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Eltako ELECTRONICS

RS485 bus display timer

FSU14

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%.

valid for devices from production week 15/15 (see bottom side of housing)

! Note: Select English language !*

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 module = 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, as described further below.

The channel switch commands can be taught-in in 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 astro 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 and 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.

The FSU14 sends every minute a **clock telegram** with the current time (hour and minute) and the day of the week.

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 for all channels 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.

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.

Central ON:
Terminal T1 and T2 jumpered:
"Central ON" is active.
Terminal T1 and T2 open:
"Central ON" is inactive.
Press top of ZE pushbutton:
"Central ON" is active.
Press bottom of ZE pushbutton:
"Central ON" is inactive.

Central OFF:
Terminal T3 and T2 jumpered:
"Central OFF" is active.
Terminal T3 and T2 open:
"Central OFF" is inactive.
Press top of ZA pushbutton:
"Central OFF" is active.
Press bottom of ZA pushbutton:
"Central OFF" is inactive.
Central ON and OFF have priority and act on all channels where CIA mode (factory setting) was selected. As long as Central ON or OFF is active, no switch programmes are carried out.

Automatic OFF pushbutton:
Press top of automatic OFF pushbutton: Automatic inactive, *OFF* appears in the display and no switch programmes are carried out.
Press bottom of automatic *OFF* pushbutton: Automatic active, *OFF* goes out and subsequent switching programs are running again.

Switch on random mode:
Press MODE and then press SET to search for the ***RND* function**. Select this function by pressing MODE. Press SET to select ON and confirm by pressing MODE; or press top of RND pushbutton; or connect inputs T1, T2 and T3 together. When the random mode is switched on, an arrow appears on the left of the display. When the random mode is switched on, all switching points of all channels are randomly shifted by up to 15 minutes. Switch-on times occur earlier, switch-off times later. The random mode does not apply to the switch programmes of central commands.

Switch off random mode:
Press MODE and then press SET to search for the ***RND* function**. Select this function by pressing MODE. Press SET to select OFF and confirm by pressing MODE; or press bottom of RND pushbutton; or open inputs T1, T2 and T3.

Assign device address for the FSU14:
The rotary switch on the FAM14 is set to position 1, its lower LED flashes red. Press MODE at the FSU14 and then search the **function *LRN*** with SET and select with MODE, now *CH* flashes. After the address oft he FAM14 has been assigned, its LED lights up green for 5 seconds and at the FSU14 the normal display appears.

Delete device address:
Press MODE and search for the **function *DA*** with SET and select with MODE. It can be switched between device address and *000* with SET. If *000* is confirmed with MODE, the device address will be deleted and the normal display appears.

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 into bus actuators of Series 14:
The rotary switch on the FAM14 is set to position 10, the LED flashes green. Set the rotary switch on the bus actuator to **LRA,** the LED flashes nervously. Press MODE at the FSU14 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 bus actuator with SET. Likewise it will be taught-in at *OFF.* If a **clock-teaching-in telegram** should be sent, press SET at *CH* to select *clock.* If *clock* is confirmed with MODE, *LRN+* flashes and a time teaching-in telegram is sent. If MODE will be pressed longer than 2 seconds the normal display appears. In order that the bus actuators can receive the commands from the FSU14, the wireless antenna module FAM14 has to be operated in position 2 to 7; please see operating manual from FAM14.

Teach-in channels into external wireless actuators:
Set the rotary switch on the FAM14 to position 9. Set the rotary switch on the wireless actuator to **LRN,** the LED flashes nervously. Press MODE on the FSU14 and select the **function *LRN*** with SET and then select with MODE. Select the channel with SET on *CH* and confirm with MODE. Now you can between *ON* and *OFF* with SET. If *ON* is confirmed with MODE *LRN+* is flashing and the function *ON* will be taught-in into the wireless actuator with SET. It will also be taught-in at *OFF.* If a **clock-teaching-in telegram** should be sent, press SET at *CH* to select *clock.* If *clock* is confirmed with MODE, *LRN+* flashes and a clock-teaching-in telegram is sent. If MODE is pressed longer than 2 seconds the normal display appears. In order that the extrenal wireless actuators can receive the switching commands from the FSU14, the wireless antenna module FAM14 has to be operated in position 2 or 5.

Enter switching programs: Press MODE and select the **function *PRG*** with MODE. Press SET and select one of the 60 memory locations from *P01* to *P60* and confirm with MODE. Occupied ones can be disabled by using SET with *ACT+* switched to *ACT* and press MODE to confirm. If *ACT+* is confirmed by MODE, it can be selected between *ON, OFF, CON* (central on), *COF* (central off), *ENC* (central end) with SET. The central commands can have priority for some actuators when the teaching-in telegram has been programmed accordingly. To cancel this priority again, *ENC* will be selected. After confirming with MODE the channel number *CH 1* to *CH 8* is selected with SET. After confirming with MODE it will be selected between *TIM,* sunset *SS* or sunrise *SR* with SET. If *TIM* is selected,

the hours *H* will be set with SET and after confirmation with MODE the minutes *M* will be entered. If *SS* or *SR* is selected, a time shift (+2/-2 hours) can be set with SET. After confirming with MODE the active days of the week are selected with SET and confirmed with MODE. After you confirm *SU,* the memory location is fully entered. If you press MODE for longer than 2 seconds at any confirmation, the changed values are saved and the screen returns to normal display.
20 seconds after the last operation of MODE or SET, the program returns automatically to normal display. An incomplete memory location input is not saved.

When using the timer in conjunction with a shutter control with FSB14 the timer will be taught-in as a central control pushbutton, where *ON* corresponds to 'central up' and *OFF* corresponds to 'central down'.

An automatic **plausibility check** is performed, if a time programming (TIM) for the identical channel is entered before or after an astro programming (SR or SS). In the plausibility check it is checked whether the switching function astro time must be performed at all due to the seasonal shift. For the plausibility check the ON function in the program position has to be always programmed before the OFF function. If a plausibility check is not required, eg with a combination of an astro programming and a time programming on the next day, a program position has to be kept free between an astro programming and a time programming or the OFF function can be programmed before the ON function.

The supply voltage must be switched off and on to immediately carry out input programs retrospectively.

Clear all memory locations: press and hold down MODE and SET simultaneously for 2 seconds and press SET to confirm *RES* in the display.

Teach in sensors:
CON = Central OFF
COF = Central ON
AUT = Automatic OFF
RND = Random mode ON
A complete rocker is taught in automatically where top activates and bottom deactivates.

Press MODE and then press SET to search for the ***LRN* function**. Select this function by pressing MODE. When CH appears, press SET to search for the ***CON***, ***COF***, ***AUT*** or ***RND* function**. Press MODE to confirm. *LRN*+ flickers. Confirm the sensor to be taught-in. The function selection reappears. Press SET to select a further function and MODE to confirm.

Confirm the sensor to be taught-in etc. If you press MODE for longer than 2 seconds, the standard display appears.

Clear sensors:
Press MODE and then press SET to search for the ***CLR* function**. Select this function by pressing MODE. Now press SET to switch between *SEP* and *ALL*. When you press MODE to confirm *SEP, CLR*+ flickers. Then confirm the sensor to be cleared. *SEP* reappears. When you press MODE to confirm *ALL,* the normal display appears and all taught-in sensors are cleared. When you press MODE for longer than 2 seconds, the standard display appears.

Configure FSU14:
The following points can be configured with the PC tool PCT14:

- operation mode per channel
- time zone
- position coordinates
- switching programs
- lock or unlock device operation
- summer winter time change
- run switching programs at random times
- language in the display
- Accept system timer
- Add or change sensors

CAUTION! Don't forget 'disconnect FAM' in the PC tool. While the connection from the PC tool to the FAM14 exists, no wireless commands are executed.

Program examples:

P01/ON/CH1/TIM/7:50/MO+:
The light on Channel 1 switches on at 7:50 on Mondays.

P02/OFF/CH1/TIM/8:50/MO+:
The light on Channel 1 switches off at 8:50 on Mondays.

P03/ON/CH1/TIM/20:00/MO+:
The light on Channel 1 switches on at 20:00 on Mondays.

P04/OFF/CH1/TIM/21:00/MO+:
The light on Channel 1 switches off at 21:00 on Mondays.

P05/ON/CH2/TIM/10:00/SU+:
The light on Channel 2 switches on at 10.00 on Sundays.

P06/OFF/CH2/TIM/12:00/SU+:
The light on Channel 2 switches off at 12.00 on Sundays.

P07/ON/CH3/TIM/6:00/WE+/TH+:
The light on Channel 3 switches on at 6.00 on Wednesdays and Thursdays.

P08/OFF/CH3/TIM/6:30/WE+/TH+:
The light on Channel 3 switches off at 6.30 on Wednesdays and Thursdays.

P09/ON/CH4/TIM/9:15/MO+/TU+/WE+/TH+/FR+/SA+/SU+:
The light on Channel 4 switches on at 9.15 every day.

P10/OFF/CH4/TIM/9:45/MO+/TU+/WE+/TH+/FR+/SA+/SU+:
The light on Channel 4 switches off at 9.45 every day.

P11/ON/CH5/SS/TH+:
The light on channel 5 switches on every Thursday at sunset.

P12/OFF/CH5/TIM/21:00/TH+:
The light on channel 5 switches off every Thursday at 09:00 p.m.

P13/ON/CH5/TIM/5:00/FR+:
The light on channel 5 switches on every Friday at 05:00 a.m.

P14/OFF/CH5/SS/FR+:
The light on channel 5 switches off every Friday at sunrise

P15/ON/CH6/TIM/6:00/MO+/TU+/WE+/TH+/FR+/SA+/SU+:
The roller shutter on channel 6 opens daily at 6:00 a.m.

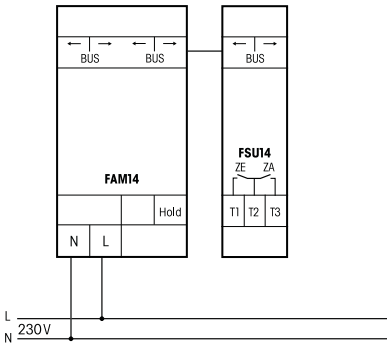
P16/OFF/CH6/TIM/22:00/MO+/TU+/WE+/TH+/FR+/SA+/SU+:
The roller shutter on channel 6 closes daily at 10:00 p.m.

Latitude *(LAT)* and longitude *(LON)* in Germany
time zone (*GMT*): +1, summer time: +2

	LAT	*LON*
Berlin	52	13
Bremen	53	9
Dresden	51	14
Düsseldorf	51	7
Erfurt	51	11
Hamburg	53	10
Hanover	52	10
Kiel	54	10
Magdeburg	52	12
Mainz	50	8
Munich	48	11
Potsdam	52	13
Saarbrücken	49	7
Schwerin	54	11
Stuttgart	49	9
Wiesbaden	50	8

more places on www.maps.google.de

Typical connection



Must be kept for later use!
We recommend the housing for operating instructions GBA14.

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35/2015 Subject to change without notice.