theben

SELEKTA
SELEKTA 171 top2 RC
SELEKTA 172 top2

1710100
1720100

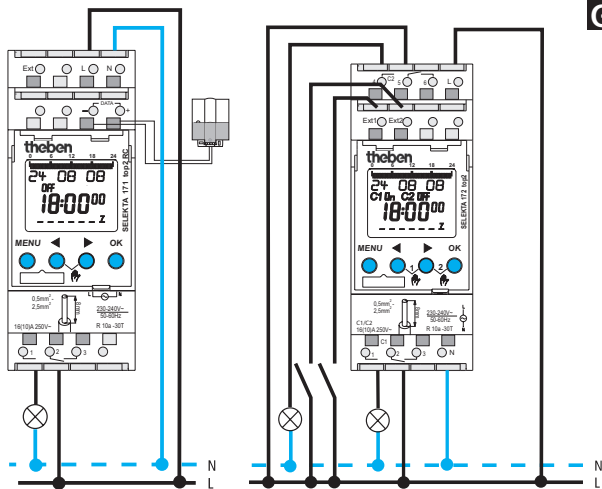**Installation and
Operating Manual**
Digital astronomic time switch

| D | **GB** | F |
| I | E |

SELEKTA 171 top2 RC　　　**SELEKTA 172 top2**

⚠ Correct connection required for smooth zero-cross switching operation (see connection diagram)!

Contents

Basic safety instructions

⚠ **WARNING**

Danger of death through electric shock or fire!
➢ Installation should only be carried out by a professional electrician!

- The device is designed for installation on DIN top hat rails (in accordance with EN 60715)
- Corresponds to type 1 STU in accordance with IEC/EN 60730-2-7
- Power reserve (10 years) is reduced if memory card is inserted (in battery operation).
- OBELISK top2 memory card: Avoid mechanical stress or contamination caused by other storage/transport methods
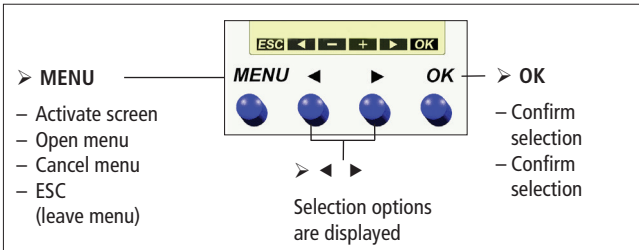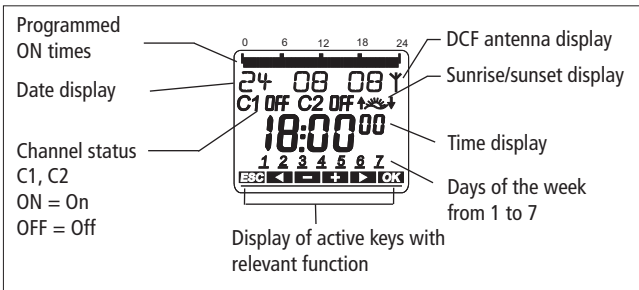
Designated use
- The astronomic time switch is used for lighting equipment (roads), external staircases, shop windows, entrances etc.
- For use only in closed, dry rooms

Disposal
Dispose of equipment in an environmentally-friendly manner

Screen display and keys

Programmed ON 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 active keys with relevant function

```
           0    6    12   18   24
          24   08   08  Y
          C1 OFF  C2 OFF
          18:00 00
           1 2 3 4 5 6 7
          ESC ◄ − + ► OK
```

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

ESC ◄ − + ► OK

MENU ◄ ► OK

➢ ◄ ►

Selection options are displayed

➢ OK
– Confirm selection
– Confirm selection

Operating instructions

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

↓

2. Make a decision

↓

YES Confirmation	NO Change/ select
OK press	◄ ► press
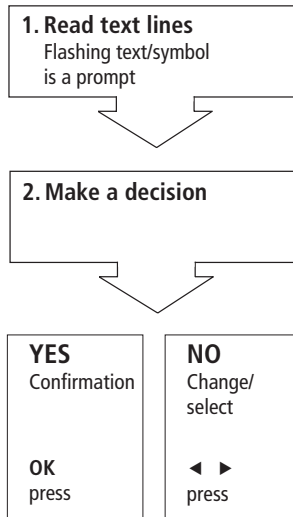
Overview of menu selection

19 10 08
C1 OFF C2 OFF
9:4046

➡ ASTRO ➡ PROGRAM ➡ TIME/DATE ➡ MANUAL ➡ OPTIONS ➡ END

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

PROGRAM
- CHANNEL C1
- STANDARD
- EXTRA 1 ASTRO-PROG
- EXTRA 2 ON
- EXTRA 3 OFF
- TOTAL SIMULATION
- DELETE ALL
- END

TIME/DATE
- TIME
- SET DATE
- SU--WI
- WEEK DAY
- FORM DATE
- FORM TIME
- EASTER RULE
- END

MANUAL
- CHANNEL C1
- PERM ON
- PERM OFF
- OVERRIDE ON
- TIMER
- HOLIDAY
- END

OPTIONS
- OPERATING HOUR
- EXT INPUT
- LCD-ILLUMINA-TION
- LANGUAGE
- PIN
- FACTORY SETTING
- INFO
- END

Connection/installation

Warning, danger of death through electric shock!
➢ Must be installed by a professional electrician!
➢ Disconnect power source!
➢ Cover or shield any adjacent live components.
➢ Ensure device cannot be switched on!
➢ Check power supply is disconnected!
➢ Earth and bypass!

Connect cable
➢ Strip cable by 8 mm (max. 9).
➢ Insert 45° cable in the open DuoFix® screwless terminal
  (2 cables per terminal position possible).
➢ To open the DuoFix® screwless terminal,
  press screwdriver downwards.

45° cable

DuoFix® screwless terminal

Spring screwless terminal
NC contact
Test tap
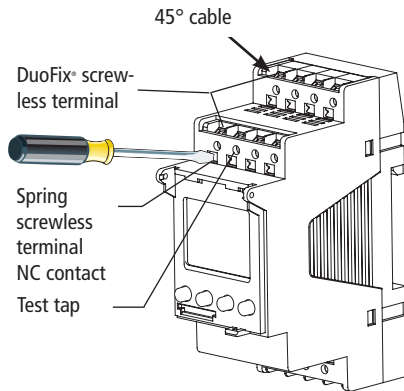
Initial start-up

Set language, country, town/city, date, time as well as summer/winter time (SO-WI)

➢ Press required key and display follows on screen (see fig).
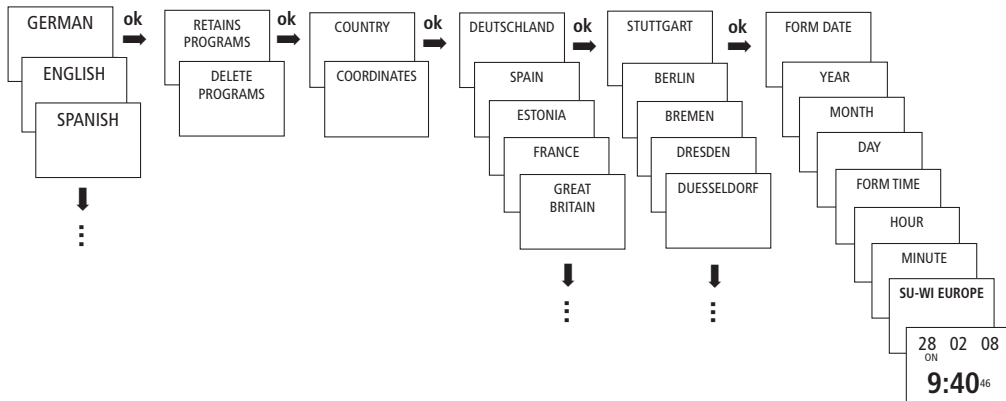
ASTRO menu

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 +/– 2 h. 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 OBELISK top2 memory card allows up to 10 further cities (= favourites) to be entered.

Change position

E.g. enter different country, a different city.

➢ Press **MENU** (see fig.).

ASTRO →**ok**→ ASTRO TIMES / TOTAL SIMULATION / OFFSET / ASTROMODE / **LOCATION** / END →**ok**→ COUNTRY / COORDINATES →**ok**→ FRANCE / SPAIN / ESTONIA / DEUTSCHLAND / GREAT BRITAIN →**ok**→ AJACCIO / BAYONNE / BORDEAUX / BREST / CAEN

9
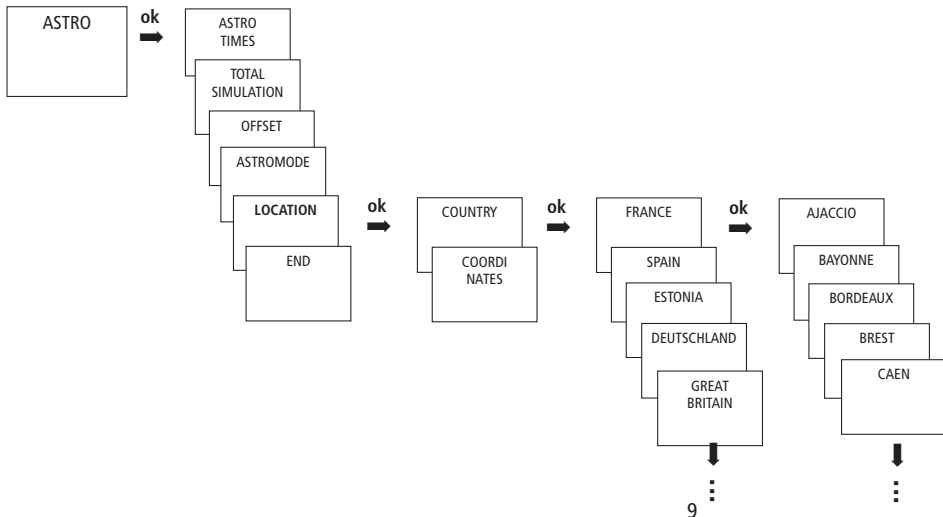
Program switching time in standard program
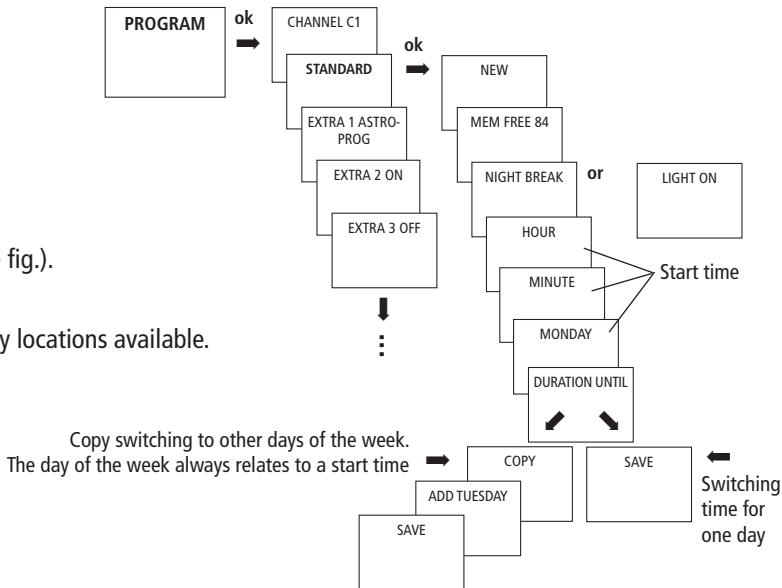
A time switch always consists of a start time and an end time (DURATION UNTIL).

(e.g. night break
on Monday
23:00 – 05:00 hrs)

➤ Press **MENU** (see fig.).

There are 84 memory locations available.

```
                    PROGRAM   ok   CHANNEL C1
                                                ok
                             ➡            ➡    NEW
                              STANDARD
                                               MEM FREE 84
                              EXTRA 1 ASTRO-
                              PROG
                                               NIGHT BREAK   or   LIGHT ON
                              EXTRA 2 ON
                                               HOUR
                              EXTRA 3 OFF
                                               MINUTE              Start time
                                               MONDAY
                              ⋮
                                               DURATION UNTIL
```

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

                                              SAVE

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Extra program

- The devices **SELEKTA 171 top2 RC** and **SELEKTA 172 top2** feature 3 special programs, that can be used for calendar-dependent switching.
- Each special program can be activated over one or several date ranges.
- There are 3 types of date range:

  – **Fixed date range:**
  Start time on 02.04.2008 at 16:00 hrs
  End time on 24.04.08 at 10:00:00 hrs

  – **Annually recurring date range**,
  e.g. Christmas:
  Start time on 24.12. at 18:00 hrs each year
  End time on 24.12. at 23:00:00 hrs each year

  – **Easter-dependent date range**,
  e.g. Whit Sunday and Monday:
  Start time: 49 days after Easter at 0:00 hrs, each year
  End time: 51 days after Easter at 0:00 hrs, each year

Note: 24:00 hrs is programmed at 0:00 hrs of the following day.

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

- **Extra program 1**
    - Astro times active
    - Optional 1x nighttime interruption
    - Optional 1x daytime switch on
    - Active in the programmed date ranges

    Example: The standard program switches on the street lighting in dependence of the astro times.
    A nighttime interruption is programmed from 23:00 hrs to 04:00 hrs.
    Extra program 1 is active within the date range from April 30, 12:00 hrs until May 12:00 hrs. Since no nighttime interruption is programmed, the street lighting will remain on all night.

- **Extra program 2**
    - Permanently **ON**
    - Always **ON**

    Example: The standard program switches on lighting of a neon advertising sign only at night.
    The extra program switches on the neon advertising sign permanently during a promotion week from 17.04.2008 at 9:00 hrs until 24.04.2008 at 18:00 hrs.
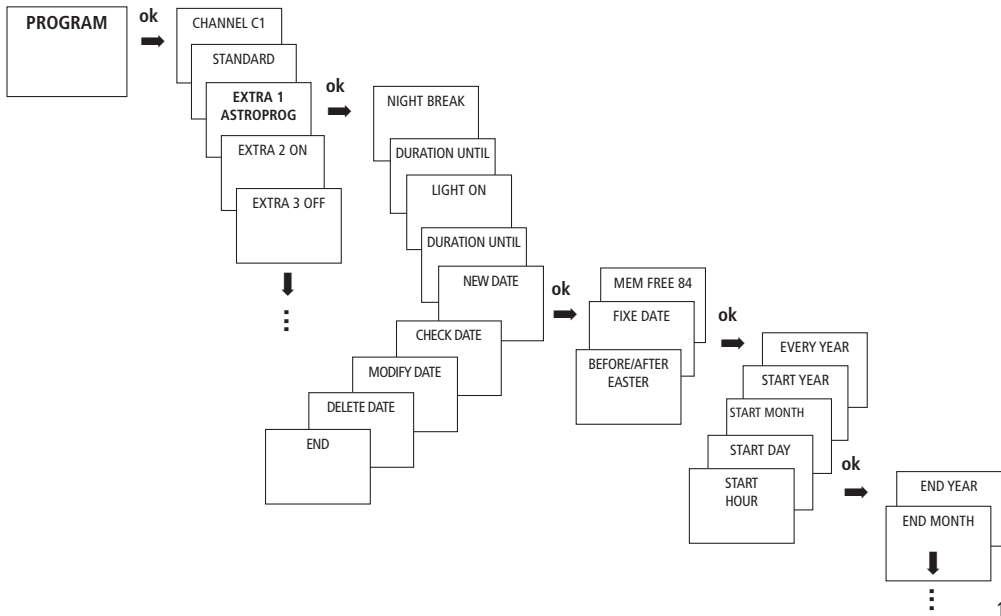
- **Extra program 3**
    - Permanently **OFF**
    - Always **off**

    Example: The standard program switches on the car park lighting in dependence of the astro times.
   The extra program does not switch on the car park lighting on July 14 from 0:00 hrs until July 15 at 04:00 hrs.

Program switching time + date range in extra program 1

PROGRAM

ok

CHANNEL C1

STANDARD

EXTRA 1 ASTROPROG

ok

NIGHT BREAK

DURATION UNTIL

LIGHT ON

DURATION UNTIL

NEW DATE

ok

MEM FREE 84

FIXE DATE

BEFORE/AFTER EASTER

ok

EVERY YEAR

START YEAR

START MONTH

START DAY

START HOUR

ok

END YEAR

END MONTH

EXTRA 2 ON

EXTRA 3 OFF

CHECK DATE

MODIFY DATE

DELETE DATE

END

Manual and permanent switching

Manual and permanent switching can be set using the menu in **MANUAL** or (in the automatic screen) by key combination (see fig).
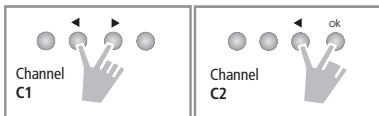
Activate manual switching
➢ Briefly press both keys simultaneously.

Activate permanent switching
➢ Simultaneously press both keys for 2 seconds.

Cancelling manual/permanent switching
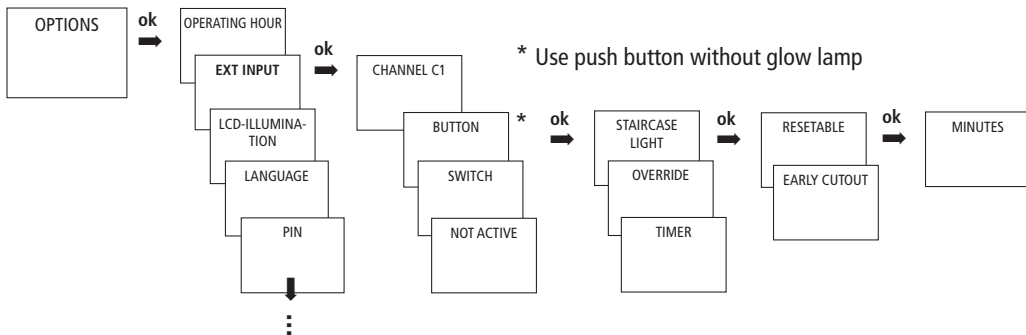➢ Press both keys simultaneously.

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.

External input

The **EXTERNAL INPUT** is set via the menu in **OPTIONS** (see fig.) to different functions.

Note:
- If a function is activated via an external push button or switch, **EXTERNAL** will appear in the display.
- SELEKTA 172 top2 features one channel via 1 external input.

- For connection with a **push button**:
  Manual switching (override): Reversing the channel status to the next automatic or programmed switching switching.
  Timer function: On timer or off timer, adjustable from 1 min to max. 23 h 59 min, can be cleared by pressing the button >3 s.
  – ON timer: press external push button → corresponding channel is switched on for the set time.
  – OFF timer: press external push button → corresponding channel is switched off for the set time.
  Staircase function (can be retriggered or switched on, adjustable from 1 to 59 min).
  – Secondary switching: press external push button → corresponding channel is switched on for the set time; press external button again within the lapsed time → time starts to run again.
  – Can be switched off: press external push button → corresponding channel is switched on for the set time; press external button again within the lapsed time → time is interrupted.

- For connection with a **switch**:
  Permanently on: press external switch → corresponding channel is switched on as long as the switch is pressed. The programmed switching times are ineffective.
  Permanently off: press external switch → corresponding channel is switched off long as the switch is pressed. The programmed switching times are ineffective.
  Astro only: press external switch → only the astronomically calculated switching times are effective; Programmed switching times in standard and special program are ineffective.
  Extra program 1: press external switch → only special program 1 and the astronomically calculated switching times are effective. Programmed switching times in standard program are ineffective.
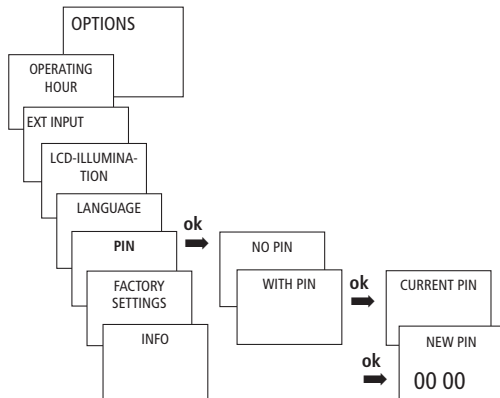
PIN code

The **PIN code** is set in **OPTIONS** via the menu.
If you have lost your PIN call the Theben Hotline.

Operating hours 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.
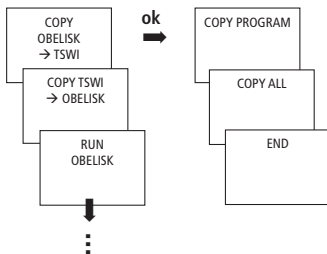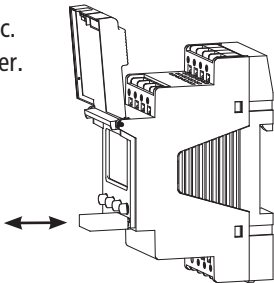
Example: replace a light source after 5,000 h.
➢ Delete operating hours or increase the value set
   in service (e.g. to 10,000 h).

```
                OPTIONS
        OPERATING
          HOUR
     EXT INPUT
        LCD-ILLUMINA-
           TION
          LANGUAGE
                     ok      NO PIN
           PIN       ➡
                             WITH PIN      ok    CURRENT PIN
        FACTORY                            ➡
        SETTINGS                                 NEW PIN
           INFO                             ok
                                            ➡    00 00
```

OBELISK top2 memory card

Using memory card

➢ Insert memory card in the time switch.

➢ Request saved switch timings, read to/from the time switch or start the Obelisk program.

➢ Remove OBELISK top2 memory card (No. 9070404) (optional) after programming etc. and store in cover.

```
┌──────────┐   ok   ┌──────────────┐
│  COPY    │   ➡   │ COPY PROGRAM │
│ OBELISK  │        ├──────────────┤
│ → TSWI   │        │  COPY ALL    │
├──────────┤        ├──────────────┤
│ COPY TSWI│        │    END       │
│ → OBELISK│        └──────────────┘
├──────────┤
│  RUN     │
│ OBELISK  │
└──────────┘
     ⋮
```

Copy OBELISK → TSWI
- Copy program: Copies only the switching program (standard and extra programs).
- Copy all data: Copies the switching program and all settings (e.g. location, offset, external input, time format etc.).

Copy TSWI → OBELISK
- All switching programs and settings are copied to the memory card.

Reception with top2 RC-DCF antenna and top2 RC-GPS antenna (optional) (only with SELEKTA 171 top2 RC)

➢ The **antenna top2 RC-DCF (9070410)** and **antenna top2 RC-GPS (9070610)** can be connected to the **SELEKTA 171 top2 RC** time switch.
➢ Ensure correct polarity.
➢ Take length of connection cable into account (max. 100 m: 2 x 1,5 mm²; max. 50 m: 2 x 0,75 mm²)
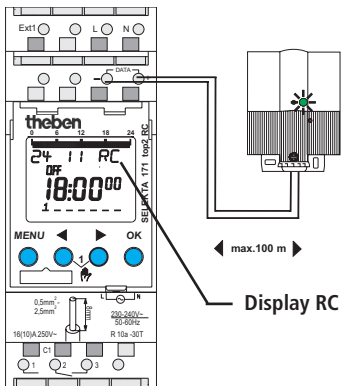
Display RC
Antenna is connected and time signal is received.

Display Υ
Antenna is connected and **no** time signal is received.
➢ Check antenna position.

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Technical data

Nominal voltage:	230–240 V~, +10 %/-15 %
Frequency:	50–60 Hz
Gap:	<3 mm
Power consumption:	type 3 VA (SELEKTA 171 top2 RC), type 6 VA (SELEKTA 172 top2)
Contact material:	$AgSnO_2$
Switch output:	phase-independent (zero-cross switching)
Data output:	SELV (Safety Extra-Low Voltage) (max. 19 V)
Contact:	two way switch
Switching capacity:	16 A/250 V~ cos φ = 1
Switching capacity:	10 A/250 V~ cos φ = 0.6
Switching capacity min.:	10 mA/230 V AC 100 mA/12 V AC/DC
Glow lamp load:	2600 W
Halogen lamp load:	2600 W

Fluorescent lamps (VVG – low-loss series devices):
uncorrected:	2300 VA
Series corrected:	2300 VA
parallel-corrected:	730 VA (80 µF)
Lead-lag circuit (duo):	1000 VA

Fluorescent lamps (EVG – Electronic series devices):
650 VA

Mercury and sodium vapour lamps:
parallel-corrected:	730 VA (80 µF)

Mercury and sodium vapour lamps:
parallel-corrected:	730 VA (80 µF)
Compact fluorescent tubes (EVG):	22x7 W, 18x11 W, 16x15 W, 16x20 W, 14x23 W
Permissible ambient temperature:	–30 °C ... +55 °C
Protection class:	II in accordance appropriate installation
Protection rating:	IP 20 in accordance with EN 60529
Pollution degree:	2
Rated impulse withstand voltage:	4 kV

Service address/Hotline