GARO®

EN **Astronomical time switch**

ASTRO1KT3
108753

ASTRO2KT3
108754
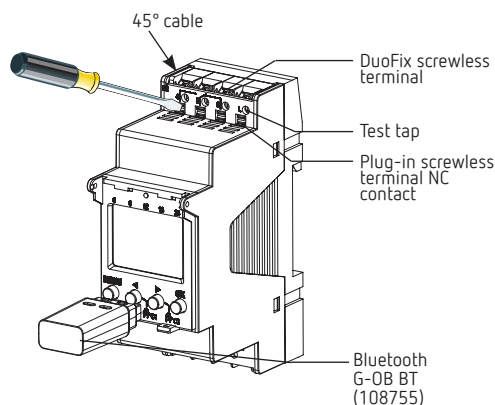
1. Basic safety information

> ⚠️ **WARNING**
>
> **Danger of death from 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)
- Power reserve (10 years) is reduced if memory card is inserted (using battery power)
- Corresponds to type 1 STU nach IEC/EN 60730-2-7

2. Proper use

- The astronomic time switch is used, for instance, for lighting equipment (roads, external staircases, display windows, entrances etc.)
- Only for use in closed, dry rooms

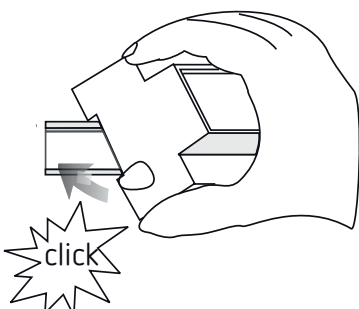⚠️ Do not use on safety devices, e.g. escape route doors, fire safety equipment etc.

Disposal

➢ Dispose of device in environmentally sound manner

3. Installation and connection

> ⚠️ **WARNING**
>
> **Danger of death from electric shock or fire!**
> ➢ Installation should only be carried out by a qualified electrician!

Time switch installation

click

45° cable

DuoFix screwless terminal

Test tap

Plug-in screwless terminal NC contact

Bluetooth G-OB BT (108755)

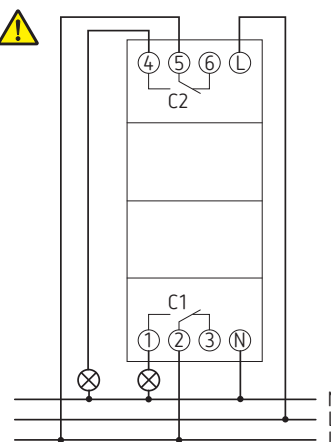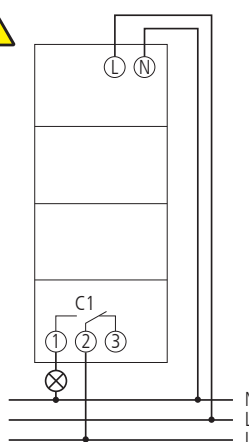⚠️ Check the depth of the control cabinet when G-OB BT is connected. The depth must be > 94 mm.

➢ Install on DIN top hat rails (in accordance with EN 60715)
➢ Disconnect power source
➢ Cover or shield any adjacent live components
➢ Ensure device cannot be switched on
➢ Check absence of voltage
➢ Earth and bypass

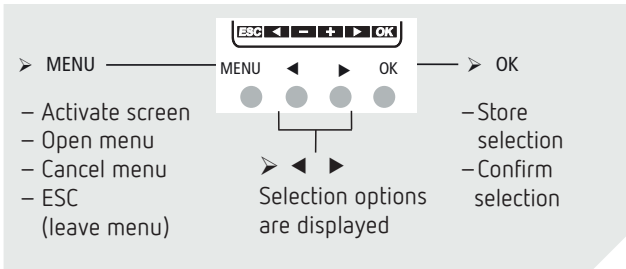### Connecting the cable

⚠️

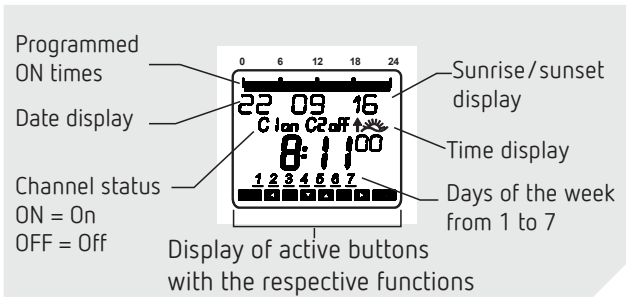ASTRO1KT3   ASTRO2KT3

➢ Correct connection required for smooth zero-cross switching operation
➢ Strip cable to 8 mm (max. 9)
➢ Insert cable in the open DuoFix plug-in terminal at 45° (2 cables per terminal position possible)
➢ To open the DuoFix plug-in terminal, press screwdriver downwards
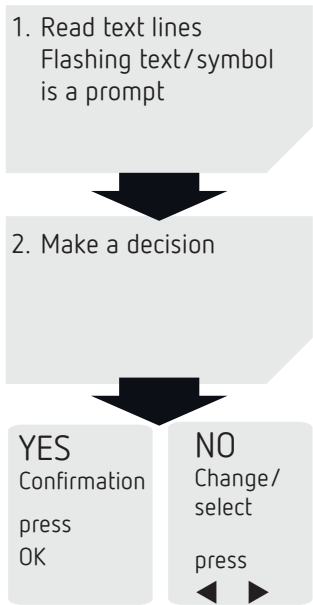
Disconnecting the cable

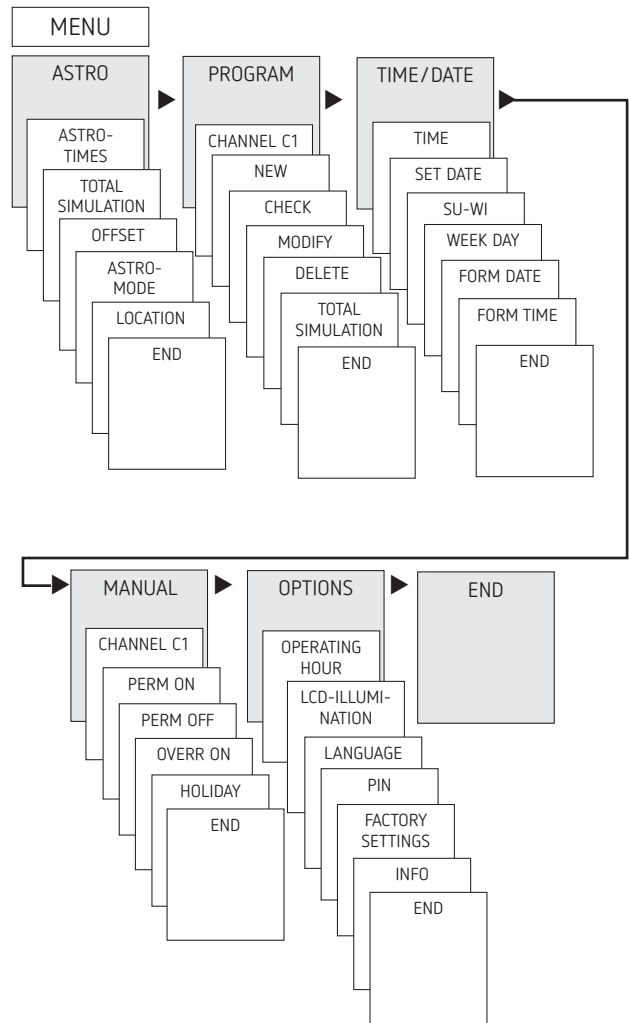➢ Use the screwdriver to push the load line connection opener downwards
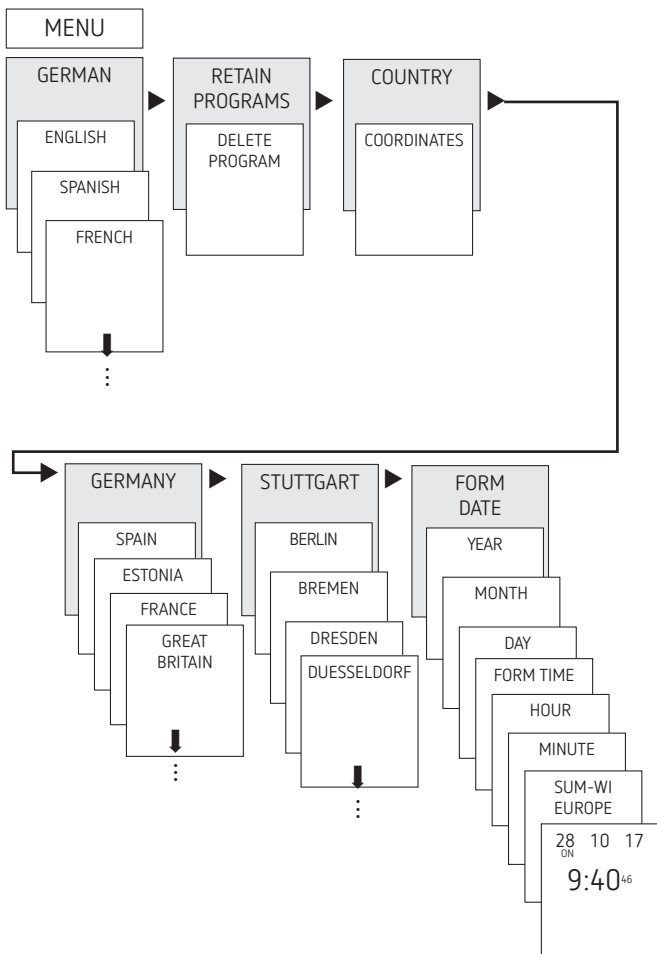
4. Device description

Display & buttons

Programmed ON times

Date display

Channel status
ON = On
OFF = Off

Sunrise/sunset display

Time display

Days of the week from 1 to 7

Display of active buttons with the respective functions

> MENU

MENU ◄ ► OK

> OK

– Activate screen
– Open menu
– Cancel menu
– ESC (leave menu)

> ◄ ►

Selection options are displayed

– Store selection
– Confirm selection

Operating instructions

1. Read text lines
   Flashing text/symbol is a prompt

2. Make a decision

YES
Confirmation

press
OK

NO
Change/select

press
◄ ►

Overview of menu selection

MENU

ASTRO
- ASTRO-TIMES
- TOTAL SIMULATION
- OFFSET
- ASTRO-MODE
- LOCATION
- END

► **PROGRAM**
- CHANNEL C1
- NEW
- CHECK
- MODIFY
- DELETE
- TOTAL SIMULATION
- END

► **TIME/DATE**
- TIME
- SET DATE
- SU-WI
- WEEK DAY
- FORM DATE
- FORM TIME
- END

► **MANUAL**
- CHANNEL C1
- PERM ON
- PERM OFF
- OVERR ON
- HOLIDAY
- END

► **OPTIONS**
- OPERATING HOUR
- LCD-ILLUMI-NATION
- LANGUAGE
- PIN
- FACTORY SETTINGS
- INFO
- END

► **END**

Initial start-up

➤ Set language, country, town/city, date, time as well as summer/winter time (SO-WI)
➤ Press any button and follow on-screen instructions (see figure)

5. Settings and functions

ASTRO menu

In the ASTRO menu astro times, complete simulation, offset, astromode as well as position (location) can be viewed or changed.

- Astro times
  Display of the astro times (including the offsets) for the current day
- Total simulation
  Display of the switching behaviour with a freely selectable Start date (the holiday program is not displayed)
- Offset
  The offset (adjustment value) can be used to shift calculated astro times +/− 120 min. This enables the Astro switch-on and switch-off times to be adapted to local circumstances (e.g. mountains, high buildings etc.) or to personal requirements.
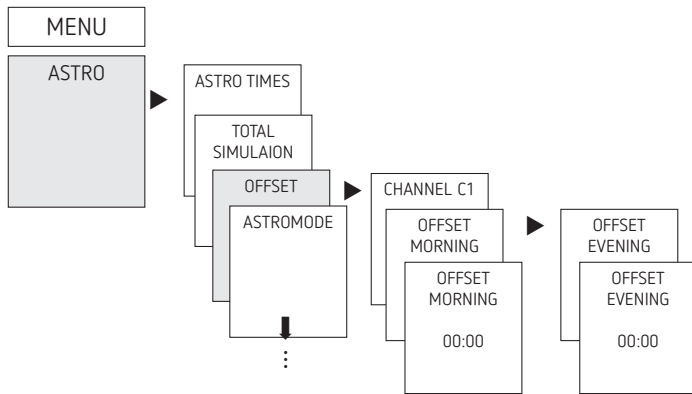
- Astro mode
  – Evenings on, mornings off Switches: on at sunset, switches off at sunset (Example: street lighting)
  – Evenings off, mornings on Switches off: at sunset, switches on at sunrise (Example: terrarium).
  – Astro inactive: The astro times are ineffective (timer function only).
- Position
  – Location set by selecting a city or by coordinates (latitude/longitude, time zone). The Bluetooth G-OB BT allows up to 10 further cities (= favourites) to be entered.
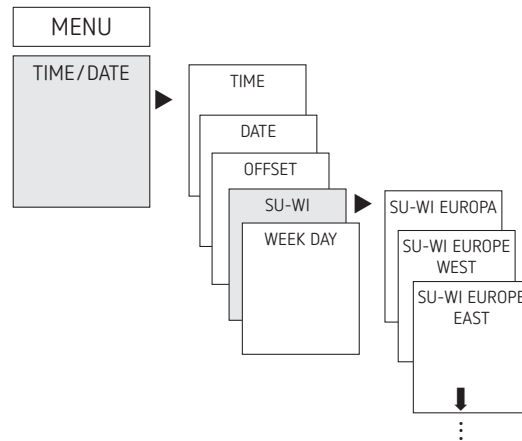
Change astro time/position
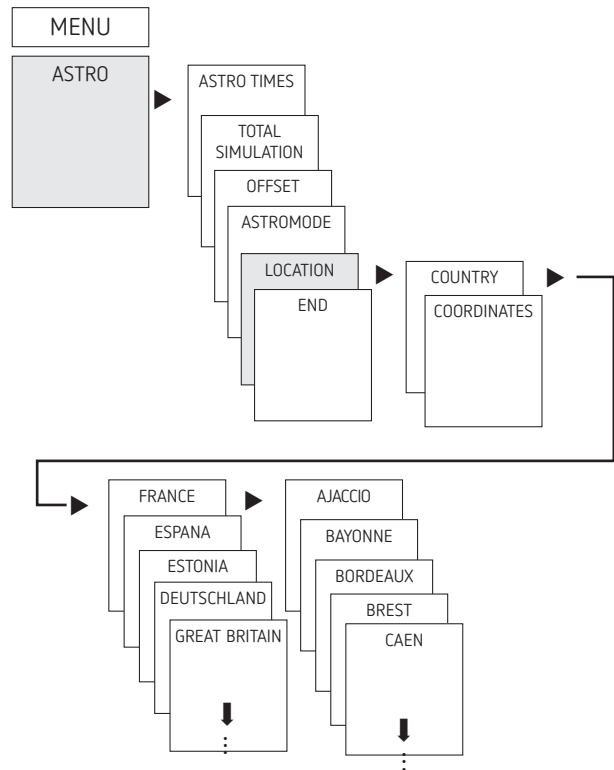
E.g. enter a different country, a different town/city
➤ Press MENU (see picture).

Setting the offset function

```
MENU
  ASTRO  ▶  ASTRO TIMES
             TOTAL
             SIMULAION
             OFFSET  ▶  CHANNEL C1
             ASTROMODE    OFFSET
                          MORNING  ▶  OFFSET
                            OFFSET     EVENING
                            MORNING     OFFSET
                                        EVENING
                            00:00       00:00
               ⋮
```
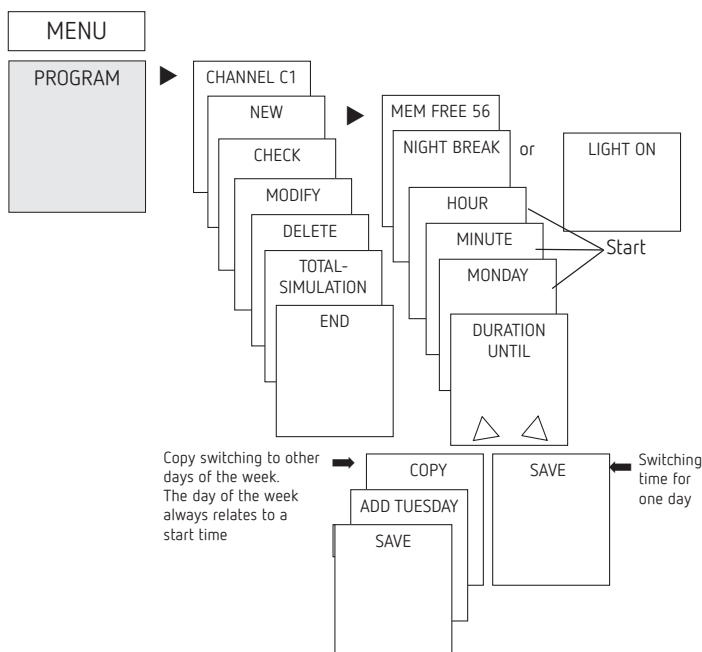
➤ Press MENU
➤ Select ASTRO and press OK to confirm
➤ Select OFFSET and press OK to confirm
➤ Select CHANNEL and press OK to confirm
➤ Select OFFSET MORNING or OFFSET EVENING and press OK to confirm
➤ Set the time and press OK to confirm

Set fixed switching time

```
MENU
  PROGRAM  ▶  CHANNEL C1
              NEW  ▶  MEM FREE 56
              CHECK    NIGHT BREAK   or   LIGHT ON
              MODIFY     HOUR
              DELETE     MINUTE            ← Start
              TOTAL-     MONDAY
              SIMULATION
              END        DURATION
                         UNTIL

                          △  △
```

Copy switching to other days of the week. The day of the week always relates to a start time ➡ COPY / ADD TUESDAY / SAVE   SAVE ← Switching time for one day

ⓘ A switching time always consists of a start time and an end time (LASTS UNTIL). e.g. night switch-off on Monday 23:00 – 05:00 hrs

ⓘ There are 56 memory cells available

➤ Press MENU
➤ Select PROGRAM and press OK to confirm
➤ Select CHANNEL and press OK to confirm
➤ Select NEW and press OK to confirm
➤ Select NIGHT SWITCH OFF or DAY SWITCH ON and press OK to confirm
➤ Set selected switching times (hours, minutes, day) and press OK to confirm
➤ Select COPY or SAVE
➤ To save press ▶ and press OK to confirm
➤ To copy press OK

Setting summer/winter time

```
MENU
  TIME/DATE  ▶  TIME
                DATE
                OFFSET
                SU-WI  ▶  SU-WI EUROPA
                WEEK DAY    SU-WI EUROPE
                            WEST
                            SU-WI EUROPE
                            EAST

                              ⋮
```
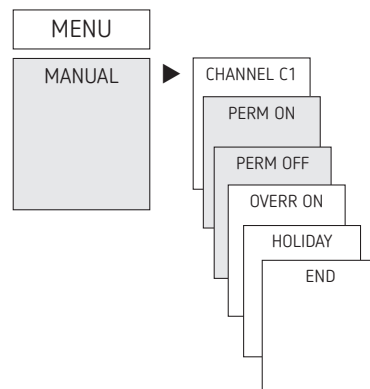
➤ Press MENU
➤ Select TIME/DAT and press OK to confirm
➤ Select SO-WI and press OK to confirm
➤ Select region for the SO-WI time and press OK to confirm

Switch Permanent ON / OFF

```
MENU
  MANUAL  ▶  CHANNEL C1
             PERM ON
             PERM OFF
             OVERR ON
             HOLIDAY
             END
```
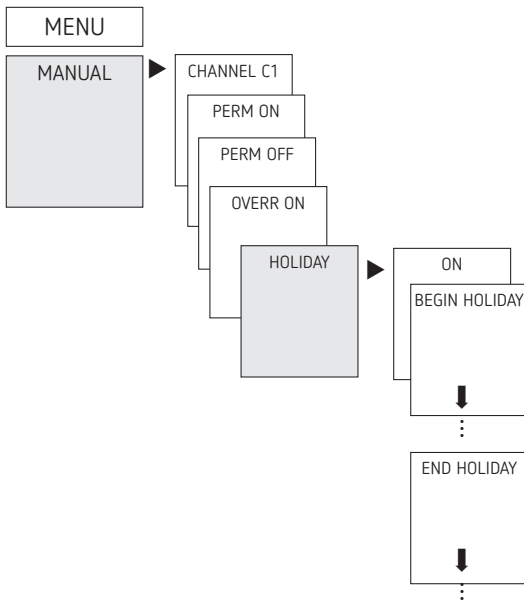
➤ Press MENU
➤ Select MANUAL and press OK to confirm
➤ Select CHANNEL and press OK to confirm
➤ Select PERMANENT ON or PERMANENT OFF and press OK to confirm

4

Setting holiday function

- ➤ Press MENU
- ➤ Select MANUAL and press OK to confirm
- ➤ Select CHANNEL and press OK to confirm
- ➤ Select HOLIDAY and press OK to confirm
- ➤ Select ON and press OK to confirm
- ➤ Select START HOLIDAY and press OK to confirm
- ➤ Enter YEAR, MONTH, DAY, HOUR and press OK to confirm
- ➤ Select END HOLIDAY and press OK to confirm
- ➤ Enter YEAR, MONTH, DAY, HOUR and press OK to confirm

Activate PIN-Code

The PIN code is set in OPTIONS via the menu.

ⓘ If you have lost the PIN, please call the Garo Hotline.

ⓘ Have the serial number ready!
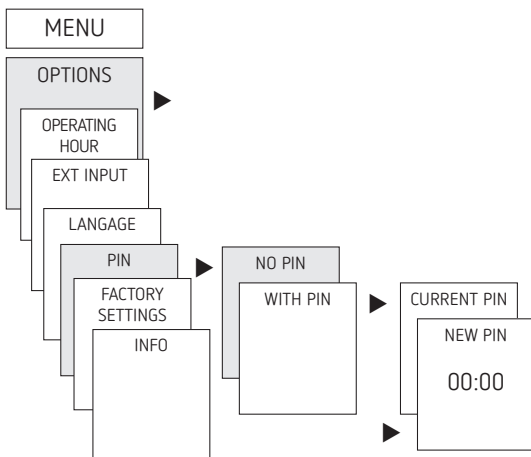
Setting manual or permanent switching

Manual and permanent switching can be set using the menu in MANUAL or (in the automatic screen) by key combination (see fig).

- • 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 are ineffective.
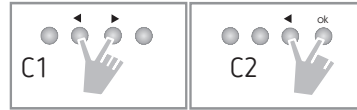
Activate manual switching
➤ Briefly press both keys simultaneously

Activate permanent switching
➤ Simultaneously press both keys for 2 seconds

Cancelling manual/permanent switching
➤ Press both keys simultaneously

Operating 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 5,000 h.
➤ Delete operating hours or set a higher value in Service (e.g. to 10,000 h)

Using Bluetooth G-OB BT

All functions can also be transferred to the time switch using the Bluetooth G-OB BT memory card (108755).
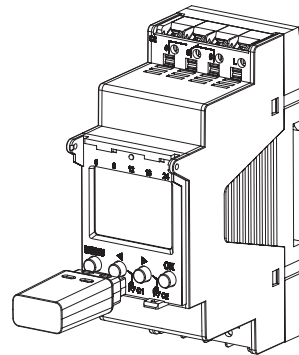
Copy OBELISK → Time switch
Copies all switching programs and settings from the time switch to the memory card. Starting OBELISK program
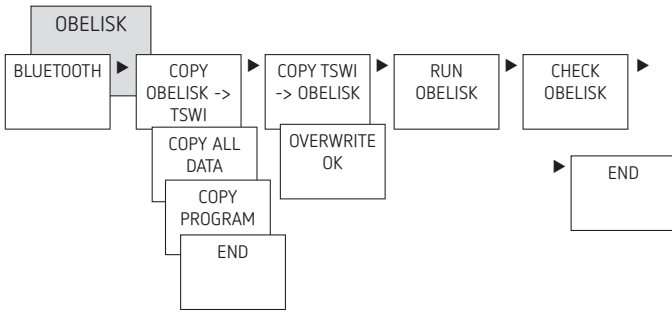
Copy Time switch → OBELISK
Copies all switching programs and settings from the time switch to the memory card.

Start OBELISK program
Takes on the switching times 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.

```
OBELISK
  │
BLUETOOTH ▶ COPY      ▶ COPY TSWI  ▶ RUN     ▶ CHECK    ▶
            OBELISK ->    -> OBELISK   OBELISK   OBELISK
            TSWI
            COPY ALL      OVERWRITE                         END
            DATA          OK
            COPY
            PROGRAM
            END
```


Now, for example, projects can be created and uploaded.
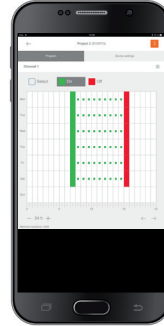
Connect time switch, Bluetooth G-OB BT and smartphone (via app)

The devices in the ASTROKT3 range can be programmed using an app (for Android, iOS) on a mobile end device. Communication takes place via Bluetooth G-OB BT. Switch programmes are transferred and direct switch commands are sent to the device.
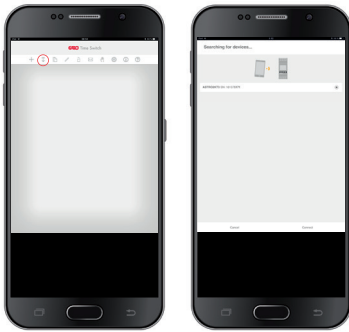
➤ Download the „Time Switch" app from the App Store or Google Play Store

ⓘ Bluetooth connection only possible in automatic mode, not in manual mode like OPTIONS etc.

➤ Open the app and activate using one of the 3 commands, by pressing „Download" ⬇ , „Manual command" ✋ or „Upload" ⬆
   → Device/device list appears on the display.

➤ Press „Connect"

➤ Press OK on the time switch
   → The display shows BLUETOOTH ACTIVE
➤ Press „Close" in the app within 30 s

Resetting the time switch

➤ Press the 4 buttons simultaneously.
   → You can choose between RETAIN PROGRAM and DELETE PROGRAM.

6. Technical Data

Operating voltage:	230 V AC +10 % / −15 %
Frequency:	50 – 60 Hz
Standby:	0,4 W
Max switching capacity.:	16 A (at 250 V AC, cos φ = 1)
Switching capacity:	10 A (at 250 V AC, cos φ = 0,6)
Min. switching capacity:	10 mA/230 V AC 100 mA/24 V AC/DC
Switch output:	switching of any phase is permitted (ASTRO2KT3)
ASTRO1KT3:	suitable for switching SELV (Safe Extra-Low Voltage)
Protection rating:	IP 20 in accordance with EN 60529
Protection class:	II in accordance with EN 60730-1 subject to designated installation
Operating temperature:	−30 °C … +55 °C
Power reserve:	10 years at +20 °C (without Bluetooth G-OB BT)
Switching accuracy:	accurate to the second
Time accuracy (typical):	± 0,25 s/day (25 °C)
Rated impulse voltage:	4 kV
Pollution degree:	2
Contact:	two way switch, contact μ
Max. switching cycles with 16 A resistive load:	50 000
Incandescent lamp load:	2600 W
Halogen lamp load:	2600 W
Fluorescent lamps (LLB low-loss ballasts): uncorrected: series-corrected: parallel-corrected:	 2600 VA 2600 VA 1300 VA (130 μF)

Compact fluorescent lamps (EB):	1100 W
LED-lamps (< 2 W):	50 W
LED-lamps (> 2 W):	600 W
Bluetooth G-OB BT: – Protection rating: – Temperature: – Range:	IP 40 −30 °C to +55 °C 15 m on open air test site
Software class:	A

ⓘ The time switch display is only fully functional at temperatures from +5 °C … +55 °C.

7. Contact

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