theben

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theben®

# Catalogue
## 2012/2013

**SYSTEMS FOR**
**TIME, LIGHT, CLIMATE**

Catalogue 2012/2013

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# Your partner for "Energy Saving Ideas"

**Dear clients and partners,**

Are you planning to build a new property or renovate an existing one? You not only face a lot of work but also need to satisfy mounting requirements in terms of technology, energy efficiency and service. These requirements have justifiably increased enormously in the area of KNX building system control over recent years. Choosing Theben solutions not only gives you 'Made in Germany' quality bit also a service provider capable of meeting these requirements. For example, with our new interfaces for KNX and OpenTherm or the DALI Gateway. Both merge worlds of technology and enable you and your customers to build a flexible and upgradeable systems. Are you planning to build a new property or renovate an existing one? You not only face a lot of work but also need to satisfy mounting requirements in terms of technology, energy efficiency and service. These requirements have justifiably increased enormously in the area of KNX building control system over recent years. Choosing Theben solutions not only gives you 'Made in Germany' quality, but also a service provider capable of meeting these requirements. For example, with our new interfaces for KNX and OpenTherm or the DALI Gateway. Both merge worlds of technology and enable you and your customers to build flexible and upgradeable systems.

**20 years of innovative lighting control: ThebenHTS Presence Detectors**

Engineers in the laboratories of the HTS AG (High Technology Systems) in Switzerland developed the first Presence Detector in 1992. A milestone in the history of energy efficient lighting and temperature control. Today, 20 years later, ThebenHTS Presence Detectors are an integral element of modern intelligent building system control. Celebrate 20 years of Presence Detectors with us and look forward to enjoying innovative lighting control solutions.

**Think about tomorrow today**

Energy efficiency and sustainability have been key features of our product range since the company was founded in 1921. This enables us to save energy efficiently, during the complete live cycle of the products – year on year. We installed solar panels on the roofs of our company buildings over ten years ago. Additional paneling was installed on the roof of the Production Building in 2010 covering approx. 840 $m^2$ with an output of 115 kWp. With an annual total output of 160 kWp, this produces a saving of around 145 tonnes of carbon dioxide per year. We have resolutely embodied the issue of $CO_2$ emission in our corporate policy: Therefore our staff use the company electric car for short to medium size journeys. In 2012 we will once again invest over 7 % our turnover in research and development to continue to be able to offer you and your customers, innovative and environmentally-friendly solutions and products. We therefore trust that you will find interesting solutions for your specific applications and needs in this catalogue. Please look and see!

All the Theben team and I look forward to further collaboration and partnership with you in future and wish you all the very best.

Thomas Goes
Chairman of the board

## THEBEN AG – SYSTEMS FOR TIME, LIGHT AND CLIMATE

In the first decades after the foundation in 1921 by P.E. Schwenk, our core competence were solutions for time controlling systems. One of our most famous products besides the ELPA 8 is certainly our legendary "theben timer".

Theben started development of EIB technology in the early day, which later evolved into KNX as we know it today. We produced the first EIB compatible time switch and twilight switch in the early 1990's. Since 1992 we became a member of the KNX Association and have been heavily committed to the development of the KNX standard ever since. Today, some 20 years later, we are one of the leading suppliers of KNX solutions. Especially with our MIX actuators and our KNX Presence Detectors which are widely specified by Consultants and Integrators through out the world.

With subsidiaries in Germany, Great Britain, France, Itlay, Switzerland and a world wide presence in more than 50 countries, our top priority are intelligent solutions for saving energy in daily live.

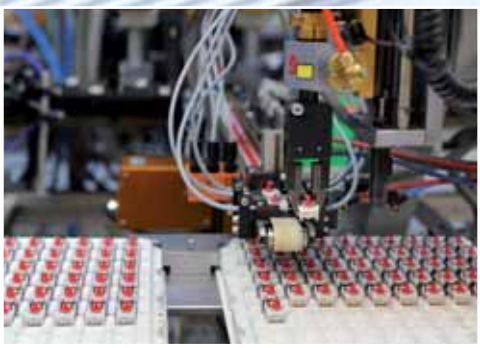
- Lighting control by twilight switches, presence and motion detectors
- Climate control by analogue and digital clock thermostats for individual room control
- KNX-systems for building control systems: from lighting and environment control to automatical solar control and weather stations

The company is certified according to the international DIN ISO 9001:2008 and we have an VDE authorized test laboratory. But we are also noted for our design: In 2009 our multifunction display VARIA 826 KNX was honoured with the red dot design award.

In 2012 we will go on developing efficient, energy-saving solutions for the controlling of time, light and climate according to our philosophy of "Energy Saving Ideas".

We will go on offering you exactly the products you want for your customers – the best systems for time, light and climate.

# We are here to help you!



**WHOLESALER MARKET**
Theben holds on to three-stage sales via wholesalers and retail trade.

**QUALITY**
Theben means supreme quality, guaranteed by consequental final testing.

**STORES**
Quick delivery through central storage.

**PHONE-HOTLINE**
You can reach us from every building site.
Quick assistance by our specialists
Phone +49 (0) 74 74/6 92-36 9
Monday to Thursday 7 am to 6 pm
Friday 7 am to 4 pm

**E-MAIL-HOTLINE**
Technical experts are always at your service.
Quick assistance by our specialists
Fax +49 (0) 7474/692-207 and
E-mail: tino.schlaich@theben.de (KNX)
christof.armbruster@theben.de
christian.skatulniak@theben.de

**REPAIR SERVICE**
Our service department offers competitive prices for repairs even after the expiry of the warranty period. We also send you the requested spare parts, even for units not in the current range, to satisfy your customers' needs as quickly as possible.
Please contact us, we are happy to assist you.

**OPERATING INSTRUCTIONS**
Operation instructions are available right around the clock. The KNX manual provides you with detailed informations for the use of our products. Instructions and other informations can be found free of charge on the internet www.theben.de.

**KNX DATA BASE**
A constantly update the product data base it is always available on the Internet for free downloading.

**TENDERS**
Text for tenders for all Theben products are available on the web for downloading.

**TRAINING FACILITIES**
Trainings are offered in your proximity. Central trainings by our own specialists and peripherally at our partners near your facilities upon request.

**TRADE FAIRS**
National and international trade fairs inform you about our innovations:

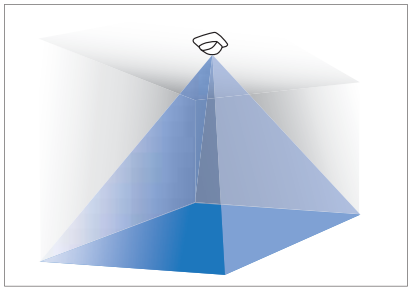
- E-world, Essen
  07.02.–09.02.2012
- Middle East Electricity, Dubai
  07.02.–09.02.2012
- ecobuild, London
  06.03.–08.03.2012
- ELECTRO-TEC, Bern
  21.03.–22.03.2012
- light + building, Frankfurt
  15.04.–20.04.2012
- belektro, Berlin
  17.10.–19.10.2012
- GET Nord, Hamburg
  21.11.–23.11.2012
- SPS/IPC/DRIVES, Nuremberg
  27.11.–29.11.2012

# Fully focussed on security and efficiency.

**MOTION DETECTORS OR PRESENCE DETECTORS – WHAT IS THE DIFFERENCE?**

Motion Detectors and Presence Detectors are electronic sensors of varying technical quality and therefore suitable for different applications. Motion Detectors were originally designed for external use, lighting fitted to the outside of buildings, in gardens or along drive ways that activate as soon as someone approaches and then switches off again after a set time delay has expired. Motion Detectors are neither fitted with active light measurement devices nor are they highly-sensitive to minimal movement.

In contrast, Presence Detectors react to the slightest changes and even recognize the presence of people if they are sat down working at a desk or stood in a corridor. Thanks to their highly sensitive sensor technology, Presence Detectors can be used for energy-efficient lighting and air conditioning control above all in all types of buildings such as offices, schools or hospitals.



The square detection area of ThebenHTS Presence Detectors makes planning simple.

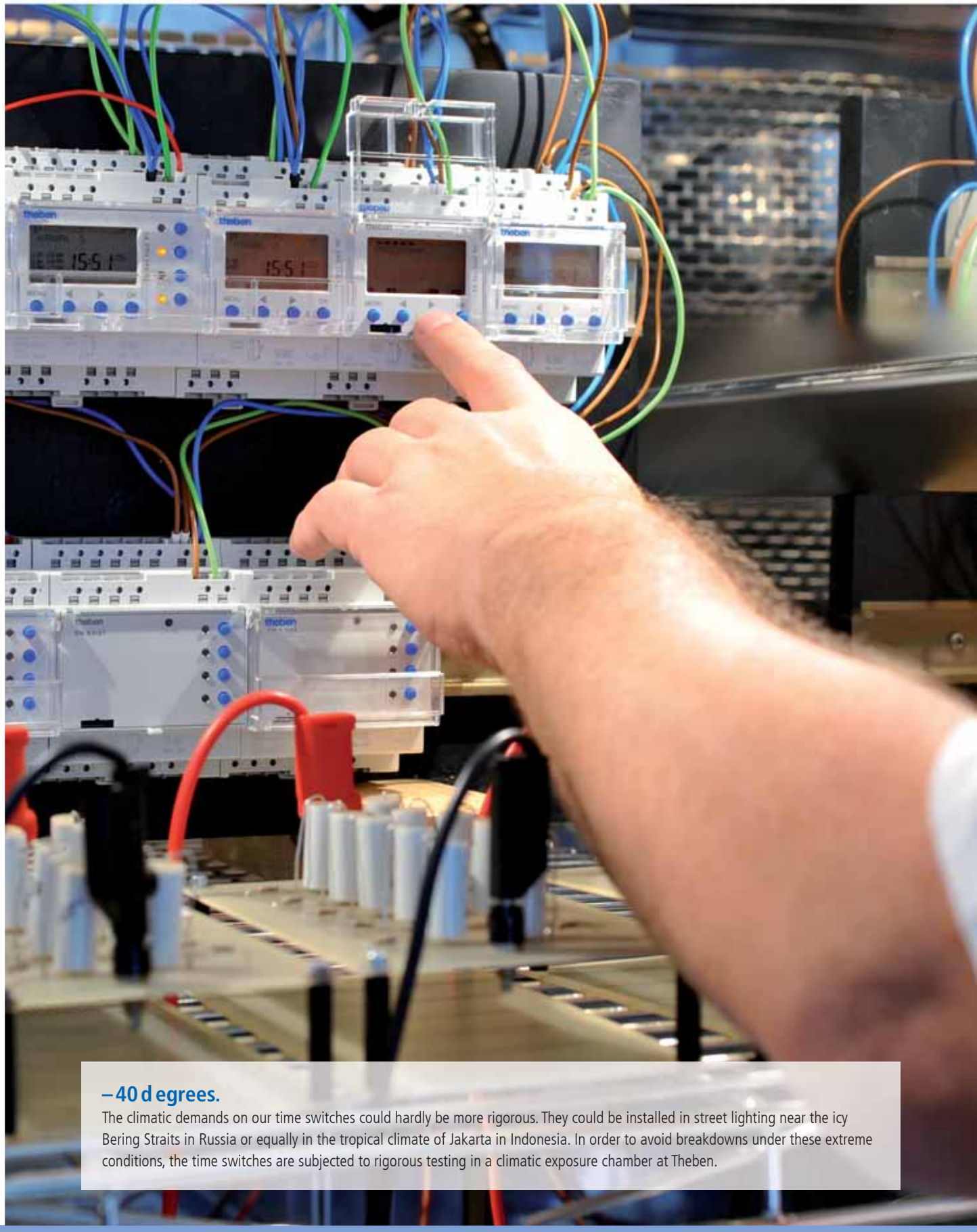
**FROM THE INVENTOR OF THE PRESENCE DETECTOR: THEBENHTS.**

ThebenHTS Presence Detectors are the real deal. Invented at the Theben Laboratory for High Technology Systems at the start of the 1990s, the first ever Presence Detector, the ECO-IR, celebrates its 20th anniversary in 2012. Since then, Theben has worked tirelessly to maximize the range of applications, ease of use and efficiency. One outstanding feature of ThebenHTS Presence Detectors is the square detection area, another world first. This avoids unnecessary overlapping and blind spots. Their extra sensitive sensors provide outstanding quality of detection.

There are also innovative solutions such as the compact passage designed for corridors and walkways. Theben is in the vanguard in terms of both function and form.
The first flush-fitting Presence Detector, the PlanoCentro, received the iF Award for its high-quality design. And that certainly won't be the last chapter on the success story of ThebenHTS Presence Detectors...

iF product design award 2010

20 Years
PRESENCE DETECTOR
INVENTED BY
thebenHTS®



## – 40 d egrees.

The climatic demands on our time switches could hardly be more rigorous. They could be installed in street lighting near the icy Bering Straits in Russia or equally in the tropical climate of Jakarta in Indonesia. In order to avoid breakdowns under these extreme conditions, the time switches are subjected to rigorous testing in a climatic exposure chamber at Theben.

| | Program | Number of channels | Memory locations | External inputs | PC interface | Memory card supplied | Type of connection | Type | Page |
|---|---|---|---|---|---|---|---|---|---|
| **DIN rail, 2 modules** | | | | | | | | | |
| | Weekly program | 1 | 56 | – | ✓ | – | DuoFix spring terminals | TR 610 top2 | 12 |
| | | 2 | 56 | – | ✓ | – | DuoFix spring terminals | TR 612 top2 | 12 |
| | | 1 | 84 | 1 | ✓ | ✓ | DuoFix spring terminals | TR 611 top2 | 14 |
| | | | | | | | | TR 611 top2 RC | 14 |
| | | 2 | 84 | 2 | ✓ | ✓ | DuoFix spring terminals | TR 622 top2 | 14 |
| | Weekly program, astronomical program | 1 | 56 | – | ✓ | – | DuoFix spring terminals | SELEKTA 170 top2 | 16 |
| | | | 84 | 1 | ✓ | – | DuoFix spring terminals | SELEKTA 171 top2 RC | 16 |
| | | 2 | 84 | 2 | ✓ | – | DuoFix spring terminals | SELEKTA 172 top2 | 16 |
| **DIN rail, 3 modules** | | | | | | | | | |
| | Yearly program, astronomical program | 1 | 800 | 1 | ✓ | – | DuoFix spring terminals | TR 641 top2 | 18 |
| | | | | | | ✓ | DuoFix spring terminals | TR 641 top2 RC | 18 |
| | | 2 | 800 | 2 | ✓ | – | DuoFix spring terminals | TR 642 top2 | 18 |
| | | | | | | ✓ | DuoFix spring terminals | TR 642 top2 RC | 18 |
| | – | – | – | – | – | – | DuoFix spring terminals | EM LAN top2 | 20 |
| **DIN rail, 4 modules** | | | | | | | | | |
| | Yearly program, astronomical program | 4 | 800 | 4 | ✓ | – | DuoFix spring terminals | TR 644 top2 | 18 |
| | | | | | | ✓ | DuoFix spring terminals | TR 644 top2 RC | 18 |
| | Yearly program | 4 | – | 4 | – | – | DuoFix spring terminals | EM 4 top2 | |
| **DIN rail, 1 module** | | | | | | | | | |
| | Weekly program | 1 | 28 | – | – | – | Screw terminals | TR 608 top | 21 |
| **Front panel installation/wall installation** | | | | | | | | | |
| | Weekly program | 1 | 42 | – | – | – | Screw terminals | TR 635 top | 22 |
| | | 2 | 42 | – | – | – | Screw terminals | TR 636 top | 22 |
| **Flush-mounted wall installation** | | | | | | | | | |
| | Weekly program | 1 | 42 | – | – | – | Screw terminals | TR 030 top | 24 |
| **Plug-in** | | | | | | | | | |
| | Weekly program | 1 | 36 | – | – | – | Plug-in | theben-eltimo 020 S | 25 |
| | | | 33 | – | – | – | Plug-in | theben-eltimo 020 S DCF | 25 |

## Digital time switches with weekly program

**TR 610 top2**

**TR 612 top2**

## Description

**Common functions**

- Digital time switch with weekly program
- DuoFix spring terminals
- Text-oriented user guidance in display
- 56 memory locations
- Interface for OBELISK top2 memory card (PC programming)
- 10 year power reserve (lithium battery)
- Zero-cross switching for relay-saving switching and high lamp loads
- ON-OFF switching times
- Switching preselection
- Permanent switching ON/OFF
- Integrated operating hour counter
- Holiday program
- Display back light (can be turned off)
- PIN coding
- Automatic summer/winter time changeover

**TR 610 top2**

- 1 channel

**TR 612 top2**

- 2 channel

## Product selection

| Program | Program functions | Number of channels | Switching load < 1 mA | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Weekly program | ON-OFF | 1 | – | 230–240 V AC | TR 610 top2 | 6100103 |
| | | | ✓ | 230–240 V AC | TR 610 top2 G | 6100110 |
| | | | – | 12–24 V UC | TR 610 top2 24V | 6104100 |
| | | 2 | – | 230–240 V AC | TR 612 top2 | 6120103 |
| | | | | 12–24 V UC | TR 612 top2 24V | 6124100 |

## Technical data

| | TR 610 top2 | TR 610 top2 G | TR 610 top2 24V | TR 612 top2 | TR 612 top2 24V |
|---|---|---|---|---|---|
| **Operating voltage** | 230–240 V AC | | 12–24 V UC | 230–240 V AC | 12–24 V UC |
| **Frequency** | 50–60 Hz | | | | |
| **Width** | 2 modules | | | | |
| **Installation type** | DIN rail | | | | |
| **Power reserve** | 10 years | | | | |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | | | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 10 A | 2 A | | 10 A | 2 A |
| **Incandescent/halogen lamp load** | 2600 W | 1400 W | | 2600 W | 1400 W |
| **Energy saving lamps** | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | 7 x 7 W , 6 x 11 W , 5 x 15 W , 5 x 20 W , 4 x 23 W | | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W |
| **Switching capacity min.** | ca.10 mA | <1 mA | ca.10 mA | | |
| **Shortest switching times** | 1 min | | | | |
| **Time accuracy** | ≤ ± 0.5 s/day (quartz) | | | | |
| **Stand-by consumption** | 0,8 W | | 0,3 W | 0,8 W | 0,3 W |
| **Test approval** | | – | | | |
| **Type of protection** | IP 20 | | | | |
| **Protection class** | II as per EN 60 730-1 | | | | |
| **Ambient temperature** | –30 °C … +55 °C | | | | |

## Accessories

### PC set OBELISK top2

- Art.No.: 9070409
  Details ▶ Page 229

### Memory card OBELISK top2

- Art.No.: 9070404
  Details ▶ Page 229

### Wall mounting kit 35 mm

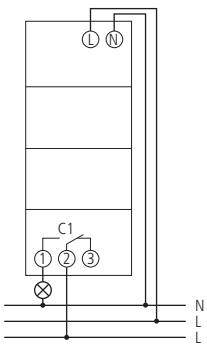
- Art.No.: 9070064
  Details ▶ Page 228

### Front panel kit

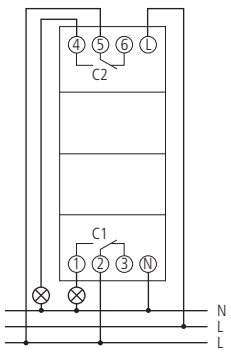
- Art.No.: 9070001
  Details ▶ Page 228

## Connection examples

### TR 610 top2




### TR 612 top2



## Digital time switches with weekly program

**TR 611 top2**

**TR 611 top2 RC**

**TR 622 top2**

## Description

### Common functions

- Digital time switch with weekly program
- DuoFix spring terminals
- Text-oriented user guidance in display
- 84 memory locations
- Interface for OBELISK top2 memory card (PC programming)
- OBELISK memory card included in delivery
- 10 year power reserve (lithium battery)
- Zero-cross switching for relay-saving switching and high lamp loads
- ON-OFF switching times
- Pulse program
- Cycle program
- Switching preselection
- Permanent switching ON/OFF
- Timer countdown
- Integrated operating hour counter
- Holiday program
- 2 random programs
- Display back light (can be turned off)
- PIN coding
- Automatic summer/winter time changeover

### TR 611 top2

- 1 channel
- External input

### TR 611 top2 RC

- Time synchronisation option via connection of an external DCF or GPS antenna (GPS not with 24 V device)
- Additional power unit required for GPS if only one device is connected to the antenna
- 1 channel
- External input

### TR 622 top2

- 2 channel
- 2 external inputs

## Product selection

| Program | Program functions | Number of channels | External inputs | Time basis | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|
| Weekly program | ON-OFF, Pulse, Cycle | 1 | 1 | Quartz | 230–240 V AC | TR 611 top2 | 6110103 |
| | | | | | 12–24 V UC | TR 611 top2 24V | 6114100 |
| | | | | Quartz/DCF77/ GPS | 230–240 V AC | TR 611 top2 RC | 6110300 |
| | | | | | 12–24 V UC | TR 611 top2 RC 24V | 6114300 |
| | | 2 | 2 | Quartz | 230–240 V AC | TR 622 top2 | 6220103 |
| | | | | | 12–24 V UC | TR 622 top2 24V | 6224100 |

## Technical data

| | TR 611 top2 | TR 611 top2 24V | TR 611 top2 RC | TR 611 top2 RC 24V | TR 622 top2 | TR 622 top2 24V |
|---|---|---|---|---|---|---|
| **Operating voltage** | 230–240 V AC | 12–24 V UC | 230–240 V AC | 12–24 V UC | 230–240 V AC | 12–24 V UC |
| **Frequency** | 50–60 Hz | | | | | |
| **Width** | 2 modules | | | | | |
| **Installation type** | DIN rail | | | | | |
| **Power reserve** | 10 years | | | | | |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | | | | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 10 A | 2 A | 10 A | 2 A | 10 A | 2 A |
| **Incandescent/halogen lamp load** | 2600 W | 1400 W | 2600 W | 1400 W | 2600 W | 1400 W |
| **Energy saving lamps** | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W |
| **Switching capacity min.** | ca.10 mA | | | | | |
| **Shortest switching times** | 1 s | | | | | |
| **Time accuracy** | ≤ ± 0.5 s/day (quartz) | | DCF77/GPS or ≤ ± 0,5 s/day (quartz) | | ≤ ± 0.5 s/day (quartz) | |
| **Stand-by consumption** | 0,8 W | 0,3 W | 1,4 W | 0,9 W | 0,8 W | 0,3 W |
| **Test approval** | | | | | | |
| **Type of protection** | IP 20 | | | | | |
| **Protection class** | II as per EN 60 730-1 | | | | | |
| **Ambient temperature** | –30 °C … +55 °C | | | | | |

## Accessories

### PC set OBELISK top2

- Art.No.: 9070409
  Details ▶ Page 229

### Memory card OBELISK top2

- Art.No.: 9070404
  Details ▶ Page 229

### Wall mounting kit 35 mm

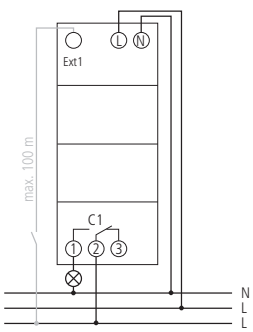
- Art.No.: 9070064
  Details ▶ Page 228

### Additional accessories

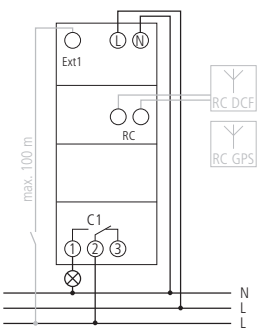
- Antenna top2 RC-DCF
  Details ▶ Page 229
- Front panel kit
  Details ▶ Page 228
- Antenna top2 RC-GPS
  Details ▶ Page 230
- Power unit top2 GPS
  Details ▶ Page 230

## Connection examples

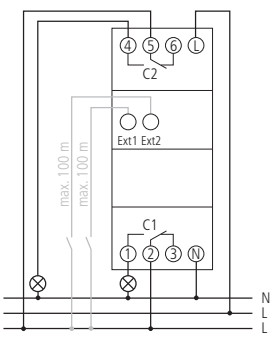
### TR 611 top2




### TR 611 top2 RC




### TR 622 top2



## Astronomical time switches with weekly program

### SELEKTA 170 top2

### SELEKTA 171 top2 RC

### SELEKTA 172 top2

## Description

### Common functions

- Astronomical time switch with weekly program
- Astronomical time switch function (automatic calculation of sunrise and sunset times for the whole year)
- DuoFix spring terminals
- Text-oriented user guidance in display
- Interface for OBELISK top2 memory card (PC programming)
- 10 year power reserve (lithium battery)
- Zero-cross switching for relay-saving switching and high lamp loads
- Calculated astronomical switching times
- Programmable ON-OFF switching times
- Switching preselection
- Permanent switching ON/OFF
- Integrated operating hour counter
- Holiday program
- Display back light (can be turned off)
- PIN coding
- Automatic summer/winter time changeover

### SELEKTA 170 top2

- 1 channel
- 56 memory locations

### SELEKTA 171 top2 RC

- Time synchronisation via connection of external DCF or GPS antennas, additional posititioning for astronomical program with GPS (GPS not with 24 V device)
- Additional power unit required for GPS if only one device is connected to the antenna
- 1 channel
- External input
- 84 memory locations
- 3 special programs with yearly date function per channel
- Count-down timer

### SELEKTA 172 top2

- 2 channels
- 84 memory locations
- Channel 1 or channel 2 can also be used purely as time switch channel
- 2 external inputs
- 3 special programs with yearly date function per channel
- Count-down timer

## Product selection

| Program | Number of channels | External inputs | Time basis | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Weekly program, astronomical program | 1 | – | Quartz | 230–240 V AC | SELEKTA 170 top2 | 1700100 |
| | | | | 12–24 V UC | SELEKTA 170 top2 24V | 1704100 |
| | | 1 | Quartz/DCF77/GPS | 230–240 V AC | SELEKTA 171 top2 RC | 1710100 |
| | | | | 12–24 V UC | SELEKTA 171 top2 RC 24V | 1714100 |
| | 2 | 2 | Quartz | 230–240 V AC | SELEKTA 172 top2 | 1720100 |
| | | | | 12–24 V UC | SELEKTA 172 top2 24V | 1724100 |

## Technical data

| | SELEKTA 170 top2 | SELEKTA 170 top2 24V | SELEKTA 171 top2 RC | SELEKTA 171 top2 RC 24V | SELEKTA 172 top2 | SELEKTA 172 top2 24V |
|---|---|---|---|---|---|---|
| **Operating voltage** | 230–240 V AC | 12–24 V UC | 230–240 V AC | 12–24 V UC | 230–240 V AC | 12–24 V UC |
| **Frequency** | 50–60 Hz | | | | | |
| **Width** | 2 modules | | | | | |
| **Installation type** | DIN rail | | | | | |
| **Power reserve** | 10 years | | | | | |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | | | | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 10 A | – | 10 A | – | 10 A | – |
| **Incandescent/halogen lamp load** | 2600 W | 1400 W | 2600 W | 1400 W | 2600 W | 1400 W |
| **Energy saving lamps** | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W |
| **Switching capacity min.** | ca.10 mA | | | | | |
| **Shortest switching times** | 1 min | | | | | |
| **Time accuracy** | ≤ ± 0.5 s/day (quartz) | | DCF77/GPS or ≤ ± 0,5 s/day (quartz) | | ≤ ± 0.5 s/day (quartz) | |
| **Stand-by consumption** | 0,8 W | 0,2 W | 1,4 W | 0,8 W | | 0,2 W |
| **Test approval** | | | | | | |
| **Type of protection** | IP 20 | | | | | |
| **Protection class** | II as per EN 60 730-1 | | | | | |
| **Ambient temperature** | –30 °C … +55 °C | | | | | |

## Accessories

### PC set OBELISK top2

- Art.No.: 9070409
  Details ▶ Page 229

### Memory card OBELISK top2

- Art.No.: 9070404
  Details ▶ Page 229

### Wall mounting kit 35 mm

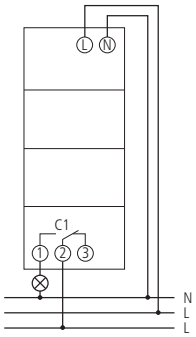
- Art.No.: 9070064
  Details ▶ Page 228

### Additional accessories

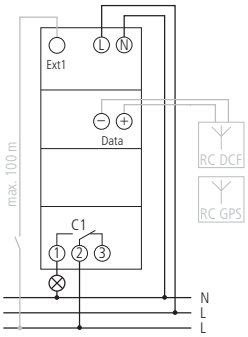
- Front panel kit
  Details ▶ Page 228
- Antenna top2 RC-DCF
  Details ▶ Page 229
- Antenna top2 RC-GPS
  Details ▶ Page 230
- Power unit top2 GPS
  Details ▶ Page 230

## Connection examples

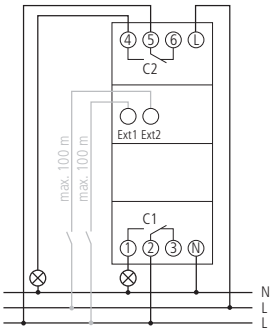
### SELEKTA 170 top2




### SELEKTA 171 top2 RC




### SELEKTA 172 top2



## Digital time switches with yearly and astronomical program

**TR 641 top2**

**TR 642 top2 RC**

**TR 644 top2**

## Description

### Common functions

- Digital time switch with yearly and astronomical time program
- DuoFix spring terminals
- Text-oriented user guidance in display
- 800 memory locations
- Interface for OBELISK top2 memory card (PC programming)
- OBELISK memory card included in delivery
- 10 year power reserve (lithium battery)
- Zero-cross switching for leay-saving switching and high lamp loads
- Automatic summer/winter time changeover
- ON-OFF switching times
- Pulse program
- Cycle program
- Extensive yearly clock functions
- Astronomical time switch function (automatic calculation of sunrise and sunset times for the whole year)
- Switching preselection
- Permanent switching ON/OFF
- Count-down timer
- Integrated operating hour counter
- Holiday program
- 2 random programs
- Display back light (can be turned off)
- PIN coding

### TR 641 top2

- 1 channel
- External input

### TR 641 top2 RC

- Time synchronisation via connection of external DCF or GPS antennas, additional posititioning for astronomical program with GPS
- 1 channel
- External input
- Extension module can be connected
- Memory card OBELISK top2 included in delivery

### TR 642 top2

- 2 channels
- 2 external inputs

### TR 642 top2 RC

As TR 641 top2 RC, but:

- 2 channels
- 2 external inputs

### TR 644 top2

- 4 channels
- 4 external inputs

### TR 644 top2 RC

As TR 641 top2 RC, but:

- 4 channels
- 4 external inputs

## Product selection

| Program | Number of channels | External inputs | Time basis | Memory card supplied | Program functions | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|---|
| Yearly program, astronomical program | 1 | 1 | Quartz | – | ON-OFF, Pulse, Cycle | 110–240 V AC | TR 641 top2 | 6410100 |
| | | | Quartz/ DCF77/GPS | ✓ | ON-OFF, Pulse, Cycle | 110–240 V AC | TR 641 top2 RC | 6410300 |
| | | | | | | 12–24 V UC | TR 641 top2 RC 24V | 6414300 |
| | 2 | 2 | Quartz | – | ON-OFF, Pulse, Cycle | 110–240 V AC | TR 642 top2 | 6420100 |
| | | | Quartz/ DCF77/GPS | ✓ | ON-OFF, Pulse, Cycle | 110–240 V AC | TR 642 top2 RC | 6420300 |
| | | | | | | 12–24 V UC | TR 642 top2 RC 24V | 6424300 |
| | 4 | 4 | Quartz | – | ON-OFF, Pulse, Cycle | 110–240 V AC | TR 644 top2 | 6440100 |
| | | | Quartz/ DCF77/GPS | ✓ | ON-OFF, Pulse, Cycle | 110–240 V AC | TR 644 top2 RC | 6440300 |

## Technical data

| | TR 641 top2 | TR 641 top2 RC | TR 641 top2 RC 24V | TR 642 top2 | TR 642 top2 RC | TR 642 top2 RC 24V | TR 644 top2 | TR 644 top2 RC |
|---|---|---|---|---|---|---|---|---|
| **Operating voltage** | 110–240 V AC | | 12–24 V UC | 110–240 V AC | | 12–24 V UC | 110–240 V AC | |
| **Frequency** | 50–60 Hz | | | | | | | |
| **Width** | 3 modules | | | | | | 4 modules | |
| **Installation type** | DIN rail | | | | | | | |
| **Power reserve** | 8 years | | | | | | | |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | | | | | | | |
| **Switching capacity channels 1+3** | – | | | | | | 10 A | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 10 A | | 2 A | 10 A | | 2 A | 10 A | |
| **Incandescent/halogen lamp load 230 V** | 2600 W | | 1400 W | 2600 W | | 1400 W | 2300 W | |
| **Incandescent/halogen lamp load 120 V** | 1300 W | | – | 1300 W | 700 W | – | 1150 W | |
| **Switching capacity min.** | ca.10 mA | | | | | | | |
| **Shortest switching times** | 1 s | | | | | | | |
| **Time accuracy** | ≤ ± 0.5 s/day (quartz) | DCF77/GPS or ≤ ± 0,5 s/day (quartz) | | ≤ ± 0.5 s/ day (quartz) | DCF77/GPS or ≤ ± 0,5 s/day (quartz) | | ≤ ± 0.5 s/day (quartz) | DCF77/GPS or ≤ ± 0,5 s/day (quartz) |
| **Stand-by consumption** | 0,6 W | 1,2 W | 1,5 W | 0,6 W | 1,2 W | 1,5 W | 0,5 W | 1,3 W |
| **Type of protection** | IP 20 | | | | | | | |
| **Protection class** | II as per EN 60 730-1 | | | | | | | |
| **Ambient temperature** | –30 °C … +55 °C | | | | | | –30 °C … +45 °C | |

## Accessories

### EM 4 top2

- for TR 641 top2 RC, TR 642 top2 RC, TR 644 top2 RC
- Art.No.: 6490104
  Details ▶ Page 20

### EM LAN top2

- for TR 641 top2 RC, TR 642 top2 RC, TR 644 top2 RC
- Art.No.: 6490900
  Details ▶ Page 20

### Antenna top2 RC-DCF

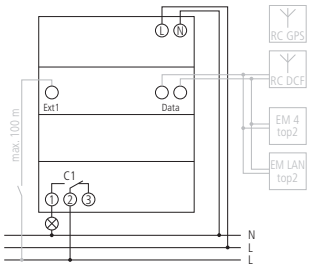
- for TR 641 top2 RC, TR 642 top2 RC, TR 644 top2 RC
- Art.No.: 9070410
  Details ▶ Page 229

### Additional accessories

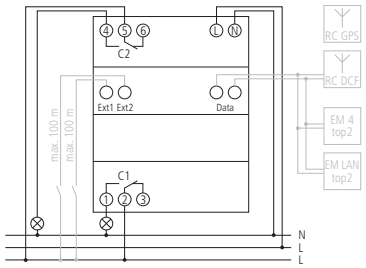
- Wall mounting kits
  Details ▶ Page 228
- Front panel kit
  Details ▶ Page 228
- Antenna top2 RC-GPS
  Details ▶ Page 230
- Memory card OBELISK top2
  Details ▶ Page 229
- PC set OBELISK top2
  Details ▶ Page 229

## Connection examples

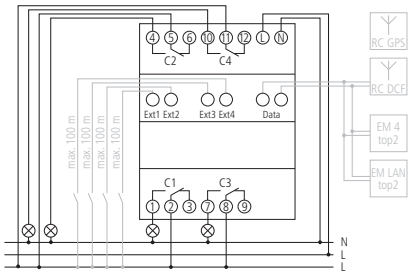
### TR 641 top2 RC




### TR 642 top2 RC




### TR 644 top2 RC



## Extension modules

### EM LAN top2

### EM 4 top2

## Description

### EM LAN top2

- Ethernet communication module for remote access via LAN-DSL network to time switches TR 641 top2 RC, TR 642 top2 RC and TR 644 top2 RC
- Remote programming using OBELISK top2 PC software
- Direct remote access to time switch (e.g. reading out switching status, performing manual switching, checking time)
- Width: 3 modules

### EM 4 top2

- Extension module for TR 641 top2 RC, TR 642 top2 RC and TR 644 top2 RC
- 4 channels
- Width: 4 modules
- DuoFix spring terminals
- 4 external inputs
- Switching preselection
- Permanent ON/OFF switching
- 4 LEDs for displaying switching status
- Zero-cross switching for relay-saving switching and high lamp loads

## Product selection

| Type | Article number |
|---|---|
| EM LAN top2 | 6490900 |
| EM 4 top2 | 6490104 |

## Accessories

### Front panel kit

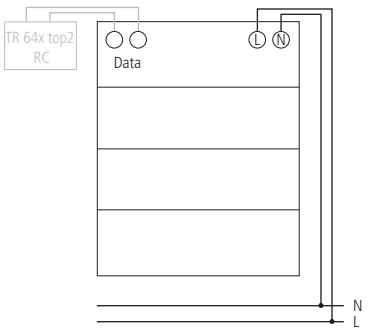
- Art.No.: 9070001
  Details ▶ Page 228

### Additional accessories

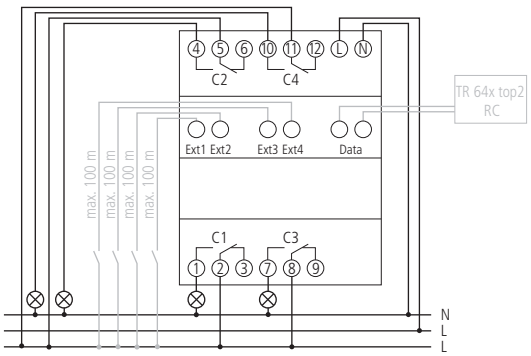
- Wall mounting kit 52,5 mm
  Details ▶ Page 228
- Wall mounting kit 70 mm
  Details ▶ Page 228

## Connection examples

### EM LAN top2




### EM 4 top2






Additional technical data at:
www.theben.de/product/ Article number

## TR 608 top

### Description

- Digital time switch with weekly program
- 1 channel
- Screw terminals
- text-oriented user guidance in display
- 28 memory locations
- 3 year power reserve (exchangeable lithium battery)
- ON-OFF switching times
- Switching preselection
- Permanent switching ON/OFF
- PIN coding
- Automatic summer/winter time changeover

### Product selection

| Program | Number of channels | Memory locations | Program functions | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Weekly program | 1 | 28 | ON-OFF | 230 V AC | TR 608 top | 6080002 |

### Technical data

| TR 608 top | |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50–60 Hz |
| **Width** | 1 module |
| **Installation type** | DIN rail |
| **Power reserve** | 3 years |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 4 A |
| **Incandescent/halogen lamp load** | 1000 W |
| **Energy saving lamps** | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 5 x 23 W |
| **Fluorescent lamp load (conventional) not corrected, series-corrected** | 800 VA |
| **Fluorescent lamp load (conventional) parallel-corrected** | 200 VA, 18 µF |
| **Shortest switching times** | 1 min |
| **Time accuracy** | ≤ ± 1 s/day (quartz) |
| **Stand-by consumption** | 0,4 W |
| **Test approval** | |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |
| **Ambient temperature** | –10 °C … +55 °C |

### Accessories

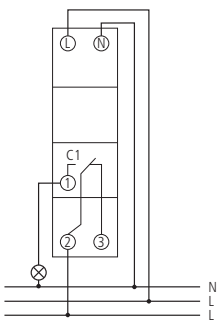
**Wall mounting kit 17,5 mm**

- Art.No.: 9070065
  Details ▶ Page 228

**Front panel kit**

- Art.No.: 9070001
  Details ▶ Page 228

### Connection example



## Digital time switches - wall installation

**TR 635 top**

**TR 636 top**

## Description

**Common functions**

- Digital time switch with weekly program
- Text-oriented user guidance in display
- 42 memory locations
- 10 year power reserve (lithium battery)
- ON-OFF switching times
- Pulse program
- Cycle program
- Switching preselection
- Permanent switching ON/OFF
- Holiday program
- Random program
- PIN coding
- Automatic summer/winter time changeover

**TR 635 top**

- 1 channel

**TR 636 top**

- 2 channels

## Product selection

| Program | Number of channels | Memory locations | Program functions | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Weekly program | 1 | 42 | ON-OFF, Pulse, Cycle | 230–240 V AC | TR 635 top | 6350002 |
| | 2 | 42 | ON-OFF, Pulse, Cycle | 230–240 V AC | TR 636 top | 6360002 |

## Technical data

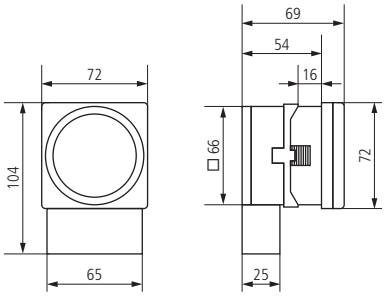
| | TR 635 top | TR 636 top |
|---|---|---|
| **Operating voltage** | 230–240 V AC | |
| **Frequency** | 50–60 Hz | |
| **Installation type** | Front panel installation/wall installation | |
| **Power reserve** | 10 years | |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | 6 A |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 10 A | 6 A |
| **Incandescent/halogen lamp load** | 2300 W | 1200 W |
| **Energy saving lamps** | 9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W | |
| **Fluorescent lamp load (conventional) not corrected, series-corrected** | 1000 VA | |
| **Fluorescent lamp load (conventional) parallel-corrected** | 400 VA, 42 µF | |
| **Shortest switching times** | 1 s | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | |
| **Stand-by consumption** | 0,6 W | 0,9 W |
| **Test approval** | | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |
| **Ambient temperature** | –10 °C … +55 °C | |

## Accessories

### Snap-on mounting 72 x 72

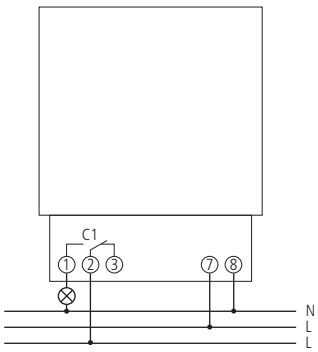
- Art.No.: 9070071
  Details ▶ Page 229

## Connection examples

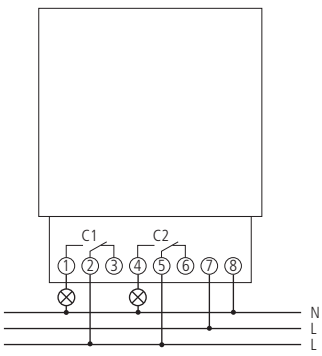



## Connection examples

### TR 635 top




### TR 636 top



## TR 030 top

### Description

- Digital time switch with weekly program
- 1 channel
- Text-oriented user guidance in display
- 42 memory locations
- 10 year power reserve (lithium battery)
- ON-OFF switching times
- Pulse program
- Cycle program
- Switching preselection
- Permanent switching ON/OFF
- Holiday program
- Random program
- PIN coding
- Automatic summer/winter time changeover

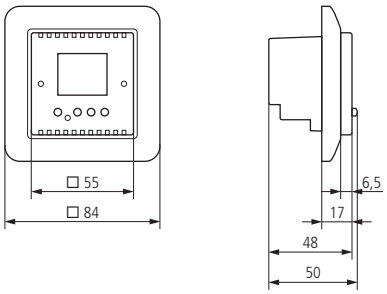
### Product selection

| Program | Number of channels | Memory locations | Program functions | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Weekly program | 1 | 42 | ON-OFF, Pulse, Cycle | 230 V AC | TR 030 top | 0300002 |

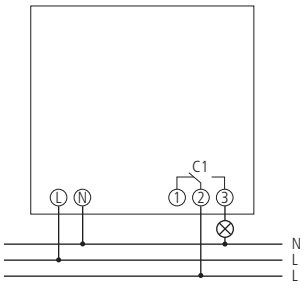
### Technical data

| TR 030 top | |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50–60 Hz |
| **Installation type** | Flush-mounted wall installation |
| **Power reserve** | 10 years |
| **Switching capacity at 250 V AC, cos φ = 1** | 10 A |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 10 A |
| **Incandescent/halogen lamp load 230 V** | 2300 W |
| **Energy saving lamps 230 V** | 9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W |
| **Fluorescent lamp load (conventional) not corrected, series-corrected** | 1000 VA |
| **Fluorescent lamp load (conventional) parallel-corrected** | 400 VA, 42 µF |
| **Shortest switching times** | 1 s |
| **Time accuracy** | ≤ ± 1 s/day (quartz) |
| **Stand-by consumption** | 0,6 W |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |
| **Ambient temperature** | –10 °C … +35 °C |

### Scale drawings




### Connection example






Additional technical data at:
www.theben.de/product/ Article number

## Digital plug-in timers

**theben-eltimo 020 S DCF**

### Description

**Common functions**

- Digital plug-in timer with weekly program
- Use with earthed sockets
- 1 channel
- Easy operation via keys for program function and day of the week, hours, minutes
- ON-OFF switching times
- Switching preselection
- Permanent switching ON/OFF
- Random program
- Automatic summer/winter time changeover

**theben-eltimo 020 S**

- 36 memory locations

**theben-eltimo 020 S DCF**

- DCF radio control
- 33 memory locations

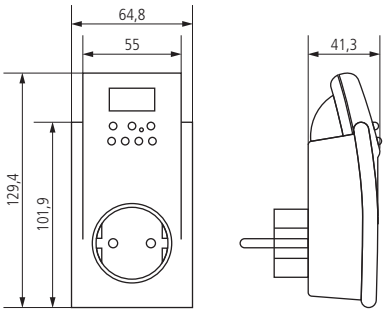
### Product selection

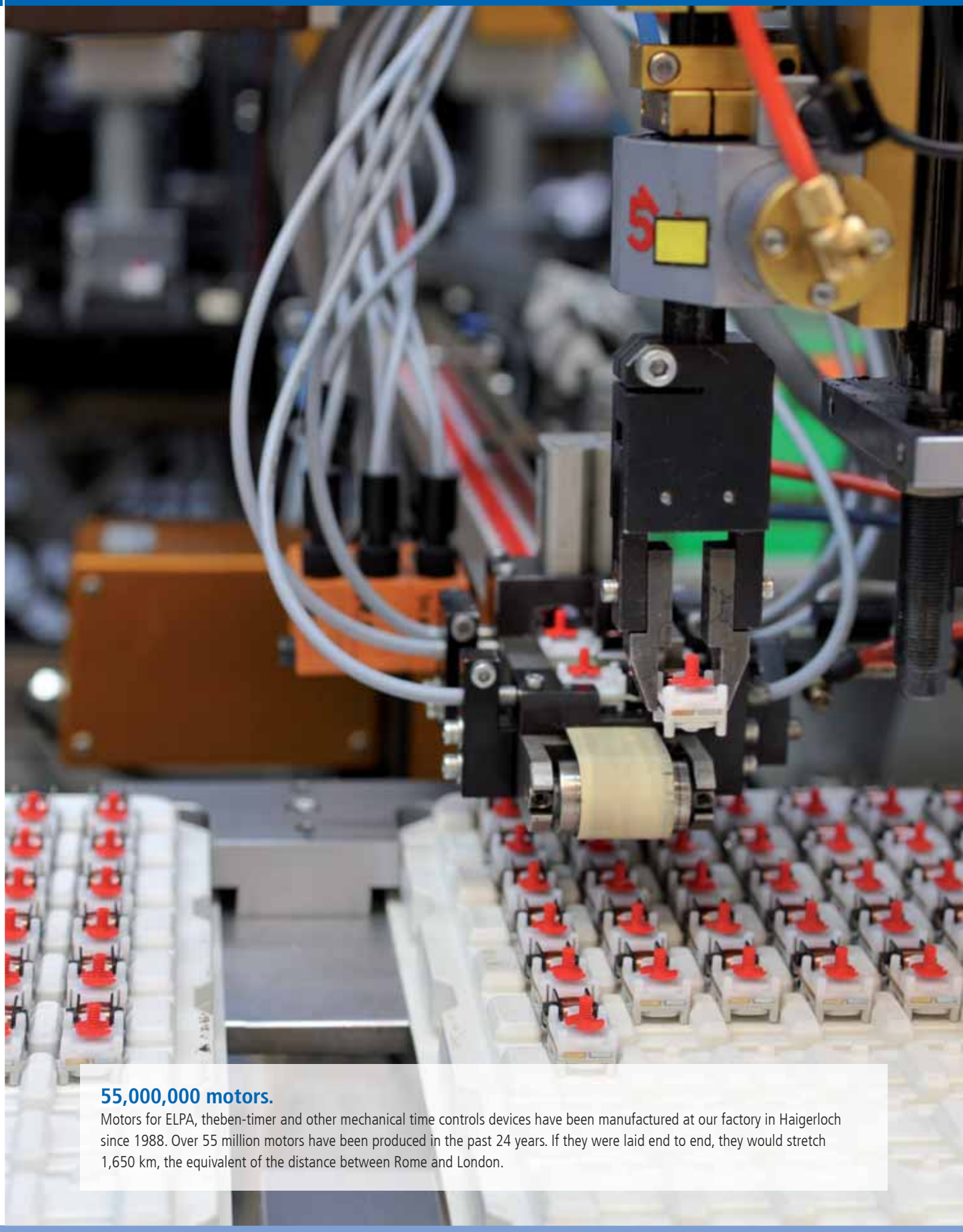
| Program | Number of channels | Memory locations | Time basis | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Weekly program | 1 | 36 | Quartz | 230 V AC | theben-eltimo 020 S | 0200000 |
| | | 33 | Quartz/DCF77 | 230 V AC | theben-eltimo 020 S DCF | 0200300 |

### Technical data

| | theben-eltimo 020 S | theben-eltimo 020 S DCF |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Installation type** | Plug-in | |
| **Power reserve** | 20 days | |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 2 A | |
| **Incandescent/halogen lamp load 230 V** | 3500 W | |
| **Shortest switching times** | 1 min | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | DCF77 synchronous or ≤ ± 1 s/day (quartz) |
| **Stand-by consumption** | 0,8 W | |
| **Type of protection** | IP 20 | |
| **Protection class** | II for housing, I for plug system as per EN 62 730-1 | |
| **Ambient temperature** | –10 °C … +40 °C | |

### Scale drawings





## 55,000,000 motors.

Motors for ELPA, theben-timer and other mechanical time controls devices have been manufactured at our factory in Haigerloch since 1988. Over 55 million motors have been produced in the past 24 years. If they were laid end to end, they would stretch 1,650 km, the equivalent of the distance between Rome and London.

| | Program | Number of channels | Type of contact | Power reserve | Shortest switching times | Programmable every | Type of connection | Type | Page |
|---|---|---|---|---|---|---|---|---|---|
| **DIN rail, 1 module** | | | | | | | | | |
| | Daily program | 1 | NO contact | – | 15 min | 15 min | Screw terminals | SYN 160 a | 28 |
| | | | | 3 days | 15 min | 15 min | Screw terminals | SUL 180 a | 28 |
| | Weekly program | 1 | NO contact | 3 days | 2 h | 2 h | Screw terminals | MEM 190 a | 28 |
| **DIN rail, 3 modules** | | | | | | | | | |
| | 60 minutes program | 1 | Changeover contact | – | 37,5 s | 37,5 s | Spring terminals | SYN 151 h | 30 |
| | Daily program | 1 | Changeover contact | – | 15 min | 15 min | Spring terminals | SYN 161 d | 30 |
| | | | | 200 hours | 15 min | 15 min | Spring terminals | SUL 181 d | 30 |
| | Weekly program | 1 | Changeover contact | 200 hours | 2 h | 2 h | Spring terminals | SUL 191w | 30 |
| | Daily program | 2 | Changeover contact | 3 days | 30 min | 15 min | Screw terminals | SUL 188 g | 32 |
| | Daily/Weekly program with 1/2 day OFF function | 1 | Changeover contact | 3 days | 45 min, 12 h | 15 min, 12 h | Screw terminals | SUL 188 hw | 32 |
| **Front panel installation/wall installation** | | | | | | | | | |
| | Daily program | 1 | Changeover contact | – | 15 min | 15 min | Screw terminals | SYN 169 s | 34 |
| | | | | 3 days | 15 min | 15 min | Screw terminals | SUL 189 s | 34 |
| | Daily program | 1 | Changeover contact | – | 20 min, 2 h | 5 min, 30 min | Screw terminals | SYN 269 h | 36 |
| | | | | 3 days | 20 min, 2 h | 5 min, 30 min | Screw terminals | SUL 289 h | 36 |
| | | 2 | Changeover contact | 3 days | 20 min, 2 h | 5 min, 30 min | Screw terminals | SUL 289 g | 36 |
| | 60 minutes program | 1 | Changeover contact | – | 1,25 min | 18,5 s | Screw terminals | TM 179 h | 38 |
| | Daily/Weekly program with 1/2 day OFF function | 1 | Changeover contact | 3 days | 30 min, 12 h | 15 min, 12 h | Screw terminals | SUL 189 hw | 38 |
| **Wall installation/3-point mounting** | | | | | | | | | |
| | Daily program | 2 | Changeover contact | 6 days | 20 min | 5 min | Screw terminals | SUL 285/2 T | 40 |
| **Plug-in** | | | | | | | | | |
| | Daily program | 1 | NO contact | – | 15 min | 15 min | Plug-in | theben-timer 26 | 41 |
| | | | | | | | | theben-timer 26 IP | 41 |
| | Weekly program | 1 | NO contact | – | 2 h | 2 h | Plug-in | theben-timer 27 | 41 |
| **Surface-mounted** | | | | | | | | | |
| | Daily and defrost program | 1 | Changeover contact | – | 2 min, 1 h | 1 min, 1 h | Screw terminals | FRI 77 h | 42 |
| | | 2 | 2 two-way change-over contacts | – | 2 min, 1 h | 1 min, 1 h | Screw terminals | FRI 77 g | 42 |
| **Drive with quick fastening for DIN rail** | | | | | | | | | |
| | Daily and defrost program | 1 | Changeover contact | – | 2 min, 1 h | 1 min, 1 h | Screw terminals | FRI 77 h-2 | 42 |
| | | 2 | 2 two-way change-over contacts | – | 2 min, 1 h | 1 min, 1 h | Screw terminals | FRI 77 g-2 | 42 |

2

## Analogue time switches – 1 module – segments

**SYN 160 a**

**SUL 180 a**

**MEM 190 a**

## Description

### Common functions

- Analogue time switch
- 1 channel
- Screw terminals
- Manual switch with 3 positions: Permanent ON/AUTO/continuous OFF
- Switching status display

### SYN 160 a

- Daily program
- Without power reserve
- 96 switching segments
- Synchronised with mains
- Shortest switching time: 15 minutes

### SUL 180 a

- Daily program
- With power reserve (exchangeable NiMH rechargeable battery)
- 96 switching segments
- Quartz controlled
- Shortest switching time: 15 minutes

### MEM 190 a

- Weekly program
- With power reserve (exchangeable NiMH rechargeable battery)
- 84 switching segments
- Quartz controlled
- Shortest switching time: 2 hours

## Product selection

| Program | Number of channels | Power reserve | Shortest switching times | Programmable every | Type of contact | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|---|
| Daily program | 1 | – | 15 min | 15 min | NO contact | 230 V AC | SYN 160 a | 1600001 |
| | | 3 days | 15 min | 15 min | NO contact | 230–240 V AC | SUL 180 a | 1800001 |
| Weekly program | 1 | 3 days | 2 h | 2 h | NO contact | 230–240 V AC | MEM 190 a | 1900001 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | SYN 160 a | SUL 180 a | MEM 190 a |
|---|---|---|---|
| **Operating voltage** | 230 V AC | 230–240 V AC | |
| **Frequency** | 50 Hz | 50–60 Hz | |
| **Width** | 1 module | | |
| **Installation type** | DIN rail | | |
| **Program** | Daily program | | Weekly program |
| **Power reserve** | – | 3 days | |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 4 A | | |
| **Incandescent/halogen lamp load** | 1000 W | | |
| **Shortest switching times** | 15 min | | 2 h |
| **Programmable every** | 15 min | | 2 h |
| **Time accuracy** | Synchronised with mains | ≤ ± 1 s/day (quartz) | |
| **Stand-by consumption** | 0,9 W | 0,5 W | |
| **Test approval** | | | |
| **Type of protection** | IP 20 | | |
| **Protection class** | II as per EN 60 730-1 | | |
| **Ambient temperature** | –25 °C … +50 °C | –10 °C … +50 °C | |

## Accessories

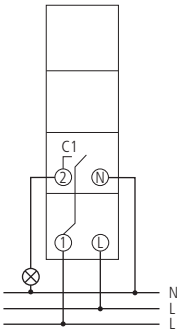
### Front panel kit

- Art.No.: 9070001
  Details ▶ Page 228

### Wall mounting kit 17,5 mm

- Art.No.: 9070065
  Details ▶ Page 228

## Connection example



2

## Analogue time switches – 3 modules – segments

**SYN 151 h**

**SUL 181 d**

**SUL 191 w**

## Description

### Common functions

- Analogue time switch
- 1 channel
- DuoFix spring terminals
- Switching preselection
- Manual switch with 3 positions: Continuous ON/AUTO/continuous OFF
- Switching status display

### SYN 151 h

- 60 minute program
- Without power reserve
- 96 switching segments
- Synchronised with mains
- Shortest switching time: 37.5 seconds

### SYN 161 d

- Daily program
- Without power reserve
- 96 switching segments
- Synchronised with mains
- Shortest switching time: 15 minutes
- Clock hands for time display and in addition 12/24 hour recognition
- Simple summer/winter time correction

### SUL 181 d

- Daily program
- With power reserve (NiMH rechargeable battery)
- 96 switching segments
- Quartz controlled
- Shortest switching time: 15 minutes
- Clock hands for time display and in addition 12/24 hour recognition
- Simple summer/winter time correction

### SUL 191 w

- Weekly program
- With power reserve (NiMH rechargeable battery)
- 84 switching segments
- Quartz controlled
- Shortest switching time: 2 hours
- Clock hands for time display and in addition 12/24 hour recognition
- Simple summer/winter time correction

## Product selection

| Program | Number of channels | Power reserve | Shortest switching times | Programmable every | Type of contact | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|---|
| 60 minutes program | 1 | – | 37,5 s | 37,5 s | Changeover contact | 230 V AC | SYN 151 h | 1510011 |
| Daily program | 1 | – | 15 min | 15 min | Changeover contact | 230 V AC | SYN 161 d | 1610011 |
| | | 200 hours | 15 min | 15 min | Changeover contact | 110–230 V AC | SUL 181 d | 1810011 |
| Weekly program | 1 | 200 hours | 2 h | 2 h | Changeover contact | 110–230 V AC | SUL 191 w | 1910011 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | SYN 151 h | SYN 161 d | SUL 181 d | SUL 191 w |
|---|---|---|---|---|
| **Operating voltage** | 230 V AC | | 110–230 V AC | |
| **Frequency** | 50 Hz | | 50–60 Hz | |
| **Width** | 3 modules | | | |
| **Installation type** | DIN rail | | | |
| **Program** | 60 minutes program | Daily program | | Weekly program |
| **Power reserve** | – | | 200 hours, approx. 100 hours at 110 V | |
| **Switching capacity at 250 V AC, cos φ = 1** | 10 A | 16 A | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 4 A | | | |
| **Incandescent/halogen lamp load** | 1100 W | | | |
| **Shortest switching times** | 37,5 s | 15 min | | 2 h |
| **Programmable every** | 37,5 s | 15 min | | 2 h |
| **Time accuracy** | Synchronised with mains | | ≤ ± 1 s/day (quartz) | |
| **Stand-by consumption** | 0,9 W | 1 VA | 0,5 W | |
| **Test approval** | | | | |
| **Type of protection** | IP 20 | | | |
| **Protection class** | II as per EN 60 730-1 | | | |
| **Ambient temperature** | –20 °C … +55 °C | | | |

## Accessories

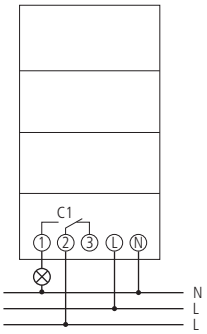
### Wall mounting kit 52,5 mm

- Art.No.: 9070050
  Details ▶ Page 228

### Front panel kit

- Art.No.: 9070001
  Details ▶ Page 228

## Connection example



2

## Analogue time switches – 3 modules – tappets

**SUL 188 g**

**SUL 188 hw**

## Description

**Common functions**

- Analogue time switch
- With power reserve (NiMH rechargeable battery)
- Quartz controlled
- Tappets
- Screw terminals
- Switching status display
- Operating indication

**SUL 188 g**

- Daily program
- 2 channels
- Fine adjustment to set the time to the minute
- Shortest switching time: 30 minutes
- 10 tappets included in delivery

**SUL 188 hw**

- Daily/Weekly program and 1/2 day OFF function for certain weekdays
- 1 channel (with series connection of the daily and weekly contacts)
- Tappets and turning segments
- Shortest switching time: 45 minutes (12 hours for the 1/2 day OFF function)
- 6 tappets included in delivery

## Product selection

| Program | Number of channels | Power reserve | Shortest switching times | Programmable every | Type of contact | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|---|
| Daily program | 2 | 3 days | 30 min | 15 min | Changeover contact | 230 V AC | SUL 188 g | 1880033 |
| Daily/Weekly program with 1/2 day OFF function | 1 | 3 days | 45 min, 12 h | 15 min, 12 h | Changeover contact | 230 V AC | SUL 188 hw | 1880108 |

## Technical data

| | SUL 188 g | SUL 188 hw |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 45–60 Hz | |
| **Width** | 3 modules | |
| **Installation type** | DIN rail | |
| **Program** | Daily program | Daily/Weekly program with 1/2 day OFF function |
| **Power reserve** | 3 days | |
| **Switching capacity at 250 V AC, cos φ = 1** | 10 A | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 4 A | |
| **Shortest switching times** | 30 min | 45 min, 12 h |
| **Programmable every** | 15 min | 15 min, 12 h |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | |
| **Stand-by consumption** | 0,5 W | |
| **Test approval** | | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |
| **Ambient temperature** | –20 °C … +55 °C | |

## Accessories

### Front panel kit

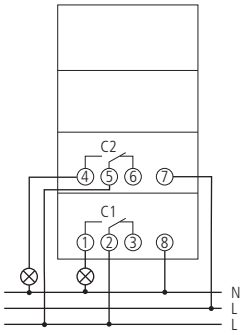
- Art.No.: 9070001
  Details ▶ Page 228

### Terminal cover 52,5 mm

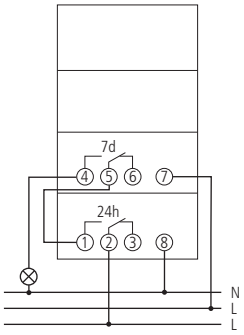
- Art.No.: 9070061
  Details ▶ Page 228

## Connection examples

### SUL 188 g




### SUL 188 hw



2

## Analogue time switches – wall installation – segments

**SYN 169 s**

**SUL 189 s**

## Description

**Common functions**

- Analogue time switch
- 1 channel
- Daily program
- 96 switching segments
- Shortest switching time: 15 minutes
- Clock hands for time display
- Switching preselection
- Permanent ON/OFF switch
- Switching status display
- Simple summer/winter time correction

**SYN 169 s**

- Without power reserve
- Synchronised with mains

**SUL 189 s**

- With power reserve (NiMH rechargeable battery)
- Quartz controlled

## Product selection

| Program | Number of channels | Power reserve | Shortest switching times | Programmable every | Type of contact | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|---|
| Daily program | 1 | – | 15 min | 15 min | Changeover contact | 230 V AC | SYN 169 s | 1690801 |
| | | 3 days | 15 min | 15 min | Changeover contact | 230 V AC | SUL 189 s | 1890801 |
| | | | | | | 110 V AC | SUL 189 s 110V | 1891801 |

## Technical data

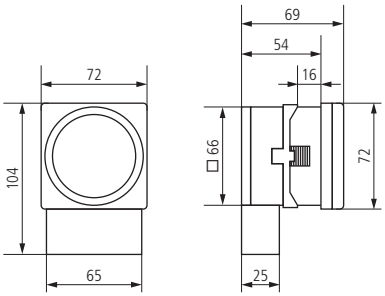
| | SYN 169 s | SUL 189 s | SUL 189 s 110V |
|---|---|---|---|
| **Operating voltage** | 230 V AC | | 110 V AC |
| **Frequency** | 50 Hz | 50–60 Hz | |
| **Installation type** | Front panel installation/wall installation | | |
| **Program** | Daily program | | |
| **Power reserve** | – | 3 days,<br>full power reserve approx. 3 days after connection to operating voltage | |
| **Switching capacity at 250 V AC, cos φ = 1** | 10 A | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 2 A | | |
| **Shortest switching times** | 15 min | | |
| **Programmable every** | 15 min | | |
| **Time accuracy** | Synchronised with mains | ≤ ± 1 s/day (quartz) | |
| **Stand-by consumption** | 0,9 W | 0,5 W | |
| **Test approval** | | | – |
| **Type of protection** | IP 20 | | |
| **Protection class** | II as per EN 60 730-1 | | |
| **Ambient temperature** | –10 °C … +55 °C | | |

## Accessories

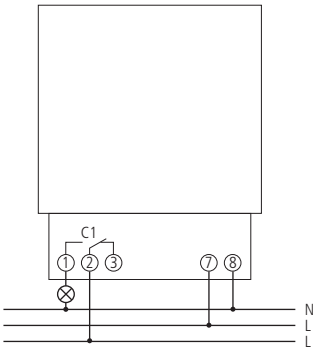
**Snap-on mounting 72 x 72**

- Art.No.: 9070071
  Details ▶ Page 229

## Scale drawings




## Connection examples



2

## Analogue time switches – wall installation – tappets

**SYN 269 h**

**SUL 289 g**

## Description

### Common functions

- Analogue time switch with daily or weekly program (switching disc can be turned)
- Tappets
- Shortest switching time: 20 minutes or 2 hours
- Clock hands for time display
- Switching status display

### SYN 269 h

- 1 channel
- Without power reserve
- Synchronised with mains
- Switching preselection
- Permanent ON/OFF switch
- Simple summer/winter time correction
- 32 tappets included in delivery

### SUL 289 h

- 1 channel
- With power reserve (NiMH rechargeable battery)
- Quartz controlled
- Switching preselection
- Permanent ON/OFF switch
- Simple summer/winter time correction
- 32 tappets included in delivery

### SUL 289 g

- 2 channels
- With power reserve (NiMH rechargeable battery)
- Quartz controlled
- 49 tappets included in delivery

## Product selection

| Program | Number of channels | Power reserve | Shortest switching times | Programmable every | Type of contact | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|---|
| Daily program | 1 | – | 20 min, 2 h | 5 min, 30 min | Changeover contact | 230 V AC | SYN 269 h | 2690008 |
| | | 3 days | 20 min, 2 h | 5 min, 30 min | Changeover contact | 230 V AC | SUL 289 h | 2890008 |
| | 2 | 3 days | 20 min, 2 h | 5 min, 30 min | Changeover contact | 230 V AC | SUL 289 g | 2890033 |

## Technical data

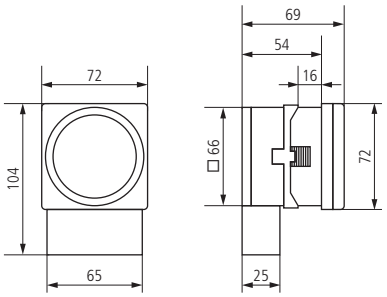
| | SYN 269 h | SUL 289 h | SUL 289 g |
|---|---|---|---|
| **Operating voltage** | 230 V AC | | |
| **Frequency** | 50 Hz | 50–60 Hz | |
| **Installation type** | Front panel installation/wall installation | | |
| **Program** | Daily program, Weekly program | | |
| **Power reserve** | – | 3 days,<br>full power reserve approx. 3 days after connection to operating voltage | |
| **Switching capacity at 250 V AC, cos φ = 1** | 10 A | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 2 A | | |
| **Shortest switching times** | 20 min, 2 h | | |
| **Programmable every** | 5 min, 30 min | | |
| **Time accuracy** | Synchronised with mains | ≤ ± 1 s/day (quartz) | |
| **Stand-by consumption** | 0,9 W | 0,5 W | |
| **Type of protection** | IP 20 | | |
| **Protection class** | II as per EN 60 730-1 | | |
| **Ambient temperature** | –10 °C … +55 °C | | |

## Accessories

**Snap-on mounting 72 x 72**

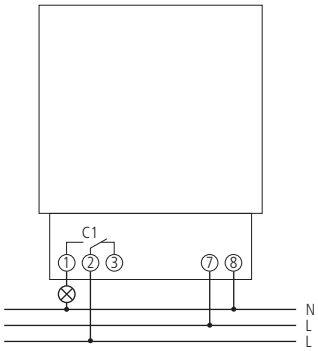
- Art.No.: 9070071
  Details ▶ Page 229

## Scale drawings

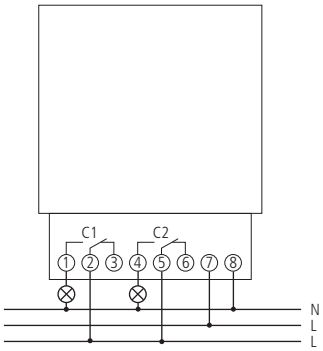



## Connection examples

**SYN 269 h, SUL 289 h**




**SUL 289 g**



2

## Analogue time switches – wall installation – tappets

**TM 179 h**

**SUL 189 hw**

## Description

### Common functions

- Analogue time switch
- Switching status display
- 6 tappets included in delivery

### TM 179 h

- 60 minute program
- 1 channel
- Without power reserve
- Synchronised with mains
- Tappets
- Shortest switching time: 75 seconds
- Switching preselection

### SUL 189 hw

- Daily/Weekly program and 1/2 day OFF function for certain weekdays
- 1 channel (with series connection of the daily and weekly contacts)
- With power reserve (NiMH rechargeable battery)
- Quartz controlled
- Tappets and turning segments
- Shortest switching time: 30 minutes (12 hours for the 1/2 day OFF function)

## Product selection

| Program | Number of channels | Power reserve | Shortest switching times | Programmable every | Type of contact | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|---|
| 60 minutes program | 1 | – | 1,25 min | 18,5 s | Changeover contact | 230 V AC | TM 179 h | 1790008 |
| Daily/Weekly program with 1/2 day OFF function | 1 | 3 days | 30 min, 12 h | 15 min, 12 h | Changeover contact | 230 V AC | SUL 189 hw | 1890108 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

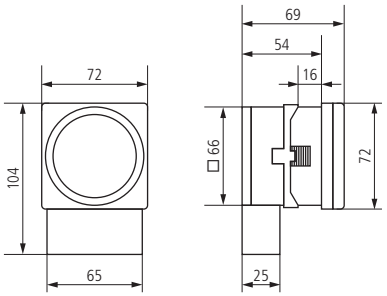
| | TM 179 h | SUL 189 hw |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | 50–60 Hz |
| **Installation type** | Front panel installation/wall installation | |
| **Program** | 60 minutes program | Daily/Weekly program with 1/2 day OFF function |
| **Power reserve** | – | 3 days, full power reserve approx. 3 days after connection to operating voltage |
| **Switching capacity at 250 V AC, cos φ = 1** | 10 A | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 2 A | |
| **Shortest switching times** | 1,25 min | 30 min, 12 h |
| **Programmable every** | 18,5 s | 15 min, 12 h |
| **Time accuracy** | Synchronised with mains | ≤ ± 1 s/day (quartz) |
| **Stand-by consumption** | 0,9 W | 0,5 W |
| **Test approval** | | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |
| **Ambient temperature** | –10 °C … +55 °C | |

## Accessories

### Snap-on mounting 72 x 72

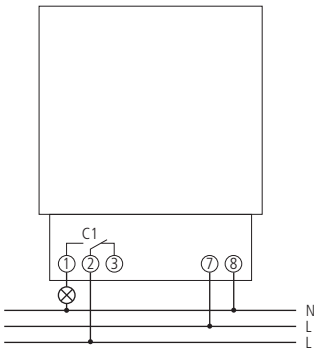
- Art.No.: 9070071
  Details ▶ Page 229

## Scale drawings

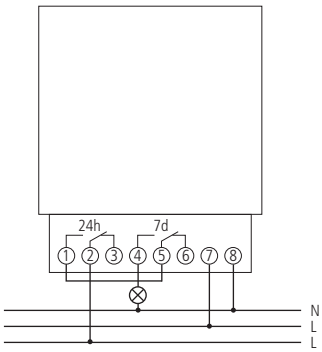



## Connection examples

### TM 179 h




### SUL 189 hw



2

## SUL 285/2 T

### Description

- Analogue tariff time switch with daily program
- 2 channels
- With power reserve (exchangeable NiMH rechargeable battery)
- Quartz controlled
- Tappets
- Shortest switching time: 20 minutes
- Clock hands for time display
- Switching status display
- Simple summer/winter time correction
- Control LED for battery change
- 32 tappets included in delivery

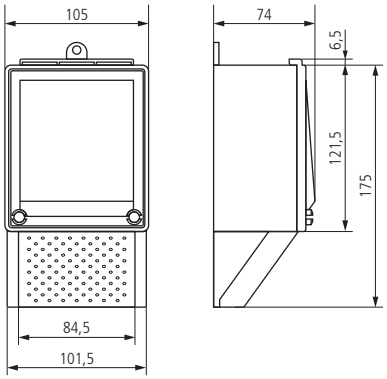
### Product selection

| Program | Number of channels | Power reserve | Shortest switching times | Programmable every | Type of contact | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|---|
| Daily program | 2 | 6 days | 20 min | 5 min | Changeover contact | 110–230 V AC | SUL 285/2 T | 2850033 |

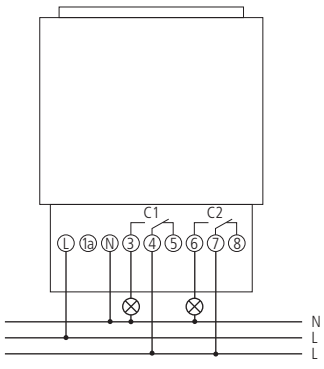
### Technical data

| SUL 285/2 T | |
|---|---|
| **Operating voltage** | 110–230 V AC |
| **Frequency** | 50–60 Hz |
| **Installation type** | Wall installation/3-point mounting |
| **Program** | Daily program |
| **Power reserve** | 6 days, full power reserve approx. 3 days after connection to operating voltage |
| **Switching capacity at 250 V AC, cos φ = 1** | 6 A |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 2 A |
| **Shortest switching times** | 20 min |
| **Programmable every** | 5 min |
| **Time accuracy** | ≤ ± 1 s/day (quartz) |
| **Stand-by consumption** | 0,6 W |
| **Type of protection** | IP 54 |
| **Protection class** | II as per EN 62 054-21 |
| **Ambient temperature** | –10 °C … +55 °C |

### Scale drawings




### Connection example






Additional technical data at:
www.theben.de/product/ Article number

theben

## Analogue plug-in timers

**theben-timer 26**

**theben-timer 26 IP 44**

**theben-timer 27**

## Description

### Common functions

- Analogue plug-in timer
- 1 channel
- Without power reserve
- Synchronised with mains
- Use with earthed sockets
- Switching preselection
- Switching status display

### theben-timer 26

- Daily program
- 96 switching segments
- Shortest switching time: 15 minutes

### theben-timer 26 IP 44

As theben-timer 26, but:

- Waterproof protection for damp locations and outdoor areas
- Transparent cover

### theben-timer 27

- Weekly program
- 84 switching segments
- Shortest switching time: 2 hours

## Product selection

| Program | Shortest switching times | Programmable every | Type of contact | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Daily program | 15 min | 15 min | NO contact | 230 V AC | theben-timer 26 | 0260030 |
| | | | | 230 V AC | theben-timer 26 IP 44 | 0260855 |
| Weekly program | 2 h | 2 h | NO contact | 230 V AC | theben-timer 27 | 0270930 |

## Technical data

| | theben-timer 26 | theben-timer 26 IP 44 | theben-timer 27 |
|---|---|---|---|
| **Operating voltage** | 230 V AC | | |
| **Frequency** | 50 Hz | | |
| **Installation type** | Plug-in | | |
| **Program** | Daily program | | Weekly program |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 4 A | | |
| **Shortest switching times** | 15 min | | 2 h |
| **Programmable every** | 15 min | | 2 h |
| **Time accuracy** | Synchronised with mains | | |
| **Stand-by consumption** | 0,9 W | | |
| **Test approval** | ✓ | – | ✓ |
| **Type of protection** | IP 20 | IP 44 | IP 20 |
| **Protection class** | I as per EN 60 730-1 | | |
| **Ambient temperature** | –10 °C … +55 °C | –40 °C … +55 °C | –10 °C … +55 °C |

2

## Analogue cooling timers

**FRI 77 h**

**FRI 77 g-2**

## Description

**Common functions**

- Analogue cooling time switch with daily and short time program
- Tappet
- 2 separate switching discs

**FRI 77 h**

- 1 channel
- Wall-mounted
- 6 tappets included in delivery

**FRI 77 g**

- 2 channels
- Wall-mounted
- 8 tappets included in delivery
- Optional delayed switching on of fan

**FRI 77 h-2**

- 1 channel
- Drive with quick fastening for DIN rail
- 6 tappets included in delivery

**FRI 77 g-2**

- 2 channels
- Drive with quick fastening for DIN rail
- 8 tappets included in delivery
- Optional delayed switching on of fan

## Product selection

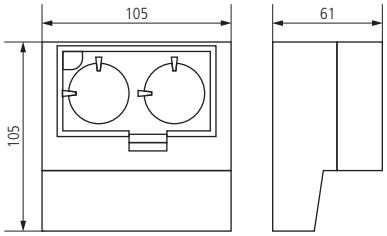
| Type of contact | Installation type | Shortest switching times | Programmable every | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Changeover contact | Surface-mounted | 2 min, 1 h | 1 min, 1 h | 230 V AC | FRI 77 h | 0770008 |
| 2 two-way changeover contacts | Surface-mounted | 2 min, 1 h | 1 min, 1 h | 230 V AC | FRI 77 g | 0770033 |
| Changeover contact | Drive with quick fastening for DIN rail | 2 min, 1 h | 1 min, 1 h | 230 V AC | FRI 77 h-2 | 0770802 |
| 2 two-way changeover contacts | Drive with quick fastening for DIN rail | 2 min, 1 h | 1 min, 1 h | 230 V AC | FRI 77 g-2 | 0770832 |

## Technical data

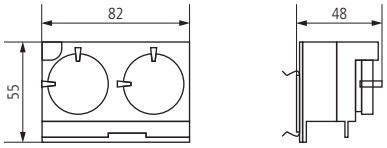
| | FRI 77 h | FRI 77 g | FRI 77 h-2 | FRI 77 g-2 |
|---|---|---|---|---|
| **Operating voltage** | 230 V AC | | | |
| **Frequency** | 50 Hz | | | |
| **Installation type** | Surface-mounted | | Drive with quick fastening for DIN rail | |
| **Program** | Daily and defrost program | | | |
| **Switching capacity at 250 V AC, cos φ = 1** | 16 A | | | |
| **Switching capacity at 250 V AC, cos φ = 0,6** | 2,5 A | | | |
| **Shortest switching times** | 2 min, 1 h | | | |
| **Programmable every** | 1 min, 1 h | | | |
| **Time accuracy** | Synchronised with mains | | | |
| **Stand-by consumption** | 0,9 W | | | |
| **Type of protection** | IP 20 | | IP 00 | |
| **Protection class** | II as per EN 60 730-1 | | | |
| **Ambient temperature** | –10 °C … +50 °C | | | |

## Scale drawings

### FRI 77 h, FRI 77 g

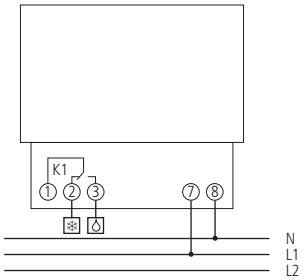



### FRI 77 h-2, FRI 77 g-2

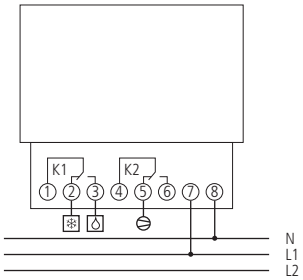



## Connection examples

### FRI 77 h, FRI 77 h-2




### FRI 77 g, FRI 77 g-2



## 91 years of expertise.

Since the company was founded by Paul Schwenk in 1921, our core expertise has been in time management. No wonder that Theben timers count amongst the most durable and reliable devices in this sector. Strict controls ensure the constant high quality of all devices and provide you with maximum security.

| | | Type | Page |
|---|---|---|---|
| **Time relays** | | | |
| | Multi-function relay | TM 345 M | 46 |
| | Time relay with switch function | TM 345 B | 46 |

| | Installation type | Size front plate | Type | Page |
|---|---|---|---|---|
| **Hour counters, analogue** | | | | |
| | Front panel installation | 48 x 48 mm | BZ 142-1 | 48 |
| | | | BZ 142-3 | 48 |
| | | 52 x 52 mm | BZ 143-1 | 48 |
| | DIN rail | 35 x 45 mm | BZ 145 | 48 |
| **Hour counters, digital** | | | | |
| | Front panel installation | 24 x 48 mm | BZ 146 | 50 |
| | | 48 x 48 mm | BZ 147 | 50 |
| | DIN rail | 35 x 45 mm | BZ 148 | 50 |

3

## Time relays

**TM 345 M**

**TM 345 B**

## Description

**TM 345 B**

- Electronic time relay
- Can be used universally for controlling automatic processes in machines, lighting, ventilation, heating, cupboards etc.
- Precise analogue time setting
- Multi-voltage input for all supply and control voltages, no jumpers or additional terminals are required
- LED to display the switching status

**TM 345 M**

As TM 345 B, but:

- Locking snap switch to select the period of time, as well as the following operating modes:
- Response delay (AV), without control contact
- Wipe contact (EW), without control contact
- Release delay (RV), with control contact
- Pulse former (IF), with control contact
- Response and release delay (VZ), with control contact
- Pulse output (WR), with control contact
- Flip-flop (TG)

## Product selection

| Multi-function | Type | Article number |
|---|---|---|
| ✓ | TM 345 M | 3450731 |
| – | TM 345 B | 3450730 |

## Technical data

| | TM 345 M | TM 345 B |
|---|---|---|
| **Operating voltage** | 12–240 V AC/DC | 24–240 V AC |
| **Frequency** | 50–60 Hz | |
| **Width** | 1 module | |
| **Stand-by consumption** | 1 W | |
| **Type of contact** | Changeover contact | |
| **Housing and insulation material** | High-temperature resistant, self-extinguishing thermoplastic | |
| **Switching output** | Potential-free | |
| **Nominal current** | 10 mA–20 A < 10 ms | |
| **Electrical service life** | $10^5$ operating cycles | |
| **Fall back value of nominal input voltage** | < 10.8 V AC/DC (as per EN 61812-1) | |
| **Type of protection** | IP 20 | |
| **Protection class** | II | |
| **Ambient temperature** | –20 °C … +60 °C | |

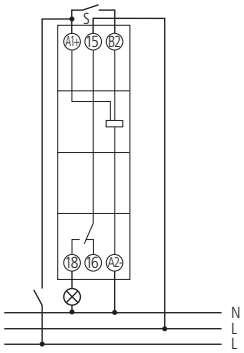
## Accessories

### Wall mounting kit 17,5 mm

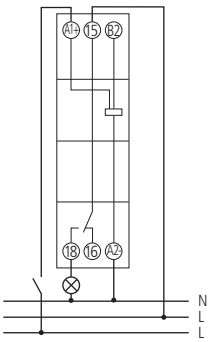
- Art.No.: 9070065
  Details ▶ Page 228

## Connection examples

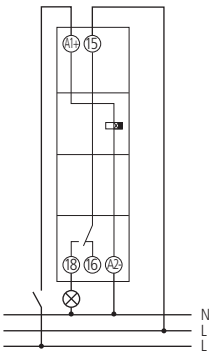
### TM 345 M




### TM 345 M




### TM 345 B



3

## Analogue hour counters – Front panel and DIN rail

**BZ 142-1**

**BZ 142-3**

**BZ 145**

### Description

**BZ 142-1, BZ 143-1**

- Hour counter with synchronous motor drive
- Front panel devices with click-in or stretch clamp supports for walls up to a maximum of 10 mm thick
- Clamp or flat plug connection 6.3 mm
- Versions for direct voltage with quartz-controlled stepper motor
- Progress display

**BZ 142-3**

- Hour counter with synchronous motor drive
- With plug-in base for wall installation (terminal cover required)
- Plug-in base with quick fastening for 35 mm profile rails (DIN EN 60 715)
- Screw terminals
- Contact protection to comply with accident prevention regulation BGV A3
- Housing colour: anthracite
- Versions for direct voltage with quartz-controlled stepper motor
- Progress display

**BZ 145**

- Hour counter
- Built in distributor device with quick fastening for 35 mm profile rails (DIN EN 60 715)
- Top mounting with additional terminal box cover plate, sealable
- Control panel installation with assembly kit No. 907 0 001
- Contact protection to comply with accident prevention regulation BGV A3
- Captive screw terminals

### Product selection

| Counting range | Installation type | Size front plate | Size of Installation section | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| 99 999,99 hours without reset | Front panel installation | 48 x 48 mm | 46 x 46 mm | 230 V AC | BZ 142-1 | 1420721 |
| | | | | 10–80 V DC | BZ 142-1 10V | 1420821 |
| | | | | 230–240 V AC | BZ 142-1 230V | 1420621 |
| | | | | 24 V AC | BZ 142-1 24V | 1424721 |
| | | | | 230 V AC | BZ 142-3 | 1420723 |
| | | | | 10–80 V DC | BZ 142-3 10V | 1420823 |
| | | 52 x 52 mm | 46 x 46 mm or ø 50 mm | 230 V AC | BZ 143-1 | 1430721 |
| 99 999,9 hours without reset | DIN rail | 35 x 45 mm | 35 x 45 mm (depth 60 mm) | 230 V AC | BZ 145 | 1450000 |
| | | | | 24–48 V DC | BZ 145 24V | 1459024 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | BZ 142-1 | BZ 142-1 10V | BZ 142-1 230V | BZ 142-1 24V | BZ 142-3 | BZ 143-1 | BZ 145 | BZ 145 24V |
|---|---|---|---|---|---|---|---|---|
| **Operating voltage** | 230 V AC | 10–80 V DC | 230–240 V AC | 24 V AC | 230 V AC | 230 V AC | 230 V AC | 24–48 V DC |
| **Frequency** | 50 Hz | | 60 Hz | 50 Hz | | | | |
| **Width** | – | | | | | | 2 modules | |
| **Installation type** | Front panel installation | | | | | | DIN rail | |
| **Type of protection** | Front frame IP 65 | | | | | | IP 65 | |
| **Protection class** | II as per EN 60 335-1 | | | | | | | |
| **Ambient temperature** | –20 °C … +70 °C | | | | | | –10 °C … +70 °C | |

## Accessories

### Clamp BZ

- for BZ 142-1, BZ 143-1
- Art.No.: 9070043
  Details ▶ Page 230

### Cover 72 x 72 for BZ

- for BZ 142-1
- Art.No.: 9070074
  Details ▶ Page 230

### Front kit BZ 142-3

- for BZ 142-3
- Art.No.: 9070075
  Details ▶ Page 230

### Cover 55 x 55 for BZ

- for BZ 142-1
- Art.No.: 9070041
  Details ▶ Page 230

### Plug-in socket BZ

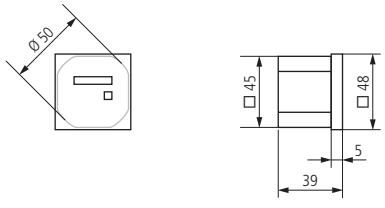
- for BZ 142-3
- Art.No.: 9070042
  Details ▶ Page 231

### Wall mounting kit 35 mm

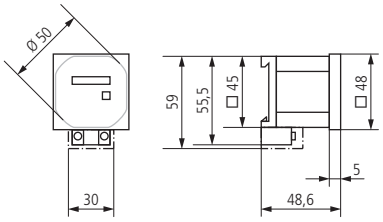
- for BZ 145
- Art.No.: 9070064
  Details ▶ Page 228

## Scale drawings

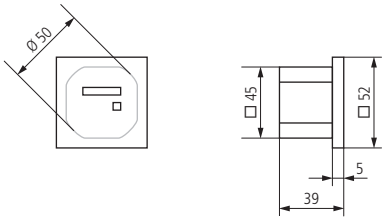
### BZ 142-1




### BZ 142-3




### BZ 143-1



3

## Digital hour counters – Front panel and DIN rail

**BZ 146**

**BZ 147**

**BZ 148**

## Description

### Common functions

- Digital hour counter
- With EEPROM memory provides reliable operating data capture even with loss of power
- 7-digit high-contrast LCD display
- Onscreen progress display

### BZ 146

- Installation cutout 22 mm x 45 mm
- Control panel installation
- Screw terminals
- Tension clamp brackets for walls up to 5mm thick
- Quartz controlled version

### BZ 147

- Installation cutout 45 mm x 45 mm
- Control panel installation
- Screw terminals
- Tension clamp brackets for walls up to 5mm thick
- Quartz controlled version

### BZ 148

- For DIN rail mounting with quick fastening for 35 mm profile rails (DIN EN 60 715)
- Surface mounting with additional terminal box cover plate option
- Captive screw terminals

## Product selection

| Counting range | Installation type | Size front plate | Size of Installation section | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| 99 999,99 hours without reset | Front panel installation | 24 x 48 mm | 22 x 45 mm | 110–240 V AC | BZ 146 | 1460000 |
| | | 48 x 48 mm | 45 x 45 mm | 110–240 V AC | BZ 147 | 1470000 |
| 999 999.9 hours without reset | DIN rail | 35 x 45 mm | 35 x 45 mm (depth 60 mm) | 24–240 V AC | BZ 148 | 1480000 |

## Technical data

| | BZ 146 | BZ 147 | BZ 148 |
|---|---|---|---|
| **Operating voltage** | 110–240 V AC | | 24–240 V AC/12–150 V DC |
| **Frequency** | 50–60 Hz | | |
| **Width** | – | | 2 modules |
| **Installation type** | Front panel installation | | DIN rail |
| **Type of protection** | IP 65 | | IP 65 (frontal) |
| **Protection class** | II as per EN 61010 | | |
| **Ambient temperature** | –30 °C … +70 °C | | –10 °C … +70 °C |



Additional technical data at:
www.theben.de/product/ Article number

## Accessories

### Clamp BZ

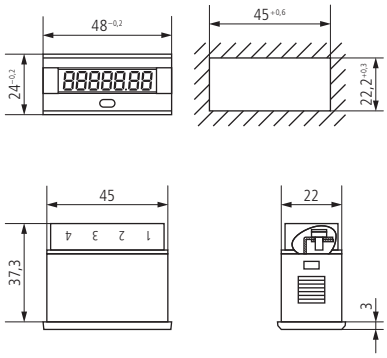
- for BZ 146, BZ 147
- Art.No.: 9070043
  Details ▶ Page 230

### Wall mounting kit 35 mm

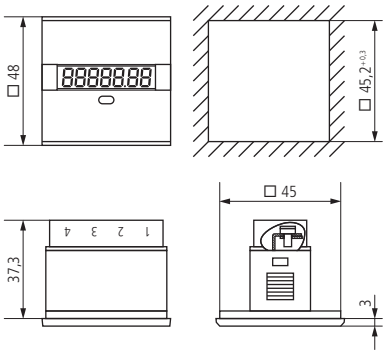
- for BZ 148
- Art.No.: 9070064
  Details ▶ Page 228

## Scale drawings

### BZ 146

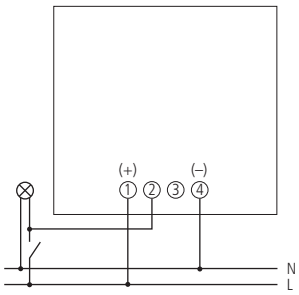



### BZ 147

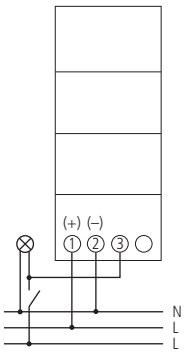



## Connection examples

### BZ 146, BZ 147




### BZ 148



## 20 years of Presence Detectors.

The Presence Detector was developed exactly 20 years ago at the Laboratory for High Technology Systems in Switzerland (today ThebenHTS) which was a ground-breaking invention in the field of presence dependant lighting control. Discover the „real deal" and see for yourself the world leading detection quality with square detection area.

| | Installation type | Detection range at mounting height 3,0 - Sitting - | Detection range at mounting height 3,0 m - Walking - | Channel | Function | Type of protection | Type | Page |
|---|---|---|---|---|---|---|---|---|
| **230 V AC** | | | | | | | | |
| | Ceiling | 20 m² ( □ 4,5 x 4,5 m) | 49 m² (□ 7,0 x 7,0 m) | Light | Switching | IP 54 | PresenceLight 360 | 54 |
| | Ceiling | 20 m² ( ø 5,0 m \| 360°) | 133 m² (ø 13,0 m \| 360°) | Light | Switching | IP 41 | SPHINX 104-360 AP | 56 |
| | | | | Light \| Presence | Switching | IP 41 | SPHINX 104-360/2 AP | 56 |
| | | | | Light | Switching | IP 41 | SPHINX 104-360 | 56 |
| | | | | Light \| Presence | Switching | IP 41 | SPHINX 104-360/2 | 56 |
| | Ceiling | 20 m² ( □ 4,5 x 4,5 m) | 49 m² (□ 7,0 x 7,0 m) | Light \| Presence | Switching | IP 40 | compact office | 58 |
| | | | | Light \| 1–10 V | Dimming | IP 40 | compact office DIM | 60 |
| | Ceiling | 90 m² ( □ 20 x 4,5 m) | 135 m² (□ 30 x 4,5 m) | Light \| Presence | Switching | IP 40 | compact passage | 62 |
| | | 45 m² ( □ 10 x 4,5 m) | 68 m² (□ 15 x 4,5 m) | Light \| Presence | Switching | IP 40 | compact passimo | 62 |
| | Ceiling | 49 m² ( □ 7,0 x 7,0 m) | 81 m² (□ 9,0 x 9,0 m) | Light \| Presence | Switching | IP 40 | ECO-IR 360A | 66 |
| | | | | | | | ECO-IR 360C NT | 68 |
| | | | | 2 x light | Switching | IP 40 | ECO-IR DUAL-C NT | 70 |
| | Ceiling | 49 m² ( □ 7,0 x 7,0 m) | 81 m² (□ 9,0 x 9,0 m) | Light \| Presence | Switching | IP 40 | PlanoCentro 101-EWH | 72 |
| | | | | – | Switching | IP 40 | PlanoCentro 000-EWH | 72 |
| | | | | Light \| Presence | Switching | IP 40 | PlanoCentro 101-UWH | 72 |
| | | | | – | Switching | IP 40 | PlanoCentro 000-UWH | 72 |
| | Wall | 28 m² ( ø 7,0 m \| 180°) | 100 m² (ø 16,0 m \| 180°) | Light | Switching | IP 54 | PresenceLight 180 | 76 |
| | Wall | 32 m² ( ø 8,0 m \| 180°) | 100 m² (ø 16,0 m \| 180°) | Light \| Presence | Switching | IP 40 | ECO-IR 180A | 78 |
| **24 V AC/DC** | | | | | | | | |
| | Ceiling | 20 m² ( □ 4,5 x 4,5 m) | 49 m² (□ 7,0 x 7,0 m) | Light \| Presence | Switching | IP 40 | compact office 24V | 80 |
| | | | | Light \| 0–10 V | Switching | IP 40 | compact office 24V Lux | 82 |
| | Ceiling | 90 m² ( □ 20 x 4,5 m) | 135 m² (□ 30 x 4,5 m) | Light \| Presence | Switching | IP 40 | compact passage 24V | 84 |
| | Ceiling | 49 m² ( □ 7,0 x 7,0 m) | 81 m² (□ 9,0 x 9,0 m) | Light \| Presence | Switching | IP 40 | ECO-IR 360-24V | 86 |
| | Wall | 32 m² ( ø 8,0 m \| 180°) | 100 m² (ø 16,0 m \| 180°) | Light \| Presence | Switching | IP 40 | ECO-IR 180-24V | 88 |

4

## PresenceLight 360

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- IP 54 for versatile use
- Light switch output (relay, 230 V)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Pulse function for staircase time switch
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

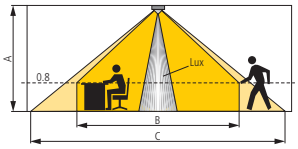
| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light | 230 V AC | Pure white (similar to RAL 9010) | PresenceLight 360 | 2000000 |
| | | | Black (similar to RAL 9005) | PresenceLight 360 BK | 2000800 |
| | | | Silver (similar to RAL 9006) | PresenceLight 360 SR | 2000801 |
| Additional colours available upon request | | | | | |

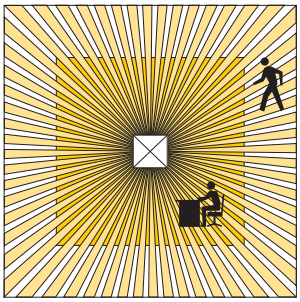
### Technical data

| | PresenceLight 360 |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 2–3 m |
| **Stand-by consumption** | 0,7 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay 230 V |
| **Resistive load** | 1400 W |
| **Incandescent/halogen lamp load** | 1200 W |
| **Compact and flourescent lamps** | 960 VA (cos φ = 0,8), 580 VA (cos φ = 0,5) |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 10 x (1 x 58 W), 5 x (2 x 58 W), 16 x (1 x 36 W), 8 x (2 x 36 W), 16 x (smaller than 36 W) |
| **Ambient temperature** | –20 °C … +50 °C |
| **Type of protection** | IP 54 |

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 9 m² \| 3,0 m x 3,0 m | 20 m² \| 4,5 m x 4,5 m ± 0,5 m |
| 2,5 m | 16 m² \| 4,0 m x 4,0 m | 36 m² \| 6,0 m x 6 ,0m ± 0,5 m |
| 3 m | 20 m² \| 4,5 m x 4,5 m | 49 m² \| 7,0 m x 7,0 m ± 1,0 m |
| 3,5 m | – | 64 m² \| 8,0 m x 8,0 m ± 1,0 m |



4

## Accessories

**Surface frame PresenceLight**

- Art.No.: 9070513
  Details ▶ Page 231

**QuickSafe**

- Art.No.: 9070531
  Details ▶ Page 232

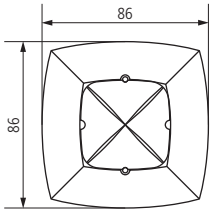
**clic**

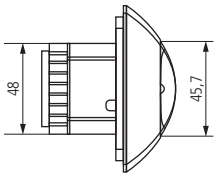
- Art.No.: 9070515
  Details ▶ Page 233

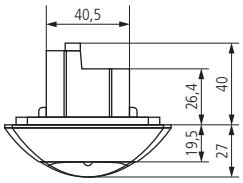
**QuickSet plus**

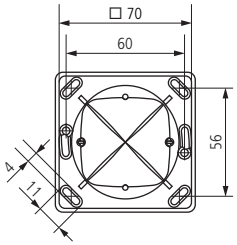
- Art.No.: 9070532
  Details ▶ Page 233

## Scale drawings

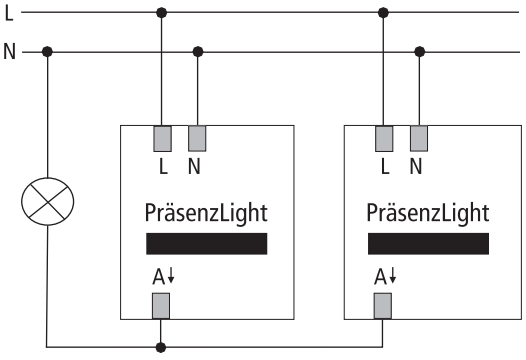


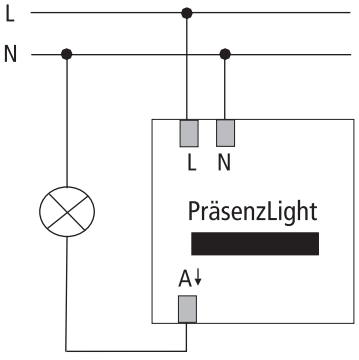




## Connection examples



## SPHINX 104

**SPHINX 104-360 AP**

**SPHINX 104-360**

4

## Description

### Common functions

- Presence detector (PIR)
- Lighting control with adjustable light threshold value and adjustable switch-off delay
- Teach-in of current brightness value possible via remote control
- Additional impulse function can be selected for combination with staircase timer (ELPA), building automation or PLC
- Master/slave function: Up to ten detectors to expand detection area
- Test function for checking detection area
- Zero-cross switching
- Automatic lighting control based on presence and brightness
- Detection area can be limited using three enclosed segments
- Mixed light measurement suitable for the control of fluorescent, incandescent and halogen lamps
- Instant start-up possible via factory preset
- Push-button or switch options for manual switching
- Screwless terminals for quick installation

### SPHINX 104-360 AP

- 1 channel
- Surface-mounted installation

### SPHINX 104-360/2 AP

- 2 channels
- Surface-mounted installation
- 2. Relay for HVAC control, presence dependent
- HVAC control with programmable switch-on and switch-off delay

### SPHINX 104-360

- 1 channel
- Flush-mounted installation

### SPHINX 104-360/2

As SPHINX 104/360/2 AP, but:

- Flush-mounted installation

## Product selection

| Installation type | Channel | Detection angle | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation, Suface mounted | Light | 360° | White | SPHINX 104-360 AP | 1040360 |
| | Light \| Presence | 360° | White | SPHINX 104-360/2 AP | 1040362 |
| Ceiling installation | Light | 360° | White | SPHINX 104-360 | 1040370 |
| | Light \| Presence | 360° | White | SPHINX 104-360/2 | 1040372 |

## Technical data

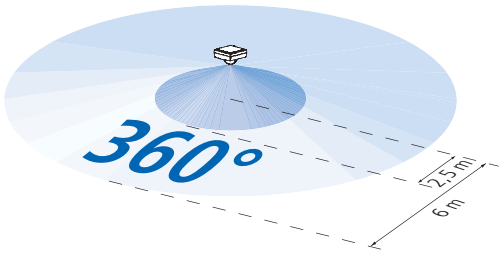
| | SPHINX 104-360 AP | SPHINX 104-360/2 AP | SPHINX 104-360 | SPHINX 104-360/2 |
|---|---|---|---|---|
| **Operating voltage** | 230 V AC | | | |
| **Frequency** | 50–60 Hz | | | |
| **Stand-by consumption** | 1 W | | | |
| **Setting range brightness** | 10–2000 lx | | | |
| **Switching capacity light** | 16 A (at 230 V AC, cos φ = 1) | | 8 A (at 230 V AC, cos φ = 1) | |
| **Switching capacity presence** | – | 5 A (cos φ = 1) 250 V AC/30 V DC | – | 3 A (cos φ = 1) 250 V AC/30 V DC |
| **Detection angle** | 360° | | | |
| **Recommended mounting height** | 2,5–3,5 m | | | |



Additional technical data at:
www.theben.de/product/ Article number

| | SPHINX 104-360 AP | SPHINX 104-360/2 AP | SPHINX 104-360 | SPHINX 104-360/2 |
|---|---|---|---|---|
| **Light switch-off delay** | 1 s–20 min | | | |
| **Presence switch-off delay** | – | 1–120 min | – | 1–120 min |
| **Switch-on delay presence** | – | 0–60 min | – | 0–60 min |
| **Incandescent lamp load** | 2000 W | | 1800 W | |
| **Fluorescent lamp load (conventional) not corrected, parallel-corrected, lead-lag circuit** | 900 VA | | | |
| **Fluorescent lamp load (conventional) parallel-corrected** | 400 VA | | | |
| **Energy saving lamps** | 4 x 7 W, 3 x 11 W, 3 x 15 W, 3 x 20 W, 3 x 23 W | | | |
| **Ambient temperature** | –10 °C … +55 °C | | | |
| **Protection class** | II | | | |
| **Type of protection** | IP 41 | | | |

## Detection range




- Walking
- Sitting

Mounting height 3,0 m

## Accessories

### SPHINX RC 104 Pro

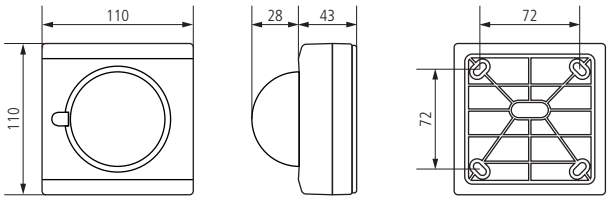
- Art.No: 9070536
  Details ▶ Page 234

### Additional accessories

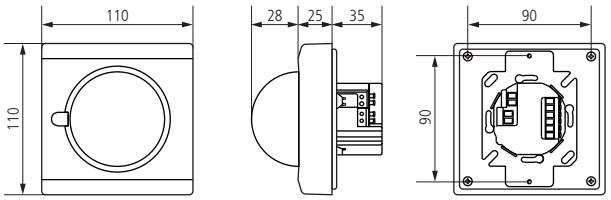
- SPHINX RC 104
  Details ▶ Page 234
- RC filter
  Details ▶ Page 233

## Scale drawings

### SPHINX 104-360 AP, SPHINX 104-360/2 AP

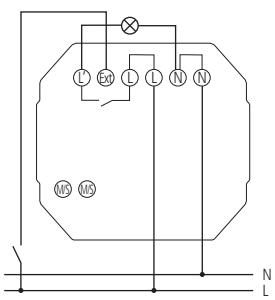



### SPHINX 104-360, SPHINX 104-360/2

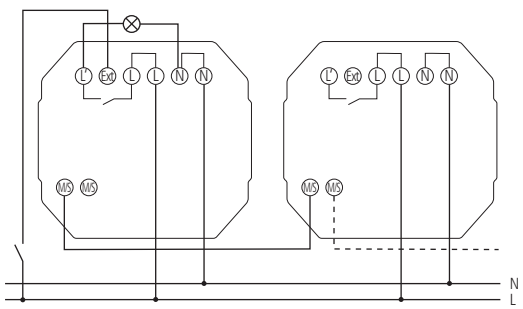



## Connection examples

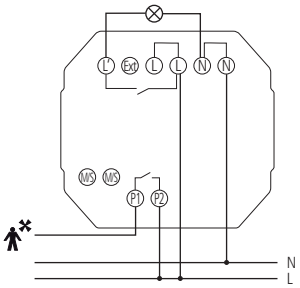
### SPHINX 104-360 AP, SPHINX 104-360




### SPHINX 104-360 AP, SPHINX 104-360




### SPHINX 104-360/2 AP, SPHINX 104-360/2



## compact office

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Light switch output (relay, 230 V)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Push button or switch connection for manual control
- Pulse function for staircase time switch
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Master/slave or master/master parallel switching: Up to ten detectors can be connected with each other to extend the detection area
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| Presence | 230 V AC | Pure white (similar to RAL 9010) | compact office | 2010000 |
| | | | Black (similar to RAL 9005) | compact office BK | 2010800 |
| | | | Silver (similar to RAL 9006) | compact office SR | 2010801 |
| Additional colours available upon request | | | | | |

### Technical data

| | compact office |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 2–3 m |
| **Stand-by consumption** | 0,7 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay 230 V |
| **Resistive load** | 1400 VA |
| **Incandescent/halogen lamp load** | 1200 W |
| **Compact and flourescent lamps** | 960 VA (cos φ = 0,8), 580 VA (cos φ = 0,5) |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 10 x (1 x 58 W), 5 x (2 x 58 W), 16 x (1 x 36 W), 8 x (2 x 36 W), 16 x (smaller than 36 W) |
| **Switch-on delay presence** | 0 s–10 min |
| **Presence switch-off delay** | 10 s–120 min |
| **Type of contact presence** | Relay potential-free |

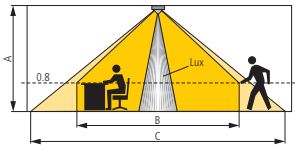


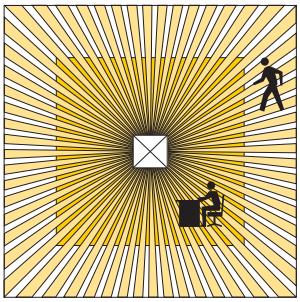
Additional technical data at:
www.theben.de/product/ Article number

| | compact office |
|---|---|
| **Switching capacity presence** | 50 W (220 V DC), 50 VA (250 V AC) minimale 0,5 mV/10 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 9 m² \| 3,0 m x 3,0 m | 20 m² \| 4,5 m x 4,5 m ± 0,5 m |
| 2,5 m | 16 m² \| 4,0 m x 4,0 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 3 m | 20 m² \| 4,5 m x 4,5 m | 49 m² \| 7,0 m x 7,0 m ± 1,0 m |
| 3,5 m | – | 64 m² \| 8,0 m x 8,0 m ± 1,0 m |



## Accessories

**Surface frame compact**

- Art.No.: 9070514
  Details ▶ Page 231

**clic**

- Art.No.: 9070515
  Details ▶ Page 233

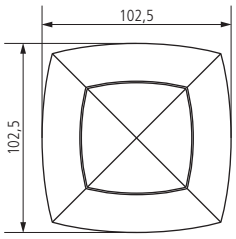
**QuickSet plus**

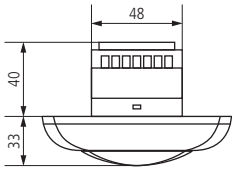
- Art.No.: 9070532
  Details ▶ Page 233

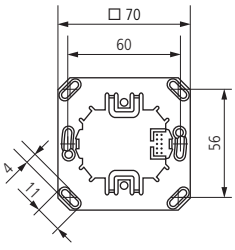
**QuickSafe**

- Art.No.: 9070531
  Details ▶ Page 232

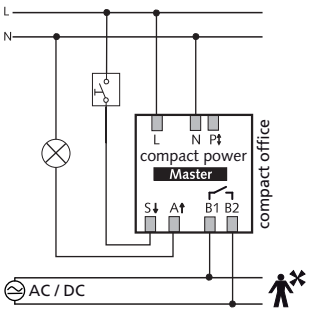
## Scale drawings

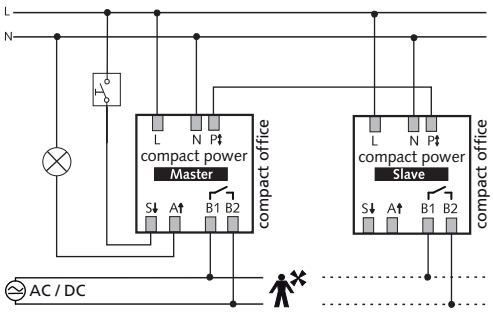



## Connection examples



## compact office DIM

20 Years
PRESENCE DETECTOR INVENTED BY thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Light switching output (relay, 230 V) and 1–10 V interface
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold, self-learning switch-off delay and stand-by time adjustable
- The stand-by time guarantees a minimum brightness and provides for a sense of security in hospital and care environments as the lighting does not switch off when areas are unoccupied but remains in stand-by mode for the set time
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Master/slave or master/master parallel switching: Up to ten detectors can be connected with each other to extend the detection area
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| 1–10 V | 230 V AC | Pure white (similar to RAL 9010) | compact office DIM | 2010001 |
| | | | Black (similar to RAL 9005) | compact office DIM BK | 2010803 |
| | | | Silver (similar to RAL 9006) | compact office DIM SR | 2010804 |
| Additional colours available upon request | | | | | |

### Technical data

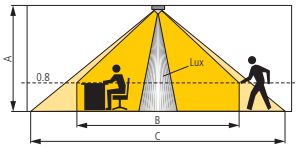
| | compact office DIM |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 2–3 m |
| **Stand-by consumption** | 0,8 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | 10 s–20 min |
| **Type of contact light** | Relay 230 V |
| **Resistive load** | 1400 VA |
| **Incandescent/halogen lamp load** | 1200 W |
| **Compact and flourescent lamps** | 960 VA (cos φ = 0,8), 580 VA (cos φ = 0,5) |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 10 x (1 x 58 W), 5 x (2 x 58 W), 16 x (1 x 36 W), 8 x (2 x 36 W), 16 x (smaller than 36 W) |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

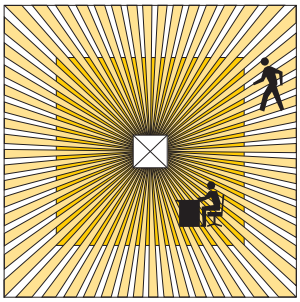


Additional technical data at:
www.theben.de/product/ Article number

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 9 m² \| 3,0 m x 3,0 m | 20 m² \| 4,5 m x 4,5 m ± 0,5 m |
| 2,5 m | 16 m² \| 4,0 m x 4,0 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 3 m | 20 m² \| 4,5 m x 4,5 m | 49 m² \| 7,0 m x 7,0 m ± 1,0 m |
| 3,5 m | – | 64 m² \| 8,0 m x 8,0 m ± 1,0 m |





## Accessories

**Surface frame compact**

- Art.No.: 9070514
  Details ▶ Page 231

**clic**

- Art.No.: 9070515
  Details ▶ Page 233

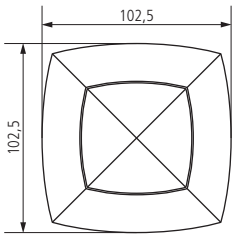
**QuickSet plus**

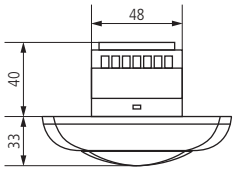
- Art.No.: 9070532
  Details ▶ Page 233

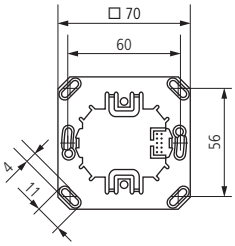
**QuickSafe**

- Art.No.: 9070531
  Details ▶ Page 232

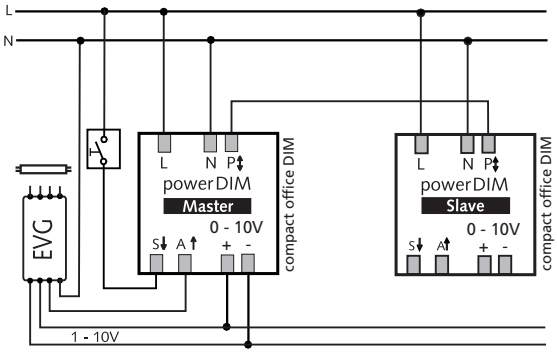
## Scale drawings

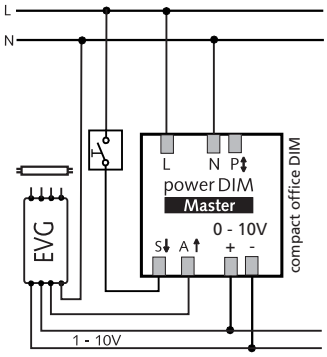



## Connection examples



## compact passage

20 Years
PRESENCE DETECTOR INVENTED BY thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Rectangular detection area for corridors allows accurate and simple planning
- Light switch output (relay, 230 V)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Push button or switch connection for manual control
- Pulse function for staircase time switch
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Master/slave or master/master parallel switching: Up to ten detectors can be connected with each other to extend the detection area
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| Presence | 230 V AC | Pure white (similar to RAL 9010) | compact passage | 2010090 |
| | | | Black (similar to RAL 9005) | compact passage BK | 2010806 |
| | | | Silver (similar to RAL 9006) | compact passage SR | 2010807 |
| Additional colours available upon request | | | | | |

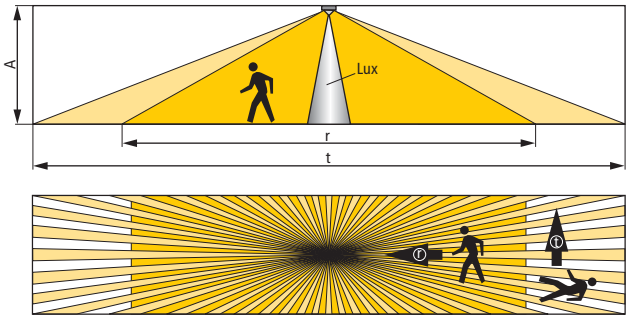
### Technical data

| compact passage | |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 2–3,5 m |
| **Stand-by consumption** | 0,7 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay 230 V |
| **Resistive load** | 1400 VA |
| **Incandescent/halogen lamp load** | 1200 W |

| | |
|---|---|
| **Compact and flourescent lamps** | 960 VA (cos φ = 0,8), 580 VA (cos φ = 0,5) |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 10 x (1 x 58 W), 5 x (2 x 58 W), 16 x (1 x 36 W), 8 x (2 x 36 W), 16 x (smaller than 36 W) |
| **Switch-on delay presence** | 0 s–10 min |
| **Presence switch-off delay** | 10 s–120 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 50 W (220 V DC), 50 VA (250 V AC) minimal 0,5 mV/10 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

## Detection range (Rectangular)

| Mounting height (A) | Head on to (r) | Diagonally (t) |
|---|---|---|
| 2 m | 56 m² \| 16 m x 3,5 m ± 1 m | 105 m² \| 30 m x 3,5 m ± 1 m |
| 2,5 m | 72 m² \| 18 m x 4,0 m ± 1 m | 120 m² \| 30 m x 4,0 m ± 1 m |
| 3 m | 90 m² \| 20 m x 4,5 m ± 1 m | 135 m² \| 30 m x 4,5 m ± 1 m |
| 3,5 m | 100 m² \| 20 m x 5,0 m ± 1 m | 150 m² \| 30 m x 5,0 m ± 1 m |




4

## Accessories

**Surface frame compact**

- Art.No.: 9070514
  Details ▶ Page 231

**QuickSafe**

- Art.No.: 9070531
  Details ▶ Page 232

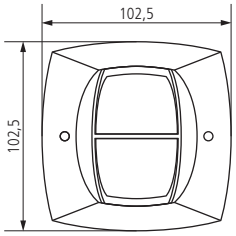
**clic**

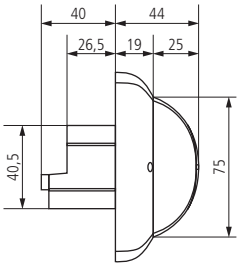
- Art.No.: 9070515
  Details ▶ Page 233

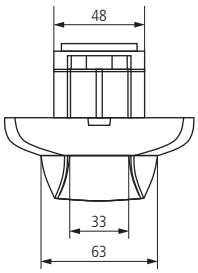
**QuickSet plus**

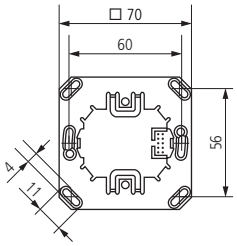
- Art.No.: 9070532
  Details ▶ Page 233

## Scale drawings

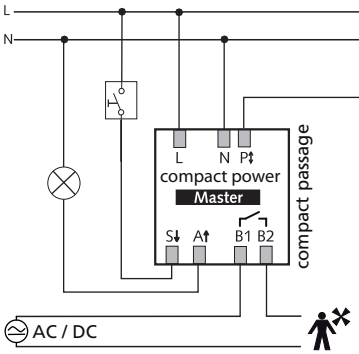


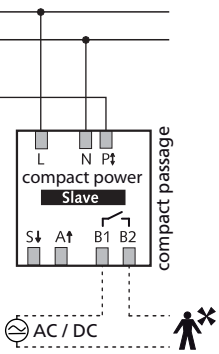



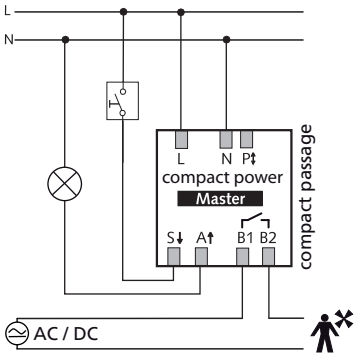




## Connection examples



## compact passimo

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Rectangular detection area for storage areas with clear demarcation vertically below the presence detector allows accurate and simple planning
- Light switch output (relay, 230 V)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Push button or switch connection for manual control
- Pulse function for staircase time switch
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Master/slave or master/master parallel switching: Up to ten detectors can be connected with each other to extend the detection area
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| Presence | 230 V AC | Pure white (similar to RAL 9010) | compact passimo WH | 2010080 |
| | | | Black (similar to RAL 9005) | compact passimo BK | 2010809 |
| | | | Silver (similar to RAL 9006) | compact passimo SR | 2010810 |
| Additional colours available upon request | | | | | |

### Technical data

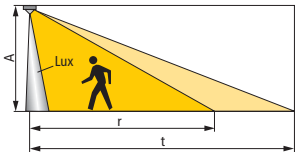
| compact passimo | |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 2–3,5 m |
| **Stand-by consumption** | 0,7 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay 230 V |
| **Resistive load** | 1400 VA |
| **Incandescent/halogen lamp load** | 1200 W |

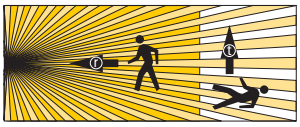
| | |
|---|---|
| **Compact and flourescent lamps** | 960 VA (cos φ = 0,8), 580 VA (cos φ = 0,5) |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 10 x (1 x 58 W), 5 x (2 x 58 W), 16 x (1 x 36 W), 8 x (2 x 36 W), 16 x (smaller than 36 W) |
| **Switch-on delay presence** | 0 s–10 min |
| **Presence switch-off delay** | 10 s–120 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 50 W (220 V DC), 50 VA (250 V AC) minimal 0,5 mV/10 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |


Additional technical data at:
www.theben.de/product/ Article number

## Detection range (Rectangular)

| Mounting height (A) | Head on to (r) | Diagonally (t) |
|---|---|---|
| 2 m | 28 m² \| 8 m x 3,5 m ± 1 m | 53 m² \| 15 m x 3,5 m ± 1 m |
| 2,5 m | 36 m² \| 9 m x 4,0 m ± 1 m | 60 m² \| 15 m x 4,0 m ± 1 m |
| 3 m | 45 m² \| 10 m x 4,5 m ± 1 m | 68 m² \| 15 m x 4,5 m ± 1 m |
| 3,5 m | 50 m² \| 10 m x 5,0 m ± 1 m | 75 m² \| 15 m x 5,0 m ± 1 m |






## Accessories

**Surface frame compact**

- Art.No.: 9070514
  Details ▶ Page 231

**clic**

- Art.No.: 9070515
  Details ▶ Page 233

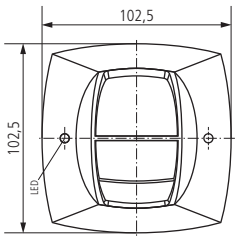
**QuickSet plus**

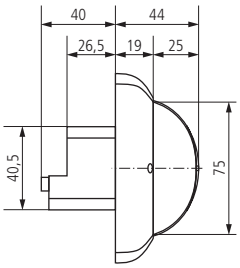
- Art.No.: 9070532
  Details ▶ Page 233

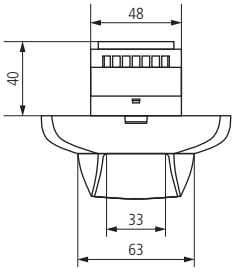
**QuickSafe**

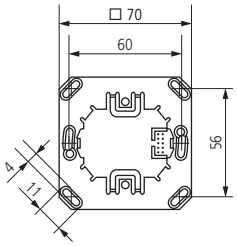
- Art.No.: 9070531
  Details ▶ Page 232

## Scale drawings

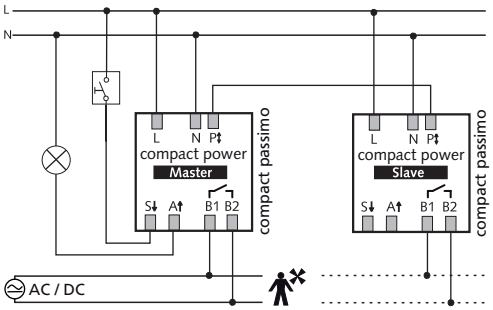


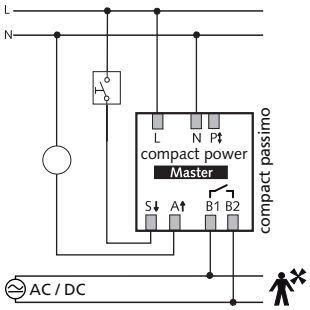




## Connection examples



## ECO-IR 360A

20 Years PRESENCE DETECTOR INVENTED BY thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Light switch output (relay, 230 V)
- Genuine daylight measurement, suitable only for fluorescent lamps (FL/PL/ESL)
- Brightness threshold and self-learning switch-off delay adjustable
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Parameters can be set using the potentiometers
- Ready for use by ex-factory set items
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| Presence | 230 V AC | Pure white (similar to RAL 9010) | ECO-IR 360A | 2020000 |
| | | | Black (similar to RAL 9005) | ECO-IR 360A BK | 2020806 |
| | | | Silver (similar to RAL 9006) | ECO-IR 360A SR | 2020807 |
| Additional colours available upon request | | | | | |

### Technical data

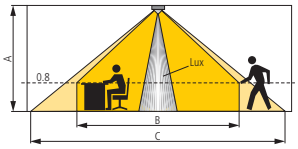
| | ECO-IR 360A |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 2–3,5 m |
| **Stand-by consumption** | 0,9 W |
| **Setting range brightness** | 50–1600 lx |
| **Light switch-off delay** | 2 min–15 min |
| **Type of contact light** | Relay 230 V |
| **Compact and flourescent lamps** | max. 1400 VA |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 12 x (1 x 58 W), 6 x (2 x 58 W), 18 x (1 x 36 W), 9 x (2 x 36 W), 18 x (smaller than 36 W) |
| **Presence switch-off delay** | 10–60 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 100 W (24 V DC), 460 VA (230 V AC), µ |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

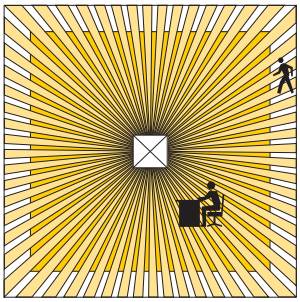


Additional technical data at:
www.theben.de/product/ Article number

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 20 m² \| 4,5 m x 4,5 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 2,5 m | 36 m² \| 6,0 m x 6,0 m | 64 m² \| 8,0 m x 8,0 m ± 0,5 m |
| 3 m | 49 m² \| 7,0 m x 7,0 m | 81 m² \| 9,0 m x 9,0 m ± 0,5 m |
| 3,5 m | 64 m² \| 8,0 m x 8,0 m | 100 m² \| 10,0 m x 10,0 m ± 1 m |
| 4 m | – | 121 m² \| 11,0 m x 11,0 m ± 1 m |



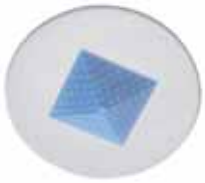





## Accessories

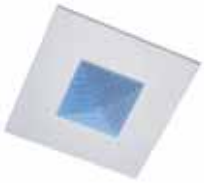
### QuickFix concrete round cover

- Art.No.: 9070519
  Details ▶ Page 231



### QuickFix square cover

- Art.No.: 9070516
  Details ▶ Page 232



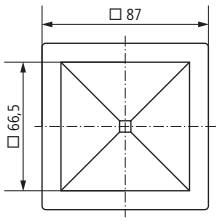
### Surface frame ECO-IR 360

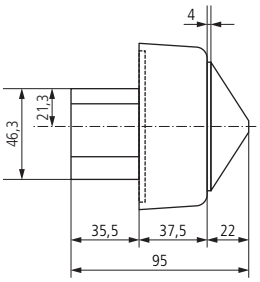
- Art.No.: 9070512
  Details ▶ Page 231

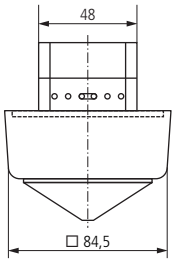
### Additional accessories

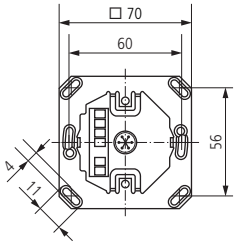
- QuickFix concrete square cover
  Details ▶ Page 232
- QuickFix concrete round cover
  Details ▶ Page 232
- QuickFix concrete flush-mounted box
  Details ▶ Page 232
- QuickFix flush-mounted housing
  Details ▶ Page 232
- QuickSafe
  Details ▶ Page 232

## Scale drawings

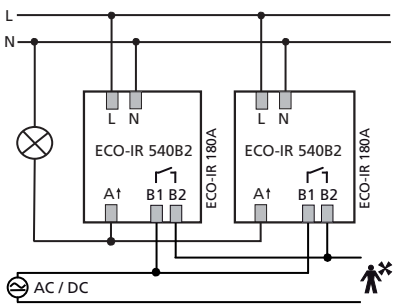


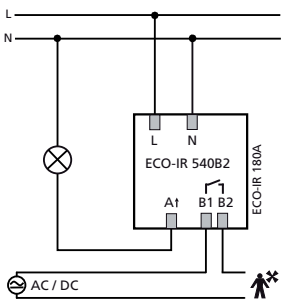




## Connection examples



## ECO-IR 360C NT

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Light switch output (relay, 230 V)
- Genuine daylight measurement, suitable only for fluorescent lamps (FL/PL/ESL)
- Brightness threshold and self-learning switch-off delay adjustable
- Push button or switch connection for manual control
- Inrush current limitation for EB
- Pulse function for staircase time switch
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Master/slave parallel switching: Up to ten detectors can be connected with each other to extend the detection area
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| Presence | 230 V AC | Pure white (similar to RAL 9010) | ECO-IR 360C NT | 2020400 |
| | | | Black (similar to RAL 9005) | ECO-IR 360C NT BK | 2020812 |
| | | | Silver (similar to RAL 9006) | ECO-IR 360C NT SR | 2020813 |
| Additional colours available upon request | | | | | |

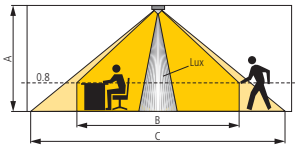
### Technical data

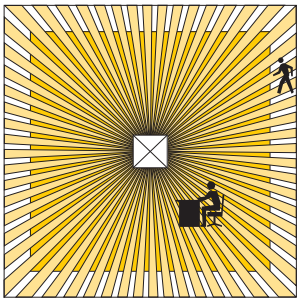
| | ECO-IR 360C NT |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 2–3,5 m |
| **Stand-by consumption** | 0,9 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | 10 s–20 min |
| **Type of contact light** | Relay 230 V, switch-on current limit |
| **Compact and flourescent lamps** | max. 1400 VA |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 16 x (1 x 58 W), 8 x ( 2 x 58 W), 24 x (1 x 36 W), 12 x (2 x 36 W), 24 x (smaller than 36 W) |
| **Switch-on delay presence** | 0 s–10 min |
| **Presence switch-off delay** | 10 s–120 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 100 W (50 V DC), 460 VA (230 V AC), minimal 10 V/100 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |


Additional technical data at:
www.theben.de/product/ Article number
theben

## Detection range (Square)

| Mounting height( A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 20 m² \| 4,5 m x 4,5 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 2,5 m | 36 m² \| 6,0 m x 6,0 m | 64 m² \| 8,0 m x 8,0 m ± 0,5 m |
| 3 m | 49 m² \| 7,0 m x 7,0 m | 81 m² \| 9,0 m x 9,0 m ± 0,5 m |
| 3,5 m | 64 m² \| 8,0 m x 8,0 m | 100 m² \| 10,0 m x 10,0 m ± 1 m |
| 4 m | – | 121 m² \| 11,0 m x 11,0 m ± 1 m |
| 9 m | – | 361 m² \| 19,0 m x 19,0 m ± 1 m |



4

## Accessories

### Surface frame ECO-IR 360

- Art.No.: 9070512
  Details ▶ Page 231

### QuickSet plus

- Art.No.: 9070532
  Details ▶ Page 233

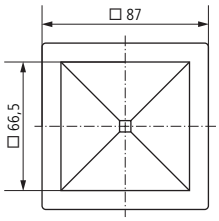
### clic

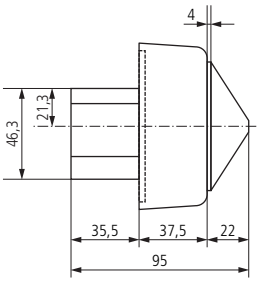
- Art.No.: 9070515
  Details ▶ Page 233

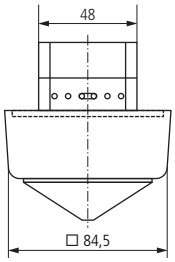
### Additional accessories

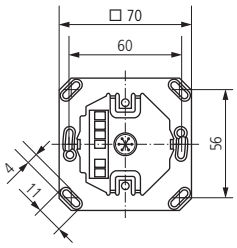
- QuickFix covers
  Details ▶ Page 232
- QuickFix concrete flush-mounted box
  Details ▶ Page 232
- QuickFix flush-mounted housing
  Details ▶ Page 232
- QuickSafe
  Details ▶ Page 232

## Scale drawings

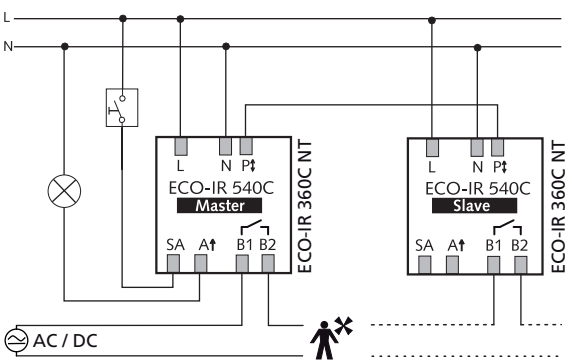


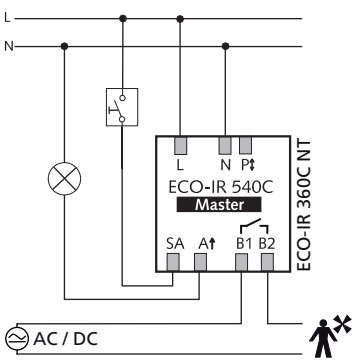




## Connection examples



## ECO-IR DUAL-C NT

20 Years PRESENCE DETECTOR INVENTED BY thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of 2 lighting groups depending on presence and brightness
- Square detection area allows accurate and simple planning
- 2 light switch outputs (relay, 230 V)
- Genuine daylight measurement, suitable only for fluorescent lamps (FL/PL/ESL)
- 2 brightness thresholds and self-learning switch-off delay adjustable
- Push button or switch connection for manual control
- Inrush current limitation for EB
- Pulse function for staircase time switch
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Master/master parallel switching: Up to ten detectors can be connected with each other to extend the detection area
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | 2 x light | 230 V AC | Pure white (similar to RAL 9010) | ECO-IR DUAL-C NT | 2020401 |
| | | | Black (similar to RAL 9005) | ECO-IR DUAL-C NT BK | 2020815 |
| | | | Silver (similar to RAL 9006) | ECO-IR DUAL-C NT SR | 2020816 |
| Additional colours available upon request | | | | | |

### Technical data

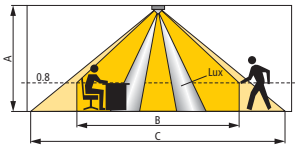
| | ECO-IR DUAL-C NT |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 2–3,5 m |
| **Stand-by consumption** | 0,9 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay 230 V, switch-on current limit |
| **Compact and flourescent lamps** | max. 1400 VA |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 16 x (1 x 58 W), 8 x ( 2 x 58 W), 24 x (1 x 36 W), 12 x (2 x 36 W), 24 x (smaller than 36 W) |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

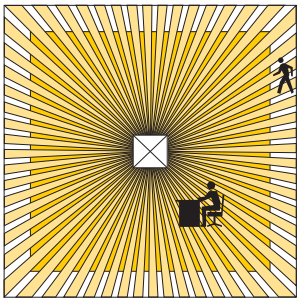


Additional technical data at:
www.theben.de/product/ Article number

## Detection range (Square)

| Mounting height( A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 20 m² \| 4,5 m x 4,5 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 2,5 m | 36 m² \| 6,0 m x 6,0 m | 64 m² \| 8,0 m x 8,0 m ± 0,5 m |
| 3 m | 49 m² \| 7,0 m x 7,0 m | 81 m² \| 9,0 m x 9,0 m ± 0,5 m |
| 3,5 m | 64 m² \| 8,0 m x 8,0 m | 100 m² \| 10,0 m x 10,0 m ± 1 m |
| 4 m | – | 121 m² \| 11,0 m x 11,0 m ± 1 m |





## Accessories

### Surface frame ECO-IR 360

- Art.No.: 9070512
  Details ▶ Page 231

### QuickSet plus

- Art.No.: 9070532
  Details ▶ Page 233

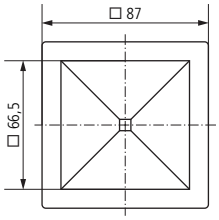
### clic

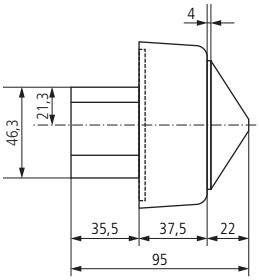
- Art.No.: 9070515
  Details ▶ Page 233

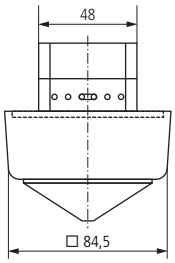
### Additional accessories

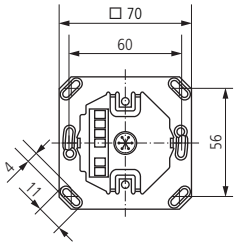
- QuickFix covers
  Details ▶ Page 232
- QuickFix concrete flush-mounted box
  Details ▶ Page 232
- QuickFix flush-mounted housing
  Details ▶ Page 232
- QuickSafe
  Details ▶ Page 232

## Scale drawings

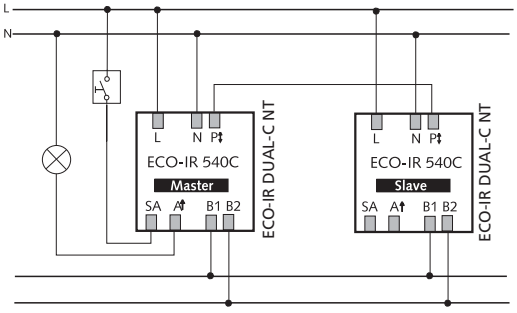


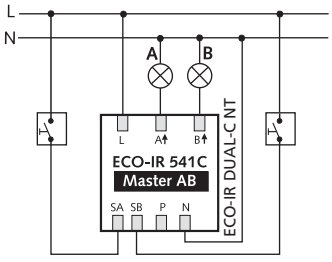




## Connection examples



## PlanoCentro

product design award 2010

20 Years PRESENCE DETECTOR INVENTED BY thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Flush design using concave mirror technology
- Light switch output (relay, 230 V)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Push button or switch connection for manual control
- Pulse function for staircase time switch
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Ready for use by 6 predefined settings, details can be set using the optional service remote control SendoPro
- Parameters can be selected for subsequent changes
- Adjustable sensitivity
- Optional user remote control SendoClic
- Test operation to check detection area, installation, brightness settings
- Master/slave or master/master parallel switching: Up to ten detectors can be connected with each other to extend the detection area
- Individual covers available upon request

**PlanoCentro 101-EWH**

- For ceiling installation (false ceilings)
- With installation for false ceilings and cover

**PlanoCentro 000-EWH**

- Slave-Version for PlanoCentro 101-EWH
- Just to be used with PlanoCentro 101-EWH as Master

**PlanoCentro 101-UWH**

- For flush-mounting (concrete ceiling)
- With metal installation frame for screwed fixing in wooden ceilings or in flush-mounted sockets, incl. cover

**PlanoCentro 000-UWH**

- Slave-Version for PlanoCentro 101-UWH
- Just to be used with PlanoCentro 101-UWH as Master

### Product selection

| Installation type | Channel | Functio | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling mounting with mounting frame | Light \| Presence | Master | Pure white (similar to RAL 9010) | PlanoCentro 101-EWH | 2030102 |
| | | | Black (similar to RAL 9005) | PlanoCentro 101-EBK | 2030103 |
| | | | Silver (similar to RAL 9006) | PlanoCentro 101-ESR | 2030104 |
| | – | Slave | Pure white (similar to RAL 9010) | PlanoCentro 000-EWH | 2040102 |
| | | | Black (similar to RAL 9005) | PlanoCentro 000-EBK | 2040103 |
| | | | Silver (similar to RAL 9006) | PlanoCentro 000-ESR | 2040104 |
| Ceiling installation (flush-mounting for concrete ceiling) | Light \| Presence | Master | Pure white (similar to RAL 9010) | PlanoCentro 101-UWH | 2030202 |
| | | | Black (similar to RAL 9005) | PlanoCentro 101-UBK | 2030203 |
| | | | Silver (similar to RAL 9006) | PlanoCentro 101-USR | 2030204 |
| | – | Slave | Pure white (similar to RAL 9010) | PlanoCentro 000-UWH | 2040202 |
| | | | Black (similar to RAL 9005) | PlanoCentro 000-UBK | 2040203 |
| | | | Silver (similar to RAL 9006) | PlanoCentro 000-USR | 2040204 |
| Additional colours available upon request | | | | | |



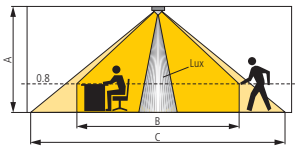
Additional technical data at:
www.theben.de/product/ Article number

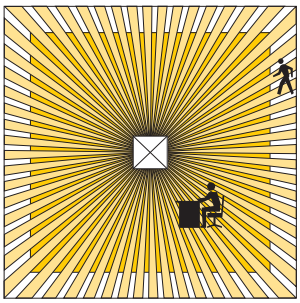
## Technical data

| | PlanoCentro 101 | PlanoCentro 000 |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Recommended mounting height** | 2–3,5 m | |
| **Stand-by consumption** | 0,8 W | 0,3 W |
| **Setting range brightness** | 5–2000 lx | – |
| **Light switch-off delay** | Impuls, 10 s–60 min | – |
| **Type of contact light** | Relay 230 V/10 A | – |
| **Incandescent/halogen lamp load** | 2300 W | – |
| **Compact and flourescent lamps** | 2300 W (at cos φ = 1), 1150 VA (at cos φ = 0,5) | – |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 20 x 54 W, 25 x 39 W, 10 x 2 x 54 W, 15 x 2 x 39 W | – |
| **Switch-on delay presence** | 0 s–10 min | – |
| **Presence switch-off delay** | 10 s–120 min | – |
| **Type of contact presence** | Relay potential-free | – |
| **Switching capacity presence** | 60 W (220 V DC), 62,5 VA (250 V AC), minimal 0,5 mV/10mA | – |
| **Ambient temperature** | 0 °C … +50 °C | |
| **Type of protection** | IP 40 | |

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 20 m² \| 4,5 m x 4,5 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 2,5 m | 36 m² \| 6,0 m x 6,0 m | 64 m² \| 8,0 m x 8,0 m ± 0,5 m |
| 3 m | 49 m² \| 7,0 m x 7,0 m | 81 m² \| 9,0 m x 9,0 m ± 0,5 m |
| 3,5 m | 64 m² \| 8,0 m x 8,0 m | 100 m² \| 10,0 m x 10,0 m ± 1 m |



## Accessories

**PlanoBox 1WH**

- for PlanoCentro 101-U, PlanoCentro 000-U
- Art.No.: 9070731
Details ▶ Page 231

**Junction casing, 115 x 115 x 100 mm**

- for PlanoCentro 101-U, PlanoCentro 000-U
- Art.No.: 9070689
Details ▶ Page 232

**SendoPro 868-A**

- Art.No.: 9070675
Details ▶ Page 233

**SendoClic**

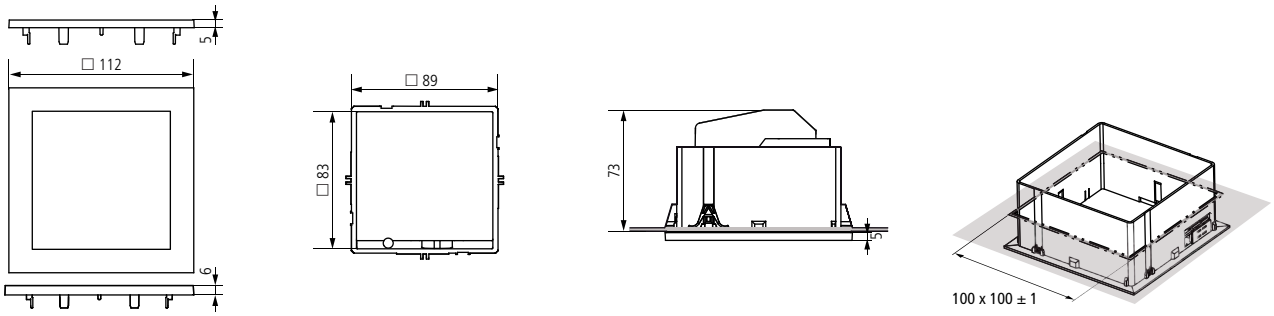
- Art.No.: 9070690
Details ▶ Page 232

4

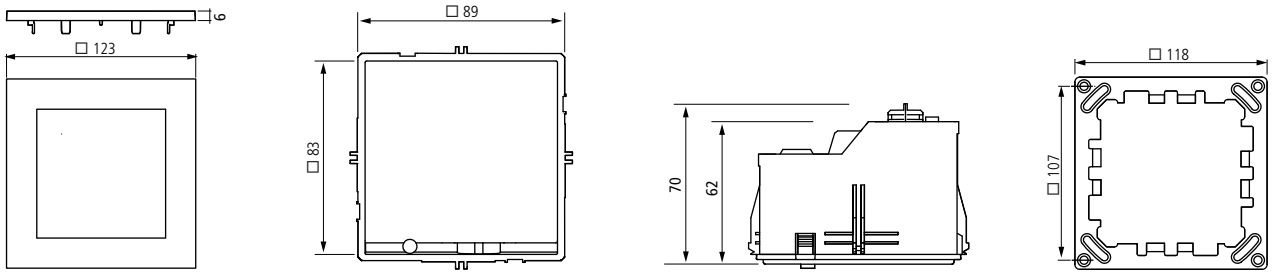
## PlanoCentro

### Scale drawings

**PlanoCentro 101-EWH, PlanoCentro 000-EWH**

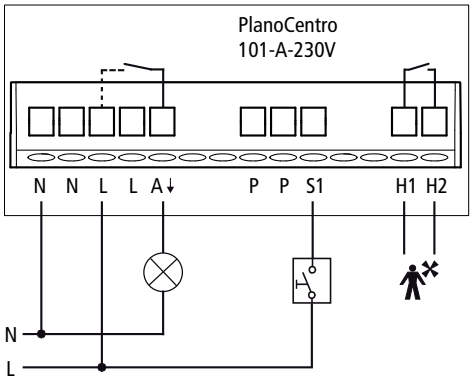



**PlanoCentro 101-UWH, PlanoCentro 000-UWH**

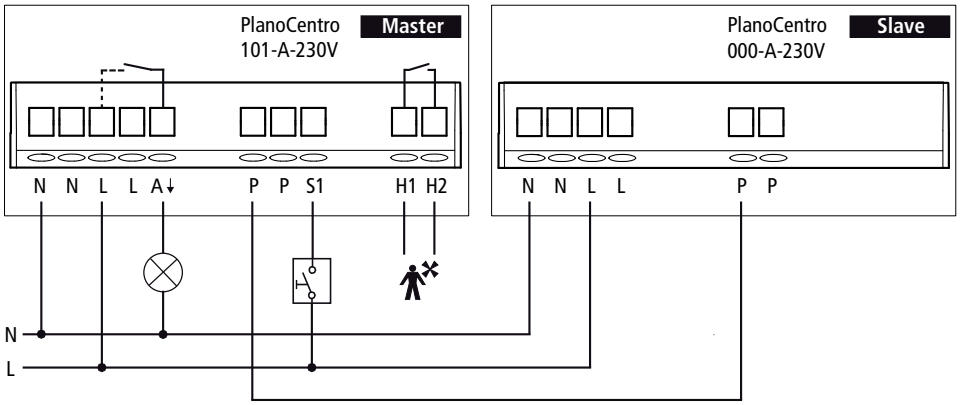


## Connection examples

### PlanoCentro 101-EWH, PlanoCentro 101-UWH




### PlanoCentro 101-EWH, PlanoCentro 000-EWH, PlanoCentro 101-UWH, PlanoCentro 000-UWH



## PresenceLight 180

20 Years
PRESENCE DETECTOR INVENTED BY thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- IP 54 for versatile use
- Light switch output (relay, 230 V)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Pulse function for staircase time switch
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Wall mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

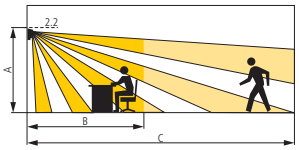
| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Wall installation | Light | 230 V AC | Pure white (similar to RAL 9010) | PresenceLight 180 | 2000050 |
| | | | Black (similar to RAL 9005) | PresenceLight 180 BK | 2000803 |
| | | | Silver (similar to RAL 9006) | PresenceLight 180 SR | 2000804 |
| Additional colours available upon request | | | | | |

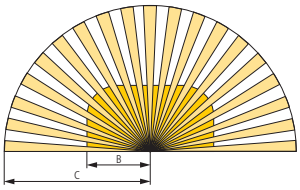
### Technical data

| | PresenceLight 180 |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 1,6–2,2 m |
| **Stand-by consumption** | 0,9 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay 230 V |
| **Resistive load** | 1400 W |
| **Incandescent/halogen lamp load** | 1200 W |
| **Compact and flourescent lamps** | 960 VA (cos φ = 0,8), 580 VA (cos φ = 0,5) |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 10 x (1 x 58 W), 5 x (2 x 58 W), 16 x (1 x 36 W), 8 x (2 x 36 W), 16 x (smaller than 36 W) |
| **Ambient temperature** | –20 °C … +50 °C |
| **Type of protection** | IP 54 |

## Detection range (Semicircular)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2,2 m | 25 m² \| 7,0 m x 3,5 m | 100 m² \| R 8 m |






## Accessories

**Surface frame PresenceLight**

- Art.No.: 9070513
  Details ▶ Page 231

**QuickSafe**

- Art.No.: 9070531
  Details ▶ Page 232

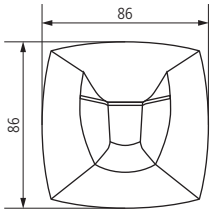
**clic**

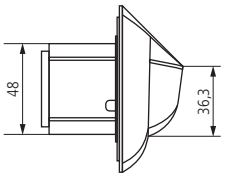
- Art.No.: 9070515
  Details ▶ Page 233

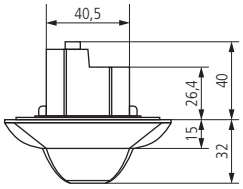
**QuickSet plus**

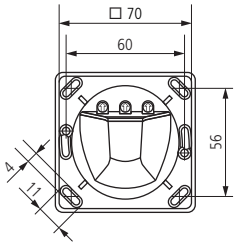
- Art.No.: 9070532
  Details ▶ Page 233

## Scale drawings

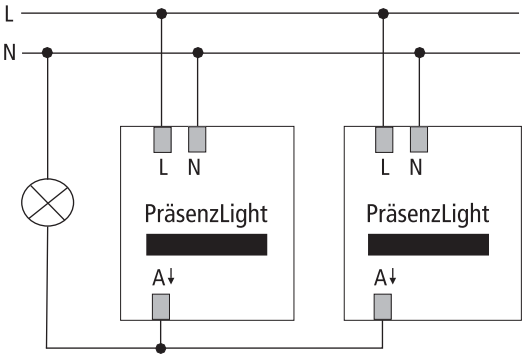


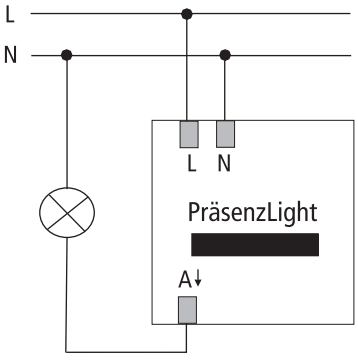




## Connection examples



## ECO-IR 180A

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Light switch output (relay, 230 V)
- Genuine daylight measurement, suitable only for fluorescent lamps (FL/PL/ESL)
- Brightness threshold and self-learning switch-off delay adjustable
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Parameters can be set using the potentiometers
- Ready for use by ex-factory set items
- Wall mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Wall installation | Light \| Presence | 230 V AC | Pure white (similar to RAL 9010) | ECO-IR 180A | 2020050 |
| | | | Black (similar to RAL 9005) | ECO-IR 180A BK | 2020809 |
| | | | Silver (similar to RAL 9006) | ECO-IR 180A SR | 2020810 |
| Additional colours available upon request | | | | | |

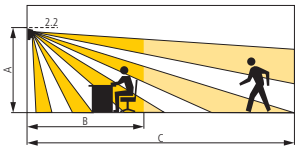
### Technical data

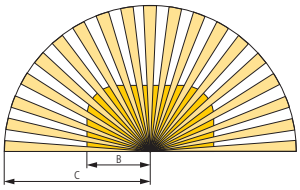
| | ECO-IR 180A |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Recommended mounting height** | 1,6–2,2 m |
| **Stand-by consumption** | 0,9 W |
| **Setting range brightness** | 50–1600 lx |
| **Light switch-off delay** | 2 min–15 min |
| **Type of contact light** | Relay 230 V |
| **Compact and flourescent lamps** | max. 1400 VA |
| **Compact and flourescent lamps (Number of electronic ballasts)** | 12 x (1 x 58 W), 6 x (2 x 58 W), 18 x (1 x 36 W), 9 x (2 x 36 W), 18 x (smaller than 36 W) |
| **Presence switch-off delay** | 10–60 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 100 W (24 V DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |


Additional technical data at:
www.theben.de/product/ Article number

## Detection range (Semicircular)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2,2 m | 32 m² \| 8 m x 4 m | 100 m² \| R 8 m |






## Accessories

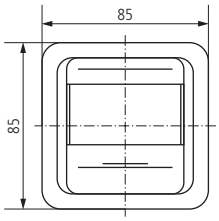
### Surface frame ECO-IR 180

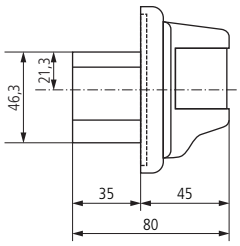
- Art.No.: 9070511
  Details ▶ Page 231

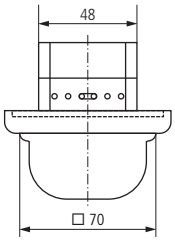
### QuickSafe

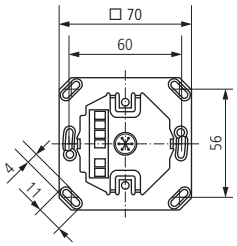
- Art.No.: 9070531
  Details ▶ Page 232

## Scale drawings

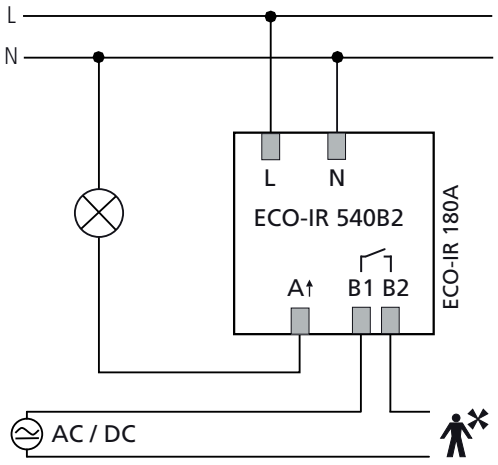


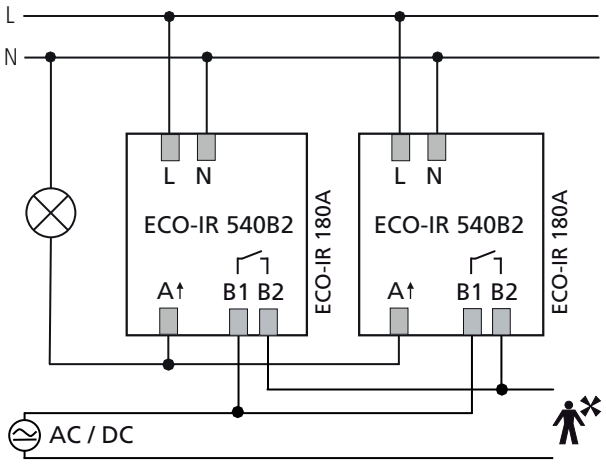




## Connection examples



## compact office 24V

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Light switch output (relay, potential-free)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Pulse function for staircase time switch
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

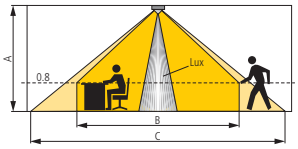
| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| Presence | 24 V AC/DC | Pure white (similar to RAL 9010) | compact office 24V | 2014000 |
| | | | Black (similar to RAL 9005) | compact office 24V BK | 2014800 |
| | | | Silver (similar to RAL 9006) | compact office 24V SR | 2014801 |
| Additional colours available upon request | | | | | |

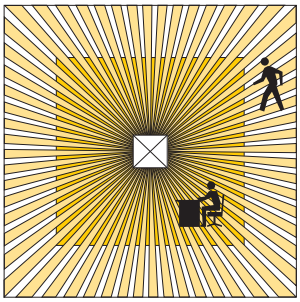
### Technical data

| | compact office 24V |
|---|---|
| **Operating voltage** | 24 V AC/DC |
| **Recommended mounting height** | 2–3 m |
| **Stand-by consumption** | 0,4 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay potential-free |
| **Compact and flourescent lamps** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Switch-on delay presence** | 0 s–10 min |
| **Presence switch-off delay** | 10 s–120 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

## Detection range (Square)

| Mounting height( A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 9 m² \| 3,0 m x 3,0 m | 20 m² \| 4,5 m x 4,5 m ± 0,5 m |
| 2,5 m | 16 m² \| 4,0 m x 4,0 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 3 m | 20 m² \| 4,5 m x 4,5 m | 49 m² \| 7,0 m x 7,0 m ± 1,0 m |
| 3,5 m | – | 64 m² \| 8,0 m x 8,0 m ± 1,0 m |





## Accessories

**Surface frame compact**

- Art.No.: 9070514

Details ▶ Page 231

**clic**

- Art.No.: 9070515

Details ▶ Page 233

**QuickSet plus**

- Art.No.: 9070532

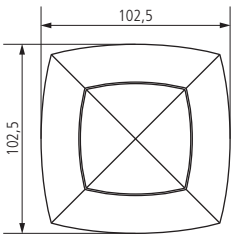
Details ▶ Page 233

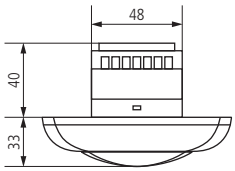
**QuickSafe**

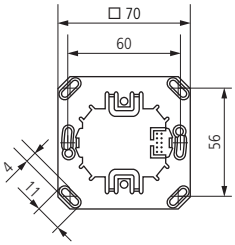
- Art.No.: 9070531

Details ▶ Page 232

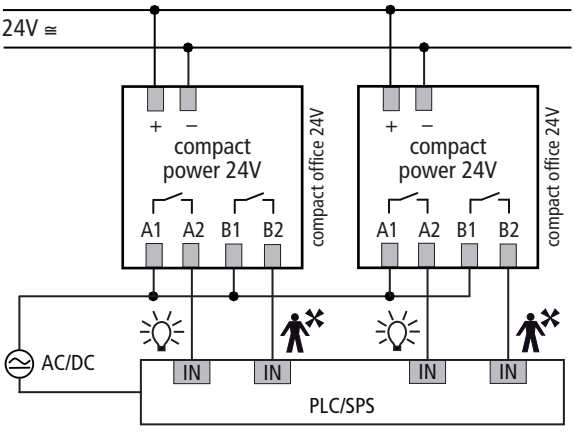
## Scale drawings

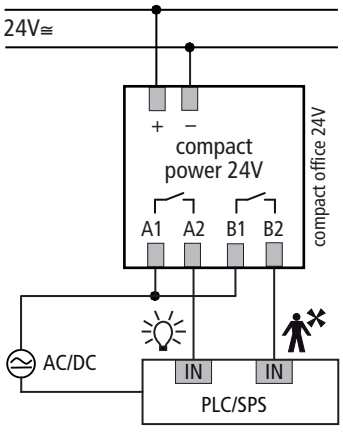



## Connection examples



## compact office 24V LUX

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness and analogue value output of measured brightness
- Square detection area allows accurate and simple planning
- Light switch output (relay, potential-free)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Analogue output 0–10 V for brightness
- Linear or logarithmic output of brightness
- Can be used as light sensor for PLC controls
- The analogue output exports the brightness measured by the internal sensor as an analogue signal. The output can be linear or logarithmic to the measured brightness. The output functions independently from the presence detector
- Pulse function for staircase time switch
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| 0–10 V | 24 V AC/DC | Pure white (similar to RAL 9010) | compact office 24V Lux | 2014001 |
| | | | Black (similar to RAL 9005) | compact office 24V Lux BK | 2014803 |
| | | | Silver (similar to RAL 9006) | compact office 24V Lux SR | 2014804 |
| Additional colours available upon request | | | | | |

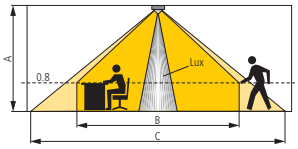
### Technical data

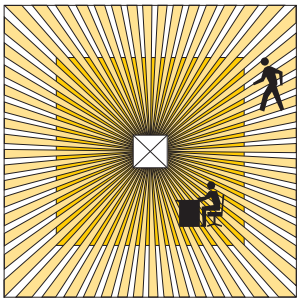
| | compact office 24V Lux |
|---|---|
| **Operating voltage** | 24 V AC/DC |
| **Recommended mounting height** | 2–3 m |
| **Stand-by consumption** | 0,5 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay potential-free |
| **Compact and flourescent lamps** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Ambient temperature** | +0 °C … +50 °C |
| **Type of protection** | IP 40 |


Additional technical data at:
www.theben.de/product/ Article number

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 9 m² \| 3,0 m x 3,0 m | 20 m² \| 4,5 m x 4,5 m ± 0,5 m |
| 2,5 m | 16 m² \| 4,0 m x 4,0 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 3 m | 20 m² \| 4,5 m x 4,5 m | 49 m² \| 7,0 m x 7,0 m ± 1,0 m |
| 3,5 m | – | 64 m² \| 8,0 m x 8,0 m ± 1,0 m |





## Accessories

**Surface frame compact**

- Art.No.: 9070514

Details ▶ Page 231

**clic**

- Art.No.: 9070515

Details ▶ Page 233

**QuickSet plus**

- Art.No.: 9070532

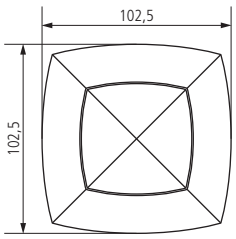
Details ▶ Page 233

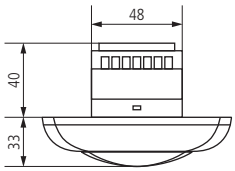
**QuickSafe**

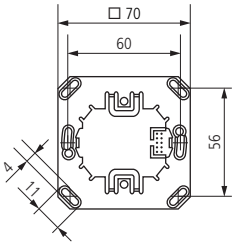
- Art.No.: 9070531

Details ▶ Page 232

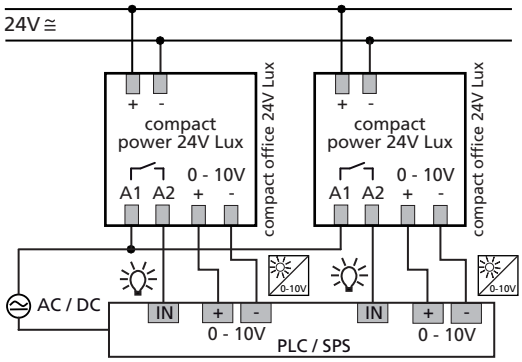
## Scale drawings

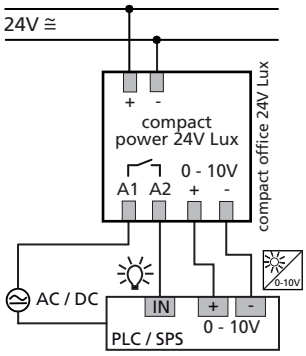



## Connection examples



## compact passage 24V

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Rectangular detection area for corridors allows accurate and simple planning
- Light switch output (relay, potential-free)
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Brightness threshold and self-learning switch-off delay adjustable
- Pulse function for staircase time switch
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Parameters can be set using the potentiometers or via the optional service remote controls
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

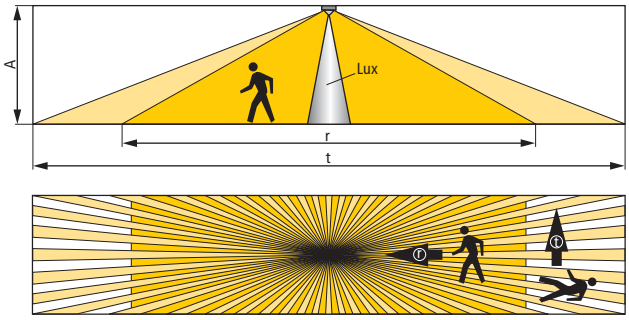
| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| Presence | 24 V AC/DC | Pure white (similar to RAL 9010) | compact passage 24V | 2014090 |
| | | | Silver (similar to RAL 9006) | compact passage 24V SR | 2014807 |
| | | | Black (similar to RAL 9005) | compact passage 24V BK | 2014806 |
| Additional colours available upon request | | | | | |

### Technical data

| | compact passage 24V |
|---|---|
| **Operating voltage** | 24 V AC/DC |
| **Recommended mounting height** | 2–3,5 m |
| **Stand-by consumption** | 0,4 W |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | Impuls (0,5 s), 10 s–20 min |
| **Type of contact light** | Relay potential-free |
| **Compact and flourescent lamps** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Switch-on delay presence** | 0 s–10 min |
| **Presence switch-off delay** | 10 s–120 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

## Detection range (Rectangular)

| Mounting height (A) | Head on to (r) | Diagonally (t) |
|---|---|---|
| 2 m | 56 m² \| 16 m x 3,5 m ± 1 m | 105 m² \| 30 m x 3,5 m ± 1 m |
| 2,5 m | 72 m² \| 18 m x 4,0 m ± 1 m | 120 m² \| 30 m x 4,0 m ± 1 m |
| 3 m | 90 m² \| 20 m x 4,5 m ± 1 m | 135 m² \| 30 m x 4,5 m ± 1 m |
| 3,5 m | 100 m² \| 20 m x 5,0 m ± 1 m | 150 m² \| 30 m x 5,0 m ± 1 m |






## Accessories

**Surface frame compact**

- Art.No.: 9070514
  Details ▶ Page 231

**clic**

- Art.No.: 9070515
  Details ▶ Page 233

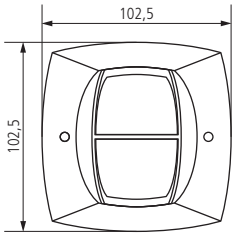
**QuickSet plus**

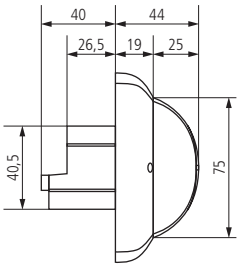
- Art.No.: 9070532
  Details ▶ Page 233

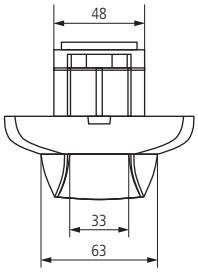
**QuickSafe**

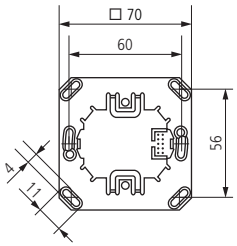
- Art.No.: 9070531
  Details ▶ Page 232

## Scale drawings

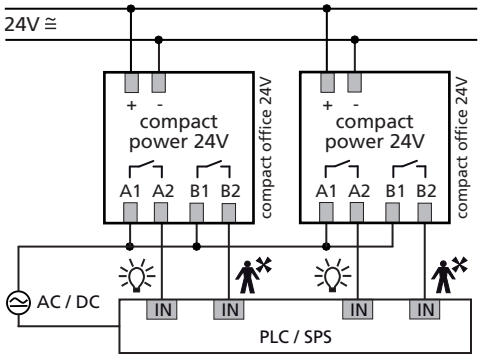


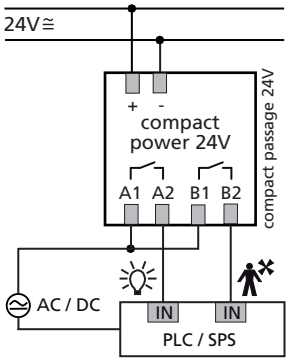




## Connection examples



## ECO-IR 360-24V

20 Years PRESENCE DETECTOR INVENTED BY thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Light switch output (relay, potential-free)
- Genuine daylight measurement, suitable only for fluorescent lamps (FL/PL/ESL)
- Brightness threshold and self-learning switch-off delay adjustable
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Parameters can be set using the potentiometers
- Ready for use by ex-factory set items
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

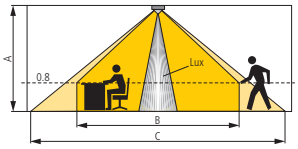
| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation | Light \| Presence | 24 V AC/DC | Pure white (similar to RAL 9010) | ECO-IR 360-24V | 2024000 |
| | | | Black (similar to RAL 9005) | ECO-IR 360-24V BK | 2024800 |
| | | | Silver (similar to RAL 9006) | ECO-IR 360-24V SR | 2024801 |
| Additional colours available upon request | | | | | |

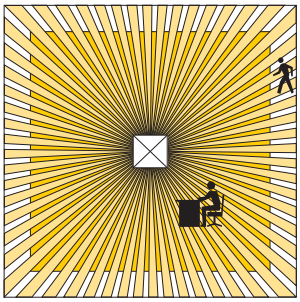
### Technical data

| | ECO-IR 360-24V |
|---|---|
| **Operating voltage** | 24 V AC/DC |
| **Recommended mounting height** | 2–3,5 m |
| **Stand-by consumption** | 0,3 W |
| **Setting range brightness** | 50–1600 lx |
| **Light switch-off delay** | 2 min–15 min |
| **Type of contact light** | Relay potential-free |
| **Compact and flourescent lamps** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Presence switch-off delay** | 1–60 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 20 m² \| 4,5 m x 4,5 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 2,5 m | 36 m² \| 6,0 m x 6,0 m | 64 m² \| 8,0 m x 8,0 m ± 0,5 m |
| 3 m | 49 m² \| 7,0 m x 7,0 m | 81 m² \| 9,0 m x 9,0 m ± 0,5 m |
| 3,5 m | 64 m² \| 8,0 m x 8,0 m | 100 m² \| 10,0 m x 10,0 m ± 1 m |
| 4 m | – | 121 m² \| 11,0 m x 11,0 m ± 1 m |



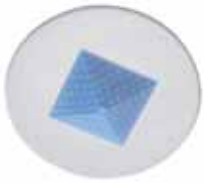



4

## Accessories

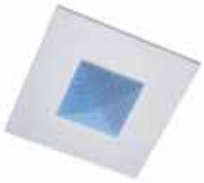
### QuickFix concrete round cover

- Art.No.: 9070519
  Details ▶ Page 231



### QuickFix square cover

- Art.No.: 9070516
  Details ▶ Page 232



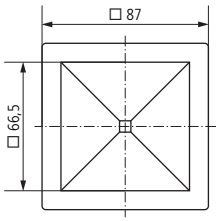
### Surface frame ECO-IR 360

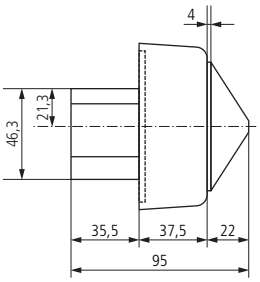
- Art.No.: 9070512
  Details ▶ Page 231

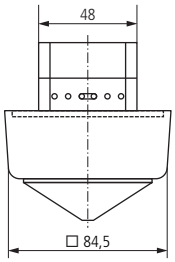
### Additional accessories

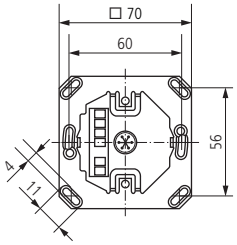
- QuickFix concrete square cover
  Details ▶ Page 232
- QuickFix concrete round cover
  Details ▶ Page 232
- QuickFix concrete flush-mounted box
  Details ▶ Page 232
- QuickFix flush-mounted housing
  Details ▶ Page 232
- QuickSafe
  Details ▶ Page 232

## Scale drawings

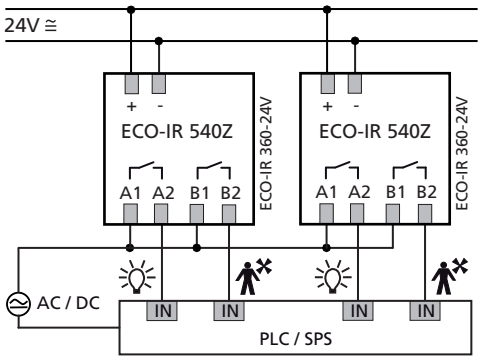


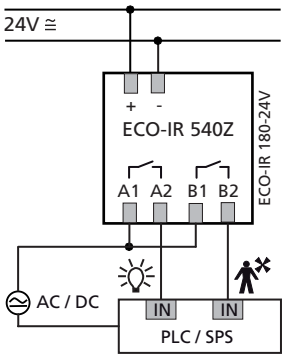




## Connection examples



## ECO-IR 180-24V

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Light switch output (relay, potential-free)
- Genuine daylight measurement, suitable only for fluorescent lamps (FL/PL/ESL)
- Brightness threshold and self-learning switch-off delay adjustable
- Presence switch output (relay, potential-free) for example for HVAC control
- HVAC control with adjustable switch-on and switch-off delay
- Parameters can be set using the potentiometers
- Ready for use by ex-factory set items
- Wall mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

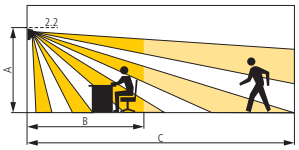
| Installation type | Channel | Operating voltage | Colour | Type | Article number |
|---|---|---|---|---|---|
| Wall installation | Light \| Presence | 24 V AC/DC | Pure white (similar to RAL 9010) | ECO-IR 180-24V | 2024050 |
| | | | Black (similar to RAL 9005) | ECO-IR 180-24V BK | 2024803 |
| | | | Silver (similar to RAL 9006) | ECO-IR 180-24V SR | 2024804 |
| Additional colours available upon request | | | | | |

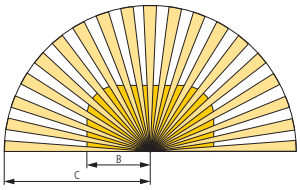
### Technical data

| | ECO-IR 180-24V |
|---|---|
| **Operating voltage** | 24 V AC/DC |
| **Recommended mounting height** | 1,6–2,2 m |
| **Stand-by consumption** | 0,3 W |
| **Setting range brightness** | 50–1600 lx |
| **Light switch-off delay** | 2 min–15 min |
| **Type of contact light** | Relay potential-free |
| **Compact and flourescent lamps** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Presence switch-off delay** | 10–60 min |
| **Type of contact presence** | Relay potential-free |
| **Switching capacity presence** | 50 W (24 V AC/DC), 460 VA (230 V AC), µ, minimal 1 V/1 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

## Detection range (Semicircular)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2,2 m | 32 m² \| 8 m x 4 m | 100 m² \| R 8 m |






## Accessories

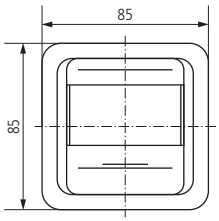
### Surface frame ECO-IR 180

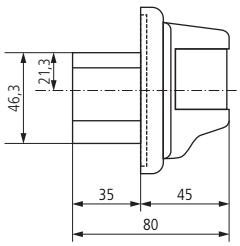
- Art.No.: 9070511
  Details ▶ Page 231

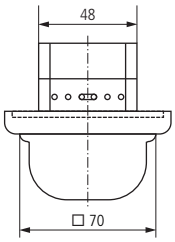
### QuickSafe

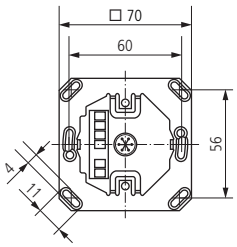
- Art.No.: 9070531
  Details ▶ Page 232

## Scale drawings

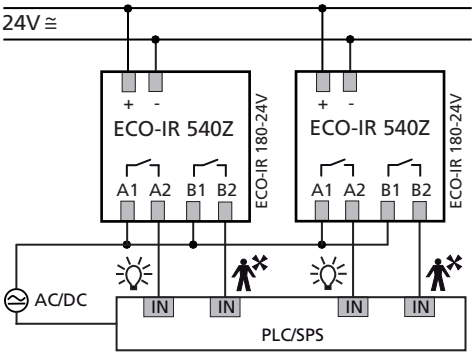


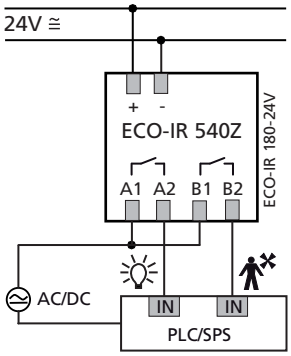



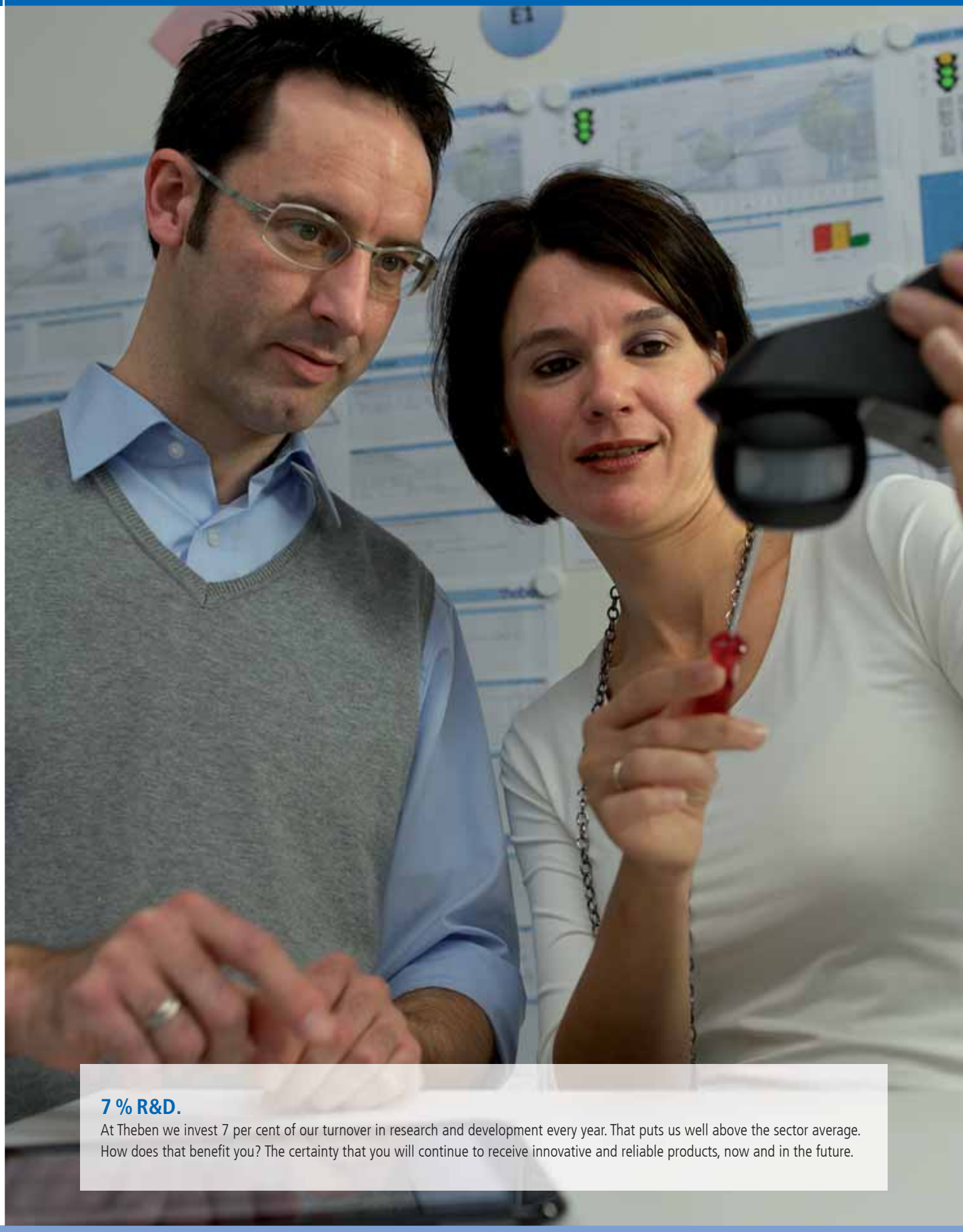




## Connection examples





## 7 % R&D.

At Theben we invest 7 per cent of our turnover in research and development every year. That puts us well above the sector average. How does that benefit you? The certainty that you will continue to receive innovative and reliable products, now and in the future.

| | Installation type | Detection angle | Detection range | Channel | Lamp loads | Light switch-off delay | Remote controlled | Type | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Outdoor** | | | | | | | | | |
| | Wall installation | 150° | 12 m | Light | 1000 W | 5 s–12 min | – | LUXA 101-150 | 92 |
| | | 180° | | Light | 1000 W | 5 s–12 min | – | LUXA 101-180 | 92 |
| | | 150° | 12 m | Light | – | 5 s–12 min | – | LUXA 102-150/150W | 94 |
| | | | | | | | | LUXA 102-150/500W | 94 |
| | | 140° | 10 m | Light | – | 5 s–10 min | – | LUXA 102-140 LED 8W | 96 |
| | | | | | | | | LUXA 102-140 LED 16W | 96 |
| | Wall and ceiling installation | 360° | Ø 32 m | Light | 1000 W | 5 s–12 min | – | LUXA 101-360 | 98 |
| | | 110° | 15 m | Light | 2300 W | 1 s–20 min | ✓ | SPHINX 105-110 | 100 |
| | | 220° | 15 m | Light | 2300 W | 1 s–20 min | ✓ | SPHINX 105-220 | 100 |
| | | 300° | 15 m | Light | 2300 W | 1 s–20 min | ✓ | SPHINX 105-300 | 100 |
| **Indoor** | | | | | | | | | |
| | Ceiling mounting | 360° | Ø 7 m | Light | 1000 W | 5 s–20 min | – | LUXA 103-360 | 102 |
| | | | | Light \| Presence | 1000 W | 5 s–20 min | – | LUXA 103-360/2 | 102 |
| | Ceiling installation, Suface mounted | 360° | Ø 7 m | Light | 1000 W | 5 s–20 min | – | LUXA 103-360 AP | 104 |
| | | | | Light \| Presence | 1000 W | 5 s–20 min | – | LUXA 103-360/2 AP | 104 |
| | Flush-mounted wall installation | 200° | 8 m | Light | 1000 W | 20 s–30 min | – | LUXA 103-200 | 106 |
| | | | | | 400 W | 20 s–30 min | – | LUXA 103-200 T | 106 |

5

## Motion detectors – wall installation

**LUXA 101-150**

**LUXA 101-180**

5

## Description

**Common functions**

- Motion detector (PIR)
- For outdoor use
- Automatic lighting control based on presence and brightness
- Additional creep under protection
- Sensor head can be turned by ± 90° horizontally and by 40° downwards
- Mixed light measurement suitable for the control of fl uorescent, incandescent and halogen lamps
- Single-handed plug-in installation with retained screws
- Instant start-up possible via factory preset
- Adjustable brightness switching value and switch-off delay
- Sensitivity can be reduced to limit detection area
- Controls are place protected

**LUXA 101-150**

- 150° detection angle

**LUXA 101-180**

- 180° detection angle

## Product selection

| Installation type | Channel | Detection angle | Colour | Type | Article number |
|---|---|---|---|---|---|
| Wall installation | Light | 150° | White | LUXA 101-150 white | 1010963 |
| | | | Black | LUXA 101-150 black | 1010964 |
| | | 180° | White | LUXA 101-180 white | 1010961 |
| | | | Black | LUXA 101-180 black | 1010962 |

## Technical data

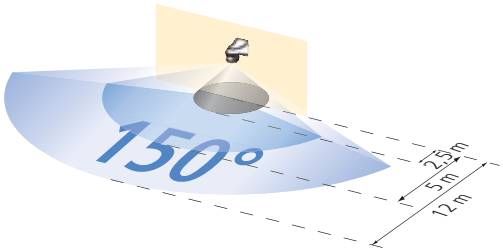
| | LUXA 101-150 | LUXA 101-180 |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50–60 Hz | |
| **Stand-by consumption** | 0,9 W | |
| **Setting range brightness** | 5–1000 lx | |
| **Switching capacity light** | 10 A (at 230 V AC, cos φ = 1), 6 A (at 230 V AC, cos φ = 0.6), 3 AX (at 230 V AC, cos φ = 0.3) | |
| **Detection angle** | 150° | 180° |
| **Light switch-off delay** | 5 s–12 min | |
| **Incandescent lamp load** | 1000 W | |
| **Fluorescent lamp load (conventional) not corrected, series-corrected** | 900 VA | |
| **Fluorescent lamp load (conventional) parallel-corrected** | 200 VA | |

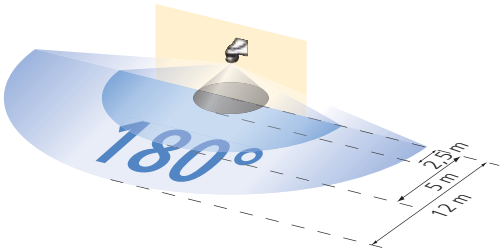


Additional technical data at:
www.theben.de/product/ Article number

| | LUXA 101-150 | LUXA 101-180 |
|---|---|---|
| **Fluorescent lamp load (conventional) lead-lag circuit** | 400 VA | |
| **Ambient temperature** | –25 °C … +45 °C | |
| **Protection class** | II | |
| **Type of protection** | IP 54 | |

## Detection range



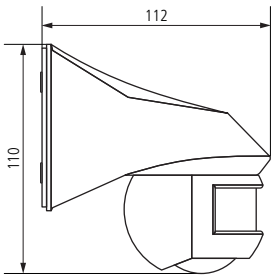

- Walking diagonally to the detector
- Walking head on to the detector
- Creep under protection

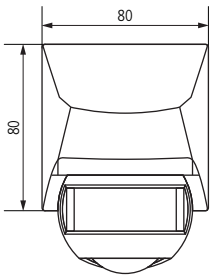
Mounting height 2,5 m

## Accessories

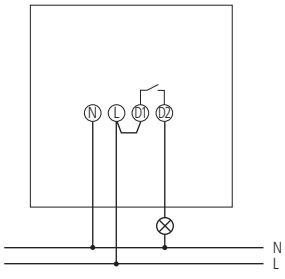
- LUXA corner angle black
  Details ▶ Page 234
- LUXA corner angle white
  Details ▶ Page 234
- RC filter
  Details ▶ Page 233

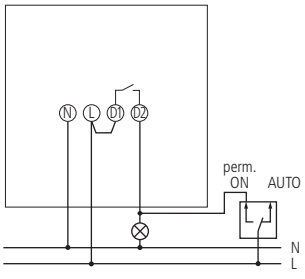
## Scale drawings

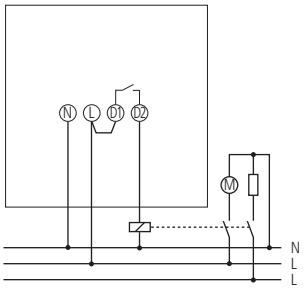



## Connection examples



## Motion detectors – wall installation

**LUXA 102-150/150W**

**LUXA 102-150/500W**

5

## Description

### Common functions

- Motion detector (PIR)
- For outdoor use
- Integrated halogen spotlight for extensive lighting
- Energy saving ecoHalogen light bulb with energy efficient class C (R7s socket) included
- 150° detection angle
- Automatic lighting control based on presence and brightness
- Spotlight can be swivelled ± 45° horizontaly, and adjusted 60° upwards and 30° downwards using screw fixings
- Additional creep under protection
- Sensor head can be turned by ± 90° horizontally and by 40° downwards
- Instant start-up possible via factory preset
- Single-handed plug-in installation with retained screws
- Controls are placed protected
- Additional light switch output (relay 230 V AC)
- Mixed light measurement suitable for the control of fluorescent, incandescent and halogen lamps
- Spotlight with tough aluminium die-cast housing
- Adjustable brightness switching value and switch-off delay
- Sensitivity can be reduced to limit detection area

### LUXA 102-150/150W

- 120 W ecoHalogen spotlight (comparable with regular 150 W spotlight)

### LUXA 102-150/500W

- 400 W ecoHalogen spotlight (comparable with regular 500 W spotlight)

## Product selection

| Installation type | Channel | Detection angle | Colour | Type | Article number |
|---|---|---|---|---|---|
| Wall installation | Light | 150° | White | LUXA 102-150/150W white | 1020961 |
| | | | Black | LUXA 102-150/150W black | 1020962 |
| | | | White | LUXA 102-150/500W white | 1020963 |
| | | | Black | LUXA 102-150/500W black | 1020964 |

## Technical data

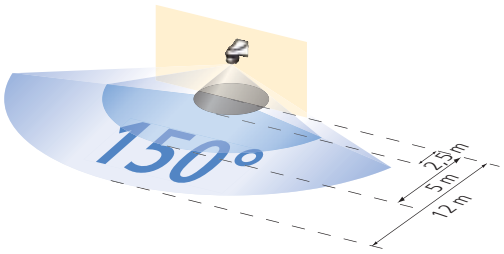
| | LUXA 102-150/150W | LUXA 102-150/500W |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50–60 Hz | |
| **Stand-by consumption** | 0,9 W | |
| **Setting range brightness** | 5–1000 lx | |
| **Switching capacity light** | 8 A (at 230 V AC, cos φ = 1), 6 A (at 230 V AC, cos φ = 0.6), 3 AX (at 230 V AC, cos φ = 0.3) | |



Additional technical data at:
www.theben.de/product/ Article number

| | LUXA 102-150/150W | LUXA 102-150/500W |
|---|---|---|
| **Detection angle** | 150° | |
| **Light switch-off delay** | 5 s–12 min | |
| **Ambient temperature** | –15 °C … +45 °C | |
| **Protection class** | I as per EN 60 669-2-1 | |
| **Type of protection** | IP 54 | |

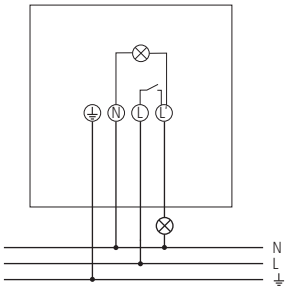
## Detection range




- Walking diagonally to the detector
- Walking head on to the detector
- Creep under protection

Mounting height 2,5 m

## Connection examples




## Accessories

### LUXA corner angle white

- Only for LUXA 102-150/150W
- Art.No.: 9070626
  Details ▶ Page 234

### LUXA corner angle black

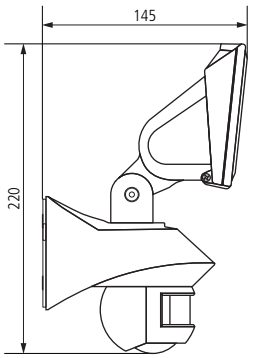
- Only for LUXA 102-150/150W
- Art.No.: 9070625
  Details ▶ Page 234

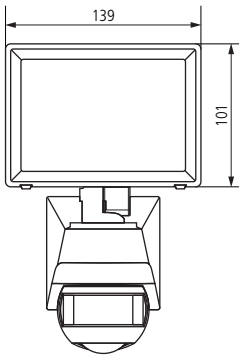
### RC filter

- Art.No.: 9070523
  Details ▶ Page 234

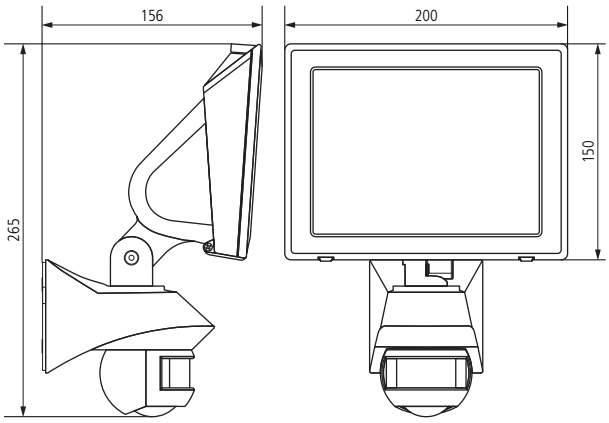
## Scale drawings

### LUXA 102-150/150W




### LUXA 102-150/500W



## Motion detectors – wall installation

**LUXA 102-140 LED 8W**

**LUXA 102-140 LED 16W**

## Description

### Common functions

- LED spotlight with motion detector
- For outdoor use
- Automatic lighting control based on presence and brightness
- 90° detection angle at a detection range of 10 m
- Additional creep under protection with 140° detection angle at a detection range of 2 m
- Sensor head can be turned by ± 90° horizontally
- Spotlight can be swivelled ± 30° horizontaly, and adjusted 70° downwards
- Lighting only brightness dependent with deactivated motion detector
- Single-handed plug-in installation with retained screws
- Instant start-up possible via factory preset
- Adjustable brightness switching value and switch-off delay

### LUXA 102-140 LED 8W

- 1 LED spot with 8 W, 430 lm (equivalent to 100 W Halogen spotlight)

### LUXA 102-140 LED 16W

- 2 LED spots with 8 W, 860 lm each (equivalent to 2 x 100 W Halogen spotlight)

## Product selection

| Installation type | Channel | Detection angle | Colour | Type | Article number |
|---|---|---|---|---|---|
| Wall installation | Light | 140° | White | LUXA 102-140 LED 8W WH | 1020971 |
| | | | Black | LUXA 102-140 LED 8W BK | 1020972 |
| | | | White | LUXA 102-140 LED 16W WH | 1020973 |
| | | | Black | LUXA 102-140 LED 16W BK | 1020974 |

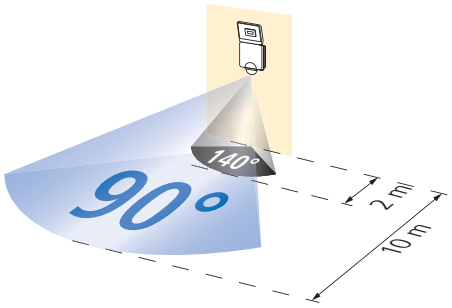
## Technical data

| | LUXA 102-140 LED 8W | LUXA 102-140 LED 16W |
|---|---|---|
| **Operating voltage** | 100–240 V AC | |
| **Frequency** | 50–60 Hz | |
| **Stand-by consumption** | 0,3 W | |
| **Setting range brightness** | 5–200 lx | |
| **Detection angle** | 140°/90° | |
| **Light switch-off delay** | 5 s–10 min | |
| **Ambient temperature** | –20 °C … +40 °C, –20 °C … +55 °C LED off | |
| **Protection class** | II | |
| **Type of protection** | IP 44 | |



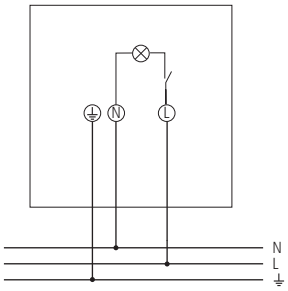
Additional technical data at:
www.theben.de/product/ Article number

## Detection range



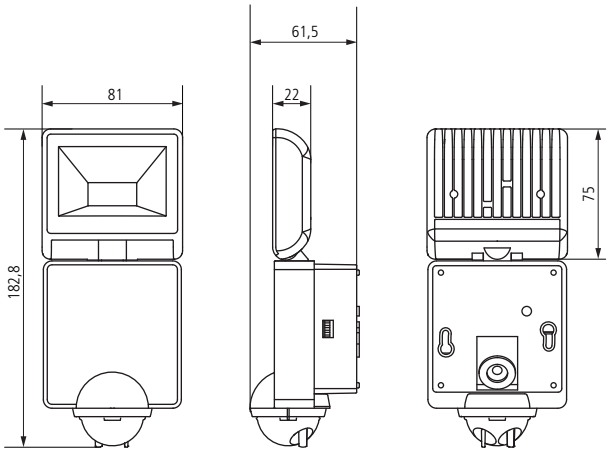

Walking diagonally to the detector
Creep under protection
Mounting height 2,5 m

## Connection examples

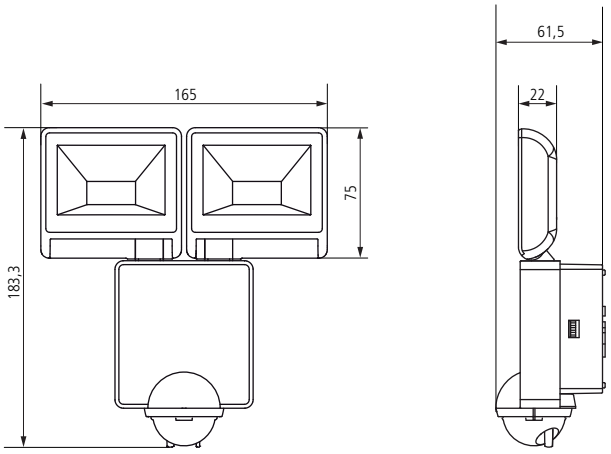



## Scale drawings

### LUXA 102-140 LED 8W




### LUXA 102-140 LED 16W



## LUXA 101-360

### Description

- Motion detector (PIR)
- For installation on walls and ceilings
- 360° detection angle
- Automatic lighting control based on presence and brightness
- Mixed light measurement suitable for the control of fl uorescent, incandescent and halogen lamps
- Single-handed plug-in installation with retained screws
- Instant start-up possible via factory preset
- Adjustable brightness switching value and switch-off delay
- Sensitivity can be reduced to limit detection area
- Sensor head can be adjusted vertically by 90° upwards or 70° downwards, thus allowing universal installation
- Creep under protection
- Detection area can be limited using enclosed segments
- Screwless terminals for quick installation
- LUXA corner angle white included

5

### Product selection

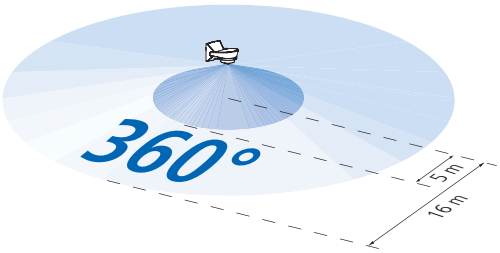
| Installation type | Channel | Detection angle | Colour | Type | Article number |
|---|---|---|---|---|---|
| Wall and ceiling installation | Light | 360° | White | LUXA 101-360 | 1010460 |

### Technical data

| LUXA 101-360 | |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50–60 Hz |
| **Stand-by consumption** | 0,9 W |
| **Setting range brightness** | 5–1000 lx |
| **Switching capacity light** | 10 A (at 230 V AC, cos φ = 1), 6 A (at 230 V AC, cos φ = 0.6), 3 AX (at 230 V AC, cos φ = 0.3) |
| **Detection angle** | 360° |
| **Light switch-off delay** | 5 s–12 min |

| | |
|---|---|
| **Incandescent lamp load** | 1000 W |
| **Fluorescent lamp load(conventional) not corrected, series-corrected** | 900 VA |
| **Fluorescent lamp load(conventional) parallel-corrected** | 200 VA |
| **Fluorescent lamp load(conventional) lead-lag circuit** | 400 VA |
| **Ambient temperature** | –15 °C … +45 °C |
| **Protection class** | II |
| **Type of protection** | IP 55 |

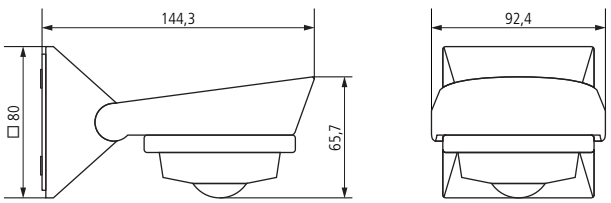
### Detection range




- Walking diagonally to the detector
- Walking head on to the detector

Mounting height 2,5 m

### Scale drawings

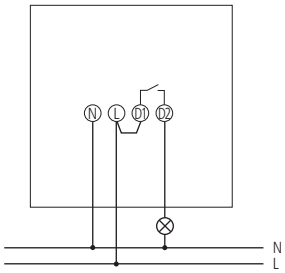


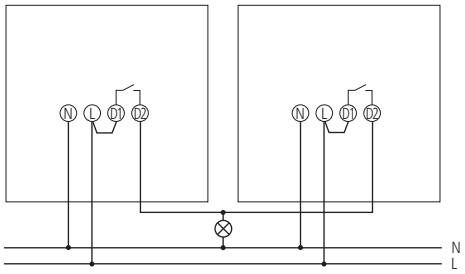
## Accessories

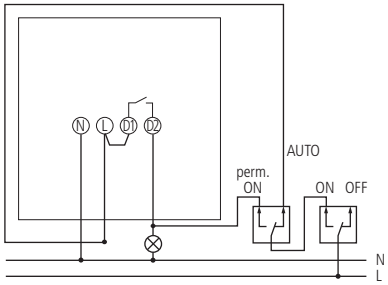
### RC filter

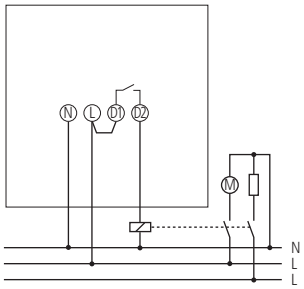
- Art.No.: 9070523
  Details ▶ Page 233

## Connection examples



## Motion detectors – wall or ceiling installation

### Description

- Motion detector (PIR)
- Wall and ceiling installation
- Automatic lighting control based on presence and brightness
- Sensor head can be adjusted horizontally by ± 90°, vertically by 90° upwards and 25° downwards
- Additional creep under protection
- Detection area can be limited using enclosed segments
- Mixed light measurement suitable for the control of fluorescent, incandescent and halogen lamps
- Instant start-up possible via factory preset
- A cover plate protects controls against manipulation
- Single-handed plug-in installation with captive screws
- RC 105 Pro, service remote control (optional)
- RC 105, user remote control (optional)
- Adjustable brightness switching value and switch-off delay
- Zero-cross swithcing for relay-saving switching and high lamp loads
- Teach-in of current brightness value possible via remote control
- Impulse function can be combined with staircase time switches (ELPA)
- Test function for checking detection area

**SPHINX 105-110**

- 110° detection angle
- Especially suitable for narrow courtyard entrances, house entrances or paths
- Internal corner installation with optional corner installation bracket

**SPHINX 105-220**

- 220° detection angle
- Particularly suitable for sides of properties, entrances and drives

**SPHINX 105-300**

- 300° detection angle
- Corner installation bracket for internal or external corners included in delivery
- Especially suitable for external corner installation for simultaneous coverage of two facades via corner

### Product selection

| Installation type | Channel | Detection angle | Colour | Type | Article number |
|---|---|---|---|---|---|
| Wall and ceiling installation | Light | 110° | White | SPHINX 105-110 | 1050110 |
| | | 220° | White | SPHINX 105-220 | 1050220 |
| | | 300° | White | SPHINX 105-300 | 1050300 |

### Technical data

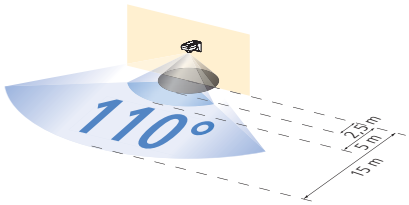
| | SPHINX 105-110 | SPHINX 105-220 | SPHINX 105-300 |
|---|---|---|---|
| **Operating voltage** | 230 V AC | | |
| **Frequency** | 50–60 Hz | | |
| **Stand-by consumption** | 0,9 W | | |
| **Setting range brightness** | 2–2000 lx | | |
| **Switching capacity light** | 16 A (at 230 V AC, cos φ = 1), 10 A (at 230 V AC, cos φ = 0.6), 8 AX (at 230 V AC, cos φ = 0.3) | | |
| **Detection angle** | 110° | 220° | 300° |
| **Light switch-off delay** | 1 s–20 min | | |
| **Incandescent lamp load** | 2300 W | | |
| **Fluorescent lamp load (conventional) not corrected, series-corrected, lead-lag circuit** | 900 VA | | |

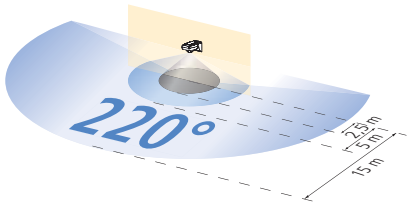


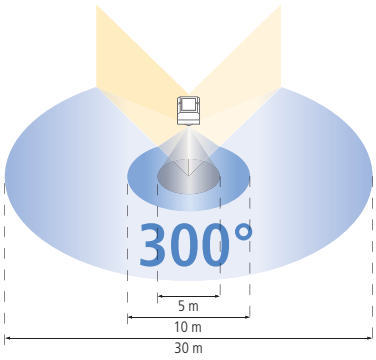
Additional technical data at:
www.theben.de/product/ Article number

| | SPHINX 105-110 | SPHINX 105-220 | SPHINX 105-300 |
|---|---|---|---|
| **Fluorescent lamp load (conventional) parallel-corrected** | 400 VA | | |
| **Energy saving lamps** | 9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W | | |
| **Ambient temperature** | –25 °C … +55 °C | | |
| **Protection class** | II | | |
| **Type of protection** | IP 55 | | |

## Detection range




- Walking diagonally to the detector
- Walking head on to the detector
- Creep under protection

Mounting height 2,5 m

## Accessories

**SPHINX RC 105**

- Art.No.: 9070539
  Details ▶ Page 234

**SPHINX RC 105 Pro**

- Art.No.: 9070537
  Details ▶ Page 235

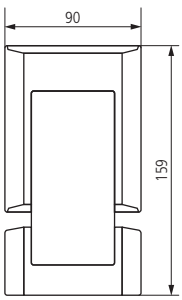
**RC filter**

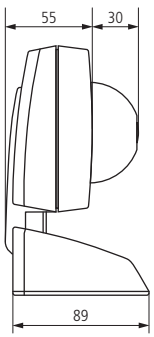
- Art.No.: 9070523
  Details ▶ Page 233

**SPHINX corner angle**

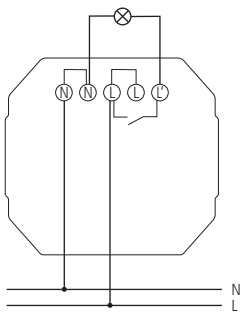
- Art.No.: 9070535
  Details ▶ Page 234

## Scale drawings




## Connection examples



## Motion detectors – ceiling installation flush mounted

### Description

- Motion detector (PIR)
- Automatic lighting control based on presence and brightness
- Ceiling installation for suspended ceilings
- Mixed light measurement suitable for the control of fluorescent, incandescent and halogen lamps
- Zero-cross switching for relay-saving switching and high lamp loads
- Sensor head can be adjusted downwards by 45° in 15° stages thus allowing detection area to be changed to avoid switching the device on unnecessarily
- Ceiling cut-out of 65–68 mm diameter
- Easy installation via two clamping brackets
- System consists of power box and sensor with plugged connection cable
- Sensor can easily be removed during painting work and replaced afterwards
- Large clamping area for quick installation
- Single-handed plug-in installation with captive screws
- Instant start-up possible via factory preset
- No unintentional adjustment due to covered up controls
- Adjustable brightness switching value and switch-off delay
- Sensitivity can be reduced to limit detection area
- Impulse function
- Test function

**LUXA 103-360**

- 1 channel

**LUXA 103-360/2**

- 2 channels
- 2. Relay for HVAC control with adjustable switch-off delay, presence-dependent, potential-free

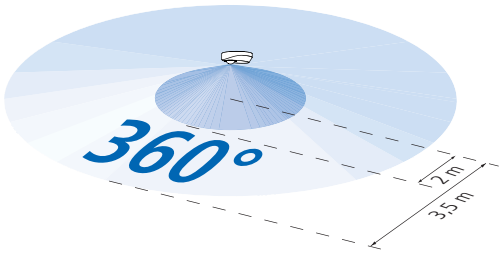
### Product selection

| Installation type | Channel | Detection angle | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling mounting | Light | 360° | White | LUXA 103-360 | 1030010 |
| | Light \| Presence | 360° | White | LUXA 103-360/2 | 1030011 |

### Technical data

| | LUXA 103-360 | LUXA 103-360/2 |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50–60 Hz | |
| **Stand-by consumption** | 0,9 W | 1,5 W |
| **Setting range brightness** | 10–2000 lx | |
| **Switching capacity light** | 10 A (at 230 V AC, cos φ = 1), 3 AX (at 230 V AC, cos φ = 0.3) | |
| **Switching capacity presence** | – | 5 A (cos φ = 1) 250 V AC/24 V DC |
| **Detection angle** | 360° | |
| **Recommended mounting height** | 2–3 m | |
| **Light switch-off delay** | 5 s–20 min | |
| **Presence switch-off delay** | – | 10 s/15 min/30 min/60 min |
| **Incandescent lamp load** | 1000 W | |
| **Fluorescent lamp load (conventional) parallel-corrected** | 400 VA | |
| **Ambient temperature** | 0 °C … +45 °C | |
| **Protection class** | II | |
| **Type of protection** | Sensor IP 40, power module IP 20 | |

## Detection range




- Walking diagonally to the detector
- Walking head on to the detector

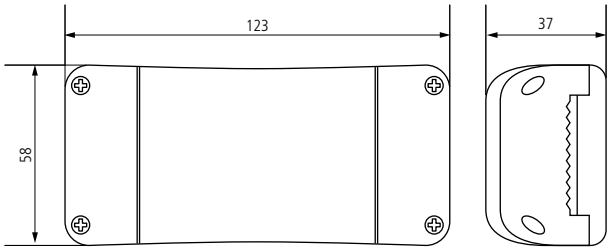
Mounting height 2,5 m

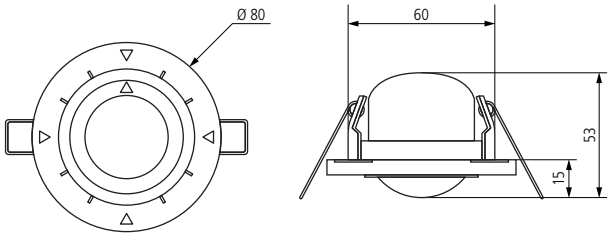
## Accessories

### RC filter

- Art.No.: 9070523
  Details ▶ Page 233

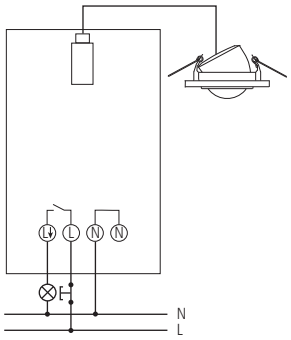
## Scale drawings



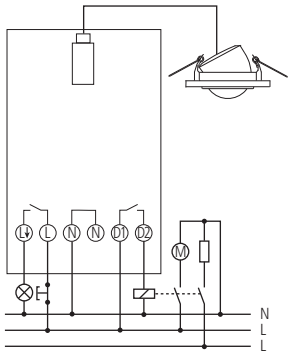




## Connection examples

### LUXA 103-360




### LUXA 103-360/2



## Motion detectors – ceiling installation surface mounted

### Description

- Motion detector (PIR)
- Automatic lighting control based on presence and brightness
- Ceiling installation
- Mixed light measurement suitable for the control of fluorescent, incandescent and halogen lamps
- Zero-cross switching for relay-saving switching and high lamp loads
- Single-handed plug-in installation with captive screws
- Instant start-up possible via factory preset
- No unintentional adjustment due to covered up controls
- Adjustable brightness switching value and switch-off delay
- Sensitivity can be reduced to limit detection area
- Impulse function
- Test function

**LUXA 103-360 AP**

- 1 channel

**LUXA 103-360/2 AP**

- 2 channels
- 2. Relay for HVAC control, presence dependent, potential-free
- HVAC control with programmable switch-off delay



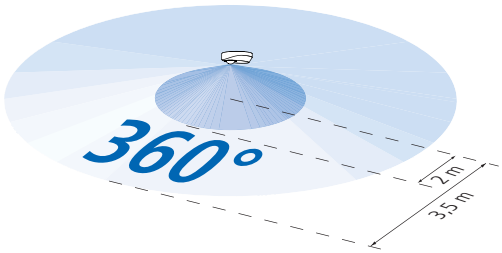
### Product selection

| Installation type | Channel | Detection angle | Colour | Type | Article number |
|---|---|---|---|---|---|
| Ceiling installation, Suface mounted | Light | 360° | White | LUXA 103-360 AP | 1030020 |
| | Light \| Presence | 360° | White | LUXA 103-360/2 AP | 1030021 |

### Technical data

| | LUXA 103-360 AP | LUXA 103-360/2 AP |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50–60 Hz | |
| **Stand-by consumption** | 1 W | |
| **Setting range brightness** | 10–2000 lx | |
| **Switching capacity light** | 10 A (at 230 V AC, cos φ = 1), 3 AX (at 230 V AC, cos φ = 0.3) | |
| **Switching capacity presence** | – | 5 A (cos φ = 1) 250 V AC/24 V DC |
| **Detection angle** | 360° | |
| **Recommended mounting height** | 2–3 m | |
| **Light switch-off delay** | 5 s–20 min | |
| **Presence switch-off delay** | – | 10 s–60 min |
| **Incandescent lamp load** | 1000 W | |
| **Fluorescent lamp load (conventional) parallel-corrected** | 400 VA | |
| **Ambient temperature** | 0 °C … +45 °C | |
| **Protection class** | II | |
| **Type of protection** | IP 40 | |

## Detection range




- Walking diagonally to the detector
- Walking head on to the detector

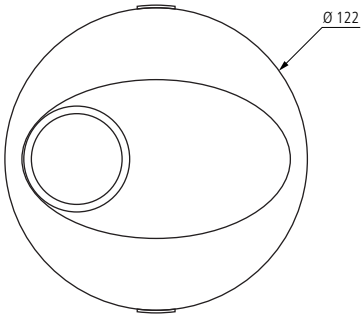
Mounting height 2,5 m

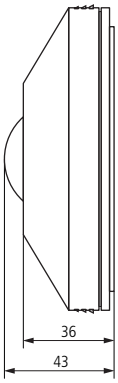
## Accessories

### RC filter

- Art.No.: 9070523
  Details ▶ Page 233

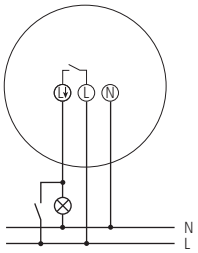
## Scale drawings



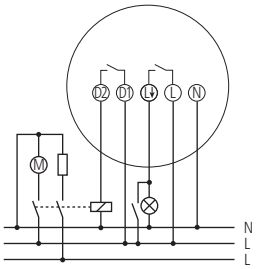




## Connection examples

### LUXA 103-360 AP




### LUXA 103-360/2 AP




5

## Motion detectors – wall installation

### Description

- Motion detector (PIR)
- Automatic lighting control based on presence and brightness
- Wall installation
- Compatible with branded switches, replaces conventional light switches
- Detection area can be limited using enclosed segments
- Manual AUTO/ON/OFF switching by simple adjustment of cover flap
- Teach-in of current brightness value
- Instant start-up possible via factory preset
- No unintentional adjustment due to covered up controls
- Adjustable brightness switching value and switch-off delay
- Sensitivity can be reduced to limit detection area
- Impulse function
- Test function

**LUXA 103-200**

- Mixed light measurement suitable for the control of fluorescent, incandescent and halogen lamps
- Expansion of detection area through integrated master/slave or master/master function when using up to 10 devices
- With acoustic advance shut-off warning 15 seconds before light switches off

**LUXA 103-200 T**

- 2 wire connection, ideal for retrofitting
- Light switch output (triac, 230 V AC)
- Mixed light measurement suitable for incandescent and halogen lamps (no electronic ballast)
- Advance shut-off warning through dimming 15 seconds before light switches off

5

### Product selection

| PG | Channel | Detection angle | Type | Article number |
|---|---|---|---|---|
| Flush-mounted wall installation | Light | 200°, circular | LUXA 103-200 | 1030030 |
| | | | LUXA 103-200 T | 1030031 |

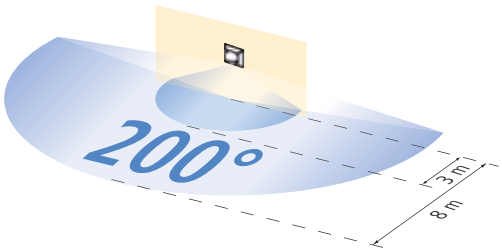
### Technical data

| | LUXA 103-200 | LUXA 103-200 T |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Stand-by consumption** | 1 W | 0,7 W |
| **Setting range brightness** | 10–1000 lx | |
| **Switching capacity light** | 10 A (at 230 V AC, cos φ = 1),<br>3 AX (at 230 V AC, cos φ = 0.3) | 2 A (at 230 V AC, cos φ = 1) |
| **Detection angle** | 200°, circular | |
| **Recommended mounting height** | 1,2–2 m | |
| **Light switch-off delay** | 20 s–30 min | |
| **Incandescent lamp load** | 1000 W | 400 W |
| **Fluorescent lamp load (conventional) parallel-corrected** | 400 VA | – |
| **Ambient temperature** | 0 °C … +45 °C | |
| **Protection class** | II | |
| **Type of protection** | IP 40 | |



Additional technical data at:
www.theben.de/product/ Article number

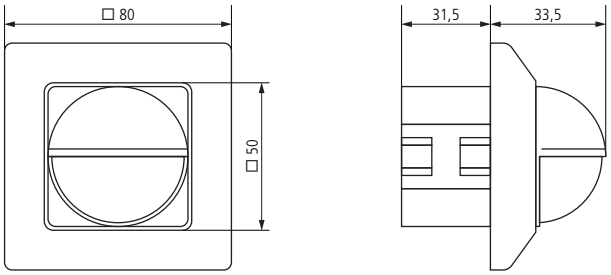
## Detection range




- Walking diagonally to the detector
- Walking head on to the detector

Mounting height 1,2–2 m

## Scale drawings




## Accessories

### Surface frame LUXA 103-200

- Art.No.: 9070504

Details ▶ Page 234

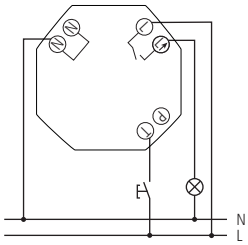
### RC filter

- Art.No.: 9070523

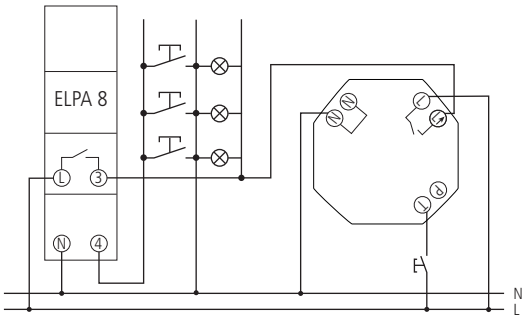
Details ▶ Page 233

## Connection examples

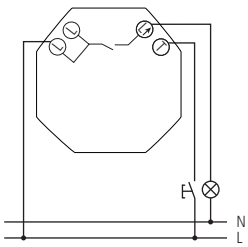
### LUXA 103-200



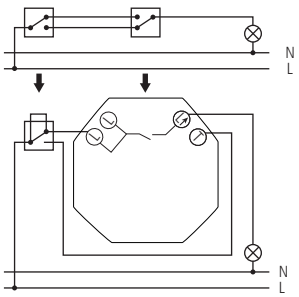

### LUXA 103-200

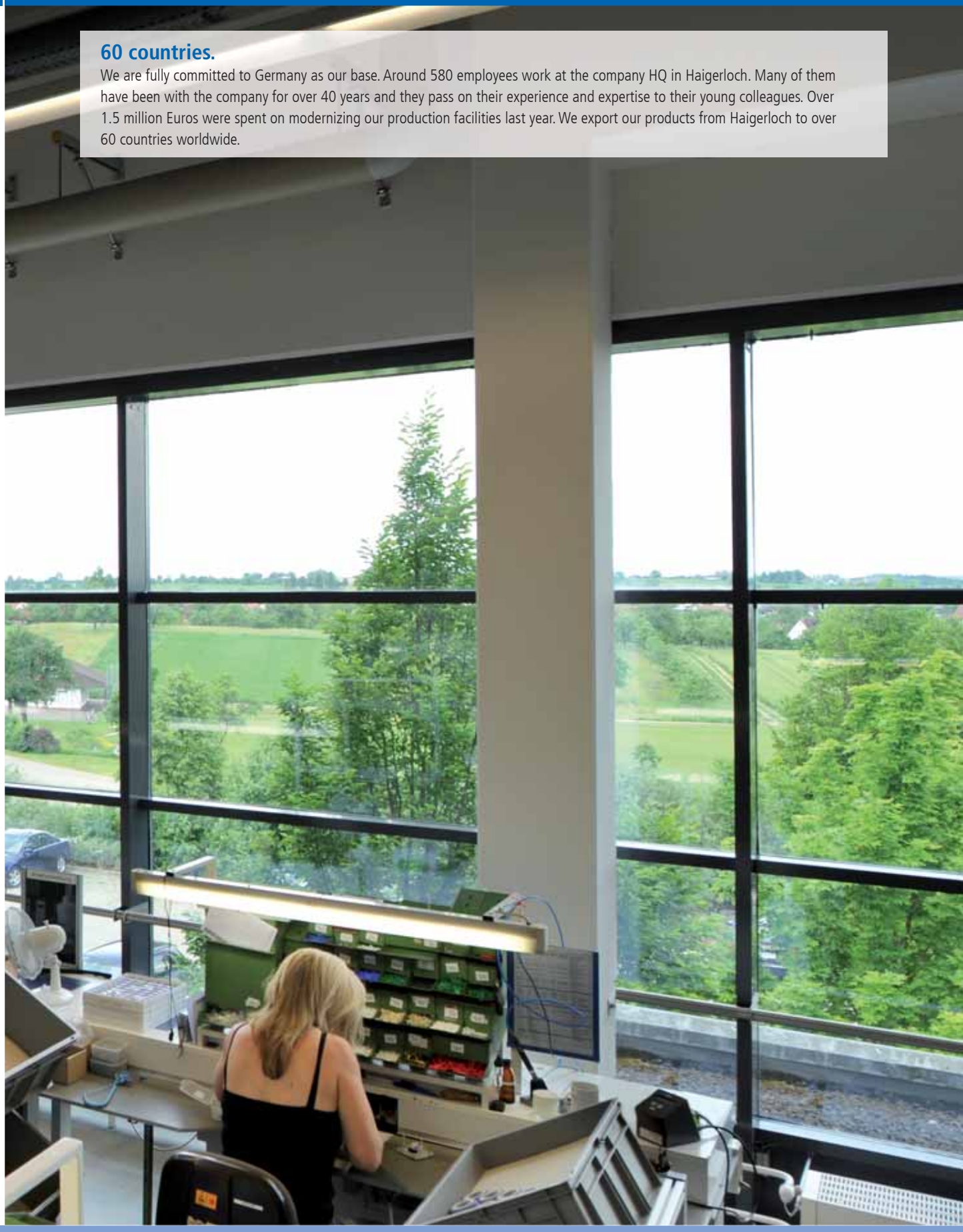



### LUXA 103-200 T




### LUXA 103-200 T





## 60 countries.

We are fully committed to Germany as our base. Around 580 employees work at the company HQ in Haigerloch. Many of them have been with the company for over 40 years and they pass on their experience and expertise to their young colleagues. Over 1.5 million Euros were spent on modernizing our production facilities last year. We export our products from Haigerloch to over 60 countries worldwide.

| | Number of channels | Setting range brightness | Switch-on delay | Separate on/off switching delay | External inputs | PC interface | Program | Type of connection | Type | Page |
|---|---|---|---|---|---|---|---|---|---|---|
| **Analogue, without time switch, DIN rail** | | | | | | | | | | |
| | 1 | 2–100 lx | 20 s | – | – | – | – | Screw terminals | LUNA 108 | 110 |
| | | 2–2000 lx | 60 s | – | – | – | – | DuoFix spring terminals | LUNA 109 | 110 |
| | | 2–50000 lx | 0–20 min | – | – | – | – | DuoFix spring terminals | LUNA 110 | 110 |
| **Analogue with time switch, DIN rail** | | | | | | | | | | |
| | | 2–2000 lx | 0–59 min | ✓ | – | ✓ | Weekly program | DuoFix spring terminals | LUNA 120 top2 | 114 |
| **Digital without time switch, DIN rail** | | | | | | | | | | |
| | 1 | 1–99000 lx | 0–59 min | ✓ | 1 | ✓ | – | DuoFix spring terminals | LUNA 111 top2 | 112 |
| | 2 | 1–99000 lx | 0–59 min | ✓ | 2 | ✓ | – | DuoFix spring terminals | LUNA 112 top2 | 112 |
| **Digital, with time switch, DIN rail** | | | | | | | | | | |
| | 1 | 1–99000 lx | 0–59 min | ✓ | 1 | ✓ | Weekly program | DuoFix spring terminals | LUNA 121 top2 RC | 114 |
| | 2 | 1–99000 lx | 0–59 min | ✓ | 2 | ✓ | Weekly program | DuoFix spring terminals | LUNA 122 top2 RC | 114 |
| **Analogue without time switch, wall installation or mast installation** | | | | | | | | | | |
| | 1 | 5–200 lx | 40 s | – | – | – | – | Screw terminals | LUNA 126 star | 116 |
| | | 2–200 lx | 2–100 s | – | – | – | – | Screw terminals | LUNA 127 star | 116 |
| | | 2–2000 lx | 2–100 s | – | – | – | – | Screw terminals | LUNA 128 star | 116 |
| **Analogue with time switch, wall installation or mast installation** | | | | | | | | | | |
| | 1 | 2–200 lx | 0–10 min | ✓ | – | – | Daily program | Screw terminals | LUNA 129 star-time | 116 |

## Twilight switches

**LUNA 108**

**LUNA 109**

**LUNA 110**

6

## Description

### Common functions

- Analogue twilight switch
- External light sensor included in delivery
- Display of channel and switching status
- Infinitely adjustable switching brightness

### LUNA 108

- Fixed On and Off switching delay

### LUNA 109

- DuoFix spring terminals
- Fixed On and Off switching delay
- Test function

### LUNA 110

- Adjustable On and Off switching delay
- DuoFix spring terminals
- Extended brightness levels and adjustable delay
- Five adjustable brightness levels for simple setting of lux value
- Zero-Cross switching for relay-saving switching and high lamp loads
- Permanent OFF and permanent ON function can be set on the potentiometer
- Test function

## Product selection

| Setting range brightness | Switch-on delay | Type of connection | Operating voltage | Sensor (included) | Type of protection | Type | Article number |
|---|---|---|---|---|---|---|---|
| 2–100 lx | 20 s | Screw terminals | 220–240 V AC | Surface-mounted | IP 20, sensor IP 54 | LUNA 108 AL | 1080710 |
| | | | | Flush-mounted | IP 20, sensor IP 65 | LUNA 108 EL | 1080700 |
| 2–2000 lx | 60 s | DuoFix spring terminals | 220–240 V AC | Surface-mounted | IP 20, sensor IP 55 | LUNA 109 AL | 1090100 |
| | | | | Flush-mounted | IP 20, sensor IP 65 | LUNA 109 EL | 1090200 |
| 2–50000 lx | 0–20 min | DuoFix spring terminals | 220–240 V AC | Surface-mounted | IP 20, sensor IP 55 | LUNA 110 AL | 1100100 |
| | | | | Flush-mounted | IP 20, sensor IP 65 | LUNA 110 EL | 1100200 |
| | | | 12–24 V UC | Surface-mounted | IP 20, sensor IP 55 | LUNA 110 AL 24V | 1104100 |
| | | | | Flush-mounted | IP 20, sensor IP 65 | LUNA 110 EL 24V | 1104200 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | LUNA 108 | LUNA 109 | LUNA 110 | LUNA 110 24V |
|---|---|---|---|---|
| **Operating voltage** | 220–240 V AC | | | 12–24 V UC |
| **Frequency** | 50–60 Hz | | | |
| **Stand-by consumption** | 0,8 W | 1,1 W | 1,3 W | 0,2 W |
| **Setting range brightness** | 2–100 lx | 2–2000 lx | 2–50000 lx | |
| **Switch-on delay** | 20 s | 60 s | 0–20 min | |
| **Type of contact** | NO contact | Changeover contact | | |
| **Switching output** | Potential-free | | Potential-free, not for SELV | |
| **Width** | 1 modules | 2 modules | | |
| **Switching capacity** | 16 A (at 250 V AC, cos φ = 1), 10 AX (Fluorescent lamp load) | | 16 A (at 250 V AC, cos φ = 1), 16 AX (Fluorescent lamp load) | 16 A (at 250 V AC, cos φ = 1), 10 AX (Fluorescent lamp load) |
| **Switching capacity min.** | – | | <10 mA | |
| **Incandescent lamp load** | 2300 W | | 3600 W | 1400 W |
| **Fluorescent lamp load (conventional) not corrected, series-corrected, lead-lag circuit** | 2300 VA | | 3600 VA | 1400 VA |
| **Energy saving lamps** | 9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W | | 34 x 7 W, 27 x 11 W, 24 x 15 W, 22 x 23 W | 5 x 7 W, 4 x 11 W, 4 x 15 W, 4 x 20 W, 4 x 23 W |
| **Ambient temperature** | –25 °C … +50 °C | –30 °C … +55 °C | | |
| **Protection class** | II | II, sensor III | | |
| **Max. cable length to sensor** | 25 m | 100 m | | |

## Accessories

### Wall mounting kit 17,5 mm

- for LUNA 108
- Art.No.: 9070065
  Details ▶ Page 228

### Wall mounting kit 35 mm

- for LUNA 109, LUNA 110
- Art.No.: 9070064
  Details ▶ Page 228

### Front panel kit

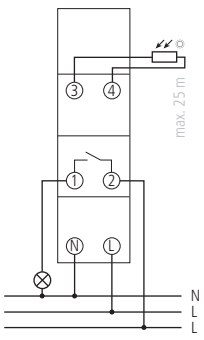
- Art.No.: 9070001
  Details ▶ Page 228

### Additional accessories

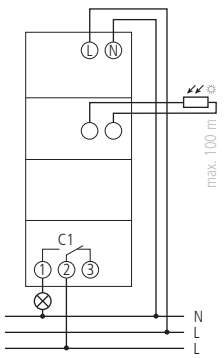
- Surface-mounted light sensor
  Details ▶ Page 235
- Analogue surface-mounted light sensor
  Details ▶ Page 235
- Analogue flush-mounted light sensor
  Details ▶ Page 235

## Connection examples

### LUNA 108




### LUNA 109, LUNA 110



## Twilight switches

**LUNA 111 top2**

**LUNA 112 top2**

6

## Description

### Common functions

- Twilight switch
- External light sensor included in delivery
- Switching brightness digitally adjustable
- Adjustable On and Off switching delay
- Switching brightness and switching delay can be set separately for switching On and Off
- Onscreen display of channel and switching status as well as current lux value
- DuoFix spring terminals
- Zero-cross switching for relay-saving switching and high lamp loads
- Up to 4 sensors can be attached
- Up to 10 devices can be connected to a digital sensor
- Interface for OBELISK top2 memory card (PC programming)
- External light sensor included in delivery
- Extended brightness range
- Permanent switching ON/OFF
- Test function
- Switching preselection
- Display back light (can be turned off)
- External input
- Operating hour counter

### LUNA 111 top2

- 1 channel

### LUNA 112 top2

- 2 channels
- 2 external contol inputs
- Channel-independent operating hour counter

## Product selection

| Number of channels | External inputs | Switch-on delay | Sensor (included) | Type of protection | Type | Article number |
|---|---|---|---|---|---|---|
| 1 | 1 | 0–59 min | Surface-mounted | IP 20, sensor IP 55 | LUNA 111 top2 AL | 1110100 |
| | | | Flush-mounted | IP 20, sensor IP 66 | LUNA 111 top2 EL | 1110200 |
| 2 | 2 | 0–59 min | Surface-mounted | IP 20, sensor IP 55 | LUNA 112 top2 AL | 1120100 |
| | | | Flush-mounted | IP 20, sensor IP 66 | LUNA 112 top2 EL | 1120200 |

## Technical data

| | LUNA 111 top2 | LUNA 112 top2 |
|---|---|---|
| **Operating voltage** | 230–240 V AC | 100–240 V AC |
| **Frequency** | 50–60 Hz | |
| **Stand-by consumption** | 1,7 W | 1,3 W |
| **Setting range brightness** | 1–99000 lx | |
| **Switch-on delay** | 0–59 min | |
| **Type of contact** | Changeover contact | 2 two-way changeover contacts |
| **Switching output** | Potential-free, not for SELV | |
| **Width** | 2 modules | 3 modules |
| **Switching capacity** | 16 A (at 250 V AC, cos φ = 1), 10 A (at 250 V AC, cos φ = 0.6), 10 AX (Fluorescent lamp load) | |
| **Switching capacity min.** | ca. 10 mA | |
| **Incandescent lamp load** | 2600 W | |
| **Fluorescent lamp load (conventional) not corrected, series-corrected, lead-lag circuit** | 2300 VA | |
| **Energy saving lamps** | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | |
| **Ambient temperature** | –30 °C … +55 °C | |
| **Protection class** | II, sensor III | |
| **Max. cable length to sensor** | 100 m | |

## Accessories

### PC set OBELISK top2

- Art.No.: 9070409
  Details ▶ Page 229

### Memory card OBELISK top2

- Art.No.: 9070404
  Details ▶ Page 229

### Front panel kit

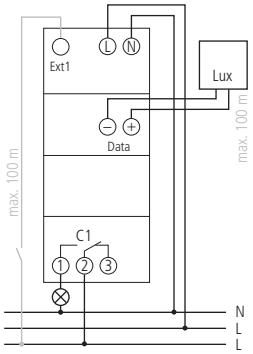
- Art.No.: 9070001
  Details ▶ Page 228

### Additional accessories

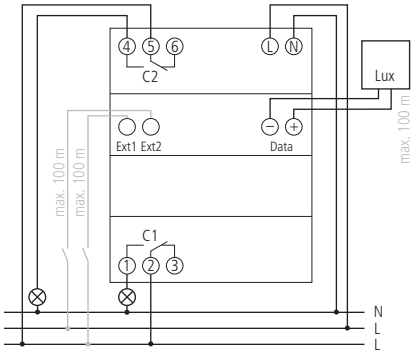
- Digital surface-mounted light sensor
  Details ▶ Page 236
- Digital flush-mounted light sensor
  Details ▶ Page 235
- Wall mounting kit 35 mm
  Details ▶ Page 228
- Wall mounting kit 52,5 mm
  Details ▶ Page 228

## Connection examples

### LUNA 111 top2




### LUNA 112 top2




6

## Twilight switches with time switch

### LUNA 120 top2

### LUNA 121 top2 RC

### LUNA 122 top2 RC

6

## Description

### Common functions

- Twilight switch with integrated weekly timer
- External light sensor included in delivery
- Fixed ON and OFF times (e.g. nighttime interruption)
- Different summer/winter time rules can be selected or freely defined
- Adjustable On and Off switching delay
- Switching brightness and switching delay can be set separately for switching On and Off
- DuoFix spring terminals
- Zero-cross switching for relay-saving switching and high lamp loads
- Interface for OBELISK top2 memory card (PC programming)
- Permanent switching ON/OFF
- Test function
- Switching preselection
- Display back light (can be turned off)
- Variable lux values can be set for each day
- Operating hour counter
- Holiday and public holiday program with yearly function for fived and public holidayas dependent on Easter

### LUNA 121 top2 RC

- Digital twilight switch
- 1 channel
- DCF77 or GPS radio controlled time via external antenna
- External input
- Switching brightness digitally adjustable
- Up to 4 sensors can be attached
- Up to 10 devices can be connected to a digital sensor
- Extended brightness range
- 2 special programmes with yearly function

### LUNA 122 top2 RC

As LUNA 121 top2 RC, but:

- 2 channels
- 2 external inputs
- Operating hour counter channel dependent

### LUNA 120 top2

- Analogue twilight switch
- 1 channel
- Analogue adjustable switching brightness

## Product selection

| Number of channels | External inputs | Additional program | Operating voltage | Sensor (included) | Type of protection | Type | Article number |
|---|---|---|---|---|---|---|---|
| 1 | 1 | Extra/Holiday program | 230–240 V AC | Surface-mounted | IP 20, sensor IP 55 | LUNA 121 top2 RC AL | 1210100 |
| | | | | Flush-mounted | IP 20, sensor IP 66 | LUNA 121 top2 RC EL | 1210200 |
| | | | 12–24 V UC | Surface-mounted | IP 20, sensor IP 55 | LUNA 121 top2 RC AL 24V | 1214100 |
| | | | | Flush-mounted | IP 20, sensor IP 66 | LUNA 121 top2 RC EL 24V | 1214200 |
| 2 | 2 | Extra/Holiday program | 100–240 V AC | Surface-mounted | IP 20, sensor IP 55 | LUNA 122 top2 RC AL | 1220100 |
| | | | | Flush-mounted | IP 20, sensor IP 66 | LUNA 122 top2 RC EL | 1220200 |
| 1 | – | Holiday program | 220–240 V AC | Surface-mounted | IP 20, sensor IP 55 | LUNA 120 top2 AL | 1200100 |
| | | | | Flush-mounted | IP 20, sensor IP 65 | LUNA 120 top2 EL | 1200200 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | LUNA 121 top2 RC 24V | LUNA 121 top2 RC | LUNA 122 top2 RC | LUNA 120 top2 |
|---|---|---|---|---|
| **Operating voltage** | 12–24 V UC | 230–240 V AC | 100–240 V AC | 220–240 V AC |
| **Frequency** | 50–60 Hz | | | |
| **Stand-by consumption** | 0,8 W (24 V) | 1,3 W | | |
| **Setting range brightness** | 1–99000 lx | | | 2–2000 lx |
| **Switch-on delay** | 0–59 min | | | |
| **Type of contact** | Changeover contact | | 2 two-way changeover contacts | Changeover contact |
| **Switching output** | Potential-free, not for SELV | | | |
| **Width** | 2 modules | | 3 modules | |
| **Switching capacity** | 16 A (at 250 V AC, cos φ = 1), 10 A (at 250 V AC, cos φ = 0.6), 10 AX (Fluorescent lamp load) | | | |
| **Switching capacity min.** | ca. 10 mA | | | |
| **Incandescent lamp load** | 1400 W | 2600 W | | |
| **Fluorescent lamp load (conventional) not corrected, series-corrected, lead-lag circuit** | 1400 W | 2300 VA | | |
| **Energy saving lamps** | 7 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W | 22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W | | |
| **Ambient temperature** | –30 °C … +55 °C | | | |
| **Protection class** | II, sensor III | | | |
| **Max. cable length to sensor** | 100 m | | | |

## Accessories

### PC set OBELISK top2

- Art.No.: 9070409
  Details ▶ Page 229

### Memory card OBELISK top2

- Art.No.: 9070404
  Details ▶ Page 229

### Antenna top2 RC-DCF

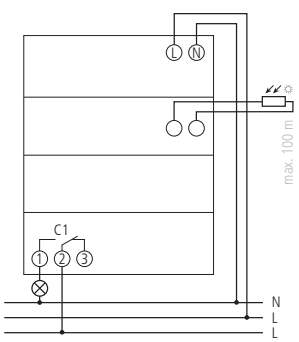
- for LUNA 121 top2 RC, LUNA 122 top2 RC
- Art.No.: 9070410
  Details ▶ Page 229

### Additional accessories

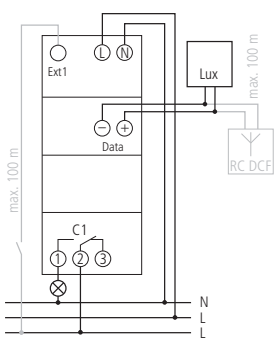
- Light sensors
  Details ▶ Page 236
- Wall mounting kits
  Details ▶ Page 228
- Front panel kit
  Details ▶ Page 228
- Antenna top2 RC-GPS
  Details ▶ Page 230
- Power unit top2 GPS
  Details ▶ Page 230

## Connection examples

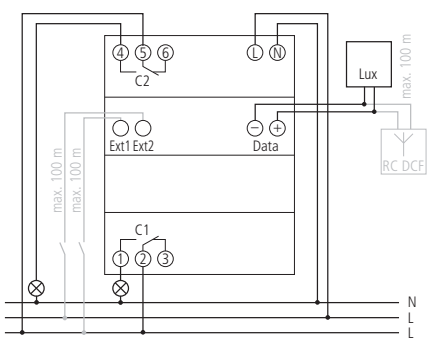
### LUNA 120 top2




### LUNA 121 top2 RC




### LUNA 122 top2 RC



## Twilight switches – wall installation

**LUNA 126 star**

**LUNA 129 star-time**

6

## Description

### Common functions

- Twilight switch with integrated light sensor
- Cable feed from the back and from below
- Captive screws
- Large terminal area
- Brightness value can be set without opening the device
- Large light exposure angle (approx. 180 degrees)
- Test button

### LUNA 126 star

- Fixed On and Off switching delay
- Infinitely adjustable switching brightness

### LUNA 127 star

- Adjustable On and Off switching delay
- Infinitely adjustable switching brightness

### LUNA 128 star

- Adjustable On and Off switching delay
- Expanded brightness range
- Infinitely adjustable switching brightness

### LUNA 129 star-time

- Time function for freely-programmable night switch-off (daily program)
- Adjustable On and Off switching delay
- Easy programming philosophy
- Preset night switch-off (23.00 OFF/5.00 ON), lux values and switch delay
- Automatic summer/winter time correction
- Integrated replaceable lithium battery enables programming before installation
- Switching brightness and switching delay can be set digitally for switching On and Off separately
- Time function can be deactivated

## Product selection

| Setting range brightness | Switch-on delay | Switching capacity at 230 V AC | Time program | Type | Article number |
|---|---|---|---|---|---|
| 5–200 lx | 40 s | 16 (10) A AX | – | LUNA 126 star | 1260700 |
| 2–200 lx | 2–100 s | 16 (10) A AX | – | LUNA 127 star | 1270700 |
| 2–2000 lx | 2–100 s | 16 (10) A AX | – | LUNA 128 star | 1280700 |
| 2–200 lx | 0–10 min | 16 (10) A AX | Daily program | LUNA 129 star-time | 1290700 |

| | LUNA 126 star | LUNA 126 star | LUNA 127 star | LUNA 128 star | LUNA 129 star-time |
|---|---|---|---|---|---|
| **Operating voltage** | 220–230 V AC | | | | |
| **Frequency** | 50–60 Hz | | | | |
| **Stand-by consumption** | 0,6 W | | | | |
| **Setting range brightness** | 5–200 lx | | 2–200 lx | 2–2000 lx | 2–200 lx |
| **Switch-on delay** | 40 s | | 2–100 s | | 0–10 min |
| **Type of contact** | NO contact | | | | |
| **Switching output** | Not potential-free (230 V) | | | | |
| **Switching capacity** | 16 A (at 230 V AC, cos φ = 1), 10 AX (at 230 V AC, cos φ = 0.3) | | | | |
| **Incandescent lamp load** | 2300 W | | | | |
| **Fluorescent lamp load (conventional) not corrected** | 2300 VA | | | | |
| **Fluorescent lamp load (conventional) series-corrected** | 2300 VA | | | | |
| **Fluorescent lamp load (conventional) lead-lag circuit** | 2300 VA | | | | |
| **Energy saving lamps** | 9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W | | | | |
| **Ambient temperature** | –35 °C … +55 °C | | | | |
| **Type of protection** | IP 55 | | | | |
| **Protection class** | II | | | | |

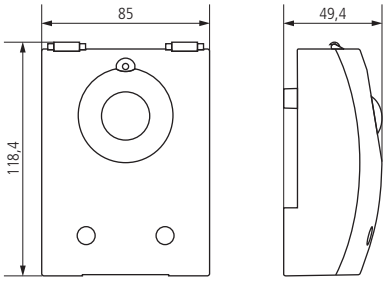
6

## Accessories

### Adpater plate LUNA star

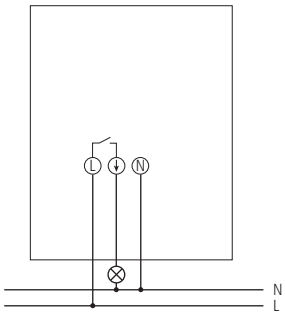
- Art.No.: 9070486
  Details ▶ Page 235

## Scale drawings

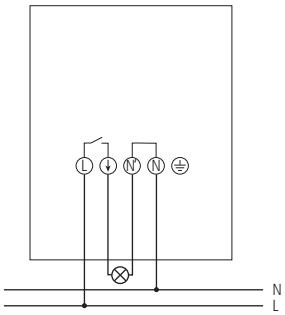


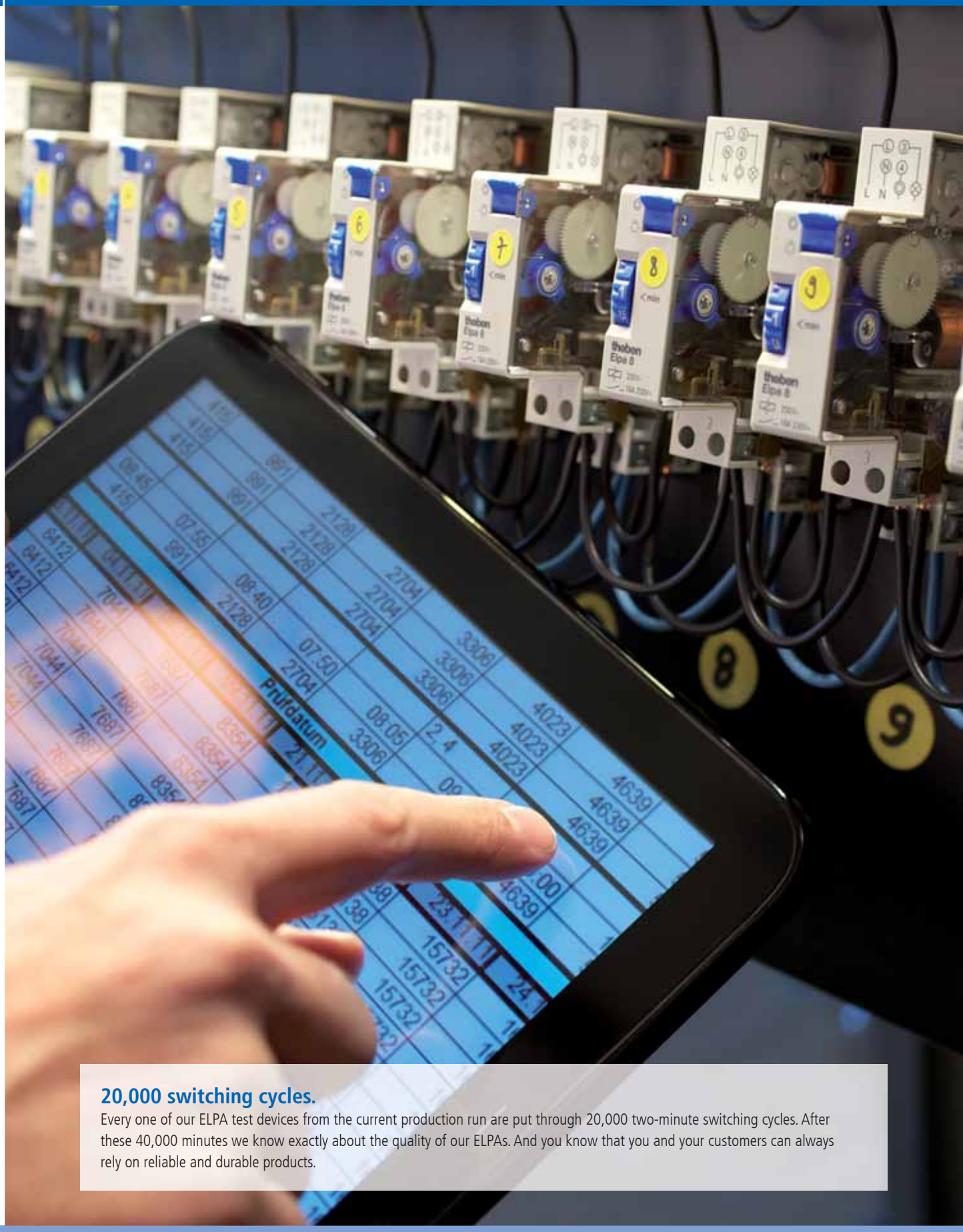

## Connection examples

### LUNA 126 star, LUNA 127 star, LUNA 128 star




### LUNA 129 star-time






## 20,000 switching cycles.

Every one of our ELPA test devices from the current production run are put through 20,000 two-minute switching cycles. After these 40,000 minutes we know exactly about the quality of our ELPAs. And you know that you and your customers can always rely on reliable and durable products.

| | Setting range time | Key input | Multi-voltage input | Switch-off pre-warning | Long-time function | Zero-cross switching | Without stand-by consumption | Type | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Staircase time switches, DIN rail, Electronic** | | | | | | | | | |
| | 0,5–20 min | 150 mA | ✓ | ✓ | 60 min | ✓ | – | ELPA 1 | 120 |
| | | | – | ✓ | 60 min | ✓ | – | ELPA 6 | 120 |
| | | | ✓ | – | – | – | – | ELPA 3 | 120 |
| | | | – | – | – | – | – | ELPA 7 | 120 |
| **Staircase time switches, DIN rail, Electro-mechanical** | | | | | | | | | |
| | 1–7 min | 50 mA | – | – | – | – | ✓ | ELPA 8 | 122 |
| | | | | | | | | ELPA 9 | 122 |
| **Switch-off pre-warning, DIN rail** | | | | | | | | | |
| | 20–60 s | – | – | ✓ | – | – | – | ELPA 4 | 122 |
| **Staircase time switches, Flush-mounted** | | | | | | | | | |
| | 0,5–20 min | 30 mA | ✓ | ✓ | 60 min | ✓ | – | ELPA 041 | 124 |
| | | | – | – | – | ✓ | – | ELPA 047 | 124 |

| | Universal dimmer for R, L, and C loads | Dimming output | Multi-voltage input | Automatic overload and overheating switch-off | Soft-ON/ Soft-OFF | Saveable switch-on brightness | Comfort functions | Type | Page |
|---|---|---|---|---|---|---|---|---|---|
| **Dimmer** | | | | | | | | | |
| | ✓ | 500 W (100 W ESL) | ✓ | ✓ | ✓ | ✓ | – | DIMAX 532 | 126 |
| | | | | | | | ✓ | DIMAX 534 | 126 |

## Staircase time switches electronic

**ELPA 1**

**ELPA 6**

**ELPA 3**

## Description

### Common functions

- Staircase time switch, electronical
- Terminal layout same as ELPA 8
- Extremely accurate
- Push button input with electronic overload protection
- Automatic 3 or 4 conductor detection (4 conductor with connection for floor lighting, 3 conductor no longer permitted for new systems)

### ELPA 1

- Zero-cross switching for relay-saving switching and high lamp loads
- Multi-functional device with 10 available functions, set at the front of the device
- Additional multi-voltage input electrically isolated for AC/DC 8...240 V, e.g. für intercoms
- Switch-off pre-warning (two double flashes) in accordance with DIN 18015-2 to avoid sudden darkness
- Extended function activated via long button press
- Immediate secondary switching (stair light switch) or prematurely switched off (impulse switch with switch-off delay)
- Permanent switch
- Electronic impulse light

### ELPA 6

- Zero-cross switching for relay-saving switching and high lamp loads
- Multi-functional device with 10 available functions, set at the front of the device
- Without multi-voltage input
- Switch-off pre-warning (two double flashes) in accordance with DIN 18015-2 to avoid sudden darkness
- Extended function activated via long button press
- Immediate secondary switching (stair light switch) or prematurely switched off (impulse switch with switch-off delay)
- Permanent switch
- Electronic impulse light

### ELPA 3

- Additional multi-voltage input electrically isolated for AC/DC 8...240 V, e.g. für intercoms
- Immediate secondary switching
- Toggle switch for permanent light

### ELPA 7

As ELPA 3, but:

- Without multi-voltage input

## Product selection

| Incandescent lamp load | Multi-function | Multi-voltage input | Switch-off pre-warning | Zero-cross switching | Type | Article number |
|---|---|---|---|---|---|---|
| 3600 W | ✓ | ✓ | ✓ | ✓ | ELPA 1 | 0010002 |
| | | – | ✓ | ✓ | ELPA 6 | 0060002 |
| 2300 W | – | ✓ | – | – | ELPA 3 | 0030002 |
| | | – | – | – | ELPA 7 | 0070002 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | ELPA 1 | ELPA 6 | ELPA 3 | ELPA 7 |
|---|---|---|---|---|
| **Operating voltage** | 220–240 V AC | | | |
| **Frequency** | 50–60 Hz | | | |
| **Stand-by consumption** | 0,9 W | | 0,7 W | |
| **Glow lamp load** | 150 mA | | | |
| **Setting range time** | 0,5–20 min | | | |
| **3/4 conductor** | Automatic | | | |
| **Type of contact** | NO contact | | | |
| **Switching output** | Not potential-free (230 V) | | | |
| **Incandescent/halogen lamp load** | 3600 W | | 2300 W | |
| **Fluorescent lamp load (conventional) lead-lag circuit** | 3600 VA | | 2300 VA | |
| **Fluorescent lamp load (conventional) parallel-corrected** | 1200 VA, 120 µF | | 400 VA, 42 µF | |
| **Energy saving lamps** | 34 x 7 W, 27 x 11 W, 24 x 15 W, 22 x 23 W | | 9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W | |
| **Switching capacity** | 16 AX (at 230 V AC, cos φ = 0.3), 16 A (at 230 V AC, cos φ = 1) | | 10 AX (at 230 V AC, cos φ = 0.3), 16 A (at 230 V AC, cos φ = 1) | |
| **Test approval** | | | | |
| **Ambient temperature** | –25 °C … +50 °C | | | |
| **Protection class** | II | | | |
| **Type of protection** | IP 20 | | | |

7

## Accessories

### Wall mounting kit 17,5 mm

- Art.No.: 9070065

Details ▶ Page 228

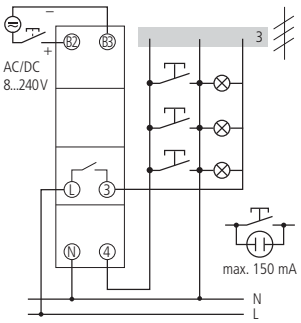
### Front panel kit

- Art.No.: 9070001

Details ▶ Page 228

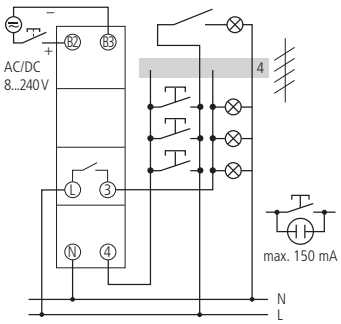
## Connection examples

### ELPA 1, ELPA 3

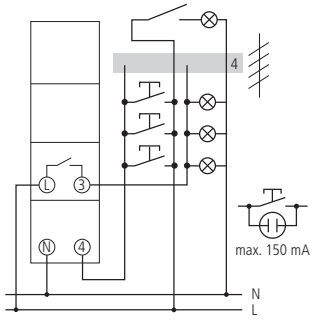



## Connection examples

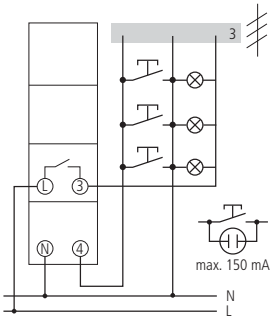
### ELPA 1, ELPA 3




### ELPA 6. ELPA 7




### ELPA 6. ELPA 7



## Staircase time switches electro-mechanical

### ELPA 8

### ELPA 9

### ELPA 4

7

## Description

### ELPA 8

- Staircase time switch, electro-mechcanical
- 4 conductor with floor lighting connection
- 3 conductor without floor lighting (no longer permitted for new systems)
- Retriggerable
- No closed-circuit current consumption
- Toggle switch for permanent light ON
- Reliable due to synchronous motor drive
- Simplest possible time setting and direct delay time readout on absolute scale
- Precision mechanics and therefore exact switching period
- Very low sensitivity to interference

### ELPA 9

- Staircase time switch, electro-mechcanical
- 3 conductor connection and floor lighting, but without secondary switching (no longer permitted for new systems)
- Terminal layout same as ELPA 8
- No closed-circuit current consumption
- Toggle switch for permanent light ON
- Reliable due to synchronous motor drive
- Simplest possible time setting and direct delay time readout on absolute scale
- Precision mechanics and therefore exact switching period
- Very low sensitivity to interference

### ELPA 4

- Switch-off pre-warning
- Additional device for staircase time switch ELPA 3/ELPA 8 or other makes
- After the lighting period set on the staircase time switch ELPA 3/ELPA 8 has expired, ELPA 4 switches to reduced brightness (approx. 50 %)
- Suitable for switching incandescent lamps and 230 V AC halogen lamps

## Product selection

| Incandescent lamp load | Setting range time | Without stand-by consumption | Switch-off pre-warning | 3/4 conductor | Secondary switching | Type | Article number |
|---|---|---|---|---|---|---|---|
| 2300 W | 1–7 min | ✓ | – | Yes | After 30 s | ELPA 8 | 0080002 |
| | | | | Only 3-way conductor | No | ELPA 9 | 0090001 |
| | 20–60 s | – | ✓ | – | At once | ELPA 4 | 0040001 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | ELPA 8 | ELPA 9 | ELPA 4 |
|---|---|---|---|
| **Operating voltage** | 230 V AC | | |
| **Frequency** | 50 Hz | | 50–60 Hz |
| **Stand-by consumption** | 0 W | | 0,4 W |
| **Glow lamp load** | 50 mA | | – |
| **Setting range time** | 1–7 min | | 20–60 s |
| **3/4 conductor** | Yes | Only 3-way conductor | – |
| **Type of contact** | NO contact | | |
| **Switching output** | Not potential-free (230 V) | | |
| **Incandescent/halogen lamp load** | 2300 W | | |
| **Fluorescent lamp load (conventional) lead-lag circuit** | 2300 VA | | – |
| **Fluorescent lamp load (conventional) parallel-corrected** | 1300 VA, 70 µF | | – |
| **Energy saving lamps** | 9 x 7 W, 6 x 11 W, 5 x 15 W, 5 x 20 W | | – |
| **Switching capacity** | 10 AX (at 230 V AC, cos φ = 0.3), 16 A (at 230 V AC, cos φ = 1) | | 10 A (at 230 V AC, cos φ = 1) |
| **Test approval** | | – | |
| **Ambient temperature** | –10 °C … +50 °C | | |
| **Protection class** | II | | |
| **Type of protection** | IP 20 | | |

## Accessories

### Wall mounting kit 17,5 mm

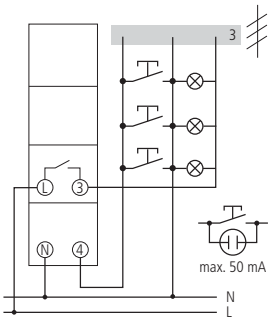
- Art.No.: 9070065
  Details ▶ Page 228

### Front panel kit

- Art.No.: 9070001
  Details ▶ Page 228

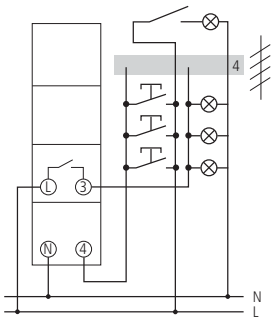
## Connection examples

### ELPA 8

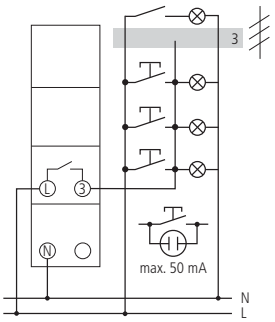



## Connection examples

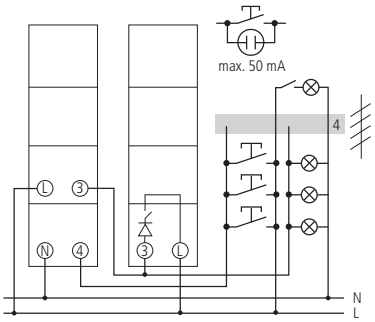
### ELPA 8




### ELPA 9




### ELPA 4



## Staircase time switches flush-mounted

**ELPA 041**

**ELPA 047**

## Description

**ELPA 047**

- Flush-mounted staircase time switch, electronic
- Suitable for upgrades and new installation
- Switch or push button connectable, i.e. existing switches can be used (e.g. when updating)
- Zero-cross switching for relay-saving switching and high lamp loads
- Push button input with electronic overload protection
- Automatic 3 or 4 conductor detection (4 conductor with connection for floor lighting, 3 conductor no longer permitted for new systems)
- Extremely accurate
- Immediate secondary switching

**ELPA 041**

As ELPA 047, but:

- Multi-functional device with 12 available functions, set at the front of the device
- Additional multi-voltage input electrically isolated for AC/DC 8...240 V, e.g. for intercoms
- Switch-off pre-warning (two double flashes) in accordance with DIN 18015-2 to avoid sudden darkness
- 60 min extended function activated via long button press
- Immediate secondary switching (stair light switch) or prematurely switched off (impulse switch with switch-off delay)
- Can be connected via key or switch

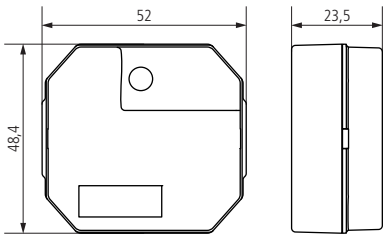
## Product selection

| Incandescent lamp load | Multi-function | Multi-voltage input | Switch-off pre-warning | Zero-cross switching | Type | Article number |
|---|---|---|---|---|---|---|
| 1800 W | ✓ | ✓ | ✓ | ✓ | ELPA 041 | 0410002 |
| | – | – | – | ✓ | ELPA 047 | 0470002 |

## Technical data

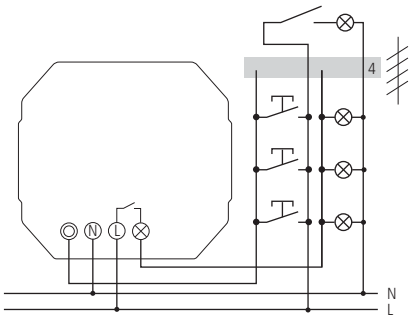
| | ELPA 041 | ELPA 047 |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50–60 Hz | |
| **Stand-by consumption** | 0,1 W | |
| **Glow lamp load** | 30 mA | |
| **Setting range time** | 0,5–20 min | |
| **3/4 conductor** | Automatic | |
| **Type of contact** | NO contact | |
| **Switching output** | Not potential-free (230 V) | |
| **Incandescent/halogen lamp load** | 1800 W | |
| **Fluorescent lamp load (conventional) lead-lag circuit** | 1200 VA | |
| **Fluorescent lamp load (conventional) parallel-corrected** | 580 VA, 54 µF | |
| **Energy saving lamps** | 13 x 7 W, 7 x 11 W, 5 x 15 W, 5 x 20 W, 4 x 23 W | |
| **Switching capacity** | 6 AX (at 230 V AC, cos φ = 0.3), 10 A (at 230 V AC, cos φ = 1) | |
| **Test approval** | | |
| **Ambient temperature** | –25 °C … +45 °C | |
| **Protection class** | II | |
| **Type of protection** | IP 20 | |

## Scale drawings



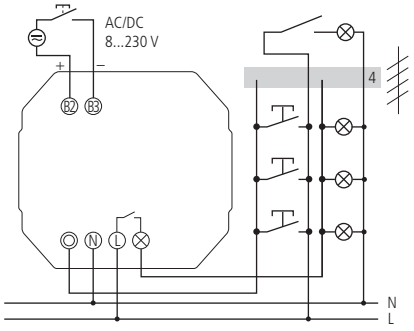

## Connection examples

**ELPA 047**

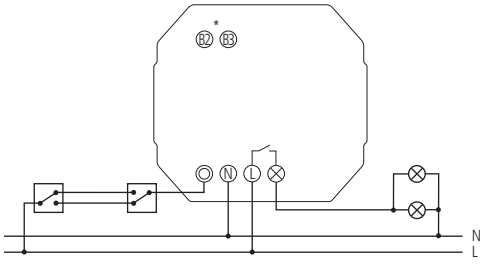



## Connection examples

**ELPA 041**




**ELPA 041**




with switch (cannot be used with three way switch, multi-voltage input switch connection)

## Dimmer

### DIMAX 532

### DIMAX 534

## Description

### DIMAX 532

- Universal dimmer for R, L and C loads with automatic load detection
- 500 W dimming output, 100 W dimmable energy saving lamps (ESL)
- Switch-on brightness can be saved individually
- Adjustable minimum brightness (required for ESL)
- Multi-voltage input, e.g. for intercoms
- Low stand-by consumption
- Memory function in the event of power failure
- Automatic electronic overload and overheating switch-off
- Dimming switch-on function
- Permanent ON function (test function)
- No minimum load requirement
- Soft ON and Soft OFF protects the light

### DIMAX 534

As DIMAX 532, but:

- Comfort setting with wake-up and snooze function (can be deactivated), e.g. for children's bedrooms
- Adjustable dimming rate (with automatic functions)
- One and two button operation for ease of use
- Up to 3 light scenes can be called up via separate input (diode module required for more than one light scene)
- Central OFF/ON or light scene for up to 10 devices possible with one push button
- Staircase light function with dimming function in accordance with DIN 18015-2 (resettable, long-time function)
- Can be controlled by push buttons or switches e.g. for combination with presence detectors or time switch

## Product selection

| Load detection | Optimized for energy-saving lamps | Light settings | Multi-function | Type | Article number |
|---|---|---|---|---|---|
| ✓ | ✓ | – | – | DIMAX 532 | 5320000 |
| | | ✓ | ✓ | DIMAX 534 | 5340000 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | DIMAX 532 | DIMAX 534 |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Stand-by consumption** | 0,2 W | |
| **Incandescent/halogen lamp load** | 500 W | |
| **Transformer electronic (C)** | 500 VA | |
| **Transformer inductive (L)** | 500 VA | |
| **Energy saving lamps** | 100 W (dimmable) | |
| **Ambient temperature** | –30 °C … +50 °C | |
| **Protection class** | II | |
| **Type of protection** | IP 20 | |

## Accessories

### Wall mounting kit 17,5 mm

- Art.No.: 9070065
  Details ▶ Page 228

### Front panel kit

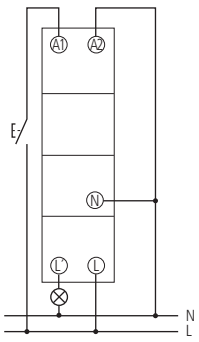
- Art.No.: 9070001
  Details ▶ Page 228

### Diode module

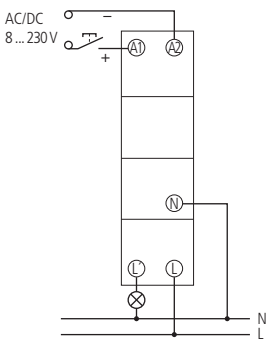
- for DIMAX 534
- Art.No.: 9070367
  Details ▶ Page 236

## Connection examples

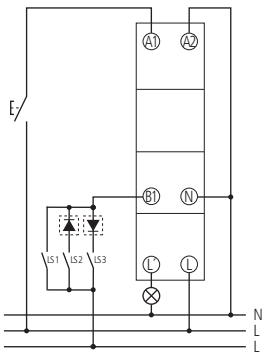
### DIMAX 532



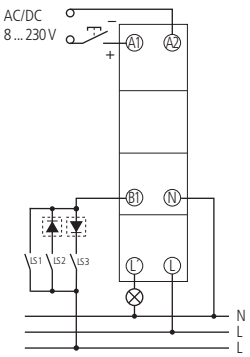

### DIMAX 532




### DIMAX 534

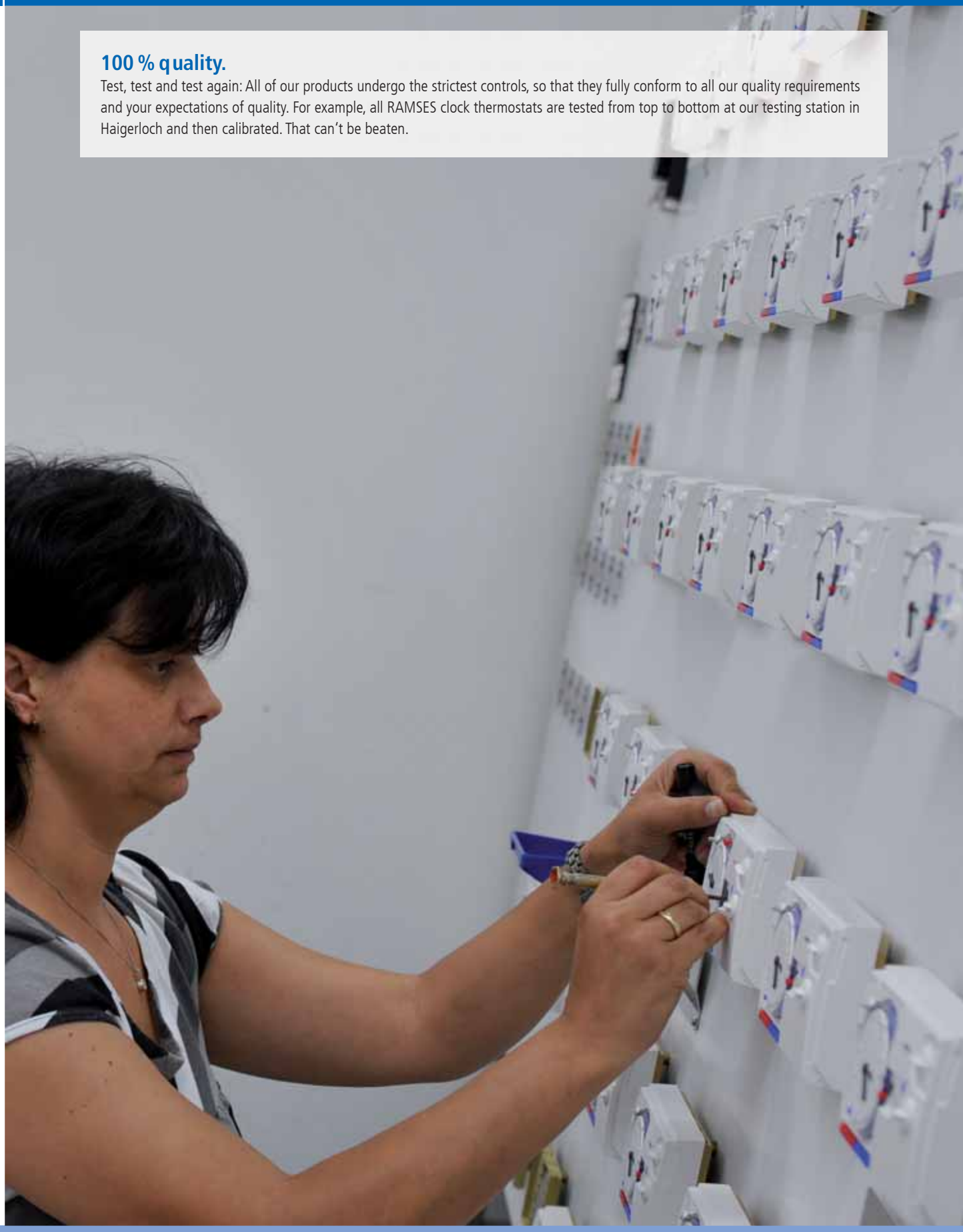



### DIMAX 534



## 100 % quality.

Test, test and test again: All of our products undergo the strictest controls, so that they fully conform to all our quality requirements and your expectations of quality. For example, all RAMSES clock thermostats are tested from top to bottom at our testing station in Haigerloch and then calibrated. That can't be beaten.



| | Program | Type of connection | Operating voltage | Switching capacity at 250 V AC | Type of contact | Type | Page |
|---|---|---|---|---|---|---|---|
| **Digital battery version** | | | | | | | |
| | Weekly program | 2/3-way conductors | 2 AA batteries | 6 (1) A | Changeover contact | RAMSES 811 top2 | 130 |
| | | | | | | RAMSES 831 top2 | 130 |
| | | Radio controlled | 2 AA batteries | 16 (2) A | NO contact | RAMSES 813 top2 HF Set A | 134 |
| | | | | | | RAMSES 813 top2 HF Set S | 134 |
| | | | | 6 (1) A | Changeover contact | RAMSES 813 top2 HF Set 1 | 134 |
| | | | | | | RAMSES 833 top2 HF Set 1 | 136 |
| | | | | | | RAMSES 833 top2 HF Set 2 | 136 |
| **Digital 230 V** | | | | | | | |
| | Weekly program | 3-/4-conductors | 230 V AC | 6 (1) A | Changeover contact | RAMSES 812 top2 | 132 |
| | | | | | | RAMSES 832 top2 | 132 |
| **Digital 230 V, DIN rail** | | | | | | | |
| | Weekly program | Screw terminals max. 4 mm² | 230 V AC | 10 (2) A | Changeover contact | RAMSES 366/1 top | 140 |
| | | | | | | RAMSES 366/2 top | 140 |
| **OpenTherm** | | | | | | | |
| | Weekly program | 2-way conductor (BUS) | 230 V AC | 8 (1) A | NO contact | RAMSES 855 top2 | 138 |
| **Analogue battery version** | | | | | | | |
| | Daily program | 2/3-way conductors | 2 AA batteries | 6 (1) A | Changeover contact | RAMSES 784 S | 142 |
| | Daily/Weekly program | 2/3-way conductors | 2 AA batteries | 6 (1) A | Changeover contact | RAMSES 784 | 144 |
| | | Radio controlled | 2 AA batteries | 6 (1) A | Changeover contact | RAMSES 784 HF Set 1 | 144 |
| **Analogue 230 V** | | | | | | | |
| | Daily program | 3-/4-conductors | 230 V AC | 6 (1) A | Changeover contact | RAMSES 722 S | 142 |
| | | | | | | RAMSES 782 S | 142 |
| | Daily/Weekly program | 3-/4-conductors | 230 V AC | 6 (1) A | Changeover contact | RAMSES 722 | 144 |
| | | | | | | RAMSES 782 | 144 |
| | Daily program | 3-/4-conductors | 230 V AC | 6 (1) A | Changeover contact | RAMSES 721 | 144 |
| | Daily/Weekly program | 3-/4-conductors | 230 V AC | 6 (1) A | Changeover contact | RAMSES 725 | 144 |

## Digital clock thermostats – battery version

**RAMSES 811 top2**

**RAMSES 831 top2**

## Description

### Common functions

- Digital clock thermostat with a low profile design for time-dependent monitoring and control of room temperature
- Battery version
  (can also be used for retrofitting purposes via 2-wire connection)
- Suitable for energy-saving room temperature control in houses, apartments, heating zones, offices, showrooms, factories, medical practices, holiday homes
- Temperature is set quickly via rotary switch
- INFO key for viewing important settings
- Quick start-up via 3 basic programs with individually changeable comfort and reduced temperature
- Party/ECO program
- Fully automatic summer/winter-time correction
- Holiday program with reduction phase or date-controlled heating phase for holiday homes
- Different control types can be individually set
- Optimum start option thanks to operating point and switching differential setting option
- 24 programmable time phases per program also enable reduction phases during the day
- Plug-in base for wall or flush-mounted socket installation

### RAMSES 811 top2

- 2 comfort and 2 reduced temperatures can be allocated to each phase.

### RAMSES 831 top2

- Illuminated display through keystroke
- External input for connection of presence detectors, temperature sensors, floor sensors, window contacts or telephone remote switches
- Integrated temperature sensor
- 3 different weekly programs
- Optimisation function for automatic correction of heating start up
- 3 comfort and 2 reduced temperatures can be allocated to each phase

## Product selection

| Type of connection | Program | Switching capacity at 250 V AC | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| 2/3-way conductors | Weekly program | 6 (1) A | +6 °C … +30 °C | 2 AA batteries | RAMSES 811 top2 | 8119132 |
| | | | | | RAMSES 831 top2 | 8319132 |

## Technical data

| | RAMSES 811 top2 | RAMSES 831 top2 |
|---|---|---|
| **Operating voltage** | 2 AA batteries | |
| **Type of contact** | Changeover contact | |
| **Switching capacity** | 6 A (at 250 V AC, cos φ = 1), 1 A (at 250 V AC, cos φ = 0.6) | |
| **Setting range temperature** | +6 °C … +30 °C | |
| **Time basis** | Quartz | |
| **Program** | Weekly program, Daily program, Holiday program, 3 basic programs | |
| **Number of memory locations** | 42, max. 24 per program | |
| **Control types** | Pulse width modulation, Hysteresis controller | |
| **Control period** | 5–30 min | |
| **Control capture range** | 0,2–5 K | |
| **Switching output** | Potential-free | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | |
| **Power reserve** | Max. 10 mins without losing time | |
| **Battery life** | approx. 1 year, depending on switching frequency | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Accessories

**Actuator ALPHA 4 230 V**

- Art.No.: 9070438
  Details ▶ Page 238

**Actuator ALPHA 4 24 V**

- Art.No.: 9070439
  Details ▶ Page 238

**Temperature sensor**

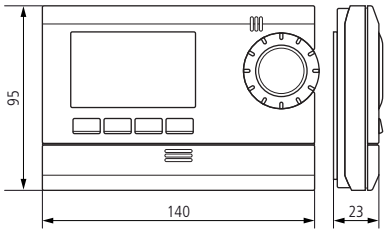
- for RAMSES 831 top2
- Art.No.: 9070321
  Details ▶ Page 238

**Temperature sensor RAMSES IP 65**

- for RAMSES 831 top2
- Art.No.: 9070459
  Details ▶ Page 237

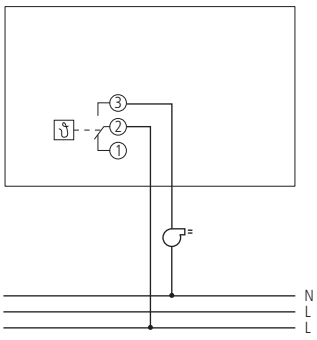



## Scale drawings

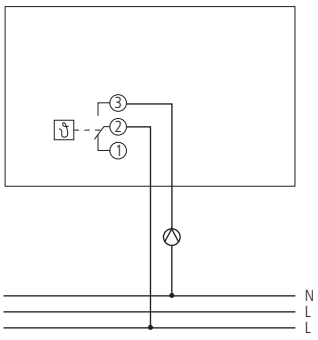



## Connection examples

**RAMSES 811 top2**




**RAMSES 811 top2**




8

## Digital clock thermostats – mains version

**RAMSES 812 top2**

**RAMSES 832 top2**

## Description

### Common functions

- Digital clock thermostat with alow profile design for time-dependent monitoring and control of room temperature
- Mains version
- Suitable for energy-saving room temperature control in houses, apartments, heating zones, offices, showrooms, factories, medical practices, holiday homes
- Integrated temperature sensor
- Temperature is set quickly via rotary switch
- INFO key for viewing important settings
- Quick start-up via 3 basic programs with individually changeable comfort and reduced temperature
- Party/ECO program
- Fully automatic summer/winter-time correction
- Holiday program with reduced temperature or date-controlled heating phase
- Different control types can be individually set
- Optimum start option thanks to operating point and switching differential setting option
- 24 programmable time phases per program also enable reduction phases during the day
- Plug-in base for wall or flush-mounted socket installation

### RAMSES 812 top2

- 2 comfort and 2 reduced temperatures can be allocated to each phase

### RAMSES 832 top2

- Illuminated display through keystroke
- External input for connection of presence detectors, temperature sensors, floor sensors, window contacts or telephone remote switches
- 3 different weekly programs
- Optimisation function for automatic correction of heating start up
- 3 comfort and 2 reduced temperatures can be allocated to each phase

## Product selection

| Type of connection | Program | Switching capacity at 250 V AC | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| 3-/4-conductors | Weekly program | 6 (1) A | +6 °C … +30 °C | 230 V AC | RAMSES 812 top2 | 8120132 |
| | | | | | RAMSES 832 top2 | 8320132 |

## Technical data

| | RAMSES 812 top2 | RAMSES 832 top2 |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Type of contact** | Changeover contact | |
| **Switching capacity** | 6 A (at 250 V AC, cos φ = 1), 1 A (at 250 V AC, cos φ = 0.6) | |
| **Setting range temperature** | +6 °C … +30 °C | |
| **Time basis** | Quartz | |
| **Program** | Weekly program, Daily program, Holiday program, 3 basic programs | |
| **Number of memory locations** | 42, max. 24 per program | |
| **Control types** | Pulse width modulation, Hysteresis controller | |
| **Control period** | 5–30 min | |

| | RAMSES 812 top2 | RAMSES 832 top2 |
|---|---|---|
| **Control capture range** | 0,2–5 K | |
| **Switching output** | Potential-free, not for SELV | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | |
| **Power reserve** | 5 hours | |
| **Stand-by consumption** | 0,4 W | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Accessories

**Actuator ALPHA 4 230 V**

- Art.No.: 9070438
  Details ▶ Page 238

**Actuator ALPHA 4 24 V**

- Art.No.: 9070439
  Details ▶ Page 238

**Temperature sensor**

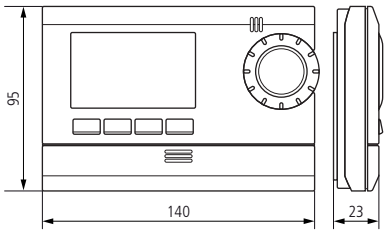
- for RAMSES 832 top2
- Art.No.: 9070321
  Details ▶ Page 238

**Temperature sensor RAMSES IP 65**

- for RAMSES 832 top2
- Art.No.: 9070459
  Details ▶ Page 237

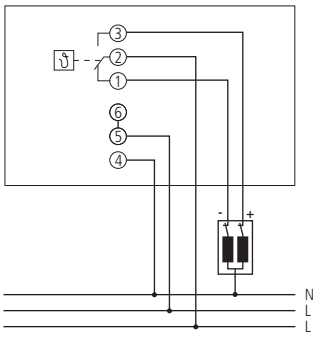


## Scale drawings

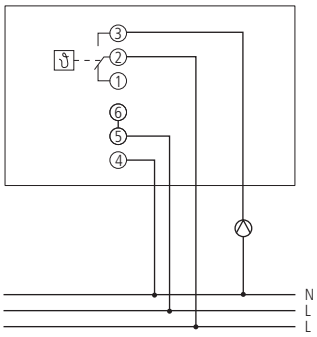



## Connection examples

**RAMSES 812 top2**

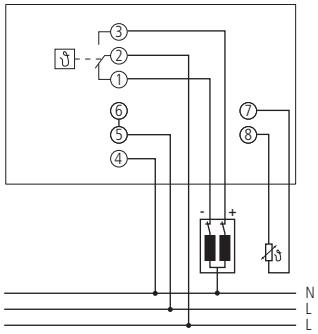



**RAMSES 812 top2**

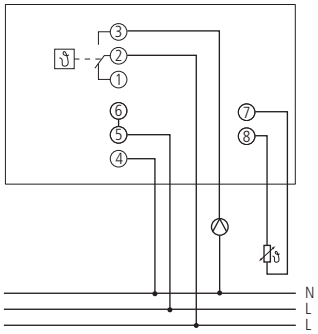



## Connection examples

**RAMSES 832 top2**




**RAMSES 832 top2**



## Digital clock thermostats – radio-controlled

### RAMSES 813 top2 HF Set A

### RAMSES 813 top2 HF Set S

### RAMSES 813 top2 HF Set 1

## Description

### Common functions

- Radio-controlled system for room temperature control
- The system consists of one digital clock thermostat and one receiver
- Suitable for energy-saving room temperature control in houses, apartments, heating zones, offices, showrooms, factories, medical practices, holiday homes
- Required temperature set via the rotary dial
- INFO key for viewing important settings
- Quick start-up via 3 basic programs with individually changeable comfort and reduced temperature
- Party/ECO program
- Automatic summer/winter time adjustment
- Different control types can be individually set
- Optimum start option thanks to operating point and switching differential setting option
- 24 programmable time phases per program also enable reduction phases during the day
- 2 comfort and 2 reduced temperatures can be allocated to each phase
- Including base for free choice of position
- An optionally available plug-in base is required for wall installation
- Holiday program with reduced temperature or date-controlled heating phase
- Optional pump protection function
- Optional feature to warn when boiler maintenance required

### RAMSES 813 top2 HF Set A

- Consisting of a RAMSES 813 top2 HF and a REC 11 receiver with an NO contact 16 (2) A/250 V AC for wall installation

### RAMSES 813 top2 HF Set S

- Consisting of a RAMSES 813 top2 HF and a REC 21 receiver as earthed intermediate connector with an NO contact 16 (2) A/230 V AC

### RAMSES 813 top2 HF Set 1

- Consisting of a RAMSES 813 top2 HF and a REC 1 receiver with a two-way switch 6 (2) A/250 V AC

## Product selection

| Type of connection | Program | Switching capacity at 250 V AC | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Radio controlled | Weekly program | 16 (2) A | +6 °C … +30 °C | 2 AA batteries | RAMSES 813 top2 HF Set A | 8139503 |
| | Weekly program | 16 (2) A | +6 °C … +30 °C | 2 AA batteries | RAMSES 813 top2 HF Set S | 8139505 |
| | Weekly program | 6 (1) A | +6 °C … +30 °C | 2 AA batteries | RAMSES 813 top2 HF Set 1 | 8139501 |

## Technical data

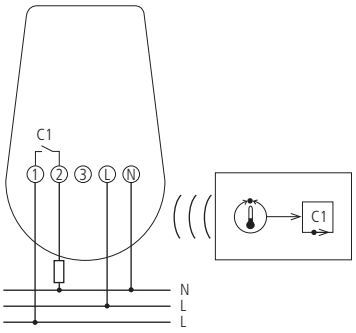
| | RAMSES 813 top2 HF Set A | RAMSES 813 top2 HF Set S | RAMSES 813 top2 HF Set 1 |
|---|---|---|---|
| **Operating voltage** | 2 AA batteries | | |
| **Type of contact** | NO contact | | Changeover contact |
| **Switching capacity** | 16 A (at 250 V AC, cos φ = 1), 2 A (at 250 V AC, cos φ = 0.6) | | 6 A (at 250 V AC, cos φ = 1), 1 A (at 250 V AC, cos φ = 0.6) |
| **Setting range temperature** | +6 °C … +30 °C | | |
| **Time basis** | Quartz | | |
| **Program** | Weekly program, Daily program, Holiday program, 3 basic programs | | |
| **Number of memory locations** | 42, max. 24 per program | | |
| **Control types** | Pulse width modulation, Hysteresis controller | | |
| **Control period** | 5–30 min | | |
| **Control capture range** | 0,2–5 K | | |
| **Switching output** | Potential-free, not for SELV | Potential-free | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | | |
| **Power reserve** | Max. 10 mins without losing time | | |
| **Stand-by consumption** | 1,9 W | 1,1 W | 1,7 W |
| **Battery life** | approx. 1 year, depending on switching frequency | | |
| **Housing receiver** | see scale drawings | | 5 modules |
| **Type of protection** | IP 20 | | |
| **Protection class** | II as per EN 60 730-1 | | |

## Accessories

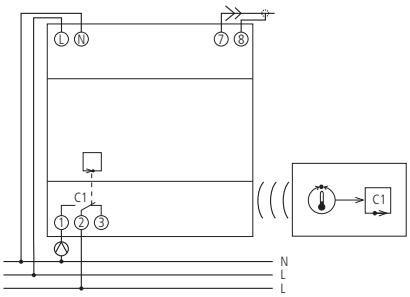
- Socket RAMSES
  Details ▶ Page 236
- Actuator ALPHA 4 230 V
  Details ▶ Page 238
- Actuator ALPHA 4 24 V
  Details ▶ Page 238
- Antenna RAMES 813/833
  Details ▶ Page 237

## Connection examples

### RAMSES 813 top2 HF Set A

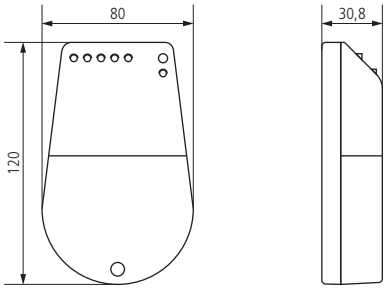



### RAMSES 813 top2 HF Set 1

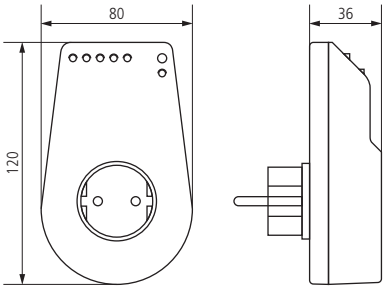



## Scale drawings

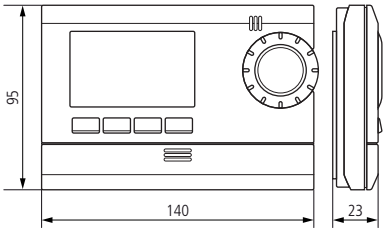
### RAMSES 813 top2 HF Set A




### RAMSES 813 top2 HF Set S




### RAMSES 813 top2 HF Set 1

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## Digital clock thermostats – radio-controlled

**RAMSES 833 top2 HF Set 1**

**RAMSES 833 top2 HF Set 2**

## Description

### Common functions

- Radio-controlled system for room temperature control
- Suitable for energy-saving room temperature control in houses, apartments, heating zones, offices, showrooms, factories, medical practices, holiday homes
- The system consists of one or two digital clock thermostat and one receiver
- Required temperature set via the rotary dial
- INFO key for viewing important settings
- Quick start-up via 3 basic programs with individually changeable comfort and reduced temperature
- Party/ECO program
- Automatic summer/winter time adjustment
- Different control types can be individually set
- Optimum start option thanks to operating point and switching differential setting option
- 24 programmable time phases per program also enable reduction phases during the day
- Illuminated display through keystroke
- External input for connection of presence detectors, temperature sensors, floor sensors, window contacts or telephone remote switches (can only be used in connection with optional plug-in base for wall mounting)
- Optimisation function for automatic correction of heating start up
- Holiday program with reduction phase or date-controlled heating phase for holiday homes
- Optional feature to warn when boiler maintenance required
- Optional pump protection function
- 3 comfort and 2 reduced temperatures can be allocated to each phase
- Including base for free choice of position
- An optionally available plug-in base is required for wall installation

### RAMSES 833 top2 HF Set 1

- Consisting of a RAMSES 833 top2 HF and a REC 1 receiver with a two-way switch 6 (2) A/250 V DC

### RAMSES 833 top2 HF Set 2

- Consisting of two RAMSES 833 top2 HF and a 2 channel REC 2 receiver with a two-way switch 6 (2) A/250 V DC per channel

## Product selection

| Type of connection | Program | Switching capacity at 250 V AC | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| Radio controlled | Weekly program | 6 (1) A | +6 °C … +30 °C | 2 AA batteries | RAMSES 833 top2 HF Set 1 | 8339501 |
| | Weekly program | 6 (1) A | +6 °C … +30 °C | 2 AA batteries | RAMSES 833 top2 HF Set 2 | 8339502 |

## Technical data

| | RAMSES 833 top2 HF Set 1 | RAMSES 833 top2 HF Set 2 |
|---|---|---|
| **Operating voltage** | 2 AA batteries | |
| **Type of contact** | Changeover contact | |
| **Switching capacity** | 6 A (at 250 V AC, cos φ = 1), 1 A (at 250 V AC, cos φ = 0.6) | |
| **Setting range temperature** | +6 °C … +30 °C | |
| **Time basis** | Quartz | |
| **Program** | Weekly program, Daily program, Holiday program, 3 basic programs | |
| **Number of memory locations** | 42, max. 24 per program | |
| **Control types** | Pulse width modulation, Hysteresis controller | |
| **Control period** | 5–30 min | |
| **Control capture range** | 0,2–5 K | |
| **Switching output** | Potential-free, not for SELV | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | |
| **Power reserve** | Max. 10 mins without losing time | |
| **Stand-by consumption** | 1,7 W | 2,2 W |
| **Battery life** | approx. 1 year, depending on switching frequency | |
| **Width** | 5 modules | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Accessories

**Actuator ALPHA 4 230 V**

- Art.No.: 9070438
  Details ▶ Page 238

**Temperature sensor**

- Art.No.: 9070321
  Details ▶ Page 238

**Temperature sensor RAMSES IP 65**

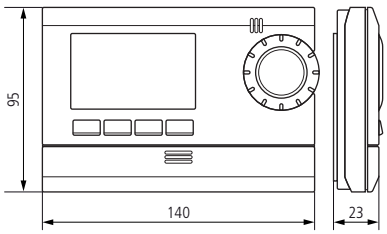
- for RAMSES 833 top2 HF Sets
- Art.No.: 9070459
  Details ▶ Page 237




**Additional accessories**

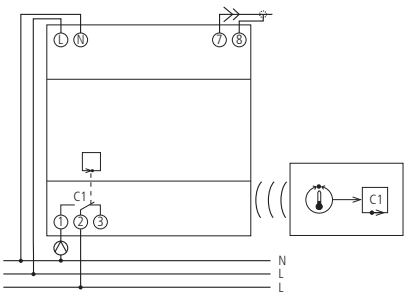
- Socket RAMSES
  Details ▶ Page 236
- Antenna RAMES 813/833
  Details ▶ Page 237
- Actuator ALPHA 4 24 V
  Details ▶ Page 238

## Scale drawings

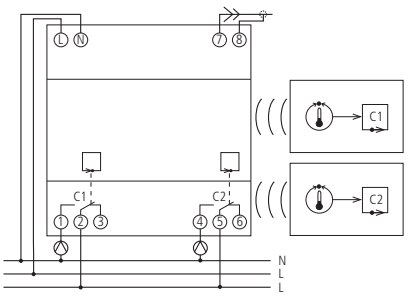



## Connection examples

**RAMSES 833 top2 HF Set 1**




**RAMSES 833 top2 HF Set 2**



## RAMSES 855 top2 OT

### Description

- Digital heating control for time-dependent monitoring and control of room temperature
- OpenTherm heating controller for 2 or 3 point control, weather-dependent, service water and circulation control
- Selector switch for 8 dfferent types of connection/function
- Automatic sensor recognition for weather or room dependent control; can be switched manually at any time
- 3 different weekly programs
- 3 comfort and 2 reduced temperatures can be allocated to each phase.
- INFO button for the most important data
- RS 232 interface for GSM modem
- Additional switching program for service water utilisation times
- Adjustable service water storage temperature, programmable legionella protection
- Party/ECO program
- Holiday program with reduction phase or date-controlled heating phase for holiday homes
- Automatic summer/winter time correction
- Boiler/runup temperature (control circuit 1) controlled by switching the burner
- Feed temperature (control circuit 2) controlled via pump or mechanicallyadjustable mixer
- 3-point controller with feed sensor
- Time and temperature dependent control of hot water circulation pump
- Pump protection function
- Hour counter for recording relay switching times e.g. burner running time
- Settable reminder function for heater maintenance
- Inputs: External sensor (included in set), heating circuit feed sensor (included in set), feed or plunge sensor for service water, feed sensor for circulation

8

### Product selection

| Type of connection (room controller) | Program | Switching capacity at 250 V AC | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| 2-way conductor (BUS) | Weekly program | 8 (1) A | +6 °C … +30 °C | 230 V AC | RAMSES 855 top2 OT | 8559132 |

### Technical data

| RAMSES 855 top2 OT | | | |
|---|---|---|---|
| **Operating voltage** | 230 V AC | **Number of memory locations** | 42, max. 24 per program |
| **Frequency** | 50–60 Hz | **Switching hysteresis** | 2–20 K |
| **Type of contact** | NO contact | **Mixer runtime** | 2–10 min |
| **Switching capacity** | 8 (1) A | **Switching output** | Potential-free, not for SELV |
| **Setting range temperature** | +6 °C … +30 °C | **Power reserve** | 4 hours |
| **Flow temperature limit** | +40 °C … +90 °C | **Stand-by consumption** | 1,6 W |
| **Type of connection (room controller)** | 2-way conductor (BUS) | **Type of protection** | IP 20 |
| **Program** | Weekly program | **Protection class** | II as per EN 60 730-1 |



Additional technical data at:
www.theben.de/product/ Article number

## Accessories

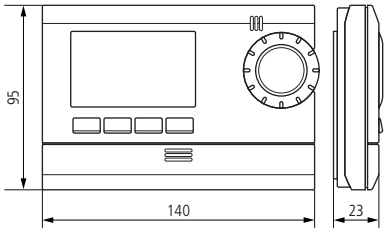
### Plunge sensor RAMSES

- Art.No.: 9070379
  Details ▶ Page 238

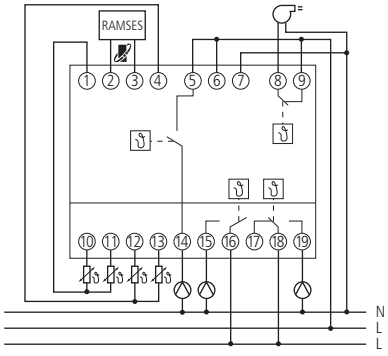
### Flow temperature sensor RAMSES

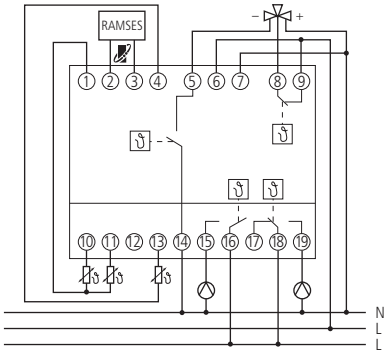
- Art.No.: 9070371
  Details ▶ Page 238

## Scale drawings




## Connection examples




8

## Digital clock thermostats – zone control

**RAMSES 366/1 top**

**RAMSES 366/2 top**

### Description

**Common functions**

- Digital clock thermostat with a low profile design for time-dependent monitoring and control of room temperature via external temperature sensor
- Daily/weekly program can be set to the minute
- Date-controlled holiday program
- Programming displayed graphically by a bar arrangement in the LCD
- Fully automatic summer/winter-time correction
- Manual switching pre-selection and operation mode selector for: Automatic mode, comfort mode, reduction mode, frost protection mode
- PIN coding
- Connection for telephone remote control for switching to comfort mode or frost protection mode
- LED display of active operating status as well as relay status

**RAMSES 366/1 top**

- Zone control, 1 zone
- 1 external temperature sensor required

**RAMSES 366/2 top**

- Zone control, 2 zones
- 2 external temperature sensors required

### Product selection

| Number of channels | Program | Switching capacity at 250 V AC | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| 1 | Weekly program | 10 (2) A | +6 °C … +30 °C | 230 V AC | RAMSES 366/1 top | 3660002 |
| 2 | Weekly program | 10 (2) A | +6 °C … +30 °C | 230 V AC | RAMSES 366/2 top | 3660052 |

## Technical data

| | RAMSES 366/1 top | RAMSES 366/2 top |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50–60 Hz | |
| **Type of contact** | Changeover contact | |
| **Switching capacity** | 10 A (at 250 V AC, cos φ = 1), 2 A (at 250 V AC, cos φ = 0.6) | |
| **Setting range temperature** | +6 °C … +30 °C | |
| **Time basis** | Quartz | |
| **Program** | Weekly program, Daily program, Holiday program | |
| **Number of memory locations** | 42 | |
| **Switching output** | Potential-free | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | |
| **Power reserve** | 10 years | |
| **Stand-by consumption** | 1,3 W | |
| **Width** | 6 modules | |
| **Type of protection** | IP 20 | |
| **Protection class** | Device II, temperature sensor III as per EN 60 730-1 | |

## Accessories

### External temperature sensor 1

- Art.No.: 9070191
  Details ▶ Page 237

### External temperature sensor 2

- Art.No.: 9070192
  Details ▶ Page 237

### Actuator ALPHA 4 230 V

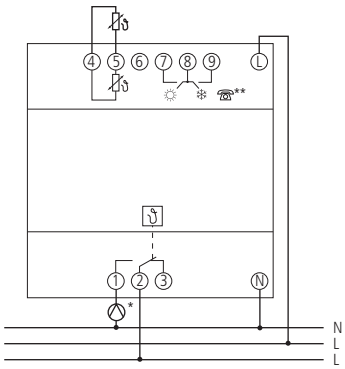
- Art.No.: 9070438
  Details ▶ Page 238

### Actuator ALPHA 4 24 V

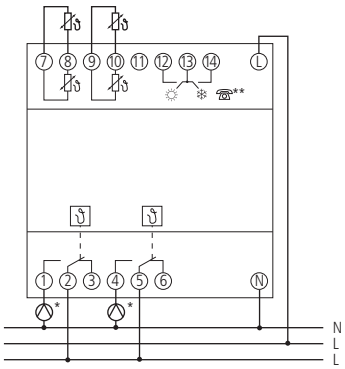
- Art.No.: 9070439
  Details ▶ Page 238

## Connection examples

### RAMSES 366/1 top




### RAMSES 366/2 top



## Analogue clock thermostats – segments

**RAMSES 784 S**

**RAMSES 782 S**

## Description

### Common functions

- Analogue clock thermostat with a low profile design for time-dependent monitoring and control of room temperature
- Segment program disc with daily progra
- Normal and reduced temperature can be set separately
- Operating point and electronic recirculation are set from the front
- Party switch and program display
- Electronic temperature control
- Selector switch for operating mode: continuous reduced temperature, continuous normal temperature, automatic mode, frost and plant protection +6 °C

### RAMSES 784 S

- Battery version
  (can also be used for retrofitting purposes via 2-wire connection)
- Quartz mechanism
- Battery monitoring with battery replacement indicator via flashing LED
- Silting and pump protection function (option)

### RAMSES 722 S

- Mains version
- Synchronous motor drive

### RAMSES 782 S

- Mains version
- Quartz mechanism, 3 day power reserve

8

## Product selection

| Power reserve | Type of connection | Program | Type of contact | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|
| – | 2/3-way conductors | Daily program | Changeover contact | +10 °C … +30 °C | 2 AA batteries | RAMSES 784 S | 7840801 |
| | 3-/4-conductors | Daily program | Changeover contact | +10 °C … +30 °C | 230 V AC | RAMSES 722 S | 7220801 |
| 3 days | 3-/4-conductors | Daily program | Changeover contact | +10 °C … +30 °C | 230 V AC | RAMSES 782 S | 7820801 |

## Technical data

| | RAMSES 784 S | RAMSES 722 S | RAMSES 782 S |
|---|---|---|---|
| **Operating voltage** | 2 AA batteries | 230 V AC | |
| **Frequency** | – | 50 Hz | 50–60 Hz |
| **Type of contact** | Changeover contact | | |
| **Program** | Daily program | | |
| **Switching capacity** | 6 A (at 250 V AC, cos φ = 1), 1 A (at 250 V AC, cos φ = 0.6) | | |
| **Switching differential** | 0,4–1,2 K | | |
| **Switching output** | Potential-free | Potential-free, not for SELV | |
| **Setting range temperature** | +10 °C … +30 °C | | |
| **Shortest switching times** | 15 min | | |
| **Programmable every** | 15 min | | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | Synchronised with mains | ≤ ± 1 s/day (quartz) |
| **Power reserve** | – | | 3 days |
| **Stand-by consumption** | 1,1 W | 1,3 W | 1,1 W |
| **Display** | 1 LED-Battery monitoring | 1 LED Heating | |
| **Type of protection** | IP 20 | | |
| **Protection class** | II as per EN 60 730-1 | | |

## Accessories

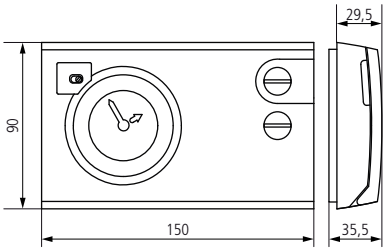
### Actuator ALPHA 4 230 V

- Art.No.: 9070438
  Details ▶ Page 238

### Additional accessories

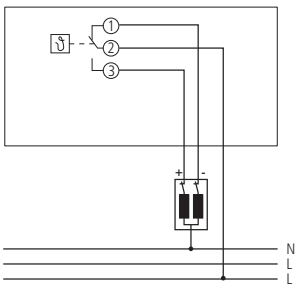
- Actuator ALPHA 4 24 V
  Details ▶ Page 238
- Adapter RAMSES 72x/78x
  Details ▶ Page 236

## Scale drawings

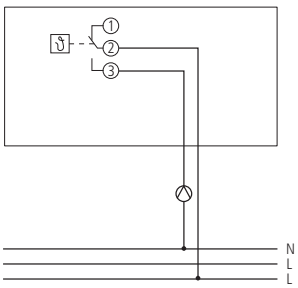



## Connection examples

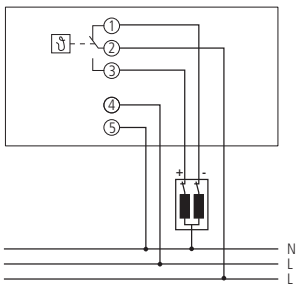
### RAMSES 784 S



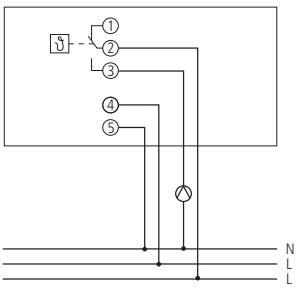

### RAMSES 784 S




### RAMSES 722 S, RAMSES 782 S




### RAMSES 722 S, RAMSES 782 S



## Analogue clock thermostats – tappets

**RAMSES 784**

**RAMSES 784 HF Set 1**

**RAMSES 721**

## Description

### Common functions

- Analogue clock thermostat with a low profile design for time-dependent monitoring and control of room temperature
- Normal and reduced temperature can be set separately
- Operating point and electronic recirculation are set from the front
- Party switch and program display
- Electronic temperature control
- Selector switch for operating mode: continuous reduced temperature, continuous normal temperature, automatic mode, frost and plant protection +6 °C

### RAMSES 784

- Battery version
  (can also be used for retrofitting purposes via 2-wire connection)
- Tappet program disc with daily or weekly program
- Electronic temperature control
- Quartz mechanism
- Battery monitoring with battery replacement indicator via flashing LED
- Silting and pump protection function (option)

### RAMSES 784 HF Set 1

- Radio-controlled system for room temperature control
- Consisting of one analogue clock thermostat RAMSES 784 HF and one REC 1 receiver with a two-way switch 6 (1) A/250 V DC
- RAMSES 784 batterry version
- Receiver REC 1 (5 modules) mains version

### RAMSES 722

- Mains version
- Tappet program disc with daily or weekly program
- Synchronous motor drive

### RAMSES 782

- Mains version
- Tappet program disc with daily or weekly program
- Quartz mechanism, 3 day power reserve

### RAMSES 721

- Mains version
- Tappet program disc with daily program
- Synchronous motor drive
- Reduced temperature approx. 5 K lower in relation to the set comfort temperature
- Without selector switch

### RAMSES 725

As RAMSES 722, but:

- Tappet program disc with daily or weekly program
- Central control of reduced temperature as per time program

## Product selection

| Power reserve | Type of connection | Program | Type of contact | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|
| – | 2/3-way conductors | Daily/Weekly program | Changeover contact | +10 °C … +30 °C | 2 AA batteries | RAMSES 784 | 7840030 |
| | Radio controlled | Daily/Weekly program | Changeover contact | +10 °C … +30 °C | 2 AA batteries | RAMSES 784 HF Set 1 | 7849407 |
| | 3-/4-conductors | Daily/Weekly program | Changeover contact | +10 °C … +30 °C | 230 V AC | RAMSES 722 | 7220030 |
| 3 days | 3-/4-conductors | Daily/Weekly program | Changeover contact | +10 °C … +30 °C | 230 V AC | RAMSES 782 | 7820030 |
| – | 3-/4-conductors | Daily program | Changeover contact | +10 °C … +30 °C | 230 V AC | RAMSES 721 | 7210030 |
| | | Daily/Weekly program | Changeover contact | +10 °C … +30 °C | 230 V AC | RAMSES 725 | 7250030 |

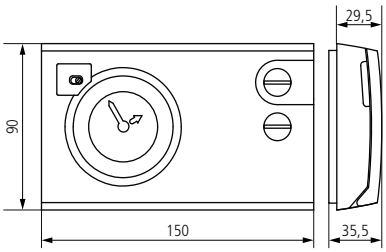
## Technical data

| | RAMSES 784 | RAMSES 784 HF Set 1 | RAMSES 722 | RAMSES 782 | RAMSES 721 | RAMSES 725 |
|---|---|---|---|---|---|---|
| **Operating voltage** | 2 AA batteries | | 230 V AC | | | |
| **Frequency** | – | | 50 Hz | 50–60 Hz | 50 Hz | |
| **Type of contact** | Changeover contact | | | | | |
| **Program** | Daily/Weekly program | | | | Daily program | Daily/Weekly program |
| **Switching capacity** | 6 A (at 250 V AC, cos φ = 1), 1 A (at 250 V AC, cos φ = 0.6) | | | | | |
| **Switching differential** | 0,4–1,2 K | | 0–1,2 K | 0,4–1,2 K | 1,5 K | |
| **Switching output** | Potential-free | | Potential-free, not for SELV | | | |
| **Setting range temperature** | +10 °C … +30 °C | | | | | |
| **Shortest switching times** | 20 min, 120 min | | | | 20 min | 20 min, 120 min |
| **Programmable every** | 5 min, 30 min | | | | 5 min | 5 min, 30 min |
| **Time accuracy** | ≤ ± 1 s/day (quartz) | | Synchronised with mains | ≤ ± 1 s/day (quartz) | Synchronised with mains | |
| **Power reserve** | – | | | 3 days | – | |
| **Stand-by consumption** | 1,1 W | 1,7 W | 1,3 W | 1,1 W | 1,3 W | 1,4 W |
| **Display** | 1 LED-Battery monitoring | | 1 LED Heating | | – | 1 LED Heating |
| **Type of protection** | IP 20 | | | | | |
| **Protection class** | II as per EN 60 730-1 | | | | | |

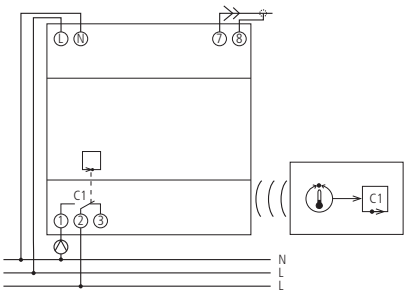
## Accessories

- Actuator ALPHA 4 230 V
  Details ▶ Page 238
- Actuator ALPHA 4 24 V
  Details ▶ Page 238
- Adapter RAMSES 72x/78x
  Details ▶ Page 236
- Antenna RAMES 813/833
  Details ▶ Page 237

## Scale drawings

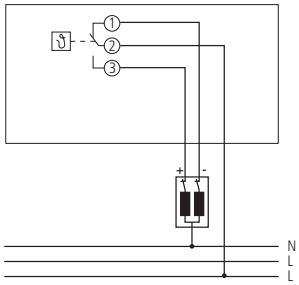



## Connection examples

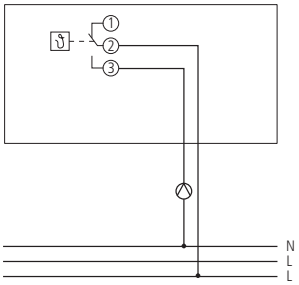



## Connection examples

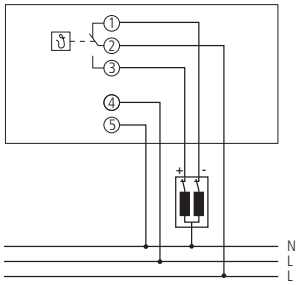
**RAMSES 784**



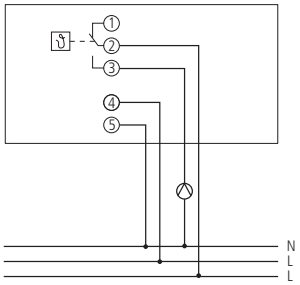

**RAMSES 784**




**RAMSES 722, RAMSES 782, RAMSES 721, RAMSES 725**




**RAMSES 722, RAMSES 782, RAMSES 721, RAMSES 725**




8

## 100 % growth.

Here at Theben, we take the training of every young person very seriously and we see it as an investment in the future rather than a tiresome duty. Therefore, we are doubling the number of apprenticeships in 2012. This new generation of qualified and motivated employees will ensure we maintain our long-term position as: An innovative company that thinks and acts sustainably.

| | Type of connection | Switching capacity at 230 V AC | Type of contact | Operating voltage | Installation type | Type | Page |
|---|---|---|---|---|---|---|---|
| **Mechanical** | | | | | | | |
| | 2/3-way conductors | 10 (4) A | NC contact | 230–240 V AC | Surface-mounted | RAMSES 701 | 148 |
| | 3-/4-conductors | 10 (4) A | NC contact | 230–240 V AC | Surface-mounted | RAMSES 702 | 148 |
| | | | | | | RAMSES 703 | 148 |
| | | | | | | RAMSES 704 | 148 |
| | | | | | | RAMSES 705 | 148 |
| | 4/5-way conductor | 10 (4) A | NC contact | 230–240 V AC | Surface-mounted | RAMSES 706 | 148 |
| | | | | | | RAMSES 707 | 148 |
| | 3-/4-conductors | Heating: 10 (4) A<br>Cooling: 5 (2) A | Changeover contact | 230–240 V AC | Surface-mounted | RAMSES 708 | 148 |
| | 4/5-way conductor | Heating: 10 (4) A<br>Cooling: 5 (2) A | Changeover contact | 230–240 V AC | Surface-mounted | RAMSES 709 | 148 |
| | 2/3-way conductors | 10 (4) A | NC contact | 230–240 V AC | Flush-mounted | RAMSES 741 | 150 |
| | 4/5-way conductor | 10 (4) A | NC contact | 230–240 V AC | Flush-mounted | RAMSES 746 | 150 |
| | 3-/4-conductors | Heating: 10 (4) A<br>Cooling: 5 (1) A | Changeover contact | 230–240 V AC | Flush-mounted | RAMSES 748 | 150 |
| | 2/3-way conductors | 10 (4) A | NC contact | 230–240 V AC | Flush-mounted | RAMSES 741 RA | 150 |
| | 4/5-way conductor | 10 (4) A | NC contact | 230–240 V AC | Flush-mounted | RAMSES 746 RA | 150 |
| | 3-/4-conductors | Heating: 10 (4) A<br>Cooling: 5 (1) A | Changeover contact | 230–240 V AC | Flush-mounted | RAMSES 748 RA | 150 |
| **Electronic** | | | | | | | |
| | 2/3-way conductors | 8 A | NC contact | 230 V AC | Surface-mounted | RAMSES 714 | 152 |
| | 4/5-way conductor | 16 A | NC contact | 230 V AC | Surface-mounted | RAMSES 714 A | 152 |
| | 5-way conductor | 16 (4) A | NO contact | 230 V AC | Flush-mounted | RAMSES 751 RA | 152 |

## Mechanical room thermostats – Surface-mounted

**RAMSES 701**

**RAMSES 706**

**RAMSES 707**

## Description

### Common functions

- Room temperature controller with thermal feedback
- Suitable for all types of heating, e.g. gas, water, electric heating with central/individual room control
- Setting controller with mechanical setting limit or detection

### RAMSES 701

see common functions

### RAMSES 702

- Integrated temperature reduction (approx. 4 K) possible via control with time switch

### RAMSES 703

- Internal setting: Temperature cannot be set externally. Temperature is set inside the device at start-up
- Integrated temperature reduction (approx. 4 K) possible via control with time switch

### RAMSES 704

- Switch for additional heating ON/OFF + indicator lamp

### RAMSES 705

- Switch for heating ON/OFF

### RAMSES 706

- Switch for heating ON/OFF + indicator lamp
- Integrated temperature reduction (approx. 4 K) possible via control with time switch

### RAMSES 707

- Switch for heating ON/OFF
- Switch for additional heating ON/OFF + indicator lamp

### RAMSES 708

- Also suitable for air conditioning equipment
- Heating/cooling changeover contact

### RAMSES 709

- Also suitable for air conditioning equipment
- Heating/cooling changeover contact
- 3-way selector switch for: comfort mode, reduction mode, external reduction
- Indicator lamp
- External temperature reduction (approx. 4 K) possible via control with time switch

## Product selection

| Type of connection | Type of contact | Switching capacity at 230 V AC | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|
| 2/3-way conductors | NC contact | 10 (4) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 701 | 7010001 |
| 3-/4-conductors | NC contact | 10 (4) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 702 | 7020001 |
| | | | | | RAMSES 703 | 7030001 |
| | | | | | RAMSES 704 | 7040001 |
| | | | | | RAMSES 705 | 7050001 |
| 4/5-way conductor | NC contact | 10 (4) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 706 | 7060001 |
| | | | | | RAMSES 707 | 7070001 |
| 3-/4-conductors | Changeover contact | Heating: 10 (4) A<br>Cooling: 5 (2) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 708 | 7080001 |
| 4/5-way conductor | Changeover contact | Heating: 10 (4) A<br>Cooling: 5 (2) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 709 | 7090001 |

## Technical data

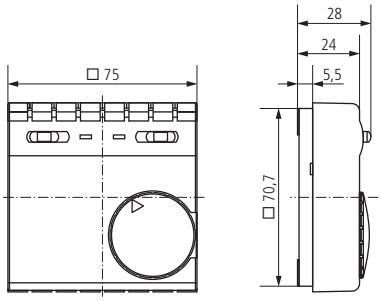
| | RAMSES 701–RAMSES 707 | RAMSES 708–RAMSES 709 |
|---|---|---|
| **Operating voltage** | 230–240 V AC | |
| **Frequency** | 50–60 Hz | |
| **Type of contact** | NC contact | Changeover contact |
| **Switching capacity** | 10 A (at 230 V AC, cos φ = 1),<br>4 A (at 230 V AC, cos φ = 0.6) | Heating: 10 A (at 230 V AC, cos φ = 1), 4 A (at 230 V AC, cos φ = 0.6)<br>Cooling: 5 A (at 230 V AC, cos φ = 1), 2 A (at 230 V AC, cos φ = 0.6) |
| **Setting range temperature** | +5 °C … +30 °C | |
| **Control accuracy** | approx. 1 K, thermal recirculation | |
| **Test approval** | | |
| **Colour** | Pure white (similar to RAL 9010) | |
| **Installation type** | Surface-mounted | |
| **Type of protection** | IP 30 | |
| **Protection class** | II as per EN 60 730-1 | |

## Accessories

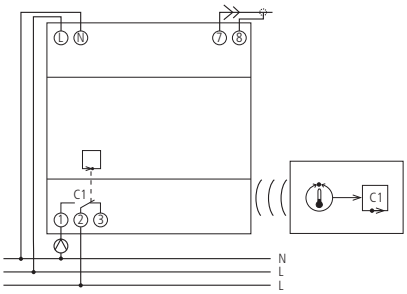
**Adapter plate RAMSES 70x**

- Art.No.: 9070480
  Details ▶ Page 236

## Scale drawings

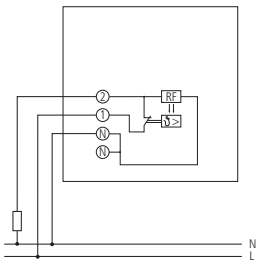



## Connection examples

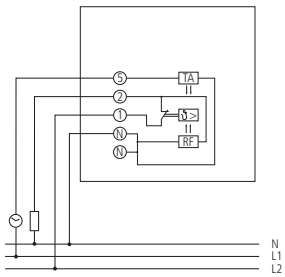



## Connection examples

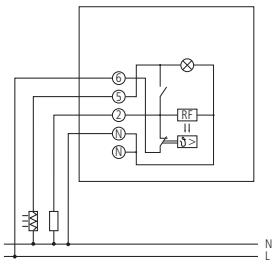
**RAMSES 701**



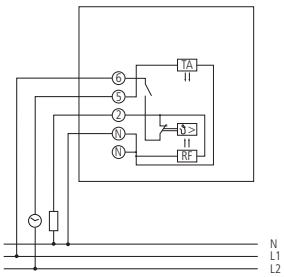

**RAMSES 702, RAMSES 703**



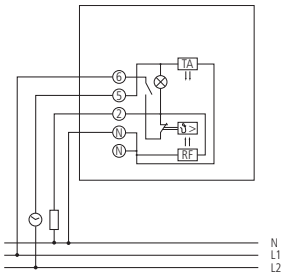

**RAMSES 704**



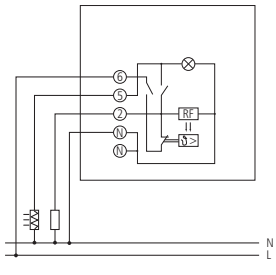

**RAMSES 705**



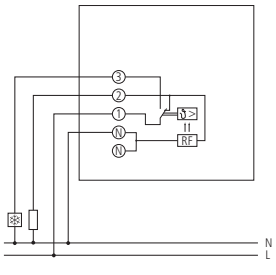

**RAMSES 706**



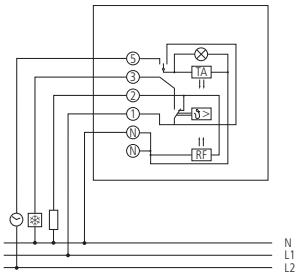

**RAMSES 707**




**RAMSES 708**




**RAMSES 709**




9

## Mechanical room thermostats – Flush-mounted

**RAMSES 741**

**RAMSES 741 RA**

**RAMSES 746 RA**

## Description

### Common functions

- Room temperature controller with thermal feedback
- Central part fits nearly all frames using an adapter frame from the switch manufacturer
- Ideal controller for refurbished and new build properties

### RAMSES 741

- Supplied as replacement device without frame, central part and setting button, incl. protective cap
- Frame, central part and setting button available as accessories

### RAMSES 746

- Switch for heating ON/OFF + indicator lamp
- Supplied as replacement device without frame, central part and setting button, incl. protective cap
- Frame, central part and setting button available as accessories

### RAMSES 748

- Heating/cooling two-way switch
- Supplied as replacement device without frame, central part and setting button, incl. protective cap
- Frame, central part and setting button available as accessories

### RAMSES 741 RA

- With frame, central part and setting button

### RAMSES 746 RA

- With frame, central part and setting button
- Switch for heating ON/OFF + indicator lamp

### RAMSES 748 RA

- Heating/cooling two-way switch
- With frame, central part and setting button

## Product selection

| Scope of delivery | Type of connection | Type of contact | Switching capacity at 230 V AC | Setting range temperature | Operating voltage | Type | Article number |
|---|---|---|---|---|---|---|---|
| Without cover | 2/3-way conductors | NC contact | 10 (4) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 741 | 7410130 |
| | 4/5-way conductor | NC contact | 10 (4) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 746 | 7460130 |
| | 3-/4-conductors | Changeover contact | Heating: 10 (4) A Cooling: 5 (1) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 748 | 7480130 |
| With cover | 2/3-way conductors | NC contact | 10 (4) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 741 RA | 7410131 |
| | 4/5-way conductor | NC contact | 10 (4) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 746 RA | 7460131 |
| | 3-/4-conductors | Changeover contact | Heating: 10 (4) A Cooling: 5 (1) A | +5 °C … +30 °C | 230–240 V AC | RAMSES 748 RA | 7480131 |

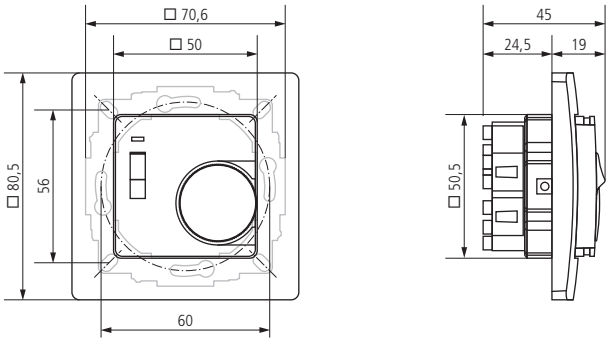
## Technical data

| | RAMSES 741 | RAMSES 746 | RAMSES 748 | RAMSES 741 RA/746 RA | RAMSES 748 RA |
|---|---|---|---|---|---|
| **Operating voltage** | 230–240 V AC | | | | |
| **Frequency** | 50–60 Hz | | | | |
| **Type of contact** | NC contact | | Changeover contact | NC contact | Changeover contact |
| **Switching capacity** | 10 A (at 230 V AC, cos φ = 1), 4 A (at 230 V AC, cos φ = 0.6) | | Heating: 10 A (at 230 V AC, cos φ = 1), 4 A (at 230 V AC, cos φ = 0.6) Cooling: 5 A (at 230 V AC, cos φ = 1), 1 A (at 230 V AC, cos φ = 0.6) | 10 A (at 230 V AC, cos φ = 1), 4 A (at 230 V AC, cos φ = 0.6) | Heating: 10 A (at 230 V AC, cos φ = 1), 4 A (at 230 V AC, cos φ = 0.6) Cooling: 5 A (at 230 V AC, cos φ = 1), 1 A (at 230 V AC, cos φ = 0.6) |
| **Setting range** | +5 °C … +30 °C | | | | |
| **Control accuracy** | approx. 0.5 K, thermal recirculation | | | | |
| **Test approval** | | | | | |
| **Colour** | – | | | Brilliant pure white (similar to RAL 9010) | |
| **Installation type** | Flush-mounted | | | | |
| **Type of protection** | – | | | IP 30 | |
| **Protection class** | II as per EN 60 730-1 | | | | |

## Accessories

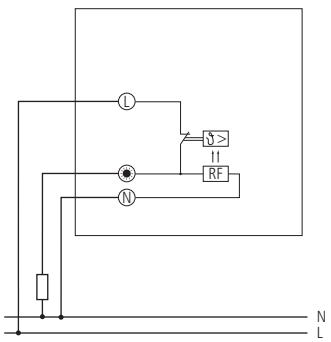
- Central part RAMSES 741/748
  Details ▶ Page 237
- Central part RAMSES 746
  Details ▶ Page 237
- Frame RAMSES 74x
  Details ▶ Page 237

## Scale drawings

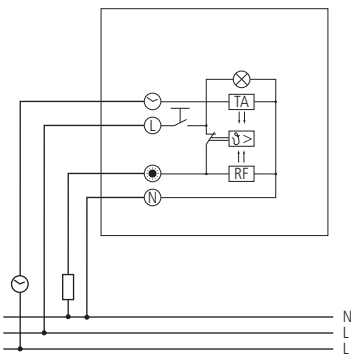



## Connection examples

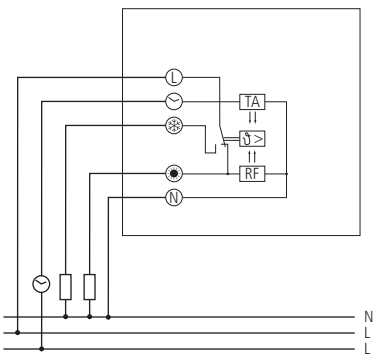
### RAMSES 741, RAMSES 741 RA




### RAMSES 746, RAMSES 746 RA




### RAMSES 748, RAMSES 748 RA



## Electronic room thermostats

### RAMSES 714

### RAMSES 714 A

### RAMSES 751 RA

## Description

### RAMSES 714

- Electronic room thermostats for all types of heating, e.g. gas, water, electric heating etc.
- Individual room control possible in combination with Theben actuators
- Heating status display via LED
- External temperature reduction (approx. 3.5 K) is possible via control with time switch. Temperature reduction can be cut to 2 K by opening a wire bridge

### RAMSES 714 A

As RAMSES 714, but:

- External temperature sensor for underfloor heating (wet rooms or bathroom heating)
- Switchable for the connection of available NTC sensors (33 KΩ/25 °C)
- Switch for heating ON/OFF

### RAMSES 751 RA

- Electronic room thermostat with remote temperature sensor for underfloor heating control
- Display of temperature reduction and heating ON
- 2-pole mains switch for heating ON/OFF
- Emergency mode for sensor malfunction at 30 % heating
- Central part fits nearly all frames using an adapter frame from the switch manufacturer

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## Product selection

| Type of connection | Type of contact | Switching capacity at 230 V AC | Setting range temperature | Installation type | Type | Article number |
|---|---|---|---|---|---|---|
| 2/3-way conductors | NC contact | 8 A | +5 °C … +30 °C | Surface-mounted | RAMSES 714 | 7140002 |
| 4/5-way conductor | NC contact | 16 A | +10 °C … +60 °C | Surface-mounted | RAMSES 714 A | 7140016 |
| 5-way conductor | NO contact | 16 (4) A | +10 °C … +50 °C | Flush-mounted | RAMSES 751 RA | 7510131 |

## Technical data

| | RAMSES 714 | RAMSES 714 A | RAMSES 751 RA |
|---|---|---|---|
| **Operating voltage** | 230 V AC | | |
| **Frequency** | 50 Hz | | |
| **Type of contact** | NC contact | | NO contact |
| **Switching output** | Not potential-free | | Potential-free |
| **Switching capacity** | 8 A (at 230 V AC, cos φ = 1) | 16 A (at 230 V AC, cos φ = 1) | 16 A (at 230 V AC, cos φ = 1), 4 A (at 230 V AC, cos φ = 0.6) |
| **Setting range temperature** | +5 °C … +30 °C | +10 °C … +60 °C | +10 °C … +50 °C |
| **Control accuracy** | ± 0.25 K | ± 0.5 K | |
| **Control behaviour** | – | | Proportional controller with PWM (continuous type) |
| **Colour** | Pure white (similar to RAL 9010) | | |
| **Installation type** | Surface-mounted | | Flush-mounted |



Additional technical data at:
www.theben.de/product/ Article number

| | RAMSES 714 | RAMSES 714 A | RAMSES 751 RA |
|---|---|---|---|
| **Max. cable length** | – | Length 4 m, Ø 6 mm, (IP 54) | Length 4 m, Ø 6 mm, extendable to 50 m |
| **Ambient temperature** | – | | +0 °C … +40 °C |
| **Type of protection** | IP 20 | | IP 30 |
| **Protection class** | II as per EN 60 730-1 | | |

## Accessories

### Actuator ALPHA 4 230 V

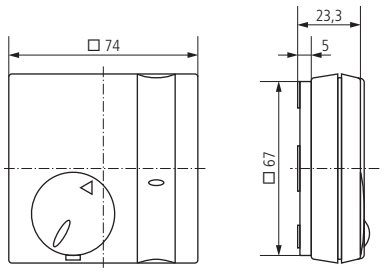
- Art.No.: 9070438
  Details ▶ Page 238

### Adapter plate RAMSES 714

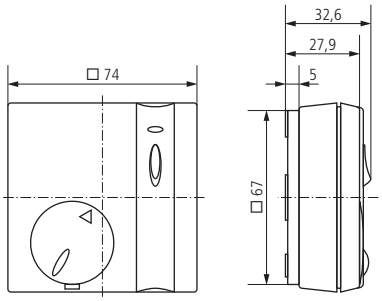
- for RAMSES 714, RAMSES 714 A
- Art.No.: 9070212
  Details ▶ Page 236

## Scale drawings

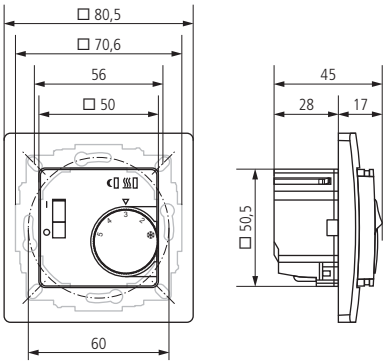
### RAMSES 714




### RAMSES 714 A

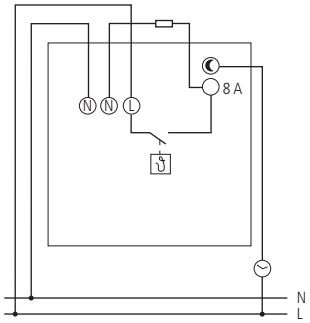



### RAMSES 751 RA

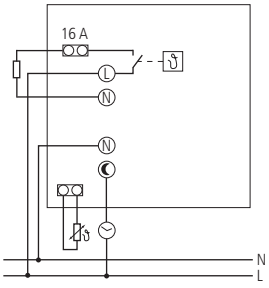



## Connection examples

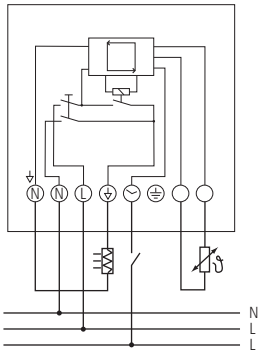
### RAMSES 714, RAMSES 714 A




### RAMSES 714 A




### RAMSES 751 RA




9

## Zero emissions.

Energy efficiency, environmental responsibility and sustainability are not just important in our range of products. These tenets are firmly anchored in our company policy: In addition to a solar power system and heat pumps for ventilating the production section, we have recently introduced our first zero emission electric company car.

| | Description | Type | Page |
|---|---|---|---|
| **$CO_2$ sensors** | | | |
| | $CO_2$ sensor with USB interface<br>Graphic display of $CO_2$ levels on PC | AMUN 716 USB | 156 |
| | $CO_2$ sensor for ventilation control and monitoring of air quality in the room<br>with switch and analog outputs | AMUN 716 R | 156 |
| **Hygrostat** | | | |
| | Hygrostat for wall installation<br>for control of humidifiers or ventilation and dehumidifier systems | SOTHIS 715 | 158 |

## $CO_2$ sensors

### AMUN 716 USB

### AMUN 716 R

## Description

### Common functions

- $CO_2$ sensor
- Suitable for conference and meeting rooms, offices, schools/nurseries, passive and low-energy housing.

### AMUN 716 USB

- Simple installation and start-up on PC via USB interface
- Software for Windows 98 SE/ME/2000/XP
- Acoustic and visual warning signals on reaching the threshold value
- Log file of $CO_2$ level can be saved
- Saves automatically during extended recordings
- Graphic display of $CO_2$ levels on PC
- Representation of course of last 80 minutes using diagrams
- Additional display of current $CO_2$ level on directly sensor via 5 LEDs
- Adjustable acoustic alarm threshold

### AMUN 716 R

- For fan control
- Warning display for $CO_2$ concentration (lights)
- Power unit optionally available. Power unit is suitable for flush mounted installation
- Simple upgrade of uncontrolled ventilation systems possible
- 2 switch outputs $CO_2$ controlled for 2 stage control, with manual and automatic mode as well as display of switching status
- 3 x 0–10 V outputs for $CO_2$, temperature and relative humidity

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## Product selection

| Measuring range | Data interface | Display | Operating voltage | Protection class | Type | Article number |
|---|---|---|---|---|---|---|
| 0–2000 ppm | USB | 5 LEDs | 5 V DC | III | AMUN 716 USB | 7169101 |
| | 3 x 0–10 V, 2 x relay 5 A/250 V AC | 6 LEDs | 24 V AC/DC | II | AMUN 716 R | 7160101 |



Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | AMUN 716 USB | AMUN 716 R |
|---|---|---|
| **Operating voltage** | 5 V DC via USB bus voltage | 24 V AC/DC SELV |
| **Outputs** | USB | 3 x 0-10 V, 2 x relay 5 A/250 V AC |
| **Measuring range $CO_2$** | 0–2000 ppm | |
| **Measuring range temperature** | – | +5 °C … +40 °C |
| **Measuring range humidity** | – | 30–80 % rF |
| **Hysteresis** | – | ±75 ppm |
| **ON/OFF thresholds** | – | 700 ppm ±200 ppm, 1300 ppm ±200 ppm |
| **Type of connection** | USB, cable length 1.5 m | Screw terminals |
| **Display** | 5 LEDs | 6 LEDs |
| **Installation type** | – | Wall installation (also on flush-mounted socket possible) |
| **Type of protection** | IP 20 | |
| **Protection class** | III as per EN 60 730-1 | II as per EN 60 730-1 |

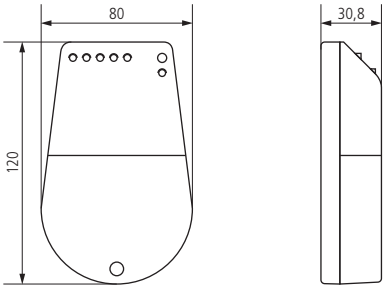
## Accessories

**Power unit CO2-sensor**

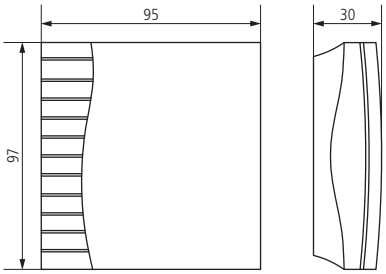
- Art.No.: 9070494
  Details ▶ Page 239

## Scale drawings

**AMUN 716 USB**




**AMUN 716 R**




10

## SOTHIS 715

### Description

- Hygrostat for wall installation
- Measurement of relative humidity
- Suitable for control of humidifiers or ventilation and dehumidifier systems
- Use SELV when there is a risk of high humidity and the build up of condensation

### Product selection

| Measuring range | Type of contact | Switching capacity humidifier | Switching capacity dehumidyfing | Type | Article number |
|---|---|---|---|---|---|
| 35–100 % rF | Changeover contact | 2 A | 5 A | SOTHIS 715 | 7150002 |

### Technical data

| SOTHIS 715 | |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50–60 Hz |
| **Switching capacity dehumidyfing** | 5 A |
| **Switching capacity humidifier** | 2 A |
| **Suitable for SELV** | Yes |

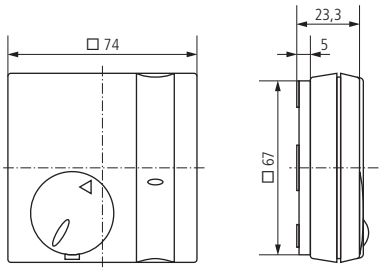
| | |
|---|---|
| **Colour** | Pure white (similar to RAL 9010) |
| **Installation type** | Wall installation |
| **Type of protection** | IP 30 |
| **Protection class** | II as per EN 60 730-1 |

### Accessories

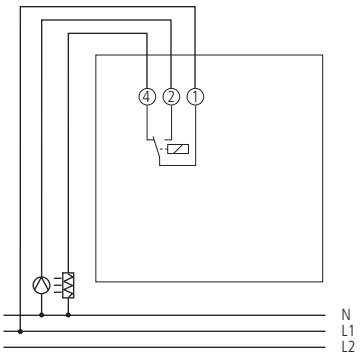
**Adapter plate RAMSES 714**

- Art.No.: 9070212
  Details ▶ Page 236

### Scale drawings




### Connection example



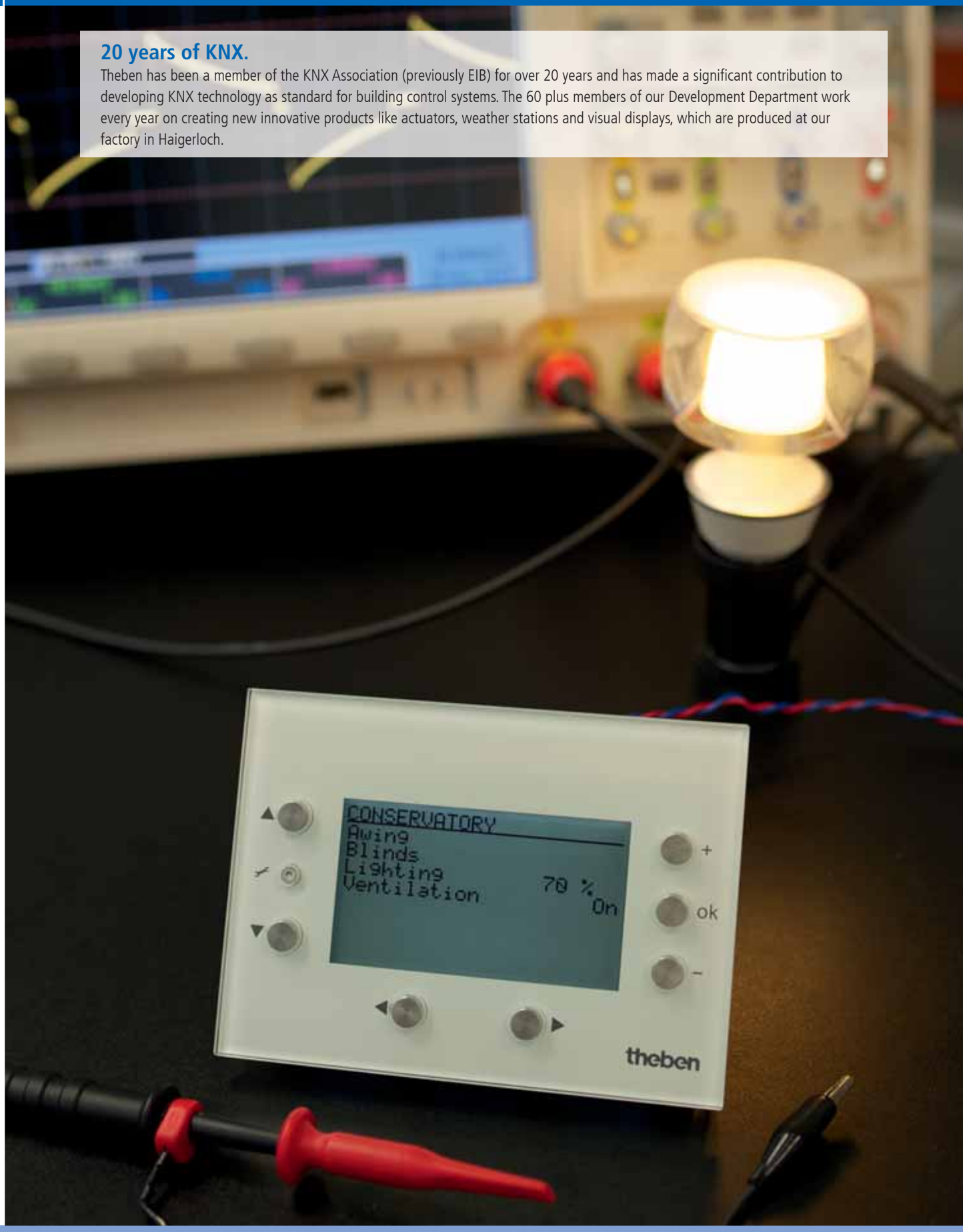

10



Additional technical data at:
www.theben.de/product/ Article number

## 20 years of KNX.

Theben has been a member of the KNX Association (previously EIB) for over 20 years and has made a significant contribution to developing KNX technology as standard for building control systems. The 60 plus members of our Development Department work every year on creating new innovative products like actuators, weather stations and visual displays, which are produced at our factory in Haigerloch.



| | Description | Type | Page |
|---|---|---|---|
| **Switching actuators** | | | |
| | Switch actuators MIX2 | RMG 4 I KNX/RME 4 I KNX/RMG 8 S KNX/RME 8 S KNX | 162 |
| | Switch actuators MIX | RMG 4 C-Load KNX/RME 4 C-Load KNX/RMG 4 S KNX/RME 4 S KNX | 164 |
| | Switch or blind actuators 4–16 channels | RMG 8 KNX/RME 8 KNX | 166 |
| **Dimming actuators** | | | |
| | Control units 2–6 channels MIX | SMG 2 S KNX/SME 2 S KNX | 167 |
| | Universal dimming actuators 2–6 channels MIX | DMG 2 S KNX/DME 2 S KNX/DMB 2 S KNX | 168 |
| **Blinds actuators** | | | |
| | Blind actuators 4–12 channels MIX | JMG 4 S KNX/JME 4 S KNX | 170 |
| **Binary inputs** | | | |
| | Binary inputs 6–18 channels MIX | BME 6 KNX/BMG 6 KNX | 171 |
| | Binary inputs for flush-mounted sockets | TA 2 KNX/TA 4 KNX/TA 6 KNX | 172 |
| **HVAC controler** | | | |
| | Multifunction display and room thermostats | VARIA 826 KNX/VARIA 824 KNX/RAMSES 713 S KNX/RAMSES 712 KNX | 173 |
| | Heating actuators | HMG 4 KNX/HME 4 KNX/HMT 6 KNX/HMT 12 KNX | 176 |
| | Motor-driven actuators | CHEOPS control KNX/CHEOPS drive KNX | 178 |
| | $CO_2$ Room air sensor | AMUN 716 KNX | 179 |
| | Room thermostat Fan-Coil and Fan-Coil actuator | RAMSES 713 FC/KNX FCA 1 KNX | 180 |
| **Presence and motion detectors** | | | |
| | Motion detectors | SPHINX 105-300 KNX/SPHINX 331 KNX/SPHINX 332 KNX | 182 |
| | Presence detectors | PresenceLight 360 KNX/compact office EIB/compact passage KNX/ compact passimo KNX/ECO-IR 360EIB-AC/ECO-IR DUAL-EIB/ PlanoCentro KNX/PresenceLight 180 KNX | 183 |
| **Weather station, brightness sensor** | | | |
| | KNX weather stations | Weather station KNX/Weather station basic KNX | 196 |
| | Brightness sensors and temperature sensors | LUNA 130 KNX/LUNA 131 S KNX/LUNA 133 KNX | 197 |
| **Digital time switches** | | | |
| | 4 channel time switches with annual program | TR 644 S DCF KNX/TR 644 S KNX | 200 |
| | 2 channel time switch with weekly program | TR 612 S KNX | 202 |
| **Gateways** | | | |
| | KNX-OpenTherm-interface | KNX-OT-Box | 204 |
| | KNX-DALI-interface | DALI Gateway KNX | 205 |
| **System devices** | | | |
| | Time signal transmitter | ZS 600 DCF KNX | 203 |
| | Supply voltage | Power supply 640 mA/320 mA/160 mA | 206 |
| | Interface and line coupler | Interface USB KNX/Line coupler KNX | 207 |
| **Display units** | | | |
| | KNX indoor clock | OSIRIA KNX | 209 |

## Switching actuators C-load 4–12 channels MIX2

### RMG 4 I KNX

### RME 4 I KNX

## Description

### Common functions

- 4-way C load switching actuator MIX2
- With current recognition
- For higher lamp loads
- Up to two extension modules MIX or MIX2 can be connected to one basic module
- Device and KNX bus module can be swapped independently of each other
- Manual set-up and use of switching actuators is possible without KNX bus module
- Removable KNX bus module enables devices to be changed without reprogramming
- LED switching status display for each channel
- Manual operation on device (even without bus connection)
- Switching functions: On/Off, pulse, On/Off delay, staircase light with warning
- Logical links: e.g. lock, AND, release, OR

### RMG 4 I KNX

- Basic module MIX2
- Can be upgraded to maximum of 12 channels

### RME 4 I KNX

- Extension module MIX2
- For upgrading to maximum of 12 channels

## Product selection

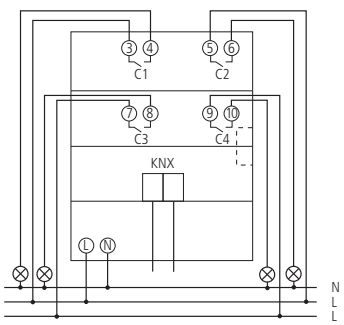
| Type | Article number |
|---|---|
| RMG 4 I KNX | 4930210 |
| RME 4 I KNX | 4930215 |

## Technical data

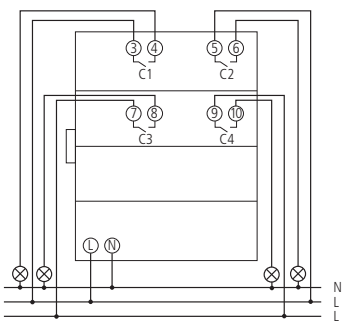
| | RMG 4 I KNX | RME 4 I KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | – |
| **Operating voltage** | 110–240 V AC | |
| **Frequency** | 45–65 Hz | |
| **Stand-by consumption** | 1,3 W | 0 W |
| **Width** | 4 modules | |
| **Type of contact** | NO contact, 16 A (at 250 V AC, cos φ = 1), 10 A (at 250 V AC, cos φ = 0,6) | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Connection examples

### RMG 4 I KNX




### RME 4 I KNX





Additional technical data at:
www.theben.de/product/ Article number
theben

## Switching actuators 8–24 channels MIX2

### RMG 8 S KNX

### RME 8 S KNX

## Description

### Common functions

- 8-way switching actuator MIX2
- Up to two extension modules MIX or MIX2 can be connected to one basic module
- Device and KNX bus module can be swapped independently of each other
- Removable KNX bus module enables devices to be changed without reprogramming
- Manual set-up and use of switching actuators is possible without KNX bus module
- LED switching status display for each channel
- Manual operation on device (even without bus connection)
- Switching functions: On/Off, pulse, On/Off delay, staircase light with warning
- Logical links: e.g. lock, AND, release, OR

### RMG 8 S KNX

- Basic module MIX2
- Can be upgraded to maximum of 24 channels

### RME 8 S KNX

- Extension module MIX2
- For upgrading to maximum of 24 channels

## Product selection

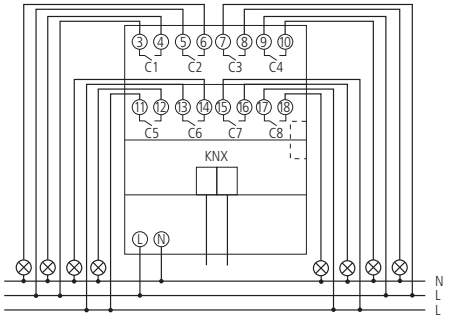
| Type | Article number |
|---|---|
| RMG 8 S KNX | 4930220 |
| RME 8 S KNX | 4930225 |

## Technical data

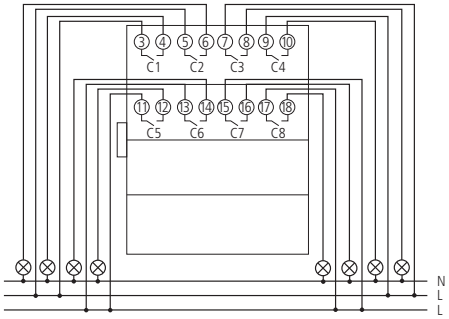
| | RMG 8 S KNX | RME 8 S KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | – |
| **Operating voltage** | 110–240 V AC | – |
| **Frequency** | 45–65 Hz | – |
| **Stand-by consumption** | 0,3 W | – |
| **Width** | 4 modules | |
| **Type of contact** | NO contact, 16 A (at 250 V AC, cos φ = 1), 3 A (at 250 V AC, cos φ = 0,6) | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Connection examples

### RMG 8 S KNX




### RME 8 S KNX



## Switching actuators C-load 4–12 channels MIX

### RMG 4 C-Load KNX

### RME 4 C-Load KNX

## Description

### Common functions

- 4-way C load switching actuator MIX
- For higher lamp loads
- Up to 2 extension modules can be connected to a basic module
- Can be combined with all MIX series devices
- Free combination of switches, dimming, blinds and heating control as well as binary inputs
- LED switching status display for each channel
- Manual switch with On/Off/Bus settings (also without bus voltage)
- Switching functions: e.g. On/Off, pulse, On/Off delay, staircase light with warning
- Logical links: e.g. lock,AND, release, OR

### RMG 4 C-Load KNX

- Basic module MIX
- Can be upgraded to maximum of 12 channels

### RME 4 C-Load KNX

- Extension module MIX
- For upgrading to maximum of 12 channels

## Product selection

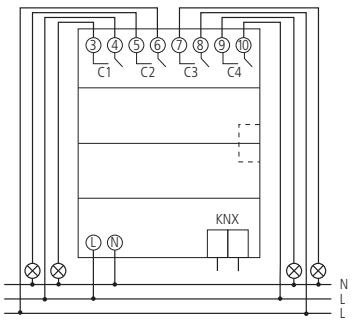
| Type | Article number |
|---|---|
| RMG 4 C-Load KNX | 4910206 |
| RME 4 C-Load KNX | 4910207 |

## Technical data

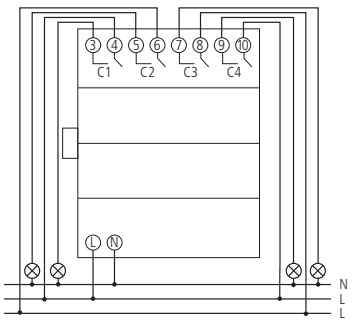
| | RMG 4 C-Load KNX | RME 4 C-Load KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | – |
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Stand-by consumption** | 2 W | |
| **Width** | 4 modules | |
| **Type of contact** | NO contact, 16 A (at 250 V AC, cos φ = 1), 16 A (at 250 V AC, cos φ = 0,6) | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Connection examples

### RMG 4 C-Load KNX




### RME 4 C-Load KNX






Additional technical data at:
www.theben.de/product/ Article number

## Switching actuators 4–12 channels MIX

### RMG 4 S KNX

### RME 4 S KNX

## Description

**Common functions**

- 4-way switching actuator MIX
- Up to 2 extension modules can be connected to a basic module
- Can be combined with all MIX series devices
- Free combination of switches, dimming, blinds and heating control as well as binary inputs
- LED switching status display for each channel
- Manual switch with On/Off/Bus settings (also without bus voltage)
- Adjustable characteristics: e.g. switching, delayed switching, pulse function
- Switching functions: e.g. On/Off, pulse, On/Off delay, staircase light with warning
- Logical links: e.g. lock,AND, release, OR

**RMG 4 S KNX**

- Basic module MIX
- Can be upgraded to maximum of 12 channels

**RME 4 S KNX**

- Extension module MIX
- For upgrading to maximum of 12 channels

## Product selection

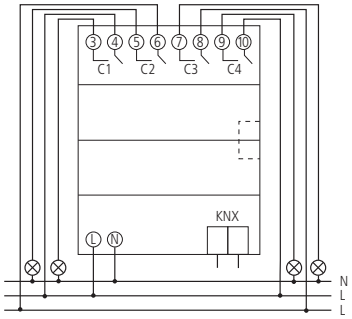
| Type | Article number |
|---|---|
| RMG 4 S KNX | 4910204 |
| RME 4 S KNX | 4910205 |

## Technical data

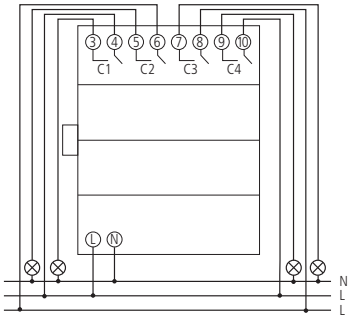
| | RMG 4 S KNX | RME 4 S KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | – |
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Stand-by consumption** | 1,3 W | |
| **Width** | 4 modules | |
| **Type of contact** | NO contact, 16 A (at 250 V AC, cos φ = 1), 10 A (at 250 V AC, cos φ = 0,6) | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Connection examples

### RMG 4 S KNX




### RME 4 S KNX



## Switch or blind actuators 4–16 channels

### RMG 8 KNX

### RME 8 KNX

## Description

### Common functions

- 4-way blind or 8-way switching actuator
- Flexible channel function selection: As switching actuator or for controlling drives for blinds, shutters, sun and vision protection devices, skylights and ventilation flaps
- Manual operation on device
- LED switching status display on device
- Manual switch for Up/Down or for Switching On/Off (also without bus voltage)
- Optimised repetition accuracy of programmed lamella positions
- Slip correction when moving from bottom to top
- No referencing required

### RMG 8 KNX

- Basic module
- Can be upgraded to maximum of 8 blind or 16 switching outputs

### RME 8 KNX

- Extension module
- For upgrading to maximum of 8 blind or 16 switching outputs

## Product selection

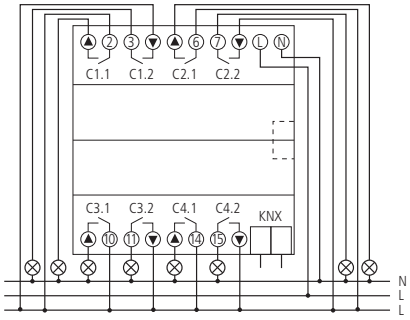
| Type | Article number |
|---|---|
| RMG 8 KNX | 4900251 |
| RME 8 KNX | 4900252 |

## Technical data

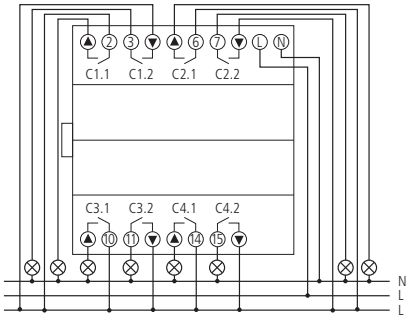
| | RMG 8 KNX | RME 8 KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 8 mA | – |
| **Operating voltage** | 230–240 V AC | |
| **Frequency** | 50 Hz | |
| **Stand-by consumption** | 1,6 W | 1,2 W |
| **Width** | 6 modules | |
| **Type of contact** | NO contact, 10 A (at 250 V AC, cos φ = 1), 6 A (at 250 V AC, cos φ = 0,6) | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Connection examples

### RMG 8 KNX




### RME 8 KNX





Additional technical data at:
www.theben.de/product/ Article number
theben

## Switch or blind actuators 4–16 channels

**SMG 2 S KNX**

**SME 2 S KNX**

## Description

### Common functions

- 2-way 1–10 V control unit MIX
- Free combination of switches, dimming, blinds and heating control as well as binary inputs
- Switching and dimming of lighting circuits in combination with electronic ballasts (EBs and ballasts LED)
- 1–10 V inputs and one switch output (relay contact) per channel
- LED switching status display for each channel
- Manual switch with On/Off/Bus settings (also without bus voltage)
- With crossover switching to spare the relay contact

### SMG 2 S KNX

- Basic module MIX
- Can be upgraded to maximum of 6 channels

### SME 2 S KNX

- Extension module MIX
- For upgrading to maximum of 6 channels

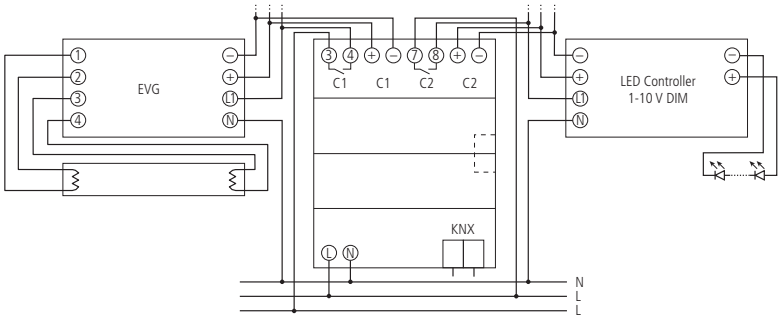
## Product selection

| Type | Article number |
|---|---|
| SMG 2 S KNX | 4910273 |
| SME 2 S KNX | 4910274 |

## Technical data

| | SMG 2 S KNX | SME 2 S KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | – |
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Stand-by consumption** | 1,6 W | |
| **Width** | 4 modules | |
| **Type of contact** | NO contact, 16 A (at 250 V AC, cos φ = 1), 10 A (at 250 V AC, cos φ = 0,6) | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Connection examples



## Universal dimming actuators 2–6 channels MIX

**DMG 2 S KNX**

**DME 2 S KNX**

**DMB 2 S KNX**

## Description

### Common functions

- 2-way universal dimmer actuator MIX
- For dimming incandescent lamps, LV and HV halogen lamps
- Also suitable for dimming of dimmable energy-saving lamps
- Also suitable for controlling fans
- Up to 2 extension modules can be connected to a basic module.
- Can be combined with all MIX series devices
- Free combination of switches, dimming, blinds and heating control as well as binary inputs
- Dimming output: 2 x 300 W/VA or 1 x 500 W/VA
- If the DMB 2 S KNX ‚Dimbooster' is used, the dimming output per device can be doubled to: 2 x 600 W/VA or 1 x 1,000 W/VA
- LED switching status display for each channel
- Manual switch with On/Off/Bus settings (also without bus voltage)
- Automatic load detection (can be deactivated)

### DMG 2 S KNX

- Basic module MIX
- Can be upgraded to maximum of 6 channels

### DME 2 S KNX

- Extension module MIX
- For upgrading to maximum of 6 channels

### DMB 2 S KNX

- 2 channel dimming output extension module ‚Dimmbooster'
- To double the output of basic and extension dimming actuators modules. e.g. to: 2 x 600 W/VA (2 channels) or 1 x 1,000 W/VA (1 channel)

## Product selection

| Type | Article number |
|---|---|
| DMG 2 S KNX | 4910270 |
| DME 2 S KNX | 4910271 |
| DMB 2 S KNX | 4910272 |

## Technical data

| | DMG 2 S KNX | DME 2 S KNX | DMB 2 S KNX |
|---|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | – | |
| **Operating voltage** | 230 V AC | | |
| **Frequency** | 50 Hz | | |
| **Stand-by consumption** | 0,5 W | | 0,8 W |
| **Width** | 4 modules | | |
| **Lamp types** | Incandescent, low-voltage and high-voltage halogen and dimmable energy saving lamps | | Incandescent, low-voltage and high-voltage halogen lamps |
| **Switching capacity min.** | 20 W/VA, 7 W/VA (ESL) | | 300 W |

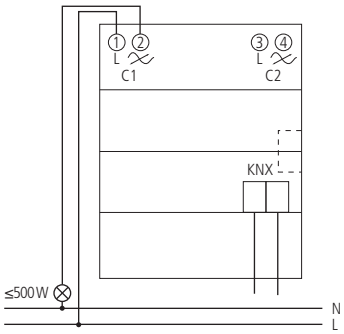


Additional technical data at:
www.theben.de/product/ Article number

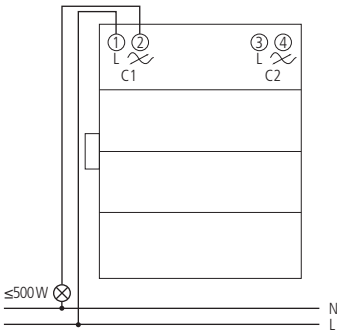
| | DMG 2 S KNX | DME 2 S KNX | DMB 2 S KNX |
|---|---|---|---|
| **Switching capacity symmetrically** | 2 x 300 W/VA | | Upgrade to 2 x 300 W/VA |
| **Switching asymmetrical** | 1 x 500 W/VA | | Upgrade to 1 x 500 W/VA |
| **Switching capacity energy saving lamps** | max. 2 x 60 W or 1 x 100 W | | – |
| **Ambient temperature** | –5 °C … +45 °C | | |
| **Type of protection** | IP 20 | | |
| **Protection class** | II as per EN 60 730-1 | | |

## Connection examples

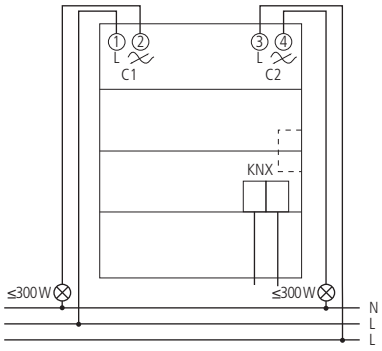
### DMG 2 S KNX



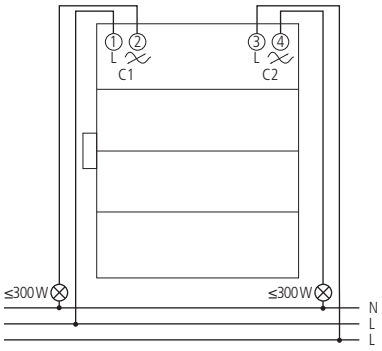

### DME 2 S KNX



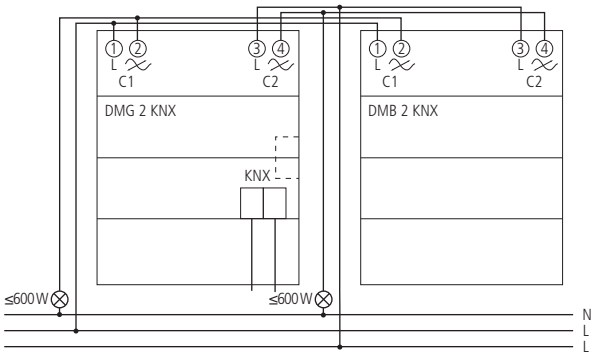

### DMG 2 S KNX




### DME 2 S KNX




### DMB 2 S KNX




11

## Blind actuators 4–12 channels MIX

### JMG 4 S KNX

### JME 4 S KNX

## Description

### Common functions

- 4-way blind actuator MIX
- For controlling drives for blinds, shutters, sun and vision protection devices, skylights and ventilation flaps
- Up to 2 extension modules can be connected to a basic module
- Can be combined with all MIX series devices
- Free combination of switches, dimming, blinds and heating control as well as binary inputs
- Manual operation on device (even without bus connection)
- LED Up and Down switching status display for each channel
- Potential-free contacts for Up and Down per channel
- Copy function for fast configuration

### JMG 4 S KNX

- Basic module MIX
- Can be upgraded to maximum of 12 channels

### JME 4 S KNX

- Extension module MIX
- For upgrading to maximum of 12 channels

## Product selection

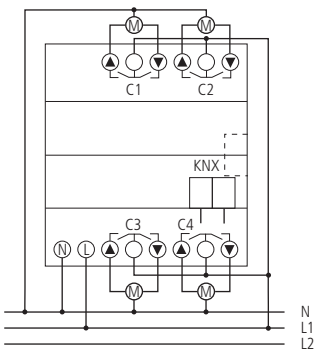
| Type | Article number |
|---|---|
| JMG 4 S KNX | 4910250 |
| JME 4 S KNX | 4910251 |

## Technical data

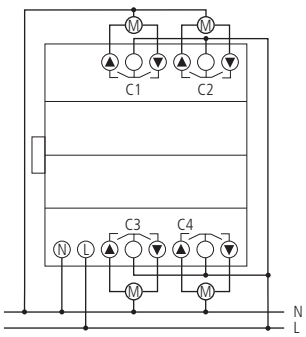
| | JMG 4 S KNX | JME 4 S KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 8 mA | – |
| **Operating voltage** | 230 V AC | |
| **Stand-by consumption** | 1,6 W | |
| **Frequency** | 50 Hz | |
| **Width** | 4 modules | |
| **Type of contact** | NO contact, 3 A (at 250 V AC, cos φ = 1) | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Connection examples

### JMG 4 S KNX




### JME 4 S KNX





Additional technical data at:
www.theben.de/product/ Article number

## Binary inputs 4–18 channels MIX

**BMG 6 KNX**

**BME 6 KNX**

## Description

### Common functions

- 6-way binary input MIX
- Multi-voltage input 8–250 AC/DC or auxiliiary supply from device (approx. 18 V AC/20 mA)
- Potential-free inputs
- Up to 2 extension modules can be connected to a basic module
- Can be combined with all MIX series devices
- Free combination of switches, dimming, blinds and heating control as well as binary inputs
- All inputs can be operated with different voltages
- Free allocation of functions: Switch/key, dimming, blinds, valuator, counter
- LED switching status display for each input

### BMG 6 KNX

- Basic module MIX
- Can be upgraded to maximum of 18 channels

### BME 6 KNX

- Extension module MIX
- For upgrading to maximum of 18 channels

## Product selection

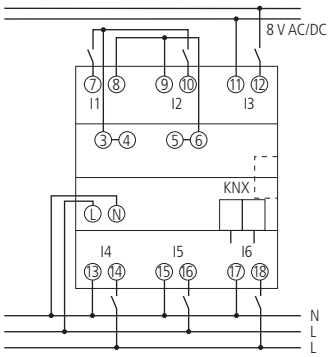
| Type | Article number |
|---|---|
| BMG 6 KNX | 4910230 |
| BME 6 KNX | 4910231 |

## Technical data

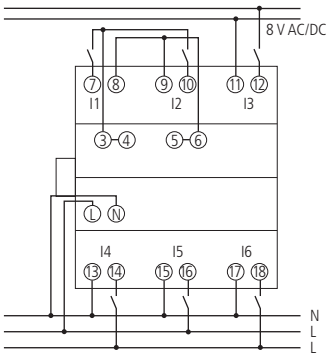
| | BMG 6 KNX | BME 6 KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | – |
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Stand-by consumption** | 0,3 W | |
| **Width** | 4 modules | |
| **Voltage inputs** | 8–250 V AC/DC 3 mA | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Connection examples

**BMG 6 KNX**




**BME 6 KNX**



## Binary inputs for flush-mounted sockets

**TA 2 KNX**

**TA 4 KNX**

**TA 6 KNX**

## Description

### Common functions

- Binary input/binary output sensor interfaces
- Can be installed in flush-mounted sockets with conventional sensors/switches
- Free allocation of functions: Switch/key, dimming, blinds, valuator
- Inputs can be reconfigured to outputs: binary input: potential-free contact/binary output: 1 mA (low current) (LED 1 mA types)
- Colour coding of wiring pairs
- Grooves on side of housing for switch/sensor clamps

### TA 2 KNX

- 2-way key interface
- 4-pole cable connection

### TA 4 KNX

- 4-way key interface
- 8-pole cable connection

### TA 6 KNX

- 6-way key interface
- 8-pole cable connection

## Product selection

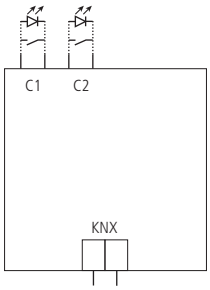
| Type | Article number |
|---|---|
| TA 2 KNX | 4969202 |
| TA 4 KNX | 4969204 |
| TA 6 KNX | 4969206 |

## Technical data

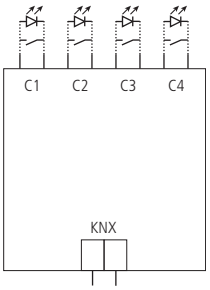
| | TA 2 KNX | TA 4 KNX | TA 6 KNX |
|---|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | | |
| **Ouput configuration LED** | Low current 1 mA (LED 1 mA types) without series resistor | | |
| **Contact voltage** | 3,3 V | | |
| **Contact current** | 0,5 mA | | |
| **Interface extension max.** | 5 m | | |
| **Ambient temperature** | –5 °C … +45 °C | | |
| **Type of protection** | IP 20 | | |
| **Protection class** | III | | |

## Connection examples

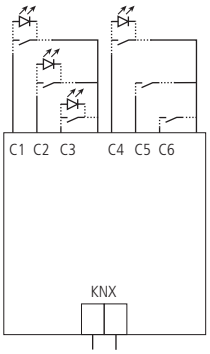
**TA 2 KNX**




**TA 4 KNX**




**TA 6 KNX**






Additional technical data at:
www.theben.de/product/ Article number

## Multifunction display

### VARIA 826 KNX

### VARIA 826 KNX

reddot design award
winner 2009

### VARIA 824 KNX

## Description

### Common functions

- Multi-functional display with room thermostat
- Freely configurable for displaying and controlling functions e.g. light settings, sun protection systems
- Illuminated display and integrated timer
- For control and regulation of heating, fan coils, air conditioning systems
- Up to 7 different display pages
- Can also be operated without 230 V connection (double power consumption from bus system)
- Automatic summer/winter time adjustment with power reserve
- Controls up to 8 rooms via own temperature profiles
- Weekly time switch with 8 channels with up to 3 different statuses, e.g. for light, shutters, fans etc.
- 3 heating programs
- Alternative continuous or on/off control
- Operation modes: comfort, stand-by, temperature reduction at night, frost protection
- Weather data from Theben weather stations can be displayed
- Free choice of programming via the ETS without plug-in
- Installation in flush-mounted socket

### VARIA 826 KNX

- Glass front in white or black

### VARIA 824 KNX

- White plastic housing

## Product selection

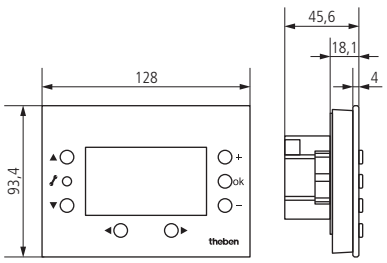
| Colour | Type | Article number |
|---|---|---|
| Glass front in white | VARIA 826 WH KNX | 8269200 |
| Glass front in black | VARIA 826 BK KNX | 8269201 |
| White plastic housing | VARIA 824 KNX | 8249200 |

## Technical data

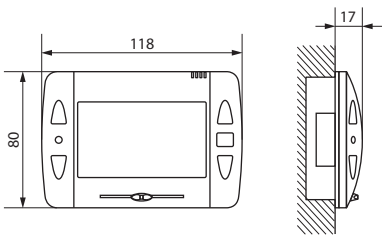
| | VARIA KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 8 mA |
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Stand-by consumption** | 0,4 W |
| **Power reserve** | 1,5 years |
| **Display** | Display with 132 x 72 points (8 lines with various functions) e.g. title, switching, dimming, blinds/shutters, % value, HVAC, counter value, temperature, 2-byte value, 8/16 bit counter value etc. |
| **Ambient temperature** | 0 °C … +45 °C |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |

## Scale drawings

### VARIA 826 KNX




### VARIA 824 KNX



## RAMSES 713 S KNX

### Description

- Individual room thermostat
- For controlling heating actuators or motorised actuators
- Can be used as a continuous or two point control (can also be combined).
- Continuous PI control can be configured for 2 stage heating (basic and additional stage, e. g. underfloor heating and radiators) or for heating and cooling (radiators and cooling surfaces)
- Two rotary controls are included in delivery: a numerical scale (mounted) and a relative scale (enclosed)
- Rotary control can be limited mechanically or via parameters
- Manual override button for presence or operation modes: comfort, stand-by, temperature reduction at night, frost protection
- 3 binary inputs for conventional switches/sensors (switching, dimming, blinds), also for externeal temperature sensor, window contact or presence signal
- Temperature sensor can be connected to give remote temperature reading
- LED (red) for heating mode, (blue) for cooling mode
- With integrated bus coupling unit

### Product selection

| Type | Article number |
|---|---|
| RAMSES 713 S KNX | 7139201 |

### Technical data

| | RAMSES 713 S KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Measuring range temperature** | 0 °C … +40 °C |
| **Setting range temperature** | +10 °C … +28 °C |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |

### Accessories

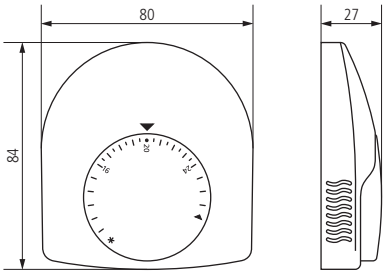
**External temperature sensor 1**

- Art.No.: 9070191
  Details ▶ Page 237

**Temperature sensor**

- Art.No.: 9070321
  Details ▶ Page 238

### Scale drawings

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Additional technical data at:
www.theben.de/product/ Article number

## RAMSES 712 KNX

### Description

- Individual room thermostat
- For controlling heating actuators or motorised actuators
- Can be used as a continuous or two point control (can also be combined)
- Temperature sensor can be connected to give remote temperature reading
- Objects for presence or operation modes: comfort, stand-by, temperature reduction at night, frost protection
- LED (red) for heating mode
- Inputs can be reconfigured to outputs for connecting LED (LED 1 mA types)
- 2 binary inputs for conventional switches/sensors (switch/sensor, dimmer, blinds, valuator, LED control)
- Can be installed in flush-mounted sockets (temperature sensor with electronic component can be removed from housing and installed in flush-mounted sockets with back-ventilated cover)
- With integrated bus coupling unit

### Product selection

| Type | Article number |
|---|---|
| RAMSES 712 KNX | 7129200 |

### Technical data

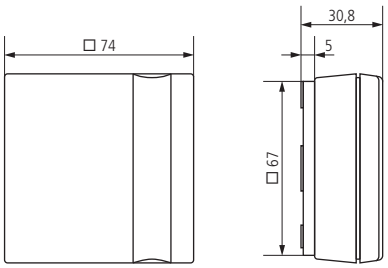
| | RAMSES 712 KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA |
| **Ouput configuration LED** | Low current 1 mA (LED 1 mA types) |
| **Interface extension max.** | 5 m |
| **Ambient temperature** | –5 °C … +45 °C |
| **Measuring range temperature** | –20 °C … +60 °C |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |

### Accessories

**Temperature sensor**

- Art.No.: 9070321
  Details ▶ Page 238

### Scale drawings



## Heating actuators 4–12 channels MIX

### HMG 4 KNX

### HME 4 KNX

## Description

### Common functions

- 4-way heating actuator MIX
- For controlling thermal actuators
- Silent semiconductor switch (triac)
- Up to 2 extension modules can be connected to a basic module.
- Can be combined with all MIX series devices
- Free combination of switches, dimming, blinds and heating control as well as binary inputs
- Maximum control variables for integrating boiler control
- For integrating boiler control
- It is possible to control a circulation pump directly via the actuator
- Up to 5 positioning actuators per channel
- Potential-free outputs 24–250 V AC
- Manual switch with On/Off/Bus settings (also without bus voltage)
- Switching status display for each channel
- With summer mode and valve protection
- Continuous or switching actuating value selectable

### HMG 4 KNX

- Basic module MIX
- Can be upgraded to maximum of 12 channels

### HME 4 KNX

- Extension module MIX
- For upgrading to maximum of 12 channels

## Product selection

| Type | Article number |
|---|---|
| HMG 4 KNX | 4910210 |
| HME 4 KNX | 4910211 |

## Technical data

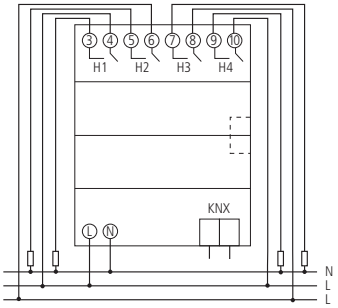
| | HMG 4 KNX | HME 4 KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | – |
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Stand-by consumption** | 1,5 W | |
| **Width** | 4 modules | |
| **Output** | Triac, 0,5 A | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Accessories

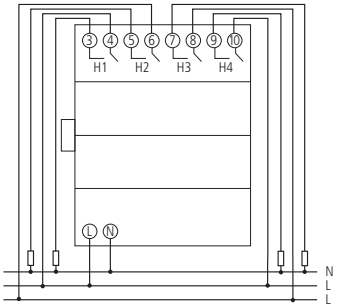
- Actuator ALPHA 4 230 V
  Details ▶ Page 238
- Actuator ALPHA 4 24 V
  Details ▶ Page 238

## Connection examples

### HMG 4 KNX




### HME 4 KNX





Additional technical data at:
www.theben.de/product/ Article number
theben

## Heating actuators with triacs

**HMT 6 KNX**

**HMT 12 KNX**

## Description

**Common functions**

- Heating actuator
- Can be installed directly on a wall or a rail in the heating circuit distributor
- Mains plug on transformer for easy installation
- Screwless terminal technology
- Integrated power supply for a maximum of 13 thermal actuators
- Silent semiconductor switch (triac)
- For integrating boiler control
- Summer mode and valve protection
- Continuous or switching actuating value selectable

**HMT 6 KNX**

- 6-way

**HMT 12 KNX**

- 12-way

## Product selection

| Type | Article number |
|---|---|
| HMT 6 KNX | 4900273 |
| HMT 12 KNX | 4900274 |

## Technical data

| | HMT 6 KNX | HMT 12 KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage | |
| **Operating voltage** | 230 V AC | |
| **Stand-by consumption** | 4 W | |
| **Frequency** | 50–60 Hz | |
| **Number of channels** | 6 | 12 |
| **Output** | Triac, 24 V AC | |
| **Fuse** | T 2 A | |
| **Ambient temperature** | –5 °C … +50 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

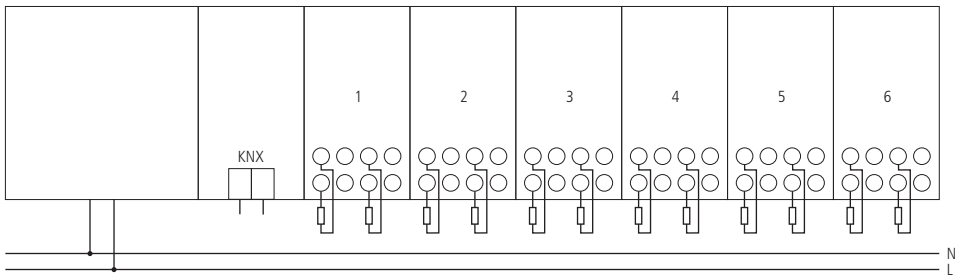
## Accessories

**Actuator ALPHA 4 24 V**

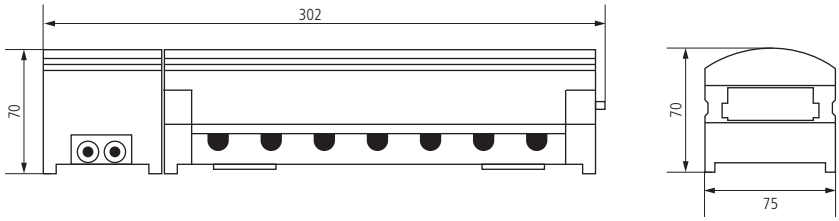
- Art.No.: 9070439
  Details ▶ Page 238

## Connection example

**HMT 6 KNX**




## Scale drawings

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## Motor-driven modulating actuators

### CHEOPS control KNX

reddot design award
winner 2003

### CHEOPS drive KNX

## Description

### Common functions

- Motorised actuator for heater valve or for controlling the heating valves
- Display of valve stroke
- Automatic valve stroke recognition
- 2 inputs for window contact, presence detector, remote sensor
- Simple installation by clicking onto valve adapter
- Can be used in heating circuit distributor
- Integrated bus coupling unit
- With summer mode and valve protection
- 2 different valve adapters included (VA 10 M 30 x 1,5/VA 78 for Danfoss RA)

### CHEOPS control KNX

- Independent room thermostat and integrated temperature sensor
- Manual operation possible via 2 keys on the device
- Display via LEDs (red/blue for hotter/colder)
- Configurable as: Heating control (continuous control),two stage heating, heating and cooling

### CHEOPS drive KNX

- Without integrated control
- Display via LEDs (red)

## Product selection

| Type | Article number |
|---|---|
| CHEOPS control KNX | 7329201 |
| CHEOPS drive KNX | 7319200 |

## Technical data

| | CHEOPS control KNX | CHEOPS drive KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | |
| **Max. valve stroke** | 7,5 mm | |
| **Controlling torque details** | 120 N | |
| **Ambient temperature** | 0 °C … +50 °C | |
| **Protection class** | III as per EN 60730-2-14 | |
| **Type of protection** | IP 20 | IP 21 |

## Accessories

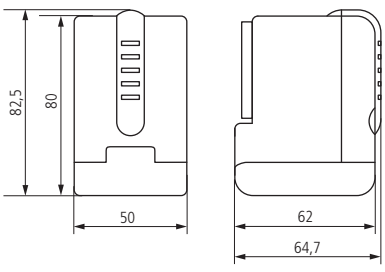
### External temperature sensor 1

- Art.No.: 9070191
  Details ▶ Page 237

### Valve adapter VA 80

- Art.No.: 9070437
  Details ▶ Page 238

## Scale drawings



## AMUN 716 KNX

### Description

- $CO_2$ airquality sensor
- Measures $CO_2$ level, relative humidity and temperature
- Three independent, configurable thresholds for the $CO_2$ level and relative humidity
- A threshold for the temperature
- Actions can be carried out if thresholds are exceeded or not reached (send, priority,
- switching, value)
- Display of achieved threshold of $CO_2$ level and relative humidity through multi-coloured LEDs
- $CO_2$ setting range of 500–2250 ppm (thresholds)
- Relative humidity of 1 % to 100 %
- „Physical value" object of 0–9999 ppm
- Power supply via KNX bus voltage, 230 V mains supply not required

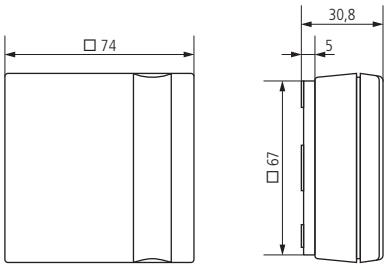
### Product selection

| Type | Article number |
|---|---|
| AMUN 716 KNX | 7169200 |

### Technical data

| | AMUN 716 KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA |
| **Measuring range $CO_2$** | 300–9999 ppm |
| **Measuring range temperature** | 0 °C … +40 °C |
| **Measuring range humidity** | 20–80 % rF linear |
| **Ambient temperature** | –5 °C … +45 °C |
| **Type of protection** | IP 20 |
| **Protection class** | III as per EN 60 730-1 |

### Scale drawings



## RAMSES 713 FC KNX

### Description

- Individual room thermostat fan coil
- For control of fan coil
- Continuous PI controller for heating and cooling
- Two rotary controls are included in delivery: an absolute scale (mounted) and 1 relative scale (enclosed)
- Rotary control can be limited mechanically or via parameters.
- Manual button for OFF, Auto, fan stages 1, 2, 3 operation modes
- 3 binary inputs for conventional switches/ sensors (switching, dimming, blinds), also for externeal temperature sensor, window contact or presence signal
- LED (red) for heating mode, (blue) for cooling mode
- With integrated bus coupling unit

### Product selection

| Type | Article number |
|---|---|
| RAMSES 713 FC KNX | 7139202 |

### Technical data

| | RAMSES 713 FC KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA |
| **Ambient temperature** | 0 °C … +50 °C |
| **Measuring range temperature** | 0 °C … +40 °C |
| **Setting range temperature** | +10 °C … +28 °C |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |

### Accessories

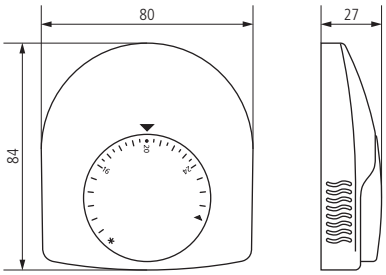
**External temperature sensor 1**

- Art.No.: 9070191
  Details ▶ Page 237

**Temperature sensor**

- Art.No.: 9070321
  Details ▶ Page 238

### Scale drawings

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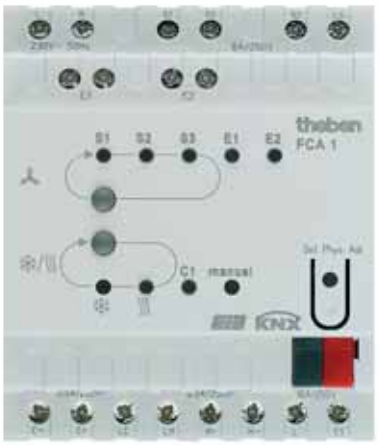
## FCA 1 KNX




### Description

- Fan coil actuator
- For controlling fan coils
- For 2 and 4 pipe systems
- For up to three fan stages
- For 2-way and 3-way valves
- Additional relay for electrical heater or cooler bank
- Potential-free input for window contacts or temperature sensor
- Potential-free, condensation monitoring
- Display of operation status via 9 LEDs
- Manual operation on device (fan satges, switching between heating and cooling)
- Adjustment of setpoint value for cooling in relation to external temperature
- Potential-free switching contact for either cooler or heater bank
- With emergency program

### Product selection

| Type | Article number |
|---|---|
| FCA 1 KNX | 4920200 |

### Technical data

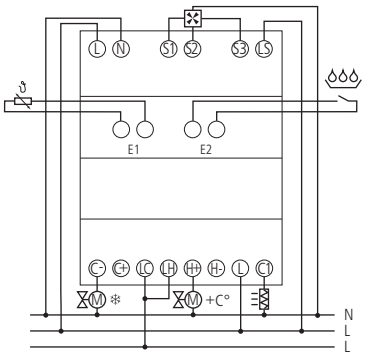
| | FCA 1 KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA |
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Stand-by consumption** | 1,9 W |
| **Width** | 4 modules |
| **Type of contact** | Triac |
| **Switching capacity additional relay** | 16 A |
| **Switching capacity blower relay** | 8 A |
| **Ambient temperature** | –5 °C … +45 °C |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |

### Accessories

**Temperature sensor**

- Art.No.: 9070321
  Details ▶ Page 238

### Connection example

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## SPHINX 105-300 KNX

### Description

- Motion detector (PIR)
- 2 channels
- For controlling lighting in outdoor areas
- Blended light measurement suitable for the control of fluorescent, incandescent and halogen lamps
- Adjustable sensor head
- Additional creep under protection via remote control
- Detection area can be limited using enclosed segments
- Settings per ETS: Brightness range and switch-off delay
- Set point adjustment of brightness either via object or potentiometer
- Following functions: Lighting ON/OFF, time functions, locking the motion detector
- Lighting control with adjustable light threshold value and adjustable switch-off delay
- Memorising of current brightness value possible via remote control
- Setting controls protected against manipulation
- Single-handed plug-in installation with captive screws

### Product selection

| Installation type | Type | Article number |
|---|---|---|
| Wall and ceiling installation | SPHINX 105-300 KNX | 1059203 |

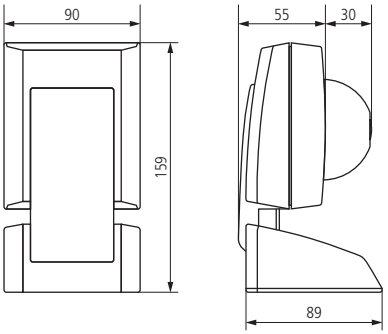
### Technical data

| | SPHINX 105-300 KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, < 10 mA |
| **Setting range brightness** | 0–650 lx |
| **Light switch-off delay** | 1 s–120 min |
| **Ambient temperature** | –20 °C … +55 °C |
| **Protection class** | II as per EN 60 335 |
| **Type of protection** | IP 55 |

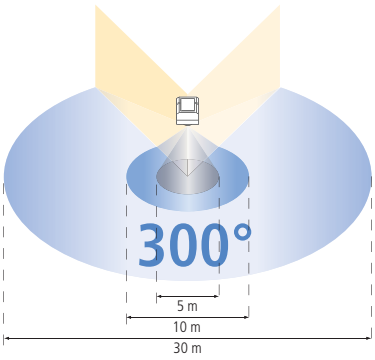
### Accessories

- SPHINX RC 105
  Details ▶ Page 234
- SPHINX RC 105 Pro
  Details ▶ Page 235
- SPHINX corner angle
  Details ▶ Page 234

### Scale drawings




### Detection range




- Walking diagonally to the detector
- Walking head on to the detector
- Creep under protection

Mounting height 2,5 m





Additional technical data at:
www.theben.de/product/ Article number

theben

## Motion detectors SPHINX 331 KNX, SPHINX 332 KNX

### Description

- Motion detector (PIR)
- For controlling lighting, ventilation etc., particularly in offices and hallways
- Integrated bus coupling
- With constant light control
- Lighting control „movement-dependent only „ and „movement and brightness dependent"
- Continuous constant light control/movement-dependent
- Following functions: e.g. lighting ON/ OFF, shutters/blinds UP/DOWN, time functions (switch-off delay), locking the motion detector, dimming values, dimming UP/DOWN, Master/Slave function
- Flush fitting design (projects 4 mm from ceiling)

**SPHINX 331 KNX**

- 1 channel

**SPHINX 332 KNX**

- 2 channels
- Additional programming keys can activate the physical address via a programming magnet (if programming is atng executed after installation)

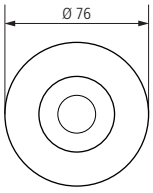
### Product selection

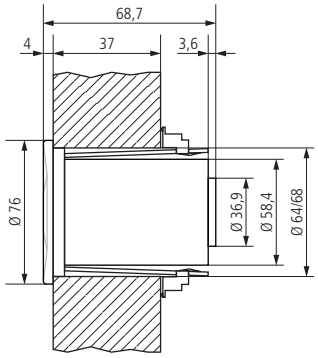
| Installation type | Type | Article number |
|---|---|---|
| Ceiling mounting | SPHINX 331 KNX | 1079211 |
| | SPHINX 332 KNX | 1079212 |

### Technical data

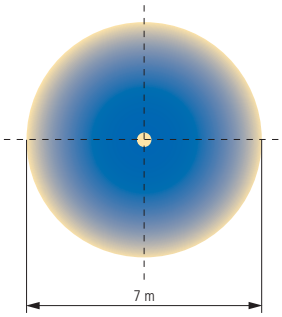
| | SPHINX 331 KNX | SPHINX 332 KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | |
| **Setting range brightness** | 0–700 lx | |
| **Light switch-off delay** | 1 s–120 min | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Protection class** | II as per EN 60 730-1 | |
| **Type of protection** | IP 20 | |

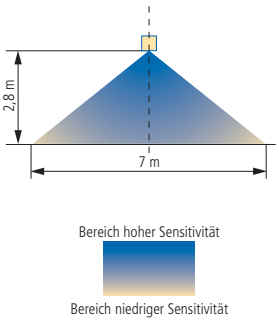
### Scale drawings




### Detection range




Mounting height 2,8 m

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## PresenceLight 360 KNX

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Integrated bus coupling
- IP 54 for versatile use
- Outputs light for controlling one or two lighting groups
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Switching or constant light control with stand-by function
- Adjustable sensitivity
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- Short presence; Reduced switch-off delay time in case of a short presence
- Channel presence with switch-off delay and switch-on delay time and send values
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Channel brightness (Lux)
- Set brightness level via bus object
- Scene functionality (8-bit scenes)
- Selected parameters can be configured remotely using the SendoPro remote control. Parameter settings are made via ETS
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Parallel switching of several presence detectors (master-slave or master-master) possible
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

| Installation type | Colour | Type | Article number |
|---|---|---|---|
| Ceiling installation | Pure white (similar to RAL 9010) | PresenceLight 360B-KNX WH | 2009000 |
| | | PresenceLight 360B-KNX BK | 2009812 |
| | | PresenceLight 360B-KNX SR | 2009813 |
| additional colours available upon request | | | |

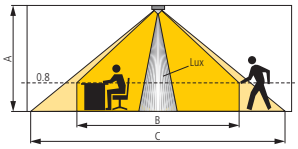
### Technical data

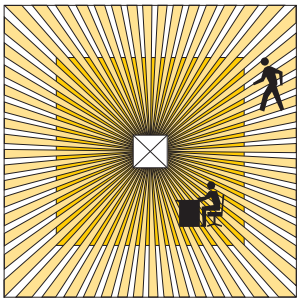
| | PresenceLight 360B-KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage |
| **Recommended installation height** | 2–3 m |
| **Setting range brightness** | 5–2000 lx |
| **Light switch-off delay** | 30 s–60 min |
| **Stand-by time light** | 30 s–60 min, on, inactive |
| **Presence switch-off delay** | 10 s–120 min |
| **Switch-on delay presence** | 10 s–30 min, inactive |
| **Ambient temperature** | –10 °C … +50 °C |
| **Type of protection** | IP 54 |


Additional technical data at:
www.theben.de/product/ Article number

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 9 m² \| 3,0 m x 3,0 m | 20 m² \| 4,5 m x 4,5 m ± 0,5 m |
| 2,5 m | 16 m² \| 4,0 m x 4,0 m | 36 m² \| 6,0 m x 6 ,0m ± 0,5 m |
| 3 m | 20 m² \| 4,5 m x 4,5 m | 49 m² \| 7,0 m x 7,0 m ± 1,0 m |
| 3,5 m | – | 64 m² \| 8,0 m x 8,0 m ± 1,0 m |



## Accessories

**Surface frame PresenceLight**

- Art.No.: 9070513
  Details ▶ Page 231

**SendoPro 868-A**

- Art.No.: 9070675
  Details ▶ Page 233

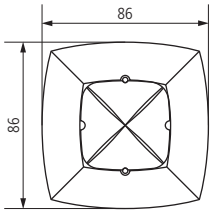
**SendoClic**

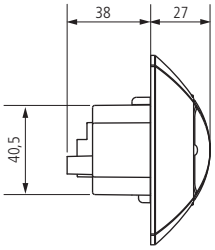
- Art.No.: 9070690
  Details ▶ Page 232

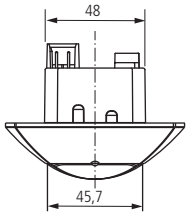
**QuickSafe**

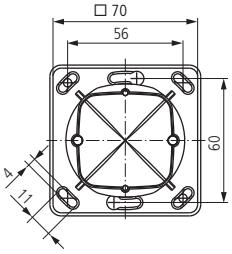
- Art.No.: 9070531
  Details ▶ Page 232

## Scale drawings

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## compact office EIB

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Integrated bus coupling
- Outputs light for controlling one or two lighting groups
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Switching or constant light control
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- The self-learning switch-off delay time adjusts to occupants' behavior
- The brightness output makes the light information available for visualization purposes
- Channel presence with switch-off delay and switch-on delay time
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Optional service remote control
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Parallel switching of several presence detectors (master-slave or master-master) possible
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

### Product selection

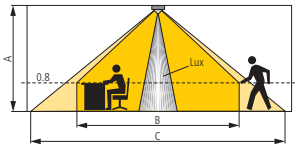
| Installation type | Colour | Type | Article number |
|---|---|---|---|
| Ceiling mounting | Pure white (similar to RAL 9010) | compact office EIB | 2019200 |
| | Black (similar to RAL 9005) | compact office EIB BK | 2019800 |
| | Silver (similar to RAL 9006) | compact office EIB SR | 2019801 |
| additional colours available upon request | | | |

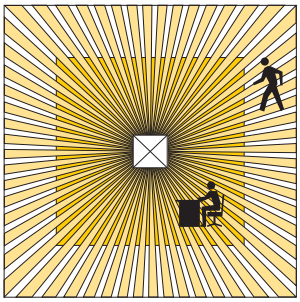
### Technical data

| | compact office EIB |
|---|---|
| **Operating voltage KNX** | Bus voltage |
| **Recommended installation height** | 2–3 m |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | 30 s–20 min |
| **Stand-by time light** | 0 s–60 min |
| **Presence switch-off delay** | 30 s–120 min |
| **Switch-on delay presence** | 0 s–30 min |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 9 m² \| 3,0 m x 3,0 m | 20 m² \| 4,5 m x 4,5 m ± 0,5 m |
| 2,5 m | 16 m² \| 4,0 m x 4,0 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 3 m | 20 m² \| 4,5 m x 4,5 m | 49 m² \| 7,0 m x 7,0 m ± 1,0 m |
| 3,5 m | – | 64 m² \| 8,0 m x 8,0 m ± 1,0 m |



## Accessories

**Surface frame compact**

- Art.No.: 9070514
  Details ▶ Page 231

**clic**

- Art.No.: 9070515
  Details ▶ Page 233

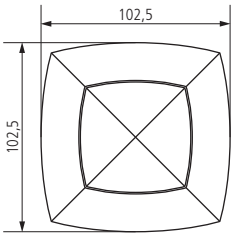
**QuickSet plus**

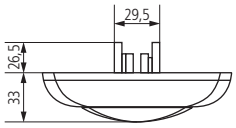
- Art.No.: 9070532
  Details ▶ Page 233

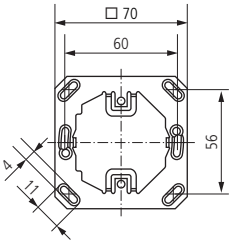
**QuickSafe**

- Art.No.: 9070531
  Details ▶ Page 232

## Scale drawings



## Presence detectors compact passage KNX, compact passimo KNX

**compact passage KNX**

**compact passimo KNX**

### Description

**Common functions**

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Integrated bus coupling
- Outputs light for controlling one or two lighting groups
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Switching or constant light control
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- The self-learning switch-off delay time adjusts to occupants' behavior
- The brightness output makes the light information available for visualization purposes
- Channel presence with switch-off delay and switch-on delay time
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Optional service remote control
- Optional user remote control
- Ready for use by ex-factory set items
- Test operation to check detection area and installation
- Parallel switching of several presence detectors (master-slave or master-master) possible
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

**compact passage KNX**

- Square detection area for corridors

**compact passimo KNX**

- Rectangular detection area for storage areas with clear demarcation vertically below the presence detector

### Product selection

| Installation type | Colour | Type | Article number |
|---|---|---|---|
| Ceiling mounting | Pure white (similar to RAL 9010) | compact passage KNX | 2019290 |
| | Black (similar to RAL 9005) | compact passage KNX BK | 2019803 |
| | Silver (similar to RAL 9006) | compact passage KNX SR | 2019804 |
| | Pure white (similar to RAL 9010) | compact passimo KNX WH | 2019280 |
| | Black (similar to RAL 9005) | compact passimo KNX BK | 2019809 |
| | Silver (similar to RAL 9006) | compact passimo KNX SR | 2019810 |
| additional colours available upon request | | | |

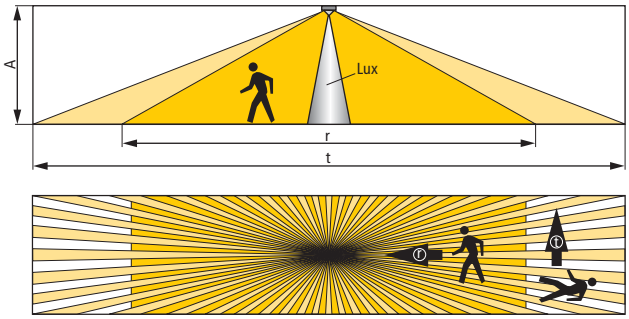
### Technical data

| | compact passage KNX/compact passimo KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage |
| **Recommended installation height** | 2–3 m |
| **Setting range brightness** | 10–1500 lx |
| **Light switch-off delay** | 30 s–20 min |
| **Stand-by time light** | 0 s–60 min |

| | compact passage KNX/compact passimo KNX |
|---|---|
| **Presence switch-off delay** | 30 s–120 min |
| **Switch-on delay presence** | 0 s–30 min |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |

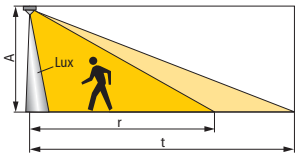
## Detection range compact passage KNX (Rectangular)

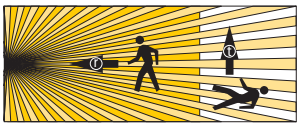
| Mounting height (A) | Head on to (r) | Diagonally (t) |
|---|---|---|
| 2 m | 56 m² \| 16 m x 3,5 m ± 1 m | 105 m² \| 30 m x 3,5 m ± 1 m |
| 2,5 m | 72 m² \| 18 m x 4,0 m ± 1 m | 120 m² \| 30 m x 4,0 m ± 1 m |
| 3 m | 90 m² \| 20 m x 4,5 m ± 1 m | 135 m² \| 30 m x 4,5 m ± 1 m |
| 3,5 m | 100 m² \| 20 m x 5,0 m ± 1 m | 150 m² \| 30 m x 5,0 m ± 1 m |




## Detection range compact passimo KNX (Rectangular)

| Mounting height (A) | Head on to (r) | Diagonally (t) |
|---|---|---|
| 2 m | 28 m² \| 8 m x 3,5 m ± 1 m | 53 m² \| 15 m x 3,5 m ± 1 m |
| 2,5 m | 36 m² \| 9 m x 4,0 m ± 1 m | 60 m² \| 15 m x 4,0 m ± 1 m |
| 3 m | 45 m² \| 10 m x 4,5 m ± 1 m | 68 m² \| 15 m x 4,5 m ± 1 m |
| 3,5 m | 50 m² \| 10 m x 5,0 m ± 1 m | 75 m² \| 15 m x 5,0 m ± 1 m |



## Accessories

**Surface frame compact**

- Art.No.: 9070514
  Details ▶ Page 231

**clic**

- Art.No.: 9070515
  Details ▶ Page 233

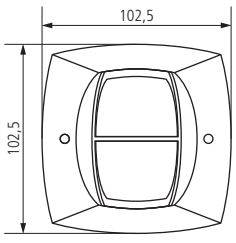
**QuickSet plus**

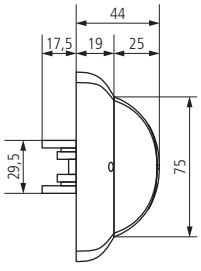
- Art.No.: 9070532
  Details ▶ Page 233

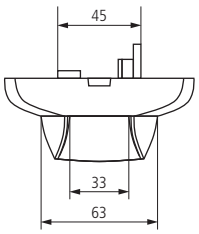
**QuickSafe**

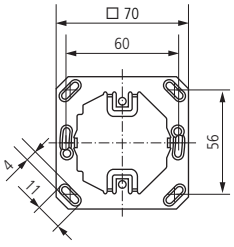
- Art.No.: 9070531
  Details ▶ Page 232

## Scale drawings



## Presence detectors ECO-IR 360EIB-AC, ECO-IR DUAL-EIB

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

**Common functions**

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Square detection area allows accurate and simple planning
- Genuine daylight measurement, suitable only for fluorescent lamps (FL/PL/ESL)
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- The self-learning switch-off delay time adjusts to occupants' behavior
- Ready for use by ex-factory set items
- The parameters are set by ETS or potentiometers
- Test operation to check detection area and installation
- Parallel switching of several presence detectors (master-slave or master-master) possible
- Ceiling mounting in flush-mounted box
- Possibility of surface mounting by using a surface frame

**ECO-IR 360EIB-AC**

- Automatic control of lighting and HVAC
- Presence output for HVAC control with switch-off delay
- Lighting control with light threshold value and self-learning switch-off delay

**ECO-IR DUAL-EIB**

- Automatic control of two lighting zones
- Lighting control with two light threshold values and self-learning switch-off delay
- Two brightness measurements

### Product selection

| Colour | Type | Article number |
|---|---|---|
| Pure white (similar to RAL 9010) | ECO-IR 360EIB-AC | 2029201 |
| Black (similar to RAL 9005) | ECO-IR 360EIB-AC BK | 2029803 |
| Silver (similar to RAL 9006) | ECO-IR 360EIB-AC SR | 2029804 |
| Pure white (similar to RAL 9010) | ECO-IR DUAL-EIB | 2029200 |
| Black (similar to RAL 9005) | ECO-IR DUAL-EIB BK | 2029800 |
| Silver (similar to RAL 9006) | ECO-IR DUAL-EIB SR | 2029801 |
| additional colours available upon request | | |
| Required accessories | BCU bus coupling unit KNX | 9070524 |

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### Technical data

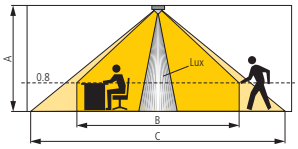
| | ECO-IR 360EIB-AC | ECO-IR DUAL-EIB |
|---|---|---|
| **Operating voltage KNX** | Bus voltage | |
| **Recommended installation height** | 2–3,5 m | |
| **Setting range brightness** | 100–1600 lx | |
| **Light switch-off delay** | 30 s–20 min | |
| **Presence switch-off delay** | 30 s–60 min | – |
| **Ambient temperature** | 0 °C…+45 °C | |
| **Type of protection** | IP 40 | |

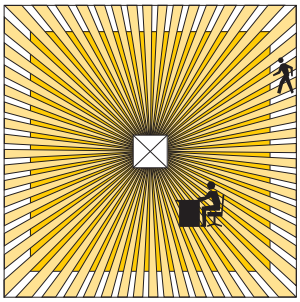


Additional technical data at:
www.theben.de/product/ Article number

## Detection area (square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 20 m² \| 4,5 m x 4,5 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 2,5 m | 36 m² \| 6,0 m x 6,0 m | 64 m² \| 8,0 m x 8,0 m ± 0,5 m |
| 3 m | 49 m² \| 7,0 m x 7,0 m | 81 m² \| 9,0 m x 9,0 m ± 0,5 m |
| 3,5 m | 64 m² \| 8,0 m x 8,0 m | 100 m² \| 10,0 m x 10,0 m ± 1 m |
| 4 m | – | 121 m² \| 11,0 m x 11,0 m ± 1 m |



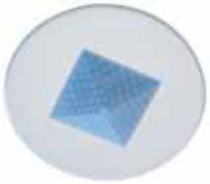
## Accessories

**BUS coupling unit KNX (required)**

- Art.No.: 9070524
  Details ▶ Page 233

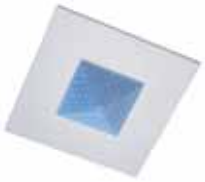
**QuickFix round cover**

- Art.No.: 9070517
  Details ▶ Page 232



**QuickFix square cover**

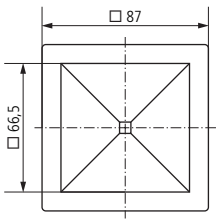
- Art.No.: 9070516
  Details ▶ Page 232

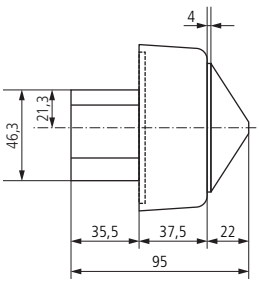


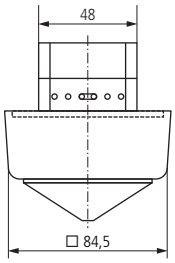
**Additional accessories**

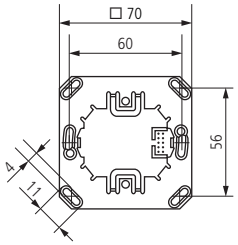
- Surface frame ECO-IR 360
  Details ▶ Page 231
- QuickFix concrete square cover
  Details ▶ Page 231
- QuickFix concrete round cover
  Details ▶ Page 231
- QuickFix concrete flush-mounted box
  Details ▶ Page 232
- QuickFix flush-mounted housing
  Details ▶ Page 232
- QuickSafe
  Details ▶ Page 232

## Scale drawings

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## Presence detector PlanoCentro KNX

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Presence detector (PIR)
- Automatic control of lighting depending on presence and brightness
- Flush design using concave mirror technology
- Square detection area allows accurate and simple planning
- Integrated bus coupling
- Outputs light for controlling one or two lighting groups
- Mixed light measurement, suitable for fluorescent lamps (FL/PL/ESL), halogen/ incandescent lamps and LEDs
- Switching or constant light control with stand-by function
- Adjustable sensitivity
- Choice of fully or semi automatic operation: In „Semi-automatic" mode the light must be switched on manually and switches off automatically
- The self-learning switch-off delay time adjusts to occupants' behavior
- Short presence; Reduced switch-off delay time in case of a short presence
- Channel presence with switch-off delay and switch-on delay time and send values
- Function „monitoring" with reduced sensitivity only to detect walking persons
- Selected parameters can be configured remotely using the SendoPro remote control. Parameter settings are made via ETS
- Optional user remote control
- Test operation to check detection area, installation and brightness settings
- Parallel switching of several presence detectors (master-slave or master-master) possible

**PlanoCentro EWH-A KNX**

- For ceiling installation (false ceilings)
- With installation for false ceilings and cover

**PlanoCentro UWH-A KNX**

- For flush-mounting (concrete ceiling)
- With metal installation frame for screwed fixing in wooden ceilings or in flush-mounted sockets, incl. cover

### Product selection

| Installation type | Colour | Type | Article number |
|---|---|---|---|
| Ceiling mounting with mounting frame | Pure white (similar to RAL 9010) | PlanoCentro EWH-A KNX | 2059102 |
| | Black (similar to RAL 9005) | PlanoCentro EBK-A KNX | 2059103 |
| | Silver (similar to RAL 9006) | PlanoCentro ESR-A KNX | 2059104 |
| Ceiling installation (flush-mounting for concrete ceiling) | Pure white (similar to RAL 9010) | PlanoCentro UWH-A KNX | 2059202 |
| | Black (similar to RAL 9005) | PlanoCentro UBK-A KNX | 2059203 |
| | Silver (similar to RAL 9006) | PlanoCentro USR-A KNX | 2059204 |
| additional colours available upon request | | | |

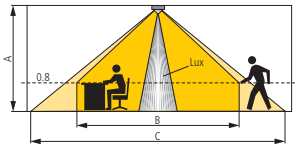
### Technical data

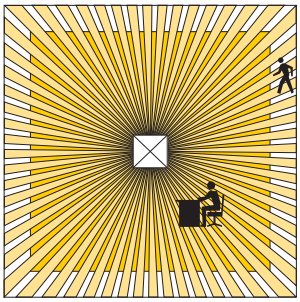
| | PlanoCentro KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage |
| **Recommended installation height** | 2,5–3,5 m |
| **Setting range brightness** | 5–2000 lx |
| **Light switch-off delay** | 30 s–60 min |
| **Presence switch-off delay** | 10 s–120 min |
| **Switch-on delay presence** | 10 s–30 min |
| **Ambient temperature** | 0 °C … +50 °C |
| **Type of protection** | IP 40 |


Additional technical data at:
www.theben.de/product/ Article number

## Detection range (Square)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2 m | 20 m² \| 4,5 m x 4,5 m | 36 m² \| 6,0 m x 6,0 m ± 0,5 m |
| 2,5 m | 36 m² \| 6,0 m x 6,0 m | 64 m² \| 8,0 m x 8,0 m ± 0,5 m |
| 3 m | 49 m² \| 7,0 m x 7,0 m | 81 m² \| 9,0 m x 9,0 m ± 0,5 m |
| 3,5 m | 64 m² \| 8,0 m x 8,0 m | 100 m² \| 10,0 m x 10,0 m ± 1 m |



## Accessories

**SendoPro 868-A**

- Art.No.: 9070675
  Details ▶ Page 233

**SendoClic**

- Art.No.: 9070690
  Details ▶ Page 232

**Junction casing, 115 x 115 x 100 mm**

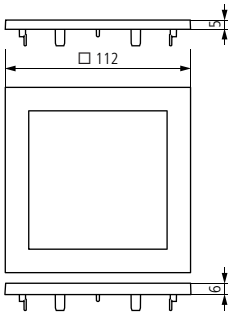
- Art.No.: 9070689
  Details ▶ Page 232

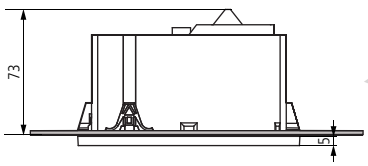
**PlanoBox 1WH**

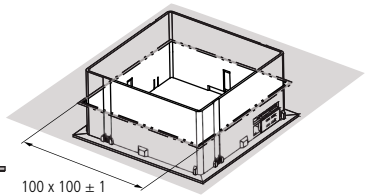
- Art.No.: 9070731
  Details ▶ Page 231

## Scale drawings

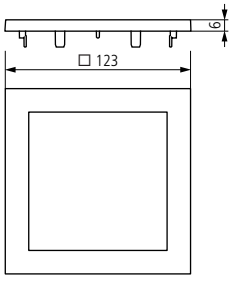
**PlanoCentro EWH-A KNX**

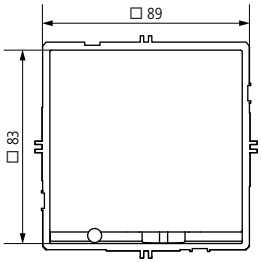


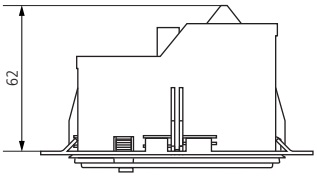



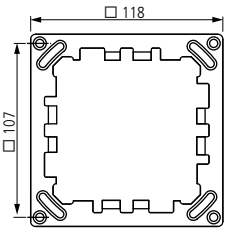




**PlanoCentro UWH-A KNX**

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## PresenceLight 180 KNX

20 Years
PRESENCE DETECTOR INVENTED BY
thebenHTS

### Description

- Detection area 180°
- Wall installation
- Presence and brightness-dependent control for lighting and HVAC systems
- Choice of fully or semi-automatic lighting control
- Connection option for sensors or switches for manual switching with automatic recognition
- Adjustable sensitivity
- Can be configured remotely
- Installation with mechanical stop
- Lighting control with brightness threshold value and self-learning switch-off delay
- Pulse function for staircase time switch
- Presence output with switch-on and switch-off delay
- Room monitoring with selective movement detection
- Parameters can be selected for subsequent changes
- Test operation mode checks the detection area and brightness threshold
- Management remote control SendoPro 868-A (optional)
- SendoClic user remote control (optional)

### Product selection

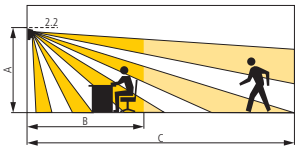
| Installation type | Colour | Type | Article number |
|---|---|---|---|
| Wall installation | Pure white (similar to RAL 9010) | PresenceLight 180B-KNX WH | 2009050 |
| | Black (similar to RAL 9005) | PresenceLight 180B-KNX BK | 2009815 |
| | Silver (similar to RAL 9006) | PresenceLight 180B-KNX SR | 2009816 |
| additional colours available upon request | | | |

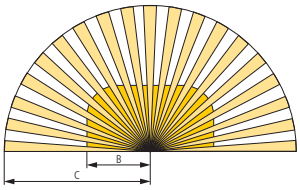
### Technical data

| | PresenceLight 180B-KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage |
| **Recommended installation height** | 1,6–2,2 m |
| **Setting range brightness** | 5–2000 lx |
| **Light switch-off delay** | 30 s–60 min |
| **Stand-by time light** | 30 s–60 min, on, inactive |
| **Presence switch-off delay** | 10 s–120 min |
| **Switch-on delay presence** | 10 s–30 min, inactive |
| **Ambient temperature** | –10 °C … +50 °C |
| **Type of protection** | IP 54 |

## Detection range (Semicircular)

| Mounting height (A) | Sitting (B) | Walking (C) |
|---|---|---|
| 2,2 m | 25 m² \| 7,0 m x 3,5 m | 100 m² \| R 8 m |




## Accessories

**Surface frame PresenceLight**

- Art.No.: 9070513
  Details ▶ Page 231

**SendoPro 868-A**

- Art.No.: 9070675
  Details ▶ Page 233

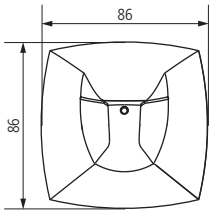
**SendoClic**

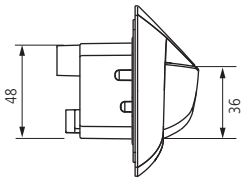
- Art.No.: 9070690
  Details ▶ Page 232

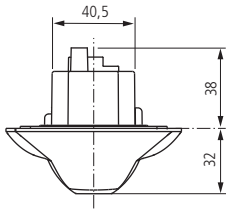
**QuickSafe**

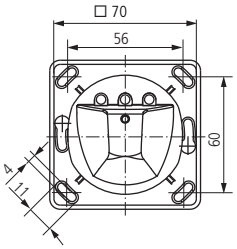
- Art.No.: 9070531
  Details ▶ Page 232

## Scale drawings



## Weather stations KNX

### Weather station KNX

### Weather station basic KNX

## Description

### Common functions

- Combination sensor
- Brightness range from 1–100,000 Lux
- Temperature range –20 °C to +55 °C
- Measurement and evaluation directly on device
- Sun protection for up to three facades possible (in combination with LUNA 133)
- Display of weather data, e.g. with VARIA multi-function display

### Weather station KNX

- For measuring wind, rain, brightness and temperature
- Rain sensor with heater (with connection at 230 V AC)

### Weather station basic KNX

- For measuring wind, brightness and temperature
- Without rain sensor
- 230 V AC connection not required

## Product selection

| Type | Article number |
|---|---|
| Weather station KNX | 1329201 |
| Weather station basic KNX | 1329205 |

## Technical data

| | Weather station KNX | Weather station basic KNX |
|---|---|---|
| **Operating voltage** | 230 V AC | – |
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | |
| **Measuring range brightness** | 1–100.000 lx | |
| **Measuring range temperature** | –20 °C … +55 °C | |
| **Ambient temperature** | –20 °C … +55 °C | |
| **Type of protection** | IP 44 | |

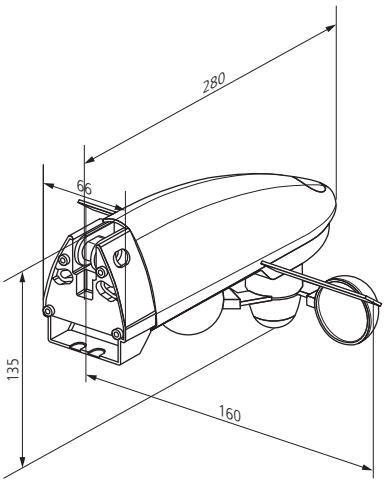
## Accessories

### Mast mounting weather station

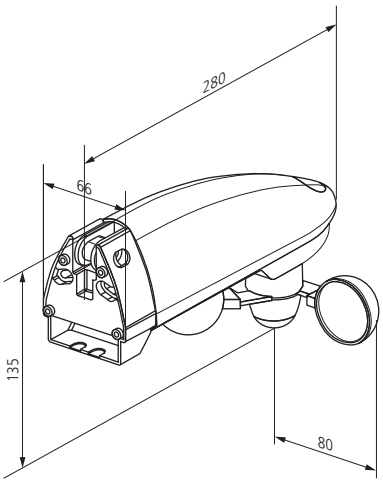
- Art.No.: 9070380
  Details ▶ Page 239

## Scale drawings

### Weather station KNX




### Weather station basic KNX

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Additional technical data at:
www.theben.de/product/ Article number

## LUNA 130 KNX

### Description

- 3 channel brightness sensor
- For brightness-dependent controlling
- Threshold values, dimming levels and switch delay adjustable
- 3 threshold switches integrated
- Threshold can be set between 1 and 20,000 Lux
- Behaviour adjustable if thresholds are exceeded or not met
- Up to 4 different brightness levels can be monitored
- Choice of 1–100 lux or 100–20,000 Lux measuring ranges
- 3 configurable thresholds
- Each section can be allocated one light setting consisting of 3 switching objects and 1 dimming object
- Surface-mounted light sensor included in delivery

### Product selection

| Type | Article number |
|---|---|
| LUNA 130 KNX | 1309200 |

### Technical data

| | LUNA 130 KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA |
| **Measuring range brightness** | 1–20.000 lx |
| **Switch-on delay** | 8 s–240 min |
| **Width** | 2 modules |
| **Ambient temperature** | –5 °C … +45 °C |
| **Type of protection** | IP 20 |

### Accessories

**Flush-mounted light sensor LUNA KNX**

- Art.No.: 9070247
  Details ▶ Page 236

## LUNA 131 KNX

### Description

- Brightness and temperature sensor
- For brightness and temperature dependent controlling in outdoor areas
- 5 freely configurable channels: 1 sun protection channel and 4 universal channels
- Sun protection channel with automated sun protection especially for blind, awning and shutter applications
- Universal channels allow linking of brightness and temperature
- Brightness range from 1–100,000 Lux
- Temperature range –20 °C to +55 °C
- Learning object for brightness threshold

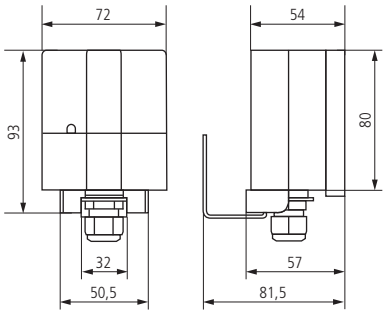
### Product selection

| Type | Article number |
|---|---|
| LUNA 131 S KNX | 1319201 |

### Technical data

| | LUNA 131 S KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 5 mA |
| **Measuring range brightness** | 1–100.000 lx |
| **Measuring range temperature** | –20 °C … +55 °C |
| **Ambient temperature** | –25 °C … +55 °C |
| **Type of protection** | IP 54 |

### Scale drawings



## LUNA 133 KNX

### Description

- Brightness sensor
- Ideally combinable with the Theben weather station for individual sun protection control of several facades (up to 3)

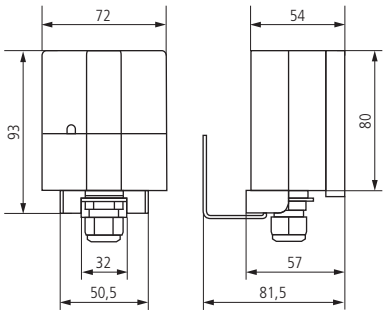
### Product selection

| Type | Article number |
|---|---|
| LUNA 133 KNX | 1339200 |

### Technical data

| | LUNA 133 KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 5 mA |
| **Measuring range brightness** | 1–100.000 lx |
| **Ambient temperature** | –25 °C … +55 °C |
| **Type of protection** | IP 54 |

### Scale drawings



## Digital time switches

### TR 644 S DCF KNX

## Description

**Common functions**

- Digital KNX time switch with yearly program
- 4 channels
- With daily, weekly, yearly, random, pulse and priority programs
- Free weekdays and channel blocks
- 1.5 years power reserve via replaceable environmentally-friendly lithium battery
- Movable public holidays can be automatically adjusted annually
- Automatic summer/winter time change
- Switching times are permanently stored in EEPROM
- Programming via key entry on device or OBELISK 2.1 programming set
- Interface for OBELISK memory card (PC programming)
- Time and date synchronisation from other bus participants
- Time-dependent specifi cation of different temperature levels for individual room control
- Time-dependent compulsory control (mainly ON or OFF) by consumers via priority telegrams
- Random switching for presence simulation

**TR 644 S DCF KNX**

- Optional DCF77 radio

**TR 644 S KNX**

- Without DCF77 radio

## Product selection

| Type | Article number |
|---|---|
| TR 644 S DCF KNX | 6449204 |
| TR 644 S KNX | 6449203 |

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## Technical data

| | TR 644 S DCF KNX | TR 644 S KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | |
| **Operating voltage** | 230 V AC only when connected to DFC77 antenna | – |
| **Width** | 6 modules | |
| **Number of channels** | 4 | |
| **Number of memory locations** | 324 | |
| **Time accuracy** | ≤ ± 1 s/day (quartz) or DCF77 synchronous | ≤ ± 1 s/day (quartz) |
| **Shortest switching times** | 1 s | |
| **Display** | LCD | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## Accessories

### Antenna DCF77 KNX

- for TR 644 S DCF KNX
- Art.No.: 9070271
  Details ▶ Page 229

### PC set OBELISK KNX

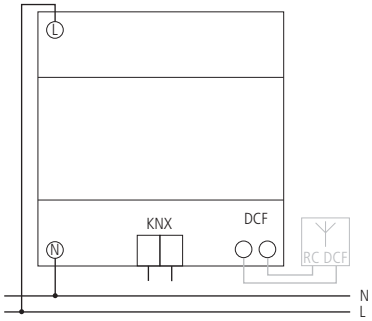
- Art.No.: 9070305
  Details ▶ Page 229

### Memory card OBELISK KNX 16 K

- Art.No.: 9070223
  Details ▶ Page 229

## Connection example

### TR 644 S DCF KNX

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## TR 612 S KNX

### Description

- Digital KNX time switch with weekly program
- 2 channels
- With screen to display: Day of the week, time, switching status etc.
- With daily and weekly programs
- 36 switching times
- 99 day holiday program; programmed in advance
- 6 year power reserve
- Automatic summer/winter time switchover
- Automatic program review
- Switching times are permanently stored in EEPROM
- Permanent switching ON/OFF

### Product selection

| Type | Article number |
|---|---|
| TR 612 S KNX | 6129201 |

### Technical data

| | TR 612 S KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 3,5 mA |
| **Width** | 2 modules |
| **Number of channels** | 2 |
| **Number of memory locations** | 36 |
| **Time accuracy** | ≤ ± 1 s/day (quartz) |
| **Shortest switching times** | 1 min |
| **Display** | LCD |
| **Ambient temperature** | –5 °C … +45 °C |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |

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Additional technical data at:
www.theben.de/product/ Article number

## ZS 600 DCF KNX

### Description

- Time transmitter for hour and date
- Can also be used with DCF77 antenna
- LED for status display DCF reception
- Integrated voltage supply for DCF77 antenna
- Preset time and date (CET or CEST)
- Automatic summer/winter time switchover

### Product selection

| Type | Article number |
|---|---|
| ZS 600 DCF KNX | 6009200 |

### Technical data

| | ZS 600 DCF KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA |
| **Width** | 2 modules |
| **Power reserve** | 10 years |
| **Time accuracy** | ≤ ± 1 s/day (quartz) or DCF77 synchronous |
| **Ambient temperature** | –10 °C … +50 °C |
| **Protection class** | III as per EN 60 730-1 |
| **Type of protection** | IP 20 |

### Accessories

**Antenna DCF77 KNX**

- Art.No.: 9070271
  Details ▶ Page 229

## KNX OT-Box

### Description

- The KNT-OT-Box serves as an interface between the boilers with OT bus (bus system in heating and ventilation technology) and the KNX system (building system technology)
- This enables the bidirectional exchange of data between the OT boiler and the heat distribution via the KNX system (individual room control)
- Removable KNX bus module enables devices to be changed without reprogramming
- Device and KNX bus module can be swapped independently of each other
- Button for OT-test-program
- The following functions are available with the KNT OT box:
  - Customised flow control
  - Weather-compensation flow control
  - Control of domestic hot water
  - Energy optimization of domestic hot water with solar support
  - Legionella protection program
  - Screed drying program

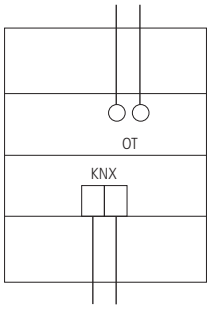
### Product selection

| Type | Article number |
|---|---|
| KNX-OT-Box | 8559200 |

### Technical data

| | KNX-OT-Box |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA |
| **Width** | 4 modules |
| **Rated impulse with stand voltage** | 4 kV |
| **Ambient temperature** | 0 °C … +45 °C |
| **Protection class** | III as per EN 60 730-1 |
| **Type of protection** | IP 20 |

### Connection example



## DALI Gateway KNX

### Description

- The DALI Gateway KNX serves as an interface between the the DALI and the KNX system
- The group-oriented DALI gateway (for max. 16 groups) is used to control operating devices equipped with a DALI interface (e.g. electronic ballasts, LED converters, transformers etc.)
- A maximum of 64 DALI members can be connected to a DALI output. Every DALI member automatically receives a random DALI address through the gateway
- The assignment of the individual DALI members in groups of lights is performed using a separate software tool. Every group of lights can be addressed and monitored via the KNX

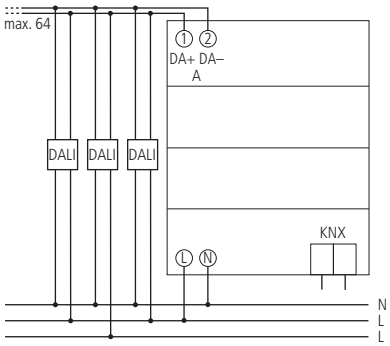
### Product selection

| Type | Article number |
|---|---|
| DALI Gateway KNX | 9070722 |

### Technical data

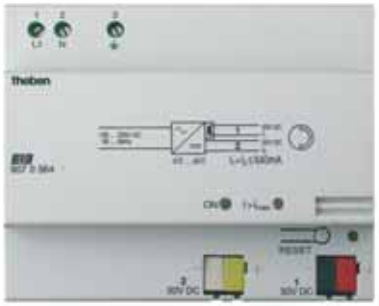
| | DALI Gateway KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, < 10 mA |
| **Operating voltage** | 110–240 V AC/DC |
| **Frequency** | 50–60 Hz |
| **Width** | 4 modules |
| **Ambient temperature** | –5 °C … +45 °C |
| **Protection class** | II |
| **Type of protection** | IP 20 |

### Connection example



## Power supply KNX

### Power supply KNX 640 mA



### Power supply 320 mA KNX

### Power supply KNX 160 mA

## Description

### Common functions

- Power-supplying and monitoring of the KNX system voltage
- Reset key for 20 s bus reset
- Continuous short-circuit protection

### Power supply KNX 640 mA

- 640 mA supply voltage
- 30 V DC auxiliary supply

### Power supply 320 mA KNX

- 320 mA supply voltage

### Power supply KNX 160 mA

- 160 mA supply voltage

## Product selection

| Type | Article number |
|---|---|
| Power supply KNX 640 mA | 9070364 |
| Power supply 320 mA KNX | 9070699 |
| Power supply KNX 160 mA | 9070701 |

## Technical data

| | Power supply KNX 640 mA | Power supply 320 mA KNX | Power supply KNX 160 mA |
|---|---|---|---|
| **Operating voltage** | 230 V AC | | |
| **Frequency** | 50–60 Hz | | |
| **Width** | 6 modules | 4 modules | |
| **KNX output** | 1 line with integrated throttle drive | | |
| **KNX nominal voltage** | 30 V DC, ± 2 V, SELV | | |
| **Nominal current** | 640 mA | 320 mA | 160 mA |
| **Ambient temperature** | –5 °C … +45 °C | | |
| **Protection class** | II as per EN 60 730-1 | | |
| **Type of protection** | IP 20 | | |

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Additional technical data at:
www.theben.de/product/ Article number

## Interface USB KNX, Line coupler KNX

**Interface USB KNX**

**Line coupler KNX**

## Description

**Interface USB KNX**

- USB interface
- For communication between PC and the KNX equipment to be programmed
- USB LED and KNX LED to display data transmission
- Usable from ETS3

**Line coupler KNX**

- Line coupler
- For connecting KNX lines or areas
- Galvanic separation of the lines/areas
- Bus terminals for main line and subordinate line
- Telegrams can be filtered (to reduce telegram traffic)
- Can also be used as line amplifier (repeater)

## Product selection

| Type | Article number |
|---|---|
| Interface USB KNX | 9070397 |
| Line coupler KNX | 9070398 |

## Technical data

| | Interface USB KNX | Line coupler KNX |
|---|---|---|
| **Operating voltage KNX** | Bus voltage, ≤ 10 mA | |
| **Operating voltage** | – | 24 V DC |
| **Width** | 2 modules | |
| **Rated impulse with stand voltage** | – | |
| **Ambient temperature** | –5 °C … +45 °C | |
| **Protection class** | II as per EN 60 730-1 | III as per EN 60 730-1 |
| **Type of protection** | IP 20 | |

## KNX indoor clocks

### OSIRIA 220 AR KNX

### OSIRIA 242 SR KNX

### OSIRIA 280 B KNX

## Description

### OSIRIA 220 AR KNX

- KNX indoor clock, round, single-sided
- Black bar hour and minute hands, red second hand
- White metallic dial
- Plastic housing
- Matte border
- Flat, shock-resistant Plexiglas
- Dial dimensions: Ø 250 mm

### OSIRIA 230 AR KNX/OSIRIA 230 SR KNX

As OSIRIA 220 AR KNX, but:

- Dial dimensions: Ø 300 mm

### OSIRIA 240 AR KNX/OSIRIA 240 SR KNX

As OSIRIA 220 AR KNX, but:

- Dial dimensions: Ø 400 mm

### OSIRIA 241 AR KNX/OSIRIA 241 BR KNX

As OSIRIA 220 AR KNX, but:

- Dial dimensions: Ø 400 mm
- Silver metallic painted metallic housing

### OSIRIA 242 AR KNX/OSIRIA 242 SR KNX

- KNX indoor clock, round, double-sided
- With wall or ceiling holder (150 mm)
- White dials
- Black bar hour and minute hands, red second hand
- White painted metallic housing
- Shock-resistant plexiglass

### OSIRIA 251 BQ KNX

- KNX indoor clock, square, single-sided
- Wall clocks protected against thrown balls e.g. for sports halls, schools, etc.
- Black bar hour and minute hands, red second hand
- Single-faced, robust, white painted metallic housing (RAL 9016) for heavy-duty applications
- Laminated safety glass
- 3-point fastening resistant to atng pried out

### OSIRIA 232 BQ KNX

- KNX indoor clock, square, single-sided, for flush-mounted installation (for OP rooms)
- White metallic dial with black DIN bar numerals
- Black bar hour and minute hands, red second hand
- Stainless steel housing frame flush with tiles or wall V4A for wall installation (flush-mounted)
- Resistant to acids, cleaning agents and disinfectants; in the installed state protected against dust and water in acc. with protection rating IP 54 (DIN 40050)
- 3 mm flat mineral lens

### OSIRIA 280 B KNX

- KNX indoor clock, digital, square, single-sided
- Analogue clock with 1-line, 9-segment LCD digital display for date
- Free-wheel black bar hand, red second hand
- No front lens

**Additional clocks upon request.**

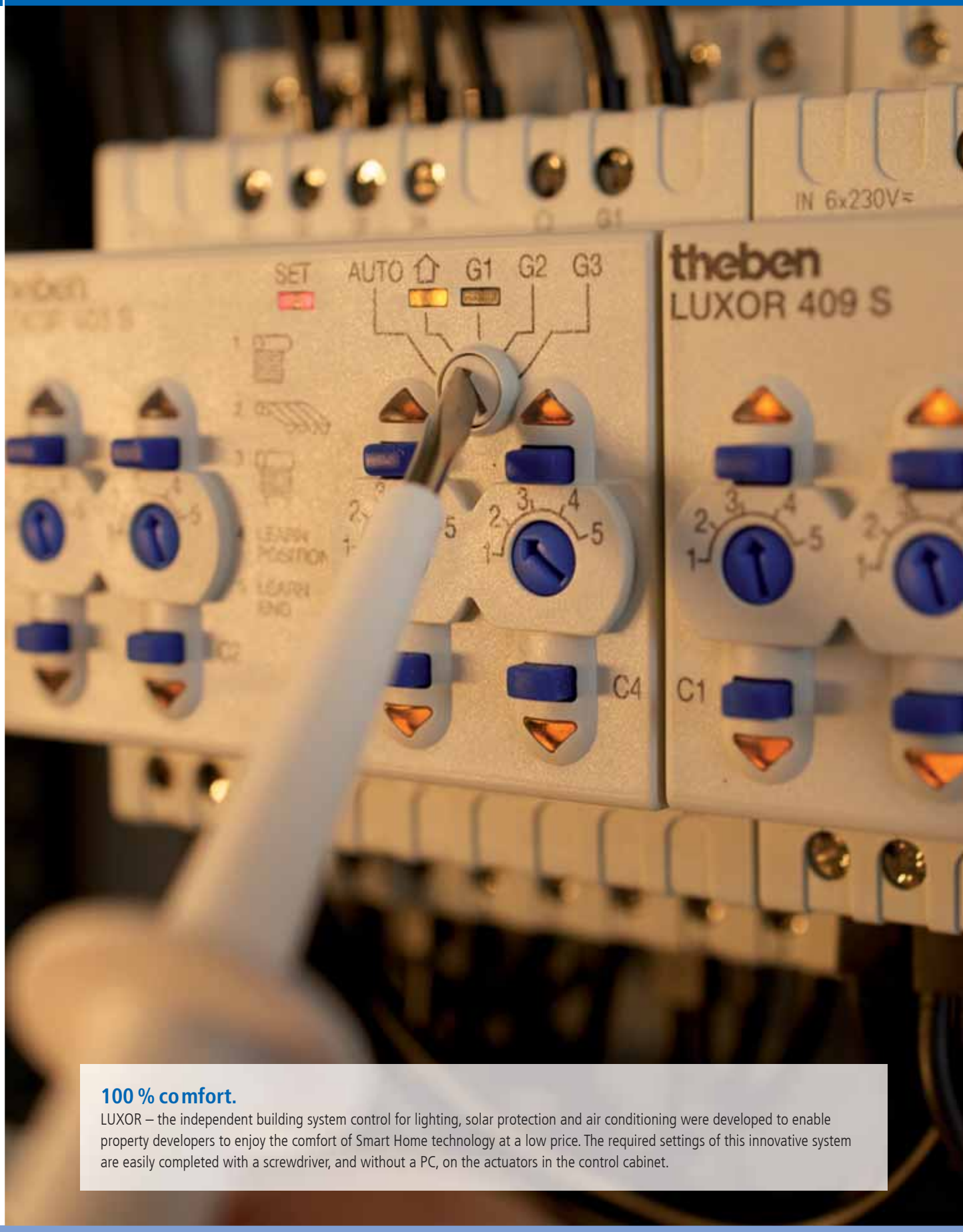
**Additional information about these products can be found at www.peweta.de.**

## Product selection

| Dial dimensions | Housing material | Type of numerals | Type | Article number |
|---|---|---|---|---|
| Ø 250 mm | Plastic housing | Arabic numerals | OSIRIA 220 AR KNX | 5009200 |
| Ø 300 mm | Plastic housing | Arabic numerals | OSIRIA 230 AR KNX | 5009210 |
| | Plastic housing | Fineline numerals | OSIRIA 230 SR KNX | 5009211 |
| Ø 400 mm | Plastic housing | Arabic numerals | OSIRIA 240 AR KNX | 5009230 |
| | Plastic housing | Fineline numerals | OSIRIA 240 SR KNX | 5009231 |
| | Silver metallic painted metallic housing | Arabic numerals | OSIRIA 241 AR KNX | 5009240 |
| | Silver metallic painted metallic housing | Bar numerals | OSIRIA 241 BR KNX | 5009241 |
| | White painted metallic housing | Arabic numerals | OSIRIA 242 AR KNX | 5009250 |
| | White painted metallic housing | Fineline numerals | OSIRIA 242 SR KNX | 5009251 |
| | White painted metallic housing | Bar numerals | OSIRIA 251 BQ KNX | 5009252 |
| 250 mm x 250 mm | Rustproof high quality steel housing | Bar numerals | OSIRIA 232 BQ KNX | 5009223 |
| Ø 280 mm | Plastic housing | Bar numerals | OSIRIA 280 B KNX | 5009280 |

## Technical data

| | OSIRIA KNX |
|---|---|
| **Operating voltage KNX** | Bus voltage, ≤5 mA |
| **Power reserve** | 10 days |
| **Ambient temperature** | –5 °C … +45 °C |




## 100 % comfort.

LUXOR – the independent building system control for lighting, solar protection and air conditioning were developed to enable property developers to enjoy the comfort of Smart Home technology at a low price. The required settings of this innovative system are easily completed with a screwdriver, and without a PC, on the actuators in the control cabinet.

| | Beschreibung | Type | Page |
|---|---|---|---|
| **Switching** | | | |
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| **Dimming** | | | |
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## LUXOR Switching

### LUXOR 400

### LUXOR 404

### LUXOR 402

## Description

### Common functions

- Modular expandable system with central functions
- For switching electrical consumers
- Manual switch on device
- LEDs to display
- 2 time functions (staircase light function with switch-off warning, lag function)
- Upgradeable for up to 16 LUXOR modules
- Central ON/OFF, panic function and presence simulation
- LUXOR modules are connected via 2-wire bus cable (COM bus)
- Max. input cable length up to 100 m
- Input separate for connecting FI (RCD)
- Universal voltage input: 8–48 V AC/DC (e. g. for intercoms)
- Control for configuring central functions

### LUXOR 400

- 4-channel basic device for lighting control
- Selector switch for confi guring central functions
- Inputs U1 and I4 fl oating

### LUXOR 404

- 4-channel upgrade device for lighting control
- Input I4 potential-free

### LUXOR 402

- 2-channel upgrade device for lighting control
- Input I4 potential-free

## Product selection

| Type | Article number |
|---|---|
| LUXOR 400 | 4000000 |
| LUXOR 404 | 4040000 |
| LUXOR 402 | 4020000 |

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Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | LUXOR 400 | LUXOR 404 | LUXOR 402 |
|---|---|---|---|
| **Operating voltage** | 230 V AC | | |
| **Frequency** | 50 Hz | | |
| **Width** | 4 modules | | 2,5 modules |
| **Installation type** | DIN rail | | |
| **Stand-by consumption** | 1,7 W | 1,3 W | |
| **Number of channels** | 4 | | 2 |
| **Type of contact** | NO contact | | |
| **Connecting cable** | 230 V phase-independent supply cable, max. cable length 100 m | | |
| **Connection for COM** | EIB/KNX bus line type YCYM or Y(ST)Y or communication line J-Y(ST)Y/length up to 100 m | | |
| **Switching capacity** | 16 A (at 250 V AC, cos φ = 1), 6 A (at 250 V AC, cos φ = 0.6) | | |
| **Ambient temperature** | –10 °C … +50 °C | | |
| **Type of protection** | IP 20 | | |
| **Protection class** | II as per EN 60 730-1 | | |

## Accessories

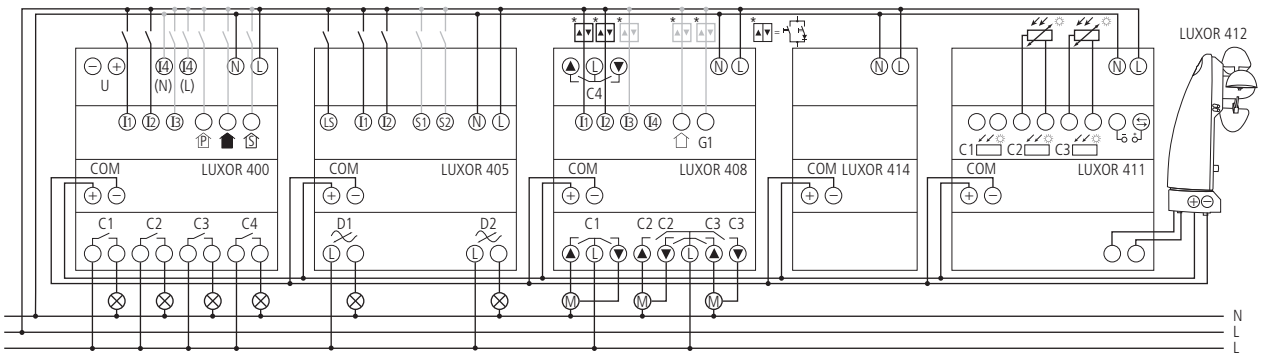
### Diode module

- Art.No.: 9070367
  Details ▶ Page 236

### Front panel kit

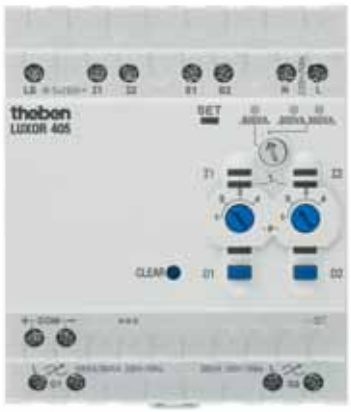
- Art.No.: 9070001
  Details ▶ Page 228

## Connection examples



## LUXOR Dimming

**LUXOR 405**




**DMB 2 S**

## Description

**LUXOR 405**

- 2-channel universal dimmer
- For dimming electric consumers such as incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with conventional or electronic transformers
- 300 W/VA (for 2 channels) or 500 W/VA (for 1 channel)
- For conventional and electronic transformers
- Can also be used without basic module
- Manual switch on device
- LEDs to display
- Upgradeable for up to 16 LUXOR modules
- LUXOR modules are connected via 2-wire bus cable (COM bus)
- One additional input per channel for motion detector
- With overcurrent display
- Input for up to 3 light settings
- 4 program options for dimming response
- Central functions: Presence simulation, central OFF, panic function, central ON

**DMB 2 S**

- 2 channel dimming output extension module ‚Dimmbooster'
- To double the output of basic and extension dimming actuators modules. e.g. to: 2 x 600 W/VA (2 channels) or 1 x 1,000 W/VA (1 channel)

## Product selection

| Type | Article number |
|---|---|
| LUXOR 405 | 4050000 |
| DMB 2 S | 4910272 |

## Technical data

| | LUXOR 405 | DMB 2 S |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Width** | 4 modules | |
| **Installation type** | DIN rail | |
| **Stand-by consumption** | 1 W | 0,8 W |
| **Number of channels** | 2 | |
| **Dimming outputs** | Triacs | |
| **Connecting cable** | 230 V phase-independent supply cable, max. cable length 100 m | |
| **Connection for COM** | EIB/KNX bus line type YCYM or Y(ST)Y or communication line J-Y(ST)Y/length up to 100 m | |
| **Ambient temperature** | –10 °C … +50 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

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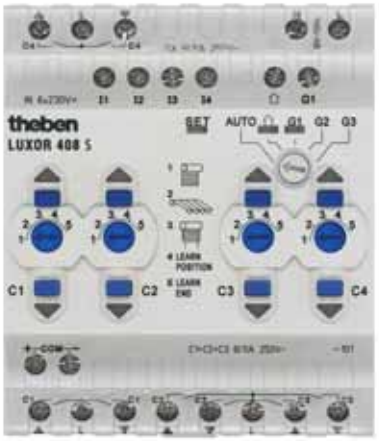
Additional technical data at:
www.theben.de/product/ Article number

## LUXOR shutter control

### LUXOR 408 S




### LUXOR 409 S

## Description

**Common functions**

- For controlling shutters, awnings or blinds
- Separate control of 4 shutters with UP/DOWN/STOP
- Manual switch on device
- LEDs to display
- Controllable via standard shutter sensor
- Upgradeable for up to 16 LUXOR modules
- LUXOR modules are connected via 2-wire bus cable (COM bus)
- Setting option for panic function (via LUXOR 400)
- Storable intermediate position and turn for shading and ventilation
- 2 diode modules (9070367) supplied in delivery

**LUXOR 408 S**

- 4-channel roller shutter basic module
- Central UP/DOWN, panic 1 group
- With three group functions (individual, group and central control)
- Expandable via channel upgrade modules, time and sensor module and weather station

**LUXOR 409 S**

- 4-channel shutter upgrade module

## Product selection

| Type | Article number |
|---|---|
| LUXOR 408 S | 4080100 |
| LUXOR 409 S | 4090100 |

## Technical data

| | LUXOR 408 S | LUXOR 409 S |
|---|---|---|
| **Operating voltage** | 230 V AC | |
| **Frequency** | 50 Hz | |
| **Width** | 4 modules | |
| **Installation type** | DIN rail | |
| **Stand-by consumption** | 1,3 W | |
| **Number of channels** | 4 | |
| **Type of contact** | NO contact | |
| **Connecting cable** | 230 V phase-independent supply cable, max. cable length 100 m | |
| **Connection for COM** | EIB/KNX bus line type YCYM or Y(ST)Y or communication line J-Y(ST)Y/length up to 100 m | |
| **Switching capacity** | 6 A (at 250 V AC, cos φ = 1) | |
| **Functions channels** | Shutter, blinds and awning control | |
| **Ambient temperature** | –10 °C … +50 °C | |
| **Type of protection** | IP 20 | |
| **Protection class** | II as per EN 60 730-1 | |

## LUXOR weather sensors

### LUXOR 411

### LUXOR 412

### LUXOR 413

## Description

### LUXOR 411

- Sensor module
- For controlling awnings, shutters and blinds in combination with LUXOR 412 and/or 413 and integrated light sensors
- Setting threshold values on device
- LEDs to display
- Max. input cable length of sensor line is 100 m
- LUXOR modules are connected via 2-wire bus cable (COM bus)

### LUXOR 412

- Weather sensor
- For controlling awnings, shutters and blinds depending on rain, wind velocity, temperature and brightness in combination with sensor module LUXOR 411
- Optional connection of up to two additional light sensors for additional facades
- Supply voltage via COM-Bus

### LUXOR 413

- Wind sensor
- For controlling awnings, shutters and blinds depending on wind velocity in combination with sensor module LUXOR 411
- Extra power unit required
- Optional connection of three additional facades with automatic sun protection function

## Product selection

| Type | Article number |
|---|---|
| LUXOR 411 | 4110000 |
| LUXOR 412 | 4120000 |
| LUXOR 413 | 4130000 |

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## Technical data

| | LUXOR 411 | LUXOR 412 | LUXOR 413 |
|---|---|---|---|
| **Operating voltage** | 230 V AC | COM-Bus | 24 V DC |
| **Frequency** | 50 Hz | – | |
| **Width** | 4 modules | – | |
| **Stand-by consumption** | 1,1 W | – | |
| **Installation type** | DIN rail | Wall installation or mast bracket | |
| **Connection for COM** | EIB/KNX bus line type YCYM or Y(ST)Y or communication line J-Y(ST)Y/length up to 100 m | | |
| **Setting range twilight value** | 1–100 lx | | – |
| **Setting range sun protection** | 1000–100000 lx | | – |
| **Measuring range wind speed** | 2–20 m/s | | |
| **Measuring range temperature** | 0 °C … +60 °C | | – |
| **Ambient temperature** | –10 °C … +50 °C | –20 °C … +55 °C | |
| **Type of protection** | IP 20 | IP 44 | IP 43 |
| **Protection class** | II as per EN 60 730-1 | | III as per EN 60 730-1 |

## Accessories

### Surface-mounted light sensor

- for LUXOR 411 + LUXOR 412
- Art.No.: 9070008

Details ▶ Page 235

### Mast mounting weather station

- for LUXOR 411 + LUXOR 413, LUXOR 413
- Art.No.: 9070380

Details ▶ Page 239

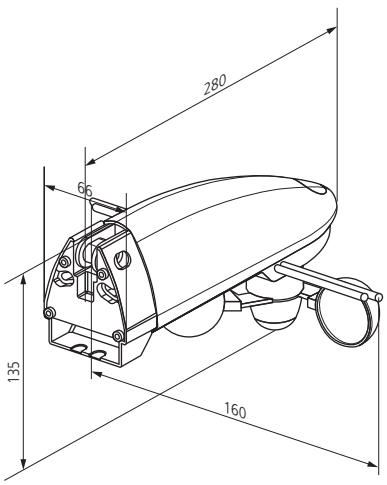
### Power unit 24 V DC

- for LUXOR 413
- Art.No.: 9079330

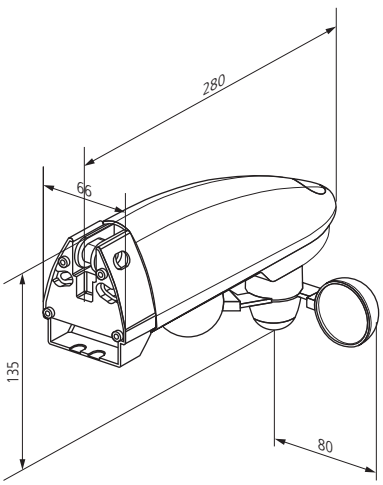
Details ▶ Page 239

## Scale drawings

### LUXOR 412




### LUXOR 413



## LUXOR 426

### Description

- Central display and control unit for the LUXOR system
- Time, weekday, date as well as central and automatic functions are displayed
- Current weather conditions are displayed as well as min/max values
- Display with back-lighting
- Favourite sites can be selected from 6 pages
- 8 channel time switch
- For control of any outputs in LUXOR system, e. g. shutters, blinds, awnings, ventilation, lighting control as well as pond or recircultaion pumps
- Heating temperature reduction in combination with a RAMSES room thermostat
- Manual switching on the device for central and group functions as well as manual and automatic mode
- Daily and weekly programs
- Astronomical program (dependent on sunrise and sunset)
- Freely programmable switching times as well as pre-programmed astronomical switching times
- Offset setting ± 120 min
- Easy location input via city list
- Individual link of time switch channels with the outputs
- Time controlled positioning of drives (LUXOR 408 S/409 S) as well as transmission of dimming values (LUXOR 405) as percentage values
- Blocking times for suppression of brightness or twilight signals from sensor module (LUXOR 411)
- Astronomical blocking times for time shifts for moving shutters/awnings up and down
- Automatic changeover summer/winter time
- PIN code
- Installation in flush-mounted socket

### Product selection

| Type | Article number |
|---|---|
| LUXOR 426 | 4260000 |

### Technical data

| | LUXOR 426 |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Installation type** | Wall installation or on flush-mounted socket |
| **Stand-by consumption** | 1,1 W |
| **Number of channels** | 8 |
| **Connection for COM** | EIB/KNX bus line type YCYM or Y(ST)Y or communication line J-Y(ST)Y/length up to 100 m |
| **Number of memory locations** | 350 |
| **Program** | Weekly program |
| **Ambient temperature** | –5 °C … +45 °C |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 335 |

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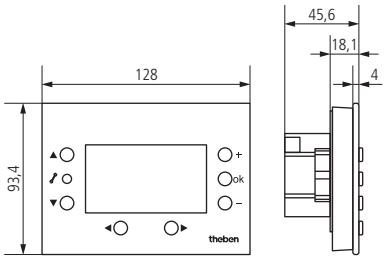
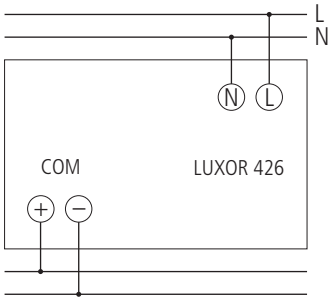
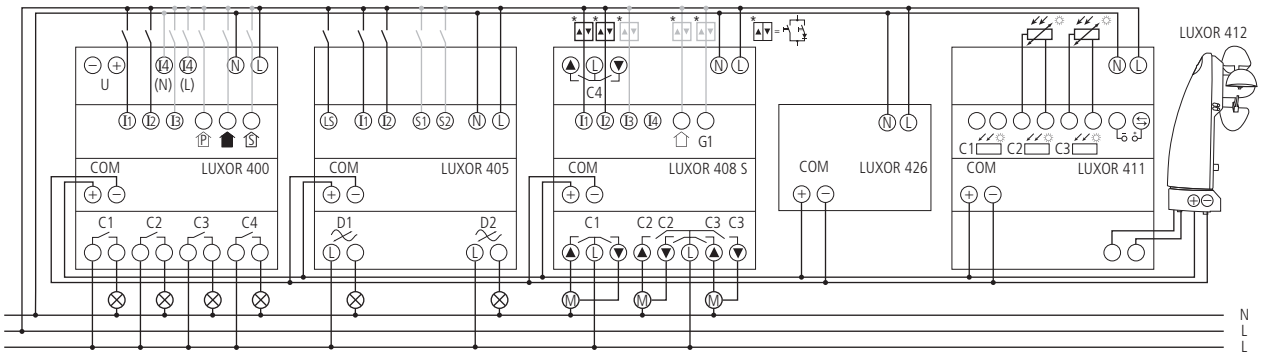
Additional technical data at:
www.theben.de/product/ Article number

## Scale drawings




## Connection examples

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## LUXOR 414

### Description

- 8-channel time switch
- For control of any outputs in LUXOR system, e.g. shutters, blinds and awnings or for lighting control
- Manual switch on device
- Daily and weekly programs
- Astronomical program (dependent on sunrise and sunset)
- Freely programmable switching times as well as pre-programmed astronomical switching times
- Easy location input via city list
- Individual link of time switch channels with the outputs via selector switch
- Positioning of drives (LUXOR 408/LUXOR 409) as well as transmission of dimming values (LUXOR 405) as percentage values
- Blocking times for suppression of brightness or twilight signals from sensor module (LUXOR 411)
- Astronomical blocking times for time shifts for moving shutters/awnings up and down
- Automatic summer/winter time changeover
- LUXOR modules are connected via 2-wire bus cable (COM bus)
- Can not be combined with LUXOR 426

### Product selection

| Type | Article number |
|---|---|
| LUXOR 414 | 4140000 |

### Technical data

| | LUXOR 414 |
|---|---|
| **Operating voltage** | 230 V AC |
| **Frequency** | 50 Hz |
| **Width** | 2,5 modules |
| **Installation type** | DIN rail |
| **Stand-by consumption** | 1,3 W |
| **Number of channels** | 8 |
| **Connection for COM** | EIB/KNX bus line type YCYM or Y(ST)Y or communication line J-Y(ST)Y/length up to 100 m |
| **Number of memory locations** | 128 |
| **Ambient temperature** | –10 °C … +50 °C |
| **Type of protection** | IP 20 |
| **Protection class** | II as per EN 60 730-1 |

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Additional technical data at:
www.theben.de/product/ Article number

## LUXOR Sets

### LUXOR Set 3

### LUXOR Set 4

### LUXOR Set 5

## Description

### LUXOR Set 3

- Set for the comfortable single family house with 10 separate lighting units and 4 time functions
- Additional dimming channels e. g. for living room and bedrooms
- This set also offers the advantage of central functions
- Suitable for 10 separate lighting units, 4 x time/switch and 4 x switch, 2 x dimming
- Consisting of: Box, 1 LUXOR 400, 1 LUXOR 404, 1 LUXOR 405

### LUXOR Set 4

- Set for shutter and blind controlling
- 8 drives can be manually or automatically controlled according to time program or sunrise or sunset
- Blocking times for time shifts for moving shutters/awnings up and down in the early morning
- Additional comfortable central functions
- Suitable for shutter and blind 8 drives, 8 drives and 8 time channels with weekly program with astronomical function
- Consisting of: Box, 1 LUXOR 408 S, 1 LUXOR 409 S, 1 LUXOR 414

### LUXOR Set 5

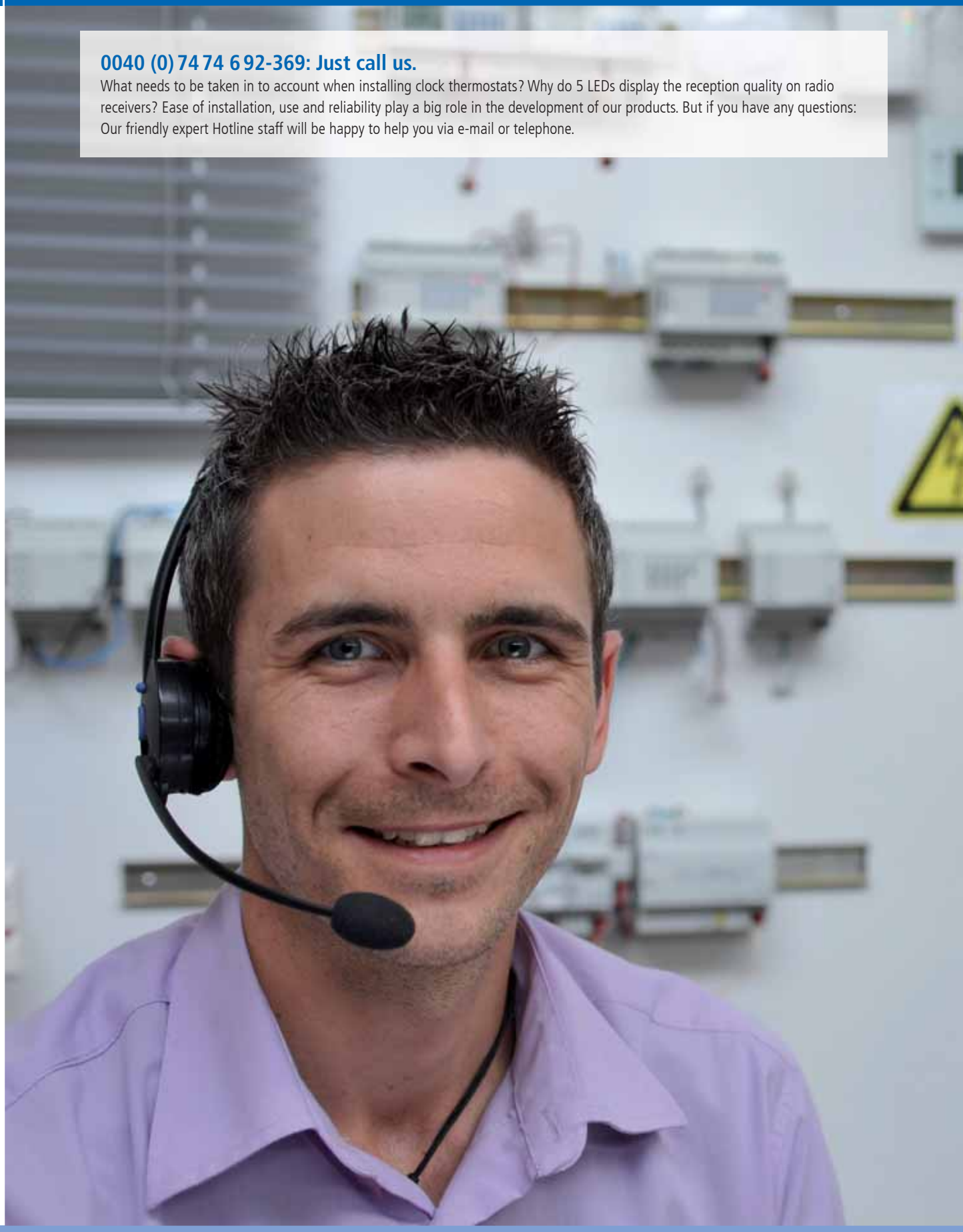
- Set for shutter and blind controlling
- 8 drives can be manually or automatically controlled according to time program or sunrise or sunset
- Blocking times for time shifts for moving shutters/awnings up and down in the early morning
- Additional comfortable central functions
- Suitable for shutter and blind 8 drives, 8 drives and 8 time channels with weekly program with astronomical function
- Consisting of: Box, 1 LUXOR 408 S, 1 LUXOR 409 S, 1 LUXOR 426

## Product selection

| Type | Article number |
|---|---|
| LUXOR Set 3 | 4990003 |
| LUXOR Set 4 | 4990004 |
| LUXOR Set 5 | 4990005 |

## 0040 (0) 74 74 6 92-369: Just call us.

What needs to be taken in to account when installing clock thermostats? Why do 5 LEDs display the reception quality on radio receivers? Ease of installation, use and reliability play a big role in the development of our products. But if you have any questions: Our friendly expert Hotline staff will be happy to help you via e-mail or telephone.



| | Number of inputs | Number of outputs | Operating voltage | Type | Page |
|---|---|---|---|---|---|
| **Controller** | | | | | |
| | 6 | 4 | 100–240 V AC | PHARAO-II 10 (AC) | 224 |
| | | | 24 V DC | PHARAO-II 11 (DC) | 224 |
| | 8 | 6 | 100–240 V AC | PHARAO-II 14 (AC) | 224 |
| | | | 24 V DC | PHARAO-II 15 (DC) | 224 |
| | 15 | 9 | 100–240 V AC | PHARAO-II 24 (AC) | 224 |
| | | | 24 V DC | PHARAO-II 25 (DC) | 224 |
| | – | 4 | 220–240 V AC | PHARAO-II extension 4AR (AC) | 224 |
| | | – | 24 V DC | LUNA 131 DDC | 226 |
| | 1 | 1 | 100–240 V AC | SUD 228 II | 226 |

13

## PHARAO controller devices

**PHARAO-II 10 (AC)**

**PHARAO-II 24 (AC)**

**PHARAO-II extension 4AR (AC)**

## Description

### Common functions

- Small control unit for house automation and industry
- Programming directly on device via eight buttons without interface cable
- Display back light with operator guidance in clear text
- Input and output switching status display
- Lifespan of relay contacts is 100,000 switching cycles at nominal current
- Assignment of programmed functions on front keys
- Internal EEPROM memory for max. 200 function blocks (5,000 bytes)
- Optional plug-in EEPROM for program transfer or dual programming of internal and plugged-in EEPROM
- 3-level password protection
- Realtime year clock with 1,000 switching times
- Graphical programming software for Windows 95/98/NT/2000/ME/XP with detailed online Help documentation
- Remote control/remote monitoring possible via modem/GSM modem
- Transmission of SMS, email or fax

### PHARAO-II 10 (AC)

- Operating voltage 100–240 V AC
- 6 digital inputs, e.g. for keys, brightness and temperature switches
- 4 relay outputs

### PHARAO-II 11 (DC)

- Operating voltage 24 V DC
- 6 digital/analogue inputs
- 4 relay outputs

### PHARAO-II 14 (AC)

- Small control unit for house automation and industry
- Operating voltage 100–240 V AC
- 8 digital inputs, e.g. for keys, brightness and temperature switches
- 6 relay outputs

### PHARAO-II 15 (DC)

- Operating voltage 24 V DC
- 8 digital/analogue inputs
- 6 relay outputs

### PHARAO-II 24 (AC)

- Operating voltage 100–240 V AC
- 15 digital inputs, e.g. for keys, brightness and temperature switches
- 9 relay outputs

### PHARAO-II 25 (DC)

- Operating voltage 24 V DC
- 15 inputs, including 8 analogue/digital options
- 9 relay outputs

### PHARAO-II extension 4AR (AC)

- 4 channel relay output extension for PHARAO-II 14 (AC), 24 (AC)

## Product selection

| Number of inputs | Number of outputs | Operating voltage | Type | Article number |
|---|---|---|---|---|
| 6 | 4 | 100–240 V AC | PHARAO-II 10 (AC) | 5750210 |
| | | 24 V DC | PHARAO-II 11 (DC) | 5759211 |
| 8 | 6 | 100–240 V AC | PHARAO-II 14 (AC) | 5750014 |
| | | 24 V DC | PHARAO-II 15 (DC) | 5759015 |
| 15 | 9 | 100–240 V AC | PHARAO-II 24 (AC) | 5750024 |
| | | 24 V DC | PHARAO-II 25 (DC) | 5759025 |
| – | 4 | 220–240 V AC | PHARAO-II extension 4AR (AC) | 5759102 |





Additional technical data at:
www.theben.de/product/ Article number

## Technical data

| | PHARAO-II 10 (AC) | PHARAO-II 11 (DC) | PHARAO-II 14 (AC) | PHARAO-II 15 (DC) | PHARAO-II 24 (AC) | PHARAO-II 25 (DC) | PHARAO-II extension 4AR (AC) |
|---|---|---|---|---|---|---|---|
| **Operating voltage** | 100–240 V AC | 24 V DC | 100–240 V AC | 24 V DC | 100–240 V AC | 24 V DC | 220–240 V AC |
| **Frequency** | 50–60 Hz | – | 50–60 Hz | – | 50–60 Hz | – | 50–60 Hz |
| **Stand-by consumption** | 1,2 W | 0,4 W | 1,3 W | 0,4 W | 1,3 W | 0,4 W | – |
| **Width** | 4 modules | | 7 modules | | | | – |
| **Installation type** | DIN rail | | | | | | plug-in |
| **Type of contact** | NO contact | | | | | | |
| **Switching capacity** | 8 A (at 250 V AC, cos φ = 1), 373 VA (at 250 V AC, inductive load) | | | | 4 x 8 A (250 V AC, cos φ = 1), inductive load max. 373 VA, 5 x 2 A (250 V AC, cos φ = 1), inductive load max. 93 VA | | 2 A (at 250 V AC, cos φ = 1) |
| **Power reserve** | 20 days | | | | | | – |
| **Time accuracy** | ≤ ± 5 s/day (quartz) | | | | | | – |
| **Input frequency** | 5 Hz | 20 Hz | | | | | – |
| **Ambient temperature** | –25 °C … +55 °C | | | | | | – |
| **Type of protection** | IP 20 | | | | | | – |
| **Protection class** | II as per EN 60 730-1 | | | | | | – |

## Accessories

### Power unit 24 V DC

- Art.No.: 9079330
  Details ▶ Page 239

### Memory module PHARAO-II

- Art.No.: 9070328
  Details ▶ Page 239

### Programming software PHARAO

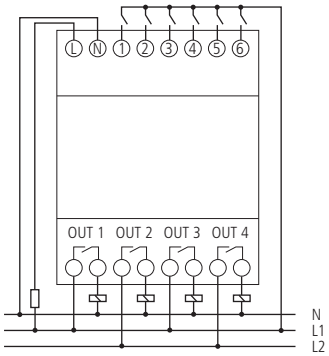
- Art.No.: 9070251
  Details ▶ Page 239

### Additional accessories

- GSM cable PHARAO-II
  Details ▶ Page 239
- Programming cable PHARAO
  Details ▶ Page 239

## Connection example

### PHARAO-II 10 (AC)



## PHARAO Accessories

### LUNA 131 DDC

### SUD 228 II

## Description

### LUNA 131 DDC

- Combination sensor with analogue output signal
- Can be used for brightness and temperature measurement
- Each of the two measurement outputs represents a 0–10 V analogue output signal
- The sensor can be connected directly to the analogue inputs of the PHARAO devices (24 V DC)
- Controls and regulators can be programmed with the signal converter, range compare and Schmitt trigger function modules
- External 24 V DC power unit required

### SUD 228 II

- Charging switch for electric storage heaters
- Adjustable charging time and backward control
- If the ripple control receiver or the tariff time switch have been released for night-time off-peak tariff, the device starts the charging program for storage heating
- Charging time can be set from 0–9 hours
- Onscreen display of charging time which is repeated every 24 hours
- Backward control stops charging process at the end of off-peak period
- Manual switch can be connected for daytime charging

## Product selection

| Type | Article number |
|---|---|
| LUNA 131 DDC | 1319700 |
| SUD 228 II | 2280577 |

## Technical data

| | LUNA 131 DDC | SUD 228 II |
|---|---|---|
| **Operating voltage** | 24 V DC | 100–240 V AC |
| **Frequency** | – | 50–60 Hz |
| **Power consumption** | – | 3 VA |
| **Installation type** | surface mounted | DIN-rail |
| **Type of contact** | – | NO contact |
| **Max. switching capacity** | – | 8 A (at 250 V AC, cos φ = 1) |
| **Measuring range brightness** | 10–50.000 lx | – |
| **Measuring range temperature** | –30 °C … +70 °C | – |
| **Display** | – | LCD |
| **Ambient temperature** | –30 °C … +70 °C | 0 °C … +55 °C |
| **Type of protection** | IP 54 | IP 20 |
| **Protection class** | – | II in accordance with EN 60 730-1 |

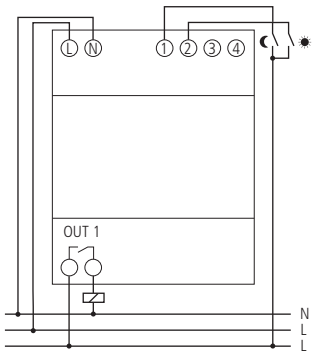
## Accessories

### Power unit 24 V DC

- Art.No.: 9079330
  Details ▶ Page 239

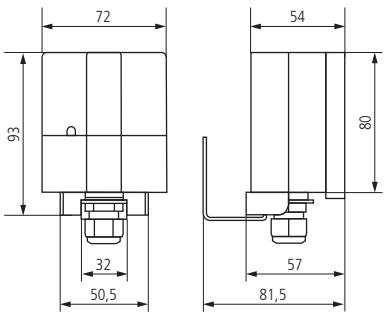
## Connection example

### SUD 228 II




## Scale drawings

### LUNA 131 DDC



| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Wall mounting kit 17,5 mm | ■ Terminal box cover plate for assembly, sealable | ■ All DIN rail installation devices width 1 module | Wall mounting kit 17,5 mm | 9070065 |
| Wall mounting kit 35 mm | ■ Terminal box cover plate for assembly, sealable | ■ All DIN rail installation devices width 2 modules | Wall mounting kit 35 mm | 9070064 |
| Wall mounting kit 52,5 mm | ■ Terminal box cover plate for assembly, sealable | ■ All DIN rail installation devices width 3 modules | Wall mounting kit 52,5 mm | 9070050 |
| Wall mounting kit 70 mm | ■ Terminal box cover plate for assembly, sealable | ■ All DIN rail installation devices width 4 modules | Wall mounting kit 70 mm | 9070049 |
| Wall mounting kit 105 mm | ■ Terminal box cover plate for assembly, sealable | ■ All DIN rail installation devices width 6 modules | Wall mounting kit 105 mm | 9070053 |
| Terminal cover 52,5 mm | ■ Terminal box cover plate for assembly, sealable | ■ SUL 188 g<br>■ SUL 188 hw | Terminal cover 52,5 mm | 9070061 |
| Front panel kit | ■ The front panel installation set is suitable for Theben distributor installation devices of 17.5 to 107.5 mm width<br>■ Walls from 1 to 5 mm thick | ■ All DIN rail installation devices | Front panel kit | 9070001 |



Additional technical data at:
www.theben.de/product/ Article number

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Snap-on mounting 72 x 72 | ■ Quick fastening for 35 mm profile rails | ■ All devices for front panel/wall installation | Snap-on mounting 72 x 72 | 9070071 |
| PC set OBELISK KNX | ■ OBELISK KNX memory card 16 K, RS 232 plug-in adapter, software | ■ TR 644 S DCF KNX<br>■ TR 644 S KNX | PC set OBELISK KNX | 9070305 |
| PC set OBELISK top2 | ■ Memory card, USB plug adapter, software (for Windows 2000/XP/Vista). Updates of existing OBELISK top2 software are available as free downloads at www.theben.de. | ■ TR top2<br>■ LUNA top2<br>■ SELEKTA top2 | PC set OBELISK top2 | 9070409 |
| Memory card OBELISK KNX 16 K | ■ Individual memory card | ■ TR 644 S DCF KNX<br>■ TR 644 S KNX | Memory card OBELISK KNX 16 K | 9070223 |
| Memory card OBELISK top2 | ■ Individual memory card | ■ TR top2<br>■ LUNA top2<br>■ SELEKTA top2 | Memory card OBELISK top2 | 9070404 |
| Antenna DCF77 KNX | ■ Radio control via antenna with KNX time switches: To ensure good reception, do not install the antenna in cellars or on distribution boxes. Connection is made via separate 2-wire, unscreened high-voltage power cable (max. 100 m), up to 10 Theben top2 RC devices can be connected. Polarity, short-circuit and interruption of the antenna circuit are each visually displayed to help with installation. | ■ TR 644 S DCF KNX<br>■ ZS 600 DCF KNX | Antenna DCF77 KNX | 9070271 |
| Antenna top2 RC-DCF | ■ Radio control via antenna with top2 RC devices: To ensure good reception, do not install the antenna in cellars or on distribution boxes. Connection is made via separate 2-wire, unscreened high-voltage power cable (max. 100 m), up to 10 Theben top2 RC devices can be connected. Polarity, short-circuit and interruption of the antenna circuit are each visually displayed to help with installation. | ■ TR top2 RC<br>■ LUNA top2 RC<br>■ SELEKTA top2 RC | Antenna top2 RC-DCF | 9070410 |

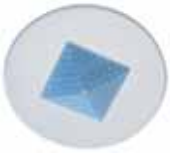
| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Antenna top2 RC-GPS | ■ Worldwide time synchronisation and positioning via receiving GPS satellite signal. The antenna is connected by a 2 wire cable (max. 100 m) to Theben top2 RC devices (up to 5 devices can be connected depending on device type). A top2 GPS power unit (item number 907 0 892) is also required when connecting to TR 611 top2 RC, LUNA 121 top2 RC, LUNA 122 top2 RC or SELEKTA 171 top2 RC devices. No additional power un it is required when connecting to TR 641 top2 RC, TR 642 top2 RC, TR 644 top2 RC devices or several devices to one antenna. Positioning is only possible when connecting to TR 641 top2 RC, TR 642 top2 RC, TR 644 top2 RC and SELEKTA 171 top2 RC devices. Can not be used with TR 611 top2 RC 24 V, TR 641 top2 RC 24V, TR 642 top2 RC 24V and SELEKTA 171 top2 RC 24V | ■ TR top2 RC<br>■ LUNA top2 RC<br>■ SELEKTA top2 RC | Antenna top2 RC-GPS | 9070610 |
| Power unit top2 GPS | ■ Required when connecting the antenna top2 RC-GPS to an individual TR 611 top2 RC, LUNA 121 top2 RC, LUNA 122 top2 RC or SELEKTA 171 top2 RC device (No additional power unit is required when connecting to a minimum of 2 devices)<br>■ Operating voltage: 230 V AC<br>■ Width: 2 modules | ■ TR top2 RC<br>■ LUNA top2 RC<br>■ SELEKTA top2 RC | Power unit top2 GPS | 9070892 |
| Clamp BZ | ■ Clamping bracket for hour counter | ■ BZ 142-1<br>■ BZ 143-1<br>■ BZ 146<br>■ BZ 147 | Clamp BZ | 9070043 |
| Cover 55 x 55 for BZ | ■ Cover for hour counter | ■ BZ 142-1 | Cover 55 x 55 for BZ | 9070041 |
| Cover 72 x 72 for BZ | ■ Cover for hour counter | ■ BZ 142-1 | Cover 72 x 72 for BZ | 9070074 |
| Front kit BZ 142-3 | ■ Terminal box cover plate for hour counter | ■ BZ 142-3 | Front kit BZ 142-3 | 9070075 |





Additional technical data at:
www.theben.de/product/ Article number

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Plug-in socket BZ | ■ Plug-in base for hour counter | ■ BZ 142-3 | Plug-in socket BZ | 9070042 |
| Surface frame Presence-Light | ■ Presence detector surface frame<br>■ Colour: Pure white<br>■ Additional colours available upon request | ■ PresenceLight 180<br>■ PresenceLight 360 | Surface frame PresenceLight | 9070513 |
| Surface frame compact | ■ Presence detector surface frame<br>■ Colour: Pure white<br>■ Additional colours available upon request | ■ compact office<br>■ compact passage<br>■ compact passimo | Surface frame compact | 9070514 |
| Surface frame ECO-IR 360 | ■ Presence detector surface frame<br>■ Colour: Pure white<br>■ Additional colours available upon request | ■ ECO-IR 360A<br>■ ECO-IR 360C NT<br>■ ECO-IR DUAL-C NT<br>■ ECO-IR 360-24V<br>■ ECO-IR 360EIB-AC<br>■ ECO-IR DUAL-EIB | Surface frame ECO-IR 360 | 9070512 |
| PlanoBox 1WH | ■ Presence detector surface frame<br>■ Colour: Pure white<br>■ Additional colours available upon request | ■ PlanoCentro U | PlanoBox 1WH | 9070731 |
| Surface frame ECO-IR 180 | ■ Presence detector surface frame<br>■ Colour: Pure white<br>■ Additional colours available upon request | ■ ECO-IR 180A<br>■ ECO-IR 180-24V<br>■ ECO-IR 180EIB-AC | Surface frame ECO-IR 180 | 9070511 |
| QuickFix concrete square cover | ■ Frame QuickFix concrete for flush-mounted socket<br>■ Flush ceiling installation<br>■ The presence detector is inserted into the false ceiling using a flush-mounted socket, just leaving pyramid lense visible<br>■ Colour: Pure white<br>■ Additional colours available upon request | ■ ECO-IR 360A<br>■ ECO-IR 360C NT<br>■ ECO-IR DUAL-C NT<br>■ ECO-IR 360-24V<br>■ ECO-IR 360EIB-AC<br>■ ECO-IR DUAL-EIB | QuickFix concrete square cover | 9070518 |
| QuickFix concrete round cover | As QuickFix concrete square cover, but:<br>■ Round design | ■ ECO-IR 360A<br>■ ECO-IR 360C NT<br>■ ECO-IR DUAL-C NT<br>■ ECO-IR 360-24V<br>■ ECO-IR 360EIB-AC<br>■ ECO-IR DUAL-EIB | QuickFix concrete round cover | 9070519 |

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| QuickFix concrete flush-mounted box | ■ QuickFix flush-mounted socket concrete | ■ ECO-IR 360A<br>■ ECO-IR 360C NT<br>■ ECO-IR DUAL-C NT<br>■ ECO-IR 360-24V<br>■ ECO-IR 360EIB-AC<br>■ ECO-IR DUAL-EIB | QuickFix concrete flush-mounted box | 9070521 |
| Junction casing, 115 x 115 x 100 mm | ■ Agro/Kaiser flush-mounted junction box/connection box 9908.01 | ■ PlanoCentro U | Junction casing, 115 x 115 x 100 mm | 9070689 |
| QuickFix square cover | ■ Frame QuickFix for false ceilings<br>■ Flush ceiling installation<br>■ The presence detector is inserted into the false ceiling, just leaving pyramid lense visible<br>■ Easy installation<br>■ Colour: Pure white<br>■ Additional colours available upon request | ■ ECO-IR 360A<br>■ ECO-IR 360C NT<br>■ ECO-IR DUAL-C NT<br>■ ECO-IR 360-24V<br>■ ECO-IR 360EIB-AC<br>■ ECO-IR DUAL-EIB | QuickFix square cover | 9070516 |
| QuickFix round cover  | ■ Frame QuickFix for false ceilings<br>■ Flush ceiling installation<br>■ The presence detector is inserted into the false ceiling, just leaving pyramid lense visible<br>■ Easy installation<br>■ Colour: Pure white<br>■ Additional colours available upon request | ■ ECO-IR 360A<br>■ ECO-IR 360C NT<br>■ ECO-IR DUAL-C NT<br>■ ECO-IR 360-24V<br>■ ECO-IR 360EIB-AC<br>■ ECO-IR DUAL-EIB | QuickFix round cover | 9070517 |
| QuickFix flush-mounted housing | ■ QuickFix flush-mounted housing<br>■ Incl. flush-mounted socket | ■ ECO-IR 360A<br>■ ECO-IR 360C NT<br>■ ECO-IR DUAL-C NT<br>■ ECO-IR 360-24V<br>■ ECO-IR 360EIB-AC<br>■ ECO-IR DUAL-EIB | QuickFix flush-mounted housing | 9070522 |
| QuickSafe | ■ QuickSafe safety cover<br>■ Secure protection against mechanical damage<br>■ Robust and solid design<br>■ Particularly impact resistant<br>■ 6 screws, 3 rawlplugs and three spacers<br>■ Protection class IK07 | ■ All ThebeHTS presence detectors | QuickSafe | 9070531 |
| SendoClic | ■ Infrared remote control for ThebenHTS presence sensors<br>■ Suitable for PlanoCentro and PresenceLight KNX<br>■ Switching and dimming of lighting, scene control<br>■ 2 channels for 2 lighting groups<br>■ 2 programmable scenes<br>■ 5 group addresses for defining channels<br>■ Coding switch and programming key for the easy allocation of lighting groups and channels | ■ PlanoCentro<br>■ PlanoCentro KNX<br>■ PresenceLight KNX | SendoClic | 9070690 |





Additional technical data at:
www.theben.de/product/ Article number

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| SendoPro 868-A | ■ Infrared remote control for the convenient startup of HTS presence detectors<br>■ Suitable for PlanoCentro, compact, PresenceLight, ECO-IR C NT and ECO-IR DUAL-C NT<br>■ The SendoPro 868A management remote control for the electrician enables efficient start-up and flexible adaptation to new applications<br>■ Rapid adjustment of parameters to changed operating conditions without uninstalling detectors<br>■ Transmission of individual settings or complete configu-ration sets to the detector<br>■ Select configurations from PlanoCentro<br>■ Calling up of pre-defi ned value packets for typical rooms<br>■ Saving and calling up user-defined parameter sets on internal memory or SD card<br>■ Updates via SD card | ■ All remote controlled ThebeHTS presence detectors | SendoPro 868-A | 9070675 |
| QuickSet plus | ■ Infrared remote control for the convenient start-up of ThebenHTS presence detectors<br>■ Suitable for all presence detectors except all PlanoCen-tro and PresenceLight KNX<br>■ Rapid adjustment to changed operating conditions without uninstalling detectors<br>■ Transmission of individual settings or complete value packages to the detector<br>■ Call up of pre-defined value packets for typical rooms<br>■ Storing and calling-up 8 user-defined value packets<br>■ Onscreen text guidance | ■ All remote controlled ThebeHTS presence detectors except PlanoCentro and PresenceLight KNX | QuickSet plus | 9070532 |
| clic | ■ Infrared remote control for ThebenHTS presence sensors<br>■ Suitable for all presence detectors except all PlanoCen-tro and PresenceLight KNX<br>■ Switching and dimming of lighting, scene control<br>■ 2 channels for 2 lighting groups<br>■ 2 programmable scenes<br>■ 5 group addresses for defining channels<br>■ Coding switch and programming key for the easy allocation of lighting groups and channels | ■ All remote controlled ThebeHTS presence detectors except PlanoCentro and PresenceLight KNX | clic | 9070515 |
| Bus coupling unit KNX | ■ Necessary for diverse presence detectors<br>■ For flush-mounted installation | ■ ECO-IR 180EIB-AC<br>■ ECO-IR 360EIB-AC<br>■ ECO-IR DUAL-EIB | Bus coupling unit KNX | 9070524 |
| RC filter | ■ Suppression filter for presence and motion detectors | ■ All presence and motion detectors | RC filter | 9070523 |

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Surface frame LUXA 103-200 | ■ Motion detector surface frame | ■ LUXA 103-200 | Surface frame LUXA 103-200 | 9070504 |
| LUXA corner angle black | ■ For corner installation of motion detectors<br>■ Wall installation, external corner installation | ■ LUXA 101-150<br>■ LUXA 101-180 | LUXA corner angle black | 9070625 |
| LUXA corner angle white | ■ For corner installation of motion detectors<br>■ Wall installation, external corner installation | ■ LUXA 101-150<br>■ LUXA 101-180<br>■ LUXA 101-360 | LUXA corner angle white | 9070626 |
| SPHINX corner angle | ■ For corner installation of motion detectors<br>■ Wall installation, external corner installation | ■ SPHINX 105-110<br>■ SPHINX 105-220<br>■ SPHINX 105-300<br>■ SPHINX 105-300 KNX | SPHINX corner angle | 9070535 |
| SPHINX RC 104 | ■ User remote control for SPHINX 104<br>■ ON/OFF (max. 8 h)/Automatic<br>■ Teach-in function for teaching in the current brightness value | ■ SPHINX 104-360<br>■ SPHINX 104-360/2<br>■ SPHINX 104-360 AP<br>■ SPHINX 104-360/2 AP | SPHINX RC 104 | 9070538 |
| SPHINX RC 104 Pro | ■ Service remote control for SPHINX 104<br>■ ON/OFF<br>■ Teach-in function for teaching in the current brightness value<br>■ Predefined brightness values and switch-on times<br>■ Impulse, reset and test function<br>■ Block function | ■ SPHINX 104-360<br>■ SPHINX 104-360/2<br>■ SPHINX 104-360 AP<br>■ SPHINX 104-360/2 AP | SPHINX RC 104 Pro | 9070536 |
| SPHINX RC 105 | ■ User remote control for SPHINX 105<br>■ ON/OFF (2 hr, 4 hr, 8 hr)<br>■ Automatic<br>■ Teach-in function for teaching in the current brightness value | ■ SPHINX 105-110<br>■ SPHINX 105-220<br>■ SPHINX 105-300<br>■ SPHINX 105-300 KNX | SPHINX RC 105 | 9070539 |





Additional technical data at:
www.theben.de/product/ Article number

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| SPHINX RC 105 Pro | ■ Service remote control for SPHINX 105<br>■ ON/OFF<br>■ Teach-in function for teaching in the current brightness value<br>■ Predefined brightness values and switch-on times<br>■ Impulse, reset and test function<br>■ Block function<br>■ Creep under protection ON/OFF | ■ SPHINX 105-110<br>■ SPHINX 105-220<br>■ SPHINX 105-300<br>■ SPHINX 105-300 KNX | SPHINX RC 105 Pro | 9070537 |
| Adpater plate LUNA star | ■ The adapter plate simplifies the replacement of faulty twilight switches from Eberle, ESYLUX, Legrand, Gräss-lin, Hager, Merten, Senmatic, Theben etc. As the plate has standard fixing holes, no further holes need to be drilled in the facade, 2 installation screws included. | ■ LUNA 126 star<br>■ LUNA 127 star<br>■ LUNA 128 star<br>■ LUNA 129 star-time | Adpater plate LUNA star | 9070486 |
| Surface-mounted light sensor | ■ Sensor rotatable<br>■ With mounting bracket and Screw terminals<br>■ Protection class IP 54 | ■ LUNA 108<br>■ LUXOR 411 | Surface-mounted light sensor | 9070008 |
| Analogue flush-mounted light sensor | ■ Connecting cable 1.5 m<br>■ Protection class IP 65 | ■ LUNA 108<br>■ LUNA 109<br>■ LUNA 110<br>■ LUNA 120 top2 | Analogue flush-mounted light sensor | 9070011 |
| Analogue surface-mounted light sensor | ■ Sensor rotatable<br>■ With mounting bracket and screw terminals<br>■ Protection class IP 55 | ■ LUNA 109<br>■ LUNA 110<br>■ LUNA 120 top2 | Analogue surface-mounted light sensor | 9070416 |
| Digital flush-mounted light sensor | ■ Spring terminals<br>■ Protection class IP 66 | ■ LUNA 111 top2<br>■ LUNA 112 top2<br>■ LUNA 121 top2 RC<br>■ LUNA 122 top2 RC | Digital flush-mounted light sensor | 9070456 |

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Digital surface-mounted light sensor | ■ Sensor rotatable<br>■ With mounting bracket and screw terminals<br>■ Protection class IP 55 | ■ LUNA 111 top2<br>■ LUNA 112 top2<br>■ LUNA 121 top2 RC<br>■ LUNA 122 top2 RC | Digital surface-mounted light sensor | 9070415 |
| Flush-mounted light sensor LUNA KNX | ■ Connecting cable 1.5 m<br>■ Protection class IP 65 | ■ LUNA 130 KNX | Flush-mounted light sensor LUNA KNX | 9070247 |
| Diode module | ■ Required for special functions (group/central function) with LUXOR<br>■ DIMAX: Light scenes, two button operation<br>■ 2 modules supplied in delivery | ■ LUXOR 400<br>■ LUXOR 402<br>■ LUXOR 404<br>■ LUXOR 405<br>■ LUXOR 408 S<br>■ LUXOR 409 S<br>■ DIMAX 534 | Diode module | 9070367 |
| Adapter RAMSES 72x/78x | ■ Wallpaper/wall cover plate for replacement of RAMSES 3…devices with new clock thermostats, e.g. RAMSES 722 | ■ RAMSES 722<br>■ RAMSES 722 S<br>■ RAMSES 782<br>■ RAMSES 782 S<br>■ RAMSES 784<br>■ RAMSES 784 S<br>■ RAMSES 721<br>■ RAMSES 725 | Adapter RAMSES 72x/78x | 9070245 |
| Socket RAMSES | ■ Plug-in socket for installing the RAMSES HF clock thermostat on the wall | ■ RAMSES 813 top2 Set 1<br>■ RAMSES 833 top2 Set 1/2 | Socket RAMSES | 9070605 |
| Adapter plate RAMSES 70x | ■ Adapter plate for flush-mounted socket 79 x 79 mm | ■ RAMSES 701<br>■ RAMSES 702<br>■ RAMSES 703<br>■ RAMSES 704<br>■ RAMSES 705<br>■ RAMSES 706<br>■ RAMSES 707<br>■ RAMSES 708<br>■ RAMSES 709 | Adapter plate RAMSES 70x | 9070480 |
| Adapter plate RAMSES 714 | ■ Adapter plate for flush-mounted socket 79 x 79 mm | ■ SOTHIS 715<br>■ RAMSES 714<br>■ RAMSES 714 A<br>■ RAMSES 714 A/FH | Adapter plate RAMSES 714 | 9070212 |

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Frame RAMSES 74x | ■ Frame for mechanical room thermostats<br>■ Without central part | ■ RAMSES 741<br>■ RAMSES 746<br>■ RAMSES 748 | Frame RAMSES 74x | 9070603 |
| Central part RAMSES 741/748 | ■ Central part without switch section and setting button | ■ RAMSES 741<br>■ RAMSES 748 | Central part RAMSES 741/748 | 9070602 |
| Central part RAMSES 746 | ■ Central part with switch section and setting button | ■ RAMSES 746 | Central part RAMSES 746 | 9070601 |
| Antenna RAMES 813/833 | ■ For 868 MHz with wall holder and 2 m screened connection cable (only required in event of poor reception quality) | ■ RAMSES 813 top2 Set 1<br>■ RAMSES 833 top2 Set 1/2<br>■ RAMSES 784 HF Set 1 | Antenna RAMES 813/833 | 9070334 |
| External temperature sensor 1 | ■ External temperature sensor | ■ RAMSES 366/1 top<br>■ RAMSES 366/2 top<br>■ RAMSES 713 S KNX<br>■ RAMSES 713 FC KNX<br>■ CHEOPS control KNX<br>■ CHEOPS drive KNX | External temperature sensor 1 | 9070191 |
| External temperature sensor 2 | ■ With temperature adjustment of ± 3 K | ■ RAMSES 366/1 top<br>■ RAMSES 366/2 top | External temperature sensor 2 | 9070192 |
| Temperature sensor RAMSES IP 65  | ■ External temperature sensor<br>■ Protection class IP 65 | ■ RAMSES 831 top2<br>■ RAMSES 833 top2<br>■ RAMSES 833 top2 Sets | Temperature sensor RAMSES IP 65 | 9070459 |

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Flow temperature sensor RAMSES | ■ Also required for applications with 2 feed sensors | ■ RAMSES 855 top2 OT | Flow temperature sensor RAMSES | 9070371 |
| Actuator ALPHA 4 230 V | ■ Actuator for radiators, heating circuit distributors or individual heating circuits<br>■ Operating voltage 230 V AC<br>■ „First open function" for easy installation and heating start-up<br>■ Plug-in installation on valve adapters<br>■ 100% protection against damaging drives through leaking valves<br>■ Function and adjustment checking<br>■ Protection against disassembly by means of removable SaveGuard<br>■ Guaranteed overvoltage protection<br>■ Valve adapter not included | ■ All clock thermostats<br>■ RAMSES 714<br>■ RAMSES 751<br>■ HMG4/HME 4 KNX | Actuator ALPHA 4 230 V | 9070438 |
| Actuator ALPHA 4 24 V | As actuator ALPHA 4 230V, but:<br>■ Operating voltage 24 V AC/DC | ■ All clock thermostats<br>■ HMG 4/HME 4 KNX<br>■ HMT 6/HMT 12 KNX | Actuator ALPHA 4 24 V | 9070439 |
| Plunge sensor RAMSES | ■ Additionally required for applications with service water control or boiler plunge sensor | ■ RAMSES 855 top2 OT | Plunge sensor RAMSES | 9070379 |
| Temperature sensor | ■ Temperature sensor for laying in floor<br>■ Type of protection IP 65 | ■ RAMSES 831 top2<br>■ RAMSES 832 top2<br>■ RAMSES 833 top2 Sets<br>■ RAMSES 712 KNX<br>■ RAMSES 713 S KNX<br>■ RAMSES 713 FC KNX<br>■ FCA 1 KNX | Temperature sensor | 9070321 |
| Valve adapter VA 78 | ■ Valve adapter for Danfoss RA<br>■ Further adapters available uopn request | ■ ALPHA 4 230 V<br>■ ALPHA 4 24 V<br>■ CHEOPS control KNX<br>■ CHEOPS drive KNX | Valve adapter VA 78 | 9070436 |
| Valve adapter VA 80 | ■ Valve adapter for Onda, Schlösser(from 1993), Oventrop (M30 x 1.5), Heimeier, Herb, Therm-Concept, Frank, Roth (distributor), Dinotherm (distributor)<br>■ Further adapters available uopn request | ■ ALPHA 4 230 V<br>■ ALPHA 4 24 V<br>■ CHEOPS control KNX<br>■ CHEOPS drive KNX | Valve adapter VA 80 | 9070437 |

| | Description | Suitable for | Type | Article number |
|---|---|---|---|---|
| Power unit CO2-sensor | ■ 24 V/12 W flush-mounted power unit (SELV) | ■ AMUN 716 R | Power unit CO2-sensor | 9070494 |
| Mast mounting weather station | ■ For mast installation of the weather station<br>■ Diameter 60–80 mm | ■ LUXOR 412<br>■ LUXOR 413<br>■ Weather station KNX<br>■ Weather station basic KNX | Mast mounting weather station | 9070380 |
| GSM cable PHARAO-II | ■ PHARAO-II GSM interface cable<br>■ Enables connection to be established and SMS data to be transmitted to mobile telephone, email address or fax machine. The interface for connecting the GSM cable is located below the plug-in upgrade modules. | ■ PHARAO-II | GSM cable PHARAO-II | 9070329 |
| Memory module PHARAO-II | ■ Plug-in EEPROM memory module (5 kByte)<br>■ External memory module for transferring and/or down-loading the program from or to the internal EEPROM system memory. Internal program is deactivated for as long as the external memory module is plugged in (dual programming). | ■ PHARAO-II | Memory module PHARAO-II | 9070328 |
| Power unit 24 V DC | ■ Power pack for supply voltage from PHARAO controllers and sensors. Power unit sufficient for 5 x PhARAO-II 14/15 or 4 x PHARAO-II 24/25 controls<br>■ Width: 3 modules | ■ LUNA 131 DDC<br>■ PHARAO-II | Power unit 24 V DC | 9079330 |
| Programming cable PHARAO | ■ For series connection (RS 232) to enable conrol programs to be configured and parameterised. This cable is used to connect an analogue model for remote maintenance and remote control. | ■ PHARAO-II | Programming cable PHARAO | 9070252 |
| Programming software PHARAO | ■ CD for Windows 95/98/NT/2000/ME/XP, software for PHARAO and PHARAO II generation | ■ PHARAO-II | Programming soft-ware PHARAO | 9070251 |

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| Discontinued models | | Successor | |
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| LUNA 108/110 V | 1081761 | No successor | |
| BZ 142-1 110V | 1421721 | No successor | |
| BZ 143-1 | 1430821 | No successor | |
| BZ 143-1 24V | 1434721 | No successor | |
| BZ 147 24V | 1479000 | No successor | |
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| ECO-IR 180 EIB-AC | 2029250 | PresenceLight 180B-KNX WH | 2009050 |
| ECO-IR 180 EIB-AC BK | 2029809 | PresenceLight 180B-KNX BK | 2009815 |
| ECO-IR 180 EIB-AC SR | 2029810 | PresenceLight 180B-KNX SR | 2009816 |
| SYN 269 g | 2690033 | SUL 289 g | 2890033 |
| SUL 285/1 T | 2850008 | SUL 285/2 T | 2850033 |
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| JME 4 24V DC KNX | 4900254 | No successor | |
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| TR 611 top (D/F/GB/I/E/P) | 6111815 | No successor | |
| TR 612 top (D/F/GB/I/E/P) | 6121815 | No successor | |
| TR 622 top (D/F/GB/I/E/P) | 6221815 | No successor | |
| TR 644 S 12V | 6448012 | TR 642 top2 RC 24V | 2x 6424300 |
| TR 644 S 24V | 6448024 | TR 642 top2 RC 24V | 2x 6424300 |
| TR 685/2 top (D/F/GB/I/E/NL) | 6850012 | TR 636 top | 6360002 |
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| RAMSES 770 KNX | 7709200 | VARIA 826 KNX | 8269200/8269201 |
| GSM-Modem | 9070396 | No successor | |
| KONTAKTLEISTE -G- | 9075141 | No successor | |

### REDUCED TEMPERATURE
Reduced room temperature during the night or when unoccupied, saves energy. Recommended temperature e. g. 16 °C.

### CONNECTION TYPE
Contact type for connecting cables to device.

### ADJUSTABLE OPERATING POINT AND THERMAL CIRCULATION
If room thermostats are unfavourably located, e. g. on external walls, the device operating point can be changed. Thermal circulation prevents rooms overheating. Adjustments can be made for especially fast or slow reacting heating systems.

### WORKING VOLTAGE
Nominal voltage required for operating device. Safe operation is guaranteed in in a tolerance range of ± 10%.

### POWER CONSUMPTION
Power draw required to operate device – without switching capacity.

### SUPPRESSION MEASURES
Despite internal safety measures, unusually strong interference fields can exceptionally interfere with microprocessor-controlled timers. Interference can be prevented by taking the following actions during installation:

- Avoid installing in the immediate vicinity of inductive consumers.
- Lay separate mains connections and use line filters if necessary
- Shield inductive consumer with Varistor or RC link.

### FROST PROTECTION
Operating mode for room thermostats for protecting the heating and water system from frost damage, e. g. +8 °C.

### POWER RESERVE
In the event of power loss, the timer continues to run for the duration of the power reserve thanks to a built-in power reserve. This removes the need to reset the timer. The power reserve details refer to the new condition and 20 °C ambient temperature. The power reserve does however diminish in relation to service life and temperature.

### MANUAL SWITCH
Priority switch switches output to "Permanent ON", "Permanent OFF" or to "Auto" for automatic time control. "Perm" means manual permanent switching of mechanical timers.

### CHANNELS
Number of switching outputs/inputs for timers, twilight switches, controls and actuators.

### PROGRESS DISPLAY
Visual function check for mechanical timers.

### LAMP LOADS
Energy saving lamps as well as sodium and mercury vapour lamps place a particular stress on the output contacts through high switch-on peaks. In isolated cases check whether a cut-off relay or cutout is required.

### FULL POWER RESERVE
If the power reserve is provided by a rechargeable battery then the power reserve is only fully available after a certain charging time.

### CONTACT OPENING WIDTH
With switching contacts a distinction is made between a 3 mm greater or lesser contact distance.

### PROGRAM
Time-related operational sequence dependent on preset commands.

### PULSE WIDTH MODULATION OR HYSTERESIS CONTROLLER
Thermostat with pulse width modulation clock cyclically and have varied switching periods. The cycle is adjustable. Hysteresis controllers switch on if the set hysteresis temperature range is exceeded or not achieved.

### SWITCHING CAPACITY
is the maximum permissible loading of the switching contacts in amperes at the nominal voltage with resistive load. The details in brackets indicate the permissible inductive load at cos φ 0.6 (e. g. motor load). The AX supplement indicates the permissible fluorescent lamp load.

### SWITCHING PRE-SELECTION
Time limited manual change to switching period by anticipating the next switching command. E. g. OFF is manually changed to ON until the next successive OFF command in the time program. The automatic time program then resumes.

### PROTECTION CLASS
Devices in Germany have to meet various protection classes to satisfy requirements against accidentally touching live components and against too high non-contact voltage.

- Protection class I:
  All metal parts that can be touched during operation or maintenance must be connected to the earth conductor.
- Protection class II:
  The devices are double or triple insulated and do not have an earth connection.
- Protection class III:
  The devices are designed to be used with safety extra-low voltage and have neither internal nor external power circuits working on other voltages.

### MEMORY LOCATIONS
They are designed to store switching times made up of information on the day of week (if necessary date) switching time and switching status.

EEPROM memory is not temporary storage and retains the information even without power supply for up to 10 years.

### 3 OR 4 WIRE SWITCHING
With staircase light timers the 3 or 4 wire riser can be used for keys or lights from floor to floor.

### PERMISSIBLE AMBIENT TEMPERATURE
Temperature range that the device can function reliably in, e. g. constant ambient temperature.

### COUNTING RANGE
Maximum number of operating hours that can be directly read.

### SELV (SAFETY EXTRA-LOW VOLTAGE)
Voltage that does not exceed 42 V between the wires or between the wires and the earth where the idling voltage does not exceed 50 V. If SELV is taken from the mains supply then this must achieved via a safety transformer or a converter with separate winding with insulation that meets the requirements of double or increased insulation.

### PELV (PROTECTIVE EXTRA-LOW VOLTAGE)
An earthed electric circuit operated with SELV which is separated from other circuits by basic insulation and protective sheathing, double insulation or increased insulation.

Impressum
Client: Theben AG, Haigerloch
Productdatabase Manager: Arne Mohl
Realisation: Theben AG, Haigerloch
Design by: Theben AG
Sources of pictures: Studio Majer, Theben AG
Print: Wachter GmbH & Co. KG

# General conditions
# for the supply of products and services of the electrical and electronics industry ("GL")*

**for commercial transactions between businesses**

### I. General provisions

1. Legal relations between Supplier and Purchaser in connection with supplies and/or services of the Supplier (hereinafter referred to as "Supplies") shall be solely governed by the present GL. The Purchaser's general terms and conditions shall apply only if expressly accepted by the Supplier in writing. The scope of delivery shall be determined by the congruent mutual written declarations.

2. The Supplier herewith reserves any industrial property rights and/or copyrights pertaining to its cost estimates, drawings and other documents (hereinafter referred to as "Documents"). The Documents shall not be made accessible to third parties without the Supplier's prior consent and shall, upon request, be returned without undue delay to the Supplier if the contract is not awarded to the Supplier. Sentences 1 and 2 shall apply mutatis mutandis to the Purchaser's Documents; these may, however, be made accessible to those third parties to whom the Supplier has rightfully subcontracted Supplies.

3. The Purchaser has the non-exclusive right to use standard software and firmware, provided that it remains unchanged, is used within the agreed performance parameters, and on the agreed equipment. Without express agreement the Purchaser may make one back-up copy of standard software.

4. Partial deliveries are allowed, unless they are unreasonable to accept for the Purchaser.

5. The term „claim for damages" used in the present GL also includes claims for indemnification for useless expenditure.

### II. Prices, terms of payment, and set-off

1. Prices are ex works and excluding packaging; value added tax shall be added at the then applicable rate.

2. If the Supplier is also responsible for assembly or erection and unless otherwise agreed, the Purchaser shall pay the agreed remuneration and any incidental costs required, e. g. for traveling and transport as well as allowances.

3. Payments shall be made free Supplier's paying office.

4. The Purchaser may set off only those claims which are undisputed or nonappealable.

### III. Retention of title

1. The items pertaining to the Supplies ("Retained Goods") shall remain the Supplier's property until each and every claim the Supplier has against the Purchaser on account of the business relationship has been fulfilled. If the combined value of the Supplier's security interests exceeds the value of all secured claims by more than 10 %, the Supplier shall release a corresponding part of the security interest if so requested by the Purchaser; the Supplier shall be entitled to choose which security interest it wishes to release.

2. For the duration of the retention of title, the Purchaser may not pledge the Retained Goods or use them as security, and resale shall be possible only for resellers in the ordinary course of their business and only on condition that the reseller receives payment from its customer or makes the transfer of property to the customer dependent upon the customer fulfilling its obligation to effect payment.

3. The Purchaser shall inform the Supplier forthwith of any seizure or other act of intervention by third parties.

4. Where the Purchaser fails to fulfil its duties, fails to make payment due, or otherwise violates its obligations the Supplier shall be entitled to rescind the contract and take back the Retained Goods in the case of continued failure following expiry of a reasonable remedy period set by the Supplier; the statutory provisions providing that a remedy period is not needed shall be unaffected. The Purchaser shall be obliged to return the Retained Goods. The fact that the Supplier takes back Retained Goods and/or exercises the retention of title, or has the Retained Goods seized, shall not be construed to constitute a rescission of the contract, unless the Supplier so expressly declares.

### IV. Time for supplies; delay

1. Times set for Supplies shall only be binding if all Documents to be furnished by the Purchaser, necessary permits and approvals, especially concerning plans, are received in time and if agreed terms of payment and other obligations of the Purchaser are fulfilled. If these conditions are not fulfilled in time, times set shall be extended reasonably; this shall not apply if the Supplier is responsible for the delay.

2. If non-observance of the times set is due to force majeure such as mobilization, war, rebellion or similar events, e. g. strike or lockout, such time shall be extended accordingly. The same shall apply if the Supplier does not receive its own supplies in due time or in due form.

3. If the Supplier is responsible for the delay (hereinafter referred to as "Delay") and the Purchaser has demonstrably suffered a loss therefrom, the Purchaser may claim a compensation as liquidated damages of 0.5 % for every completed week of Delay, but in no case more than a total of 5 % of the price of that part of the Supplies which due to the Delay could not be put to the intended use.

4. Purchaser's claims for damages due to delayed Supplies as well as claims for damages in lieu of performance exceeding the limits specified in No. 3 above are excluded in all cases of delayed Supplies, even upon expiry of a time set to the Supplier to effect the Supplies. This shall not apply in cases of mandatory liability based on intent, gross negligence, or due to loss of life, bodily injury or damage to health. Rescission of the contract by the Purchaser based on statute is limited to cases where the Supplier is responsible for the delay. The above provisions do not imply a change in the burden of proof to the detriment of the Purchaser.

5. At the Supplier's request, the Purchaser shall declare within a reasonable period of time whether it, due to the delayed Supplies, rescinds the contract or insists on the delivery of the Supplies.

6. If dispatch or delivery, due to Purchaser's request, is delayed by more than one month after notification of the readiness for dispatch was given, the Purchaser may be charged, for every additional month commenced, storage costs of 0.5 % of the price of the items of the Supplies, but in no case more than a total of 5 %. The parties to the contract may prove that higher or, as the case may be, lower storage costs have been incurred.

### V. Passing of risk

1. Even where delivery has been agreed freight free, the risk shall pass to the Purchaser as follows:

a) if the Supplies do not include assembly or erection, at the time when the Supplies are shipped or picked up by the carrier. Upon the Purchaser's request, the Supplier shall insure the Supplies against the usual risks of transport at the Purchaser's expense;

b) if the Supplies include assembly or erection, at the day of taking over in the Purchaser's own works or, if so agreed, after a fault-free trial run.

2. The risk shall pass to the Purchaser if dispatch, delivery, the start or performance of assembly or erection, the taking over in the Purchaser's own works, or the trial run is delayed for reasons for which the Purchaser is responsible or if the Purchaser has otherwise failed to accept the Supplies.

### VI. Assembly and erection

Unless otherwise agreed in written form, assembly and erection shall be subject to the following provisions:

1. The Purchaser shall provide at its own expense and in due time:

a) all earth and construction work and other ancillary work outside the Supplier's scope, including the necessary skilled and unskilled labor, construction materials and tools,

b) the equipment and materials necessary for assembly and commissioning such as scaffolds, lifting equipment and other devices as well as fuels and lubricants,

c) energy and water at the point of use including connections, heating and lighting,

d) suitable dry and lockable rooms of sufficient size adjacent to the site for the storage of machine parts, apparatus, materials, tools, etc. and adequate working and recreation rooms for the erection personnel, including sanitary facilities as are appropriate in the specific circumstances; furthermore, the Purchaser shall take all measures it would take for the protection of its own possessions to protect the possessions of the Supplier and of the erection personnel at the site,

e) protective clothing and protective devices needed due to particular conditions prevailing on the specific site.

2. Before the erection work starts, the Purchaser shall unsolicitedly make available any information required concerning the location of concealed electric power, gas and water lines or of similar installations as well as the necessary structural data.

3. Prior to assembly or erection, the materials and equipment necessary for the work to start must be available on the site of assembly or erection and any preparatory work must have advanced to such a degree that assembly or erection can be started as agreed and carried out without interruption. Access roads and the site of assembly or erection must be level and clear.

4. If assembly, erection or commissioning is delayed due to circumstances for which the Supplier is not responsible, the Purchaser shall bear the reasonable costs incurred for idle times and any additional traveling expenditure of the Supplier or the erection personnel.

5. The Purchaser shall attest to the hours worked by the erection personnel towards the Supplier at weekly intervals and the Purchaser shall immediately confirm in written form if assembly, erection or commissioning has been completed.

6. If, after completion, the Supplier demands acceptance of the Supplies, the Purchaser shall comply therewith within a period of two weeks. In default thereof, acceptance is deemed to have taken place. Acceptance is also deemed to have been effected if the Supplies are put to use, after completion of an agreed test phase, if any.

### VII. Receiving supplies

The Purchaser shall not refuse to receive Supplies due to minor defects.

**VIII. Defects as to quality**

The Supplier shall be liable for defects as to quality ("Sachmängel", hereinafter referred to as "Defects",) as follows:

1. Defective parts or defective services shall be, at the Supplier's discretion, repaired, replaced or provided again free of charge, provided that the reason for the Defect had already existed at the time when the risk passed.

2. Claims for repair or replacement are subject to a statute of limitations of 12 months calculated from the start of the statutory statute of limitations; the same shall apply mutatis mutandis in the case of rescission and reduction. This shall not apply where longer periods are prescribed by law according to Sec. 438 para. 1 No. 2 (buildings and things used for a building), Sec. 479 para. 1 (right of recourse), and Sec. 634a para. 1 No. 2 (defects of a building) German Civil Code ("BGB"), in the case of intent, fraudulent concealment of the Defect or non-compliance with guaranteed characteristics (Beschaffenheitsgarantie). The legal provisions regarding suspension of the statute of limitations ("Ablaufhemmung", "Hemmung") and recommencement of limitation periods shall be unaffected.

3. Notifications of Defect by the Purchaser shall be given in written form without undue delay.

4. In the case of notification of a Defect, the Purchaser may withhold payments to an amount that is in a reasonable proportion to the Defect. The Purchaser, however, may withhold payments only if the subject-matter of the notification of the Defect involved is justified and incontestable. The Purchaser has no right to withhold payments to the extent that its claim of a Defect is time-barred. Unjustified notifications of Defect shall entitle the Supplier to demand reimbursement of its expenses by the Purchaser.

5. The Supplier shall be given the opportunity to repair or to replace the defective good ("Nacherfüllung") within a reasonable period of time.

6. If repair or replacement is unsuccessful, the Purchaser is entitled to rescind the contract or reduce the remuneration; any claims for damages the Purchaser may have according to No. 10 shall be unaffected.

7. There shall be no claims based on Defect in cases of insignificant deviations from the agreed quality, of only minor impairment of usability, of natural wear and tear, or damage arising after the passing of risk from faulty or negligent handling, excessive strain, unsuitable equipment, defective civil works, inappropriate foundation soil, or claims based on particular external influences not assumed under the contract, or from non-reproducible software errors. Claims based on defects attributable to improper modifications or repair work carried out by the Purchaser or third parties and the consequences thereof are likewise excluded.

8. The Purchaser shall have no claim with respect to expenses incurred in the course of supplementary performance, including costs of travel, transport, labor, and material, to the extent that expenses are increased because the subject-matter of the Supplies has subsequently been brought to another location than the Purchaser's branch office, unless doing so complies with the normal use of the Supplies.

9. The Purchaser's right of recourse against the Supplier pursuant to Sec. 478 BGB is limited to cases where the Purchaser has not concluded an agreement with its customers exceeding the scope of the statutory provisions governing claims based on Defects. Moreover, No. 8 above shall apply mutatis mutandis to the scope of the right of recourse the Purchaser has against the Supplier pursuant to Sec. 478 para. 2 BGB.

10. The Purchaser shall have no claim for damages based on Defects. This shall not apply to the extent that a Defect has been fraudulently concealed, the guaranteed characteristics are not complied with, in the case of loss of life, bodily injury or damage to health, restrictions to liberty and/or intentionally or grossly negligent breach of contract on the part of the Supplier. The above provisions do not imply a change in the burden of proof to the detriment of the Purchaser. Any other or additional claims of the Purchaser exceeding the claims provided for in this Article VIII, based on a Defect, are excluded.

**IX. Indusrial property rights and copyright; defects in title**

1. Unless otherwise agreed, the Supplier shall provide the Supplies free from third parties' industrial property rights and copyrights (hereinafter referred to as "IPR") with respect to the country of the place of delivery only. If a third party asserts a justified claim against the Purchaser based on an infringement of an IPR by the Supplies made by the Supplier and used in conformity with the contract, the Supplier shall be liable to the Purchaser within the time period stipulated in Article VIII No. 2 as follows:

a) The Supplier shall choose whether to acquire, at its own expense, the right to use the IPR with respect to the Supplies concerned or whether to modify the Supplies such that they no longer infringe the IPR or replace them. If this would be impossible for the Supplier under reasonable conditions, the Purchaser may rescind the contract or reduce the remuneration pursuant to the applicable statutory provisions.

b) The Supplier's liability to pay damages is governed by Article XI.

c) The above obligations of the Supplier shall apply only if the Purchaser (i) immediately notifies the Supplier of any such claim asserted by the third party in written form, (ii) does not concede the existence of an infringement and (iii) leaves any protective measures and settlement negotiations to the Supplier's discretion. If the Purchaser stops using the Supplies in order to reduce the damage or for other good reason, it shall be obliged to point out to the third party that no acknowledgement of the alleged infringement may be inferred from the fact that the use has been discontinued.

2. Claims of the Purchaser shall be excluded if it is responsible for the infringement of an IPR.

3. Claims of the Purchaser are also excluded if the infringement of the IPR is caused by specifications made by the Purchaser, by a type of use not foreseeable by the Supplier or by the Supplies being modified by the Purchaser or being used together with products not provided by the Supplier.

4. In addition, with respect to claims by the Purchaser pursuant to No. 1 a) above, Article VIII Nos. 4, 5, and 9 shall apply mutatis mutandis in the event of an infringement of an IPR.

5. Where other defects in title occur, Article VIII shall apply mutatis mutandis.

6. Any other claims of the Purchaser against the Supplier or its agents or any such claims exceeding the claims provided for in this Article IX, based on a defect in title, are excluded.

**X. Impossiblity of performance; adaption of contract**

1. To the extent that delivery is impossible, the Purchaser is entitled to claim damages, unless the Supplier is not responsible for the impossibility. The Purchaser's claim for damages is, however, limited to an amount of 10 % of the value of the part of the Supplies which, owing to the impossibility, cannot be put to the intended use. This limitation shall not apply in the case of mandatory liability based on intent, gross negligence or loss of life, bodily injury or damage to health; this does not imply a change in the burden of proof to the detriment of the Purchaser. The Purchaser's right to rescind the contract shall be unaffected.

2. Where unforeseeable events within the meaning of Article IV No. 2 substantially change the economic importance or the contents of the Supplies or considerably affect the Supplier's business, the contract shall be adapted taking into account the principles of reasonableness and good faith. To the extent this is not justifiable for economic reasons, the Supplier shall have the right to rescind the contract. If the Supplier intends to exercise its right to rescind the contract, it shall notify the Purchaser thereof without undue delay after having realized the repercussions of the event; this shall also apply even where an extension of the delivery period has previously been agreed with the Purchaser.

**XI. Other claims for damages; statute of limitations**

1. The Purchaser has no claim for damages based on whatever legal reason, including infringement of duties arising in connection with the contract or tort.

2. The above shall not apply in the case of mandatory liability, e. g. under the German Product Liability Act ("Produkthaftungsgesetz"), in the case of intent, gross negligence, loss of life, bodily injury or damage to health, or breach of a condition which goes to the root of the contract ("wesentliche Vertragspflichten"). However, claims for damages arising from a breach of a condition which goes to the root of the contract shall be limited to the foreseeable damage which is intrinsic to the contract, unless caused by intent or gross negligence or based on liability for loss of life, bodily injury or damage to health. The above provision does not imply a change in the burden of proof to the detriment of the Purchaser.

3. To the extent that the Purchaser has a claim for damages, it shall be timebarred upon expiration of the statute of limitations pursuant to Article VIII No. 2. The same shall apply to the Purchauser's claims in connection with actions undertaken to avoid any damage (e. g. callback). In the case of claims for damages under the German Product Liability Act, the statutory statute of limitations shall apply.

**XII. Venue and applicable law**

1. If the Purchaser is a businessman, sole venue for all disputes arising directly or indirectly out of the contract shall be the Supplier's place of business. However, the Supplier may also bring an action at the Purchaser's place of business.

2. Legal relations existing in connection with this contract shall be governed by German substantive law, to the exclusion of the United Nations Convention on contracts for the International Sale of Goods (CISG).

**XIII. Severability clause**

The legal invalidity of one or more provisions of this Agreement in no way affects the validity of the remaining provisions. This shall not apply if it would be unreasonable for one of the parties to be obligated to continue the contract.

**– as of June 2005 –**

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**Under www.theben.de you can find the leaflets above as pdf-files.**

In addition, you can find downloads on the Internet at:

- Texts for tenders
- Operating instructions
- Databases
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