

Wireless basic unit FME14-24V 

**Only skilled electricians may install this electrical equipment otherwise there is the risk of fire or electric shock!**

Temperature at mounting location:  
-20°C up to +50°C.  
Storage temperature: -25°C up to +70°C.  
Relative humidity:  
annual average value <75%.

DIN rail mounted device combination for DIN-EN 60715 TH35 rail mounting, comprising the FAM14 wireless antenna module for the Eltako RS485 bus, FAE14LPR actuators and a power supply unit SNT14.

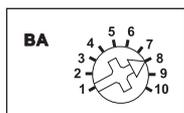
If required the small enclosed wireless antenna can be replaced by a larger antenna FA250 or FA200.

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

**The cross-wiring between bus and power supply is produced by top mounted jumpers.**

The supply voltage of the FAM14 is 230V and will be connected to the terminals N and L at the bottom.

### Mode switch



The addresses of FAE14 actuators were also issued at the factory in Pos. 1 and the rotary switch is set to operating mode 8.

Teaching-in wireless sensors in FAE14 actuators takes place as described in

the actuator operating manual below. Power supply and cross-wiring between the actuators and the SAS busbar is described in the operating manual below.

**Before snapping the basic unit to the carrier rail**, first unlock all lock slides by pulling them back to the catch point. Place the basic unit from the top onto the carrier rail and relock the lock slides.

**Insert the enclosed busbar SAS-** with the printed side up below the base unit in the + and - terminals of the FAE14LPR and the switching power supply unit and tighten all binding screws.

**The 230V power supply for the switching power supply unit** takes place at the top of the terminals L and N.

**The actuators** are connected to the bottom of the FAE14LPR actuators.

### Single room control, heating/cooling for 2 zones each with bus actuators FAE14LPR.

2 PCB relays 4A/250V per channel FAE14LPR, not potential-free.

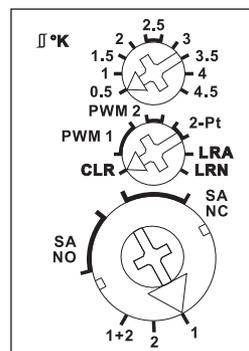
Only 0.1 watt standby loss.

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

### 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.

### Function rotary switches FAE14



### 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  $\geq$  reference temperature, the device is switched off.

When the actual temperature  $\leq$  (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 settable 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  $\geq$  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.

The type of connected actuators will be selected with the **lower rotary switch**.

**SANC** for actuator NC (normally closed) or **SANO** for actuator NO (normally open).

When **wireless window/door contacts FTK or Hoppe window handles** 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 push-buttons** 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).

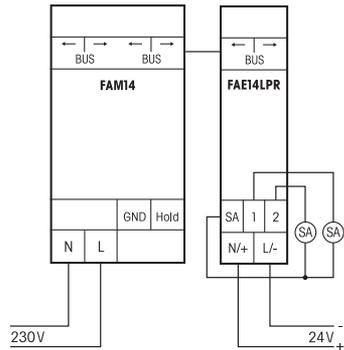
If no telegram is received from the temperature sensor for longer than 60 minutes, the device switches to **fault mode**:

At heating mode it will be switched on and off every 2 minutes at PWM 1 or every 7.5 minutes at PWM 2. Since no other actual temperature is known, it is not possible to switch to frost protection here. In cooling function, the output remains off.

In both cases the LED on the device flashes at a constant low rate. When telegrams are received again, control continues in the selected mode and the LED goes out.

**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.

## Typical connection



## Teaching-in wireless sensors in wireless actuators FAE14

All sensors must be taught-in in the actuators so that they can detect and execute commands.

The teach-in memory is empty on delivery from the factory. If you are unsure whether the teach-in memory contains something or not, **you must first clear the memory contents completely:**

Set the middle rotary switch to CLR and also the lower rotary switch to positions 1+2. The LED flashes at a high rate. Within the next 10 seconds, turn the upper rotary switch three times to the right stop (turn clockwise) and then turn back away from the stop. The LED stops flashing and goes out after 2 seconds. All taught-in sensors or sensors of a channel are cleared.

**Clear individual taught-in sensors** in the same way as in the teach-in procedure, except that you set the middle rotary switch to CLR instead of LRN, and operate the sensor. The LED previously flashing at a high rate goes out.

## Teaching-in sensors (a total of 120 memory locations are available):

1. Set the top rotary switch to the required teach-in function.

Teach in at right stop (4.5):

FTR, FUTH, 4-way buttons, FBH, FTK and Hoppe window handle.

On FTF, FAFT and FIFT the position of the rotary switch defines the

reference temperature during the teach-in process. In middle position (2.5) the reference temperature is 21°C. It can be set in steps of 1° from 17°C at left stop (0.5) to 25°C at right stop (4.5).

2. Set the lower rotary to positions 1+2, 1 or 2.

3. Set the middle rotary switch to LRN. The LED flashes at a low rate.

4. Operate the sensor to be taught-in. The LED goes out.

To prevent an accidental teach-in, turn the rotary switch back to LRN for further teach-in operations. The LED reverts to flashing at a low rate.

## The PCT14 software tool

A mini USB to connect a PC is located behind the black panel on the FAM14 wireless antenna module mounted on the left to produce a device list, for additional configuration of actuators and as data backup by means of the PCT14 PC tool. The FME14 contains a legalisation code to download the PCT14 from the Eltako website at [www.eltako.com](http://www.eltako.com).

## Configure FAE14 additionally:

The following functions can be configured additionally using the PC Tool PCT14:

- Teach-in buttons and wireless Hoppe window handles using single and double clicks.
- Operating mode Channel 1 heating mode or cooling mode ('Heating mode' = factory setting)
- Operating mode Channel 2 heating mode or cooling mode ('Heating mode' = factory setting)
- Dewpoint evaluation Channel 1 ('enabled' = factory setting)
- Dewpoint evaluation Channel 2 ('enabled' = factory setting)
- Dewpoint without humidity values Channel 1 (15°C = factory setting)
- Dewpoint without humidity values Channel 2 (15°C = factory setting)

- Reference temperature for FAFT60, FTF, FUTH Channel 1 (21°C = factory setting)
- Reference temperature for FAFT60, FTF, FUTH Channel 2 (21°C = factory setting)
- Reference temperature for FTF55, FAFT60 and FIFT63
- Add or change sensors

**Caution: If necessary do not forget to press 'Disconnect link to FAM' in the PC-Tool PCT14. While the PC Tool remains connected to the FAM14, no wireless commands can be executed.**

## Caution when removing the jumpers

The jumpers are firmly attached to the terminal blocks so that they are not being released during operation. If one of the basic unit modules needs to be replaced, please use only the SMW14 jumper mounting tool included in the scope of supply to remove jumpers and move the tool vertically to the carrier rail.



For attaching a jumper, insert it into the SMW14 and thereby attach.

## Replacing a module from the device combination

Remove jumpers and the busbar and pry up the module clip connections.

## The scope of supply comprises:

- 1 FME14-24V DIN rail mounted device combination
- 1 complete module cover
- 1 SAS busbar
- 1 SMW14 jumper mounting tool
- 2 spare jumpers
- 1 legalisation code to download the PCT14
- 1 housing for operating instructions GBA14



When an actuator is ready for teach-in (the LED flashes at a low rate), the very next incoming signal is taught-in. Therefore, make absolutely sure that you do not activate any other sensors during the teach-in phase.

## Must be kept for later use!

Insert in the GBA14 housing for operating instructions.

## Eltako GmbH

D-70736 Fellbach

+49 711 94350000

[www.eltako.com](http://www.eltako.com)