

theben

307031

EN Digital twilight
switch

LUNA 121 top2 RC
1210100/ 1210200
LUNA 122 top2 RC
1220100/ 1220200



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1. Basic safety information



WARNING

Danger of death through electric shock or fire!

- Installation should only be carried out by a qualified electrician!

- The device is designed for installation on DIN top hat rails (in accordance with EN 60715)



OBELISK top2 memory card: Avoid mechanical overload and contamination during storage/transportation

2. Proper use

- The digital twilight switch is used for lighting equipment (streets), external stairways, display windows, entrances etc.
- Only for use in closed, dry rooms



Do not use on safety devices, e.g. escape route doors, fire safety equipment etc.

Disposal

- Dispose of device in environmentally sound manner

3. Installation and connection

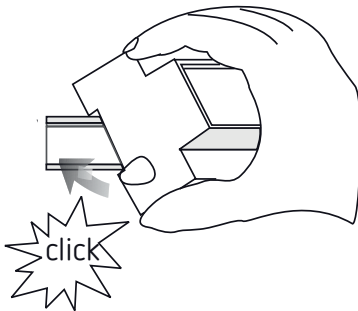
Mounting the time switch

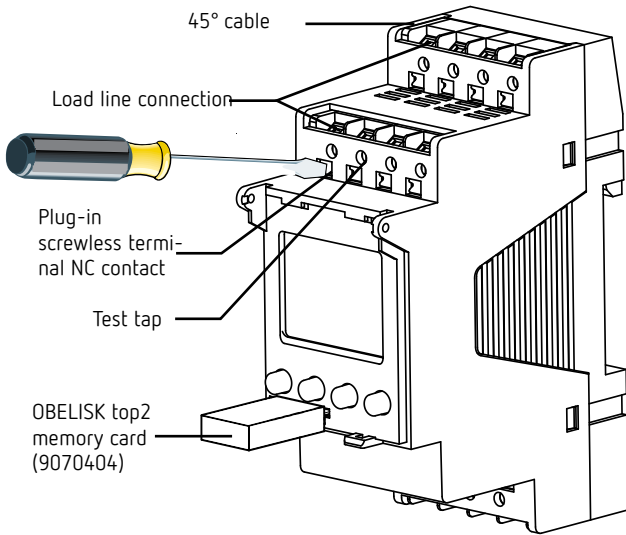


WARNING

Danger of death through electric shock or fire!

- Installation should only be carried out by a qualified electrician!

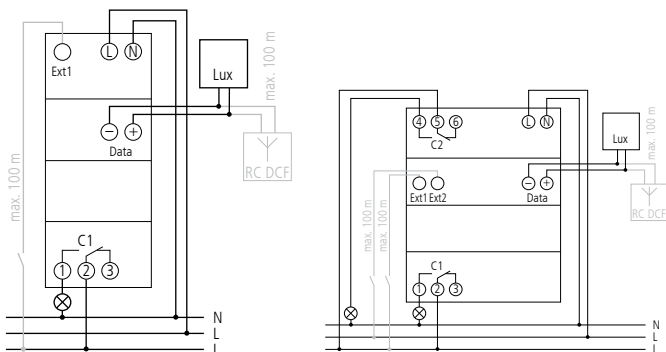




- Mount on DIN top hat rails (as defined in EN 60715)
- Switched voltage-free
- Ensure device cannot be switched on
- Check absence of voltage
- Earth and bypass
- Cover or shield any adjacent live components

Connecting the cable

Wiring diagrams LUNA 121 top2 RC / LUNA 122 top2 RC



- ▶ Strip cable to 8 mm (max. 9)
- ▶ Insert cable in the open DuoFix® plug-in terminal at 45°
 - ① 2 cables per terminal position possible
- ▶ To open the DuoFix® plug-in terminal, press screwdriver downwards

Disconnecting the cable

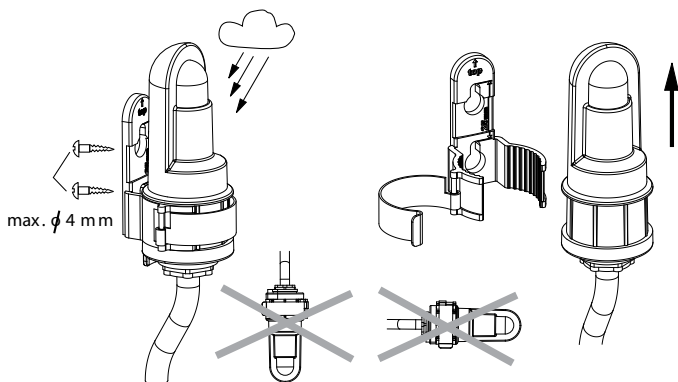
- ▶ Use the screwdriver to push the load line connection opener downwards

Connection/installation of light sensor

- ⚠ Take length of connection cable into account: max. 100 m (2 x 1.5 mm²), max. 50 m (2 x 0.75 mm²)
- ⚠ Avoid running sensor wiring parallel to mains power cables
- Ensure correct polarity. Disconnect power source

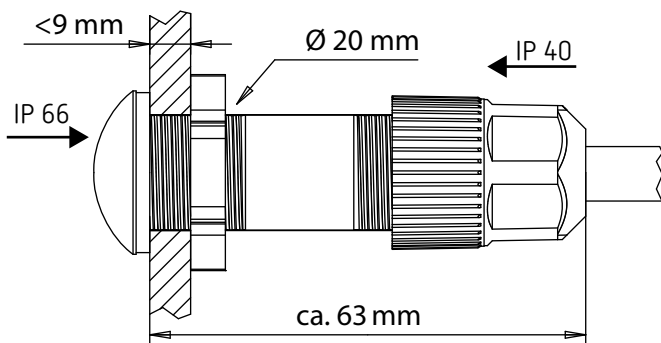
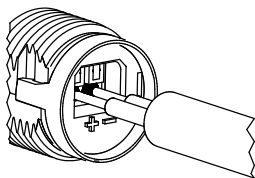
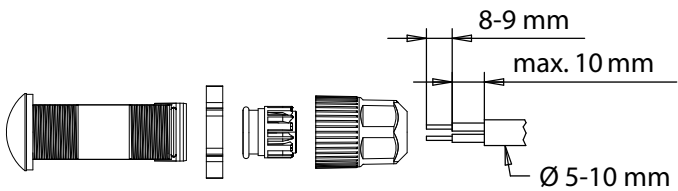
Mounting light sensor 907 0 415

- Mounting light sensor: 0.5-2.5 mm², strip cable by 10 mm (max. 11 mm)



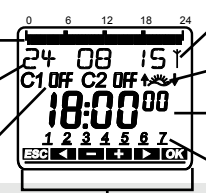
Installing light sensor 907 0 456

- Installing light sensor: 0.25-1.5 mm², strip cable by 8 mm (max. 9 mm)



4. Device description

Display & buttons



Programmed switching times

Date display

Channel status
C1, C2
ON = On
OFF = Off

DCF antenna display

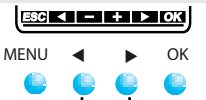
Sunrise/sunset display

Time display

Days of the week from 1 to 7

Display of the active buttons with the relevant function

The screenshot shows a digital display with a top bar for switching times (0, 6, 12, 18, 24). The main display shows '24 08 15', 'C1 OFF C2 OFF', and '18:00'. Below the time is a row of numbers 1-7. At the bottom is a control bar with 'ESC', left and right arrows, '+', and 'OK'.



MENU

OK

Options are displayed

MENU

- Activate display
- Open menu
- Cancel menu
- ESC (leave menu)


OK

- Save selection
- Confirm selection

The close-up shows the control bar with four blue buttons labeled 'MENU', left arrow, right arrow, and 'OK'. Below the arrows are three more arrows pointing left, right, and left.

Operating instructions

1. Read text line
text/symbol represents
query



2. Make a decision



YES
Confirmation

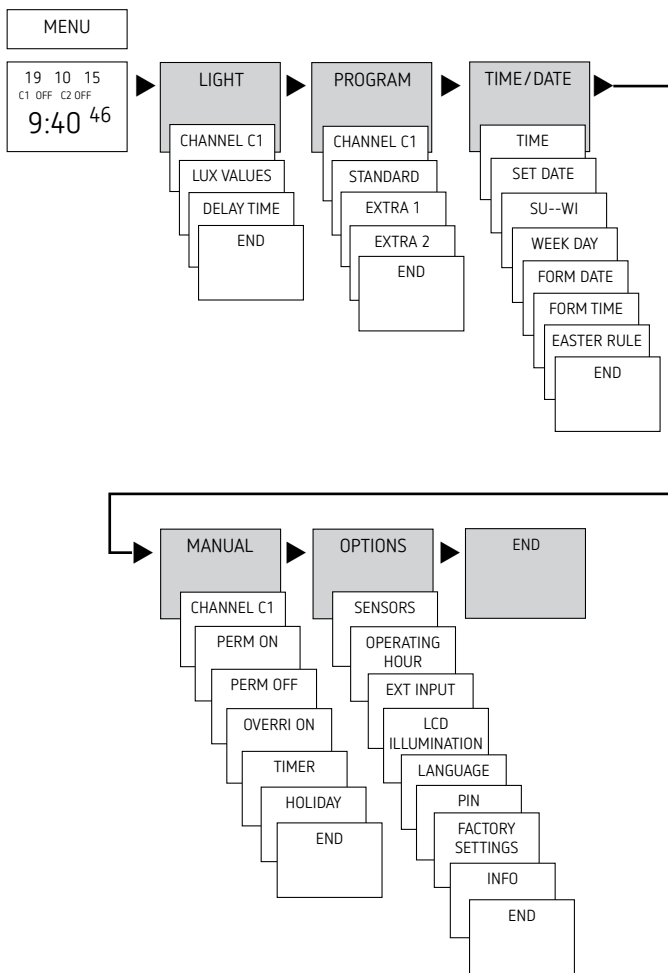
Press
OK

NO
Modify/
Change

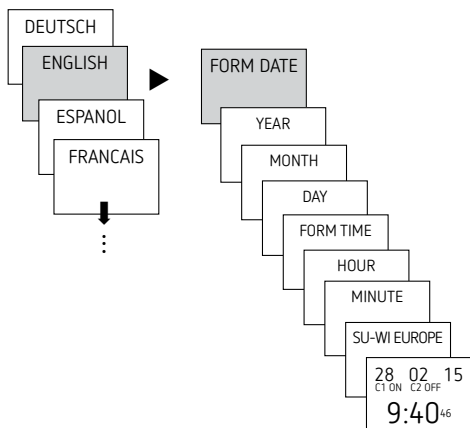
Press
◀ ▶



Overview of navigation menu



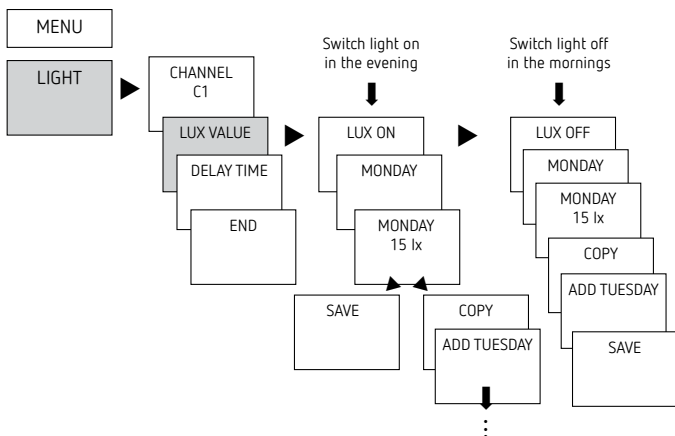
Initial operation



- Set language, date, time as well as summer /winter time (SU-WI)
- Press any button and display follows on screen (see figure)
 - ① If all settings are performed, the screen alternately shows the automatic display and READING
 - ① If a sensor is connected, the measured lux value appears on screen (only during mains operation).

5. Settings and functions

Set lux values



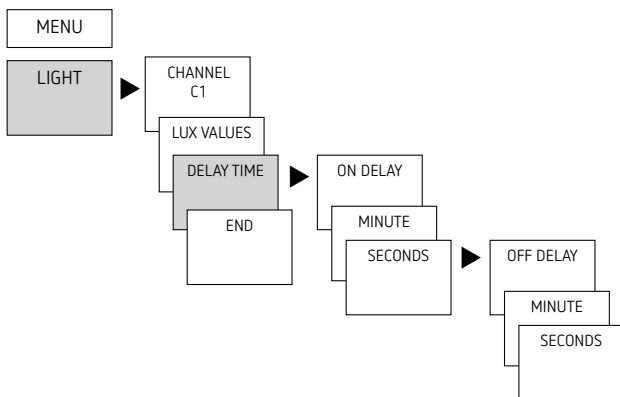
① The device has been preset at 15 lx for the switch on/switch off level

- Press MENU
- Select LIGHT and press OK to confirm
- Select CHANNEL C1 or C2, confirm with OK
- Select LUX VALUE and press OK to confirm
- Select LUX ON and press OK to confirm
- MONDAY is displayed, confirm with OK
- Set LUX VALUE, confirm with OK
- Select COPY or SAVE, confirm with OK
- To save press ► and press OK to confirm
- To copy press OK

Typical brightness values

Daylight (bright)	80.000 lx
Office accommodation	500 lx
Hallways and stairs	100–150 lx
Street lighting	15 lx
Full moon	ca. 0,3 lx

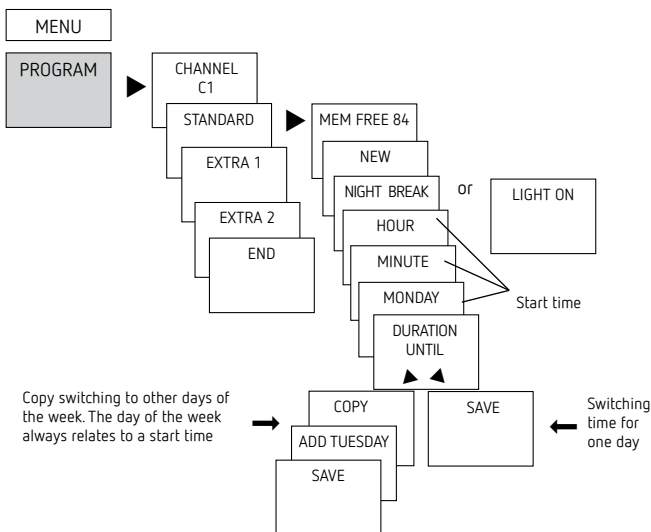
Set delay



① An on/off delay of 1 minute is preset to avoid faulty operation caused by lightning, car headlights etc. When the delay ends the channel status will flash ON/OFF.

- Press MENU
- Select LIGHT and press OK to confirm
- Select CHANNEL C1 or C2, confirm with OK
- Select DELAY TIME, confirm with OK
- Select ON DELAY, confirm with OK
- MODIFY HOUR, use the + or – buttons to change hour and minute and confirm with OK.

Program switching time in standard program



① A switching time always consists of a start time and an end time

① There are 84 memory cells available

Example: Switch on sports hall lighting from Mon–Fri, 7:30 to 12:00 hrs

- Press MENU
- Select PROGRAM and press OK to confirm
- Select CHANNEL C1 or C2, confirm with OK
- Select STANDARD, confirm with OK
- Select NEW, confirm with OK
- Select NIGHT BREAK or LIGHT ON, confirm with OK
- Set required turn-on time (Mo–Fr, 7:30), confirm with OK
- Set DURATION UNTIL, confirm with OK
- Select COPY, confirm with OK
- ADD TUESDAY is displayed, confirm by pressing OK and also confirm the days We, Th, Fr by pressing OK.
- Continue with ► until SAVE is displayed.
- Confirm by pressing OK.

Repeat all steps for the turn-off time, however instead of selecting ON with ► select OFF and enter 12:00 for hour and minute.

Program switching time in special program 1

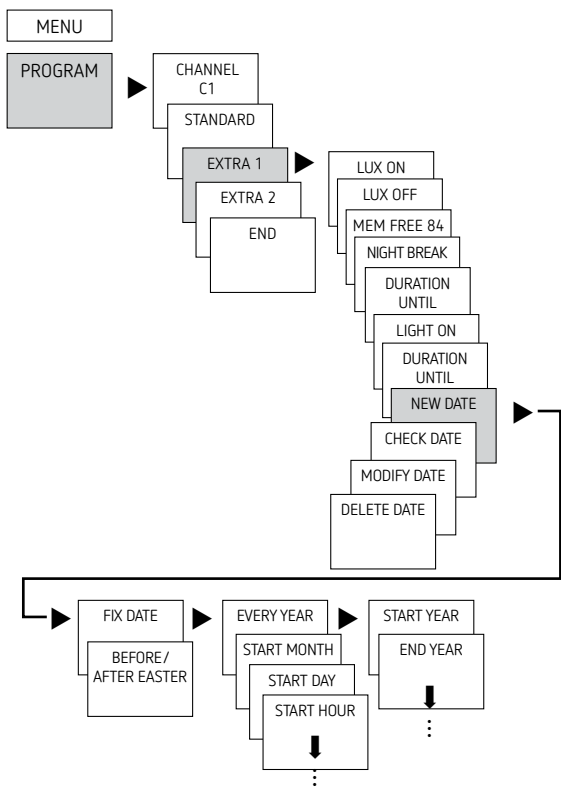
Special programs 1 and 2 are simple annual programs that a higherpriority than the standard program

The following can be entered in the special program:

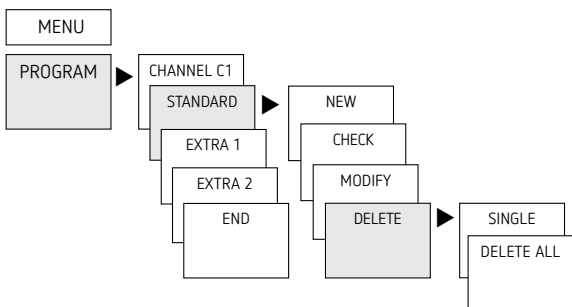
- LUX ON/LUX OFF
- one night switch off/day switch on with length without naming day of the week
- as many date entries as required

Special program in the holidays from Mon–Sun, e.g. 1.8.–17.8. with alternative night switch off and lux values





Delete switching program



- ▶ Press MENU
- ▶ Select PROGRAM and confirm with OK
- ▶ Select CHANNEL C1 or C2, confirm with OK
- ▶ Select STANDARD; EXTRA 1 or EXTRA 2, confirm with OK
- ▶ Select DELETE, confirm with OK
- ▶ Select SINGLE or DELETE ALL, confirm with OK

Set Easter rule

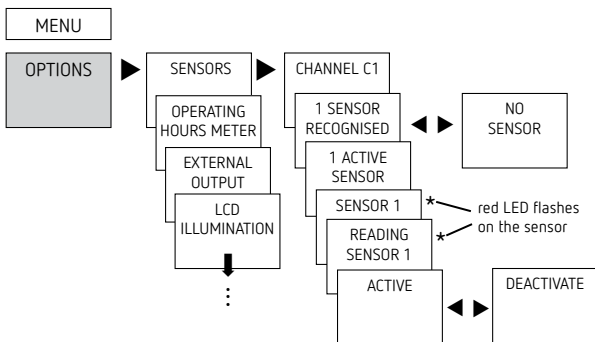
① The EASTER RULE can be set using menu item TIME/DATE

Easter holiday dates in Germany

Public holiday	days before/after Easter Sunday
Monday before Lent	- 48
Good Friday	- 2
Easter Monday	+ 1
Ascension	+ 39
Whit Monday	+ 50
Corpus Christi	+ 60

Allocate sensors

① The SENSORS are allocated in the menu under OPTIONS



➤ Press MENU (see fig.)

Connection options:

- 1 LUNA + max. 4 light sensors
- 1 LUNA + max. 3 light sensors + 1 DCF antenna
- max. 10 LUNA
- Σ max. 16 devices (LUNA + light sensors)

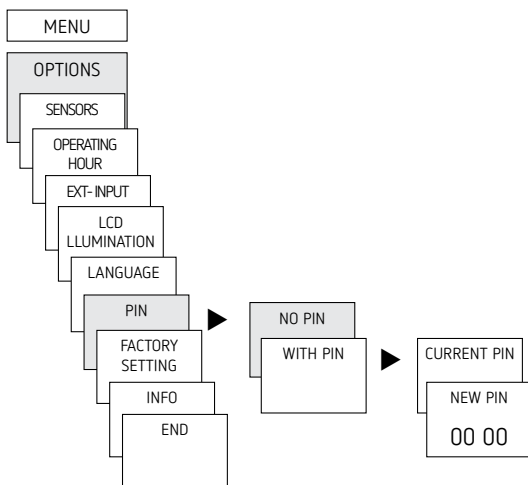
① **Presetting:** all connected sensors are active for all channels. The sensor that sends the lowest lux value is active

Activating PIN code

The PIN code is set in OPTIONS via the menu.

① If you have forgotten your PIN, call the Theben Hotline.

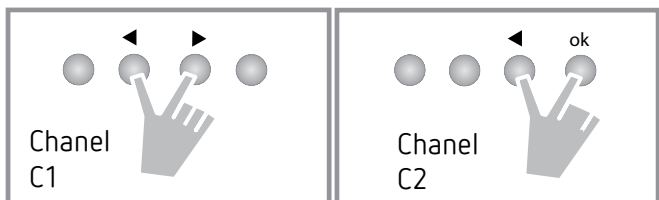
① Have the serial number ready



Setting manual or permanent switching

Manual or permanent switching can be set via the menu in MANUAL or (in the automatic screen) by button combination (see picture).

- Manual control:
Reversing the channel status to the next automatic or programmed switching.
- Permanent switching:
As long as a permanent switching (on or off) is activated, the programmed switching times and switching thresholds are ineffective



Activating manual control

- Briefly press both buttons simultaneously

Activating permanent switching

- Press both buttons simultaneously for 2 seconds

Cancelling manual/permanent switching

- Press both buttons simultaneously

Set external input

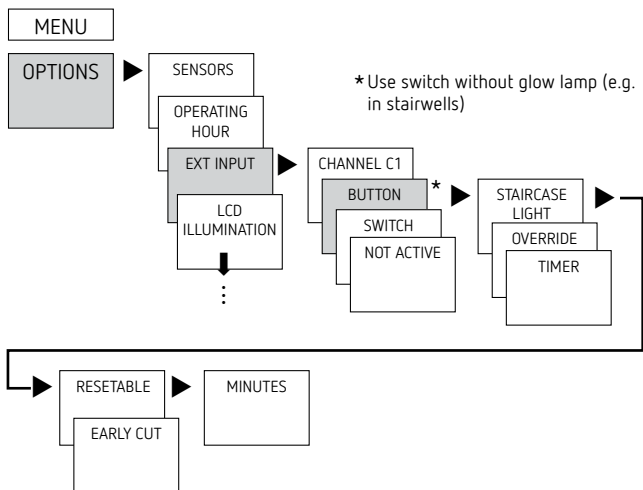
For the channel, an EXTERNAL INPUT (see figure) can be set with different functions.

3 sub-menus can be selected: Inactive, push button (function), switch (function)

- NOT ACTIVE: The external input has no function
- BUTTON: Manual (manual control), Timer (countdown timer) are selectable
- SWITCH: PERM ON, PERM OFF, ENABLE CHANNEL, ONLY LUX, EXTRA 1, EXTRA 2 are selectable

① If a function is activated via an external push button or switch, EXTERNAL is displayed.





- Press MENU, with ► select EXT INPUT and follow the indications on the display.

Hour counter

The operating hours of the channel (relay) are displayed and deleted in the OPTIONS menu. If the number of operating hours exceeds the value set in the Service menu, SERVICE will appear in the display.

Example: Replace a lamp after after 5,000 h.

- Delete operating hours or set a higher value in Service (e.g. to 10,000 h)

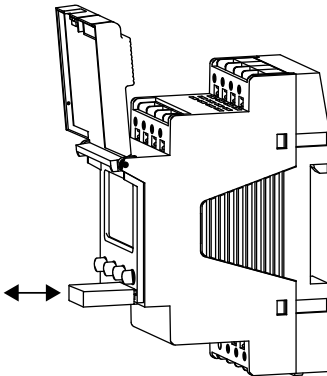
Using the OBELISK top2 memory card

All functions can also be set on the PC using the OBELISK software and transferred to the device via the memory card.

- ▶ Insert memory card in the time switch
- ▶ Read in/out saved switching times and device setups in the time switch or start Obelisk program
- ▶ Remove memory card after copying etc.

⚠ Avoid mechanical overload and contamination during storage/transport

① PC software OBELISK top2 available at www.theben.de



Copying OBELISK → LUNA

This copies the switching program and optionally all time switch settings (e.g. external input, time format etc.) from the memory card in the time switch.

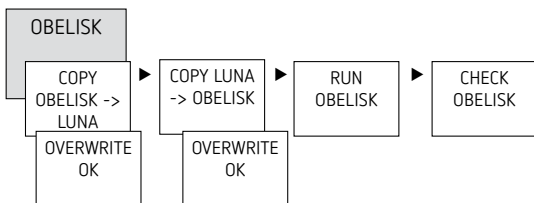
Copying LUNA → OBELISK

This copies all switch programmes and settings from the time switch to the memory card.

Starting OBELISK program

Takes on the switching times and the threshold values that are programmed on the memory card.

As soon as the memory card is removed, the switching times of the time switch are re-activated.



Resetting the twilight switch

- ▶ Press the 4 buttons simultaneously
 - You can choose between KEEP PROGRAM and DELETE PROGRAM

6. Technical data

Operating voltage:	230–240 V~(LUNA 121 top2 RC) / 100–240 V~ (LUNA 122 top2 RC), +10 % / -15 %
Frequency:	50–60 Hz
Brightness range:	1–99,000 lx
On/off switch delay:	0–59 min
Power consumption Luna 121 / Luna 122:	1,8 W / 2,2 W
Switch output:	phase-independent (zero-crossover switching)
Contact:	μ -contact, two way switch
Switching capacity:	16 A / 250 V~ $\cos \varphi = 1$
Fluorescent lamp switching capacity:	10 AX
Switching capacity min.:	10 mA / 250 V AC 100 mA / 12 V AC/DC
Glow lamp load:	2600 W
Halogen lamp load:	2600 W
Fluorescent lamps KVG: uncorrected: series-corrected: parallel-corrected: Lead-lag circuit (duo):	2300 VA 2300 VA 800 VA (80 μ F) 2300 VA
Fluorescent lamps (EVG – Electronic series devices):	650 W
Compact fluorescent tubes (EVG):	170 W
LED lamps (< 2 W):	30 W
LED lamps (2 W – 8 W):	100 W
LED-lamps (> 8 W):	120 W
Permissible ambient temperature:	-30 °C ... +55 °C, -40 °C ... +70 °C (sensor)
Protection class:	II (light sensors III) if correctly mounted
Protection rating: device Mounted light sensor Installation light sensor	IP 20 IP 55 IP 66 (frontside, when installed) IP 40 (backside)

7. Contact

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