Twilight switch with digital time switch clock

EN

SOU-2

Contents

Warning

Device is constructed for connection in 1-phase main alternating current voltage 230V and must be installed according to norms valid in the state of application. Connection according to the details in this direction. Installation, connection, setting and servicing should be installed by qualified electrician staff only, who has learnt these instruction and functions of the device. This device contains protection against overvoltage peaks and disturbancies in supply. For correct function of the protection of this device there must be suitable protections of higher degree (A,B,C) installed in front of them. According to standards elimination of disturbancies must be ensured. Before installation the main switch must be in position "OFF" and the device should be de-energized. Don´t install the device to sources of excessive electro-magnetic interference. By correct installation ensure ideal air circulation so in case of permanent operation and higher ambient temperature the maximal operating temperature of the device is not exceeded. For installation and setting use screw-driver cca 2 mm. The device is fully-electronic - installation should be carried out according to this fact. Non-problematic function depends also on the way of transportation, storing and handling. In case of any signs of destruction, deformation, non-function or missing part, don´t install and claim at your seller it is possible to dismount the device after its lifetime, recycle, or store in protective dump.

Characteristics

SOU-2 features a sundown switch and digital time switch clock with weekly and annual program. Thanks to this combination, you can control lighting based on the ambient light level while changing in real time the lighting intensity toggle range and„lock" the output when the light doesn't need to be on. This lets you achieve the required effect (where all night lighting is not necessary - advertisement, parking areas, walkways) and save on both energy and lamps.

- used to control lighting based on ambient light intensity, on real time and the on the time control switch
- the advantage of real time is blocking the sundown switch function when illuminating seems inefficient (night time, weekends, etc.)
- adjustable light intensity level 10-50,000 lux
- when no one's around, the random switching function simulates the presence of persons
- external sensor with IP56 rating for mounting on the wall / in a panel (cover and sensor holder are a part of the supply)
- Switching modes:
  - *AUTO* – automatic switching mode:
    - *PROGRAMME* ⊙ – switches according to program (light functions or time program).
    - *RANDOM* ☐ – switches randomly in a 10–120 minute interval.
  - *HOLIDAY* 🧳 – holiday mode – option of setting up a period for which the timer will be blocked, i.e. will not switch based on the set programmes.
  - *MANUAL* ✋ – manual mode – option of controlling the individual output relays manually
    - Options for automatic switching program:
    - *LIGHTS* - switching according to set light intensity range
    - time program - switches according to set time program
- 100 memory locations for time programs (common for both channels).
- Each memory position can switch on/off the relay or set the lighting intensity toggle range according to lux value.
- Programming can be performed under voltage and in backup mode.
- The relay outputs do not work in backup mode (battery-powered)
- Choice of menu display - CZ / SK / EN / RO / PL / HU / RU (factory setting EN).
- Choice of automatic daylight savings time transition according to time zone.
- Backlit LCD display.
- Easy and quick setting with the help of 4 control buttons.
- Pluggable transparent cover on front panel.
- The time switch clock has a battery backup, which retains data in case of a power outage (reserve backup time - up to 3 years).
- Power supply: 230V
- 2-module, DIN rail mounted

Technical parameters

Supply terminals:	A1 - A2
Supply voltage tolerance:	AC 230V / 50 - 60Hz
Consumption:	max. 4 VA
Supply voltage:	-15 %; +10 %
Real time back-up:	yes
Backup battery type:	CR 2032 (3V)
Summer/winter time:	automatic
Output	
Number of contacts:	1x changeover ($AgSnO_2$)
Rated current:	8 A / AC1
Switched capacity:	2000 VA / AC1, 240 W / DC
Switched voltage:	250 V AC1 / 24 V DC
Mechanical life:	$> 1x10^7$
Electrical life (AC1):	$> 1x10^5$
Time circuit	
Real time back-up when de-energized:	up to 3 years
Accuracy:	max. ±1s/ day at 23°C
Minimum interval:	1 min.
Program data stored for:	min. 10 years
Program circuit	
Illumination range:	10-50000 Lux
Sensor failure indication:	displayed on LCD*
Number of program places:	100
Program period:	daily , weakly, yearly
Data readout:	LCD display, with back light
Other information	
Operating temperature	-10.. +55 °C
Storage temperature:	-30.. +70 °C
Electrical strength:	4 kV (supply - output)
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP 40 z from front panel / IP 20
Overvoltage cathegory:	clips
Pollution degree:	III.
Max. cable size (mm^2):	2
Dimensions:	max.1x 2.5, max.2x1.5/ with sleeve max. 1x2.5 90 x 35.6 x 64 mm
Dimension of sensor:	separate page in the catalog
Weight:	127 g
Weight sensor:	20 g
Standards:	EN 61812-1, EN 61010-1, EN 60255-6; EN 60730-1;EN 60730-2-7

* *ERROR* - sensor short circuit

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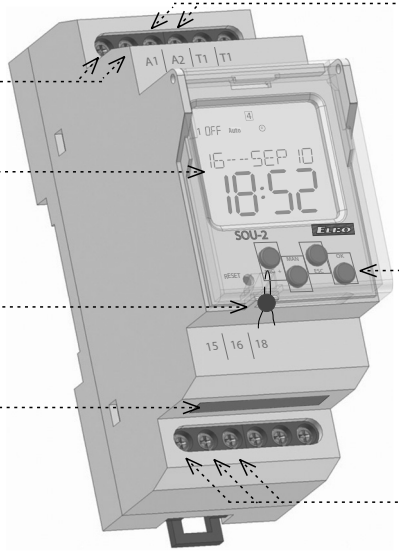
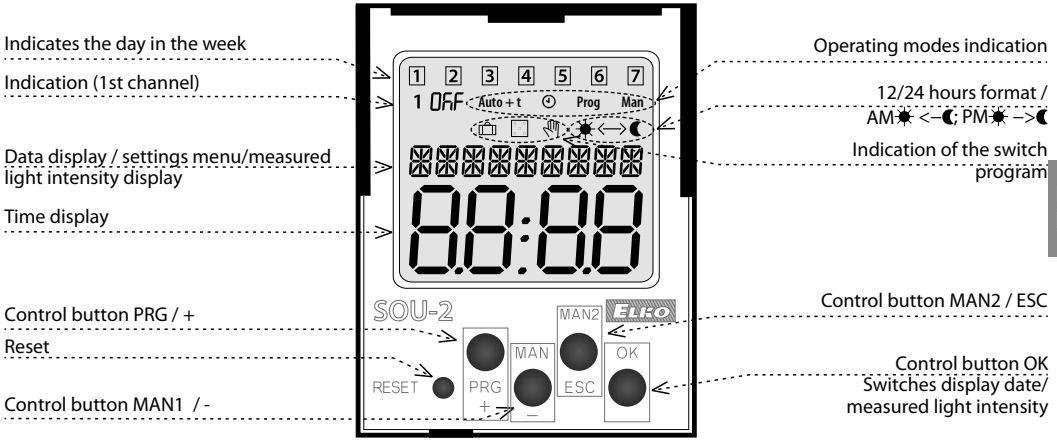
Description





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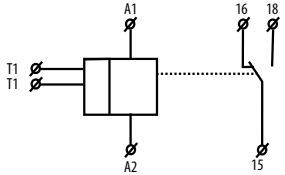
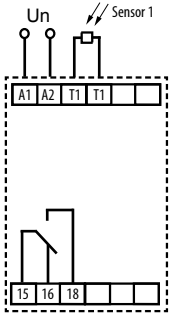
CONTROL OF A DISPLAY WITH BACKLIGHT

Power on: Display is illuminated with a backlight for 10 seconds from the last button press. The display continuously shows the settings – date, time, day of the week, contact state and programme. Permanent on / off is activated by simultaneous presses of the MAN, ESC, OK buttons. After activating the permanent on/off, the display will flash briefly. Backup mode: After 2 minutes, the display switches to the sleep mode, i.e. shows no information. The display can be activated by pressing any button.

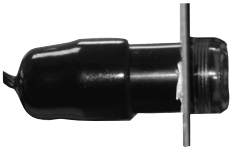
Symbol



Connection



Light sensor



Sensor tolerance: +/- 33%

External sensor adjusted for wall/panel mounting

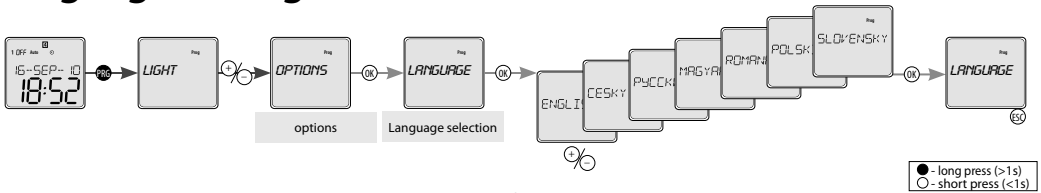
Sensor resistance upon:	Value
<1 Lux	>3MΩ
1 Lux	3MΩ
100 Lux	1150Ω
50 000 Lux	51Ω

Mode precendence

mode precedence	display	output mode
mode with the highest priority ➤➤➤	ON / OFF ✋	manual control
➤➤	ON / OFF 💼	holiday mode
➤	ON / OFF	time program Prog
	LIGHT	light

LIGHT and *TIME PROGRAM* can work at the same time on a single channel.

Language settings



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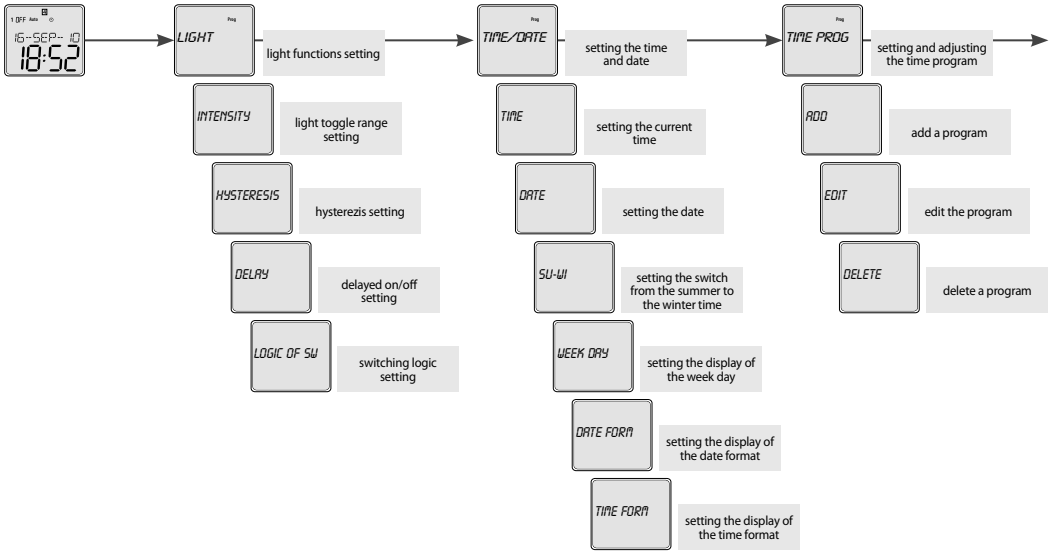
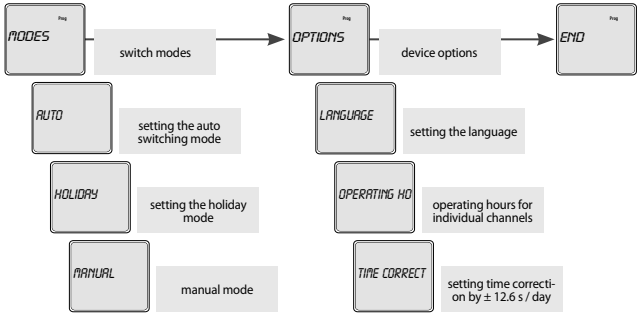
Menu overview





Device differs short and long button press. In the manual marked as:

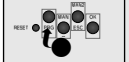
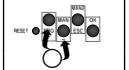
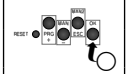
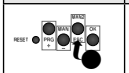
○ - short button press (<1s)

● - long button press (>1s)

After 30s of inactivity (from the last press of any button) will device automatically returns into starting menu.

In the start screen, press OK to toggle between displaying the date or light intensity. The measured value after exceeding 999 is measured in the hundreds of thousands by displaying the letter „k" at the end. A comma separates the thousands line.

Control

	PRG	- entrance into programming menu
	+ / −	- browsing in menu
		- setting of values
	+ / −	- quick shifting during setting of values
	OK	- entrance into required menu
		- confirmation
		- switch. between display
	ESC	- one level up
		- a step back
	ESC	- back to the starting menu

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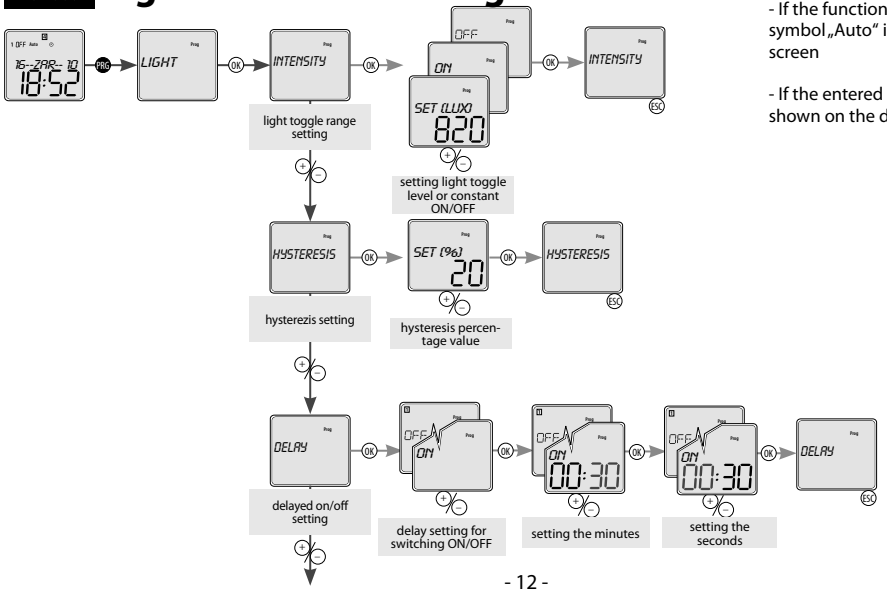
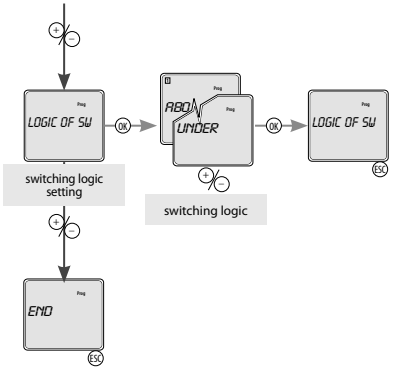
LIGHT Light functions setting



- If the function *LIGHT* is active, then symbol „Auto" is displayed on the screen

- If the entered switching delay is shown on the display „Auto + t"

● - long press (>1s)
○ - short press (<1s)



Setting value in lux:

820 lux

10 000 lux

The value may be entered in a range of 10 to 50,000 lux. After exceeding a value of 9,800 lux, a period separates the thousands line.

SWITCHING LOGIC

ABOVE
- when exceeding the toggle range, the light intensity relay switches on

UNDER
- when exceeding the toggle range, the light intensity relay switches off…

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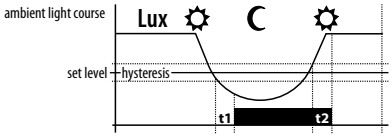
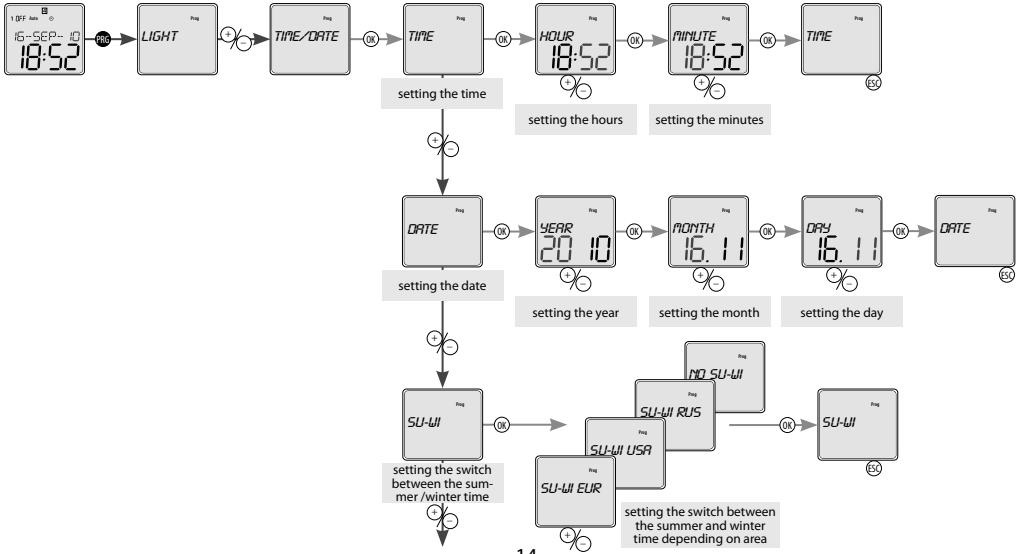
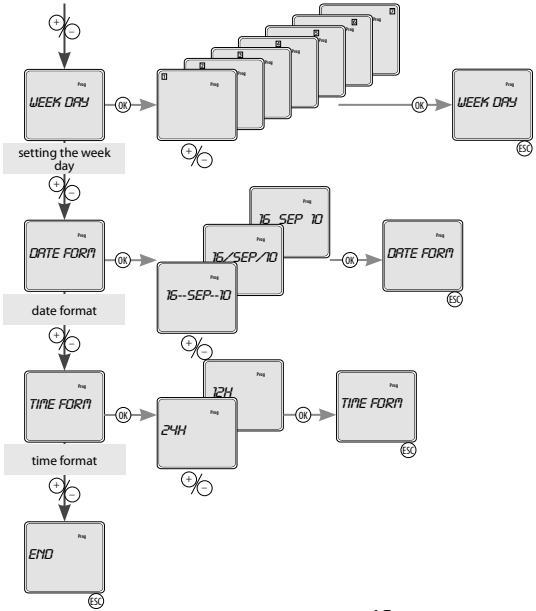


t1- delay time when switching on
t2 - delay time when switching off

● - long press (>1s)
○ - short press (<1s)

TIME/DATE Date and time setting





- After entering the date is normally calculated and numbered by day of the week : Monday = first day of the week

- Numeral showing the day of the week, may not correspond to the calendar day of the week. It can be set in the menu „Display settings of the week .“ Set the number from the set to the current date

Note: After the date is changed , the numbering of days back to the standard numbering ie Monday = first day of the week

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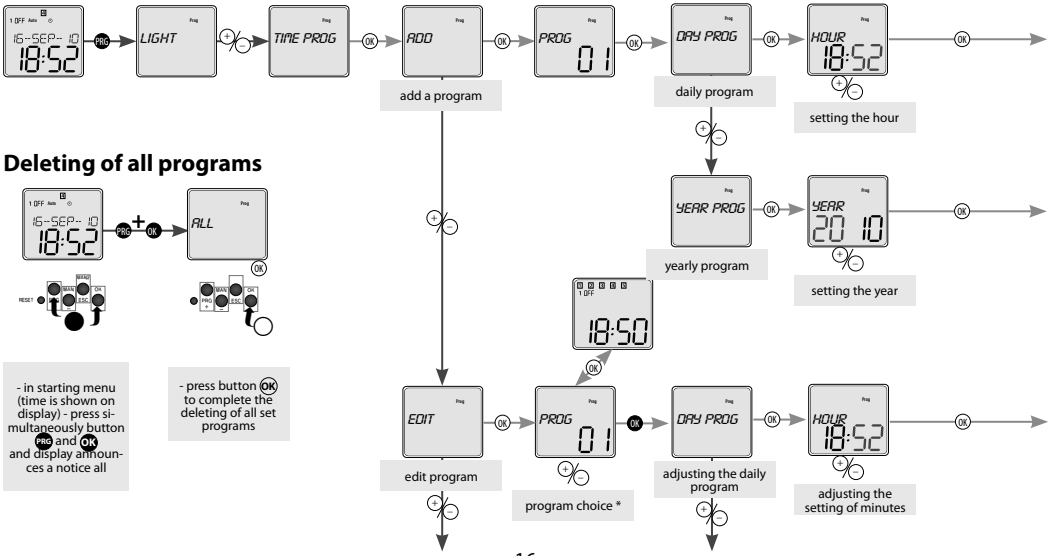
● - long press (>1s)
○ - short press (<1s)

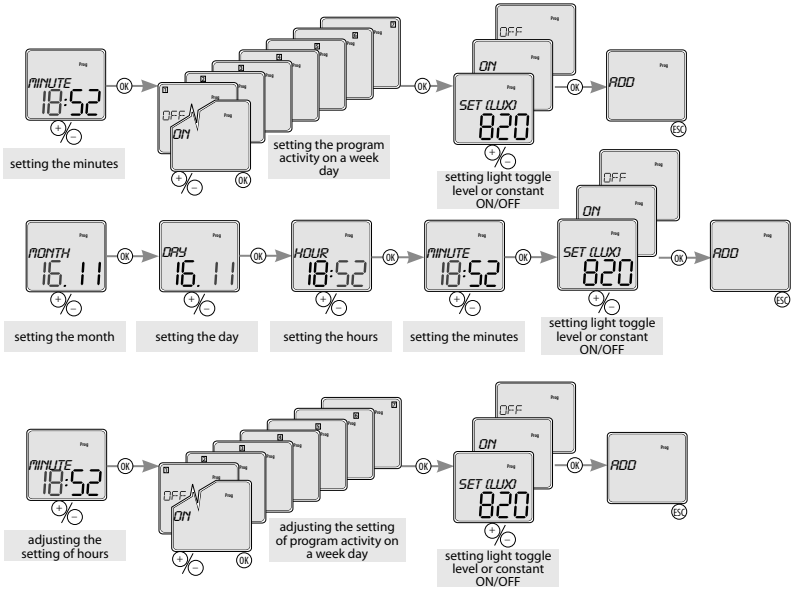
TIME PROGRAM Time program

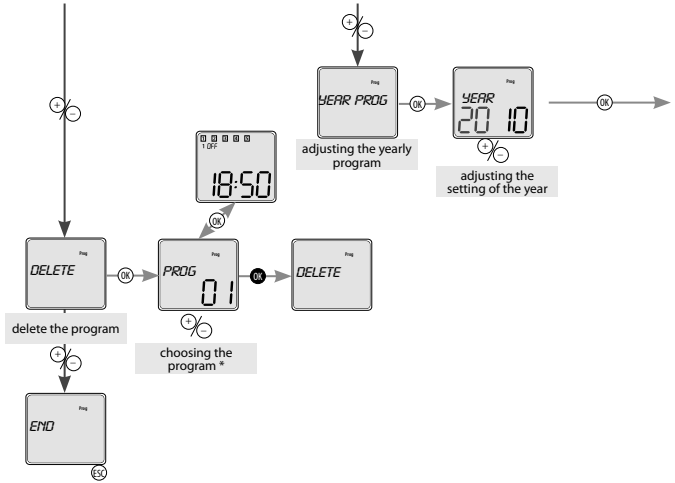


Deleting of all programs

- in starting menu (time is shown on display) - press simultaneously button PRG and OK and display announces a notice all

- press button OK to complete the deleting of all set programs

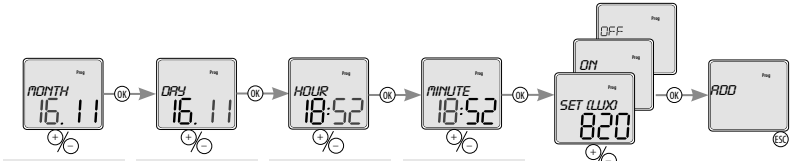

MINUTE
18:52
OK
setting the minutes
OFF
ON
setting the program activity on a week day
SET (LUX)
820
setting light toggle level or constant ON/OFF
ADD
ESC
MONTH
16. 11
setting the month
DAY
setting the day
HOUR
setting the hours
setting the minutes
setting light toggle level or constant ON/OFF
adjusting the setting of hours
adjusting the setting of program activity on a week day
- long press (>1s)
- short press (<1s)



*

1. ON - permanently ON
1. OFF - always off
1. OR - controlled by twilight switch

By shortly pressing OK, you can toggle between the program number and the display of its settings. Use + − to toggle preset programs. By holding OK you can proceed with the required step - *CHANGE / DELETE*. If you do not want to proceed, press ESC to go to the main settings without any change.
If the program memory is full, you will see *FULL* on the display.
If the programs memory is empty and you want to change or erase a program, the display will read *EMPTY*



adjusting the setting of the month

adjusting the setting of the day

adjusting the setting of hours

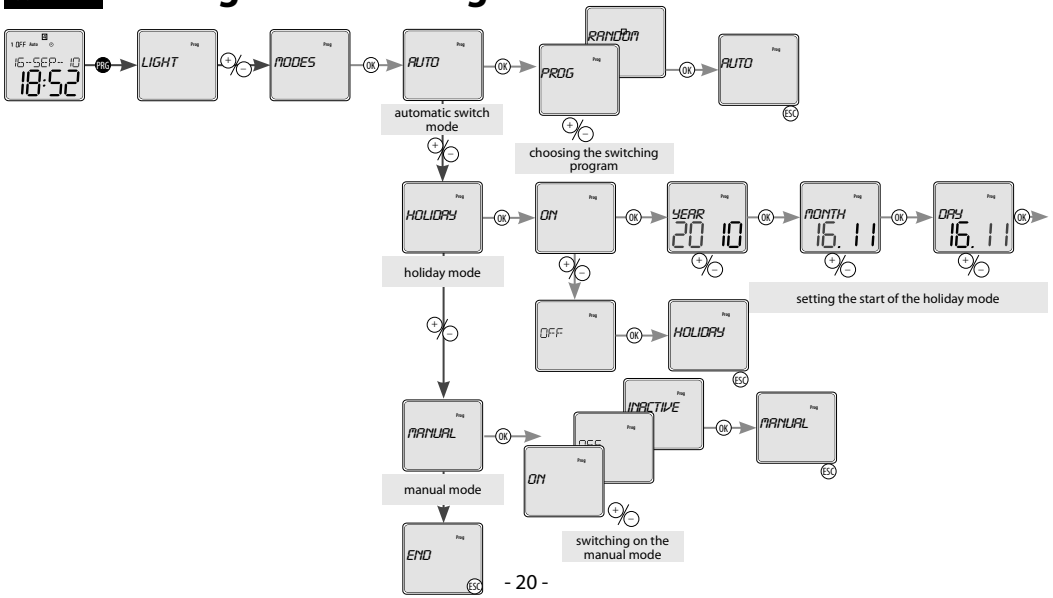
adjusting the setting of minutes

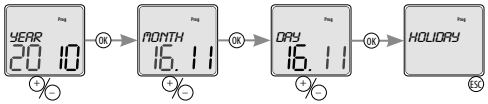
setting light toggle level or constant ON/OFF

EN

● - long press (>1s)
○ - short press (<1s)

MODES Setting the switching modes



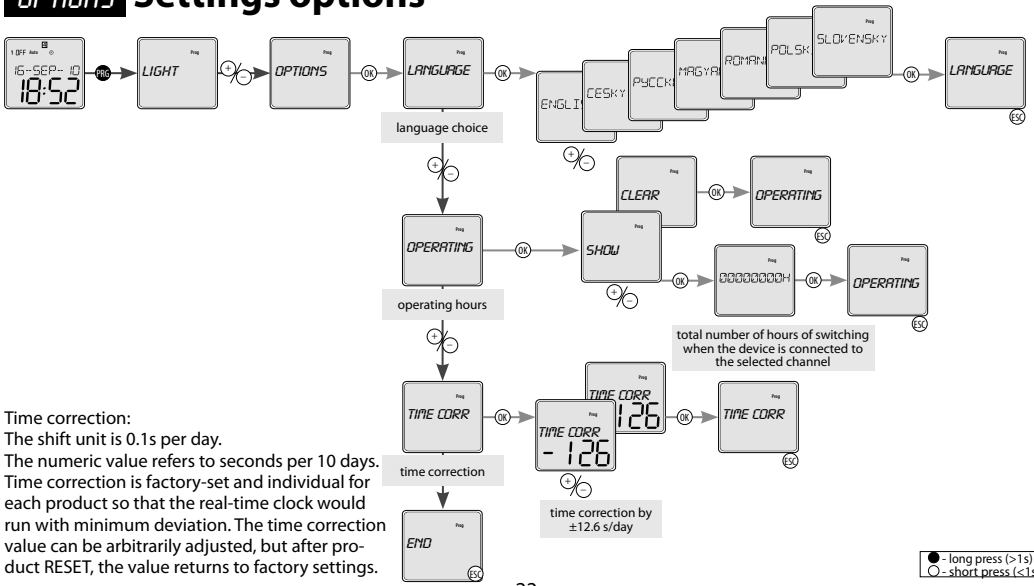


setting the end of the holiday mode

What you see on the display:
- when a random mode is activated - *RANDOM* - the symbol is lit ☐.
- vacation mode *HOLIDAY*: - the illuminated symbol 🧳 indicates the vacation mode.
  - the flashing symbol 🧳 indicates the vacation mode.
  - the symbol 🧳 is not illuminated if the vacation mode is not set or has
- when the manual mode is activated, the symbol is lit ✋ and the manually controlled channel is flashing.

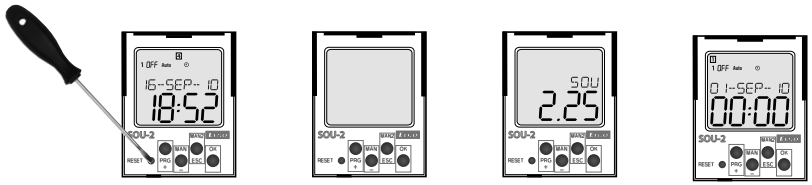
● - long press (>1s)
○ - short press (<1s)

OPTIONS Settings options



Time correction:
The shift unit is 0.1s per day.
The numeric value refers to seconds per 10 days. Time correction is factory-set and individual for each product so that the real-time clock would run with minimum deviation. The time correction value can be arbitrarily adjusted, but after product RESET, the value returns to factory settings.

Reset



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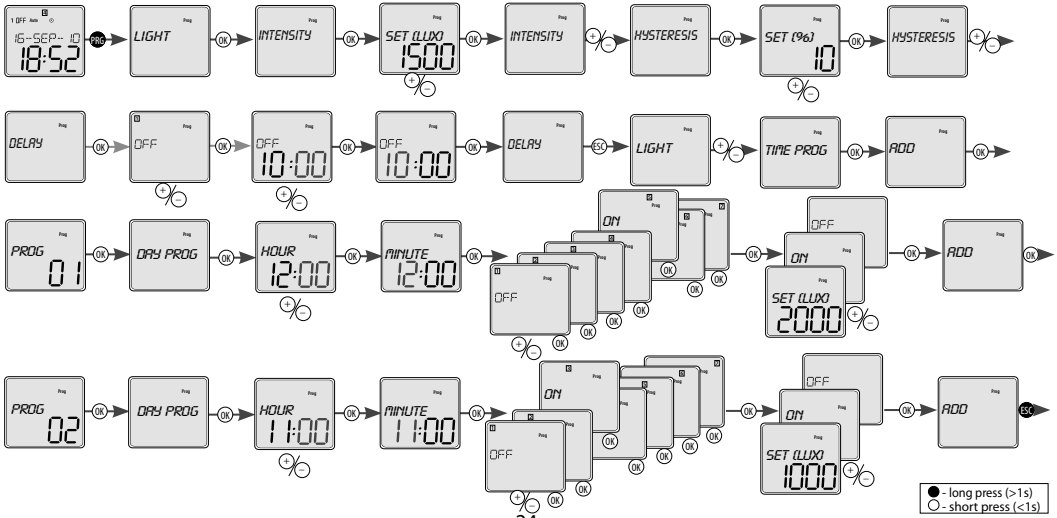
Performed by shortly pressing the hidden RESET button with a blunt-pointed object (e.g. a pencil or screw-driver with a diameter of at most 2 mm).

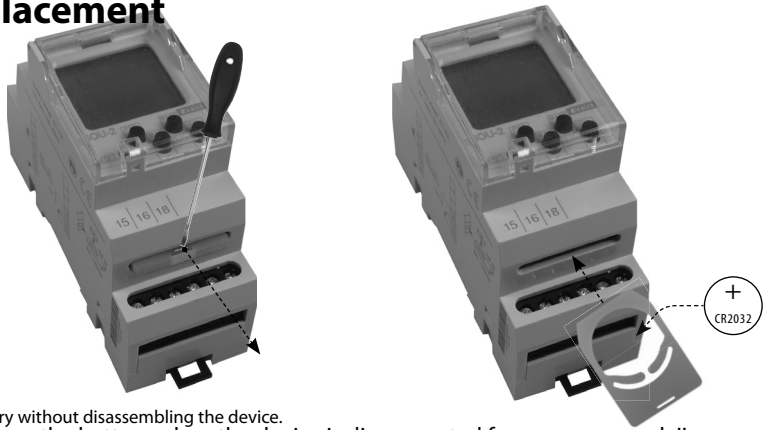
The type of device and software version will be displayed for 1 second, then the device will enter default mode. This means that the language is set to EN, all data is zeroed (light function, time/date, user programs, device options function).

An example of SOU-2 programming

Settings for switching upon exceeding the range of 1,500 lux. Settings of hysteresis at 10% and off delay at 10 min. Upon a change of the lux switching range each Friday at 12:00 p.m. to 2,000 and each Wednesday at 11:00 a.m. to 1,000 lux.



Battery replacement



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You can change the battery without disassembling the device.

CAUTION - only change the battery when the device is disconnected from power supply!!
- the date and time must be reset after changing the battery !!!

- remove the plug-in module with the battery
- replace the original battery
- enter a new battery so that its upper edge (+) lines up with the plug-in module
- slide the plug-in module in the device and pay attention to polarity (+ up) – for roughly 1 s, the display will show the name and the software version
- you can connect the device to power supply

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