THE HOME OF INNOVATION.

MAIN CATALOGUE 2020
Innovation is not just part of our philosophy. It is part of our DNA. We have been putting it into action for more than 70 years, by thinking outside the box and thinking ahead. And over this time, we have continued to grow, evolving from the inventors of the Eltako impulse switch to a provider of smart home solutions.

This development is now reflected in our communications – with the establishment of two new brands: Eltako Professional Standard for conventional building technology and Eltako Professional Smart Home for pioneering smart home solutions. This move underlines that Eltako is the home of innovation.
THE HOME OF INNOVATION.
Complete answers to your needs, not stand-alone, piecemeal products. We offer flexible, end-to-end solutions that can truly transform any building into a smart home. Based on EnOcean technologies, our systems are future-proof and easily extensible. Genuine professional-standard quality – at a good price. That’s Eltako Professional Smart Home.
YOUR ONE-STOP SOURCE OF INNOVATIVE SOLUTIONS.

We offer an end-to-end portfolio of both smart home and conventional building technologies, designed for ease of installation and backed by reliable manufacturer support. Our smart home products are versatile, intelligent and future-ready – delivering greater comfort, convenience, safety and energy efficiency. Discover how Eltako can do for you and your customers.

ELTAKO — PRODUCT RANGE

ELTAKO — TECHNOLOGY

1. **Remote Switches**
   - The foundation of our quality products and the development of the majority of functions. The devices are easy to install and or interface to other systems, such as heating systems and ventilation systems, or other remote control interfaces.

2. **Remote Switch System**
   - A centralised installation for smart home automation in new and existing installations. The module TTS/SM is capable of sending control commands to centrally controlled devices in order to achieve the full scope of BUS technology.

3. **Centralised Wireless Systems**
   - The centralised BUS building technology system, system control via a BUS controller or the wireless cabinet to control individual actuators from there. This is based on the BUS-EC 01.

4. **Decentralised Wireless Systems**
   - Centralised installations are ready to use in homes (in new or existing). The consumer is directly connected to the BUS system without the need for additional wiring. Decentralised installations include decentralised actuators.

5. **Roller Shutter and Shading Systems Control**
   - A storing and control control that can be easily mounted to provide easy and quick control of roller shutters, blinds and awnings with no batteries and smart wiring. This is an easy and cost-effective way of controlling roller shutters, blinds and awnings with no batteries and smart wiring.

6. **Visualisation and Control Software**
   - The Eltako Safe and MiniSafe Smart Home is a central unit that can provide complete control of your home. It is easy to use and can be configured and controlled via smartphone or tablet, by voice activation or by conventional pushbuttons.

7. **Energy Meters**
   - The Eltako Powerline BUS offers the simplest way to sharpen your awareness about how much energy you consume is to observe your power consumption. Our modern energy meters are easy to fit and supply all the important information.

8. **Powerline BUS System**
   - The Eltako Powerline BUS offers the simplest way to observe your power consumption. Our modern energy meters are easy to fit and supply all the important information.

9. **Passive and Active Sensors**
   - Wireless switches and control switches are defined as passive devices and presence simulation. They are required to switch, control or detect an event. They are a cost-effective way of providing extra security and safety.

10. **Multimedia**
    - Easy and convenient to operate - via smartphone or tablet. It is easy to use and can be configured and controlled via smartphone or tablet, by voice activation or by conventional pushbuttons.

11. **Control**
    - The control of your smart home: Open the blinds via smartphone while on vacation. Or turn on your sofa. Monitor your house via voice activation from the comfort of your own home.

12. **Comfort and Convenience**
    - Relax, and let your home do the hard work. The many central, time and automation functions available can be set up and executed via the visualisation and control software.

13. **Shading**
    - Eltako systems enable heating, air-conditioning. The many central, time and automation functions available can be set up and executed via the visualisation and control software.

14. **Room Climate**
    - Eltako systems enable heating, air-conditioning. The many central, time and automation functions available can be set up and executed via the visualisation and control software.

15. **Lighting**
    - Whether you need the lights on or off, the effect you want – and to create the perfect atmosphere – is easily possible.

16. **Enhanced Efficiency**
    - Eltako systems enable heating, air-conditioning. The many central, time and automation functions available can be set up and executed via the visualisation and control software.

17. **Safety and Security**
    - The Safe and MiniSafe Smart Home is a central unit that can provide complete control of your home. It is easy to use and can be configured and controlled via smartphone or tablet, by voice activation or by conventional pushbuttons.

18. **Shading Systems**
    - Eltako systems enable heating, air-conditioning. The many central, time and automation functions available can be set up and executed via the visualisation and control software.

19. **Compliance and Convenience**
    - Relax, and let your home do the hard work. The many central, time and automation functions available can be set up and executed via the visualisation and control software.

20. **Multimedia**
    - Easy and convenient to operate - via smartphone or tablet. It is easy to use and can be configured and controlled via smartphone or tablet, by voice activation or by conventional pushbuttons.

21. **Control**
    - The control of your smart home: Open the blinds via smartphone while on vacation. Or turn on your sofa. Monitor your house via voice activation from the comfort of your own home.

22. **Comfort and Convenience**
    - Relax, and let your home do the hard work. The many central, time and automation functions available can be set up and executed via the visualisation and control software.
As a market and technology leader for building technologies, we know what our customers need – because we have more than 70 years’ experience and, above all, because we are a reliable, fair and supportive partner. And we can meet any need, with the world’s broadest product portfolio. Eltako delivers consistently excellent quality, ease of installation and great value for money – for genuine professionals.
Eltako E-Design now available for the 55mm switching system.

New Series 62 with tap technology, low installation depth and plug-in terminals.

IF YOU HAVE ANY QUESTIONS, JUST ASK US!

OUR SUPPORT TEAM IS GLAD TO ASSIST YOU WITH INSTALLATION AND INFORM YOU ABOUT NEW PRODUCTS.

Just as professional as our products: Professional Support from Eltako.

Technical support:  
+49 176 135 825 14  
thuente@eltako.de

Export Sales Manager:  
+49 711 943 500 01  
export@eltako.de
CONTENTS

Series 14 – RS485-Bus rail-mounted devices for the centralised Wireless Building installation

The remote switch system FTS14 – Modular RS485 bus

Wireless actuators for the decentralised Wireless Building installation

Eltako Powerline

The blue wireless network in the building with MiniSafe, MiniSafe REG, SafeIV, PowerSafeIV, TouchIV wibutler pro and iRoom docking stations

Active wireless sensors

Passive wireless sensors

Accessories active and passive wireless sensors and wired bus sensors

Universal dimmer switches, capacity enhancer, 1-10 V controllers and rotary dimmers

Three-phase energy meters and one-phase energy meters

Electronic impulse switches

Electronic switching relays, control relays and coupling relays

Time relays, multifunction time relays and timer

Mains disconnection relays, operating hours impulse counter, current-, mains monitoring- and current-limiting relays

Staircase time switches and off-delay timers

Cable-bound shading systems and roller shutter control

Switching power supply units and wide-range switching power supply units

Electromechanical impulse switches

Electromechanical switching relays and installation contactors

Accessories wireless and others

Technical data wireless actuators, teach-in list, operating distances and contents of Eltako wireless telegrams

Type comparison table, warranty regulations, terms of delivery and index
The performance of our devices has become so complex that we have devised pictograms to depict technical features of particular importance.

**MINIMIZED STANDBY LOSS**

of electronic devices supports international efforts to reduce energy consumption. 98% of the devices produced by ELTAKO have a standby loss of less than 0.8 watt.

**BISTABLE SWITCHING RELAYS**

help electronic switchgear to reduce heating and current consumption. This prolongs lifetime and reduces or avoids standby loss. After installation the short automatic synchronization in the Off position is carried out, partly at initial operation.

**IMPULSE SWITCHES FOR CENTRAL CONTROL**

offer important basic functions, even if they are not used for central control. In order to reduce the type variety we offer them partially only completely equipped with additional control inputs central on/off.

**BIDIRECTIONAL WIRELESS**

expands the functions of the wireless actuators by another dimension: every change in state and incoming central control telegrams are confirmed by wireless telegram. This wireless telegram can be taught-in in other actuators, the GFVS Software and in universal displays. In addition, a repeater function can partially be enabled in these actuators to reach other actuators that are located far away from the wireless source.

**WITHOUT STAND-BY LOSS**

Electromechanical switchgear and electronic switching devices with a special Eltako technology as well as numerous pushbuttons, sensors and transmitter modules work without stand-by loss.

**THE UNIVERSAL CONTROL VOLTAGE 8 TO 253 V, AC 50-60 HZ AND 10 TO 230 V DC,**

covers the commonly used control voltage range with one device only. We use the international abbreviation UC (universal current).

**GLOW LAMPS FOR ILLUMINATION OF PUSH-BUTTONS**

in parallel to pushbutton contacts can make life difficult for switchgear. A glow lamp current up to 150 mA is permitted for particular device.

**THE ELTAKO RS485 BUS**

connects the wireless antenna modules FAM14, FEM and/or pushbutton input modules FTS14EM with the RS485 bus actuators in the switchboard or distribution box. It is an often used and very safe 2-wire bus.
**ZERO PASSAGE SWITCHING**

of the mains voltage sinusoidal wave prolongs contact lifetime. This provides very high switching capacities and the shallow current flow curve protects the connected consumers.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230V AC 50Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to the contact input terminal (L). This gives an additional standby consumption of only 0.1 Watt.

**SOLID STATE RELAYS**

operate noiseless, switch in zero passage and are very durable, even at high switching frequency.

**UNIVERSAL DIMMER**

for R, L and C loads. Our universal dimmer switches recognize automatically the connected load and adjust their dimmer function accordingly.

Other dimmers have to be replaced when luminaires with different kind of loads will be used later on.

Only universal dimmer switches with the added ESL marking and added LED marking have the associated comfort settings.

**ENCrypted WIRELESS SYSTEM**

The internet transmissions of the GFVS software to smartphones and M2M communications are generally highly encrypted. Many wireless pushbuttons can be taught-in encrypted in actuators of the Series 61 and 71 as well as the FAM14.

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**Only a trained electrician may install our devices, otherwise there is a risk of fire or electric shock. It is therefore prohibited to sell to other customers for this reason otherwise the risk passes to the seller.**

**Special models and non-standard control voltages** are only supplied ex works. Any return is excluded.

**Subject to change!** The product descriptions on the internet are valid only for newly manufactured devices at that time.

Also this print-catalogue is only a snap-shot. Older and newer devices might differ from them. Therefore, only the operation instructions enclosed with the devices are binding. Terms of delivery see page S-4.
No matter what system you wish to install, and in what kind of building - Eltako Professional Smart Home makes it possible. We offer intelligent, end-to-end, made-to-measure packages, not stand-alone solutions. Discover our impressive armory of products of exceptional high quality and extensibility. They offer great value for money and make any home into a smart home - and will turn you into your customers’ very own knight in shining armor.
Together, we can go further.

Hand-in-hand with our professionals, you’ll make every project a success.

Eltako Professional Standard simplifies system installation by means of a unique product portfolio, consistently high quality and outstanding value for money. We offer professional, practical support, enabling you to rapidly overcome any challenge. Working as a team, we’ll get more done. And better.
SERIES 14 – A NEW CHAPTER IN THE CENTRALISED INSTALLATION OF WIRELESS ACTUATORS.
Series 14 – RS485-Bus rail-mounted devices for the centralised Wireless Building installation

- Wireless antenna module FAM14 and wireless antenna FA
- Wireless receiver antenna modules FEM and FEM65
- RS485 bus gateway FGW14 and FGW14-USB
- Wireless GSM module FGSM14
- DALI gateway FDG14
- RS485 bus weather data gateway FWG14MS and RS485 bus gateway BGW14
- Wireless transmitter module FSM14-UC
- RS485 bus meter collector F3Z14D
- RS485 bus energy meter data gateway FSDG14
- PC Tool PCT14
- RS485 bus actuator 4-channel impulse switch FSR14-4x
- RS485 bus actuator 2-channel impulse switch FSR14-2x
- RS485 bus actuator 4-channel impulse switch F4SR14-LED
- RS485 bus actuator noiseless 2-channel impulse switch FSR14SSR
- RS485 bus actuator multifunction impulse switch with integrated relay function FMS14
- RS485 bus actuator for shading elements and roller shutters FSB14
- RS485 bus actuator universal dimmer switch FUD14
- RS485 bus actuator universal dimmer switch FUD14/800W
- Capacity enhancer FLUD14 for universal dimmer switch FUD14/800W
- RS485 bus actuator dimmer switch controller FSG14 for EVG 1-10V
- RS485 bus actuator multifunction time relay FMZ14
- RS485 bus actuator staircase lighting time delay switch FTP14
- RS485 bus actuator mains disconnection relay FFR14
- RS485 bus actuator time relay for card switch or smoke alarm FZK14
- RS485 bus actuator heating/cooling relay FHK14
- RS485 bus actuator 4-channel heating/cooling relay F4HK14
- RS485 bus actuator 2-speed fan relay F2L14
- RS485 bus display timer FSU14
- RS485 bus multifunction sensor relay FMSR14 and wireless weather data transmitter module FWS61-24V DC
- Multi sensor MS and single-phase energy meter transmitter module FWZ14
- RS485 bus wireless three-phase energy meter, MID approval DSZ14DRS-3x80A
- RS485 bus wireless three-phase energy meter, MID approval DSZ14WDRS-3x6A
- Wireless repeater FRP14
- RS485 bus telegram duplicator FTD14
The Eltako wireless system works with the reliable and worldwide standardized EnOcean wireless technology in 868 MHz. It transmits ultra short and interference-proof signals with a range of up to 100 meters in halls. Eltako wireless pushbuttons reduce the electromog load since they emit high-frequency waves that are 100 times weaker than conventional light switches. There is also a significant reduction in low-frequency alternating fields since fewer power cables need to be installed in the building.
FAM14


If required, a wireless antenna FA250 or FA200 can be connected.

Modular device for DIN-EN 60715 TH35 rail mounting. 2 module = 36 mm wide, 58 mm deep.
Supply voltage 230 V.

The delivery includes 1 Spacer DS14, 2 terminators with printing Ω, 1/2 module, 3 jumpers 1 module (including 1 spare), 1 jumper 1,5 TE, 2 jumpers 1/2 module (including 1 spare) and 1 jumper installation tool SMW14.

The delivery includes 1 Spacer DS14, 2 terminators with printing Ω, 1/2 module, 3 jumpers 1 module (including 1 spare), 1 jumper 1,5 TE, 2 jumpers 1/2 module (including 1 spare) and 1 jumper installation tool SMW14.

The wireless antenna module FAM14 receives and tests all signals from wireless transmitters and repeaters within the receiving range. These are transmitted via an RS485 interface to RS485 bus switching actuators connected in series:

Up to 126 channels can be connected to the Eltako RS485 bus. Bus cross wiring and power supply with jumper.

You can teach in up to 128 encrypted sensors.

The attached second terminator has to be plugged to the last actuator.

You can teach in up to 128 encrypted sensors.

Mini USB to connect to a PC, to create an equipment list, to configure the actuators using the PC tool PCT14 and for data backup.

A legalisation code to download the PCT14 from the Eltako website www.eltako.com is supplied with the FAM14.

Gateways FGW14 and FGW14-USB will be connected to the terminal Hold when they connect a PC with a RS232 bus and/or up to 3 wireless receiver modules FEM with a sub-bus RS485.

FTS14EM, FTS14TG and FWG14MS will be also connected to terminal Hold.

The lower rotary switch is required to teach in encrypted sensors and can be turned to AUTO 1 in operation. Unencrypted sensors need not be taught-in in the FAM14.

With the upper rotary switch BA 10 different operating modes can be set as described in the operating instructions.

The upper LED displays all perceived wireless commands in the reception area by short flickering.

The bottom LED lights up green if a connection from the PC tool PCT14 to the FAM14 was created. When reading or writing date the LED flashes green. The green LED goes out if the connection from the PC tool PCT14 to the FAM14 was terminated.

At a load of more than 50% of the rated capacity of 8W a ventilation clearance of ½ module must be maintained with the spacer DS14 on the left side.

FA250 AND FA200

Wireless antennas with magnetic base

The enclosed small antenna can be replaced with a wireless antenna FA250 or if need be FA200 with magnetic base and cable.

The enclosed small antenna can be replaced with a wireless antenna FA250 or if need be FA200 with magnetic base and cable.

Function rotary switches

BA

AUTO

CLR

LRN

Standard setting ex works.

Recommended retail prices excluding VAT.

FAM14 Wireless antenna module EAN 4010312313695 103,90 €/pc.

FA250 Wireless antenna with 250 cm cable, black EAN 4010312300244 21,80 €/pc.

FA250-gw Wireless antenna with 250 cm cable, grey white EAN 4010312317051 21,80 €/pc.

FA200 High-performance receive antenna with 200 cm cable EAN 4010312303306 70,60 €/pc.
WIRELESS RECEIVER ANTENNA MODULE FEM

FEM

Wireless receiver antenna module for the RS485 sub-bus. Only 0.5 watt standby loss.

SMA socket for small enclosed antenna. The reception range can be increased by placing a larger wireless antenna FA250* or FA200* in the optimised position.

Housing dimensions L x W x H: 78 x 40 x 22 mm.

Up to three wireless receiver modules in a separate mini-housing can be installed at any point in the building in addition to an FAM14 and connected via a Gateway FGW14 to the main bus by a 4-wire screened sub-bus line (e.g. telephone line).

Therefore connect the terminals RSA/RSB of the FEM with the terminals RSA2/RSB2 of the FGW14.

Also connect the terminals +12V/GND of the FEM with the terminals +12V/GND of the FGW14.

Wiring of several FEM should take place with a line in the form of a chain, as prescribed in RS485 bus systems.

A radial wiring with one line per FEM is not allowed.

In each of the three wireless receiver modules, the jumper must be plugged into a different position.

For this purpose, carefully open the housing on the narrow side with a screwdriver at the side provided. Blade width 6.5 mm, max. 1.5 mm thick.

| FEM | Wireless receiver antenna module | EAN 4010312313848 | 78,80 €/pc. |

FEM65-wg

Wireless receiver antenna module for the RS485 sub-bus. In the housing for surface mounting 84 x 84 x 30 mm or mounting into the E-Design65 switching system. Only 0.5 watt standby loss.

We recommend stainless-steel countersunk screws 2.9 x 25 mm, DIN 7982 C for screw fixing on 55 mm switch boxes. See chapter Z: ‘Accessories’.

Set of 2 stainless-steel countersunk screws 2.9 x 25 mm and plugs 5x 25 mm are enclosed.

Up to three wireless receiver modules FEM and/or FEM65 can be installed at any point in the building in addition to a FAM14 and connected via a gateway FGW14 to the main bus by a 4-wire screened sub-bus line (e.g. telephone line).

| FEM65-wg | Wireless receiver antenna module, pure white glossy | EAN 4010312315934 | 83,40 €/pc. |

Recommended retail prices excluding VAT.

* see chapter Z
WEEE registration number DE 30298399

FEM

Wireless receiver antenna module for the RS485 sub-bus. Only 0.5 watt standby loss.

SMA socket for small enclosed antenna. The reception range can be increased by placing a larger wireless antenna FA250* or FA200* in the optimised position.

Housing dimensions L x W x H: 78 x 40 x 22 mm.

Up to three wireless receiver modules in a separate mini-housing can be installed at any point in the building in addition to an FAM14 and connected via a Gateway FGW14 to the main bus by a 4-wire screened sub-bus line (e.g. telephone line).

Therefore connect the terminals RSA/RSB of the FEM with the terminals RSA2/RSB2 of the FGW14.

Also connect the terminals +12V/GND of the FEM with the terminals +12V/GND of the FGW14.

Wiring of several FEM should take place with a line in the form of a chain, as prescribed in RS485 bus systems.

A radial wiring with one line per FEM is not allowed.

In each of the three wireless receiver modules, the jumper must be plugged into a different position.

For this purpose, carefully open the housing on the narrow side with a screwdriver at the side provided. Blade width 6.5 mm, max. 1.5 mm thick.

| FEM | Wireless receiver antenna module | EAN 4010312313848 | 78,80 €/pc. |

FEM65-wg

Wireless receiver antenna module for the RS485 sub-bus. In the housing for surface mounting 84 x 84 x 30 mm or mounting into the E-Design65 switching system. Only 0.5 watt standby loss.

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Set of 2 stainless-steel countersunk screws 2.9 x 25 mm and plugs 5x 25 mm are enclosed.

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| FEM65-wg | Wireless receiver antenna module, pure white glossy | EAN 4010312315934 | 83,40 €/pc. |

Recommended retail prices excluding VAT.
FGW14

Multiple Gateway. Bidirectional. Only 0.5 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
The gateway is only 1 module wide but has multiple uses: For coupling of up to three FEM, for direct connection via the RS232 interface with the PC, for connection to the bus components of the older Series 12 or as a bus connector of two RS485 buses of Series 14.

**Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.**

**Operation in conjunction with FAM14 or FTS14KS.**

The Hold terminal is connected to the FAM14 or the FTS14KS.

Wireless receiver modules FEM are connected in parallel to the sub-bus terminals RSA2 and RSB2 as well as the power supply terminals GND and +12V.

Up to 10 pushbutton input modules FTS12EM can be connected in series to the sub-bus terminals RSA2 and RSB2. If necessary in series with wireless receiver modules FEM.

The PC connection is via connection to the terminals Tx and Rx.

Series 12 actuators are connected to the sub-bus terminals RSA2 and RSB2. There is no Hold connection in this case.

A second series 14 bus is fed into the terminals RSA2/RSB2.

The settings of the **operating mode rotary switch BA** are carried out as described in the operating instructions.

<table>
<thead>
<tr>
<th>FGW14</th>
<th>Multiple gateway</th>
<th>EAN 4010312313855</th>
<th>56,60 €/pc.</th>
</tr>
</thead>
</table>

FGW14-USB

Gateway with USB-A connection. Bidirectional. Only 0.3 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

The gateway is only 1 module wide but has multiple uses: To connect a Smart Home central unit SafelV or PC via a USB interface, to couple up to three FEM devices, for connection to the bus components of the older Series 12 or as a bus connector of two RS485 buses of Series 14.

**Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.**

**Operation in conjunction with FAM14 or FTS14KS.**

The Hold terminal is connected to the FAM14 or the FTS14KS.

The PC is connected via a USB interface running at 9600 baud or 58 kbaud.

Wireless receiver modules FEM are connected in parallel to the sub-bus terminals RSA2 and RSB2 as well as the power supply terminals GND and +12V.

Up to 10 pushbutton input modules FTS12EM can be connected in series to the sub-bus terminals RSA2 and RSB2. If necessary in series with wireless receiver modules FEM.

The SafelV or PC connection is via connection to the terminals Tx and Rx.

Series 12 actuators are connected to the sub-bus terminals RSA2 and RSB2. There is no Hold connection in this case.

A second series 14 bus is fed into the terminals RSA2/RSB2.

The settings of the **operating mode rotary switch BA** are carried out as described in the operating instructions.

<table>
<thead>
<tr>
<th>FGW14-USB</th>
<th>Gateway with USB connection</th>
<th>EAN 4010312316054</th>
<th>56,60 €/pc.</th>
</tr>
</thead>
</table>

| USB-Kabel | 2 m long, Type A, ST/BU | EAN 4010312907702 | 11,00 €/pc. |
FGSM14

Wireless GSM module for the Eltako RS485 bus. Bidirectional. Standby loss 0.9 watt. The GSM antenna is contained in the scope of supply.

DIN rail mounted device for fitting on mounting rail DIN-EN 60715 TH35. 3 modules = 54 mm wide, 58 mm deep.

When receiving and transmitting the power loss is about 2 watts.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

The GSM module links smartphones encrypted directly to the bus over the mobile radio network. Thereby up to 16 Series 14 switching points in the same RS485 bus can be very easily addressed encrypted by Eltako app. Multiple actuators can be addressed per switching point. The switching points report their status back. In addition, 8 other status messages, for example for temperatures and error messages, are possible.

A status overview takes place immediately when the app is activated in the smartphone.

Very simple and secure registration using Eltako quickcon® technology.

Now also with Push Function. It displays fault messages actively on smartphones. It is triggered by smoke alarms, water probes or window contacts, for example.

Download the app FGSM14 from the store of your iPhone or Android mobile system.

The configuration of the FGSM14 is done with the PC-Tool PCT14 at the FAM14 or FTS14KS.

Power is supplied by an integrated switch mode power supply unit independent from the bus power supply. Therefore, a 230 V supply voltage to L and N is required.

If the GSM receiver is not installed at the same place in a distributor containing Series 14 actuators, the bus is connected to a bus coupler FBA14 using a 2-wire screened bus line (e.g. telephone line). Then connect to the RSA and RSB terminals.

For the function of the GSM module FGSM14 it is necessary that a device address is assigned from the FAM14 or the FTS14KS as described in the operating instructions.

A data flat for 2 years is included in the price of the version for Germany.

Only one application form for commissioning must be completed and submitted. This is located in the package. The activation takes place on the next business day after receipt. Subsequent contracts are offered automatically.

A data card is already inserted in the FGSM14. This can be replaced with the card of another provider after removing the middle front plate. No data card is included in the delivery of the FGSM14E.

| FGSM14 | Wireless GSM module Germany with dataflat for two years | EAN 4010312314098 | 285,00 €/pc.* |
| FGSM14E | Wireless GSM module Export without dataflat | EAN 4010312315637 | 215,00 €/pc.* |

GSM antenna with 250 cm cable

Housing for operating instructions GBA14 page 1-44.
DALI GATEWAY FDG14

**FDG14**

DALI gateway, bidirectional. Only 1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

Operation in conjunction with FAM14.

Power supply 230 V at terminals N and L.

16 V DC/130 mA can be connected to the DALI terminals +/-- for up to 64 DALI devices.

The gateway FDG14 controls DALI devices with EnOcean wireless transmitters via the FAM14.

As of production week 14/16 **Groups 0-15** can be controlled and the broadcast command can be sent. In addition **DALI scenes 0-15** can be recalled.

DALI installations, which are to be fully controlled with the FDG14, must be configured in groups 0-15.

The FDG14 internally saves the dimming value for each of the groups 0-15 and supplies this value as feedback. The same feedback telegrams are generated as for an FUD14. The FDG14 occupies 16 BR14 device addresses. The feedbacks of the device addresses correspond to the dimming values of the DALI groups 0-15 in ascending order. Feedbacks can be converted by the PCT14 for each individual group of dimming value telegrams (% ) to pushbutton telegrams (ON/OFF). Feedbacks can then control BR14 actuators. The FDG14 fulfills the function of the DALI master and the DALI power supply. The rotary switches can only teach in pushbuttons for groups 0-8 and DALI scenes 0-9. Activation telegrams for groups 9-15 and scenes 10-15 are only possible by entries in PCT14.

As of Production Week 30/19, the FDG14 can be used as a single-channel device ‘FDG14-Broadcast’. This is defined when the device address is issued.

**Important:** Wireless pushbuttons always need to be double-clicked when they are taught-in manually in the FDG14. **CLR** only needs a single click.

A direction pushbutton or universal pushbutton with identical ID and identical pushbutton can be taught in several times in different groups. The group last selected is always valid. Therefore, a pushbutton can either switch only one group or broadcast to all groups. One FBH per group can also be taught in. With a manual teach-in this always acts dependent on brightness. With PCT14 you can also set the brightness threshold.

The delay time for switch-off after no motion is detected can be set together in minutes (1 ... 60) for the FBH devices of all groups. The default is 3 minutes.

<table>
<thead>
<tr>
<th>FDG14</th>
<th>DALI gateway</th>
<th>EAN 4010312316085</th>
<th>87,50 €/pc.</th>
</tr>
</thead>
</table>

Recommended retail prices excluding VAT.
RS485 BUS WEATHER DATA GATEWAY FWG14MS AND RS485 BUS GATEWAY BGW14

FWG14MS
Weather data gateway for multi sensor MS. Bidirectional. Only 0.3 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
A multisensor MS at the gateway is connected to terminals RSA and RSB. The information is received once per second and converted into bus telegrams. However, several FWG14MS can be connected to a multisensor MS e.g. to control several Eltako RS485 buses with only one MS multisensor. Only at one FWG14MS must the end resistor connected. At additional FWG14MS, this resistor must be removed.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper. Operation in conjunction with FAM14 or FTS14KS.
The Hold terminal is connected to the FAM14 or the FTS14KS. A maximum of two FWG14MS devices can be operated in one bus. The telegram duplicator FTD14 can also send telegrams over the Wireless Building System after the IDs of the FWG14MS are taught in the FTD14 or entered using the PTC14. Receiving devices can then be FSB14, FSB61NP and FSB71. If the multisensor MS signal is not received, an alarm telegram is sent. Using the PC Tool PCT14, 96 inputs can be AND or OR linked and up to 12 outputs can be output.
The BA operating mode rotary switch can be configured according to the operating instructions.

<table>
<thead>
<tr>
<th>FWG14MS</th>
<th>Weather data gateway</th>
<th>EAN 4010312316887</th>
<th>56,60 €/pc.</th>
</tr>
</thead>
</table>

BGW14
RS485 bus gateway. Bidirectional. Only 0.3 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper. Operation in conjunction with FAM14 or FTS14KS.
The Hold terminal is connected to the FAM14 or the FTS14KS.
Up to 16 RS485 sensors, e.g. BUTH65/12V DC, BBH65/12V DC and BTR65H/12V DC can be connected to the RSA/RSB terminals. See chapter 8, page 8-19 and 8-20. Standard telephone wire is sufficient as connecting lead: J-Y (ST) Y 2x2x0.8 mm² or equivalent.
The permitted maximum line length is 1000 m. The second 120 Ω terminal resistor must also be connected to the RSA/RSB terminals of the remotest sensor.
With up to 8 BGW14 devices, the data of up to 128 sensors can be fed to the RS485 bus.
Set the operating mode rotary switch BA according to the operating instructions.

<table>
<thead>
<tr>
<th>BGW14</th>
<th>RS485 bus gateway</th>
<th>EAN 4010312319062</th>
<th>56,60 €/pc.</th>
</tr>
</thead>
</table>

Recommended retail prices excluding VAT.
Wireless 4-fold transmitter module. With exchangeable antenna. If required, a wireless antenna FA250 can be connected. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper. Alternatively, the power supply can be performed with a switching power supply unit 12 V DC at the terminals +12 V/GND.

This wireless transmitter module has four channels and, like a wireless 4-way pushbutton, it can transmit wireless telegrams into the Eltako wireless network. E1 initiates a wireless telegram like 'press rocker above' of a wireless pushbutton with one rocker, E2 like 'press rocker below', E3 like 'press left rocker above' of a wireless pushbutton with double rocker and E4 like 'press left rocker below' of a wireless pushbutton with double rocker.

The telegram on opening the control contacts is identical like 'release wireless pushbutton'. Several wireless transmitter modules must not be switched at the same time.

The universal control voltage at +En/-E processes control commands from 8 to 253 V AC or 10 to 230 V DC with a length of at least 0.2 seconds. Max. parallel capacitance (approx. length) of control lead at 230 V 0.9 μF. This corresponds to a length of approx. 3000 meters.

If the terminals E1 and E2 are connected with a bridge, the wireless telegram is transmitted from E2, as long as the control voltage is applied, e.g. for central commands with priority.

The rotary switch is required for the activation or deactivation of encryption and is set to AUTO in operation.

**Activate encryption:** Turn the rotary switch to the right stop (position key) and press once.

**Deactivate encryption:** Turn the rotary switch to the left stop (position crossed out key) and press once.

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**Housing for operating instructions GBA14 page 1-44.**

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**Recommended retail prices excluding VAT.**

| FSM14-UC | Wireless 4-fold transmitter module | EAN 4010312316078 | 58,00 €/pc. |
Recommended retail prices excluding VAT.

**F3Z14D**

Wireless meter concentrator for electricity, gas and water meters. For 3 S0 interfaces and/or 3 AFZ scanners, only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 modul = 18 mm wide, 58 mm deep.

**Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.**

This meter concentrator concentrates the data of up to three electricity, data and water meters and supplies this data to the RS485 bus. Either for forwarding to an external computer or for sending over the Wireless Building System.

Hook-up is either by connection to the S0 interface of the meters or by use of an AFZ scanner on each Ferraris meter. The scanner is bonded above the rotary disc of the meter and connected by its connecting wire to one of the S01-S03/GND terminals. The F3Z14D detects automatically whether an S0 interface or an AFZ is connected.

The meter reading is entered into the display by two pushbuttons as well as the impulse rate (number of impulses or revolutions per kilowatt hour or cubic meter). The settings can be locked.

Meter readings can be entered and read out using the **PCT14 PC Tool**. In addition, impulse rates can be entered. The default display is selectable and operation of the device is interlocked.

The display is subdivided into 3 fields.

**Field 1:**
- The default display is the unit of the meter reading currently displayed in field 3, either in kilowatt hours kWh or megawatt hours MWh or cubic meter M3 or cubic decametre DM3

**Field 2:**
- Momentary value of active power in watts and kilowatts or flow in centilitres and decilitres.
- The arrow on the left in display field 1 indicates automatic switchover from 0-99 W or cl/s to 0.1 to 65 kW or dal/s. The display depends on the number of impulses of the meter.
- The displayed minimum load is e.g. 10 watts at 2000 impulses per KWH and 2000 watts at 10 impulses per KWH.

**Field 3:**
- The meter reading is the default display. Every 4 seconds, the display alternates between 3 integer numbers and 1 decimal point (from 0 to 999.9) and an additional 1 or to 3 integer numbers (from 0 to 999).

**Select meter in display:**
- Press MODE and then press MODE again to select the **ANZ function**. Press SET to select the meter number to be displayed as default. Press MODE to confirm.

**Issue device address in the bus and send teach-in telegrams** as described in the operating instructions.

All Eltako energy meters are fitted with an S0 interface and can therefore be connected to the energy meter concentrator F3Z14D. Only devices FWZ14-65A, DSZ14DRS-3x80A and DSZ14WDRS-3x5A are directly connected to the bus.

**Further settings can be made using the PCT14.**

---

**Recommended retail prices:**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price Excl. VAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>F3Z14D</td>
<td>RS485 bus meter collector</td>
<td>EAN 4010312501528</td>
<td>49.90 €/pc.</td>
</tr>
<tr>
<td>AFZ</td>
<td>Scanner for each Ferraris meter</td>
<td>EAN 4010312315576</td>
<td>257.90 €/pc.</td>
</tr>
</tbody>
</table>
FSDG14

Wireless energy meter data gateway for meters equipped with an IEC 62056-21 IR interface. 2 channels. Only 0.4 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

This energy meter data gateway can provide the data of an electronic domestic supply meter (eHZ-EDL) with IR interface according to IEC 62056-21 and SML protocol version 1 to the RS485 bus. Either for forwarding to an external computer or the GFVS software.

Regular flashing of the green LED indicates that the FSDG14 is receiving data from the meter. Active power, up to 4 meter readings and the serial number are transferred. The serial number corresponds to the last 4 bytes (hex) of the server ID printed on the meter. The telegram is sent over the wireless building service by means of the wireless antenna module FAM14. Usage data are transmitted over channel 1 and delivery data over channel 2. It is therefore essential for the FAM14 to issue a device address. If there is a change in active power or a meter reading, the appropriate telegram is sent immediately and all telegrams including the serial number are sent cyclically every 10 minutes.

Also display with FE4650.

The PCT14 PC tool can also read out the FSDG14.

Turn the rotary switch to select the following operating modes (OBIS codes according to IEC 62056-61):

1: Usage meter (1.8.0) and usage power on channel 1, delivery meter (2.8.0) and delivery power on Channel 2.
2: Usage tariff 1 (1.8.1) and tariff 2 (1.8.2) and usage power on channel 1, delivery tariff 1 (2.8.1) and tariff 2 (2.8.2) and delivery power on channel 2.
3: Usage tariff 1 (1.8.1) and tariff 2 (1.8.2) and usage power on channel 1, delivery meter (2.8.0) and delivery power on Channel 2.
4: Usage meter (1.8.0) and usage power on channel 1, delivery tariff 1 (2.8.1) and tariff 2 (2.8.2) and delivery power on channel 2.

The link is made by using an AIR IR scanner. The scanner is attached by its fixing magnets to the IR output of the meter and is connected by its connecting cable to terminals Tx, Rx, GND and +12 V.

Recommended retail prices excluding VAT:

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>EAN</th>
<th>Price/pc</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSDG14</td>
<td>RS485 bus energy meter data gateway</td>
<td>4010312316146</td>
<td>45,10 €</td>
</tr>
<tr>
<td>AIR</td>
<td>IR scanner for energy meters</td>
<td>4010312316153</td>
<td>110,30 €</td>
</tr>
</tbody>
</table>
PCT14

The PC tool for Series 14 and 71

PCT14 is a PC-installed service program (PC Tool) to acquire, edit, save and reimport the settings of Eltako Series 14 and 71 actuators. It belongs to the scope of supply of the FTS14KS as well as the FAM14 and must be downloaded from the download page of the Eltako website at www.eltako.com.

Quick Start Guide for Series 14 and 71; after installing PCT14:
1. Establish connection between PC and FAM14, FTS14KS or DAT71.
   Connect the PC and the mini-USB port with a USB cable.
   It may happen that the first connection automatically installs a driver.
   If the connection is successful, the status bar displays the used COM.

2. Create device list; after installing the actuators
   Right-click in the left window section to display the context menu.
   Select the command 'Update device list and read device memory' from the context menu.
   After the query for the RS485 bus, all the available devices are displayed.
   Other actions can be carried out by executing context menu commands. Right-click to display the context menu. The status line is located at the lower border of the program window and contains information on the context menu commands.
   Click on 'Help' for more information.

PCT14 PC Tool with export and import functions
PCT14 is capable of reading all sensor-actuator set-ups from Series 14 and Series 71 actuators fully automatically and exporting the data to the GFVS. The virtual pushbutton is generated here for GFVS and is then re-imported to Series 14 actuators. Saved designations are also transferred. Overlaying the GFVS on a fully set-up Series-14 Wireless Building System is then a simple task for an electrician. For data exchange a Windows-PC/Notebook is needed.

| PCT14   | PC tool for Series 14 and 71 | Included in the scope of supply of the FAM14 and FTS14KS |

**Process of PCT14 – GFVS Data Exchange Tool Import / Export for PCT14 and GFVS 4.0**

1. Mount USB stick in SafeIV/TouchIV
2. Start import / export using menu option in GFVS
3. Import PCT14 configuration file
4. Create functions, etc.
5. Save updated PCT14 configuration file on USB stick
6. Dismount USB stick

Encrypted PCT14 configuration file on USB stick

Encrypted PCT14 configuration file from USB stick

1. Read out Series 14 actuator via FAM14, create configuration
2. Export PCT14 configuration file

Windows-PC / Notebook with PCT14 and USB connection FAM14

1. Import PCT14 configuration file
2. Save new configuration in Series 14 actuators via FAM14
FSR14-4x

4-channel impulse switch with integrated relay function, 1 NO contact per channel 4 A/250 V AC, incandescent lamps 1000 watts, potential free from the power supply, with DX technology. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to K(L). This results in an additional standby consumption of only 0.1 watt.

When all 4 relays of the FSR14-4x are switched on, a power of 0.7 watts is required. If supply voltage fails, the device is switched off in defined mode.

The channels can be taught-in as ES and/or ER channel separately from each other.

Scene control:

Several channels of one or several FSR14-4x devices can be switched on or off in a scene by one of the four signals of a pushbutton with double rocker taught-in as a scene pushbutton.

Central commands on PC are sent using the Wireless Building Visualisation and Control Software GFVS.

To do this, teach-in one or several FSR14-4x devices.

Use the rotary switches to teach-in the pushbuttons and test the 4 channels as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EWT time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.

If wireless motion/brightness sensors FBH (Master) and/or FBH (slave) are taught-in, the switching threshold will be set with the upper rotary switch, separated for each channel, at which the lighting will be switched on or off. Settings of the upper rotary switch in accordance with operating instructions.

When wireless brightness sensors are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off.

An additionally set RV time is not taken into account.

Only one FBH (Master) or FAH can be taught-in per channel. However a FBH (Master) or FAH can be taught-in into several channels.

When wireless window/door contacts FTK or window handle sensors FFG7B-rw are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 116 FTKs:

AUTO 1 = window closed then output active.
AUTO 2 = window open then output active.

In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).

One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK.

After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later.

An additionally set RV time is not taken into account.

Function with wireless smoke alarm detectors FRW or water sensors according to the operating instructions.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.
**FSR14-2x**

2-channel impulse switch with integrated relay function, 1+1 NO contacts potential free 16 A/250 V AC, incandescent lamps 2000 watts, with DX technology. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N1) and L to 1(L) and/or N to (N2) and L to 3(L). This results in an additional standby consumption of only 0.1 watt.

If supply voltage fails, the switching state is retained.

When power is restored, the device is switched off in defined mode.

The channels can be taught-in as ES and/or ER channel separately from each other.

**Scene control:**

Several channels of one or several FSR14-2x devices can be switched on or off in a scene by one of the four signals of a pushbutton with double rocker taught-in as a scene pushbutton.

**Central commands on PC** are sent using the Wireless Building Visualisation and Control Software GFVS.

To do this, teach-in one or several FSR14-2x devices.

**Use the rotary switches** to teach-in the pushbuttons and test the 2 channels as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EW time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.

If wireless motion/brightness sensors FBH (Master) and/or FBH (slave) are taught-in, the switching threshold will be set with the upper rotary switch, separated for each channel, at which the lighting will be switched on or off. Settings of the upper rotary switch in accordance with operating instructions.

**When wireless brightness sensors** are taught–in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off. An additionally set RV time is not taken into account.

Only one FBH (Master) or FAH can be taught-in per channel. However a FBH (Master) or FAH can be taught-in into several channels.

**When wireless window/door contacts FTK or window handle sensors FFG7B-rw** are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 116 FTKs:

- AUTO 1 = window closed then output active.
- AUTO 2 = window open then output active.

In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).

One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK.

After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later. An additionally set RV time is not taken into account.

Function with wireless smoke alarm detectors FRW or water sensors according to the operating instructions.

**The LED** below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

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Recommended retail prices excluding VAT.
Recommended retail prices excluding VAT.

1-15

RS485 BUS ACTUATOR 4-CHANNEL IMPULSE SWITCH F4SR14-LED

F4SR14-LED

4-channel impulse switch with integrated relay function, 1 NO contact per channel up to 400 W 230 V LED, incandescent lamps 1800 watts, potential free from the power supply, with DX technology. Bi-directional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep. Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper. 230 V LED lamps can be switched up to 400 W and up to a maximum inrush current of 25 A/100 ms per NO contact.

Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to (K). This results in an additional standby consumption of only 0.1 watt.

When all 4 relays of the F4SR14-LED are switched on, a power of 1 watt is required. If supply voltage fails, the device is switched off in defined mode.

The channels can be taught-in as ES and/or ER channel separately from each other.

Scene control:

Several channels of one or several F4SR14-LED devices can be switched on or off in a scene by one of the four signals of a pushbutton with double rocker taught-in as a scene pushbutton.

Central commands on PC are sent using the Wireless Building Visualisation and Control Software GFVS. To do this, teach-in one or several F4SR14-LED devices.

Use the rotary switches to teach-in the pushbuttons and test the 4 channels as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EW time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.

If wireless motion/brightness sensors FBH (Master) and/or FBH (slave) are taught-in, the switching threshold will be set with the upper rotary switch with double rocker taught-in as a scene pushbutton.

When wireless brightness sensors are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off. An additionally set RV time is not taken into account.

Only one FBH (Master) or FAH can be taught-in per channel. However a FBH (Master) or FAH can be taught-in into several channels.

When wireless window/door contacts FTK or window handle sensors FFG7B-rw are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 116 FTKs:

AUTO 1 = window closed then output active.
AUTO 2 = window open then output active.

In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).

One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK.

After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later.

An additionally set RV time is not taken into account.

Function with wireless smoke alarm detectors FRW or water sensors according to the operating instructions.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Connection example page 1-48.
Technical data, see page 1-48.
Housing for operating instructions GBA14 page 1-44.

Further settings can be made using the PC Tool PCT14.
RS485 BUS ACTUATOR NOISELESS 2-CHANNEL IMPULSE SWITCH FSR14SSR

FSR14SSR

Noiseless 2-channel impulse switch with integrated relay function, 400 W. 2 solid state relays not potential free. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep. Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper. If both relays of the FSR14 are switched on, a power of 0.4 watts is required. The rated switching capacity of 400 W is applied for one contact and also for the sum of the two contacts. The parallel connection of multiple devices to increase power is allowed. From manufacturing date 12/17 with automatic overtemperature shutdown. With a load < 1 W a GLE must be switched parallel to the load. If supply voltage fails, the device is switched off in defined mode.

The channels can be taught-in as ES and/or ER channel separately from each other.

Scene control:
Several channels of one or several FSR14SSR devices can be switched on or off in a scene by one of the four signals of a pushbutton with double rocker taught-in as a scene pushbutton.

Central commands on PC are sent using the Wireless Building Visualisation and Control Software GFVS. To do this, teach-in one or several FSR14SSR devices.

Use the rotary switches to teach-in the pushbuttons and test the 2 channels as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EW time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.

If wireless motion/brightness sensors FBH (Master) and/or FBH (slave) are taught-in, the switching threshold will be set with the upper rotary switch, separated for each channel, at which the lighting will be switched on or off. Settings of the upper rotary switch in accordance with operating instructions.

When wireless brightness sensors are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off. An additionally set RV time is not taken into account. Only one FBH (Master) or FAH can be taught-in per channel. However a FBH (Master) or FAH can be taught-in into several channels.

When wireless window/door contacts FTK or window handle sensors FFG7B-rw are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 116 FTKs:
AUTO 1 = window closed then output active.
AUTO 2 = window open then output active.
In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).
One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK.
After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later.
An additionally set RV time is not taken into account.

Function with wireless smoke alarm detectors FRW or water sensors according to the operating operating instructions.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Further settings can be made using the PC Tool PCT14.

Connection example page 1-46.
Technical data, see page 1-48.
Housing for operating instructions GBA14 page 1-44.
RS485 BUS ACTUATOR MULTIFUNCTION IMPULSE SWITCH WITH INTEGRATED RELAY FUNCTION FMS14

**FMS14**

Multifunction impulse switch with integrated relay function, 1+1 NO potential free 16 A/250 V AC, incandescent lamps 2000 W, with DX technology. Bidirectional. Only 0.1-0.6 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako–RS485 bus. Bus cross wiring and power supply with jumper.

Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to K(L). This results in an additional standby consumption of only 0.1 watt.

Maximum current over both contacts 16 A for 230 V.

If supply voltage fails, the device is switched off in defined mode.

When both relays of the FMS14 are switched on, 0.6 watt are required.

The upper and the middle rotary switches are for teaching-in the sensors. In normal mode, the middle rotary switch is then set to AUTO and the bottom rotary switch to the required function:

- **2S** = Impulse switch with 2 NO contacts
- **2(2xS)** = 2-way impulse switch each with one NO relay
- **WS** = Impulse switch with 1 NO contact and 1 NC contact (0.3 watt standby loss)
- **SS1** = Impulse multi circuit switch 1+1 NO contacts for switching sequence 1
- **SS2** = Impulse multi circuit switch 1+1 NO contacts for switching sequence 2
- **SS3** = Impulse multi circuit switch 1+1 NO contacts for switching sequence 3
- **GS** = Impulse group switch 1+1 NO contacts
- **2R** = Switching relay with 2 NO contacts
- **WR** = Switching relay with 1 NO contact and 1 NC contact (0.3 watt standby loss)
- **RR** = Switching relay (closed-circuit current relay) with 2 NC contacts (0.5 watt standby loss)
- **GR** = Group relay 1+1 NO contacts

Switching sequence SS1: 0 - contact 1(K-1) - contact 2(K-2) - contact 1 + 2

Switching sequence SS2: 0 - contact 1 - contact 1 + 2 - contact 2

Switching sequence SS3: 0 - contact 1 - contact 1 + 2

Switching sequence GS: 0 - contact 1 - 0 - contact 2

GR: Relay with alternating closing contacts.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

**RS485 bus actuator – Multifunction impulse switch with integrated relay function**

<table>
<thead>
<tr>
<th>FMS14</th>
<th>EAN 4010312313725</th>
<th>42.20 €/pc.</th>
</tr>
</thead>
</table>

Recommended retail prices excluding VAT.

**Further settings can be made using the PC Tool PCT14.**

Connection example page 1-46.

Technical data, see page 1-48.

Housing for operating instructions GBA14 page 1-44.
Recommend retail prices excluding VAT.

FSB14

Switch actuator for shading elements and roller shutters with 2 channels for two 230 V motors. 2+2 NO contact 4 A/250 V AC, potential free from power supply 12 V. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

Zero passage switching to protect contacts and motors.

A motor is connected to 1, 2 and N; a second motor may be connected to 3, 4 and N. If both relays of the FSB14 are switched on, a power of 0.4 watts is required.

If supply voltage fails, the device is switched off in defined mode.

The pushbuttons can be taught-in either as direction switches or universal switches:

Local control with universal pushbuttons: Each impulse causes the FSB14 to change its position in the UP-Stop-DOWN-Stop sequence.

Local control with direction pushbutton: A top impulse by pushbutton directly activates the ‘UP’ switch position. A bottom impulse by pushbutton directly activates the ‘DOWN’ switch position.

A further impulse from one of the two pushbuttons stops the sequence immediately.

Central control dynamic without priority: A control signal from a pushbutton which was taught-in as a central control pushbutton without priority directly activates the switch position ‘Up’ with a scanning pulse up and the switch position ‘Down’ with a scanning pulse down. Without priority because this function can be overridden by other control signals.

Central control dynamic with priority: A control signal of min. 2 seconds from a pushbutton which was taught-in as a central control pushbutton with priority directly activates the switch position ‘Up’ (press top) and the switch position ‘Down’ (press bottom). With priority because these control signals cannot be overridden by other (local) control signals until the central control signal is cancelled by pressing again the central control pushbutton ‘Up’ or ‘Down’.

The switch position ‘up’ or ‘down’ and the priority are specifically activated with a control signal, e.g. from a FSM61 taught-in with priority as a central pushbutton. With priority because these control signals cannot be overridden by other control signals until the central command is cancelled by the termination of the control signal.

Shading scene control: With a control signal of a pushbutton with double rocker taught-in as a scene pushbutton or automatically by an additional taught-in wireless-outdoor-brightness sensor, up to 4 previously filed elapsed times can be accessed.

With control via GFVS software, operating commands for up and down with the exact travel time information can be started. As the actuator reports the exact elapsed time after each activity, even when driving was triggered by a pushbutton, the position of the shading is always displayed correctly in the GFVS software. Upon reaching the end positions above and below the position is automatically synchronized.

Function rotary switch below

AUTO 1 = In this position, the local advanced automatic reversing system for Venetian blinds is activated. When a universal pushbutton or a direction pushbutton are used for control a double impulse activates a slow rotation in the opposite direction, which can be stopped with a further impulse. AUTO 2 = In this position, the local advanced automatic reversing system for Venetian blinds is completely switched off. AUTO 3 = In this position, the local pushbuttons act static at first, thus, allow reversal of Venetian blinds by operating pushbuttons. They only switch to dynamic after 0.7 seconds continuous operation.

AUTO 4 = In this position, the local pushbuttons act only static (ER function). The time delay RV (wiping time) of the upper rotary switch is active. Central control is not possible.

WA = Automatic reversal for Venetian blinds and awnings is controlled by the middle rotary switch. 0 = OFF, otherwise from 0.3 to 5 seconds ON with the selected reversal time. In this case, it is only for DOWN that the direction is reversed on time-out of the time lag selected by the top rotary switch, e.g. to extend awnings or set Venetian blinds to a defined position. A LED is located behind the RV-rotary switch to show the reversal time.

RV = The time delay (delay time RV) is set by the top rotary switch. If the FSB14 is in the UP or DOWN position the selected delay time runs (elapses); at time-out the device changes automatically to STOP. Therefore, the time delay must be chosen at least as long as the shading element or roller shutter will need to move from one limit position to the other.

The LED indication for the delay time RV is located behind the rotary switch.

When one or several wireless window/door contacts FTK or window handle sensors FFG7B-rw are taught-in, a lock-out protection is set up while the door is open and disables a Central Down command. The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.

| FSB14 | RS485 bus actuator for shading elements and roller shutters | EAN 4010312313732 | 53,20 €/pc. |
Universal dimmer switch, Power MOSFET up to 400 W. Automatic lamp detection. Bidirectional. Only 0.3 watt standby loss. With adjustable minimum brightness or maximum brightness and dimming speed. With switching operation for light alarm clocks, children’s rooms and snooze function. Also with light scene control and constant light regulation.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
The delivery includes a spacer DS14, 1 short jumper 1 module (up to 200 W load) and 1 long jumper 1.5 modules (from 200 W load with DS14 on the left side).
Universal dimmer switch for lamps up to 400 W, depending on ventilation conditions, dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps are also dependent on the lamp electronics.

Zero passage switching with soft ON and soft OFF to protect lamps.
Switching voltage 230 V. No minimum load.
The brightness level is stored on switch-off (memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.

Automatic electronic overload protection and overtemperature switch-off.
Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

The upper rotary switch LA/LRN is first required for teach-in and defines in operation whether automatic lamp detection should be activated or special comfort positions:

- **AUTO** allows all lamp types to be dimmed.
- **EC1** is a comfort position for energy saving lamps which must be switched on at high voltage due to their design so that they can be dimmed down and switched back on safely when cold.
- **EC2** is a comfort position for energy saving lamps which cannot be switched back on in dimmed-down position due to their design. Therefore the memory is switched off in this position.
- **LC1** is a comfort position for LED lamps which cannot be dimmed down far enough in AUTO (phase cut-off) due to their design.
- **LC2** and **LC3** are comfort positions for LED lamps like LC1 but with different dimming curves.
- In positions **EC1**, **EC2**, **LC1**, **LC2** and **LC3**, no inductive (wound) transformers may be used. In addition the maximum number of dimmable LED lamps may be lower than in AUTO position due to their design.

- **LC4**, **LC5** and **LC6** are comfort positions for LED lamps such as AUTO but with different dimming curves.
- **PCT** is a position for special functions which are set up using the PC tool PCT14.

The minimum brightness (fully dimmed down) is adjustable with the middle % rotary switch.
The dimming speed is adjustable using the bottom dimming speed rotary switch.

The pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons:
When installed as a direction pushbutton, one side is then ‘switch on and dim up’ and the other side is ‘switch off and dim down’. A double-click on the switch-on side activates automatic dim-up to full brightness at dim speed. A double click on the switch-off side activates the snooze function. The children’s room function is implemented on the switch-on side. As a universal pushbutton, change the direction by briefly releasing the pushbutton.
For light scene control, constant light regulation, light alarm circuit, children’s room circuit and sleep timer, refer to the operating instructions.

When the pushbutton is taught in as a staircase pushbutton, it is possible to retrieve a resettable staircase time switch function with RV = 2 minutes. Individual light scene pushbuttons can be used to retrieve brightness settings carried out during teach-in. A taught-in FAH can be used to implement a twilight switch. Switch-on can take place using up to 4 FBHs depending on motion and brightness.
The LED performs during the teach-in process according to the operating instructions.
It shows control commands by short flickering during operation.

**FUD14**

| RS485 bus universal dimmer switch | EAN 4010312313749 | 61,00 €/pc. |

Recommended retail prices excluding VAT.
Universal dimmer switch, Power MOSFET up to 800 W. Automatic lamp detection. Only 0.3 watt standby loss. With adjustable minimum brightness or maximum brightness and dimming speed. With switching operation for light alarm clocks, children's rooms and snooze function. Also with light scene control and constant light regulation.

Modular device for DIN-EN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep. The delivery includes a spacer DS14, 2 short jumpers 1 module (up to 400 W load) and 1 long jumper 1.5 modules (from 400 W load with DS14 on the left side).

Universal dimmer switch for lamps up to 800 W, depending on ventilation conditions, dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps are also dependent on the lamp electronics. Up to 3600 W with capacity enhancers FLUD14 at terminals X1 and X2.

Zero passage switching with soft ON and soft OFF to protect lamps.
Switching voltage 230 V. No minimum load.
The brightness level is stored on switch-off (memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.
Automatic electronic overload protection and overtemperature switch-off.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

The upper rotary switch LA/LRN is first required for teach-in and defines in operation whether automatic lamp detection should be activated or special comfort positions:

- **AUTO** allows all lamp types to be dimmed.
- **EC1** is a comfort position for energy saving lamps which must be switched on at high voltage due to their design so that they can be dimmed down and switched back on safely when cold.
- **EC2** is a comfort position for energy saving lamps which cannot be switched back on in dimmed-down position due to their design. Therefore the memory is switched off in this position.
- **LC1** is a comfort position for LED lamps which cannot be dimmed down far enough in AUTO (phase cut-off) due to their design.
- **LC2** and **LC3** are comfort positions for LED lamps like LC1 but with different dimming curves.

The minimum brightness (fully dimmed down) is adjustable with the middle % rotary switch.
The dimming speed is adjustable using the bottom dimming speed rotary switch.

The pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons:
When installed as a direction pushbutton, one side is then 'switch on and dim up' and the other side is 'switch off and dim down'. A double-click on the switch-on side activates automatic dim-up to full brightness at dim speed. A double click on the switch-off side activates the snooze function. The children's room function is implemented on the switch-on side.

As a universal pushbutton, change the direction by briefly releasing the pushbutton.

For light scene control, constant light regulation, light alarm circuit, children's room circuit and sleep timer, refer to the operating instructions.

When the pushbutton is taught in as a staircase pushbutton, it is possible to retrieve a resettable staircase time switch function with RV = 2 minutes. Individual light scene pushbuttons can be used to retrieve brightness settings carried out during teach-in. A taught-in FAH can be used to implement a twilight switch. Switch-on can take place using up to 4 FBHs depending on motion and brightness.

The LED performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.
**FLUD14**

Capacity enhancer for universal dimmer switch FUD14/800 W, Power MOSFET up to 400 W. Standby loss 0.1 watt only.

Modular device for DIN EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
Capacity enhancers FLUD14 can be connected to the universal dimming actuator FUD14/800 W. By this the switching capacity for one lamp will be increased up to 200 W or alternatively for additional lamps up to 400 W per each capacity enhancer.
The two circuits to increase capacity can be created at the same time using several FLUD14s.
Supply voltage 230 V. No minimum load.
Automatic electronic overload protection and over-temperature switch-off.
The lamp type of a capacity enhancer FLUD14 in the 'Capacity increase with additional lamps' may deviate from the lamp type of the universal dimmer switch FUD14/800 W.
It is therefore possible to mix capacitive and inductive loads.

**Function rotary switch**

Standard setting ex factory.

The switching mode "one lamp" (1) or "additional lamps" (2) is set with a rotary switch on the front.
**This setting must be same as the actual installation, otherwise there is a risk of destruction of the electronics.**

**Capacity increase for a lamp (1) in dimmer switch operating modes AUTO, LC4, LCS and LCS. For operating modes EC1, 2 and LC1, 2, 3, see next page.**

**Capacity increase for additional lamps (2) in dimmer switch operating modes AUTO, LC4, LCS and LC6. For operating modes EC1, 2 and LC1, 2, 3, see next page.**

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FLUD14 | Capacity enhancer | EAN 4010312313763 | 62.20 €/pc.

1 Ventilation clearance of ½ module to adjacent devices must be maintained.
FLUD14

This setting must be made on the front panel for ESL and 230 V LED lamps if the FUD14/800W is operated in comfort settings EC1, EC2, LC1, LC2 or LC3.

**Function rotary switch**

![Rotary Switch Diagram]

Standard setting ex factory.

Capacity increase with capacity enhancers FLUD14 for dimmable energy saving lamps ESL and dimmable 230 V LED lamps in comfort settings EC1, EC2, LC1, LC2 and LC3. Also for capacity increase with additional lamps. Otherwise there is a risk of destruction of the electronics.

**Capacity increase of a lamp in settings EC1, 2 and LC1, 2, 3**

<table>
<thead>
<tr>
<th>Circuit Diagram</th>
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<tbody>
<tr>
<td>N</td>
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<td>L</td>
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<td>X1</td>
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<td>FLUD14</td>
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<td>FLUD14/800W</td>
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<td>X2</td>
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<td>BUS</td>
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</tbody>
</table>

1-8. FLUD14 + up to 100 W each

**Capacity increase with additional lamps in settings EC1, 2 and LC1, 2, 3.**

<table>
<thead>
<tr>
<th>Circuit Diagram</th>
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<td>X1</td>
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<td>X2</td>
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<tr>
<td>BUS</td>
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</tbody>
</table>

1-8. FLUD14 + up to 100 W each

1) Ventilation clearance of ½ module to adjacent devices must be maintained.

**FLUD14**  
Capacity enhancer  
EAN 4010312313763  
62.20 €/pc.
RS485 BUS ACTUATOR DIMMER SWITCH CONTROLLER FSG14
FOR ELECTRONIC BALLAST 1-10 V

FSG14/1-10V
Dimmer switch controller for electronic ballast 1-10 V, 1 NO contact not potential free 600 VA and 1-10 V control output 40 mA. Bidirectional. Only 0.9 watt standby loss. With adjustable minimum brightness and dimming speed. With light scene control and constant light regulation.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 modul = 18 mm wide, 58 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control.

Zero passage switching to protect contacts.
The power consumption of the 12 V DC power supply is only 0.1W.
Also adapted for LED driver with 1-10 V passive interface, without voltage source up to 0.6 mA, above this value an additional voltage source is necessary.
The brightness level is stored on switch-off (memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.
The minimum brightness (fully dimmed) is adjustable with the % rotary switch.
The dimming speed is adjustable using the dimming speed rotary switch.
The load is switched on and off by a bistable relay at output EVG. Switching capacity for fluorescent lamps or LV halogen lamps with EVG 600 VA.

By using a bistable relay coil power loss and heating is avoided even in the on mode.
After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
The pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons:
As a direction pushbutton, press up is brighter and press down is darker respectively above short pressing means switch ON and below short pressing switch OFF. A double click above activates automatic updimming until full brightness with dim speed. A double click below activates snooze function. The children's room function will be realized with the upper switch.
As a universal pushbutton, change the direction by briefly releasing the pushbutton.
With switching operation for children's rooms and snooze function.

Switching for light alarm clocks: A wireless signal of a time clock which was taught-in accordingly starts the wake up function by switching on the light at the lowest brightness level and dims up slowly until the maximum level is reached. The dimming process is stopped by tapping briefly (e.g. on a hand-held transmitter).

Switching operation for children's rooms: If the light is switched on by holding down the pushbutton (universal pushbutton or direction pushbutton above), it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down. The last saved brightness level is not modified.

Snooze function (universal pushbutton or direction pushbutton below): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down.
The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.
**FMZ14**

Multifunction time relay with 10 functions, 1 CO contact potential free 10 A/250 V AC, incandescent lamps 2000 watts*, with DX technology. Bidirectional. Only 0.4 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 modul = 18 mm wide, 58 mm deep.

**Connection to the Eltako-RS485 bus.** Bus cross wiring and power supply with jumper.

Wireless window contacts (FTK) at opened windows with the function NO or NC can be taught-in.

If a direction switch is taught-in, a function (e.g. TI) can be started using the top switch (START) and stopped with the bottom switch (STOP).

**Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched.** This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to K (L). This results in an additional standby consumption of only 0.1 watt.

If supply voltage fails, the two contacts switch off. When power is restored, contact 1 closes.

Teach-in takes place using the top and middle rotary switches and then the time is set.

T is the time base and xT the multiplier.

The function is selected using the bottom rotary switch:

- RV = off delay
- AV = operate delay
- TI = clock generator starting with impulse
- TP = clock generator starting with pause
- IA = impulse controlled operate delay (e.g. automatic door opener)
- EW = fleeting NO contact
- AW = fleeting NC contact
- ARV = operate and release delay
- ON = Permanent ON
- OFF = Permanent OFF

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

* The maximum load can be used starting at a delay time or clock cycle of 5 minutes.

The maximum load will be reduced for shorter times as follows: up to 2 seconds 15%, up to 2 minutes 30%, up to 5 minutes 60%.

<table>
<thead>
<tr>
<th>FMZ14</th>
<th>RS485 bus actuator Multifunction time relay</th>
<th>EAN 4010312313787</th>
<th>40,60 €/pc.</th>
</tr>
</thead>
</table>

Recommended retail prices excluding VAT.
**FTN14**

Staircase off-delay timer, 1 NO contact not potential free 16 A/250 V AC, incandescent lamps up to 2000 watts, switch-off early warning and switchable pushbutton permanent light. Also for energy saving lamps ESL up to 200 Watt. Bidirectional. Only 0.2 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 modul = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.
Switching voltage 230 V.

Zero passage switching to protect contacts and consumers.
If a power failure occurs, the switching state is retained. The time lapse to switch off starts when the power supply is restored.

In addition to the bus control input, this staircase off-delay timer can also be controlled locally by a conventional 230 V control switch. Glow lamp current up to 5 mA, dependent on the ignition voltage of the glow lamps.

The upper rotary switch LRN is required for teach-in. Then the off-delay 1 to 30 minutes can be set.
Wireless pushbuttons and/or wireless motion-brightness sensors FBH will be taught-in with the middle rotary switch in the setting LRN, of which one or more are central control pushbuttons. The required function of this staircase off-delay timer can then be selected:

- **NLZ** = off-delay timer with adjustable operate delay
- **TLZ** = staircase time switch
- **ESL** = staircase time switch for energy saving lamps ESL
  - + = with pushbutton permanent light (only TLZ)
  - + = with switch-off early warning (TLZ + ESL)
  - + = with pushbutton permanent light and switch-off early warning (TLZ + ESL)

If the permanent light function is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 60 minutes or by pressing the pushbutton for longer than 2 seconds.

If the switch-off early warning is switched on, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.

If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.

A response delay (AV delay) can be set with the lower rotary switch at setting NLZ or when controlled with a switch. Setting AUTO1 = 1 s, AUTO2 = 30 s, AUTO3 = 60 s, AUTO4 = 90 s and AUTO5 = 120 s (clockwise).
Also permanent light function can be set manually.

But if you activate by pressing a button at NLZ, the device switches on when pressed once and the time lapse to switch-off starts when pressed twice.

When teaching-in wireless motion/brightness sensors FBH, the switching threshold is defined on the last FBH taught-in to switch the light on/off depending on the brightness – provided motion is detected. The off delay set on the FTN14 is prolonged by a setting of 1 minute fixed in the FBH. When teaching-in window/door contacts FTK, a NC or NO can be taught-in as required. Accordingly, the timing period starts when opening or closing the window or the door.

If switches for permanent operation are taught-in, for example wireless transmitter modules or FTS14EM, it is switched on when pressing and the time will be started when releasing.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

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**Recommended retail prices excluding VAT.**
FFR14

2-channel mains disconnection relay, 1+1 NO contacts potential free 16 A/250 V AC, incandescent lamps 2000 watts. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 modul = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

The mains disconnection relay FFR14 interrupts the power supply of 1 or 2 circuits and prevents interfering electromagnetic fields.

To enable zero passage switching in patented Eltako Duplex technology, L must be connected to K (L) and N to (N). This results in an additional standby consumption of only 0.1 watt. N may not be connected if a contactor is switched downstream for the purpose of increasing performance.

When both relays of the FFR14 are switched on, 0.6 watts are required.

If supply voltage fails, the device is switched off in defined mode.

Maximum current as the sum of both contacts 16 A at 230 V.

This mains disconnection relay is switched in the circuit distributor downstream of the 16 A circuit breaker which protects up to two circuits in the room to be protected by mains disconnection. For example, one circuit for the lighting and one circuit for the socket outlets.

The circuits are enabled and disabled manually using one or several stationary wireless pushbuttons or hand-held wireless transmitters.

With the top rotary switch a time delay from 10 to 90 minutes can be set for the control with universal and direction pushbutton for contact 2. In position 4 without delay.

The middle rotary switch is required for teaching-in and is set to AUTO in normal mode.

With the lower rotary switch it will be switched on at ON and switched off at OFF. It is set to AUTO in normal mode.

If a wireless pushbutton rocker is assigned to 'central ON' for the mains disconnection relay and to 'ON' for the lighting, the mains disconnection relay is automatically cancelled when the lighting is switched on.

If a wireless pushbutton rocker, e.g. a bedside light, is assigned with 'OFF' for the lamp and 'central OFF' for the mains disconnection relay, the mains disconnection is automatically activated when the bedside lamp is switched off.

10 teach-in positions of the FFR14 plus the switch-off delay give the user plenty of scope to define the settings the mains disconnection relay.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.
FZK14

Time relay for card switch or smoke alarm. 1 NO contact potential free 16 A/250 V AC, incandescent lamps up to 2000 watts. Off-delay and response delay are adjustable. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 modul = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.
Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to 1(L). This results in an additional standby consumption of only 0.1 watt.

N may not be connected if a contactor is switched downstream for the purpose of increasing performance.

The upper rotary switch AV is required for teach-in. Then set here the response lag time AV between 0 and 120 seconds for contact.

The middle rotary switch is required for teach-in. Then the device response after a power failure is defined here. In AUTO1 position the switching state is retained when power is restored; in AUTO2 position, the device is switched off in a defined mode.

The lower rotary switch RV sets the time-delay RV for the contact between 0 and 90 seconds in normal operation. Additionally specific confirmation telegrams can be sent to teach-in other actuators with the lower rotary switch.

Turn the rotary switch to ON1: confirmation telegrams (0x70) service card KCS was inserted
Turn the rotary switch to ON2: confirmation telegrams (0x30) guest card KCG was inserted
Turn the rotary switch to OFF: confirmation telegrams (0x50) card was removed

The confirmation telegrams will be taught-in into other actuators as ‘central ON’ (card inserted) and ‘central OFF’ (card removed), e.g. FSR14-4x.

In this application the contact of the FZK only connects the allocation of the controlled load circuits of the actuator connected to the confirmation telegrams.

This makes it possible to produce different lighting scenes for the service card KCS and the guest card KCG when inserting the according card.

Then the single channels of the actuator can be switched individually with the wireless pushbuttons.

The AV and RV times permit the simple control of lights and air conditioning systems with the wireless card switch FKF.

The response lag AV starts as soon as the card is inserted in the wireless card-operated door lock FKF and the time delay RV starts after the card is removed.

In addition to the wireless card switch FKF, wireless window/window contacts FTK, window handles and motion/brightness sensors FBH and FB65B can also be taught in.

Opening a monitored window also starts the RV time. When the RV time expires, contact opens. Closing all monitored windows starts the AV time. When the AV time expires, contact closes, if the card is inserted.

When motion/brightness sensors are used and the card is inserted, contact closes immediately motion is detected. If no motion is detected for 15 minutes the contact opens, even if the card is inserted.

For light control and additional climate control with wireless window door contact two FZK14 have to be used, otherwise not only the air conditioning, but also the light would be switched off when window is open.

Several wireless smoke alarms FRW-ws are logically linked with this switch actuator time relay so that the RV time only starts after all FRW-ws devices have signalled alarm end.

Card switches and smoke alarms can not be operated together with an FZK device.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.
RS485 BUS ACTUATOR HEATING/COOLING RELAY FHK14

**Function rotary switches**

- **Left stop:** lowest hysteresis 0.5°. **Middle position:** hysteresis 2.5°. **Right stop:** largest hysteresis 4.5°. In between, divisions in steps of 0.5°.

- **AUTO 1:** With PWM control at \( T = 4 \) minutes. (PWM = pulse width modulation). (suitable for valves with thermoelectric valve drive)
- **AUTO 2:** With PWM control at \( T = 15 \) minutes. (suitable for valves with motor-driven valve drive)
- **AUTO 3:** With 2-point control.

**Bottom rotary switch for operating modes:**
- **H:** heating mode (Contact 1-2 and Contact 3-4);
- **K:** cooling mode (Contact 1-2 and Contact 3-4);
- **HK:** heating mode (Contact 3-4) and cooling mode (Contact 1-2);

As long as all taught-in motion detectors FBH detect no motion, the device is switched to setback mode. In heating mode, the reference temperature is set back by 2°; in cooling mode, it is raised by 2°. As soon as a motion detector signals movement again, the device is switched to normal mode. When a wireless pushbutton FT4 is taught-in, the assignment of the 4 keys is assigned with the following fixed functions: Top right: Normal mode (can also be enabled by timer). Bottom right: Night setback mode by 4°; in cooling mode, raised by 4° (can also be enabled by timer). Top left: Setback mode by 2°, in cooling mode, raised by 2°. Bottom left: Off (in heating mode, frost protection enabled; in cooling mode permanent off). If the motion detector and wireless pushbutton are taught-in at the same time, the last telegram received is always the one that is valid. A motion detector therefore switches off a setback mode selected by wireless pushbutton when a movement is detected.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

**Recommended retail prices excluding VAT.**
Heating/cooling relay with 4 channels, 1 NO contact per channel 4 A/250 V AC, potential free from the power supply, with DX technology. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 modul = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to K (L). This results in an additional standby consumption of only 0.1 watt.

When all 4 relays are switched on, a power of 0.7 watts is required.

If supply voltage fails, the device is switched off in defined mode.

This heating/cooling relay assesses information about wireless temperature controllers or sensors. Possibly supplemented by window/door contacts, motion detectors, window handle sensor FFG7B-rw and wireless pushbuttons.

As an alternative to a wireless temperature controller, the temperature information on the set and actual values can be obtained from the GFVS software.

It is also possible to specify the set temperature via GFVS software and thus limiting the setting range of the wireless temperature controller.

Top rotary switch for adjustable hysteresis:
- Left stop: lowest hysteresis 0.5°. Middle position: hysteresis 2.5°.
- Right stop: largest hysteresis 4.5°. Inbetween, divisions in steps of 0.5°.

Middle rotary switch for regulation types:
- AUTO 1: With PWM control at T = 4 minutes. (PWM = pulse width modulation)  
  (suitable for valves with thermolectric valve drive)
- AUTO 2: With PWM control at T = 15 minutes.  
  (suitable for valves with motor-driven valve drive)
- AUTO 3: With 2-point control.

Bottom rotary switch for operating modes:
- H: heating mode (Contacts 1 to 4); K: cooling mode (Contacts 1 to 4);  
  HK: heating mode (Contact 3 and 4) and cooling mode (Contact 1 and 2);
In heating mode, the frost protection function is always enabled. As soon as the actual temperature drops below 8°C, the temperature is controlled in the selected operating mode to 8°C. If one or several windows are open, the output remains off provided the window/door contacts FTK or window handle sensors FFG7B-rw are taught-in. In heating mode, however, the frost protection remains enabled.

As long as all taught-in motion detectors FBH detect no motion, the device is switched to setback mode. In heating mode, the reference temperature is set back by 2°; in cooling mode, it is raised by 2°. As soon as a motion detector signals movement again, the device is switched to normal mode.

When a wireless pushbutton FT4 is taught-in, the assignment of the 4 keys is assigned with the following fixed functions: Top right: Normal mode (can also be enabled by timer). Bottom right: Night setback mode by 4°; in cooling mode, raised by 4° (can also be enabled by timer). Top left: Setback mode by 2°, in cooling mode, raised by 2°. Bottom left: Off (in heating mode, frost protection enabled; in cooling mode permanent off). If the motion detector and wireless pushbutton are taught-in at the same time, the last telegram received is always the one that is valid. A motion detector therefore switches off a setback mode selected by wireless pushbutton when a movement is detected.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

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**Recommended retail prices excluding VAT.**

| F4HK14 | RS485 bus actuator Heating/cooling relay | EAN 4010312314982 | 51.90 €/pc. |
**Function rotary switches**

During the teach-in process, adjust the upper rotary switch to set the sensor type. A wireless pushbutton (exclusive) with double rocker is taught-in in rotary switch position 1. Double rockers are assigned automatically: top left Stage 1 (only contact 1-2 closed), top right Stage 2 (only contact 3-4 closed). Bottom left and bottom right OFF: both contacts open.

A wireless pushbutton (adding) with double rocker is taught-in in rotary switch position 2. Double rockers are assigned automatically: top left Stage 1 (contact 1-2 closed), top right Stage 2 (contacts 1-2 and 3-4 closed). Bottom left and bottom right OFF: both contacts open.

If you switch the two contacts in parallel, one wireless pushbutton and 1 rocker are sufficient. In this case, top is ON and bottom is OFF. In rotary switch position 3, teach in ON/OFF switch with double rocker (all rockers are assigned automatically): top is ON and bottom is OFF.

In rotary switch position 1, teach in ON/OFF switch with double rocker (all rockers are assigned automatically) and wireless transmitter modules. When you teach in an FTK device, window handle sensor FFG7B-rw or active sensor, there is no need to take the teach-in position into account.

**Overview of switch-on thresholds (lower rotary switch):**

- **Temperature (°C):** 1 = 20°C, 2 = 22°C, 3 = 24°C, ..., 10 = 38°C.
- **CO₂ (ppm):** 1 = 700 ppm; 2 = 800 ppm; 3 = 900 ppm; 4 = 1000 ppm; 5 = 1200 ppm; 6 = 1400 ppm; 7 = 1600 ppm; 8 = 1800 ppm; 9 = 2000 ppm and 10 = 2200 ppm.
- **Humidity (%):** 1 = 10%, 2 = 20%, ..., 10 = 100%.

**Overview of addition values (upper rotary switch):**

- **Temperature (K):** 1 = 5°C, 2 = 10°C, 3 = 15°C, ..., 10 = 50°C.
- **CO₂ difference:** 1 = 50 ppm, 2 = 100 ppm, 3 = 150 ppm, ..., 10 = 500 ppm. Fixed hysteresis: 50 ppm.
- **Humidity difference:** 1 = 5%, 2 = 10%, 3 = 15%, ..., 10 = 50%. Fixed hysteresis: 5%.
- **Temperature difference (K):** 1 = 1K, 2 = 2K, 3 = 3K, ..., 10 = 10K. Fixed hysteresis: 1K.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

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**F2L14**

2-speed fan relay, 1+1 NO contacts potential free 16 A/250 V AC, with DX technology. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 modul = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N1) and L to (L) and/or N to (N2) and L to (L). This results in an additional standby consumption of only 0.1 watt.

If supply voltage fails, the switching state is retained. When supply voltage is restored, the device is switched off in defined mode.

This fan relay evaluates the information of up to 23 passive sensors, e.g. wireless pushbuttons, window/door contacts, window handle sensors FFG7B-rw or wireless transmitter modules. Active sensors for CO₂, humidity and temperature are also evaluated.

Several active sensors can be linked by the PCT14 PC Tool. When the two contacts are switched in parallel, the 2-speed actuator for 2 fan speeds becomes an actuator for one fan.

The middle rotary switch must be set to position LRN for teach-in. Set the required operating mode when the fan actuator is in operation.

During the teach-in process, adjust the upper rotary switch to set the sensor type. A wireless pushbutton (exclusive) with double rocker is taught-in in rotary switch position 1. Double rockers are assigned automatically: top left Stage 1 (only contact 1-2 closed), top right Stage 2 (only contact 3-4 closed). Bottom left and bottom right OFF: both contacts open.

A wireless pushbutton (adding) with double rocker is taught-in in rotary switch position 2. Double rockers are assigned automatically: top left Stage 1 (contact 1-2 closed), top right Stage 2 (contacts 1-2 and 3-4 closed). Bottom left and bottom right OFF: both contacts open.

If you switch the two contacts in parallel, one wireless pushbutton and 1 rocker are sufficient. In this case, top is ON and bottom is OFF. In rotary switch position 3, teach in ON/OFF switch with double rocker (all rockers are assigned automatically): top is ON and bottom is OFF.

When operated with an active sensor, set the switch-in threshold on the lower rotary switch. When the threshold is reached, Stage 1 (Contact 1-2) is switched on. At the upper rotary switch, set the addition value at which Stage 2 (Contact 3-4). Turn the middle rotary switch to set one of the operating modes AUTO1 to AUTO7.

**AUTO1:** for manual mode of a 2-stage fan by means of a double rocker wireless pushbutton. Each contact is closed separately (exclusive) or contact 3-4 cuts in to switch stage 2 (accumulative). This is determined when teaching-in. Passive sensors, such as wireless pushbuttons and transmitter modules, which are taught-in as a off-switches, cause opening of both contacts. As long as the control voltage is applied to transmitter modules or a window monitored by an FTK or window handle sensor FFG7B-rw is open, the contacts are open and can not be switched on manually. **AUTO2:** Activating with wireless CO₂ sensor. The switch-on thresholds are set by the lower and upper rotary switches. The contacts close 'exclusively'.

**AUTO3:** Activating with wireless CO₂ sensor. The switch-on thresholds are set by the lower and upper rotary switches. The contacts close 'exclusively'. **AUTO4:** Same as AUTO2, but activated by the wireless temperature sensor. **AUTO5:** Same as AUTO2, but the contacts close 'adding'. **AUTO6:** Same as AUTO3, but the contacts close 'adding'. **AUTO7:** Same as AUTO4, but the contacts close 'adding'.

**Overview of switch-on thresholds (lower rotary switch):**

- **Temperature (°C):** 1 = 20°C, 2 = 22°C, 3 = 24°C, ..., 10 = 38°C.
- **CO₂ (ppm):** 1 = 700 ppm; 2 = 800 ppm; 3 = 900 ppm; 4 = 1000 ppm; 5 = 1200 ppm; 6 = 1400 ppm; 7 = 1600 ppm; 8 = 1800 ppm; 9 = 2000 ppm and 10 = 2200 ppm.
- **Humidity (%):** 1 = 10%, 2 = 20%, ..., 10 = 100%.

**Overview of addition values (upper rotary switch):**

- **Temperature (K):** 1 = 5°C, 2 = 10°C, 3 = 15°C, ..., 10 = 50°C.
- **CO₂ difference:** 1 = 50 ppm, 2 = 100 ppm, 3 = 150 ppm, ..., 10 = 500 ppm. Fixed hysteresis: 50 ppm.
- **Humidity difference:** 1 = 5%, 2 = 10%, 3 = 15%, ..., 10 = 50%. Fixed hysteresis: 5%.
- **Temperature difference (K):** 1 = 1K, 2 = 2K, 3 = 3K, ..., 10 = 10K. Fixed hysteresis: 1K.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

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**F2L14**

RS485 bus actuator
Impulse switch with integr. relay function
EAN 4010312316160
54.90 €/pc.
Display timer with 8 channels for the Eltako RS485 bus. With “astro” function. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 modul = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

For the function of the timer FSU14 it is necessary that the wireless antenna module FAM14 assigns a device address. Please see the operating instructions.

The switching commands of the channels can be taught-in into bus actuators and wireless actuators. Up to 60 timer memory locations are freely assigned to the channels. With date and automatic summer/winter time changeover. Ca. 20 days power reserve without battery. Each memory location can either be used with astrog function (automatic turn on after sunrise or sunset) or the time function. The astro switch-on and -off time can be shifted ±2 hours and in addition, an influence of the solstices time lag of up to ±2 hours can be entered.

The timer is set using the MODE and SET buttons and the settings can be interlocked.

Set language: Every time the power supply is applied, press SET within 10 seconds to set the language and press MODE to confirm. D = German, GB = English, F = French, IT = Italian and ES = Spanish. The normal display then appears: weekday, time, day and month.

Rapid scroll: In the following settings, the numerals scroll rapidly when you press and hold down Enter. Release then press and hold down to change the scroll direction.

Set clock: Press MODE and search for the function CLK with SET and select with MODE. Press MODE to set. In H, press SET to select the hour and press MODE to confirm. In M proceed in the same way to set the minute.

Set date: Press MODE and search for the function DAT with SET ans select with MODE. Press MODE to select. At Y, press SET to select the year and press MODE to confirm. Proceed in the same way at M to set the month and at D to set the day. The last setting in the sequence is MO (weekday) blinking. Press SET to set it. From production week 08/17 the emission every minute from a

Set position coordinates (if the astro function is required): Press MODE and search for the function POS with SET and select with MODE. For LAT press SET to select the latitude and press MODE to confirm. Repeat this procedure for LON to select the longitude and press MODE to confirm. Select the time zone at GMT with SET and confirm with MODE. If desired, a time lag of up to ±2 hours can now be entered at WS (winter solstice) and SS (summer solstice).

Summer/winter time changeover: Press MODE and search for the function SWT with SET and select with MODE. Now press SET to switch between ON and OFF. If you select ON, changeover is automatic.

Switch random mode on/off: Press MODE and search for the function RND with SET and select with MODE. Press SET to set to ON (RND+) or OFF (RND) and press MODE to confirm. When random mode is switched on, all switch-on time points of all channels are shifted at random by up to 15 minutes. Switch-on times are switched earlier and switch-off times are switched later.

Lock settings: Briefly press MODE and SET together and at LCK, press SET to lock. This is displayed by an arrow next to the lock symbol.

Unlock settings: Press MODE and SET together for 2 seconds and at UNL press SET to unlock.

Wired central control: At the terminals T1/T2 and T3/T2 switches can be connected for central control.

Set operating mode: Press MODE, search the function INT with SET and select with MODE. Select the channel with SET at CH and confirm with MODE. You can switch between CIA (automatic with central control), AUT (automatic), ON (with priority) or OFF (with priority) with SET. If you confirm ON or OFF with MODE, the correspondent telegram will be sent immediately. If the switching state should automatically change if a time program will be active, the channel must be set to CIA or AUT again.

If MODE is pressed longer than 2 seconds, the normal display appears.

Teach-in channels in wireless actuators: Press MODE and search for the function LRN with SET and select with MODE. Select the channel at CH with SET and confirm with MODE. It can be switched between ON and OFF with SET. If ON is confirmed with MODE, LRN+ flashes and the function ON will be taught-in in the learning actuator with SET. Likewise it will be taught-in at OFF. See the operating instructions for more information.

Enter switching programs: press MODE and select one of the 60 memory locations from P01 to P60 with MODE and SET at the function PRG. See the operating instructions for more information. When random mode is switched on, all switching times of all channels are shifted incidentally by up to 15 minutes. Power-on times to previous and power-off times to future. For more information please see operating manual.
FMSR14

Multifunction sensor relay with display and 5 channels (brightness, twilight, wind, rain and frost) for the Eltako RS485 bus. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako- RS485 bus. Bus cross wiring and power supply with jumper.
This multifunction sensor relay evaluates the wireless telegrams of the wireless weather data transmitter module FWS61 and, dependent on the setting, issues switching commands directly to the RS485 bus and also to the wireless network in the display by means of the MODE and SET buttons. This also allows control over wireless actuators installed at decentralised positions. If only centrally installed actuators need to be addressed to control shading elements from the FWS61, it is sufficient to teach-in the FSB14s in these actuators using the PC Tool PCT14. An FMSR14 is then not required.

For the function of the sensor relay FMSR14 it is necessary that a device address is assigned from the wireless antenna module FAM14, according to the manual.

FWS61-24V DC

Wireless weather data transmitter module for the seven weather items sent by the multisensor MS. With internal antenna. Only 0.3 watt standby loss.

For installation. 45 mm long, 45 mm wide, 18 mm deep.
Power (24V DC) is supplied by the switch mode power supply unit SNT61-230V/24V DC-0,25A (33 mm deep, 45mm long, 45mm wide). This switching power supply unit simultaneously supplies the multisensor MS including the heating of the rain sensor.
It is possible to use a deep UP box for the two devices.
This weather data transmitter module receives the seven momentary readings of the weather items: brightness (from three cardinal points), twilight, wind, rain and ambient temperature by cable J-Y (ST) Y 2x2x0.8 from the multisensor MS attached to the outside of the building. The readings are sent in the form of wireless telegrams over the Eltako wireless network with the priorities listed below. Evaluation is carried out by the Wireless Building Visualisation and Control Software GFVS, the wireless multifunction sensor relay FMSR14, the actuators FSB14 and FSB71.

When the supply voltage is applied, a teach-in telegram is sent immediately and two status telegrams containing the momentary values are sent approx. 60 seconds later. At least every 10 minutes, but also:
Brightness values West, South and East each from 0 to 99 kLux if a change of minimum 10% occurs.
Twilight values from 0 to 999 Lux if a change of minimum 10% occurs.
Wind speeds from 0 to 70m/s. From 4m/s to 16m/s, the momentary values are sent immediately 3 times at intervals of 1 second. After that, further value increases are sent within 20 seconds. Dropping wind speeds are sent progressively delayed by 20 seconds.
Rain values at the start are sent immediately 3 times. After the rain stops, a telegram is sent within 20 seconds.
Temperature values from -40.0°C to +80.0°C are sent every 10 minutes together with all the other values in a status telegram.
Monitoring multisensor function and line break. If the weather data message from multisensor MS is not sent for 5 seconds, the FWS61 immediately sends an alarm telegram which is repeated every 30 seconds. The alarm telegram can be taught-in as a switch telegram in an actuator to initiate further action as required. In addition, the two status telegrams containing the values brightness 0 Lux, twilight 0 Lux, temperature -40°C (frost), wind 70 m/s and rain are sent.
When a message is again detected from the multisensor MS, the alarm stops automatically.

FWS61-24V DC Wireless weather data transmitter module EAN 4010312301937 65,10 €/pc.
The MS multi sensor sends the current weather details, including brightness (from three points of the compass), wind, rain and frost, to the weather data transmitter module FWS61 connected in series once per second. A standard telephone wire is sufficient as connecting lead: J-Y(ST)Y 2 x 2 x 0.8 or equivalent. 100 m line length is permitted. Solid plastic housing, L x W x H = 118 x 96 x 77 mm. Degree of protection IP44. Temperature at mounting location -30°C to +50°C.

A power supply unit SNT61-230V/24V DC-0,25A is required for the power supply, including heating of the rain sensor. This simultaneously supplies the wireless weather data transmitter module FWS61-24V DC.

**MS**
Multi sensor MS

**FWZ14-65A**
Wireless single-phase energy meter transmitter module, maximum current 65 A.
Only 0.5 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Accuracy class B (1%). With RS485 interface.

**Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.**

The meter reading, the current power and the serial number will be handed over to the bus – eg for forwarding to an external computer, the software GFVS 4.0 or GFVS-Energy – and also to the wireless network via FAM14. For this it is necessary that a device address is assigned from the wireless antenna module FAM14, according to the manual.

Also display with FEA65D.

It measures active energy by means of the current between input and output. The internal power consumption of 0.5 watt active power is not metered.

Like all meters without declaration of conformity (e.g. MID), this meter is not permitted for billing.

1 phase conductor with a max. current up to 65 A can be connected.

The inrush current is 40 mA. In operation the rotary switch must be set to AUTO.

Power consumption is indicated using a LED.

If the L input and the L output were interchanged when hooked up, a normal rate (HT) / off-peak (NT) switchover telegram is transmitted to indicate the hook-up error.

If the anticipated load exceeds 50%, maintain an air gap of ½ pitch unit to the devices mounted adjacent.

Thereto included are 2 spacers DS14, a short jumper and two long jumpers.
DSZ14DRS-3X80A MID

RS485 bus wireless three-phase energy meter. Maximum current 3 x 80 A. Standby loss 0.8 W at L1 and only 0.5 W at L2 and L3 each.

Modular device for DIN-EN 60715 TH35 rail mounting in distribution cabinets with IP51 protection class. 4 modules = 70 mm wide and 58 mm deep.

Accuracy class B (1%). With RS485 interface. It measures active energy by means of the current between input and output. The internal power consumption of 0.8 W or 0.5 W active power per path is neither metered nor indicated.

1, 2 or 3 phase conductors with max. currents up to 80 A can be connected.

The inrush current is 40 mA.

The terminals L1 and N must always be connected.

Connection to the Eltako RS485 bus via a FBA14 by means of a 2-wire screened bus line (e.g. telephone line). The meter reading and the momentary capacity are transferred to the bus – e.g. for transfer to an external computer of the GFVS 4.0 Software – and is also transferred to the wireless network via the FAM14. For this it is necessary that a device address is assigned from the wireless antenna module FAM14, according to the operating instructions.

Also display with FEA65D.

The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.

The power consumption is displayed with a LED flashing 1000 times per kWh next to the display.

Designed as standard for using as double-tariff meter: Switch over to a second tariff by applying 230 V to terminals E1/E2.

On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu according to the operation manual. First the background lighting switches on. The display then shows the total active energy per tariff, the active energy per resettable memory RS1 or RS2, and the instantaneous values of consumption, voltage and current per phase.

Error message (false)

When the phase conductor is missing or the current direction is wrong ‘false’ and the corresponding phase conductor are indicated on the display.

| DSZ14DRS-3X80A | RS485 bus wireless three-phase energy meter, MID approval | EAN 4010312501733 | 165,00 €/pc. |
**RS485 BUS WIRELESS THREE-PHASE ENERGY METER, MID APPROVAL**

**DSZ14WDRS-3X5A MID**

RS485 bus wireless three-phase energy meter with settable CT ratio and MID. Maximum current 3x5 A. Standby loss 0.8 W at L1 and only 0.5 W at L2 and L3 each.

Modulair device for DIN-EN 60715 TH35 rail mounting in distribution cabinets with IP51 protection class.

4 modules = 70 mm wide and 58 mm deep.

Accuracy class B (1%). With RS485 interface.

This three-phase energy meter measures active energy by means of the current between input and output. The internal power consumption of 0.8 W or 0.5 W active power per path is neither metered nor indicated.

**1, 2 or 3 phase conductors with max. currents up to 5 A can be connected.**

The inrush current is 10 mA.

The terminals L1 and N must always be connected.

**Connection to the Eltako RS485 bus via a FBA14 by means of a 2-wire screened bus line (e.g. telephone line).** The meter reading and the momentary capacity are transferred to the bus – e.g. for transfer to an external computer of the GFVS 4.0 Software – and is also transferred to the wireless network via the FAM14. For this it is necessary that a device address is assigned from the wireless antenna module FAM14, according to the operating instructions.

Also display with FEA650.

**The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.**

The power consumption is displayed with a LED flashing 10 times per kWh next to the display.

On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu.

First the **background lighting** switches on. The display then shows the total active energy, the active energy of the resettable memory as well as the instantaneous values of consumption, voltage and current per phase.

**The CT ratio can also be set.** It is set to 5:5 at the factory and blocked with a bridge over the terminals which are marked with ‘JUMPER’. To adjust the CT ratio to the installed transformer remove the bridge and reset the energy meter according to the operation manual. Then block it again with the bridge. Adjustable current transformer ratios: 5:5, 50:5, 100:5, 150:5, 200:5, 250:5, 300:5, 400:5, 500:5, 600:5, 750:5, 1000:5, 1250:5 and 1500:5.

**Error message (false)**

When the phase conductor is missing or the current direction is wrong ‘false’ and the corresponding phase conductor are indicated on the display.

**Important!** Before working on the current transformers disconnect the voltage paths of the energy meters.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN 4010312501450</th>
<th>Price €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSZ14WDRS-3X5A</td>
<td>RS485 bus wireless three-phase energy meter, MID approval</td>
<td></td>
<td>172,00</td>
</tr>
</tbody>
</table>

Recommend retail prices excluding VAT.
FRP14

1 and 2 level wireless repeater with small antenna. Only 0.6 watt standby loss. If required, a wireless antenna FA250 can be connected.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 modul = 18 mm wide, 58 mm deep.
This repeater is only needed if the building conditions prevent undisturbed reception or the distance between the wireless pushbutton and receiver is too great.
Antenna FA250 with a 250 cm cable can be connected instead of the enclosed small antenna. When positioned in the optimal location, it can increase range considerably.
The 1-level mode is activated ex works. Only the signals from sensors and actuators are received, tested and retransmitted at full transmit power. Wireless signals from other repeaters are ignored to reduce the data volume.
In de-energized state it can be switched to 2-level mode with a rotary switch. After switching on the supply voltage, the wireless signals of another 1-level repeater are now being processed.
A signal can then be received and amplified maximum 2 times.
Wireless repeaters need not be taught-in. They receive and amplify signals from all wireless sensors within their reception area.
The LEDs under the rotary switch indicate all the wireless signals detected by briefly flashing.
The wireless repeater FRP14 can be installed either as a single device in a subdistributor panel.
It then requires a 12 V power supply from a switch mode power supply unit SNT12-230V/12V DC-1A. Or it is installed together with remote Series 14 wireless actuators and cross-wiring requires a jumper. There is no connection to the bus. It is only looped through.

| FRP14 | Wireless repeater | EAN 4010312313879 | 83.10 €/pc. |
FTD14

Telegram duplicator for the Eltako RS485 bus with exchangeable antenna. Only 0.5 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper. Operation in conjunction with FAM14 or FTS14KS.

The telegrams of taught-in IDs are duplicated and directly sent into the Eltako wireless network with a new output ID. These wireless telegrams can be specifically taught-in in decentralized actuators.

A total of 120 memory locations are available.

The upper rotary switch is used to selectively transmitting a wireless telegram. In normal operation, it is set to RUN.

The bottom rotary switch is used for teaching-in and deleting IDs. In normal operation, it is set to RUN.

The green LED below the lower rotary switch lights up briefly when a wireless telegram is transmitted.

The enclosed small antenna can be replaced with a wireless antenna FA250 with magnetic base and cable.

<table>
<thead>
<tr>
<th>Function rotary switches</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RUN</strong></td>
</tr>
</tbody>
</table>

Standard setting ex works.

Further settings can be made using the PC Tool PCT14.

Recommended retail prices excluding VAT.

FTD14 RS485 telegram duplicator EAN 4010312315705 84,80 €/pc.

Housing for operating instructions GBA14 page 3-44.
Wireless room temperature controllers transmit wireless telegrams containing setpoints and actual values to a wireless antenna module in the heating circuit distributor. The distributor passes on the received data via an internal RS485 bus to actuators to control the device motors.

The modular design means that only the hardware actually needed is installed. This saves the cost of unnecessary actuators.

The usual term 'single room control' does not mean that only one room is controlled. In fact, zones are controlled. Every zone (e.g. every room) may have a separate room temperature controller and several zones in a room may have a common controller.

The power supply unit integrated in the antenna module can power up to 25 actuators and each actuator can control 1 or 2 heat zones. 2 actuators per zone can be directly connected.

If several actuators are required per zone, additional actuators are simply assigned to one zone.

The smallest unit comprises a 2 pitch unit (PU) wide antenna module FAM14 and 1 PU wide 2 zone actuator FAE14. One PU is only 1.8 cm wide.

The total width of the smallest unit with 2 zones is therefore only 3 PU = 5.4 cm. With 6 zones, the module width adds up to only 11 cm and with 12 zones, the total width is only 18 cm.

The actuators are powered by electronic solid state relays for 230 V actuators which have a practically unlimited service life, type FAE14SSR. In addition with conventional PCB relays for 24 V actuators, type FAE14LPR.

Modules are quickly cross-connected to the upper information side (bus and internal power supply) by means of jumpers.

With 230 V actuators and with 3 actuators and more (6 zones), it is recommended to fit 1 PU wide power supply unit STE14 snapped on the right with a preterminated busbar SAS. Otherwise they are connected by wire jumpers.

24 V DC actuators are powered by 12 W, 24 W or 48 W by a switch mode power supply unit SNT14-24V DC snapped on the right hand side. For 3 actuators or more, it can be connected using the pre-terminated busbar SAS.
FAE14SSR

Noisless 2-channel single room control, 400 W. 2 solid state relays not potential free. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting, 1 module = 18 mm wide, 58 mm deep. Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

If both relays are switched on, a power of 0.4 watts is required.

The rated switching capacity of 400 W is applied for one contact and also for the sum of the two contacts. From production week 35/16 with automatic electronic over temperature shutdown.

With a load < 1 W a GLE must be switched parallel to the load.

First teach in the sensors using the rotary switches.

The channels can be taught-in together at the same time. Use the lower rotary switch in positions 1+2. Alternatively, they can be taught-in separately in position 1 or 2.

Then set the operating mode using the middle rotary switch:
- PWM 1 for valves with thermoelectric actuator, T = 4 minutes.
- PWM 2 for valves with motor-driven actuator, T = 15 minutes.
- 2-Pt for 2-point control.

PWM control mode: The upper rotary switch sets the required temperature difference at which the device is switched on at 100%.

When the actual temperature >= reference temperature, the device is switched off.

When the actual temperature =< (reference temperature - hysteresis), the device is switched on at 100%.

When the actual temperature is between (reference temperature - hysteresis) and the reference temperature, the device is switched on and off by a PWM in steps of 10% depending on the temperature difference. The lower the temperature difference, the shorter the switch-on time. As a result of the settability of the 100% value, the PWM can be adapted to the radiator size and inertia. The signs are the opposite in cooling mode.

In heating mode, the frost protection function is always enabled. As soon as the actual temperature drops below 8°C, the temperature is controlled in the selected operating mode to 8°C.

Two-point control mode: The upper rotary switch sets the required difference between the switch-on and switch-off temperatures.

When the actual temperature >= reference temperature, the device is switched off.

When the actual temperature =< (reference temperature - hysteresis), the device is switched on.

The signs are the opposite in cooling mode.

The type of connected actuators will be selected with the lower rotary switch. SA NC for actuator NC (normally closed) or SA NO for actuator NO (normally open).

When wireless window/door contacts FTK or window handle sensors FFG7B-rw are taught-in, they are OR linked. If one or more windows are open, the output remains off. In heating mode, however, the frost protection remains enabled.

When motion detectors FBH are taught-in, they are AND linked. If all FBHs signal 'No motion', the device switches to standby setback mode: In heating mode, the reference temperature is set back by 2°; in cooling mode, it is raised by 2°. As soon as a motion detector signals movement again, the device is switched to normal mode.

When the FBHs and wireless pushbuttons are taught-in, the last telegram received is always the one that is valid. An FBH therefore switches off a setback mode selected by means of the wireless pushbutton when motion is detected.

When a wireless pushbutton is taught-in, the 4 keys are assigned the following functions:
- Top right: Normal mode (can also be enabled by timer with the function 'ON').
- Bottom right: Night setback mode by 4°; in cooling mode: increase by 4° (can also be enabled by timer with the function 'OFF').
- Top left: Standby setback mode by 2°, in cooling mode, increase by 2°.
- Bottom left: Off (in heating mode, frost protection enabled; in cooling mode permanent off).

Malfunction mode: If no wireless telegram will be received from a temperature sensor for more than 1 hour, the LED lights up and it will be switched to fault mode: in heating mode it will be switched on for 1.2 minutes and switched off for 2.8 minutes at PWM 1. At PWM 2 and 2-Pt the times are 4.5 minutes 'on' and 10.5 minutes 'off'. The device is switched off in cooling mode. When a wireless telegram is again received, the LED goes out and the device switches back to normal mode.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.
FAE14LPR

2-channel single room control, 4 A/250 V, potential free. Bidirectional. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

If both relays are switched on, a power of 0.4 watts is required.

The channels can be taught-in together at the same time. Use the lower rotary switch in positions 1 or 2.

Alternatively, they can be taught-in separately in position 1 and 2.

First teach in the sensors using the rotary switches. In normal mode, set the operating mode using the middle rotary switch.

PWM 1 for valves with thermoelectric actuator, T = 4 minutes.

PWM 2 for valves with motor-driven actuator, T = 15 minutes.

2-Pt for 2-point control.

PWM control mode: The upper rotary switch sets the required temperature difference at which the device is switched on at 100%.

When the actual temperature >= reference temperature, the device is switched off.

When the actual temperature <= (reference temperature – hysteresis), the device is switched on at 100%.

When the actual temperature is between (reference temperature – hysteresis) and the reference temperature, the device is switched on and off by a PWM in steps of 10% depending on the temperature difference.

The lower the temperature difference, the shorter the switch-on time. As a result of the settability of the 100% value, the PWM can be adapted to the radiator size and inertia.

The signs are the opposite in cooling mode.

In heating mode, the frost protection function is always enabled. As soon as the actual temperature drops below 8°C, the temperature is controlled in the selected operating mode to 8°C.

Two-point control mode: The upper rotary switch sets the required difference between the switch-on and switch-off temperatures.

When the actual temperature >= reference temperature, the device is switched off.

When the actual temperature <= (reference temperature – hysteresis), the device is switched on.

The signs are the opposite in cooling mode.

The type of connected actuators will be selected with the lower rotary switch. SA NC for actuator NC (normally closed) or SA NO for actuator NO (normally open).

When wireless window/door contacts FTK or window handle sensors FF678-rw are taught-in, they are OR linked. If one or more windows are open, the output remains off. In heating mode, however, the frost protection remains enabled.

When motion detectors FBH are taught-in, they are AND linked. If all FBHs signal ‘no motion’, the device switches to standby setback mode: In heating mode, the reference temperature is set back by 2°C; in cooling mode, it is raised by 2°C. As soon as a motion detector signals movement again, the device is switched to normal mode.

When the FBHs and wireless pushbuttons are taught-in, the last telegram received is always the one that is valid. An FBH therefore switches off a setback mode selected by means of the wireless pushbutton when motion is detected.

When a wireless pushbutton is taught-in, the 4 keys are assigned the following functions:

- Top right: Normal mode (can also be enabled by timer with the function ‘ON’). Bottom right: Night setback mode by 4°C; in cooling mode: increase by 4°C (can also be enabled by timer with the function ‘OFF’). Top left: Standby setback mode by 2°C, in cooling mode, increase by 2°C. Bottom left: Off (in heating mode, frost protection enabled; in cooling mode permanent off).

Malfunction mode: If no wireless telegram will be received from a temperature sensor for more than 1 hour, the LED lights up and it will be switched to fault mode: in heating mode it will be switched on for 1.2 minutes and switched off for 2.8 minutes at PWM 1. At PWM 2 and 2-Pt the times are 4.5 minutes ‘on’ and 10.5 minutes ‘off’. The device is switched off in cooling mode. When a wireless telegram is again received, the LED goes out and the device switches back to normal mode.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.
### TSA02NC-230 V

Thermal actuator AFRISO-230 V/2 W, normally closed contact (NC).

Electrical control of hot water valves.

- Actuators convert the electrical signal of room or clock thermostats in one valve stroke and control the set temperature. Connected directly to the valve or distributor top part by connecting cable and union nut.
- IP54. Power supply 230 V ±10%.
- I max 200 mA, -5/+60°C.
- Stroke > 3 mm in 3-6 minutes. F ≈ 90 N.

| TSA02NC-230V | Actuator NC, 230 V | EAN 4010312314425 | 25,30 €/pc. |

### TSA02NC-24V

Thermal actuator AFRISO-24 V/2 W, normally closed contact (NC).

Electrical control of hot water valves.

- Actuators convert the electrical signal of room or clock thermostats in a valve stroke and control the set temperature. Connected directly to the valve or distributor top part by connecting cable and union nut.
- IP54. Power supply 24 V ±10%.
- I max 230 mA, -5/+60°C.
- Stroke > 3 mm in 3-6 minutes. F ≈ 90 N.

| TSA02NC-24V | Actuator NC, 24 V | EAN 4010312314432 | 25,30 €/pc. |
POWER INPUT STE14 AND BUS BARS SAS-

STE14

Power input for 230 V actuators.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

Cross wiring bus and power supply via jumper.

The power input STE14 is connected to the 230 V power supply for the actuators on the upper input side. A busbar SAS- is plugged and screwed to the lower output side. The number of pitch units results from the sum of 1 PU for each STE14 and FAE14 device plus 2 PUs for the FAM14. The STE14 can be mounted left, right or between the actuators.

With 24 V actuators, an STE14 is not required since the busbar here connects the 24 V output of the switch mode power supply unit to the power supply for the actuators.

A connection with the bus and the 12 V power supply does not take place. They will only be looped with the jumper.

<table>
<thead>
<tr>
<th>STE14</th>
<th>Power input</th>
<th>EAN 4010312314029</th>
<th>18.50 €/pc.</th>
</tr>
</thead>
</table>

SAS-

Bus bars for cross-connecting power input STE14 or switch mode power supply unit FSNT14 to actuators FAE14SSR and FAE14LPR.

<table>
<thead>
<tr>
<th>SAS-6TE</th>
<th>Bus bars 6 PU</th>
<th>EAN 4010312314050</th>
<th>11.80 €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS-7TE</td>
<td>Bus bars 7 PU</td>
<td>EAN 4010312314067</td>
<td>12.80 €/pc.</td>
</tr>
</tbody>
</table>

Housing for operating instructions GBA14 page 1-44.

Recommended retail prices excluding VAT.
BBV14

Bus jumper connector for wired connections of the bus and power supply jumpers Series 14, length of 45 cm. 4-core wire with soldered plugs on both sides.

The bus jumper connector BBV14 can connect bus parts on different rails. To connect DIN-Rail devices of Series 14 with cross-wiring and bus power supply with jumpers on different rails in a cabinet or distributor with minimum space, bus jumper connectors can be plugged at the end and the beginning of the next device series.

If longer connections are required, FBA14 bus coupler should be used.

<table>
<thead>
<tr>
<th>BBV14</th>
<th>Bus jumper connector</th>
<th>EAN 4010312315248</th>
<th>22,40 €/pc.</th>
</tr>
</thead>
</table>

FBA14

Bus coupler for wire connections of bus and power supply jumpers Series 14.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

Bus cross wiring and power supply with jumper.

Bus coupler FBA14 can connect various bus parts as well as feed power supplies. Bus parts on different DIN rails or in other distributors or switch cabinets are each connected to an FBA14 and a 4-wire screened bus line, e.g. a telephone line. The total length of all connecting lines should not exceed 100 m. A 9 mm wide second terminating resistor (supplied with the FAM14 respectively FTS14KS) must be plugged into the last actuator.

The bus coupler may be positioned at any point in a Series 14 device row. The 4 wires of the bus line are connected to the -12 V, +12 V, RSA and RSB terminals of the two FBA14s.

The jumper plugged in ex works to the lower terminal block must remain fitted to +12 V.

This jumper also remains fitted if a switch mode power supply unit FSNT12-12V/12W is connected to the +12 V and -12 V terminals to produce power supply redundancy.

If the power supply of the switch mode power supply unit in the FAM14 or FTS14KS is insufficient to power the entire RS485 bus, a switch mode power supply unit SNT12-230V/12V DC-1A can be connected to the -12 V and +12 V terminals of the bus coupler to increase capacity. In this case the jumper must be removed. Actuators to the left of the bus coupler are powered by the FAM14 or FTS14KS, actuators to the right are powered by the switch mode power supply unit.

<table>
<thead>
<tr>
<th>FBA14</th>
<th>Bus coupler</th>
<th>EAN 4010312313862</th>
<th>23,10 €/pc.</th>
</tr>
</thead>
</table>

Housing for operating instructions GBA14 page 1-44.
POWER SUPPLY UNIT FSNT14, SPACER DS14 AND HOUSING FOR OPERATING INSTRUCTIONS GBA14

FSNT14-12V/12W

Switching power supply unit rated capacity 12 W. Standby loss 0.2 watt only.

Modular devices for DIN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
If the total power demand of a Series 14 bus system is higher than 8 W, other switching power supply units FSNT14-12V/12W are required. These are each supplying a group of actuators, which are separated with a disconnecting link on the FSNT14.
The scope of delivery includes 1 disconnecting link TB14 1 module. 1 jumper 1.5 modules and a spacer DS14.
At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units and dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS14.
Therefore, this and a long jumper are included to the dimmers.
Input voltage 230 V (-20% bis +10%). Efficiency 83%.
Stabilised output voltage ±1%, low residual ripple. Short-circuit proof.
Overload protection and over-temperature switch-off by means of swichting off with automatic switching-on after fault clearance (autorecovery function).
This switching power supply unit can also be used for producing a redundancy. Therefore only 1 FSNT14 should be plugged in parallel to the integrated power supply units into the FAM14 and FTS14KS and connected to a normal jumper. For an optimal load distribution, the FSNT14 should be placed as close as possible next to the last bus actuator.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>EAN</th>
<th>Price (£/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSNT14-12V/12W</td>
<td>Power supply unit Series 14</td>
<td>4010312315095</td>
<td>46.90</td>
</tr>
</tbody>
</table>

DS14

Spacer

1/2 module wide = 9 mm, to produce and maintain a ventilation clearance for modular devices dissipating much heat, e.g. dimmers and switching power supply units.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>EAN</th>
<th>Price (£/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS14</td>
<td>Spacer</td>
<td>4010312907016</td>
<td>1.10</td>
</tr>
</tbody>
</table>

GBA14

Housing for operating instructions

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 55 mm deep.
Housing without front panel to insert operating instructions.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>EAN</th>
<th>Price (£/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBA14</td>
<td>Housing for operating instr., white-blue</td>
<td>4010312906422</td>
<td>2.20</td>
</tr>
</tbody>
</table>
FUA12-230V

Wireless universal actuator with exchangeable antenna. Impulse switch with integrated relay function with 1 change over contact potential free 10 A/250 V AC, incandescent lamps up to 2000 W, with DX technology. Bidirectional. Encrypted wireless. Only 0.9 watt standby loss.

Modular device for DIN-EN 80715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep.
Supply voltage 230 V.

The wireless universal actuator combines the functions of a wireless antenna module and an actuator as a 1-channel impulse switching relay with DX technology.
If supply voltage fails, the switching state is retained. When supply voltage is restored, the device is switched off in defined mode.
The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.
Patented Eltako Duplex technology allows you to switch normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to 15 (L). This results in an additional standby consumption of only 0.1 watt.
It is also possible to control the device via the wired pushbutton terminal. In this case the N wire must be connected on the terminal (N). Glow lamp current is not permitted.
230 V control pushbutton: control current: 0.4 mA, max. parallel capacitance 0.3 μF (approx. length) of (1000 m) local control lead.
You can switch on bidirectional wireless and/or a repeater function. Every status change and incoming central control telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught-in other actuators, in the GFVS software and in universal displays.
The function of the actuator is set with the lower rotary switch.

Function rotary switches

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER</td>
<td>switching relay</td>
</tr>
<tr>
<td>ESV</td>
<td>impulse switch. Possibly with off delay</td>
</tr>
<tr>
<td>LRV</td>
<td>ESV with pushbutton permanent light</td>
</tr>
<tr>
<td>L/RN</td>
<td>ESV with switch-off early warning</td>
</tr>
<tr>
<td>FUA12-230V</td>
<td></td>
</tr>
<tr>
<td>ESV</td>
<td>pushbutton permanent light and switch-off early warning</td>
</tr>
</tbody>
</table>

If the permanent light function is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 2 hours or by pressing the pushbutton.
If the switch-off early warning is switched on, the light starts to flicker approx. 30 seconds before timeout. This is repeated three times at decreasing time intervals.
The function ESV on the upper rotary switch sets the off delay from 2 to 120 minutes. In setting 0 normal impulse switch function ES without off delay, without pushbutton permanent light and without switch-off early warning.
In setting ER = switching relay of the lower rotary switch, this rotary switch fulfills a safety and power saving function in the settings except 0: If the opening command cannot be detected, for example, because of a jammed or too hastily operated pushbutton, contact 18 opens automatically after expiry of the set time between 2 and 120 seconds. When a FTK is taught-in, this time function is turned off.
Universal pushbuttons can be taught-in as NC contacts.

FTK wireless window/door contact and window handle sensors FFG7B-rw: ER function position: Several FTK devices and (or) window handle sensors FFG7B-rw are interlinked; N0 contact: When a window is opened, contact 18 closes. All windows must be closed before contact 18 opens (e.g. controller for cooker extraction hoods). NC contact: All windows must be closed before contact 18 closes. When a window is opened, contact 18 opens (e.g. for climate control systems).

Twilight pushbutton with taught-in FAH wireless outdoor brightness sensor in function position ESV. In time setting 120, contact 18 opens with a time delay of 4 minutes when brightness reaches high enough levels. In time setting 0, the contact opens immediately. Pushbutton activation also remains available.

Motion detection with taught-in FBH (slave) wireless motion detector and in ER function position. The device switches on when motion is detected. If no more motion is detected, contact 18 opens after expiry of the set time between 0 and 120 seconds. When an FBH (master) wireless detector and brightness detector is taught-in, use the upper rotary switch to define the switching threshold at which the lighting is switched on or off depending on the brightness (in addition to motion). An FAH wireless outdoor brightness sensor or an FBH (master) wireless motion detector and brightness sensor can be used in ER function position together with FBH (slave) motion detector so that motion is only evaluated in darkness.
If FAH or FBH (master) detects brightness, contact 18 opens immediately.
When teaching-in, the switching threshold is also taught-in: between break of twilight and complete darkness.
The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

Recommended retail prices excluding VAT.

| FUA12-230V | Wireless universal actuator | EAN 4010312316955 | 111.60 €/pc. |

Housing for operating instructions GB414 page 1-44.
Three-phase energy meters DSZ14 must be connected to the end of a bus line.
The enclosed second terminating resistor has to be plugged to the last actuator of the FAM14 or the terminating resistor can be clamped under the terminals RSB/RSA of the last energy meter (120Ω, not included).
The enclosed second terminating resistor has to be plugged to the last actuator of the FAM14 or the terminating resistor can be clamped under the terminals RSB/RSA of the last energy meter (120 Ω, not included).
## TECHNICAL DATA – SWITCHING ACTUATORS AND DIMMING ACTUATORS FOR THE ELTAKO RS485 BUS

### Type

<table>
<thead>
<tr>
<th>Type</th>
<th>F4HK14</th>
<th>FHK14</th>
<th>FSBI14</th>
<th>FSR14-4x</th>
<th>FUD14</th>
<th>FUD14/800W</th>
<th>FSG14/1-10V</th>
<th>F2L14</th>
<th>F4SR14-LED</th>
<th>FFR14</th>
<th>FMS14</th>
<th>FMZ14</th>
<th>FSR14-2x</th>
<th>FTN14</th>
<th>FZK14</th>
</tr>
</thead>
</table>

### Contacts

- **Contact material/contact gap**: AgSnO₂/0.5 mm
- **Power MOSFET**: AgSnO₂/0.5 mm
- **Opto-Triac**: AgSnO₂/0.5 mm
- **Test voltage control connections/contact**: –
- **Rated switching capacity each contact**:
  - F4HK14: 4 A/250 V AC
  - F2L14: 16 A/250 V AC
  - FMZ14: 10 A/250 V AC
  - F4SR14-LED: 8 A/250 V AC
- **Incandescent lamps and halogen lamp load 230 V^1^**:
  - up to 1000 W (10 A/10 ms)
  - up to 1000 W (10 A/10 ms)
- **Fluorescent lamp load with KVG**:
  - 500 VA (10 A/10 ms)
- **Compact fluorescent lamps with EVO^*^**:
  - up to 200 W (10 A/10 ms)
  - up to 200 W (10 A/10 ms)
- **Inductive load \(\cos \varphi = 0.6/230 V AC\)**:
  - up to 650 W (10 A/10 ms)
  - up to 650 W (10 A/10 ms)
- **230 V LED lamps**:
  - up to 200 W (10 A/10 ms)
  - up to 200 W (10 A/10 ms)
- **Max. switching current DC1: 12 V/24 V DC**:
  - 4 A
  - 8 A (not FTN14 and FZK14)
- **Life at rated load, \(\cos \varphi = 1\) or for incandescent lamps 500 W at 100 h**:
  - \(>10^3\)
  - \(>10^3\)
- **Service life at rated load, \(\cos \varphi = 0.6\) at 100 h**:
  - \(>4 \times 10^4\)
  - \(>4 \times 10^4\)
  - \(>4 \times 10^4\)
  - \(>4 \times 10^4\)
- **Maximum conductor cross-section (3-fold terminal)**:
  - 6 mm² (4 mm²)
  - 6 mm² (4 mm²)
  - 6 mm² (4 mm²)
  - 6 mm² (4 mm²)
  - 6 mm² (4 mm²)
- **Two conductors of same cross-section (3-fold terminal)**:
  - 2.5 mm² (1.5 mm²)
  - 2.5 mm² (1.5 mm²)
  - 2.5 mm² (1.5 mm²)
  - 2.5 mm² (1.5 mm²)
  - 2.5 mm² (1.5 mm²)
- **Screw head**: slotted/crosshead, pozidriv
- **Type of enclosure/terminals**: IP50/IP20

### Electronics

- **Time on**: 100%
- **Max./min. temperature at mounting location**: +50°C/-20°C
- **Standyloss (active power)**: 0.1 W
- **Local control current at 230 V control input**: –
- **Max. parallel capacitance (approx. length) of local control lead at 230 V AC**: –

### Compliance

- EN 61000-6-3
- EN 61000-6-1
- EN 60669

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* ^EVO* = electronic ballast units; KVG = conventional ballast units
* ^Bistable relay as relay contact. After installation, wait for short automatic synchronisation before teaching-in the wireless pushbuttons.
* ^If the load exceeds 200 W, a ventilation clearance of 1/2 pitch unit to adjacent devices must be maintained.
* ^Applies to lamps of max. 150 W.
* ^Per dimmer or capacity enhancer it is only allowed to use max. 2 inductive (wound) transformers of the same type, furthermore no-load operation on the secondary part is not permitted. The dimmer might be destroyed.
* ^When calculating the load a loss of 20% for inductive (wound) transformers and a loss of 5% for capacitive (electronic) transformers must be considered in addition to the lamp load.
* ^Fluorescent lamps or LV halogen lamps with electronic ballast.
* ^Applies to one contact and the sum of both contacts.
* ^Capacity increase for all dimmable lamp types with Capacity Enhancer FLUD14.
* ^Inductive load \(\cos \varphi = 0.6\) as sum of both contacts 1000 W max.

The second terminating resistor has to be plugged to the last actuator included in the FAM14 respectively FTN14 scope of supply.

Eltako Wireless is based on the EnOcean wireless standard for 868 MHz, frequency 868.3 MHz, data rate 128 kbps, modulation mode ASK, max. transmit power 7 dBm (<10 mW).
# Power Requirement of the 12 V DC Power Supply of Series 14

The switching power supply unit in the FAM14 resp. FTS14KS provides 12 V DC/8 W*. The maximum power consumption of each connected device must be added to calculate the total power consumption of the 12 V DC power supply.

<table>
<thead>
<tr>
<th>Device</th>
<th>Maximum power requirement (existing relay energized)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGW14</td>
<td>0.30 W</td>
</tr>
<tr>
<td>F2L14</td>
<td>0.14 W</td>
</tr>
<tr>
<td>F3Z14D</td>
<td>0.10 W</td>
</tr>
<tr>
<td>F4HK14</td>
<td>0.70 W</td>
</tr>
<tr>
<td>F4SR14-LED</td>
<td>1.00 W</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>FWZI4-65A</td>
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<td>FZK14</td>
<td>0.14 W</td>
</tr>
<tr>
<td>STE14</td>
<td>–</td>
</tr>
</tbody>
</table>

* If the power requirement is greater, a switching power supply unit FSNT14-12V/12W should be used for each 12 watts of more power. Furthermore a disconnecting link TB14 has to be attached instead of a normal jumper to separate the additionally powered group.
The remote switch system FTS14 – Modular RS485 bus

The remote switch system FTS14 – modular RS485 bus of the next generation

Input module FTS14EM

FTS14 communication interface FTS14KS

Optional: Pushbutton gateway FTS14TG and bus pushbutton B4T65 and B4FT65

Bus pushbutton coupler FTS61BTK and bus pushbutton coupler FTS61BTKL

Optional: Wireless output module FTS14FA

The input module FTS14EM with Series 14 actuators

The input module FTS14EM with actuators in combination with FAM14 to expand the Wireless Building

The wireless output module FTS14FA with FTS14TG, FTS14EM and actuators

The pushbutton gateway FTS14TG with bus pushbutton coupler FTS61BTK and bus pushbuttons B4T65 or B4FT65

All possible combinations FTS14KS, FAM14, FTS14TG, FTS14EM and FTS14FA and actuators
THE REMOTE SENSING SYSTEM FTS14 – MODULAR RS485 BUS OF THE NEXT GENERATION

THE REMOTE SENSING SYSTEM FTS14 USES THE NEW FEATURES OF OUR SERIES 14

The bus and power supply connections on the input module FTS14EM, communication interface FTS14KS and actuators as DIN rail mounted devices are very simply cross-wired by means of jumpers. A customary screened 4-wire telephone line acts as bus line to connect several distributors together.

The FTS14 bus and the input module FTS14EM use exactly the same telegram structure as the Wireless Building DIN rail mounted devices of the Series 14 and are therefore directly combinable with actuators and other components in the Series 14. All the necessary functions of current production are then immediately available.

The power supply in the FTS14KS decouples the electronics of all connected devices from the 230 V power supply grid. As a result, the devices are not exposed to voltage peaks and other faults which are becoming increasingly frequent on mains power supplies. This protection significantly increases the expected service life of the devices.

Every FTS14EM with only two pitches width has 10 inputs for either conventional pushbuttons, window/door-contacts or motion sensors. Thanks to the electrically isolated universal control voltage from 8 to 230V UC, the inputs can be controlled either directly with the mains voltage or with low voltage. A separate switch mode power supply unit, e.g. the SNT12 which is only one pitch unit wide, must then be used for 12 V or 24 V. Control power requirement is only 0.05 or 0.2 watts per pushbutton when a pushbutton is operated. All input terminals (E1 to E10) are arranged in the lower terminal blocks and a terminal for the common pushbutton reference potential (-E) is located on the upper terminal block.

The FTS14EM can be configured by 2 rotary switches in such a way that max. 50 FTS14EM devices can be connected to max. 500 pushbuttons in a bus installation. In addition the pushbutton inputs of each FTS14EM are set by rotary switch either as universal pushbuttons or in pairs as direction pushbuttons. The telegram of each pushbutton input in the entire bus is available over the bus system simultaneously for all actuators connected. It is therefore possible to install central and group pushbuttons rapidly and using few wires. The related pushbuttons are simply taught-in in the required actuators on the bus.

The connected actuators can also be configured with the PC tool PCT14 via communication interface of the FTS14KS.

→ Optional: Instead of the FTS14KS a wireless antenna module FAM14 (from the Wireless Building System), which is only two pitch units wide, can also be installed. Actuators can then be activated via the FTS14EM by wireless pushbuttons, hand-held transmitters and wireless sensors as well as conventional pushbuttons. The bidirectional FAM14 also permits a Smart Home central unit SafeIV to evaluate feedback messages from the actuators transferred by wireless. Each actuator status is then displayed and can also be changed. Connecting the HOLD terminals of all devices regulates bus access and prevents collisions.

→ Optional: The pushbutton gateway FTS14TG, which is only two pitch units wide, can feed telegrams from the 4-way bus pushbuttons B4T65, B4FT65 and pushbutton coupler FTS61BTK connected by 2-wire pushbutton bus to conventional pushbuttons connected to the bus. Data transfer and power supply take place simultaneously over 2 wires only. This avoids many single pushbutton control lines. This avoids many single pushbutton control lines. An FTS14EM device is then not required.

→ Optional: Pushbutton telegrams on the bus can be sent directly to the Wireless Building system with a wireless output module FTS14FA, e.g. to control decentral actuators.

→ Optional: The multiple gateway FGW14, which is only one pitch unit wide, can set up connections to the Smart Home central unit SafeIV, bus components of the previous Series 12 and an RS232 interface. In addition to this, two RS485 buses from Series 14 can be connected.
All optional possibilities can be combined as required: FTS14EM with actuators, the wireless antenna module FAM14, the pushbutton wireless output module FTS14FA and the pushbutton gateway FTS14TG for connection to pushbutton couplers FTS61BTK.
**INPUT MODULE FTS14EM**

**FTS14EM**

Input module for the Eltako RS485 bus, 10 control inputs for universal control voltage. Only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 railmounting.
2 modules = 36 mm wide, 58 mm deep.

**Connection to the Eltako-RS485 bus. Bus wiring and power supply with jumper.**

**Operation in conjunction with FTS14KS or FAM14.**

10 control inputs +E1 to +E10/-E electrically isolated from the supply voltage.
Control voltage: 8..230 V UC.
The control inputs can be either activated for pushbuttons (delivery state), window-door contacts or motion detectors.

From the production week 21/19 the signals of the control inputs can be inverted.

**Control inputs for pushbuttons:** telegrams of pushbuttons will be generated (e.g. 0x70).
Each FTS14EM can be set to UT (= universal pushbutton) or RT (= direction pushbutton) on the lower rotary switch.

**Control inputs for window-door contacts:** telegrams of the window-door contact FTK are generated (EEP D5-00-01). If the input is driven by the contact with the control voltage to be applied externally, the telegram 'window open' is generated. If the contact is opened, the telegram 'window open' is generated.
As with the wireless sensor FTK, the status telegram is repeated every 15 minutes.

**Control inputs for motion detectors:** telegrams of the wireless motion/brightness sensor FBH are generated (EEP A5-08-01), wherein the brightness value is always 0. If the input is driven by the contact with the control voltage to be applied externally, the telegram 'motion' is generated. If the contact is opened, the telegram 'no motion' will be generated. As with the wireless sensors FBH, the status telegram is repeated every 15 minutes.

Each telegram of a contact input has to be taught-in with an identification number (ID) into one or more actuators according to the operating instructions.

The **lower rotary switch** defines the group to which an FTS14EM belongs. A total of 5 groups are available (1, 101, 201, 301 and 401) each with 100 IDs.

The **upper rotary switch** (0 to 90) sets the ID within a group. The ID range within a group results from the combination of upper and lower rotary switches and must be set differently on each FTS14EM.

Maximum ten FTS14EMs form a group. Therefore, a total of 50 FTS14EMs comprising 500 pushbuttons or contacts are possible in one RS485 bus.

To generate the necessary **teach-in telegrams** for teaching-in into the actuators, the requested group has to be selected on the upper and lower rotary switch. For pushbuttons in the range UT or RT or for window-door contacts and motion sensors in the range RT. Then confirm the required control input.

In operation, the same group should be selected for window-door contacts and motion sensors in the range UT or RT for pushbutton or UT.

The LED below the upper rotary switch flashes briefly, when a connected contact is closed.

**Optional:** An **FAM14 wireless antenna module** (from Wireless Building System) which is only two modules wide can also be installed. Actuators can then be activated via the FTS14EM by wireless pushbuttons und Kontakten, hand-held transmitters and wireless sensors in addition to conventional buttons. As the FAM14 has an integrated switch mode power supply unit, the FTS14KS is no longer required for power supply in this configuration.

The bidirectional FAM14 also permits a Smart Home central unit SafeIV to evaluate feedback messages from the actuators transferred by wireless. Each actuator status is then displayed and can also be changed. Connecting the HOLD terminals of all devices regulates bus access and prevents collisions.

The telegrams of the FTS14EM can also be sent to the Eltako Wireless Building with the optional wireless output module FTS14FA.

**Recommended retail prices excluding VAT.**

| FTS14EM | Input module | EAN 4010312315071 | 56.40 €/pc. |
FTS14KS

FTS14 communication interface for the Eltako RS485 bus with integrated power supply unit 12 V DC/8 W. Only 0.6 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
2 module = 38 mm wide, 58 mm deep.
Supply voltage 230 V.
The delivery includes 2 terminators with printing Ω, 1/2 module, 3 jumpers 1 module (including 1 spare), 2 jumpers 1/2 module (including 1 spare) and 1 jumper installation tool SMW14.

Bus cross wiring and power supply with jumper.
The attached second terminator should be plugged to the last actuator.

Mini USB to connect to a PC, to create an equipment list, to configure the actuators using the PC tool PCT14 and for data backup. A legalization code to download the PCT14 from the Eltako homepage www.eltako.com is included in the FTS14KS.
All FTS14EM and if needed gateways FGW14 will be connected to the terminal Hold when they connect a PC with a RS232 bus.
According to the operating manual 10 different operating modes can be set with the operating mode rotary switch BA.

The bottom LED lights up green if a connection from the PC tool PCT14 was created. When reading or writing data the LED flashes green. The green LED goes out if the connection from the PC tool PCT14 was terminated.
At a load of more than 50% of the rated capacity of 8 W a ventilation clearance of 1/2 module must be maintained with the spacer DS14 on the left side.

| FTS14KS | FTS14 communication interface | EAN 4010312315651 | 74,90 €/pc. |
**OPTIONAL: PUSHBUTTON GATEWAY FTS14TG AND BUS PUSHBUTTON B4T65, B4FT65**

**FTS14TG**

Optional: Pushbutton gateway for FTS14 systems. Only 1.3 watt standby loss.

Modular device for DIN-EN 60715 TH35 railmounting. 2.5 modules = 45 mm wide, 58 mm deep. To improve heat dissipation, provide a ventilation gap ½ a pitch unit wide on the left-hand side. Use the enclosed spacer DS4 for this purpose.

Power supply 230 V.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper. Operation in conjunction with FAM14 or FTS14KS.

Using up to 3 pushbutton gateways FTS14TG, you can feed the telegrams of up to 90 4-way bus switches B4T65 and B4FT65 or pushbutton bus couplers FTS61BTK and FTS61BTKL connected over a 2-wire bus with conventional pushbuttons connected to them. Data transfer and power supply take place simultaneously over 2 wires only. This avoids a mass of single pushbutton control lines. An FTS14EM device is then not required.

Up to 30 B4T65, B4FT65, FTS61BTK and FTS61BTKL devices can be connected to an FTS14TG pushbutton gateway.

A voltage of 29 V DC is supplied to the connected devices over a 2-wire bus which is also used for data transfer.

Please use only conventional bus or telephone lines.

The 2-wire bus is electrically isolated from the Eltako RS485 bus.

The permitted maximum line length is 200 m. The RLC device enclosed with the FTS14TG must also be connected to the terminals BP and BN on the bus switch or pushbutton bus coupler furthest away.

Pushbutton telegrams from the connected devices are transmitted by an FTS14FA device over the Eltako RS485 bus and over the Eltako building wireless system.

**B4T65 AND B4FT65**

Bus switch 84 x 84 mm external for connection to FTS14TG pushbutton gateway by 2-wire pushbutton bus. Pure white, glossy. Only 0.2 watt standby loss. B4FT65 bus 4-way flat pushbutton in E-design, only 11 mm high. B4T65 bus 4-way pushbutton in E-Design, only 16 mm high.

The scope of supply comprises the R1E resp. RF1E frame including snapped-on electronics, a flat rocker and a flat double rocker (all the same colour).

The double rocker permits entry of 4 evaluable signals, but the rocker allows only 2 signals.

At the rear, a 20 cm long red/black by pushbutton bus line is routed externally. Red terminal to BP, black to BN of a pushbutton gateway FTS14TG.

Up to 30 bus switches and/or FTS61BTK pushbutton bus couplers can be connected to terminals BP and BN of an FTS14TG pushbutton gateway.

The permitted maximum line length is 200 m. The RLC device enclosed with the FTS14TG must also be connected to the terminals BP and BN on the bus switch or pushbutton bus coupler furthest away.

A voltage of 29 V DC is supplied to the connected B4 over a 2-wire pushbutton bus which is also used for data transfer.

Please use only conventional bus or telephone lines.

Confirmation telegrams from actuators are displayed by 4 resp. 2 yellow LEDs when the actuator IDs are entered by the PCT14 in the ID table of the FTS14TG.

<table>
<thead>
<tr>
<th>RLC element</th>
<th>Range extension for FTS14TG</th>
<th>EAN 4010312907092</th>
<th>3,80 €/pc.</th>
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**Recommended retail prices excluding VAT.**

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<td>3,80 €/pc.</td>
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BUS PUSHPUTTON COUPLER FTS61BTK AND BUS PUSHPUTTON COUPLER FTS61BTKL

FTS61BTK

Bus pushbutton coupler FTS61BTK for 4 conventional pushbuttons for connection to FTS14TG pushbutton gateways by 2-wire pushbutton bus. Only 0.2 watt standby loss.

For installation. 45 mm long, 45 mm wide, 18 mm deep.

Up to 30 bus pushbuttons and/or bus pushbutton couplers FTS61BTK devices can be connected to the BP and BN terminals of a pushbutton gateway FTS14TG. The permitted total line length is 200 m. The RLC device enclosed with the FTS14TG must also be connected to the terminals BP and BN on the bus switch or pushbutton bus coupler furthest away.

A voltage of 29 V DC is supplied to the connected FTS61BTK over a 2-wire pushbutton bus which is also used for data transfer.

Please use only conventional bus or telephone lines.

Up to four conventional pushbuttons can be connected to T1, T2, T3 and T4 by a maximum line length of 2 metres. Connect the opposite pole to the T0 terminal in each case.

Caution: Do not apply any voltage.

The pairs T1/T3 and T2/T4 can be defined as direction pushbuttons.

Connect the bus to BP and BN. Make sure the polarity is correct.

| FTS61BTK | Bus pushbutton coupler | EAN 4010312315668 | 40,30 €/pc. |

FTS61BTKL

Bus pushbutton coupler FTS61BTKL for 4 conventional pushbuttons with integrated 24 V LEDs for connection to FTS14TG pushbutton gateways by 2-wire pushbutton bus. Only 0.2 watt standby loss.

For installation. 45 mm long, 45 mm wide, 18 mm deep.

Up to 30 bus pushbuttons and/or bus pushbutton couplers FTS61BTKL devices can be connected to the BP and BN terminals of a pushbutton gateway FTS14TG. The permitted total line length is 200 m. The RLC device enclosed with the FTS14TG must also be connected to the terminals BP and BN on the bus switch or pushbutton bus coupler furthest away.

A voltage of 29 V DC is supplied to the connected FTS61BTKL over a 2-wire pushbutton bus which is also used for data transfer.

Please use only conventional bus or telephone lines.

Up to four conventional pushbuttons T1-T4 can be connected to T1, T2, T3 and T4 by a maximum line length of 2 metres. Connect the opposite pole to the T0 terminal in each case.

Caution: Do not apply any voltage.

The pairs T1/T3 and T2/T4 can be defined as direction pushbuttons.

Connect the bus to BP and BN. Make sure the polarity is correct.

| FTS61BTKL | Bus pushbutton coupler for feedback LED | EAN 4010312318801 | 45,80 €/pc. |

Recommended retail prices excluding VAT.
Optional: Wireless output module pushbutton telegrams for FTS14 systems with FTS14EM and/or FTS14TG. Only 0.5 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

Operation in conjunction with FTS14KS with or without FAM14.

A rotary switch defines the FTS14EM or FTS14TG group to which an FTS14FA belongs. Therefore a maximum of 8 FTS14FAs can be connected to a bus. Every pushbutton telegram from an FTS14EM or FTS14TG is sent with its own ID to the Eltako building wireless system.

**Rotary switch on the FTS14FA set to position 1**: Sends telegrams of all FTS14EMs set to 1.

**Rotary switch on the FTS14FA set to position 101**: Sends telegrams of all FTS14EMs set to 101.

**Rotary switch on the FTS14FA set to position 201**: Sends telegrams of all FTS14EMs set to 201.

**Rotary switch on the FTS14FA set to position 301**: Sends telegrams of all FTS14EMs set to 301.

**Rotary switch on the FTS14FA set to position 401**: Sends telegrams of all FTS14EMs set to 401.

**Rotary switch on the FTS14FA set to position TG2/5**: Sends telegrams of all FTS14TG set to 2 or 5.

**Rotary switch on the FTS14FA set to position TG3/6**: Sends telegrams of all FTS14TG set to 3 or 6.

**Rotary switch on the FTS14FA set to position TG4/7**: Sends telegrams of all FTS14TG set to 4 or 7.

**Rotary switch on the FTS14FA set to position OFF**: The FTS14FA is switched off.

The green LED under the rotary switch will flash shortly when a wireless telegram is sent. Telegrams from an FAM14 are not sent by the FTS14FA.

Recommended retail prices excluding VAT.
The second terminator which is included in the FTS14KS has to be plugged to the last actuator.

Control inputs FTS14EM
The second terminator which is included in the FAM14 has to be plugged to the last actuator.

Control inputs FTS14EM
The second terminating resistor supplied with the FTS14KS must be plugged into the last bus user.

Every FTS14FA generates wireless telegrams from up to 5 FTS14EM pushbutton input modules and up to 3 FTS14TG pushbutton gateways.

Control inputs FTS14EM
The second terminator which is included in the FTS14KS has to be plugged to the last actuator. Up to 30 bus pushbuttons B4T65 or B4FT65 and decentralised bus pushbutton couplers FTS61BTK with 4 pushbutton inputs for conventional pushbuttons can be connected with a pushbutton gateway FTS14TG.

A simple 2-wire circuit supplies the bus pushbutton coupler with power and also pushbutton information will be transmitted.

The topology of the 2-wire connection can be chosen arbitrarily here.
The second terminator which is included in the FAM14 respectively FTS14KS has to be plugged to the last bus participant. Additional actuator setting options with the PCT14 PC tool for conventional pushbuttons. Up to 30 bus pushbuttons B4T65 or B4FT65 and decentralised bus push button couplers FTS61BTK with 4 pushbutton inputs can be connected with a pushbutton gateway FTS14TG. A simple 2-wire circuit supplies the bus pushbutton coupler with power and also pushbutton information will be transmitted. The topology of the 2-wire connection can be chosen arbitrarily here.
3

FLUSH MOUNTING SWITCHING AND DIMMING ACTUATORS FOR DECENTRALISED INSTALLATION.

FD62NPN-
FSR71
FSR61NP-
Wireless actuators for the decentralised Wireless Building installation

NEW Wireless light actuator FL62-230V and FL62NP-230V 3 - 4
NEW Wireless universal dimming actuator without N terminal FD62NP-230V 3 - 5
NEW Wireless universal dimming actuator FD62NPN-230V 3 - 5
NEW Wireless shading element and roller shutter actuator FJ62/12-36V DC 3 - 6
NEW Wireless shading element and roller shutter actuator FJ62NP-230V 3 - 7
NEW Wireless repeater FRP62-230V 3 - 8
NEW Wireless actuator for extractor hoods control with window/door contact FDH62NP-230V+FTKB-wg 3 - 9
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  Wireless actuator impulse switch with integr. relay function FSR61/8-24V UC 3 - 11
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The Eltako wireless sytem works with the reliable and worldwide standardized EnOcean wireless technology in 868 MHz. It transmits ultra short and interference-proof signals with a range of up to 100 meters in halls. Eltako wireless pushbuttons reduce the electrosmog load since they emit high-frequency waves that are 100 times weaker than conventional light switches. There is also a significant reduction in low-frequency alternating fields since fewer power cables need to be installed in the building.
**FR62-230V**

Wireless relay actuator 10 A/250 V AC. 1 NO contact or NC contact, potential free. Standby loss only 0.4 watt.

For installation, 49 x 51 mm wide, 20 mm deep.

The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².

Up to 32 wireless pushbuttons and wireless window contacts can be taught in using easy tap technology. Bidirectional wireless switchable.

Distance between control terminals/contact 6 mm.

Supply voltage, switching voltage and control voltage local 230 V.

If supply voltage fails, the device is switched off in defined mode. When the supply voltage is restored, the device is switched off in a defined process. After installation, wait until the short automatic synchronisation takes place before the switched user is connected to the network.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch if fitted previously.

Glow lamp current is not permitted.

During teach-in, the function of the contact in quiescent position is defined as NO or NC. Closes the contact with at least one open window; it can then activate extraction hoods etc. or generate an alarm. Opens the contact with at least one open window: it can then switch off heaters or air conditioners.

Several wireless window contacts are linked together. The function is determined by the last wireless window contact which is taught in.

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**FR62NP-230V**

Wireless relay actuator 10 A/250 V AC. 1 NO contact or NC contact, not potential free. Standby loss only 0.4 watt.

For installation, 49 x 51 mm wide, 20 mm deep.

The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².

Up to 32 wireless pushbuttons and wireless window contacts can be taught in using easy tap technology. Bidirectional wireless switchable.

Zero passage switching.

Supply voltage, switching voltage and control voltage local 230 V.

If supply voltage fails, the device is switched off in defined mode. When the supply voltage is restored, the device is switched off in a defined process. After installation, wait until the short automatic synchronisation takes place before the switched user is connected to the network.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch if fitted previously.

Glow lamp current is not permitted.

During teach-in, the function of the contact in quiescent position is defined as NO or NC. Closes the contact with at least one open window; it can then activate extraction hoods etc. or generate an alarm. Opens the contact with at least one open window: it can then switch off heaters or air conditioners.

Several wireless window contacts are linked together. The function is determined by the last wireless window contact which is taught in.
FL62-230V

Wireless light actuator 10 A/250 V AC. Impulse switch with NO contact. Potential free. 230 V incandescent lamps and halogen lamps 1000 W, ESL and 230 V LED lamps up to 200 W. Standby loss only 0.4 watt.

For installation. 49 x 51 mm wide, 20 mm deep.

The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².

The convenient tap technology permits the teach-in of up to 32 wireless universal pushbuttons, wireless direction pushbuttons, wireless central control pushbuttons and motion sensors.

Bidirectional wireless switchable.

Distance between control terminals and contact 6 mm.

Supply voltage, switching voltage and control voltage local 230 V.

If supply voltage fails, the device is switched off in defined mode. When the supply voltage is restored, the device is switched off in a defined process. After installation, wait for the short automatic synchronisation before connecting the switched user to the network.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch if fitted previously.

Glow lamp current is not permitted.


FL62NP-230V

Wireless light actuator 10 A/250 V AC. Impulse switch with NO contact. Not potential free. 230 V incandescent lamps and halogen lamps 1000 W, ESL and 230 V LED lamps up to 200 W. Standby loss only 0.4 watt.

For installation. 49 x 51 mm wide, 20 mm deep.

The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².

The convenient tap technology permits the teach-in of up to 32 wireless universal pushbuttons, wireless direction pushbuttons, wireless central control pushbuttons and motion sensors.

Bidirectional wireless switchable.

Zero passage switching.

Supply voltage, switching voltage and control voltage local 230 V.

If supply voltage fails, the device is switched off in defined mode. When the supply voltage is restored, the device is switched off in a defined process. After installation, wait for the short automatic synchronisation before connecting the switched user to the network.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch if fitted previously.

Glow lamp current is not permitted.

### WIRELESS UNIVERSAL DIMMING ACTUATOR WITHOUT N TERMINAL FD62NP-230V AND WIRELESS UNIVERSAL DIMMING ACTUATOR FD62NPN-230V

#### FD62NP-230V

Wireless universal dimming actuator, without N terminal. With power MOSFET. 230 V incandescent lamps and halogen lamps up to 200 W depending on ventilation conditions. Dimmable LED lamps in 'phase cut-out' mode up to 200 W or in 'phase control' mode up to 40 W depending on ventilation conditions. Minimum load for 'phase cut-out' 20 W, or for 'phase control' 8 W. No inductive (wound) transformers. With children's rooms and snooze function. No minimum load. Only 0.6 watt standby loss.

For installation. 49 x 51 mm wide, 20 mm deep.

**The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².**

Up to 32 wireless universal pushbuttons, wireless direction pushbuttons, wireless central control pushbuttons and motion sensors can be taught in using easy tap technology.

**Bidirectional wireless switchable.**

**Zero passage switching with soft ON and soft OFF to protect lamps.**

Supply voltage, switching voltage and control voltage local 230 V.

The brightness level is stored on switch-off (memory).

If supply voltage fails, the device is switched off in defined mode.

Automatic electronic overload protection and overtemperature switch-off.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch if fitted previously.

Glow lamp current is not permitted.


#### FD62NPN-230V

Wireless universal dimming actuator. With power MOSFET. 230 V incandescent lamps and halogen lamps up to 300 W depending on ventilation conditions. Dimmable LED lamps in 'phase cut-off' mode up to 300 W or in 'phase control' mode up to 100 W depending on ventilation conditions. No inductive (wound) transformers. With children's rooms and snooze function. No minimum load. Only 0.5 watt standby loss.

For installation. 48 x 51 mm wide, 20 mm deep.

**The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².**

Up to 32 wireless universal pushbuttons, wireless direction pushbuttons, wireless central control pushbuttons and motion sensors can be taught in using easy tap technology.

Bidirectional wireless switchable.

**Zero passage switching with soft ON and soft OFF to protect lamps.**

Supply voltage, switching voltage and control voltage local 230 V.

The brightness level is stored on switch-off (memory).

If supply voltage fails, the device is switched off in defined mode.

Automatic electronic overload protection and overtemperature switch-off.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch if fitted previously.

Glow lamp current is not permitted.


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Recommended retail prices excluding VAT.
WIRELESS SHADING ELEMENT AND ROLLER SHUTTER ACTUATOR FJ62/12-36V DC

FJ62/12-36V DC

Wireless shading element and roller shutter actuator 1+1 NO contact, 4 A/36 V DC, not potential free, for a shading element motor 12-36 V DC. Standby loss only 0,3–0,5 watt.

For installation, 49 x 51 mm wide, 20 mm deep.

The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².

The convenient tap technology permits the teach-in of up to 32 wireless universal pushbuttons, wireless direction pushbuttons and wireless central control pushbuttons.

Bidirectional wireless switchable.

Supply voltage, switching voltage and control voltage local 12-36 V DC.

If supply voltage fails, the device is switched off in defined mode.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional control switch if fitted previously.

Control is either by separate local control inputs for Up and Down as direction pushbuttons or these two inputs are bridged and controlled by single pushbuttons as universal pushbuttons. A change in direction then takes place by interrupting activation.

An incandescent lamp current is not permitted.

Wireless pushbuttons can be taught in with either the functions 'Up-Stop-Down-Stop' as universal pushbuttons or as local pushbuttons as well as a wireless pushbutton or roller shutter double pushbuttons can be taught in as direction pushbuttons with press top for 'Up' and bottom for 'Down'. Press briefly to stop the movement. In addition the central control pushbuttons can be taught in without priority.

The tap reverse function can be activated: universal pushbuttons, direction pushbuttons and wired pushbuttons are initially in static mode so that the position of the blind can be adjusted.

Switched to dynamic only after activation > 1 second.

With control via GFVS software, operating commands for up and down with the exact travel time information can be started. As the actuator reports the exact elapsed time after each activity, even when driving was triggered by a pushbutton, the position of the shading is always displayed correctly in the GFVS software.

Upon reaching the end positions above and below the position is automatically synchronized.

When a wireless window contact is taught in, a lockout protection is set up for open windows or doors to disable the Central Down and GFVS Down commands.

| FJ62/12-36VDC | Wireless shading element and roller shutter actuator | EAN 4010312319406 | 59,80 €/pc. |

Recommended retail prices excluding VAT.
FJ62NP-230V

Wireless shading element and roller shutter actuator 1+1 NO contact, 4 A/250 V AC, not potential free, for a shading element motor 230 V AC. Standby loss only 0.6 watt.

For installation. 49 x 51 mm wide, 20 mm deep.

The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².

The convenient tap technology permits the teach-in of up to 32 wireless universal pushbuttons, wireless direction pushbuttons and wireless central control pushbuttons.

Zero passage switching.
Bidirectional wireless switchable.
Supply voltage, switching voltage and control voltage local 230 V.
If supply voltage fails, the device is switched off in defined mode.
In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional control switch if fitted previously.
Control is either by separate local control inputs for Up and Down as direction pushbuttons or these two inputs are bridged and controlled by single pushbuttons as universal pushbuttons. A change in direction then takes place by interrupting activation.
An incandescent lamp current is not permitted.
Wireless pushbuttons can be taught in with either the functions 'Up-Stop-Down-Stop' as universal pushbuttons or as local pushbuttons as well as a wireless pushbutton or roller shutter double pushbuttons can be taught in as direction pushbuttons with press top for 'Up' and bottom for 'Down'. Press briefly to stop the movement. In addition the central control pushbuttons can be taught in without priority.
The tap reverse function can be activated: universal pushbuttons, direction pushbuttons and wired pushbuttons are initially in static mode so that the position of the blind can be adjusted.
Switched to dynamic only after activation > 1 second.

With control via GFVS software, operating commands for 'up' and 'down' with the exact travel time information can be started. As the actuator reports the exact elapsed time after each activity, even when driving was triggered by a pushbutton, the position of the shading is always displayed correctly in the GFVS software. Upon reaching the end positions above and below the position is automatically synchronized.

When a wireless window contact is taught in, a lockout protection is set up for open windows or doors to disable the Central Down and GFVS Down commands.

| FJ62NP-230V | Wireless shading element and roller shutter actuator | EAN 4010312319390 | 54,80 €/pc. |
FRP62-230V

1 and 2 level wireless repeaters. Only 0.7 watt standby loss.

For installation, 49 x 51 mm wide, 20 mm deep.

The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm².

Supply voltage 230 V.

This repeater is only needed if the building conditions prevent undisturbed reception or the distance between the wireless pushbutton and receiver is too great.

If the supply voltage is only connected to terminals L and N, Level 1 mode is active.

Only wireless signals from sensors are received, tested and forwarded at full transmit power.

If phase is connected to the Level 2 terminal in addition to the supply voltage, Level 2 mode is active. In addition to wireless signals from sensors, the wireless signals of Level 1 repeaters are processed. A wireless signal can then be received and amplified a maximum of two times.

Wireless repeaters need not be taught in. They receive and amplify signals from all wireless sensors within their reception area.

| FRP62-230V | Wireless repeater | EAN 4010312320310 | 49,40 €/pc. |
Recommended retail prices excluding VAT.

FDH62NP-230V+FTKB

Wireless extractor hoods control. 1 NO contact not potential free 10 A/250 V AC. Only 0.4 watt standby loss. For installation. 48 x 51 mm wide, 20 mm deep.

The terminals are plug-in terminals for conductor cross-sections of 0.2 mm² to 2.5 mm². Using easy tap technology, up to 32 wireless universal pushbuttons and wireless window contacts can be taught in. Only sensors are allowed which report that the window is actually open or tilted. Otherwise there is a risk of poisoning! Bidirectional wireless switchable. Supply voltage, switching voltage and control voltage local 230 V.

Zero passage switching. By using a bistable relay coil power loss and heating is avoided even in the on mode. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains. If a power failure occurs, the switching state is retained. If supply voltage fails, the device is switched off in defined mode.

The extractor hood motor can only be switched on when the window is open. If the window is closed, the relay switches the motor off. However, if the motor is switched off before the window is closed, any in-built lights that are switched on remain on and can be switched on and off using the switch on the extractor hood. If the motor is switched on in addition to the lights with the window closed, the relay switches off. The in-built lights can be switched on by a wireless pushbutton or a local conventional 230 V control pushbutton (a glow lamp current is not permitted) even if the window is closed and the relay is switched off.

FTKB-wg

Wireless window/door contact with solar cell and battery 75 x 25 x 12 mm, pure white glossy.

Starting at 100 Lux daylight the window/door contact FTKB powers itself from a solar cell, otherwise several years with a button cell CR2032. On opening and closing, the related telegram is send twice in short succession. The current status telegram is sent cyclically every approx. 8 minutes. Adhesive foil mounting.

Window/door contact dimensions l x w x h: 75 x 25 x 12 mm; magnet dimensions l x w x h: 37 x 10 x 6 mm.

| FDH62NP-230V+FTKB | Wireless actuator for extractor hoods control with window/door contact | EAN 4010312319828 | 98.80 €/pc. |
FSR61NP-230V

1 NO contact not potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, off delay with switch-off early warning and switchable pushbutton permanent light. Encrypted wireless, bi-directional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation, 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage, switching voltage and control voltage local 230 V.
If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence.
After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch if fitted previously. Glow lamp current is not permitted.
You can teach in encrypted sensors.
You can switch on bi-directional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

Scene control: several FSR61s can be switched on or off in a scene by one of the four control signals of a double-rocker pushbutton taught-in as scene pushbutton.
With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central control pushbuttons. In addition wireless window/door contacts with the function N/O contact or N/C contact while the window is open, wireless outdoor brightness sensors FAH and wireless motion/brightness sensors FBH. The required function of the impulse switch with integrated relay function can then be selected:
ER = switching relay
ESV = impulse switch. Possibly with off delay, then:
+ = ESV with pushbutton permanent light
+ = ESV with switch-off early warning
+ = ESV with pushbutton permanent light and switch-off early warning
If the permanent light function is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 2 hours or by pressing the pushbutton.
If the switch-off early warning is switched on, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.
If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.
The function ESV on the bottom rotary switch sets the off delay from 2 to 120 minutes.
In setting normal impulse switch function ES without off delay, without pushbutton permanent light and without switch-off early warning.
In setting ER = switching relay of the other rotary switch, this 2nd rotary switch fulfils a safety and power saving function in the settings except ER. If the switch-off command is not recognised, e.g. since the pushbutton is jammed or it was pressed too quickly, the relay switches off automatically on expiry of a time adjustable between 2 and 120 seconds. When a FTK is taught-in, this time function is turned off.
For twilight switch with taught-in wireless outdoor brightness sensor FAH and motion detection with taught-in wireless motion detector FBH see the operating instructions.
The LED performs during the teach-in process according to the operation instructions. It shows wireless control commands by short flickering during operation.

FSR61NP-230V Wireless actuator Impulse switch with integr. relay function EAN 4010312300190 80,40 €/pc.
FSR61/8-24V UC

1 NO contact potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, off delay with switch-off early warning and switchable pushbutton permanent light. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.3-0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage and control voltage locally 8 to 24 V UC.
If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence.
After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional control switch if fitted previously. Glow lamp current is not permitted.

You can teach in encrypted sensors.
You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are then confirmed by a wireless telegram.
This wireless telegram can be taught-in in other actuators like the FSR61NP-230V, in the GFVS software and in universal displays.

Scene control: several FSR61s can be switched on or off in a scene by one of the four control signals of a double-rocker pushbutton taught-in as scene pushbutton.

With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central control pushbuttons. In addition wireless window/door contacts with the function N/O contact or N/C contact while the window is open, wireless outdoor brightness sensors FAH and wireless motion/brightness sensors FBH. The required function of the impulse switch with integrated relay function can then be selected:

ER = switching relay
ESV = impulse switch. Possibly with off delay, then:
- ESV with pushbutton permanent light
- ESV with switch-off early warning
- ESV with pushbutton permanent light and switch-off early warning

If the permanent light function is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 2 hours or by pressing the pushbutton.

If the switch-off early warning is switched on, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.
If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.
The function ESV on the bottom rotary switch sets the off delay from 2 to 120 minutes. In setting \( \infty \) normal impulse switch function ES without off delay, without pushbutton permanent light and without switch-off early warning.

In setting ER = switching relay of the other rotary switch, this 2nd rotary switch fulfills a safety and power saving function in the settings except \( \infty \). If the switch-off command is not recognised, e.g. since the pushbutton is jammed or it was pressed too quickly, the relay switches off automatically on expiry of a time adjustable between 2 and 120 seconds. When a FTK is taught-in, this time function is turned off. For twilight switch with taught-in wireless outdoor brightness sensor FAH and motion detection with taught-in wireless motion detector FBH see the operating instructions.

The LED performs during the teach-in process according to the operation instructions. It shows wireless control commands by short flickering during operation.
FSR61-230V

1 NO contact potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, off delay with switch-off early warning and switchable pushbutton permanent light. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep. Supply voltage and control voltage locally 230 V. If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains. In addition to the wireless control input via an internal antenna, this universal impulse switching relay can also be controlled locally by a conventional control switch if fitted previously. Glow lamp current is not permitted.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function. Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

Scene control: several FSR61s can be switched on or off in a scene by one of the four control signals of a double-rocker pushbutton taught-in as scene pushbutton.

With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central control pushbuttons. In addition wireless window/door contacts with the function N/O contact or N/C contact while the window is open, wireless outdoor brightness sensors FAH and wireless motion/brightness sensors FBH. The required function of the impulse switch with integrated relay function can then be selected:

ER = switching relay
ESV = impulse switch. Possibly with off delay, then:
+ = ESV with pushbutton permanent light
+ = ESV with switch-off early warning
+ = ESV with pushbutton permanent light and switch-off early warning

If the permanent light function is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 2 hours or by pressing the pushbutton.

If the switch-off early warning is switched on, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals. If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.

The function ESV on the bottom rotary switch sets the off delay from 2 to 120 minutes. In setting normal impulse switch function ES without off delay, without pushbutton permanent light and without switch-off early warning.

In setting ER = switching relay of the other rotary switch, this 2nd rotary switch fulfils a safety and power saving function in the settings except ER. If the switch-off command is not recognised, e.g. since the pushbutton is jammed or it was pressed too quickly, the relay switches off automatically on expiry of a time adjustable between 2 and 120 seconds. When a FTK is taught-in, this time function is turned off.

For twilight switch with taught-in wireless outdoor brightness sensor FAH and motion detection with taught-in wireless motion detector FBH see the operating instructions.

The LED performs during the teach-in process according to the operation instructions. It shows wireless control commands by short flickering during operation.

Recommended retail prices excluding VAT.
Recommended retail prices excluding VAT.

**FSR61G-230V**

Noiseless solid-state relay not potential-free, 400 Watt, off delay with switch-off early warning and switchable pushbutton permanent light. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.

Supply voltage, switching voltage and control voltage local 230 V.

From production week 35/16 with automatic electronic over temperature shutdown.

At a load of < 1W a GLE has to be switched parallely to the load.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control pushbutton mounted upstream.

Glow lamp current is not approved.

You can teach in encrypted sensors.

You can switch on bidirectional wireless and/or a repeater function. Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators like the FSR61NP-230V, in the GFVS software and in universal displays.

**Scene control:** several FSR61s can be switched on or off in a scene by one of the four control signals of a double-rocker pushbutton taught-in as scene pushbutton.

With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned therefrom one ore more central control pushbuttons. In addition wireless window/door contacts with the function N/O contact or N/C contact while the window is open, wireless outdoor brightness sensors FAH and wireless motion/brightness sensors FBH. The required function of the impulse switch with integrated relay function can then be selected:

ER = switching relay

ESV = impulse switch. Possibly with off delay, then:

+ ESV with pushbutton permanent light
+ ESV with switch-off early warning
+ ESV with pushbutton permanent light and switch-off early warning

If the **permanent light function** is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 2 hours or by pressing the pushbutton.

If the **switch-off early warning** is switched on, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.

If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.

The function ESV on the bottom rotary switch sets the off delay from 2 to 120 minutes.

In setting normal impulse switch function ES without off delay, without pushbutton permanent light and without switch-off early warning.

In setting ER = switching relay of the other rotary switch, this 2nd rotary switch fulfills a safety and power saving function in the settings except 2. If the switch-off command is not recognised, e.g. since the pushbutton is jammed or it was pressed too quickly, the relay switches off automatically on expiry of a time adjustable between 2 and 120 seconds. When a FTK is taught-in, this time function is turned off.

For **twilight switch** with taught-in wireless outdoor brightness sensor FAH and **motion detection** with taught-in wireless motion detector FBH see the operating instructions.

The **LED** performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

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**Technical data page T-3.**

**Recommended retail prices excluding VAT.**
FSR61LN-230V

2 NO contacts for bipolar switching of L and N 10 A/250 V AC, incandescent lamps up to 2000 watts, off delay with switch-off early warning and switchable pushbutton permanent light. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage, switching voltage and control voltage local 230 V.
If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence.
After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
In addition to the wireless control input via an internal antenna, this universal impulse switching relay can also be controlled locally by a conventional control switch if fitted previously. Glow lamp current is not permitted.

You can teach in encrypted sensors.
You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators like the FSR61NP-230V, in the GFVS software and in universal displays.

Scene control: several FSR61LNs can be switched on or off in a scene by one of the four control signals of a double-rocker pushbutton taught-in as scene pushbutton.

With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central control pushbuttons. In addition wireless window/door contacts with the function N/O contact or N/C contact while the window is open. The required function of the impulse switch with integrated relay function can then be selected:

ER = switching relay
ESV = impulse switch. Possibly with off delay, then:
+ = ESV with pushbutton permanent light
+ = ESV with switch-off early warning
+ = ESV with pushbutton permanent light and switch-off early warning

If the permanent light function is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 2 hours or by pressing the pushbutton.
If the switch-off early warning is switched on, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.
If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.
The function ESV on the bottom rotary switch sets the off delay from 2 to 120 minutes. In setting normal impulse switch function ES without off delay, without pushbutton permanent light and without switch-off early warning.
In setting ER = switching relay of the other rotary switch, this 2nd rotary switch fulfills a safety and power saving function in the settings except. If the switch-off command is not recognised, e.g. since the pushbutton is jammed or it was pressed too quickly, the relay switches off automatically on expiry of a time adjustable between 2 and 120 seconds. When a FTK is taught-in, this time function is turned off.
For twilight switch with taught-in wireless outdoor brightness sensor FAH and motion detection with taught-in wireless motion detector FBH see the operating instructions.
The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

FSR61LN-230V Wireless actuator Impulse switch with integr. relay function EAN 4010312313190 80,40 €/pc.
FMS61NP-230V

1+1 NO contacts not potential free 10 A/250 V AC, incandescent lamps up to 2000 watts. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage, switching voltage and control voltage local 230 V.
If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence.

This wireless actuator is a multifunction impulse switch and features state-of-the-art hybrid technology that we developed: we combined the wear-free receiver and evaluation electronics and two bistable relays with zero passage switching.

By using a bistable relay coil power loss and heating is avoided even in the on mode. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
In addition to the wireless control input via an internal antenna, this multifunction impulse switch can also be controlled locally by a conventional 230 V control switch previously mounted (in the 2xS function only contact 1).
Maximum current as the sum of both contacts 16 A at 230 V.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are confirmed by a wireless telegram.
This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central control pushbuttons. The required function of this multifunction impulse switch can then be selected. Switching will be visualised by flashing of the LED.

2xS = 2fold impulse switch each with 1 NO contact
2S = impulse switch with 2 NO contacts
WS = impulse switch with 1 NO contact and 1 NC contact
SS1 = impulse multicircuit switch 1 + 1 NO contact with switching sequence 1
SS2 = impulse multicircuit switch 1 + 1 NO contact with switching sequence 2
Switching sequence SS1: 0 - contact 1 - contact 2 - contacts 1+2
Switching sequence SS2: 0 - contact 1 - contacts 1+2 - contact 2

The bottom rotary switch is only required to teach-in the transmitters.
From production week 08/2013 universal pushbuttons and direction pushbuttons can be taught in.

The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

| FMS61NP-230V | Wireless actuator Multifunction impulse switch | EAN 4010312300268 | 82.40 €/pc. |

Recommended retail prices excluding VAT.
**FLC61NP-230V**

1 NO contact not potential free 10 A/250 V AC, incandescent lamps 2000 watts, 5 selectable operating modes. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage, switching voltage and control voltage local 230 V.
If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence.
After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230V control pushbutton mounted upstream. Glow lamp current is not approved.
You can teach in an operating mode pushbutton.
You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are then confirmed by a wireless telegram.
This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.
With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned therefrom one ore more central control pushbuttons. In addition, wireless motion and brightness sensors. Then select the required operating mode:

**ES(V)+TLZ:** In this mode, the normal impulse switch function with buttons is active. Use the lower rotary switch RV to set a time delay between 0 and 60 minutes for the ESV function. Press the universal pushbuttons and direction pushbuttons to switch on and off. The staircase time switch function TLZ results from the Central ON pushbuttons and a time delay set using the rotary switch RV.

**AUTO1:** In AUTO1 mode, (semi automatic motion: only switch off motion controlled), switch on/off takes place by means of universal pushbuttons, direction pushbuttons or central control pushbuttons. Switch-off takes place by means of one or several wireless motion sensors in case of no motion on expiry of the time delay set between 0 and 60 minutes using the lower rotary switch RV.

**AUTO2:** In AUTO2 mode (semi automatic motion and brightness: only switch off, motion and brightness controlled), switch on/off takes place by means of the universal pushbuttons, direction pushbuttons or central control pushbuttons. Switch-off takes place by means of one or several wireless motion/brightness sensors in case of no motion or insufficient brightness on expiry of the time delay set between 0 and 60 minutes using the lower rotary switch RV.

**AUTO3:** In AUTO3 mode, (fully automatic motion: switch on and off, motion and brightness controlled), switch on takes place in case of brightness threshold undershoot by means of one or several wireless motion/brightness sensors and switch-off takes place in case of no motion on expiry of time delay set between 0 and 60 minutes using lower rotary switch RV. In addition, switch on/off takes place by means of universal pushbuttons, direction pushbuttons or central control pushbuttons.

**AUTO4:** In AUTO4 mode (fully automatic motion and brightness: switch on and off, motion and brightness controlled), switch-on takes place in case of brightness threshold undershoot by means of one or several wireless motion/brightness sensors and switch-off takes place in case of no motion or sufficient brightness on expiry of time delay set between 0 and 60 minutes using lower rotary switch RV. In addition, switch on/off takes place by means of universal pushbuttons, direction pushbuttons or central control pushbuttons.

Once you have taught in an operating mode pushbutton, the 4 switches are configured with the following functions: top left AUTO, function according to the rotary switch position. Top right ON with priority. Bottom left and right OFF with priority. When you select AUTO mode, the lamp lights up briefly and then goes out.

One FBH in the room is sufficient to measure brightness when the lighting comprises fluorescent lamps, energy saving lamps or LED lamps. If lighting consists of electric light bulbs or halogen lamps, an outdoor brightness sensor must be taught-in as Master for operating modes AUTO2 and AUTO4. If several sensors are taught-in, switch-off only takes place when all sensors report no motion or sufficient brightness.

The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.
FUD61NP-230V

Without N connection, power MOSFET up to 300 W. Only 0.7 watt standby loss. With adjustable minimum brightness and dimming speed. With switching operation for children's rooms and snooze function. Light scenes can be taught-in. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation, 45 mm long, 45 mm wide, 33 mm deep. Universal dimmer switch for R, L and C loads up to 300 watts, depending on ventilation conditions. Automatic detection of load R+L or R+C.

Without N connection, therefore it is suitable for mounting directly behind the pushbutton light switch, even if there is no N wire.

Not compatible with energy saving lamps and 230 V LED, please use this dimmer with N connection: FUD61NPN.

Supply voltage, switching voltage and control voltage local 230 V. Minimum load only 40 W.

Zero passage switching with soft ON and soft OFF to protect lamps.

The brightness level is stored on switch-off (memory).

In case of a power failure the switch position is stored and may be switched on when the power supply is restored.

Automatic electronic overload protection and overtemperature switch-off.

The minimum brightness (fully dimmed) is adjustable with the % rotary switch.

In the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central pushbuttons.

The dimming speed is adjustable using the dimming speed rotary switch. At the same time, the soft ON and soft OFF periods are changed.

In addition to the wireless control input via an internal antenna, this universal dimmer switch can also be controlled locally by a conventional 230 V control switch if fitted previously.

You can teach in encrypted sensors.

You can switch on bidirectional wireless and/or a repeater function.

Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators like the FSR61NP-230V, in the GFVS software and in universal displays. The current dimming value is also displayed in % in the GFVS software.

The wireless pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons:

When installed as a direction pushbutton, one side is then ‘switch on and dim up’ and the other side is ‘switch off and dim down’. A double-click on the switch-on side activates automatic dim-up to full brightness at dim speed. A double click on the switch-off side activates the snooze function. The children’s room function is implemented on the switch-on side.

As a universal pushbutton, change the direction by briefly releasing the pushbutton. Short control commands switch on/off.

For light scene control, children’s room circuit and sleep timer, refer to the operating instructions. The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.
Wireless actuator universal dimmer switch FUD61NPN-230V

Universal dimmer switch, 300 W power MOSFET. Automatic lamp detection. Only 0.7 watt standby loss. With adjustable minimum brightness or dimming speed. With switching operation for light alarm clocks, children’s rooms and snooze function. Additionally with light scene control. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Universal dimmer switch for lamps up to 300 W, dependent on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V-LED lamps, additionally dependent on the lamps electronics.

Zero passage switching with soft ON and soft OFF to protect lamps.
Supply voltage, switching voltage and control voltage local 230 V. No minimum load.
The brightness level is stored on switch-off (memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.
Automatic electronic overload protection and overtemperature switch-off.

You can teach in encrypted sensors.
You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught into other actuators like the FSR61NP-230V, universal displays and the GFVS software. The current dimming value is also displayed in % in the GFVS software.
The minimum brightness (fully dimmed) or the dimming speed is adjustable with the upper %/dimming speed rotary switch.
The lower rotary switch determines the operation, whether the automatic lamp detection or special comfort positions should act:
AUTO allows the dimming of all light species.
EC1 is a comfort position for energy saving lamps which must be switched on with increased power dependent on the construction, so they will also switch on again safely in cold condition when dimmed down.
EC2 is a comfort position for energy saving lamps which will not be switched on again when dimmed down dependent on the construction. Memory is switched off in this position.
LC1 is a comfort position for LED lamps which are not being dimmed down enough when set to AUTO (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.
LC2 and LC3 are comfort positions for LED lamps like LC1, but with different dimming curves.
In positions EC1, EC2, LC1, LC2 and LC3 no inductive (wound) transformers should be used. In addition, the maximum number of dimmable LED lamps can be lower than in the AUTO position dependent on the construction.
The pushbuttons can be either taught-in as direction pushbuttons or universal pushbuttons: As direction pushbutton ‘switch on and dim up’ is on one side and ‘switch off and dim down’ on the other side. A double-click on the switch on side triggers the automatic dimming up to full brightness with dim speed time. A double-click on the switch off side triggers the snooze function. The children’s room function is triggered on the switch on side. As a universal pushbutton the direction change is made by briefly releasing the pushbutton.
For light scene control, light alarm circuit, children’s room circuit and sleep timer, refer to the operator manual.
The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

FUD61NPN-230V
Wireless actuator
Universal dimmer switch

EAN 4010312300299
99,90 €/pc.

Recommended retail prices excluding VAT.
DC constant current source for LEDs up to 1000 mA or 30 watts. Only 0.3 watt standby loss.

With adjustable minimum brightness and dimming speed. With switching operation for children's rooms and snooze function. Also with light scene control by PC or wireless pushbuttons. Encrypted wireless and repeater function are switchable.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
The nominal output current can be set with a jumper on the circuit board:
o no connection: 350 mA; flush right (Pin 2-3 connected): 700 mA; flush left (Pin 1-2 connected): 1000 mA.
Factory settings 700 mA. The input voltage ranges from 12 V DC to 36 V DC maximum. The input voltage must be selected to the sum of the LED at the output voltage, so that the current control can operate.
This deviation must be at least 6 volts. The total power output current x output voltage should not exceed 30 watts.
A pulse resistant DC power supply unit is required, which provides the necessary voltage and required current of the LED light(s).

Universal control voltage input 8 to 230 V UC, electrically isolated from the 230 V supply voltage and switching voltage.
The brightness level is stored on switch-off (memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.
Automatic electronic overload protection and overtemperature switch-off.

Starting in production week 11/14, you can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function.
The minimum brightness (fully dimmed) is adjustable with the upper % rotary switch.
In the setting LRN up to 35 pushbuttons can be assigned, of which one or more central pushbuttons.
The dimming speed can be adjusted with the lower dimming speed rotary switch.
In addition to the wireless control input via an internal antenna, this universal dimmer switch can also be controlled locally by a conventional 230 V control switch if fitted previously. A short interruption of control changes the direction of dimming. Short control commands switch on/off.
The pushbuttons can be either taught-in as direction pushbuttons or universal pushbuttons: As direction pushbutton 'switch on and dim up' is on one side and 'switch off and dim down' on the other side. A double-click on the switch on side triggers the automatic dimming up to full brightness with dim speed time. A double-click on the switch off side triggers the snooze function. The children's room function is triggered on the switch on side. As a universal pushbutton the direction change is made by briefly releasing the pushbutton. With switching operation for children's rooms and snooze function.
Central pushbutton 'on' switches on with memory value. Central pushbutton 'off' switches off.
Switching operation for children's rooms (universal pushbutton or direction pushbutton on the switch-on side): If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.
The snooze function (universal pushbutton or direction pushbutton on the switch-off side): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down.

Light scenes on the PC are set and retrieved using the Wireless Building Visualisation and Control Software GFVS. A description of the GFVS is in chapter 5. One or several FKLD61 devices must be taught in on the PC as dimming switches with percentage brightness values.

Lights scenes with wireless pushbuttons are taught in on the FKLD61 device. Up to four brightness values which can be taught-in in light scene pushbuttons with double rocker.
A FBH can either be taught-in as a movement detector with/without twilight switch or a FAH as a twilight switch according to the operating instructions.
The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

Recommended retail prices excluding VAT.
FLD61

PWM LED dimmer switch for LEDs 12–36 V DC, up to 4 A. Only 0.2–0.4 watt standby loss. With adjustable minimum brightness and dimming speed. With switching operation for children's rooms and snooze function. Also with light scene control by PC or wireless pushbuttons. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage 12 to 36 V DC, depending on the connected LED lighting.
Output voltage PWM (puls width modulation).
Maximum output voltage 4 A.
A pulse resistant DC power supply unit is required, which provides the necessary voltage and required current of the LED light(s).

Universal control voltage input 8 to 230 V UC, electrically isolated from the 230 V supply voltage and switching voltage.
The brightness level is stored on switch-off (memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.
Automatic electronic overload protection and overtemperature switch-off.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function. The minimum brightness (fully dimmed) is adjustable with the upper % rotary switch. In the setting LRN up to 35 pushbuttons can be assigned, of which one or more central pushbuttons.
The dimming speed can be adjusted with the lower dimming speed rotary switch.
In addition to the wireless control input via an internal antenna, this universal dimmer switch can also be controlled locally by a conventional 230 V control switch if fitted previously. A short interruption of control changes the direction of dimming. Short control commands switch on/off.
The pushbuttons can be either taught-in as direction pushbuttons or universal pushbuttons: As direction pushbutton 'switch on and dim up' is on one side and 'switch off and dim down' on the other side. A double-click on the switch on side triggers the automatic dimming up to full brightness with dim speed time. A double-click on the switch off side triggers the snooze function. The children's room function is triggered on the switch on side. As a universal pushbutton the direction change is made by briefly releasing the pushbutton.

Central pushbutton 'on' switches on with memory value. Central pushbutton 'off' switches off.

Switching operation for children's rooms (universal pushbutton or direction pushbutton on the switch-on side): If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

Snooze function (universal pushbutton or direction pushbutton on the switch-off side): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down.

Light scenes on the PC are set and retrieved using the Wireless Building Visualisation and Control Software GFVS. A description of the GFVS is in chapter 5. One or several FLD61 devices must be taught in on the PC as dimming switches with percentage brightness values.

Lights scenes with wireless pushbuttons are taught in on the FLD61 device. Up to four brightness values which can be taught-in in light scene pushbuttons with double rocker.

A FBH can either be taught-in as a movement detector with/without twilight switch or a FAH as a twilight switch according to the operating instructions.
The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

Recommended retail prices excluding VAT.
FSB61-230V

Without N connection, 1+1 NO contact not potential free 4 A/250 V AC, for roller blinds and shading systems. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage, switching voltage and control voltage local 230 V.
Without N connection, not suitable for all motors.
If a power failure occurs, the device is switched off in a defined sequence.
In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch previously mounted.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central pushbuttons. The required function of this impulse group switch can then be selected:

- **GS1** = Group switch with pushbutton control and off delay in seconds. Both a wireless pushbutton with the function 'Up-Hold-Down-Hold' as well as the local pushbutton can be taught-in or a wireless pushbutton like a roller Venetian blind double pushbutton with pressing above 'Up' and pressing below 'Down'. Tap briefly to interrupt the movement immediately. However, a pulse in the opposite direction stops and then switches over to the opposite direction after a pause of 500 ms.

- **Dynamic central control with and without priority can be implemented.**

- **GS2** = Group switch same as GS1, central switch always without priority.
- **GS3** = Group switch same as GS2, **in addition with double-click reverse function** for the local pushbutton and a wireless pushbutton as universal switch taught-in appropriately: After double-clicking, the Venetian blind moves in the opposite direction until it is stopped by a brief tap.
- **GS4** = Group switch same as GS2, **in addition with tip reverse function**: The control pushbutton is initially in static mode. The relay is energised as long as the pushbutton is tapped so that the Venetian blind can be reversed in the opposite direction by short impulses.
- **GR** = Group relay. As long as the wireless pushbutton is closed, a contact is closed. Then it opens. On reception of the next wireless signal the other contact closes, etc.

- **Shading scene control**: Up to 4 saved 'Down' running times are retrievable using the control signal of a pushbutton and double rocker taught-in as a scene pushbutton.

- **With control via GFVS software**, operating commands for up and down with the exact travel time information can be started. As the actuator reports the exact elapsed time after each activity, even when driving was triggered by a pushbutton, the position of the shading is always displayed correctly in the GFVS software. Upon reaching the end positions above and below the position is automatically synchronized.

- If a **wireless outdoor brightness sensor** is also taught-in addition to a scene pushbutton, the taught-in scenes 1, 2 and 4 are executed automatically depending on the outdoor brightness.

Use the bottom rotary switch to set the time delay to the position 'Halt' in seconds. Select a delay time that is at least as long as the shading element or roller shutter needs to move from its end position to the other position.

When you teach in an FTK wireless window/door contact or a window handle sensor FF7B-rw, a lock out protection is set when doors are opened to prevent Central Down and Scene Down. The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

| FSB61-230V | Wireless actuator without N connection for shading elements and roller shutters | EAN 4010312317235 | 86.80 €/pc. |

Recommended retail prices excluding VAT.
**FSB61NP-230V**

1+1 NO contact not potential free 4 A/250 V AC, for roller blinds and shading systems. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.9 watt standby loss.

For installation, 45 mm long, 45 mm wide, 33 mm deep.

Supply voltage, switching voltage and control voltage local 230 V.

If a power failure occurs, the device is switched off in a defined sequence.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch previously mounted.

From production week 36/19, a direction pushbutton for 'down' can be connected via the diode RTD (any polarity). Another direction pushbutton for 'up' is connected directly to A1. On the first control pulse 'down', EG661Z switches over the control input A1 to 'direction pushbutton'. To switch the control input back to 'universal pushbutton', briefly switch off the power supply and switch back on.

**You can teach in encrypted sensors.** You can switch on bidirectional wireless and/or a repeater function.

Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

**With the top rotary switch** in the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central pushbuttons. The required function of this impulse group switch can then be selected:

**GS1** = Group switch with pushbutton control and off delay in seconds. Both a wireless pushbutton with the function 'Up-Hold-Down-Hold' can be taught-in or a wireless pushbutton like a roller Venetian blind double pushbutton with pressing above 'Up' and pressing below 'Down'. Tap briefly to interrupt the movement immediately.

**Dynamic central control with and without priority can be implemented.**

**GS2** = Group switch same as GS1, central switch always without priority.

**GS3** = Group switch same as GS2, in addition with double-click reverse function** for the local pushbutton and a wireless pushbutton as universal switch taught-in appropriately: After double-clicking, the Venetian blind moves in the opposite direction until it is stopped by a brief tap.

**GS4** = Group switch same as GS2, in addition with tip reverse function: The control pushbutton is initially in static mode. The relay is energised as long as the pushbutton is tapped so that the Venetian blind can be reversed in the opposite direction by short impulses.

**GR** = Group relay. As long as the wireless pushbutton is closed, a contact is closed. Then it reopens. On reception of the next wireless signal the other contact closes, etc.

**Shading scene control:** Up to 4 saved 'Down' running times are retrievable using the control signal of a pushbutton and double rocker taught-in as a scene pushbutton.

**With control via GFVS software,** operating commands for up and down with the exact travel time information can be started. As the actuator reports the exact elapsed time after each activity, even when driving was triggered by a pushbutton, the position of the shading is always displayed correctly in the GFVS software. Upon reaching the end positions above and below the position is automatically synchronized.

If a** wireless outdoor brightness sensor** is also taught-in in addition to a scene pushbutton, the taught-in scenes 1, 2 and 4 are executed automatically depending on the outdoor brightness.

**Use the bottom rotary switch** to set the time delay to the position 'Halt' in seconds. Select a delay time that is at least as long as the shading element or roller shutter needs to move from its end position to the other position.

**When you teach in an FTK wireless window/door contact or a window handle sensor FF77B-rw,** a lock out protection is set when doors are opened to prevent Central Down and Scene Down.

The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

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**Recommended retail prices excluding VAT.**

| FSB61NP-230V | Wireless actuator for shading elements and roller shutters | EAN 4010312300213 | 86,80 €/pc. |
FTN61NP-230V

1 NO contact not potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, off delay with switch-off early warning and switchable pushbutton permanent light. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage, switching voltage and control voltage local 230 V.
Zero passage switching to protect contacts and consumers.
This wireless actuator is a staircase off-delay timer and features state-of-the-art hybrid technology that we developed: we combined the wear-free receiver and evaluation electronics and a bistable relay with zero passage switching.
By using a bistable relay coil power loss and heating is avoided even in the on mode. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
In addition to the wireless control input via an internal antenna, this staircase off-delay timer can also be controlled locally by a conventional 230 V control switch previously mounted.
Glow lamp current up to 5 mA, dependent on the ignition voltage of the glow lamps.
The lighting is switched on again after a power failure provided the set time has not yet elapsed.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

With the top rotary switch in the setting LRN up to 35 wireless pushbuttons and/or wireless motion/brightness sensors FBH can be assigned, of which one ore more central pushbuttons. The required function of this staircase off-delay timer can then be selected.
The flashing of the LED as soon as a new setting range has been reached when turning the rotary switch helps to find the desired position reliably.

If the permanent light function is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 60 minutes or by pressing the pushbutton for longer than 2 seconds.
If the switch-off early warning is switched on, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.
If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.
With the bottom rotary switch, the off delay is adjusted from 1 to 20 minutes.
When motion/brightness sensors FBH are taught-in, use the last FBH that was taught-in to define the switching threshold at which the lighting is switched on or off depending on the brightness or motion detected. The off delay set on the FTN61NP is prolonged by a setting of 1 minute fixed in the FBH.
The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

Recommended retail prices excluding VAT.
**FMZ61-230V**

1 NO contact potential free 10 A/250 V AC, incandescent lamps up to 2000 watts.* Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.

Supply voltage and if necessary control voltage locally 230 V.

If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence.

This wireless actuator features state-of-the-art hybrid technology that we developed: we combined the wear-free receiver and evaluation electronics with a bistable relay.

By using a bistable relay coil power loss and heating is avoided even in the on mode.

After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.

In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional control switch if fitted previously.

Glow lamp current is not permitted.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function.

Every change in state and incoming central command telegrams are confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

With the top rotary switch in the setting LRN up to 35 wireless pushbuttons can be assigned, of which one or more central control pushbuttons. In addition, wireless window/door contacts (FTK) may have a NO or NC function when the window is open. If a direction pushbutton is taught-in, a function (e.g. TI) can be started using the top key (START) and stopped with the bottom key (STOP). The required function can then be selected. Switching will be visualised by flashing of the LED.

* RV = off delay
  * AV = operating delay
  * TI = clock generator starting with impulse
  * IA = impulse-controlled operating delay
  * EW = fleeting NO contact

The bottom rotary switch sets the time from 0.5 seconds to 60 minutes.

The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

* The maximum load can be used from a delay time or clock cycle of 5 minutes. The maximum load is reduced for shorter times as follows: up to 2 minutes 30%, up to 5 minutes 60%.

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**Function rotary switches**

**Typical connection**

Recommended retail prices excluding VAT.
Recommended retail prices excluding VAT.

WIRELESS ACTUATOR HEATING/COOLING RELAY FHK61-230V

FHK61-230V

1 NO contact potential free 10 A/250 V AC. Only 0.8 watt standby loss. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation, 45 mm long, 45 mm wide, 33 mm deep. Supply voltage 230 V.
If a power failure occurs, the switching state is retained.
If a power failure occurs repeatedly, the device is switched off in a defined sequence. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.

This heating/cooling relay evaluates the information from wireless temperature controllers or sensors. Possibly supplemented by window/door contacts, motion detector, window handle sensor FFG7B-rw and wireless pushbuttons.
Valves will be controlled with the potential-free contact.
You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function. Each function change by a wireless temperature controller (normal mode, setback, off) is confirmed by a wireless telegram. This wireless telegram can be taught-in into the GFVS software.

Upper rotary switch for operating modes:
- **H1:** Heating operation with PWM control at T = 4 minutes (PWM = pulse width modulation).
  (suitable for valves with thermoelectric valve drive)
- **H2:** Heating operation with PWM control at T = 15 minutes.
  (suitable for valves with motor-driven valve drive)
- **H3:** Operating mode with 2-point control.
- **K1:** Cooling operation with PWM control at T = 15 minutes.
- **K2:** Cooling mode with 2-point control.

Switchover is visualised by LEDs flashing.

Lower rotary switch for adjustable hysteresis and PWM influence:
- **Left stop:** lowest hysteresis 0.5°.
- **Middle position:** hysteresis 2.5°.
- **Right stop:** largest hysteresis 4.5°.

Inbetween, divisions in steps of 0.5° visualised by LEDs flashing.

Two-point control mode: The hysteresis rotary switch sets the required difference between the switch-on and switch-off temperatures.
When the ‘actual temperature >= reference temperature’, the device is switched off.
When the ‘actual temperature <= (reference temperature – hysteresis)’, the device is switched on.
The signs are the opposite in cooling mode.

PWM control mode: The hysteresis rotary switch sets the required temperature difference at which the device is switched on at 100%. When the ‘actual temperature <= reference temperature’, the device is switched on. When the ‘actual temperature >= (reference temperature – hysteresis)’, the device is switched off. If the ‘actual temperature’ lies between the ‘reference temperature – hysteresis’ and ‘reference temperature’, the device is switched on and off with a PWM in steps of 10% depending on the temperature difference. The lower the temperature difference, the shorter the switch-on time. As a result of the settability of the 100% value, the PWM can be adapted to the heater size and inertia. The signs are the opposite in cooling mode.

In heating mode, the frost protection function is always enabled. As soon as the actual temperature drops below 8°C, the temperature is controlled in the selected operating mode to 8°C.
If one or several windows are open, the output remains off provided the window/door contacts FTK or window handle sensors FFG7B-rw are taught-in. In heating mode, however, the frost protection remains enabled.

As long as all taught-in motion detectors FBH detect no motion, the device is switched to setback mode. In heating mode, the reference temperature is set back by 2°; in cooling mode, it is raised by 2°. As soon as a motion detector signals movement again, the device is switched to normal mode.
When a wireless pushbutton FT4 is taught-in, the assignment of the 4 keys is assigned with the following fixed functions:
- **Top right:** Normal mode (can also be enabled by timer).
- **Bottom right:** Night setback mode by 4°; in cooling mode, raised by 4° (can also be enabled by timer).
- **Top left:** Setback mode by 2°, in cooling mode, raised by 2°.
- **Bottom left:** Off (in heating mode: frost protection enabled; in cooling mode permanent off).

If the motion detector and wireless pushbutton are taught-in at the same time, the last telegram received is always the one that is valid. A motion detector therefore switches off a setback mode selected by wireless pushbutton when a movement is detected.
The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

Recommended retail prices excluding VAT.

| FHK61-230V | Wireless actuator Heating/cooling relay | EAN 4010312302309 | 82,10 €/pc. |
Recommended retail prices excluding VAT.

**FHK61U-230V**

1 NO contact potential free 10 A/250 V AC. Only 0.8 watt standby loss. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation. 45 mm long, 45 mm wide, 33 mm deep.

Supply voltage 230 V.

If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence.

By using a bistable relay coil power loss and heating is avoided even in the on mode. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.

This heating/cooling relay evaluates the information from wireless temperature controllers or sensors. Possibly supplemented by window/door contacts, motion detector, window handle sensor FFG7B-rw and wireless pushbuttons.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function. Every change in state of the contact is confirmed by a wireless telegram. This wireless telegram can be taught-in into other actuators and the GFVS software. Especially into a FSR61 to synchronously switch a heat circulating pump with the valves.

**Upper rotary switch for operating modes:**

- **H1:** Heating operation with PWM control at $T = 4$ minutes (PWM = pulse width modulation). (suitable for valves with thermoelectric valve drive)
- **H2:** Heating operation with PWM control at $T = 15$ minutes. (suitable for valves with motor-driven valve drive)
- **H3:** Operating mode with 2-point control.
- **K1:** Cooling operation with PWM control at $T = 15$ minutes.
- **K2:** Cooling mode with 2-point control.

Switchover is visualised by LEDs flashing.

**Lower rotary switch for adjustable hysteresis and PWM influence:**

- **Left stop:** lowest hysteresis 0.5°.
- **Middle position:** hysteresis 2.5°.
- **Right stop:** largest hysteresis 4.5°.

Inbetween, divisions in steps of 0.5° visualised by LEDs flashing.

**Two-point control mode:** The hysteresis rotary switch sets the required difference between the switch-on and switch-off temperatures.

When the ‘actual temperature $\geq$ reference temperature’, the device is switched off.

When the ‘actual temperature $\leq$ (reference temperature – hysteresis)’, the device is switched on.

The signs are the opposite in cooling mode.

**PWM control mode:** The hysteresis rotary switch set the required temperature difference at which the device is switched on at 100%. When the ‘actual temperature $\geq$ reference temperature’, the device is switched off. When the ‘actual temperature $\leq$ (reference temperature – hysteresis), the device is switched on at 100%.

If the ‘actual temperature’ lies between the ‘reference temperature – hysteresis’ and the ‘reference temperature’, the device is switched on and off with a PWM in steps of 10% depending on the temperature difference. The lower the temperature difference, the shorter the switch-on time. As a result of the settablity of the 100% value, the PWM can be adapted to the heater size and inertia. The signs are the opposite in cooling mode.

In heating mode, the frost protection function is always enabled. As soon as the actual temperature drops below 8°C, the temperature is controlled in the selected operating mode to 8°C.

If one or several windows are open, the output remains off provided the window/door contacts FTK or window handle sensors FFG7B-rw are taught-in. In heating mode, however, the frost protection remains enabled.

As long as all taught-in motion detectors FBH detect no motion, the device is switched to setback mode.

In heating mode, the reference temperature is set back by 2°; in cooling mode, it is raised by 2°. As soon as a motion detector signals movement again, the device is switched to normal mode.

When a wireless pushbutton FT4 is taught-in, the assignment of the 4 keys is assigned with the following fixed functions:

- **Top right:** Normal mode (can also be enabled by timer).
- **Bottom right:** Night setback mode by 4°; in cooling mode, raised by 4° (can also be enabled by timer).
- **Top left:** Setback mode by 2°; in cooling mode, raised by 2°.
- **Bottom left:** Off (in heating mode, frost protection enabled; in cooling mode permanent off).

If the motion detector and wireless pushbutton are taught-in at the same time, the last telegram received is always the one that is valid. A motion detector therefore switches off a setback mode selected by wireless pushbutton when a movement is detected.

The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

**Recommended retail prices excluding VAT:**

FHK61U-230V | Wireless actuator Heating/cooling relay | EAN 4010312315118 | 81,80 €/pc.
**FH61SSR-230V**

Noiseless single room control, 400 W. Solid state relay not potential free. Only 0.8 watt standby loss. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation, 45 mm long, 45 mm wide, 33 mm deep.

Supply voltage, switching voltage and control voltage local 230 V.

With a load < 1 W a GLE must be switched parallel to the load.

This heating/cooling relay evaluates the information from wireless temperature controllers or sensors. As required, supplemented by window/door contacts, motion detectors, window handle sensor FFG7B-rw and wireless pushbuttons.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function. Each function change (normal mode, decrease mode, off) is confirmed by a wireless telegram. This wireless telegram can be taught-in in the GFVS software.

**Upper rotary switch for operating modes:**

- **H1:** Heating operation with PWM control at T = 4 minutes. (suitable for valves with thermoelectric valve drive)
- **H2:** Heating operation with PWM control at T = 15 minutes. (suitable for valves with motor-driven valve drive)
- **H3:** Heating operation with 2-point control.
- **K1:** Cooling operation with PWM control at T = 15 minutes.
- **K2:** Cooling mode with 2-point control.

Switchover is visualised by LEDs flashing.

**Lower rotary switch for adjustable hysteresis and PWM influence:**

- **Left stop:** lowest hysteresis 0.5°. **Middle position:** hysteresis 2.5°. **Right stop:** largest hysteresis 4.5°.

In-between, divisions in steps of 0.5° visualised by LEDs flashing.

**Two-point control mode:** The hysteresis rotary switch sets the required difference between the switch-on and switch-off temperatures. When the 'actual temperature <= reference temperature', the device is switched off. When the 'actual temperature > reference temperature', the device is switched on. The signs are the opposite in cooling mode.

**PWM control mode:** The hysteresis rotary switch sets the required temperature difference at which the device is switched on at 100%. When the 'actual temperature <= reference temperature', the device is switched off.

When the 'actual temperature > reference temperature', the device is switched on at 100%. If the 'actual temperature lies between the reference temperature - hysteresis' and the reference temperature', the device is switched on and off with a PWM in steps of 10% depending on the temperature difference.

The lower the temperature difference, the shorter the switch-on time. As a result of the settable of the 100% value, the PWM can be adapted to the heater size and inertia. The signs are the opposite in cooling mode.

In heating mode, the frost protection function is always enabled. As soon as the actual temperature drops below 8°C, the temperature is controlled in the selected operating mode to 8°C.

If one or several windows are open, the output remains off provided the window/door contacts FTK or window handle sensors FFG7B-rw are taught-in. In heating mode, however, the frost protection remains enabled.

As long as all taught-in motion detectors FBH detect no motion, the device is switched to setback mode. In heating mode, the reference temperature is set back by 2°; in cooling mode, it is raised by 2°. As soon as a motion detector signals movement again, the device is switched to normal mode.

When a wireless pushbutton is taught-in, the assignment of the 4 keys is assigned with the following fixed functions: Top right: Normal mode (can also be enabled by timer). Bottom right: Night setback mode by 4°; in cooling mode, raised by 4° (can also be enabled by timer). Top left: Setback mode by 2° in cooling mode, raised by 2°. Bottom left: Off (in heating mode, frost protection enabled; in cooling mode permanent off). If the motion detector and wireless pushbutton are taught-in at the same time, the last telegram received is always the one that is valid. A motion detector therefore switches off a setback mode selected by wireless pushbutton when a movement is detected.

When bidirectional wireless is switched on, the FHK61 sends a confirmation telegram containing its own ID and current operating mode to the Eltako wireless network.

**PWM setpoint function:** When a PWM data telegram is taught-in, the control function selected at the rotary switch is switched off. Only PWM commands are executed. When bidirectional wireless is switched on, the FHK61 sends a received PWM data telegram as confirmation telegram containing its own ID to the Eltako wireless network.

The 230 V control input acts as a dew signalling input. When a voltage of 230 V is applied, the solid state relay is switched off. Every change in state of the control input is immediately sent as a button telegram cyclically every 15 minutes.

The LED performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

**Recommended retail prices excluding VAT.**

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**Technical data page T-3.**

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**Recommended retail prices excluding VAT.**
**FFR61-230V**

1+1 NO contacts not potential free 10 A/250 V AC, incandescent lamps up to 2000 watts. Only 0.8 watt standby loss. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation, 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage and switching voltage 230 V.
If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence.

This wireless actuator features state-of-the-art hybrid technology that we developed: we combined the wear-free receiver and evaluation electronics and two bistable relays with zero passage switching.

By using a bistable relay coil power loss and heating is avoided even in the on mode.
After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.

The mains disconnection relay FFR61-230V interrupts the power supply of 1 or 2 circuits and this prevents interfering electromagnetic fields.

Maximum current as the sum of both contacts 16 A at 230 V.

You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function.
Every status change and incoming central control telegrams are confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

This mains disconnection relay is fitted in the circuit distributor which branch off to max two 16 A protected circuits in the room to be protected by mains disconnection. For example, one circuit for the lighting and one circuit for the socket outlets.
The circuits are enabled and disabled manually using one or several stationary wireless pushbuttons or hand-held wireless transmitters.

**Use the upper rotary switch** to switch on the device at ON and switch it off at OFF. In normal mode, turn the rotary switch to AUTO1.

**Use the lower rotary switch** to set a release delay of 10 to 90 minutes to activate the universal and direction pushbutton for Contact 2. Position ∞ has no release delay.
If a wireless pushbutton rocker is assigned to ‘central ON’ for the mains disconnection relay and to ‘ON’ for the lighting, the mains disconnection relay is automatically cancelled when the lighting is switched on.
If a wireless pushbutton rocker, e.g. a bedside light, is assigned with ‘OFF’ for the lamp and ‘central OFF’ for the mains disconnection relay, the mains disconnection is automatically activated when the bedside lamp is switched off.

7 teach-in positions of the FFR61 plus the switch-off delay gives the user plenty of scope to define the settings for the mains disconnection relay.

**The LED** performs during the teach-in process according to the operating instructions. It shows wireless control commands by short flickering during operation.

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Recommended retail prices excluding VAT.
FZK61NP-230V

Wireless actuator for wireless card switch, wireless smoke detector, wireless window/door contact as well as wireless motion/brightness sensor, 1+1 NO contacts not potential free 10 A/250 V AC, incandescent lamps 2000 watts. Only 0.8 watt standby loss. Off-delay and response lag are adjustable for one contact. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage and switching voltage 230 V.
This wireless actuator features state-of-the-art hybrid technology that we developed: we combined the wear-free receiver and evaluation electronics and two bistable relays with zero passage switching. By using a bistable relay coil power loss and heating is avoided even in the on mode.
After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
Maximum current as the sum of both contacts 16 A at 230 V.
Encrypted sensors can be taught in. You can switch on bidirectional wireless and/or a repeater function. Every status change and incoming central control telegrams are confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators and in the GFVS software.

For the production week 32/19 wireless window-door contacts and motion brightness sensors can be taught-in and evaluated independently from the wireless card switch FKF. In this case, the contact L-2 only turns on/off depending of the wireless window door contacts or motion-brightness sensors, an eventual taught-in wireless card switch FKF then switches only the contact L-1.
The upper rotary switch AV is required for teach-in. Then set here the response lag time AV between 0 and 180 seconds for Contact L-2.
Use the bottom rotary switch RV to set the time delay time RV between 0 and 180 seconds for Contact L-2. The AV and RV times permit the simple control of air conditioning systems with the wireless card switch FKF.
The response lag AV starts as soon as the hotel card/key card is inserted in the wireless card switch FKF and the time delay RV starts after the card is removed.
In addition to the wireless card switch FKF, wireless window/door contacts FTK, window handle sensors FFG7B-rw and wireless motion/brightness sensors FBH can also be taught in.
Opening a monitored window also starts the RV time. When the RV time expires, Contact L-2 opens. Closing all monitored windows starts the AV time. When the AV time expires, Contact L-2 closes. Contact L-1 is provided for light switching and always switches immediately without AV/RV.
To increase the switching capacity for one channel, outputs 1 and 2 can be bridged, provided no air conditioning control is required. Then AV and RV must be set to 0.
If wireless motion detectors are taught-in, both channels switch on immediately in motion, unless the hotel card is inserted. If no movement has been detected for 15 minutes, both channels are switched off, even if the hotel card is inserted.
Several wireless smoke alarms FRW-ws are logically linked with this wireless actuator time relay so that the RV time only starts after all FRW-ws devices have signalled alarm end.
Card switches and smoke alarms can not be operated together with an FZK device.
The LED performs during the teach-in process according to the operation manual. It shows wireless control commands by short flickering during operation.

| FZK61NP-230V | Wireless actuator time relay | EAN 4010312304273 | 81,10 €/pc. |

Recommended retail prices excluding VAT.
**FSM61-UC**

**Wireless 2-fold transmitter module. With internal antenna. No standby loss.**

For installation, 45 mm long, 45 mm wide, 18 mm deep.

The wireless transmitter module FSM61-UC has two channels and can transmit wireless pushbutton telegrams to the Eltako building wireless system. A1 initiates a wireless telegram, such as 'Press top rocker' for a wireless pushbutton with one rocker and A3 such as 'Press bottom rocker'. The telegram on opening the two control contacts is identical to 'Release wireless pushbutton'.

Several wireless transmitter modules must not be switched at the same time.

The universal control voltage at +An/-A2 processes control commands of 8 to 253 V AC or 10 to 230 V DC with periods lasting min. 0.2 seconds. Max. parallel capacitance (approx. length) of control lead at 230 V 5 nF. This correspond to a length of approx. 20 meters.

If the terminals A1 and A3 are connected with a bridge, the wireless telegram is transmitted once per minute by A3, provided the control voltage is applied, e.g. for central commands with priority.

**No permanent power supply required, therefore no standby losses.**

The rotary switch is required for the activation or deactivation of encryption and is set to AUTO in operation.

**Activate encryption:**

Turn the rotary switch to the right stop (position key) and press once.

**Deactivate encryption:**

Turn the rotary switch to the left stop (position crossed out key) and press once.

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Recommended retail prices excluding VAT.

| FSM61-UC | Wireless transmitter module | EAN 4010312300152 | 57.70 €/pc. |
**FWS61-24V DC**

Wireless weather data transmitter module for the seven weather items sent by the multisensor MS. With internal antenna. Only 0.3 watt standby loss.

For installation, 45 mm long, 45 mm wide, 18 mm deep.

Power (24 V DC) is supplied by the switch mode power supply unit SNT61-230V/24V DC-0,25A (33 mm deep, 45 mm long, 55 mm wide). This switching power supply unit simultaneously supplies the multisensor MS including the heating of the rain sensor. It is possible to use a deep UP box for the two devices.

This weather data transmitter module receives the seven momentary readings of the weather items: brightness (from three cardinal points), twilight, wind, rain and ambient temperature by cable J-Y (ST) Y 2 x 2 x 0.8 from the multisensor MS attached to the outside of the building. The readings are sent in the form of wireless telegrams over the Eltako wireless network with the priorities listed below. Evaluation is carried out by the Wireless Building Visualisation and Control Software GFVS, the wireless multifunction sensor relay FMSR14, the actuators FSB14 and FSB71.

When the supply voltage is applied, a teach-in telegram is sent immediately and two status telegrams containing the momentary values are sent approx. 60 seconds later. At least every 10 minutes, but also:

- **Brightness values** West, South and East each from 0 to 99 kLux if a change of minimum 10% occurs.
- **Twilight values** from 0 to 999 Lux if a change of minimum 10% occurs.
- **Wind speeds** from 0 to 70 m/s. From 4 m/s to 16 m/s, the momentary values are sent immediately 3 times at intervals of 1 second. After that, further value increases are sent within 20 seconds. Dropping wind speeds are sent progressively delayed by 20 seconds.
- **Rain values** at the start are sent immediately 3 times. After the rain stops, a telegram is sent within 20 seconds.
- **Temperature values** from -40.0°C to +80.0°C are sent every 10 minutes together with all the other values in a status telegram.

**Monitoring multisensor function and line break.** If the weather data message from multisensor MS is not sent for 5 seconds, the FWS61 immediately sends an alarm telegram which is repeated every 30 seconds. The alarm telegram can be taught-in as a switch telegram in an actuator to initiate further action as required. In addition, the two status telegrams containing the values brightness 0 Lux, twilight 0 Lux, temperature -40°C (frost), wind 70 m/s and rain are sent. When a message is again detected from the multisensor MS, the alarm stops automatically.

**MS**

**Multi sensor MS**

The MS multi sensor sends the current weather details, including brightness (from three points of the compass), wind, rain and frost, to the weather data transmitter module FWS61 connected in series once per second. A standard telephone wire is sufficient as connecting lead: J-Y (ST) Y 2 x 2 x 0.8 or equivalent. 100m line length is permitted. Solid plastic housing, L x W x H = 118 x 96 x 77 mm. Degree of protection IP44. Temperature at mounting location -30°C to +50°C. A power supply unit SNT61-230V/24V DC-0,25A is required for the power supply, including heating of the rain sensor. This simultaneously supplies the wireless weather data transmitter module FWS61-24V DC.

**SNT61-230V/24V DC-0,25A**

*Rated capacity 6W. Standby loss 0.1 watt only.*

Built-in device for installation. 45 mm long, 45 mm wide, 33 mm deep. Input voltage 230 V (~20% up to +10%). Efficiency 82%. Stabilised output voltage ±1%, low residual ripple. Short-circuit proof. Overload protection and over-temperature switch-off by means of swiching off with automatic switching-on after fault clearance (autorecovery function).
**FSR71NP-230V**

Impulse switch with integrated relay function. 1 NO contact not potential free 16 A/250 V AC, incandescent lamps 2000 watts. With light scene control by PC or wireless pushbuttons. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings and lamps. 166 mm long, 46 mm wide and 31 mm high. With cable fixation.

If supply voltage fails, the switching state is retained. When supply voltage is restored, the device is switched off in defined mode.

**Scene control:**
Several FSR71NP devices can be switched on or off in a scene by one of the four signals of a pushbutton with double rocker taught-in as a scene pushbutton.

**Central commands on PC** are sent using the Wireless Building Visualisation and Control Software GFVS. To do this, teach-in one or several FSR71NP devices.

**Use the rotary switches** to teach-in the pushbuttons and test the device as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EW time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.

**If wireless motion/brightness sensors FBH (Master) and/or FBH (slave) are taught-in,** the switching threshold will be set with the upper rotary switch, at which the lighting will be switched on or off. Settings of the upper rotary switch in accordance with operating manual.

**When wireless brightness sensors** are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off.

An additionally set RV time is not taken into account. Only one FBH (Master) or FAH is taught-in per channel. However, one FBH or FAH can be taught-in in several channels.

**When wireless window/door contacts FTK or window handle sensors FFG7B-rw** are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 116 FTKs:

- **AUTO 1** = window closed then output active.
- **AUTO 2** = window open then output active.

In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).

One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK. After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later.

- **An additionally set RV time is not taken into account.**
- **When water probes** are taught-in, a variety of functions can be set using the middle rotary switch in positions AUTO 1 to AUTO 4.

- **AUTO 1** = ‘no water’, then NO contact closed.
- **AUTO 2** = ‘water’, then NO contact closed.

In Positions AUTO 3 and AUTO 4 the water probes taught-in to a single channel are interlinked automatically. With AUTO 3, all water probes must signal ‘no water’ before the NO contact closes. The NO contact opens when a water probe signals ‘water’. With AUTO 4, the NO contact closes when a water probe signals ‘water’. Only when all water probes signal ‘no water’ does the NO contact open. An additionally set RV time is ignored.

**The LED** below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

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**Recommended retail prices excluding VAT.**
**FSR71NP-2x-230V**

2-channel impulse switch with integrated relay function, 1 NO contact each not potential free 16 A/250 V AC, incandescent lamps 2000 watts. With light scene control by PC or wireless pushbuttons. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings and lamps. 166 mm long, 46 mm wide and 31 mm high. With cable fixation. Maximum current as the sum of both contacts 16 A.

If supply voltage fails, the switching state is retained. When supply voltage is restored, the device is switched off in defined mode.

**The channels can be taught-in as ES and/or ER channel separately from each other.**

**Scene control:**

Several channels of one or several FSR71NP-2x devices can be switched on or off in a scene by one of the four signals of a pushbutton with double rocker taught-in as a scene button.

**Central commands on PC** are sent using the Wireless Building Visualisation and Control Software GFVS.

To do this, teach-in one or several FSR71NP-2x devices.

**Use the rotary switches** to teach-in the pushbuttons and test the 2 channels as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EW time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.

If **wireless motion/brightness sensors FBH (Master) and/or FBH (slave)** are taught-in, the switching threshold will be set with the upper rotary switch, separated for each channel, at which the lighting will be switched on or off. Settings of the upper rotary switch in accordance with operating instructions.

When **wireless brightness sensors** are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off. An additionally set RV time is not taken into account.

Only one FBH or FAH is taught-in per channel. However, one FBH or FAH can be taught-in in several channels.

When **wireless window/door contacts FTK or window handle sensors FFG7B-rw** are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 116 FTKs:

- **AUTO 1** = window closed then output active.
- **AUTO 2** = window open then output active.

In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).

One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK. After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later.

An additionally set RV time is not taken into account.

When **water probes** are taught-in, a variety of functions can be set using the middle rotary switch in positions AUTO 1 to AUTO 4.

- **AUTO 1** = ‘no water’, then NO contact closed.
- **AUTO 2** = ‘water’, then NO contact closed.

In Positions AUTO 3 and AUTO 4 the water probes taught-in to a single channel are interlinked automatically. With AUTO 3, all water probes must signal ‘no water’ before the NO contact closes. The NO contact opens when a water probe signals ‘water’. With AUTO 4, the NO contact closes when a water probe signals ‘water’. Only when all water probes signal ‘no water’ does the NO contact open. An additionally set RV time is ignored.

The **LED** below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

**Technical data page T-3.**

Recommended retail prices excluding VAT.

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<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
<td>FSR71NP-2x-230V</td>
<td>2 channel wireless actuator impulse switch with integr. relay function</td>
<td>4010312316245</td>
<td>113.40 €/pc.</td>
</tr>
</tbody>
</table>
2-channel impulse switch with integrated relay function, 1 NO contact each potential free 16 A/250 V AC, incandescent lamps 2000 watts. With light scene control by PC or wireless pushbuttons. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings and lamps.
166 mm long, 46 mm wide and 31 mm high. With cable fixation.
If supply voltage fails, the switching state is retained. When supply voltage is restored, the device is switched off in defined mode.
The channels can be taught-in as ES and/or ER channel separately from each other.
Scene control:
Several channels of one or several FSR71-2x devices can be switched on or off in a scene by one of the four signals of a pushbutton with double rocker taught-in as a scene button.
Central commands on PC are sent using the Wireless Building Visualisation and Control Software GFVS.
To do this, teach-in one or several FSR71-2x devices.
Use the rotary switches to teach-in the pushbuttons and test the 2 channels as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EW time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.
If wireless motion/brightness sensors FBH (Master) and/or FBH (slave) are taught-in, the switching threshold will be set with the upper rotary switch, separated for each channel, at which the lighting will be switched on or off. Settings of the upper rotary switch in accordance with operating instructions.
When wireless brightness sensors are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off.
An additionally set RV time is not taken into account.
Only one FBH or FAH is taught-in per channel. However, one FBH or FAH can be taught-in in several channels.
When wireless window/door contacts FTK or window handle sensors FFG7B-rw are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 116 FTKs:
AUTO 1 = window closed then output active.
AUTO 2 = window open then output active.
In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).
One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK. After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later.
An additionally set RV time is not taken into account.
When water probes are taught-in, a variety of functions can be set using the middle rotary switch in positions AUTO 1 to AUTO 4.
AUTO 1 = 'no water', then NO contact closed.
AUTO 2 = 'water', then NO contact closed.
In Positions AUTO 3 and AUTO 4 the water probes taught-in to a single channel are interlinked automatically. With AUTO 3, all water probes must signal 'no water' before the NO contact closes. The NO contact opens when a water probe signals 'water'. With AUTO 4, the NO contact closes when a water probe signals 'water'. Only when all water probes signal 'no water' does the NO contact open. An additionally set RV time is ignored.
The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.
**FSR71NP-4x-230V**

4-channel impulse switch with integrated relay function, 1 NO contact each not potential free 4 A/250 V AC. With light scene control by PC or wireless pushbuttons. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings and lamps. 166 mm long, 46 mm wide and 31 mm high. With cable fixation. If supply voltage fails, the switching state is retained.

**The channels can be taught-in as ES and/or ER channel separately from each other.**

**Scene control:**
Several channels of one or several FSR71NP-4x devices can be switched on or off in a scene by one of the four signals of a pushbutton with double rocker taught-in as a scene button.

**Central commands on PC** are sent using the Wireless Building Visualisation and Control Software GFVS. To do this, teach-in one or several FSR71NP-4x devices.

**Use the rotary switches** to teach-in the pushbuttons and test the 4 channels as required. For normal mode, the middle and lower rotary switches are then set to AUTO. With the upper rotary switch the EW time (0-120 seconds) is directly set for relays or the RV time (0-120 minutes) for impulse switches for all channels if necessary.

If **wireless motion/brightness sensors FBH (Master) and/or FBH (slave)** are taught-in, the switching threshold will be set with the upper rotary switch, separated for each channel, at which the lighting will be switched on or off. Settings of the upper rotary switch in accordance with operating instructions.

When **wireless brightness sensors** are taught-in, define the switching threshold separately for each channel using the top rotary switch. The switching threshold switches the lighting on or off depending on the brightness (from approx. 0 lux in position 0 to approx. 50 lux in position 120). A hysteresis of approx. 300 lux is permanently set for switch on/off.

An additionally set RV time is not taken into account.

Only one FBH or FAH is taught-in per channel. However, one FBH or FAH can be taught-in in several channels.

**When wireless window/door contacts FTK or window handle sensors FFG7B-rw** are taught-in, different functions can be set with the middle rotary switch in position AUTO 1 to AUTO 4 and linked to maximum 116 FTKs:

- **AUTO 1** = window closed then output active.
- **AUTO 2** = window open then output active.

In settings AUTO 3 and AUTO 4 the FTKs taught-in to a single channel are linked automatically. With AUTO 3 all FTKs must be closed so that the N/O contact closes (e.g. for climate control). With AUTO 4 one open FTK is sufficient to close the N/O contact (e.g. for an alarm signal or to switch on the power supply for an extractor hood).

One or several FTKs can be taught-in in several channels to allow several simultaneous functions in each FTK. After a power failure the link is restored by a new signal to the FTK and a signal on the next status message 15 minutes later.

An additionally set RV time is not taken into account.

When **water probes** are taught-in, a variety of functions can be set using the rotary switch in positions AUTO 1 to AUTO 4.

- **AUTO 1** = ‘no water’, then NO contact closed.
- **AUTO 2** = ‘water’, then NO contact closed.

In Positions AUTO 3 and AUTO 4 the water probes taught-in to a single channel are interlinked automatically. With AUTO 3, all water probes must signal ‘no water’ before the NO contact closes. The NO contact opens when a water probe signals ‘water’. With AUTO 4, the NO contact closes when a water probe signals ‘water’. Only when all water probes signal ‘no water’ does the NO contact open. An additionally set RV time is ignored.

The **LED below the upper function rotary switch** performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

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**Recommended retail prices excluding VAT.**

| FSR71NP-4x-230V | 4 channel wireless actuator | Impulse switch with integr. relay function | EAN 4010312316269 | 112,00 €/pc. |

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Further settings can be made and actuators configured using the PC Tool PCT4 and the data transformer DAT71.
FSB71-230V

Switch actuator for shading elements and roller shutters for one 230 V motor. 1+1 NO contact 4 A/250 V AC, not potential free. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings. 166 mm long, 46 mm wide and 31 mm high. With cable fixation. Zero passage switching to protect contacts and motors. The motor is connected to 1, 2 and N. If supply voltage fails, the device is switched off in defined mode. The pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons: Local control with universal pushbuttons: With each impulse the switch position changes in the sequence ’Up, stop, Down, Stop’. Local control with direction pushbutton: A top impulse by pushbutton directly activates the ’UP’ switch position. A bottom impulse by pushbutton directly activates the ’DOWN’ switch position. A further impulse from one of the two pushbuttons stops the sequence immediately.

Central control dynamic without priority: A control signal from a pushbutton which was taught-in as a central control pushbutton without priority directly activates the switch position ’Up’ with a scanning pulse up and the switch position ’Down’ with a scanning pulse down. Without priority because this function can be overridden by other control signals.

Central control dynamic with priority: A control signal of min. 2 seconds from a pushbutton which was taught-in as a central control pushbutton with priority directly activates the switch position ’Up’ (press top) and the switch position ’Down’ (press bottom). With priority because these control signals cannot be overridden by other (local) control signals until the central control signal is cancelled by pressing again the central control pushbutton ’Up’ or ’Down’.

The switch position ’up’ or ’down’ and the priority are specifically activated with a control signal, e.g. from a FSM61 taught-in with priority as a central pushbutton. With priority because these control signals cannot be overridden by other control signals until the central command is cancelled by the termination of the central control signal.

Shading scene control: Up to 4 already stored ’Down’ runtimes can be called using the control signal of a pushbutton with double rocker taught-in as a scene pushbutton or automatically using an additional taught-in wireless exterior brightness sensor.

When controlled via the GFVS software, Up and Down move commands can be started at the precise move time specified. Since the actuator reports back the precise time moved after each action, even when the movement is triggered by pushbutton, the position of the sunshading is always correctly displayed in the GFVS software. When the top or bottom end position is reached, the position is automatically synchronised.

Function rotary switch below: AUTO 1 = In this position, the local advanced automatic reversing system for Venetian blinds is activated. When a universal pushbutton or a direction pushbutton are used for control a double impulse activates a slow rotation in the opposite direction, which can be stopped with a further impulse. AUTO 2 = In this position, the local advanced automatic reversing system for Venetian blinds is completely switched off. AUTO 3 = In this position, the local pushbuttons act static at first, thus, allow reversal of Venetian blinds by operating pushbuttons. They only switch to dynamic after 0.7 seconds continuous operation. AUTO 4 = In this position, the local pushbuttons act only static (ER function). The time delay RV (wiping time) of the upper rotary switch is active. Central control is not possible.

Further settings can be made and actuators configured using the PC Tool PCT14 and the data transformer DAT71. Zero passage switching to protect contacts and motors.

Recommended retail prices excluding VAT.

| FSB71-230V | Wireless actuator for shading elements and roller shutters, 230 V | EAN 4010312316306 | 90.00 €/pc. |
FSB71-2x-230V

Switch actuator for shading elements and roller shutters with 2 channels for two 230 V motors. 2+2 NO contact 4 A/250 V AC, not potential free. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings. 166 mm long, 46 mm wide and 31 mm high. With cable fixation.

Zero passage switching to protect contacts and motors.
A motor is connected to 1, 2 and N; a second motor may be connected to 3, 4 and N. If supply voltage fails, the device is switched off in defined mode.

The pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons: Local control with universal pushbuttons: With each impulse the switch position changes in the sequence 'Up, stop, Down, Stop'. Local control with direction pushbutton: A top impulse by pushbutton directly activates the 'UP' switch position. A bottom impulse by pushbutton directly activates the 'DOWN' switch position. A further impulse from one of the two pushbuttons stops the sequence immediately.

Central control dynamic without priority: A control signal from a pushbutton which was taught-in as a central control pushbutton without priority directly activates the switch position 'Up' with a scanning pulse up and the switch position 'Down' with a scanning pulse down. Without priority because this function can be overridden by other control signals. Central control dynamic with priority: A control signal of min. 2 seconds from a pushbutton which was taught-in as a central control pushbutton with priority directly activates the switch position 'Up' (press top) and the switch position 'Down' (press bottom). With priority because these control signals cannot be overridden by other (local) control signals until the central control signal is cancelled by pressing again the central control pushbutton 'Up' or 'Down'. The switch position 'up' or 'down' and the priority are specifically activated with a control signal, e.g. from a FSBM taught-in with priority as a central pushbutton. With priority because these control signals cannot be overridden by other control signals until the central command is cancelled by the termination of the control signal.

Shading scene control: Up to 4 already stored 'Down' runtimes can be called using the control signal of a pushbutton with double rocker taught-in as a scene pushbutton or automatically using an additional taught-in wireless exterior brightness sensor.

Shading scene control: Up to 4 already stored 'Down' runtimes can be called using the control signal of a pushbutton with double rocker taught-in as a scene pushbutton or automatically using an additional taught-in FAHBO wireless exterior brightness sensor.

When controlled via the GFVS software, Up and Down move commands can be started at the precise move time specified. Since the actuator reports back the precise time moved after each action, even when the movement is triggered by pushbutton, the position of the sunshading is always correctly displayed in the GFVS software. When the up or bottom end position is reached, the position is automatically synchronised.

Function rotary switch below: AUTO 1 = In this position, the local advanced automatic reversing system for Venetian blinds is activated. When a universal pushbutton or a direction pushbutton are used for control a double impulse activates a slow rotation in the opposite direction, which can be stopped with another impulse. AUTO 2 = In this position, the local advanced automatic reversing system for Venetian blinds is completely switched off. AUTO 3 = In this position, the local pushbuttons act static at first, thus, allow reversal of Venetian blinds by operating pushbuttons. They only switch to dynamic after 0.7 seconds continuous operation. AUTO 4 = In this position, the local pushbuttons act only static (ER function). The time delay RV (wiping time) of the upper rotary switch is active. Central control is not possible. ▲▼ = ▲ (UP) and ▼ (DOWN) of the lower rotary switch are the positions for manual control. Manual control has priority over all other control commands.

WA = Automatic reversal for Venetian blinds and awnings is controlled by the middle rotary switch. 0 = OFF, otherwise from 0.3 to 5 seconds ON with the selected reversal time. In this case, it is only for DOWN that the direction is reversed on time-out of the time lag selected by the top rotary switch, e.g. to extend awnings or set Venetian blinds to a defined position. A LED is located behind the RV-rotary switch to show the reversal time.

RV = The time delay (delay time RV) is set by the top rotary switch. If the FSB is in the UP or DOWN position the selected delay time runs (elapses); at time-out the device changes automatically to STOP. Therefore, the delay time must be chosen as least as long as the shading element or roller shutter will need to move from one limit position to the other. The LED indication for the delay time RV is located behind the rotary switch RV.

When one or several wireless window/door contacts FTK or window handle sensors FF7B-rw are taught-in, a lock-out protection is set up while the door is open which prevents Central down and Scene down. The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.
F SB 71-24 V DC

Switch actuator for shading elements and roller shutters for one 24 V DC motor. 1+1 NO contact 4 A/24 V DC, not potential free. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.9 watt standby loss.

Mounting e.g. in false ceilings. 166 mm long, 46 mm wide and 31 mm high. With cable fixation. The motor is connected to 1 and 2. If supply voltage fails, the device is switched off in defined mode.

The pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons:

- Local control with universal pushbuttons: With each impulse the switch position changes in the sequence ‘Up, stop, Down, Stop’.
- Local control with direction pushbutton: A top impulse by pushbutton directly activates the ‘UP’ switch position. A bottom impulse by pushbutton directly activates the ‘DOWN’ switch position. A further impulse from one of the two pushbuttons stops the sequence immediately.

Central control dynamic without priority: A control signal from a pushbutton which was taught-in as a central control pushbutton without priority directly activates the switch position ‘Up’ with a scanning pulse up and the switch position ‘Down’ with a scanning pulse down. Without priority because this function can be overridden by other control signals.

Central control dynamic with priority: A control signal of min. 2 seconds from a pushbutton which was taught-in as a central control pushbutton with priority directly activates the switch position ‘Up’ (press top) and the switch position ‘Down’ (press bottom). With priority because these control signals cannot be overridden by other (local) control signals until the central control signal is cancelled by pressing again the central control pushbutton ‘Up’ or ‘Down’.

The switch position ‘up’ or ‘down’ and the priority are specifically activated with a control signal, e.g. from a FSM61 taught-in with priority as a central pushbutton. With priority because these control signals cannot be overridden by other control signals until the central command is cancelled by the termination of the control signal.

Shading scene control: Up to 4 already stored ‘Down’ runtimes can be called using the control signal of a pushbutton with double rocker taught-in as a scene pushbutton or automatically using an additional taught-in wireless exterior brightness sensor.

When controlled via the GFVS software, Up and Down move commands can be started at the precise move time specified. Since the actuator reports back the precise time moved after each action, even when the movement is triggered by pushbutton, the position of the sunshading is always correctly displayed in the GFVS software. When the top or bottom end position is reached, the position is automatically synchronised.

Function rotary switch below: AUTO 1 = In this position, the local advanced automatic reversing system for Venetian blinds is activated. When a universal pushbutton or a direction pushbutton are used for control a double impulse activates a slow rotation in the opposite direction, which can be stopped with a further impulse.

AUTO 2 = In this position, the local advanced automatic reversing system for Venetian blinds is completely switched off. AUTO 3 = In this position, the local pushbuttons act static at first, thus, allow reversal of Venetian blinds by operating pushbuttons. They only switch to dynamic after 0.7 seconds continuous operation. AUTO 4 = In this position, the local pushbuttons act only static (ER function). The time delay RV (wiping time) of the upper rotary switch is active. Central control is not possible. ▲▼ = ▲ (UP) and▼ (DOWN) of the lower rotary switch are the positions for manual control. Manual control has priority over all other control commands.

WA = Automatic reversal for Venetian blinds and awnings is controlled by the middle rotary switch. 0 = OFF, otherwise from 0.3 to 5 seconds ON with the selected reversal time. In this case, it is only for DOWN that the direction is reversed on time-out of the time lag selected by the top rotary switch, e.g. to extend awnings or set Venetian blinds to a defined position. A LED is located behind the RV-rotary switch to show the reversal time. RV = The time delay (delay time RV) is set by the top rotary switch. If the FSB is in the UP or DOWN position the selected delay time runs (elapses); at time-out the device changes automatically to STOP. Therefore, the time delay must be chosen at least as long as the shading element or roller shutter will need to move from one limit position to the other. The LED indication for the delay time RV is located behind the rotary switch RV.

When one or several wireless window/door contacts FTK or window handle sensors FFG7B-rw are taught-in, a lock-out protection is set up while the door is open which prevents Central down and Scene down.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.
FUD71-230V

Universal dimmer switch, power MOSFET up to 400 W. Automatic lamp detection. With adjustable minimum brightness and dimming speed. With switching operation for light alarm clocks, children’s rooms and snooze function as well as constant light regulation and master–slave mode. Also with light scene control by PC or wireless pushbuttons. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.7 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings and lamps. 166 mm long, 46 mm wide and 31 mm high. With cable fixation.

Universal dimmer switch for lamps up to 400 W, depending on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V LED lamps, additionally depending on the lamps electronics.

Zero passage switching with soft ON and soft OFF to protect lamps.

The brightness level is stored on switch-off (memory).

In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.

Automatic electronic overload protection and overtemperature switch-off.

Encrypted sensors can be taught in.

You can switch on bidirectional wireless and/or a repeater function.

Every change in state and incoming central command telegrams are confirmed by a wireless telegram.

This wireless telegram can be taught-in in other actuators and in the GFVS software. The current dimming value is also displayed in % in the GFVS-Software.

The upper rotary switch determines the operation, whether automatic lamp detection or special comfort positions should work:

- AUTO allows the dimming of all lamp types.
- EC1 is a comfort position for energy saving lamps, which which by design must be turned on with an increased voltage so that they switch on again in cold state when dimmed down.
- EC2 is a comfort position for energy saving lamps, which by design won’t switch on again when dimmed down. Therefore Memory is switched off in this position.
- LC1 is a comfort position for LED lamps, which by design won’t be dimmed down enough in the AUTO position (trailing phase angle) and therefore has to be forced to leading phase angle.
- LC2 and LC3 are comfort positions for LED lamps like LC1 but with different dimming curves.
- LC4, LC5 and LC6 are comfort positions for LED lamps like AUTO but with different dimming curves.
- PCT is a position for special functions which were set up using the PCT14 PC Tool. The PCT14 link is hooked up using the data transformer DAT71.

The minimum brightness (fully dimmed down) is adjustable with the middle % rotary switch.

The dimming speed is adjustable using the lower dimming speed rotary switch.

The pushbuttons can be either taught-in as direction pushbuttons or universal pushbuttons: As direction pushbutton ‘switch on and dim up’ is on one side and ‘switch off and dim down’ on the other side. A double-click on the switch on side triggers the automatic dimming up to full brightness with dim speed time. A double-click on the switch off side triggers the snooze function. The children’s room function is triggered on the switch on side. As a universal pushbutton the direction change is made by briefly releasing the pushbutton.

For light scene control, constant light regulation, master–slave mode, light alarm clocks, children’s rooms and snooze function see operating instructions.

A resettable staircase time switch function with RV = 2 minutes can be called by a pushbutton taught-in as a staircase pushbutton. Brightness level settings can be called during teach-in with single light scene pushbuttons. A twilight pushbutton can be implemented using a taught-in FAH. Switch-on can be performed dependent on motion and brightness with up to 4 FBH devices.

The LED accompanies the teach-in process and indicates control commands in operation by flashing briefly.
WIRELESS ACTUATOR UNIVERSAL DIMMER SWITCH FUD71L/1200W-230V

Universal dimmer switch, power MOSFET up to 1200 W. Automatic lamp detection. With adjustable minimum brightness and dimming speed. With switching operation for light alarm clocks, children's rooms and snooze function as well as constant light regulation and master-slave mode. Also with light scene control by PC or wireless pushbuttons. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.7 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings and lamps. 252 mm long, 46 mm wide and 31 mm high. With cable fixation. Universal dimmer switch for lamps up to 1200 W, depending on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V LED lamps, additionally depending on the lamps electronics.

Zero passage switching with soft ON and soft OFF to protect lamps.
The brightness level is stored on switch-off (memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.
Automatic electronic overload protection and overtemperature switch-off.
The upper rotary switch determines the operation, whether automatic lamp detection or special comfort positions should work:
AUTO allows the dimming of all lamp types.
EC1 is a comfort position for energy saving lamps, which by design must be turned on with an increased voltage so that they switch on again in cold state when dimmed down.
EC2 is a comfort position for energy saving lamps, which by design won't switch on again when dimmed down. Therefore Memory is switched off in this position.
LC1 is a comfort position for LED lamps, which by design won't be dimmed down enough in the AUTO position (trailing phase angle) and therefore has to be forced to leading phase angle.
LC2 and LC3 are comfort positions for LED lamps like LC1 but with different dimming curves.
In positions EC1, EC2, LC1, LC2 and LC3 inductive (wound) transformers may not be used. In addition, the maximum number of dimmable LED lamps may be lower by design than in the AUTO position.
LC4, LC5 and LC6 are comfort positions for LED lamps like AUTO but with different dimming curves.
PCT is a position for special functions which were set up using the PCT14 PC Tool. The PCT14 link is hooked up using the data transformer DAT71.
The minimum brightness (fully dimmed down) is adjustable with the middle % rotary switch.
The dimming speed is adjustable using the lower dimming speed rotary switch.
The pushbuttons can be either taught-in as direction pushbuttons or universal pushbuttons: As direction pushbutton 'switch on and dim up' is on one side and 'switch off and dim down' on the other side. A double-click on the switch on side triggers the automatic dimming up to full brightness with dim speed time. A double-click on the switch off side triggers the snooze function. The children's room function is triggered on the switch on side. As a universal pushbutton the direction change is made by briefly releasing the pushbutton.

For light scene control, constant light regulation, master-slave mode, light alarm clocks, children's rooms and snooze function see operating instructions.
A resettable staircase time switch function with RV = 2 minutes can be called by a pushbutton taught-in as a staircase pushbutton. Brightness level settings can be called during teach-in with single light scene pushbuttons. A twilight pushbutton can be implemented using a taught-in FAH. Switch-on can be performed dependent on motion and brightness with up to 4 FBH devices.
The LED accompanies the teach-in process and indicates control commands in operation by flashing briefly.

| FUD71L/1200W-230V | Wireless actuator Universal dimmer switch | EAN 4010312316412 | 143,50 €/pc. |

Further settings can be made and actuators configured using the PC Tool PCT14 and the data transformer DAT71.

Technische Daten Seite T-3.
FSG71/1-10V

Dimmer switch controller for electronic ballast units 1-10 V, 1 NO contact not potential-free 600 VA and 1-10 V control output 40 mA. With adjustable minimum brightness and dimming speed. With switching operation for light alarm clocks, children's rooms and snooze function as well as constant light regulation and master-slave mode. Also with light scene control by PC or wireless pushbuttons. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 1.4 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings and lamps.

Zero passage switching with soft ON and soft OFF to protect lamps.

Also adapted for LED driver with 1-10 V passive interface, without voltage source up to 0.6 mA, above this value an additional voltage source is necessary.

The brightness level is stored on switch-off (memory).

In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.

The minimum brightness (fully dimmed) is adjustable with the % rotary switch.

The dimming speed is adjustable using the dimming speed rotary switch.

The load is switched on and off by a bistable relay at output EVG. Switching capacity for fluorescent lamps or LV halogen lamps with EVG 600 VA.

By using a bistable relay coil power loss and heating is avoided even in the on mode.

After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.

The pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons: As a direction pushbutton, press up is brighter and press down is darker respectively above short pressing means switch ON and below short pressing switch OFF. A double click above activates automatic updimming until full brightness with dim speed. A double click below activates snooze function. The children's room function will be realized with the upper switch.

As a universal pushbutton, change the direction by briefly releasing the pushbutton. With switching operation for children's rooms and snooze function.

Light alarm circuit: An appropriately taught-in timer wireless signal starts the wake-up function by switching on the lighting at lowest brightness and slowly dimming up to maximum brightness over a period of 30 minutes. Briefly tip the pushbutton (e.g. a hand-held wireless transmitter) to stop dim-up. Light alarm circuit is not possible in EC positions.

Switching operation for children's rooms, if activated: If the light is switched on by holding down the pushbutton (universal pushbutton or direction pushbutton above), it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down. The last saved brightness level is not modified.

Snooze function, if activated: (universal pushbutton or direction pushbutton below): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 30 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down.

The LED below the upper function rotary switch performs during the teach-in process according to the operating instructions. It shows control commands by short flickering during operation.

Recommended retail prices excluding VAT.
FDG71L-230V

Wireless DALI gateway, bidirectional. 2 watt standby loss.

Installation for example in suspended ceilings and lamps.
252 mm long, 46 mm wide and 31 mm high. With cable fixation.
Power supply 230 V at terminals N and L.
16 V DC/130 mA can be connected to the DALI terminals +/- for up to 64 DALI devices.
The gateway FDG71L controls DALI devices with EnOcean wireless transmitters.

Groups 0-15 can be controlled and the broadcast command can be sent. In addition DALI scenes 0-15
can be recalled.
DALI installations, which are to be fully controlled with the FDG71L, must be configured in groups 0-15.
The FDG71L internally saves the dimming value for each of the groups 0-15 and supplies this value as feedback.
The same feedback telegrams are generated as for an FUD71.
The feedbacks of the device addresses correspond to the dimming values of the DALI groups 0-15 in ascending order.
Feedbacks can be converted by the PCT14 for each individual group of dimming value telegrams (%) to pushbutton telegrams (ON/OFF). Feedbacks can then control actuators.
The FDG71L fulfills the functions of the DALI master and the DALI power supply.

Important: Wireless pushbuttons always need to be double-clicked when they are taught-in manually
in the FDG71L. CLR only needs a single click.
A direction pushbutton or universal pushbutton with identical ID and identical pushbutton can be taught in several times in different groups. The group last selected is always valid. Therefore, a pushbutton can either switch only one group or broadcast to all groups.
One FBH per group can also be taught in. With a manual teach-in this always acts dependent on brightness. With PCT14 you can also set the brightness threshold.
The delay time for switch-off after no motion is detected can be set together in minutes (1 ... 60) for the FBH devices of all groups. The default is 3 minutes.

| FDG71L-230V | Wireless DALI gateway | EAN 4010312317556 | 128,60 €/pc. |

Function rotary switches

Standard setting ex works.

Further settings can be made and actuators configured using the PC Tool PCT14 and the data transformer DAT71.

Technical data page T-3.

Recommended retail prices excluding VAT.
**FRGBW71L**

PWM dimmer switch with 4 channels for LED 12-36 V DC, each up to 2 A. Adjustable minimum brightness and dimming speed. With snooze function and light alarm circuit. Additionally with light scene control via PC or with wireless pushbuttons. Activation for encrypted wireless, bidirectional wireless and repeater function. Standby loss only 0.3-0.5 watt.

Installation for example in suspended ceilings and lamps. 252 mm long, 46 mm wide and 31 mm high. With cable fixation.
The set brightness level remains stored when switched off (memory).
In case of a power failure, the switch position and brightness level are saved and switched on when the power supply is restored.
Automatic electronic overload protection and overtemperature shutdown.
Encrypted sensors can be taught-in.
Bidirectional wireless and/or a repeater function can be switched on.
Every change in state and incoming central control telegrams are then confirmed by a wireless telegram. The wireless telegram can be taught in other actuators and the GFVS software. In addition the current dimming value is displayed in % in the GFVS software.
The upper rotary switch is only required for teach-in.
Use the middle % rotary switch to set the minimum brightness (fully dimmed).
Use the lower dimming speed rotary switch to set the dimming speed.
The pushbuttons can either be taught in as direction pushbuttons or universal pushbuttons: as direction pushbutton, one side is ‘switch on and dim up’; the other side is ‘switch off and dim down’. Double-click on the switch-on side to trigger automatic dim up to full brightness at dimming speed. Double-click on the switch-off side to trigger the snooze function.
As universal pushbutton, change the direction by briefly releasing the pushbutton.
FHB wireless motion/brightness sensors can be taught in as master or slave.
FAH wireless brightness sensors can be taught in for switch-off dependent on brightness or as a twilight switch.
Light scene control, light alarm circuit and snooze function as described in the operating instructions. The LED accompanies the teach-in process as described in the operating instructions and indicates control commands by briefly flickering during operation.

| FRGBW71L | Wireless actuator PWM Dimmer Switch for LED | EAN 4010312316450 | 104,90 €/pc. |

Recommended retail prices excluding VAT.

Further settings can be made and actuators configured using the PC Tool PCT4 and the data transformer DAT71.

Technical data page T-3.
WIRELESS ACTUATOR PWM DIMMER SWITCH FOR LED FWWK71L

FWWK71L

PWM dimmer switch with 2 channels for LED 12-36 V DC, each up to 4 A. Input: two terminals each for + and -. Output: one terminal for +, two terminal each for channel 1 (warm white) and channel 2 (cold white). Adjustable minimum brightness and dimming speed. With snooze function and light alarm circuit. Additionally with light scene control via PC or with wireless pushbuttons. Activation for encrypted wireless, bidirectional wireless and repeater function. Standby loss only 0.3-0.5 watt.

Installation for example in suspended ceilings and lamps. 252 mm long, 46 mm wide and 31 mm deep. With cable fixation.

The set brightness level remains stored when switched off (memory).

In case of a power failure, the switch position and brightness level are saved and switched on when the power supply is restored.

Automatic electronic overload protection and overtemperature shutdown.

Encrypted sensors can be taught-in.

Bidirectional wireless and/or a repeater function can be switched on.

Every change in state and incoming central control telegrams are then confirmed by a wireless telegram. The wireless telegram can be taught in other actuators and the GFVS software. In addition the current dimming value is displayed in % in the GFVS software.

The upper rotary switch is only required for teach-in.

Use the middle % rotary switch to set the minimum brightness (fully dimmed).

Use the lower dimming speed rotary switch to set the dimming speed.

The pushbuttons can either be taught in as direction pushbuttons or universal pushbuttons: as direction pushbutton, one side is 'switch on and dim up'; the other side is 'switch off and dim down'. Double-click on the switch-on side to trigger automatic dim up to full brightness at dimming speed. Double-click on the switch-off side to trigger the snooze function. As universal pushbutton, change the direction by briefly releasing the pushbutton.

FHB wireless motion/brightness sensors can be taught in as master or slave.

FAH wireless brightness sensors can be taught in for switch-off dependent on brightness or as a twilight switch.

Light scene control, light wake-up circuit and sleep circuit as described in the operating instructions.

The LED lights up during teach-in according to the operating instructions. Wireless control commands are indicated by short flickering during operation.

Function rotary switches

<table>
<thead>
<tr>
<th>Function rotary switches</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Standard setting ex works.

Further settings can be made and actuators configured using the PC Tool PCT4 and the data transformer DAT71.

Technical data page T-3.

Recommended retail prices excluding VAT.
**DAT71**

Data transformer to configure Series 71 actuators using the PCT14 PC tool.

The DAT71 can be used to link an actuator to the PC. Using PCT14, data can be transferred to or from the actuator. In addition, the DAT71 can be used as a mobile data storage. The DAT71 must then be plugged into the actuator and connected to the PC by USB cable (not included in the scope of supply). After starting the PCT14, configure the actuator.

Plugging the data transformer DAT71 to a Series 71 actuator.

<table>
<thead>
<tr>
<th>Data</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DAT71</strong></td>
<td>Data transformer for Series 71</td>
<td>4010312316351</td>
<td>68,70 €/pc.</td>
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</tbody>
</table>
**FSR70S-230V**

1 NO contact not potential free. 10 A/250 V AC, incandescent lamps up to 2000 watts, energy saving lamps ESL up to 200 W. Only 0.8 watt standby loss.

Installation in the 230 V power supply cord of standard lamps and bedside lights. 100 mm long, 50 mm wide and 31 mm high.

This wireless actuator is an impulse switch with integrated relay function and features state-of-the-art hybrid technology that we developed: we combined the wear-free receiver and evaluation electronics and a bistable relay with zero passage switching.

By using a bistable relay coil power loss and heating is avoided even in the on mode.

**With the rotary switch on the side** in the settings LRN up to 35 wireless pushbuttons can be assigned, of which one or more central control pushbuttons. In addition, wireless motion/brightness sensor FBH and/or a wireless outside brightness sensor FAH for a presence simulation. The required function of the impulse switch with integrated relay function can then be selected:

**ES = Impulse switch:**
- After the FBH is taught-in, the device switches on when movement is detected and, after an additional FAH is taught-in, at twilight and when movement is detected.
- If no movement is detected, the contact opens after a 4 minute delay. A wireless switch can only be taught-in additionally to activate or deactivate presence simulation.

**ER = Switching relay**
- When FAH is taught-in, the device switches on at twilight.
- The contact opens after a 4 minute delay when brightness is detected.

**AS = Presence simulation**
- The AS starts with a random pause time of 20 to 40 minutes followed by a random switch-on time of 30 to 120 minutes.
- When the rotary switch is turned to AS or when the line voltage is switched on in AS position, the light switches on for 5 seconds after 1 second.
- When the FAH is taught-in, the AS only starts when twilight commences.
- After the FAH detects brightness, the AS ends after 4 minutes.

The **LED** on the side below the left rotary switch accompanies the teach-in process as described in the operation manual. It indicates control commands by short flickering during operation.

| FSR70S-230V-rw | Impulse switch with integr. relay function pure white | EAN 4010312301487 | 84,40 €/pc. |

Standard setting ex works.

Technical data page T-3.
**FUD70S-230V**

Universal dimmer switch, Power MOSFET 400 W. Automatic lamp detection. Only 0.6 watt standby loss. With adjustable minimum or maximum brightness and dimming speed. With switching operation for light alarm clocks, children’s rooms and snooze function. Also with light scene control by PC or wireless pushbuttons. Bidirectional wireless and with repeater function. Only 0.6 watt standby loss.

Mounting in the 230 V power supply cord, e.g. in false ceilings. 100 mm long, 50 mm wide and 31 mm high.

With **bidirectional wireless**; in addition, a **repeater** function can be switched in. Every change in state and incoming central command telegrams are confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators and in the GFVS software.

Universal dimmer switch for lamps up to 400 W, depending on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V LED lamps, additionally depending on the lamps electronics.

**Zero passage switching with soft ON and soft OFF to protect lamps.**
The brightness level is stored on switch-off (memory).

In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.

Automatic electronic overload protection and overtemperature switch-off.

The **left rotary switch** determines the operation, whether automatic lamp detection or special comfort positions should work:

- **AUTO** allows the dimming of all lamp types.
- **EC1** is a comfort position for energy saving lamps, which which by design must be turned on with an increased voltage so that they switch on again in cold state when dimmed down.
- **EC2** is a comfort position for energy saving lamps, which by design won’t switch on again when dimmed down. Therefore Memory is switched off in this position.
- **LC1** is a comfort position for LED lamps, which by design won’t be dimmed down enough in the AUTO position (trailing phase angle) and therefore has to be forced to leading phase angle.
- **LC2** and **LC3** are comfort positions for LED lamps like LC1 but with different dimming curves.

In positions EC1, EC2, LC1, LC2 and LC3 inductive (wound) transformers may not be used. In addition, the maximum number of dimmable LED lamps may be lower by design than in the AUTO position.

The minimum brightness (fully dimmed down) or maximum brightness (fully dimmed up) is adjustable with the **middle % rotary switch** on the side. In the setting LRN up to 30 pushbuttons can be assigned, of which one or more central pushbuttons.

The dimming speed is adjustable using the **right dimming speed rotary switch** on the side. At the same time, the soft ON and soft OFF periods are changed.

The **wireless pushbuttons can be taught-in either as direction pushbuttons or universal pushbuttons**: When installed as a direction pushbutton, one side is then ‘switch on and dim up’ and the other side is ‘switch off and dim down’. A double-click on the switch-on side activates automatic dim-up to full brightness at dim speed. A double click on the switch-off side activates the snooze function. The children’s room function is implemented on the switch-on side.

As a **universal pushbutton**, change the direction by briefly releasing the pushbutton.

**Light scene control, light wake-up switching, switching operation for children’s rooms and snooze function according to the operating instruction.**

The **LED** on the side below the left rotary switch accompanies the teach-in process as described in the operation manual. It indicates control commands by short flickering during operation.

| FUD70S-230V-rw | Universal dimmer switch pure white | EAN 4010312301395 | 102.80 €/pc |

Recommended retail prices excluding VAT.
FSSA-230V

1 NO contact not potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, ESL and LED up to 400 W. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Adapter for German fused safety socket. With increased shock protection. Supply and switching voltage 230 V.

In case of failure of the supply voltage, the switching state is maintained. The recurrent supply voltage is disconnected in a definite sequence. After plugging wait for short automatic synchronization before the switched consumer is plugged.

This wireless actuator features state-of-the-art hybrid technology that we developed:
we combined the wear-free receiver and evaluation electronics and a bistable relay.
You can teach in encrypted sensors.

You can switch on bidirectional wireless and/or a repeater function.

Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught into other actuators, the software GFVS 4.0, and universal displays.

Up to 35 wireless pushbuttons are assigned with the left button LRN, either as a universal pushbutton, direction pushbutton or central pushbutton. For the control of extractor hoods or similar items up to 35 wireless window door contacts FTK or wireless window handle sensors FFG7B-rw can be taught-in. Several FTK or wireless window handle sensors FFG7B-rw are linked together.

If a FTK or wireless window handle sensor FFG7B-rw is taught-in, control commands of eventually taught-in pushbuttons are no longer running.

It can be switched on and off manually with the right button.
The LED performs during the teach-in process according to the operation manual. It shows wireless control commands by short flickering during operation.

Recommended retail prices excluding VAT.
**FSVA-230V-10A**

1 NO contact not potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, ESL and LED up to 400 W. With integrated current measurement up to 10 A. Encrypted current measurement, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Adapter for German fused safety socket. With increased shock protection.
Supply and switching voltage 230 V.
In case of failure of the supply voltage, the switching state is maintained. The recurrent supply voltage is disconnected in a definite sequence. After plugging wait for short automatic synchronization before the switched consumer is plugged.

**This wireless actuator features state-of-the-art hybrid technology that we developed:**
we combined the wear-free receiver and evaluation electronics and a bistable relay.
Apparent power is measured by the integrated current measurement from approx. 10 VA to 2300 VA when the contact is closed. A wireless telegram is transmitted into the Eltako wireless network within 30 seconds after switching on the load or after a change in power by min 5% and cyclically every 10 minutes.

**Evaluation on the computer with Eltako Wireless Building Visualisation and Control Software GFVS or with the energy consumption indicator FEA65D.**
GFVS-Energy supports up to 100 energy meters and GFVS 4.0 up to 250 energy meters.

**You can teach in encrypted sensors.**
You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught into other actuators, the software GFVS 4.0, and universal displays.
Up to 35 wireless pushbuttons are assigned with the left button LRN, either as a universal pushbutton, direction pushbutton or central pushbutton. For the control of extractor hoods or similar items up to 35 wireless window door contacts FTK or wireless window handle sensors FFG7B-rw can be taught-in. Several FTK or wireless window handle sensors FFG7B-rw are linked together.
If a FTK or wireless window handle sensor FFG7B-rw is taught-in, control commands of eventually taught-in pushbuttons are no longer running.
It can be switched on and off manually with the right button.

**The LED performs during the teach-in process according to the operation manual.** It shows wireless control commands by short flickering during operation.

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**Recommended retail prices excluding VAT.**

**Technical data page T-3.**

| FSVA-230V-10A | Wireless actuator Socket switching actuator with current measurement | EAN 4010312314555 | 105,90 €/pc. |

**WEEE registration number DE 3029839**
FSUD-230V

Universal dimmer switch, 300 W power MOSFET. Automatic lamp detection. Only 0.7 watt standby loss. With adjustable minimum brightness. With switching operation for children's rooms and snooze function. Encrypted wireless, bidirectional wireless and repeater function are switchable.

Adapter for German fused safety socket. With increased shock protection.
Supply and switching voltage 230 V.
Universal dimmer switch for lamps up to 300 W. Dimmable energy saving lamps ESL and dimmable 230 V-LED lamps, dependent on the lamps electronics.
Zero passage switching with soft ON and soft OFF to protect lamps.
No minimum load required.
This dimmer switch is activated by wireless pushbuttons FT and FFT, handheld wireless transmitters FHS and FMH, and remote controls FF8 and UFB.
The set brightness level is stored when switched off (memory), but can be switched off for ESL lamps.
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.
Automatic electronic overload protection and overtemperature switch-off.
You can teach in encrypted sensors.
You can switch on bidirectional wireless and/or a repeater function.
Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught into other actuators, the software GFVS 4.0, and universal displays FU55. The current dimming value is also displayed in % in the software GFVS.
Up to 35 wireless pushbuttons are assigned with the left button LRN, either as a universal pushbutton, direction pushbutton or central pushbutton.
It can be switched on and off manually with the right button.
The pushbuttons can be either taught-in as direction pushbuttons or universal pushbuttons: As direction button 'switch on and dim up' is on one side and 'switch off and dim down' on the other side. A double-click on the switch on side triggers the automatic dimming up to full brightness. A double-click on the switch off side triggers the snooze function. The children's room function is triggered on the switch on side. As a universal pushbutton the direction change is made by briefly releasing the pushbutton.
For children's room circuit and sleep timer, refer to the operating instructions.
The LED performs during the teach-in process according to the operation manual. It shows wireless control commands by short flickering during operation.

Recommended retail prices excluding VAT.
FSHA-230V

1 NO contact nor potential free 10 A/250 V AC. Encrypted wireless, bidirectional wireless and repeater function switchable. Only 0.8 watt standby loss.

Adapter for German fused safety socket. With increased shock protection. Supply and switching voltage 230 V. Zero passage switching. If a power failure occurs, the switching state is retained. Device is programmed to switch off when the power supply is restored.

The FSHA evaluates the data of wireless temperature controllers or sensors. Can be supplemented by window/door contacts, window handles, motion detectors and wireless pushbuttons. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.

**Encrypted sensors can be taught in.**

**Bidirectional wireless** and/or a **repeater** function can be switched on. Every change of state is then confirmed by a wireless telegram. This wireless telegram can be taught in other actuators and the GFVS.

**The FSHA operates as a two-point controller:**

Switches off at 'actual temperature >= set temperature'.

Switches off at 'actual temperature >= set temperature'.

Hysteresis is defined at 1°.

The **frost protection function** is always enabled. As soon as the actual temperature drops below 8°C, the temperature is regulated to 8°C.

If one or several windows are open, the output remains off provided the window/door contacts or window handles are taught-in. However, the frost protection remains enabled. As long as all taught-in motion detectors detect no motion, the device is switched to setback mode and the reference temperature is set back by 2°. As soon as a motion detector signals movement again, the device is switched to normal mode.

When a wireless pushbutton is taught-in, the assignment of the 4 keys is assigned with the following fixed functions:

- Top right: Normal mode (AUTO), can also be enabled by timer.
- Bottom right: Night setback mode by 4°, can also be enabled by timer.
- Top left: Setback mode by 2°
- Bottom left: Off (frost protection enabled)

If the motion detector and wireless pushbutton are taught-in at the same time, the last telegram received is always the one that is valid. A motion detector therefore switches off a setback mode selected by wireless pushbutton when a movement is detected.

**Malfunction mode:**

If a temperature sensor fails to receive a wireless telegram for longer than 1 hour, the LED lights up and the device switches to fault mode. The FSHA-230V switches cyclically between 'ON' for 4.5 minutes and 'OFF' for 10.5 minutes. When a wireless telegram is again received, the LED goes out and the device switches back to normal mode.

The **LED** lights up during teach-in according to the operating instructions. Wireless control commands are indicated by short flickering during operation.

### Technical data page T-3.

Recommended retail prices excluding VAT.

| FS0230T | Wireless actuator Wireless socket heating actuator EAN 4010312318997 | 92,80 €/pc. |
Wireless module for fitting in the 3xAA battery compartment of gongs or any other plastic housing. Only 0.5 watt standby loss.

52 mm long, 42 mm wide and 16 mm deep.
This wireless module is suitable for all gongs that can be powered with 3 pieces AA batteries or with 8 to 12 V UC transformer connection and activated by one contact.
The gong module FGM also fits in the much larger battery compartment for 3 or 4 pieces baby cells.
The gong module is placed in the battery compartment in accordance with the operating instructions and connected to the gong terminals.
The gong and the wireless module is powered by a switch mode power supply unit SNT81-230V/12V DC-0,5A which is fitted in a flush-mounted wall socket behind the gong and requires a 230 V connection.
Normal switches can also be connected to the appropriate gong terminals.
For teaching-in a rotary switch is located on the board. Then it is set to AUTO (clockwise).
In addition to one or several wireless switches, wireless window/door contacts FTK, motion detector/brightness sensors FBH and window handle sensors FFG7B-rw can be taught in.
The LED performs during the teach-in process according to the operation manual. It shows wireless control commands by short flickering during operation.

Examples of suitable gongs:
Friedland D844
Grothe Croma 100

| FGM | Wireless module | EAN 4010312303290 | 65,30 €/pc. |
WIRELESS INDOOR UP SIGNAL GENERATOR FIUS55E-wg AND FIUS65-wg

FIUS55E-wg

Wireless signal generator pure white glossy for single mounting 80 x 80 x 17 mm or mounting into the E-Design55 switching system. Internal acoustic signal generator for a minimum volume of 80 dB. Power supply 230 V. Only 0.8 watt standby loss. Smart Home actuator.

Up to 32 wireless pushbuttons, wireless window contacts as well as motion sensors can be taught in.

| FIUS55-wg | Wireless indoor UP signal generator, pure white glossy | EAN 4010312320990 | 66,40 €/pc. |

FIUS65-wg

Wireless signal generator pure white glossy for single mounting 84 x 84 x 17 mm or mounting into the E-Design65 switching system. Internal acoustic signal generator for a minimum volume of 80 dB. Power supply 230 V. Only 0.8 watt standby loss. Smart Home actuator.

Up to 32 wireless pushbuttons, wireless window contacts as well as motion sensors can be taught in.

| FIUS65-wg | Wireless indoor UP signal generator, pure white glossy | EAN 4010312320983 | 66,40 €/pc. |
FAS260SA

Wireless outdoor siren white, 260 x 200 x 70 mm, with solar cell and lithium-polymer battery. Protection class IP54. Smart Home actuator.

The purpose of the siren is to generate acoustic and visual alarm signals. The user can choose from 4 different alarm modulations by means of jumpers. The minimum volume is 85 dB. Visual signals are always generated by LEDs flashing under the red cover.

The siren is controlled by the central control units Safe, MiniSafe or the wireless alarm controllers FAC55D and FAC65D.

Sensors that trigger alarms are taught in at the central control units or controllers. Sensor devices include motion sensors, door/window contacts, water and smoke detectors, temperature sensors and wireless transmitter modules.

The user defines which sensors trigger an alarm and in which combination. This is supported by a cyclical wireless contact between the siren and the central unit.

If this communication is interrupted during the alarm readiness, for example if the central control unit is not powered, the following may take place depending on the position of the jumpers in the siren:

- No reaction
- 2 short acoustic or visual signals at intervals of 10 seconds (as-delivered state)
- Short 1 second acoustic and visual alarm at intervals of 10 seconds
- Alarm triggered immediately

The maximum length of the alarm is adjustable to 1, 3 or 5 minutes by means of jumpers in the siren.

The as-delivered state is adjusted to 1 minute.

Install the siren in a place that is sheltered from the rain and where there is enough sunlight to charge the solar cell on the top of the device.

A daily exposure to normal daylight for a few hours is sufficient to retain the change in the internal battery.

To protect against theft or manipulation, the mounting panel is fitted with a contact which immediately triggers the alarm if the siren is removed from its mount.

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**Recommended retail prices excluding VAT.**

| FAS260SA | Wireless outdoor siren, white | EAN 4010312320075 | 116,60 €/pc. |
**FTA65..-wg**

Wireless pushbutton actuator dimming, dimming without N connection, shading and light switch. For single mounting 84 x 84 x18/33 mm or mounting into the E-Design65 switching system. Pure white glossy. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Smart Home sensor and actuator.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTA65D-wg</td>
<td>Wireless pushbutton actuator dimming</td>
<td>EAN 4010312319185</td>
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<td>FTA65D-wg</td>
<td>Wireless pushbutton actuator dimming without N connection</td>
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<td>FTA65L-wg</td>
<td>Wireless pushbutton actuator light switch</td>
<td>EAN 4010312319215</td>
<td>67,50 €/pc.</td>
</tr>
</tbody>
</table>

**FFTA65..-wg**

Wireless flat pushbutton actuator dimming, dimming without N connection, shading and light switch. For single mounting 84 x 84 x 11/33 mm or mounting into the E-Design65 switching system. Pure white glossy. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Smart Home sensor and actuator.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
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<td>Wireless flat pushbutton actuator dimming without N connection</td>
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<td>FFTA65J-wg</td>
<td>Wireless flat pushbutton actuator shading</td>
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<td>FFTA65L-wg</td>
<td>Wireless flat pushbutton actuator light switch</td>
<td>EAN 4010312319291</td>
<td>69,80 €/pc.</td>
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</tbody>
</table>

**FTA55..-wg**

Wireless pushbutton actuator dimming, dimming without N connection, shading and light switch. For single mounting 80 x 80 x 15/33 mm or mounting into the E-Design55 switching system. Pure white glossy. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Smart Home sensor and actuator.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
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</thead>
<tbody>
<tr>
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<td>Wireless pushbutton actuator dimming</td>
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<td>FTA55L-wg</td>
<td>Wireless pushbutton actuator light switch</td>
<td>EAN 4010312319253</td>
<td>67,50 €/pc.</td>
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</tbody>
</table>

Recommended retail prices excluding VAT.
ELTAKO POWERLINE – THE IDEAL SUPPLEMENT TO THE ELTAKO WIRELESS BUILDING SYSTEM WITH ENOCEAN.
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The electricity wiring in buildings acts as the Eltako Powerline bus. Now you can transmit sensor data and telegrams to actuators over the existing electricity wiring instead of broadcasting wireless telegrams – that is the basic difference between the two technologies.
### FPLG14

**Wireless Powerline gateway. Bidirectional. Standby loss only 0.4 watt.**

- Modular device for DIN-EN 60715 TH35 rail mounting.
- 2 module = 36 mm wide, 58 mm deep.
- Supply voltage 230 V.
- **Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.**
- This gateway translates wireless and Powerline telegrams in both directions.
- **Operation in conjunction with FAM14 or FTS14KS.**
- GFVS control functions for dimming, heating and shading are also possible.
- **All** Powerline telegrams from the electricity wiring system are automatically translated into RS485 bus telegrams and may also be sent as wireless telegrams by connected FTD14 devices.
- **Only** wireless and RS485 bus telegrams taught into the FPLG14 are translated into Powerline telegrams and modulated onto the electricity wiring system. Up to 120 different addresses. Teach-in takes place by means of rotary switches on the front of the devices or using the PCT14 as described in the user's manual.

| FPLG14 | Wireless Powerline gateway | EAN 4010312316771 | €91.60/pc.

### FPLT14

**Wireless Powerline tunnel gateway. Uni- and bidirectional. Standby loss only 0.4 watt.**

- Modular device for DIN-EN 60715 TH35 rail mounting.
- 2 module = 36 mm wide, 58 mm deep.
- Supply voltage 230 V.
- **Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.**
- **This gateway transmits RS485 bus telegrams over powerline with large distance over the electrical net. Minimum 2 pcs FPLT14 are required.**
- Up to 10 FPLT14 can unidirectionally send the bus telegrams of their FAM14 / FTS14KS installation with Powerline to another FAM14 / FTS14KS installation via a local FPLT14.
- Two FPLT14 can exchange the bus telegrams bidirectionally from 2 FAM14 / FTS14KS installations with Powerline via the installed wires. Teach-in up to 120 telegram IDs according to the operating instructions, also with PCT14. Because of the transmission delay, short-click evaluations for FUD and FSB actuators are not possible.

| FPLT14 | Wireless Powerline tunnel gateway | EAN 4010312317723 | €91.60/pc.

Recommended retail prices excluding VAT.
Recommended retail prices excluding VAT.

**PL-FTGW**

Powerline pushbutton gateway. Bidirectional. 53 x 43 mm, 40 mm deep for mounting in 58 mm switch boxes. Standby loss 1.1 watt.

Supply voltage 230 V. Power consumption in operation 1.1 Watt.

Powerline telegrams from the grid taught-in into the gateway are automatically transformed and sent into Eltako-wireless telegrams.

Wireless telegrams taught-in into the gateway are transformed into powerline telegrams and modulated to the power supply grid.

By pressing the reset button, the PL-FTGW will be put into the teaching-in mode. The rotary switch selects, whether wireless or powerline telegrams should be taught-in.

One being taught powerline sensor is automatically assigned by operating in the learning mode, a free radio channel.

A free wireless channel is automatically assigned to a taught-in powerline sensor with confirmation in teaching-in mode.

Up to 80 Powerline sensors or feedbacks can be taught-in. The function as a universal, direction or central pushbutton for a taught-in wireless sensor is assigned via slide switch of the PL-FTGW. The Powerline address is set via rotary switch g and e which should be addressed with the wireless sensor.

In addition to wireless switches also Eltako wireless sensors such as window contacts and motion detectors can be taught-in. GFVS control functions for dimming, heating and shading are also possible.

The implementation into practical Powerline telegrams für PL actuators is done automatically. Up to 100 different wireless sensor can be taught-in.

All records and configurations can be accessed via Sienna-Professional software and power supply. Other functions can then be selected which are not available through the direct teaching-in via rotary switch.

In addition, the gateway can be set into the learn and deletion mode, so that a manual teaching-in can be carried out without direct access to the device.

The PL-FTGW also serves as a relay station for communication between the temperature controller PL-SAMTEMP with EnOcean actuators FKS-MD1 and FKS-E. Up to 20 actuators and PL-SAMTEMP are managed here.

| PL-FTGW | Powerline pushbutton gateway | EAN 4010312316986 | 166,40 €/pc. |
DECENTRALISED ACTUATOR PL-SAM1L WITH SENSOR INPUT AND
DECENTRALISED ACTUATOR PL-SAM2L WITH SENSOR INPUTS

PL-SAM1L

Powerline actuator with 1 channel. 53 x 43 mm, 25 mm deep, for mounting in 58 mm switch boxes. Used as impulse switch or relay. 1 NO contact not potential free 10 A/250 V AC, incandescent lamps 2000 watts. Sensor input 230 V. Standby loss only 0,5 watt. To control and switch at the same place.

Two rotary switches are located on the front for address assignment:
The left rotary switch defines the group address g with 16 alphabetical values from A to P.
The right rotary switch defines the element address e with 16 numerical values from 0 to 15.
Above it is a slide switch which acts as a configuration switch with positions 0, 1 and 2.
Position 0: Sensor input functions as pushbutton (impulse switch).
Position 1: Sensor input functions as NO contact (relay).
Position 2: A change-over switch is evaluated as a pushbutton.
To the left of the rotary switches is a red LED which indicates all activities.
Next to it is a reset pushbutton and to the right of that is a service pin. For functions, please refer to the operating instructions.
The terminals located above are plug-in terminals for conductor cross-sections of 0.2 mm² to 1.5 mm².

PL-SAM1L | Powerline actuator 1 channel with sensor input 230 V | EAN 4010312316665 | 103,70 €/pc.

PL-SAM2L

Powerline actuator with 2 channels. 53 x 43 mm, 25 mm deep for mounting in 58 mm switch boxes. Used as impulse switch or relay. 1+1 NO contacts not potential free 5 A/250 V AC, incandescent lamps 1000 watts. 2 sensor inputs with internal low voltage. Standby loss only 0,5 watt. To control and switch at the same place.

Use only potential free switching elements. Internal low voltage applied to the sensor inputs.
Two rotary switches are located on the front for address assignment:
The left rotary switch defines the group address g with 16 alphabetical values from A to P.
The right rotary switch defines the element address e with 16 numerical values from 0 to 15.
Above it is a slide switch which acts as a configuration switch with positions 0, 1 and 2.
Position 0: Sensor inputs function as pushbuttons (impulse switches).
Position 1: Sensor input functions as NC contact (relay).
Position 2: A change-over switch is evaluated as a pushbutton.
To the left of the rotary switches is a red LED which indicates all activities.
Next to it is a reset pushbutton and to the right of that is a service pin. For functions, please refer to the operating instructions.
The terminals located above are plug-in terminals for conductor cross-sections of 0.2 mm² to 1.5 mm².
Next to them are three wires with wire end-sleeves for the two control inputs with internal low voltage.

PL-SAM2L | Powerline actuator 2 channels with 2 sensor inputs | EAN 4010312316672 | 105,40 €/pc.

Recommended retail prices excluding VAT.
**PL-SAM2**

Powerline Venetian blind actuator for 1 motor. 53 x 43 mm, 25 mm deep for mounting in 58 mm switch boxes. 1+1 NO contact for motors up to 3 A. 2 sensor inputs with internal low voltage. Standby loss only 0,5 watt. To control and switch at the same place.

Use only potential free switching elements. Internal low voltage applied to the sensor inputs. The control inputs can be used for a Venetian blind pushbutton or a Venetian blind switch. The runtime is preset to 120 seconds. This can be changed using the SIENNA-Professional installation software.

Two rotary switches are located on the front for address assignment:

- **The left rotary switch defines the group address g with 16 alphabetical values from A to P.**
- **The right rotary switch defines the element address e with 16 numerical values from 0 to 15.**

Above it is a slide switch which acts as a configuration switch with positions 0, 1 and 2.

Position 0: Start and stop by pressing Venetian blind pushbutton. Auto stop at end.

Position 1: Comfort switch for Venetian blind slat adjustment. Tip briefly to adjust slats.

> 1 second same as position 0.

Position 2: Tip pushbutton to operate, release to stop. Auto stop at end.

To the left of the rotary switches is a red LED which indicates all activities.

Next to it is a reset pushbutton and to the right of that is a service pin. For functions, please refer to the operating instructions.

The terminals located above are plug-in terminals for conductor cross-sections of 0.2 mm² to 1.5 mm². Next to them are three wires with wire end-sleeves for the two control inputs with internal low voltage.

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**Recommended retail prices excluding VAT.**

| PL-SAM2 | Powerline Venetian blind actuator for 1 motor | EAN 4010312316689 | 105,40 €/pc. |
PL-SAMDU

Powerline universal dimmer actuator. 53 x 43 mm, 40 mm deep for mounting in 58 mm switch boxes. Power MOSFET up to 300 W. Automatic lamp detection. Sensor input 230 V. Standby loss only 0,6 Watt. To control and dim at the same place.

Universal dimmer switch for lamps up to 300 W, dependent on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V-LED lamps, additionally dependent on the lamps electronics. No minimum load. Zero passage switching with soft ON and soft OFF to protect lamps.

Short-time control commands switch on/off, permanent control varies the brightness to the maximum level. A interruption of control changes the direction of dimming.

The brightness level is stored on switch-off (memory).

In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.

Automatic electronic overload protection and overtemperature switch-off.

Two rotary switches are located on the front for address assignment:

The left rotary switch defines the group address g with 16 alphabetical values from A to P.

The right rotary switch defines the element address e with 16 numerical values from 0 to 15.

Above it is a slide switch which acts as a configuration switch:

The position AUTO1 allows the dimming of all types of lamps up to 300 watts.

The position LC1 is a comfort position for LED lamps up to 150 watts which are not being dimmed down enough when set to AUTO (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.

The position AUTO2 allows the dimming of all types of lamps up to 300 watts. Increased minimum brightness compared to AUTO1.

In position LC1 no inductive (wound) transformers should be used. In addition, the maximum number of dimmable LED lamps can be lower than in the AUTO position dependent on the construction.

Mixing of L loads (inductive loads, e.g. wound transformers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230V incandescent lamps and halogen lamps) may be added anytime.

To the left of the rotary switches is a red LED which indicates all activities.

Next to it is a reset pushbutton and to the right of that is a service pin. For functions, please refer to the operating instructions.

The terminals located above are plug-in terminals for conductor cross-sections of 0.2 mm² to 1.5 mm².

PL-SAMDU | Powerline universal dimmer actuator 1 channel with sensor input 230 V | EAN 4010312316870 | 119,60 €/pc.

PL-AMD10V

Powerline dimmer actuator 1-10 V. 53 x 43 mm, 25 mm deep, for mounting in 58 mm switch boxes. To switch and/or dim via a 1-10 V interface. 1 NO non-floating contact 600 VA. Standby loss only 0,5 watt. To activate and dim at different places.

Current sink of max. 30 mA for active and passive electronic ballasts. A Powerline sensor input is required for activation. Two rotary switches are located on the front for address assignment:

The left rotary switch defines the group address g with 16 alphabetical values from A to P.

The right rotary switch defines the element address e with 16 numerical values from 0 to 15.

Above it is a slide switch which has no function here.

To the left of the rotary switches is a red LED which indicates all activities. Next to it is a reset pushbutton and to the right of that is a service pin. For functions, please refer to the operating instructions.

The terminals located above are plug-in terminals for conductor cross-sections of 0.2 mm² to 1.5 mm².

PL-AMD10V | Powerline dimmer actuator 1-10 V | EAN 4010312316726 | 105,40 €/pc.
DECENTRALISED TLZ ACTUATOR PL-SAM1LT WITH SENSOR INPUT 230 V AND
DECENTRALISED ACTUATOR PL-SAM1L WITH SENSOR INPUT 230 V

PL-SAM1LT

Powerline TLZ (staircase time switch) actuator with 1 channel. 53 x 43 mm, 25 mm deep for mounting in 58 mm switch boxes. Off delay settable from 1 minute to 120 minutes. Switch-off early warning settable. 1 NO contact not potential free 10 A/250 V AC, incandescent lamps 2000 watts. Sensor input 230 V. Standby loss only 0.5 watt. To control and switch at the same place.

Two rotary switches are located on the front for address assignment:
The left rotary switch defines the group address g with 16 alphabetical values from A to P.
The right rotary switch determines the off-delay time.
Above it is a slide switch which acts as a configuration switch with positions 0, 1 and 2.
Position 0: Pushbutton at sensor input with subsequent switching.
Position 1: Same as Position 0 but with switch-off early warning.
Position 2: A change-over switch is evaluated as a pushbutton.
To the left of the rotary switches is a red LED which indicates all activities.
Next to it is a reset pushbutton and to the right of that is a service pin. For functions, please refer to the operating instructions.
The terminals located above are plug-in terminals for conductor cross-sections of 0.2 mm² to 1.5 mm².

| PL-SAM1LT | Powerline TLZ actuator 1 channel with sensor input 230 V | EAN 4010312316702 | 105.40 €/pc. |

Recommended retail prices excluding VAT.

PL-SM1L

Powerline sensor input with 1 channel. 53 x 43 mm, 25 mm deep for mounting in 58 mm switch boxes. Sensor input 230 V. Standby loss only 0.5 watt. To control and switch at different places.

When pressed, the sensor input acts on all actuators with the same address or as a central pushbutton if element address 0 is used.
Two rotary switches are located on the front for address assignment:
The left rotary switch defines the group address g with 16 alphabetical values from A to P.
The right rotary switch defines the element address e with 16 numerical values from 0 to 15.
Above it is a slide switch which acts as a configuration switch with positions 0, 1 and 2.
Position 0: Sensor input with reset function as pushbutton.
Position 1: Sensor input functions as NO contact.
Position 2: A change-over switch is evaluated as a pushbutton.
To the left of the rotary switches is a red LED which indicates all activities.
Next to it is a reset pushbutton and to the right of that is a service pin. For functions, please refer to the operating instructions.
The terminals located above are plug-in terminals for conductor cross-sections of 0.2 mm² to 1.5 mm².

| PL-SM1L | Powerline sensor input 230 V | EAN 4010312316740 | 99.90 €/pc. |
DECENTRALISED 8-CHANNEL SENSOR INPUT PL-SM8 AND TEMPERATURE CONTROLLER PL-SAMTEMP FOR HEATING AND COOLING

**PL-SM8**

Powerline sensor input with 8 channels. 53 x 43 mm, 25 mm deep for mounting in 58 mm switch boxes. 8 sensor inputs with internal low voltage. Standby loss only 0.5 watt. To control and switch at different places.

Use only potential free switching elements. Internal low voltage applied to the sensor inputs.

Two rotary switches are located on the front for address assignment:
- The left rotary switch defines the group address g with 16 alphabetical values from A to P.
- The right rotary switch defines the element address e with 16 numerical values from 0 to 15.

Above them is a slide switch which functions as a configuration switch.

Position 0: 2 adjacent inputs as direction pushbuttons for UP/DOWN or ON/OFF.

Position 1: All sensor inputs function separately as NO contacts.

Position 2: All sensor inputs function separately as pushbuttons.

To the left of the rotary switches is a red LED which indicates all activities.

Next to it is a reset pushbutton and to the right of that is a service pin. For functions, please refer to the operating instructions.

The terminals located above are plug-in terminals for conductor cross-sections of 0.2 mm² to 1.5 mm².

The addresses of the 8 inputs can also be freely assigned if necessary using the SIENNA-Professional software.

The socket strip located above this has 9 plug-in wires with wire end-sleeves.

8 control inputs with internal low voltage.

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**PL-SAMTEMP**

Powerline temperature controller with display, white, 55 x 55 mm, for mounting in switch systems. In addition a floating control contact 3 A/250 V AC for direct connection of heaters and coolers. Standby loss only 0.4 watt.

The scope of supply comprises a frame RIE and an intermediate frame ZR65/55 for the E-Design, the temperature controller upper part and a bottom part for attachment in 55 mm flush-mounted boxes.

The complete display can be removed from the frame for screw mounting.

In normal mode the current room temperature is indicated in the display as well as icons for 'present' or 'absent' and for 'heating on' or 'cooling active'.

Press the pushbuttons ☐ (absent) and ☑ (present) to activate the associated setpoint.

In setup mode as described in the user's manual, press pushbuttons ▲ and ▼ to display the setpoint and actual temperatures and change the setpoints.

Control heating or cooling with Powerline actuators PL-SAML or PL-SAM2L.

---

Typical connections on page 4-10.
PL-SW-PROF

The coupling element with USB cable and 230V power supply unit is included in the scope of supply. The software for installation and configuration of the powerline devices PL is available for download under eltako.com.

PL-SW-PROF is a Windows-based program for installing and configuring all PL and SIENNA components and is designed for electricians.

Powerline systems can either be installed or configured using a screwdriver or a PC/laptop.

All changes can be made from the PC. Existing installations in a building can also be read and detected.

The bus is coupled using a USB port on the PC. Thanks to Powerline technology, the nearest electric socket becomes a bus coupler.

Download in accordance with the included installation instructions from the homepage eltako.com/en -> Software -> Powerline. The operating instructions are available for download at the bottom of the page under Operating Instructions/SIENNA Professional.

<table>
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</tr>
<tr>
<td><strong>Operating system</strong></td>
</tr>
<tr>
<td><strong>Programming environment</strong></td>
</tr>
<tr>
<td><strong>Hard disc memory</strong></td>
</tr>
<tr>
<td><strong>RAM memory</strong></td>
</tr>
<tr>
<td><strong>Screen resolution</strong></td>
</tr>
<tr>
<td><strong>Interface</strong></td>
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<table>
<thead>
<tr>
<th>TECHNICAL DATA ECHELON COUPLING ELEMENT PL-20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technology</strong></td>
</tr>
<tr>
<td><strong>Bus coupler</strong></td>
</tr>
<tr>
<td><strong>PC coupler</strong></td>
</tr>
<tr>
<td><strong>Current draw</strong></td>
</tr>
<tr>
<td><strong>Processor type</strong></td>
</tr>
<tr>
<td><strong>Temperature range</strong></td>
</tr>
</tbody>
</table>

PL-SW-PROF | Software PL-SW-PROF | EAN 4010312316856 | 333,40 €/pc.*

* The software part is not discountable.
TYPICAL CONNECTIONS

Typical connection PL-SAM1L
Additional switching point for an existing consumer

Typical connection PL-SAM2L

Typical connection PL-SAM2

Typical connection PL-AMD10V

Typical connection PL-SAM1LT
Delayed switch-off

Typical connection PL-SM1
Switch an additional consumer

Typical connection PL-SM8

Typical connection PL-SAMDU

(e.g. staircase time switch or circulation pump)
SAM1LT switches itself and associated actuators off after a preset time.

(e.g. mirror light in bathroom, socket in living room, outside light)
### TECHNICAL DATA POWERLINE DEVICES

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<tr>
<th>Type</th>
<th>PL-SAMDU</th>
<th>PL-AMD10V</th>
<th>PL-SAM1L</th>
<th>PL-SAM2L</th>
<th>PL-SAM2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contacts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact material/contact gap</td>
<td>Power Mosfet</td>
<td>AgSnO₂/0.5 mm</td>
<td>AgSnO₂/0.5 mm</td>
<td>AgSnO₂/0.5 mm</td>
<td>AgSnO₂/0.5 mm</td>
</tr>
<tr>
<td>Spacing of control connections/contact</td>
<td>–</td>
<td>–</td>
<td>3 mm</td>
<td>3 mm</td>
<td>3 mm</td>
</tr>
<tr>
<td>Test voltage control connections/contact</td>
<td>–</td>
<td>–</td>
<td>2000 V</td>
<td>2000 V</td>
<td>2000 V</td>
</tr>
<tr>
<td>Rated switching capacity each contact</td>
<td>–</td>
<td>–</td>
<td>600 VA</td>
<td>10A/250 V AC</td>
<td>5A/250 V AC</td>
</tr>
<tr>
<td>Incandescent lamp and halogen lamp load up to 230 V, I &lt; 70 A/104-11 ms</td>
<td>–</td>
<td>–</td>
<td>2000 W</td>
<td>1000 W</td>
<td>–</td>
</tr>
<tr>
<td>Inductive load cos ϕ = 0.6/230 V AC inrush current ≤ 35 A</td>
<td>up to 300 W</td>
<td>–</td>
<td>650 W</td>
<td>650 W</td>
<td>650 W</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* in lead-lag circuit or non compensated</td>
<td>–</td>
<td>–</td>
<td>1000 VA</td>
<td>500 VA</td>
<td>–</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* shunt-compensated or with EVG*</td>
<td>–</td>
<td>600 VA</td>
<td>500 VA</td>
<td>250 VA</td>
<td>–</td>
</tr>
<tr>
<td>Compact fluorescent lamps with EVG* and energy saving lamps</td>
<td>–</td>
<td>–</td>
<td>up to 400 W</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Dimmable 230 V LED lamps</td>
<td>up to 300 W</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Service life at rated load, cos ϕ = 1 or incandescent lamps 500 W at 100 h</td>
<td>–</td>
<td>&gt; 10⁵</td>
<td>&gt; 10⁵</td>
<td>&gt; 10⁵</td>
<td>&gt; 10⁵</td>
</tr>
<tr>
<td>Service life at rated load, cos ϕ = 0.6 at 100 h</td>
<td>–</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
</tr>
<tr>
<td>Max. operating cycles</td>
<td>–</td>
<td>10⁵/h</td>
<td>10⁵/h</td>
<td>10⁵/h</td>
<td>10⁵/h</td>
</tr>
<tr>
<td>Connection type</td>
<td>Plug-in terminals</td>
<td>Plug-in terminals</td>
<td>Plug-in terminals</td>
<td>Plug-in terminals</td>
<td>Plug-in terminals</td>
</tr>
<tr>
<td>Minimum conductor cross-section</td>
<td>0.2 mm²</td>
<td>0.2 mm²</td>
<td>0.2 mm²</td>
<td>0.2 mm²</td>
<td>0.2 mm²</td>
</tr>
<tr>
<td>Maximum conductor cross-section</td>
<td>1.5 mm²</td>
<td>1.5 mm²</td>
<td>1.5 mm²</td>
<td>1.5 mm²</td>
<td>1.5 mm²</td>
</tr>
<tr>
<td>Conductor stripping</td>
<td>8-9 mm</td>
<td>8-9 mm</td>
<td>8-9 mm</td>
<td>8-9 mm</td>
<td>8-9 mm</td>
</tr>
<tr>
<td>Type of enclosure/terminals</td>
<td>IP30/IP20</td>
<td>IP30/IP20</td>
<td>IP30/IP20</td>
<td>IP30/IP20</td>
<td>IP30/IP20</td>
</tr>
<tr>
<td><strong>Electronics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time on</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Max./min. temperature at mounting location</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
</tr>
<tr>
<td>Standby loss (active power)</td>
<td>0.6 W</td>
<td>0.5 W</td>
<td>0.5 W</td>
<td>0.5 W</td>
<td>0.5 W</td>
</tr>
<tr>
<td>Local control current at 230 V control input</td>
<td>0.4 mA</td>
<td>–</td>
<td>0.4 mA</td>
<td>0.4 mA</td>
<td>0.4 mA</td>
</tr>
<tr>
<td>Max. parallel capacitance (approx. length) of local control lead at 230 V AC</td>
<td>3 nF (10 m)</td>
<td>–</td>
<td>3 nF (10 m)</td>
<td>3 nF (10 m)</td>
<td>3 nF (10 m)</td>
</tr>
</tbody>
</table>

### Notes:
- Applies to lamps of max. 150 W.
- Also transformers electronically (C load).
- Generally applies to 230 V LED lamps. Due to different lamp electronics, switch on/off problems and a restriction in the maximum number of lamps, however, the dimming ranges may be limited depending on the manufacturer; in particular when the connected load is very low (e.g. with 5 W LEDs). The comfort position LC1 at SAMDU optimizes the dimming range, which however results in a maximum capacity of only up to 150 W. In this comfort position, no wound (inductive) transformers should be dimmed.
- Fluorescent lamps or LV halogen lamps with electronic ballast.
- Applies to lamps of max. 150 W.
- All actuators with 2 contacts: Inductive load cos ϕ = 0.6 as sum of both contacts 1000 W max.
- A maximum of 2 transformers of the same type.
- EVG = electronic ballast units; KVG = conventional ballast units.

Powerline communication in the B/C-Band (5kb/s) corresponds to FCC, CENELEC EN 50065-1 and LONWORKS protocol.
THE FUTURE OF ELECTRICAL INSTALLATIONS IN RESIDENTIAL BUILDINGS – THE BLUE WIRELESS NETWORK IN THE BUILDING.
The blue wireless network in the building with MiniSafe, MiniSafeREG, Safe IV, PowerSafe IV, Touch IV, wibutler pro and iRoom docking stations

Eltako – The Wireless Building. The basis with sensors and actuators 5 - 2
Eltako – The Wireless Building for all 5 - 3
The blue wireless network in the building 5 - 4
The Smart Home control unit Safe IV with Wireless Building software GFVS 4.0 5 - 4
The Smart Home control unit and its assistants 5 - 5
Smart Home control unit Safe IV 5 - 6
Smart Home control unit PowerSafe IV 5 - 7
Wireless Building Visualisation and Control Software GFVS 4.0 5 - 8
Wireless GSM module FGSM14 5 - 9
Smart Home control unit Touch IV 5 -10
Smart Home control unit MiniSafe 5 -11
Smart Home control unit MiniSafe REG and switching power supply unit for MiniSafe REG HDR-30-5 5 -12
Smart Home control unit wibutler pro WP 5-13
NEW Smart Home control unit mediola MV6 mini E 5-14
IP Gateway EAP185 for Safe and Touch with GFVS 5 -15
NEW Wall Docking station with charging function fixDock-iPad10.5- 5-16
Wall Docking station with charging function fixDock-iPad5- and fixDock-Mini4- 5-16
Wall Docking station with charging function surDock-iPad-10.5-, surDock-iPad-5-, and surDock-iPad-mini- 5-17
Wall Docking station with charging function and motor LWA-5+LBA-5, LWG-5+LBG-5 and LWG-Code5+LBG-Code5 5-18
Wall Docking station with charging function and motor miniDock4- and iBezel-5- 5-19
NEW Wall Docking station with charging function and motor PBA-5+PWA-5 5-19
Desktop docking station with charging function iTop-Pro- and iTop-Plus- 5-20
Flush-mounted box for miniDock BB-Mini 5-20
Flush-mounted box for all iDock models BB-B and BB-LAB+BB-LAS 5-21
NEW Flush-mounted box for all iDock models BB-PAB+BB-PAS 5-21

The Eltako wireless system works with the reliable and worldwide standardized EnOcean wireless technology in 868 MHz. It transmits ultra short and interference-proof signals with a range of up to 100 meters in halls. Eltako wireless pushbuttons reduce the electromagnetic load since they emit high-frequency waves that are 100 times weaker than conventional light switches. There is also a significant reduction in low-frequency alternating fields since fewer power cables need to be installed in the building.
ELTAKO – THE WIRELESS BUILDING. THE BASIS WITH SENSORS AND ACTUATORS

THE ELTAKO WIRELESS BUILDING IS THE WIRELESS NETWORK FOR BUILDINGS OF ANY SIZE.

The wireless pushbuttons, wireless sensors and wireless actuators from Eltako work perfectly together and control, regulate and switch all areas in the building. GFVS software and hardware for visualisation and control.

- If a GSM module FGSM14 is installed in the house, it can be monitored and controlled with the available free smartphone app as remote control, without a Wireless Building control unit and an internet connection being required. A data card with flat is included. Easy and reliable application with the Eltako quickcon® technology.
- An installed Wireless Building control unit SafeIV installed with the Wireless Building Visualisation and Control Software GFVS 4.0 provides extra functions and permits modern visualisation and control via tablet or smartphone over an internet connection and integrated wireless antenna module. Remote over smartphone including camera pictures.
- All pushbutton, sensor and actuator functions in the building are retained even if the Smart Home control unit is down – e.g. for maintenance purposes.

Without Eltako sensors and actuators no information or control commands can be sent over the wireless network. They form the basis for the Eltako Wireless Building and of course they operate without a Wireless Building control unit if there is no requirement for centralised building monitoring, centralised building control or visualisation. Smartphone access is still possible for Series 14 actuators.

Eltako sensors for switch commands, temperature, brightness, motion, humidity and air quality run partly without external power supply.

Batteryless and cordless Eltako wireless pushbuttons and handheld transmitters generate their own power requirements for wireless telegrams when operated. Many Eltako sensors generate their power requirements from a solar cell and save excess energy from daylight to storage capacitors so that there is sufficient energy for troublefree functioning in the dark. Some of these sensors and solar cells can be made ‘winterproof’ with additional batteries. Further Eltako sensors have a higher power requirement which they cannot generate themselves and therefore require an external power supply. Eltako actuators are the backbone of the Eltako Wireless Building. They only evaluate directly addressed wireless telegrams in order to switch or control any number of consumers in the building. Many have a bidirectional function.

This allows them to send back their switch states to the Wireless Building control unit or displays or directly initiate other functions via actuators. In addition, these actuators may also function as repeaters.

Of course there are specific actuators for either centralised or decentralised installation. If the Eltako RS485 bus is installed centrally with rail mounted devices in switch cabinets, a wireless antenna module FAM14 is used to communicate with the actuators. The RS485 bus can also be used composite or without wireless by means of the Eltako remote switch system FTS.

The Eltako Wireless Building uses all Eltako wireless components in an ingenious way and can be installed even in small installations. The components are all downwars-compatible!

All sensors and actuators communicate within the Eltako wireless network by means of telegrams using the world-wide standard of the EnOcean Alliance. The batteryless and cordless wireless modules in the Eltako wireless pushbuttons are produced by EnOcean in Germany, the wireless microchips in the other sensors and actuators in Europe.

Eltako therefore develops and manufactures all the offered sensors and actuators with the Eltako logo. These are of course compatible with all products made by other manufacturers within the enormous international EnOcean family.

A SMALL SELECTION OF OUR WIRELESS SENSORS AND ACTUATORS

- F4T65 Wireless pushbutton without battery or wire
- FBH65B Motion/brightness sensor
- F4T65 Wireless flat pushbutton
- FMH2S-wr Mini hand-held transmitter for calling systems
- FDFD Remote control
- FDR14-2x Impulse switch
- FUD14 Dimming actuator 400 W
- FUD61NP Dimming actuator without N
- FSR61NP Switching actuator
- FSR14-2x Impulse switch
- FTR655B Temperature controller
- FTR655B Wireless flat pushbutton
YOU CAN START SMALL WITH ELTAKO WIRELESS BUILDING.

An actuator with two batteryless and wireless pushbuttons is already a very elegant solution to the problem of missing pushbuttons. The old light switch is replaced by a wireless actuator preceded by a wireless pushbutton. Up to 32 other wireless pushbuttons can be fitted. Then of course, the wireless actuator can also be a wireless dimming actuator.

At the other end of the unlimited and wide spectrum of possibilities with the Eltako Wireless Building, there are networked skyscrapers with hundreds of wireless sensors and wireless actuators, in groups or grouped floor by floor, monitored, controlled and visualised by Smart Home control units Safe IV and installed software GFVS 4.0.

THE 3 STAGES ON THE ELTAKO WIRELESS BUILDING SUCCESS LADDER.

STAGE 1
A few wireless sensors and wireless actuators to improve or expand an existing installation. Generally with actuators installed decentrally.

STAGE 2
Several wireless sensors and wireless actuators to renovate an existing building or construct a new building but without centralised monitoring, control or visualisation. With actuators installed decentralised and centralised. Smartphone access by app and GSM module.

STAGE 3
Several wireless sensors and wireless actuators in a residential building with centralised monitoring, control or visualisation. With a Smart Home control unit Safe IV with integrated wireless antenna module and installed software GFVS 4.0. Actuators mainly installed centrally and supplemented by decentralised installation. With internet access, standard external access to smartphones over the mobile radio network. Visualisation and control from tablet PCs and smartphones.
THE BLUE WIRELESS NETWORK IN THE BUILDING

THE SMART HOME CONTROL UNIT SAFE IV WITH WIRELESS BUILDING SOFTWARE GFVS 4.0

A building surveillance, control and visualisation system based on a Smart Home control unit. Secure data management by means of Safe IV and the factory installed Wireless Building Visualisation and Control Software GFVS 4.0.

Monitors and transmits wireless information independent of the size of the building or number of locations. Integrated wireless antenna module for smaller buildings. With internet access, standard access to smartphones over the mobile radio network.

Transmission of electricity meter parameters directly from the RS485 interface of the meter to the bus and then to the wireless network, if required.

1) The blue network. Derived from the Eltako corporate colour blue which is the symbolic colour for environmental protection and sustainability in numerous countries – e.g. in the USA.

2) All data and events are saved to a database for a predefined period. A net storage capacity of up to 80 GB (Safe IV) resp. 200 GB (PowerSafe IV) is available for data. As protection against data loss, data is saved on a hard disc partition. In addition, data can be stored externally, e.g. on an USB stick.

3) The Safe IV is a Smart Home control unit of small design in the industry standard, which can be mounted anywhere. On the back of an intended VESA mounting MIS-D monitor with special screws. Otherwise fastening with slots with suspension opening at the rear.

4) The Wireless Building Visualisation and Control Software GFVS visualises the switch positions of actuators and the consumption of connected meters for electricity, gas, water and heat. On the other hand, direct hook-ups and controls can be switched using preset software links. For this purpose all it takes is a click of a mouse or a touch on a tablet PC, smartphone or notebook. This hardware is not included, so it can be selected according to the personal needs of the user.
THE SMART HOME CONTROL UNIT AND ITS ASSISTANTS

Like a spider in a web the Smart Home control unit SafeIV ‘feels’ all ‘vibrations’ in the network. It detects every single wireless telegram within the entire building. This function is provided by the integrated wireless antenna module. Its range can be extended by installing repeaters or EnOcean access points.

There is more to the Smart Home control unit and its assistants than listening, they can also send control commands and information over the Eltako wireless network. For example, to control a building’s energy supply, to supply fresh air, control shading elements optimally or switch lighting from a central point.

Reliable calculations show that optimised automatic building control is required to implement the zero energy building or even the + energy building.

SWITCHING AND DIMMING ACTUATORS SERIES 61 AND 71, DECENTRALISED INSTALLATION

SWITCHING AND DIMMING ACTUATORS SERIES 14, FOR CENTRAL INSTALLATION
Safe IV

Smart Home control unit Safe IV with LAN and if need be GSM communication, 199 x 180 x 39 mm.

The Safe IV is a Smart Home control unit of small design in the industry standard, which can be mounted anywhere. On the back of an intended VESA mounting MIS-D monitor with supplied screws. Otherwise fastening with slots with suspension opening at the rear.

The Linux operating system is installed as well as the Wireless Building Visualisation and Control Software GFVS 4.0. The wireless antenna module is integrated, a power supply is included. The Smart Home control unit is locked for other applications. The power consumption is only 11 resp. 13 watts. For power supply a switching power supply unit 230 V/12 V DC is included.

All data and events are saved to a database for a predefined period. There is a net memory capacity of up to 80 GB available for data. As protection against data loss, data is saved on a hard disc partition. In addition, data can be stored externally, e.g. on an USB stick.

The installed Wireless Building Visualisation and Control Software GFVS 4.0 visualises the switch positions of actuators and the consumption of taught-in meters for electricity, gas, water and heat. On the other hand, direct hook-ups and controls can be made using preset software links. For this purpose all it takes is a click of a mouse or a touch on a tablet PC, smartphone or notebook. This hardware is not included, so it can be selected according to the personal needs of the user.

<table>
<thead>
<tr>
<th>TECHNICAL DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
</tr>
<tr>
<td>RAM</td>
</tr>
<tr>
<td>Hard disk</td>
</tr>
<tr>
<td>Wireless standards / frequencies</td>
</tr>
<tr>
<td>Power supply</td>
</tr>
<tr>
<td>Power consumption (max.)</td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
</tr>
<tr>
<td>Weight</td>
</tr>
</tbody>
</table>

| Safe IV-rw     | Eltako Smart Home control unit with software GFVS 4.0, pure white | EAN 4010312318287 | 999,00 €/pc.* |
| Safe IV-sz     | Eltako Smart Home control unit with software GFVS 4.0, black    | EAN 4010312318805 | 999,00 €/pc.* |

Recommended retail prices excluding VAT.

* The software part is not discountable.
PowerSafe IV

Smart Home control unit PowerSafe IV with LAN and if need be GSM communication, 199 x 180 x 39 mm.

The PowerSafe IV is a Smart Home control unit of small design in the industry standard, which can be mounted anywhere. On the back of an intended VESA mounting MIS-D monitor with supplied screws. Otherwise fastening with slots with suspension opening at the rear.

The Linux operating system is installed as well as the Wireless Building Visualisation and Control Software GFVS 4.0. The wireless antenna module is integrated, a power supply is included. The Smart Home control unit is locked for other applications.

The power consumption is only 35 resp. 37 watts. For power supply a switching power supply unit 230 V/12 V DC is included.

All data and events are saved to a database for a predefined period. There is a net memory capacity of up to 200 GB available for data. As protection against data loss, data is saved on a hard disc partition. In addition, data can be stored externally, e.g. on an USB stick.

The installed Wireless Building Visualisation and Control Software GFVS 4.0 visualises the switch positions of actuators and the consumption of taught-in meters for electricity, gas, water and heat. On the other hand, direct hook-ups and controls can be made using preset software links. For this purpose all it takes is a click of a mouse or a touch on a tablet PC, smartphone or notebook. This hardware is not included, so it can be selected according to the personal needs of the user.

For external communication, the PowerSafe IV can be equipped with a GSM modem. Recognisable by the third antenna for communication over the GSM mobile network.

Provided an internet access exists, it permits external access by smartphone and/or tablet PC for visualisation and control. This is free of charge on the building side. Very simple and secure registration using Eltako quickcon® technology. If no data card is fitted for the optional GSM modem, the Data Communication Pack GFVS-Comm is required to permit external access.

GSM is the Global System for Mobile Communications which is used for mobile radio (D and E networks in Germany) and to exchange data packets.

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>CPU</th>
<th>Intel Core i7 Prozessor</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAM</td>
<td>8 GB</td>
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<tr>
<td>Hard disk</td>
<td>240 GB SSD</td>
</tr>
<tr>
<td>Wireless standards / frequencies</td>
<td>EnOcean 868 MHz, WLAN 2.4 GHz 802.11ac</td>
</tr>
<tr>
<td>Power supply</td>
<td>Power supply unit 100-240 V AC/12 V DC</td>
</tr>
<tr>
<td>Power consumption (max.)</td>
<td>35 watts without GSM modem, 37 watts with GSM modem</td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
<td>199 x 180 x 39mm</td>
</tr>
<tr>
<td>Weight</td>
<td>ca. 1.1 kg</td>
</tr>
</tbody>
</table>

**PowerSafe IV- rw**

Eltako Smart Home control unit with software GFVS 4.0, pure white

EAN 4010312318294

1.999,00 €/pc.*

**GSM-Modem**

GSM modem upgrade

EAN 4010312318836

150,00 €/pc.*

* The software part is not discountable
GFVS 4.0

Wireless Visualisation and Control Software GFVS 4.0. Included in the scope of supply of the Smart Home control units Safe IV, PowerSafe IV and Touch IV.

A wireless receiver for transmitting and receiving the wireless telegrams is already integrated in the Smart Home control units Safe IV, PowerSafe IV and Touch IV. For connecting tablets, smartphones or PC, access rights for 5 devices (clients) are included in delivery. Free download of apps for tablets and smartphones from Google and Apple stores.

- two language system in German and English with simple switchover
- status feedbacks can be integrated from most actuators in Series 14, 61 and 71
- appealing operating apps for smartphone and tablet PC
- 5 clients included in the system scope of supply for direct control by smartphone, tablet and PC
- automatic data backup of the entire system, up to 3 backups can be saved
- recovery mode to restore system backups
- visualisation software with control functions for:
  - control and dim light on/off
  - control roller shutters/blinds/awnings
  - control temperature in individual rooms
  - light scenes
  - time-controlled astro functions
  - register and control by email
  - evaluate electricity meters via the energy cockpit with currency selection
  - surveillance functions with up to 5 cameras
  - hotline free of charge

### PERFORMANCE FEATURES

<table>
<thead>
<tr>
<th>Feature</th>
<th>GFVS 4.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of supported sensors and energy meter transmitter modules</td>
<td>unlimited</td>
</tr>
<tr>
<td>Number of supported actuators</td>
<td>unlimited</td>
</tr>
<tr>
<td>Number of supported clients</td>
<td>5</td>
</tr>
<tr>
<td>Number of supported cameras up to a resolution of 1280 x 1024</td>
<td>5</td>
</tr>
<tr>
<td>Number of supported timers</td>
<td>unlimited</td>
</tr>
<tr>
<td>SQL database in scope of delivery</td>
<td>✔</td>
</tr>
<tr>
<td>Sends text messages/e-mails</td>
<td>✔</td>
</tr>
<tr>
<td>Voice control</td>
<td>✔</td>
</tr>
<tr>
<td>Supports Eltako apps</td>
<td>✔</td>
</tr>
<tr>
<td>256 bit encryption</td>
<td>✔</td>
</tr>
</tbody>
</table>
FGSM14

Wireless GSM module for the Eltako RS485 bus. Bidirectional. Standby loss 0.9 watt. The GSM antenna is contained in the scope of supply.

DIN rail mounted device for fitting on mounting rail DIN-EN 60715 TH35.
3 modules = 54 mm wide, 58 mm deep.
When receiving and transmitting the power loss is about 2 watts.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.
The GSM module links smartphones encrypted directly to the bus over the mobile radio network. Thereby up to 16 Series 14 switching points in the same RS485 bus can be very easily addressed encrypted by Eltako app. Multiple actuators can be addressed per switching point. The switching points report their status back. In addition, 8 other status messages, for example for temperatures and error messages, are possible.

A status overview takes place immediately when the app is activated in the smartphone.

Very simple and secure registration using Eltako quickcon® technology.

Now also with Push Function. It displays fault messages actively on smartphones. It is triggered by smoke alarms, water probes or window contacts, for example.

Download the app FGSM14 from the store of your iPhone or Android mobile system.
The configuration of the FGSM14 is done with the PC-Tool PCT14 at the FAM14 or FTS14KS.
Power is supplied by an integrated switch mode power supply unit independent from the bus power supply. Therefore, a 230 V supply voltage to L and N is required.

If the GSM receiver is not installed at the same place in a distributor containing Series 14 actuators, the bus is connected to a bus coupler FBA14 using a 2-wire screened bus line (e.g. telephone line). Then connect to the RSA and RSB terminals.

For the function of the GSM module FGSM14 it is necessary that a device address is assigned from the FAM14 or the FTS14KS as described in the operating instructions.
A data flat for 2 years is included in the price of the version for Germany.

Only one application form for commissioning must be completed and submitted. This is located in the package. The activation takes place on the next business day after receipt. Subsequent contracts are offered automatically.

A data card is already inserted in the FGSM14. This can be replaced with the card of another provider after removing the middle front plate. No data card is included in the delivery of the FGSM14E.

<table>
<thead>
<tr>
<th>FGSM14</th>
<th>Wireless GSM module Germany with dataflat for two years</th>
<th>EAN 4010312314098</th>
<th>285,00 €/pc.*</th>
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</thead>
<tbody>
<tr>
<td>FGSM14E</td>
<td>Wireless GSM module Export without dataflat</td>
<td>EAN 4010312315637</td>
<td>215,00 €/pc.*</td>
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</tbody>
</table>

Recommended retail prices excluding VAT.

* The software part is not discountable.

Wireless GSM module Germany with dataflat for two years EAN 4010312314098 285,00 €/pc.* Wireless GSM module Export without dataflat EAN 4010312315637 215,00 €/pc.*
SMART HOME CONTROL UNIT TOUCH IV

**Touch IV**

The Smart Home control unit. Switch on, configure and use!

15.6” monitor PC Touch IV for continuous duty with integrated wireless antenna module and ready installed Wireless Visualisation and Control Software GFVS 4.0 for all the necessary sensors and actuators, 5 clients, 5 cameras and any number of sensors, actuators and timers. Smartphone link over WLAN. With stand for standalone installation or for mounting on the wall. The VESA mount for wall mounting can be ordered separately.

This monitor PC has a Linux operating system and is locked for other applications so GFVS 4.0 can work free of faults. Suitable for 24/7 non-stop operation. The scope of supply includes a mains adapter.

All data and events are saved to a database for a predefined period. There is a net memory capacity of up to 80 GB available for data. As protection against data loss, data is saved on a hard disc partition. In addition, data can be stored externally, e.g. on an USB stick.

The installed Wireless Building Visualisation and Control Software GFVS 4.0 visualises the switch positions of actuators and the consumption of taught-in meters for electricity, gas, water and heat. On the other hand, direct hook-ups and controls can be made using preset software links. One touch is all that’s needed.

Provided an internet access exists, it permits external access by smartphone and/or tablet PC for visualisation and control. This is free of charge on the building side. Very simple and secure registration using Eltako quickcon® technology.

**TECHNICAL DATA**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>CPU</td>
<td>Intel processor</td>
</tr>
<tr>
<td>RAM</td>
<td>4 GB</td>
</tr>
<tr>
<td>Hard disk</td>
<td>120 GB SSD</td>
</tr>
<tr>
<td>Wireless standards / frequencies</td>
<td>EnOcean 868 MHz, WLAN 2.4 GHz 802.11ac</td>
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<tr>
<td>Monitor</td>
<td>39.6 cm (15.6”) resistive touch screen</td>
</tr>
<tr>
<td>Power supply</td>
<td>Power supply unit 100-240 V AC/19 V DC</td>
</tr>
<tr>
<td>Power consumption (max.)</td>
<td>7 watts with monitor off, 12 watts with monitor on</td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
<td>391 x 327 x 42 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 3.6 kg</td>
</tr>
</tbody>
</table>

**Recommended retail prices excluding VAT.**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Touch IV-wg</td>
<td>Smart Home control unit Touch PC with GFVS 4.0, pure white glossy</td>
</tr>
<tr>
<td>EAN</td>
<td>4010312318829</td>
</tr>
<tr>
<td>Price</td>
<td>999,00 €/pc*</td>
</tr>
<tr>
<td>Touch IV-sz</td>
<td>Smart Home control unit Touch PC with GFVS 4.0, black glossy</td>
</tr>
<tr>
<td>EAN</td>
<td>4010312318812</td>
</tr>
<tr>
<td>Price</td>
<td>999,00 €/pc*</td>
</tr>
<tr>
<td>VESA Wand-halterung</td>
<td>For mounting Touch IV on the wall</td>
</tr>
<tr>
<td>EAN</td>
<td>4010312312629</td>
</tr>
<tr>
<td>Price</td>
<td>32,90 €/pc.</td>
</tr>
</tbody>
</table>

* The software part is not discountable.
The MiniSafe as Smart Home control unit receives EnOcean signals from many Eltako sensors and actuators and permits highly encrypted access, both internally and externally, with the app GFA4 by smartphone or tablet. Smart Home controller.

MiniSafe connected to the local network via Ethernet. The intended use of the MiniSafe is the bidirectional communication with EnOcean wireless signals over Ethernet (TCP/IP).

**Recommendation:** maximum 30 actuators and sensors for approx. 10 seconds connection time between app and MiniSafe.

**Scope of supply:** MiniSafe, wall adapter power supply, 1x ethernet cable 2 m RJ45, quick start guide, instruction for downloading the app GFA4.

**Specifications:** Processor: Intel X1021, memory: 1GB DDR3 RAM + 4 GB eMMC, LAN: 1x 10/100 Mbit ethernet, integrated EnOcean-868 MHz wireless module (TCM310) ESP3, power supply 5 V, plastic housing pure white glossy, dimensions: 165 x 70 x 35 mm with slots for wall mounting and feet to put down, weight: 175 grams.

The configuration and control is performed via the app GFA4 from the Android app store or Apple app store.

| MiniSafe | Smart Home control unit | EAN 4010312319079 | 297,00 €/pc.* |

*The software part is not discountable.
The MiniSafe REG as Smart Home control unit receives EnOcean signals from many Eltako sensors and actuators and permits highly encrypted access, both internally and externally, with the Eltako Wireless Building app GFA4 by smartphone or tablet. Smart Home controller.

MiniSafe REG connected to the local network via Ethernet. The intended use of the MiniSafe REG is the bidirectional communication with EnOcean wireless signals over Ethernet (TCP/IP).

**Recommendation:** maximum 30 actuators and sensors for approx. 10 seconds connection time between app and MiniSafe.

**Scope of supply:** MiniSafe REG, wireless antenna, wall adapter power supply, 1x ethernet cable 2 m RJ45, 2x DIN rail adapters, quick start guide, instruction for downloading the app GFA4.

**Specifications:** Processor: Intel X1021, memory: 1 GB DDR3 RAM + 4 GB eMMC, LAN: 1x 10/100 Mbit ethernet, integrated EnOcean-868 MHz wireless module (TCM310) ESP3, power supply 5 V, plastic housing gray RAL 7035, dimensions: 165 x 70 x 35 mm with slots for wall mounting and feet to put down, weight: 175 grams.

The configuration and control is performed via the app GFA4 from the Android app store or Apple app store.

The enclosed small antenna can be replaced with a wireless antenna FA250 with magnetic base and cable.

Can be mounted on an DIN rail DIN-EN 60715 TH35 with the DIN Rail adapters for the long holes, 10 pitches wide. Instead of the adapter plug, the DIN-rail power supply HDR-30-5 can be used. The special 5 V connection cable is already mounted.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MiniSafe REG</td>
<td>Smart Home control unit</td>
<td>4010312319017</td>
<td>308,80 €/pc.*</td>
</tr>
<tr>
<td>FA250</td>
<td>Wireless antenna with 250 cm cable, black</td>
<td>4010312300244</td>
<td>21,80 €/pc.</td>
</tr>
<tr>
<td>FA250-gw</td>
<td>Wireless antenna with 250 cm cable, grey white</td>
<td>4010312317051</td>
<td>21,80 €/pc.</td>
</tr>
<tr>
<td>HDR-30-5</td>
<td>Power supply unit 5 V/15 W for MiniSafe REG</td>
<td>4010312318874</td>
<td>43,40 €/pc.</td>
</tr>
</tbody>
</table>

* The software part is not discountable.
SMART HOME CONTROL UNIT WIBUTLER PRO

wibutler pro Smart Home control unit with app Eltako Edition. The wibutler pro-Home-Server is the Smart Home control unit of a cross-trade home automation solution which is capable of connecting several wireless sensors and wireless actuators together. Offline mode is optional via a separate access point without any online connection. Encrypted communications. Smart Home server.

The scope of supply comprises a profile pushbutton F4PT.
The products are easy to start up using an app contained in the scope of supply. Simply download the app from the wibutler.com website for iOS and Android devices.

Technical specifications:
- Power supply: 12 V DC, 100 V-240 V AC, 50/60 Hz;
- wireless protocols: EnOcean/868,3 MHz, Z-Wave, ZigBee, WLAN, LAN: 1x Ethernet-RJ 45;
- hard disk: integrated 8 GB SSD; RAM: 1GB DDR3-RAM;
- processor: 1GHz CPU ARMADA 370 ARM v7; audio: integrated loudspeaker, 3.5 mm jack connector.

Size (L x W x H): 11.7 x 11.7 x 4.1 cm; colour: white.

| WP | wibutler pro Smart Home control unit | EAN 4010312317372 | 462,80 €/pc.* |

THE WIBUTLER CONCEPT

Wibutler is a manufacturer independent smart home solution to simplify people’s everyday lives. The solution combines products of various manufacturers and needs only a single app for users to control, combine and automate all products. Using time and automation rules defined especially for this application, wibutler can assume tasks and act according to its owner’s wishes.

wibutler pro
The core of the solution is the pro Smart Home control unit wibutler. Thanks to multiple wireless standards (EnOcean, ZWave, ZigBee, WLAN), it is extremely compatible and is capable of networking products irrespective of the manufacturer. The Smart Home control unit translates wireless standards as required and allows the networking of products of different standards, manufacturers and industries. The wibutler pro is especially safe when used in offline mode. No connection to the Internet is then required.

wibutler app Eltako Edition
It takes only a few clicks to network, automate and control smart products using the wibutler app Eltako Edition. The entire house is networked and controlled by a single app.

This is how it works:

- **Automation rules:** The wibutler organises devices to work in teams. Devices react by means of if/then rules to movements or actions such as the opening or closing of windows, doors or drawers.

- **Time control:** wibutler uses time rules to learn repetitive tasks which must be executed at particular times.

- **Remote control:** using wibutler via your smartphone or tablet when you’re away from home to check the state of devices and appliances at home and change them to the state you want.

- **Consumption logs:** wibutler measures consumption and displays where are the greatest saving potential.

- **Profiles:** defined rules are assigned to profiles (e.g., ‘Home Day/Night’, ‘Away’ and ‘Holiday’). With one click of a profile pushbutton you can change the entire house to the mode you require (e.g. ‘Away’: All OFF, alarm system and presence simulations ON).

Recommended retail prices excluding VAT.

*The software part is not discountable.*
The mediola V6 mini E is a universal Smart Home central unit that networks devices of a large number of different brands and wireless standards, allowing them to work seamlessly together. The compact control unit is a centralised and convenient way to operate devices by infrared and wireless. Control is by app or by voice command.

Now it’s so simple to combine TV, hi-fi, lights, heating, roller shutters, sensors etc. without any problem and transform your home into a Smart Home in the twinkling of an eye. The many clever automation options will make your home really smart.

To network devices from all the various brands, the V6 mini E is equipped with a wireless transceiver for 868 MHz, an additional EnOcean transceiver and an IR transceiver. It lets you combine components from the vast portfolio of EnOcean and Homematic IP wireless systems with devices from Becker, elero, Kopp, Kaiser-Nienhaus, WIR Elektronik or IR devices – whatever your preferences. Control using the V6 mini E is always local. No internet access is required; however, remote access and Cloud link are optional.

Specifications:
- Power supply: 5 V DC / 1.5 A, 100 V-240 V AC, 50/60 Hz;
- Power consumption: 1.3 W;
- Wireless protocols: EnOcean 868.3 MHz, WLAN;
- Processor: 84 MHz ARM® Cortex®-M4, 512 Kbyte Flash, 96 KB SRAM;
- Network: WLAN IEEE 802.11/b/g/n 2.4 GHz;
- Wireless transceiver: 2x for 868 MHz;
- Infrared (IR): integrated IR receiver 38 kHz and transmitter (36 - 455 kHz);
- Size (LxWxH): 9 x 9 x 2 cm;
- Colour: black.

IQONTROL NEO APP – SMART HOME MADE EASY
IQONTROL NEO is the free app to operate the V6 mini E. It offers a low-cost and extremely simply entry into the immense world of the mediola Smart Home. Control is very simple and intuitive since the app has many features, e.g. it generates its user interface automatically.

A key feature: you can start controlling straight away with the easy-to-use IQONTROL NEO. Then, as needed, you can switch to AIO CREATOR NEO with its sensational flexibility. There is even an upgrade option to import an existing IQONTROL NEO configuration into the AIO CREATOR NEO.

* The software part is not discountable
Gateway with ETHERNET interface to run with a Smart Home Central Unit Safe or Touch together with the Wireless Building Visualisation and Control Software GFVS.

The EAP165 receives all wireless telegrams from the Eltako Wireless Building system from a building surface area of approx. 200 to 400 m² and forwards them via ETHERNET to the GFVS software. It also sends wireless telegrams from the software to the Eltako Wireless Building.

**Scope of supply:** EAP165, wall adapter power supply, interchangeable EnOcean antenna, 1x ethernet cable 2 m RJ45, quick start guide.

**Specifications:** Processor: Intel X1021, memory: 1 GB DDR3 RAM + 4 GB eMMC, LAN: 1x 10/100 Mbit Ethernet, integrated EnOcean-868 MHz wireless module (TCM310) ESP3, power supply 5 V, plastic housing gray RAL 7035, dimensions: 165 x 70 x 35 mm with slots for wall mounting and feet to put down, weight: 175 grams. Configuration is by means of the Eltako IP Configurator which is obtainable from [https://www.eltako.com/de/software.html](https://www.eltako.com/de/software.html)

| EAP165 | IP gateway | EAN 4010312319130 | 299,80 €/pc.* |

* The software part is not discountable.
## fixDock-iPad10.5-

In-wall docking station with charging function for permanent vertical or horizontal installation (lock: permanent) of an Apple iPad Pro or Air 10.5”, flush-mounted mounting enclosure, aluminium frame, glass cover in white or black. Power supply 100-240 V AC to USB included. Dimensions: 226.0 x 315.0 x 78.0 mm, flush-mounted cut-out dimensions: 215.0 x 305.0 x 78.0 mm.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>fixDock-iPad10.5-w-HV</td>
<td>In-wall docking station with charging function, white</td>
<td>4010312320976</td>
<td>519.20 €/pc.</td>
</tr>
<tr>
<td>fixDock-iPad10.5-b-HV</td>
<td>In-wall docking station with charging function, black</td>
<td>4010312320969</td>
<td>519.20 €/pc.</td>
</tr>
</tbody>
</table>

## fixDock-iPad5-

In-wall docking station with charging function for permanent vertical or horizontal installation (lock: permanent) of an Apple iPad Air, iPad Air 2, iPad 9.7” or iPad Pro 9.7”, flush-mounted mounting enclosure, aluminium frame, glass cover in white or black. Power supply 100-240 V AC to USB included. Dimensions: 226.0 x 315.0 x 78.0 mm, flush-mounted cut-out dimensions: 215.0 x 305.0 x 78.0 mm.

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<tr>
<th>Model</th>
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</tr>
</thead>
<tbody>
<tr>
<td>fixDock-iPad5-w-HV</td>
<td>In-wall docking station with charging function, white</td>
<td>4010312319489</td>
<td>429.50 €/pc.</td>
</tr>
<tr>
<td>fixDock-iPad5-b-HV</td>
<td>In-wall docking station with charging function, black</td>
<td>4010312319482</td>
<td>429.50 €/pc.</td>
</tr>
</tbody>
</table>

## fixDock-mini4-

In-wall docking station with charging function for permanent vertical or horizontal installation (lock: permanent) of an Apple iPad Mini 1- 5, flush-mounted mounting enclosure, aluminium frame, glass cover in white or black. Power supply 100-240 V AC to USB included. Dimensions: 194.0 x 284.0 x 90.0 mm, flush-mounted cut-out dimensions: 176.0 x 274.0 x 22.0 mm.

<table>
<thead>
<tr>
<th>Model</th>
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<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>fixDock-mini4-w-HV</td>
<td>In-wall docking station with charging function, white</td>
<td>4010312319512</td>
<td>408.00 €/pc.</td>
</tr>
<tr>
<td>fixDock-mini4-b-HV</td>
<td>In-wall docking station with charging function, black</td>
<td>4010312319505</td>
<td>408.00 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
ON-WALL DOCKING STATION WITH CHARGING FUNCTION

**surDock-iPad 10.5-**
On-wall surface-mount docking station with charging function for horizontal permanent installation of an Apple iPad Pro or Air 10.5”, aluminum enclosure and glass cover in white or black. External power supply 100-240 V AC to USB included. Installation using EU standard switch box or US single gang wall box. Dimensions: 215.0 x 305.0 x 22.5 mm.

<table>
<thead>
<tr>
<th>Model</th>
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<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>surDock-iPad10.5-w-HV</td>
<td>On-wall surface-mount with charging function, white</td>
<td>4010312320174</td>
<td>499,00 €/pc.</td>
</tr>
<tr>
<td>surDock-iPad10.5-b-HV</td>
<td>On-wall surface-mount with charging function, black</td>
<td>4010312320181</td>
<td>499,00 €/pc.</td>
</tr>
</tbody>
</table>

**surDock-iPad5-**
On-wall surface-mount docking station with charging function for horizontal permanent installation of an Apple iPad Air, iPad Air 2, iPad 9.7” or iPad Pro 9.7”, aluminum enclosure and glass cover in white or black. External power supply 100-240 V AC to USB 5 V DC/2 A included. Installation using EU standard switch box or US single gang wall box. Dimensions: 215.0 x 305.0 x 22.5 mm.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>surDock-iPad5-w-HV</td>
<td>On-wall surface-mount with charging function, white</td>
<td>4010312320150</td>
<td>479,00 €/pc.</td>
</tr>
<tr>
<td>surDock-iPad5-b-HV</td>
<td>On-wall surface-mount with charging function, black</td>
<td>4010312320167</td>
<td>479,00 €/pc.</td>
</tr>
</tbody>
</table>

**surDock-mini4-**
On-wall surface-mount docking station with charging function for permanent vertical or horizontal installation (lock: permanent) of an Apple iPad Mini 1-5, aluminium enclosure and glass cover in white or black. External power supply 100-240 V AC to USB included. Dimensions: 175.4 x 274.0 x 22.0 mm.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>surDock-mini4-w-HV</td>
<td>On-wall surface-mount with charging function, white</td>
<td>4010312320198</td>
<td>416,00 €/pc.</td>
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<tr>
<td>surDock-mini4-b-HV</td>
<td>On-wall surface-mount with charging function, black</td>
<td>4010312320204</td>
<td>416,00 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
## LWA-5 + LBA-5

In-wall docking station with charging function and motor for horizontal installation (lock: pre-installed) of an Apple iPad Air, iPad Air 2, iPad 9.7" or iPad Pro 9.7", the in-wall installation box must be ordered separately, aluminium frame and aluminium cover in white or black. iPad is unlocked by motor and swivelled to the front by motor for removal. Standard dimensions: 226.4 x 351.9 x 68.2 mm, flush-mounted dimensions: 246.5 x 372.0 x 78.0 mm; Flush-mounted cut-out dimensions, standard: 205.0 x 295.0 x 65.0 mm, flush-mounted cut-out dimensions flush-mounted: 231.0 x 357.0 x 78.0 mm.

<table>
<thead>
<tr>
<th>Model</th>
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<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWA-5</td>
<td>Docking station with charging function and motor, white</td>
<td>EAN 4010312319550</td>
<td>899,00 €/pc.</td>
</tr>
<tr>
<td>LBA-5</td>
<td>Docking station with charging function and motor, black</td>
<td>EAN 4010312319543</td>
<td>899,00 €/pc.</td>
</tr>
</tbody>
</table>

## LWG-5 + LBG-5

In-wall docking station with charging function and motor for horizontal installation (lock: pre-installed) of an Apple iPad Air, iPad Air 2, iPad 9.7" or iPad Pro 9.7", the in-wall installation box must be ordered separately, aluminium frame and glass cover in white or black. iPad is unlocked by motor and swivelled to the front by motor for removal. Standard dimensions: 226.4 x 351.9 x 68.2 mm, flush-mounted dimensions: 246.5 x 372.0 x 78.0 mm; Flush-mounted cut-out dimensions, standard: 205.0 x 295.0 x 65.0 mm, flush-mounted cut-out dimensions flush-mounted: 231.0 x 357.0 x 78.0 mm.

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<tr>
<th>Model</th>
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<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWG-5</td>
<td>Docking station with charging function and motor, white</td>
<td>EAN 4010312319574</td>
<td>999,00 €/pc.</td>
</tr>
<tr>
<td>LBG-5</td>
<td>Docking station with charging function and motor, black</td>
<td>EAN 4010312319567</td>
<td>999,00 €/pc.</td>
</tr>
</tbody>
</table>

## LWG-Code5 + LBG-Code5

In-wall docking station with charging function and motor for horizontal installation (lock: pre-installed) of an Apple iPad Air, iPad Air 2, iPad 9.7" or iPad Pro 9.7", the in-wall installation box must be ordered separately, aluminium frame and glass cover in white or black. iPad is unlocked by motor and swivelled to the front by motor for removal. Unlocked by entering a code (Activation of the code via the iPad App). Standard dimensions 226.4 x 351.9 x 68.2 mm, flush-mounted dimensions: 246.5 x 372.0 x 78.0 mm; flush-mounted cut-out dimensions, standard: 205.0 x 295.0 x 65.0 mm, flush-mounted cut-out dimensions flush-mounted: 231.0 x 357.0 x 78.0 mm.

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<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LWG-Code5</td>
<td>Docking station with charging function, motor and code secured iPad lock, white</td>
<td>EAN 4010312319598</td>
<td>1199,00 €/pc.</td>
</tr>
<tr>
<td>LBG-Code5</td>
<td>Docking station with charging function, motor and code secured iPad lock, black</td>
<td>EAN 4010312319591</td>
<td>1199,00 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
**miniDock4-**

In-wall docking station with charging function and motor for vertical or horizontal installation (lock: pre-installed) of an Apple iPad mini 1-5, the in-wall installation box must be ordered separately, aluminium frame and glass cover in white or black. iPad is unlocked by motor and swivelled to the front by motor for removal. Dimensions: 226.0 x 315.0 x 78.0 mm, flush-mounted cut-out dimensions: 215.0 x 305.0 x 78.0 mm.

| miniDock4-w-m | Docking station with charging function and motor, white | EAN 4010312319536 | 747.20 €/pc. |
| miniDock4-b-m | Docking station with charging function and motor, black | EAN 4010312319529 | 747.20 €/pc. |

**iBezel-5-**

In-wall docking station with charging function and motor for horizontal installation (lock: pre-installed) of an Apple iPad Air, iPad Air 2, iPad 9.7” or iPad Pro 9.7”, the in-wall installation box must be ordered separately, aluminium frame and glass cover in white or black. iPad is unlocked by motor and swivelled to the front by motor for removal. Unlocked by entering a code (Activation of the code via the iPad App). Built-in controller as well as key panel integrated into glass panel. Control commands transferred to a system controller via 8 freely programmable keys. Standard dimensions: 226.4 x 351.9 x 68.2 mm, flush-mounted dimensions: 246.5 x 372.0 x 78.0 mm; Flush-mounted cut-out dimensions, standard: 205.0 x 295.0 x 65.0 mm, flush-mounted cut-out dimensions flush-mounted: 231.0 x 357.0 x 78.0 mm.

| iBezel-5-w | Docking station with charging function, motor and control function, white | EAN 4010312319611 | 1299.00 €/pc. |
| iBezel-5-b | Docking station with charging function, motor and control function, black | EAN 4010312319604 | 1299.00 €/pc. |

**PBA-5 + PWA-5**

In-wall docking station with charging function and motor for vertical installation (lock: pre-installed) of an Apple iPad Air, iPad Air 2, iPad 9.7” or iPad Pro 9.7”, the in-wall installation box must be ordered separately, aluminium frame and aluminium cover in white or black. Standard dimensions: 226.2 x 315.7 x 68.2 mm, flush-mounted dimensions: 246.5 x 336.0 x 78 mm; Flush-mounted cut-out dimensions, standard: 205.0 x 296.0 x 65.0 mm, flush-mounted cut-out dimensions flush-mounted: 230.6 x 320.1 x 78.0 mm.

| PBA-5 | Docking station with charging function and motor, black | EAN 4010312320860 | 798.50 €/pc. |
| PWA-5 | Docking station with charging function and motor, white | EAN 4010312320877 | 798.50 €/pc. |
**DESKTOP DOCKING STATION WITH CHARGING FUNCTION**

### iTop-Pro-

Desktop docking station with charging function for horizontal installation of an Apple iPad mini 1-5, iPad Air, iPad Air 2, iPad 9.7”, iPad Pro 9.7”, iPad Pro, Air 10.5” or iPad Pro 12.9” with sliding Lightning connector for positioning. Keypad with 6 keys and controller with control interfaces integrated in glass front. Control commands transferred to a system controller via 6 freely programmable keys. Aluminium enclosure with glass front in white or black. Dimensions: 280 x 160 x 138 mm; weight: 2.2 kg.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>iTop-Pro-w</td>
<td>Desktop docking station with charging function, and control function, white</td>
<td>EAN 4010312319635</td>
<td>899,00 €/pc.</td>
</tr>
<tr>
<td>iTop-Pro-b</td>
<td>Desktop docking station with charging function, and control function, black</td>
<td>EAN 4010312319628</td>
<td>999,00 €/pc.</td>
</tr>
</tbody>
</table>

### iTop-Plus-

Desktop docking station with charging function for horizontal installation of an Apple iPad mini 1-5, iPad Air, iPad Air 2, iPad 9.7”, iPad Pro 9.7”, iPad Pro, Air 10.5” or iPad Pro 12.9” with sliding Lightning connector for positioning. Built-in controller as well as key panel integrated into glass panel. Keypad with 6 keys and controller with control interfaces integrated in glass front. Control commands transferred to a system controller via 6 freely programmable keys. iTop-Plus locks the iPad to protect it against theft. Aluminium enclosure with glass front in white or black. Dimensions: 280 x 160 x 138 mm; weight: 2.4 kg.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>iTop-Plus-w</td>
<td>Desktop docking station with charging function, iPad lock and control function, white</td>
<td>EAN 4010312319659</td>
<td>999,00 €/pc.</td>
</tr>
<tr>
<td>iTop-Plus-b</td>
<td>Desktop docking station with charging function, iPad lock and control function, black</td>
<td>EAN 4010312319642</td>
<td>999,00 €/pc.</td>
</tr>
</tbody>
</table>

### BB-Mini

Flush-mounted box made of flame-retardant plastic for miniDock models, flush-mounted, mounted vertically or horizontally, aluminium frame in silver or black. Projection of miniDock surface 2 mm. Dimensions: 226.0 x 315.0 x 78.0 mm; Cut-out dimensions: 215.0 x 305.0 x 78.0 mm.

<table>
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<tr>
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<th>EAN Code</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB-Mini</td>
<td>miniDock flush-mounted box, horizontal and vertical, silver</td>
<td>EAN 4010312319680</td>
<td>111,70 €/pc.</td>
</tr>
<tr>
<td>BB-Mini-AB</td>
<td>miniDock flush-mounted box, horizontal and vertical, black</td>
<td>EAN 4010312319677</td>
<td>142,50 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
DOCKING STATION ACCESSORIES

**BB-B**
Flush-mounted box made of flame-retardant plastic for all iDock models, mounted vertically and horizontally. Projection of iDock surface 7 mm. Dimensions: 215.0 x 305.0 x 65.0 mm; cut-out dimensions: 205.0 x 295.0 x 65.0 mm.

| BB-B | Flush-mounted box for all iDock models, vertical or horizontal | EAN 4010312319666 | 81.00 €/pc.

**BB-LAB + BB-LAS**
Flush-mounted box made of flame-retardant plastic for all iDock models, flush-mounted, mounted horizontally, aluminium frame in silver or black. Projection of iDock surface 2 mm. Dimensions: 246.5 x 372.0 x 78.0 mm; cut-out dimensions: 231.0 x 357.0 x 78.0 mm.

| BB-LAB | Flush-mounted box for all iDock models with glass or aluminium fronts, horizontal, black | EAN 4010312319673 | 173.20 €/pc.
| BB-LAS | Flush-mounted box for all iDock models with glass or aluminium fronts, horizontal, silver | EAN 4010312319772 | 173.20 €/pc.

**BB-PAB + BB-PAS**
Flush-mounted box made of flame-retardant plastic for iDock models, flush-mounted, mounted vertically, aluminium frame in silver or black. Projection of miniDock surface 2 mm. Dimensions: 246.5 x 336 x 78 mm; Cut-out dimensions: 230.6 x 320.1 x 78.0 mm.

| BB-PAB | Flush-mounted box for all iDock models with glass or aluminium fronts, vertical, black | EAN 4010312320884 | 173.20 €/pc.
| BB-PAS | Flush-mounted box for all iDock models with glass or aluminium fronts, vertical, silver | EAN 4010312320891 | 173.20 €/pc.

Recommended retail prices excluding VAT.
ACTIVE WIRELESS SENSORS TEST THEIR AMBIENT VALUES CONTINUOUSLY AND SEND WIRELESS TELEGRAMS AUTOMATICALLY.
Active wireless sensors

E-Design65

Wireless outdoor motion/brightness sensor with solar cell FABH65S-wg 6-3
Wireless outdoor brightness sensor with solar cell FAH65S-wg 6-3
Wireless motion sensor with battery FB65B-wg 6-3
Wireless motion/brightness sensor FBH65/12VDC-wg 6-4
Wireless motion/brightness sensor with solar cells and battery FBH65SB-wg 6-4
Wireless motion/brightness sensor with solar cell FBH65S/12V DC-wg 6-4
Wireless motion/brightness sensor with temperature and humidity FBH65TF/12V DC-wg 6-5

NEW
Wireless air quality+temperature+humidity sensor FLGTF65-wg 6-5
Wireless alarm controller with display FAC65D/230V-wg 6-5

NEW
Wireless alarm controller with display FAC65D/12-24V UC-wg 6-6
Wireless humidity temperature sensor with battery FFT65B-wg 6-6

NEW
Wireless brightness sensor for ceiling mounting with battery and solar cell FHD65SB-wg 6-6
Wireless timer with display, astro function and solstice time changes FSU65D/230V-wg 6-7

NEW
Wireless timer with display, astro function and solstice time changes FSU65D/12-24V UC-wg 6-7
Wireless temperature sensor with solar cell FTF65S/12V DC-wg 6-7
Wireless temperature controller with display FTR65DSB-wg 6-8
Wireless temperature controller with hand wheel and battery FTR65HB-wg 6-8
Wireless temperature controller with solar cell and battery FTR65SB-wg 6-8
Wireless temperature controller with hand wheel and solar cell FTR65HS/12VDC-wg 6-9
Wireless thermo clock/hygrostat with display FUTH65D/230V 6-9
Wireless thermo clock/hygrostat with display FUTH65D/12-24V UC-wg 6-9

NEW

E-Design65 flat

Wireless motion/brightness sensor with solar cells and battery FBHF65SB-wg 6-10
Wireless humidity temperature sensor with battery FTF65B-wg 6-10
Wireless temperature controller with hand wheel and battery FTRF65HB-wg 6-10
Wireless temperature controller with hand wheel, solar cells and battery FTRF65SB-wg 6-11
E-Design55

NEW Wireless motion sensor with battery FB55B-wg 6-12
NEW Wireless motion/brightness sensor with solar cells and battery FBH55SB-wg 6-12
NEW Wireless timer with display, astro function and solstice time changes FSU55D/230V-wg 6-12
NEW Wireless timer with display, astro function and solstice time changes FSU55D/12-24V UC-wg 6-13
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**FABH65S-wg**

Wireless outdoor motion/brightness sensor pure white glossy for surface mounting, 84 x 84 x 39 mm, protection degree IP54. With solar cell. Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: F4HK14, FGM, FHK14, FHK61, FLC61, FSG14, FSG71, FSR14, FSR61, FSR71, FTN14, FTM61, FUD14, FUD61, FUD71, FZK14, FZK61

| FABH65S-wg | Outdoor motion/brightness sensor, pure white glossy | EAN 4010312315798 | 99,90 €/pc. |

**FAH65S-wg**

Wireless outdoor brightness sensor pure white glossy for surface mounting, 84 x 84 x 30 mm, protection degree IP54. With solar cell. Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FKLD61, FLG61, FLS61, FBG61L, FSB14, FSB61, FSB71, FSG14, FSG71, FSR14, FSR61, FSR71, FUD14, FUD61, FUD71

| FAH65S-wg | Outdoor brightness sensor, pure white glossy | EAN 4010312315828 | 83,30 €/pc. |

**FB65B-wg**

Wireless motion sensor pure white glossy for surface mounting 84 x 84 x 25 mm or mounting into the E-Design65 switching system. With battery (lifetime 3 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FSR14, FSR61, FSR71, FTN14, FUD14, FUD61, FUD71, FZK14, FZK61, TF61D, TF61L, TF100D, TF100L

| FB65B-wg | Motion sensor, pure white glossy | EAN 4010312317570 | 73,60 €/pc. |
ACTIVE WIRELESS SENSORS E-DESIGN65

**FBH65/12V DC-wg**

Wireless motion/brightness sensor pure white glossy for surface mounting 84 x 84 x 39 mm or mounting into the E-Design65 switching system. Power supply with a 12 V DC power supply unit. Only 1mW standby loss. Smart Home sensor.

- The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: F4HK14, FGM, FHK14, FHK61, FLC61, FSG14, FSG71, FSR14, FSR61, FSR71, FTN14, FTN61, FUD14, FUD61, FUD71, FZK14, FZK61

| FBH65/12V DC-wg | Motion/brightness sensor, pure white glossy | EAN 4010312320099 | 93,30 €/pc. |

**FBH65SB-wg**

Wireless motion/brightness sensor pure white glossy for surface mounting 84 x 84 x 27 mm or mounting into the E-Design65 switching system. With solar cells and battery (lifetime 4-5 years). Smart Home sensor.

- The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: F4HK14, FGM, FHK14, FHK61, FLC61, FSG14, FSG71, FSR14, FSR61, FSR71, FTN14, FTN61, FUD14, FUD61, FUD71, FZK14, FZK61, TF61D, TF61L, TF100D, TF100L

| FBH65SB-wg | Wireless motion/brightness sensor with solar cells and battery, pure white glossy | EAN 4010312317914 | 88,30 €/pc. |

**FBH65S/12V DC-wg**

Wireless motion/brightness sensor pure white glossy for surface mounting 84 x 84 x 39 mm or mounting into the E-Design65 switching system. Power supply with the integrated solar cell or a 12 V DC power supply unit. Only 1mW standby loss. Smart Home sensor.

- The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: F4HK14, FGM, FHK14, FHK61, FLC61, FSG14, FSG71, FSR14, FSR61, FSR71, FTN14, FTN61, FUD14, FUD61, FUD71, FZK14, FZK61

| FBH65S/12V DC-wg | Motion/brightness sensor, pure white glossy | EAN 4010312320105 | 110,00 €/pc. |

Recommended retail prices excluding VAT.
**FBH65TF/12V DC-wg**

Wireless motion/brightness sensor with temperature and humidity sensor pure white glossy for surface mounting 84 x 84 x 39 mm or mounting into the E-Design65 switching system. Power supply from 12 V DC switch mode power supply unit. Only 1mW standby loss. Brightness from 10 to 2000 Lux, temperature -20°C to +60°C, humidity 0% to 100%. Smart Home sensor.

With rotary switches to set the time from 1 to 10 minutes and set the brightness threshold from 10 to 20,000 lux der Helligkeitsschwelle 10-2000 Lux.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: pushbutton telegrams in all actuators with central control function, data telegrams FBH in all FSR and FHK devices, data telegrams TF in FHK14, FHK61 and F4HK14 devices.

| FBH65TF/12V DC-wg | Motion/brightness sensor, pure white glossy | EAN 4010312320112 | 106.70 €/pc. |

**FLGTF65-wg**

Wireless air quality+temperature+humidity sensor, pure white glossy, for single mounting 84 x 84 x 17/33 mm or installation in the E-Design65 switching system. With LED display to signal room air quality. With additional alert tone. Power supply 230 V. Stand-by loss only 0.6 watt. Smart Home sensor.

| FLGTF65-wg | Wireless air quality+temperature+humidity sensor, pure white glossy | EAN 401031321041 | 81.60 €/pc. |

**FAC65D/230V-wg**

Wireless alarm controller pure white glossy for single mounting 84 x 84 x 14 mm or mounting into the E-Design65 switching system. Installation depth 33 mm. Illuminated display. Internal acoustic signal generator for a minimum volume of 80 dB. Supply voltage 230 V. Only 0.5 watt standby loss. Smart Home actuator.

Up to 50 sensors e.g.FTK, FTKB, FTKB-hg, FTKE, FFG7B, FBH, FRW, TF-RWB, FWS, FTR, FTF, FFT60SB, FLGTF65, wireless pushbuttons and the GFVS can be taught in as described in the operating instructions. Additionally, up to 4 wireless outdoor sirens FAS260SA can be taught in.

| FAC65D/230V-wg | Wireless alarm controller with display, pure white glossy | EAN 4010312319727 | 95.20 €/pc. |
Recommended retail prices excluding VAT.

### FAC65D/12-24V UC-wg
Wireless alarm controller pure white glossy for single mounting 84 x 84 x 14 mm or mounting into the E-design65 switching system. Installation depth 33 mm. Illuminated display. Internal acoustic signal generator for a minimum volume of 80 dB. Supply voltage 12-24 V UC. Only 0.3 watt standby loss. Smart Home actuator.

Up to 50 sensors e.g. FTK, FTKB, FTKB-hg, FTKE, FF7B, FBH, FRW, TF-RWB, FWS, FTR, TTF, FFT80SB, FLGTF65, wireless pushbuttons and the GFVS can be taught in as described in the operating instructions. Additionally, up to 4 wireless outdoor sirens FAS260SA can be taught in.

| FAC65D/12-24V UC-wg | Wireless alarm controller with display, pure white glossy | EAN 4010312321270 | 95,20 €/pc. |

### FFT65B-wg
Wireless humidity temperature sensor pure white glossy for single mounting 84 x 84 x 17 mm or mounting into the E-Design65 switching system. With battery (lifetime 5 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

| FFT65B-wg | Humidity temperature sensor, pure white glossy | EAN 4010312317587 | 58,20 €/pc. |

### FHD65SB-wg
Wireless brightness sensor pure white glossy for ceiling mounting 84 x 84 x 16 mm. With solar cells and battery (lifetime 4-5 years). For automatic brightness control using dimmer switches FUD14, FUD71, FSG14/1-10V and FSG71/1-10V. Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FUD14, FUD71, FSG14/1-10V, FSG71/1-10V

| FHD65SB-wg | Wireless brightness sensor for ceiling mounting, pure white glossy | EAN 4010312320143 | 83,60 €/pc. |
**ACTIVE WIRELESS SENSORS E-DESIGN65**

### FSU65D/230V-wg

Wireless timer with display and 8 channels pure white glossy for single mounting 84 x 84 x 14 mm or mounting into the E-Design65 switching system. Installation depth 33 mm. With ‘astro’ function and solstice time changes. Illuminated display. Power supply 230 V. Only 0.5 watt standby loss. Smart Home sensor.

| FSU65D/230V-wg | Timer with display, pure white glossy | EAN 4010312317709 | 77,10 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: All actuators except FZK14, FZK61 and FUTH65D

### FSU65D/12-24V UC-wg

Wireless timer with display and 8 channels pure white glossy for single mounting 84 x 84 x 14 mm or mounting into the E-design65 switching system. Installation depth 35 mm. With ‘astro’ function and solstice time changes. Illuminated display. Power supply 12-24 V UC. Only 0.3 watt standby loss. Smart Home sensor.

| FSU65D/12-24V UC-wg | Timer with display, pure white glossy | EAN 4010312321324 | 77,10 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: All actuators except FZK14, FZK61 and FUTH65D

### FTF65S/12V DC-wg

Wireless temperature sensor pure white glossy for single mounting 84 x 84 x 30 mm or mounting into the E-Design65 switching system. Power supply with solar cell or from 12 V DC switch mode power supply unit. Only 1 mW standby loss. Smart Home sensor.

| FTF65S/12V DC-wg | Wireless temperature sensor, pure white glossy | EAN 4010312320129 | 89,90 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FM14

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Recommended retail prices excluding VAT.
ACTIVE WIRELESS SENSORS E-DESIGN65

**FTR65DSB-wg**
Wireless temperature controller with display pure white glossy for single mounting 84 x 84 x 22 mm or mounting into the E-Design65 switching system. With solar cell and battery (lifetime 3-5 years). Smart Home sensor.

| FTR65DSB-wg | Wireless temperature controller with display, pure white glossy | EAN 4010312319338 | 94.70 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14.

**FTR65HB-wg**
Wireless temperature controller with hand wheel pure white glossy for single mounting 84 x 84 x 27 mm or mounting into the E-Design65 switching system. With battery (lifetime 4 years). Smart Home sensor.

| FTR65HB-wg | Wireless temperature controller with hand wheel, pure white glossy | EAN 4010312317594 | 68.80 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14, TF61R.

**FTR65SB-wg**
Wireless temperature controller with hand wheel pure white glossy for single mounting 84 x 84 x 27 mm or mounting into the E-Design65 switching system. Power supply with the integrated solar cell and battery (lifetime 5 years). Smart Home sensor.

| FTR65SB-wg | Wireless temperature controller with solar cell and battery, pure white glossy | EAN 4010312319178 | 73.80 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14, TF61R.

Recommended retail prices excluding VAT.
**FTR65HS/12V DC-wg**

Wireless temperature controller with hand wheel pure white glossy for single mounting 84 x 84 x 36 mm or mounting into the E-Design65 switching system. Power supply with the integrated solar cell or a 12 V DC power supply unit. Only 1 mW standby loss. Smart Home sensor.

| FTR65HS/12V DC-wg | Wireless temperature controller with hand wheel, pure white glossy | EAN 4010312320136 | 91.70 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

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**FUTH65D/230V-wg**

Wireless thermo clock/hygrostat with display pure white glossy for single mounting 84 x 84 x 14 mm or mounting into the E-Design65 switching system. Installation depth 33 mm. With adjustable day and night reference temperatures and relative humidity. Illuminated display. Preset ready to operate. Power supply 230 V. Only 0.5 watt standby loss. Smart Home sensor.

| FUTH65D/230V-wg | Wireless thermo clock/hygrostat with display, pure white glossy | EAN 4010312317693 | 81.90 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

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**FUTH65D/12-24V UC-wg**

Wireless thermo clock/hygrostat with display pure white glossy for single mounting 84 x 84 x 14 mm or mounting into the E-Design65 switching system. Installation depth 33 mm. With adjustable day and night reference temperatures and relative humidity. Illuminated display. Preset ready to operate. Power supply 12-24 V UC. Only 0.3 watt standby loss. Smart Home sensor.

| FUTH65D/12-24V UC-wg | Wireless thermo clock/hygrostat with display, pure white glossy | EAN 4010312321300 | 81.90 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14
ACTIVE WIRELESS SENSORS E-DESIGN65 FLAT

**FBHF65SB-wg**

Wireless motion/brightness sensor with flat frames pure white glossy for single mounting 84 x 84 x 20/9 mm over a flush box or mounting into the E-Design65 switching system. Power supply with the integrated solar cell and battery (lifetime 4-5 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: F4H14, F4HK14, F4HK61, FLC61, FSG71, FSR14, FSR61, FSR71, FTM14, FTM61, FUO14, FUO61, FUO71, FZK14, FZK61, TF61D, TF61L, TF100D, TF100L

| FBHF65SB-wg | Wireless motion/brightness sensor with solar cells and battery, pure white glossy | EAN 4010312318591 | 85,90 €/pc. |

**FFTF65B-wg**

Wireless humidity temperature sensor with flat frames pure white glossy for single mounting 84 x 84 x 17/9 mm over a flush box or mounting into the E-Design65 switching system. With battery (lifetime 5 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

| FFTF65B-wg | Wireless humidity temperature sensor with battery, pure white glossy | EAN 4010312318607 | 73,10 €/pc. |

**FTRF65HB-wg**

Wireless temperature controller with hand wheel pure white glossy for single mounting 84 x 84 x 20/9 mm over a flush box or mounting into the E-Design65 switching system. Power supply with battery (lifetime 4 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14, TF61R

| FTRF65HB-wg | Wireless temperature controller with battery, pure white glossy | EAN 4010312318973 | 75,20 €/pc. |

Recommended retail prices excluding VAT.
**FTRF65SB-wg**

Wireless temperature controller with hand wheel pure white glossy for single mounting 84 x 84 x 20/9 mm over a flush box or mounting into the E-Design65 switching system. Power supply with battery (lifetime 4 years). Smart Home sensor.

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| FTRF65SB-wg | Wireless temperature controller with solar cells and battery, pure white glossy | EAN 4010312318614 | 83.30 €/pc. |
---|---|---|---|
## ACTIVE WIRELESS SENSORS E-DESIGN55

### FB55B-wg

Wireless motion sensor pure white glossy for single mounting 80 x 80 x 27 mm or mounting into the E-Design55 switching system. With battery (lifetime 3 years). Smart Home sensor.

| FB55B-wg | Wireless motion sensor, pure white glossy | EAN 4010312321003 | 73,60 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FSR14, FSR61, FSR71, FTN14, FUD14, FUD61, FUD71, FZK14, FZK61, FTN1D, FTN61, FTN71, FTN100D, FTN100L.

### FBH55SB-wg

Wireless motion/brightness sensor pure white glossy for single mounting 80 x 80 x 27 mm or mounting into the E-Design55 switching system. With solar cells and battery (lifetime 4–5 years). Smart Home sensor.

| FBH55SB-wg | Wireless motion/brightness sensor, pure white glossy | EAN 4010312318355 | 88,30 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FSR14, FSR61, FSR71, FTN14, FUD14, FUD61, FUD71, FZK14, FZK61, FTN1D, FTN61, FTN71, FTN100D, FTN100L.

### FSU55D/230V-wg

Wireless timer with display and with 8 channels pure white glossy for single mounting 80 x 80 x 14 mm or mounting into the E-Design55 switching system. Installation depth 33 mm. With ‘astro’ function and solstice time changes. Illuminated display. Power supply 230 V. Only 0.5 watt standby loss. Smart Home sensor.

| FSU55D/230V-wg | Wireless timer with display, pure white glossy | EAN 4010312318010 | 77,10 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: All actuators except FZK14, FZK61 and FUTH65D.

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Recommended retail prices excluding VAT.
**ACTIVE WIRELESS SENSORS E-DESIGN55**

**FSU55D/12-24V UC-wg**

Wireless timer with display and with 8 channels pure white glossy for single mounting 80 x 80 x 14 mm or mounting into the E-design55 switching system. Installation depth 33 mm. With 'astro' function and solstice time changes. Illuminated display. Power supply 12-24 V UC. Only 0.3 watt standby loss. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price €/pc.</th>
</tr>
</thead>
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<tr>
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<td>Wireless timer with display, pure white glossy</td>
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The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: All actuators except FZK14, FZK61 and FUTH65D.

**FFT55B-wg**

Wireless humidity temperature sensor pure white glossy for single mounting 84 x 84 x 17 mm or mounting into the E-Design55 switching system. With battery (lifetime 5 years). Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFT55B-wg</td>
<td>Wireless humidity temperature sensor with battery, pure white glossy</td>
<td>4010312317587</td>
<td>58,20</td>
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</table>

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

**FAC55D/230V-wg**

Wireless alarm controller pure white glossy for single mounting 80 x 80 x 14 mm or mounting into the E-Design55 switching system. Installation depth 33 mm. Illuminated display. Internal acoustic signal generator for a minimum volume of 80 dB. Supply voltage 230 V. Only 0.5 watt standby loss. Smart Home actuator.

Up to 50 sensors e.g. FTK, FTKB, FTKB-hg, FTKE, FFG7B, FBH, FRW, TF-RWB, FWS, FTR, FTF, FFT60SB, FLGT65, wireless pushbuttons and the GFVS can be taught in as described in the operating instructions. Additionally, up to 4 wireless outdoor sirens FAS260SA can be taught in.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price €/pc.</th>
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</thead>
<tbody>
<tr>
<td>FAC55D/230V-wg</td>
<td>Wireless alarm controller 55 x 55 mm with display, pure white glossy</td>
<td>4010312319710</td>
<td>95,20</td>
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</table>

Recommended retail prices excluding VAT.
**FAC55D/12-24V UC-wg**

Wireless alarm controller pure white glossy for single mounting 80 x 80 x 14 mm or mounting into the E-design55 switching system. Installation depth 33 mm. Illuminated display. Internal acoustic signal generator for a minimum volume of 80 dB. Supply voltage 12-24 V UC. Only 0.3 watt standby loss. Smart Home actuator.

Up to 50 sensors e.g. FTK, FTKB, FTKB-hg, FTKE, FFG7B, FBH, FRW, TF-RWB, FWS, FTR, FTF, FFT60SB, FLGTF65, wireless pushbuttons and the GFVS can be taught in as described in the operating instructions. Additionally, up to 4 wireless outdoor sirens FAS260SA can be taught in.

| FAC55D/12-24V UC-wg | Wireless alarm controller 55x55 mm with display, pure white glossy | EAN 4010312321287 | 95,20 €/St. |

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**FTR55DSB-wg**

Wireless temperature controller with display pure white glossy for single mounting 80 x 80 x 22 mm or mounting into the E-Design55 switching system. With solar cell and battery (lifetime 3-5 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

| FTR55DSB-wg | Wireless temperature controller with display, pure white glossy | EAN 4010312319345 | 94,70 €/pc. |

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**FTR55HB-wg**

Wireless temperature controller with hand wheel pure white glossy for single mounting 80 x 80 x 27 mm or mounting into the E-Design55 switching system. With battery (lifetime 4 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14, TF61R

| FTR55HB-wg | Wireless temperature controller 55x55 mm with hand wheel and battery, pure white glossy | EAN 4010312317921 | 68,80 €/pc. |

Recommended retail prices excluding VAT.
### FTR55SB-wg
Wireless temperature controller pure white glossy for single mounting 80 x 80 x 27 mm or mounting into the E-Design55 switching system. With solar cells and battery (lifetime 5 years). Smart Home sensor.

| FTR55SB-wg | Wireless temperature controller, pure white glossy | EAN 4010312321065 | 73,80 €/pc. |

### FUTH55D/230V-wg
Wireless thermo clock/hygrostat with display pure white glossy for single mounting 80 x 80 x 14 mm or mounting into the E-Design55 switching system. Installation depth 33 mm. With adjustable day and night reference temperatures and relative humidity. Illuminated display. Power supply 230 V. Only 0.5 watt standby loss. Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

| FUTH55D/230V-wg | Wireless thermo clock/hygrostat with display, pure white glossy | EAN 4010312318003 | 81,90 €/pc. |

### FUTH55D/12-24V UC-wg
Wireless thermo clock/hygrostat with display pure white glossy for single mounting 80 x 80 x 14 mm or mounting into the E-Design55 switching system. Installation depth 33 mm. With adjustable day and night reference temperatures and relative humidity. Illuminated display. Power supply 12-24 V UC. Only 0.3 watt standby loss. Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

| FUTH55D/12-24V UC-wg | Wireless thermo clock/hygrostat with display, pure white glossy | EAN 4010312321294 | 81,90 €/pc. |
ACTIVE WIRELESS SENSORS E-DESIGN55

FLGTF55-wg

Wireless air quality+temperature+humidity sensor pure white glossy for single mounting 84 x 84 x 17/33 mm or mounting into the E-Design55 switching system. With LED display to signal room air quality. With additional alert tone. Power supply 230 V. Stand-by loss only 0.8 watt. Smart Home sensor.

| FLGTF55-wg | Wireless air quality+temperature+humidity, sensor pure white glossy | EAN 401031321058 | 81.60 €/pc. |

FTAF55D/230V-wg

Wireless temperature controller Air+Floor with display pure white glossy for single mounting 80x80x14 mm or mounting into the E-Design55 switching system. Installation depth 33 mm. With adjustable day and night reference temperatures. Display illuminated. Preset ready to operate. Wired temperature sensor for monitoring of floor temperature can be connected. 1 NO contact not potentialfree 16 A/250 V AC. Power supply 230 V. Only 0.4 watt standby loss. Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FSR14, FSR61, FSR71

| FTAF55D-230V-wg | Wireless temperature controller Air+Floor, pure white glossy | EAN 4010312322215 | 77.30 €/pc. |

Recommended retail prices excluding VAT.
### FTR86B-ws
Wireless temperature controller white with display for single mounting 86 x 86 x 35 mm. Power supply with battery (lifetime 2 years). Smart Home sensor.

| FTR86B-ws | Wireless temperature controller with display, white | EAN 4010312318423 | 93,10 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

### FTR78S-wg
Wireless temperature controller with rotary wheel pure white glossy for single mounting 78 x 83 x 13 mm. Power supply with solar cell or with battery (lifetime 5 years). Smart Home sensor.

| FTR78S-wg | Wireless temperature controller with rotary wheel, pure white glossy | EAN 4010312316030 | 126,30 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

### FABH130/230V-rw
Wireless outdoor motion/brightness sensor pure white, 130 x 85 x 100 mm, protection class IP55. 1 NO contact not potential free 10 A/250 V AC, incandescent lamps 2300 Watt. Power supply 230 V. Only 0.9 watt standby loss. Smart Home sensor.

| FABH130/230V-rw | Wireless outdoor motion/brightness sensor, pure white | EAN 4010312317617 | 123,30 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FSR14, FSR61, FSR71

Recommended retail prices excluding VAT.
ACTIVE WIRELESS SENSORS OTHERS

AFZ
Scanner for bonding to Ferraris meter for wireless energy meter concentrator F3Z14D.

| AFZ | Scanner for each Ferraris meter | EAN 4010312315578 | 257,90 €/pc. |

AIR
Infrared scanner with fixing magnet for electronic domestic supply meter eHZ for wireless energy meter data gateway FSDG14.

| AIR | IR scanner for energy meters | EAN 4010312316153 | 110,30 €/pc. |

FHD60SB
Wireless brightness twilight sensor pure white with solar cells and battery (lifetime 5-8 years). For indoors and outdoors. l x w x h: 60 x 46 x 30 mm. Actuators can cover the range from 0 to 50 Lux using the twilight switch function. Smart Home sensor.

| FHD60SB | Wireless brightness twilight sensor, pure white | EAN 4010312320952 | 64,90 €/pc. |

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FKLD61, FLC61, FLD61, FRGBW71L, FSB14, FSB61, FS71, FSR14, FSR61, FSR71, FUD14, FUD71, FUD61

Recommended retail prices excluding VAT.
ACTIVE WIRELESS SENSORS OTHERS

**FFT60SB**

Wireless humidity temperature sensor pure white with solar cell and battery (lifetime 3-5 years), 60 x 46 x 30 mm. Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFT60SB</td>
<td>Wireless humidity temperature sensor, pure white</td>
<td>4010312320945</td>
<td>69,90</td>
</tr>
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</table>

**FWS60**

Water sensor FWS60 for connection to the wireless transmitter module FSM60B pure white. 1 x w x h: 60 x 46 x 30 mm (dimensions without screw connection). With 150 cm connecting cable. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
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<th>EAN</th>
<th>Price (€/pc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FWS60</td>
<td>Water sensor to the FSM60B, pure white</td>
<td>4010312316108</td>
<td>23,60</td>
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<tr>
<td>FSM60B</td>
<td>Wireless transmitter module with battery, pure white</td>
<td>4010312316092</td>
<td>59,60</td>
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</tbody>
</table>

**FWS81**

Wireless water sensor with swelling discs and energy generator, 88 x 50 x 30 mm, white. No standby loss. Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FSR14, FMZ61, TF100A, TF-IUS

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc.)</th>
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</thead>
<tbody>
<tr>
<td>FWS81</td>
<td>Wireless water sensor, white</td>
<td>4010312316061</td>
<td>111,30</td>
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</tbody>
</table>
AKTIVE FUNKSENSOREN SONSTIGE

**FRW-ws**

Wireless smoke alarm Detectomat HDv3000OS, white, with wireless transmitter module inserted. Only 0.03 mW standby loss of the wireless transmitter module. With battery (lifetime 3-6 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FGM, FLC61, FMS14, FMZ14, FMZ61, FSR14, FSR61, FSR71, FZK14, FZK61

| FRW-ws | Wireless smoke alarm, white | EAN 4010312312308 | 105,30 €/pc. |

**FRWB-rw**

Wireless smoke detector pure white with wireless emitter module in the base. Ø86 mm, 49 mm high. With solar cell and battery (lifetime 10 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FGM, FLC61, FMS14, FMZ14, FMZ61, FSR14, FSR61, FSR71, FZK14, FZK61

| FRWB-rw | Wireless smoke detector, pure white | EAN 4010312321027 | 105,30 €/pc. |

**FHMB-rw**

Wireless heat detector pure white with wireless emitter module in the base. Ø86 mm, 45 mm high. With solar cell and battery (lifetime 10 years). Smart Home sensor.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FGM, FLC61, FMS14, FMZ14, FMZ61, FSR14, FSR61, FSR71, FZK14, FZK61

| FHMB-rw | Wireless heat detector, pure white | EAN 4010312321034 | 109,20 €/pc. |
**ACTIVE WIRELESS SENSORS OTHERS**

**FKS-E**

**Wireless small actuator for radiators. No wires since it is battery powered. Low standby losses. Smart Home sensor.**

Bidirectionale wireless with EnOcean protocol EEP A5-20-01. The actuator is powered by 2 alkaline AA batteries with a service life of up to 3 years.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FUTH55D, FUTH65D, TF-UTH, TF-UTH55.

| FKS-E | Small actuator | EAN 4010312316047 | 122,20 €/pc. |

**FKS-H**

**The SmartDrive MX wireless mini actuator from Hora has a large display to set the setpoint. No connecting cable since it is battery-powered. Smart Home sensor.**

Bidirectionale wireless with EnOcean protocol EEP A5-20-04. The actuator is powered by 2 lithium AA batteries with a service life of up to 4 years.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FUTH55D, FUTH65D, TF-UTH, TF-UTH55.

| FKS-H | Small actuator | EAN 4010312321072 | 136,50 €/pc. |

**FKS-SV**

**Wireless small actuator Smart Valve for radiators. Without battery and wire. With thermic Energy Harvesting. Smart Home sensor.**

Bidirectionale wireless with EnOcean protocol EEP A5-20-01.

**Function:** The actuator obtains its power supply from the temperature difference (\(\Delta T>4K\)) between the radiator and the room. The internal storage device prevents power supply bottlenecks needed to run the actuator.

**Applications:** The actuator is designed both for use in private homes and in industrial premises. In rooms that are seldom heated, it may be necessary to recharge the device via the micro-USB.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FUTH55D, FUTH65D, TF-UTH, TF-UTH55.

| FKS-SV | Small actuator | EAN 4010312319857 | 130,70 €/pc. |
MS

Once per second the MS multi sensor sends the current weather details, including brightness (from three points of the compass), wind, rain and frost via a connecting wire to the bus multifunction sensor relay FWS61-24 V DC. Opaque. l x w x h: 118 x 96 x 77 mm. Power supplied by power supply unit SNT61-230V/24V DC-0,25A. Smart Home sensor.

Evaluation is carried out using the Wireless Building Visualisation and Control Software GFVS, the wireless multifunction sensor relay FMSR14, actuators FSB14 and FSB71.

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>MS</td>
<td>Multisensor</td>
<td>EAN 4010312901731</td>
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<tr>
<td>FWS61-24V DC</td>
<td>Wireless weather data transmitter module</td>
<td>EAN 4010312301937</td>
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<tr>
<td>SNT61-230V/24V DC-0,25A</td>
<td>Power supply unit</td>
<td>EAN 4010312301326</td>
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</tbody>
</table>

FTFB-wg

Wireless temperature+humidity sensor, pure white glossy, 75 x 25 x 12 mm, with battery (lifetime 5 years). Smart Home sensor.

The temperature humidity sensor measures constantly the relative humidity between 0 and 100% (+-5%) and the temperature between -20°C and +60°C (+-0,5°C). It sends a data telegram within 2 minutes if changed in the Eltako wireless network. If there is no change, a status telegram is sent every 10 minutes. Adhesive foil mounting, an adhesive film is enclosed. The electronics are powered by an internal button cell CR2032. To change only the housing needs to be opened. This is also required to activate the battery supply by pulling out an insulating strip.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>FTFB-wg</td>
<td>Wireless temperature+humidity sensor, pure white glossy</td>
<td>EAN 4010312319147</td>
</tr>
</tbody>
</table>

FTFSB-wg

Wireless temperature+humidity sensor with solar cell and battery (lifetime 5 years), pure white glossy, 75 x 25 x 12 mm. Smart Home sensor.

The wireless temperature humidity sensor measures constantly the relative humidity between 0 and 100% (+-5%) and the temperature between -20°C and +60°C (+-0,5°C). It sends a data telegram within 2 minutes if changed in the Eltako wireless network. If there is no change, a status telegram is sent every 10 minutes. Adhesive foil mounting, an adhesive film is enclosed. The electronics are powered by an internal button cell CR2032. To change only the housing needs to be opened. This is also required to activate the battery supply by pulling out an insulating strip.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: FAE14, FHK14, F4HK14, F2L14, FHK61, FME14

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FTFSB-wg</td>
<td>Wireless temperature+humidity sensor, pure white glossy</td>
<td>EAN 4010312320853</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
Passive wireless sensors send wireless telegrams when they are triggered manually.
## Passive wireless sensors

### E-Design55

- **NEW** Wireless 1-way pushbutton, 5 colors F1T55E- and wireless 2-way pushbutton, 5 colors F2T55E-  
  7-3

- **NEW** Wireless 2-way pushbutton, 5 colors with battery F2T55EB-  
  7-3

- **NEW** Wireless 2-way central control pushbutton, 5 colors F2ZT55E- and wireless 4-way pushbutton, 5 colors F4T55E-  
  7-4

- **NEW** Wireless 4-way pushbutton, 5 colors with battery F4T55EB-  
  7-4

- Wireless 6-way pushbutton F6T55B- and wireless rotary switch with battery, 5 colors FDT55EB-wg  
  7-5

- Wireless pushbutton dimming actuator FTA55D-wg  
  7-5

- Wireless pushbutton dimming actuator without N connection FTA55DL-wg and wireless pushbutton shading actuator FTA55J-wg  
  7-6

- Wireless pushbutton light switch actuator FTA55L-wg  
  7-6

### E-Design65

- **NEW** Wireless 1-way pushbutton FIT65-wg and wireless 2-way pushbutton F2T65-wg  
  7-7

- **NEW** Wireless 2-way pushbutton with battery F2T65B-wg  
  7-7

- Wireless 4-way pushbutton F4T65-wg and wireless 4-way pushbutton with battery F4T65B-wg  
  7-8

- Wireless 6-way pushbutton with battery F6T65B-wg  
  7-8

- Wireless 2-way central control pushbutton F2ZT65-wg and wireless 4-way profile pushbutton F4PT-gb  
  7-9

- Wireless rotary switch with battery FDT65B-wg  
  7-9

- Wireless pushbutton dimming actuator FTA65D-wg and wireless pushbutton dimming actuator without N connection FTA65DL-wg  
  7-10

- Wireless pushbutton shading actuator FTA65J-wg  
  7-10

- Wireless pushbutton light switch actuator FTA65L-wg and wireless card switch FKF65-wg  
  7-11

- Wireless pull switch FZS65-wg  
  7-11

- Bus 4-way pushbutton to FTS14TG B4T65-wg and rocker switch mechanically WS65-wg  
  7-12

- Rocker pushbutton mechanically WT65-wg  
  7-12

- **NEW** Rocker pushbutton mechanically W2T65-wg  
  7-13

### E-Design65 flat

- Wireless 1-way flat pushbutton F1FT65-wg and wireless 2-way flat pushbutton F2FT65-wg  
  7-14

- Wireless 4-way flat pushbutton F4FT65-wg  
  7-14

- Wireless 2-way central control flat pushbutton with battery F2ZT65B-wg and wireless 2-way flat pushbutton with battery F2FT65B-wg  
  7-15

- Wireless 4-way flat pushbutton with battery F4FT65B-wg  
  7-15

- Wireless flat rotary switch FDTF65B-wg and wireless flat pushbutton dimming actuator FFTA65D-wg  
  7-16

- Wireless flat pushbutton dimming actuator without N connection FFTA65DL-wg  
  7-16

- Wireless flat pushbutton shading actuator FFTA65J-wg and wireless flat pushbutton light switch actuator FFTA65L-wg  
  7-17

- Bus 4-way flat pushbutton to FTS14TG B4FT65-wg  
  7-17
45x45 mm, 55x55 mm and 60x60 mm

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Wireless 2-way pushbutton FZT55-wg 7-18
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Wireless 4-way flat pushbutton, 6 colors FT4F- 7-35
### F1T55E-wg

Wireless 1-way pushbutton in E-Design55, 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1T55E-al</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, coated/aluminium paint</td>
<td>4010312321195</td>
<td>43,30 €/pc.</td>
</tr>
<tr>
<td>F1T55E-ag</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, anthracite glossy</td>
<td>4010312321201</td>
<td>35,50 €/pc.</td>
</tr>
<tr>
<td>F1T55E-wg</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, pure white glossy</td>
<td>4010312321096</td>
<td>35,50 €/pc.</td>
</tr>
<tr>
<td>F1T55E-gw</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, glossy white</td>
<td>4010312321218</td>
<td>35,50 €/pc.</td>
</tr>
<tr>
<td>F1T55E-sg</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, black glossy</td>
<td>4010312321225</td>
<td>35,50 €/pc.</td>
</tr>
</tbody>
</table>

### F2T55E-

Wireless 2-way pushbutton in E-Design55, 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2T55E-al</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, coated/aluminium paint</td>
<td>4010312319932</td>
<td>47,60 €/pc.</td>
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<tr>
<td>F2T55E-ag</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, anthracite glossy</td>
<td>4010312319963</td>
<td>39,80 €/pc.</td>
</tr>
<tr>
<td>F2T55E-wg</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, pure white glossy</td>
<td>4010312319918</td>
<td>39,80 €/pc.</td>
</tr>
<tr>
<td>F2T55E-gw</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, glossy white</td>
<td>4010312319925</td>
<td>39,80 €/pc.</td>
</tr>
<tr>
<td>F2T55E-sg</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, black glossy</td>
<td>4010312319956</td>
<td>39,80 €/pc.</td>
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</table>

### F2T55EB-

Wireless 2-way pushbutton in E-Design55, 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high. Whisper quiet and with battery (lifetime 2-5 years). With rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>F2T55EB-al</td>
<td>Wireless pushbutton 55 x 55 mm without wire, coated/aluminium paint</td>
<td>4010312321188</td>
<td>62,70 €/pc.</td>
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<tr>
<td>F2T55EB-ag</td>
<td>Wireless pushbutton 55 x 55 mm without wire, anthracite glossy</td>
<td>4010312321140</td>
<td>54,90 €/pc.</td>
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<tr>
<td>F2T55EB-wg</td>
<td>Wireless pushbutton 55 x 55 mm without wire, pure white glossy</td>
<td>4010312321171</td>
<td>54,90 €/pc.</td>
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<tr>
<td>F2T55EB-gw</td>
<td>Wireless pushbutton 55 x 55 mm without wire, glossy white</td>
<td>4010312321157</td>
<td>54,90 €/pc.</td>
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<tr>
<td>F2T55EB-sg</td>
<td>Wireless pushbutton 55 x 55 mm without wire, black glossy</td>
<td>4010312321164</td>
<td>54,90 €/pc.</td>
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</table>

Recommended retail prices excluding VAT.
### PASSIVE WIRELESS SENSORS E-DESIGN55

#### F2ZT55E-
Wireless 2-way pushbutton in E-Design55, 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With laser engraved rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc.)</th>
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</thead>
<tbody>
<tr>
<td>F2ZT55E-al</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, coated/aluminium paint</td>
<td>4010312320518</td>
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<tr>
<td>F2ZT55E-ag</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, anthracite glossy</td>
<td>4010312320549</td>
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<tr>
<td>F2ZT55E-wg</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, pure white glossy</td>
<td>4010312319994</td>
<td>45.60</td>
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<tr>
<td>F2ZT55E-gw</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, glossy white</td>
<td>4010312320501</td>
<td>45.60</td>
</tr>
<tr>
<td>F2ZT55E-sg</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, black glossy</td>
<td>4010312320525</td>
<td>45.60</td>
</tr>
</tbody>
</table>

#### F4T55E-
Wireless 4-way pushbutton in E-Design55, 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With double rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4T55E-al</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, coated/aluminium paint</td>
<td>4010312319901</td>
<td>47.60</td>
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<tr>
<td>F4T55E-ag</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, anthracite glossy</td>
<td>4010312318895</td>
<td>39.80</td>
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<tr>
<td>F4T55E-wg</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, pure white glossy</td>
<td>4010312319833</td>
<td>39.80</td>
</tr>
<tr>
<td>F4T55E-gw</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, glossy white</td>
<td>4010312319864</td>
<td>39.80</td>
</tr>
<tr>
<td>F4T55E-sg</td>
<td>Wireless pushbutton 55 x 55 mm without battery or wire, black glossy</td>
<td>4010312319888</td>
<td>39.80</td>
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</table>

#### F4T55EB-
Wireless 4-way pushbutton in E-Design55, 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high. Whisper quiet and with battery (lifetime 2-5 years). With double rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4T55EB-al</td>
<td>Wireless pushbutton 55 x 55 mm without wire, coated/aluminium paint</td>
<td>4010312320563</td>
<td>64.30</td>
</tr>
<tr>
<td>F4T55EB-ag</td>
<td>Wireless pushbutton 55 x 55 mm without wire, anthracite glossy</td>
<td>4010312320587</td>
<td>56.50</td>
</tr>
<tr>
<td>F4T55EB-wg</td>
<td>Wireless pushbutton 55 x 55 mm without wire, pure white glossy</td>
<td>4010312320570</td>
<td>56.50</td>
</tr>
<tr>
<td>F4T55EB-gw</td>
<td>Wireless pushbutton 55 x 55 mm without wire, glossy white</td>
<td>4010312320556</td>
<td>56.50</td>
</tr>
<tr>
<td>F4T55EB-sg</td>
<td>Wireless pushbutton 55 x 55 mm without wire, black glossy</td>
<td>4010312321133</td>
<td>56.50</td>
</tr>
</tbody>
</table>
**PASSIVE WIRELESS SENSORS E-DESIGN55**

### F6T55B-

Wireless 6-way pushbutton for single mounting 80 x 80 x 15 mm or mounting into the E-Design55 switching system. Silent and with battery (lifetime 5-8 years). Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>F6T55B-wg</td>
<td>Wireless 6-way pushbutton without wire, pure white glossy</td>
<td>4010312320655</td>
<td>68,50 €/pc.</td>
</tr>
</tbody>
</table>

### FDT55EB-

1-way wireless rotary switch for single mounting 80 x 80 x 25 mm over a flush box or mounting into the E-Design55 switching system. With battery (lifetime 2-8 years). Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDT55EB-al</td>
<td>Wireless rotary switch coated/aluminium paint 55 x 55 mm without wire</td>
<td>4010312320656</td>
<td>69,50 €/pc.</td>
</tr>
<tr>
<td>FDT55EB-ag</td>
<td>Wireless rotary switch anthracite glossy 55 x 55 mm without wire</td>
<td>4010312320662</td>
<td>61,70 €/pc.</td>
</tr>
<tr>
<td>FDT55EB-wg</td>
<td>Wireless rotary switch pure white glossy 55 x 55 mm without wire</td>
<td>4010312319987</td>
<td>61,70 €/pc.</td>
</tr>
<tr>
<td>FDT55EB-gw</td>
<td>Wireless rotary switch glossy white 55 x 55 mm without wire</td>
<td>4010312320666</td>
<td>61,70 €/pc.</td>
</tr>
<tr>
<td>FDT55EB-sg</td>
<td>Wireless rotary switch black glossy 55 x 55 mm without wire</td>
<td>4010312320679</td>
<td>61,70 €/pc.</td>
</tr>
</tbody>
</table>

### FTA55D-wg

Wireless pushbutton dimming actuator. For single mounting 80 x 80 x 15/33 mm or mounting into the E-Design55 switching system. Pure white glossy. With power MOSFET. 230 V incandescent lamps and halogen lamps up to 300 W, 230 V LEDs up to 100 W. No inductive (wound) transformers. With switching operation for children’s rooms and snooze function. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Standby loss only 0.7 watt. Smart Home sensor and actuator.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTA55D-wg</td>
<td>Wireless pushbutton dimming actuator, pure white glossy</td>
<td>4010312319222</td>
<td>74,80 €/pc.</td>
</tr>
</tbody>
</table>
PASSIVE WIRELESS SENSORS E-DESIGN55

FTA55DL-wg
Wireless pushbutton dimming actuator without N connection. For single mounting 80 x 80 x 15/33 mm or mounting into the E-Design55 switching system. Pure white glossy. With Power MOSFET. 230 V incandescent lamps and halogen lamps up to 200 W, depending on ventilation conditions. Dimmable energy saving lamps ESL and 230 V LED lamps in 'trailing edge' mode up to 200 W or up to 40 W in 'leading edge' mode, depending on ventilation conditions. Min. load 20 W at 'trailing edge' mode and 8 W at 'leading edge' mode. No inductive (wound) transformers. With switching operation for children's rooms and snooze function. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Only 0.7 watt standby loss. Smart Home sensor and actuator.

| FTASDL-wg | Wireless pushbutton dimming actuator without N connection, pure white glossy | EAN 4010312319239 | 74,80 €/pc. |

FTA55J-wg
Wireless pushbutton shading actuator, 1+1 NO contact 4 A/250 V AC for one shading element motor. For single mounting 80 x 80 x 15/33 mm or mounting into the E-Design55 switching system. Pure white glossy. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Only 0.8 watt standby loss. Smart Home sensor and actuator.

| FTASJ-wg | Wireless pushbutton shading actuator, pure white glossy | EAN 4010312319246 | 68,20 €/pc. |

FTA55L-wg
Wireless pushbutton light switch actuator 10 A/250 V AC. For single mounting 80 x 80 x 15/33 mm or mounting into the E-Design55 switching system. Pure white glossy. Impuls switch with 1 NO contact, not potentialfree, 230 V incandescent and halogen lamps 1000 W, ESL and 230 V LED lamps up to 200 W. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Standby loss 0.8 watt only. Smart Home sensor and actuator.

| FTASL-wg | Wireless pushbutton light switch actuator, pure white glossy | EAN 4010312319253 | 67,50 €/pc. |

Recommended retail prices excluding VAT.
F1T65-wg

Wireless 1-way pushbutton for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Smart Home sensor.

| F1T65-wg | Wireless 1-way pushbutton without battery and wire, pure white glossy | EAN 4010312321089 | 35,50 €/pc. |

F2T65-wg

Wireless 2-way pushbutton for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker. Smart Home sensor.

| F2T65-wg | Wireless pushbutton without battery or wire, pure white glossy | EAN 4010312319321 | 39,80 €/pc. |

F2T65B-wg

Wireless 2-way pushbutton for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Silent and with battery (lifetime 2-5 years). With rocker. Smart Home sensor.

| F2T65B-wg | Wireless pushbutton without wire, pure white glossy | EAN 4010312321126 | 54,90 €/pc. |
PASSIVE WIRELESS SENSORS E-DESIGN65

**F4T65-wg**

Wireless 4-way pushbutton for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With double rocker. Smart Home sensor.

| F4T65-wg | Wireless pushbutton without battery or wire, pure white glossy | EAN 4010312315965 | 39,80 €/pc. |

**F4T65B-wg**

Wireless 4-way pushbutton for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Silent and with battery (lifetime 2-5 years). With double rocker. Smart Home sensor.

| F4T65B-wg | Wireless pushbutton without wire, pure white glossy | EAN 4010312315972 | 56,50 €/pc. |

**F6T65B-wg**

Wireless 6-way pushbutton for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Silent and with battery (lifetime 5-8 years). With double rocker. Smart Home sensor.

| F6T65B-wg | Wireless 6-way pushbutton without wire, pure white glossy | EAN 4010312318584 | 68,40 €/pc. |

| F6T65B-Keypad | Wireless 6-way pushbutton as keypad without wire, pure white glossy | EAN 4010312319123 | 74,90 €/pc. |
F2ZT65-wg
Wireless 2-way pushbutton for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker laser engraved. Smart Home sensor.

| F2ZT65-wg | Wireless pushbutton without battery or wire, pure white glossy | EAN 4010312318751 | 45.60 €/pc. |

F4PT-gb
Wireless 4-way pushbutton pure white glossy for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With laser engraved double rocker. Smart Home sensor.

- The mounting panel can only be screwed on a flat surface or fixed to the wall, on glass or furniture using the enclosed adhesive film. By means of a 55 mm switch box, use the sleeves for screw connection supplied in the socket.

| F4PT-gb | 4-way profile pushbutton, pure white glossy | EAN 4010312317624 | 42.90 €/pc. |

FDT65B-wg
Wireless 1-way rotary switch for single mounting 84 x 84 x 25 mm or mounting into the E-Design65 switching system. With battery (lifetime 2-8 years). Smart Home sensor.

| FDT65B-wg | Wireless rotary switch without wire, pure white glossy | EAN 4010312317273 | 61.70 €/pc. |
FTA65D-wg

Wireless pushbutton. For single mounting 84 x 84 x 16/33 mm or mounting into the E-Design65 switching system. Pure white glossy. With Power MOSFET. 230 V incandescent and halogen lamps up to 300 W. 230 V LED lamps up to 100 W. No inductive (wound) transformers. With switching operation for children's rooms and snooze function. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Only 0.7 watt standby loss. Smart Home sensor and actuator.

| FTA65D-wg | Wireless pushbutton dimming actuator, pure white glossy | EAN 4010312319185 | 74.80 €/pc. |

FTA65DL-wg

Wireless pushbutton dimming actuator without N connection. For single mounting 84 x 84 x 16/33 mm or mounting into the E-Design65 switching system. Pure white glossy. With Power MOSFET. Incandescent and halogen lamps up to 200 W, depending on ventilation conditions. Energy saving lamps ESL and 230 V LED lamps in 'trailing edge' mode up to 200 W or up to 40 W in 'leading edge' mode, depending on ventilation conditions. Min. load 20W at 'trailing edge' mode and 8 W at 'leading edge' mode. No inductive (wound) transformers. With switching operation for children's rooms and snooze function. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Only 0.7 watt standby loss. Smart Home sensor and actuator.

| FTA65DL-wg | Wireless pushbutton dimming actuator without N connection, pure white glossy | EAN 4010312319192 | 74.80 €/pc. |

FTA65J-wg

Wireless pushbutton shading actuator, 1+1 NO contact 4 A/250 V AC for one shading element motor. For single mounting 84 x 84 x 16/33 mm or mounting into the E-Design65 switching system. Pure white glossy. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Only 0.8 watt standby loss. Supply voltage 230 V. Smart Home sensor and actuator.

| FTA65J-wg | Wireless pushbutton shading actuator, pure white glossy | EAN 4010312319208 | 68.20 €/pc. |

Recommended retail prices excluding VAT.
FTA65L-wg
Wireless pushbutton actuator light switch 10 A/250 V AC. For single mounting 84 x 84 x 16/33 mm or mounting into the E-Design65 switching system. Pure white glossy. Impuls switch with 1 NO contact, not potentialfree, 230 V incandescent and halogen lamps 1000 W, ESL and 230 V LED kamps up to 200 W. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Standby loss 0.8 watt only. Smart Home sensor and actuator.

| FTA65L-wg | Wireless pushbutton actuator light switch, pure white glossy | EAN 4010312319215 | 67,50 €/pc. |

FKF65-wg
Wireless card switch for surface mounting 84 x 84 x 29 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Smart Home sensor.

| FKF65-wg | Key card switch, pure white glossy | EAN 4010312316115 | 53,20 €/pc. |

FZS65-wg
Wireless pull switch for surface mounting 84 x 84 x 24 mm or mounting into the E-Design65 switching system. With grey and red handle. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Smart Home Sensor.

| FZS65-wg | Wireless pull switch, pure white glossy | EAN 4010312316139 | 67,90 €/pc. |
PASSIVE WIRELESS SENSORS E-DESIGN65

**B4T65-wg**

Bus 4-way pushbutton for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. For connection to FTS14TG pushbutton gateway. Only 0.2 watt standby loss. With rocker and double rocker. Smart Home sensor.

| B4T65-wg | Bus pushbutton in E-Design, pure white glossy | EAN 4010312315675 | 42,10 €/pc. |

**WS65-wg**

Rocker switch, 1 CO contact 10 A/250 V AC. Switch for single mounting 84 x 84 x 22 mm or mounting into the E-Design65 switching system.

| WS65-wg | Rocker switch 1 CO contact, pure white glossy | EAN 4010312317341 | 12,20 €/pc. |

**WT65-wg**

Rocker pushbutton, 1 NO contact 10 A/250 V AC. Pushbutton for single mounting 84 x 84 x 22 mm or mounting into the E-Design65 switching system.

| WT65-wg | Rocker pushbutton 1 NO contact, pure white glossy | EAN 4010312317334 | 12,20 €/pc. |
W2T65-wg
Rocker pushbutton with double rocker, 2 NO contacts 10 A/250 V AC. Pushbutton for single mounting 84 x 84 x 22 mm or mounting into the E-Design65 switching system.

| W2T65-wg | Rocker pushbutton 2 NO contacts, pure white glossy | EAN 4010312320594 | 15.20 €/pc. |
PASSIVE WIRELESS SENSORS E-DESIGN65 FLAT

**F1FT65-wg**

Wireless 1-way flat pushbutton for single mounting 84 x 84 x 11 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Smart Home sensor.

| F1FT65-wg | Wireless flat pushbutton without battery or wire, pure white glossy | EAN 4010312315958 | 37,90 €/pc. |

**F2FT65-wg**

Wireless 2-way flat pushbutton for single mounting 84 x 84 x 11/7 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker. Smart Home sensor.

| F2FT65-wg | Wireless flat pushbutton, pure white glossy | EAN 4010312319307 | 39,80 €/pc. |

**F4FT65-wg**

Wireless 4-way flat pushbutton for single mounting 84 x 84 x 11/7 mm over a flush box or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With double rocker. Smart Home sensor.

| F4FT65-wg | Wireless flat pushbutton, pure white glossy | EAN 4010312318485 | 39,80 €/pc. |

Recommended retail prices excluding VAT.
**F2FZT65B-wg**

Wireless 2-way flat pushbutton for single mounting 84 x 84 x 11 mm or mounting into the E-Design65 switching system. Whisper quiet and with battery (lifetime 5-8 years). With rocker laser engraved. Smart Home sensor.

| F2FZT65B-wg | Wireless flat pushbutton without wire, pure white glossy | EAN 4010312318775 | 45.60 €/pc. |

**F2FT65B-wg**

Wireless 2-way flat pushbutton for single mounting 84 x 84 x 11 mm or mounting into the E-Design65 switching system. Whisper quiet and with battery (lifetime 5-8 years). With rocker. Smart Home sensor.

| F2FT65B-wg | Wireless flat pushbutton without wire, pure white glossy | EAN 4010312319314 | 54.90 €/pc. |

**F4FT65B-wg**

Wireless 4-way flat pushbutton for single mounting 84 x 84 x 11 mm or mounting into the E-Design65 switching system. Whisper quiet and with battery (lifetime 5-8 years). With double rocker. Smart Home sensor.

| F4FT65B-wg | Wireless flat pushbutton without wire, pure white glossy | EAN 4010312315989 | 58.50 €/pc. |

Recommended retail prices excluding VAT.
### FDTF65B-wg
1-way wireless rotary switch flat for single mounting 84 x 84 x 11/9 mm over a flush box or mounting into the E-Design65 switching system. With battery (lifetime 2-8 years). Smart Home sensor.

| FDTF65B-wg | Wireless rotary switch flat without wire, pure white glossy | EAN 4010312318843 | €61.70 | pc. |

### FFTA65D-wg
Wireless flat pushbutton dimming actuator. For single mounting 84 x 84 x 11/33 mm or mounting into the E-Design65 switching system. Pure white glossy. With Power MOSFET. 230 V incandescent and halogen lamps up to 300 W, 230 V LED lamps up to 100 W. No inductive (wound) transformers. With switching operation for children’s rooms and snooze function. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Only 0.7 watt standby loss. Smart Home sensor and actuator.

| FFTA65D-wg | Wireless flat pushbutton dimming actuator, pure white glossy | EAN 4010312319260 | €79.80 | pc. |

### FFTA65DL-wg
Wireless flat pushbutton dimming actuator without N connection. For single mounting 84 x 84 x 11/33 mm or mounting into the E-Design65 switching system. Pure white glossy. With Power MOSFET. Incandescent and halogen lamps up to 200 W, depending on ventilation conditions. 230 V energy saving lamps ESL and 230 V LED lamps in ‘trailing edge’ mode up to 200 W or up to 40 W in ‘leading edge’ mode, depending on ventilation conditions. Min. load 20 W at ‘trailing edge’ mode and 8 W at ‘leading edge’ mode. No inductive (wound) transformers. With switching operation for children’s rooms and snooze function. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Only 0.7 watt standby loss. Smart Home sensor and actuator.

| FFTA65DL-wg | Wireless flat pushbutton dimming actuator without N connection, pure white glossy | EAN 4010312319277 | €79.80 | pc. |
PASSIVE WIRELESS SENSORS E-DESIGN65 FLAT

**FFT65J-wg**
Wireless flat pushbutton shading actuator, 1+1 NO contact 4 A/250 V AC for one shading element motor. For single mounting 84 x 84 x 11/33 mm or mounting into the E-Design65 switching system. Pure white glossy. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Only 0.8 watt standby loss. Smart Home sensor and actuator.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFT65J-wg</td>
<td>Wireless flat pushbutton shading actuator, pure white glossy</td>
<td>4010312319284</td>
<td>68.80 €/pc.</td>
</tr>
</tbody>
</table>

**FFT65L-wg**
Wireless flat pushbutton light switch actuator 10 A/250 V AC. For single mounting 84 x 84 x 11/33 mm or mounting into the E-Design65 switching system. Pure white glossy. Impuls switch with 1 NO contact, not potentialfree, 230 V incandescent and halogen lamps 1000 W, ESL and 230 V LED kamps up to 200 W. With integrated universal/direction pushbutton and terminals for additional wired pushbuttons. Supply voltage 230 V. Standby loss 0.8 watt only. Smart Home sensor and actuator.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFT65L-wg</td>
<td>Wireless flat pushbutton light switch actuator, pure white glossy</td>
<td>4010312319291</td>
<td>69.80 €/pc.</td>
</tr>
</tbody>
</table>

**B4FT65-wg**
Bus 4-way pushbutton for single mounting 84 x 84 x 11mm or mounting into the E-Design65 switching system. For connection to FTS14TG pushbutton gateway. Only 0.2 watt standby loss. With rocker and double rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4FT65-wg</td>
<td>Bus flat pushbutton in E-Design, pure white glossy</td>
<td>4010312315682</td>
<td>42.10 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
### FT55-

**Wireless 4-way pushbutton.** 80x80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT55-al</td>
<td>Wireless pushbutton 55 x 55 mm w/o battery or wire, coated/aluminium paint</td>
<td>4010312305829</td>
<td>48,80</td>
</tr>
<tr>
<td>FT55-ws</td>
<td>Wireless pushbutton 55 x 55 mm w/o battery or wire, white</td>
<td>4010312308936</td>
<td>41,00</td>
</tr>
<tr>
<td>FT55-rw</td>
<td>Wireless pushbutton 55 x 55 mm w/o battery or wire, pure white</td>
<td>4010312305775</td>
<td>41,00</td>
</tr>
<tr>
<td>FT55-wg</td>
<td>Wireless pushbutton 55 x 55 mm w/o battery or wire, pure white glossy</td>
<td>4010312305799</td>
<td>41,00</td>
</tr>
<tr>
<td>FT55-sz</td>
<td>Wireless pushbutton 55 x 55 mm w/o battery or wire, black</td>
<td>4010312305782</td>
<td>41,00</td>
</tr>
<tr>
<td>FT55-an</td>
<td>Wireless pushbutton 55 x 55 mm w/o battery or wire, anthracite</td>
<td>4010312305805</td>
<td>41,00</td>
</tr>
</tbody>
</table>

### F4T55B-

**Wireless 4-way pushbutton for single mounting 80 x 80 x 15 mm or mounting in the 55 mm switch system.** Whisper quiet and with battery (lifetime 2-5 years). With rocker and double rocker. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F4T55B-al</td>
<td>Wireless pushbutton 55 x 55 mm w/o wire, coated/aluminium paint</td>
<td>4010312316467</td>
<td>61,50</td>
</tr>
<tr>
<td>F4T55B-ws</td>
<td>Wireless pushbutton 55 x 55 mm w/o wire, white</td>
<td>4010312316511</td>
<td>53,70</td>
</tr>
<tr>
<td>F4T55B-rw</td>
<td>Wireless pushbutton 55 x 55 mm w/o wire, pure white</td>
<td>4010312316474</td>
<td>53,70</td>
</tr>
<tr>
<td>F4T55B-wg</td>
<td>Wireless pushbutton 55 x 55 mm w/o wire, pure white glossy</td>
<td>4010312316498</td>
<td>53,70</td>
</tr>
<tr>
<td>F4T55B-an</td>
<td>Wireless pushbutton 55 x 55 mm w/o wire, anthracite</td>
<td>4010312316504</td>
<td>53,70</td>
</tr>
</tbody>
</table>

### FZT55-wg

**Wireless 2-way pushbutton.** 80x80mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker laser engraved. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FZT55-wg</td>
<td>Wireless pushbutton 55 x 55 mm w/o battery or wire, pure white glossy</td>
<td>4010312318768</td>
<td>45,60</td>
</tr>
</tbody>
</table>
PASSIVE WIRELESS SENSORS 55 X 55 MM

**F4PT55-gb**

Wireless 4-way wireless pushbutton pure white glossy for single mounting 80 x 80 x 15 mm or mounting in the 55 mm switch system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With laser engraved double rocker. Smart Home sensor.

Rocker laser engraved with 'Home Day/Night', 'Away' and 'Vacation'.
The mounting panel can only be screwed on a flat surface or fixed to the wall, on glass or furniture using the enclosed adhesive film. By means of a 55 mm switch box, use the sleeves for screw connection supplied in the socket.

| F4PT55-gb | Wireless 4-way profile pushbutton 55 x 55 mm w/o battery or wire, pure white glossy | EAN 4010312318164 | 42,90 €/pc. |

**FDT55B-wg**

Wireless rotary switch pure white glossy for single mounting 80 x 80 x 25 mm or mounting in the 55 mm switch system. With battery (lifetime 2-8 years). Smart Home sensor.

| FDT55B-wg | Wireless rotary switch w/o wire, pure white glossy | EAN 4010312318256 | 61,70 €/pc. |

**B4T55-**

Bus 4-way pushbutton for single mounting 80 x 80 x 15 mm. For connection to FTS14TG pushbutton gateway. Only 0.2 watt standby loss. With rocker and double rocker. Smart Home sensor.

| B4T55-wg | Bus pushbutton 55 x 55 mm, pure white glossy | EAN 4010312316580 | 42,10 €/pc. |
| B4T55-an | Bus pushbutton 55 x 55 mm, anthracite | EAN 4010312316627 | 42,10 €/pc. |

Recommended retail prices excluding VAT.
PASSIVE WIRELESS SENSORS 55 X 55 MM

**WS55-**
Rocker switch, 1 CO contact 10 A/250 V AC. Switch for single mounting 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WS55-ws</td>
<td>Rocker switch 55 x 55 mm, white</td>
<td>4010312317440</td>
<td>10,20 €/pc.</td>
</tr>
<tr>
<td>WS55-rw</td>
<td>Rocker switch 55 x 55 mm, pure white</td>
<td>4010312317464</td>
<td>10,20 €/pc.</td>
</tr>
<tr>
<td>WS55-wg</td>
<td>Rocker switch 55 x 55 mm, pure white glossy</td>
<td>4010312317433</td>
<td>10,20 €/pc.</td>
</tr>
<tr>
<td>WS55-an</td>
<td>Rocker switch 55 x 55 mm, anthracite</td>
<td>4010312317488</td>
<td>10,20 €/pc.</td>
</tr>
</tbody>
</table>

**WT55-**
Rocker pushbutton, 1 NO contact 10 A/250 V AC. Pushbutton for single mounting 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>WT55-ws</td>
<td>Rocker pushbutton 55 x 55 mm, white</td>
<td>4010312317495</td>
<td>10,20 €/pc.</td>
</tr>
<tr>
<td>WT55-rw</td>
<td>Rocker pushbutton 55 x 55 mm, pure white</td>
<td>4010312317501</td>
<td>10,20 €/pc.</td>
</tr>
<tr>
<td>WT55-wg</td>
<td>Rocker pushbutton 55 x 55 mm, pure white glossy</td>
<td>4010312317518</td>
<td>10,20 €/pc.</td>
</tr>
<tr>
<td>WT55-an</td>
<td>Rocker pushbutton 55 x 55 mm, anthracite</td>
<td>4010312317532</td>
<td>10,20 €/pc.</td>
</tr>
</tbody>
</table>

**W2T55-wg**
Double rocker pushbutton, 2 NO contacts 10 A/250 V AC. Pushbutton for single mounting 80 x 80 mm external dimensions, internal frame dimensions 55 x 55 mm, 15 mm high.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>W2T55-wg</td>
<td>Rocker pushbutton 55 x 55 mm, pure white glossy</td>
<td>4010312320389</td>
<td>15,20 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
PASSIVE WIRELESS SENSORS 45 X 45 MM

FT4BS-ws
Wireless 4-way pushbutton 45 x 45 mm Belgium, Schneider-white. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

<table>
<thead>
<tr>
<th>FT4BS-ws</th>
<th>Wireless 4-way pushbutton 45x45mm Belgium, Schneider-white</th>
<th>EAN 4010312314203</th>
<th>45,80 €/pc.</th>
</tr>
</thead>
</table>

FT4B-
Wireless 4-way pushbutton 45 x 45 mm Niko Belgium. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

| FT4B-cr | Wireless 4-way pushbutton 45 x 45 mm Belgium, Niko cream | EAN 4010312312995 | 45,80 €/pc. |
| FT4B-na | Wireless 4-way pushbutton 45 x 45 mm Belgium, Niko anthracite | EAN 4010312314180 | 45,80 €/pc. |
| FT4B-nw | Wireless 4-way pushbutton 45 x 45 mm Belgium, Niko white | EAN 4010312312902 | 45,80 €/pc. |

FT4BI-
Wireless 4-way pushbutton 45 x 45 mm Bticino. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

| FT4Bi-an | Wireless 4-way pushbutton 45 x 45 mm Bticino, anthracite | EAN 4010312319759 | 45,80 €/pc. |
| FT4Bi-ww | Wireless 4-way pushbutton 45 x 45 mm Bticino, white | EAN 4010312319765 | 45,80 €/pc. |

Recommended retail prices excluding VAT.
### Passive Wireless Sensors 45 x 45 mm and 60 x 60 mm

#### FT4BL-lw

Wireless 4-way pushbutton 45 x 45 mm Belgium, Legrand-white. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT4BL-lw</td>
<td>Wireless 4-way pushbutton 45 x 45 mm Belgium, Legrand-white</td>
<td>4010312314197</td>
<td>45.80</td>
</tr>
</tbody>
</table>

#### FT4CH-

Wireless 4-way pushbutton for internal frame dimensions 60 x 60 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker. Also for cover frames from ABB Normelec and Hager.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT4CH-hg</td>
<td>Wireless pushbutton without battery or wire, without frame, light grey</td>
<td>4010312300985</td>
<td>45.80</td>
</tr>
<tr>
<td>FT4CH-sz</td>
<td>Wireless pushbutton without battery or wire, without frame, black</td>
<td>4010312300992</td>
<td>45.80</td>
</tr>
<tr>
<td>FT4CH-w</td>
<td>Wireless pushbutton without battery or wire, without frame, white</td>
<td>4010312300978</td>
<td>45.80</td>
</tr>
</tbody>
</table>

#### FT4CH+2P-

Wireless 4-way pushbutton for internal frame dimensions 60 x 60 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker laser engraved. Also for cover frames from ABB Normelec and Hager.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT4CH+2P-w</td>
<td>Wireless pushbutton without battery or wire, laser engraved, white</td>
<td>4010312312001</td>
<td>53.40</td>
</tr>
</tbody>
</table>
PASSIVE WIRELESS SENSORS 55 X 55 MM

**FT4S-ws**
Wireless 4-way pushbutton 55 x 55 mm Sweden Eljo-white. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

<table>
<thead>
<tr>
<th>FT4S-ws</th>
<th>Wireless pushbutton, Eljo-white</th>
<th>EAN 4010312314227</th>
<th>45,80 €/pc.</th>
</tr>
</thead>
</table>

**FT55ES-wg**
Wireless 4-way pushbutton 55 x 55 mm Exxact Sweden, pure white glossy. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

<table>
<thead>
<tr>
<th>FT55ES-wg</th>
<th>Wireless pushbutton Exxact, pure white glossy</th>
<th>EAN 4010312314227</th>
<th>45,80 €/pc.</th>
</tr>
</thead>
</table>

**FT55RS-alpine white**
Wireless 4-way pushbutton 55 x 55 mm Sweden Jussi-white. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

<table>
<thead>
<tr>
<th>FT55RS-alpine white</th>
<th>Wireless pushbutton, alpine white</th>
<th>EAN 4010312314210</th>
<th>45,80 €/pc.</th>
</tr>
</thead>
</table>

Recommended retail prices excluding VAT.
PASSIVE WIRELESS SENSORS 55 X 55 MM

FT55EL-ws

Wireless 4-way pushbutton 55 x 55 mm Finland Elko-white. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

| FT55EL-ws | Wireless pushbutton Finland, Elko-white | EAN 4010312316658 | 45,80 €/pc. |

FT55R-

Wireless 4-way pushbutton 55 x 55 mm for Busch Jäger Reflex and Duro cover frames. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

| FT55R-white | Wireless pushbutton, white | EAN 4010312313985 | 45,80 €/pc. |
| FT55R-alpine white | Wireless pushbutton, alpine white | EAN 4010312313992 | 45,80 €/pc. |

FT55AH-

Wireless 4-way pushbutton 55 x 55 mm for Merten glass frames and Berker. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker.

| FT55AH-al | Wireless pushbutton, coated/aluminium paint | EAN 4010312318683 | 52,30 €/pc. |
| FT55AH-ws | Wireless pushbutton, white | EAN 4010312318676 | 44,50 €/pc. |
| FT55AH-rw | Wireless pushbutton, pure white | EAN 4010312318690 | 44,50 €/pc. |
| FT55AH-wg | Wireless pushbutton, pure white glossy | EAN 4010312318713 | 44,50 €/pc. |
| FT55AH-an | Wireless pushbutton, anthracite | EAN 4010312318720 | 44,50 €/pc. |
### FMT55/2-

Wireless mini pushbutton, 55 x 55 mm external dimensions, 15 mm high, with rocker. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMT55/2-rw</td>
<td>Wireless mini pushbutton without battery or wire, with rocker, pure white</td>
<td>EAN 4010312312469</td>
<td>39.40 €/pc.</td>
</tr>
<tr>
<td>FMT55/2-wg</td>
<td>Wireless mini pushbutton without battery or wire, with rocker, pure white glossy</td>
<td>EAN 4010312312483</td>
<td>39.40 €/pc.</td>
</tr>
</tbody>
</table>

### FMT55/4-

Wireless mini pushbutton, 55 x 55 mm external dimensions, 15 mm high, with double rocker. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMT55/4-rw</td>
<td>Wireless mini pushbutton without battery or wire, with double rocker, pure white</td>
<td>EAN 4010312312544</td>
<td>42.20 €/pc.</td>
</tr>
<tr>
<td>FMT55/4-wg</td>
<td>Wireless mini pushbutton without battery or wire, with double rocker, pure white glossy</td>
<td>EAN 4010312312568</td>
<td>42.20 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
**Recommended retail prices excluding VAT.**

### FFD-al/anso

Wireless 50-way remote control with display 185 x 50 mm, 17 mm high. Power is supplied by lithium-ion battery whose voltage is monitored and shown in the display. With charger, wall holder WHF-al and 2 stainless-steel countersunk screws 2.9 x 25 mm and plugs 5 x 25 mm. Smart Home sensor.

| FFD-al/anso | Wireless remote control with display and rechargeable battery. Painted aluminium top, bottom anthracite-soft paint. With wall holder and charger. | EAN 4010312313541 | 125,00 €/pc. |

### FF8-al/anso

Wireless 8-way remote control 185 x 50 mm, 17 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. With wall holder WHF-al and 2 stainless-steel countersunk screws 2.9 x 25 mm and plugs 5 x 25 mm. Smart Home sensor.

| FF8-al/anso | Wireless remote control with 2 double rockers, painted aluminium top, bottom and rockers anthracite-soft paint | EAN 4010312303931 | 105,90 €/pc. |

### FMH8-

Wireless 8-way mini hand-held transmitter 45 x 85 mm, 18 mm high. Weighs only 60 grams. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

| FMH8-wg | Wireless mini hand-held transmitter pure white glossy, laser engraved 1+2+3+4+5+6+7+8 | EAN 4010312321348 | 75,80 €/pc. |
| FMH8-ag | Wireless mini hand-held transmitter anthracite glossy, laser engraved 1+2+3+4+5+6+7+8 | EAN 4010312321331 | 75,80 €/pc. |
| FMH8-al/anso | Wireless mini hand-held transmitter, the top is painted in aluminum and the bottom and the pushbuttons have an anthracite-soft paint, laser engraved 1+2+3+4+5+6+7+8 | EAN 4010312313282 | 83,80 €/pc. |
FHS2-al/anso

Wireless 2-way hand-held transmitter with rocker aluminium/anthracite-soft, 49 x 47 mm, 16 mm high. Weighs only 37 grams. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

FHS2-al/anso  | Wireless hand-held transmitter without battery or wire, with rocker, aluminium/anthracite-soft | EAN 4010312320303 | 50,70 €/pc.

FHS4-al/anso

Wireless 4-way hand-held transmitter with rocker aluminium/anthracite-soft, 49 x 47 mm, 16 mm high. Weighs only 37 grams. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

FHS4-al/anso  | Wireless hand-held transmitter without battery or wire, with double rocker, aluminium/anthracite-soft | EAN 4010312320297 | 52,90 €/pc.
FKD-wg

Wireless bell pushbutton 80 x 40 x 15 mm, pure white glossy with energy generator. Protection degree IP54. Generates the energy for radio telegrams by pushing the button, therefore without connecting cable and no stand-by loss.

Labeling field 43 x 12 mm. For example for Dymo label tape 9 mm and 12 mm. The radio bell pushbutton transmits 1 signal that can be evaluated like a 1-way wireless pushbutton.

| FKD-wg   | Wireless and batterless bell pushbutton, pure white glossy | EAN 4010312319475 | 43.10 €/pc. |

FSTAP-al/sz

Wireless keyswitch for surface mounting 70 x 70 x 43 mm. Die cast aluminium, black front, protection degree IP44. Euro profile cylinder lock with 2 keys. Battery lifetime 3-5 years. No standby loss. Smart Home sensor.

No external power supply required, so no connecting wire.
An internal 3 V CR2032 battery supplies power for several years.
To change the battery, open the housing as described in the installation instructions.
The lock has 2 positions, right and left with spring-supported return to the middle.
The wireless keyswitch transmits 2 evaluable signals that are taught into the wireless actuators.

| FSTAP-al/sz | Wireless keyswitch, without wire, aluminium/black | EAN 4010312320907 | 95.80 €/pc. |

FIW-USB

Wireless infrared converter with USB port for the universal remote control Logitech Harmony Touch (available from specialist retailers). Only 0.05 watt stand-by loss. Smart Home sensor.

With a special Eltako FIW data record, the infrared signals are converted into wireless telegrams by a wireless infrared converter FIW-USB and transmitted to the Eltako wireless network.
Either connect to a device with power supply to the USB socket or use a USB charger for mains voltage.
USB plug Type A with 2 m connecting cable.

| FIW-USB    | Wireless infrared converter with USB port | EAN 4010312311158 | 93.50 €/pc. |

Recommended retail prices excluding VAT.
**FTK-**

Wireless window/door contact with solar cell 75 x 25 x 12 mm, pure white glossy and anthracite glossy. Adhesive foil mounting. Protection class IP54, therefore suitable for outdoor mounting. Smart Home sensor.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTK-wg</td>
<td>Wireless window/door contact, pure white glossy</td>
<td>EAN 4010312321638</td>
<td>72,80 €/pc.</td>
</tr>
<tr>
<td>FTK-ag</td>
<td>Wireless window/door contact, anthracite glossy</td>
<td>EAN 4010312321645</td>
<td>74,90 €/pc.</td>
</tr>
</tbody>
</table>

**FTKB-wg**

Wireless window/door contact with solar cell and battery (lifetime 8 years) 75 x 25 x 12 mm, pure white glossy. Adhesive foil mounting. Smart Home sensor.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTKB-wg</td>
<td>Wireless window/door contact with battery, pure white glossy</td>
<td>EAN 4010312321621</td>
<td>57,80 €/pc.</td>
</tr>
</tbody>
</table>

**FFG7B-**

Wireless window handle sensor pure white and coated/aluminium paint, 120 x 35 x 7 mm, with battery (lifetime 7 years). Installation behind conventional window handle. Smart Home sensor.

Wireless transmit telegrams for window positions open, tilted and closed. Status telegram every 15 minutes. Very simple installation under standard window handle: Unscrew handle, fit sensor, and screw handle back on.

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFG7B-rw</td>
<td>Wireless window handle sensor, pure white</td>
<td>EAN 4010312318638</td>
<td>63,20 €/pc.</td>
</tr>
<tr>
<td>FFG7B-al</td>
<td>Wireless window handle sensor, coated/aluminium paint</td>
<td>EAN 4010312322031</td>
<td>71,00 €/pc.</td>
</tr>
</tbody>
</table>
PASSIVE WIRELESS SENSORS OTHERS

**FFKB-wg**

Wireless window/door contact pure white glossy, 75 x 25 x 12 mm, with battery (lifetime 7 years). Magnet pure white 37 x 10 x 6 mm. Smart Home sensor.

On opening and closing, the related telegram is send twice in short succession. The current status telegram is sent cyclically every approx. 8 minutes. Attach by bonding.

The wireless sensor can be taught in the actuators listed below and in the Wireless Building Visualisation and Control Software: F2L14, F4HK14, FGM, FHK14, FHK61, FM2Z14, FMZ61, FSB14, FSB61, FSB71, FSG14, FSR14, FSR61, FSR71, FTH14, FTN61, FUD14, FUD71, FZK14, FZK61

| FFKB-wg       | Wireless window/door contact, pure white glossy | EAN 4010312321102 | 56.70 €/pc.

**FFTE-rw**

Wireless window touch contact with energy generator pure white, 48 x 32 x 11.5 mm. Also for monitoring of doors, drawers and other mobile equipment. Generates the power for wireless telegrams when the button is pressed. Therefore, no connecting wire and no standby losses. Smart Home sensor.

A wireless telegram is sent when a window is opened or closed. Evaluated via FHK14, FHK61, FSB14, FSB61, FSB71, FSR14, FSR61, FSR71, FZK14, FZK61 and GFVS. Attach by affixing supplied adhesive foil, screwing on or using the supplied mounting bracket.

| FFTE-rw       | Wireless window/door contact, pure white       | EAN 4010312319024 | 52.50 €/pc.

**FTKE-rw**

Wireless window/door contact with energy generator 48 x 32 x 11.5 mm, pure white. Also for monitoring of drawers and other mobile equipment. Generates the power for wireless telegrams itself when the lever is pressed, therefore there is no battery, no connecting wire and no standby loss. Fixing by gluing, screwing or with mounting brackets BW3. Smart Home sensor.

| FTKE-rw       | Wireless window/door contact, pure white       | EAN 4010312315231 | 52.50 €/pc.

Recommended retail prices excluding VAT.
FPE-1

Wireless position switch with energy generator 48 x 32 x 11.5 mm, blue. Generates the power for wireless telegrams itself when the lever is pressed, therefore there is no battery, no connecting wire and no standby loss.

FPE-1: When pressing the operating lever a wireless telegram Data (hex) 0x10 is sent and when releasing Data (hex) 0x00 is sent, like a wireless pushbutton.

FVST

The encryption for the wireless window-door contacts FTKE, the wireless position switch FPE-1 as well as the wireless flat pushbuttons F1T and FIT can be activated and deactivated with the wireless encryption plug FVST.

FTKE and FPE
Activate encryption:
Insert the encryption plug and pull the lever.

FTKE and FPE
Deactivate encryption:
Insert the encryption plug and operate the rocker.

FVST
Wireless encryption plug
EAN 4010312907290
1,00 €/pc.
**PASSIVE WIRELESS SENSORS OTHERS**

**BW3**
Set mounting brackets for FTKE and FPE-1 with 3 brackets, screws, screw nuts and self-adhesive strips.

<table>
<thead>
<tr>
<th>BW3</th>
<th>Mounting brackets, pure white</th>
<th>EAN 4010312907641</th>
<th>3,30 €/pc.</th>
</tr>
</thead>
</table>

**FTKB-hg**
Wireless window/door contact mTRONIC with battery (lifetime several years) 135 x 18 x 9 mm, light grey. With intelligent burglary detection in mode 1 and 2 (locking monitoring). An alarm signal is sent when the window is opened at the locked and tilted position. Fixing by screwing in the window frame, between frame and sash on PVC or wooden doors and windows, in accordance with the manual. Smart Home sensor.

<table>
<thead>
<tr>
<th>FTKB-hg</th>
<th>Wireless window/door contact with battery. light grey</th>
<th>EAN 4010312318782</th>
<th>90,40 €/pc.</th>
</tr>
</thead>
</table>

**FTKB-gr**
Winkhaus wireless window/door contact with battery (lifetime several years) 128 x 24 x 9 mm, grey. Fixing by screwing in the window frame, between frame and sash on PVC or wooden doors and windows, in accordance with the operating instructions. Smart Home sensor.

<table>
<thead>
<tr>
<th>FTKB-gr</th>
<th>Wireless window/door contact with battery. grey</th>
<th>EAN 4010312317228</th>
<th>106,00 €/pc.</th>
</tr>
</thead>
</table>

Recommended retail prices excluding VAT.
### FMH2-

Wireless 2-way mini hand-held transmitter 43 x 43 mm, 16 mm high. Weighs only 30 grams. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMH2-ws</td>
<td>Wireless mini hand-held transmitter white, laser engraved 0 + I</td>
<td>EAN 4010312303450</td>
<td>40.90 €/pc.</td>
</tr>
<tr>
<td>FMH2-rw</td>
<td>Wireless mini hand-held transmitter pure white, laser engraved 0 + I</td>
<td>EAN 4010312303467</td>
<td>40.90 €/pc.</td>
</tr>
<tr>
<td>FMH2-wg</td>
<td>Wireless mini hand-held transmitter pure white glossy, laser engraved 0 + I</td>
<td>EAN 4010312303481</td>
<td>40.90 €/pc.</td>
</tr>
<tr>
<td>FMH2-sz</td>
<td>Wireless mini hand-held transmitter black, laser engraved 0 + I</td>
<td>EAN 4010312303474</td>
<td>40.90 €/pc.</td>
</tr>
<tr>
<td>FMH2-an</td>
<td>Wireless mini hand-held transmitter anthracite, laser engraved 0 + I</td>
<td>EAN 4010312303498</td>
<td>40.90 €/pc.</td>
</tr>
</tbody>
</table>

### FMH2S-

Wireless 2-way mini hand-held transmitter 43 x 43 mm, 16 mm high. Weighs only 30 grams. Also prepared to attach a key ring. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMH2S-ws</td>
<td>Wireless mini hand-held transmitter white for key ring, laser engraved 0 + I</td>
<td>EAN 4010312303368</td>
<td>43.30 €/pc.</td>
</tr>
<tr>
<td>FMH2S-rw</td>
<td>Wireless mini hand-held transmitter pure white for key ring, laser engraved 0 + I</td>
<td>EAN 4010312303375</td>
<td>43.30 €/pc.</td>
</tr>
<tr>
<td>FMH2S-wg</td>
<td>Wireless mini hand-held transmitter pure white glossy for key ring, laser engraved 0 + I</td>
<td>EAN 4010312303399</td>
<td>43.30 €/pc.</td>
</tr>
<tr>
<td>FMH2S-sz</td>
<td>Wireless mini hand-held transmitter black for key ring, laser engraved 0 + I</td>
<td>EAN 4010312303406</td>
<td>43.30 €/pc.</td>
</tr>
<tr>
<td>FMH2S-an</td>
<td>Wireless mini hand-held transmitter anthracite for key ring, laser engraved 0 + I</td>
<td>EAN 4010312303412</td>
<td>43.30 €/pc.</td>
</tr>
</tbody>
</table>

### FMH4-

Wireless 4-way mini hand-held transmitter 43 x 43 mm, 16 mm high. Weighs only 30 grams. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMH4-ws</td>
<td>Wireless mini hand-held transmitter white, laser engraved 1+2+3+4</td>
<td>EAN 4010312301029</td>
<td>43.30 €/pc.</td>
</tr>
<tr>
<td>FMH4-rw</td>
<td>Wireless mini hand-held transmitter pure white, laser engraved 1+2+3+4</td>
<td>EAN 4010312301036</td>
<td>43.30 €/pc.</td>
</tr>
<tr>
<td>FMH4-wg</td>
<td>Wireless mini hand-held transmitter pure white glossy, laser engraved 1+2+3+4</td>
<td>EAN 4010312301067</td>
<td>43.30 €/pc.</td>
</tr>
<tr>
<td>FMH4-sz</td>
<td>Wireless mini hand-held transmitter black, laser engraved 1+2+3+4</td>
<td>EAN 4010312301012</td>
<td>43.30 €/pc.</td>
</tr>
<tr>
<td>FMH4-an</td>
<td>Wireless mini hand-held transmitter anthracite, laser engraved 1+2+3+4</td>
<td>EAN 4010312301043</td>
<td>43.30 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
PASSIVE WIRELESS SENSORS OTHERS

**FMH4S-**

Wireless 4-way mini hand-held transmitter 43 x 43 mm, 16 mm high. Weighs only 30 grams. Also prepared to attach a key ring. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMH4S-ws</td>
<td>Wireless mini hand-held transmitter white for key ring, laser engraved 1+2+3+4</td>
<td>EAN 4010312301371</td>
<td>45,60 €/pc.</td>
</tr>
<tr>
<td>FMH4S-rw</td>
<td>Wireless mini hand-held transmitter pure white for key ring, laser engraved 1+2+3+4</td>
<td>EAN 4010312301562</td>
<td>45,60 €/pc.</td>
</tr>
<tr>
<td>FMH4S-wg</td>
<td>Wireless mini hand-held transmitter pure white glossy for key ring, laser engraved 1+2+3+4</td>
<td>EAN 4010312301586</td>
<td>45,60 €/pc.</td>
</tr>
<tr>
<td>FMH4S-sz</td>
<td>Wireless mini hand-held transmitter black for key ring, laser engraved 1+2+3+4</td>
<td>EAN 4010312301555</td>
<td>45,60 €/pc.</td>
</tr>
<tr>
<td>FMH4S-an</td>
<td>Wireless mini hand-held transmitter anthracite for key ring, laser engraved 1+2+3+4</td>
<td>EAN 4010312301579</td>
<td>45,60 €/pc.</td>
</tr>
</tbody>
</table>

**FMH2S-wr**

Wireless mini hand-held transmitter for calling systems 43 x 43 mm, 16 mm high. Weighs only 48 grams. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMH2S-wr</td>
<td>Wireless mini hand-held transmitter with grey carry strap for calling systems, pure white with red lettering</td>
<td>EAN 4010312303337</td>
<td>51,90 €/pc.</td>
</tr>
</tbody>
</table>

**FMH1W-sz**

Wireless mini hand-held transmitter waterproof 68 x 44 mm, 10-20 mm high. Weighs only 34 grams. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no battery. Smart Home sensor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMH1W-sz</td>
<td>Wireless mini hand-held transmitter, waterproof, black</td>
<td>EAN 4010312315293</td>
<td>64,70 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
FTTB

Wireless pushbutton tracker with battery (lifetime 5-8 years). 55 x 44 mm, 15 mm high. Weighs only 20 grams. Smart Home sensor.

The wireless pushbutton tracker FTTB has a blue pushbutton to send normal pushbutton telegrams. After opening the housing (grasp into the joint and prise apart), switch the tracker on by shifting the slide switch to the Tr position. The sensor then sends a presence telegram every 60 seconds. An internal 3V button cell CR2032 supplies power for several years.

| FTTB | Wireless pushbutton tracker, without wire | EAN 4010312321119 | 58.20 €/pc. |

FT4F-

Wireless 4-way flat pushbutton, 80 x 80 mm external dimensions, internal frame dimensions 63 x 63 mm, 15 mm high. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. With rocker and double rocker. Smart Home sensor.

| FT4F-al | Wireless flat pushbutton without battery or wire, coated/aluminium paint | EAN 4010312306697 | 48.80 €/pc. |
| FT4F-an | Wireless flat pushbutton without battery or wire, anthracite | EAN 4010312302996 | 41.00 €/pc. |
| FT4F-rw | Wireless flat pushbutton without battery or wire, pure white | EAN 4010312302941 | 41.00 €/pc. |
| FT4F-sz | Wireless flat pushbutton without battery or wire, black | EAN 4010312302965 | 41.00 €/pc. |
| FT4F-wg | Wireless flat pushbutton without battery or wire, pure white glossy | EAN 4010312302972 | 41.00 €/pc. |
| FT4F-ws | Wireless flat pushbutton without battery or wire, white | EAN 4010312302927 | 41.00 €/pc. |

Recommended retail prices excluding VAT.
HELPFUL ACCESSOIRES FOR WIRELESS SENSORS AND BUS SENSORS.

DSS65-TV65/3-
**Accessories active and passive wireless sensors and wired bus sensors**

**NEW** Universal frames E-Design55 internal dimensions 55 x 55 mm R1UE55, R2UE55, R3UE55 and R4UE55

**NEW** Universal frames E-Design65 internal dimensions 65 x 65 mm, R1UE, R2UE, R3UE and R4UE

Flat frames E-Design65 RF1E, RF2E, RF3E and RF4E

Frames internal dimensions 55 x 55 mm R, R2 and R3

Wireless pushbutton encryption rocker FTVW

Blind covers BLA65-wg, BLA65F-wg and BLA55

Blind covers BLF-wg and fused safety sockets DSS65-wg, DSS65F-wg

**NEW** Fused safety sockets DSS55E-wg, DSS+SD055- and cover TAE65/3-wg

Covers TV65/2-wg, TV65/3-wg, TV65/4-wg

Covers UAE65/2-wg, TAE65F/3-wg, TV65F/2-wg

Covers TV65F/3-wg, TV65F/4-wg, UAE65F/2-wg

Desktop base for E-Design65 pushbuttons and sensors S065

Desktop base for E-Design55 pushbuttons and sensors S055

Cover grey FSAF-gr

Rockers and double rockers laser engraved for E-Design65 pushbuttons and switches W + DW

Rockers and double rockers laser engraved for pushbuttons and switches 55er Design and E-Design55 W + DW

Rockers and double rockers laser engraved for remote control and hand-held transmitters W + DW

Laser engravings overview

Adapter frame AR65/2.8-wg

Bus motion/brightness sensor BBH65/12V DC-wg

Bus temperature controller with hand wheel BTR65H/12V DC-wg

Bus thermo clock/hygrostat with display BUTH65D/12V DC-wg

**NEW** Bus temperature sensor BTF65/12V DC-wg

**NEW** Bus motion/brightness sensor BBH55/12V DC-wg

**NEW** Bus temperature controller with hand wheel BTR55H/12V DC-wg

**NEW** Bus thermo clock/hygrostat with display BUTH55D/12V DC-wg

**NEW** Bus temperature sensor BTF55/12V DC-wg
**ACCESSORIES**

**R1UE55-, R2UE55-, R3UE55-, R4UE55-**

Universal frames E-Design 55. Single frames R1UE55, 80 x 80 mm external dimensions, double frames R2UE55, 80 x 152 mm external dimensions, triple frames R3UE55, 80 x 224 mm external dimensions and 4-way frames R4UE55, 80 x 292 mm external dimensions. 11 mm hoch. Internal frame dimensions 55 x 55 mm.

The universal frames can be mounted horizontally and vertically. For all wireless sensors of the 55 switching system.

<table>
<thead>
<tr>
<th>Frame Type</th>
<th>Description</th>
<th>EAN Code</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1UE55-al</td>
<td>Single universal frame coated/aluminium paint</td>
<td>4010312908464</td>
<td>4.70</td>
</tr>
<tr>
<td>R1UE55-ag</td>
<td>Single universal frame anthracite</td>
<td>4010312908488</td>
<td>2.90</td>
</tr>
<tr>
<td>R1UE55-wg</td>
<td>Single universal frame white glossy</td>
<td>4010312908341</td>
<td>2.90</td>
</tr>
<tr>
<td>R1UE55-gw</td>
<td>Single universal frame glossy white</td>
<td>4010312908471</td>
<td>2.90</td>
</tr>
<tr>
<td>R1UE55-sg</td>
<td>Single universal frame black glossy</td>
<td>4010312908471</td>
<td>2.90</td>
</tr>
<tr>
<td>R2UE55-al</td>
<td>Double universal frame coated/aluminium paint</td>
<td>4010312908525</td>
<td>8.90</td>
</tr>
<tr>
<td>R2UE55-ag</td>
<td>Double universal frame anthracite</td>
<td>4010312908518</td>
<td>4.10</td>
</tr>
<tr>
<td>R2UE55-wg</td>
<td>Double universal frame white glossy</td>
<td>4010312908365</td>
<td>4.10</td>
</tr>
<tr>
<td>R2UE55-gw</td>
<td>Double universal frame glossy white</td>
<td>4010312908495</td>
<td>4.10</td>
</tr>
<tr>
<td>R2UE55-sg</td>
<td>Double universal frame black glossy</td>
<td>4010312908501</td>
<td>4.10</td>
</tr>
<tr>
<td>R3UE55-al</td>
<td>Triple universal frame coated/aluminium paint</td>
<td>4010312908563</td>
<td>11.50</td>
</tr>
<tr>
<td>R3UE55-ag</td>
<td>Triple universal frame anthracite</td>
<td>4010312908556</td>
<td>4.30</td>
</tr>
<tr>
<td>R3UE55-wg</td>
<td>Triple universal frame white glossy</td>
<td>4010312908358</td>
<td>4.30</td>
</tr>
<tr>
<td>R3UE55-gw</td>
<td>Triple universal frame glossy white</td>
<td>4010312908532</td>
<td>4.30</td>
</tr>
<tr>
<td>R3UE55-sg</td>
<td>Triple universal frame black glossy</td>
<td>4010312908549</td>
<td>4.30</td>
</tr>
<tr>
<td>R4UE55-al</td>
<td>4-way universal frame coated/aluminium paint</td>
<td>4010312908600</td>
<td>14.50</td>
</tr>
<tr>
<td>R4UE55-ag</td>
<td>4-way universal frame anthracite</td>
<td>4010312908594</td>
<td>4.90</td>
</tr>
<tr>
<td>R4UE55-wg</td>
<td>4-way universal frame white glossy</td>
<td>4010312908440</td>
<td>4.90</td>
</tr>
<tr>
<td>R4UE55-gw</td>
<td>4-way universal frame glossy white</td>
<td>4010312908570</td>
<td>4.90</td>
</tr>
<tr>
<td>R4UE55-sg</td>
<td>4-way universal frame black glossy</td>
<td>4010312908587</td>
<td>4.90</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
R1UE, R2UE, R3UE, R4UE

Universal frames E-Design65. Single frames R1UE, 84 x 84 mm external dimensions, double frames R2UE, 84 x 155 mm external dimensions, triple frames R3UE, 84 x 226 mm external dimensions and 4-way frames R4UE, 84 x 297 mm external dimensions. 13 mm high. Internal frame dimensions 65 x 65 mm.

The universal frames can be mounted horizontally and vertically.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1UE-wg</td>
<td>Single universal frame white glossy</td>
<td>EAN 4010312908617</td>
<td>2,90 €/pc.</td>
</tr>
<tr>
<td>R2UE-wg</td>
<td>Double universal frame white glossy</td>
<td>EAN 4010312908327</td>
<td>4,10 €/pc.</td>
</tr>
<tr>
<td>R3UE-wg</td>
<td>Triple universal frame white glossy</td>
<td>EAN 4010312908334</td>
<td>4,30 €/pc.</td>
</tr>
<tr>
<td>R4UE-wg</td>
<td>4-way universal frame white glossy</td>
<td>EAN 4010312908440</td>
<td>4,90 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
ACCESSORIES

RF1E, RF2E, RF3E, RF4E

Flat frames E-Design65. Single frames RF1E, 84 x 84 mm external dimensions, double frames RF2E, 84 x 155 mm external dimensions, triple frames RF3E, 84 x 226 mm external dimensions and 4-way frames RF4E, 84 x 297 mm external dimensions. The flat frames are 8.5 mm high. Internal frame dimensions 65 x 65 mm.

These frames can only be used vertically for sensors.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF1E-wg</td>
<td>Single flat frame, pure white glossy</td>
<td>4010312907245</td>
<td>2,90 €/pc.</td>
</tr>
<tr>
<td>RF2E-wg</td>
<td>Double flat frame, pure white glossy</td>
<td>4010312907252</td>
<td>4,10 €/pc.</td>
</tr>
<tr>
<td>RF3E-wg</td>
<td>Triple flat frame, pure white glossy</td>
<td>4010312907269</td>
<td>4,30 €/pc.</td>
</tr>
<tr>
<td>RF4E-wg</td>
<td>4-way flat frame, pure white glossy</td>
<td>4010312907610</td>
<td>4,90 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
R-, R2-, R3-

Frames internal dimensions 55 x 55 mm. Single frames R, 80 x 80 mm external dimensions, double frames R2, 80 x 151 mm external dimensions, and triple frames R3, 80 x 222 mm external dimensions. 15 mm high.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Single frames for wireless pushbuttons</th>
<th>Double frames for wireless pushbuttons</th>
<th>Triple frames for wireless pushbuttons</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-</td>
<td>Single frames for wireless pushbuttons -ws, -rw, -wg, -sz, -an -al</td>
<td>3,90 €/pc.</td>
<td>4,20 €/pc.</td>
<td>4,40 €/pc.</td>
</tr>
<tr>
<td>R2-</td>
<td>Double frames for wireless pushbuttons -ws, -rw, -wg, -sz, -an -al</td>
<td>4,70 €/pc.</td>
<td>8,90 €/pc.</td>
<td>11,50 €/pc.</td>
</tr>
<tr>
<td>R3-</td>
<td>Triple frames for wireless pushbuttons -ws, -rw, -wg, -sz, -an -al</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FTVW

The wireless pushbutton encryption rocker FTVW can be used to activate and deactivate the encryption of Eltako wireless pushbuttons, hand-held wireless transmitters and wireless remote control with batteryless and cordless EnOcean wireless modules. This excludes the tap-radio® pushbuttons and handheld transmitters using the EnOcean module PTM210.

First, remove the rockers. The wireless modules must be removed from wireless mini hand-held transmitters FMH8 and placed on a flat surface.

Activate encryption:
The label encryption ON on the FTVW is located on the top side.

Press the encryption rocker on the wireless module and press the rocker twice.

Deactivate encryption:
The label encryption OFF on the FTVW is located on the top side.

Press the encryption rocker on the wireless module and press the rocker once.

Teach-in of encryptable EnOcean wireless modules is described in the operating instructions for encryptable actuators. This is identified by the pictogram ⚜️.

<table>
<thead>
<tr>
<th></th>
<th>Wireless pushbutton encryption rocker</th>
<th>EAN 4010312907030</th>
<th>1,50 €/pc.</th>
</tr>
</thead>
</table>

Recommended retail prices excluding VAT.
**ACCESSORIES**

**BLA65-wg**
Blind cover BLA65 E-Design65 for R1UE, R2UE, R3UE and R4UE.

| BLA65-wg | Blind cover for R1E – R4E, pure white glossy | EAN 4010312907139 | 3,40 €/pc. |

**BLA65F-wg**
Blind cover BLA65F flat E-Design65 for RF1E, RF2E, RF3E and RF4E.

| BLA65F-wg | Blind cover for RF1E – RF4E, pure white glossy | EAN 4010312907412 | 3,40 €/pc. |

**BLA55-**
Blind cover BLA55 E-Design55 for RIUE55, R2UE55, R3UE55 and R4UE55.

| BLA55-rw | Blind cover for RIUE55 – R4UE55, pure white | EAN 4010312905883 | 3,40 €/pc. |
| BLA55-wg | Blind cover for RIUE55 – R4UE55, pure white glossy | EAN 4010312905913 | 3,40 €/pc. |

Recommended retail prices excluding VAT.
**ACCESSORIES**

**BLF-wg**
Blind cover BLF for R1F, R2F and R3F.

| BLF-wg  | Blind cover for R1F, R2F and R3F, pure white glossy | EAN 4010312904268 | 3,40 €/pc. |

**DSS65-wg**
German Fused Safety Socket DSS with socket outlet front in E-Design65. Pure white glossy. With increased shock protection. The socket base bearing the VDE sign has plug-in terminals.

| DSS65-wg | DSS with socket outlet front, pure white glossy | EAN 4010312315996 | 5,90 €/pc. |

**DSS65F-wg**
German Fused Safety Socket with socket outlet front in E-Design65 for flat frames. Pure white glossy. With increased shock protection. The socket base bearing the VDE sign has plug-in terminals.

| DSS65F-wg | DSS with socket outlet front, pure white glossy | EAN 4010312316818 | 5,90 €/pc. |
**ACCESSORIES**

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**DSS55E-wg**

German Fused Safety Socket DSS with socket outlet front in E-Design55, 80 x 80 mm external dimensions, external frame dimensions 55 x 55 mm. Pure white glossy. With increased shock protection. The socket base bearing the VDE sign has plug-in terminals.

| DSS55E-wg | DSS with socket outlet front, pure white glossy | EAN 4010312320082 | 5,70 €/pc. |

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**DSS+SD055-**

German Fused Safety Socket DSS with socket outlet front SD055. With increased shock protection.

| DSS+SD055-ws | DSS with socket outlet front, white glossy | EAN 4010312310830 | 6,80 €/pc. |
| DSS+SD055-rw | DSS with socket outlet front, pure white | EAN 4010312310854 | 6,80 €/pc. |
| DSS+SD055-wg | DSS with socket outlet front, pure white glossy | EAN 4010312310885 | 6,80 €/pc. |
| DSS+SD055-sz | DSS with socket outlet front, black | EAN 4010312310878 | 6,80 €/pc. |
| DSS+SD055-an | DSS with socket outlet front, anthracite | EAN 4010312310908 | 6,80 €/pc. |

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**TAE65/3-wg**

Cover for 3-socket telecommunications access unit (TAE). Pure white glossy. For E-Design65 frames R1UE, R2UE, R3UE and R4UE. Fits all Rutenbeck TAE access sockets.

| TAE65/3-wg | 3-socket TAE cover for E-Design frames | EAN 4010312907337 | 2,90 €/pc. |

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Recommended retail prices excluding VAT.
ACCESSORIES

**TV65/2-wg**

2-hole cover for TV/RF aerial sockets. Pure white glossy. For E-Design65 frames R1UE, R2UE, R3UE and R4UE. Fits all Hirschmann aerial sockets.

| TV65/2-wg | TV/RF cover for E-Design frames | EAN 4010312907351 | 2,90 €/pc. |

**TV65/3-wg**

3-hole cover for TV/RF/SAT aerial sockets. Pure white glossy. For E-Design65 frames R1UE, R2UE, R3UE and R4UE. Fits all Hirschmann aerial sockets.

| TV65/3-wg | TV/RF/SAT cover for E-Design frames | EAN 4010312907382 | 2,90 €/pc. |

**TV65/4-wg**

4-hole cover for TV/RF/SAT aerial sockets. Pure white glossy. For E-Design65 frames R1UE, R2UE, R3UE and R4UE. Fits all Hirschmann aerial sockets.

| TV65/4-wg | TV/RF/SAT cover for E-Design frames | EAN 4010312907634 | 2,90 €/pc. |
**ACCESSORIES**

**UAE65/2-wg**
Cover for 2-hole UAE/IAE (ISDN) and network sockets. Pure white glossy. For E-Design65 frames R1UE, R2UE, R3UE and R4UE. Fits all Rutenbeck or Telegärtner 2-hole UAE/IAE(ISDN) and network sockets.

| UAE65/2-wg | 2-hole UAE/IAE cover for E-Design frames | EAN 4010312907399 | 2,90 €/pc. |

**TAE65F/3-wg**
Cover for 3-socket telecommunications access unit (TAE). Pure white glossy. For E-Design65 flat frames RF1E, RF2E, RF3E and RF4E. Fits all Rutenbeck TAE access sockets.

| TAE65F/3-wg | 3-socket TAE cover for E-Design flat frames | EAN 4010312907344 | 2,90 €/pc. |

**TV65F/2-wg**
2-hole cover for TV/RF aerial sockets. Pure white glossy. For E-Design65 flat frames RF1E, RF2E, RF3E and RF4E. Fits all Hirschmann aerial sockets.

| TV65F/2-wg | TV/RF cover for E-Design flat frames | EAN 4010312907368 | 2,90 €/pc. |

Recommended retail prices excluding VAT.
ACCESSORIES

**TV65F/3-wg**

3-hole cover for TV/RF/SAT aerial sockets. Pure white glossy. For E-Design65 flat frames RF1E, RF2E, RF3E and RF4E. Fits all Hirschmann aerial sockets.

| TV65F/3-wg | TV/RF/SAT cover for E-Design flat frames | EAN 4010312907375 | 2,90 €/pc. |

**TV65F/4-wg**

4-hole cover for TV/RF/SAT aerial sockets. Pure white glossy. For E-Design65 flat frames RF1E, RF2E, RF3E and RF4E. Fits all Hirschmann aerial sockets.

| TV65F/4-wg | TV/RF/SAT cover for E-Design flat frames | EAN 4010312907627 | 2,90 €/pc. |

**UAE65F/2-wg**

Cover for 2-hole UAE/IAE (ISDN) and network sockets. Pure white glossy. For E-Design65 flat frames RF1E, RF2E, RF3E and RF4E. Fits all Rutenbeck or Telegärtner 2-hole UAE/IAE(ISDN) and network sockets.

| UAE65F/2-wg | 2-hole UAE/IAE cover for E-Design flat frames | EAN 4010312907405 | 2,90 €/pc. |
ACCESSORIES

**S065**
Desktop base for E-Design65 pushbuttons and sensors, also flat except 230 V versions, are clipped onto the base. With slip-resistant plastic feet.

| S065 | Desktop base | EAN 4010312908143 | 7,30 €/pc.

**S055**
Desktop base for E-Design55 pushbuttons and sensors, except 230 V versions, are clipped onto the base. With slip-resistant plastic feet.

| S055 | Desktop base | EAN 4010312908150 | 7,30 €/pc.

**FSAF-gr**
Grey cover foil for wireless sensors. Covers the rear of wireless pushbuttons bonded to glass panes. Self-adhesive plastic foil permeable to air; easily to affix bubble-free. Please specify the size required.

| FSAF-gr | Cover grey | EAN 4010312908136 | 3,40 €/pc.

Recommended retail prices excluding VAT.
Accessories

W + DW

Rockers and double rockers laser engraved for E-Design65 pushbuttons and switches.

For all pushbuttons, switches and hand-held transmitters we provide rockers and double rockers offered in all colors with laser engraving.

The additional title +2P will do for each arrow top (up) and bottom (down).

The additional title +0I will do for I (=on) top and 0 (=off) down.

The additional title +0I will do for 0 (=off) top and I (=on) down.

Other prints with a maximum of 6 lines must be characterized and then we engrave it in Arial font.

Maximum of two lines at the top, middle and bottom.

An overview of the pictograms for laser engraving is available on page 8-16. The pictogram number is sufficient as additional designation.

If we receive an E-mail to LGI@eltako.de with an Adobe Illustrator or Corel Draw file with the extension .ai or .cdr, we engrave individual customer requirements.

If you require a new pictogram in your specifications, we only charge a lump sum - please refer to the product designation LGI.

For rockers without symbol use the suffix 'not engraved'.

Rockers: W-B4FT65, W-B4T65, W-F1FT65, W-F2FT65, W-F2T65, W-WT/WS65

Double rockers: DW-B4FT65, DW-B4T65, DW-F4T65B, DW-F4FT65, DW-F4FT65B, DW-F4T65, DW-W2T65

Recommended retail prices excluding VAT.
**ACCESSORIES**

**W + DW**

Rockers and double rockers laser engraved for pushbuttons and switches 45x45 mm, 55er Design, E-Design55, 60x80 mm and 63x63 mm.

For all pushbuttons and hand-held transmitters we provide rockers and double rockers offered in all colors and hand-held transmitters with laser engraving.

The additional title +2P will do for each arrow top (up) and bottom (down).

The additional title +0I will do for I (=on) top and 0 (=off) down.

The additional title +0I will do for 0 (=off) top and I (=on) down.

Other prints with a maximum of 6 lines must be characterized and then we engrave it in Arial font. Maximum of two lines at the top, middle and bottom.

An overview of the pictograms for laser engraving is available on page 8-16. The pictogram number is sufficient as additional designation. If we receive an E-mail to LGI@eltako.de with an Adobe Illustrator or Corel Draw file with the extension .ai or .cdr, we engrave individual customer requirements. If you require a new pictogram in your specifications, we only charge a lump sum - please refer to the product designation LGI. For rockers without symbol use the suffix 'not engraved'.


<table>
<thead>
<tr>
<th>Symbol</th>
<th>Rocker/Double Rocker</th>
<th>Description</th>
<th>Part Number</th>
<th>Price €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>+2P</td>
<td>Laser engraving individually, create new pictogram</td>
<td>EAN 4010312908310</td>
<td>9,90</td>
<td></td>
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<tr>
<td>+0I</td>
<td>Rocker for bus pushbuttons ws/rw/wg/sz/an/al</td>
<td>EAN 4010312907573</td>
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<tr>
<td>DW-B4T55</td>
<td>Double rocker for bus pushbuttons ws/rw/wg/sz/an/al</td>
<td>EAN 4010312907580</td>
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<tr>
<td>W-F2T55E</td>
<td>Rocker for wireless pushbuttons 55x55 mm wg</td>
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<tr>
<td>DW-F4T55E</td>
<td>Double rocker for wireless pushbuttons 55x55 mm wg</td>
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<tr>
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<tr>
<td>W-FMT55/2-</td>
<td>Double rocker for wireless mini pushbuttons ws/rw/wg/sz/an/al</td>
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<td>W-FT4CH</td>
<td>Rocker for wireless pushbuttons 60x60 mm Swiss Design wg(61)/hg(65)/sz(60)</td>
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<td>W-FT4B</td>
<td>Rocker for wireless pushbuttons 45x45 mm Niko Belgium cr/na/nw</td>
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<td>W-FT4R-</td>
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<td>W-FT55</td>
<td>Rocker for wireless pushbuttons 55x55 mm ws/rw/wg/sz/an/al</td>
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<td>Double rocker for wireless pushbuttons 55x55 mm ws/rw/wg/sz/an/al</td>
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<tr>
<td>DW-FT55EL</td>
<td>Double rocker for wireless pushbutton 55x55 mm for Exakta, Exakta-white</td>
<td>EAN 4010312908198</td>
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<tr>
<td>DW-FT55ES</td>
<td>Double rocker for wireless pushbutton 55x55 mm for Exacta, pure white glossy</td>
<td>EAN 4010312907085</td>
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<tr>
<td>W-FT55R</td>
<td>Rocker for wire pushbutton 55x55 mm for Busch Reflex and Duro, white/alpine white</td>
<td>EAN 4010312907047</td>
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<tr>
<td>DW-FT55R</td>
<td>Double rocker for wire pushbutton 55x55 mm for Busch Reflex and Duro, white/alpine white</td>
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<tr>
<td>DW-W2T55</td>
<td>Double rocker for rocker switch</td>
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<tr>
<td>W-WT/WS55</td>
<td>Rocker for rocker switch and rocker pushbutton ws/rw/wg/sz/an/al</td>
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<td></td>
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</tbody>
</table>

Recommended retail prices excluding VAT.
ACCESSORIES

**W + DW**

Rockers and double rockers laser engraved for remote controls and hand-held transmitters.

For all pushbuttons and hand-held transmitters we provide rockers and double rockers offered in all colors and hand-held transmitters with laser engraving.

The additional title +2P will do for each arrow top (up) and bottom (down).

The additional title +0I will do for I (=on) top and 0 (=off) down.

The additional title +I0 will do for 0 (=off) top and I (=on) down.

Other prints with a maximum of 6 lines must be characterized and then we engrave it in Arial font.

Maximum of two lines at the top, middle and bottom.

An overview of the pictograms for laser engraving is available on page 8-16. The pictogram number is sufficient as additional designation.

If we receive an E-mail to LGI@eltako.de with an Adobe Illustrator or Corel Draw file with the extension .ai or .cdr, we engrave individual customer requirements.

If you require a new pictogram in your specifications, we only charge a lump sum – please refer to the product designation **LGI**.

**Rockers: W-FMH2**

- add. nomenclature ...+0I
- add. nomenclature ...+2P

**Double rockers: DW-FMH4**

- add. nomenclature ...+0I
- add. nomenclature ...+2P

**Double rockers: DW-FF8**

- add. nomenclature ...+0I
- add. nomenclature ...+2P

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**Recommended retail prices excluding VAT.**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>EAN 4010312908310</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGI</td>
<td>Laser engraving individually, create new pictogram</td>
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<td>9.90 €/pc.</td>
</tr>
<tr>
<td>DW-FF8</td>
<td>Double rocker for wireless remote control anthracite-soft paint</td>
<td>4010312908378</td>
<td>6.80 €/pc.</td>
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<tr>
<td>W-FMH2</td>
<td>Rocker for wireless hand-held transmitters FMH2 ws/rw/sz/an/al</td>
<td>4010312906354</td>
<td>6.20 €/pc.</td>
</tr>
<tr>
<td>DW-FMH4</td>
<td>Double rocker for wireless hand-held transmitters FMH4 ws/rw/sz/an/al</td>
<td>4010312908361</td>
<td>6.80 €/pc.</td>
</tr>
</tbody>
</table>
LASER ENGRAVINGS OVERVIEW
For any laser engraving order, please specify the type of your pushbutton, remote control or hand-held transmitter, the engraving number and also if you need a single or double rocker. Rockers and double rockers for pushbuttons, remote controls and hand-held transmitters are available on pages 8-13 to 8-15.
**AR65/2,8-wg**

Adapter frame for other wireless sensors in E-Design65 of Series 65 as height adjustment. Pure white glossy.

**AR65/2,8-wg**: for frames for flat pushbuttons 80 x 80 mm, R1F, R2F and R3F.

The adapter frame is plugged on from the rear prior to assembly of these sensors. Cut the 4 rear projecting pins on the E-Design sensors off flush before connecting the adapter frame AR65/2,8.

1) Also for Gira Standard 55 and Busch-Jaeger Future Linear frames.

| AR65/2,8-wg       | Adapter frame pure white glossy | EAN 4010312907436 | 1,10 €/pc. |

**BBH65/12VDC-wg**

Bus motion/brightness sensor pure white glossy for connection to the RS485 bus gateway BGW14. For single mounting or mounting into the E-Design65 switching system. 84 x 84 mm, 27 mm high. Installation depth 33 mm. Data transmission and power supply takes place over the 4-wire bus with a 12 V DC power supply unit. Only 0.1 watt standby loss. Smart Home sensor.

| BBH65/12VDC-wg    | Bus motion/brightness sensor, pure white glossy | EAN 4010312318966 | 71,60 €/pc. |

**BTR65H/12VDC-wg**

Bus temperature controller with hand wheel pure white glossy for connection to the RS485 bus gateway BGW14. For single mounting or mounting into the E-Design65 switching system. 84 x 84 mm, 27 mm high. Installation depth 33 mm. Data transmission and power supply takes place over the 4-wire bus with a 12 V DC power supply unit. Only 0.1 watt standby loss. Smart Home sensor.

| BTR65H/12VDC-wg   | Bus temperature controller with hand wheel, pure white glossy | EAN 4010312318959 | 61,30 €/pc. |

Recommended retail prices excluding VAT.
ACCESSORIES

BUTH65D/12V DC-wg
Bus thermo clock/hygrostat with display pure white glossy for connection to the RS485 bus gateway BGW14. For single mounting or mounting into the E-Design65 switching system. 84 x 84 mm, 14 mm high. Installation depth 33 mm. With adjustable day and night reference temperatures and relative humidity. Illuminated display. Preset ready to operate. Data transmission and power supply takes place over the 4-wire bus with a 12 V DC power supply unit. Only 0.1 watt standby loss. Smart Home sensor.

| BUTH65D/12V DC-wg | Bus thermo clock/hygrostat with display, pure white glossy | EAN 4010312318942 | 71.70 €/pc. |

BTF65/12V DC-wg
Bus temperature sensor pure white glossy for connection to the RS485 bus gateway BGW14. For single mounting or mounting into the E-Design65 switching system. 84 x 84 mm, 17 mm high. Installation depth 33 mm. Data transmission and power supply take place over the 4-wire bus with a 12 V DC mains adapter. Only 0.1 watt standby loss. Smart Home sensor.

| BTF65/12V DC-wg | Bus temperature sensor, pure white glossy | EAN 4010312319741 | 56.30 €/pc. |

BBH55/12VDC-wg
Bus motion/brightness sensor for connection to the RS485 bus gateway BGW14. For single mounting or mounting into the E-Design55 switching system. 80 x 80 mm, 25 mm high. Installation depth 33 mm. Data transmission and power supply take place over the 4-wire bus with a 12 V DC switching power supply unit. Only 0.1 watt standby loss. Smart Home sensor.

| BBH55/12VDC-wg | Bus motion/brightness sensor, pure white glossy | EAN 4010312319789 | 71.60 €/pc. |

Recommended retail prices excluding VAT.
**BTR55H/12VDC-wg**

Bus temperature controller with hand wheel for connection to the RS485 bus gateway BGW14. For single mounting or mounting into the E-Design55 switching system. 80 x 80 mm, 27 mm high. Installation depth 33 mm. Data transmission and power supply take place over the 4-wire bus with a 12 V DC switching power supply unit. Only 0.1 watt standby loss. Smart Home sensor.

| BTR55H/12VDC-wg | Bus temperature controller with hand wheel, pure white glossy | EAN 4010312319796 | 61,30 €/pc. |

**BUTH55D/12V DC-wg**

Bus thermo clock/hygrostat with display pure white glossy for connection to the RS485 bus gateway BGW14. For single mounting or mounting into the E-Design55 switching system. 80 x 80 mm, 14 mm high. Installation depth 33 mm. With adjustable day and night reference temperatures and relative humidity. Illuminated display. Preset ready to operate. Data transmission and power supply takes place over the 4-wire bus with a 12 V DC power supply unit. Only 0.1 watt standby loss. Smart Home sensor.

| BUTH55D/12V DC-wg | Bus thermo clock/hygrostat with display, pure white glossy | EAN 4010312319802 | 71,70 €/pc. |

**BTF55/12V DC-wg**

Bus temperature sensor pure white glossy for connection to the RS485 bus gateway BGW14. For single mounting or mounting into the E-Design55 switching system. 80 x 80 mm, 17 mm high. Installation depth 33 mm. For installation in 55 mm switch boxes. Data transmission and power supply take place over the 4-wire bus with a 12 V DC mains adapter. Only 0.1 watt standby loss.

| BTF55/12V DC-wg | Bus temperature sensor, pure white glossy | EAN 4010312319819 | 56,30 €/pc. |

Recommended retail prices excluding VAT.
THE RIGHT LIGHT FOR EVERY ROOM WITH ELTAKO DIMMER SWITCHES.
Universal dimmer switches, capacity enhancer, 1-10 V controllers and rotary dimmers

<table>
<thead>
<tr>
<th>Selection table for universal dimmer switches, capacity enhancer and 1-10 V controllers</th>
<th>9 - 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal dimmer switch <strong>EUD12NP-UC</strong></td>
<td>9 - 3</td>
</tr>
<tr>
<td>Digital settable multifunction universal dimmer switch <strong>EUD12D-UC</strong></td>
<td>9 - 4</td>
</tr>
<tr>
<td>Universal dimmer switch <strong>EUD12F</strong> for mains disconnection switching</td>
<td>9 - 5</td>
</tr>
<tr>
<td>Universal dimmer switch with rotary knob <strong>EUD12DK/800W-UC</strong></td>
<td>9 - 6</td>
</tr>
<tr>
<td>Capacity enhancer for universal dimmer switches <strong>LUD12-230V</strong></td>
<td>9 - 7</td>
</tr>
<tr>
<td>Digitally adjustable motor dimmer <strong>MOD12D-UC</strong></td>
<td>9 - 9</td>
</tr>
<tr>
<td>Fully electronic multifunction time relay <strong>MFZ12PM0-UC</strong> with 18 functions</td>
<td>9 - 10</td>
</tr>
<tr>
<td>1-10 V control dimmer switch <strong>SDS12/1-10V</strong> for electronic ballast units</td>
<td>9 - 11</td>
</tr>
<tr>
<td>1-10 V controller <strong>SUD12/1-10V</strong> for universal dimmer switches</td>
<td>9 - 12</td>
</tr>
<tr>
<td>Rotary dimmer in E-Design65 <strong>DTD65-230V-wg</strong></td>
<td>9 - 13</td>
</tr>
<tr>
<td>Rotary dimmer in E-Design65 <strong>DTD65L-230V-wg</strong> without N connection</td>
<td>9 - 14</td>
</tr>
<tr>
<td>Rotary dimmer flat in E-Design65 <strong>DTD65F-230V-wg</strong></td>
<td>9 - 15</td>
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<td>Rotary dimmer flat in E-Design65 <strong>DTD65FL-230V-wg</strong> without N connection</td>
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<tr>
<td>Rotary dimmer in E-Design55 <strong>DTD55-230V-wg</strong></td>
<td>9 - 17</td>
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<tr>
<td>Rotary dimmer in E-Design55 <strong>DTD55L-230V-wg</strong> without N connection</td>
<td>9 - 18</td>
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<tr>
<td>Universal dimmer switch <strong>EUD6INP-230V</strong> without N connection</td>
<td>9 - 19</td>
</tr>
<tr>
<td>Universal dimmer switch <strong>EUD6INPL-230V</strong> without N connection, especially for LED</td>
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</tr>
<tr>
<td>Universal dimmer switch <strong>EUD6INPN-UC</strong></td>
<td>9 - 21</td>
</tr>
<tr>
<td>Universal dimmer switch <strong>EUD6INPN-230V</strong></td>
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<td>Multifunction universal dimmer switch <strong>EUD6IM-UC</strong></td>
<td>9 - 23</td>
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<tr>
<td>LED dimmer switch <strong>ELD61/12-36V DC</strong></td>
<td>9 - 24</td>
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<tr>
<td>1-10 V control dimmer switch <strong>SDS61/1-10V</strong> for electronic ballast units</td>
<td>9 - 25</td>
</tr>
<tr>
<td>Constant current LED dimmer switch <strong>KLD61</strong></td>
<td>9 - 26</td>
</tr>
<tr>
<td>Technical data universal dimmer switches, capacity enhancers and 1-10 V controllers</td>
<td>9 - 27</td>
</tr>
</tbody>
</table>
### THE ENERGY SAVERS

Set the mood and reduce energy costs at the same time – a fascinating combination for incandescent lamps, halogen lamps and LED lamps. The dimming of lamps in combination with soft ON and soft OFF, prolongs their lifetime considerably. This applies also to the infinitely dimmable energy saving lamps. Only universal dimmers with the marking R, L, C recognize automatically the connected load and adjust their dimming function accordingly. Other dimmers have to be exchanged if lamps with other kind of loads are used later.

Only universal dimmer switches with the added ESL marking and added LED marking have the associated comfort settings.

---

<table>
<thead>
<tr>
<th>Modular device for DIN EN 60715 TH35 rail mounting, number of modules 18 mm each</th>
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<tr>
<td>Built-in device for installation (e.g. flush-mounting box) and surface mounting</td>
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<tr>
<td>Dimming R, L and C loads</td>
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<td>With comfort position for dimmable energy saving lamps ESL</td>
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<tr>
<td>With comfort position for dimmable LEDs</td>
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<td>Power MOSFET up to W (nearly unlimited number of switching cycles)</td>
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<td>Increase of capacity with capacity enhancer LUD12-230 V</td>
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<td>Dimming speed adjustable</td>
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<td>Supply voltage 230 V</td>
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<td>Low standby loss</td>
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<td>Central control electrically isolated from the local input</td>
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<td>Switching operation for children's rooms</td>
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<td>Snooze function</td>
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</tr>
</tbody>
</table>

* EVG = electronic ballast units
* No N connection required.
* Applies to glow lamps with 170 V ignition voltage, for glow lamps with 90 V ignition voltage approx. ½ glow lamp current.
* Depends on the set function. This specification refers to EUD12D, which is connected in series.
* 1) This specification refers to the connected EUD12D or LUD12 depending on the selected mode.
* Minimum brightness level or dimming speed adjustable.
* Rotation speed determines the dimming speed.
**EUD12NPN-UC**

Universal dimmer switch. Power MOSFET up to 400 W. Automatic lamp detection. Standby loss 0.1 watt only. With adjustable minimum or maximum brightness and dimming speed. With switching operation for children's rooms and snooze function.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Universal dimmer switch for lamps up to 400 W, depending on ventilation conditions, dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps are also dependent on the lamp electronics.

**Zero passage switching with soft start and soft OFF to protect lamps.**

Universal control voltage input 8 to 230 V UC, electrically isolated from the 230 V supply voltage and switching voltage. No minimum load required.

Short-time control commands switch on/off, permanent control varies the brightness to the maximum level. An interruption of control changes the direction of dimming.

The setting of the brightness level is stored after switching off.

In case of a power failure the switching position and the brightness level are stored.

If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Glow lamp current up to 5 mA starting at 110 V.

Automatic electronic overload protection and over-temperature switch-off.

The LED below the top rotary switch on the front shows control commands. It starts blinking after 15 seconds if a pushbutton is inhibited.

**The upper rotary switch** determines the operation, whether the automatic lamp detection or special comfort positions should act:

**AUTO** allows the dimming of all light species.

**EC1** is a comfort position for energy saving lamps which must be switched on with increased power dependent on the construction, so they will also switch on again safely in cold condition when dimmed down.

**EC2** is a comfort position for energy saving lamps which will not be switched on again when dimmed down dependent on the construction. Memory is switched off in this position.

**LC1** is a comfort position for LED lamps which are not being dimmed down enough when set to **AUTO** (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.

**LC2** and **LC3** are comfort positions for LED lamps like LC1, but with different dimming curves.

In positions EC1, EC2, LC1, LC2 and LC3 no inductive (wound) transformers should be used. In addition, the maximum number of dimmable LED lamps can be lower than in the **AUTO** position dependent on the construction.

The minimum brightness level (completely dimmed down) or the maximum brightness level (completely dimmed up) is adjustable with the **middle %** rotary switch.

The dimming speed can be adjusted with the **lower dimming speed rotary switch**.

The duration of soft start and soft OFF is changed simultaneously.

**With special switching operation for children's rooms:** If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

**Snooze function:** With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.

Mixing of L loads (inductive loads, e.g. wound transformers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230 V incandescent lamps and halogen lamps) may be added anytime.

Mixing of L loads and C loads is possible with the dimmer switch EUD12D (page 9-4) in connection with capacity enhancer LUD12 (page 9-7).

**Recommended retail prices excluding VAT:**

- EUD12NPN-UC  Power MOSFET up to 400 W  EAN 4010312107843  57,50 €/pc.
EUD12D-UC

Universal dimmer switch. Power MOSFET up to 400 W. Automatic lamp detection. Standby loss 0.3 watt only. With adjustable minimum brightness, maximum brightness and dimming speed. With switching operation for children’s rooms and snooze function.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Universal dimmer switch for lamps up to 400 W, depending on ventilation conditions, dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps are also dependent on the lamp electronics.

Up to 3600 W with capacity enhancers LUD12-230V (description page 9-7) at the terminals X1 and X2. Universal control voltage 8 to 230 V UC and additionally the universal voltage control inputs 8 to 230 V UC central ON and central OFF. The control inputs are electrically isolated from the supply voltage and switching voltage. Zero passage switching with soft start and soft OFF to protect lamps. In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered. From 110 V control voltage glow lamp current up to 5 mA (not for DSD). Automatic electronic overload protection and over-temperature switch-off. The functions and times are entered using the MODE and SET keys as described in the operating manual and indicated on the LC display. A keylock function is provided.

You can dim all lamp types in automatic mode settings EUD, DSD, Udo, MIN, MMX, CG and R.

EUD = Universal dimmer switch with settings for dimming speed, minimum brightness, maximum brightness, memory and Soft ON/OFF as well as choice of priority for central control. ESL and LED is settable. Short-time control commands switch on/off, permanent control varies the brightness to the maximum level. A interruption of control changes the direction of dimming.

ESL is a convenience setting for energy saving lamps which must be switched on at high voltage for design reasons so that they can also be switched back on in dimmed state. Memory must be switched off on energy saving lamps which cannot be switched back on in dimmed state for design reasons.

LED is a convenience setting for LED lamps which cannot be dimmed down far enough in automatic mode (phase cut-off) for design reasons and must therefore be forced to phase control. There is a choice of 3 dimming curves. No inductive (wound) transformers may be used in ESL and LED settings. In addition the maximum number of lamps may be lower than in automatic mode for design reasons.

Switching operation for children’s rooms: If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

Snooze function: With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.

DSD = Same as universal dimmer switch EUD but also comprising activation via two direction switches on the universal control inputs 8..230 V UC.

Udo = Same as universal dimmer switch EUD but also comprising setting for a time delay from 1 to 99 minutes. Switch-off early warning at the end by dimming is selectable and adjustable from 1 to 3 minutes.

STS = Staircase time switch with switchable switch-off early warning by dimming. With pump and permanent light by pushbutton. Time adjustable from 1 to 99 minutes. Switch-off early warning (no flickering) by dimming is adjustable from 1 to 3 minutes. Also for dimmable energy saving lamps ESL and 230 V LED lamps. MIN = Universal dimmer switch, switches when control voltage is applied to the minimum brightness setting. Maximum brightness is dimmed during the set dim time from 1 to 99 minutes. When the control voltage is interrupted, the device is switched off immediately, even during the dim time. MMX = Same function as for MIN; when the control voltage is interrupted, dimming still continues until the set minimum brightness is reached. Then the device is switched off. CG = Clock with adjustable switch on/off times from 0.1 to 9.9 seconds. The maximum brightness is adjustable from 3 to 99%. R = Switching relay with setting for Soft ON/OFF from 0.1 to 9.9 seconds. The maximum brightness is adjustable from 3 to 99%. ON = permanent ON. OFF = permanent OFF.

The dim position in % or the time lapse in minutes is indicated in the middle of the display. The expired, restettable switch-on time is indicated at the bottom of the display. Display menu guidance including language selection (German, English, French, Italian or Spanish) is described in the supplied operating instructions.

EUD12D-UC  Power MOSFET up to 400 W  EAN 4010312109489  69,00 €/pc.

Recommended retail prices excluding VAT.
UNIVERSAL DIMMER SWITCH EUD12F FOR MAINS DISCONNECTION SWITCHING

EUD12F

Universal dimming switch. Power MOSFET up to 300 W. Automatic lamp detection. Standby loss 0.1 watt only. With adjustable minimum brightness and dimming speed. With switching operation for children’s rooms and snooze function.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Universal dimmer switch for lamps up to 300 W, depending on ventilation conditions, dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps are also dependent on the lamp electronics.

Zero passage switching with soft start and soft OFF to protect lamps.

Supply voltage and switching voltage 230 V.

Short-time control commands switch on/off, permanent control varies the brightness to the maximum level.

An interruption of control changes the direction of dimming.

The setting of the brightness level is stored after switching off.

In case of a power failure the switching position and the brightness level are stored.

If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Automatic electronic overload protection and over-temperature switch-off.

With integrated switching-off relay for the mains disconnection of switched circuits.

The control pushbutton(s) of the room are connected via low voltage control wires to the terminals T1 and T2 of the EUD12F (field-free internal DC voltage). The permanent power supply must be connected directly to a phase conductor ahead of the mains disconnection relay FR12-230V. Due to this, the complete function remains but the leads to the lamps is disconnected by means of the switching-off relay. A glow lamp current is not permitted.

The minimum brightness level (completely dimmed down) can be adjusted with the upper rotary switch % ☀️, e.g. for dimmable energy saving lamps.

You can dim all lamp types in automatic mode.

Use the lower dimming speed rotary switch to set the dimming speed in seven steps in automatic mode.

+ESL is a convenience setting for energy saving lamps which must be switched on at high voltage for design reasons so that they can also be switched back on cold in dimmed state.

-ESL is a convenience setting for energy saving lamps which cannot be switched back on in dimmed state for design reasons.

This is why memory is switched off in this position. No inductive (wound) transformers may be used in +ESL and -ESL settings. In addition the maximum number of dimmable energy saving lamps may be lower than in automatic mode for design reasons.

With special switching operation for children’s rooms: If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

Snooze function: With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.

Mixing of L loads (inductive loads, e.g. wound transformers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230 V incandescent lamps and halogen lamps) may be added anytime.

Mixing of L loads and C loads is possible with the dimmer switch EUD12D (page 9-4) in connection with capacity enhancer LUD12 (page 9-7).

Technical data page 9-27.

Housing for operating instructions GBA12, see accessories, chapter 2.

Recommended retail prices excluding VAT.
UNIVERSAL DIMMER SWITCH WITH ROTARY KNOB EUD12DK/800W-UC

EUD12DK/800W-UC

Universal dimmer switch with rotary knob, Power MOSFET up to 800 W. Automatic lamp detection. Standby loss 0.2 watt only. With adjustable minimum and maximum brightness.

Modular device for DIN EN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep.
Universal dimmer switch for lamps up to 800 W, depending on ventilation conditions, dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps are also dependent on the lamp electronics.

Up to 3600W with capacity enhancers LUD12 at the terminals X1 and X2.
Zero passage switching with soft start and soft OFF to protect lamps.

Universal control voltage input 8 to 230 V UC, electrically isolated from the 230 V supply voltage and switching voltage. No minimum load required.

Alternatively, PWM control with 10–24 V DC at the PWM and GND connections.
The setting of the brightness level is stored after switching off (Memory).
In case of a power failure the switching position and the brightness level are stored.
If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Automatic electronic overload protection and over-temperature switch-off.

Maximum brightness (fully dimmed up) is adjustable using the upper % rotary switch.

Use the middle % rotary switch to set the minimum brightness (fully dimmed down).

The lower rotary switch sets the operating mode:

ON: Permanent ON at maximum brightness.

Pos. 1 is an AUTO position and allows the dimming of all lamp types. Switch on and off using pushbutton on the device and/or pushbutton connected to +A1/-A2. Dimming via rotary knob.

Pos. 2 is a comfort setting for LED lamps which cannot be dimmed down far enough on AUTO (phase cut-off) due to the design and must therefore be forced at phase control. Switch on and off using pushbutton on the device and/or pushbutton connected to +A1/-A2. Dimming via rotary knob.

Pos. 3 is a comfort setting for energy saving lamps which must be switched on at a higher voltage so that they can be safely switched on cold when they are dimmed down. Switch on and off using pushbutton on the device and/or pushbutton connected to +A1/-A2. Dimming via rotary knob.

Pos. 4 is an AUTO position and allows the dimming of all lamp types. Switch on and off using switch connected to +A1/-A2. Dimming via rotary knob.

Pos. 5 is a comfort setting for LED lamps which cannot be dimmed down far enough on AUTO (phase cut-off) due to the design and must therefore be forced at phase control. Switch on and off using switch connected to +A1/-A2. Dimming via rotary knob.

Pos. 6 is a comfort setting for energy saving lamps which must be switched on at a higher voltage so that they can be safely switched on cold when they are dimmed down. Switch on and off using switch connected to +A1/-A2. Dimming via rotary knob.

Pos. 7 is an AUTO position and allows the dimming of all lamp types. Switch on and off and dimming with PWM activation.

Pos. 8 is a comfort setting for LED lamps which cannot be dimmed down far enough on AUTO (phase cut-off) due to the design and must therefore be forced at phase control. Switch on and off and dimming with PWM activation.

OFF: Permanent OFF.

The LED under the upper rotary switch lights up when the lamp is switched on.

Recommended retail prices excluding VAT.
LUD12-230V

Capacity enhancer for universal dimmer switches. Power MOSFET up to 400 W. Standby loss 0.1 watt only.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep. Capacity enhancers LUD12-230V can be connected to the universal dimmer switches EUD12D, SUD12 (1-10 V input) and the multifunction time relay MFZ12PMD. By this the switching capacity for one lamp will be increased up to 200 W or alternatively for additional lamps up to 400 W per each capacity enhancer. Dimmable energy saving lamps and dimmable 230 V LED lamps are also dependent on the lamp electronics. Both switching modes for increase of capacity can be executed simultaneously.

Automatic lamp detection in the "Capacity increase with additional lamps" setting.

Supply voltage 230 V.

Automatic electronic overload protection and over-temperature switch-off.

In the mode "Increase of capacity with additional lamps" the kind of load of a capacity enhancer LUD12-230V can vary from the kind of load of the universal impulse dimmer switch. Therefore it is possible to mix L loads and C loads.

Increase of capacity for one lamp (.), ESL and LED see next page

Increase of capacity with additional lamps (.), ESL and LED see next page

Technical data page 9-27.
Housing for operating instructions GBA12, see accessories, chapter Z.

LUD12-230V Power MOSFET up to 400 W EAN 4010312107867 62,20 €/pc.
LUD12-230V

Capacity increase with capacity enhancer LUD12 for ESL dimmable energy saving lamps and dimmable 230 V LED lamps in the ESL and LED comfort settings.

**Function rotary switch**

![Rotary switch diagram](image)

Standard setting ex works.

This setting must be made on the front panel of ESL and 230 V LED lamps if the universal dimmer switch is operated in the ESL or LED comfort settings. Also for capacity increase with additional lamps. **Otherwise there is a risk of destruction of the electronics.**

Increase of capacity for one lamp

- 1 - 9. LUD12 + up to 100 W each

Increase of capacity with additional lamps

- 1 - 9. LUD12 + up to 100 W each

Technical data page 9-27. Housing for operating instructions GBA12, see accessories, chapter Z.

LUD12-230V | Power MOSFET up to 400 W | EAN 4010312107867 | 62,20 €/pc.
MOD12D-UC

Power MOSFET up to 300 W. Standby loss 0.3 watt only. Minimal speed, maximum speed and dimming speed are adjustable.

Modular device for DIN EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
Motor dimmer with phase control for L loads up to 300 W, depending on ventilation conditions. Only 1 fan motor should be connected.
Universal control voltage 8 to 230 V UC and additionally the universal voltage control inputs 8 to 230 V UC central ON and central OFF. The control inputs are electrically isolated from the 230 V supply voltage and switching voltage.

Switching in zero crossing and switch-on at increased speed.
If there is a power failure, the switch position and the speed level are saved. The device can be switched on when the power supply is restored.
Automatic electronic overload protection and over-temperature switch-off.
Enter the 6 functions and times using the MODE and SET keys as described in the operator manual.
The functions and times are indicated in the LC display. Other features include language selection and keylock.
The total switch-on time is added and indicated in the bottom line of the display. It can be reset to zero.
The top line shows the parameters during the setting procedure and the active function in service. The left arrow indicates the switch position ‘ON’ and the right arrow shows the keylock function when applied.
During the setting procedure, the middle line shows the parameters set. In service, the middle line indicates the speed between 10 and 99 for the MOD and DSD functions or the remaining time in minutes for the Udo and ODT functions.

MOD = Motor dimmer with settings for dimming speed DSP, minimum speed MI%, maximum speed MA%, memory function MEM+ and selection of the central control inputs ON and/or OFF when activated or deactivated. Short commands switch on/off, permanent activation changes speed. An interruption in activation changes the dimming direction.

DSD = Motor dimmer with activation with two direction buttons for dimming direction. Setting the dimming speed DSP, minimum speed MI%, maximum speed MA% and memory function MEM+. When activation takes place via +E1, a short command switches on. Permanent activation dims up to maximum speed. A double-click immediately dims to maximum speed. When activation takes place via +F1, a short command switches off. Permanent activation dims down to minimum speed. No central control function.

Udo = Motor dimmer as for MOD function with manual on/off. In addition, a time delay time TIM can be set from 1 to 99 minutes. When the time delay expires, the device switches off. Central ON has priority over Central OFF.

ODT = Motor dimmer with run-on switch function with adjustable speed SP%, response lag AV adjustable from 1 to 99 minutes and time delay RV adjustable from 1 to 99 minutes. When the control voltage is applied, the device switches on after the AV time expires. When the control voltage cuts off, the RV time begins. When the RV time expires, the device switches off.
No central control function.

ON = Permanent ON at maximum speed, OFF = Permanent OFF.
Press MODE and SET briefly and simultaneously to activate the keylock. Then press SET to confirm the flashing LCK. Press MODE and SET simultaneously for 2 seconds to deactivate keylock. Then press SET to confirm the flashing UNL.

Recommended retail prices excluding VAT.

Technical data page 9-27.
Housing for operating instructions GBA12, see accessories, chapter Z.
**FULLY ELECTRONIC MULTIFUNCTION TIME RELAY**

**MFZ12PMD-UC**

Power MOSFET with almost unlimited number of circuits up to 400 W. Automatic lamp detection. Standby loss 0.3 watt only. Dim down to minimum brightness and up to maximum brightness and Soft ON / Soft OFF are also adjustable for lamp circuit.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Digitally adjustable and fully electronic multifunction time relay for lamps up to 400 W dependent on ventilation conditions. Dimmable energy saving lamps (ESL) and dimmable 230V LED lamps are also dependent on the lamp electronics.

If **minimum brightness** is not set to 0, the circuit is not switched off but dimmed down to the set percentage.

**Up to 3600 W with capacity enhancers LUD12-230V** (description page 9-7) at the terminals X1 and X2.

Universal control voltage 8 to 230 V UC and additionally the universal voltage control inputs 8 to 230 V UC central ON and central OFF. The control inputs are electrically isolated from the supply voltage and switching voltage.

**Zero passage switching to protect lamps.**

Glow lamp current up to 5 mA starting at 110 V.

Automatic electronic overload protection and overtemperature switch-off.

Enter both the functions and the times using the two buttons MODE and SET. The functions and times are indicated digitally on an LC display. The time can be set by entering all values within the preselected time scale (0.1 to 9.9 or 1 to 99 seconds, minutes or hours). The longest time is 99 hours. This permits 600 time settings. The time(s) entered is (are) permanently displayed digitally.

**Settable functions** (description page 13-11): RV = release delay, AV = operate delay, AV+ = additive operate delay, TI = clock generator starting with impulse, TP = clock generator starting with pause, IA = impulse-controlled operate delay, IF = pulse shaper, EW = fleeting NO contact, AW = fleeting NC contact, EA = fleeting NC contact and fleeting NC contact, ARV = operate and release delay, ARV+ = additive operate and release delay, ES = impulse switch, SRV = release-delay impulse switch, ESV = impulse switch with release delay and switch-off early-warning function, ER = relay, ON = permanent ON, OFF = permanent OFF. With TI, TP, IA, EAW, ARV and ARV+ functions, a different second time can be entered also with different time ranges.

**Setting the times and functions:** The LCD component to be changed is selected by pressing the MODE key. The component accessed flashes. Press the SET key to change the component accessed. This may be the function, the time ranges, time T1 or time T2 (on TI, TP, IA, EAW, ARV and ARV+ only). Pressing the MODE key terminates each input. Once the time has been set with MODE, no more components are flashing.

The timing relay is now ready to operate. Press the MODE key again to restart the input cycle. All the entered parameters are retained if they are not changed using SET. 25 sec. after the last operation and if the component still flashes the input cycle is automatically terminated and the previously made changes lapse.

**Setting additional parameters valid for all functions:** when you press the MODE button for longer than 2 seconds, you access the submenu. Press the SET button to select the parameter you want to change. Then confirm by pressing MODE. Press SET to enter the parameter and confirm by pressing MODE. After the ‘LED’ submenu, you return automatically to the main menu.

**MIN** = Minimum brightness in OFF state settable to 0 and from 10 to 89 (%), factory setting = 0.

**MAX** = Maximal brightness in ON state settable from 10 to 99 (%), factory setting = 99. MAX must be at least 10 divisions above MIN.

**RMP** = Switch ON/OFF ramp (soft ON and soft ON) adjustable from 0 = 10 ms to 99 = 1 s, factory setting = 0.

**LED** = LED+ for dimmable 230 V LED lamps which cannot be dimmed down far enough in automatic mode (trailing edge control) for design reasons and must therefore be forced by phase control. Enabled by pressing MODE; factory setting = LED without +.

**Functions of the LC display:** if you selected the functions ON or OFF, no time is displayed. Instead an arrow indicates either ON or OFF. In all other functions the set time(s), the function abbreviation and an arrow next to ON and OFF display the switching position. The clock symbol flashes while the set time is elapsing and the remaining time is shown.

**Safety in the event of a power failure:** The set parameters are stored in an EEPROM and are therefore immediately available again when the power supply is restored after a power failure.

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**Recommended retail prices excluding VAT.**

**MFZ12PMD-UC**

Power MOSFET up to 400 W

EAN 4010312601099

70.40 €/pc.
SDS12/1-10V

1 NO contact not potential free 600 VA and 1-10 V control output 40 mA. Only 1 Watt standby loss. With adjustable minimum brightness and dimming speed. With switching operation for children’s rooms and snooze function.

Modular device for DIN-EN 60715 rail mounting.
1 modul = 18 mm wide, 58 mm deep.

Zero passage switching with soft ON and soft OFF to protect lamps.
Also adapted for LED driver with 1-10 V passive interface, without voltage source up to 0.6 mA, above this value an additional voltage source is necessary.

Universal control voltage 8 to 230 V UC, local and central on/off with same potential.
Supply voltage 230 V electrically isolated.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

The brightness level is stored on switch-off (Memory).
In case of a power failure the switch position and the brightness stage are stored and may be switched on when the power supply is restored.

The minimum brightness (fully dimmed) is adjustable with the upper % rotary switch.
At the same time, you define whether the children’s room function and the snooze function are active (+KI +SL).

The dimming speed is adjustable using the lower dimming speed rotary switch.
The load is switched on and off by a bistable relay at output EVG (electronic ballast units). Switching capacity for fluorescent lamps or LV halogen lamps with electronic ballast units 600 VA.

By using a bistable relay coil power loss and heating is avoided even in the on mode. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.

Either direction pushbuttons can be connected to ▲ ▼ or these terminals are bridged and a push-button is connected as universal pushbutton. As direction pushbutton ▲ is ‘switch on and dim up’ and ▼ is ‘switch off and dim down’. A double click at ▲ triggers the automatic updimming until full brightness with dim speed. A double click at ▼ triggers the snooze function. The children’s room function is realized with the pushbutton at ▲.

As a universal pushbutton, change the direction by briefly releasing the pushbutton.

Switching operation for children’s rooms KI (universal pushbutton or direction pushbutton ▲):
If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

Snooze function SL (universal pushbutton or direction pushbutton ▼): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off.
The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.
**SUD12/1-10V**

1 NO contact potential free 600 VA and 1-10 V control output 40 mA. Standby loss 0.9 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

The controller SUD12 can be used in two different modes:

### Mode 1-10 V output

In this mode electronic ballast units and transformers with a 1-10 V interface up to a total control current of 40 mA can be controlled when connected to an universal dimmer switch EUD12D or MFZ12PMD. The EUD12D or the MFZ12PMD is controlled with pushbuttons at the universal control voltage input locally or centrally. The SUD12 converts the dimmer signals from Y1/Y2 to the 1-10 V output 0/01 for the interface.

It switches the electronic ballast with a bistable relay at the output EVG (electronic ballast units). **Zero passage switching to protect contacts.** The switching capacity for fluorescent lamps or low voltage halogen lamps with electronic ballast is up to 600 VA.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The switched load may not be connected to the mains before the short automatic synchronisation after installation has terminated.

**At the same time a directly dimmable lamp can be connected to the dimmer switch EUD12D. Furthermore the dimmer switch EUD12D or MFZ12PMD can be expanded with capacity enhancers LUD12 for directly dimmable lamps as described on page 9-7.**

### Mode 1-10 V input

In this mode the output of a 1-10 V controller can be converted at A1/0 into a direct dimming function when connected to a capacity enhancer LUD12 at terminals X1/X2. The closing operation and the opening operation is also carried out externally at L of the SUD12.

The rotary switch of the LUD12 must be adjusted to the setting (additional lamps).

Further capacity enhancers LUD12 in the mode "increase of capacity with additional lamps" can be connected to the controller SUD12 as described on page 9-8.

A 100 K potentiometer for brightness control may also be directly connected to the control input A1/0. If the input A1/0 is disconnected the LUD12 dimms to maximum brightness.

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Technical data page 9-27. Housing for operating instructions GBA12, see accessories, chapter Z.

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Recommended retail prices excluding VAT.
**DTD65-230V-wg**

Rotary dimmer for single mounting 84 x 84 x 25 mm or mounting into the E-Design65 switching system. Installation depth 33 mm. Universal dimmer switch with rotary knob, Power MOSFET up to 300 W. Automatic lamp detection. With adjustable minimum and maximum brightness. Standby loss 0.14 watt only.

Universal dimmer switch for lamps up to 300 W, depending on the ventilation conditions. Dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps also depending on the lamp electronics.

**Zero passage switching with soft start and soft OFF to protect lamps.**

Control voltage, supply voltage and switching voltage 230 V. No minimum load required.
The setting of the brightness level is stored after switching off (Memory).
In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

**Automatic electronic overload protection and over-temperature switch-off.**

**Mounting:** screw mounting plate. After the rotary switch setting, pull the red insulating cap and attach the knob. The insulating cap should be retained for future use in the DTD65. Then put up the frame and attach the front panel.

⚠️ **Important! Before mounting and removal, always disconnect the power supply!**

Minimum brightness (fully dimmed down) is adjustable using the left % rotary switch.
Use the middle % rotary switch to set the maximum brightness (fully dimmed up).

The right rotary knob sets the operating mode:
**AUTO** allows the dimming of all lamp types.
**LC** is a comfort position for LED lamps which are not being dimmed down enough when set to AUTO (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.
**EC** is a comfort position for energy saving lamps which must be switched on with increased power dependent on the construction, so they will also switch on again safely in cold condition when dimmed down.

**Operation:**
Press the middle of the rotary knob to switch on with memory value and to switch off and save the current dimming value.
**Turn to the right (clockwise) to dim up.** The turning speed determines the dim-up speed.
If the dimming actuator was switched off to the right at the start of dimming, switch-on is at minimum brightness followed by gradual dim-up. This is the children’s room circuit.
When the rotary knob is turned jerkily to the right - dim-up is rapid to the maximum brightness adjusted.
**Turn to the left (anticlockwise) to dim-down** to the minimum brightness adjusted.
The turning speed determines the dim-down speed.

When the rotary knob is turned jerkily to the left, dim-down is rapid to the minimum brightness adjusted.
If the dimming switch was switched off to the left at the start of turning, switch-on is at minimum brightness followed by gradual dim-up by turning to the right.

**Control is also possible using a 230 V control pushbutton in addition to the rotary knob:** Short commands switch on/off, continuous activation changes brightness up to maximum or minimum value. If you interrupt activation, it changes the dimming direction.

**Children’s room circuit with control pushbutton:** Press the control pushbutton for a long time to switch on at minimum brightness, then continue pressing the pushbutton to dim up the lights slowly without changing the last dimming value stored.
**Sleep time with control pushbutton:** A double pulse dims down and switches off the lighting from the current dimming position through to minimum brightness.
The maximum dimming time of 60 minutes is dependent on the current dimming position and the adjusted minimum brightness and can therefore be shortened as required. Tap briefly at any time during dim-down process to switch off. Press long during the dimming-down process to dim up and end the sleep timer.

**Technical data page 9-27.**
**DTD65L-230V-wg**

Rotary dimmer without N connection for single mounting 84 x 84 x 25 mm or mounting into the E-Design65 switching system. Installation depth 33 mm. Universal dimmer switch with rotary knob, Power MOSFET up to 200 W. With adjustable minimum and maximum brightness. Standby loss 0.5 watt only.

Universal dimmer switch for R and C loads up to 200 watt, depending on ventilation conditions. Dimmable energy saving lamps ESL and 230 V LED lamps in 'trailing edge' mode up to 200 W or up to 40 W in 'leading edge' mode, depending on ventilation conditions.

If 230 V LED lamps are lightly glowing when they are turned off, a GLE base load must be installed parallel to the lamp.

**It is not permitted to connect L loads (inductive loads, like wounded transformers).**

**Zero passage switching with soft start and soft OFF to protect lamps.**

Control voltage, supply voltage and switching voltage 230 V. Minimum load 4 W.

In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Automatic electronic overload protection and over-temperature switch-off.

**Mounting:** screw mounting plate. After the rotary switch setting, pull the red insulating cap and attach the knob. The insulating cap should be remained for future use in the DTD65L. Then put up the frame and attach the front panel.

⚠️ Important! Before mounting and removal, always disconnect the power supply!

Minimum brightness (fully dimmed down) is adjustable using the left % rotary switch.

Use the middle % rotary switch to set the maximum brightness (fully dimmed up).

The right rotary switch allows to choose the dimming technology: trailing edge with memory (P-AB), trailing edge without memory (P-AB on-max), leading edge with memory (P-AN) or leading edge without memory (P-AN on-max).

The adjusted brightness stays saved at turning off if the memory function is active. At on-max function it turns on always with 100% brightness, by this way ESL can be switched.

**Operation:**

Press the middle of the rotary knob to switch on with memory value and to switch off and save the current dimming value.

Turn to the right (clockwise) to dim up. The turning speed determines the dim-up speed.

If the dimming actuator was switched off to the right at the start of dimming, switch-on is at minimum brightness followed by gradual dim-up. This is the children's room circuit.

When the rotary knob is turned jerkily to the right – dim-up is rapid to the maximum brightness adjusted.

Turn to the left (anticlockwise) to dim-down to the minimum brightness adjusted.

The turning speed determines the dim-down speed.

When the rotary knob is turned jerkily to the left, dim-down is rapid to the minimum brightness adjusted.

If the dimming switch was switched off to the left at the start of turning, switch-on is at minimum brightness followed by gradual dim-up by turning to the right.

Control is also possible using a 230 V control pushbutton in addition to the rotary knob: Short commands switch on/off, continuous activation changes brightness up to maximum or minimum value. If you interrupt activation, it changes the dimming direction.

Children’s room circuit with control pushbutton: Press the control pushbutton for a long time to switch on at minimum brightness, then continue pressing the pushbutton to dim up the lights slowly without changing the last dimming value stored.

Sleep time with control pushbutton: A double pulse dims down and switches off the lighting from the current dimming position through to minimum brightness.

The maximum dimming time of 60 minutes is dependent on the current dimming position and the adjusted minimum brightness and can therefore be shortened as required. Tap briefly at any time during dim-down process to switch off. Press long during the dimming-down process to dim up and end the sleep timer.

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**Recommended retail prices excluding VAT.**
**DTO65F-230V-wg**

Rotary dimmer for single mounting 84 x 84 x 21 mm or mounting into the E-Design65 switching system with flat frame. Installation depth 33 mm. Universal dimmer switch with rotary knob, Power MOSFET up to 300 W. Automatic lamp detection. With adjustable minimum and maximum brightness. Standby loss 0.14 watt only.

Universal dimmer switch for lamps up to 300 W, depending on the ventilation conditions. Dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps also depending on the lamp electronics.

**Zero passage switching with soft start and soft OFF to protect lamps.**

Control voltage, supply voltage and switching voltage 230 V. No minimum load required.

The setting of the brightness level is stored after switching off (Memory).

In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

**Automatic electronic overload protection and over-temperature switch-off.**

**Mounting:** screw mounting plate. After the rotary switch setting, pull the red insulating cap and attach the knob. The insulating cap should be remained for future use in the DTD65. Then put up the frame and attach the front panel.

⚠️ **Important! Before mounting and removal, always disconnect the power supply!**

Minimum brightness (fully dimmed down) is adjustable using the left % rotary switch.

Use the middle % rotary switch to set the maximum brightness (fully dimmed up).

The right rotary knob sets the operating mode:

- **AUTO** allows the dimming of all lamp types.
- **LC** is a comfort position for LED lamps which are not being dimmed down enough when set to AUTO (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.
- **EC** is a comfort position for energy saving lamps which must be switched on with increased power dependent on the construction, so they will also switch on again safely in cold condition when dimmed down.

**Operation:**

Press the middle of the rotary knob to switch on with memory value and to switch off and save the current dimming value.

**Turn to the right (clockwise) to dim up.** The turning speed determines the dim-up speed.

If the dimming actuator was switched off to the right at the start of dimming, switch-on is at minimum brightness followed by gradual dim-up. **This is the children’s room circuit.**

When the rotary knob is turned jerkily to the right - dim-up is rapid to the maximum brightness adjusted.

**Turn to the left (anticlockwise) to dim-down** to the minimum brightness adjusted.

The turning speed determines the dim-down speed.

When the rotary knob is turned jerkily to the left, dim-down is rapid to the minimum brightness adjusted.

If the dimming switch was switched off to the left at the start of turning, switch-on is at minimum brightness followed by gradual dim-up by turning to the right.

Control is also possible using a 230 V control pushbutton in addition to the rotary knob: Short commands switch on/off, continuous activation changes brightness up to maximum or minimum value. If you interrupt activation, it changes the dimming direction.

**Children’s room circuit with control pushbutton:** Press the control pushbutton for a long time to switch on at minimum brightness, then continue pressing the pushbutton to dim up the lights slowly without changing the last dimming value stored.

**Sleep time with control pushbutton:** A double pulse dims down and switches off the lighting from the current dimming position through to minimum brightness.

The maximum dimming time of 60 minutes is dependent on the current dimming position and the adjusted minimum brightness and can therefore be shortened as required. Tap briefly at any time during dim-down process to switch off. Press long during the dimming-down process to dim up and end the sleep timer.

**Recommended retail prices excluding VAT.**
**DTD65FL-230V-wg**

Rotary dimmer without N connection for single mounting 84 x 84 x 21mm or mounting into the E-Design65 switching system with flat frame. Installation depth 33 mm. Universal dimmer switch with rotary knob, Power MOSFET up to 200 W. With adjustable minimum and maximum brightness. Standby loss 0.5 watt only.

Universal dimmer switch for R and C loads up to 200 watt, depending on ventilation conditions.

Dimmable energy saving lamps ESL and 230 V LED lamps in 'trailing edge' mode up to 200 W or up to 40 W in 'leading edge' mode, depending on ventilation conditions.

If 230 V LED lamps are lightly glowing when they are turned off, a GLE base load must be installed parallel to the lamp.

**It is not permitted to connect L loads (inductive loads, like wounded transformers).**

Zero passage switching with soft start and soft OFF to protect lamps.

Control voltage, supply voltage and switching voltage 230 V. Minimum load 4 W.

In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Automatic electronic overload protection and over-temperature switch-off.

**Mounting:** screw mounting plate. After the rotary switch setting, pull the red insulating cap and attach the knob. The insulating cap should be remained for future use in the DTD65L. Then put up the frame and attach the front panel.

⚠️ **Important! Before mounting and removal, always disconnect the power supply!**

Minimum brightness (fully dimmed down) is adjustable using the left % rotary switch.

Use the **middle % rotary switch** to set the maximum brightness (fully dimmed up).

The right rotary switch allows to choose the dimming technology: trailing edge with memory (P-AB), trailing edge without memory (P-AB on-max), leading edge with memory (P-AN) or leading edge without memory (P-AN on-max).

The adjusted brightness stays saved at turning off if the memory function is active. At on-max function it turns on always with 100% brightness, by this way ESL can be switched.

**Operation:**

Press the **middle of the rotary knob** to switch on with memory value and to switch off and save the current dimming value.

**Turn to the right (clockwise) to dim up.** The turning speed determines the dim-up speed.

If the dimming actuator was switched off to the right at the start of dimming, switch-on is at minimum brightness followed by gradual dim-up. **This is the children’s room circuit.**

When the rotary knob is turned jerkily to the right - dim-up is rapid to the maximum brightness adjusted.

**Turn to the left (anticlockwise) to dim-down** to the minimum brightness adjusted.

The turning speed determines the dim-down speed.

When the rotary knob is turned jerkily to the left, dim-down is rapid to the minimum brightness adjusted.

If the dimming switch was switched off to the left at the start of turning, switch-on is at minimum brightness followed by gradual dim-up by turning to the right.

**Control is also possible using a 230 V control pushbutton in addition to the rotary knob:** Short commands switch on/off, continuous activation changes brightness up to maximum or minimum value. If you interrupt activation, it changes the dimming direction.

**Children’s room circuit with control pushbutton:** Press the control pushbutton for a long time to switch on at minimum brightness, then continue pressing the pushbutton to dim up the lights slowly without changing the last dimming value stored.

**Sleep time with control pushbutton:** A double pulse dims down and switches off the lighting from the current dimming position through to minimum brightness.

The maximum dimming time of 60 minutes is dependent on the current dimming position and the adjusted minimum brightness and can therefore be shortened as required. Tap briefly at any time during dim-down process to switch off. Press long during the dimming-down process to dim up and end the sleep timer.

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**Recommended retail prices excluding VAT.**

| DTD65FL-230V-wg | Rotary dimmer flat without N connection, pure white glossy | EAN 4010312318669 | 54.80 €/pc. |
ROTARY DIMMER IN E-DESIGN55 DTD55-230V-wg

**DTD55-230V-wg**

Rotary dimmer for single mounting 80 x 80 x 25 mm or mounting into the E-Design55 switching system. Installation depth 33 mm. Universal dimmer switch with rotary knob. Power MOSFET up to 300 W. Automatic lamp detection. With adjustable minimum and maximum brightness. Standby loss 0.14 watt only.

Universal dimmer switch for lamps up to 300 W, depending on the ventilation conditions. Dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps also depending on the lamp electronics.

**Zero passage switching with soft start and soft OFF to protect lamps.**

Control voltage, supply voltage and switching voltage 230 V. No minimum load required.

The setting of the brightness level is stored after switching off (Memory). In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered. Automatic electronic overload protection and over-temperature switch-off.

**Mounting:** screw mounting plate. After the rotary switch setting, pull the red insulating cap and attach the knob. The insulating cap should be remained for future use in the DTD55. Then put up the frame and attach the front panel.

⚠️ **Important! Before mounting and removal, always disconnect the power supply!**

Minimum brightness (fully dimmed down) is adjustable using the left % rotary switch.

Use the middle % rotary switch to set the maximum brightness (fully dimmed up).

The right rotary knob sets the operating mode:

**AUTO** allows the dimming of all lamp types.

**LC** is a comfort position for LED lamps which are not being dimmed down enough when set to **AUTO** (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.

**EC** is a comfort position for energy saving lamps which must be switched on with increased power dependent on the construction, so they will also switch on again safely in cold condition when dimmed down.

**Operation:**

Press the middle of the rotary knob to switch on with memory value and to switch off and save the current dimming value.

**Turn to the right (clockwise) to dim up.** The turning speed determines the dim-up speed.

If the dimming actuator was switched off to the right at the start of dimming, switch-on is at minimum brightness followed by gradual dim-up. **This is the children's room circuit.**

When the rotary knob is turned jerkily to the right – dim-up is rapid to the maximum brightness adjusted.

**Turn to the left (anticlockwise) to dim-down** to the minimum brightness adjusted.

The turning speed determines the dim-down speed.

When the rotary knob is turned jerkily to the left, dim-down is rapid to the minimum brightness adjusted.

If the dimming switch was switched off to the left at the start of turning, switch-on is at minimum brightness followed by gradual dim-up by turning to the right.

Control is also possible using a 230 V control pushbutton in addition to the rotary knob: Short commands switch on/off, continuous activation changes brightness up to maximum or minimum value. If you interrupt activation, it changes the dimming direction.

**Children's room circuit with control pushbutton:** Press the control pushbutton for a long time to switch on at minimum brightness, then continue pressing the pushbutton to dim up the lights slowly without changing the last dimming value stored.

**Sleep time with control pushbutton:** A double pulse dims down and switches off the lighting from the current dimming position through to minimum brightness. The maximum dimming time of 60 minutes is dependent on the current dimming position and the adjusted minimum brightness and can therefore be shortened as required. Tap briefly at any time during dim-down process to switch off. Press long during the dimming-down process to dim up and end the sleep timer.

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**Recommended retail prices excluding VAT.**

| DTD55-230V-wg | Rotary dimmer, pure white glossy | EAN 4010312317785 | 54,80 €/pc. |

Technical data page 9-27.
**DTD55L-230V-wg**

Rotary dimmer without N connection for single mounting 80 x 80 x 25 mm or mounting into the E-Design55 switching system. Installation depth 33 mm. Universal dimmer switch with rotary knob, Power MOSFET up to 200 W. With adjustable minimum and maximum brightness. Standby loss 0.5 watt only.

Universal dimmer switch for R and C loads up to 200 watt, depending on ventilation conditions. Dimmable energy saving lamps ESL and 230 V LED lamps in 'trailing edge' mode up to 200 W or up to 40 W in 'leading edge' mode, depending on ventilation conditions.

If 230 V LED lamps are lightly glowing when they are turned off, a GLE base load must be installed parallel to the lamp.

**It is not permitted to connect L loads (inductive loads, like wounded transformers).**

Zero passage switching with soft start and soft OFF to protect lamps.

Control voltage, supply voltage and switching voltage 230 V. Minimum load 4 W.

In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Automatic electronic overload protection and over-temperature switch-off.

**Mounting:** screw mounting plate. After the rotary switch setting, pull the red insulating cap and attach the knob. The insulating cap should be remained for future use in the DTD55L. Then put up the frame and attach the front panel.

⚠️ **Important! Before mounting and removal, always disconnect the power supply!**

Minimum brightness (fully dimmed down) is adjustable using the left % rotary switch.

Use the middle % rotary switch to set the maximum brightness (fully dimmed up).

The right rotary switch allows to choose the dimming technology: trailing edge with memory (P-AB), trailing edge without memory (P-AB on-max), leading edge with memory (P-AN) or leading edge without memory (P-AN on-max).

The adjusted brightness stays saved at turning off if the memory function is active. At on-max function it turns on always with 100% brightness, by this way ESL can be switched.

**Operation:**

- **Press the middle of the rotary knob** to switch on with memory value and to switch off and save the current dimming value.
- **Turn to the right (clockwise) to dim up.** The turning speed determines the dim-up speed.
- If the dimming actuator was switched off to the right at the start of dimming, switch-on is at minimum brightness followed by gradual dim-up. **This is the children's room circuit.**
- **When the rotary knob is turned jerkily to the right** - dim-up is rapid to the maximum brightness adjusted.
- **Turn to the left (anticlockwise) to dim-down** to the minimum brightness adjusted.
- The turning speed determines the dim-down speed.
- **When the rotary knob is turned jerkily to the left**, dim-down is rapid to the minimum brightness adjusted.
- If the dimming switch was switched off to the left at the start of turning, switch-on is at minimum brightness followed by gradual dim-up by turning to the right.

**Control is also possible using a 230 V control pushbutton in addition to the rotary knob:** Short commands switch on/off, continuous activation changes brightness up to maximum or minimum value. If you interrupt activation, it changes the dimming direction.

**Children's room circuit with control pushbutton:** Press the control pushbutton for a long time to switch on at minimum brightness, then continue pressing the pushbutton to dim up the lights slowly without changing the last dimming value stored.

**Sleep time with control pushbutton:** A double pulse dims down and switches off the lighting from the current dimming position through to minimum brightness.

The maximum dimming time of 60 minutes is dependent on the current dimming position and the adjusted minimum brightness and can therefore be shortened as required. Tap briefly at any time during dim-down process to switch off. Press long during the dimming-down process to dim up and end the sleep timer.
EUD61NP-230V

Without N connection, POWER MOSFET up to 400 W. Standby loss 0.5 watt only. With control inputs for pushbutton light switches and light switches. With adjustable minimum brightness and dimming speed.

Built-in device for installation. 45 mm long, 45 mm wide, 18 mm deep. Universal dimmer switch for R, L and C loads up to 400 watt, depending on ventilation conditions. Automatic detection of load R+L or R+C. Not compatible with energy saving lamps and 230 V LED, please use the EUD61NP or the dimmer with N connection: EUD61NP.

Zero passage switching with soft start and soft OFF to protect lamps. Control voltage 230 V. Min. load 20 W.

Short-time control commands switch on/off, permanent control varies the brightness up to the maximum level. A short interruption of control changes the direction of dimming. The brightness level is stored after switching off.

In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Automatic electronic overload protection and over-temperature switch-off. The minimum brightness level (completely dimmed down) can be adjusted with the upper rotary switch %.

The dimming speed can be adjusted with the lower dimming speed rotary switch. Simultaneously the soft on and soft off period is changed.

If light switches cannot be replaced by pushbutton light switches, there is a separate control input for light switches. If the switch is opened briefly after closing, the light is dimmed until the next time it is opened again briefly. The dimming direction changes automatically at both peaks. The dimming direction can also be changed by opening the switch briefly twice.

Switching operation for children’s rooms (only if controlled by pushbutton light switch): If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

Snooze function (only if controlled by pushbutton light switch): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.

Without N connection, therefore suitable for mounting directly behind the pushbutton light switch or light switch, even if no N wire is available.

Mixing of L loads (inductive loads, e.g. wound transformers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230 V incandescent lamps and halogen lamps) may be added anytime.

EUD61NP-230V Power MOSFET up to 400 W EAN 4010312108062 54,90 €/pc.
EUD61NPL-230V

Without N connection, POWER MOSFET up to 200 W. Standby loss 0.5 watt only. With control inputs for pushbutton light switches and light switches. With adjustable minimum brightness, dimming technology and dimming speed.

For installation. 45 mm long, 45 mm wide, 18 mm deep.
Universal dimmer switch for R and C loads up to 200 W, depending on ventilation conditions.
Dimmable energy saving lamps ESL and 230 V LED lamps in 'trailing edge' mode up to 200 W or up to 40 W in 'leading edge' mode, depending on ventilation conditions.
If 230 V LED lamps are lightly glowing when they are turned off, a GLE base load must be installed parallel to the lamp.

It is not permitted to connect L loads (inductive loads, like wounded transformers).

Zero passage switching with soft start and soft OFF to protect lamps.
Control voltage, supply voltage and switching voltage 230 V. Min. load 4 W.
Short-time control commands switch on/off, permanent control varies the brightness up to the maximum level. A short interruption of control changes the direction of dimming.
The brightness level is stored after switching off (memory). It is possible to deactivate the memory function by turning 3 times the upper rotary switch to the right stop (max), then it is compatible with ESL. To reactivate the memory function (factory setting), turn the upper rotary switch 3 times to the left stop (min).
In case of a power failure the switching position and the brightness level are stored, and will switch on after the failure if applicable.
Automatic electronic overload protection and over-temperature switch-off.
The minimum brightness level (completely dimmed down) can be adjusted with the upper rotary switch %.
The lower rotary switch allows to choose between the both dimming technologies, P-AN leading or P-AB trailing edge and to change the dimming speed. Simultaneously the duration of soft on and soft off will be adjusted.

If light switches cannot be replaced by pushbutton light switches, there is a separate control input for light switches: If the switch is opened briefly after closing, the light is dimmed until the next time it is opened again briefly. The dimming direction changes automatically at both peaks. The dimming direction can also be changed by opening the switch briefly twice.

Switching operation for children's rooms (only if controlled by pushbutton light switch): If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

Snooze function (only if controlled by pushbutton light switch): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required.
It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.
Without N connection, therefore suitable for mounting directly behind the pushbutton light switch or light switch, even if no N wire is available.

Technical data page 9-27.

Recommended retail prices excluding VAT.
Universal dimmer switch. Power MOSFET up to 400 W. Automatic lamp detection. Standby loss 0.1 watt only. With adjustable minimum brightness or dimming speed. With switching operation for children’s rooms and snooze function.

For installation. 45 mm long, 45 mm wide, 18 mm deep.
Universal dimmer switch for lamps up to 400 watts, depending on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V LED lamps dependent on the lamps electronics.
Zero passage switching with soft start and soft OFF to protect lamps.
Universal control voltage input 8 to 230 V UC, electrically isolated from the 230 V supply voltage and switching voltage. No minimum load required.
Short-time control commands switch on/off, permanent control varies the brightness to the maximum level. An interruption of control changes the direction of dimming.
The setting of the brightness level is stored after switching off (Memory).
In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.
Automatic electronic overload protection and over-temperature switch-off.
With the top rotary switch %/dim speed either the minimum brightness level (completely dimmed down) or the dim speed can be adjusted. The duration of soft-on and soft-off will be changed with the dimming speed.
In operation, the bottom rotary switch determines, whether automatic lamp detection or special comfort positions should operate:
AUTO allows the dimming of all lamp types.
EC1 is a comfort position for energy saving lamps which must be switched on with increased power dependent on the construction, so they will also switch on again safely in cold condition when dimmed down.
EC2 is a comfort position for energy saving lamps which will not be switched on again when dimmed down dependent on the construction. Memory is switched off in this position.
LC1 is a comfort position for LED lamps which are not being dimmed down enough when set to AUTO (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.
LC2 and LC3 are comfort positions for LED lamps like LC1, but with different dimming curves.
In positions EC1, EC2, LC1, LC2 and LC3 no inductive (wound) transformers should be used. In addition, the maximum number of dimmable LED lamps can be lower than in the AUTO position dependent on the construction.
With special switching operation for children’s rooms: If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.
Snooze function: With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.
Mixing of L loads (inductive loads, e.g. wound transformers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230 V incandescent lamps and halogen lamps) may be added anytime.

Technical data page 9-27.
Universal dimmer switch. Power MOSFET up to 400 W. Automatic lamp detection. Standby loss 0.1 watt only. With adjustable minimum brightness or dimming speed. With switching operation for children’s rooms and snooze function.

For installation. 45 mm long, 45 mm wide, 18 mm deep.
Universal dimmer switch for lamps up to 400 watts, depending on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V LED lamps dependent on the lamps electronics.

Zero passage switching with soft start and soft OFF to protect lamps.
Control voltage, supply voltage and switching voltage 230 V.
No minimum load required.
Short-time control commands switch on/off, permanent control varies the brightness to the maximum level. An interruption of control changes the direction of dimming.
The setting of the brightness level is stored after switching off (Memory).
In case of a power failure the switching position and the brightness level are stored. If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.
Automatic electronic overload protection and over-temperature switch-off.
With the top rotary switch %/dim speed either the dim speed can be adjusted or the minimum brightness level (completely dimmed down). The duration of soft-on and soft-off will be changed with the dimming speed.

In operation, the bottom rotary switch determines, whether automatic lamp detection or special comfort positions should operate:
AUTO allows the dimming of all lamp types.
EC1 is a comfort position for energy saving lamps which must be switched on with increased power dependent on the construction, so they will also switch on again safely in cold condition when dimmed down.
EC2 is a comfort position for energy saving lamps which will not be switched on again when dimmed down dependent on the construction. Memory is switched off in this position.
LC1 is a comfort position for LED lamps which are not being dimmed down enough when set to AUTO (trailing phase angle) dependent on the construction and must therefore be forced to leading phase angle.
LC2 and LC3 are comfort positions for LED lamps like LC1, but with different dimming curves.
In positions EC1, EC2, LC1, LC2 and LC3 no inductive (wound) transformers should be used. In addition, the maximum number of dimmable LED lamps can be lower than in the AUTO position dependent on the construction.
With special switching operation for children’s rooms: If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.
Snooze function: With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.
Mixing of L loads (inductive loads, e.g. wound transformers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230 V incandescent lamps and halogen lamps) may be added anytime.

Recommended retail prices excluding VAT.
Multifunction universal dimmer switch EUD61M-UC

EUD61M-UC

Universal dimmer switch. Power MOSFET up to 400 W. Automatic lamp detection. Standby loss 0.1 watt only. With adjustable minimum brightness. With switching operation for children's rooms and snooze function.

Built-in device for installation. 45 mm long, 45 mm wide, 18 mm deep.

Universal dimmer switch for lamps up to 400 W, depending on ventilation conditions, dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps are also dependent on the lamp electronics.

Zero passage switching with soft start and soft OFF to protect lamps.

Universal control voltage input 8 to 230 V UC, electrically isolated from the 230 V supply voltage and switching voltage.

Short-time control commands switch on/off, permanent control varies the brightness to the maximum level.

A interruption of control changes the direction of dimming. The brightness level is stored after switching off in case the function memory is set. If the function on max is set, it always switches on at the maximum brightness level.

In case of a power failure the switching position and the brightness level are stored.

If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Automatic electronic overload protection and over-temperature switch-off.

The minimum brightness level (completely dimmed down) can be adjusted with the upper rotary switch %, e.g. for dimmable energy saving lamps.

You can dim all lamp types in automatic mode.

Use the lower function rotary switch to select between five automatic mode functions: memory, memory+soft on, max, on max+soft on and ESV+soft on.

+ESL is a convenience setting for energy saving lamps which must be switched on at high voltage for design reasons so that they can also be switched back on cold in dimmed state.

-ESL is a convenience setting for energy saving lamps which cannot be switched back on in dimmed state for design reasons. This is why memory is switched off in this position.

No inductive (wound) transformers may be used in +ESL and -ESL settings. In addition the maximum number of dimmable energy saving lamps may be lower than in automatic mode for design reasons.

Setting of function ESV same as 'memory+soft on' with setting of a release delay up to 90 minutes with the rotary switch % if the manual off command is not given. Before time-out switch-off early warning function by dimming down within 1 minute.

Switching operation for children's rooms: If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

Snooze function: With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.

Mixing of L loads (inductive loads, e.g. wound transformers) and C loads (capacitive loads, e.g. electronic transformers) is not permitted. R loads (ohmic loads, e.g. 230 V incandescent lamps and halogen lamps) may be added anytime.

Recommended retail prices excluding VAT.

Technical data page 9-27.
**LED DIMMER SWITCH ELD61/12-36V DC**

**ELD61/12-36V DC**

Power MOSFET for LED lamps 12-36 V DC up to 4 A, pulse width modulation PWM. Stand-by loss 0.1 Watt only. With adjustable minimum brightness and dimming speed. With switching operation for children's rooms and snooze function.

For installation. 45 mm long, 45 mm wide, 18 mm deep.

Dimmer switch for R- and LED loads up to 4 A depending on ventilation conditions.

Zero passage switching with soft start and soft OFF to protect lamps.

Supply voltage input 12 to 36 V DC, depending on the connected LED illumination.

A pulse resistant switching power supply unit is necessary.

**Universal control voltage 8..230 V UC,** electrically isolated from the supply voltage.

Either direction pushbuttons can be connected to ▲▼ or these terminals will be bridged and a pushbutton will be connected as an universal pushbutton.

With universal pushbutton: short commands switch on/off, permanent control changes the brightness to the maximum. An interruption of the control changes the dimming direction.

With direction pushbutton: switching and dimming on with ▲, turning and dimming off with ▼. A dual pulse with ▲ effects dimming on up to the maximum brightness with the set dimming speed (dimspeed).

The set brightness level will be stored when turning off (Memory).

In case of power failure the switching position and the brightness level will be stored and will be switched on when supply voltage recurs.

Automatic electronic overload protection and overtemperature switch off.

The LED indicates an activation by a short flickering.

**With the top rotary switch %** the minimum brightness level (completely dimmed down) can be adjusted.

**With the lower dim speed rotary switch,** the dimming speed can be set. At the same time, soft-on and soft-off is changed.

**With switching operation for children's rooms (universal or direction pushbutton ▲):**

- If the light is switched on by holding down the pushbutton it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is pressed without modifying the latest stored brightness level.

**Snooze function (universal or direction pushbutton ▼):** with a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.

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**Recommended retail prices excluding VAT.**

| ELD61/12-36V DC | Power MOSFET up to 4 A | EAN 4010312109502 | 51.20 €/pc. |
1-10V CONTROL DIMMER SWITCH SDS61/1-10V FOR ELECTRONIC BALLAST UNITS

SDS61/1-10V

1 NO contact not potential free 600 VA and 1-10 V control output 40 mA. Only 1 watt standby loss. With adjustable dimming speed. With switching operation for children's rooms and snooze function. With pushbutton or switch activation.

Built-in device for installation. 45 mm long, 45 mm wide, 33 mm deep.
Zero passage switching with soft ON and soft OFF to protect lamps.
Also adapted for LED driver with 1-10 V passive interface, without voltage source up to 0.6 mA, above this value an additional voltage source is necessary.
Switching voltage and control voltage 230 V.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
The load is switched on and off by a bistable relay at output EVG (electronic ballast units). Switching capacity for fluorescent lamps or LV halogen lamps with electronic ballast units 600 VA.
By using a bistable relay coil power loss and heating is avoided even in the on mode.
After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
Short-time control commands switch on/off, permanent control varies the brightness up to the maximum level. An interruption of control changes the direction of dimming.
The brightness level is stored after switching off.
In case of a power failure the switching position and the brightness level are stored.
If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.
The dimming speed is adjustable using the dimming speed rotary switch (only for pushbutton activation).
If light switches cannot be replaced by light pushbuttons, the rotary switch can be set to the switch symbol at the right stop: When the closed switch is briefly opened, the light is dimmed until the switch is briefly opened again. The dimming direction is changed automatically at each of the two vertices. In addition the direction can be changed by opening the switch briefly twice.
Switching operation for children's rooms (only for pushbutton activation): If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.
Snooze function (only for pushbutton activation): With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.

Typical connection

Function rotary switch

Standard setting ex works.

Technical data page 9-27.

Recommended retail prices excluding VAT.

| SDS61/1-10V | 1 NO contact 600 VA | EAN 4010312109496 | 50,80 €/pc. |
**KLD61**

DC constant current source for LEDs up to 1000 mA or 30 watts. Standby loss 0.1 watt only. With adjustable minimum brightness and dimming speed. With switching operation for children's rooms and snooze function.

For installation. 45 mm long, 45 mm wide, 33 mm deep.

The nominal output current can be set with a jumper on the circuit board:
- no connection: 350 mA;
- flush right (Pin 2-3 connected): 700 mA;
- flush left (Pin 1-2 connected): 1000 mA. Factory settings 700 mA.

The input voltage ranges from 12 V DC to 36 V DC maximum.

The input voltage must be selected to the sum of the LED at the output voltage, so that the current control can operate. This deviation must be at least 6 volts.

The total power output current x output voltage should not exceed 30 watts.

A pulse resistant DC power supply unit is required, which provides the necessary voltage and required current of the LED light(s).

**Universal control voltage input 8 to 230 V UC**, electrically isolated from the 230 V supply voltage and switching voltage.

Short-time control commands switch on/off, permanent control varies the brightness to the maximum level.

An interruption of control changes the direction of dimming.

The setting of the brightness level is stored after switching off (Memory).

In case of a power failure the switching position and the brightness level are stored.

If applicable the dimmer will be switched on at the stored brightness level after the supply voltage is recovered.

Automatic electronic overload protection and over-temperature switch-off.

The minimum brightness (fully dimmed) is adjustable with the upper % rotary switch.

The dimming speed can be adjusted with the lower dimming speed rotary switch.

**Switching operation for children's rooms**: If the light is switched on by holding down the pushbutton, it starts at the lowest brightness level after approx. 1 second and dims up slowly as long as the pushbutton is held down without modifying the last stored brightness level.

**Snooze function (universal pushbutton)**: With a double impulse the lighting is dimmed down from the current dimming position to the minimum brightness level and switched off. The current dimming position as well as the adjustable minimum brightness level determine the dimming time (max. = 60 minutes) which can be reduced as required. It can be switched off at any time by short-time control commands during the lighting is dimmed down. Holding down the pushbutton during the dimming down process dims up and stops the snooze function.
## TECHNICAL DATA UNIVERSAL DIMMER SWITCHES, CAPACITY ENHANCERS AND 1-10 V CONTROLLERS

| Type | ELD61 | EUD12NP | EUD12D | LUD12 | MZ12PM | EUD61NP | EUD61F | EUD12F | SDS12 | SDS1 | MOD12D | DT065 | DT06FL | DT06SFL | DT055 | DT05SFL |
|------|-------|---------|--------|-------|--------|---------|--------|--------|-------|------|------|-------|-------|--------|--------|--------|-------|
|      |       |         |        |       |        |         |        |        |       |      |      |       |       |        |        |        |       |
| Spacing of control connections/load | 6 mm | 6 mm | 6 mm | 6 mm | 3 mm | 6 mm | 6 mm | 3 mm | 6 mm | 3 mm | 6 mm | 3 mm | 3 mm |
| Incandescent and halogen lamps 230 V (R) | – | up to 400 W EUD12DK: up to 800 W | up to 400 W EUD61NP: 200 W | – | – | – | – | – | – | – | – | up to 300 W DT06FL and DT05FL: up to 200 W |
| Inductive transformers (L)1) 2) | – | up to 400 W EUD12DK: up to 800 W | up to 400 W (not EUD61NP) | – | – | – | – | – | – | – | up to 300 W DT06FL and DT05FL: up to 200 W |
| Motor (L)3) | – | – | – | – | – | – | – | – | up to 300 W |
| Capacitive transformers (C)4) 5) 6) 9) | – | up to 400 W EUD12DK: up to 800 W | up to 400 W EUD61NP: 200 W | – | – | – | – | – | – | – | up to 300 W DT06FL and DT05FL: up to 200 W |
| Dimmable energy saving lamps ESL 6) 9) | – | up to 400 W EUD12DK: up to 800 W | up to 400 W (not EUD61NP) | – | – | – | – | – | – | – | up to 300 W DT06FL and DT05FL: up to 200 W |
| Dimmable 230 V LED lamps 6) 9) | – | up to 400 W EUD12DK: up to 800 W | up to 400 W (not EUD61NP) | – | – | – | – | – | – | – | up to 300 W DT06FL and DT05FL: up to 200 W |
| Dimmable LED lamps 12-36 V DC | ELD61: 4 A KLD61: 30 W | – | – | – | – | – | – | – | – | – | – | – | – |
| 1-10 V EVG* | – | – | – | – | – | – | – | – | – | – | – | – | – |
| Maximum-condentor cross-section (3-fold terminal) | 4 mm² | 6 mm² (4 mm²) | 4 mm² | 6 mm² (4 mm²) | 6 mm² (4 mm²) | 4 mm² | 6 mm² (4 mm²) | 4 mm² |
| Two conductors of same crosssection (3-fold terminal) | 1.5 mm² | 2.5 mm² (1.5 mm²) | 1.5 mm² | 2.5 mm² (1.5 mm²) | 1.5 mm² | 2.5 mm² (1.5 mm²) | 1.5 mm² |
| Screw head | slotted/crosshead | slotted/crosshead, pozidriv | slotted/crosshead | slotted/crosshead, pozidriv | slotted/crosshead | slotted/crosshead, pozidriv | slotted/crosshead, pozidriv |
| Type of enclosure/terminals | IP30/IP20 | IP30/IP20 | IP30/IP20 | IP50/IP20 | IP50/IP20 | IP50/IP20 | IP50/IP20 |
| Time on | 100% | 100% | 100% | 100% | 100% | 100% |
| Max./min. temperature at mounting location | +50°C/-20°C | +50°C/-20°C | +50°C/-20°C | +50°C/-20°C | +50°C/-20°C |
| Standby loss (active power) | 0.1 W | 0.1 W EUD12DK: 0.2 W EUD12D and MZ12PM: 0.3 W | 0.1 W EUD61NP: 0.5 W | 0.1 W EUD61NP: 230 V | 0.1 W | 1 W SUB12: 0.9 W | 1 W 0.3 W |
| Control voltage | 8..230 V UC | 8..230 V UC | 8..230 V UC | 8..230 V UC | 8..230 V UC | 230 V | 8..230 V UC |
| Control current 230 V/contro input (≤5) | – | – | – | EUD61NP: 0.7 mA EUD61NP-230 V: 4/1000 mA | – | – | 0.5 mA |
| Control current universal control voltage | 8/12/24/230 V (≤5 s) | 10/100 mA | 0/100 mA | 10/100 mA | 2/3/7/10/100 mA | 3/5/10/100 mA |
| Control current central 8/12/24/230 V (≤5 s) | – | 3/5/10/100 mA | – | 3/5/10/100 mA | – | 2/3/8/15/100 mA |
| Max. parallel capacitance (approx. length of single control lead at 230 V AC) | 0.3 μF (1000 m) | 0.9 μF (3000 m) | 0.9 μF (3000 m) | EUD61NP: 0.3 μF (1000 m) | – | 0.3 μF (1000 m) | 0.5 μF (1000 m) |
| Max. parallel capacitance (approx. length of central control lead at 230 V AC) | – | 0.9 μF (3000 m) | – | 0.9 μF (3000 m) | – | 0.9 μF (3000 m) |

* EVG = electronic ballast units; KVG = conventional ballast units
  1) Secondary cable length with a maximum of 2 m. A load of more than 200 W (EUD12DK:400 W, EUD12F:100 W) is a ventilation clearance of 1/2 module and adjacent devices must be maintained. The switching capacity of the EUD and KVG depends also on the ventilation conditions. 2) Per dimmer or capacity enhancer it is only allowed to use max. 2 inductive (wound) transformers of the same type, furthermore no-load operation on the secondary part is not permitted. The dimmer might be destroyed. Therefore do not permit load breaking on the secondary part. Operation in parallel of inductive (wound) and capacitative (electronic) transformers is not permitted! When calculating the load a loss of 20% for inductive (wound) transformers and a loss of 5% for capacitative (electronic) transformers must be considered in addition to the lamp load. *Affects the max. switching capacity. *In the settings ESL and LED no wound (inductive) transformer must be dimmed. **Increase of capacity for dimmable energy saving lamps ESL and dimmable 230 V LED lamps see page 9.***Only fan motor may be connected. **For 12 V halogen and LED lamps it usually applies for dimmable energy saving lamps and dimmable 230 V LED lamps. Different lamp electronics may result in restricted dimming areas, on/off problems and a limited maximum number of lamps (to 10 units), especially if the connected load is very low (e.g. with 5 W LED lamp). The comfort positions of the dimmer switches optimize the dimming range, which, however, only gives a maximum power up to 100 W. No inductive (wound) transformers may be dimmed in these comfort positions.

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

Compliance with: EN 61000-6-3, EN 61000-6-1 and EN 60 669
INTELLIGENTLY MEASURE AND VISUALIZE POWER.
Three-phase and single-phase energy meters

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The Eltako wireless system works with the reliable and worldwide standardized EnOcean wireless technology in 868 MHz. It transmits ultra short and interference-proof signals with a range of up to 100 meters in halls. Eltako wireless pushbuttons reduce the electrosmog load since they emit high-frequency waves that are 100 times weaker than conventional light switches. There is also a significant reduction in low-frequency alternating fields since fewer power cables need to be installed in the building.
Depending on the customer’s installation, only a conventional meter panel is required for billing with the electricity supply operator. On the other hand, dwellings and businesses can be billed using small three-phase meters installed in power distribution panels. See the installation instructions for electricians on page 10-25. It is then the task of the building management service to read the intermediate meter. This either takes place at the same time as heating consumption is read or centrally, e.g. when the meter interface is evaluated. All Eltako energy meters for rail mounting are therefore fitted as standard with an S0 interface.

### Selection Table Three-Phase and Single-Phase Energy Meters

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<td>Meter mounting installation</td>
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<td>Single-phase energy meter</td>
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<td>Reference current Iref (Limiting current Imax) A</td>
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<td>10(80)</td>
<td>5(6) (a)</td>
<td>10(80)</td>
<td>5(6) (a)</td>
<td>10(80)</td>
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<tr>
<td>Display LC display digits</td>
<td>5+2(6) 6+1</td>
<td>5+2(6) 6+1</td>
<td>6+1</td>
<td>5+2(6) 6+1</td>
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<td>5+2(6) 6+1</td>
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<tr>
<td>Accuracy class MID, inaccuracy ±1%</td>
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<td>With return stop</td>
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<td>M-bus interface</td>
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<td>Interface for Eltako RS485 bus</td>
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</table>

1) CT operated energy meter
2) Switches over automatically from 5+2 to 6+1.
* DSZ12DM-3x65A and DSZ12WDM-3x65A are still available.

MID meters require no subsequent calibration with calibration mark. Instead, they are the equivalent of calibrated meters as a result of MID testing and an EU Declaration of Conformity from the manufacturer.
**DSZ15D-3x80A MID**

Maximum current 3x80 A. Standby loss 0.5 watt per path only.

Modular device for DIN-EN 60715 TH35 rail mounting.
4 modules = 70 mm wide and 58 mm deep.
Accuracy class B (1%). With SO interface.
It measures active energy by means of the current between input and output. The internal power consumption of 0.5 watt active power per path is neither metered nor indicated.
1, 2 or 3 phase conductors with max. currents up to 80 A can be connected.
The inrush current is 40 mA.
The N terminal must always be connected.

The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.
Power consumption is shown by a bar flashing at a rate of 100 times per kWh.

**Designed as standard for using as double-tariff meter:** Switch over to a second tariff by applying 230 V to terminals E1/E2.
On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu according to the operation manual. First the **background lighting** switches on. The display then shows the total active energy per tariff, the active energy per resettable memory RS1 or RS2, and the instantaneous values of consumption, voltage and current per phase.

**Error message (false)**
When the phase conductor is missing or the current direction is wrong ‘false’ and the corresponding phase conductor are indicated on the display.

**Recommended retail prices excluding VAT.**

![Image](image_url)
DSZ15DE-3X80A

Maximum current 3x80 A. Standby loss 0.5 watt per path only.

Modular device for DIN-EN 60715 TH35 rail mounting.
4 modules = 70 mm wide and 58 mm deep.
Accuracy class B (1%). With SO interface.
It measures active energy by means of the current between input and output. The internal power consumption of 0.5 watt active power per path is neither metered nor indicated. Like all meters without declaration of conformity (e.g. MID), this meter is not permitted for billing.
1, 2 or 3 phase conductors with max. currents up to 80 A can be connected.
The N terminal must always be connected.
The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.
Power consumption is shown by a bar flashing at a rate of 100 times per kWh.
Designed as standard for using as double-tariff meter: Switch over to a second tariff by applying 230 V to terminals E1/E2.
On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu according to the operation manual. First the background lighting switches on. The display then shows the total active energy per tariff, the active energy per resettable memory RS1 or RS2, and the instantaneous values of consumption, voltage and current per phase.
Error message (false)
When the phase conductor is missing or the current direction is wrong ‘false’ and the corresponding phase conductor are indicated on the display.

| DSZ15DE-3X80A | Three-phase energy meter, without approval | EAN 4010312501719 | 86.70 €/pc. |
DSZ15WD-3X5A MID

CT operated three-phase energy meter with settable CT ratio and MID. Maximum current 3x5 A. Standby loss 0.5 watt per path only.

Modular device for DIN-EN 60715 TH35 rail mounting.
4 modules = 70 mm wide and 58 mm deep.
Accuracy class B (1%). With S0 interface.
This three-phase energy meter measures active energy by means of the current between input and output. The internal power consumption of 0.5 watt active power per path is neither metered nor indicated.

1, 2 or 3 phase conductors with max. currents up to 5 A can be connected.
The inrush current is 10 mA.
The N terminal must always be connected.
The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.

Power consumption is shown by a bar flashing at a rate of 10 times per kWh.
On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu according to the operation manual. First the background lighting switches on. The display then shows the total active energy, the active energy per resettable memory, and the instantaneous values of consumption, voltage and current per phase.

The CT ratio can also be set. It is set to 5:5 at the factory and blocked with a bridge over the terminals which are marked with 'JUMPER'. To adjust the CT ratio to the installed transformer remove the bridge and reset the energy meter according to the operation manual. Then block it again with the bridge. Adjustable current transformer ratios: 5:5, 50:5, 100:5, 200:5, 250:5, 300:5, 400:5, 500:5, 600:5, 750:5, 1000:5, 1250:5 and 1500:5.

Error message (false)
When the phase conductor is missing or the current direction is wrong 'false' and the corresponding phase conductor are indicated on the display.

Important! Before working on the current transformers disconnect the voltage paths of the energy meters.

| DSZ15WD-3x5A | CT operated three-phase energy meter, MID approval | EAN 4010312501641 | 172.00 €/pc. |
DSZ15DM-3X80A MID

M-bus three-phase energy meter.
Maximum current 3x80 A. Standby loss 0.5 watt per path only.

Modular device for DIN-EN 60715 TH35 rail mounting.
4 modules = 70 mm wide and 58 mm deep.
Accuracy class B (1%). With M-bus interface.
It measures active energy by means of the current between input and output.
The internal power consumption of 0.5 watt active power per path is neither metered nor indicated.
1, 2 or 3 phase conductors with max. currents up to 80 A can be connected.
The inrush current is 40 mA.
The N terminal must always be connected.
The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.
Power consumption is indicated by an LED flashing at a rate of 1000 times per KWh.

Designed as standard for using as double-tariff meter: Switch over to a second tariff by applying 230 V to terminals E1/E2.
On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu.
First the background lighting switches on. The display then shows the total active energy per tariff, the active energy of the resettable memory RS1 or RS2 as well as the instantaneous values of consumption, voltage and current per phase.

Error message (false)
When the phase conductor is missing or the current direction is wrong 'false' and the corresponding phase conductor are indicated on the display.

M-bus data transfer
- On read-out all values are transferred in a telegram.
- The following telegrams are supported:
  - Initialisation: SND_NKE  Reply: ACK
  - Read out meter: REQ_UD2  Reply: RSP_UD
  - Change primary address: SND_UD  Reply: ACK
  - Reset RS1: SND_UD  Reply: ACK
  - Slave selection for the secondary address  Reply: ACK
- The device does not reply to unknown requests
- The transfer rate is detected automatically
- The device has a voltage monitor. In case of voltage loss, all registers are saved in the EEPROM.

Changing the M-bus primary address:
To change the M-bus primary address, hold down SELECT for 3 s. In the menu that appears, press MODE to increment the address by 10. Press SELECT to increment by 1. When the required primary address is set, wait until the main menu reappears.

Secondary address
- It is possible to communicate with the energy meters according to the standard EN13757 using the secondary address.
- The use of wild cards is possible.
For details refer to the operating instructions at www.eltako.com.

| DSZ15DM-3X80A | M-bus three-phase energy meter, MID approval | EAN 4010312501726 | 205,40 €/pc. |

Recommended retail prices excluding VAT.
DSZ15WDM-3X5A MID

M-bus CT operated three-phase energy meter with settable CT ratio and MID.
Maximum current 3x5 A. Standby loss 0.5 watt per path only.

Modular device for DIN-EN 60715 TH35 rail mounting.
4 modules = 70 mm wide and 58 mm deep.
Accuracy class B (1%). With M-bus interface.
This three-phase meter measures active energy by means of the currents flowing between inputs and outputs. The internal power consumption of 0.5 watt active power per path is neither metered nor indicated.
1, 2 or 3 converters with secondary currents of up to 5 A can be connected.
The inrush current is 10 mA.
The N terminal must always be connected.
The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.
Power consumption is indicated by an LED flashing at a rate of 10 times per KWh.
On the right next to the display are the MODE and SELECT buttons to browse through the menu. First the background lighting switches on. Then the total active energy, the active energy of the resettable memory and the instantaneous values of power, voltage and current are displayed for each outer conductor.
The CT ratio can also be set. It is set to 5:5 at the factory and blocked with a bridge over the terminals which are marked with 'JUMPER'. To adjust the CT ratio to the installed transformer remove the bridge and reset the energy meter according to the operation manual. Then block it again with the bridge. Adjustable current transformer ratios: 5:5, 50:5, 100:5, 150:5, 200:5, 250:5, 300:5, 400:5, 500:5, 600:5, 750:5, 1000:5, 1250:5 and 1500:5.
Error message (false)
If there is no outer conductor of the current direction is incorrect, 'false' and the related outer conductor are indicated in the display.

M-bus data transfer
- On read-out all values are transferred in a telegram.
- The following telegrams are supported:
  - Initialisation: SND_NKE Reply: ACK
  - Read out meter: REQ_UD2 Reply: RSP_UD
  - Change primary address: SND_UD Reply: ACK
  - Reset RS1: SND_UD Reply: ACK
  - Slave selection for the secondary address Reply: ACK
- The device does not reply to unknown requests
- The transfer rate is detected automatically
- The device has a voltage monitor. In case of voltage loss, all registers are saved in the EEPROM.

Changing the M-bus primary address:
To change the M-bus primary address, hold down SELECT for 3 s. In the menu that appears, press MODE to increment the address by 10. Press SELECT to increment by 1. When the required primary address is set, wait until the main menu reappears.

Secondary address
- It is possible to communicate with the energy meters according to the standard EN13757 using the secondary address.
- The use of wild cards is possible.
For details refer to the operating instructions at www.eltako.com.

Important!
Before working on the current transformers disconnect the voltage paths of the energy meters.

| DSZ15WDM-3x5A | CT operated three-phase energy meter, MID approval | EAN 4010312501665 | 205,40 €/pc. |
**DSZ14DRS-3X80A MID**

RS485 bus wireless three-phase energy meter. Maximum current 3x80 A. Standby loss 0.8 W at L1 and only 0.5 W at L2 and L3 each.

Modulair device for DIN-EN 60715 TH35 rail mounting in distribution cabinets with IP51 protection class.

4 modules = 70 mm wide and 58 mm deep.

Accuracy class B (1%). With RS485 interface.

It measures active energy by means of the current between input and output. The internal power consumption of 0.8 W or 0.5 W active power per path is neither metered nor indicated.

1, 2 or 3 phase conductors with max. currents up to 80 A can be connected.

The inrush current is 40 mA.

The terminals L1 and N must always be connected.

**Connection to the Eltako RS485 bus via a FBA14 by means of a 2-wire screened bus line (e.g. telephone line).** The meter reading and the momentary capacity are transferred to the bus – e.g. for transfer to an external computer of the GFVS 4.0 Software – and is also transferred to the wireless network via the FAM14. For this it is necessary that a device address is assigned from the wireless antenna module FAM14, according to the operating instructions. Also display with FEA65D.

**The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.**

The power consumption is displayed with a LED flashing 1000 times per kWh next to the display.

**Designed as standard for using as double-tariff meter:** Switch over to a second tariff by applying 230 V to terminals E1/E2.

On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu according to the operation manual. First the background lighting switches on. The display then shows the total active energy per tariff, the active energy per resettable memory RS1 or RS2, and the instantaneous values of consumption, voltage and current per phase.

**Error message (false)**

When the phase conductor is missing or the current direction is wrong 'false' and the corresponding phase conductor are indicated on the display.

| DSZ14DRS-3X80A | RS485 bus wireless three-phase energy meter, MID approval | EAN 4010312501733 | 165,00 €/pc. |
**DSZ14WDRS-3X5A MID**

RS485 bus wireless three-phase energy meter with settable CT ratio and MID. Maximum current 3x5 A. Standby loss 0.8 W at L1 and only 0.5 W at L2 and L3 each.

Modulair device for DIN-EN 60715 TH35 rail mounting in distribution cabinets with IP51 protection class.

- 4 modules = 70 mm wide and 58 mm deep.
- Accuracy class B (1%).
- With RS485 interface.

This three-phase energy meter measures active energy by means of the current between input and output. The internal power consumption of 0.8 W or 0.5 W active power per path is neither metered nor indicated.

**1, 2 or 3 phase conductors with max. currents up to 5 A can be connected.**

The inrush current is 10 mA.

The terminals L1 and N must always be connected.

**Connection to the Eltako RS485 bus via a FBA14 by means of a 2-wire screened bus line (e.g. telephone line).** The meter reading and the momentary capacity are transferred to the bus – e.g. for transfer to an external computer of the GFVS 4.0 Software – and is also transferred to the wireless network via the FAM14. For this it is necessary that a device address is assigned from the wireless antenna module FAM14, according to the operating instructions.

Also display with FEA650.

**The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.**

The power consumption is displayed with a LED flashing 10 times per kWh next to the display.

On the right next to the display are the keys MODE and SELECT. Press them to scroll through the menu. First the **background lighting** switches on. The display then shows the total active energy, the active energy of the resettable memory as well as the instantaneous values of consumption, voltage and current per phase.

**The CT ratio can also be set.** It is set to 5:5 at the factory and blocked with a bridge over the terminals which are marked with ‘JUMPER’. To adjust the CT ratio to the installed transformer remove the bridge and reset the energy meter according to the operation manual. Then block it again with the bridge. Adjustable current transformer ratios: 5:5, 50:5, 100:5, 150:5, 200:5, 250:5, 300:5, 400:5, 500:5, 600:5, 750:5, 1000:5, 1250:5 and 1500:5.

**Error message (false)**

When the phase conductor is missing or the current direction is wrong ‘false’ and the corresponding phase conductor are indicated on the display.

**Important!** Before working on the current transformers disconnect the voltage paths of the energy meters.

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**Recommended retail prices excluding VAT.**

| **DSZ14WDRS-3X5A** | **RS485 bus wireless three-phase energy meter, MID approval** | **EAN 4010312501450** | **172,00 €/pc.** |
**WSZ15D-32A MID**

Maximum current 32 A. Standby loss 0.4 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide and 58 mm deep.
Accuracy class B (1%). With S0 interface.
This single-phase energy meter measures active energy by means of the current between input and output. The internal power consumption of 0.4 watt active power is neither metered nor indicated.
1 phase conductor with a max. current up to 32 A can be connected.
The start current is 20 mA.
If the anticipated load exceeds 50%, maintain an air gap of ½ pitch unit to the devices mounted adjacenty.
If necessary, use spacer DS12.
Two N terminals for secure cross wiring of several counters.

**The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.**

**Press the button.**

Below the displays is a button which you can use to browse through the menu as described in the User Manual. First the **background lighting** switches on. Then you can display the total active energy, active energy of the resettable memory and the instantaneous values for active power, voltage and current.
Power consumption is shown by a bar flashing at a rate of 1000 times per kWh.

**Error message**

In the event of a connection error the backlighting of the display flashes.


**WSZ15D-65A MID**

Maximum current 65 A. Standby loss 0.4 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide and 58 mm deep.
Accuracy class B (1%). With S0 interface.
This single-phase energy meter measures active energy by means of the current between input and output. The internal power consumption of 0.4 watt active power is neither metered nor indicated.
1 phase conductor with a max. current up to 65 A can be connected.
The start current is 40 mA.
If the anticipated load exceeds 50%, maintain an air gap of ½ pitch unit to the devices mounted adjacenty.
If necessary, use spacer DS12.
Two N terminals for secure cross wiring of several counters.

**The 7 segment LC display is also legible twice within a period of 2 weeks without power supply.**

**Press the button.**

Below the displays is a button which you can use to browse through the menu as described in the User Manual. First the **background lighting** switches on. Then you can display the total active energy, active energy of the resettable memory and the instantaneous values for active power, voltage and current.
Power consumption is shown by a bar flashing at a rate of 1000 times per kWh.

**Error message**

In the event of a connection error the backlighting of the display flashes.

*WSZ15D-65A* Single-phase energy meter, MID approval EAN 4010312501696 71,50 €/pc.

Recommended retail prices excluding VAT.
WSZ15DE-32A

Maximum current 32 A. Standby loss 0.4 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide and 58 mm deep.
Accuracy class B (1%). With SO interface.
It measures active energy by means of the current between input and output. The internal power consumption of 0.4 watt active power is neither metered nor indicated. Like all meters without declaration of conformity (e.g. MID), this meter is not permitted for billing.

Every 30 seconds, the display switches for 5 seconds from the accumulated active energy in kWh to the momentary consumption in watts.

1 phase conductor with a max. current up to 32 A can be connected. If the anticipated load exceeds 50%, maintain an air gap of 1/2 pitch unit to the devices mounted adjacently.
If necessary, use spacer DS12. The inrush current is 20 mA. The display can only be read when the power supply is on. However, the consumption is saved to a non-volatile memory and is displayed immediately after power restoration.

Two N terminals for secure cross wiring of several counters.
The digital display has 7 digits. Two decimal places are indicated up to 99999.99 kWh. Above 100000.0 kWh there is only one decimal place.

Power consumption is shown by a bar flashing at a rate of 1000 times per kWh.

Error message
In the event of a connection error a LED in the display flashes.

WSZ15DE-32A Single-phase energy meter, without approval EAN 4010312501702 46,20 €/pc. Recommended retail prices excluding VAT.
WZR12-32A

Maximum current 32 A, standby loss 0.5 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

This single-phase energy meter with reset function uses the current between input and output to measure active energy and saves the consumption parameter in a non-volatile memory.

Like all meters without declaration of conformity (e.g. MID), this meter is not permitted for billing.

Accuracy conforms to Class B MID (1%) like all Eltako single-phase energy meters, the inrush current is 20 mA.

The display is subdivided into 3 fields.

■ Field 1:
This display refers to the cumulative value in field 3.

Field 3 shows the consumption since last reset. This is the display standard mode.

H01 = Field 3 shows the consumption for the last hour up to H24 = 24 hours ago.

D01 = Field 3 shows the consumption for the last day up to D95 = 95 days ago.

■ Field 2:
Instantaneous values of energy consumption (active power) in watt (W) or kilowatt (kW).

The display arrows on the left and right show the automatic change W and kW.

■ Field 3:
Cumulative value up to 9999 kWh. Display up to 9.999 kWh with 3 decimal digits, from 10 kWh with 1 decimal digit and from 1000 kWh without decimal digit.

Press the left button MODE to scroll down the display options which are shown in field 1: H01 and D01 as described above. Finally, press MODE to show the abbreviation of the set language, e.g. GB for English, D for German, F for French and ES for Spanish.

Press the right button SELECT once within the display options to increment the indicated figure by 1.

The corresponding value is indicated in field 3. The last clock hour then becomes the hour before last, etc.
If the active language was selected with MODE, press SELECT to switch to a different language. Exit the new language setting by pressing MODE to activate the setting.

The program returns to the standard display mode automatically if MODE or SELECT are not operated for 20 seconds or if you press both buttons briefly simultaneously.

Reset
Hold down the buttons MODE and SELECT simultaneously for 3 seconds until RES appears in segment 1. Then press SELECT briefly to reset all memories. Afterwards the program returns automatically to standard display mode.

| WZR12-32A | Single-phase energy meter with reset, without approval | EAN 4010312501252 | 54.20 €/pc. |
WSZ60D-60A MID

Maximum current 60 A, standby loss 0.5 watt.

Single-phase energy meter for 3-point energy meter mounting.
Accuracy class A.

This single-phase energy meter measures active energy by means of the current between input and output. The internal power consumption of 0.5 watt active power is neither metered nor indicated.

1 phase conductor with a max. current up to 60 A can be connected.
The inrush current is 10 mA.

LC display with 7 digits, therefrom 1 digit after the decimal point.

Power consumption is shown by a red LED flashing at a rate of 1000 times per kWh.

Permanent light: halt; light off: free of tension.

| WSZ60D-60A | Single-phase energy meter, MID approval | EAN 4010312501573 | 59,90 €/pc. |
**GFVS-Energy**

Wireless Visualisation and Control Software for up to 100 electricity meters with S0 interface with FSS12 energy meter transmitter modules as well as wireless single-phase energy meter, wireless three-phase energy meter and wireless energy meter transmitter modules.

The software can be downloaded for free from the Eltako homepage. The software GFVS 4.0 on the Smart Home central unit SafeIV can evaluate up to 250 energy meters. The wireless receiver FAM-USB with USB port is required for PC reception and if required for transmitting wireless telegrams from a PC to load shedding relay and is not included in the scope of supply. It must be licenced via web.

**FAM-USB**

Wireless USB receiver/transmitter

EAN 4010312312971

79,90 €/pc.

**FSS12-12V DC**

Wireless energy meter transmitter module for connection to S0 interface of many single-phase energy meters and three-phase energy meters. Only 0.5 watt standby loss. With load shedding relay 1 NO contact potential free 4 A/250 V. With exchangeable antenna. If required, a wireless antenna FA250 can be connected.

Modular device for DIN-EN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep.

The energy meter transmitter module FSS12 evaluates the signals from the energy meter S0 interface and transmits wireless telegrams containing consumption and meter reading to the Eltako wireless network for evaluation on a PC using the Visualisation and Control Software GFVS 4.0 and GFVS-Energy. On three-phase energy meters, the data sent includes normal rate (HT) or off-peak (NT) energy tariff data, provided the E1/E2 terminals on the three-phase energy meter are connected to E1/E2 on the FSS12. With adjustable pulse rate.

GFVS-Energy supports up to 100 transmitter modules and GFVS 4.0 up to 250 transmitter modules.

The 12 V DC supply voltage is powered at 12 W by a switch mode power supply unit FSNT12-12V that is only 1 pitch unit wide. If the relay of the FSS12 is switched on, a power of 0.6 watts is required.

The setting and display screen is subdivided into 3 fields:

- **Field 1:** The normal display is the unit of the meter reading currently displayed in Field 3. This alternates every 4 seconds with either kilowatt hours kWh (KWH in display) or megawatt hours MWh (MWH in display). The display in Field 1 is supplemented by a + sign after the reading to indicate that the off-peak tariff rate is applied to E1/E2.

- **Field 2:** Instantaneous values of energy consumption (active power) in watt (W) or kilowatt (kW). The left-pointing arrow in Field 1 indicates an automatic switchover from 0 to 99 W to 0.1 to 65 kW.

- **Field 3:** The meter reading is the normal display. Every 4 seconds the display alternates between 3 whole numbers and 1 decimal point (from 0.1 to 999.9 kWh) and 1 or max. 3 whole numbers (from 0 to 999 MWh). The meter reading is displayed without decimals in increments of 1kWh with freely chosen pulse rates whose last digit is not 0.

**Wireless telegrams:** Maximum every130 seconds a performance telegram will be sent and the display will be updated. Otherwise a telegram will be sent within 20 seconds if the power changed by at least 10%.

A switchover from HT to NT is transmitted immediately in the same way as a meter reading change. A full telegram comprising meter reading HT, meter reading NT and power is transmitted 20 seconds after the power supply is switched on and then every 10 minutes. The LED lights up briefly when a telegram is transmitted. For settings with the buttons MODE and SET see the operating instructions.

**FSS12-12V DC**

Wireless energy meter transmitter module

EAN 4010312310184

87,00 €/pc.

Recommended retail prices excluding VAT.
FEA65D-wg

Wireless energy consumption indicator with display for individual fitting and mounting into the E-Design65 switching system. For up to 20 wireless single-phase energy meters, wireless three-phase energy meters and energy meter transmitter modules. Illuminated display. Standby loss 0.2 watt only.

Power supply 12 V DC. A 20 cm long red/black connecting wire is routed to the rear.
The complete module can be removed from the frame for screw mounting.
We recommend stainless-steel countersunk screws 2.9 x 25 mm, DIN 7982 C, for screw connections. Both with rawl plugs 5 x 25 mm and with 55 mm switch boxes. Set of 2 stainless-steel countersunk screws 2.9 x 25 mm and plugs 5x25 mm are enclosed.
The energy consumption indicator evaluates the information of the wireless two-phase energy meters FWZ12 and FWZ61, the RS485 two-phase energy meter transmitter module FWZ14-65A, the RS485 three-phase energy meters DSZ14DRS and DSZ14WDRS as well as the wireless energy meter transmitter module FSS12.
The last energy meter selected is displayed from EM01 to EM20: the accumulated energy consumption (meter reading) in KWh with 7 digits, of which one digit is a decimal point, and the currently consumed active power (momentary capacity) from 15 watts to 65,000 watts.
The data of one energy meter transmitter module FSS12 and one RS485 three-phase energy meter DSZ14DRS also contains separate values for normal rate (HT) and off-peak (NT), both of which are displayed. Momentary capacity is also identified accordingly.
When you press MODE for longer than two seconds, the display goes to energy meter EM01.
For energy meter EM01, an additional statistic can be displayed for total energy consumption over the last hours, days, months and years. This is obtainable by briefly pressing MODE, statistic appears in the display.
Press MODE to browse through all the possible displays consump, total, hour, day, month and year.
Press the button SET within the display options. Each press of the button increments the number displayed by 1 and the actual value is indicated in the display. The last full hour then becomes the last hour but one, etc.
Hour 01 = Displays consumption over the last full hour to 24 = 24 hours ago.
Day 01 = Displays consumption of the last full day up to day 31 = 31 days ago.
Month 01 = Displays consumption of the last full month up to month 12 = 12 months ago.
Year 01 = Displays consumption of the last full year up to year 24 = 24 years ago.
20 seconds after last pressing MODE or SET, and if you press and hold down MODE for longer than 2 seconds, the program revert automatically back to normal display.

| FEA65D-wg | Wireless energy consumption indicator with display, pure white glossy | EAN 4010312315903 | 94,50 €/pc. |
### EVA12-32A

**Maximum current 32 A, standby loss 0.5 watt only.**

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

**The energy consumption indicator EVA12 uses the current between input and output to measure active energy in the same way as a single-phase energy meter. It saves the consumption parameter in a non-volatile memory.**

Like all meters without declaration of conformity (e.g. MID), this meter is not permitted for billing.

Accuracy conforms to Class B MID (1%) like all Eltako single-phase energy meters.

The inrush current is 20 mA.

**In this way the energy consumption indicator reproduces exactly the reading on the billing energy meter installed at a different location in the building.**

The display is subdivided into 3 fields.

- **Field 1:**
  - This display refers to the cumulative value in field 3.
  - **III moving slowly to the right** = Field 3 shows the cumulative consumption since last reset. This is the display standard mode.
  - H01 = Field 3 shows the consumption for the last hour up to H24 = 24 hours ago.
  - D01 = Field 3 shows the consumption for the last day up to D31 = 31 days ago.
  - M01 = Field 3 shows the consumption for the last month up to M12 = 12 months ago.
  - Y01 = Field 3 shows the consumption for the last year up to Y24 = 24 years ago.

- **Field 2:**
  - Instantaneous values of energy consumption (active power) in watt (W) or kilowatt (kW). The display arrows on the left and right show the automatic change W and kW.

- **Field 3:**
  - Cumulative value in kWh. Display up to 9.999 kWh with 3 decimal digits, from 10 kWh with 1 deciaml digit and from 1000 kWh without decimal digit.

- **Press the left button MODE** to scroll down the display options which are shown in field 1: H01, D01, M01 and Y01 as described above. Finally, press MODE to show the abbreviation of the set language, e.g. GB for English, D for German and F for French.

- **Press the right button SELECT** once within the display options to increment the indicated figure by 1. The corresponding value is indicated in field 3. The last clock hour then becomes the hour before last, etc.

If the active language was selected with MODE, press SELECT to switch to a different language. Exit the new language setting by pressing MODE to activate the setting.

The program returns to the standard display mode automatically if MODE or SELECT are not operated for 20 seconds or if you press both buttons briefly simultaneously.

**Reset**

To start saving the values to the nearest hour, we recommend performing a reset at an opportune moment after installation. Hold down the buttons MODE and SELECT simultaneously for a further 3 seconds until RES appears in field 1. Then press SELECT briefly to reset all memories. Afterwards the program returns automatically to standard display mode.

| EVA12-32A | Single-phase energy meter with energy consumption indicator | EAN 4010312500828 | 59,90 €/pc. |

Recommended retail prices excluding VAT.
FWZ14-65A

RS485 bus wireless single-phase energy meter, maximum current 65 A. Only 0.5 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
Accuracy class B (1%). With RS485 interface.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.
The meter reading, the current power and the serial number will be handed over to the bus – eg for forwarding to an external computer, the software GFVS 4.0 or GFVS-Energy – and also to the wireless network via FAM14. For this it is necessary that a device address is assigned from the wireless antenna module FAM14, according to the manual.
Also display with FEA65D.

It measures active energy by means of the current between input and output. The internal power consumption of 0.5 watt active power is not metered.

Like all meters without declaration of conformity (e.g. MID), this meter is not permitted for billing.

1 phase conductor with a max. current up to 65 A can be connected.
The inrush current is 40 mA. In operation the rotary switch must be set to AUTO.

Power consumption is indicated using a LED.
If the L input and the L output were interchanged when hooked up, a normal rate (HT)/off-peak (NT) switchover telegram is transmitted to indicate the hook-up error.
If the anticipated load exceeds 50%, maintain an air gap of ½ pitch unit to the devices mounted adjacenty. Thereto included are 2 spacers DS14, a short jumper and two long jumpers.

| FWZ14-65A | RS485 bus wireless single-phase energy meter | EAN 4010312501511 | 61,10 €/pc. |
Wireless single-phase energy meter, maximum current 65 A. Only 0.5 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep. This single-phase energy meter measures active energy by means of the current between input and output and transmits the consumption and meter reading over the Eltako wireless network. Accuracy class B (1%).

Evaluation on the computer with Eltako Wireless Building Visualisation and Control Software GFVS or with energy consumption indicator FEA85D.

GFVS-Energy supports up to 100 transmitter modules and GFVS 4.0 up to 250 transmitter modules. The internal power consumption of max. 0.5 watt active power is neither metered nor indicated. Like all meters without declaration of conformity (e.g. MID), this meter is not permitted for billing.

1 phase conductor with a max. current up to 65 A can be connected.

If the anticipated load exceeds 50%, maintain an air gap of ½ pitch unit to the devices mounted adjacent. If necessary, use spacer DS12.

The inrush current is 40 mA. The consumption is saved to a non-volatile memory and is immediately available again after a power failure.

**Wireless telegrams:** A telegram is transmitted within 60 seconds if the power status changes by min. 10 percent. A change in meter reading is transmitted immediately. A full telegram comprising meter reading and power status is transmitted every 10 minutes. When the power supply is switched on, a **teach-in telegram** is sent to teach in the associated energy consumption indicator.

If the L input and the L output were interchanged when hooked up, a normal rate (HT)/off-peak (NT) switchover telegram is transmitted to indicate the hook-up error.
F3Z14D

Wireless meter concentrator for electricity, gas and water meters.
For 3 S0 interfaces and/or 3 AFZ scanners, only 0.1 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 modul = 18 mm wide, 58 mm deep.

Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.

This meter concentrator concentrates the data of up to three electricity, data and water meters and supplies this data to the RS485 bus. Either for forwarding to an external computer or for sending over the Wireless Building System.

Hook-up is either by connection to the S0 interface of the meters or by use of an AFZ scanner on each Ferraris meter. The scanner is bonded above the rotary disc of the meter and connected by its connecting wire to one of the S01-S03/GND terminals. The F3Z14D detects automatically whether an S0 interface or an AFZ is connected.

The meter reading is entered into the display by two pushbuttons as well as the impulse rate (number of impulses or revolutions per kilowatt hour or cubic meter). The settings can be locked.

Meter readings can be entered and read out using the PCT14 PC Tool. In addition, impulse rates can be entered. The default display is selectable and operation of the device is interlocked.

The display is subdivided into 3 fields.

Field 1:
The default display is the unit of the meter reading currently displayed in Field 3, either in kilowatt hours kWh or megawatt hours MWh or cubic meter M3 or cubic decametre DM3.

Field 2:
Momentary value of active power in watts and kilowatts or flow in centilitres and decilitres.
The arrow on the left in display field 1 indicates automatic switchover from 0-99 W or cl/s to 0.1 to 65 kW or dal/s. The display depends on the number of impulses of the meter.
The displayed minimum load is e.g. 10 watts at 2000 impulses per KWH and 2000 watts at 10 impulses per KWH.

Field 3:
The meter reading is the default display. Every 4 seconds, the display alternates between 3 integer numbers and 1 decimal point (from 0 to 999.9) and an additional 1 or to 3 integer numbers (from 0 to 999).

Select meter in display:
Press MODE and then press MODE again to select the ANZ function. Press SET to select the meter number to be displayed as default. Press MODE to confirm.

Issue device address in the bus and send teach-in telegrams as described in the operating instructions.
All Eltako energy meters are fitted with an S0 interface and can therefore be connected to the energy meter concentrator F3Z14D. Only devices FWZ14-65A, DSZ14DRS-3x80A and DSZ14WDRS-3x5A are directly connected to the bus.

| F3Z14D | RS485 bus meter collector | EAN 4010312501528 | 49,90 €/pc.
| AFZ    | scanner for each Ferraris meter | EAN 4010312315576 | 257,90 €/pc.

Recommended retail prices excluding VAT.
**FSDG14**

Wireless energy meter data gateway for meters equipped with an IEC 62056-21 IR interface.

2 channels. Only 0.4 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

**Connection to the Eltako-RS485 bus. Bus cross wiring and power supply with jumper.**

This energy meter data gateway can provide the data of an electronic domestic supply meter (eHZ-EDL) with IR interface according to IEC 62056-21 and SML protocol version 1 to the RS485 bus. Either for forwarding to an external computer or the GFVS software.

Regular flashing of the green LED indicates that the FSDG14 is receiving data from the meter. Active power, up to 4 meter readings and the serial number are transferred. The serial number corresponds to the last 4 bytes (hex) of the server ID printed on the meter. The telegram is sent over the wireless building service by means of the wireless antenna module FAM14. Usage data are transmitted over channel 1 and delivery data over channel 2. It is therefore essential for the FAM14 to issue a device address. If there is a change in active power or a meter reading, the appropriate telegram is sent immediately and all telegrams including the serial number are sent cyclically every 10 minutes.

Also display with FEAG50.

The PCT14 PC tool can also read out the FSDG14.

**Turn the rotary switch** to select the following operating modes (OBIS codes according to IEC 62056-61):

1: Usage meter (1.8.0) and usage power on channel 1, delivery meter (2.8.0) and delivery power on Channel 2.
2: Usage tariff 1 (1.8.1) and tariff 2 (1.8.2) and usage power on channel 1, delivery tariff 1 (2.8.1) and tariff 2 (2.8.2) and delivery power on channel 2.
3: Usage tariff 1 (1.8.1) and tariff 2 (1.8.2) and usage power on channel 1, delivery meter (2.8.0) and delivery power on Channel 2.
4: Usage meter (1.8.0) and usage power on channel 1, delivery tariff 1 (2.8.1) and tariff 2 (2.8.2) and delivery power on channel 2.

The link is made by using an AIR IR scanner. The scanner is attached by its fixing magnets to the IR output of the meter and is connected by its connecting cable to terminals Tx, Rx, GND and +12 V.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSDG14</td>
<td>RS485 bus energy meter gateway</td>
<td>4010312316146</td>
<td>45.10 €/pc.</td>
</tr>
<tr>
<td>AIR</td>
<td>IR scanner for energy meters</td>
<td>4010312316153</td>
<td>110.30 €/pc.</td>
</tr>
</tbody>
</table>
**FSR61VA-10A**

1 NO contact not potential free 10A/250 V AC, incandescent lamps up to 2000 watts, off delay with switch-off early warning and switchable pushbutton permanent light. With integrated current measurement up to 10 A. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep. Supply voltage and control voltage 230 V. If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains. Apparent power is measured by the integrated current measurement from approx. 10 VA to 2300 VA when the contact is closed. A wireless telegram is transmitted into the Ellako wireless network within 30 seconds after switching on the load or after a change in power by min 5% and cyclically every 10 minutes.

**Evaluation on the computer with Ellako Wireless Building Visualisation and Control Software GFVS or with energy consumption indicator FEA65D. GFVS-Energy supports up to 100 transmitter modules and GFVS 4.0 up to 250 transmitter modules. You can teach in encrypted sensors.** You can switch on bidirectional wireless and/or a repeater function. Every change in state and incoming central command telegrams are confirmed by a wireless telegram. This wireless telegram can be taught-in in other actuators, in the GFVS software and in universal displays.

| FSR61VA-10A | Wireless actuator Impulse switch with integr. relay function with current measurement | EAN 4010312311462 | 81.90 €/pc. |

**FSVA-230V-10A**

1 NO contact not potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, ESL and LED up to 400 W. With integrated current measurement up to 10 A. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

Adapter for German fused safety socket. With increased shock protection. Supply and switching voltage 230 V. In case of failure of the supply voltage, the switching state is maintained. The recurrent supply voltage is disconnected in a definite sequence. After plugging wait for short automatic synchronization before the switched consumer is plugged.

**This wireless actuator features state-of-the-art hybrid technology that we developed:** we combined the wear-free receiver and evaluation electronics and a bistable relay. Apparent power is measured by the integrated current measurement from approx. 10 VA to 2300 VA when the contact is closed. A wireless telegram is transmitted into the Ellako wireless network within 30 seconds after switching on the load or after a change in power by min 5% and cyclically every 10 minutes.

**Evaluation on the computer with Ellako Wireless Building Visualisation and Control Software GFVS or with the energy consumption indicator FEA65D. GFVS-Energy supports up to 100 energy meters and GFVS 4.0 up to 250 energy meters.** You can teach in encrypted sensors. You can switch on bidirectional wireless and/or a repeater function. Every change in state and incoming central command telegrams are then confirmed by a wireless telegram. This wireless telegram can be taught into other actuators, the software GFVS 4.0, and universal displays. Up to 35 wireless pushbuttons are assigned with the left button LRN, either as a universal pushbutton, direction pushbutton or central pushbutton. For the control of extractor hoods or similar items up to 35 wireless window door contacts FTK or wireless window handle sensors FFG7B-rw can be taught-in. Several FTK or wireless window handle sensors FFG7B-rw are linked together. If a FTK or wireless window handle sensor FFG7B-rw is taught-in, control commands of eventually taught-in pushbuttons are no longer running. It can be switched on and off manually with the right button. The LED performs during the teach-in process according to the operation manual. It shows wireless control commands by short flickering during operation.

| FSVA-230V-10A | Wireless actuator Socket switching actuator with current measurement | EAN 4010312314555 | 105.90 €/pc. |
### TECHNICAL DATA SINGLE-PHASE AND THREE-PHASE
### ENERGY METERS AND ENERGY CONSUMPTION INDICATOR

<table>
<thead>
<tr>
<th></th>
<th>EVA12-32A</th>
<th>WSZ15D-32A</th>
<th>WZR12-32A</th>
<th>DSZ15D-3x80A</th>
<th>DSZ15DE-3x80A</th>
<th>DSZ15DM-3x80A</th>
<th>DSZ14DRS-3x80A</th>
<th>DSZ15WD-3x5A</th>
<th>DSZ15WDM-3x5A</th>
<th>DSZ14WDRS-3x5A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rated voltage</strong></td>
<td>230V, 50Hz</td>
<td>230V, 50Hz</td>
<td>3x230/400V, 50Hz</td>
<td>3x230/400V, 50Hz</td>
<td>3x230/400V, 50Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Extended range</strong></td>
<td>-20%/-+15%</td>
<td>-20%/-+15%</td>
<td>-20%/-+15%</td>
<td>-20%/-+15%</td>
<td>-20%/-+15%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reference current I_{ref} (Limiting current I_{max})</strong></td>
<td>5 (32)A</td>
<td>10 (65)A</td>
<td>3x(60)A</td>
<td>3x(60)A</td>
<td>3x(60)A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internal consumption active power</strong></td>
<td>0.4 W</td>
<td>0.4 W</td>
<td>0.5 W at L1</td>
<td>0.5 W at L1</td>
<td>0.5 W at L1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>LC display 7 digits, therefrom 1 or 2 digits after the decimal point</td>
<td>LC display 7 digits, therefrom 1 or 2 digits after the decimal point</td>
<td>LC display 7 digits, therefrom 1 or 2 digits after the decimal point</td>
<td>LC display 7 digits, therefrom 1 or 2 digits after the decimal point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Display instantaneous values</strong></td>
<td>WSZ15D: With a key you can select active power, voltage and current</td>
<td>WSZ15DE: Active power displayed for 5 seconds every 30 seconds</td>
<td>EVA12, WZR12: With a key you can select active power, voltage and current</td>
<td>With a key you can select total active energy and active energy resettable, power, voltage and current per phase</td>
<td>With a key you can select total active energy and active energy resettable, power, voltage and current per phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accuracy class ±1%</strong></td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Inrush current according to accuracy class B</strong></td>
<td>20 mA</td>
<td>40 mA</td>
<td>40 mA</td>
<td>10 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-25/+55°C</td>
<td>-25/+55°C</td>
<td>-25/+55°C</td>
<td>-25/+55°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interface (not EVA12, WZR12)</strong></td>
<td>DSZ15DM and DSZ15WDM with M-bus interface. DSZ14DRS and DSZ14WDRS with interface for Eltako RS485 bus. All else: Pulse interface SD according to DIN EN 62053-31, potential free by opto-coupler, max. 30 V DC/20 mA and min. 5 V DC. Impedance 100 ohms.</td>
<td>pulse length 30 ms</td>
<td>pulse length 30 ms</td>
<td>pulse length 30 ms</td>
<td>pulse length 30 ms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2000 Imp./kWh</td>
<td>2000 Imp./kWh</td>
<td>1000 Imp./kWh</td>
<td>10 Imp./kWh</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Terminal cover sealable</strong></td>
<td>With sealing cap PK38, For the current path 1 sealing cap is required</td>
<td>With sealing cap PK38, For the current path 1 sealing cap is required</td>
<td>Terminal cover claps</td>
<td>Terminal cover claps</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Protection degree</strong></td>
<td>IP50 for mounting in distribution cabinets with protection class IP5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maximum conductor cross section</strong></td>
<td>8 mm²</td>
<td>WSZ15D, WSZ15DE: L terminals 16 mm²</td>
<td>L terminals 16 mm², N and SD terminals 6 mm²</td>
<td>N and L terminals 16 mm², SD, M-Bus and RS485 bus terminals 6 mm²</td>
<td>DSZ15D/DE/DM-3x80A and DSZ14DRS-3x80A: L terminals 25 mm²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The N terminal of three-phase energy meters must be connected, if not the electronics might be destroyed.

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 1 or Type 2 surge protection device (SPD) must be installed.

Compliance with: EN 50470
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>230 V, 50 Hz</td>
</tr>
<tr>
<td>Extended range</td>
<td>-10 %/+10 %</td>
</tr>
<tr>
<td>Reference current $I_{\text{ref}}$</td>
<td>5(60) A</td>
</tr>
<tr>
<td>(Limiting current $I_{\text{max}}$)</td>
<td></td>
</tr>
<tr>
<td>Internal consumption</td>
<td>0.5 W</td>
</tr>
<tr>
<td>Active power</td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>LC display 7 digits, therefrom 1 decimal digit</td>
</tr>
<tr>
<td>Accuracy class</td>
<td>A (± 2 %)</td>
</tr>
<tr>
<td>Backstop</td>
<td>yes</td>
</tr>
<tr>
<td>Inrush current</td>
<td>10 mA</td>
</tr>
<tr>
<td>Number of tariffs</td>
<td>1</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-25/-70°C</td>
</tr>
<tr>
<td>Protection degree</td>
<td>IP51</td>
</tr>
<tr>
<td>Maximum conductor cross section</td>
<td>35 mm²</td>
</tr>
<tr>
<td>Weight</td>
<td>1.3 kg</td>
</tr>
<tr>
<td>Dimensions</td>
<td>176 x 121 x 50 mm</td>
</tr>
<tr>
<td>EC type examination certificate</td>
<td>DE-07-MI003-PTB 015</td>
</tr>
</tbody>
</table>

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 1 or Type 2 surge protection device (SPD) must be installed.
MEASURING INSTRUMENTS DIRECTIVE MID


The 10 types of measuring instruments also include active electrical energy meters.

The MID replaces previous regulations on national approval and subsequent calibration in the domestic, trade and light industry sectors.

A manufacturer’s Declaration of Conformity was produced based on this new directive. There is a type examination certificate or pattern examination certificate for each type.

The MID regulates the following:
- the technical requirements (standard series DIN EN 50470-1/-3)
- the conformity assessment procedure
- the putting into use of measuring instruments
- marking the measuring instruments
- market surveillance

National law continues to regulate the following:
- recalibration
- calibration validity
- charges

When an MID instrument is put into use, we declare conformity with the MID in the operating instructions. The number of the type examination certificate is also quoted there.

The MID Device bears the MID conformity mark that consists of:

```
CE - M19 - 1383
```

Identification number of the notified body

Metrology mark M + year of putting into use

CE mark

The year after the year of putting into use defines the recalibration time.

The period of calibration validity depends on the prevailing national law. In Germany, this is 8 years and can then be extended by a further 8 years by a state certified inspection body, i.e. not the manufacturer.

MID meters require no subsequent calibration with calibration mark. Instead, they are the equivalent of calibrated meters as a result of MID testing and an EU Declaration of Conformity from the manufacturer.
ELECTRONIC IMPULSE SWITCHES – THE SILENT REVOLUTION.

ESR12Z-ESR12DDX-ESR61NP-
Electronic impulse switches

Selection table electronic impulse switches

*Impulse switch ES12DX-UC*

*Impulse switch ES12-200-UC*

*Impulse switch ES12-110-UC*

*Impulse switch with integrated relay function ESR12NP-230V+UC*

*Digital settable multifunction impulse switch with integrated relay function ESR12DDX-UC*

*Impulse switch with potential free contacts ES12Z, also for central control*

*4-fold impulse switch with integrated relay function ESR12Z-4DX-UC, also for central control and group control*

*Impulse switch ES61-UC*

*Impulse switch with integrated relay function ESR61NP-230V+UC*

*Multifunction impulse switch with integrated relay function ESR61M-UC*

*Noiseless impulse switch with integrated relay function ESR61SSR-230V with solid state relay*

*Impulse switch for installation in lighting fittings ES75-12..24V UC*

*Technical data electronic impulse switches, also for central control*

*Impulse switches with monostable relay IFE12-10TS, IFES12-20TS and IFED12-20*

*Impulse switches with bistable relay IFE12-10.11 and IFE12-20.13*

*Technical data impulse switches*
Without attracting particular attention by switching noise, the importance of electronic impulse switches with all their variants compared to conventional mechanical versions is growing steadily. They offer a highly reduced switching noise and further attractive advantages, such as multifunction, central control, zero passage switching for AC voltage, minimized control power demand and universal control voltage.

### Selection Table: Electronic Impulse Switches

**The Silent Revolution**

<table>
<thead>
<tr>
<th>Page</th>
<th>11-3</th>
<th>11-4</th>
<th>11-5</th>
<th>11-6</th>
<th>11-7</th>
<th>11-8</th>
<th>11-9</th>
<th>11-10</th>
<th>11-11</th>
<th>11-12</th>
<th>11-13</th>
<th>11-14</th>
</tr>
</thead>
</table>

| Modular device for mounting on DIN rail EN 60715 TH35, number of modules 18 mm each | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 |

| Built-in device for installation (e.g. flush-mounting box) |   |   |   |   |   |   |   |   |

| Number NO contacts (not potential free) | 1 | 2 | 1 | (I) | 1+1 | 2 | 1 | 4x1 | 1 | (I) | 1+1 | 2 |

| Number NC contacts potential free | 1 | 1-2 | 1 |   | 1-2 | 2 |

| Zero passage switching |   |   |   |   |   |   |   |   |

| Switching capacity 16 A/250 V AC |   |   |   |   |   |   |   |   |

| Switching capacity 10 A/250 V AC |   |   |   |   |   |   |   |   |


| Bistable relay(s) as relay contact(s) |   |   |   |   |   |   |   |   |

| Universal control voltage | UC |   |   |   |   |   |   |   |

| Additional control voltage 230 V |   |   |   |   |   |   |   |   |

| Control voltage 12 to 24 V UC |   |   |   |   |   |   |   |   |

| Supply voltage same as control voltage |   |   |   |   |   |   |   |   |

| Supply voltage 230 V |   |   |   |   |   |   |   |   |

| No standby loss |   |   |   |   |   |   |   |   |

| Low standby loss |   |   |   |   |   |   |   |   |

| Glow lamp current (mA) at the control input 230 V | 5 | 5 | 5 | 150 | 5 | 5 | 50 | 50 |

| Glow lamp current (mA) at the control input for universal voltage |   |   |   |   |   |   |   |   |

| Off delay, switch-off early warning function and permanent light by pushbutton can be switched on |   |   |   |   |   |   |   |   |

| Multi circuit switch |   |   |   |   |   |   |   |   |

| Group switch |   |   |   |   |   |   |   |   |

| Central control electrically isolated from the local control |   |   |   |   |   |   |   |   |

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* Applies to glow lamps with 110 V ignition voltage, for glow lamps with 90 V ignition voltage approx. ½ glow lamp current. ² Glow lamp current independent from the ignition voltage. ³ Depends on the set function. ⁴ Will automatically be switched on starting at 110V control voltage. ⁵ Control with 230 V or low-voltage possible. ⁶ If the control voltage is 230 V, but the phase conductor is different than the 230 V supply voltage, the universal voltage control input must be used due to the potential disconnection. ⁷ At the control input. ⁸ The relay contact can be open or closed when putting into operation. ⁹ It will be synchronised at first operation. ¹° The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated. ¹¹ Patented Duplex technology. When switched with 230 V 50 Hz zero passage switching is activated if L is connected to L and N to N. Then additional standby loss of only 0.1 watt.
ES12DX-UC

1 NO contact potential free 16 A/250 V AC. Incandescent lamp load up to 2000 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear.

Simply connect the neutral conductor to the terminal (N) and L to 1(L) for this. This results in an standby consumption of only 0.1 watt.

If the contact is used for controlling switching devices which do not perform zero passage switching themselves, (N) should not be connected because the additional closing delay otherwise causes the opposite effect.

Either universal control voltage 8 to 230 V UC at the control input +A1/A2
or 230 V with glow lamp current up to 5 mA at the control input -(L)/-A2(N).

The simultaneous use of two potentials at the control inputs is not permitted.

Very low switching noise.

No permanent power supply necessary, therefore no standby loss.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

By using a bistable relay coil power loss and heating is avoided even in the on mode.
The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

Same terminal connection as the electromechanical impulse switch S12-100-.

If this impulse switch is in a circuit, which is monitored by a FR12-230V mains disconnection relay, no additional base load is required. However, the monitoring voltage of the FR12-230V must be set to ‘max’. Control only through A1-A2.

The electronics does not have an internal power supply and therefore no power is consumed in any contact position. A control current flows only during a short control impulse of 0.2 seconds. This activates the microcontroller, reads the last switching state from the non-voltage memory, switches the bistable relay to its opposite state accordingly and rewrites the new switching state to memory.

Recommended retail prices excluding VAT.

Typical connections
Either universal control voltage 8 to 230 V UC
or control voltage 230 V with glow lamp current up to 5 mA

If N is connected, the zero passage switching is active.

Technical data page 11-15.
Housing for operating instructions GBA12, see accessories, chapter Z.
**ES12-200-UC**

2 NO contacts potential free 16 A/250 V AC. Incandescent lamp load up to 2000 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

**Either** universal control voltage 8 to 230 V UC at the control input +A1/A2

**or** 230 V with glow lamp current up to 5 mA at the control input -A2(N).

The simultaneous use of two potentials at the control inputs is not permitted.

Very low switching noise.

**No permanent power supply necessary, therefore no standby loss.**

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

Same terminal connection as the electromechanical impulse switch S12-200-.

Maximum current across both contacts 16 A for 230 V.

**If this impulse switch is in a circuit, which is monitored by a FR12-230V mains disconnection relay, no additional base load is required. However, the monitoring voltage of the FR12-230V must be set to ‘max’.**

The electronics does not have an internal power supply and therefore no power is consumed in any contact position. A control current flows only during a short control impulse of 0.2 seconds. This activates the microcontroller, reads the last switching state from the non-voltage memory, switches the bistable relay to its opposite state accordingly and rewrites the new switching state to memory.

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**Recommended retail prices excluding VAT.**

| ES12-200-UC | 2 NO contacts 16 A | EAN 4010312108048 | 44.90 €/pc. |
**ES12-110-UC**

1 NO contact + 1 NC contact potential free 16 A/250 V AC. Incandescent lamp load up to 2000 W. **No standby loss.**

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

**Either** universal control voltage 8 to 230 V UC at the control input +A1/A2

**or** 230V with glow lamp current up to 5 mA at the control input -(L)-A2(N).

The simultaneous use of two potentials at the control inputs is not permitted. Very low switching noise.

**No permanent power supply necessary, therefore no standby loss.**

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

Same terminal connection as the electromechanical impulse switch S12-110-.

**If this impulse switch is in a circuit, which is monitored by a FR12-230V mains disconnection relay, no additional base load is required. However, the monitoring voltage of the FR12-230V must be set to 'max'.**

The electronics does not have an internal power supply and therefore no power is consumed in any contact position. A control current flows only during a short control impulse of 0.2 seconds. This activates the microcontroller, reads the last switching state from the non-voltage memory, switches the bistable relay to its opposite state accordingly and rewrites the new switching state to memory.

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**Recommended retail prices excluding VAT.**
ESR12NP-230V+UC

1 NO contact not potential free 16 A/250 V AC. Incandescent lamp load up to 2300W. Off delay impulse switch with switch-off early warning and pushbutton permanent light switchable.

Standby loss 0.5 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

Zero passage switching to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

Control voltage 230 V. In addition electrically isolated universal voltage from 8 to 230 V UC. Supply voltage and switching voltage 230 V.

Very low switching noise. If the function ESV is set, definitely variable off-delay time RV from 2 to 120 minutes, settable by minute scale.

Contact position indication with two LEDs. This starts blinking after 15 seconds in case of an inhibited pushbutton (not if the function ER is set).

Glow lamp current up to 150 mA only at the control input 230 V independent from ignition voltage (not if the function ER is set).

Relays with suitable functions to feed back the switching voltage signal of a dimmer switch.

In case of a power failure the system is disconnected in a preset sequence.

The functions ES, ESV or ER are selectable by means of a rotary switch.

ES = Impulse switch
ER = Switching relay
ESV = Impulse switch with off delay. The impulse switch automatically disconnects after the set delay is timed out if a manual OFF command has not been given. Infinitely variable time range up to 120 minutes.

ESV = If switch-off early warning RV is set the stairwell lighting starts flickering approximately 30 seconds before timeout at repeated shorter time intervals. During this process reset is possible.

ESV = If pushbutton permanent light RV is set permanent light can be switched on by pressing longer than 1 sec. This switches off automatically after 2 hours or by an operation longer than 2 seconds.

ESV = If both switch-off early warning function and permanent light by pushbutton set, the switch-off early warning function is activated before switching off the permanent light.

If this impulse switch with integrated relay function is in a circuit, which is monitored by a FR12-230V mains disconnection relay, no additional base load is required. However, the monitoring voltage of the FR12-230V must be set to ‘max’.

Typical connection

Recommended retail prices excluding VAT.
If N is connected, the zero passage switching is active.

ESR12DDX-UC
1+1 NO contacts potential free 16 A/250 V AC. Incandescent lamp load up to 2000 W. Standby loss 0.03–0.4 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 1(L) and/or 3(L) for this. This results in an additional standby consumption of only 0.1 Watt.

Universal control voltage 8 to 230 V UC. Supply voltage is same as the control voltage.

The functions are set with the keys MODE and SET as described in the operating instructions. They are indicated on the display and can be blocked if required.

The accrued switch-on time is continuously displayed. First in hours (h), then in months (m) with 1 digit after the decimal point.

By using bistable relays coil power loss and heating is avoided even in the on mode.

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

Only impulse switch functions: After a power failure the system is disconnected in a definite sequence or the switch position is kept depending on the setting (then + on the display next to function abbreviations). Settings under RSM in the menu guidance. Furthermore, when using these functions, with the keys MODE and SET, the control inputs A1 and A3 can be defined as central control inputs.

ZA1 = ‘central off’ with A1, local with A3; ZE1 = ‘central on’ with A1, local with A3; ZOO = no central control. ‘Central on’ with A1, ‘central off’ with A3. No local control refer to function RS.

Relays with suitable functions to feed back the switching voltage signal of a dimmer switch. From 110V control voltage and in the settings 2S, WS, SS and GS glow lamp current up to 5mA, dependent on the ignition voltage.

With the keys MODE and SET you can select amongst 18 functions:

OFF = Permanent OFF
2xS = 2-fold impulse switch with 1 NO contact each, control inputs A1 and A3
2S = Impulse switch with 2 NO contacts
WS = Impulse switch with 1 NO contact and 1 NC contact
SS1 = Impulse multi circuit switch 1+1 NO contacts for switching sequence
   0 - contact 1(1-2) - contact 2(3-4) - contacts 1+2
SS2 = Impulse multi circuit switch 1+1 NO contacts for switching sequence
   0 - contact 1 - contacts 1+2 - contact 2
SS3 = Impulse multi circuit switch 1+1 NO contacts for switching sequence
   0 - contact 1 - contacts 1+2 - contact 2
GS = Impulse group switch 1+1 NO contacts for switching sequence
   0 - contact 1 - 0 - contact 2
RS = Switch with 2 NO contacts, with A1 = set control input and A3 = reset control input
2xR = 2-fold switching relay with 1 NO contact each, control inputs A1 and A3
2R = Switching relay with 2 NO contacts
WR = Switching relay with 1 NO contact and 1 NC contact
RR = Switching relay/(closed-circuit current relay) with 2 NC contacts
EAW = Pulse relay for fleeting NO contact and fleeting NC contact with 1+1 NO contacts, wiping time 1 sec each
EW = Pulse relay for fleeting NO contact with 1 NO contact and 1 NC contact, wiping time 1 sec
AW = Impulse relay fleeting NC contact with 1 NO contact and 1 NC contact, wiping time 1 sec
GR = Group relay 1+1 NO contacts (relay with alternating closing contacts)
ON = Permanent ON

The control inputs A1 and A3 have the same functions except for 2xS, 2xR and RS, if not used as central control inputs.

After setting the required function, the function can be blocked.

An arrow on the right of the abbreviation indicates the blocking status.
**ES12Z-200-UC**

2 NO contacts potential free 16 A/250 V AC. Incandescent lamp load up to 2000 W. Standby loss 0.03–0.4 watt only. Central control priorities selectable.

Modular device for DIN–EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep. State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

Local universal control voltage 8 to 230 V UC.

In addition control inputs 8 to 230 V UC central ON and central OFF, electrically isolated from the local input. Supply voltage same as the local control voltage. Very low switching noise. Glow lamp current starting at 110 V control voltage up to 50 mA in positions 1 to 3 and 5 to 7 of the rotary switch.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

Maximum current across both contacts 16 A for 230 V. Contact position indication with LED. This starts blinking after 15 seconds in case of an inhibited pushbutton, not in position 4+8 of the rotary switch.

**With the upper rotary switch** this impulse switch can be partly or completely excluded from central control:

- ZE+ZA = ‘Central ON’ and ‘Central OFF’ are active. You can select a response delay of 0, 1, 2 or 3 seconds for ‘Central ON’. ZE = Only ‘Central ON’ is active. You can select a response delay of 0, 1, 2 or 3 seconds. ZA = Only ‘Central OFF’ is active.

The lower rotary switch sets several priorities. These determine which other control inputs are inhibited as long as another control input is excited permanently.

Furthermore, here it is decided if the switch position should be kept or not after a power failure:

- OFF = Permanent OFF, ON = Permanent ON
- 1 and 5 = No priority. Also if central control inputs are excited permanently, it is possible to operate the device by pushing a local push-button. The last central command is executed. This is the setting ex factory.
- 2 and 6 = Priority for central ON and OFF. Local push-buttons are temporarily inhibited. However, continuous excitation central OFF has priority over continuous excitation central ON.
- 3 and 7 = Priority for central ON and OFF. Local push-buttons are temporarily inhibited. However, continuous excitation central ON has priority over continuous excitation central OFF.
- 4 and 8 = Priority for permanently excited local push-button. In the meantime central commands are not executed. In these positions a glow lamp current is not permitted.

**ES12Z-110-UC**

1 NO contact + 1 NC contact potential free 16 A/250 V AC. Incandescent lamp load up to 2000 W. Standby loss 0.03–0.4 watt only. Central control priorities selectable.

All functions same as ES12Z-200, but with 1 NO contact and 1 NC contact.
4-FOLD IMPULSE SWITCH WITH INTEGRATED RELAY FUNCTION ESR12Z-4DX-UC, ALSO FOR CENTRAL CONTROL AND GROUP CONTROL

**ESR12Z-4DX-UC**

With 4 independent contacts, 1 NO contact each potential free, 16 A/250 V AC, incandescent lamp load up to 2000 W. Standby loss 0.03–0.4 watt only.

Modular devices for DIN-EN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep. Patented Eltako Duplex technology (DX) allows you to switch 3 of the 4 normally potential free contacts in zero passage switching when 230 V A/C voltage 50 Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and the phase conductors to 1(L), 3(L) or 5(L). This results in an additional standby consumption of only 0.1 watt. If the channels are used to control switchgear that has no zero passage switching, (N) should not be connected, otherwise the additional off-delay would have the opposite effect.

Local universal control voltage 8 to 230 V UC. In addition universal control inputs central ON and central OFF for 8 to 230 V UC, electrically isolated from the local inputs.

**With additional group control inputs** ON and OFF for 8..230 V UC. Same potential like the local control inputs. Groups of these impulse switches can be controlled separately using the group control inputs. Supply voltage like the local control voltage. By using a bistable relay coil power loss and heating is avoided even in the on mode. The switched consumers may not be connected to the mains before the short automatic synchronisation after installation has terminated. Central commands always have priority, local control inputs are blocked as long as central commands are activated. In case of a power failure the system is disconnected in a defined mode.

**With the upper rotary switch** this impulse switch with integrated relay function can be partly or completely excluded from central control: ZE+ZA = central ON and central OFF ZE = central ON only ZA = central OFF only ZE+ZA = no central control

Use the middle rotary switch to preselect the functions of the lower rotary switch for **ES** and **ER**. Use **ER** to select the clamp functions. If BM is selected, control can be exerted by a motion detector. Not suitable to feed back the switching voltage signal of a dimmer switch. Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose. With the lower rotary switch 18 different functions may be selected:

- **ON** = Permanent ON
- **4xS** = 4-fold impulse switch with 1 NO contact each, control inputs A1, A3, A5 and A7
- **4xR** = 4-fold switching relay with 1 NO contact each, control inputs A1, A3, A5 and A7
- **4S** = Impulse switch with 4 NO contacts
- **4R** = Switching relay with 4 NO contacts
- **25/WS** = Impulse switch with 3 NO contacts and 1 NC contact
- **25/WR** = Switching relay with 3 NO contacts and 1 NC contact
- **2WS** = Impulse switch with 2 NO contacts and 2 NC contacts
- **2WR** = Switching relay with 2 NO contacts and 2 NC contacts
- **SSa** = Impulse multi circuit switch 2+2 NO contacts for switching sequence 0-2-2+4-2+4+6; check back signal B
- **SSb** = Impulse multi circuit switch 2+2 NO contacts for switching sequence 0-2-2+4+6+2+4+6+8
- **SSa** = Impulse group switch. Switching sequence 0-2-0-4-0-6-0; check back signal B
- **SSb** = Impulse group switch. Switching sequence 0-2-0-4-0-6-0; check back signal B
- **GS** = Group relay 1+1+1 NO contacts
- **3xS+** = 3-fold impulse switch with 1 NO contact each + check back signal 8, control inputs A1, A3 and A5
- **3xR+** = 3-fold switching relay with 1 NO contact each + check back signal 8, control inputs A1, A3 and A5

**Function rotary switches**

Standard setting ex works.

**Typical circuit with central control and group control**

If N is connected, the zero passage switching is active at the contacts 1-2, 3-4 and 5-6.

Technical data page 11-15.

**Housing for operating instructions GBA12**, see accessories, chapter 2.

**ESR12Z-4DX-UC**

4 x 1 NO contact 16 A  
EAN 4010312108130  
94,90 €/pc.

Recommended retail prices excluding VAT.
**ES61-UC**

1 NO contact potential free 10 A/250 V AC. Incandescent lamp load up to 2000 W. No standby loss.

For installation. 45 mm long, 45 mm wide, 18 mm deep.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

*Either* universal control voltage 8 to 230 V UC at the control input +A1/-A2

*or* 230 V with a glow lamp current up to 5 mA at the control input +230V(L)/-A2(N).

Using two potentials simultaneously at the control inputs is not permitted.

Very low switching noise.

*No permanent power supply necessary, therefore no standby loss.*

*By using a bistable relay coil power loss and heating is avoided even in the on mode.*

The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

*If this impulse switch is in a circuit, which is monitored by a FR12-230V mains disconnection relay, no additional base load is required. However, the monitoring voltage of the FR12-230V must be set to 'max'.*

The electronics does not have an internal power supply and therefore no power is consumed in any contact position. A control current flows only during a short control impulse of 0.2 seconds. This activates the microcontroller, reads the last switching state from the non-voltage memory, switches the bistable relay to its opposite state accordingly and rewrites the new switching state to memory.

**Recommended retail prices excluding VAT.**

| ES61-UC | 1 NO contact 10 A | EAN 4010312107966 | 42,00 €/pc. |
**ESR61NP-230V+UC**

1 NO contact not potential free 10 A/250 V AC, incandescent lamp load up to 2000 W. Off delay impulse switch with switch-off early warning and pushbutton permanent light switchable. Standby loss 0.7 watt only.

For installation. 45 mm long, 46 mm wide, 18 mm deep.

**Zero passage switching** to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

Control voltage 230V. In addition electrically isolated universal control voltage from 8 to 230 V UC. Supply voltage and switching voltage 230 V. Very low switching noise. Variable time range up to 120 minutes in the function ESV. At the control input pushbuttons with a glow lamp current up to 50 mA can be connected.

In case of a power failure the system is disconnected in a preset sequence.

If the timing period is set to minimum in the function ESV, the release delay is switched off. The standard impulse switch function ES is then set. The function ER is selectable. If the function ER is selected a glow lamp current is not permitted. Only the control input A1-A2 should be used.

**When set to the function ER this device is suitable to feed back the switching voltage signal of a dimmer switch.**

**If switch-off early warning function** is switched on, the light starts flickering approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.

**If the permanent light function** is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 2 hours or by pressing the pushbutton for longer than 2 seconds.

If both switch-off early warning function and permanent light by pushbutton are set, the switch-off early warning function is activated before switching off the permanent light.

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**Recommended retail prices excluding VAT.**

| ESR61NP-230V+UC | 1 NO contact 10 A | EAN 4010312107911 | €42.40/pc. |
MULTIFUNCTION IMPULSE SWITCH WITH INTEGRATED RELAY FUNCTION ESR61M-UC

ESR61M-UC

1+1 NO contacts potential free 10 A/250 V AC. Incandescent lamp load up to 2000 W.
No standby loss.

For installation, 45 mm long, 45 mm wide, 32 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Universal control voltage 8 to 230 V UC.

No permanent power supply necessary, therefore no standby loss.
By using bistable relays coil power loss and heating is avoided even in the on mode.
The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.
The functions of the second rotary switch are preselected using the rotary switch ES/ER.
The setting ER selects the function in brackets. 10 different functions are selectable.

2S = Impulse switch with 2 NO contacts
(2R) = Switching relay with 2 NO contacts
WS = Impulse switch with 1 NO contact and 1 NC contact
(WR) = Switching relay with 1 NO contact and 1 NC contact
SS1 = Impulse multi circuit switch 1+1 NO contacts for switching sequence
0 - contact 1(1-2) - contact 2(3-4) - contacts 1+2
(RR) = Switching relay (closed-circuit current relay) with 2 NC contacts
SS2 = Impulse multi circuit switch 1+1 NO contacts for switching sequence
0 - contact 1 - contacts 1+2 - contact 2
(EW) = Impulse relay for fleeting NO contact with 1 NO contact and 1 NC contact, wiping time 1 sec
GS = Impulse group switch 1+1 NO contacts for switching sequence 0 - contact 1 - 0 - contact 2
(GR) = Group relay 1+1 NO contacts (relay with alternating closing contacts)
This relay is not suitable to feed back the switching voltage signal of a dimmer switch. Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.

The electronics does not have an internal power supply and therefore no power is consumed in any contact position. A control current flows only during a short control impulse of 0.2 seconds. This activates the microcontroller, reads the last switching state from the non-voltage memory, switches the bistable relay to its opposite state accordingly and rewrites the new switching state to memory.

Recommended retail prices excluding VAT.

| ESR61M-UC | 1+1 NO contacts 10 A | EAN 4010312108079 | 54.90 €/pc. |

Technical data page 11-15.
ESR61SSR-230V

Noiseless solid state relay not potential free, 400 Watt, off delay impulse switch with switch-off early warning and pushbutton permanent light switchable. Standby loss 0.3 watt only.

For installation, 45 mm long, 45 mm wide, 18 mm deep.
Supply, switching and control voltage 230V.
Zero passage switching.
In case of a power failure the system is disconnected in a preset sequence.
In the ER function the relay switches back on when the power is restored and the control input is active.
It is not permitted to apply a glow lamp current to the control input.
With automatic electronic overtemperature switch-off.
At a load of < 1W a GLE must be switched in parallel to the load.
Use the top rotary switch to select the required function of this impulse switch:

ER = switching relay
ESV = impulse switch. Possibly with off delay, then
+ = ESV with pushbutton permanent light
+ = ESV with switch-off early warning
+ = ESV with pushbutton permanent light and switch-off early warning

The LED flashes when the rotary switch reaches a new setting range to assist you to find the require position with certainty.
The LED lights up permanently when the relay is switched on.

When the pushbutton permanent light is switched on, set the LED to permanent light by pressing the pushbutton for longer than 1 second. This is indicated by the LED flickering briefly. After 2 hours, the permanent light switches off automatically or it can be switched off previously by briefly pressing the pushbutton.

If the switch-off early warning is switched on, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.
During the switch-off early warning, the light can be switched back on by briefly pressing the pushbutton.
If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.
The function ESV on the bottom rotary switch sets the off delay from 2 to 120 minutes.
In setting ∞ normal impulse switch function ES without off delay, without pushbutton permanent light and without switch-off early warning.
In the ER function a switch-on wipe time can be set between 2 and 120 seconds. On expiry of the wipe time the relay switches off automatically.
In setting ∞ default relay function ER without wipe time.

Recommended retail prices excluding VAT.

| ESR61SSR-230V | Impulse switch with integrated relay function with SSR | EAN 4010312109786 | 44.70 €/pc. |
IMPULSE SWITCH ES75-12..24V UC FOR INSTALLATION IN LIGHTING FITTINGS

ES75-12..24V UC

For installation in lighting fittings. 1 NO contact not potential free 10 A/250 V AC. Standby loss 1 watt only.

Built-in device for installation. 85 mm long, 40 mm wide, 28 mm deep.

With integrated transformer to galvanically separate the control circuit from the switching circuit to comply with the requirements for safety extra low voltage (SELV) to EN 60669-2-2. As of production week 18/18, compliance is fulfilled with the safety requirements of 2x MOPP to EN 60601-1. Activation by internal voltage or external control voltage of 12 to 24 V UC, control current 10 mA at 24 V. Continuous power supply 230 V. A circuit breaker of max. 10 A is required.

Incandescent lamps and halogen lamps load up to 500 W\textsuperscript{1} and fluorescent lamps with conventional ballast units in lead-lag circuit up to 1000 VA. Fluorescent lamps with conventional ballast units parallel compensated 300 VA.

Temperatures at the mounting location between -20°C and +50°C.

Min. command pulse duration/command pause 20/300 ms.

Connections on the low voltage side: 4-pole pin receptacle for STOCKO MKF 13264-6-0-404 plug, 230 V connections: 6-pole terminal strip with plug-in terminals. max. conductor cross section 2.5 mm\textsuperscript{2}. One STOCKO plug comes with each device.

\textsuperscript{1} For lamps with 150 W max.

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\textbf{ES75-12..24V UC} \hspace{1cm} 1 NO contact 10 A \hspace{1cm} EAN 4010312101063 \hspace{1cm} 41,70 €/pc.
### TECHNICAL DATA ELECTRONIC IMPULSE SWITCHES, ALSO FOR CENTRAL CONTROL

#### Contacts

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<thead>
<tr>
<th>Type</th>
<th>ESI2DX a)</th>
<th>ESR2NP</th>
<th>ESI2DDX b)</th>
<th>ES12Z b)</th>
<th>ESR22-4DX b)</th>
<th>ESI1-110 a)</th>
<th>ESR61M a)</th>
<th>ESR61NP a)</th>
<th>ESR61SSR</th>
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</thead>
<tbody>
<tr>
<td>Contact material/contact gap</td>
<td>AgSnO2/0.5 mm</td>
<td>AgSnO2/0.5 mm</td>
<td>AgSnO2/0.5 mm</td>
<td>AgSnO2/0.5 mm</td>
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<td>AgSnO2/0.5 mm</td>
<td>AgSnO2/0.5 mm</td>
<td>AgSnO2/0.5 mm</td>
<td>Opto Triac</td>
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<tr>
<td>Spacing of control connections/contact control connections C1-C2 or A1-A2/contact</td>
<td>6 mm</td>
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<td>Test voltage connection/contact</td>
<td>ESI2-200/100: 100 V</td>
<td>–</td>
<td>4000 V</td>
<td>4000 V</td>
<td>ESR61M: 2000 V</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Test voltage connection C1-C2 or A1-A2/contact</td>
<td>4000 V</td>
<td>2000 V</td>
<td>4000 V</td>
<td>4000 V</td>
<td>2000 V</td>
<td>4000 V</td>
<td>2000 V</td>
<td>4000 V</td>
<td>–</td>
</tr>
<tr>
<td>Rated switching capacity</td>
<td>16 A/250 V AC</td>
<td>16 A/250 V AC</td>
<td>16 A/250 V AC</td>
<td>16 A/250 V AC</td>
<td>10 A/250 V AC</td>
<td>10 A/250 V AC</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

#### Incandescent lamp and halogen lamp

- Load: 230 V, I_{on} ≤ 70 A/10 ms
- Power: 2000 W
- Maximum current across both contacts: 16 A for 230 V

#### Fluorescent lamp

- Load with KEV* shunt-compensated or with EKV*: 500 VA
- Load with KEV*: 1000 VA
- Standby loss: 0.5 W

#### Electronics

- Standby loss: 0.3 μF
- Standby loss: 6 mm

#### Screw head

- Slotted/crosshead, pozidriv

#### Type of enclosure/terminals

- IP50/IP20
- IP30/IP20

### To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.
IMPULSE SWITCHES WITH MONOSTABLE RELAY 10 A/250 V AC

OVERVIEW

<table>
<thead>
<tr>
<th>Type</th>
<th>Switching type</th>
<th>Control voltage</th>
<th>Current consumption</th>
<th>Nominal switching current/voltage</th>
<th>Pushbutton type</th>
<th>Advantages and application</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFE12-10TS</td>
<td>Off-switch</td>
<td>12 V AC</td>
<td>5 mA</td>
<td>10 A/250 V AC</td>
<td>Without glow lamp</td>
<td>Impulse switch with 1 NO contact</td>
</tr>
<tr>
<td>IFES12-20TS</td>
<td>Impulse multicircuit switch</td>
<td>12 V AC</td>
<td>5 mA</td>
<td>10 A/250 V AC</td>
<td>Without glow lamp</td>
<td>Multicircuit switch sequence 0/1/2/1+2/0</td>
</tr>
<tr>
<td>IFED12-20</td>
<td>Double off-switch</td>
<td>12 V AC</td>
<td>5 mA</td>
<td>10 A/250 V AC</td>
<td>Without glow lamp</td>
<td>Two separately controllable remote switch in one device; space-saving and well suited for new distributions</td>
</tr>
</tbody>
</table>

IFE...

Impulse switches with monostable relay 10 A/250 V AC

No annoying switching noises.
For DIN rail and screw fastening.
100% duty cycle.
Increased insensitivity to unsafe contact with the button.
Minimal power consumption.
According to DIN VDE 0637 and EMC directive.
Shock protected.

Dimension drawing in mm

Wiring diagram

Max. fuse 10 A
Note: the buttons must be connected to T and optionally to A1 or A2. The remote switches with monostable relay are not suitable for operation with illuminated buttons.

<table>
<thead>
<tr>
<th>Type</th>
<th>Current consumption</th>
<th>Nominal switching current/voltage</th>
<th>Pushbutton type</th>
<th>Advantages and application</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFE12-10TS</td>
<td>5 mA</td>
<td>10 A/250 V AC</td>
<td>Without glow lamp</td>
<td>Impulse switch with 1 NO contact</td>
</tr>
<tr>
<td>IFES12-20TS</td>
<td>5 mA</td>
<td>10 A/250 V AC</td>
<td>Without glow lamp</td>
<td>Multicircuit switch sequence 0/1/2/1+2/0</td>
</tr>
<tr>
<td>IFED12-20</td>
<td>5 mA</td>
<td>10 A/250 V AC</td>
<td>Without glow lamp</td>
<td>Two separately controllable remote switch in one device; space-saving and well suited for new distributions</td>
</tr>
<tr>
<td>HPI</td>
<td>Mounting plate with screws</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.

IFE12-10TS 1 NO contact 10 A EAN 4010312107379 18,50 €/pc.
IFE12-20TS 1+1 NO contact 10 A EAN 401031207430 25,00 €/pc.
IFED12-20 2x1 NO contacts 10 A EAN 4010312107454 25,00 €/pc.
HPI Mounting plate with screws EAN 4010312901663 1,10 €/pc.
# IMPULSE SWITCHES WITH BISTABLE RELAY 10 A/250 V AC

## OVERVIEW

<table>
<thead>
<tr>
<th>Type</th>
<th>Switching type</th>
<th>Control voltage</th>
<th>Current consumption</th>
<th>Nominal switching current/voltage</th>
<th>Pushbutton type</th>
<th>Advantages and application</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFE12-10.11</td>
<td>Off-switch</td>
<td>12 V AC</td>
<td>1 mA</td>
<td>10 A/250 V AC</td>
<td>With or without glow lamp&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Use with illuminated buttons: The button lighting is always on.</td>
</tr>
<tr>
<td>IFE12-20.13</td>
<td>Double off-switch</td>
<td>12 V AC</td>
<td>1 mA</td>
<td>10 A/250 V AC</td>
<td>without glow lamp</td>
<td>two separately controllable remote switch in one device</td>
</tr>
</tbody>
</table>

<sup>1</sup>Suitable for all illuminated button types up to a maximum glow lamp current of 50 mA.

---

### IFE..

**Impulse switches with bistable relay 10 A/250 V AC**

#### Dimension drawing in mm

![Dimension drawing](image)

**IFE12-10.11**

For illuminated and non-illuminated buttons, button lighting always on.

![IFE12-10.11 diagram](image)

1 NO contact 10 A

EAN 4010312107386

25,60 €/pc.

IFE12-20.13

2x1 NO contacts 10 A

EAN 4010312107461

35,50 €/pc.

HP1

Mounting plate with screws

EAN 4010312901663

1,10 €/pc.

---

Technical data page 11-18.

Recommended retail prices excluding VAT.
<table>
<thead>
<tr>
<th>Type</th>
<th>IFE12-10TS</th>
<th>IFE12-20TS</th>
<th>IFE12-10.11</th>
<th>IFE12-20.13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control part</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated voltage</td>
<td>12 V AC (10..20 V AC)</td>
<td>12 V AC (10..20 V AC)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time on</td>
<td>100%ED</td>
<td>100%ED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum command time</td>
<td>20 ms</td>
<td>20 ms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switching frequency</td>
<td>180/min</td>
<td>180/min</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Load part</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated switching capacity</td>
<td>10A/250V AC</td>
<td>10A/250V AC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incandescent lamp and halogen lamp 230V, I on ≤ 70A/10ms</td>
<td>2000 W</td>
<td>1200 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVG* and energy saving lamps ESL</td>
<td>1000 VA, max. 5 pcs in parallel</td>
<td>400 VA, max. 5 pcs in parallel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* in lead-lag or non-compensated</td>
<td>1000 VA</td>
<td>400 VA, max. 3 pcs in parallel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* shunt-compensated or with EVG*</td>
<td>400 VA</td>
<td>not approved</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connections</td>
<td>Socket clamp 2.5 mm² for control input and load output</td>
<td>Head screw terminal 2.5 mm² for load input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max./min. temperature at mounting location</td>
<td>+35°C/-5°C</td>
<td>+35°C/-5°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 00</td>
<td>IP 00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting position</td>
<td>All positions</td>
<td>All positions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting method</td>
<td>For quick fastening on mounting rails or for screw fastening using holding plate and screws HP1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In case of power failure</td>
<td>Defined OFF (not IFED12)</td>
<td>The switch position is retained in the event of a power failure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* EVG = electronic ballast units; KVG = conventional ballast units
1) Switching sequence of the multicircuit switch: 0/1/2/1+2/0
2) For lamps with 150 W max.
3) Multicircuit switch and switch double: sum of both contacts max. 2500 VA.

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SWITCHING AND CONTROL PROFESSIONALS – ELECTRONIC SWITCHING RELAYS, CONTROL RELAYS AND COUPLING RELAYS.
Electronic switching relays, control relays and coupling relays

Selection table switching relays, control relays and coupling relays 12-2

Switching relay ER12DX-UC 12-3

Switching relay ER12-200-UC and ER12-110-UC 12-4

Switching and control relays ER12-001-UC and ER12-002-UC 12-5

NEW Switching relay ER12SSR-UC 12-6

Impulse switch with integrated relay function ESR12NP-230V+UC 12-7

Digital settable multifunction impulse switch with integrated relay function ESR12DDX-UC 12-8


NEW Coupling relay KRW12DX-UC 12-10

Switching relay ER61-230V and impulse switch with integrated relay function ESR61NP-230V+UC 12-11

Multifunction impulse switch with integr. relay function ESR61M-UC 12-12

Noiseless impulse switch with integrated relay function ESR61SSR-230V with solid state relay 12-13

NEW Isolating relays ETR61-230V and ETR61NP-230V 12-14

Isolating relay ETR61NP-230V with window contact FK and window contact FK 12-15

Technical data electronic switching relays, control relays and coupling relays 12-16
**Professional hybrid relays combine the advantages of nonwearing electronic control with high switching capacity of special relays.**

We also use mainly bistable relays. Thus preventing coil power loss even in the on mode. This increases energy efficiency and reduces heating in the switch cabinet.

---

### Selection Table: Switching Relays, Control Relays and Coupling Relays

**Switching and Control Professionals**

<table>
<thead>
<tr>
<th>Page</th>
<th>12-3</th>
<th>12-4</th>
<th>12-5</th>
<th>12-6</th>
<th>12-7</th>
<th>12-8</th>
<th>12-9</th>
<th>12-10</th>
<th>12-11</th>
<th>12-12</th>
<th>12-13</th>
<th>12-14</th>
<th>12-15</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modular device for mounting on DIN rail EN 60715 TH35, number of modules 18 mm each</strong></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>½</td>
<td>1</td>
<td></td>
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<tr>
<td><strong>Built-in device for installation (e.g. flush-mounting box)</strong></td>
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</tr>
<tr>
<td><strong>Number NO contacts or changeover contact (W) potential free (not potential free)</strong></td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1W</td>
<td>2W</td>
<td>1</td>
<td>(L)</td>
<td>1+1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Number NC contacts potential free</strong></td>
<td>1</td>
<td>1-2</td>
<td>2</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Zero passage switching</strong></td>
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<tr>
<td><strong>Switching capacity 16 A/250 V AC</strong></td>
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<tr>
<td><strong>Switching capacity 10 A/250 V AC</strong></td>
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<tr>
<td><strong>Bistable relay(s) as relay contact(s)</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>Switchable between the functions for impulse switches and switching relays</strong></td>
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<tr>
<td><strong>Universal control voltage</strong></td>
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<td></td>
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</tr>
<tr>
<td><strong>(additional) control voltage 230 V</strong></td>
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<td></td>
<td></td>
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<tr>
<td><strong>Supply voltage same as control voltage</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Supply voltage 230 V</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>No standby loss</strong></td>
<td></td>
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<tr>
<td><strong>Low standby loss</strong></td>
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<td></td>
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</tr>
<tr>
<td><strong>Glow lamp current (mA) at the control input 230 V</strong></td>
<td>150</td>
<td>5</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

---

8 Glow lamp current independent from the ignition voltage.
9 Depends on the set function.
10 If the control voltage is 230 V, but the phase conductor is different from the 230 V supply voltage, the universal voltage control input must be used.
11 At the control input.
12 The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.
13 The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.
14 Patented duplex technology: When switching 230 V/50 Hz the contact switching takes place in the zero passage when L is connected to (L) and N to (N). The standby loss is then 0.1 Watt.
SWITCHING RELAY ER12DX-UC

ER12DX-UC

1 NO contact potential free 16 A/250 V AC, incandescent lamp load up to 2000 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 1(L) for this. This gives an standby consumption of only 0.1 watt.

If the contact is used for controlling switching devices which do not perform zero passage switching themselves, (N) should not be connected because the additional closing delay otherwise causes the opposite effect.

Universal control voltage 8 to 230 V UC.

Very low switching noise.

Contact position indicator with LED.

Same terminal connection as electromechanical switching relay R12-100-.

By using a bistable relay coil power loss and heating is avoided even in the on mode.

The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

This relay is not suitable to feed back the switching voltage signal of a dimmer switch.

Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.

The electronics does not have an internal power supply and therefore no standby loss. The microcontroller is activated when the control contact closes. This switches the bistable relay to the correct direction. The bistable relay switches back either when the control contact opens or when the control voltage falls.

Recommended retail prices excluding VAT.
SWITCHING RELAY ER12-200-UC AND ER12-110-UC

**ER12-200-UC**

2 NO contacts potential free 16 A/250 V AC, incandescent lamp load up to 2000 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep. State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays. Universal control voltage 8 to 230 V UC. Very low switching noise. Contact position indicator with LED. Maximum current across both contacts 16 A for 230 V. Same terminal connection as electromechanical switching relay R12-200-.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

**This relay is not suitable to feed back the switching voltage signal of a dimmer switch. Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.**

The electronics does not have an internal power supply and therefore no standby loss. The microcontroller is activated when the control contact closes. This switches the bistable relay to the correct direction. The bistable relay switches back either when the control contact opens or when the control voltage falls.

**ER12-200-UC**

2 NO contacts 16 A EAN 4010312205433

42.60 €/pc.

---

**ER12-110-UC**

1 NO + 1 NC contact potential free 16 A/250 V AC, incandescent lamp load up to 2000 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep. State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays. Universal control voltage 8 to 230 V UC. Very low switching noise. Contact position indicator with LED. Same terminal connection as electromechanical switching relay R12-110-.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

**This relay is not suitable to feed back the switching voltage signal of a dimmer switch. Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.**

The electronics does not have an internal power supply and therefore no standby loss. The microcontroller is activated when the control contact closes. This switches the bistable relay to the correct direction. The bistable relay switches back either when the control contact opens or when the control voltage falls.

**ER12-110-UC**

1 NO contact + 1 NC contact 16 A EAN 4010312205440

42.60 €/pc.
SWITCHING RELAYS ER12-001-UC AND ER-002-UC

ER12-001-UC

1 CO contact potential free 16 A/250 V AC, incandescent lamp load up to 2000 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays. Universal control voltage 8 to 230 V UC.
Low control power demand, therefore substantially less heat is generated.
Safe disconnection to VDE 0106, Part 101; therefore, these devices can also be used as coupling relays.
Integrated free-wheeling anti-surge diode (A1 = +, A2 = -).
By using a bistable relay coil power loss and heating is avoided even in the on mode.
The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

This relay is not suitable to feed back the switching voltage signal of a dimmer switch.
Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.

The electronics does not have an internal power supply and therefore no standby loss.
The microcontroller is activated when the control contact closes. This switches the bistable relay to the correct direction. The bistable relay switches back either when the control contact opens or when the control voltage falls.

ER12-001-UC

1 CO contact 16 A
EAN 4010312205365
41,10 €/pc.

ER12-002-UC

2 CO contacts potential free 16 A/250 V AC, incandescent lamp load up to 2000 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Low switching noise. Contact position indicator with LED.
Integrated free-wheeling anti-surge diode (A1 = +, A2 = -).
By using a bistable relay coil power loss and heating is avoided even in the on mode.
The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

This relay is not suitable to feed back the switching voltage signal of a dimmer switch.
Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.

The electronics does not have an internal power supply and therefore no standby loss.
The microcontroller is activated when the control contact closes. This switches the bistable relay to the correct direction. The bistable relay switches back either when the control contact opens or when the control voltage falls.

ER12-002-UC

2 CO contacts 16 A
EAN 4010312205372
49,60 €/pc.
ER12SSR-UC

Noiseless solid state relay potential free, 400 Watt. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
Universal control voltage: 8 to 230 V UC.
Contact position indication with LED.
Switching voltage 230 V AC.
Zero passage switching.
With automatic overtemperature shutdown.
With a load < 1W a GLE must be switched parallel to the load.

Recommended retail prices excluding VAT.
ESR12NP-230V+UC

1 NO contact not potential free 16 A/250 V AC, incandescent lamp load up to 2300 W. Off delay impulse switch with switch-off early warning and pushbutton permanent light switchable.

Standby loss 0.5 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

**Zero passage switching** to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

Control voltage 230 V. In addition electrically isolated universal voltage from 8 to 230 V UC.

Supply voltage and switching voltage 230 V.

Very low switching noise. If the function ESV is set, definitely variable off-delay time RV from 2 to 120 minutes, settable by minute scale.

Contact position indication with two LEDs. This starts blinking in case of a blocked pushbutton (not if the function ER is set).

Glow lamp current up to 150 mA only at the control input 230 V independent from ignition voltage (not if the function ER is set).

Relays with suitable functions to feed back the switching voltage signal of a dimmer switch.

In case of a power failure the system is disconnected in a preset sequence.

The functions ES, ESV or ER are selectable by means of a rotary switch.

ES = Impulse switch
ER = Switching relay
ESV = Impulse switch with off delay. The impulse switch automatically disconnects after the set delay is timed out if a manual OFF command has not been given. Infinitely variable time range up to 120 minutes.

ESV = If switch-off early warning is set the stairwell lighting starts flickering approximately 0 seconds before timeout at repeated shorter time intervals. During this process reset is possible.

ESV = If push-button permanent light is set permanent light can be switched on by pressing longer than 1 sec. This switches off automatically after 2 hours or by an operation longer than 2 seconds.

ESV = If both switch-off early warning function and permanent light by push-button are set, the switch-off early warning function is activated before switching off the permanent light.

This electronic impulse switch does not need a base load for switching lights in rooms which are monitored by a FRI12-230V mains disconnection relay.

| ESR12NP-230V+UC | 1 NO contact 16 A | EAN 4010312107928 | 44,30 €/pc. |

**Function rotary switches**

- RV (min)
- ES = switch-off early warning
- ER = pushbutton permanent light
- ESV = switch-off early warning and pushbutton permanent light

**Typical connection**

- 8-230 V UC

Technical data page 12-16.

Housing for operating instructions GBA12, see accessories, chapter Z.

Recommended retail prices excluding VAT.
**ESR12DDX-UC**

1+1 NO contacts potential free 16 A/250 V AC. Incandescent lamp load up to 2000 W. Standby loss 0.03–0.4 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 1(L) and/or 3(L) for this. This results in an additional standby consumption of only 0.1 Watt.

Universal control voltage 8 to 230 V UC. Supply voltage is same as the control voltage.

The functions are set with the keys MODE and SET as described in the operating instructions. They are indicated on the display and can be blocked if required.

The **acrued switch-on time** is continuously displayed. First in hours (h), then in months (m) with 1 digit after the decimal point.

**By using bistable relays coil power loss and heating is avoided even in the on mode.**

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

Only impulse switch functions: After a power failure the system is disconnected in a definite sequence or the switch position is kept depending on the setting (then + on the display next to function abbreviations). Settings under RSM in the menu guidance. Furthermore, when using these functions, with the keys MODE and SET, the control inputs A1 and A3 can be defined as central control inputs.

**ZA1** = 'central off' with A1, local with A3; **ZE1** = 'central on' with A1, local with A3;
**Z00** = no central control. 'Central on' with A1, 'central off' with A3. No local control refer to function RS.

Relays with suitable functions to feed back the switching voltage signal of a dimmer switch.

From 110 V control voltage and in the settings 2S, WS, SS and GS glow lamp current up to 5 mA, dependent on the ignition voltage.

**With the keys MODE and SET you can select amongst 18 functions:**

- **OFF** = Permanent OFF
- **2xS** = 2-fold impulse switch with 1 NO contact each, control inputs A1 and A3
- **2S** = Impulse switch with 2 NO contacts
- **WS** = Impulse switch with 1 NO contact and 1 NC contact
- **SS1** = Impulse multi circuit switch 1+1 NO contacts for switching sequence
  - 0 - contact 1(1-2) - contact 2(3-4) - contacts 1 + 2
- **SS2** = Impulse multi circuit switch 1+1 NO contacts for switching sequence
  - 0 - contact 1 - contacts 1 + 2 - contact 2
- **SS3** = Impulse multi circuit switch 1+1 NO contacts for switching sequence
  - 0 - contact 1 - contacts 1 + 2
- **GS** = Impulse group switch 1+1 NO contacts for switching sequence
  - 0 - contact 1 - 0 - contact 2
- **RS** = Switch with 2 NO contacts, with A1 = set control input and A3 = reset control input
- **2xR** = 2-fold switching relay with 1 NO contact each, control inputs A1 and A3
- **2R** = Switching relay with 2 NO contacts
- **WR** = Switching relay with 1 NO contact and 1 NC contact
- **RR** = Switching relay (closed-circuit current relay) with 2 NC contacts
- **EAW** = Impulse relay for fleeting NO contact and fleeting NC contact with 1+1 NO contacts, wiping time 1 sec each
- **EW** = Impulse relay for fleeting NO contact with 1 NO contact and 1 NC contact, wiping time 1 sec
- **AW** = Impulse relay fleeting NC contact with 1 NO contact and 1 NC contact, wiping time 1 sec
- **GR** = Group relay 1+1 NO contacts (relay with alternating closing contacts)
- **ON** = Permanent ON

The control inputs A1 and A3 have the same functions except for 2xS, 2xR and RS, if not used as central control inputs.

After setting the required function, the function can be blocked. An arrow on the right of the abbreviation indicates the blocking status.

**KR09-12V UC**

1 NO contact potential free 6 A/250 V AC, incandescent lamp load up to 500 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1/2 module = 9 mm wide, 55 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Control voltages 12 V UC.
Contact position indicator with LED. Control power demand 0.2 W only.
Safe disconnection to VDE 0106, Part 101; therefore, these devices can also be used as coupling relays.

| KR09-12V UC | 1 NO contact 6 A | EAN 4010312203415 | 33.90 €/pc. |

**KR09-24V UC**

1 NO contact potential free 6 A/250 V AC, incandescent lamp load up to 500 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1/2 module = 9 mm wide, 55 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Control voltages 24 V UC.
Contact position indicator with LED. Control power demand 0.2 W only.
Safe disconnection to VDE 0106, Part 101; therefore, these devices can also be used as coupling relays.

| KR09-24V UC | 1 NO contact 6 A | EAN 4010312203385 | 32.90 €/pc. |

**KR09-230V**

1 NO contact potential free 6 A/250 V AC, incandescent lamp load up to 500 W. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1/2 module = 9 mm wide, 55 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Control voltages 230 V.
Contact position indicator with LED. Control power demand 0.2 W only.
Safe disconnection to VDE 0106, Part 101; therefore, these devices can also be used as coupling relays.

| KR09-230V | 1 NO contact 6 A | EAN 4010312203378 | 32.90 €/pc. |
COUPLING RELAY KRW12DX-UC

KRW12DX-UC

1 NO contact potential free 16 A/250 V AC with tungsten pre-contact, max. inrush current 500 A/2 ms. No standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 1(L) for this. This gives an standby consumption of only 0.1 watt.

If the contact is used for controlling switching devices which do not perform zero passage switching themselves, (N) should not be connected because the additional closing delay otherwise causes the opposite effect.
Universal control voltage 8 to 230 V UC.
Low switching noise.
Contact position indicator with LED.

By using a bistable relay coil power loss and heating is avoided even in the on mode.
The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

This relay is not suitable to feed back the switching voltage signal of a dimmer switch.
Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.

The electronics does not have an internal power supply and therefore no standby loss.
The microcontroller is activated when the control contact closes. This switches the bistable relay to the correct direction. The bistable relay switches back either when the control contact opens or when the control voltage falls.

ES12Z with KRW12DX-UC

If N is connected, the zero passage switching is active.

Housing for operating instructions GBA12, see accessories, chapter Z.

Recommended retail prices excluding VAT.

KRW12DX-UC  1 NO contact 16 A  EAN 4010312206683  42.70 €/pc.
SWITCHING RELAY ER61-UC
IMPULSE SWITCH WITH INTEGRATED RELAY FUNCTION ESR61NP-230V+UC

**ER61-UC**

1 CO contact potential free 10 A/250 V AC, incandescent lamp load up to 2000 W. No standby loss.

For installation. 45 mm long, 45 mm wide, 18 mm deep.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays. Universal control voltage 8 to 230 V UC. Low switching noise.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.

This relay is not suitable to feed back the switching voltage signal of a dimmer switch.

Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.

The electronics does not have an internal power supply and therefore no standby loss.

The microcontroller is activated when the control contact closes. This switches the bistable relay to the correct direction. The bistable relay switches back either when the control contact opens or when the control voltage falls.

<table>
<thead>
<tr>
<th>ER61-UC</th>
<th>1 CO contact 10 A</th>
<th>EAN 4010312205358</th>
<th>39.40 €/pc.</th>
</tr>
</thead>
</table>

**ESR61NP-230V+UC**

1 NO contact not potential free 10 A/250 V AC, incandescent lamp load up to 2000W. Off delay impulse switch with switch-off early warning and pushbutton permanent light switchable. Standby loss 0.7 watt only.

For installation. 45 mm long, 45 mm wide, 18 mm deep.

**Zero passage switching** to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

Control voltage 230 V. In addition electrically isolated universal control voltage from 8 to 230 V UC. Supply voltage and switching voltage 230 V. Very low switching noise. Variable time range up to 120 minutes in the function ESV. At the control input pushbuttons with a glow lamp current up to 50 mA can be connected.

In case of a power failure the system is disconnected in a preset sequence.

If the timing period is set to minimum in the function ESV, the release delay is switched off.

The standard impulse switch function ES is then set. The function ER is selectable. If the function ER is selected a glow lamp current is not permitted. Only the control input A1- A2 should be used.

When set to the function ER this device is suitable to feed back the switching voltage signal of a dimmer switch.

If switch-off early warning function \(\text{ESV}\) is switched on, the light starts flickering approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.

If the permanent light function \(\text{ER}\) is switched on, the function can be activated by pressing the pushbutton for longer than 1 second. This function switches off automatically after 2 hours or by pressing the pushbutton for longer than 2 seconds.

If both switch-off early warning function and permanent light by pushbutton \(\text{ESV}\) \(\text{ER}\) are set, the switch-off early warning function is activated before switching off the permanent light.

<table>
<thead>
<tr>
<th>ESR61NP-230V+UC</th>
<th>1 NO contact 10 A</th>
<th>EAN 4010312107911</th>
<th>42.40 €/pc.</th>
</tr>
</thead>
</table>
**ESR61M-UC**

1+1 NO contacts potential free 10 A/250 V AC. Incandescent lamp load up to 2000 W. No standby loss.

For installation, 45 mm long, 45 mm wide, 32 mm deep.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

Universal control voltage 8 to 230 V UC.

No permanent power supply necessary, therefore no standby loss.

By using bistable relays coil power loss and heating is avoided even in the on mode.

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

The functions of the second rotary switch are preselected using the rotary switch ES/ER.

10 different functions are selectable.

- **2S** = Impulse switch with 2 NO contacts
- **(2R)** = Switching relay with 2 NO contacts
- **WS** = Impulse switch with 1 NO contact and 1 NC contact
- **(WR)** = Switching relay with 1 NO contact and 1 NC contact
- **SS1** = Impulse multi circuit switch 1+1 NO contacts for switching sequence 0 - contact 1(1-2) - contact 2(3-4) - contacts 1 + 2
- **(RR)** = Switching relay (closed-circuit current relay) with 2 NC contacts
- **SS2** = Impulse multi circuit switch 1+1 NO contacts for switching sequence 0 - contact 1 - contacts 1 + 2 - contact 2
- **(EW)** = Impulse relay for fleeting NO contact with 1 NO contact and 1 NC contact, wiping time 1 sec
- **GS** = Impulse group switch 1+1 NO contacts for switching sequence 0 - contact 1 - 0 - contact 2
- **(GR)** = Group relay 1+1 NO contacts (relay with alternating closing contacts)

This relay is not suitable to feed back the switching voltage signal of a dimmer switch.

Use only relays ESR12DDX-UC, ESR12NP-230V+UC or ESR61NP-230V+UC for this purpose.

The electronics does not have an internal power supply and therefore no power is consumed in any contact position. A control current flows only during a short control impulse of 0.2 seconds. This activates the microcontroller, reads the last switching state from the non-voltage memory, switches the bistable relay to its opposite state accordingly and rewrites the new switching state to memory.

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**Recommended retail prices excluding VAT.**
ESR61SSR-230V

Noiseless solid state relay not potential free, 400 watt, Off delay impulse switch with switch-off early warning and pushbutton permanent light switchable. Standby loss 0.3 Watt only.

For installation, 45 mm long, 45 mm wide, 18 mm deep.
Supply, switching and control voltage 230V.
Zero passage switching.
In case of a power failure the system is disconnected in a preset sequence.
In the ER function the relay switches back on when the power is restored and the control input is active.
It is not permitted to apply a glow lamp current to the control input.
With automatic electronic overtemperature switch-off.
At a load of < 1W a GLE must be switched in parallel to the load.

*Use the top rotary switch* to select the required function of this impulse switch:
- ER = switching relay
- ESV = impulse switch. Possibly with off delay, then
  - + ESV = ESV with pushbutton permanent light
  - + ESV = ESV with switch-off early warning
  - + ESV = ESV with pushbutton permanent light and switch-off early warning

The LED flashes when the rotary switch reaches a new setting range to assist you to find the required position with certainty.
The LED lights up permanently when the relay is switched on.

When the pushbutton permanent light is switched on $\bigcirc$, set the LED to permanent light by pressing the pushbutton for longer than 1 second. This is indicated by the LED flickering briefly. After 2 hours, the permanent light switches off automatically or it can be switched off previously by briefly pressing the pushbutton.

If the switch-off early warning is switched on $\bigcirc$, the light starts to flicker approx. 30 seconds before time-out. This is repeated three times at decreasing time intervals.
During the switch-off early warning, the light can be switched back on by briefly pressing the pushbutton.
If both switch-off early warning and pushbutton permanent light are switched on, switch-off early warning is activated before automatic switch-off of the permanent light.

The function ESV on the bottom rotary switch sets the off delay from 2 to 120 minutes.
In setting $\infty$ normal impulse switch function ES without off delay, without pushbutton permanent light and without switch-off early warning.

In the ER function a switch-on wipe time can be set between 2 and 120 seconds. On expiry of the wipe time the relay switches off automatically.
In setting $\infty$ default relay function ER without wipe time.

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ISOLATING RELAY ETR61-230V AND ETR61NP-230V

ETR61-230V

1 NO contact potential free 5 A/250 V AC. Standby loss 0.5 watt only.

For installation, 45 mm long, 45 mm wide, 18 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Control input with internally produced low voltage 24 V DC. With an isolating transformer electrically isolated from power supply and make contact (PELV).
Therefore no external low voltage power supply necessary.
Spacing between power supply and contact: 6 mm.
Power supply 230 V.

| ETR61-230V | 1 NO contact 5 A | EAN 4010312206690 | 34,30 €/pc. |

ETR61NP-230V

1 NO contact not potential free 10 A/250 V AC. With window contact. Standby loss 0.5 watt only.

For installation, 45 mm long, 45 mm wide, 18 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Control input with internally produced low voltage 24 V DC. With an isolating transformer electrically isolated from power supply and make contact (PELV).
Therefore no external low voltage power supply necessary.
With 2 L terminals and 2 N terminals for an easy and quick installation.
Power supply 230 V.

| ETR61NP-230V | 1 NO contact 10 A | EAN 4010312205488 | 34,30 €/pc. |

Recommended retail prices excluding VAT.
**ETR61NP-230V+FK**

1 NO contact not potential free 10 A/250 V AC. With window contact. Standby loss 0.5 watt only.

For installation, 45 mm long, 45 mm wide, 18 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Control input with internally produced low voltage 24 V DC. With an isolating transformer electrically isolated from power supply and make contact (PELV).
Therefore no external low voltage power supply necessary.
With 2 L terminals and 2 N terminals for an easy and quick installation.
Power supply 230 V.

The enclosed window contact consists of a Reed relay with terminals and a solenoid. The NC contact opens when the solenoid approaches closer than 25 mm. The disconnection relay ETR61NP is connected to terminals T1 and T2. Power supply to the extractor only cuts in when the window is open. ETR61NP can be wired in the flush mounted socket behind the socket for the extractor.

**Mounting the window contact FK:**
Lever out the inserts at the narrow end of the housing. Wire up the Reed relay and cut out the cable entry on the housing. Affix the two housings in parallel maximum 15 mm apart and also screw if necessary. In the longitudinal direction the solenoid may be twisted in any direction compared to the Reed relay.

**Recommended retail prices excluding VAT:**

<table>
<thead>
<tr>
<th>Description</th>
<th>EAN Code</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETR61NP-230V+FK</td>
<td>4010312205495</td>
<td>58.20 €/pc.</td>
</tr>
<tr>
<td>FK</td>
<td>4010312803001</td>
<td>25.50 €/pc.</td>
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</table>

**Technical data page 12-16.**
# TECHNICAL DATA ELECTRONIC SWITCHING RELAYS, CONTROL RELAYS AND COUPLING RELAYS

## Compliance with EN 61000-6-3, EN 61000-6-1 and EN 60 669

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

## Types of Relays

<table>
<thead>
<tr>
<th>Type</th>
<th>ESR12NP-230V+UC</th>
<th>ESR12DDX-UC</th>
<th>ER12DX-UC</th>
<th>ER12-200-UC</th>
<th>ER12-110-UC</th>
<th>ER12-001-UC</th>
<th>ER12-002-UC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ESR16M-UC</td>
<td>ETR61-230V</td>
<td>ETR61NP-230V</td>
<td>ER61-UC</td>
<td>ESR6ISSR-230V</td>
<td>KRO09 -12V UC</td>
<td>KRW12DX-UC</td>
</tr>
</tbody>
</table>

## Contacts

<table>
<thead>
<tr>
<th>Contact material/contact gap</th>
<th>AgSnO₂/0.5 mm</th>
<th>Opto Triac</th>
<th>AgSnO₂/0.5 mm</th>
<th>W+AgSnO₂/0.5 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spacing of control connections/contact</td>
<td>3 mm</td>
<td>6 mm</td>
<td>6 mm, ER61: 3 mm</td>
<td>6 mm</td>
</tr>
</tbody>
</table>

| Test voltage contact/contact | ESR12DDX: 4000 V | ER12-200/110: 2000 V | -- | -- |


| Incandescent lamp and halogen lamp load | 2300 W | 2000 W | 2000 W | up to 400 W | 500 W | 3300 W |

| Rated inrush current | 40-fold inrush current must be expected for electronic ballast devices. For steady loads of 1200 W or 600 W use the current limiting relay SBR12 or SBR61. See chapter 14, page 14-8. |

| Compact fluorescent lamps with EVG* and energy saving lamps ESL | 15x7 W, 10x20 W | 15x7 W, 10x20 W | 15x7 W, 10x20 W | up to 600 W | 500 VA | 500 VA |

| Max. switching current DC1: 12 V/24 V DC | up to 200 W | up to 200 W | up to 200 W | up to 600 W (5) | I on ≤ 70 A/10 ms | 6 A/250 V AC |

| Time on | 100% | 100% | 100% | 100% | 100% | 100% |

| Standby loss (active power) | 0.5 W | 0.5 W | 0.5 W | 0.5 W | 0.5 W | 0.5 W |

| Control current 230 V control input local ±20% | 10 mA | 10 mA | 10 mA | 10 mA | 10 mA | 10 mA |

| Control current universal control voltage all control voltages mA ±20% | 4 (not ESR12DDX) | 4 (not ESR12DDX) | 4 (not ESR12DDX) | 4 (not ESR12DDX) | 4 (not ESR12DDX) | 4 (not ESR12DDX) |

| Control current at 8/12/24/230 V (<10 s) mA ±20% | 2/4/9/15 (100) | 2/4/9/15 (100) | 2/4/9/15 (100) | 2/4/9/15 (100) | 2/4/9/15 (100) | 2/4/9/15 (100) |

| Max. parallel capacitance (approx. length) of control lead at 230 V AC | 0.06 µF (200 m) | 0.06 µF (200 m) | 0.06 µF (200 m) | 0.06 µF (200 m) | 0.06 µF (200 m) | 0.06 µF (200 m) |

---

* EVG = electronic ballast units; KVG = conventional ballast units
* Bistable relay as relay contact. The relay contact can be open or closed when putting into operation. It will be synchronised at first operation.
* EVG = electronic ballast units; KVG = conventional ballast units
* Bistable relay as relay contact. The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated. For lamps with 150 W max.
* A 40-fold inrush current must be expected for electronic ballast devices. For steady loads of 1200 W or 600 W use the current limiting relay SBR12 or SBR61. See chapter 14, page 14-8.
* For DX types close attention must be paid that zero passage switching is activated! For ER12-200 maximum current across both contacts: 10 A for 230 V. Usually applies for dimmable energy saving lamps and dimmable 230 V LED lamps. Due to differences in the lamps electronics, there may be a restriction on the maximum number of lamps; especially if the connected load is very low (for 5 W-LEDs).
TIME RELAYS, MULTIFUNCTIONS TIME RELAY AND TIMER. UP TO 18 FUNCTIONS COMBINED WITH UNIVERSAL CONTROL VOLTAGE – AN UNRIVALLED COMBINATION.
Time relays, multifunction time relays and timer

Selection table time relays and multifunction time relays 13 - 2
Digital settable multifunction time relay MFZ12DDX-UC with 18 functions 13 - 3
Analogue settable multifunction time relay MFZ12DX-UC with 18 functions 13 - 4
Analogue settable time relays RVZ/AVZ/TGI/EAW 13 - 5
Analogue settable multifunction time relay MFZ12NP-230V+UC with 10 functions 13 - 6
Analogue settable multifunction time relay MFZ12-230V with 10 functions 13 - 7
Analogue settable 2-stage ON-delay A2Z12-UC 13 - 8
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Multifunction time relays with up to 18 functions combined with universal control voltage 8 to 230 V UC - a competitive advantage, particularly the digital settable time relays MFZ12DX. Multifunction time relays always switch at zero passage, the DX devices only when connected to N.

<table>
<thead>
<tr>
<th>Modular device for mounting on DIN rail EN 60715</th>
<th>13-3</th>
<th>13-4</th>
<th>13-5</th>
<th>13-5</th>
<th>13-5</th>
<th>13-6</th>
<th>13-7</th>
<th>13-8</th>
<th>13-9</th>
<th>13-10</th>
<th>13-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>TH35, number of modules 18 mm each</td>
<td></td>
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<tr>
<td>Built-in device for installation (e.g. flush-mounting box)</td>
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<tr>
<td>Digital settable</td>
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<td>Analogue settable</td>
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6 Up to 3400 W with capacity enhancers LLG12-230V. 7 The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

21 Duplex technology: When switched with 230 V / 50 Hz zero passage switching is activated if L is connected to (L) and N to (N). Then additional standby loss of only 0.1 watt.
**DIGITAL SETTABLE MULTIFUNCTION TIME RELAY**

**MFZ12DDX-UC WITH 18 FUNCTIONS**

**MFZ12DDX-UC**

1 CO contact potential free 10 A/250 V AC. Incandescent lamps 2000 W*. Standby loss 0.05–0.5 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 15 (L) for this. This gives an additional standby consumption of only 0.1 Watt.

**Universal control voltage 8 to 230 V UC.** Supply voltage same as the control voltage.

Both functions and times are entered at the touch of a key and indicated digitally on an LC display. Only two keys are required for this purpose.

When setting the time all values can be entered within preset time ranges (0.1 to 9.9 or 1 to 99 seconds, minutes or hours). The longest possible setting is 99 hours. 600 settings are possible. The time setting is continuously displayed digitally.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

**Functions (description page 13-11)**

- **RV** = off delay
- **AV** = operate delay
- **AV+** = operate delay additive
- **TI** = clock generator starting with impulse
- **TP** = clock generator starting with pause
- **IA** = impulse controlled pickup delay (e.g. automatic door opener)
- **IF** = pulse shaper
- **EW** = fleeting NO contact
- **AW** = fleeting NC contact
- **EAW** = fleeting NO contact and fleeting NC contact
- **ARV** = operate and release delay
- **ARV+** = operate and release delay additive
- **ES** = impulse switch
- **SRV** = release-delay impulse switch
- **ESV** = impulse switch with release delay and switch-off early-warning function
- **ER** = relay
- **ON** = permanent ON
- **OFF** = permanent OFF

With TI, TP, IA, EAW, ARV and ARV+ functions, a different second time can be entered also with different time ranges.

**Setting the times and functions:** The LCD component to be changed is selected by pressing the MODE key. The component accessed flashes. Press the SET key to change the component accessed. This may be the function, the time ranges, time T1 or time T2 (on TI, TP, IA, EAW, ARV and ARV+ only). Pressing the MODE key terminates each input. Once the time has been set with MODE, no more components are flashing. The timing relay is now ready to operate. Press the MODE key again to restart the input cycle. All the entered parameters are retained if they are not changed using SET. 25 sec. after the last operation and if the component still flashes the input cycle is automatically terminated and the previously made changes lapse.

**Functions of the LC display:** If the ON or OFF function was selected, no time is displayed, only ON and OFF and a contact symbol in the correct position. On all other functions, the set time, the function code and the contact symbol are shown in the correct position (open or closed). The clock symbol flashes while the set time is elapsing and the remaining time is shown.

**Safety in the event of a power failure:** The set parameters are stored in an EEPROM and are therefore immediately available again when the power supply is restored after a power failure.

* The maximum load can be used starting at a delay time or clock cycle of 5 minutes. The maximum load will be reduced for shorter times as follows: up to 2 seconds 15%, up to 2 minutes 30%, up to 5 minutes 60%.

**Recommended retail prices excluding VAT.**

| MFZ12DDX-UC | 1 CO contact 10 A | EAN 4010312603079 | 59,10 €/pc. |
**ANALOGUE SETTABLE MULTIFUNCTION TIME RELAY**

**MFZ12DX-UC WITH 18 FUNCTIONS**

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**MFZ12DX-UC**

1 CO contact potential free 10 A/250 V AC. Incandescent lamps 2000 W*. Standby loss 0.02–0.6 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 15 (L) for this. This gives an additional standby consumption of only 0.1 Watt.

Universal control voltage from 8 to 230 V UC. Supply voltage same as control voltage. Time setting between 0.1 second and 40 hours.

By using a bistable relay coil power loss and heating is avoided even in the on mode. The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated. According to the connection of the power supply to the terminals B1-A2 or B2-A2 two different levels of settings can be selected:

**Functions F with connection of the power supply to B1-A2** (description page 13-11)

- *RV* = off delay
- *AV* = operate delay
- *TI* = clock generator starting with impulse
- *TP* = clock generator starting with pause
- *IA* = impulse controlled operate delay (e.g. automatic door opener)
- *EW* = fleeting NO contact
- *AW* = fleeting NC contact
- *ARV* = operate and release delay
- *ON* = permanent ON
- *OFF* = permanent OFF

**Functions (F) with connection of the power supply to B2-A2** (description page 13-11)

- *SRV* = release-delay impulse switch
- *ER* = relay
- *EAW* = fleeting NO contact and fleeting NC contact
- *ES* = impulse switch
- *IF* = pulse shaper
- *ARV+* = additive operate and release delay
- *ESV* = impulse switch with release delay and switch-off early-warning function
- *AV+* = additive operate delay
- *ON* = permanent ON
- *OFF* = permanent OFF

*The LED below the big rotary switch indicates the contact position while time-out is in progress. It blinks while the relay contact 15–18 is open (15–16 closed), and is continuously ON as long as the relay contact 15–18 is closed (15–16 open).

The time base **T** is selected by means of the middle, latching rotary switch **T**. Time-base figures available are 0.1 seconds, 0.5 seconds, 2 seconds, 5 seconds, 1 minute, 2 minutes, 5 minutes, 1 hour, 2 hours and 4 hours. The total time is obtained by multiplying the timebase by the multiplier.

The multiplier **xT** is set on the upper, latching rotary switch **xT** and is in the range from 1 to 10. Thus, time settings can be selected in the range from 0.1 second (time base 0.1 second and multiplier 1) and 40 hours (time base 4 hours and multiplier 10).

* The maximum load can be used starting at a delay time or clock cycle of 5 minutes. The maximum load will be reduced for shorter times as follows: up to 2 seconds 15%, up to 2 minutes 30%, up to 5 minutes 60%.

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Recommended retail prices excluding VAT.
ANALOGUE SETTABLE TIME RELAYS RVZ/AVZ/TGI/EAW

**RVZ/AVZ/TGI/EAW12DX-UC**

1 CO contact potential free 10 A/250 V AC. Incandescent lamps 2000 W*. Standby loss 0.02–0.4 watt only.

Modular device for DIN EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
These digital settable time relays are identical to the MFZ12DX-UC, except that they have one function only (description page 13-11).

On type TGI12DX-UC T1 and T2 can be set separately by a second multiplier while the time base remains the same.

On type EAW12DX-UC different functions can be selected by a rotary switch: fleeting NO contact (E), fleeting NC contact (A), or fleeting NO contact and fleeting NC contact (EAW).

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230V AC 50Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 15 (L) for this. This gives an additional standby consumption of only 0.1 Watt.

Universal control voltage from 8 to 230V UC. Supply voltage like control voltage.
Time setting between 0.1 second and 40 hours.

*By using a bistable relay coil power loss and heating is avoided even in the on mode.*
The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

The LED below the big rotary switch indicates the contact position while time-out is in progress. It blinks while the relay contact 15-18 is open (15-16 closed), and is continuously ON as long as the relay contact 15-18 is closed (15-16 open).

**The time base** T is selected by means of the middle, latching rotary switch T. Time-base figures available are 0.1 seconds, 0.5 seconds, 2 seconds, 5 seconds, 1 minute, 2 minutes, 5 minutes, 1 hour, 2 hours and 4 hours. The total time is obtained by multiplying the time base by the multiplier.

**The multiplier** xT is set on the upper, latching rotary switch xT and is in the range from 1 to 10. Thus, time settings can be selected in the range from 0.1 second (time base 0.1 second and multiplier 1) and 40 hours (time base 4 hours and multiplier 10).

* The maximum load can be used starting at a delay time or clock cycle of 5 minutes.
The maximum load will be reduced for shorter times as follows: up to 2 seconds 15%, up to 2 minutes 30%, up to 5 minutes 60%.

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<tr>
<th>Function rotary switches</th>
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<tbody>
<tr>
<td>RVZ12DX-UC</td>
<td>TGI12DX-UC</td>
<td>EAW12DX-UC</td>
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</table>

| RVZ12DX-UC | RV release delay (OFF delay) | EAN 4010312603093 | 51.40 €/pc. |
| AVZ12DX-UC | AV operate delay (ON delay) | EAN 4010312603109 | 51.40 €/pc. |
| TGI12DX-UC | Ti clock generator | EAN 4010312603116 | 51.40 €/pc. |
| EAW12DX-UC | EW+AW+EAW fleeting NO contact and fleeting NC contact | EAN 4010312603123 | 51.40 €/pc. |

Recommended retail prices excluding VAT.
**ANALOGUE SETTABLE MULTIFUNCTION TIME RELAY MFZ12NP-230V+UC WITH 10 FUNCTIONS**

**MFZ12NP-230V+UC**

1 NO contact not potential free 16 A/250 V AC. Incandescent lamps 2300 W*. Standby loss 0.5 watt only.

Modular device for DIN EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

**Zero passage switching** to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

230 V control voltage and additionally 8 to 230 V UC electrically isolated universal control voltage. 230 V supply voltage and switching voltage.

Very low switching noise.

Time settings between 0.1 seconds and 40 hours.

**Functions F** (description page 13-11)

- **RV** = release delay
- **AV** = operate delay
- **TI** = clock generator starting with impulse
- **TP** = clock generator starting with pause
- **IA** = impulse-controlled operate delay
- **EW** = fleeting NO contact
- **AW** = fleeting NC contact
- **ARV** = operate and release delay
- **ON** = permanent ON
- **OFF** = permanent OFF

The LED below the upper function rotary switch informs about the position of the contact during the countdown. It blinks while the contact is open and stays on as long as the contact is closed.

**The time base T** is selected by means of the middle, latching rotary switch T. Time-base figures available are 0.1 second, 0.5 seconds, 2 seconds, 5 seconds, 1 minute, 2 minutes, 5 minutes, 1 hour, 2 hours and 4 hours. The total time is obtained by multiplying the time base by the multiplier.

**The multiplier xT** is set on the upper, latching rotary switch xT and is in the range from 1 to 10. Thus, time settings can be selected in the range from 0.1 second (time base 0.1 second and multiplier 1) and 40 hours (time base 4 hours and multiplier 10).

* The maximum load can be used starting at a delay time or clock cycle of 5 minutes. The maximum load will be reduced for shorter times as follows: up to 2 seconds 15%, up to 2 minutes 30%, up to 5 minutes 60%.

Recommended retail prices excluding VAT.
ANALOGUE SETTABLE MULTIFUNCTION TIME RELAY MFZ12-230V WITH 10 FUNCTIONS

MFZ12-230V

1 NO contact potential free 10 A/250 V AC. Incandescent lamps 1000 W*. Standby loss 0.4 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
Control voltage 230 V. Supply voltage same as control voltage.
Time setting between 0.1 second and 40 hours.

Functions F (description page 13-11)
RV = off delay
AV = operate delay
TI = clock generator starting with impulse
TP = clock generator starting with pause
IA = impulse controlled operate delay (e.g. automatic door opener)
EW = fleeting NO contact
AW = fleeting NC contact
ARV = operate and release delay
ON = permanent ON
OFF = permanent OFF

The LED below the big rotary switch indicates the contact position while time-out is in progress. It blinks while the relay contact is open, and is continuously ON as long as the relay contact is closed.

The time base T is selected by means of the middle, latching rotary switch T. Time-base figures available are 0.1 seconds, 0.5 seconds, 2 seconds, 5 seconds, 1 minute, 2 minutes, 5 minutes, 1 hour, 2 hours and 4 hours. The total time is obtained by multiplying the timebase by the multiplier.

The multiplier xT is set on the upper, latching rotary switch xT and is in the range from 1 to 10. Thus, time settings can be selected in the range from 0.1 second (time base 0.1 second and multiplier 1) and 40 hours (time base 4 hours and multiplier 10).

* The maximum load can be used starting at a delay time or clock cycle of 5 minutes. The maximum load will be reduced for shorter times as follows: up to 2 seconds 15%, up to 2 minutes 30%, up to 5 minutes 60%.

Housing for operating instructions GBA12, see accessories, chapter Z.
A2Z12-UC

1+1 NO contact potential free 10 A/250 V AC. Incandescent lamps 1000 W. Standby loss 0.4 watt only.

Modular device for DIN EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
Universal control voltage input 8 to 230 V UC. Supply voltage is same as the control voltage.
Contact position display with two LEDs. Very low switching noise.

By using a bistable relay coil power loss and heating is avoided even in the on mode.
The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.
In case of a power failure the system is disconnected in a preset sequence.
When the control voltage is applied, the time lapse T1 starts between 0 and 60 seconds.
At the end of the time lapse, contact 1-2 closes and time lapse T2 starts between 0 and 60 seconds. At the end of this time lapse, contact 3-4 closes. After an interval, the time lapse starts again at T1.

A2Z12-UC 1+1 NO 10 A

Housing for operating instructions GBA12, see accessories, chapter Z.

Recommended retail prices excluding VAT.
**FULLY ELECTRONIC MULTIFUNCTION TIME RELAY MFZ12PMD-UC WITH 18 FUNCTIONS**

**MFZ12PMD-UC**

Power MOSFET with almost unlimited number of circuits up to 400 W. Automatic lamp detection. Standby loss 0.3 watt only. Dim down to minimum brightness and up to maximum brightness and Soft ON / Soft OFF are also adjustable for lamp circuit.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep. Digitally adjustable and fully electronic multifunction time relay for lamps up to 400 W dependent on ventilation conditions. Dimmable energy saving lamps (ESL) and dimmable 230 V LED lamps are also dependent on the lamp electronics.

If **minimum brightness** is not set to 0, the circuit is not switched off but dimmed down to the set percentage.

**Up to 3600 W with capacity enhancers LUD12-230V** (description page 9-7) at the terminals X1 and X2.

Universal control voltage 8 to 230 V UC and additionally the universal voltage control inputs 8 to 230 V UC central ON and central OFF. The control inputs are electrically isolated from the supply voltage and switching voltage.

**Zero passage switching to protect lamps.**

Glow lamp current up to 5 mA starting at 110 V.

Automatic electronic overload protection and overtemperature switch-off.

Enter both the functions and the times using the two buttons MODE and SET. The functions and times are indicated digitally on an LC display. The time can be set by entering all values within the preselected time scale (0.1 to 9.9 or 1 to 99 seconds, minutes or hours). The longest time is 99 hours. This permits 600 time settings. The time(s) entered is (are) permanently displayed digitally.

**Settable functions** (description page 13-11): **RV** = release delay, **AV** = operate delay, **AV+** = additive operate delay, **TI** = clock generator starting with impulse, **TP** = clock generator starting with pause, **IA** = impulse-controlled operate delay, **IF** = pulse shaper, **EV** = fleeting NO contact, **AW** = fleeting NC contact, **EAW** = fleeting NO contact and fleeting NC contact, **ARV** = operate and release delay, **ARV+** = additive operate and release delay, **ES** = impulse switch, **SRV** = release-delay impulse switch, **ESV** = impulse switch with release delay and switch-off early-warning function, **ER** = relay, **ON** = permanent ON, **OFF** = permanent OFF.

With **TI**, **TP**, **IA**, **EAW**, **ARV** and **ARV+** functions, a different second time can be entered also with different time ranges.

**Setting the times and functions:** The LCD component to be changed is selected by pressing the **MODE** key. The component accessed flashes. Press the **SET** key to change the component accessed. This may be the function, the time ranges, time T1 or time T2 (on **TI**, **TP**, **IA**, **EAW**, **ARV** and **ARV+** only). Pressing the **MODE** key terminates each input. Once the time has been set with **SET**, 25 sec. after the last operation and if the component still flashes the input cycle is automatically terminated and the previously made changes lapse.

**Setting additional parameters valid for all functions:** when you press the **MODE** button for longer than 2 seconds, you access the submenu. When you press the **MODE** button for longer than 2 seconds, you access the submenu. Press the **SET** button to select the parameter you want to change. Then confirm by pressing **MODE**. Press **SET** to enter the parameter and confirm by pressing **MODE**. After the ‘**LED**’ submenu, you return automatically to the main menu.

**MIN** = Minimum brightness in OFF state settable to 0 and from 10 to 99 (%), factory setting = 0.

**MAX** = Maximal brightness in ON state settable from 10 to 99 (%), factory setting = 99. **MAX** must be at least 10 divisions above **MIN**.

**RMP** = Switch ON/OFF ramp (soft ON and soft ON) adjustable from 0 = 10ms to 99 = 1s, factory setting = 0.

**LED** = LED+ for dimmable 230V LED lamps which cannot be dimmed down far enough in automatic mode (trailing edge control) for design reasons and must therefore be forced by phase control. Enabled by pressing **MODE**; factory setting = **LED** without +.

**Functions of the LC display:** if you selected the functions **ON** or **OFF**, no time is displayed. Instead an arrow indicates either **ON** or **OFF**. In all other functions the set time(s), the function abbreviation and an arrow next to **ON** and **OFF** display the switching position. The clock symbol flashes while the set time is elapsing and the remaining time is shown.

**Safety in the event of a power failure:** The set parameters are stored in an EEPROM and are therefore immediately available again when the power supply is restored after a power failure.

**Recommended retail prices excluding VAT.**
MFZ61DX-UC

1 NO contact potential free 10 A/250 V AC. Incandescent lamps 2000 W*. Standby loss 0.02–0.4 watt only.

Built-in device for installation.
45 mm long, 45 mm wide, 18 mm deep.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 1 (L) for this. This gives an additional standby consumption of only 0.1 watt.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

By using a bistable relay coil power loss and heating is avoided even in the on mode.

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

Universal control voltage input 8 to 230 V UC. Supply voltage is same as the control voltage.

Time settings between 0.5 seconds and 1 hour.

Functions F (description page 13-11)
RV = off delay
AV = operating delay
TI = clock generator starting with impulse
IA = impulse-controlled operating delay
EW = fleeting NO contact
AW = fleeting NC contact

* The maximum load can be used from a delay time or clock cycle of 5 minutes. The maximum load is reduced for shorter times as follows: up to 2 seconds 15%, up to 2 minutes 30%, up to 5 minutes 60%.

PTN12-230V

Test pushbutton for emergency lighting systems with its own battery supply. 1 CO contact 16 A/250 V AC. Off-delay settable between 10 and 180 minutes. Only 0.5 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Supply voltage 230 V, 50/60 Hz.

Off-delay 10, 20, 30, 40, 50, 60, 90, 120, 150 and 180 minutes settable with rotary switch.

When the supply voltage is applied, the green LED lights up.

For further informations see the operating instructions.

Housing for operating instructions GBA12, see accessories, chapter Z.
DESCRIPTION OF FUNCTIONS OF THE TIME RELAYS AND MULTIFUNCTION TIME RELAYS

The contact 15-18 corresponds on MFZ12NP to the contact L-3. The terminals A1-A2 correspond on MFZ12NP to the terminals A1-N or C1-C2. The contact 15-18 corresponds on MFZ61DX and MFZ12-230V to the contact 1-2. The terminals A1-A2 correspond on MFZ12-230V to the terminals A1-N. The contact 15-18 corresponds on MFZ12PMD to the output.

**RV = Release delay (OFF delay)**

```
RV
A1-A2
15-18
```

When the control voltage is applied the relay contact switches to 15-18. When the control voltage is interrupted the timing period is started; on time-out the relay contact returns to normal position. Resettable during the timing period.

**AV = Operate delay (ON delay)**

```
AV
A1-A2
15-18
```

When the control voltage is applied the timing period is started; on time-out the relay contact changes to 15-18. After an interruption, the timing period is restarted.

**TI = Clock generator starting with impulse (fl asher relay)**

```
TI
A1-A2
15-18
```

As long as the control voltage is applied the relay contact opens and closes. On MFZ12, MFZ12DX, MFZ12NP and MFZ61DX the changeover time in both directions is identical, and is equal to the preset time. On MFZ12DX both times can be set separately (identical time base, but additional multiplier), on MFZ12DX and MFZ12PMD it is completely settable separately. When the control voltage is applied the relay contact immediately changes to 15-18.

**TP = Clock generator starting with pause (fl asher relay)**

```
TP
A1-A2
15-18
```

Description of function same as for TI, except that, when the control voltage is applied, the contact initially remains at 15-18 rather than changing to 15-18.

**IA = Impulse-controlled operate delay**

```
IA
A1-A2
15-18
```

The timing period t1 starts with a control impulse from 50ms; on time-out the relay contact changes to 15-18 for the set time. Further control impulses are evaluated only after the set time has elapsed.

**EW = Fleeting NO contact**

```
EW
A1-A2
15-18
```

When the control voltage is applied the NO contact changes to 15-18 and reverts on wiping time-out. If the control voltage is removed during the wiping time the NO contact immediately reverts to 15-16 and the residual time is cancelled.

**AW = Fleeting NC contact**

```
AW
A1-A2
15-18
```

When the control voltage is interrupted the NO contact changes to 15-18, and reverts on wiping time-out. If the control voltage is applied during the wiping time the NO contact immediately reverts to 15-16 and the residual time is cancelled.

**ARV = Operate and release delay**

```
ARV
A1-A2
15-18
```

When the control voltage is applied the timing period starts; on time-out the relay contact changes to 15-18. If the control voltage is interrupted then, another timing period is started and, on time-out, the relay contact returns to normal position. On MFZ12, MFZ12DX and MFZ12NP this release delay is identical to the operating delay, on MFZ12DX and MFZ12PMD it is completely settable separately. After an interruption of the operating delay, the timing period is restarted.

**ER = Relais**

As long as the control contact is closed the make contact reverts from 15-16 to 15-18.

**EAW = Fleeting NO contact and fleeting NC contact**

```
EAW
A1-A2
15-18
```

When the control voltage is applied or interrupted the relay contact changes to 15-18 and reverts after the set wiping time.

**ES = Impulse switch**

With control impulses from 50ms the make contact switches to and fro.

**IF = Pulse shaper**

When the control voltage is applied the relay contact changes to 15-18 for the set time. Further control impulses are evaluated only after the set time has elapsed.

**ARV+ = Additive operate and release delay**

Same function as ARV, but after an interruption of the operate delay the elapsed time is stored.

**ESV = Impulse switch with release delay and switch-off early-warning function**

Function same as SRV. Additionally with switch-off early warning: approx. 30 sec. before time-out the lighting starts flickering 3 times at gradually shorter time intervals.

**AV+ = Additive operate delay**

Function same as AV. However, after an interruption the elapsed time is stored.

**SRV = Release-delay impulse switch**

With control impulses from 50ms the make contact switches to and fro. In the contact position 15-18, the device switches automatically to the rest position 15-16 on delay time-out.

**A2 = 2-stage ON-delay**

```
A2
A1-A2
15-18
```

When the control voltage is applied, the time lapse T1 starts between 0 and 60 seconds. At the end of the time lapse, contact 1-2 closes and time lapse T2 starts between 0 and 60 seconds. At the end of this time lapse, contact 3-4 closes. After an interval, the time lapse starts again at T1.
2-channel timer. 1+1 NO contacts potential free 16 A/250 V AC. With ‘astro’ function. Only 0.03–0.4 watt standby loss. From week 26/19 with display backlighting.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18mm wide, 58mm deep. Patented Eltako Duplex technology (DX) allows you to switch normally potential free contacts in zero passage switching when 230V A/C voltage 50Hz is switched. This drastically reduces wear. To achieve this, simply connect the N conductor to the terminal (N) and L to 1(L) and/or 3(L). This results in an additional standby consumption of only 0.1 watt.

In the ON state, the use of bistable relays causes no coil power loss or heating. Up to 60 timer memory locations are freely assigned to the channels. With date and automatic summer/winter time changeover. Ca. 7 days power reserve without battery. Each memory location can be assigned with the astro function (automatic switching after sunrise or sundown), the switch on/off time or a pulsed switching time (which triggers an impulse of 2 seconds). The astro switch on/off time can be changed up to ±2 hours. A time lag of up to ±2 hours influenced by the solstices can be entered additionally.

With control input (+A1) for central control ON or OFF with priority.

Supply voltage and control voltage for central control 8 to 230V UC.

The timer is set using the MODE and SET buttons and a keylock function is provided.

The display illumination goes on by pressing on MODE or SET. 20 seconds after you last press MODE or SET, the program returns automatically to normal display and the display illumination goes off.

Set language: Every time the power supply is applied, press SET within 10 seconds to set the language and press MODE to confirm. D = German, GB = English, F = French, IT = Italian and ES = Spanish. The normal display then appears: weekday, time, day and month.

Rapid scroll: In the following settings, the numerals scroll rapidly when you press and hold down Enter. Release then press and hold down to change the scroll direction.

Set clock: Press MODE then at PRG (program) press SET to search for the CLK function. Press MODE to set. In H, press SET to select the hour and press MODE to confirm. In M proceed in the same way to set the minute.

Set date: Press MODE then at PRG press SET to search for the DAT function. Press MODE to select. At Y, press SET to select the year and press MODE to confirm. Proceed in the same way at M to set the month and at D to set the day. The last setting in the sequence is MO (weekday) blinking. Press SET to set it and press MODE to confirm.

Set geographic position (if astro function is required): you can find a list of German cities at the end of the operating manual. Press MODE then press SET at PRG to search for the POS function. Select by pressing MODE. Press SET at LAT to select the latitude. Select by pressing MODE. Repeat this procedure for LON to select the longitude and press MODE to confirm. If desired a time lag of up to ±2 hours can be entered at WS (winter solstice) and SS (summer solstice) for both channels.

Manual switching ON or OFF with priority: Press MODE and for PRG press SET to search for the function INT. Then press MODE to select. For CH press SET to select channel 1 or 2 and press MODE to confirm. Now you can switch between AUT (automatic) and ON or OFF using SET. After confirming with MODE the shift position of the selected channel may change. If the shift position should change automatically when a time program becomes active, AUT (automatic) should be selected again. If MODE is pressed longer than 2 seconds at confirmations the change is saved and the normal display will appear.

Summer/winter time changeover: Press MODE then at PRG press SET to search for the SWT function and press MODE to select. Now press SET to switch between ON and OFF. If you select ON, changeover is automatic.

Central control ON or OFF with priority at automatic mode (AUT): Press MODE and then SET for PRG (program) to search for the function CIA. Press MODE to select. Then press SET to switch from CON to COF and press MODE to confirm.

Switch random mode on/off: Press MODE then at PRG press SET to search for the RND function and press MODE to select. Press SET to set to ON (RND+) or OFF (RND) and press MODE to confirm. When random mode is switched on, all switch-on time points of all channels are shifted at random by up to 15 minutes. Switch-on times are switched earlier and switch-off times are switched later.

Entering timer programs: refer to the operating instructions.

Enable keylock: Briefly press MODE and SET together and at LCK, press SET to lock. This is displayed by an arrow next to the lock symbol.

Disable keylock: Press MODE and SET together for 2 seconds and at UNL press SET to unlock.

S2U12DDX-UC 2-channel timer EAN 4010312603208 75.50 €/pc.
<table>
<thead>
<tr>
<th>Type</th>
<th>MFZ12DX a)</th>
<th>MFZ12DX b)</th>
<th>MFZ12NP PTN12</th>
<th>MFZ12-230V A2Z12-UC c)</th>
<th>MFZ61DX d)</th>
<th>S2U12DX e)</th>
<th>MFZ12PMD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contacts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact material/contact gap</td>
<td>AgSnO2/0.5mm</td>
<td>AgSn02 /0.5mm</td>
<td>AgSnO2/0.5mm</td>
<td>AgSnO2/0.5mm</td>
<td>AgSnO2/0.5mm</td>
<td>Power MOSFET</td>
<td></td>
</tr>
<tr>
<td>Spacing of control connections/contact Spacing of control connections CT1-C2/contact</td>
<td>6 mm</td>
<td>6 mm</td>
<td>6 mm</td>
<td>6 mm</td>
<td>6 mm</td>
<td>6 mm</td>
<td></td>
</tr>
<tr>
<td>Test voltage control connections/contact Test voltage CT1-C2/contact</td>
<td>4000 V</td>
<td>4000 V</td>
<td>4000 V</td>
<td>4000 V</td>
<td>4000 V</td>
<td>4000 V</td>
<td></td>
</tr>
<tr>
<td>Rated switching capacity</td>
<td>10A/250V AC</td>
<td>10A/250V AC</td>
<td>10A/250V AC</td>
<td>10A/250V AC</td>
<td>10A/250V AC</td>
<td>10A/250V AC</td>
<td></td>
</tr>
<tr>
<td>Incandescent lamp and halogen lamp load</td>
<td>up to 200W</td>
<td>up to 200W</td>
<td>up to 200W</td>
<td>up to 200W</td>
<td>up to 200W</td>
<td>up to 200W</td>
<td></td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* in lead-lag circuit or non compensated</td>
<td>1000 VA d)</td>
<td>1000 VA d)</td>
<td>1000 VA d)</td>
<td>1000 VA d)</td>
<td>1000 VA d)</td>
<td>1000 VA d)</td>
<td></td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* shunt-compensated or with EVG*</td>
<td>500 VA d)</td>
<td>500 VA d)</td>
<td>500 VA d)</td>
<td>500 VA d)</td>
<td>500 VA d)</td>
<td>500 VA d)</td>
<td></td>
</tr>
<tr>
<td>Compact fluorescent lamps with EVO* and energy saving lamps ESL</td>
<td>15x7W 10x20W 3(4)</td>
<td>15x7W 10x20W 3(4)</td>
<td>lein ≤ 35A/10ms 1(2)</td>
<td>15x7W 10x20W 3(4)</td>
<td>15x7W 10x20W 3(4)</td>
<td>100W 3(4)</td>
<td></td>
</tr>
<tr>
<td>230V LED lamps</td>
<td>up to 200W d)</td>
<td>up to 200W d)</td>
<td>up to 200W d)</td>
<td>up to 200W d)</td>
<td>up to 200W d)</td>
<td>up to 200W d)</td>
<td></td>
</tr>
<tr>
<td>Max. switching current DC1: 12 V/24 V DC</td>
<td>8 A</td>
<td>8 A</td>
<td>8 A</td>
<td>8 A</td>
<td>8 A</td>
<td>8 A</td>
<td></td>
</tr>
<tr>
<td>Life at rated load, cos ϕ = 1 for incandescent lamps 1000 W at 100/h</td>
<td>&gt; 10³</td>
<td>&gt; 10³</td>
<td>&gt; 10³</td>
<td>&gt; 10³</td>
<td>&gt; 10³</td>
<td>&gt; 10³</td>
<td></td>
</tr>
<tr>
<td>Life at rated load, cos ϕ = 0.6 bei 100/h</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td></td>
</tr>
<tr>
<td>Maximum conductor cross-section (3-fold terminal)</td>
<td>6 mm² (4 mm²)</td>
<td>6 mm² (4 mm²)</td>
<td>6 mm² (4 mm²)</td>
<td>6 mm² (4 mm²)</td>
<td>6 mm² (4 mm²)</td>
<td>6 mm² (4 mm²)</td>
<td></td>
</tr>
<tr>
<td>Two conductors of same cross-section (3-fold terminal)</td>
<td>2.5 mm² (1.5 mm²)</td>
<td>2.5 mm² (1.5 mm²)</td>
<td>2.5 mm² (1.5 mm²)</td>
<td>2.5 mm² (1.5 mm²)</td>
<td>2.5 mm² (1.5 mm²)</td>
<td>2.5 mm² (1.5 mm²)</td>
<td></td>
</tr>
<tr>
<td>Screw head</td>
<td>slotted/cross-head, pozidriv</td>
<td>slotted/cross-head, pozidriv</td>
<td>slotted/cross-head, pozidriv</td>
<td>slotted/cross-head, pozidriv</td>
<td>slotted/cross-head, pozidriv</td>
<td>slotted/cross-head, pozidriv</td>
<td></td>
</tr>
<tr>
<td>Type of enclosure/terminals</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
<td>IP30/IP20</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
<td></td>
</tr>
<tr>
<td>Time on</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Max./min. temperature at mounting location</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td></td>
</tr>
<tr>
<td>Temperature dependence</td>
<td>&lt; 0.2% per ºC</td>
<td>&lt; 0.2% per ºC</td>
<td>&lt; 0.2% per ºC</td>
<td>&lt; 0.2% per ºC</td>
<td>&lt; 0.2% per ºC</td>
<td>&lt; 0.2% per ºC</td>
<td></td>
</tr>
<tr>
<td>Repeat accuracy at 25ºC</td>
<td>±0.1%</td>
<td>±0.1%</td>
<td>±0.1%</td>
<td>±0.1%</td>
<td>±0.1%</td>
<td>±0.1%</td>
<td></td>
</tr>
<tr>
<td>Control voltage dependence from 0.9 to 1.1x rated voltage</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>Stored energy time in the event of power failure (then total reset)</td>
<td>&gt; 0.2 seconds</td>
<td>&gt; 0.2 seconds</td>
<td>&gt; 0.2 seconds</td>
<td>&gt; 0.2 seconds</td>
<td>&gt; 0.2 seconds</td>
<td>7 days</td>
<td>&gt; 0.2 seconds</td>
</tr>
<tr>
<td>Standby loss (active power) 230 V</td>
<td>MFZ12DDX: 0.5W; MFZ12DX: 0.4-0.6W; RVZ/AVZ/TGI/ EAW12X: 0.4W</td>
<td>0.5 W</td>
<td>0.4 W</td>
<td>0.4 W</td>
<td>0.4 W</td>
<td>0.3 W</td>
<td></td>
</tr>
<tr>
<td>Standby loss (active power) 12 V/24 V</td>
<td>0.02 W/0.04 W; MFZ12DDX: 0.05 W/0.1W</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>0.02 W/0.04 W</td>
<td>0.03 W/0.06 W</td>
<td>–</td>
</tr>
<tr>
<td>Control current 230 V-control input local ±20%</td>
<td>–</td>
<td>2mA</td>
<td>2mA; A2Z12: –</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Control current universal control voltage 8/12/24/230 V(&lt;10A) ±20%</td>
<td>0.05/0.1/0.2 mA</td>
<td>A2Z12: 0.05/ 0.1/0.2mA</td>
<td>0.05/0.1/ 0.2/1mA</td>
<td>0.04/0.05/0.1/2mA</td>
<td>10 (100)mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. parallel capacitance (approx. length) of the control leads at 230 V AC</td>
<td>0.2 µF (600m)</td>
<td>0.01 µF (30m); C1-C2: 0.03 µF (100m); A2Z12: 0.2 µF (600m)</td>
<td>0.01 µF (30m); A2Z12: 0.2 µF (600m)</td>
<td>0.2 µF (600m)</td>
<td>0.2 µF (600m)</td>
<td>0.9 µF (300m)</td>
<td></td>
</tr>
</tbody>
</table>

a) EVG = electronic ballast units; KVG = conventional ballast units b) Bistable relay as relay contact. The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated. c) For lamps with a load of 150 W max. d) A 40-fold inrush current must be calculated for electronic ballast devices. For steady loads of 1200 W or 600 W use the current-limiting relay lamps. Due to differences in the lamps electronics, there may be a restriction on the maximum number of lamps; especially if the connected load is very low (for 5-W-LEDs).

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.
THE BODYGUARDS.
Mains disconnection relays, operating hours impulse counter, current relay, mains monitoring relay and current-limiting relays

Selection table mains monitoring relays, current relays and current-limiting relays

Self-learning mains disconnection relay FR12-230V

Self-learning mains disconnection relay FR61-230V and accessory base load GLE

Digital adjustable operating hours impulse counter BZR12DDX-UC with alarm relay and reset

Current relay AR12DX-230V

Mains monitoring relays NR12 monitoring the rotating field

Current-limiting relays capacitive SBR12-230V/240µF and SBR61-230V/120µF

Phase annunciator P3K12-230V and technical data

Typical connections mains disconnection relays

Questions and answers on mains disconnection relays
Eltako mains disconnection relays switch off a monitored 230 V conductor after connected loads are switched off manually. This prevents interfering electromagnetic alternating fields.

A DC voltage with an extremely low residual ripple is used for monitoring purposes. No measurable alternating field is generated but it is guaranteed that room lighting is detected when switched on. The monitored conductor is then switched on again.

Electronically controlled loads or supplied loads, require a high degree of monitoring effort. Here, the self-learning mains disconnection relays are ideal for such applications.

<table>
<thead>
<tr>
<th>Page</th>
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<th>14-4</th>
<th>14-5</th>
<th>14-6</th>
<th>14-7</th>
<th>14-7</th>
<th>14-8</th>
<th>14-8</th>
<th>14-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modular device for mounting on DIN rail EN 60715 1x35, number of modules 18mm each</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Built-in device for installation (e.g. flush-mounting box)</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Number NO contacts or CO contacts potential free (not potential free)</td>
<td>(1)</td>
<td>(1)</td>
<td>1W</td>
<td>1W</td>
<td>1W</td>
<td>2W</td>
<td>(1)</td>
<td>(1)</td>
<td>–</td>
</tr>
<tr>
<td>Zero passage switching</td>
<td>☑</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Switching capacity 16 A/250 V AC</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<tr>
<td>Switching capacity 10 A/250 V AC</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Incandescent lamp load W</td>
<td>2300</td>
<td>1000</td>
<td>2000</td>
<td>2300</td>
<td>1600</td>
<td>1600</td>
<td>1200</td>
<td>600</td>
<td>–</td>
</tr>
<tr>
<td>Fluorescent lamp load with EVG* and energy saving lamps W</td>
<td>I on ≤70 A/10 ms ²</td>
<td>I on ≤70 A/10 ms ²</td>
<td>150-200 ²</td>
<td>150-200 ²</td>
<td>I on ≤70 A/10 ms ²</td>
<td>I on ≤70 A/10 ms ²</td>
<td>1200</td>
<td>600</td>
<td>–</td>
</tr>
<tr>
<td>No standby loss</td>
<td>☑</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<td>Low standby loss</td>
<td>■</td>
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<td>■</td>
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<tr>
<td>Adjustable operating hours counter</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
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</tr>
<tr>
<td>Current relay</td>
<td>■</td>
<td>■</td>
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</tr>
<tr>
<td>Mains monitoring relay</td>
<td>■</td>
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<tr>
<td>Current-limiting relay</td>
<td>■</td>
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</tr>
<tr>
<td>Mains disconnection relay</td>
<td>■</td>
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</tr>
<tr>
<td>Phase annunciator</td>
<td>■</td>
<td>■</td>
<td>■</td>
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</tr>
</tbody>
</table>

* EVG = electronic ballast units

² A 40-fold inrush current must be expected for electronic ballast devices. Limit with SBR12 or SBR61 if applicable.

² Duplex technology: When switched with 230 V/50 Hz zero passage switching is activated if L is connected to (L) and N to (N). Then additional standby loss of only 0.1 Watt.
FR12-230V

1 NO contact not potential free 16 A/250 V AC. Self-learning. Incandescent lamp load 2300 W. Standby loss 0.8 watt only.

Modular device for DIN EN 60715 TH35 rail mounting.
1 module = 18 mm wide and 58 mm deep.
230 V supply voltage and switching voltage.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
The FR12-230V mains disconnection relay disconnects the power supply once all series connected loads are turned off, thus preventing any electromagnetic interference fields from occurring.
Small loads up to 200 mA are acceptable and, once major loads are disconnected, they do not prevent field disconnection. The limit is taught-in automatically by the FR12 using a patented method so you need not set the limit manually. Loads drawing more than 200 mA are consistently defined as loads which should cause the line power to be connected.
As long as no major load is turned on, one pole of the monitored circuit remains isolated from the mains. Neutral and earth are connected continuously to avoid acting as an aerial.
A DC voltage with an extremely low residual ripple is applied for monitoring. Therefore, it is prohibited to bridge the relay contact, which would ultimately cause device failure.
When a load is turned on, the mains disconnection switch connects the monitored phase after approx. 1 sec and the LED lights red.

Function of the lower rotary switch
In the function ON/¬ position, the relay contact is continuously closed and field disconnection deactivated.
When turning back to position A = automatic with self-learning, the actual current value is stored as shut down value in which should be switched-off even if small consumers, such as electronic dimmers, are still available. Lighting must therefore be switched-off when learning by rotary switch.
In position A changes of connected consumers can be taught-in independently. When the outer conductor is switched-on the first time and after a power failure the FR12 automatically teaches-in again.
If a new small consumer is switched-on more than 24 hours, the total current drawn of the monitored circuit is less than 200 mA, the disconnection switch is set to A mode and the light was switched-on and off occasionally, the new small consumer is taught-in and the ladder is switched-off. This can be achieved immediately after connecting of a new small consumer by briefly jumping from A to ¬ and back. If self-learning of the device is not desired, the rotary switch must be set to the function A ‘automatic switched-off’.

Function of the upper rotary switch
The monitoring voltage can be adjusted in the range from 5 V DC to 230 V DC. Due to its low residual ripple, it generates no measurable alternating field even at 230 V DC. The higher the adjustment, the greater the number of capacitive loads detectable without switching on a base load. It can therefore be reduced until the loads are barely detectable. In many applications, even the lowest monitoring voltages are detectable.

FR12-230V
1 NO 16 A
80,40 €/pc.

Recommended retail prices excluding VAT.
**SELF-LEARNING MAINS DISCONNECTION RELAY FR61-230V**

**ACCESSORY BASE LOAD GLE**

---

**FR61-230V**

1 NO contact not potential free 10 A/250 V AC. Standby loss 0.8 watt only.

- Built-in device for installation.
- 45 mm long, 45 mm wide, 26 mm deep.
- 230 V supply voltage and switching voltage.
- State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
- The FR61-230V mains disconnection relay disconnects the power supply once all series connected loads are turned off, thus preventing any electromagnetic interference fields from occurring.
- Small loads up to 20 mA are acceptable and, once major loads are disconnected, they do not prevent field disconnection. There is no need to manually set the limit; it is learned by the FR61. Loads drawing more than 200 mA are consistently defined as loads which should cause the line power to be connected.
- As long as no major load is turned on, one pole of the monitored circuit remains isolated from the mains. Neutral and earth are connected continuously to avoid acting as an aerial.
- A DC voltage of 230 V DC with an extremely low residual ripple is applied for monitoring. Therefore, it is **prohibited to bridge the relay contact**, which would ultimately cause device failure.
- When a load is turned on, the mains disconnection relay connects the phase.
- **If the phase is switched on for the first time and after a power failure the FR61 automatically learns in again**: At first an inrush current of 30 mA is specified. If a new small load is switched on for more than 24 hours, the total current drawn by the monitored circuit is less than 200 mA, and in the meantime the light has been switched on and off, the new load is learned in and the conductor is switched off. This learn-in mode can be realised immediately after connection of the new load by briefly switching off the MCB.

| **FR61-230V** | 1 NO 10 A | EAN 4010312203477 | 68.30 €/pc.

---

**GLE**

**Accessory base load**

A base load is used if loads cannot be detected due to their capacitance but are meant to switch on the line voltage. Base loads must consistently start or operate in parallel with the related load and be turned off with the latter. Higher stand by loads may affect or jam the detection of a base load. Typical applications: Fluorescent lamps, dimmer circuits and electronic transformers.

**GLE base load element**

PTC in a small coupler with connecting leads; can be used directly in a load, a switch box or a junction box. It is not capable of keeping the mains disconnection relay in the connected state without an additional load connected.

| **GLE** | 1 x base load | EAN 4010312900970 | 5.60 €/pc.

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Recommended retail prices excluding VAT.
BZR12DDX-UC

1 CO contact potential free 10 A/250 V AC. Standby loss 0.05–0.5 watt only.

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 1 (L) for this. This gives an additional standby consumption of only 0.1 watt.

The BZR12DX is adjustable when the supply voltage UC (8-253 V AC or 10-230 V DC) is applied to B1/A2.

**Typical connection**

- Field 1 shows the selected function.
- Field 2 shows the selected time.
- Field 3 shows the residual impulses.

**Recommended retail prices excluding VAT.**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZR12DDX-UC</td>
<td>1 CO 10 A</td>
<td>4010312603161</td>
<td>55.10 €/pc.</td>
</tr>
</tbody>
</table>


Housing for operating instructions GBA12, see accessories, chapter 2.

Recommended retail prices excluding VAT.
**AR12DX-230V**

1 CO contact potential free 16 A/250 V AC. Standby loss 0.8 watt only.

Modular device for DIN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

*With the patented Eltako Duplex technology (DX) the normally potential-free contacts can still switch in zero passage when switching 230 V AC 50 Hz and therefore drastically reduce wear. Simply connect the neutral conductor to the terminal (N) and L to 1 (L) for this. This gives an additional standby consumption of only 0.1 watt.*

If the contact is used for controlling switching devices which do not perform zero passage switching themselves, (N) should not be connected because the additional closing delay otherwise causes the opposite effect.

With an internal toroidal-core current transformer the single phase AC current flowing through a consumer V1 of 0.1 A up to max. 32 A is compared to the setpoint. When the latter is exceeded a relay switches off a consumer V2 connected to 2 within 0.5 seconds or switches on a consumer V3 connected to 3.

Adjustment accuracy ±5%. From 25 A the relay always switches on.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

**The basis of current A** will be set with the lower rotary switch \( A \).

The following basic values can be selected: 0.1 A, 0.3 A, 0.6 A, 0.9 A, 1.5 A, 1.9 A, 3.0 A and 3.2 A.

**The multiplier \( xA \)** will be set with the middle rotary switch \( xA \) and offers values between 1 and 10. So currents starting from 0.1 A (basis of current 0.1 A and multiplier 1) can be set.

**OFF delay RV** can be set with the upper rotary switch \( RV \) between 0 and 120 secs.

The hysteresis is defined as approx. 25%.

Status indication by LED.

The measuring input M1-M2 is electrically isolated from power supply L–N and make contact 1 (L)-2/3.

Reference values larger than 32 A can be adapted by an external measuring transformer.

**Function rotary switches**

- **RV** (s): 0-120 secs
- **xA**
- **A**: 0.1, 0.3, 0.6, 0.9, 1.5, 1.9, 3.0, 3.2 A
- **OFF delay RV**: 0-120 secs
- Status indication by LED

**Typical connection**

If (N) is connected, the zero passage switching is active.


Housing for operating instructions GBA12, see accessories, chapter Z.
NR12-001-3X230V

1 CO contact potential free 10 A/250 V AC. Standby loss 0.8 watt only.

Modular device for DIN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

Designed to monitor 230V AC voltage between 1 to 3 phase conductors and neutral and to monitor the rotating field (clockwise) in the switch positions 2 Ph and 3 Ph.

In the position only the rotating field is monitored, independent from the mains voltage.

Supply voltage L1-N 180-250 V/50 Hz.

In case of failure of L1 the relay releases immediately without delay.

With the lower rotary switch on the front two operate voltages resp. dropout voltages can be set and the number of monitored phase conductors must be selected.

U1: 161 V dropout voltage and 185 V operate voltage.
U2: 196 V dropout voltage and 206 V operate voltage as per VDE 0100, part 718 (formerly: VDE 0108, part 1).

Voltage applied signalled by LED. At wrong polarity or in case of a missing phase conductor the LED flashes rapidly.

Release delay RV settable with the upper rotary switch from 0.1 to 8 sec.
The LED flashes slowly during the release delay time period. Operate delay 0.5 sec.

Maximum fusing 16 A.

NR12-001-3x230V
1 CO 10 A
EAN 4010312202524
48.80 €/pc.

NR12-002-3X230V

2 CO contacts potential free 10 A/250 V AC. Standby loss 0.8 watt only.

Modular device for DIN 60715 TH35 rail mounting.
2 modules = 36 mm wide, 58 mm deep.

All functions same as NR12-001-3x230V but with a second CO contact.

Maximum fusing 16 A.

Typical connections: 1 phase monitoring

Typical connections: 3 phase monitoring

NR12-002-3x230V
NR12-001-3x230V
NR12-002-3x230V
NR12-001-3x230V

NR12-002-3x230V
2 CO 10 A
EAN 4010312202548
63.80 €/St.
CURRENT-LIMITING RELAYS CAPACITIVE SBR12-230V/240µF AND SBR61-230V/240µF

**SBR12-230V/240µF**

1 NO contact 16 A/250 V AC. No standby loss.

Modular device for DIN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
Max. capacitive load 240 µF downstream of rectifier (e.g. energy saving lamps and electronic ballast) or 120 µF directly at the mains (e.g. shunt-compensated fluorescent lamps).
Limiting resistor 12 Ω, limiting period approx. 15msec.
The starting current impulse of energy saving lamps, fluorescent lamps and compact fluorescent lamps is limited to 20 A by short-time switch-on (approx. 15msec.) of heavy-duty resistors (12 Ω).
The current-limiting relay is connected on the load side of the protected relay contact.
Permanent load max. 1200 W, max. switching frequency 600/h.

*Explanation of capacitive load specification:*
The specified max. capacitive load directly at the mains is the deciding factor determining shunt-compensated fluorescent lamps or conventional ballast, for example.
Here the capacitor switched in parallel to the mains is the deciding factor determining the correct dimensioning per lamp.
The specified max. capacitive load downstream of the rectifier is the deciding factor determining fluorescent lamp ballast or energy saving lamps, for example. An equivalent capacitance of 10 µF per lamp may be calculated.

| SBR12-230V/240µF | 1 NO 16 A | EAN 4010312205457 | 38,90 €/pc. |

**SBR61-230V/120µF**

1 NO contact 10 A/250 V AC. No standby loss.

Built-in device for installation. 45 mm long, 45 mm wide, 18 mm deep.
Max. capacitive load 120 µF downstream of rectifier (e.g. energy saving lamps and electronic ballast) or 60 µF directly at the mains (e.g. shunt-compensated fluorescent lamps).
Limiting resistor 24 Ω, limiting period approx. 15 ms.
The starting current impulse of energy saving lamps, fluorescent lamps and compact fluorescent lamps is limited to 10 A by short-time switch on (approx. 15 msec.) of heavy-duty resistors (24 Ω).
The current-limiting relay is connected on the load side of the protected relay contact.
Permanent load max. 600 W, max. switching frequency 600/h.

*Explanation of capacitive load specification:*
The specified max. capacitive load directly at the mains is the deciding factor determining shunt-compensated fluorescent lamps or conventional ballast, for example.
Here the capacitor switched in parallel to the mains is the deciding factor determining the correct dimensioning per lamp.
The specified max. capacitive load downstream of the rectifier is the deciding factor determining fluorescent lamp ballast or energy saving lamps, for example. An equivalent capacitance of 10 µF per lamp may be calculated.

| SBR61-230V/120µF | 1 NO 16 A | EAN 4010312205464 | 36,10 €/pc. |
## PHASE ANNUNCIATOR P3K12-230V AND TECHNICAL DATA

### P3K12-230V

**Phase annunciator. Standby loss 0.06 watt only.**

Modular device for DIN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

For visual monitoring of 1 to 3 phases 230 V.

Indication with three red LEDs.

| P3K12-230V | Phase annunciator | EAN 4010312701065 | 32,60 €/pc. |

### PHASE ANNUNCIATOR P3K12-230V AND TECHNICAL DATA

#### Compliance with: EN 61000-6-3, EN 61000-6-1 and EN 60 669

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

### Type BZR12DDX NR12 AR12DX/FR12 FR61

#### Contacts

<table>
<thead>
<tr>
<th>Contacts</th>
<th>BZR12DDX</th>
<th>NR12</th>
<th>AR12DX/FR12</th>
<th>FR61</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material</td>
<td>AgSnO₂/0.5 mm</td>
<td>AgSnO₂/0.5 mm</td>
<td>AgSnO₂/0.5 mm</td>
<td>AgSnO₂/0.5 mm</td>
</tr>
<tr>
<td>Spacing of control connections/contact</td>
<td>3 mm</td>
<td>&gt;6 mm</td>
<td>–, AR12DX: &gt;6 mm</td>
<td>–</td>
</tr>
<tr>
<td>Test voltage contact to contact</td>
<td>2000 V</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Rated switching capacity</td>
<td>10 A/250 V AC</td>
<td>10 A/250 V AC</td>
<td>16 A/250 V AC</td>
<td>10 A/250 V AC</td>
</tr>
<tr>
<td>Incandescent lamp and halogen lamp load</td>
<td>2000 W</td>
<td>2000 W</td>
<td>2300 W</td>
<td>1000 W</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG</td>
<td>1000 VA</td>
<td>1000 VA</td>
<td>1000 VA</td>
<td>1000 VA</td>
</tr>
<tr>
<td>Fluorescent lamp load with EVO* or EVOG* and energy saving lamps ESL</td>
<td>500 VA</td>
<td>500 VA</td>
<td>500 VA</td>
<td>500 VA</td>
</tr>
<tr>
<td>Compact fluorescent lamps with EVO* and energy saving lamps ESL</td>
<td>15x7W, 10x20W</td>
<td>I on ≤ 70A/10 ms</td>
<td>I on ≤ 70A/10 ms</td>
<td>I on ≤ 70A/10 ms</td>
</tr>
<tr>
<td>230 V LED lamps</td>
<td>up to 200 W</td>
<td>up to 200 W</td>
<td>up to 200 W</td>
<td>up to 200 W</td>
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<tr>
<td>Max. switching current DC: 12 V/24 V DC</td>
<td>8 A</td>
<td>8 A</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Life at rated load, cos Φ = 1 at 100/h and incandescent lamps 1000 W at 100/h</td>
<td>&gt;10³</td>
<td>&gt;10³</td>
<td>&gt;10³</td>
<td>&gt;10³</td>
</tr>
<tr>
<td>Life at rated load, cos Φ = 0.6 at 100/h</td>
<td>&gt;4x10⁴</td>
<td>&gt;4x10⁴</td>
<td>&gt;4x10⁴</td>
<td>&gt;4x10⁴</td>
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<tr>
<td>Max. operating cycles</td>
<td>10³/h</td>
<td>10³/h</td>
<td>10³/h</td>
<td>10³/h</td>
</tr>
<tr>
<td>Switching position indication/voltage indication</td>
<td>Display</td>
<td>Leuchtdiode</td>
<td>Leuchtdiode</td>
<td>–</td>
</tr>
<tr>
<td>Maximum conductor cross-section</td>
<td>6 mm²</td>
<td>6 mm²</td>
<td>6 mm²</td>
<td>4 mm²</td>
</tr>
<tr>
<td>Two conductors of same cross-section</td>
<td>2.5 mm²</td>
<td>2.5 mm²</td>
<td>2.5 mm²</td>
<td>1.5 mm²</td>
</tr>
<tr>
<td>Screw head</td>
<td>slotted/crosshead, pozidriv</td>
<td>slotted/crosshead, pozidriv</td>
<td>slotted/crosshead, pozidriv</td>
<td>slotted/crosshead, pozidriv</td>
</tr>
<tr>
<td>Type of enclosure/terminals</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
<td>IP30/IP20</td>
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</tbody>
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### Electronics

<table>
<thead>
<tr>
<th>Electronics</th>
<th>BZR12DDX</th>
<th>NR12</th>
<th>AR12DX/FR12</th>
<th>FR61</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time on</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Max./min. temperature at mounting location</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
</tr>
<tr>
<td>Control voltage range</td>
<td>0.9 to 1.1x rated voltage</td>
<td>0.9 to 1.1x rated voltage</td>
<td>0.9 to 1.1x rated voltage</td>
<td>0.9 to 1.1x rated voltage</td>
</tr>
<tr>
<td>Stand by loss (active power) 230 V</td>
<td>0.5 W</td>
<td>0.8 W</td>
<td>0.8 W</td>
<td>0.8 W</td>
</tr>
<tr>
<td>Stand by loss (active power) 12 V</td>
<td>0.05 W</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Max. parallel capacitance (length) of control lead</td>
<td>0.06 µF (200 m)</td>
<td>0.06 µF (200 m)</td>
<td>0.06 µF (200 m)</td>
<td>0.06 µF (200 m)</td>
</tr>
</tbody>
</table>

* EVG = electronic ballast units; KVG = conventional ballast units
* Applies to lamps with max. 150 W
* A 40-fold inrush current must be expected for electronic ballast devices.
* When using DX types close attention must be paid that zero passage switching is activated!
* Standby loss at 24 V approx. two times greater than at 12 V.
* Usually applies for dimmable energy saving lamps and dimmable 230 V LED lamps. Due to differences in the lamps electronics, there may be a restriction on the maximum number of lamps; especially if the connected load is very low (for 5W-LEDs).

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.
Standard connection mains disconnection relay

Mains disconnection relay with GLE base load element

Elder rotary dimmers with phase cut-on (ON before zero crossing) for resistive and inductive loads
Can mostly be operated at V=\text{max} if no additional standby consumer is in the circuit. Otherwise see 'Modern dimmers'.

Touch dimmers and sensor dimmers
cannot be used. The universal dimmer switch EUD61 and a push-button from the associated switch product range can replace a touch dimmer.

Remote control dimmers
We recommend as remote control dimmers the impulse dimmer switch EUD12F. On these devices, terminal L is 'tapped' ahead of the mains disconnection relay, thus, maintaining the complete function. An integrated cut-off relay takes over the mains disconnection of the circuit. Mechanical push-buttons are connected to T1 and T2. Only a low DC voltage is impressed on the control wire. If the application of the EUD12F is not possible for reasons of installation the type EUD12NPN can be used. Here the terminal L is connected after the mains disconnection relay. Therefore the memory function is switched off.

Switched-mode power supplies in consumer electronic units (e.g. TV sets) and plug-in power supply units
Only specific units or power supplies are detected and disconnected by the mains disconnection switch, even while in standby mode. Where units or power supplies in a monitored circuit are not to be disconnected these must be isolated from line power by a switched socket outlet or a plug connector so that the function of the mains disconnection switch is not affected.

Switching power supply units in the distribution box
The switching power supply units WNT12 are detected at primary switching-on from 50V DC monitoring voltage. At secondary switching-on of the load the full monitoring voltage is necessary.

Roller shutter control
In order to operate tube-mounted motors with electronic limit switches, it is best if the lighting is switched on to reactivate the monitored circuit before the electromechanical switch or push-button switch is operated. In case of automatic controls in monitored circuits, the mains disconnection (MD) must be inhibited for the period when the roller shutters are controlled. This can be achieved by fitting a time switch in the distributor. However, in this case, do not bridge L-3 of the mains disconnection relay under any circumstances. Instead, connect the time switch change-over contact between terminal L of the MD and the monitored circuit.

Plug-in consumers with power control
These devices (vacuum-cleaners, standard lamps with dimmer) are often not detected when switching on the mains disconnection relay. For operation of these kind of devices therefore the normal lighting must be switched on first.
**Function check?**
Disconnect terminal 3 with the power on. The mains disconnection relay must switch the phase on. The LED goes out.

**Base load?**
A base load is used if loads cannot be detected due to their capacitance but are meant to switch on the line voltage. Never connect a base load directly between the disconnecting phase and neutral.

**The mains disconnection relay is clocking?**
A base load device may be connected directly between the disconnecting phase and neutral. An inductive consumer (e.g. plug-in power supply) is located in the disconnecting circuit without any isolation directly downstream of the mains disconnection relay. To function correctly, the consumer must be isolated from the mains.

**Dimmer operation downstream of a mains disconnection relay?**
We recommend using the universal dimmer switch EUD12F or EUD12NPN, as described on page G8. Rotary dimmer with phase sector control for electronic transformers: only possible with additional terminal for mains disconnection devices (e.g. make Busch-Jaeger, Jung, Berker und Gira). Touch dimmers and sensor dimmers cannot be used. The universal dimmer switch EUD61 and a push-button from the associated switch product range can replace a touch dimmer.

**Operate electronic transformers?**
All electronic transformers must be switched with a base load in parallel to the primary input, as long as they are not dimmed.

**Appliances with transformer power supplies** *(i.e. entertainment electronic appliances, PC, etc.)*?
These appliances are often switched on or off on the secondary side. The transformer power supplies are permanently connected to the mains. Devices with these features must be disconnected from the mains after operation by unplugging the mains plug or by a switchable multiple socket strip or power consumption is learnt-in and is also disconnected (up to 200 mA).

**Time-controlled roller blind controls directly mounted at the windows?**
These roller blind controls receive a continuous quiescent current and should not be operated downstream of a mains disconnection relay for this reason. If disconnection is not possible from the room electrical circuit, the roller blind controls must be replaced by roller blind switches.

**Electronic impulse switches downstream of a mains disconnection relay?**
We recommend the electronic impulse switches ESR12NP which can also connect the FR12 without an additional base load. Electromechanical impulse switches need to be pressed a little longer until the FR12 and the lighting circuit switch on.

**Fluorescent lamps or compressed fluorescent lamps (energy saving lamps) downstream of a mains disconnection relay?**
Fluorescent lamps always require a base load which must be connected in parallel to the lamp.

**230 V LED lamps after a mains disconnection switch?**
230 V LED lamps always need a base load which must be connected in parallel to the lamp.
MAKE A CONFIDENT STRIDE THROUGH THE STAIRWELL WITH ELTAKO STAIRCASE TIME SWITCHES.
Staircase time switches and off-delay timers

Selection table staircase time switches and off-delay timers 15 - 2
Staircase time switch TLZ12-8plus The Standard 15 - 3
Staircase time switch TLZ12-8 The Simple 15 - 4
Staircase time switch TLZ12G-230V+UC The Noiseless 15 - 5
Digital settable staircase time switch TLZ12D-plus The Allrounder 15 - 6
Staircase time switch TLZ12-9 for older installations 15 - 7
Staircase time switch TLZ61NP-230V 15 - 8
Staircase time switch TLZ61NP-230V+UC 15 - 9
Technical data staircase time switches 15 - 10
Off-delay timer NLZ12NP-230V+UC 15 - 11
Off-delay timer NLZ61NP-230V 15 - 12
Off-delay timer NLZ61NP-UC 15 - 12
Technical data off-delay timer 15 - 13
Incandescent lamps and energy saving lamps ESL are replaced by LED lamps. As the first leading manufacturer of staircase time switches, we produce devices with optimisation for that since 2010. TLZ12G up to 400 Watt!

When these staircase time switches are in ESL setting, the switch-off early warning by flickering function does not reduce the service life of the energy saving lamps. The warning function which prevents sudden darkness fully complies with the stipulations in DIN 18015-2.

In addition, the lighting is immediately switched on again after a power failure if the set time has not yet elapsed, to increase security.

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**The Complete Range**

In the table below, various properties and configurations of the TLZ12 time switches are listed. The entries are marked with a yes (Y) or no (N) in the columns. The numbers in the rows indicate the variation in each category. The table is structured to allow easy identification of the features available in each model.

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<thead>
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</thead>
<tbody>
<tr>
<td>Modular device for mounting on DIN rail EN 60715 TH35, number of modules 18 mm each</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Built-in device for installation (e.g. flush-mounting box)</td>
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<tr>
<td>For energy saving lamps ESL*</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>For 230 V LED lamps</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>Switch-off early warning function switchable</td>
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<tr>
<td>Variable time range up to</td>
<td>30 min</td>
<td>12 min</td>
<td>30 min</td>
<td>99 min</td>
<td>12 min</td>
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<tr>
<td>Low standby loss</td>
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<tr>
<td>230 V control voltage</td>
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<tr>
<td>Universal control voltage (additionally) 8 to 230 V UC</td>
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<tr>
<td>Glow lamp current mA</td>
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<td>50</td>
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<td>50</td>
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<tr>
<td>Double connections pushbutton and lamp</td>
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<td>Single connections below</td>
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<tr>
<td>Automatic detection 3-/4-wire circuit</td>
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<td>3-wire circuit, without attic lighting</td>
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<tr>
<td>Resettable</td>
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<tr>
<td>Permanent light and switch-off logics with pushbutton switchable</td>
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<tr>
<td>Incrementing 2)</td>
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<td>Speareate continuous light switch</td>
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<td>Additional input for motion control</td>
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<tr>
<td>With multifunction: TLZ, ESV, ES and ER</td>
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<tr>
<td>Bistable relay</td>
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<td>Zero passage switching</td>
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</tbody>
</table>

* ESL = abbr. for energy saving lamps

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1) As stipulated in DIN 18015-2 under 4.2 the following should be taken into account: For lighting systems in staircases, corridors, arcades or elevator areas it is recommended to use the switch-off early warning function to prevent sudden darkness. If the switch-off early warning function is active, the light starts flickering approx. 30 seconds before time-out and is repeated three times at decreasing time intervals.

2) Time can be extended: Within the first second after switching on or resetting the time can be extended by pressing the pushbutton repeatedly up to three times (incrementing). Each operation increments the set time once.
**TLZ12-8plus**

1 NO contact not potential free 16 A/250 V AC. Incandescent lamps up to 2300 W, energy saving lamps ESL and LED lamps up to 200 W. Control voltage 230 V and/or 8..230 V UC. Switch-off early warning and permanent light by pushbutton switchable. Standby loss 0.7 watt only. With ESL optimisation and multifunction.

Modular device for DIN EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 58 mm deep.

**Zero passage switching** to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

**The noiseless electronics** do not even bother the sensitive ear – unlike many synchronous motors with mechanical gears.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

Control voltage, supply voltage and switching voltage 230 V. In addition electrically isolated universal voltage from 8 to 230 V UC. 3-wire and 4-wire circuits, resettable, with attic lighting if 4-wire circuit.

**Automatic detection of the method of connection.**

Glow lamp current up to 50 mA, dependent on the ignition voltage of the glow lamps.

Precise variable time range from 1 to 30 minutes; settable by minute scale.

**Permanent light switch** with the big rotary switch.

If the function TLZ is set, the lighting is switched on again after a power failure provided the set time has not yet elapsed.

**With double connections** for pushbutton and lamp in order to connect either above or below or only below.

If **switch-off early warning function** is switched on, the light starts flickering approx. 30 seconds before time-out and is repeated three times at decreasing time intervals.

If **permanent light by pushbutton** is switched on, permanent light can be switched on by pressing the pushbutton longer than 1 second. This is switched off automatically after 60 minutes or by pressing the pushbutton longer than 2 seconds.

If both switch-off early warning function and permanent light by pushbutton are switched on, the switch-off early warning function is activated before the permanent light switches off.

When energy saving lamps ESL are completely or partially switched, then set the switch-off early warning and the permanent light by pushbutton on the right hand side of the rotary switch.

If the function TLZ is selected the time can be extended within the first second after switching on or resetting by pressing the pushbutton repeatedly up to three times (incrementing). Each momentary-contact control increments the set time once.

**With multifunction:** The following functions can be selected optionally: **ES** (impulse switch), **ER** (relay), **ESV** (impulse switch with release delay).

If the function ESV is set the time ranges (t), which can be set with the middle rotary switch are as follows: 1 = 2 min, 2 = 5 min, 3 = 10 min, 4 = 15 min, 6 = 25 min, 8 = 35 min, 10 = 45 min, 12 = 60 min, 20 = 90 min, 30 = 120 min. In this function the impulse switch automatically disconnects after the set delay is timed out, if a manual OFF command has not been given. Switch-off early warning and permanent light by pushbutton can also be switched on in this position. Forgotten permanent light is switched off after 2 hours.

**Function rotary switches**

**Typical connections**

3-wire circuit, resettable.

4-wire circuit with attic lighting, resettable.

Technical data page 15-10.

Housing for operating instructions GBA12, see accessories, chapter 2.
**TLZ12-8**

1 NO contact not potential free 16A/250V AC. Incandescent lamps up to 2000W, energy saving lamps ESL and LED lamps up to 100W, without switch-off early warning. Standby loss 0.7 watt only.

Modular device for DIN EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

**The noiseless electronics** do not even bother the sensitive ear – unlike many synchronous motors with mechanical gears.

230 V control voltage, supply voltage and switching voltage.

Variable time range from approx. 0.2 to 12 minutes.

Glow lamp current up to 50 mA, dependent on the ignition voltage of the glow lamps.

**Own permanent light switch** with the big rotary switch.

3-wire and 4-wire circuits, resettable, with attic lighting if 4-wire circuit.

**Automatic detection of the method of connection.**
Without switch-off early warning function and without zero passage switching.

**With double connections** for pushbutton and lamp in order to connect either above or below or only below.

- $\circ$ = Function switched off
- $\bigcirc$ = Permanent light switched on
- AUTO = The set function is active

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**TLZ12-8**

1 NO 16 A

EAN 4010312401637

32,00 €/pc.

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Recommended retail prices excluding VAT.

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Technical data page 16-10.

Housing for operating instructions GBA12, see accessories, chapter 2.
STAIRCASE TIME SWITCH TLZ12G-230V+UC
THE NOISELESS

TLZ12G-230V+UC

Noiseless solid-state relay not potential-free 400 W, also energy saving lamps ESL and LED lamps. Switch-off early warning and pushbutton permanent light switchable. Standby loss 0.4 watt only.

With ESL optimisation and multifunction.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

Zero passage switching to protect lamps. This prolongs in particular the lifetime of energy saving lamps.
The noiseless electronics and zero passage switching do not even bother the sensitive ear – unlike many synchronous motors with mechanical gears.

230 V control voltage and additionally 8 to 230 V UC electrically isolated universal control voltage. 230 V supply voltage and switching voltage. 3-wire and 4-wire circuits, resettable, with attic lighting if 4-wire circuit. Automatic detection of the method of connection.

Glow lamp current up to 50 mA, dependent on the ignition voltage of the glow lamps.

Precise variable time range from 1 to 30 minutes, settable by minute scale.

Permanent light switch with the big rotary switch.
If the function TLZ is set, the lighting is switched on again after a power failure provided the set time has not yet elapsed.

With double connections for pushbutton and lamp in order to connect either above or below or only below.

If switch-off early warning function is switched on the light starts flickering approx. 30 seconds before time-out and is repeated three times at decreasing time intervals.

If pushbutton permanent light is switched on permanent light can be switched on by pressing pushbutton longer than 1 second. This is switched off automatically after 60 minutes or by pressing pushbutton longer than 2 seconds.

If both switch-off early warning function and permanent light pushbutton are switched on, the switch-off early warning function is activated before the permanent light switches off.

When energy saving lamps ESL are completely or partially switched, then set the switch-off early warning and the pushbutton permanent light on the right hand side of the rotary switch.
If the function TLZ is selected the time can be extended within the first second after switching on or resetting by pressing the pushbutton repeatedly up to three times (incrementing). Each momentary-contact control increments the set time once.

With multifunction: the following functions can be selected optionally: ES (impulse switch), ER (relay), ESV (impulse switch with release delay).
If the function ESV is set the time ranges (t) which can be set with the middle rotary switch are as follows:
1 = 2 min, 2 = 5 min, 3 = 10 min, 4 = 15 min, 6 = 25 min, 8 = 35 min, 10 = 45 min, 12 = 60 min, 20 = 90 min, 30 = 120 min. In this function the impulse switch automatically disconnects after the set delay is timed out, if a manual OFF command has not been given. Switch-off early warning and pushbutton permanent light can be switched on additionally in this position as well. Forgotten permanent light is switched off after 2 hours.

= Switch-off early warning function
= Permanent light
= Switch-off early warning function and permanent light by pushbutton
= Permanent light switch on (all click-stop positions)
TLZ/ESV/ES/ER = The set function is active

Technical data page 15-10.
Housing for operating instructions GBA12, see accessories, chapter 2.

53,70 €/pc.
DIGITAL SETTABLE STAIRCASE TIME SWITCH TLZ12D-PLUS
THE ALLROUNDER

TLZ12D-plus

1 NO contact not potential free 16 A/250 V AC. Incandescent lamps up to 2300 W. Energy saving lamps ESL and LED lamps up to 200 W. Control voltage 230 V and/or 8..230 V UC. Switch-off early warning and permanent light by pushbutton switchable. Standby loss 0.5 watt only.

With ESL optimisation and multifunction.

Modular device for DIN EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
The functions and times are entered using the MODE and SET keys as described in the operating manual and indicated on the LC display. A keylock function is provided.

Zero passage switching to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

The noiseless electronics do not even bother the sensitive ear – unlike many synchronous motors with mechanical gears.

By using a bistable relay coil power loss and heating is avoided even in the on mode.
The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

Control voltage, supply voltage and switching voltage 230 V. In addition electrically isolated universal voltage from 8 to 230 V UC. 3-wire and 4-wire circuits, resettable, with attic lighting if 4-wire circuit.

Automatic detection of the method of connection.

Glow lamp current up to 50 mA, dependent on the ignition voltage of the glow lamps.

Precise variable time range from 1 to 99 minutes.

Separate continuous light pushbutton with projecting SET button in the functions STS, ISO, IS and R.

With motion detector control input BM, which converts the input signal into a control impulse if the function STS is set. In this case the permanent light by pushbutton function is not active.

If the function STS is set, the lighting is switched on again after a power failure provided the set time has not yet elapsed.

The elapsed period is shown in the middle of the display. The set time flashes at the bottom edge of the display until the set period elapses. The accrued switch-on time is displayed there outside the elapsed time, first in hours (h), then in months (m) with 1 digit after the decimal point.

When the set time flashes but the elapsed time does not change, a control pushbutton is inhibited.

If switch-off early warning function is switched on, the light starts flickering in time variable from 10 to 50 seconds before time-out and is repeated three times at decreasing time intervals.

If permanent light by pushbutton is switched on, permanent light can be switched on by pressing the pushbutton longer than 1 second. This is switched off automatically after time variable from 0.5 to 10 hours or by pressing the pushbutton longer than 2 seconds. This function is not active at the BM input.

If both switch-off early warning function and permanent light by pushbutton are switched on, the switch-off early warning function is activated before the permanent light switches off.

If energy saving lamps are switched completely or partially, activate position ‘ESL’ in the menu guidance. This is indicated by a + sign next to the abbreviation for the function at the top of the display.

If the function STS is selected the time can be extended within the first second after switching on or resetting by pressing the pushbutton repeatedly up to three times (incrementing). Each momentary-contact control increments the set time once. This function is not active at the BM input.

With multifunction: Switchable to the functions IS (impulse switch), R (relay), ISO (impulse switch with off-delay) and HC (hour counter). After setting the required function, the function can be blocked. An arrow on the right of the abbreviation indicates the blocking status.

ISO: The impulse switch automatically disconnects after the set delay from 0.1 to 9.9 hours is timed out, provided there is no manual OFF command. Switch-off early warning, permanent light by pushbutton and ESL are also switchable if the function ISO is set.

HC: As long as the pushbutton input is excited, the + sign is indicated next to the abbreviation for the function HC at the top of the display. The time is added and indicated at the bottom of the display. Initially up to 9999 hours (h), then automatic change-over to months (m) each with 730 hours and display with 1 digit after the decimal point. The relay is not switched on if the function HC is set.

Menu guidance with selectable languages German, English or French as described in the attached operating instructions.

Recommended retail prices excluding VAT.
Recommended retail prices excluding VAT.

**TLZ12-9**

1 NO contact not potential free 16 A/250 V AC. Incandescent lamps up to 2300 W. Energy saving lamps ESL and LED lamps up to 100 W. Switch-off early warning switchable. Standby loss 0.7 watt only.

Modular device for DIN EN 50022 rail mounting. 1 module = 18 mm wide, 58 mm deep.

**Zero passage switching** to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

**The noiseless electronics** do not even bother the sensitive ear - unlike many synchronous motors with mechanical gears.

**By using a bistable relay coil power loss and heating is avoided even in the onmode.**

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated. 230 V control voltage, supply voltage and switching voltage.

Glow lamp current up to 50 mA, dependent on the ignition voltage of the glow lamps.

Precise variable time range from 1 to 12 minutes, settable by minute scale.

**Own permanent light switch** with the big rotary switch.

3-wire circuit with attic lighting, not resettable. Only for retrofitting of existing systems.

After a power failure the lighting is switched on again in case the set time has not elapsed yet.

**If switch-off early warning function** is switched on the light starts flickering approx. 30 seconds before time-out and is repeated three times at decreasing time intervals.

- = Switch-off early warning function

= Permanent light switched on (all click-stop positions)

AUTO = The set function is active (all click-stop positions)

| TLZ12-9 | 1 NO 16 A | EAN 4010312401620 | 42.40 €/pc. |

**Typical connections**

3-wire circuit with attic lighting, not resettable.

Technical data page 15-10.

Housing for operating instructions GBA12, see accessories, chapter Z.
**TLZ61NP-230V**

1 NO contact not potential free 10 A/250 V AC. Incandescent lamps up to 2000 W, energy saving lamps ESL and LED lamps up to 200 W. Switch-off early warning and permanent light by pushbutton switchable. Standby loss 0.7 watt only. With ESL optimisation.

Built-in device for installation. 45 mm long, 45 mm wide, 18 mm deep.

Zero passage switching to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

**By using a bistable relay coil power loss and heating is avoided even in the on mode.**

The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

230 V control voltage, supply voltage and switching voltage.

With infinitely variable time range from 1 to 12 minutes. 50 mA glow lamp current, dependent on the ignition voltage of the glow lamps.

3-wire and 4-wire circuits, resettable, with attic lighting if 4-wire circuit.

Automatic detection of the method of connection.

After a power failure the lighting is switched on again in case the set time has not elapsed yet.

If switch-off early warning function \( \overline{\text{U}} \) is switched on, the light starts flickering approx. 30 seconds before time-out and is repeated three times at decreasing time intervals.

If permanent light by pushbutton \( \text{O} \) is switched on, permanent light can be switched on by pressing the pushbutton longer than 1 second. This is switched off automatically after 60 minutes or by pressing the pushbutton longer than 2 seconds.

If both switch-off early warning function and permanent light by pushbutton \( \text{O} \) \( \overline{\text{U}} \) are switched on, the switch-off early warning function is activated before the permanent light switches off.

**When energy saving lamps ESL are completely or partially switched, then set the switch-off early warning with the pushbutton permanent light ESL on the lower rotary switch.**

If the function TLZ is selected the time can be extended within the first second after switching on or resetting by pressing the pushbutton repeatedly up to three times (incrementing).

The standard impulse switch function ESV is then set.

Each momentary-contact control increments the set time once.

If the timing period is set to minimum in the function ESV, the release delay is switched off.

**Technical data page 15-10.**
**TLZ61NP-230V+UC**

1 NO contact not potential free 10 A/250 V AC. Incandescent lamps up to 2000 W, energy saving lamps ESL and LED lamps up to 200 W. Switch-off early warning and permanent light by pushbutton switchable. Standby loss 0.7 watt only. With ESL optimisation.

Built-in device for installation. 45 mm long, 45 mm wide, 18 mm deep.

Zero passage switching to protect contacts and lamps. This prolongs in particular the lifetime of energy saving lamps.

By using a bistable relay coil power loss and heating is avoided even in the on mode.

The switched customer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

230 V control voltage, supply voltage and switching voltage. In addition electrically isolated universal voltage from 8 to 230 V UC.

With infinitely variable time range from 1 to 12 minutes. 50 mA glow lamp current, dependent on the ignition voltage of the glow lamps.

3-wire and 4-wire circuits, resettable, with attic lighting if 4-wire circuit.

Automatic detection of the method of connection.

After a power failure the lighting is switched on again in case the set time has not elapsed yet.

If switch-off early warning function \( \text{TLZ} \) is switched on, the light starts flickering approx. 30 seconds before time-out and is repeated three times at decreasing time intervals.

If permanent light by pushbutton \( \text{ESL} \) is switched on, permanent light can be switched on by pressing the pushbutton longer than 1 second. This is switched off automatically after 60 minutes or by pressing the pushbutton longer than 2 seconds.

If both switch-off early warning function and permanent light by pushbutton \( \text{ESL} \) are switched on, the switch-off early warning function is activated before the permanent light switches off.

When energy saving lamps ESL are completely or partially switched, then set the switch-off early warning with the pushbutton permanent light ESL on the lower rotary switch.

If the function TLZ is selected the time can be extended within the first second after switching on or resetting by pressing the pushbutton repeatedly up to three times (incrementing). Each momentary-contact control increments the set time once.

The function ESV, impulse switch with release delay up to 120 minutes, can be selected optionally. If this function is set it is automatically disconnected after the set delay is timed out if a manual OFF command has not been given.

If the timing period is set to minimum in the function ESV, the release delay is switched off.

The standard impulse switch function ES is then set.

\( \text{TLZ} \) = Switch-off early warning function

\( \text{ESL} \) = Permanent light by pushbutton

\( \text{ESL} \) = Switch-off early warning function and permanent light by pushbutton

| TLZ61NP-230V+UC | 1 NO 10A | EAN 4010312400739 | 43,70 €/pc. |

Recommended retail prices excluding VAT.
### TECHNICAL DATA STAIRCASE TIME SWITCHES

**Compliance with:** EN 61000-6-3, EN 61000-6-1 and EN 60669. With switch-off early warning function according to DIN18015-2.

**To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.**

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#### Type

<table>
<thead>
<tr>
<th>Type</th>
<th>TLZ12-8plus b)</th>
<th>TLZ12G</th>
<th>TLZ12-9 b)</th>
<th>TLZ6INP b)</th>
<th>TLZ6INP+UC b)</th>
</tr>
</thead>
</table>

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#### Contacts

<table>
<thead>
<tr>
<th>Contact material/contact gap</th>
<th>AgSnO2/0.5mm</th>
<th>Opto-Triac</th>
<th>AgSnO2/0.5mm</th>
<th>AgSnO2/0.5mm</th>
</tr>
</thead>
</table>

#### Spacing of control connections/contact
- Spacing of control connections C1-C2 or A1-A2/contact
  - 3 mm
  - 6 mm

#### Test voltage control connection/contact
- Test voltage C1-C2 or A1-A2/contact
  - 2000 V
  - 4000 V

#### Rated switching capacity
- Incandescent lamp and halogen lamp load
  - 1200W, I<sub>on</sub> ≤ 70 A/10 ms
  - 2300W up to 400 W

#### Fluorescent lamp load with KVG* in lead-lag circuit or non compensated
- 1000 VA

#### Fluorescent lamp load with KVG* shunt-compensated or with EVG*
- 500 VA

#### Compact fluorescent lamps with EVG* and energy saving lamps ESL
- up to 200 W (2)

#### 230V LED lamps
- up to 200 W (2)
- C1/C2 or A1-A2/contact
  - up to 400 W (2)
- up to 100 W (2)

#### Life at rated load, cos φ = 1 or for incandescent lamps 1000 W at 100/h
- > 10<sup>4</sup>

#### Life at rated load, cos φ = 0.6 at 100/h
- > 4 x 10<sup>4</sup>

#### Max. operating cycles
- 10<sup>3</sup>/h

#### Maximum conductor cross-section
- (3-fold terminal)
  - 6 mm<sup>2</sup>
  - (4 mm<sup>2</sup>)

#### Two conductors of same cross-section
- (3-fold terminal)
  - 2.5 mm<sup>2</sup>
  - (1.5 mm<sup>2</sup>)

#### Screw head
- Slotted/crosshead, pozidriv
- Slotted/crosshead, pozidriv
- Slotted/crosshead, pozidriv
- Slotted/crosshead, pozidriv

#### Type of enclosure/terminals
- IP50/IP20
- IP50/IP20
- IP50/IP20
- IP30/IP20

---

#### Electronics

<table>
<thead>
<tr>
<th>Time on</th>
<th>100 %</th>
<th>100 %</th>
<th>100 %</th>
<th>100 %</th>
</tr>
</thead>
</table>

| Max./min. temperature at mounting location |
| +50°C/-20°C | +50°C/-20°C | +50°C/-20°C | +50°C/-20°C |

| Standby loss (active power) |
| 0.7 W | T/LZ12D-plus: 0.5 W | 0.4 W | 0.7 W | 0.7 W |

| Control current local at 230 V (<10 s) ± 20 % |
| 5 (100) mA | 5 (100) mA | 5 (100) mA | 5 (100) mA |

| Control current universal control voltage 8/12/24/230 V (<10 s) ± 20 % |
| 2/4/9/5 (100) mA | 2/4/9/5 (100) mA | – | 2/4/9/5 (100) mA (nur T/LZ12N+UC) |

| Max. parallel capacitance (approx. length) of individual control lead at 230 V AC |
| 0.06 μF (200 m) | 0.9 μF (3000 m) | 0.06 μF (200 m) | 0.06 μF (200 m) |

---

* EVG = electronic ballast units, KVG = conventional ballast units
* b) Bistable relay as relay contact. The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.
* 2) Applies for lamps with max. 150 W.
* 3) Usually applies for dimmable energy saving lamps and dimmable 230 V LED lamps. Due to differences in the lamps electronics, there may be a restriction on the maximum number of lamps; especially if the connected load is very low (for 5 W-LEDs).
THE FRESH AIR PROFESSIONALS

Fresh air in the bathroom with the professional off-delay timers NLZ, also known as off-delay relay. Accurate timing is self-evident for this electronic device as well as noiseless operation. The off-delay timers with universal voltage offer additional applications as here even different potentials for switch and fan can be applied.
The NP types have a settable operate delay up to 12 minutes.

NLZ12NP-230V+UC

1 NO contact not potential free 16 A/250 V AC. Standby loss 0.5 watt only.

Modular device for DIN EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
Zero passage switching to protect contacts and consumers.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
230 V control voltage and additionally 8 to 230 V UC electrically isolated universal control voltage. 230 V supply voltage and switching voltage.
Very low switching noise.
Off-delay time settable from 1 to 12 min with the top rotary switch. Operating delay settable from 0 to 12 minutes with the middle rotary switch. Permanent ON and permanent OFF with the bottom rotary switch.
Function: When the control contact (light switch) is closed the operate delay AV starts (if not set ‘0 minutes’), on time-out the fan is switched on. The set release delay RV (delay time) starts when the control contact opens and if a set operating delay has elapsed.
The fan switches off on time-out.
This off-delay timer can be controlled by all dimmer switches EUD12 and EUD61 even in the minimum dimming position.

Typical connections

- Fan control through light switch
- Fan control through ultra low voltage door contact, light is controlled separately
- Fan control through light switch in case of different potentials on switch and fan

Housing for operating instructions GBA12, see accessories, chapter Z.

Recommended retail prices excluding VAT.
OFF-DELAY TIMER NLZ61NP-230V AND NLZ61NP-UC

NLZ61NP-230V

1 NO contact not potential free 10 A/250 V AC. Standby loss 0.7 watt only.

Built-in device for installation.
45 mm long, 45 mm wide, 18 mm deep.

Zero passage switching to protect contacts and consumers.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.
230 V control voltage, supply voltage and switching voltage.

By using a bistable relay coil power loss and heating is avoided even in the on mode.
The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.
The top rotary switch varies the off-delay time from 1 to 12 minutes.
Operating delay settable from 0 to 12 minutes with the lower rotary switch.

Function: When the control contact (light switch) is closed the operating delay AV starts (if not set ‘0 minutes’), on time-out the fan is switched on. The set release delay RV (delay time) starts when the control contact opens and if a set operating delay has elapsed. The fan switches off on time-out.

NLZ61NP-UC

1 NO contact not potential free 10A/250V AC. Standby loss 0.7 watt only.

Built-in device for installation. 46mm long, 45mm wide, 18mm deep.

Zero passage switching to protect contacts and consumers.
State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

8 to 230V UC universal control voltage, electrically isolated from the 230V supply voltage and switching voltage.

By using a bistable relay coil power loss and heating is avoided even in the on mode.
The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated. The top rotary switch varies the off-delay time from 1 to 12 minutes.
Operating delay settable from 0 to 12 minutes with the lower rotary switch.

Function: When the control contact (light switch) is closed the operating delay AV starts (if not set ‘0 minutes’), on time-out the fan is switched on. The set release delay RV (delay time) starts when the control contact opens and if a set operating delay has elapsed. The fan switches off on time-out.

This off-delay timer can be controlled by all dimmer switches EUD12 and EUD81 even in the minimum dimming position.

Recommended retail prices excluding VAT.

## TECHNICAL DATA OFF-DELAY TIMER

Compliance with: EN 61000-6-3, EN 61000-6-1 and EN 60 669. With switch-off early warning function according to DIN18015-2.

### Contacts

<table>
<thead>
<tr>
<th>Type</th>
<th>NLZ12NP</th>
<th>NLZ61NP-230V</th>
<th>NLZ61NP-UC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material/contact gap</td>
<td>AgSnO₂/0.5mm</td>
<td>AgSnO₂/0.5mm</td>
<td></td>
</tr>
<tr>
<td>Spacing of control connections/contact</td>
<td>3 mm/6 mm</td>
<td>3 mm/6 mm</td>
<td></td>
</tr>
<tr>
<td>Spacing of control connections C1-C2 or A1-A2/contact</td>
<td>3 mm</td>
<td>3 mm</td>
<td></td>
</tr>
<tr>
<td>Test voltage control connection/contact</td>
<td>2000V</td>
<td>2000V</td>
<td></td>
</tr>
<tr>
<td>Test voltage C1-C2 or A1-A2/contact</td>
<td>4000V</td>
<td>4000V</td>
<td></td>
</tr>
<tr>
<td>Rated switching capacity</td>
<td>16 A/250V AC</td>
<td>10 A/250V AC</td>
<td></td>
</tr>
<tr>
<td>Incandescent lamp and halogen lamp load</td>
<td>2300 W</td>
<td>2000 W</td>
<td></td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* in lead-lag circuit or non compensated</td>
<td>1000 VA</td>
<td>1000 VA</td>
<td></td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* shunt-compensated or with EVG*</td>
<td>500 VA</td>
<td>500 VA</td>
<td></td>
</tr>
<tr>
<td>Compact fluorescent lamps with EVG* and energy saving lamps ESL</td>
<td>up to 200 W</td>
<td>up to 200 W</td>
<td></td>
</tr>
<tr>
<td>230 V LED lamps</td>
<td>up to 200 W</td>
<td>up to 200 W</td>
<td></td>
</tr>
<tr>
<td>Life at rated load, cos ϕ = 1 or for incandescent lamps 1000W at 100/h</td>
<td>&gt; 10⁵</td>
<td>&gt; 10⁵</td>
<td></td>
</tr>
<tr>
<td>Life at rated load, cos ϕ = 0.6 at 100/h</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td></td>
</tr>
<tr>
<td>Max. operating cycles</td>
<td>10⁵/h</td>
<td>10⁵/h</td>
<td></td>
</tr>
<tr>
<td>Maximum conductor cross-section (3-fold terminal)</td>
<td>6 mm² (4 mm²)</td>
<td>4 mm²</td>
<td></td>
</tr>
<tr>
<td>Two conductors of same cross-section (3-fold terminal)</td>
<td>2.6 mm² (1.5 mm²)</td>
<td>1.5 mm²</td>
<td></td>
</tr>
<tr>
<td>Screw head</td>
<td>slotted/crosshead, pozidriv</td>
<td>slotted/crosshead</td>
<td></td>
</tr>
<tr>
<td>Type of enclosure/terminals</td>
<td>IP50/IP20</td>
<td>IP30/IP20</td>
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</tr>
</tbody>
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### Electronics

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Time on</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Max./min. temperature at mounting location</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
</tr>
<tr>
<td>Standby loss (activ power)</td>
<td>0.5 W</td>
<td>0.7 W</td>
</tr>
<tr>
<td>Control current local at 230 V (&lt;10 s) ± 20%</td>
<td>2 mA</td>
<td>1 mA</td>
</tr>
<tr>
<td>Control current universal control voltage 8/12/24/230 V (&lt;10 s) ± 20%</td>
<td>2/4/9/5 (100) mA</td>
<td>2/4/9/5 (100) mA</td>
</tr>
<tr>
<td>Max. parallel capacitance (approx. length) of individual control lead at 230 V AC</td>
<td>0.06 μF (200 m)</td>
<td>0.06 μF (200 m)</td>
</tr>
<tr>
<td></td>
<td>C1/C2: 0.9 μF (3000 m)</td>
<td>A1-A2: 0.3 μF (1000 m)</td>
</tr>
</tbody>
</table>

* EVG = electronic ballast units; KVG = conventional ballast units

** Applies for lamps with max. 100 W

** Usually applies for dimmable energy saving lamps and dimmable 230 V LED lamps. Due to differences in the lamps electronics, there may be a restriction on the maximum number of lamps; especially if the connected load is very low (for 5 W-LEDs).

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.
CABLE-BOUND SHADING SYSTEMS AND ROLLER SHUTTER CONTROL – THE MODULAR APPROACH FOR THE ELECTRICAL TRADE.
Cable-bound shading systems and roller shutter control

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Multifunction sensor relay MSR12-UC 16 - 4
Digital settable sensor relay LRW12D-UC 16 - 5
Impulse group switch EGS12Z-UC for central control 16 - 6
Impulse group switch EGS12Z2-UC for central control 16 - 7
Motor isolating relay MTR12-UC and DC motor relay DCM12-UC 16 - 7
Impulse group switch EGS61Z-230V for central control 16 - 8
Motor isolating relay MTR61-230V 16 - 9
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Typical circuit example of a shading system control 16 - 11
Typical circuit example of a shading system control and roller shutter control 16 - 12
Typical circuit examples of a roller shutter control 16 - 13
THE MODULAR APPROACH FOR THE ELECTRICAL TRADE

Planning and realisation of a shading system or roller shutter control are classical tasks for the electrical installer. Eltako has developed a well thought-out modular system of control devices and switchgear for mounting in switch cabinets and distribution boards.

The modular approach has been chosen to provide a control or switchgear device (module) for any desired function match the overall system, typically permitting an individual awning to be controlled as perfectly as a large system which comprises dozens of shutters, awnings, Venetian blinds, etc.

Any assignment of control devices to the switchgear devices can be chosen, and provision is made for easy modifications, retrofitting and expansion, "bit by bit".

There are four groups of devices:

1. **Sensors**
   Sensors serve to detect the actual situation. A light sensor, for example, measures brightness and generates a control voltage as a function of it.

2. **Sensor relays**
   Sensor relays serve to convert the sensor-produced actual signals to control signals as a function of practical set points, whilst logic operations are performed and faulty sensors detected.

3. **Actuators**
   Actuators serve to control the motors of shading systems and roller shutters. These are group impulse switches in hybrid technology with central control functions and possibly motor isolating relays or DC motor relays.

4. **Accessories**
   Switching power supply units for the power supply of the multi sensor and the multifunction sensor relay as well as for the heating of the rain sensors are available as accessories.

<table>
<thead>
<tr>
<th>Sensors, page 16-3</th>
<th>Sensor relays, page 16-4 and 16-5</th>
<th>Actuators, page 16-6 to 16-9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi sensor MS</td>
<td>Multifunction sensor relay MSR12-UC for brightness, twilight, wind, rain and frost</td>
<td>Group impulse switch EGS12Z-UC</td>
</tr>
<tr>
<td>Rain sensor RS</td>
<td>Light-twilight-rain-wind sensor relay LRW12D for light, twilight and wind</td>
<td>Group impulse switch EGS12Z2-UC</td>
</tr>
<tr>
<td>Light sensor LS</td>
<td></td>
<td>Group impulse switch EGS61Z</td>
</tr>
<tr>
<td>Wind sensor WS</td>
<td></td>
<td>Motor isolating relay MTR12-UC and MTR61</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DC motor relay DCM12-UC</td>
</tr>
</tbody>
</table>

The principle of overall control is quite simple: each shading element or its motor is controlled by an actuator that receives commands via sensors and, where fitted, sensor relays.

A complete Control System consists (as the smallest unit) of a switch or momentary contact switch controlled EGS12Z-UC group impulse switch for one motor. The largest unit comprises any number of sensors and sensor relays as well as any number of impulse group switches EGS12Z-UC and EGS12Z2-UC with or without motor isolating relay MTR12 and DC motor relay DCM12-UC to control the motors.
**MS**

**Multi sensor**

The MS multi sensor sends the current weather details, including brightness (from three points of the compass), wind, rain and frost, to the multifunction sensor relay MSR12-UC connected in series once per second. A standard telephone wire is sufficient as connecting lead: J-Y(ST)Y 2 x 2 x 0.8 or equivalent. 100 m line length is permitted. Solid plastic housing, l x w x h = 118 x 96 x 77 mm. Protection degree IP44. Temperature at mounting location -30°C to +50°C. A power supply unit SNT12-230V/24V DC (chapter 17) is required for the power supply, including heating of the rain sensor. This is only 1 module = 18mm wide and it also it supplies the multifunction sensor relay MSR12-UC (page 16-4). Several MSR12-UC can be connected to a multisensor MS, e.g. for evaluating up to three directions with the light sensor of the MS.

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<tbody>
<tr>
<td><strong>MS</strong></td>
<td>Multi sensor</td>
<td>EAN 4010312901731</td>
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</tbody>
</table>

**WS**

**Wind sensor**

The WS wind sensor provides a sequence of pulses as a function of the wind vane speed. This pulse sequence is evaluated in a LRW12D universal sensor relay connected in series. Solid plastic housing, 125 mm dia. x 117 mm high. Protection degree IP54. Temperature at mounting location -15°C to +60°C. For mounting, use KM1 plastic mounting bracket that comes with the device. With 5-metre measuring lead connected.

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<tbody>
<tr>
<td><strong>WS</strong></td>
<td>Wind sensor</td>
<td>EAN 4010312901281</td>
</tr>
</tbody>
</table>

**RS**

**Rain sensor**

The rain sensor RS reports rain to the sensor relay LRW12D connected in series once per second. A standard telephone wire is sufficient as connecting lead: J-Y(ST)Y 2 x 2 x 0.8 or equivalent. 100 m line length is permitted. Solid plastic housing, l x w x h = 118 x 96 x 77 mm. Protection degree IP44. Temperature at mounting location -30°C to +50°C. A power supply unit SNT61-230V/24V DC or SNT12-230V/24V DC (chapter 17) is required for the power supply, including heating of the rain sensor (1.2 W). An LED lights up green when the supply voltage is applied and lights up yellow for rain.

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<table>
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<tbody>
<tr>
<td><strong>RS</strong></td>
<td>Rain sensor</td>
<td>EAN 4010312206546</td>
</tr>
</tbody>
</table>

**LS**

**Light sensor**

The LS light sensor generates a voltage dependent on light intensity by means of a photo resistor. This voltage is evaluated in a LRW12D universal sensor relay connected in series. Solid plastic housing, l x w x h = 38 x 28 x 95 mm, Protection degree IP54. Temperature at mounting location -20°C to +60°C. Mounting with the supplied screw and nut on the accompanying aluminum mounting bracket or directly on the plastic mounting bracket KM1 of the wind sensor WS. Maximum diameter of the measuring cable (not included in the scope of supply) 5 mm.

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<tbody>
<tr>
<td><strong>LS</strong></td>
<td>Light sensor</td>
<td>EAN 4010312901267</td>
</tr>
</tbody>
</table>

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Recommended retail prices excluding VAT.
MULTIFUNCTION SENSOR RELAY MSR12-UC

MSR12-UC

Multifunction sensor relay for brightness, twilight, wind, rain and frost, 5 OptoMOS semiconductor outputs 50 mA/8...230 V UC. Standby loss without Multi sensor MS 0.5 watt only.

Modular device for DIN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep.

The multi-sensor relay MSR12-UC evaluates the signals from the multisensor MS once per second, and sends appropriate control signals to the downstream EGS12Z-UC or EGS12Z2-UC actuators depending on the setting of the rotary switch on the front. The OptoMOS semiconductor outputs switch the voltage applied to the universal voltage input terminal +B1. Only a single Multisensor MS can be connected to a Multifunction sensor relay MSR12-UC. Several MSR12-UC can be connected to a multisensor MS, e.g. for evaluating up to three directions with the light sensor of the MS. Only a single MSR12-UC must provide the outer terminal resistance. It must be removed if there is a further MSR12-UC. Supply voltage 24 V DC from power unit SNT12-230V/24V DC (chapter 17). This power unit simultaneously supplies the multisensor MS connected to the terminals MS1, MS2, MSA and MSB, including heating of the rain sensor surface. After installation wait for the short automatic synchronisation of approx. 1 minute. During this process three LEDs flash in a slow sequence.

Function rotary switches

BA = Setting the operating modes 1 to 10 from the adjacent table. 2 delay times RV - for wind and twilight - each in connection with 5 brightness ranges for light and twilight. The LED behind the rotary switch indicates Frost when the outdoor temperature drops below 2°C, at which point output 6 closes. This output opens again as soon as the temperature is over 3°C for 5 minutes.

O-S-W = If the Multisensor MS is aligned towards the south, the weighting for light and twilight can be shifted towards the east or west. If the MS is mounted in a different direction, the desired point of the compass can be set using this rotary switch. An LED behind the rotary switch indicates rain detection, at which point output 4 closes. Once the rain sensor surface dries out - assisted by a heating unit - contact 4 opens immediately. This is automatically followed by a 2-second pulse on output 2 if the sun signal is applied at that moment.

m/s = This rotary switch is used to select the wind speed in metres per second at which the wind signal is triggered. This closes output 5. This is indicated by the LED behind the rotary switch. Opening takes place after the set delay time RV, during which the LED flashes. This is automatically followed by a 2-second pulse on output 2 if the sun signal is applied at that moment.

DSR = In this position of the wind rotary switch the MSR12-UC functions like a twilight sensor relay. The twilight signal as described under Lux is then continuously applied to output 3 as long as the set twilight value is undershot. Output 3 opens with a delay of 5 minutes if the brightness value set is overshot. The outputs 4 (rain) and 6 (frost) remain active as described there. Output 5 (wind) likewise remain active, but the wind signal is triggered at 10 m/s.

TEST = As long as TEST remains switched on, each switchover from the OFF position to the TEST position activates the outputs 2 to 6 in ascending order.

OFF = In the OFF position the MSR12-UC has no function.

Lux = This rotary switch is used to set the brightness at which the sun signal is immediately triggered as a 2-second pulse at output 2. The LED behind the rotary switch indicates when the brightness value is exceeded.

Lux = This rotary switch is used to set the brightness at which the 2-second twilight signal is triggered at output 3 after the set delay time RV when the value is undershot. This is indicated by the LED behind the rotary switch. It flashes during the delay time. If the twilight switching threshold is set to the same level or higher than the sun switching threshold, then the sun switching threshold is raised internally above the twilight switching threshold.

Changing light compensation: Constant changes between sun and rain clouds would result in sensitive closing and opening of the shade elements. This is prevented by a changing light compensation function.

Sensor function and open circuit monitoring: The Multisensor MS sends updated information to the MSR12-UC every second. If this signal is missing completely for 5 seconds, or if the individual signal from the wind sensor is missing for 24 hours, then an alarm is triggered: three LEDs flash rapidly and the wind output 5 is closed for 2 seconds in order to protect any awnings or windows which may be connected here. This pulse is repeated every hour. The alarm is turned off automatically when a signal is detected again.
DIGITAL SETTABLE SENSOR RELAY LRW12D-UC

**LRW12D-UC**

Light-twilight rain wind sensor relay, 4 OptoMOS semiconductor outputs 50 mA/8..230 V UC. Standby loss 0.05–0.5 watt only.

Modular device for DIN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.

Supply voltage 8 to 230 V UC.

The sensor relay LRW12D evaluates the signals from the light sensor LS, the rain sensor RS and the wind sensor WS and sends appropriate control signals to the downstream EGS12Z-UC or EGS12Z-UC actuators depending on the setting via the display on the front panel.

The OptoMOS semiconductor outputs switch the voltage applied to the universal voltage input terminal +B1.

A light sensor LS, rain sensor RS and wind sensor WS can be connected to a sensor relay LRW12D. However, only one per sensor.

If one or two of the three possible sensors are not connected, OFF has to be selected in the function menu for the relevant sensor.

However, at a wind sensor WS several LRW12D can be connected for controlling different wind speeds. Then the LRW12D must be connected to the same potential +B1/-A2.

When the supply voltage UC (8–253 V AC or 10–230 V DC) is applied to B1/A2, the LRW12D can be set as described in the operating instructions.

| LRW12D-UC | 4 OptoMOS | EAN 4010312206553 | 66,60 €/pc. |
**EGS12Z-UC**

Impulse group switch for central control, 1+1 NO contacts not potential free 16A/250V AC, for 1 motor or motor relays. Standby loss 0.05–0.4 watt only.

Modular device for DIN 60715 TH35 rail mounting. 1 module = 18mm wide, 58mm deep.

This impulse group switch serves to implement commands generated by the sensor relays or by switches and push-buttons and controls a motor, a motor isolating relay MTR12-UC or a DC motor relay DCM12-UC dependent on the setting of the rotary switch on the front. 8 to 230V UC supply voltage and switching voltage at terminals +B1/A2. The control voltage at terminals A3 up to A8 must have an identical potential.

The function of this electronic group impulse switch is based on the principle that, on the one hand, impulse control is used to obtain UP-Stop-DOWN-Stop (contact 1 closed - both contacts open - contact 2 closed - both contacts open) and, on the other hand, additional control inputs can be used to select UP or DOWN as desired. Dynamic refers to control inputs for which one impulse of not less than 20 milliseconds is sufficient to close a contact. Static denotes a control input for which the contact is only closed as long as the control command is applied. UP and DOWN apply to roller shutters, Venetian blinds and roller blinds. For awnings, 'UP' = retract and 'DOWN' = extend. For windows 'UP' = open and 'DOWN' = close.

**Function rotary switches**

**AUTO 1** = When the lower rotary switch is in this position, the local advanced automatic reversing system for Venetian blinds is activated. When a push-button connected to A3+A4 (connected with a bridge) or A5/A6 connected to a dual push-button are used for local control a double impulse activates a slow rotation in the opposite direction, which can be stopped with a further impulse.

**AUTO 2** = When the lower rotary switch is in this position, the local advanced automatic reversing system for Venetian blinds is completely switched off.

**AUTO 3** = When the lower rotary switch is in this position, the local advanced automatic reversing system for Venetian blinds is switched off as well. The central control inputs A5 and A6 though, which are dynamic at AUTO 1 and AUTO 2, are static at first, thus, allow reversal of Venetian blinds by operating pushbuttons. They only switch to dynamic after 1 second continuous operation. When the lower rotary switch is in this position, the local advanced automatic reversing system for Venetian blinds is activated. When a push-button connected to A3+A4 (connected with a bridge) or A5/A6 connected to a dual push-button are used for local control a double impulse activates a slow rotation in the opposite direction, which can be stopped with a further impulse.

**Local control with pushbutton** connected to terminals A3+A4 (to be connected with a bridge). Each impulse causes the group impulse switch to change its position in the UP-Stop-DOWN-Stop sequence.

**Local control with roller shutter toggle switch** connected to terminals A3 and A4.

**Local control with dual roller shutter pushbutton** connected to A5 and A6. The ‘UP’ or ‘DOWN’ position is activated with an impulse by pushbutton. A further impulse from one of the two push-buttons stops the sequence immediately.

**Central control dynamic** without priority connected to terminals A5 (UP) and A6 (DOWN). Up or DOWN is activated by a control signal. A further control signal (>700ms) at this control input interrupts this process immediately, a further control signal (>700ms) continues the process. This is without priority because the local input A3+A4 (with bridge) and the central control inputs A7 and A8 can immediately override even whilst the control contact on A5 or A6 is still closed.

**Central control dynamic with priority** connected to terminals A7 (UP) and A8 (DOWN). With priority because these control inputs cannot be overridden by other control inputs as long as the central control contact is closed. Otherwise it has the same function as the central control dynamic without priority. These central control inputs A7 and A8 are used for the sensor relays MSR12 and LRW12D for the wind sensor, the frost sensor and the rain sensor functions as these are required to have absolute priority over other sensor commands.

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**Recommended retail prices excluding VAT.**

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**Technical data page 16-10.**

**Housing for operating instructions GBA12, see accessories, chapter 2.**
**EGS12Z2-UC**

Impulse group switch for central control, 2+2 NO contacts not potential free 5 A/250 V AC, for two 230 V-motors. Standby loss 0.05–0.9 watt only.

Modular device for DIN 60715 TH35 rail mounting, 2 modules = 36 mm wide, 58 mm deep.

Supply voltage 8..230 V UC at terminals +B1/-A2. The control voltage at terminals A3 up to A8 must have an identical potential. This impulse group switch serves to implement commands generated by the sensor relays or by switches and push-buttons and controls two 230 V motors according to the setting of the rotary switches on the front. 1/2 = motor 1, 3/4 = motor 2.

The mode of operation corresponds completely to the impulse group switch EGS12Z2-UC on page 18-6 in which a MTR12-UC as described below is integrated.

**MTR12-UC**

Motor isolating relay, 2+2 NO contacts not potential free 5 A/250 V AC for one or two 230 V-motors. Standby loss 0.5 watt only.

Modular device for DIN 60715 TH35 rail mounting, 1 module = 18 mm wide, 58 mm deep.

Universal control voltage 8..230 V UC. 230 V supply voltage.

The tube-mounted motors of shading elements and roller shutters must not be connected in parallel, or reverse voltages will occur through the limit switches, ultimately causing failure of the motors. For one motor and if the control voltage and the motor voltage are 230 V, one EGS12Z2-UC is adequate. Where more than one motor is controlled by an EGS12Z2-UC or in case the control voltage is different, one MTR12-UC must be connected to two motors. It must be remembered that the MTR12-UC devices, while they can be operated in parallel, require unassigned contact outputs K2/K3 of the controlling EGS12Z2-UC. These have to be connected to terminals K2/K3 of the MTR12-UC. 1/2 = motor 1, 3/4 = motor 2.

The functions UP and DOWN may be blocked or switched off entirely by a rotary switch. This block applies only to the max. 2 connected motors. Therefore single shading elements or roller shutters can be completely or partially excepted from the automatic function of an over-all control.

**DCM12-UC**

DC motor relay, 2 NO contacts not potential free 24 V DC/90 watt, for one 24 V DC motor. Standby loss 0.07 watt only.

Modular device for DIN 60715 TH35 rail mounting, 1 module = 18 mm wide, 58 mm deep.

Universal control voltage 8..230 V UC. 24 V DC supply voltage.

The DCM12-UC can be operated in parallel, but they require unassigned contact outputs K2/K3 of the controlling EGS12Z2-UC. These have to be connected to terminals K2/K3 of the DCM12-UC.

The functions UP and DOWN may be blocked or switched off entirely by a rotary switch. This block applies only to the 1 connected motor. Therefore single shading elements or roller shutters can be completely or partially excepted from the automatic function of an over-all control.

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**Recommended retail prices excluding VAT.**
EGS61Z-230V

Impulse group switch for central control, 1+1 NO contacts not potential free 10 A/250 V AC, for one 230 V AC motor. Standby loss 0.4 watt only.

For installation, 45 mm long, 45 mm wide, 32 mm deep. State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays. This impulse group switch serves to implement commands generated by the sensor relays or by switches and push-buttons and controls a 230 V motor for a shading element or a roller shutter. 230 V control voltage, supply voltage and switching voltage. The same control voltage must be supplied to A1, A7 and A8 as to L.

By using bistable relays coil power loss and heating is avoided even in the on mode.
The switched consumer may not be connected to the mains before the short automatic synchronisation after installation has terminated.

A universal pushbutton connected to control input A1 controls the pulse signals for ‘up, stop, down, stop’. As of production week 25/18, a direction pushbutton for ‘down’ can be connected via the diode RTD (any polarity). Another direction pushbutton for ‘up’ is connected directly to A1. On the first control pulse ‘down’, EGS61Z switches over the control input A1 to ‘direction pushbutton’. To switch the control input back to ‘universal pushbutton’, briefly switch off the power supply and switch back on. Additional control inputs A7 and A8 can be used for central control UP or DOWN with priority.

With priority because these control inputs cannot be overridden by other control inputs as long as the central control contact is closed. Up or DOWN is activated by a control signal. A further control signal (< 700 ms) at this control input interrupts this process immediately, a further control signal (> 700 ms) continues the process.

The time delay (delay time RV) is set by means of the rotary switch RV. If, the group impulse switch is in the UP or DOWN position the selected delay time runs (elapses); at time-out the device changes automatically to STOP. Therefore, the time delay must be chosen at least as long as the shading element or roller shutter will need to move from one limit position to the other.

With the rotary switch WA automatic reversal is controlled: in the setting from 0.5 to 2 sec. reversal time the automatic reversal is activated. In this case, it is only for DOWN that the direction is reversed on time-out of the time lag selected by means of the top rotary switch RV, e.g. to extend awnings or set Venetian blinds to a defined position.

AUTO 1: No automatic reversal and no local advanced automatic reversing system. A7 and A8 operation < 1s → static process (contact closes only during operation) operation > 1s → dynamic process (contact remains closed), stop command by new operation.

AUTO 2: Automatic reversal with 1s reversal time. Additionally the local advanced automatic reversing system for Venetian blinds at A1 is active: a double impulse activates a slow rotation in the opposite direction, which can be stopped with a further impulse.

<table>
<thead>
<tr>
<th>RTD</th>
<th>Direction pushbutton diode</th>
<th>EAN 4010312908273</th>
<th>1,60 €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGS61Z-230V</td>
<td>1 + 1 NO 10 A</td>
<td>EAN 4010312108123</td>
<td>57,80 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
**MTR61-230V**

Motor isolating relay, 1+1 NO contacts not potential free 10A/250V AC, for one 230V AC motor. Standby loss 0.4 watt only.

For installation, 45 mm long, 55 mm wide, **32 mm deep**.

State-of-the-art hybrid technology combines advantages of nonwearing electronic control with high capacity of special relays.

This actuator implements the instructions of the EGS61Z and switches a 230 V motor for a shading element or a roller shutter at 1-2. Therefore connect the motor connections K2–K3 of the EGS61Z with the K2–K3 connections of one or several MTR61.

230 V control voltage, supply voltage and switching voltage.

| MTR61-230V | 1 + 1 NO 10 A | EAN 4010312206577 | 52.80 €/pc. |

Recommended retail prices excluding VAT.
## TECHNICAL DATA SHADING SYSTEMS AND ROLLER SHUTTER CONTROL

### Compliance with:
- EN 61000-6-3
- EN 61000-6-1
- EN 60 669

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

### Contacts

<table>
<thead>
<tr>
<th>Type</th>
<th>EGS12Z b)</th>
<th>EGS12ZZ b)</th>
<th>EGS61Z b)</th>
<th>LRW12D/MSR12 [i]</th>
<th>MTR12/DCM12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material/contact gap</td>
<td>AgSnO(_2)/0.5mm</td>
<td>AgSnO(_2)/0.5mm</td>
<td>AgSnO(_2)/0.5mm</td>
<td>OptoMOS</td>
<td>AgSnO(_2)/0.5mm</td>
</tr>
<tr>
<td>Spacing of control connections/contact</td>
<td>3 mm</td>
<td>3 mm</td>
<td>3 mm</td>
<td>3 mm/6 mm</td>
<td>3 mm</td>
</tr>
<tr>
<td>Rated switching capacity</td>
<td>16A/250V AC</td>
<td>5A/250V AC</td>
<td>10A/250V AC</td>
<td>50mA/8..230V UC</td>
<td>5A/250V AC</td>
</tr>
<tr>
<td>Inductive load (\cos \phi = 0.6/230) V AC</td>
<td>650 W</td>
<td>650 W [\text{ii}]</td>
<td>650 W</td>
<td>–</td>
<td>MTR12: 650 W [\text{ii}]</td>
</tr>
<tr>
<td>Life at rated load, (\cos \phi = 0.6)</td>
<td>(&gt;4 \times 10^4)</td>
<td>(&gt;4 \times 10^4)</td>
<td>(&gt;4 \times 10^4)</td>
<td>–</td>
<td>(&gt;4 \times 10^4)</td>
</tr>
<tr>
<td>Switch position indication</td>
<td>WA and RV</td>
<td>WA and RV</td>
<td>–</td>
<td>LRW12D: Display</td>
<td>LED</td>
</tr>
<tr>
<td>Maximum conductor cross-section (3-fold terminal)</td>
<td>6 mm(^2) (4 mm(^2))</td>
<td>6 mm(^2) (4 mm(^2))</td>
<td>4 mm(^2)</td>
<td>6 mm(^2) (4 mm(^2))</td>
<td>6 mm(^2) (4 mm(^2))</td>
</tr>
<tr>
<td>Two conductors of same cross-section (3-fold terminal)</td>
<td>2.5 mm(^2) (1.5 mm(^2))</td>
<td>2.5 mm(^2) (1.5 mm(^2))</td>
<td>1.5 mm(^2)</td>
<td>2.5 mm(^2) (1.5 mm(^2))</td>
<td>2.5 mm(^2) (1.5 mm(^2))</td>
</tr>
<tr>
<td>Screw head</td>
<td>slotted / cross-head, pozidriv</td>
<td>slotted / cross-head, pozidriv</td>
<td>slotted / cross-head, pozidriv</td>
<td>slotted / cross-head, pozidriv</td>
<td>slotted / cross-head, pozidriv</td>
</tr>
<tr>
<td>Type of enclosure/terminals</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
<td>IP30/IP20</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
</tr>
</tbody>
</table>

### Electronics

<table>
<thead>
<tr>
<th>Time on (also for central on/off)</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max./min. temperature at mounting location</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
<td>+50°C/-20°C</td>
</tr>
<tr>
<td>Standby loss (active power) at 230 V</td>
<td>0.4 W</td>
<td>0.9 W</td>
<td>0.4 W</td>
<td>LRW12D: 0.5W</td>
<td>MTR12: 0.5 W</td>
</tr>
<tr>
<td>Standby loss (active power) at 24 V</td>
<td>0.1 W</td>
<td>0.1 W</td>
<td>–</td>
<td>LRW12D: 0.1W</td>
<td>DCM12: 0.07 W</td>
</tr>
<tr>
<td>Standby loss (active power) at 12 V</td>
<td>0.05 W</td>
<td>0.05 W</td>
<td>–</td>
<td>LRW12D: 0.05 W</td>
<td>MTR12: –</td>
</tr>
<tr>
<td>Control current A1 or A3-A8 at 12/24/230 V (\pm 20%)</td>
<td>0.05/0.1/0.7 mA</td>
<td>0.05/0.1/0.7 mA</td>
<td>–/–/0.7 mA</td>
<td>–</td>
<td>0.1/0.2/1 mA</td>
</tr>
<tr>
<td>Max. parallel capacitance (approx. length) of control lead at 230 V AC</td>
<td>0.06 (\mu)F (200 m)</td>
<td>0.06 (\mu)F (200 m)</td>
<td>0.3 (\mu)F (1000 m)</td>
<td>MTR61: 0.06 (\mu)F (200 m)</td>
<td>–</td>
</tr>
<tr>
<td>Min. command duration</td>
<td>50 ms</td>
<td>50 ms</td>
<td>50 ms</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

\[i\] Bistable relay as relay contact. Do not connect the switched consumer to the mains before the short automatic synchronisation after installation has terminated.

\[ii\] After installation and after a power failure the multisensor needs approx. 1 minute before the wind sensor is active. During this process the outputs wind and sun of the MSR12-UC are blocked and 3 LEDs flash slowly.

If necessary, see the operating instructions of the appropriate shading elements for the maximum wind speed that can be set for the sensor relays.

<table>
<thead>
<tr>
<th>m/s</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>km/h</td>
<td>14.4</td>
<td>21.6</td>
<td>28.8</td>
<td>36.0</td>
<td>43.2</td>
<td>50.4</td>
<td>57.6</td>
</tr>
<tr>
<td>Bft</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

Do not route measurement leads parallel to other electrical lines - measurement leads must be screened statically if longer than 10m. For example JY-ST-Y. To extend leads use screw terminals and damp-proof connectors.

When selecting an installation site for light, wind and multi sensors, ensure that the sensors are not in the shadow of the objects being monitored.

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.
When controlling with 230V (+B1=L, -A2=N) the 230V motors are directly connected to K2, K3 and N. Otherwise motor isolating relays MTR12-UC must be interconnected to K2/K3.

A night time window can be set with the digital time switch DW12-001-230V so that the multi sensor does not cause any disturbance. To do this, program the changeover as follows: in the daytime the terminal +B1 of MSR12-UC connect to L(+) and at night time L(+) direct to terminal 3 of MSR12-UC. This simulates twilight at the beginning of the time window in order to open all shading elements and at the same time all sensors are switched off.

When controlling with 230V (+B1=L, -A2=N) the 230V motors are directly connected to K2, K3 and N. Otherwise motor isolating relays MTR12-UC must be interconnected to K2/K3.

A night time window can be set with the digital time switch DW12-001-230V so that the multi sensor does not cause any disturbance. To do this, program the changeover as follows: in the daytime the terminal +B1 of MSR12-UC connect to L(+) and at night time L(+) direct to terminal 3 of MSR12-UC. This simulates twilight at the beginning of the time window in order to open all shading elements and at the same time all sensors are switched off.
Shading system with the light, twilight, rain and wind sensor relay LRW12D

When controlling with 230 V (+B1= L, -A2=N) the 230 V awning motor is directly connected to K2, K3 and N. Otherwise a motor isolating relay MTR12-UC must be interconnected to K2/K3.

Roller shutter control with EGS12Z2-UC

For clarity, the L and N connections for the 230V motors are not shown.
ROLLE SHUTTER CONTROL WITH EGS12Z-UC

For clarity, the L and N connections for the 230V motors are not shown.
SWITCHING POWER SUPPLY UNITS AND WIDE-RANGE SWITCHING POWER SUPPLY UNITS – WITH LOW STANDBY CONSUMPTION AND HIGH EFFICIENCY.
Switching power supply units and wide-range switching power supply units

Wide-range switching power supply units WNT12 17 - 2
Switching power supply units SNT12 17 - 4
Switching power supply units SNT14 17 - 5
Switching power supply units SNT61 17 - 6
Technical data switching power supply units and wide-range switching power supply units 17 - 7
**WIDE-RANGE SWITCHING POWER SUPPLY UNITS WNT12**

**WNT12-12V DC-12W/1A AND WNT12-24V DC-12W/0,5A**

Wide-range switching power supply unit. Rated capacity 12 W. Standby loss 0.2 watt only.

Modular devices for DIN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.

At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12 W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.

Wide-range input voltage 88-264 V AC (110 V -20% up to 240 V +10%).

Efficiency 12 V DC 83%, 24 V DC 86%. Stabilised output voltage ±1%, low residual ripple. Short-circuit proof.

Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

**Recommended retail prices excluding VAT.**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WNT12-12V DC-12W/1A</td>
<td>Wide-range switching power supply unit</td>
<td>EAN 4010312901748</td>
<td>61,10</td>
</tr>
<tr>
<td>WNT12-24V DC-12W/0,5A</td>
<td>Wide-range switching power supply unit</td>
<td>EAN 4010312901755</td>
<td>61,10</td>
</tr>
</tbody>
</table>

**WNT12-12V DC-24W/2A AND WNT12-24V DC-24W/1A**

Wide-range switching power supply unit. Rated capacity 48 W. Standby loss 0.4 watt only.

Modular devices for DIN 60715 TH35 rail mounting.
4 modules = 72 mm wide, 58 mm deep.

At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12 W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.

Wide-range input voltage 88-264 V AC (110 V -20% up to 240 V +10%).

Efficiency 87%. Stabilised output voltage ±1%, low residual ripple. Short-circuit proof.

Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

**Recommended retail prices excluding VAT.**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
<th>EAN</th>
<th>Price (€/pc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WNT12-12V DC-24W/2A</td>
<td>Wide-range switching power supply unit</td>
<td>EAN 4010312300077</td>
<td>67,90</td>
</tr>
<tr>
<td>WNT12-24V DC-24W/1A</td>
<td>Wide-range switching power supply unit</td>
<td>EAN 4010312300084</td>
<td>67,90</td>
</tr>
</tbody>
</table>
WNT12-24V DC-48W/2A

Wide-range switching power supply unit. Rated capacity 48 W. Standby loss 0.4 watt only.

Modular devices for DIN 60715 TH35 rail mounting.
4 modules = 72 mm wide, 58 mm deep.
At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12 W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.
Wide-range input voltage 88-264 V AC (110 V -20% up to 240 V +10%).
Efficiency 87%. Stabilised output voltage ±1%, low residual ripple. Short-circuit proof.
Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

Recommended retail prices excluding VAT.
SWITCHING POWER SUPPLY UNITS SNT12

SNT12-230V/12V DC-1A AND SNT12-230V/24V DC-0.5A

Switching power supply unit. Rated capacity 12 W. Standby loss 0.2 watt only.

Modular devices for DIN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12 W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.
Input voltage 230 V (-20% up to +10%).
Efficiency 12 V DC 83%, 24 V DC 86%.
Stabilised output voltage ±1%, low residual ripple.
Short-circuit proof.
Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

| SNT12-230V/12V DC-1A | Switching power supply unit | EAN 4010312301111 | 49.20 €/pc. |
| SNT12-230V/24V DC-0.5A | Switching power supply unit | EAN 4010312301128 | 49.20 €/pc. |

SNT12-230V/12V DC-2A AND SNT12-230V/24V DC-1A

Switching power supply unit. Rated capacity 24 W. Standby loss 0.2 watt only.

Modular devices for DIN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep.
At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.
Input voltage 230 V (-20% up to +10%).
Efficiency 12 V DC 83%, 24 V DC 87%.
Stabilised output voltage ±1%, low residual ripple.
Short-circuit proof.
Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

| SNT12-230V/12V DC-2A | Switching power supply unit | EAN 4010312301135 | 61.50 €/pc. |
| SNT12-230V/24V DC-1A | Switching power supply unit | EAN 4010312301142 | 61.50 €/pc. |
### SNT14-24V/12W

- **Switching power supply unit.** Rated capacity 12 W. Standby loss 0.2 watt only.
- Modular devices for DIN 60715 TH35 rail mounting. 1 module = 18 mm wide, 58 mm deep.
- At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12 W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.
- Input voltage 230 V (-20% up to +10%).
- Efficiency 86%.
- Stabilised output voltage ±1%, low residual ripple.
- Short-circuit proof.
- Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

| SNT14-24V/12W | Switching power supply unit | EAN 4010312314395 | 37,70 €/pc. |

### SNT14-24V/24W

- **Switching power supply unit.** Rated capacity 24 W. Standby loss 0.2 watt only.
- Modular devices for DIN 60715 TH35 rail mounting. 2 modules = 36 mm wide, 58 mm deep.
- At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12 W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.
- Input voltage 230 V (-20% up to +10%).
- Efficiency 87%.
- Stabilised output voltage ±1%, low residual ripple.
- Short-circuit proof.
- Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

| SNT14-24V/24W | Switching power supply unit | EAN 4010312314401 | 46,20 €/pc. |

### SNT14-24V/48W

- **Switching power supply unit.** Rated capacity 48 W. Standby loss 0.4 watt only.
- Modular devices for DIN 60715 TH35 rail mounting. 4 modules = 72 mm wide, 58 mm deep.
- At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12 W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.
- Input voltage 230 V (-20% up to +10%).
- Efficiency 87%. Stabilised output voltage ±1%, low residual ripple.
- Short-circuit proof.
- Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

| SNT14-24V/48W | Switching power supply unit | EAN 4010312314418 | 78,50 €/pc. |

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Recommended retail prices excluding VAT.
**SNT61-230V/12V DC-0.5A**

Switching power supply unit. Rated capacity 6 W. Standby loss 0.1 watt only.

Built-in device for installation. 45 mm long, 45 mm wide, 33 mm deep.
Input voltage 230 V (-20% up to +10%).
Efficiency 81%.
Stabilised output voltage ±1%, low residual ripple.
Short-circuit proof.
Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).

**SNT61-230V/24V DC-0.25A**

Switching power supply unit. Rated capacity 6 W. Standby loss 0.1 watt only.

Built-in device for installation. 45 mm long, 45 mm wide, 33 mm deep.
Input voltage 230 V (-20% up to +10%).
Efficiency 82%.
Stabilised output voltage ±1%, low residual ripple.
Short-circuit proof.
Overload protection and over-temperature switch-off by means of switching off with automatic switching-on after fault clearance (autorecovery function).
## Technical Data

### Switching Power Supply Units and Wide-Range Switching Power Supply Units

Compliance with: EN 60 950, EN 55 022 and EN 61000-6-2

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

<table>
<thead>
<tr>
<th>Type</th>
<th>SNT61-230V/12V DC-0,5A</th>
<th>SNT61-230V/24V DC-0,25A</th>
<th>WNT12-12V DC-12W/1A</th>
<th>SNT14-24V/24V DC-12W/0,5A</th>
<th>SNT12-230V/12V DC-1A</th>
<th>SNT14-24V/24V DC-24W/2A</th>
<th>WNT12-230V/24V DC-1A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output wattage</td>
<td>6 W 6)</td>
<td>6 W 6)</td>
<td>12 W 7)</td>
<td>12 W 7)</td>
<td>24 W 7)</td>
<td>24 W 7)</td>
<td>48 W 7)</td>
</tr>
<tr>
<td>Output voltage,</td>
<td>12 V DC, ±1%</td>
<td>24 V DC, ±1%</td>
<td>12 V DC, ±1%</td>
<td>24 V DC, ±1%</td>
<td>12 V DC, ±1%</td>
<td>24 V DC, ±1%</td>
<td>24 V DC, ±1%</td>
</tr>
<tr>
<td>tolerance ±</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output current</td>
<td>0,5 A</td>
<td>0,25 A</td>
<td>1 A</td>
<td>0,5 A</td>
<td>2 A</td>
<td>1 A</td>
<td>2 A</td>
</tr>
<tr>
<td>Standby loss</td>
<td>0,1 W</td>
<td>0,1 W</td>
<td>0,2 W</td>
<td>0,2 W</td>
<td>0,2 W</td>
<td>0,2 W</td>
<td>0,4 W</td>
</tr>
<tr>
<td>Residual ripple</td>
<td>100 mV</td>
<td>100 mV</td>
<td>100 mV</td>
<td>100 mV</td>
<td>100 mV</td>
<td>100 mV</td>
<td>100 mV</td>
</tr>
<tr>
<td>Class of protection</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>Protection degree</td>
<td>IP 20</td>
<td>IP 20</td>
<td>IP 20</td>
<td>IP 20</td>
<td>IP 20</td>
<td>IP 20</td>
<td>IP 20</td>
</tr>
<tr>
<td>Efficiency</td>
<td>81%</td>
<td>82%</td>
<td>83%</td>
<td>86%</td>
<td>83%</td>
<td>87%</td>
<td>87%</td>
</tr>
<tr>
<td>Overload protection</td>
<td>160-200%</td>
<td>160-200%</td>
<td>160-200%</td>
<td>160-200%</td>
<td>160-200%</td>
<td>160-200%</td>
<td>160-200%</td>
</tr>
<tr>
<td>short-term</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overvoltage protection</td>
<td>140-170%</td>
<td>140-170%</td>
<td>140-170%</td>
<td>140-170%</td>
<td>140-170%</td>
<td>140-170%</td>
<td>140-170%</td>
</tr>
<tr>
<td>Short-circuit proof</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Over-temperature</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>protection 4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switchable in parallel</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Size</td>
<td>45x45x33 mm</td>
<td>45x45x33 mm</td>
<td>1 module, 18 mm</td>
<td>1 module, 18 mm</td>
<td>2 modules, 36 mm</td>
<td>2 modules, 36 mm</td>
<td>4 modules, 72 mm</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-10/+50</td>
<td>-10/+50</td>
<td>-10/+50</td>
<td>-10/+50</td>
<td>-10/+50</td>
<td>-10/+50</td>
<td>-10/+50</td>
</tr>
</tbody>
</table>

6) Even at full load a ventilation clearance is not necessary.
50) At a load of more than 50% of the rated capacity and always if there are adjacent switching power supply units from 12 W rated capacity and if there are dimmers a ventilation clearance of 1/2 module must be maintained with the spacers DS12 on both sides.
7) If connected on the primary side, 2 ms.
4) With autorecovery function after fault clearance.
ELECTROMECHANICAL IMPULSE SWITCHES - POLE POSITION S.

S12-400-
S12-100-
S91-100-
# Electromechanical impulse switches

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electromechanical impulse switches with 1 and 2 contacts S12</td>
<td>18-2</td>
</tr>
<tr>
<td>Electromechanical impulse multicircuit switches with 2 contacts SS12</td>
<td>18-2</td>
</tr>
<tr>
<td>Electromechanical 16 A impulse switches 1-pole S09, 4-pole S12</td>
<td>18-3</td>
</tr>
<tr>
<td>Auxiliary contact KM12</td>
<td>18-3</td>
</tr>
<tr>
<td>1- and 2-pole impulse switches S91 and S81</td>
<td>18-4</td>
</tr>
<tr>
<td>1-, 2- and 4-pole electromechanical 25A impulse switches XS12</td>
<td>18-5</td>
</tr>
<tr>
<td>Switch positions of electromechanical impulse switches, comparable electronic types</td>
<td>18-6</td>
</tr>
<tr>
<td>Technical data electromechanical impulse switches</td>
<td>18-7</td>
</tr>
</tbody>
</table>
When we introduced the first ELTAKO impulse switches in 1949, they were already standing in the pole position in Europe and since then we have defended this position time and again with innovative products, highest quality, best possible service and attractive prices. Then, impulse switches were also called impulse relays, step switches or latching relays.

**S12-100-/-200-/-110-**

1-pole and 2-pole 16 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.

- 1 module = 18 mm wide, 55 mm deep.
- 100% time on. Control power demand 5-6 W only.
- Contacts 1 NO, 2 NO, 1 NO + 1 NC.
- Contact gap 3 mm. Spacing of control connections/contact > 6mm.

Devices for 25 A XS12, page 18-5.

Retrofittable auxiliary contact KM12, page 18-3.

The pin-compatible ES12DX-UC, ES12-200-UC and ES12-110-UC electronic impulse switches can also be used.

Their universal control voltage UC covers the voltage ranges of 8 to 253 V AC at 50-60 Hz and 10 to 230 V DC.

<table>
<thead>
<tr>
<th>Model</th>
<th>Contact Configuration</th>
<th>EAN</th>
<th>Price €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S12-100-12V</td>
<td>1 NO 16 A</td>
<td>4010312100455</td>
<td>23.90</td>
</tr>
<tr>
<td>S12-100-230V</td>
<td>1 NO 16 A</td>
<td>4010312100479</td>
<td>23.90</td>
</tr>
<tr>
<td>S12-100-8V, 24V, 12V DC, 24 V DC</td>
<td>1 NO 16 A</td>
<td>4010312100530</td>
<td>25.90</td>
</tr>
<tr>
<td>S12-200-12V</td>
<td>2 NO 16 A</td>
<td>4010312100554</td>
<td>30.10</td>
</tr>
<tr>
<td>S12-200-230V</td>
<td>2 NO 16 A</td>
<td>4010312100564</td>
<td>30.10</td>
</tr>
<tr>
<td>S12-200-8V, 24V, 12V DC, 24 V DC</td>
<td>2 NO 16 A</td>
<td>4010312100572</td>
<td>32.10</td>
</tr>
<tr>
<td>S12-110-12V</td>
<td>1 NO 1 + 1 NC 16 A</td>
<td>4010312100493</td>
<td>30.10</td>
</tr>
<tr>
<td>S12-110-230V</td>
<td>1 NO 1 + 1 NC 16 A</td>
<td>4010312100516</td>
<td>30.10</td>
</tr>
<tr>
<td>S12-110-8V, 24V, 12V DC, 24 V DC</td>
<td>1 NO 1 + 1 NC 16 A</td>
<td>4010312100518</td>
<td>32.10</td>
</tr>
</tbody>
</table>

**SS12-110-**

Impulse multicircuit switch, 1+1 NO contacts 16 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.

- 1 module = 18 mm wide, 55 mm deep.
- 100% time on. Control power demand 5-6 W.
- Contact gap 3 mm. Spacing of control connections/contact > 6 mm.

The ESR12DX-UC electronic impulse switch can also be used.

The universal control voltage UC covers the voltage ranges of 8 to 253 V AC at 50-60 Hz and 10 to 230 V DC.

<table>
<thead>
<tr>
<th>Model</th>
<th>Contact Configuration</th>
<th>EAN</th>
<th>Price €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS12-110-12V</td>
<td>1 + 1 NO 16 A</td>
<td>4010312101346</td>
<td>31.10</td>
</tr>
<tr>
<td>SS12-110-230V</td>
<td>1 + 1 NO 16 A</td>
<td>4010312101124</td>
<td>31.10</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
ELECTROMECHANICAL 16A IMPULSE SWITCHES 1-POLE S09, 4-POLE S12 AND AUXILIARY CONTACT KM12

S09-
1 NO contact 16 A/230 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.
Only ½ module = 9 mm wide, 55 mm deep.
Control power demand 5 W. For impulse control.
Contact gap 3 mm.

<table>
<thead>
<tr>
<th>Model</th>
<th>Contacts</th>
<th>EAN</th>
<th>Price €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S09-12V</td>
<td>1 NO 16 A</td>
<td>4010312104187</td>
<td>24.40</td>
</tr>
<tr>
<td>S09-230V</td>
<td>1 NO 16 A</td>
<td>4010312104200</td>
<td>24.40</td>
</tr>
</tbody>
</table>

S12-400-/310-/220-
4-pole 16 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator, for impulse control.
2 modules = 36 mm wide, 55 mm deep.
Time on: impulse control only. Control power demand 12–15 W.
Contacts: 4 NO, 3 NO + 1 NC, 2 NO + 2 NC. Contact gap 3 mm.
Devices for 25 A XS12, page 18-5.
Retrofittable auxiliary contact KM12.

<table>
<thead>
<tr>
<th>Model</th>
<th>Contacts</th>
<th>EAN</th>
<th>Price €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S12-400-230V</td>
<td>4 NO 16 A</td>
<td>4010312104484</td>
<td>45.70</td>
</tr>
<tr>
<td>S12-310-230V</td>
<td>3 NO + 1 NC 16 A</td>
<td>4010312100639</td>
<td>45.70</td>
</tr>
<tr>
<td>S12-220-230V</td>
<td>2 NO + 2 NC 16 A</td>
<td>4010312100592</td>
<td>45.70</td>
</tr>
</tbody>
</table>

KM12
Contact module, 1 NO contact and 1 NC contact 4 A/250 V AC

Retrofittable to the left of all impulse switches S12 and XS12 as well as switching relays and installation contactors R12 and XR12.
½ module = 9 mm wide.

<table>
<thead>
<tr>
<th>Model</th>
<th>Contacts</th>
<th>EAN</th>
<th>Price €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM12</td>
<td>Auxiliary 1 NO + 1 NC, 4 A</td>
<td>4010312901243</td>
<td>16.10</td>
</tr>
</tbody>
</table>
1- AND 2-POLE IMPULSE SWITCHES S91 AND S81

S91-100-

1 NO contact 10 A/250V AC

Built-in devices for installation and surface mounting. With manual control and switch position indicator.

50 mm long, 26 mm wide, 32 mm deep.

Time on 100%. Control power demand 4–5 W. Contact gap 2 mm.

The ES61-UC electronic impulse switch can also be used.

The universal control voltage UC covers the voltage ranges of 8 to 253 V AC at 50-60 Hz and 10 to 230 V DC.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Order Code</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>S91-100-230V</td>
<td>1 NO 10 A</td>
<td></td>
<td>4010312103531</td>
<td>24,80</td>
</tr>
<tr>
<td>S91-100-12V</td>
<td>1 NO 10 A</td>
<td></td>
<td>4010312103517</td>
<td>24,80</td>
</tr>
<tr>
<td>S91-100-8V</td>
<td>1 NO 10 A</td>
<td></td>
<td>4010312103500</td>
<td>28,00</td>
</tr>
<tr>
<td>S91-100-230V</td>
<td>1 NO 10 A</td>
<td></td>
<td>4010312103531</td>
<td>24,80</td>
</tr>
<tr>
<td>S91-100-12V</td>
<td>1 NO 10 A</td>
<td></td>
<td>4010312103517</td>
<td>24,80</td>
</tr>
<tr>
<td>S91-100-8V</td>
<td>1 NO 10 A</td>
<td></td>
<td>4010312103500</td>
<td>28,00</td>
</tr>
</tbody>
</table>

S81-002-

2 CO contacts 10 A/250V AC

Built-in devices for installation and surface mounting.

With manual control and switch position indicator.

50 mm long, 42 mm wide, 32 mm deep.

Time on 100%. Control power demand 5 W. Contact gap 2 mm.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Order Code</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>S81-002-230V</td>
<td>2 CO 10 A</td>
<td></td>
<td>4010312103333</td>
<td>30,00</td>
</tr>
</tbody>
</table>
# 1-, 2- and 4-Pole Electromechanical 25A Impulse Switches XS12

## XS12-100-/-200-/-110-

**1-pole and 2-pole, 25 A/250 V AC**

- Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.
- 1 module = 18 mm wide, 55 mm deep.
- 100% time on. Control power demand 5-6 W.
- Contacts: 1 NO, 2 NO, 1 NO + 1 NC.
- Contact gap 3 mm.
- Retrofittable auxiliary contact KM12, page 18-3.

### Technical data

<table>
<thead>
<tr>
<th>Model</th>
<th>Contacts</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>XS12-100-230V</td>
<td>1 NO 25 A</td>
<td>EAN 4010312101613</td>
<td>28,30 €/pc.</td>
</tr>
<tr>
<td>XS12-200-230V</td>
<td>2 NO 25 A</td>
<td>EAN 4010312101605</td>
<td>33,30 €/pc.</td>
</tr>
<tr>
<td>XS12-110-230V</td>
<td>1 NO + 1 NC 25 A</td>
<td>EAN 4010312101651</td>
<td>33,30 €/pc.</td>
</tr>
</tbody>
</table>

## XS12-400-/-310-/-220-

**4-pole 25 A/250 V AC**

- Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator, for impulse control.
- 2 modules = 36 mm wide, 55 mm deep.
- Time on: impulse control only. Control power demand 12-15 W.
- Contacts: 4 NO, 3 NO + 1 NC, 2 NO + 2 NC.
- Contact gap 3 mm.
- Retrofittable auxiliary contact KM12, page 18-3.

### Technical data

<table>
<thead>
<tr>
<th>Model</th>
<th>Contacts</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>XS12-400-230V</td>
<td>4 NO 25 A</td>
<td>EAN 4010312101650</td>
<td>47,10 €/pc.</td>
</tr>
<tr>
<td>XS12-310-230V</td>
<td>3 NO + 1 NC 25 A</td>
<td>EAN 4010312101704</td>
<td>47,10 €/pc.</td>
</tr>
<tr>
<td>XS12-220-230V</td>
<td>2 NO + 2 NC 25 A</td>
<td>EAN 4010312101759</td>
<td>47,10 €/pc.</td>
</tr>
</tbody>
</table>

---

Recommended retail prices excluding VAT.
### Comparable Electronic Types

**ES12DX-UC**
replaces terminal compatible the **S12-100-**, all control voltages

**ES12-200-UC**
replaces terminal compatible the **S12-200-**, all control voltages

**ES12-110-UC**
replaces terminal compatible the **S12-110-**, all control voltages

**ESR12DDX-UC**
replaces the **S81-110-**, all control voltages

**ES61-UC**
replaces the **S91-100-**, all control voltages

**ESR61M-UC**
replaces **S81-**, **SS81-** and **GS81-**, all control voltages

<table>
<thead>
<tr>
<th>CONTACTS</th>
<th>TYPE</th>
<th>CONTACTS</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 NO contact</td>
<td>S12-100-</td>
<td>1 CO contacts</td>
<td>S81-002</td>
</tr>
<tr>
<td>2 NO contacts</td>
<td>S12-200-</td>
<td>4 NO contacts</td>
<td>XS12-400-</td>
</tr>
<tr>
<td>1 NO contact + 1 NC contact</td>
<td>S12-110-</td>
<td>3 NO contacts + 1 NC contact</td>
<td>XS12-310-</td>
</tr>
<tr>
<td>Multicircuit switch 1+1 NO contacts</td>
<td>SS12-110-</td>
<td>2 NO contacts + 2 NC contact</td>
<td>XS12-220-</td>
</tr>
</tbody>
</table>
### TECHNICAL DATA ELECTROMECHANICAL IMPULSE SWITCHES

### Contacts

<table>
<thead>
<tr>
<th>Type</th>
<th>S09/S12/SS12</th>
<th>S91/S81</th>
<th>XS12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material/contact gap</td>
<td>AgSnO₂/1.3 mm</td>
<td>AgSnO₂/2 mm</td>
<td>AgSnO₂/3 mm ¹</td>
</tr>
<tr>
<td>Spacing of control connections/contact</td>
<td>&gt;6 mm</td>
<td>&gt;6 mm</td>
<td>&gt;6 mm</td>
</tr>
<tr>
<td>Test voltage contact/contact</td>
<td>2000 V</td>
<td>2000 V</td>
<td>2000 V</td>
</tr>
<tr>
<td>Test voltage control connections/contact</td>
<td>4000 V</td>
<td>4000 V</td>
<td>4000 V</td>
</tr>
<tr>
<td>Rated switching capacity</td>
<td>16A/250V AC 10A/400V AC</td>
<td>10A/250V AC 6A/400V AC</td>
<td>25A/250V AC 16A/400V AC</td>
</tr>
<tr>
<td>Incandescent lamp and halogen lamp load/230V</td>
<td>3600 W</td>
<td>3600 W</td>
<td>3600 W</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* in lead-lag circuit or non compensated</td>
<td>230 VA</td>
<td>230 VA</td>
<td>230 VA</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* shunt-compensated or with EVG*</td>
<td>500 VA</td>
<td>500 VA</td>
<td>1000 VA</td>
</tr>
<tr>
<td>Compact fluorescent lamps with EVG* and energy saving lamps ESL I on ≤ 140A/10 ms ³</td>
<td>I on ≤ 70A/10 ms ³</td>
<td>I on ≤ 140A/10 ms ³</td>
<td></td>
</tr>
<tr>
<td>HOI and HOI non compensated</td>
<td>500 W</td>
<td>-</td>
<td>500 W</td>
</tr>
<tr>
<td>Max. switching current DC: 12 V/24 V DC</td>
<td>8 A</td>
<td>8 A</td>
<td>12 A</td>
</tr>
<tr>
<td>Life at rated load cos φ = 1 or incandescent lamps 1000 W at 100/h</td>
<td>&gt;10⁸</td>
<td>&gt;10⁸</td>
<td>&gt;10⁸</td>
</tr>
<tr>
<td>Life at rated load, cos φ = 0.6 at 100/h</td>
<td>&gt;4x10⁴</td>
<td>&gt;4x10⁴</td>
<td>&gt;4x10⁴</td>
</tr>
<tr>
<td>Max. operating cycles</td>
<td>10⁴/h</td>
<td>10⁴/h</td>
<td>10⁵/h</td>
</tr>
<tr>
<td>Switch position indication</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Manual control</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Maximum conductor cross-section</td>
<td>6 mm²</td>
<td>4 mm²</td>
<td>6 mm²</td>
</tr>
<tr>
<td>Two conductors of same cross-section</td>
<td>2.5 mm²</td>
<td>1.5 mm²</td>
<td>2.5 mm²</td>
</tr>
<tr>
<td>Screw head</td>
<td>slotted/crosshead, pozidriv</td>
<td>slotted/crosshead, pozidriv</td>
<td>slotted/crosshead, pozidriv</td>
</tr>
<tr>
<td>Type of enclosure/terminals</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
</tr>
</tbody>
</table>

### Solenoid

<table>
<thead>
<tr>
<th>Type</th>
<th>S09/S12/SS12</th>
<th>S91/S81</th>
<th>XS12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time on at rated voltage 1- and 2-pole, without S09</td>
<td>100% ⁴</td>
<td>100% ⁴</td>
<td>100% ⁴</td>
</tr>
<tr>
<td>Time on at rated voltage 4-pole as well as S09</td>
<td>impulse control</td>
<td>impulse control</td>
<td>impulse control</td>
</tr>
<tr>
<td>Max./min. temperature at mounting location</td>
<td>+50°C/-5°C</td>
<td>+50°C/-5°C</td>
<td>+50°C/-5°C</td>
</tr>
<tr>
<td>Control voltage range</td>
<td>0.9 to 1.1 x rated voltage</td>
<td>0.9 to 1.1 x rated voltage</td>
<td>0.9 to 1.1 x rated voltage</td>
</tr>
<tr>
<td>Coil power loss AC+ DC ≥20%</td>
<td>1- and 2-pole 5 - 6 W; 4-pole 12 - 15 W</td>
<td>5 W</td>
<td>1- and 2-pole 5 - 6 W; 4-pole 12 - 15 W</td>
</tr>
<tr>
<td>Min. command duration</td>
<td>50 ms</td>
<td>50 ms</td>
<td>50 ms</td>
</tr>
<tr>
<td>Max. parallel capacitance (length) of single control lead at 230 V AC</td>
<td>0.06 μF (approx. 200 m)</td>
<td>0.06 μF (approx. 200 m)</td>
<td>0.06 μF (approx. 200 m)</td>
</tr>
<tr>
<td>Max. voltage induced at the control inputs</td>
<td>0.2 x rated voltage</td>
<td>0.2 x rated voltage</td>
<td>0.2 x rated voltage</td>
</tr>
<tr>
<td>Glow lamps in parallel with the 230 V control switches</td>
<td>5 mA</td>
<td>5 mA</td>
<td>5 mA</td>
</tr>
<tr>
<td>With 1μF/250 V AC capacitor in parallel with coil</td>
<td>10 mA</td>
<td>10 mA</td>
<td>10 mA</td>
</tr>
<tr>
<td>With 2.2 μF/250 V AC capacitor in parallel with coil</td>
<td>15 mA</td>
<td>15 mA</td>
<td>15 mA</td>
</tr>
</tbody>
</table>

* EVG = electronic ballast units; KVG = conventional ballast units
* Contact distance of the NC contacts 1.2 mm
* Contact spacing of NC contacts 1.2 mm
* A 40-fold inrush current must be calculated for electronic ballast devices. For steady loads of 1200 W or 600 W use the current-limiting relay SBR12 or SBR61. See chapter 14, page 14-8.
* Whenever several impulse switches are continuously energised make sure there is adequate ventilation and, in addition, a ventilation clearance of approx. half a module. Use the DS12 spacer as necessary.

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

Compliance with: EN 60 669
ELECTROMECHANICAL SWITCHING RELAYS AND INSTALLATION CONTACTORS – POLE POSITION R

R12-400-
R12-100-
R91-100-
Electromechanical switching relays and installation contactors

1-, 2- and 4-pole electromechanical switching relays R12
19-2

1- or 2-pole electromechanical switching relays R91 and R81
19-3

1-, 2- and 4- pole 25 A electromechanical installation contactors XR12
19-4

Technical data electromechanical switching relays and installation contactors
19-5
1-, 2- AND 4-POLE ELECTROMECHANICAL SWITCHING RELAYS R12

R12-100-/200-/110-/020-

1- and 2-pole 16 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator. 1 module = 18 mm wide, 55 mm deep.

100% time on. Control power demand 1.9 W.

Contacts: 1 NO, 2 NO, 1 NO + 1 NC, 2 NC (closed-circuit current relay, 230 V only).

Contact gap 3 mm.

Contact/contact test voltage 2000 V and control connections/contact test voltage 4000 V.


The pin-compatible ER12DX-UC, ER12-200-UC and ER12-110-UC electronic switching relays can also be used.

The universal control voltage UC covers the voltage ranges of 8 to 253 V AC at 50-60 Hz and 10 to 230 V DC.

<table>
<thead>
<tr>
<th>Model</th>
<th>Contacts</th>
<th>EAN</th>
<th>Price</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>R12-100-12V</td>
<td>1 NO 16 A</td>
<td>EAN 4010312200421</td>
<td>23,90 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-100-230V</td>
<td>1 NO 16 A</td>
<td>EAN 4010312200445</td>
<td>23,90 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-100-8V, 24V, 12V DC, 24V DC</td>
<td>1 NO 16 A</td>
<td>EAN 4010312200506</td>
<td>25,90 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-200-12V</td>
<td>2 NO 16 A</td>
<td>EAN 4010312200520</td>
<td>30,10 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-200-230V</td>
<td>2 NO 16 A</td>
<td>EAN 4010312200520</td>
<td>30,10 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-200-8V, 24V, 12V DC, 24V DC</td>
<td>2 NO 16 A</td>
<td>EAN 4010312200520</td>
<td>32,10 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-110-12V</td>
<td>1 NO + 1 NC 16 A</td>
<td>EAN 4010312200469</td>
<td>30,10 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-110-230V</td>
<td>1 NO + 1 NC 16 A</td>
<td>EAN 4010312200483</td>
<td>30,10 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-110-8V, 24V, 12V DC, 24V DC</td>
<td>1 NO + 1 NC 16 A</td>
<td>EAN 4010312201572</td>
<td>32,10 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-020-230V</td>
<td>2 NC 16 A</td>
<td>EAN 4010312201572</td>
<td>30,00 €/pc.</td>
<td></td>
</tr>
</tbody>
</table>

R12-400-/310-/220-

4-pole 16 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator. 2 modules = 36 mm wide, 55 mm deep.

100% time on. Control power demand 4 W.

Contacts: 4 NO, 3 NO + 1 NC, 2 NO + 2 NC.

Contact gap 3 mm.

Contact/contact test voltage 2000 V and control connections/contact test voltage 4000 V.


<table>
<thead>
<tr>
<th>Model</th>
<th>Contacts</th>
<th>EAN</th>
<th>Price</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>R12-400-230V</td>
<td>4 NO 16 A</td>
<td>EAN 4010312200643</td>
<td>45,70 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-310-230V</td>
<td>3 NO + 1 NC 16 A</td>
<td>EAN 4010312200605</td>
<td>45,70 €/pc.</td>
<td></td>
</tr>
<tr>
<td>R12-220-230V</td>
<td>2 NO + 2 NC 16 A</td>
<td>EAN 4010312200568</td>
<td>45,70 €/pc.</td>
<td></td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
1- OR 2-POLE ELECTROMECHANICAL SWITCHING RELAYS R91 AND R81

**R91-100-**

1 NO contact 10 A/250 V AC

Built-in devices for installation and surface mounting.
50 mm long, 26 mm wide, 32 mm deep.
Time on 100%. Control power demand 4–5 W.
Contact gap 2 mm.
Contact/contact test voltage 2000 V and control connection/contact test voltage 4000 V.
The ER61-UC electronic switching relay can also be used.
The universal control voltage UC covers the voltage ranges of 8 to 253 V AC at 50-60 Hz and 10 to 230 V DC.

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**R91-100-230V**

R91-100-230V 1 NO 10 A EAN 4010312203125 24,80 €/pc.

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**R91-100-12V**

R91-100-12V 1 NO 10 A EAN 4010312203101 24,80 €/pc.

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**R91-100-8V**

R91-100-8V 1 NO 10 A EAN 4010312203095 28,00 €/pc.

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**R81-002-**

2 CO contacts 10 A/250 V AC

Built-in devices for installation and surface mounting.
50 mm long, 42 mm wide, 32 mm deep.
Time on 100%. Control power demand 5 W.
Contact gap 2 mm.
Contact/contact test voltage 2000 V and control connection/contact test voltage 4000 V.

---

**R81-002-230V**

R81-002-230V 2 CO 10 A EAN 4010312203040 30,00 €/pc.

---

**Comparable electronic types**

<table>
<thead>
<tr>
<th>Electronic Type</th>
<th>Replacement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER12DX-UC</td>
<td>replaces terminal compatible the R12-100-, all control voltages</td>
</tr>
<tr>
<td>ER12-200-UC</td>
<td>replaces terminal compatible the R12-200-, all control voltages</td>
</tr>
<tr>
<td>ER12-110-UC</td>
<td>replaces terminal compatible the R12-110-, all control voltages</td>
</tr>
<tr>
<td>ER61-UC</td>
<td>replaces the R91-100-, all control voltages</td>
</tr>
<tr>
<td>ESR61M-UC</td>
<td>replaces partially the R81, all control voltages</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
**XR12-100-/200-/110-**

1- and 2-pole, 25 A/250 V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.

- 1 module = 18 mm wide, 55 mm deep.
- 100% time on. Control power demand 1.9 W.
- Contacts 1 NO, 2 NO, 1 NO + 1 NC.
- Contact gap 3 mm.
- Contact/contact test voltage 2000 V and control connection/contact test voltage 4000 V.
- Retrofittable auxiliary contact KM12, page 18-3.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price/pc</th>
</tr>
</thead>
<tbody>
<tr>
<td>XR12-100-230V</td>
<td>1 NO 25 A</td>
<td>EAN 4010312201206</td>
<td>28,30 €/pc.</td>
</tr>
<tr>
<td>XR12-200-230V</td>
<td>2 NO 25 A</td>
<td>EAN 4010312201305</td>
<td>33,30 €/pc.</td>
</tr>
<tr>
<td>XR12-110-230V</td>
<td>1 NO + 1 NC 25 A</td>
<td>EAN 4010312201251</td>
<td>33,30 €/pc.</td>
</tr>
</tbody>
</table>

**XR12-400-/310-/220-**

4-pole, 25A/250V AC

Modular devices for DIN 60715 TH35 rail mounting with manual control and switch position indicator.

- 2 modules = 36 mm wide, 55 mm deep.
- 100% time on. Control power demand 4 W.
- Contacts 4 NO, 3 NO + 1 NC, 2 NO + 2 NC.
- Contact gap 3 mm.
- Contact/contact test voltage 2000 V and control connection/contact test voltage 4000 V.
- Retrofittable auxiliary contact KM12, page 18-3.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>EAN</th>
<th>Price/pc</th>
</tr>
</thead>
<tbody>
<tr>
<td>XR12-400-230V</td>
<td>4 NO 25 A</td>
<td>EAN 4010312201374</td>
<td>47,10 €/pc.</td>
</tr>
<tr>
<td>XR12-310-230V</td>
<td>3 NO + 1 NC 25 A</td>
<td>EAN 4010312201428</td>
<td>47,10 €/pc.</td>
</tr>
<tr>
<td>XR12-220-230V</td>
<td>2 NO + 2 NC 25 A</td>
<td>EAN 4010312201473</td>
<td>47,10 €/pc.</td>
</tr>
</tbody>
</table>

Recommended retail prices excluding VAT.
## TECHNICAL DATA
**ELECTROMECHANICAL SWITCHING RELAYS AND INSTALLATION CONTACTORS**

<table>
<thead>
<tr>
<th>Type</th>
<th>R12</th>
<th>R81/R91</th>
<th>XR12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contacts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact material/contact gap</td>
<td>AgSnO₂/3 mm</td>
<td>AgSnO₂/2 mm</td>
<td>AgSnO₂/3 mm¹</td>
</tr>
<tr>
<td>Spacing of control connections/contact</td>
<td>&gt; 6 mm</td>
<td>&gt; 6 mm</td>
<td>&gt; 6 mm</td>
</tr>
<tr>
<td>Test voltage contact/contact</td>
<td>2000 V</td>
<td>2000 V</td>
<td>2000 V</td>
</tr>
<tr>
<td>Test voltage control connections/contact</td>
<td>4000 V</td>
<td>4000 V</td>
<td>4000 V</td>
</tr>
<tr>
<td>Rated switching capacity</td>
<td>16A/250V AC/10A/400V AC</td>
<td>10A/250V AC/6A/400V AC</td>
<td>25A/250V AC/16A/400V AC</td>
</tr>
<tr>
<td>Incandescent lamp and halogen lamp load 230V²</td>
<td>2300 W</td>
<td>2300 W</td>
<td>2300 W</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* in lead-lag circuit or non compensated</td>
<td>2300 VA</td>
<td>2300 VA</td>
<td>3600 VA</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* shunt-compensated or with EVG*</td>
<td>500 VA</td>
<td>500 VA</td>
<td>1000 VA</td>
</tr>
<tr>
<td>Compact fluorescent lamps with EVO* and energy saving lamps ESL</td>
<td>I on ≤ 140A/10 ms ³)</td>
<td>I on ≤ 70A/10 ms ³)</td>
<td>I on ≤ 140A/10 ms ³)</td>
</tr>
<tr>
<td>HQL and HQI non compensated</td>
<td>500 W</td>
<td>-</td>
<td>500 W</td>
</tr>
<tr>
<td>Max. switching current DC: 12V/24V DC</td>
<td>8 A</td>
<td>8 A</td>
<td>12 A</td>
</tr>
<tr>
<td>Life at rated load, cos ϕ = 1 or incandescent lamps 1000W at 100/h</td>
<td>&gt; 10⁴</td>
<td>&gt; 10⁴</td>
<td>&gt; 10⁴</td>
</tr>
<tr>
<td>Life at rated load, cos ϕ = 0.6 at 100/h</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
<td>&gt; 4x10⁴</td>
</tr>
<tr>
<td>Max. operating cycles</td>
<td>10³/h</td>
<td>10³/h</td>
<td>10³/h</td>
</tr>
<tr>
<td>Closing time</td>
<td>10-20 ms</td>
<td>10-20 ms</td>
<td>10-20 ms</td>
</tr>
<tr>
<td>Opening time</td>
<td>5-15 ms</td>
<td>5-15 ms</td>
<td>5-15 ms</td>
</tr>
<tr>
<td>Switch position indication</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Manual control</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Maximum conductor cross-section</td>
<td>6 mm²</td>
<td>4 mm²</td>
<td>6 mm²</td>
</tr>
<tr>
<td>Two conductors of same cross-section</td>
<td>2.5 mm²</td>
<td>1.5 mm²</td>
<td>2.5 mm²</td>
</tr>
<tr>
<td>Screw head</td>
<td>slotted/crosshead, pozidriv</td>
<td>slotted/crosshead, pozidriv</td>
<td>slotted/crosshead, pozidriv</td>
</tr>
<tr>
<td>Type of enclosure/terminals</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
<td>IP50/IP20</td>
</tr>
</tbody>
</table>

**Solenoid System**

| Time on          | 100% ⁴)                      | 100%                        | 100% ⁴)                  |
| Max./min. temperature at mounting location | +50°C/-5°C                   | +50°C/-5°C                   | +50°C/-5°C                |
| Control voltage range | 0.9 to 1.1 x rated voltage | 0.9 bis 1.1 x rated voltage | 0.9 to 1.1 x rated voltage |
| Coil power loss AC+DC ±20% | 1- and 2-pole: 1.9 W 4-pole: 4 W | R81: 5 W R91: 2.5 W | 1- and 2-pole: 1.9 W 4-pole: 4 W |
| Total power loss with continuous excitation at rated voltage and rated contact load | 1-pole: 4 W 2-pole: 6 W 4-pole: 12 W | 1-pole: 7 W 2-pole: 9 W | 1-pole: 4 W 2-pole: 6 W 4-pole: 12 W |
| Max. parallel capacitance (length) of control lead | 0.06 µF (ca. 200 m) | 0.06 µF (ca. 200 m) | 0.06 µF (ca. 200 m) |
| Max. voltage induced at the control inputs | 0.2 x rated voltage | 0.2 x rated voltage | 0.2 x rated voltage |

* EVG = electronic ballast units. KVG = conventional ballast units. ¹Contact distance of the NO contacts 1.2 mm. ²Contact spacing of NC contacts 1.2 mm. ³A 40-fold inrush current must be calculated for electronic ballast devices. For steady loads of 1200 W or 600 W use the current-limiting relay SBR12 or SBR91. See chapter 14, page 14-8. ⁴) Whenever several impulse switches are continuously energised make sure there is adequate ventilation as a function of the calculated power loss.

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

Compliance with: EN 60 669
ACCESSORIES – USEFUL HELPERS ABOUT THE ELTAKO INSTALLATION
Accessories wireless and others

Blisterpack dimming **BPD** and blisterpack switching **BPS**
Blisterpack dimming **BPD55** and blisterpack switching **BPS55**
Blisterpack shading **BPB** and **BPB55**
Set of jumpers **STS14**
**WET.PROTECT WP50**
Wireless Powernet phase coupler **FPP12**
Wireless MP3 player **FMP3**
EnOcean KNX gateways **KNX ENO**
EnOcean Field Test Tool **P10**
Wireless pushbutton inserts with EnOcean energy generators **FTE**
Wireless repeater **FRP61-230V** and wireless socket repeater **FSRP-230V**
Wireless repeater **FRP70-230V** and **FRP65/230V-wg**
Outdoor wireless repeater **FARP60-230V**
Wireless transmitter module **FSM60B** with batteries
Wireless outdoor transmitter module **FASM60-UC**
Wireless antennas **FA250**, **FHM175** and **FA200**
Wireless antenna **FAG65-wg**, surface cap **K81**, spacer **DS12** and socket outlet **ST12-16A**
Sealing cap **PK18**, screws **S + rawls D**, triple RC module **RC12-230V** and housings for operating instructions **GBA12** and **GBA14**
BLISTERPACK DIMMING BPD AND BLISTERPACK SWITCHING BPS

BPD
Blisterpack dimming with wireless pushbutton F2T65 and universal dimmer switch FUD6INPN-230V. Smart Home sensor and Smart Home actuator.

F2T65: Wireless pushbutton pure white glossy for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Wireless pushbuttons with one rocker can transmit two evaluable signals: press rocker up and press rocker down.

The mounting base can be screwed onto a flat surface or glued to the wall, on glass or on furniture using the enclosed adhesive foil. Use the sleeves in the 55 mm socket box for screw mounting.

FUD6INPN-230V: Universal dimmer switch, 300 W power MOSFET. Automatic lamp detection. Only 0.7 watt standby loss. With adjustable minimum brightness or dimming speed. With switching operation for light alarm clocks, children's rooms and snooze function. Additionally with light scene control. Encrypted wireless, bidirectional wireless and repeater function are switchable.

For installation. 45 mm long, 45 mm wide, 33 mm deep.

Universal dimmer switch for lamps up to 300 W, dependent on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V-LED lamps, additionally dependent on the lamps electronics. Zero passage switching with soft ON and soft OFF to protect lamps. Supply voltage, switching voltage and control voltage local 230 V. No minimum load.

The brightness level is stored on switch-off (memory).

| BPD | Blisterpack dimming | EAN 4010312314241 | 139,70 €/pc |

BPS
Blisterpack switching with wireless pushbutton F2T65 and wireless actuator impulse switch with integrated relay function FSR61-230V. Smart Home sensor and Smart Home actuator.

F2T65: Wireless pushbutton pure white glossy for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Wireless pushbuttons with one rocker can transmit two evaluable signals: press rocker up and press rocker down.

The mounting base can be screwed onto a flat surface or glued to the wall, on glass or on furniture using the enclosed adhesive foil. Use the sleeves in the 55 mm socket box for screw mounting.

FSR61-230V: Wireless actuator impulse switch with integrated relay function. 1 NO contact potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, off delay with switch-off early warning and switchable pushbutton permanent light. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.

For installation. 45 mm long, 45 mm wide, 33 mm deep.

Supply voltage and control voltage locally 230 V. If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.

In addition to the wireless control input via an internal antenna, this universal impulse switching relay can also be controlled locally by a conventional control switch if fitted previously. Glow lamp current is not permitted.

| BPS | Blisterpack switching | EAN 4010312314258 | 118,20 €/pc |

Recommended retail prices excluding VAT.
BPD55
Blisterpack dimming with wireless pushbutton F2T55E and universal dimmer switch FUD61NPN-230V. Smart Home sensor and Smart Home actuator.

F2T55E: Wireless pushbutton pure white glossy for single mounting 84 x 84 x 15 mm or mounting into the E-Design55 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Wireless pushbuttons with one rocker can transmit two evaluable signals: press rocker up and press rocker down.
The mounting base can be screwed onto a flat surface or glued to the wall, on glass or on furniture using the enclosed adhesive foil. Use the sleeves in the 55 mm socket box for screw mounting.
FUD61NPN-230V: Universal dimmer switch, 300 W power MOSFET. Automatic lamp detection. Only 0.7 watt standby loss. With adjustable minimum brightness or dimming speed. With switching operation for light alarm clocks, children's rooms and snooze function. Additionally with light scene control. Encrypted wireless, bidirectional wireless and repeater function are switchable.
For installation. 45 mm long, 45 mm wide, 33 mm deep.
Universal dimmer switch for lamps up to 300 W, dependent on ventilation conditions. Dimmable energy saving lamps ESL and dimmable 230 V-LED lamps, additionally dependent on the lamps electronics. Zero passage switching with soft ON and soft OFF to protect lamps. Supply voltage, switching voltage and control voltage local 230 V. No minimum load.
The brightness level is stored on switch-off (memory).

| BPD55 | Blisterpack dimming | EAN 4010312317839 | 139,70 €/pc. |

BPS55
Blisterpack switching with wireless pushbutton F2T55E and wireless actuator impulse switch with integrated relay function FSR61-230V. Smart Home sensor and Smart Home actuator.

F2T55E: Wireless pushbutton pure white glossy for single mounting 84 x 84 x 15 mm or mounting into the E-Design55 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Wireless pushbuttons with one rocker can transmit two evaluable signals: press rocker up and press rocker down.
The mounting base can be screwed onto a flat surface or glued to the wall, on glass or on furniture using the enclosed adhesive foil. Use the sleeves in the 55 mm socket box for screw mounting.
FSR61-230V: Wireless actuator impulse switch with integrated relay function. 1 NO contact potential free 10 A/250 V AC, incandescent lamps up to 2000 watts, off delay with switch-off early warning and switchable pushbutton permanent light. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.
For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage and control voltage locally 230 V.
If a power failure occurs, the switching state is retained. If a power failure occurs repeatedly, the device is switched off in a defined sequence. After installation, wait for short automatic synchronisation before the switched consumer is connected to the mains.
In addition to the wireless control input via an internal antenna, this universal impulse switching relay can also be controlled locally by a conventional control switch if fitted previously. Glow lamp current is not permitted.

| BPS55 | Blisterpack switching | EAN 4010312317846 | 118,20 €/pc. |
BLISTERPACK SHADING BPB AND BLISTERPACK SHADING BPB55

BPB

Blisterpack shading with wireless pushbutton F2T65 and wireless actuator for shading elements and roller shutters FSB61NP-230V. Smart Home sensor and Smart Home actuator.

F2T65: Wireless pushbutton pure white glossy for single mounting 84 x 84 x 16 mm or mounting into the E-Design65 switching system. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Wireless pushbuttons with one rocker can transmit two evaluable signals: press rocker up and press rocker down.
The mounting base can be screwed onto a flat surface or glued to the wall, on glass or on furniture using the enclosed adhesive foil. Use the sleeves in the 55 mm socket box for screw mounting.
FSB61NP-230V: Wireless actuator for shading elements and roller shutters. 1+1 NO contact not potential free 4 A/250 V AC, for roller blinds and shading systems. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.
For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage, switching voltage and control voltage local 230 V.
If a power failure occurs, the device is switched off in a defined sequence.
In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch previously mounted.

<table>
<thead>
<tr>
<th>BPB</th>
<th>Blisterpack shading</th>
<th>EAN 4010312316979</th>
<th>126,60 €/pc.</th>
</tr>
</thead>
</table>

BPB55

Blisterpack shading with wireless pushbutton F2T55E and wireless actuator for shading elements and roller shutters FSB61NP-230V. Smart Home sensor and Smart Home actuator.

F2T55E: Wireless pushbutton pure white glossy for single mounting 84 x 84 x 15 mm or mounting into the E-Design55. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss. Wireless pushbuttons with one rocker can transmit two evaluable signals: press rocker up and press rocker down.
The mounting base can be screwed onto a flat surface or glued to the wall, on glass or on furniture using the enclosed adhesive foil. Use the sleeves in the 55 mm socket box for screw mounting.
FSB61NP-230V: Wireless actuator for shading elements and roller shutters. 1+1 NO contact not potential free 4 A/250 V AC, for roller blinds and shading systems. Encrypted wireless, bidirectional wireless and repeater function are switchable. Only 0.8 watt standby loss.
For installation. 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage, switching voltage and control voltage local 230 V.
If a power failure occurs, the device is switched off in a defined sequence.
In addition to the wireless control input via an internal antenna, this wireless actuator can also be controlled locally by a conventional 230 V control switch previously mounted.

<table>
<thead>
<tr>
<th>BPB55</th>
<th>Blisterpack shading</th>
<th>EAN 4010312317822</th>
<th>126,60 €/pc.</th>
</tr>
</thead>
</table>
ACCESSORIES
JUMPERS STS14, WET.PROTECT WP50 AND WIRELESS POWERNET PHASE COUPLER FPP12

STS14

STS14 set of jumpers for Series 14, 7 pieces.

| STS14 | Jumpers | EAN 4010312314975 | 6,30 €/pc. |

WP50

WET.PROTECT e.nautic 50ml.

High-performance protection against humidity, moisture and corrosion. This water blocker completely infiltrates any moisture and humidity. It creates a micro-thin protective film with extremely water repellent effect. The dielectric strength is extremely high with 200 kV/mm. Due to the salt water resistance, it is not only perfect for the use in winter as it protects against the effects of road salt, but also for applications close to the sea. Wireless pushbuttons treated with this spray according to the operating manual even remain fully functional outdoors on the weather side for years.

| WP50 | WET.PROTECT 50 ml | EAN 4010312907306 | 21,10 €/pc. |

FPP12

Wireless Powernet phase coupler to transmit wireless telegrams over the 230 V power mains. Only 0.2 watt standby loss.

Modular device for DIN-EN 60715 TH35 rail mounting.
1 module = 18 mm wide, 58 mm deep.
Voltage between the two outer conductors: 400 V/50 Hz.
Frequency range 115-132 kHz.
The phase coupler increases the capacitive coupling between 2 different outer conductors if, for example, the cables within the installation are not laid in parallel at a distance of at least several metres apart (as ribbon cables or jacketed cables).

Caution: The phase coupler may only be connected to the input side of the line circuit-breaker.

Typical connection

| FPP12 | Wireless Powernet phase coupler | EAN 4010312311789 | 25,40 €/pc. |
FMP3

Wireless MP3 player to play back MP3 files such as music, noises and sounds. With internal loudspeaker, USB port, micro USB port, 3.5 mm jack socket to connect stereo headphones and a 3.5 mm jack socket to connect an external loudspeaker.

Plastic housing, pure white, l x w x h: 165 x 70 x 35 mm with oblong holes for wall mounting and plastic feet for placing on flat surfaces, weight 230 grams.

The scope of supply comprises a USB stick (plugged as delivered in the USB port) containing MP3 files, a 5 V plug-in power adapter with micro USB cable and a 3.5 mm jack plug with screw terminals to connect an external loudspeaker.

Up to 120 sensors, e.g. wireless pushbuttons, wireless window/door contacts and wireless motion detection sensors, can be taught in.

Up to 50 different tracks can be played back.

Eltako has stored examples of noises and sounds on the USB stick with the kind approval of the operator of the internet platform www.salamisound.de. You can supplement or replace them.

We also recommend the website www.audiyou.de as an additional source to download sounds.

Possible applications:

- doorbell with a variety of different tracks for various sensors
- acoustic signalling device for open/close doors, cabinets or drawers
- acoustic signalling device for motion detection
- repetitive acoustic signal for open doors (e.g. refrigerator)
- acoustic confirmation signal for any incident in the Eltako wireless building system

| FMP3 | Wireless MP3 player | EAN 4010312317853 | 142.40 €/pc. |

Recommended retail prices excluding VAT.
**KNX ENO 626**

Bidirectional gateway between EnOcean wireless and KNX bus with 8 channels from Weinzierl, flush mounting.

The KNX ENO 626 secure acts as a bidirectional gateway between EnOcean Wireless and the KNX/EIB bus. Control commands and measured values can be transmitted by EnOcean wireless sensors to the KNX bus, for example to control KNX actuators. Similarly, EnOcean wireless actuators can be controlled by KNX. The KNX ENO 626 secure from Weinzierl allows encrypted communication with security compatible EnOcean devices.

The KNX ENO 626 secure has 8 wireless channels and accepts over 100 EEP (Enocean Equipment Profile), it allows an easy and secure connection from different EnOcean sensors and actors to a KNX installation. In addition the gateway offers logic functions and comprises an integrated wireless repeater.

The configuration is done with the KNX ENO-Tool, downloadable on weinzierl.de.

Flush mounting in a 55 mm wall box.

The repeater function is designed to bridge large distances between sensors and actuators. The KNX ENO 626 is a Level 1 wireless repeater.

| KNX ENO 626 | EnOcean KNX gateway | EAN 4010312318911 | 275.80 €/pc. |

**KNX ENO 636**

Bidirectional gateway between EnOcean wireless and KNX bus with 32 channels from Weinzierl, 81 x 81 x 25 mm.

The KNX ENO 636 secure acts as a bidirectional gateway between EnOcean Wireless and the KNX/EIB bus. Control commands and measured values can be transmitted by EnOcean wireless sensors to the KNX bus, for example to control KNX actuators. Similarly, EnOcean wireless actuators can be controlled by KNX. The KNX ENO 636 secure from Weinzierl allows encrypted communication with security compatible EnOcean devices.

The KNX ENO 636 secure has 32 wireless channels and accepts over 100 EEP (Enocean Equipment Profile), it allows an easy and secure connection from different EnOcean sensors and actors to a KNX installation. In addition the gateway offers logic functions and comprises an integrated wireless repeater.

The configuration is done with the KNX ENO-Tool, downloadable on weinzierl.de.

Surface mounting by means of a 55 mm flush mount box. Power is supplied over the KNX bus.

The repeater function is designed to bridge large distances between sensors and actuators. The KNX ENO 636 is a Level 1 wireless repeater.

| KNX ENO 636 | EnOcean KNX gateway | EAN 4010312318904 | 440.40 €/pc. |
The EnOcean field test tool Probare P10 is a portable field tester which shows the signal quality of the received EnOcean 868MHz telegrams. Additionally it helps to determine the best place for EnOcean transmitters, receivers or repeaters, it can also help to look if any signals are sent or not.

2 AA/LR06 batteries are additionally necessary.

Switch on and off by pressing the ON/OFF button for 1.5 seconds.

The signal quality is shown by LEDs.

With the MODE button you can switch between the different functions.

All shows the signal quality of all received EnOcean telegrams.

Filter shows the signal quality of one unique transmitter.

Repeater activates the repeater function (level 1) by this way you can determine the best position for a repeater.

Radio Link Test allows the wireless coverage testing in combination with the adequate receiver by sending telegrams cyclically.

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**P10**

| Wireless level meter Probare | EAN 4010312317068 | 114.90 €/pc.

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**FTE...**

Wireless pushbutton inserts with EnOcean energy generators for wireless pushbuttons made by other manufacturers. Generates the power for wireless telegrams itself when the button is pressed, therefore there is no connecting wire and no standby loss.

The scope of supply comprises the mounting base and an attachment frame for FT55 with EnOcean module inserts PTM215 (encrypted) or PTM215B (Bluetooth).

Wireless pushbuttons with one rocker can transmit two evaluable signals. Wireless pushbuttons with double rocker can transmit four evaluable signals.

FT55 rockers W-FT55 and double rockers DW-FT55, also with laser engraving, page 8-19.

| Wireless pushbutton insert, encrypted | EAN 4010312318539 | 34.20 €/pc.
| Wireless pushbutton insert, Bluetooth | EAN 4010312318553 | 36.30 €/pc.

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Recommended retail prices excluding VAT.
FRP61-230V

1 and 2 level wireless repeaters. Only 0.7 watt standby loss.

For installation, 45 mm long, 45 mm wide, 33 mm deep.
Supply voltage 230 V.
This repeater is only needed if the building conditions prevent undisturbed reception or the distance between the wireless pushbutton and receiver is too great.
The 1-level mode is activated ex works. Only wireless signals from sensors are received, tested and retransmitted at full transmit power. Wireless signals from other repeaters are ignored to reduce the data volume.
Use the rotary switch to switch over to 2 level mode. Then the wireless signals from sensors and from another 1 level repeater are processed. A signal may therefore be received and amplified twice.
The LED indicates incoming wireless signals by flashing briefly.
Wireless repeaters need not be taught-in. They receive and amplify signals from all wireless sensors within their reception area.

| FRP61-230V | Wireless repeater | EAN 4010312300251 | 53.70 €/pc. |

FSRP-230V

1- and 2-level wireless socket repeater. Only 0.7 watt standby loss.

Adapter for German fused safety socket. With increased shock protection.
This repeater is only needed if the building conditions do not allow undisturbed reception or the distance between the wireless pushbutton and receiver is too great.
The 2-level mode is activated ex works. Sensor wireless signals are then processed in addition to the wireless signals of another 1-level repeater. A wireless signal can then receive and amplify a maximum of two times.
From production week 31/18: By multiple unplugging and plugging can be switched to the 1-level mode. Now only the wireless signals from sensors are received and amplified. Wireless signals from other repeaters are ignored to reduce the amount of data.
Activate 1-level mode:
Briefly unplug and replug the adapter plug 3 times at intervals of 1 second within a period of 10 seconds.
Activate 2-level mode:
Briefly unplug and replug the adapter plug 5 times at intervals of 1 second within a period of 20 seconds.
Wireless repeaters need not be taught-in. They receive and amplify signals from all wireless sensors within their reception area.

| FSRP-230V | Wireless socket repeater | EAN 4010312314999 | 68.90 €/pc. |
**ACCESSOIRES**

**WIRELESS REPEATERS FRP70-230V AND FRP65/230V-wg**

**FRP70-230V**

1 and 2 level wireless repeater with small antenna and with antenna FA250. Only 0.6 watt standby loss. A wireless antenna FA250 is connectable as required.

Mounting in the 230 V power supply cord, e.g. in false ceilings. 100 mm long, 50 mm wide and 25 mm deep.

This repeater is only needed if the building conditions prevent undisturbed reception or the distance between the wireless pushbutton and receiver is too great. Antenna FA250 with 250 cm cable is connectable instead of the enclosed antenna. The range can be extended considerably by placing it in the optimum position. The 1-level mode is activated ex works. Only wireless signals from sensors are received, tested and retransmitted at full transmit power. Wireless signals from other repeaters are ignored to reduce the data volume.

Use the rotary switch to switch over to 2 level mode. Then the wireless signals from sensors and from another 1 level repeater are processed. A signal may therefore be received and amplified twice.

The LED indicates incoming wireless signals by flashing briefly.

Wireless repeaters need not be taught-in. They receive and amplify signals from all wireless sensors within their reception area.

| FA250      | Wireless antenna with 250 cm cable, black | EAN 4010312300244 | 21,80 €/pc. |
| FA250-gw   | Wireless antenna with 250 cm cable, grey white | EAN 4010312317051 | 21,80 €/pc. |

**FRP65/230V-wg**

2 level wireless repeaters in the housing for single mounting 84 x 84 x 30 mm or mounting into the E-design switching system. Only 0.8 watt standby loss.

We recommend stainless-steel countersunk screws 2.9 x 25 mm, DIN 7982 C, for screw connections.

Set of 2 stainless-steel countersunk screws 2.9 x 25 mm and plugs 5 x 25 mm are enclosed.

Supply voltage 230 V.

This repeater is only needed if the building conditions prevent undisturbed reception or the distance between the wireless pushbutton and receiver is too great.

The 2-level mode is activated. The signals from sensors and actuators are received, tested and retransmitted with full transmitting power.

The wireless signals from another 1-level repeater are also being processed.

A signal may therefore be received and amplified twice.

Wireless repeaters need not be taught-in. They receive and amplify signals from all wireless sensors within their reception area.

| FRP65/230V-wg | Wireless repeater pure white glossy | EAN 4010312315927 | 72,90 €/pc. |
FARP60-230V

Outside wireless repeater 1 and 2 levels, 60 x 46 mm, 30 mm deep. Only 0.7 watt standby loss.

Supply voltage 230 V.
This repeater is only needed if the building conditions prevent undisturbed reception or the distance between the wireless pushbutton and receiver is too great.
The 1-level mode is activated ex works. Only the signals from sensors and actuators are received, tested and retransmitted at full transmit power. Wireless signals from other repeaters are ignored to reduce the data volume.
Switchover to 2-level mode is carried out by removing the cover (loosen two screws on the front panel) and repositioning the jumper flush right. In this setting, wireless signals from other 1-level repeaters are also processed. A signal may therefore be received and amplified twice.
A red LED blinks briefly to indicate all the wireless signals detected.
Wireless repeaters need not be taught-in. They receive and amplify signals from all wireless sensors within their reception area.
On the underside there is an M12 screw for a waterproof mains connection.
The protection class is IP54, the allowable ambient temperature is -20°C to +55°C.
For screw mounting.

| FARP60-230V | Outdoor wireless repeater | EAN 4010312310137 | 69.70 €/pc. |
### FSM60B

Wireless transmitter module with batteries and antenna rod. L x W x H: 60 x 46 x 30 mm (dimensions excluding antenna and fixing screws).

This wireless transmitter module can be operated by a water sensor FWS60 or a pushbutton and transmits a variety of adjustable wireless telegrams to the Eltako building wireless system. An internal jumper permits selection between 4 operating modes.

- **Mode 1 (jumper plugged at Position JP1):** Wireless telegrams are sent from a wireless pushbutton, such as ‘Press double rocker at bottom left’.
- **Mode 2 (jumper plugged at Position 2):** Wireless telegrams are sent from a wireless pushbutton, such as ‘Press double rocker at top right and bottom right’.
- **Mode 3 (jumper plugged at Position 3; factory setting):** Wireless telegrams are sent to EnOcean Standard EEPROM A5-30-03.
- **Mode 4 (jumper plugged at Position 4):** Wireless telegrams are sent to EnOcean Standard EEPROM A5-30-01.

In modes 3 and 4 a status telegram is also sent every 33 minutes.

The power supply that lasts several years is provided by an internal 3 V button cell CR2032. The charge status of the battery is transmitted in every data and status telegram in mode 4.

Press the internal LRN button to teach in the actuator which is ready for teach-in.

Release two screws on the front to remove the cover. When closing, make sure the seal is in the correct position.

An M12 screw is located on the underside to connect the cable.

It is not permitted to activate several wireless transmitter modules at the same time.

<table>
<thead>
<tr>
<th>FSM60B</th>
<th>Transmitter module with batteries</th>
<th>EAN 4010312316092</th>
<th>59.60 €/pc</th>
</tr>
</thead>
</table>

### FASM60-UC

Wireless outdoor transmitter module 2 channels. L x W x H: 60 x 46 x 30 mm (dimensions excluding fixing screws). With internal antenna. No standby loss.

The wireless transmitter module FASM60-UC has two channels and can transmit wireless pushbutton telegrams to the Eltako building wireless system. A1 initiates a wireless telegram, such as ‘Press top rocker’ for a wireless pushbutton with one rocker and A3 such as ‘Press bottom rocker’. The telegram on opening the two control contacts is identical to ‘Release wireless pushbutton’. Several wireless transmitter modules must not be switched at the same time.

There is a screw joint M12 at the bottom for the waterproof connection IP64. Connection to a 5-fold inside terminal for the control input +A1/-A2 and +A3/-A2. Loosen the 2 screws on the front and remove lid. If the terminals A1 and A3 are connected with a bridge, the wireless telegram is transmitted once per minute by A3, provided the control voltage is applied, e.g. for central commands with priority.

The universal control voltage processes control commands of 8 to 253 V AC or 10 to 230 V DC with periods lasting min. 0.2 seconds.

Max. parallel capacitance of the single control leads (separately installed) at 230 V 3 nF, this corresponds to a length of approx. 10 meters. Parallel control leads (jointly installed) at 230 V 0.5 nF, approx. 2 meters.

Max. parallel capacitance (approx. length) of control lead at 12-24 V UC 0.03 µF, this corresponds to a length of approx. 100 meters.

No permanent power supply required, therefore no standby losses. The wireless telegrams can be encrypted.

The internal rotary switch activates or deactivates the encryption mode, and is in operation in the center position.

**Encryption activation:** Turn the rotary switch to the right end and tap one time.

**Encryption deactivation:** Turn the rotary switch to the left end and tap one time.

<table>
<thead>
<tr>
<th>FASM60-UC</th>
<th>Outdoor transmitter module 2 channels</th>
<th>EAN 4010312311988</th>
<th>57.80 €/pc</th>
</tr>
</thead>
</table>

Recommended retail prices excluding VAT.
FA250, FHM175 AND FA200

Wireless antenna FA250 with magnetic base and 250 cm cable, black

The small enclosed wireless antenna of the wireless antenna modules and several wireless transmitter modules are replaceable by this larger 868MHz-HF-antenna to receive and transmit wireless signals to or from metal control cabinets. It is mounted on the magnetic base externally and the 250 cm cable is routed inside the cabinet. The best performance is achieved by attaching the magnetic foot on a metal surface. The transmit and receive ranges are almost spherical around this antenna. Antenna height, only 10 cm. With SMA screw terminal. Extension by 5 m using wireless antenna extension FAV5 or by 10 m using FAV10.

Wireless antenna FA250-gw with magnetic base and 250 cm cable, grey white

Description see FA250, black.

HF ground FHM175 for the HF wireless antenna FA250, aluminium disc anodized, 4 mm thick, 175 mm diameter.

This HF ground optimizes the receiver and transmitter performance of the HF antenna FA250 (not included in the scope of supply) since the diameter has twice the length of the antenna plus its bar diameter. A deepened steel disc with the diameter of the magnetic antenna core is pressed into the center. Thereby the FA250 can easily be centered. The aluminium disc is formed with a hole and a slot to be fixed to the wall.

High-performance receive antenna FA200 with magnetic base and 200 cm cable

This antenna has a radial gain of up to 7 dBi and therefore has a much greater range than wireless antenna FA250. As a trade-off the receive power along the antenna axis is considerably lower. This must be taken into consideration when positioning the antenna. It may only be used as a receive antenna. Antenna height 59 cm. With SMA screw terminal. Extension by 5 m using wireless antenna extension FAV5 or by 10 m using FAV10.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>EAN</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA250</td>
<td>Wireless antenna with 250 cm cable, black</td>
<td>EAN 4010312300244</td>
<td>21,80 €/pc.</td>
</tr>
<tr>
<td>FA250-gw</td>
<td>Wireless antenna with 250 cm cable, grey white</td>
<td>EAN 4010312317051</td>
<td>21,80 €/pc.</td>
</tr>
<tr>
<td>FHM175</td>
<td>HF ground for FA250</td>
<td>EAN 4010312313121</td>
<td>66,60 €/pc.</td>
</tr>
<tr>
<td>FA200</td>
<td>High-performance receive antenna with 200 cm cable</td>
<td>EAN 4010312303306</td>
<td>70,60 €/pc.</td>
</tr>
<tr>
<td>FAV5</td>
<td>Antenna extension 5 m</td>
<td>EAN 4010312302897</td>
<td>28,50 €/pc.</td>
</tr>
<tr>
<td>FAV10</td>
<td>Antenna extension 10 m</td>
<td>EAN 4010312302903</td>
<td>35,80 €/pc.</td>
</tr>
</tbody>
</table>
Recommended retail prices excluding VAT.

ACCESSORIES
WIRELESS ANTENNA FAG65, SURFACE CAP K81, SPACER DS12 AND SOCKET OUTLET ST12-16A

FAG65-wg

Wireless antenna in the housing for single mounting 84 x 84 x 30 mm or mounting into the E-design switching system. With 100 cm cable.

We recommend stainless-steel countersunk screws 2.9 x 25 mm, DIN 7982 C, for screw connections. Set of 2 stainless-steel countersunk screws 2.9 x 25 mm and plugs 5 x 25 mm are enclosed. In the housing there is a wireless antenna with ground plane and permanently attached antenna cable, 100 cm long, with SMA screw.

Image without frame

| FAG65-wg | Wireless antenna pure white glossy | EAN 4010312315910 | 33,70 €/pc. |

K81

Surface cap

For series 81,
l x w x h = 60 x 60 x 37 mm.

| K81 | Surface cap | EAN 4010312901236 | 4,70 €/pc. |

DS12

Spacer

1/2 module wide = 9 mm, to produce and maintain a ventilation clearance for modular devices dissipating much heat, e.g. dimmers from 300 W/400 W and continuously rated electromechanical impulse switches.

| DS12 | Spacer | EAN 4010312900987 | 1,10 €/pc. |

ST12-16A

Socket outlet

Socket outlet 16 A as modular device for mounting on DIN-EN 60715 TH35 rail or as built-in device. 2.5 modules = 45 mm wide, 55 mm deep.

| ST12-16A | Socket outlet | EAN 4010312700358 | 18,50 €/pc. |
**PK18**

Sealing cap

For all sealable modular devices of series 12 with one module. Covers the back terminals as well as the latched sliding switch and can be sealed. If necessary two sealing caps can be used, one above and one below.

<table>
<thead>
<tr>
<th>PK18</th>
<th>Sealing cap</th>
<th>EAN 4010312901403</th>
<th>1,10 €/pc.</th>
</tr>
</thead>
</table>

**S+D 25**

25 pcs screws and rawl plugs to fit the mounting plate for wireless pushbuttons. Screws also for fitting on UP boxes.

Contents: 25 pcs countersunk sheet metal screws with cross head 2.9 x 25 mm DIN 7982 C, stainless steel A2 and 25 pcs Fischer rawl plugs with lip SX5, 25 mm long.

The screw head fits exactly (in height and diameter) between the mounting plate of the wireless pushbutton and the Eltako frame.

Moreover, the screws are also suitable for fixing devices on UP switch boxes in the screw sleeves there.

<table>
<thead>
<tr>
<th>S+D 25</th>
<th>25 screws and rawl plugs 25 mm</th>
<th>EAN 4010312906231</th>
<th>5,20 €/pc.</th>
</tr>
</thead>
</table>

**RC12-230V**

Triple RC module

Modular device for DIN-EN 60715 TH35 rail mounting.

1 module = 18 mm wide, 55 mm deep.

Used to compensate for inductive interference voltages on control leads. Up to three switchgear devices can be interference-suppressed by connection in parallel with the 230 V control inputs.

<table>
<thead>
<tr>
<th>RC12-230V</th>
<th>Triple RC module</th>
<th>EAN 4010312201596</th>
<th>32,30 €/pc.</th>
</tr>
</thead>
</table>

**GBA12 AND GBA14**

Housing for operating instructions

Modular device for DIN-EN 60715 TH35 rail mounting. 1 module = 18 mm wide, 55 mm deep.

Housing without front panel to insert operating instructions.

<table>
<thead>
<tr>
<th>GBA12</th>
<th>Housing for operating instr., grey-blue</th>
<th>EAN 4010312901779</th>
<th>2,20 €/pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBA14</td>
<td>Housing for operating instr., white-blue</td>
<td>EAN 4010312906422</td>
<td>2,20 €/pc.</td>
</tr>
</tbody>
</table>

Unverbindliche Preisempfehlung zuzüglich gesetzl. MwSt.
ALL SPECIFICATIONS AT A GLANCE
Technical data of the wireless actuators, teach-in list, operating distances and contents of Eltako Wireless telegrams

The Eltako wireless system works with the reliable and worldwide standardized EnOcean wireless technology in 868MHz. It transmits ultra short and interference-proof signals with a range of up to 100 meters in halls. Eltako wireless pushbuttons reduce the electrosmog load since they emit high-frequency waves that are 100 times weaker than conventional light switches. There is also a significant reduction in low-frequency alternating fields since fewer power cables need to be installed in the building.
<table>
<thead>
<tr>
<th>Contacts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact material/contact gap</td>
<td>AgSnO₂/0.5 mm</td>
</tr>
<tr>
<td>Power MOSFET</td>
<td>–</td>
</tr>
<tr>
<td>AgSnO₂/0.5 mm</td>
<td>–</td>
</tr>
<tr>
<td>AgSnO₂/0.5 mm</td>
<td>–</td>
</tr>
<tr>
<td>Opto-Triac</td>
<td>–</td>
</tr>
<tr>
<td>Rated switching capacity each contact</td>
<td></td>
</tr>
<tr>
<td>4 A/250 V AC</td>
<td>600 VA[2]</td>
</tr>
<tr>
<td>16 A/250 V AC</td>
<td>10 A/250 V AC</td>
</tr>
<tr>
<td>10 A/250 V AC</td>
<td>8 A/250 V AC</td>
</tr>
<tr>
<td>incandescent lamps and halogen lamp load 230 V[3]</td>
<td>1000 W up to 400 W: FUD14/800 W; up to 800 W[3][4]</td>
</tr>
<tr>
<td>2000 W</td>
<td>F4SR14/LED</td>
</tr>
<tr>
<td>up to 4000 W[6]</td>
<td>up to 4000 W[6]</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* in lead-lag circuit or non compensated</td>
<td>500 VA</td>
</tr>
<tr>
<td>Fluorescent lamp load with KVG* shunt-compensated or with EVG*</td>
<td>600 VA[5]</td>
</tr>
<tr>
<td>500VA</td>
<td>up to 400 VA[6]</td>
</tr>
<tr>
<td>Compact fluorescent lamps with EVG* and energy saving lamps ESL</td>
<td>up to 200 W[3] up to 400 W[3][1]</td>
</tr>
<tr>
<td>up to 400 W[3][4]</td>
<td>up to 400 W[3][4]</td>
</tr>
<tr>
<td>Inductive load cos φ = 0.6/230 V AC inrush current ≤ 35 A</td>
<td>650 W[4]</td>
</tr>
<tr>
<td>650 W[3]</td>
<td>–</td>
</tr>
<tr>
<td>230V LED lamps</td>
<td>up to 200 W[4] up to 400 W[3][1]</td>
</tr>
<tr>
<td>up to 400 W[3][4]</td>
<td>up to 400 W[3][4] up to 400 W[3][4]</td>
</tr>
<tr>
<td>Max. switching current DC: 12 V/24 V DC</td>
<td>4 A</td>
</tr>
<tr>
<td>8 A (not F4SR14 and FZK14)</td>
<td>–</td>
</tr>
<tr>
<td>Life at rated load, cos φ = 1 or for incandescent lamps 500 W at 100/h</td>
<td>&gt;10³</td>
</tr>
<tr>
<td>&gt;10³</td>
<td></td>
</tr>
<tr>
<td>&gt;10³</td>
<td></td>
</tr>
<tr>
<td>&gt;10³</td>
<td></td>
</tr>
<tr>
<td>Service life at rated load, cos φ = 0.6 at 100/h</td>
<td>&gt;4×10³</td>
</tr>
<tr>
<td>&gt;4×10³</td>
<td></td>
</tr>
<tr>
<td>&gt;4×10³</td>
<td></td>
</tr>
<tr>
<td>&gt;4×10³</td>
<td></td>
</tr>
<tr>
<td>Max. operating cycles</td>
<td>10³/h</td>
</tr>
<tr>
<td>10³/h</td>
<td></td>
</tr>
<tr>
<td>10³/h</td>
<td></td>
</tr>
<tr>
<td>10³/h</td>
<td></td>
</tr>
<tr>
<td>Maximum conductor cross-section (3-fold terminal)</td>
<td>6 mm² (4 mm²)</td>
</tr>
<tr>
<td>6 mm² (4 mm²)</td>
<td></td>
</tr>
<tr>
<td>6 mm² (4 mm²)</td>
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</tr>
<tr>
<td>6 mm² (4 mm²)</td>
<td></td>
</tr>
<tr>
<td>Two conductors of same cross-section (3-fold terminal)</td>
<td>2.5 mm² (1.5 mm²)</td>
</tr>
<tr>
<td>2.5 mm² (1.5 mm²)</td>
<td></td>
</tr>
<tr>
<td>2.5 mm² (1.5 mm²)</td>
<td></td>
</tr>
<tr>
<td>2.5 mm² (1.5 mm²)</td>
<td></td>
</tr>
<tr>
<td>Screw head</td>
<td>slotted/crosshead, pozidriv</td>
</tr>
<tr>
<td>slotted/crosshead, pozidriv</td>
<td></td>
</tr>
<tr>
<td>slotted/crosshead, pozidriv</td>
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</tr>
<tr>
<td>slotted/crosshead, pozidriv</td>
<td></td>
</tr>
<tr>
<td>Slotted/crosshead, pozidriv</td>
<td></td>
</tr>
<tr>
<td>Slotted/crosshead, pozidriv</td>
<td></td>
</tr>
<tr>
<td>Type of enclosure/terminals</td>
<td>IP50/IP20</td>
</tr>
<tr>
<td>IP50/IP20</td>
<td></td>
</tr>
<tr>
<td>IP50/IP20</td>
<td></td>
</tr>
<tr>
<td>IP50/IP20</td>
<td></td>
</tr>
<tr>
<td>IP50/IP20</td>
<td></td>
</tr>
<tr>
<td>Electronics</td>
<td></td>
</tr>
<tr>
<td>Time on</td>
<td>100%</td>
</tr>
<tr>
<td>Max./min. temperature at mounting location</td>
<td>+50°C/-20°C</td>
</tr>
<tr>
<td>+50°C/-20°C</td>
<td></td>
</tr>
<tr>
<td>+50°C/-20°C</td>
<td></td>
</tr>
<tr>
<td>+50°C/-20°C</td>
<td></td>
</tr>
<tr>
<td>+50°C/-20°C</td>
<td></td>
</tr>
<tr>
<td>Standby loss (active power)</td>
<td>0.1 W</td>
</tr>
<tr>
<td>0.3 W</td>
<td></td>
</tr>
<tr>
<td>0.9 W</td>
<td></td>
</tr>
<tr>
<td>0.05-0.5 W</td>
<td></td>
</tr>
<tr>
<td>0.1 W</td>
<td></td>
</tr>
<tr>
<td>Local control current at 230 V control input</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td></td>
</tr>
<tr>
<td>–</td>
<td></td>
</tr>
<tr>
<td>5 mA</td>
<td></td>
</tr>
<tr>
<td>Max. parallel capacitance (approx. length) of local control lead at 230 V AC</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td></td>
</tr>
<tr>
<td>–</td>
<td></td>
</tr>
<tr>
<td>–</td>
<td></td>
</tr>
<tr>
<td>–</td>
<td></td>
</tr>
<tr>
<td>FNT14; 0.3 μF (1000 m)</td>
<td></td>
</tr>
</tbody>
</table>

* EVG = electronic ballast units; KVG = conventional ballast units
* Inductive relay as contact element. After installation, wait for short automatic synchronisation before teaching in the wireless pushbuttons.
* Applies to lamps of max. 150 W.
* Per dimmer or capacity enhancer it is only allowed to use max. 2 inductive (wound) transformers of the same type, furthermore no-load operation on the secondary part is not permitted. The dimmer might be destroyed. Therefore do not permit load breaking on the secondary part.
* Operation in parallel of inductive (wound) and capacitive (electronic) transformers is not permitted!
* When calculating the load a loss of 20% for inductive (wound) transformers and a loss of 5% for capacitive (electronic) transformers must be considered in addition to the lamp load.
* Generally applies to energy saving lamps (ESL) and 230 V LED lamps. Due to different lamp electronics, switch on/off problems and a restriction in the maximum number of lamps, however, the dimming ranges may be limited depending on the manufacturer. In particular when the connected load is very low (e.g. with 5 W LEDs). The dimmer switch comfort settings EC1, EC2, LC1, LC2 and LC3 optimise the dimming range, however, the maximum power is then only up to 100 W. In these comfort settings, no inductive (wound) transformers may be dimmed.

The second terminating resistor has to be plugged to the last actuator included in the FAM14 respectively FSNT14 scope of supply.

To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.

Compliance with: EN 61000-6-3, EN 61000-6-1 and EN 60669
## TECHNICAL DATA SWITCHING ACTUATORS AND DIMMING ACTUATORS FOR INSTALLATION

### Contacts

| Type | FSUD | FUD61NP | FUD70S | FUD71NP | FKLD61 | FLD61 | FRGBW71L | FWKKW71L | FDH62, FF61, FHK61, FLC61, FMS61, FMZ61, FSHA, FSR61, FSR61LN, FSR70S, FSR71, FSSA, FSSA, FSVA, FSSA, FTN61, FZK61 |
|------|------|--------|--------|--------|--------|-------|----------|----------|------------------|------------------|
|      |      |        |        |        |        |       |          |          |                  |                  |

### Spacing of control connections/contact
- Power MOSFET
- Power MOSFET
- Power MOSFET
- 6 mm
- 3 mm
- 3 mm
- 2000 V
- 2000 V

### Rated switching capacity each contact
- 10A/250V AC
- 60VA
- 4A/250V AC
- 1000 VA
- 500 VA
- 250 VA
- up to 400 W
- up to 200 W

### Incandescent lamp and halogen lamp load
- up to 300W (1)
- up to 400W (1)
- up to 200W (2)
- up to 400W (2)
- up to 200W (2)

### Fluorescent lamp load with KV* or KVG*
- in lead-lag circuit or non compensated
- up to 1000 VA
- up to 500 VA
- up to 250 VA

### Inductive load cos φ = 0.6/230V AC
- Up to 1200W (3)
- Up to 1200W (3)
- Up to 400W (3)
- Up to 400W (3)

### Maximum operating cycles
- 10³/h
- 10³/h
- 10³/h
- 10³/h

### Maximum conductor cross-section
- 4 mm²
- 4 mm²
- 4 mm²
- 4 mm²

### Two conductors of same cross-section
- 1.5 mm²
- 1.5 mm²
- 1.5 mm²
- 1.5 mm²

### Screw head
- slotted/cross-head
- slotted/cross-head
- slotted/cross-head
- slotted/cross-head

### Type of enclosure/terminals
- IP30/IP20
- IP30/IP20
- IP30/IP20
- IP30/IP20

### Electronics

### Frequency on 100% 100% 100% 100% 100% 100%
- Time on
- 100%
- 100%
- 100%
- 100%
- 100%
- 100%

### Standby loss (active power)
- 0.7 W
- 0.8 W
- 0.2-0.6 W FUD71: 0.7 W
- 0.3 W-0.9 W
- 1.4 W
- 0.8 W
- 0.8 W

### Control current universal control voltage
- 0.7 W
- 0.8 W
- 0.2-0.6 W
- 0.3 W-0.9 W
- 1.4 W
- 0.8 W
- 0.8 W

### Local current control at 230 V control input
- 1mA
- 3.5 mA
- 3.5 mA
- 3.5 mA

### Max. parallel capacitance (approx. length) of local control lead at 230 V AC
- 0.5 µF (300 m)
- 0.5 µF (1000 m)
- 3 nF (10 m)
- 3 nF (10 m)

---

4) Secondary cable length with a maximum of 2m. 4) Bistable relay as relay contact. After installation, wait for short automatic synchronisation before teaching-in the wireless pushbuttons. 5) Applies to lamps of max. 150 W. 2) Also max. 2 induction transformers of the same type (L load) and electronic transformers (C load). 3) Generally applies to energy saving lamps (ESL) and 230 V LED lamps. Due to different lamp electronics, switch on/off problems and a restriction in the maximum number of lamps, however, the dimming ranges may be limited depending on the manufacturer, in particular when the connected load is very low (e.g. with 5 W LEDs). In these comfort settings, no inductive (wound) transformers may be dimmed. 4) Fluorescent lamps or LV halogen lamps with electronic ballast. 4) All actuators with 2 contacts: Inductive load cos φ = 0.6 as sum of both contacts 1000 W max.

**Eltako Wireless is based on the EnOcean wireless standard for 868 MHz, frequency 868.3 MHz, data rate 125 kbps, modulation mode ASK, max. transmit power 7 dBm (<10 mW).**

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To comply with DIN VDE 0100-443 and DIN VDE 0100-534, a Type 2 or Type 3 surge protection device (SPD) must be installed.
### Sensors

<table>
<thead>
<tr>
<th>Pushbuttons, hand-held transmitters and remote controls</th>
<th>Transmitter modules</th>
<th>Card switch, pull switch and smoke alarm</th>
<th>Window/door contact</th>
<th>Window handle sensor and window/door contact</th>
<th>Motion/brightness sensors</th>
<th>Brightness sensors</th>
<th>Temperature controller/sensors</th>
<th>Air quality sensor</th>
<th>Control from the Smart Home control unit SafeIV with software GFVS</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4, F1, F2, F3</td>
<td>FASM50</td>
<td>FHM55</td>
<td>FFH56</td>
<td>FSU54EM</td>
<td>FFB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>F4HK65</td>
<td>FSF50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>F4SR14-LED</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>FAE14,...</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
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<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
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<td>FGTF</td>
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<td>FSU67</td>
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<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
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<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>FMS14</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>FMB14</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>FSB14</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>FSQ14/1-10V</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>FSQ14/210V</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>FEN14</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
<tr>
<td>FZB14</td>
<td>FSJ50</td>
<td>FFH60B</td>
<td>FSU67</td>
<td>FT566EM</td>
<td>FBB65S</td>
<td>FBA55S</td>
<td>FFT60SB</td>
<td>FFT55</td>
<td>FGTF</td>
</tr>
</tbody>
</table>

### Actuators

| F2L14 | X | X | X | X | X | X | X | X |
| F4HK14 | X | X | X | X | X | X | X | X |
| F4SR14-LED | X | X | X | X | X | X | X | X |
| FAE14,... | X | X | X | X | X | X | X | X |
| FDG14 | X | X | X | X | X | X | X | X |
| FDR14 | X | X | X | X | X | X | X | X |
| FH14 | X | X | X | X | X | X | X | X |
| FMS14 | X | X | X | X | X | X | X | X |
| FMB14 | X | X | X | X | X | X | X | X |
| FSB14 | X | X | X | X | X | X | X | X |
| FSQ14/1-10V | X | X | X | X | X | X | X | X |
| FSQ14/210V | X | X | X | X | X | X | X | X |
| FEN14 | X | X | X | X | X | X | X | X |
| FZB14 | X | X | X | X | X | X | X | X |

Notes:
- ¹ Only evaluation of temperature
- ² Also controllable by activation telegrams from the GFVS software
- ³ Only motion detection

12/2019
**TEACH-IN SETTINGS OF LOWER ROTARY SWITCH FOR THE MOST CUSTOMARY DEVICES OF SERIES 61**

<table>
<thead>
<tr>
<th>Type</th>
<th>Teaching-in function</th>
<th>FM61</th>
<th>FMZ61</th>
<th>FS61</th>
<th>FS61</th>
<th>FTN61</th>
<th>FUD61NP</th>
<th>FUD61NPN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>from week 08/13</td>
<td>from week 18/11</td>
<td>from week 39/12</td>
<td>from week 40/12</td>
<td>from week 25/11</td>
<td>from week 38/12</td>
<td>from week 40/12</td>
</tr>
<tr>
<td></td>
<td>Phase-out-model</td>
<td>UT1 = channel 1</td>
<td>UT2 = channel 2</td>
<td>UT1 = channel 1</td>
<td>UT2 = channel 2</td>
<td>UT1 = channel 1</td>
<td>UT2 = channel 2</td>
<td>UT1 = channel 1</td>
</tr>
<tr>
<td>Universal pushbutton / toggle / switch over (On/Off)</td>
<td>UT1 = channel 1</td>
<td>UT2 = channel 2</td>
<td>(2)</td>
<td>2</td>
<td>60</td>
<td>80</td>
<td>Appro. middle</td>
<td>2</td>
</tr>
<tr>
<td>Universal pushbutton NC contact</td>
<td></td>
<td></td>
<td></td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direction pushbutton</td>
<td>RT1 = channel 1</td>
<td>RT2 = channel 2</td>
<td>1h</td>
<td>min</td>
<td>40</td>
<td>max</td>
<td>EC1</td>
<td></td>
</tr>
<tr>
<td>On / central ON resp. UP</td>
<td>3</td>
<td>(3)</td>
<td>20</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>LC3</td>
<td></td>
</tr>
<tr>
<td>Off / central OFF resp. DOWN</td>
<td>(1)</td>
<td>(3)</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>LC1</td>
<td></td>
</tr>
<tr>
<td>FTK as NC contact</td>
<td>0.5s</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTK as NO contact</td>
<td>(3)</td>
<td>(3)</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FBH as motion detector</td>
<td>20</td>
<td>20</td>
<td>(Slave)</td>
<td>max</td>
<td>EC1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FBH as motion detector with brightness sensor</td>
<td>2..120</td>
<td>1..20</td>
<td>min..3</td>
<td>AUTO..EC2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAH as twilight sensor</td>
<td>min..max</td>
<td>2..120</td>
<td>2..120</td>
<td>AUTO..EC1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSU or pushbutton as wake-up light</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>EC2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wireless Visualisation and Control Software GFVS / LZ light scene</td>
<td>RT1 = GFVS</td>
<td>RT2 = GFVS</td>
<td>max</td>
<td>6 = LZ</td>
<td>80 = GFVS</td>
<td>6 = LZ</td>
<td>min</td>
<td>AUTO</td>
</tr>
</tbody>
</table>

**Additional information:**

**Clear all addresses:**
Turn position CLR and the other rotary switches 3 times from centre to right. Centre-right-centre-right-centre-right.

**Activate or deactivate feedback:**
Turn position CLR and the other rotary switches 3 times from centre to left. Centre-left-centre-left-centre-left.

**Activate or deactivate Repeater Level 1:**
Switch off power, depress pushbutton connected to the pushbutton input and switch power back on.

*Printed date may deviate in case of earlier production date.*
### Teach-in Settings of Upper Rotary Switch for the Most Customary Devices of Series 14

<table>
<thead>
<tr>
<th>Type</th>
<th>FAE14</th>
<th>FHK14</th>
<th>FMS14</th>
<th>FSB14</th>
<th>FSR14</th>
<th>FTN14</th>
<th>FUD14</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching-in function</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Universal pushbutton / toggle / switch over (On/Off)</td>
<td>3 ch 2</td>
<td></td>
<td>20 ch 1</td>
<td></td>
<td>5 swt</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 ch 1</td>
<td></td>
<td>40 ch 2</td>
<td></td>
<td>10</td>
<td></td>
<td>EC2</td>
</tr>
<tr>
<td></td>
<td>8 ch 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direction pushbutton</td>
<td>5 ch 2</td>
<td></td>
<td>10 ch 1</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 ch 1</td>
<td></td>
<td>30 ch 2</td>
<td></td>
<td></td>
<td></td>
<td>LC2</td>
</tr>
<tr>
<td></td>
<td>10 ch 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On / Central On</td>
<td>4</td>
<td></td>
<td>180 ch 1</td>
<td>45</td>
<td>4</td>
<td></td>
<td>LC1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>200 ch 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Off / Central Off</td>
<td>2</td>
<td></td>
<td>90</td>
<td></td>
<td>2</td>
<td></td>
<td>EC1</td>
</tr>
<tr>
<td>Sequential light scene pushbutton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LC3</td>
</tr>
<tr>
<td>4-way direct light scene pushbutton</td>
<td></td>
<td></td>
<td>180 ch 1</td>
<td>30</td>
<td></td>
<td></td>
<td>LC4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>200 ch 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single light scene pushbutton</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LC5</td>
</tr>
<tr>
<td>Staircase light switch</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LC6</td>
</tr>
<tr>
<td>Wireless Visualisation and Control Software GFVS</td>
<td>4, 5</td>
<td>9 ch 1</td>
<td>180 ch 1</td>
<td>0</td>
<td>2 off</td>
<td></td>
<td>PCT</td>
</tr>
<tr>
<td></td>
<td>10 ch 2</td>
<td></td>
<td>200 ch 2</td>
<td></td>
<td>4 on</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2 off</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTK window/door contact</td>
<td>20 ch 1</td>
<td></td>
<td></td>
<td></td>
<td>LC2</td>
<td>NO contact</td>
<td>LC3 as</td>
</tr>
<tr>
<td></td>
<td>40 ch 2</td>
<td></td>
<td></td>
<td></td>
<td>NO contact</td>
<td>NC contact</td>
<td>NC contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAH brightness sensor</td>
<td>150 both</td>
<td>channels</td>
<td>0-120</td>
<td></td>
<td>LC5</td>
<td>as switch</td>
<td>LC6 as dimmer</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSU or pushbutton as wake-up light</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>AUTO</td>
</tr>
<tr>
<td>FBH as motion detector with brightness sensor</td>
<td>4, 5</td>
<td></td>
<td>0-120</td>
<td>1...20</td>
<td>AUTO</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central control without priority</td>
<td>60 both</td>
<td>channels</td>
<td>45 on</td>
<td>90 off</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central control with priority, first signal starts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>priority, second signal stops it</td>
<td>90 both</td>
<td>channels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central control with priority as long as signal is</td>
<td>120 both</td>
<td>channels</td>
<td>15 on</td>
<td>20 off</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>applied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTR temperature controller</td>
<td>4, 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
OPERATING DISTANCES BETWEEN SENSORS AND ACTUATORS.


1. Wireless signal range

Wireless signals are electromagnetic waves. The field strength at the receiver decreases the further the distance away from the transmitter. The wireless range is therefore limited.

Obstacles standing in the radio field the also shorten range compared with line-of-sight links:

<table>
<thead>
<tr>
<th>OBSTACLE</th>
<th>REDUCED RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood, plaster, glass uncoated, with no metal</td>
<td>0 – 10 %</td>
</tr>
<tr>
<td>Brick, particle board</td>
<td>5 – 35 %</td>
</tr>
<tr>
<td>Concrete with iron reinforcement bars</td>
<td>10 – 90 %</td>
</tr>
<tr>
<td>Metal, aluminium cladding</td>
<td>see 2</td>
</tr>
</tbody>
</table>

The geometric shape of a room determines the radio range since propagation is not in the form of a beam but requires a certain volume of space (the radio beam from the transmitter and receiver ellipsoidal at their points of focus). Narrow corridors with solid walls are bad for propagation. External antennas typically have better radio characteristics than flush-mounted receivers installed in walls. The type of fitted for the antennas and the spacing from ceilings, floors and walls all play a role.

People and obstacles in a room may reduce range. It is therefore essential to integrated some reserve when performing range planning to ensure the reliable functioning of the wireless system even in poor conditions.

A sturdy, reliable installation in a building is achieved by integrating sufficient range reserves.

Recommendations from everyday practice:

<table>
<thead>
<tr>
<th>RANGE</th>
<th>CONDITIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 30 m</td>
<td>Under excellent conditions: Large free room, optimum antenna design and good antenna position.</td>
</tr>
<tr>
<td>&gt; 20 m</td>
<td>If there are furniture and persons in the room, through up to 5 dry plasterboard walls or 2 brick/aerated concrete walls: For transmitters and receivers with good antenna design and good antenna position.</td>
</tr>
<tr>
<td>&gt; 10 m</td>
<td>If there are furniture and persons in the room, through up to 5 plasterboard drywalls or 2 brick/aerated concrete walls: For receivers fitted in wall or in ceiling. Or small receiver with internal antenna. Or together with switch/wire antenna on/near metal. Or a narrow corridor.</td>
</tr>
</tbody>
</table>

2. Partitioning

So-called radio shadows form behind metal surfaces, e.g. behind metal partition walls and metal ceilings, behind metal foils of heat insulation and solid reinforcement in concrete walls. Single thin metal strips have very little influence, for example the profile sections in a plasterboard drywall.

It has been observed that radio communications also works with metal room dividers. This occurs by reflections: metal and concrete walls reflect radio waves and they travel to neighbouring corridors or rooms through openings, e.g. in a wooden door or a glass partition. The range may be strongly reduced depending on the location. An additional repeater at a suitable location can easily offer alternative radio paths.

Important conditions that reduce radio range:

- Metal partition walls or hollow walls filled with insulation wool backed by metal foil
- Suspended ceilings with panels made of metal or carbon fibre
- Steel furniture or glass with metal coating
- Fitting the pushbutton on a metal wall (typical range loss: 30%)
- Use of metal pushbutton frames (typical range loss: 30%)

Firewalls, staircases and building services areas should be regarded as partitions.

A partition can be avoided by repositioning the transmitter/receiver antenna out of the radio shadow or by using a repeater.
3. Penetration angle
The angle at which the transmitted signal impinges on the wall plays a special role. Signals should penetrate masonry as vertically as possible. Wall niches must be avoided.

4. Antenna installation
The receive antenna or a receiver with an integrated antenna should not be installed on the same side of the wall as the transmitter. It is better to install the antenna on adjacent or opposite walls. The antennas should be spaced from the room corner at a distance of >10 cm as far as possible.

The ideal installation location for the receive antenna is a central position in the room.

A "magnet foot antenna" (e.g. Eltako FA200 or FA250) must adhere on a metallic surface that is as large as possible in order to create a sufficient opposite pole. For example, the simplest installation can be on a ventilation pipe.

5. Spacings between receiver and other interference sources
The spacing between the receiver and other transmitters (e.g. GSM/DECT/Wireless LAN) and high-frequency interference sources (computer, audio and video systems) should be >50 cm.

Eltako transmitters, on the other hand, can be installed without any problem next to other transmitters and interference sources.

6. Use of repeaters
In case of problems with reception quality, it may be helpful to use a wireless repeater. The Eltako Repeater FRP61 (see chapter Z) requires no configuration, only a mains connection. If receives the wireless signal and passes it on. This almost doubles the range. Eltako repeaters are switchable to 2-level function and allow more than two repeaters to be cascaded.

7. Field strength measuring instrument
The field strength measuring instrument EPM300 (see page Z-11) helps to find the best position for transmitter and receiver. Moreover, it can be used to test link interferences in installed devices and even identify an interfering transmitter.

8. Installation in residential buildings
Here there is no real necessity to overcome large radio links. If necessary, a central wireless repeater can be installed to amplify the signal.

9. Installation in industrial buildings
To cover large premises, a wireless gateway is typically used as an automation bus (TCP/IP, EIB/KNX, LON, etc.). Planning with a range radius of 10-12 m offers sufficient security, even if there are the usual changes to the environmental conditions later.
Contents of Eltako Wireless Telegrams

Communication within Eltako Wireless Building

All Eltako wireless sensors and Eltako wireless actuators communicate within the Eltako wireless network by means of wireless telegrams that are formatted using the world-wide standard of EnOcean Alliance. These are the EEPs as described below; some of them are partly modified to a certain extent. The feedback from the bidirectional actuators to confirm the switch position correspond to those of the FTHZ15 wireless modules but without the telegram sent when the button is released.

Sensor Telegrams

<table>
<thead>
<tr>
<th>EEP</th>
<th>(EEP: similar to A5-08-01, expanded brightness range, no Occupancy Button in DB0_Bit0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORG</td>
<td>0x07</td>
</tr>
<tr>
<td>Data_byte3</td>
<td>-</td>
</tr>
<tr>
<td>Data_byte2</td>
<td>brightness 0 – 2048 lux, linear n = 0x00 – 0xFF</td>
</tr>
<tr>
<td>Data_byte1</td>
<td>-</td>
</tr>
<tr>
<td>Data_byte0</td>
<td>DB0_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram)</td>
</tr>
<tr>
<td></td>
<td>DB0_Bit1 = motion (0 = motion, 1 = no motion) for data telegram: 0x00 (motion), 0x0F (no motion) for teach-in telegram: 0x95</td>
</tr>
<tr>
<td>Teach-in telegram BD3..DB0: 0x20, 0x08, 0x00, 0x80</td>
<td></td>
</tr>
</tbody>
</table>

FA60+FB65B+FBI765 (EEP: A5-04-02 PLUS DATA_BYTE3)

| ORG | 0x07 |
| Data_byte3 | charge state of energy accumulator (e.g. 2.5V = 0x59 ... 4V = 0x9B) |
| Data_byte2 | rel. humidity 0 .. 100%, linear 0x00 – 0xFA, i.e. (0...250 dez.) |
| Data_byte1 | Actual temperature -20°C .. +80°C, linear 0x00 |
| Data_byte0 | DB0_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) for data telegram: 0x0F, for teach-in telegram: 0x87 |
| Teach-in telegram BD3..DB0: 0x10, 0x08, 0x00, 0x87 |

FA60+FA60B+FA65S+FIH65S (EEP: A5-06-01 PLUS DATA_BYTE3)

| ORG | 0x07 |
| Data_byte3 | brightness 0 – 100 lux, linear n = 0x00 – 0x64 (only valid if DB2 = 0x00) |
| Data_byte2 | brightness 300 – 30.000 lux, linear n = 0x00 – 0xFF |
| Data_byte1 | - |
| Data_byte0 | DB0_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) for data telegram: 0x0F, for teach-in telegram: 0x87 |
| Teach-in telegram BD3..DB0: 0x18, 0x08, 0x00, 0x87 |

FAH65B (EEP: A5-06-02)

| ORG | 0x07 |
| Data_byte3 | - |
| Data_byte2 | brightness 0 – 1024 lux, linear n = 0x00-0xFF |
| Data_byte1 | - |
| Data_byte0 | DB0_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) for data telegram: 0x0F, for teach-in telegram: 0x87 |
| Teach-in telegram BD3..DB0: 0x18, 0x10, 0x00, 0x87 |

FASM60+FSTM14+FSM61+FSU65D

| ORG | 0x05 |
| Data_byte3 | 0x70/0x50 |

FAM60B

| ORG | 0x05 |
| Data_byte3 | 0x70 / 0x50 / 0x10 / 0x00 |
| EEP | A5-30-01 |
| ORG | 0x07 |
| Data_byte1 | 0x10 / 0xFF |
| EEP | A5-30-03 |
| ORG | 0x07 |
| Data_byte1 | 0x0F / 0x1F |

FC02TF65 (EEP: A5-09-04)

| ORG | 0x07 |
| Data_byte3 | humidity 0..100% (corresponds 0..200) |
| Data_byte2 | CO2 value 0..2550 ppm (corresponds 0..255) |
| Data_byte1 | temperature 0..51°C (corresponds 0..255) |
| Teach-in telegram BD3..DB0: 0x24, 0x20, 0x0D, 0x80 |

FKF

| ORG | 0x05 |
| Data_byte3 | 0x00 / 0xFF |
| EEP | A5-30-01 |
| ORG | 0x07 |
| Data_byte1 | 0x00 / 0xFF |
| EEP | A5-30-03 |
| ORG | 0x07 |
| Data_byte1 | 0x0F / 0x1F |

FRW

| ORG | 0x05 |
| Data_byte3 | 0x00 / 0xFF |

FSS12+FWZ12+FWZ61 (EEP: A5-12-01)

| ORG | 0x07 |
| Data_byte3 | charge state of energy accumulator (e.g 2.5V = 0x59 … 4V = 0x9B) |
| Data_byte2 | rel. humidity 0 .. 100%, linear 0x00 – 0xFA, i.e. (0..250 dez.) |
| Data_byte1 | Actual temperature -20°C .. +60°C, linear 0x00 |
| Data_byte0 | DB0_Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram) for data telegram: 0x0F, for teach-in telegram: 0x87 |
| Teach-in telegram BD3..DB0: 0x0C, 0x10, 0x00, 0x80 |

FAM60B

| ORG | 0x05 |
| Data_byte3 | 0x70 / 0x50 / 0x10 / 0x00 |
| EEP | A5-30-01 |
| ORG | 0x07 |
| Data_byte1 | 0x00 / 0xFF |
| EEP | A5-30-03 |
| ORG | 0x07 |
| Data_byte1 | 0x0F / 0x1F |

Teach-in telegram BD3..DB0: 0x24, 0x20, 0x0D, 0x80 (is sent once at every power-up)
SENSER TELEGRAMS

**FIFT65**
- ORG = 0x05
- Data.byte3 = 0x10

**F4T65+F4F+F55 WITH ROCKER**
- ORG = 0x05
- Data.byte3 = 0x70/0x50

**F4T65+F4F+F55 WITH DOUBLE ROCKER**
- ORG = 0x05
- Data.byte3 = 0x70/0x50/0x30/0x10

**FT65S**
- ORG = 0x07
- Data.byte3 = -
- Data.byte2 = -
- Data.byte1 = actual temperature 0 – 40°C, linear 0xFF - 0x00
- Data.byte0 = 0x08, 0x28, 0x00, 0x0D

**FTK+FTKB**
- ORG = 0x06
- Data.byte3 = contact closed -> 0x09
- Data.byte2 = -
- Data.byte1 = -
- Data.byte0 = -

**FTK**
- ORG = 0x05
- Data.byte3 = 0xF0 (window closed)
- Data.byte2 = -
- Data.byte1 = -
- Data.byte0 = -

**FWS61**
- ORG = 0x05
- Data.byte3 = 0xF0 (window closed)
- Data.byte2 = -
- Data.byte1 = -
- Data.byte0 = -

**FWS81**
- ORG = 0x05
- Data.byte3 = 0x05

**FTR65DSB+FTR65HS+FUTH65D**
- ORG = 0x07
- Data.byte3 = Nachtabsenkung 0-5°K in 1° Schritten
- Data.byte2 = Solltemperatur 0 – 40°C, linear 0x00 - 0xFF

Einstellbarer Bereich: FTR65DSB: 8°C – 40°C
- Data.byte1 = Isttemperatur 0 – 40°C, linear 0xFF - 0x00
- Data.byte0 = DB0.Bi3 = LRN Button

Bei Datentelegramm: 0x0F, bei Lerntelegramm: 0x87

**FTR78S**
- ORG = 0x07
- Data.byte3 = -
- Data.byte2 = -
- Data.byte1 = reference temperature 8-30°C, linear 0x00-0xFF
- Data.byte0 = -

**FWS61 (EEP: A5-13-01 AND 02)**
- The FWS61 has two telegrams to one data set, which are sent successively.
- In the telegrams last Byte (UU oder YY) it can be identified, which telegram part is involved.

**FTK+FTKB**
- ORG = 0x06
- Data.byte3 = contact closed -> 0x09
- Data.byte2 = -
- Data.byte1 = -
- Data.byte0 = -

**FTK**
- ORG = 0x05
- Data.byte3 = 0xF0 (window closed)
- Data.byte2 = -
- Data.byte1 = -
- Data.byte0 = -

**FWS81**
- ORG = 0x05
- Data.byte3 = 0x05
CONTENTS OF ELTAKO WIRELESS TELEGRAMS

SENSOR TELEGRAMS

DSZ14DRS, DSZ14WDRS, FSDG14, FWZ14, FWZ12, FWZ61 (EEP: A5-12-01)

<table>
<thead>
<tr>
<th>ORG</th>
<th>0x07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data.byte3 to Data.byte1</td>
<td>form a 24-bit binary coded number</td>
</tr>
</tbody>
</table>

Data.byte3

Data.Byte 3 (MSB) 0...16777215

Data.byte2

Data.Byte 2 0...16777215

Data.byte1

Data.Byte 1 (LSB) 0...16777215

Data.byte0

DB0..Bit4 = tariff changeover

DB0..Bit3 = LRN pushbutton (0 = teach-in telegram, 1 = data telegram)

DB0..Bit2 = Data content switchover:

1 = momentary power in watts,
0 = meter status in 0.1 KW/h

DB0..Bit1 = 0 (fix)

DB0..Bit0 = 1 (fix)

Possible values in data telegram:

DB0 = 0x09 -> meter status normal rate in 0.1 KW/h
DB0 = 0x19 -> meter status off-peak rate in 0.1KW/h
DB0 = 0x0C -> momentary power in W, normal rate active
DB0 = 0x1C -> momentary power in W, off-peak rate active

Teach-in telegram DB3..DB0: 0x48, 0x08, 0x0D, 0x80

ID = Base-ID of FAM14 + device addresses of DSZ14(W)DRS

In addition, the meter serial number printed on the meter is transmitted every 10 minutes.

The data is divided into 2 consecutive telegrams.

1. part:

DB0 = 0x0F -> meter serial number = S-ABBCC (A,B,C = 0..9)
DB1 = 0x00 -> the first 2 digits of the serial number in DB3
DB2 = 0x00
DB3 = AA

2. part:

DB0 = 0x0F -> meter serial number = S-ABBCC (A,B,C = 0..9)
DB1 = 0x01 -> the last 4 digits of the serial number in DB2 and DB3
DB2 = BB
DB3 = CC

FSR61VA, FSHA-230V (EEP: A5-12-01)

<table>
<thead>
<tr>
<th>ORG</th>
<th>0x07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data.byte3 to Data.byte1</td>
<td>form a 24-bit binary coded number</td>
</tr>
</tbody>
</table>

Data.byte3

Data.Byte 3 (MSB) 0...16777215

Data.byte2

Data.Byte 2 0...16777215

Data.byte1

Data.Byte 1 (LSB) 0...16777215

Data.byte0

DB0..Bit4 = 0 (fixed)

DB0..Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram)

DB0..Bit2 = switchover data content:

1 = momentary power in watts
0 = fixed

Possible values in data telegram:

DB0 = 0x0C -> momentary power in W, normal rate active

Teach-in telegram DB3..DB0: 0x48, 0x08, 0x0D, 0x80 (is sent once at every power-up)

FZS

<table>
<thead>
<tr>
<th>ORG</th>
<th>0x05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data.byte3</td>
<td>0x30/0x00</td>
</tr>
</tbody>
</table>

FZ314D (EEP: A5-12-01, 02, 03)

Electricity EEP: A5-12-01

<table>
<thead>
<tr>
<th>ORG</th>
<th>0x07</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data.byte3 to Data.byte1</td>
<td>form a 24-bit binary coded number</td>
</tr>
</tbody>
</table>

Data.byte3

Data.Byte 3 (MSB) 0...16777215

Data.byte2

Data.Byte 2 0...16777215

Data.byte1

Data.Byte 1 (LSB) 0...16777215

Data.byte0

DB0..Bit4 = -

DB0..Bit3 = LRN pushbutton (0 = teach-in telegram, 1 = data telegram)

DB0..Bit2 = Data content switchover:

1 = momentary power in watts,
0 = meter status in 0.1 KW/h

DB0..Bit1 = 0 (fix)

DB0..Bit0 = 1 (fix)

Possible values in data telegram:

DB0 = 0x09 -> meter status normal rate in 0.1 KW/h
DB0 = 0x19 -> meter status off-peak rate in 0.1KW/h
DB0 = 0x0C -> momentary power in W, normal rate active
DB0 = 0x1C -> momentary power in W, off-peak rate active

Teach-in telegram DB3..DB0: 0x48, 0x08, 0x0D, 0x80 (is sent once at every power-up)

ID = Base-ID of FAM14 + device addresses of FZ314D

Gas EEP: A512-02 Teach-in telegram DB3..DB0: 0x48, 0x10, 0x0D, 0x80

Water EEP: A512-03 Teach-in telegram DB3..DB0: 0x48, 0x18, 0x0D, 0x80

FTS14EM (ONLY TELEGRAMS FOR THE ELTAKO-RS485-BUS)

Depending on the set ID range (addition of lower rotary switch + upper rotary switch + 1000) the following basic ID's arise.

Example for group 1: 1 (bottom rotary switch) +0 (top rotary switch) +1000 = basis-ID = 1001

Example for group 1: 1 (bottom rotary switch) +90 (top rotary switch) +1000 = basis-ID = 1091

Example for group 5: 401 (bottom rotary switch) +30 (top rotary switch) +1000 = basis-ID = 1431

<table>
<thead>
<tr>
<th>ORG</th>
<th>0x05</th>
</tr>
</thead>
</table>

Setting UT

Data.byte3

control of +E1 -> 0x70 (basis-ID+0)
control of +E2 -> 0x50 (basis-ID+1)
control of +E3 -> 0x30 (basis-ID+2)
control of +E4 -> 0x10 (basis-ID+3)
control of +E5 -> 0x70 (basis-ID+4)
control of +E6 -> 0x50 (basis-ID+5)
control of +E7 -> 0x30 (basis-ID+6)
control of +E8 -> 0x10 (basis-ID+7)
control of +E9 -> 0x70 (basis-ID+8)
control of +E10 -> 0x50 (basis-ID+9)

Automatically pairs are formed with straight ID. when set to RT:

+EI/1+E2, +E3+E4, +E5+E6, +E7+E8, +E9+E10

If the control of a control input will be finished, a telegram with the respective ID and Data.byte3 = 0x00 will be created.

Data.byte2 = not used (0x00)
Data.byte1 = not used (0x00)
Data.byte0 = not used (0x00)
CONTENTS OF ELTAKO WIRELESS TELEGRAMS

ACTIVATION TELEGRAMS FROM THE GFVS SOFTWARE

FSR61, FSR61NP, FSR61G, FSR61LN, FLC61NP

Direct switching command, FUNC=38, Command 1, (like EEP A5-38-08).
There is the possibility to block the switching state with absolut priority so that it cannot be changed by other taught-in pushbuttons.

OR0 = 0x07
Data.byte3 = 0x01
Data.byte2 = no used
Data.byte1 = no used
Data.byte0 = DB0.Bit3 = LRN Button
(0 = teach-in telegram, 1 = data telegram)
DB0.Bit2 = 1: block switching state,
0: do not block switching state
DB0.Bit0 = 1: switching output ON,
0: switching output OFF

Teach-in telegram DB3..DB0 must look like this: 0xE0, 0x40, 0x0D, 0x80
Data telegrams have to look like date:
0x01, 0x00, 0x00,
0x01, 0x00, 0x00,
0x01, 0x00, 0x00,

Data byte0 = DB0_Bit3 = LRN Button
DB0_Bit0 = 1: switching output ON,
DB0_Bit2 = 1: block switching state,
(0 = teach-in telegram, 1 = data telegram)

Data_byte1 =  no used
Data_byte2 =  no used
Data_byte3 = 0x01
ORG =  0x07 so that it cannot be changed by other taught-in pushbuttons.

FSB84, FSB61, FSB71

Direct drive command with specification of runtime in s.
FUNC=3F, Typ=7F (universal). Separately for each channel.

OR0 = 0x07
Data.byte3 = Runtime in 100ms LSB, or runtime in seconds 1-255 dec.
Data.byte2 = Runtime in 100ms LSB, or runtime in seconds 1-255 dec.
Data.byte1 = command:
0x00 = Stop
0x01 = Up
0x02 = Down
Data.byte0 = DB0.Bit3 = LRN Button
(0 = teach-in telegram, 1 = data telegram)
DB0.Bit2 = Lock/unlock the actuator for pushbutton
(0 = unlock, 1 = lock)
DB0.Bit1 = change between runtime in seconds or in 100ms.
(0 = runtime only in DB2 in seconds)
(1 = runtime in DB3 (MSB) + DB2 (LSB) in 100ms.)

Teach-in telegram DB3..DB0 must look like this: 0xE0, 0x40, 0x0D, 0x80
Data telegrams have to look like date:
0x01, 0x00, 0x00,
0x01, 0x00, 0x00,
0x01, 0x00, 0x00,

Data byte0 = DB0_Bit3 = LRN Button
DB0_Bit0 = 1: Block dimming value
DB0_Bit2 = 1: Dimmer ON, 0: Dimmer OFF.
(0 =)

Data_byte1 = dimming speed
0x00 = very fast dimming speed .... to ...
0xFF = very slow dimming speed
Data_byte2 = dimming value in % from 0 to 100 dec.
Data_byte3 = 0x02
ORG =  0x07

Data telegrams DB3..DB0 must look like this: 0xFF, 0xF8, 0x0D, 0x87 (dimmer on at 20% and slowest dimming speed)
0x02, 0x64, 0x01, 0x09 (dimmer on at 100% and fastest dimming speed)
0x02, 0x32, 0x00, 0x09 (dimmer on at 50% and internal dimming speed)
0x01, 0x00, 0x00, 0x00 (dimmed off)

FSR14-2X, FSR14-4X, FSR14SSR, FSR71

Direct switching command, FUNC=38, Command 1, (like EEP A5-38-08).
Separately for each channel.

There is the possibility to block the switching state with absolut priority so that it cannot be changed by other taught-in pushbuttons.

OR0 = 0x07
Data.byte3 = 0x01
Data.byte2 = no used
Data.byte1 = no used
Data.byte0 = DB0.Bit3 = LRN Button
(0 = teach-in telegram, 1 = data telegram)
DB0.Bit2 = 1: block switching state,
0: do not block switching state
DB0.Bit0 = 1: switching output ON,
0: switching output OFF

Teach-in telegram DB3..DB0 must look like this: 0xE0, 0x40, 0x0D, 0x80
Data telegrams have to look like date:
0x01, 0x00, 0x00,
0x01, 0x00, 0x00,
0x01, 0x00, 0x00,

Data byte0 = DB0_Bit3 = LRN Button
DB0_Bit0 = 1: switching output ON,
DB0_Bit2 = 1: block switching state,
(0 =)

Data_byte1 = dimming speed
0x00 = very fast dimming speed .... to ...
0xFF = very slow dimming speed
Data_byte2 = dimming value in % from 0 to 100 dec.
Data_byte3 = 0x02
ORG =  0x07

Data telegrams DB3..DB0 must look like this: 0xFF, 0xF8, 0x0D, 0x87 (dimmer off)
0x02, 0x00, 0x00, 0x00 (dimmed off)

FSB71L, FSD71L, FLD61, FLD61, FRGB71L, FSU71/1-10V, FSU71/1-10V, FSU71/230V, FUD14, FUD14-800W, FUD61NP, FUD61NP, FUD71

Direct transfer of dimming value from 0 to 100%, similar to FUNC=38, Command 2 (like EEP A5-38-08).

OR0 = 0x07
Data.byte3 = dimming value in % from 0 to 100 dec.
Data.byte2 = dimming speed
0x00 = the dimming speed set on the dimmer is used.
0x01 = very fast dimming speed .... to ...
0xFF = very slow dimming speed
Data.byte1 = DB0.Bit3 = LRN Button
(0 =)
DB0.Bit0 = 1: Dimmer ON, 0: Dimmer OFF.
DB0.Bit2 = 1: Block dimming value
0: Dimming value not blocked

Teach-in telegram BD3..DB0 must look like this: 0xE0, 0x40, 0x0D, 0x87
Data telegrams BD3..DB0 must look like this, for example:
0x02, 0x32, 0x00, 0x09 (dimmer on at 50% and internal dimming speed)
0x02, 0x64, 0x01, 0x09 (dimmer on at 100% and fastest dimming speed)
0x02, 0x14, 0xFF, 0x09 (dimmer on at 20% and slowest dimming speed)
0x02, 0x.., 0x.., 0x08 (dimmer off)

FSB14, FSB61, FSB71, FSB14-2X, FSB14-4X, FSB14SSR, FSR71

ONLY FRGBW71L AND FWWKW71L: FREE PROFILE (EEP 07-3F-7F)

Direct transfer of dimming value from 0 to 100%, similar to FUNC=38, Command 2 (like EEP A5-38-08).

OR0 = 0x07
Data.byte3 = dimming value in % from 0 to 100 dec.
Data.byte2 = dimming speed
0x00 = the dimming speed set on the dimmer is used.
0x01 = very fast dimming speed .... to ...
0xFF = very slow dimming speed
Data.byte1 = DB0.Bit3 = LRN Button
(0 =)
DB0.Bit0 = 1: Dimmer ON, 0: Dimmer OFF.
DB0.Bit2 = 1: Block dimming value
0: Dimming value not blocked

Teach-in telegram BD3..DB0 must look like this: 0xE0, 0x40, 0x0D, 0x87
Data telegrams BD3..DB0 must look like this, for example:
0x02, 0x32, 0x00, 0x09 (dimmer on at 50% and internal dimming speed)
0x02, 0x64, 0x01, 0x09 (dimmer on at 100% and fastest dimming speed)
0x02, 0x14, 0xFF, 0x09 (dimmer on at 20% and slowest dimming speed)
0x02, 0x.., 0x.., 0x08 (dimmer off)
CONTENTS OF ELTAKO WIRELESS TELEGRAMS

ACTIVATION TELEGRAMS FROM THE GFVS SOFTWARE

**FH681SSR**

Direct transfer of PWM value from 0 to 100%.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORG</td>
<td>0x07</td>
</tr>
<tr>
<td>Data.byte3</td>
<td>0x02</td>
</tr>
<tr>
<td>Data.byte2</td>
<td>PWM value in % from 0 to 100 dec.</td>
</tr>
<tr>
<td>Data.byte1</td>
<td>PWM basic time T in 10 second steps from 1-100 dec., e.g. 12:T = 120 seconds</td>
</tr>
<tr>
<td>Data.byte0</td>
<td>DB0.Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram)</td>
</tr>
</tbody>
</table>

DB0.Bit1 = 1: Repeater on, 0: Repeater off.
DB0.Bit0 = 1: PWM on, 0: PWM off.

Teach-in telegram DB3..DB0 have to look like this: 0xE0, 0x40, 0x00, 0x80
Data telegrams DB3..DB0 have to look like this for example:
0x02, 0x2D, 0x0A, 0x09 (PWM on with 45% and T = 100 seconds, repeater off)
0x02, 0x64, 0x18, 0x09 (PWM on with 100% and T = 240 seconds, repeater off)
0x02, 0x14, 0x12, 0x0B (PWM on with 20% and T = 180 seconds, repeater on)

FD62NP-230V, FD62NPN-230V

Direct transfer of dimming value from 0 to 100%, similar to FUNC=38, Command 2 (like EEP A5-38-08).

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORG</td>
<td>0x07</td>
</tr>
<tr>
<td>Data.byte3</td>
<td>0x02</td>
</tr>
<tr>
<td>Data.byte2</td>
<td>dimming value in % from 0 to 100 dec.</td>
</tr>
<tr>
<td>Data.byte1</td>
<td>dimming speed: 0x01 = very fast, 0xFF = very slow</td>
</tr>
<tr>
<td>Data.byte0</td>
<td>DB0.Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram)</td>
</tr>
</tbody>
</table>

DB0.Bit1 = 1: Dimmer ON, 0: Dimmer OFF.
DB0.Bit2 = 1: Block dimming value, 0: Dimming value not blocked
DB0.Bit5 = 1: Teach-in mode activation, 3x within 2s = delete GFVS-ID

Teach-in telegram: 0xEF040D80
Unlock teach-in mode: 0x00000028
request confirmation telegram: 0x00000008

**FJ62/12-36V DC, FJ62NP-230V**

Direct drive command with specification of runtime in s.

**FUNC**=3F, **Typ**=7F (universal).

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORG</td>
<td>0x07</td>
</tr>
<tr>
<td>Data.byte3</td>
<td>Runtime in 100ms MSB</td>
</tr>
<tr>
<td>Data.byte2</td>
<td>Runtime in 100 ms LSB, or runtime in seconds 1-255 dez.</td>
</tr>
<tr>
<td>Data.byte1</td>
<td>command: 0x00 = Stop, 0x01 = Up, 0x02 = Down</td>
</tr>
<tr>
<td>Data.byte0</td>
<td>DB0.Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram)</td>
</tr>
</tbody>
</table>

DB0.Bit2 = Lock/unlock the actuator for pushbutton (0 = unlock, 1 = lock)
DB0.Bit1 = change between runtime in seconds or in 100ms.
(0 = runtime only in DB2 in seconds)
(1 = runtime in DB3 (MSB) + DB2 (LSB) in 100ms.)
DB0.Bit5 = 1: Lernmodus aktivieren, 3x innerhalb 2s = löschen GFVS-ID

Teach-in telegram: 0xFF800D80
Unlock teach-in mode: 0x00000028


Direct switching command, **FUNC**=38, Command 1, (like EEP A5-38-08).

There is the possibility to block the switching state with absolut priority so that it cannot be changed by other taught-in pushbuttons.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORG</td>
<td>0x07</td>
</tr>
<tr>
<td>Data.byte3</td>
<td>0x01</td>
</tr>
<tr>
<td>Data.byte2</td>
<td>no used</td>
</tr>
<tr>
<td>Data.byte1</td>
<td>no used</td>
</tr>
<tr>
<td>Data.byte0</td>
<td>DB0.Bit3 = LRN Button (0 = teach-in telegram, 1 = data telegram)</td>
</tr>
</tbody>
</table>

DB0.Bit1 = 1: block switching state, 0: do not block switching state
DB0.Bit0 = 1: switching output ON, 0: switching output OFF
DB0.Bit5 = 1: Teach-in mode activation, 3x within 2s = delete GFVS-ID

Teach-in telegram: 0xEF040D80
Unlock teach-in mode: 0x00000028
request confirmation telegram: 0x00000008
CONFIRMATION TELEGRAMS OF BIDIRECTIONAL ACTUATORS

FFR61-230V, FZK61NP-230V
Every time the state of the internal switching relay 1 changes, the internal switching relay 1 sends a PTM200 telegram containing the unique ID of the integrated TCM300 after approx. 300ms. Relay 2 sends the same telegram after approx. 1000ms.

ORG = 0x05
Data.byte3 = 0x70 = channel 1 ON, 0x50 = channel 1 OFF
Data.byte3 = 0x30 = channel 2 ON, 0x10 = channel 2 OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent!

FH6KU1-230V
Every time the internal switching relay changes state, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300ms.

ORG = 0x05
Data.byte3 = 0x70 = relay ON, 0x50 = relay OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent.

FH6K1SSR-230V
PTM200 telegram
ORG=0x05
Data.byte3 = 0x70 = normal mode,
0x50 = night reduction (-4°K)
0x30 = setback mode (-2°K), 0x10 = OFF
(frost protection active)
In addition every telegram received from a taught-on temperature sensor (e.g. B. FTR55H) is repeated as a confirmation telegram.

FMS61NP-230V
Every time the internal switching relay 1 changes state, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300ms. Relay 2 sends the same telegram after approx. 1000ms.

ORG = 0x05
Data.byte3 = 0x70 = channel 1 ON, 0x50 = channel 1 OFF
Data.byte3 = 0x30 = channel 2 ON, 0x10 = channel 2 OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent.

FMB61-230V
Every time the internal switching relay changes state, a PTM200 telegram containing the unique ID of the integrated TCM300 is sent after approx. 300ms. 0x30 = thaw signal input inactive
Data.byte3 = 0x70 = thaw signal input active,
0x50 = thaw signal input inactive

FGB61NP-230V, FGS71, FJ62/12-36V DC, FJ62NP-230V
ORG= 0x05
Data.byte3 = 0x70 = upper stop position,
0x50 = lower stop position,
0x01 = Start up, 0x02 = Start down

If the actuator is stopped before the end of the RV, only the actual elapsed time is sent indicating the direction in a ORG7 message with the same ID! This is also the info that the engine has stopped now.

ORG = 0x07
Data.byte3 = driving time in 100ms MSB
Data.byte2 = driving time in 100ms LSB
Data.byte1 = 0x01 = driven up or 0x02 = driven down
Data.byte0 = 0x0A (not blocked) or 0x0E (blocked)
Remark: The RV time must be set on the device so that the end position is always reached. If the roller shutter is already at an end position, the relay is switched on receipt of a drive command anyway (0x01 or 0x02 is sent) and it is switched off on expiry of the RV. (0x70 or 0x50 is sent).

Every time the dimmer is switched on or off, a PTM200 telegram containing the unique ID or base ID of the integrated TCM300 is sent after approx. 300-400ms. With central commands (ZE/ZA) the relay state is also sent if the state already corresponds to the required state.

ORG = 0x05
Data.byte3 = 0x70 = relay ON, 0x50 = relay OFF
Remark: ON 0x00 (would be equivalent to button released) is never sent.

FSB61NP-230V, FS871, FJ62/12-36V DC, FJ62NP-230V
ORG= 0x05
Data.byte3 = 0x70 = upper stop position,
0x50 = lower stop position,
0x01 = Start up, 0x02 = Start down

If the actuator is stopped before the end of the RV, only the actual elapsed time is sent indicating the direction in a ORG7 message with the same ID! This is also the info that the engine has stopped now.

ORG = 0x07
Data.byte3 = driving time in 100ms MSB
Data.byte2 = driving time in 100ms LSB
Data.byte1 = 0x01 = driven up or 0x02 = driven down
Data.byte0 = 0x0A (not blocked) or 0x0E (blocked)
Remark: The RV time must be set on the device so that the end position is always reached. If the roller shutter is already at an end position, the relay is switched on receipt of a drive command anyway (0x01 or 0x02 is sent) and it is switched off on expiry of the RV. (0x70 or 0x50 is sent).

To teach-in reply confirmation telegrams of bidirectional actuators into other actuators or into the software GFVS the local control input has to be used to change the switching position and to simultaneously send the confirmation telegrams.
CONTENTS OF ELTako WIRELESS TELEGRAMS

SERIES 14 CONFIRMATION TELEGRAM

As soon as Series 14 actuators receive a device address, the FAM14 can request actuators for confirmation telegrams. The confirmation telegrams are then radioed by the FAM14. The ID of the radioed telegrams is identical to the Base ID of the TCM300 in the FAM14 plus the device address. Multichannel actuators have consecutive device addresses corresponding to the number of channels.

Note: Depending on the number of actuators on the bus, there may be a time lapse of up to 10 seconds before a confirmation telegram is requested and radioed. If fast confirmation is expected by certain actuators, a device list for confirmation telegrams must be generated via the PCT14. The actuator must be entered several times in the device list. The FAM14 must then be operated in operating mode 5.

CONFIRMATION TELEGRAMS OF BIDIRECTIONAL ACTUATORS.

FDG14, FSG14/1-10V, FUD14, FUD14/800W

Here you can select 2 confirmation telegrams in the PCT14 configuration independently of each other.

1. PTM200 telegram ORG=0x05
   Data_byte3: 0x70 = Dimmer ON,
   0x50 = Dimmer OFF
2. 4BS telegram with dimming value
   ORG = 0x07
   Data_byte3 = 0x02
   Data_byte2 = Dimming value in %
   Data_byte1 = 0x00
   Data_byte0 = 0x08 = Dimmer OFF,
   0x09 = Dimmer ON

FSB14

Per channel: PTM200 telegram
ORG=0x05
Data_byte3 = 0x07 = end position top,
0x50 = end position bottom
0x01 = Start up,
0x02 = Start down

If the actuator is stopped before the end of RV, only the actual elapsed time is sent indicating the direction in a ORG7 message with the same ID! This is also the info that the engine has stopped now.

ORG = 0x07
Data_byte3 = driving time in 100ms MSB
Data_byte2 = driving time in 100ms LSB
Data_byte1 = 0x00 = driven up or 0x02 = driven down
Data_byte0 = 0x0A (not blocked) or 0x0E (blocked)

Remark: The RV time must be set on the device so that the end position is always reached. If the roller shutter is already at an end position, the relay is switched on receipt of a drive command anyway (0x01 or 0x02 is sent) and it is switched off on expiry of the RV. (0x70 or 0x50 is sent).

FFR14, F2L14, FMS14, FMZ14, FSR14-2X, FSR14-4X, FSR14SSR, FTN14, FZK14

Per channel: PTM200 telegram
ORG=0x05
Data_byte3 = 0x70 = relay ON, 0x50 = relay OFF

FAE14LPR, FAE14SSR, F4HK14, FHK14

Per channel: PTM200 telegram
ORG=0x05
Data_byte3 = 0x70 = normal mode,
0x50 = night reduction (-4°K)
0x30 = setback mode (-2°K), 0x10 = OFF
(frost protection active)

In addition every telegram received from a taught-on temperature sensor (e.g. FTR55H) is repeated as a confirmation telegram.

FMSR14

The FMSR14 evaluates the MS multisensor data which is fed to the Eltako wireless network by the FWS61 transmitter module. The data contains measured values for sunlight from 3 cardinal points, light values to evaluate twilight, and wind speed in m/s.

In addition there are signals for rain and frost.

The device occupies 5 device addresses, providing confirmation telegrams for each of the 3 parameters and the 2 signals containing confirmation telegrams with an individual ID.

Limits can be set using the PCT14 configuration for the measured values of sunlight, twilight and wind speed. If these parameters are exceeded or overshot, telegrams containing Data_byte3 = 0x70 or 0x50 (selectable) are generated.

As soon as the limits are no longer exceeded or overshot, a telegram containing Data_byte3 = 0x00 is generated.

The signals for frost and rain are also converted into telegrams containing Data_byte3 = 0x70 or 0x50 (selectable).

When the signals are cancelled, telegrams containing Data_byte3 = 0x00 are generated.

FSU14

The 8 timer channels correspond to the 8 device addresses of the FSU14. Switch on/off commands are generated in the form of confirmation telegrams depending on the programmed switching times for the individual channels:

PTM200 telegrams
ORG=0x05
Data_byte3 = 0x70 = switch ON,
0x50 = switch OFF

Clock telegram (EEP: A5-13-04) with the current time (hour and minute) and the day of the week.

Teach-in clock telegram DB3..DB0: 0x4C, 0x20, 0x0D, 0x80 FF

Remark: The RV time must be set on the device so that the end position is always reached. If the roller shutter is already at an end position, the relay is switched on receipt of a drive command anyway (0x01 or 0x02 is sent) and it is switched off on expiry of the RV. (0x70 or 0x50 is sent).
ALL SPECIFICATIONS AT A GLANCE
### Type comparison table, warranty regulations, terms of delivery and index

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<th>Page</th>
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</table>
## Type Comparison Table

For Eltako Series 11 in Comparison With the Up-to-Date Series 12.

### Electronic Impulse Switches

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<td>ES12DX-</td>
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## Type Comparison Table

**For Eltako Series 11 in Comparison With the Up-to-Date Series 12 and 15.**

- Devices of Series 12, which have not existed in former series and which have still the same type name, are not listed here.

### MAINS DISCONNECTING RELAYS

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### Shading Systems and Roller Shutter Control

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* If controlled only by a LS and/or WS the USR12- can also be replaced by a LRW12D-. The MSR12- needs a multi sensor MS12.

### Control Relays

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WARRANTY REGULATIONS FOR THE ELECTRICAL TRADES IN GERMANY.

Since 1956 we offer a warranty period of 2 years for all Eltako products. Since 2004 the following improved warranty regulations applied for the electrical trades in Germany on the basis of an agreement between the ZVEI, VEG and ZVEH.

- **Products bearing the label ELTAKO delivered after 1.1.2019 are subject to an extended warranty period of 5 years from the data of manufacture.**
- **If a complaint for defective products is received within the warranty period, ELTAKO waives the submission of evidence for the origin of the defect. The customer must return the defective parts to ELTAKO free of charge.**
- **In exchange, on acknowledgement of the defective products, ELTAKO will supply replacement parts free of charge as soon as possible, if it is not possible to deliver the same product due to a model upgrade or as a result of technical progress, ELTAKO will deliver replacement products of identical type and quality.**
- **In return, the electrical trade contractor waives the refunding of all other costs of the exchange of defective products.**

With this simplified handling, the previously established practice continues, an occurring product defect is eliminated quickly, inexpensively and efficiently. Obviously the electrical trade contractor may also request a warranty processing in strict accordance with the legal provisions of the law of obligations.

TERMS OF DELIVERY

We exclusively deliver to the general conditions for products and services of the (German) electrical industry, as at January 2020, and to our current price list.

Only a trained electrician may install our switchgear, power supply units and energy meters, otherwise there is a risk of fire or electric shock. It is therefore prohibited to sell to other customers for this reason otherwise the risk passes to the seller.
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<td><strong>W2T55-wg</strong> Rocker switch</td>
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<td>Rocker for wireless handbrake and mini handbrake transmitter</td>
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</tbody>
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