theben

EIB KNX

2007

Home & Building System Technology
- Switching actuators
- Dimming actuators
- Binary inputs
- Blind actuators
- Heating actuators
- Single-room temperature regulators
- Motorised actuators
- Weather station
- Motion sensor
- Presence sensors
- Brightness sensors
- Time switches
- Slave clocks
- System devices

An overview of the EIB/KNX product range from Theben

Theben offers everything for the distribution system. Everything complete. Everything perfect.

TR 648 S DCF
16 channel yearly time switch with
4 astronomical channels and
the possibility for PC based programming

TR 612 S
2 channel
weekly
time switch

LUNA 130
brightness sensor
with 3 thresholds
or 4 scenes

RMG 4 S
4 channel
switching actuator, 16 A

and

RMG 4 C load
or high switch-on currents
and capacitive loads

MIX

RME 4 S
4 channel expansion unit,
16 A for the extension to
12 channels

and

RME 4 C load
or high switch-on currents
and capacitive loads

MIX
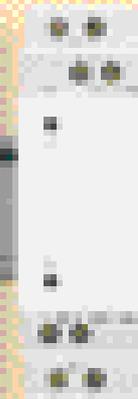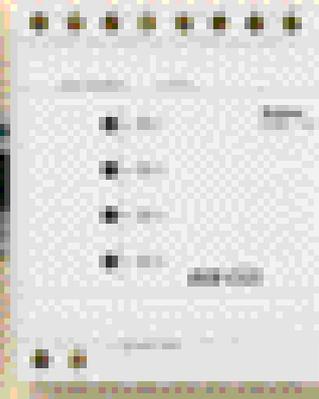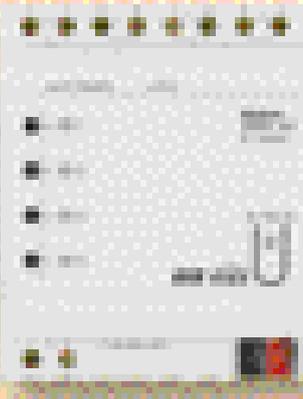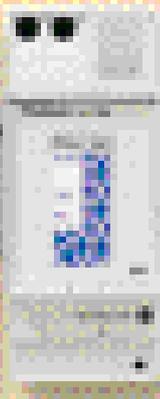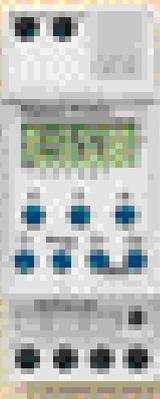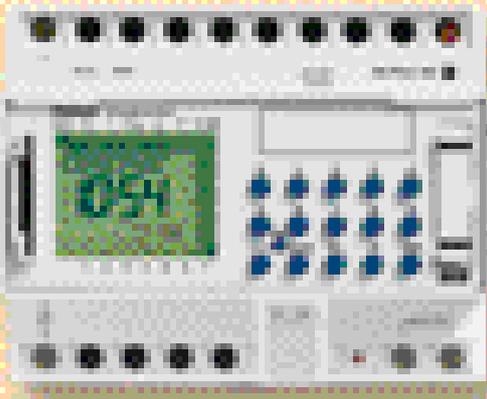
RMG 8
8 channel switching actuator, 10 A
or 4 channel blind actuator

RME 8
8 channel extension unit, 10 A
or 4 channel blind actuator for
JMG 4 or RMG 8

MIX
HMG 4
4 channel heating actuator for
valve actuators

MIX
BMG 6
6-way bina

All that is needed for switching and dimming lighting, for controlling blinds, for controlling radiators and underfloor heaters, for controlling processes according to time or daylight. Theben simply has everything for the distribution system along with the matching system components.

DMG 2
2 channel Universal
dimming actuator,
2 x 300 W/VA or
1 x 500 W/VA
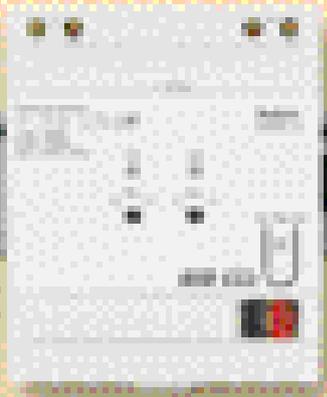
DME 2
2 channel dimming
extension module to
max. 6 channels
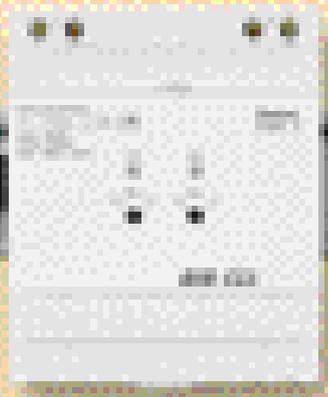
DMB 2
Performance extension
for DMG 2 and DME 2
for doubling
the dimming power,
2 x 600 W/VA or
1 x 1.000 W/VA

JMG 4
4 channel blind actuator, 8 A

and

JMG 4 24VDC
4-channel blind actuator for
DC motors
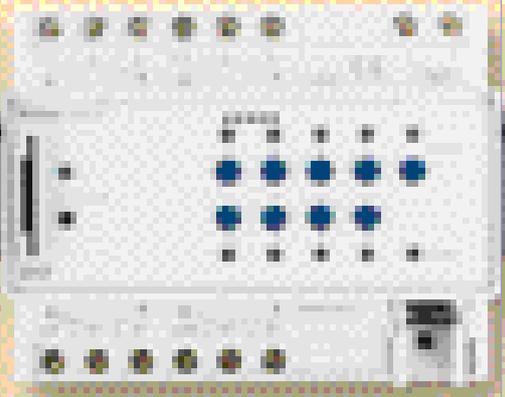
ary input

JME 4S
Relay outputs for 4 drives

Power supply
640 mA

Interface
USB

Line coupler

An overview of the EIB/KNX product range from Theben

EIB KNX - An overview of building solutions

Brightness sensor

LU 131 S
1–100.000 Lux
▶ page 84–85, (61,86–87)

Time switch

TR 644 S DCF
4 channels
quartz- or radio-controlled
▶ page 90–91, (89)

Room thermostat

RAM 713 S, RAM 713 FC
Room temperature controller,
Fan Coil regulator
▶ page 42–49, (53)

Radiator

CHEOPS
Motorised actuation
▶ page 54–59, (60)

Heating

HMG 4, HMT 6
Heating actuator, Heating
actuator for floor heating
▶ page 14–17, 38–41

### Binary input for flush mount

TA 6
Modules with 2–6 channels
with output for LED
▶ page 26–29
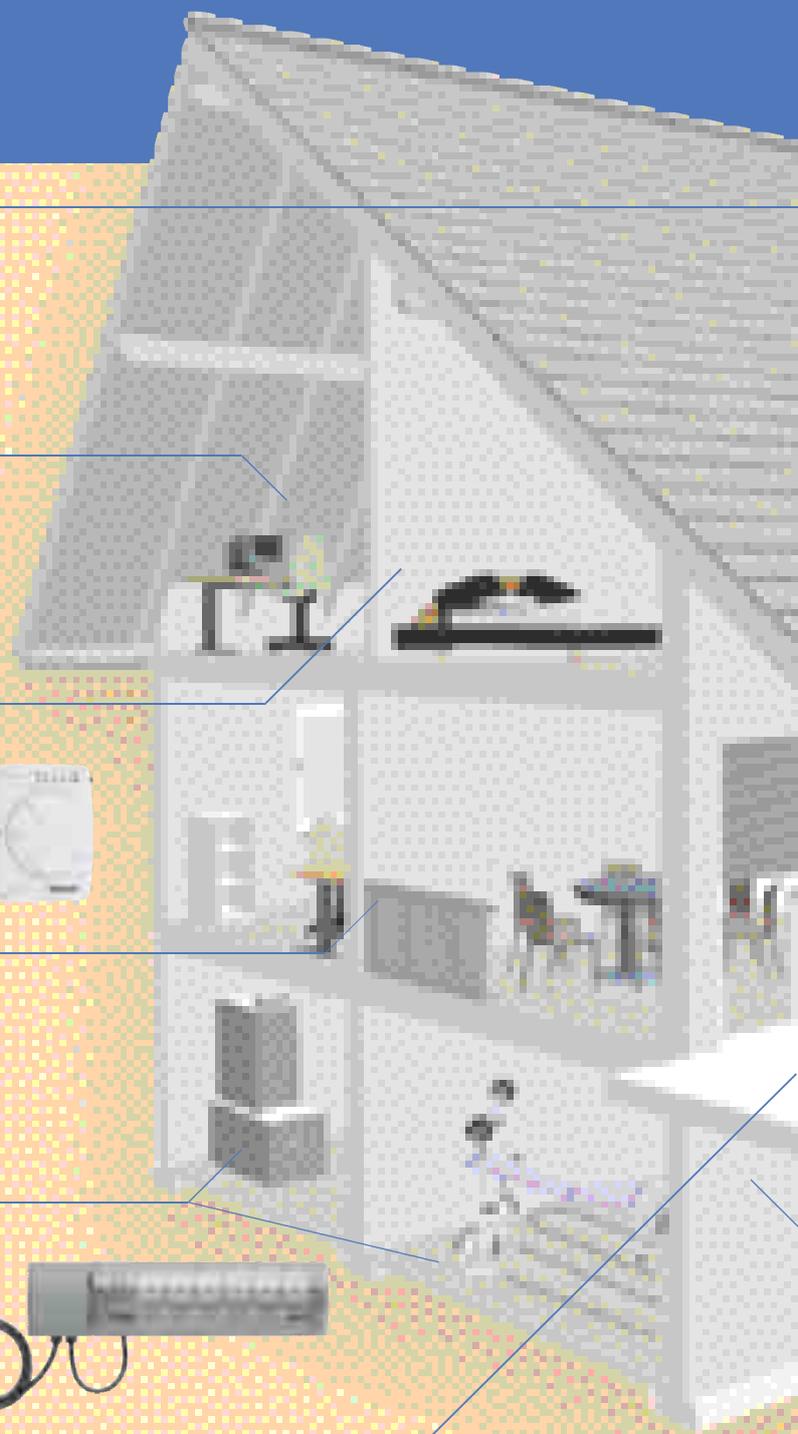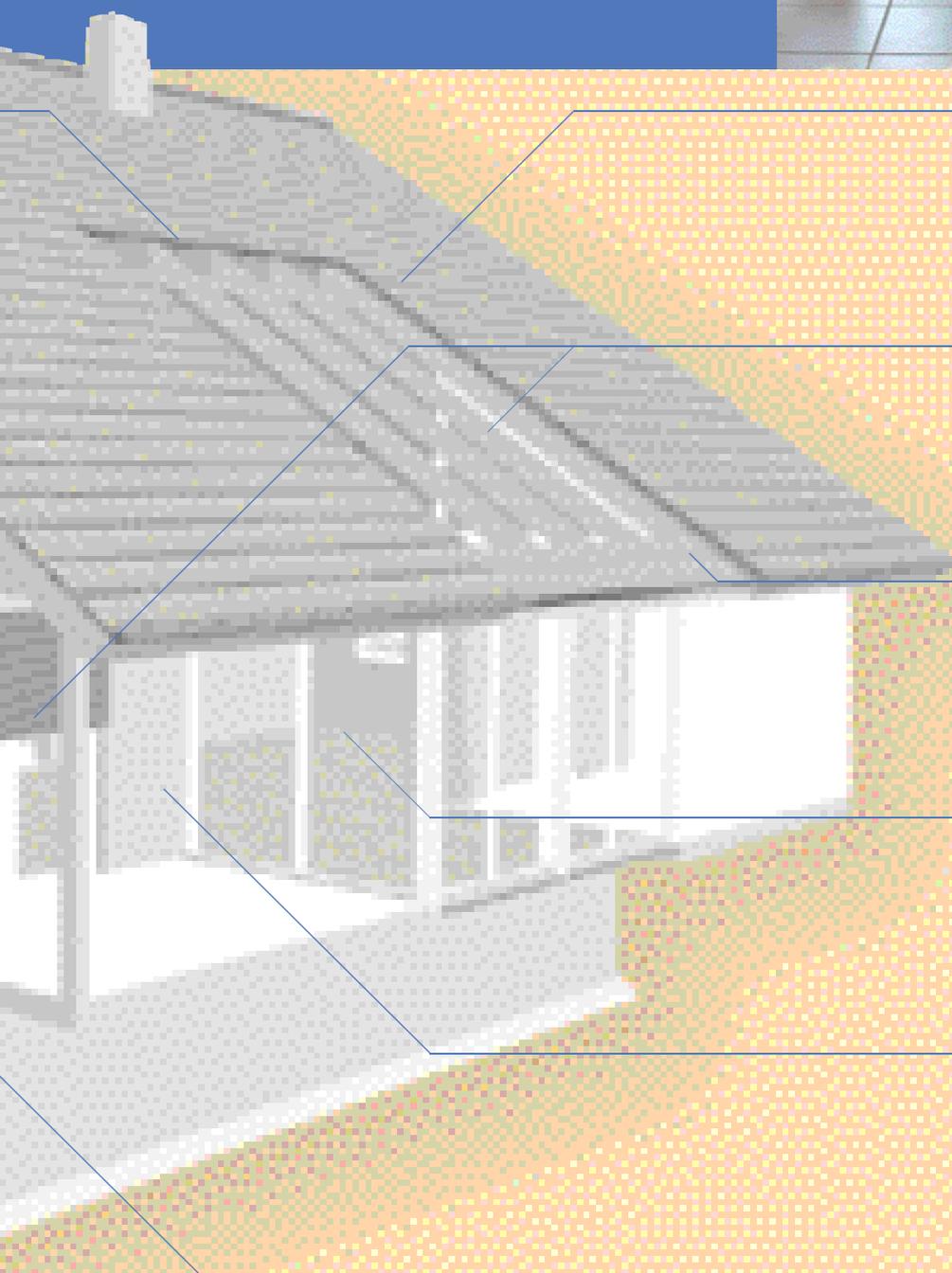
Weather station

Weather station
Combination device
▶ page 62–65

Blinds/roller shutters

JMG 4S + JME 4S
4 – 12 channels
▶ page 18–21, (30–37)

Switching/Dimming

RMG 4S + RME 4S, DMG 2
Switching actuators, Dimming
actuators, binary inputs
▶ page 6–13, (22–25, 30–37)

Light control

HTS presence sensors
▶ page 70–83, (66–69)

Time display

OSIRIA
Wall clocks, time transmitter
▶ page 94–99, (88)

System components

Power supply
USB interface
Line coupler
▶ page 100–103

Switching actuators of the MIX-series RMG 4 S, RME 4 S, RMG 4 C load, RME 4 C

Makes almost anything possible – the modular concept for switching electrical products on and off

RMG 4 S (base module)
• 4-channel switching actuator

RME 4 S (extension module)
• 4-channel switching actuator

RMG 4 C load (base module)
• 4-channel switching actuator

RME 4 C load (extension module)
• 4-channel switching actuator

Description

The MIX-series is a series of devices, consisting of base modules (e.g. RMG 4 S or RMG 4 C load) and extension modules (e.g. RME 4 S or RME 4 C load). To one basis module of this series, up to 2 extension modules of this series can be connected.

Every channel of these switching actuators has an LED for displaying what state the switch is in and a hand switch with the On/Off/bus positions. The switching actuators can adopt a parameterized state within 1 second after the return of mains power and are therefore suited for use in units in accordance with VDE 0108. The properties of the basic functions of switching, delay switching and pulse function can be set by means of parameters.

RMG 4 C load base module, 4 channels

RME 4 S extension module, 4 channels

The following can also be parameterized: no. per channel links, contact type (contact breaker/ contact maker) along with the activation upon central commands such as steady-On, steady-Off, central switching and storing/calling scene.

Characteristics

- Switching power 16 A, extendable to 12 channels
- Feedback object for each channel
- Central objects with and without priority
- Switching functions: On/Off, pulse, On/Off-delay, stairway light with pre-warning in accordance with DIN 18015-2
- Logical operations: Disable, AND, Enable, OR
- Calling and storing scenes
- Adjustable reaction to bus failure
- Adjustable reaction to the return of bus or mains activity
- Hand switch with On, Off, bus, switching also without bus voltage

Advantages

- The free combination of switching, dimming, control of blinds and heating, as well as binary inputs, all increase flexibility and reduce system costs
- There are even hand switches for dimming modules; they make the installation easier
- Extensions reduce the channel price considerably

Technical data: RMG 4 S/RME 4 S
Supply voltage provided by the current net
Operating voltage: 230 V AC ± 10 %, 50 Hz
Power consumption: 2.5 VA

Supply voltage provided by the EIB net
Power consumption: max. 10 mA
Connection: Bus terminal

Output number: 4 closing contacts
Type of contact: floating
Rated voltage: 230 V AC, 50 to 60 Hz
Rated current: 16 A/250 V AC, cos φ = 1
10 A/250 V AC, cos φ = 0.6
Switching of different phases: possible
Switching SELV: possible if all 4 channels of a SELV module can switch

Switching capacity
Ohmic load: 3.680 W
Capacitive load: max. 42 µF
Incandescent lamp load: 2.300 W
HV halogen lamp load: 2.300 W
**Fluorescent lights
uncompensated:**
26 x 40 W, 20 x 58 W, 10 x 100 W
parallel compensated: 10 x 40 W (4.7 µF),
20 x 58 W (7.0 µF), 2 x 100 W (18 µF)
Dual switch (KVG): 10 x (2 x 58 W),
5 x (2 x 100 W)

**Technical data: RMG 4 C load/
RME 4 C load**
Supply voltage provided by the current net
Operating voltage: 230 V AC ± 10 %, 50 Hz
Power consumption: 2.5 VA

Supply voltage provided by the EIB net
Power consumption: max. 10 mA
Connection: Bus terminal

Output number: 4 closing contacts
Type of contact: floating
Rated voltage: 230 V AC, 50 to 60 Hz
Rated current: 16 A/250 V AC, cos φ = 1
16 A/250 V AC, cos φ = 0.6
Switching of different phases: possible
Switching SELV: possible if all 4 channels of a SELV module can switch

Housing: 45 x 72 x 60 cm (4 modules)

Switching capacity
Ohmic load: 3,680 W
Capacitive load: max. 200 µF
Incandescent lamp load: 3.680 W
**Fluorescent lights
uncompensated:** 3.680 W
parallel compensated: 2.500 W/200 µF
Dual switch: 3.680 W

| Order no:		Order no:	
RMG 4 S EIB/KNX	491 0 204	RMG 4 C load EIB/KNX	491 0 206
RME 4 S EIB/KNX	491 0 205	RME 4 C load EIB/KNX	491 0 207

Application software RMG 4 S, RME 4 S, RMG 4 C load, RME 4 C load

Every channel has its own feedback object. The various channels can be assigned to the central objects. In this regard, a central steady On/Off has a higher priority.
By means of the scene object, scenes are taught-in and called up.

- 104 group addresses
- 105 possible associations
- 68 objects

	0	Switch ON/OFF	BM RM04 Channel 1	1 Bit
	4	Feedback	BM RM04 Channel 1	1 Bit
	5	Switch ON/OFF	BM RM04 Channel 2	1 Bit
	9	Feedback	BM RM04 Channel 2	1 Bit
	10	Switch ON/OFF	BM RM04 Channel 3	1 Bit
	14	Feedback	BM RM04 Channel 3	1 Bit
	15	Switch ON/OFF	BM RM04 Channel 4	1 Bit
	19	Feedback	BM RM04 Channel 4	1 Bit
	60	Switch ON/OFF	Central continuous ON	1 Bit
	61	Switch ON/OFF	Central continuous OFF	1 Bit
	62	Switch ON/OFF	Central switching	1 Bit
	63	Access/save scene	Scene	1 Byte

Selection of the extension modules

The base module can be extended by up to 2 extension modules. The function of the extension module (switching/dimming actuator) can simply be set via parameters.

Advantage:

- Inexpensive extension modules reduce the channel price
- The unlimited combination of switching and dimming actuators reduces the system costs
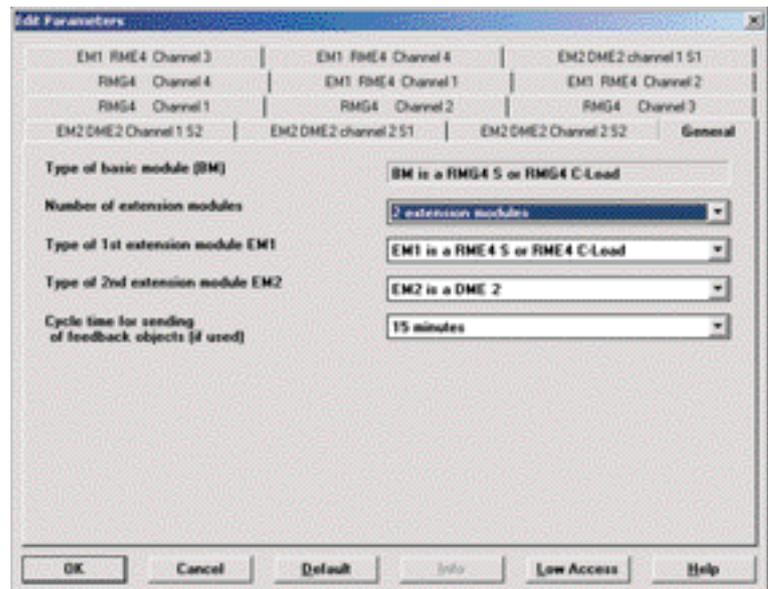
Switching functions

You may select from the following switching functions:

- Switch On/Off
- Delay On/Off
- Pulse function
- Automatic stairway lighting with pre-warning function

Advantage:

- Extensive switching functions possible on all channels

Central switching

Every channel can involve central objects with priority (central steady-On, central steady-Off) as well as without priority (central switching).

Advantage:

- Less need of group addresses
- Forced guidance by means of priority switches
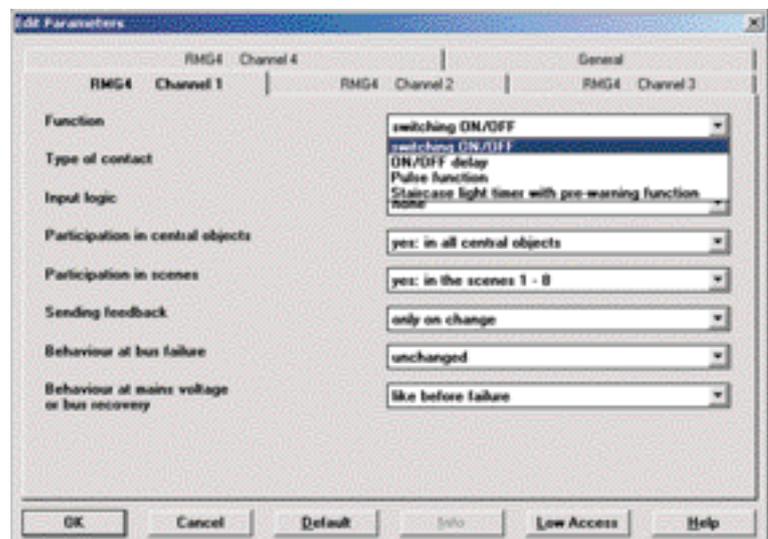
Logical operations

An array of logical operations can be selected on every channel:
• Disable
• OR
• AND
• Enable

Advantage:
• Variety of application options of the actuators

You can choose how the system should react when the bus fails and when the bus/mains is restored. This permits the actuators to be used in units in accordance with VDE 0108.
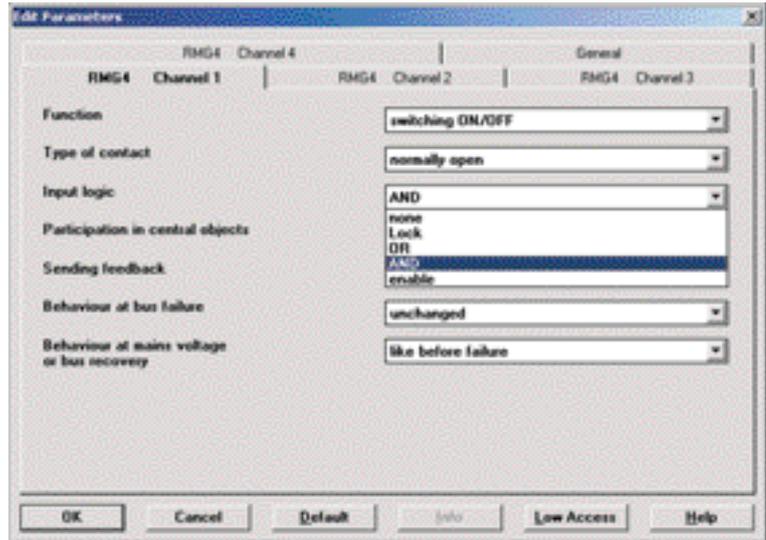
Contact type

The contact can be parameterized as
• CONTACT BREAKER
   or
• CONTACT MAKER
for the functions "Switch On/Off" and "Pulse function".

The time functions can be set to determine if the pulse should start again after the bus/mains is reactivated.
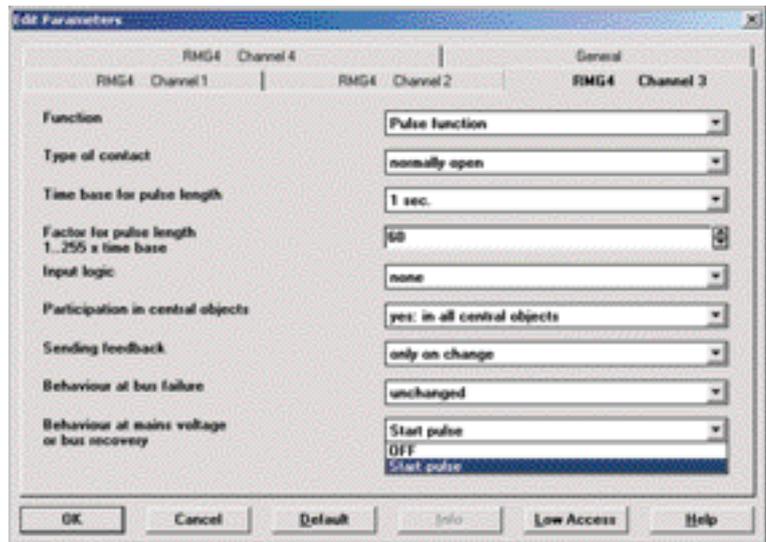
Combination options of the MX-series

1st row: switching 12 channels
2nd row: switching 12 channels C-Load
3rd row: dimming 6 channels

RMG 4 S   RME 4 S   RME 4 S

RMG 4 C load   RME 4 C load   RME 4 C load

DMG 2   DME 2   DME 2   DMB 2

switching

9

Universal dimming actuators of the MX-series   DMG 2, DME 2, DMB 2

Comfort everywhere – the dimming actuators that allow you to dim all incandescent lighting

DMG 2 (base module)
• Universal-Dimmer

DME 2 (extension module)

DMB 2 "Booster" (power extension)

Description

The MX-series is a series of devices, consisting of base modules (e.g. DMG 2) and extension modules (e.g. DME 2). A total of 2 extension modules of this series can be connected to one base module of this series.

The universal dimmer DMG 2 is a device for serial installation. By means of both outputs, it can dim or switch a group of electrical consumers such as, e.g. incandescent lights, high-voltage halogen lamps as well as low-voltage halogen lamps with conventional or electronic transformers connected upstream.
If a dimming channel of a base or extension module is connected in parallel with a DMB 2 channel the power doubles.

DMB 2 "Booster"
power extension
by parallel connection
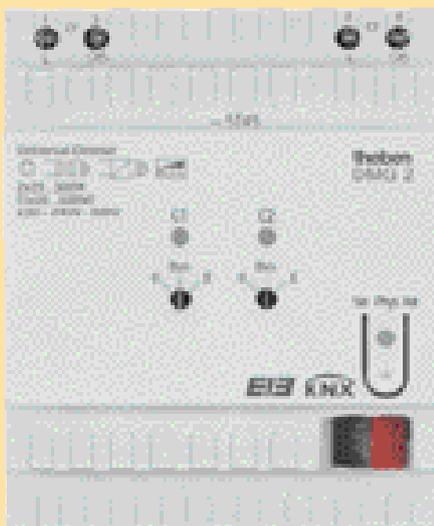
DMG 2 base module

DME 2 extension module

Characteristics

- Dimming power each base and extension module: 2 x 300 W/VA or 1 x 500 W/VA with the following combination options:
  - 6 x 300 W/VA
  - 4 x 300 W/VA + 1 x 500 W/VA
  - 2 x 300 W/VA + 2 x 500 W/VA
  - 3 x 500 W/VA
- By using the dimming booster DMB 2, the dimming power of each device can be doubled to:
  - 2 x 600 W/VA or 1 x 1.000 W/VA
- Central objects with and without priority
- Automatic load detection
- Diagnosis and feedback objects
- Adjustable reaction to bus failure
- Adjustable reaction to the return of bus or mains activity
- Hand switch for On, Off, bus, switching also without bus voltage
- Dimming extensions can be combined with the switching base module any way you want

Advantages

- Allowing for any combination of switching and dimming helps in attaining a very convenient channel price
- Up to 6 x dimming through extensions
- There are hand switches even for dimming modules; they make the installation easier

Technical data

Voltage: 230 V AC, 50 Hz
Minimum load: 10 W/VA
Own power requirement: < 0.5 W
EIB power supply: < 10 mA

Output
Channels per module: 2

Maximum load
Symmetrical: 2 x 300 W/VA
Unsymmetrical: 1 x 500 W/VA
Example for unsymmetrical load:
1 x 400 and 1 x 100 W/VA
Cable length dimmer load: max. 100 m
Circuit protection:
automatic circuit-breaker Characteristics B 16 A

Clamp cross section: solid 0.5 mm²
Ø 0.8 up to 4 mm² strand with cable end sleeve 0.5 mm² up to 2.5 mm²
Admissible ambient temperature:
−5 °C ... +45 °C
Protection class:
II when installed correctly
Protection type:
IP 20 in accordance with EN 60529
Device standard: EN 60669
Housing: 45 x 72 x 60 mm (4 modules))

Order numbers:

DMG 2 EIB EIB/KNX	491 0 220
DME 2 EIB EIB/KNX	491 0 221
DMB 2 EIB EIB/KNX	491 0 222

Each channel can be actuated with 1 bit, 4 bit and 1 byte. An additional switching option is available using the "Soft switching" object; by this means, a previously set time sequence can be called.

The various channels can be assigned to central objects. In this case, "Central steady On/Off" has a higher priority.

By means of the scene object, scenes are stored and called up.

- 104 group addresses
- 105 possible associations
- 68 objects

	0	Switch ON/OFF	BM DM02 channel 1	1 Bit
	1	brighter/dimmer	BM DMG2 channel 1	4 Bit
	2	dimming value	BM DMG2 channel 1	1 Byte
	3	Soft switch	BM DMG2 channel 1	1 Bit
	5	Feedback in %	BM DMG2 channel 1	1 Byte
	6	Feedback ON/OFF	BM DMG2 channel 1	1 Bit
	7	general error message	BM DMG2 channel 1	1 Bit
	9	Status message (Bitset)	BM DM02 channel 1	1 Byte
	10	Switch ON/OFF	BM DM02 channel 2	1 Bit
	11	brighter/dimmer	BM DM02 channel 2	4 Bit
	12	dimming value	BM DM02 channel 2	1 Byte
	13	Soft switch	BM DM02 channel 2	1 Bit
	60	Switch ON/OFF	Central continuous ON	1 Bit
	61	Switch ON/OFF	Central continuous OFF	1 Bit
	62	Switch ON/OFF	Central switching	1 Bit
	63	Access/save scene	Scene	1 Byte

Selection of the extension modules

The base module can be extended by up to 2 extension modules. The type of the extension module (switching/dimming actuator) can simply be created via parameters.

Advantage:

- Extension of the channels reduces the channel price
- The unlimited combination of switching and dimming actuators reduces the system costs

For the function of the switching actuator, see RMG 4 S (page 6)
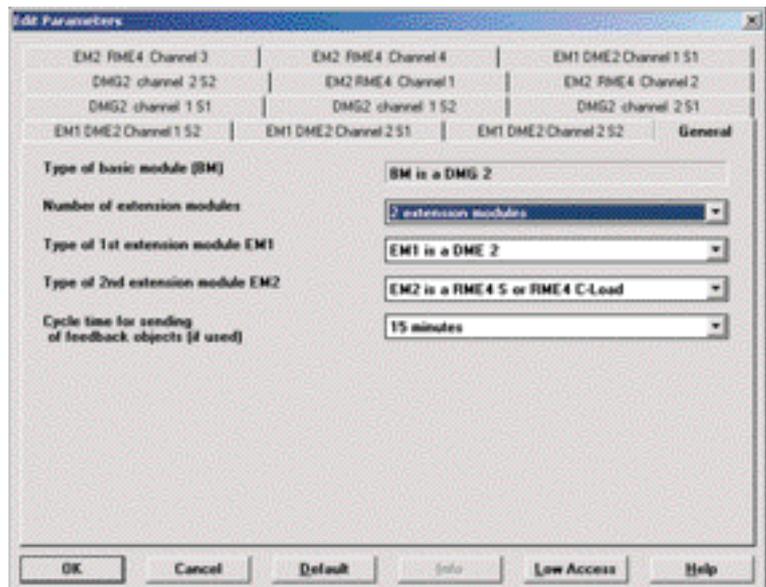
Dim settings

The dimming range can be limited by setting a minimum brightness. Furthermore, it can be set if a dimming value is approached or jumped to. The switch-on brightness defines how the light is to act when switched on (with 1 bit).

Advantage:

- The optional settings allow the customer to program dimming behavior according to his individual wishes.

Central switching

Every channel can involve central objects with priority (central steady-On, central steady-Off) as well as without priority (central switching).

Advantage:

- Less need of group addresses
- Forced guidance by means of priority switches

Application software DMG 2, DME 2, DMB 2
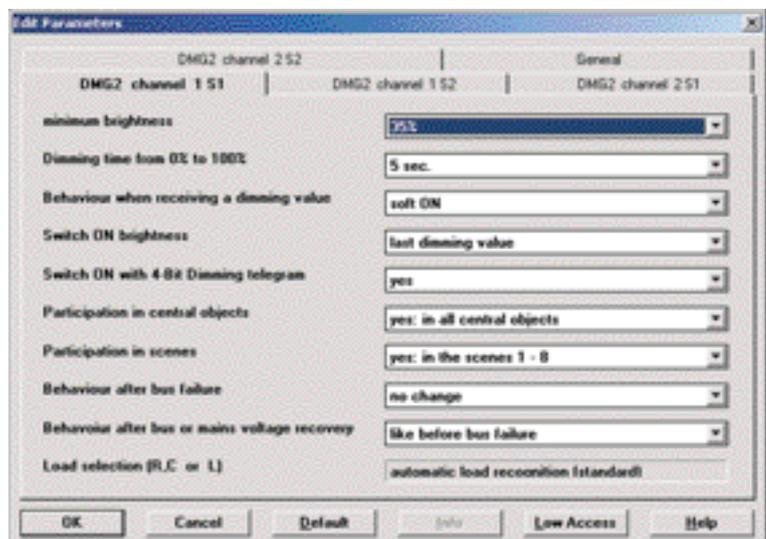
Dimmer settings

A dimming time sequence can be defined by means of soft switching, e. g., can be slowly dimmed up over the period of one hour.
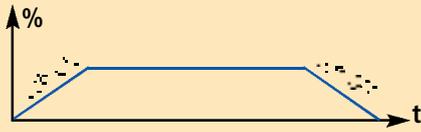
Feedback object

Every channel can signal back the dimming value (1 byte) and the status (On/Off). Various diagnosis objects are also available.
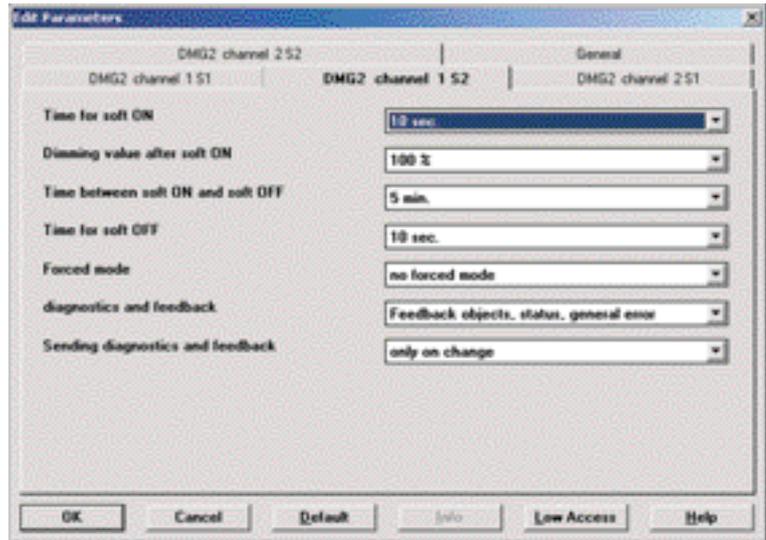
RMG 4 S   RME 4 S   RME 4 S

RMG 4 C load   RME 4 C load   RME 4 C load

DMG 2   DME 2   DME 2   DMB 2

13
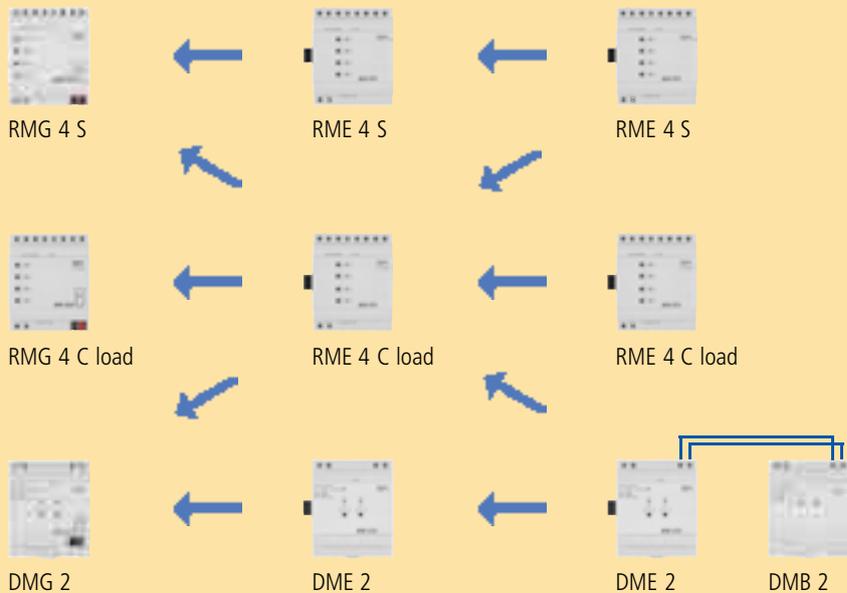
Heating actuators of the MIX series HMG 4, HME 4

Small and silent – the new heating actuators with pump control

HMG 4 (basic module)
• 4-channel heating actuator

HME 4 (upgrade module)
• 4 channel upgrade module
(for expansion up to 12 heating channels)

Actuator ALPHA 4 230 V~
Actuator ALPHA 4 24 V
(see Page 60)

Description
The MIX series is a range of devices comprising of basic modules (e.g. HMG 4) and upgrade modules (e.g. HME 4).
Up to 2 upgrade modules can be connected in series to the basic modules in this series.

The heating actuators control thermal positioning actuators based on the control variable of the room temperature controller, and make it possible to integrate a boiler control. It is also possible to control a circulation pump directly via the actuator.
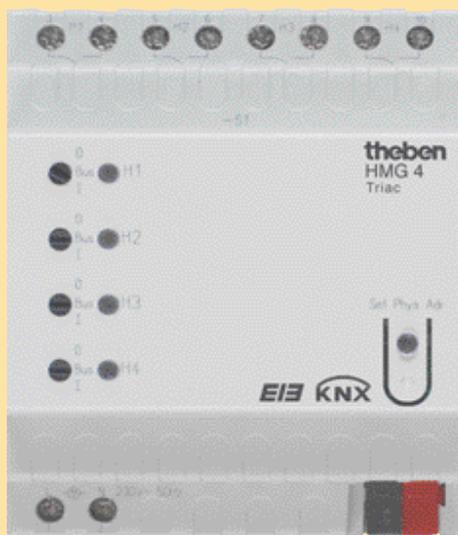
HMG 4 basic module
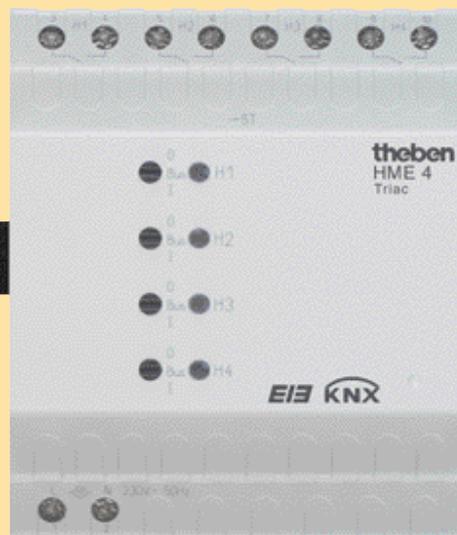
HME 4 upgrade module

Characteristics

- Silent semiconductor switch
- 4 floating outputs 24–250 V AC
- Up to 5 positioning actuators per channel
- 4 LEDs for the status display
- 4 ON/OFF/BUS rotary switches
- Continuous or switching control variable selectable
- Compulsory object for each channel
- Emergency program in case of bus and message failure
- Summer operation (prevents unwanted heating in summer) and valve protection
- Pump control directly by the actuator
- Minimum and maximum control variables are adjustable, generating various responses to falling below or exceeding the control variables (individually selectable)
- Determining the maximum control variables for all channels to integrate the boiler control

Advantages

- The free combination of switching, dimming, control of blinds and heating, as well as binary inputs, all increase flexibility and reduce system costs
- Upgrades enable up to 12 heating channels
- Low cost upgrade modules reduce channel price
- Pump control directly by the actuator
- By determining the largest control variable for all channels and sending it to the boiler control it is possible to adjust the feed temperature, thus achieving energy savings up to 30%
- Easy start-up via manual switch

Technical data:
Operating voltage: 230 V/240 V, ± 10 %
Nominal frequency: 50–60 Hz
Power consumption: max. 2.5 VA

Bus power supply
EIB power supply: max. 10 mA
(incl. 2 upgrades)
Connection: Bus terminals

Output: Triac
Quantity: 4
Switching capacity: 0.5 A
Up to 5 thermal positioning actuators per output

Permissible ambient temperature:
–5 °C ... +45 °C
**Protection class:**
II subject to correct installation
Protection rating: IP 20 in accordance with EN 60529
Housing: 45 x 72 x 60 mm (4 modules)

Order no:

HMG 4 EIB/KNX	491 0 210
HME 4 EIB/KNX	491 0 211

A continuous or switching control variable can be selected for each channel. There is also an object for compulsory operation available for each channel. If a channel is in the emergency program, e.g. because of failure of a thermostat, this fact can also be reported on the bus. Additionally an object for direct control of the pump is now available. The largest of all of the control variables can be used to integrate the boiler control.

- 110 group addresses
- 111 possible associations
- 64 objects

0	Continuous actuating value	GM HMG4	Channel 1	1 Byte
1	forced operation	GM HMG4	Channel 1	1 Bit
2	indicate timeout of actuating value	GM HMG4	Channel 1	1 Bit
3	Continuous actuating value	GM HMG4	Channel 2	1 Byte
4	forced operation	GM HMG4	Channel 2	1 Bit
5	indicate timeout of actuating value	GM HMG4	Channel 2	1 Bit
6	Continuous actuating value	GM HMG4	Channel 3	1 Byte
7	forced operation	GM HMG4	Channel 3	1 Bit
8	indicate timeout of actuating value	GM HMG4	Channel 3	1 Bit
9	Continuous actuating value	GM HMG4	Channel 4	1 Byte
10	forced operation	GM HMG4	Channel 4	1 Bit
11	indicate timeout of actuating value	GM HMG4	Channel 4	1 Bit
12	Summer operation ON/OFF	GM HMG4	Summer operation	1 Bit
13	Highest actuating value HMG 4	GM HMG4	highest actuating value	1 Byte
14	Pump-ON/OFF	GM HMG4	Pump	1 Bit
60	For RMG(E)4S and DMG(E)2	Central continuous ON		1 Bit
61	For RMG(E)4S and DMG(E)2	Central continuous OFF		1 Bit
62	For RMG(E)4S and DMG(E)2	Central switching		1 Bit
63	For RMG(E)4S and DMG(E)2	Access/save scene		1 Byte

Selection of upgrade modules

The basic module can be expanded by adding up to 2 upgrade modules. The type of upgrade module (switching, dimming, blinds or heating actuator or binary input) can be created easily using the parameters.

Advantages:

- Upgrading the channels reduces the channel price
- Combination of various functions in any way desired reduces the system costs

For all of the combination options, see Pages 104/105.

Pulse width modulation

The control variable is converted within the PWM period (Pulse Width Modulation) into In and Out cycles.

Advantages:

- The continuous regulator can send a value to the heating actuator, which is processed immediately by the actuator
- Improved room temperature

Limiting the control value

By limiting the maximum control variable it is possible to prevent continuous pressure from being exerted on the wax cartridge of the thermal positioning actuator. This increases the service life of the thermal drive.
Limiting the minimum control variable can be used for the base temperature in underfloor heating systems, or to suppress very short cycles, for example.

Heating

Application software HMG 4, HME 4
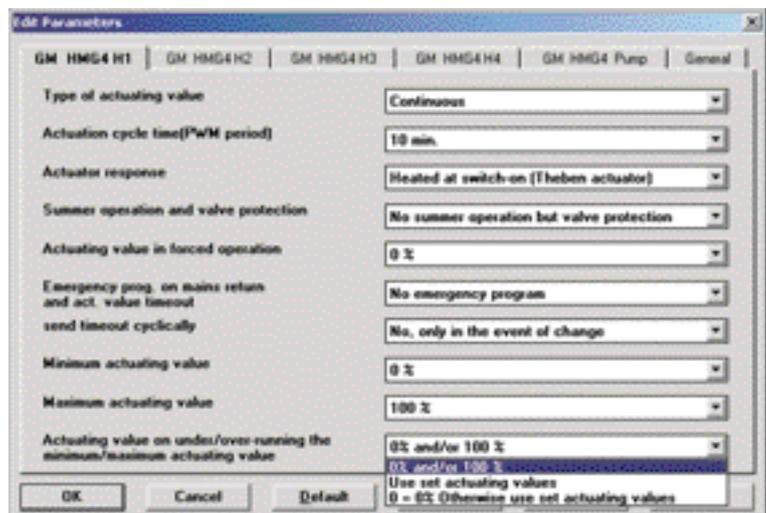
Pump control and largest control variable

Each channel can be optionally be taken into account in the pump control and when determining the "largest control variable".
The recirculation pump is switched on when a channel issues a heat requirement. By determining the largest control variable for all channels and sending it to the boiler control it is possible to adjust the feed temperature, thus achieving energy savings up to 30%

Advantages:
• Energy-saving use of the heating system
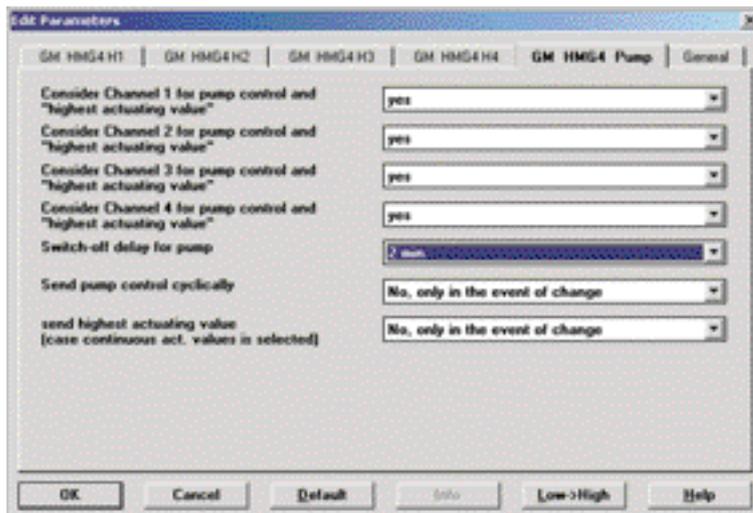
Application example
Individual room control with radiator/convector heating

❶ Temperature controller RAM 713 is installed in each room and connected to the bus
❷ An EIB timer enables needs-driven temperature control using weekly or yearly programs, e.g. for schools, offices, etc.
❸ HMG 4 heating actuator controls the
❹ thermal Theben actuators on the radiators
❺ Optional: window monitoring, i.e. prevention of unwanted heating when a window is open

Application example for HMG 4 with BME 6 binary input
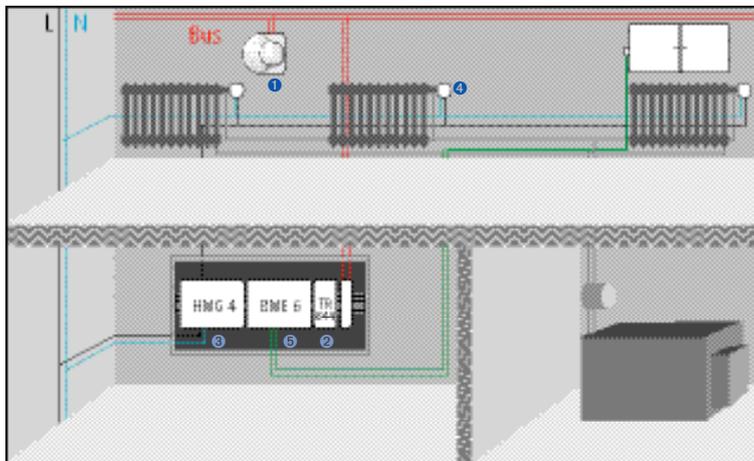
4–12 channel blinds actuator of the MIX series JMG 4S, JME 4S

The ideal solution for blinds, shutters and awnings

JMG 4S (basic device)
- Relay outputs for 4 drives
- Suitable for the control of drives for blinds, shutters, awnings and skylights

JME 4S (upgrade device)
- Relay outputs for 4 drives
- Mixed use of drive and switch functions possible as required
- Upgrade for RMG 4S, RMG 4 C load, DMG 2, BMG 6

Description

The series is a collection of devices consisting of basic modules (e.g. JMG 4S) and upgrade modules (e.g. JME 4S).
Up to 2 upgrade modules can be connected in series to the basic modules in this series.

The phase sequence and runtime of motors can be controlled per channel. The manual switches operate UP/DOWN actions. The relays switching status are displayed via LEDs.

JMG 4S basic module
4 drives

JME 4S upgrade module
4 drives
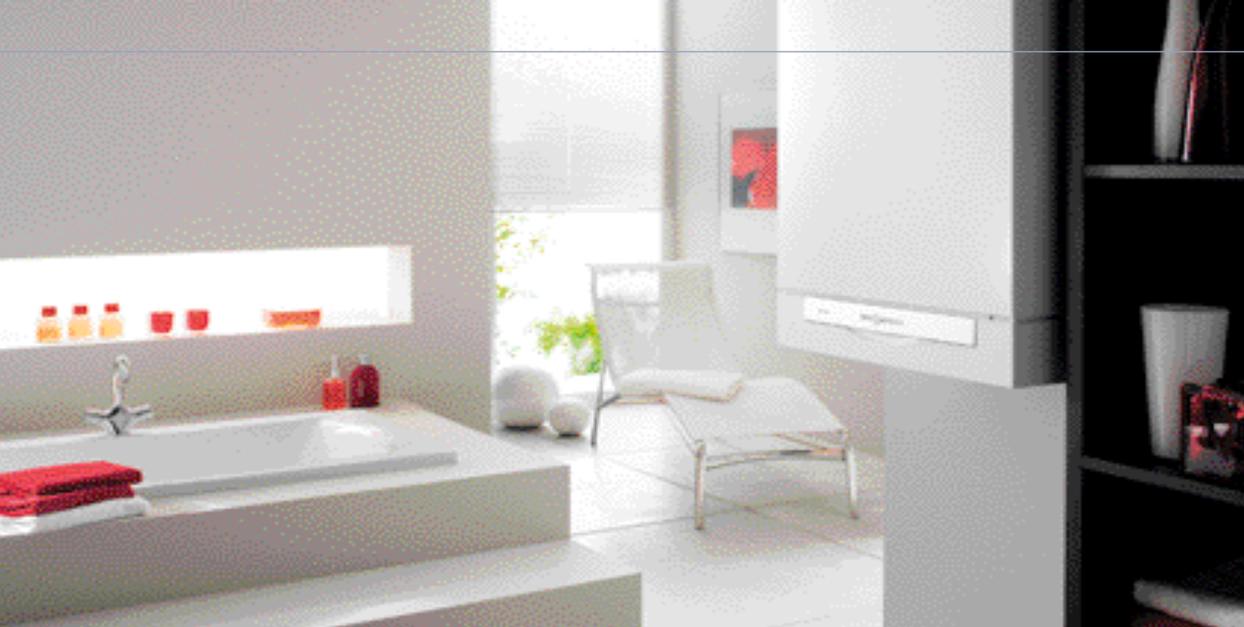
Characteristics

- Drive controls for controlling blinds, shutters and various solar and visual protective devices and for skylights as well as ventilation flaps
- 4 output channels each with a floating UP and a floating DOWN contact
- Manual UP and DOWN key for each channel
- LED UP and DOWN display for each channel

Advantages

- The free combination of blinds and heating controls, switching, dimming as well as binary inputs all increase flexibility and reduce system costs
- Modular upgrading for 4 to 12 blinds
- Copy function for fast configuration
- Manual operation on device, e. g. for installation test of drives possible without bus voltage
- LED output status display
- Simple input of runtimes
- Central UP/DOWN object
- 3 safety objects provide a façade-based response
- Flexible reaction to safety telegrams: Individually adjustable for each drive for start and end of the safety status
- Selectable response in event of bus failure as well as with the return of bus/mains voltage
- Feedback of drive positions for building visualisation

Technical data:

Operating voltage: 230 V, ± 10 %
Nominal frequency: 50 Hz
Power consumption: < 2.5 VA

Power supply from the bus (JMG 4S only)
Power draw: < 8 mA
Bus connection: Bus terminals

Output
Contact material: $AgSnO_2$
Type of contact: NO contact, floating
Switching capacity: 3 A, $\cos \varphi = 1$

Permissible ambient temperature:
−5 °C ... +45 °C
Protection class:
II subject to correct installation
Protection rating: IP 20 in accordance with EN 60529
**Housing:** 45 x 72 x 60 mm (4 modules)

Order numbers:

JMG 4S EIB/KNX	491 0 250
JME 4S EIB/KNX	491 0 251

manual

C1   C2   C3   C4
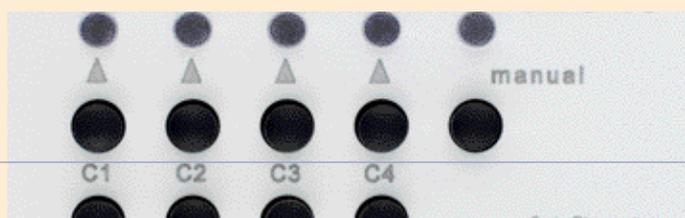
Every channel can be used as required either as a blinds channel, as shutters channel or as general drive channel.
Centralobject 63 (call up/save scenes) and safety objects 64 to 66 as well as central UP/DOWN object 67 are available as central objects.

- 104 group addresses
- 105 possible associations
- 68 possible objects

0	Up / Down	BM JMG4 S	C1	1 Bit
1	Step / Stop	BM JM04 S	C1	1 Bit
2	% Height	BM JM04 S	C1	1 Byte
3	% Slats	BM JM04 S	C1	1 Byte
4	Lock obj. % height and % slats	BM JM04 S	C1	1 Bit
5	Up / Down	BM JM04 S	C2	1 Bit
6	Step / Stop	BM JM04 S	C2	1 Bit
7	% Height	BM JM04 S	C2	1 Byte
8	% Slats	BM JM04 S	C2	1 Byte
9	Lock obj. % height and % slats	BM JMG4 S	C2	1 Bit
19	Lock obj. % height and % slats	BM JMG4 S	C4	1 Bit
60	For RMG(E)4S and DMG(E)2	Central continuous ON		1 Bit
61	For RMG(E)4S and DMG(E)2	Central continuous OFF		1 Bit
62	For RMG(E)4S and DMG(E)2	Central switching		1 Bit
63	For RMG(E)4S and DMG(E)2	Access/save scene		1 Byte
64	For JMG(E)4 S	Central contoller Safety 1		1 Bit
65	For JMG(E)4 S	Central contoller Safety 2		1 Bit
66	For JMG(E)4 S	Central contoller Safety 3		1 Bit
67	For JMG(E)4 S	Central up/down		1 Bit

Selection of upgrade modules
The basic module can be expanded by adding up to 2
upgrade modules.
The type of upgrade module (switching, dimming, blinds or heating module or binary input) can easily be created using the parameters.
Advantages:
- Upgrading the channels reduces the channel price
- Any combination of various functions can reduce the system costs

**See pages 104/105
for possible combinations.**
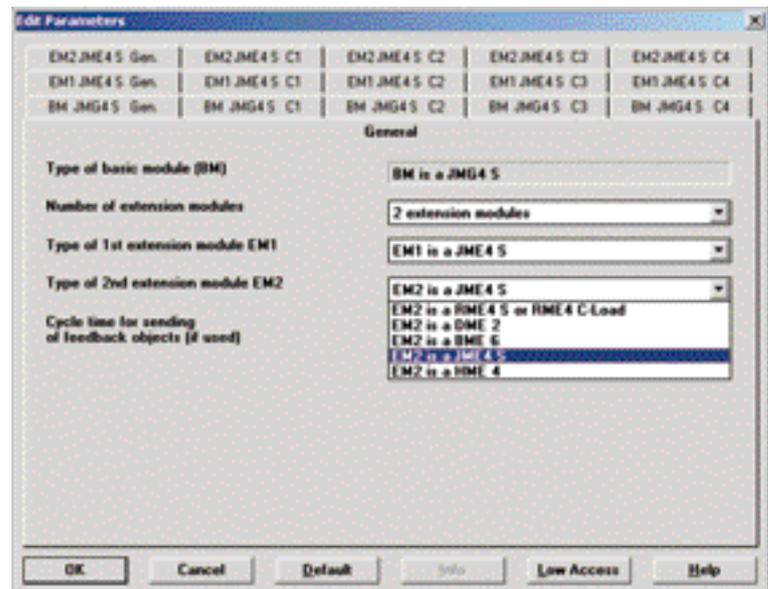
Blinds drive
For the blinds drive the runtime fully "Up", the time for the turning the slats and the steps required to completely turn the slats is selected.
The desired number of steps (step number) to fully turn the slats can be set as required.
**Advantages:**
- Simple input of curtain runtimes
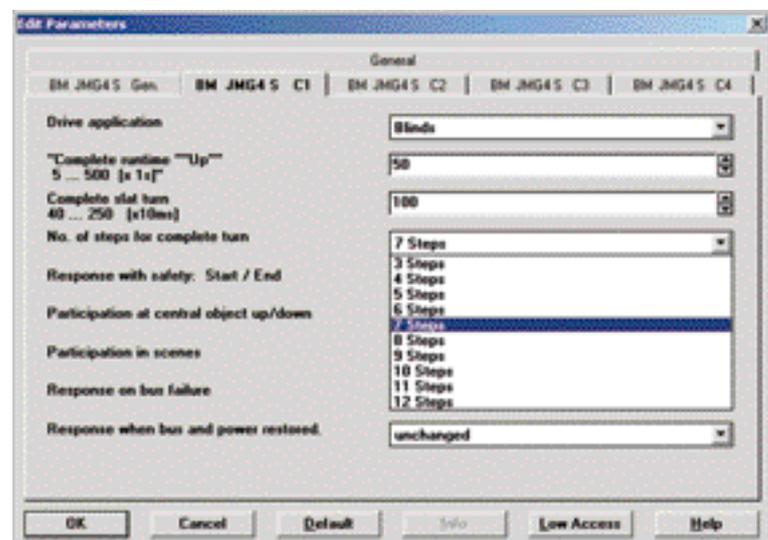
Blinds drive

Set responses can be configured for the safety objects. Selectable response in event of bus failure as well as in the event of return of bus/mains voltage.

Advantages:

- Flexible safety functions
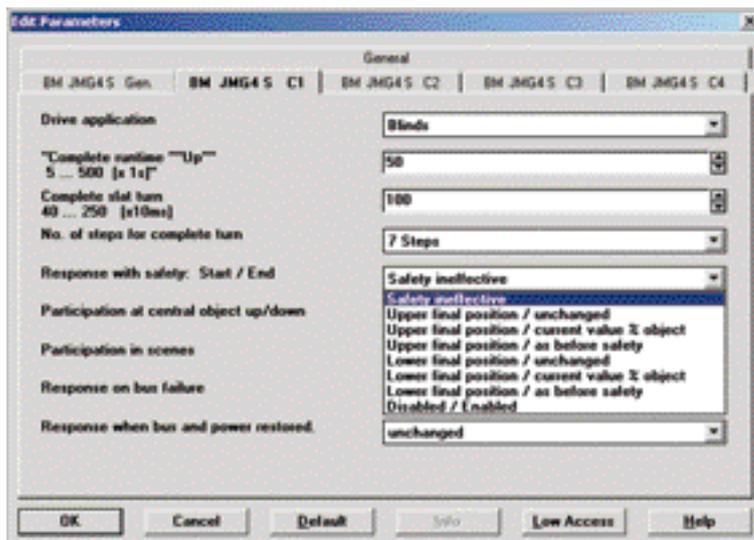
Shutters / awnings / general drives

Runtime and step duration of Step/Stop object can be selected for blinds/awnings/general drives.

If required, the lower position can always be achieved even if 70 % of the traverse has been completed, e. g. to tension awning material in awnings.
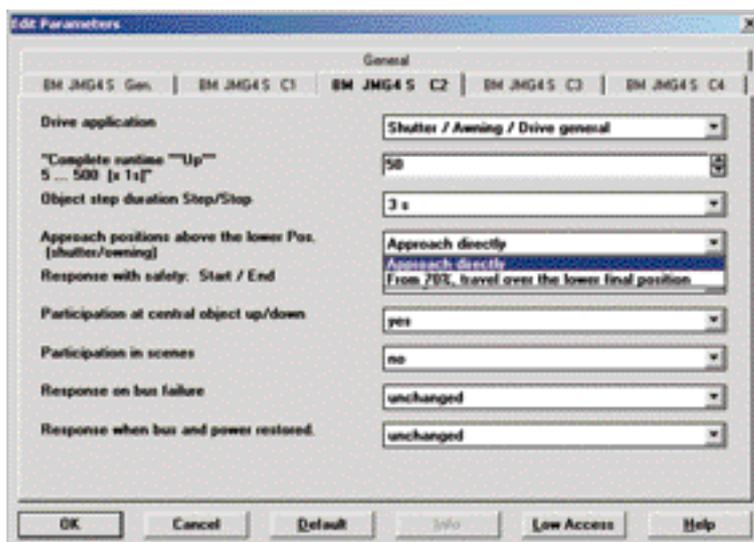
Copy function

- The configuration settings for channels 2 to 4 can simply be copied from channel 1

Advantages:

- Quick and easy installation

Universal binary inputs of the MIX series BMG 6, BME 6
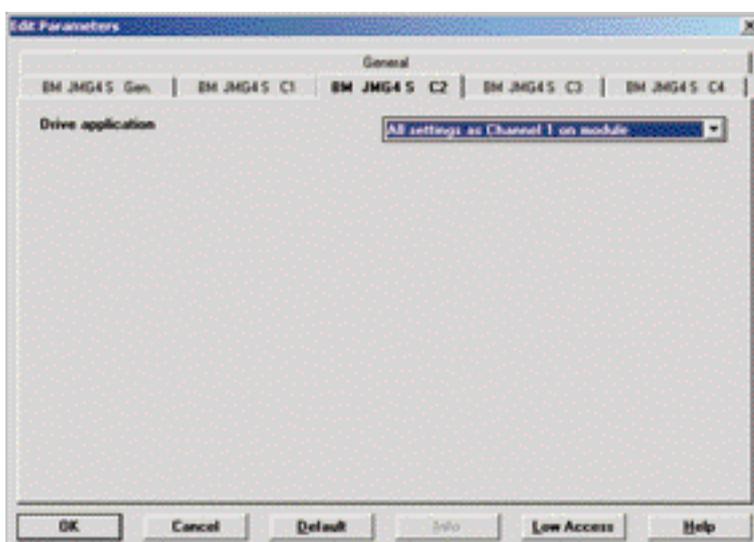
Absolutely flexible – the binary inputs for connecting all of your voltages

BMG 6 (basic module)
• **6-way binary input**

BME 6 (upgrade module)
• **6-way binary input**

Description

The MIX series is a range of devices comprising basic modules (e.g. BMG 6) and upgrade modules (e.g. BME 6). Up to 2 upgrade modules can be connected in series to the basic modules in this series.

Each input of the binary inputs has an LED for status display on the input.
After a bus failure the inputs are polled again, which means that the current state is always displayed. Thanks to the multi-voltage input and the auxiliary supply for floating inputs the device can be used in all kinds of applications.

BMG 6 basic module

BME 6 upgrade module

Characteristics

- Multi-voltage input 8–250 V AC/DC
- Auxiliary supply for floating inputs of device supplied
- All inputs can be operated with different voltages
- 6 LEDs for displaying the status at the input
- Max. cable length per input 100 m
- Up to 2 output objects per channel
- Disable object for each channel
- Adjustable response after restoration of the bus supply
- Software functions: Switch/key, dimming, blinds, valuator, counter
- Binary input modules can also be combined as desired with all switching, heating, dimming and blind actuators of the MX series

Advantages

- The free combination of switching, dimming, control of blinds and heating, as well as binary inputs, all increase flexibility and reduce system costs
- Upgrades enable up to 18 inputs
- Low cost upgrade modules reduce the channel price
- Multi-voltage inputs and auxiliary supply for floating inputs make it possible to solve all applications with a single device
- LEDs for status display of the outputs

Technical data:
Bus power supply
Power consumption: < 10 mA
(incl. 2 upgrades)
Connection: bus terminal
Protection class: II

Inputs
Quantity: 6
Average current consumption of inputs:
≤ 3 mA
Voltage range: 8–250 V AC/DC
Max. line length: 100 m
Permissible ambient temperature:
−5 °C ... +45 °C
Protection class: II
Protection rating in accordance with EN 60 529 subject to correct installation:
IP 20
Housing: 45 x 72 x 60 mm (4 modules)

Power unit for auxiliary supply
Voltage: 230 V AC, ± 10 %, 50 Hz
Power consumption: 2.5 VA
Output voltage: approx. 18 V~/ 20 mA

Order numbers:

BMG 6 EIB/KNX	491 0 230
BME 6 EIB/KNX	491 0 231

Application software BMG 6, BME 6

Depending on its function, each channel has 1–2 output objects, e.g. ON/OFF switches or blind UP/DOWN and blind STEP/STOP.
Each channel has its own disable object. The central objects 60–63 are not used in this device.

- 104 group addresses
- 105 possible associations
- 68 objects

	0	Switch ON/OFF	BM BMG6 Channel 1	1 Bit
	2	Lock	BM BMG6 Channel 1	1 Bit
	3	Switch ON/OFF	BM BMG6 Channel 2	1 Bit
	5	Lock	BM BMG6 Channel 2	1 Bit
	6	Switch ON/OFF	BM BMG6 Channel 3	1 Bit
	8	Lock	BM BMG6 Channel 3	1 Bit
	9	Switch ON/OFF	BM BMG6 Channel 4	1 Bit
	11	Lock	BM BMG6 Channel 4	1 Bit
	12	Switch ON/OFF	BM BMG6 Channel 5	1 Bit
	14	Lock	BM BMG6 Channel 5	1 Bit
	15	Switch ON/OFF	BM BMG6 Channel 6	1 Bit
	17	Lock	BM BMG6 Channel 6	1 Bit
	60	For RMG(E)4S and DMG(E)2	Central continuous ON	1 Bit
	61	For RMG(E)4S and DMG(E)2	Central continuous OFF	1 Bit
	62	For RMG(E)4S and DMG(E)2	Central switching	1 Bit
	63	For RMG(E)4S and DMG(E)2	Access/save scene	1 Byte

Selection of upgrade modules

The basic module can be expanded by adding up to 2 upgrade modules. The type of upgrade module (switching, dimming, blinds or heating actuator or binary input) can be created easily using the parameters.

Advantages:
- Upgrading the channels reduces the channel price
- Combination of various functions in any way desired reduces the system costs

For all of the combination options, see pages 104/105.

Binary input functions

The following functions are available at each input:
- Switch/key
- Dimming
- Blinds
- Regulator
- Counter
- Send 2 messages

Advantages:
- Extensive functions possible on all channels

Disable object

Various responses can be parameterized for each channel for when the disable is set:
- Ignore disable
- No response when the disable is set
- Response the same as after rising edge
- Response the same as after falling edge

Advantages:
- The disable object can be used flexibly in a number of ways for each channel
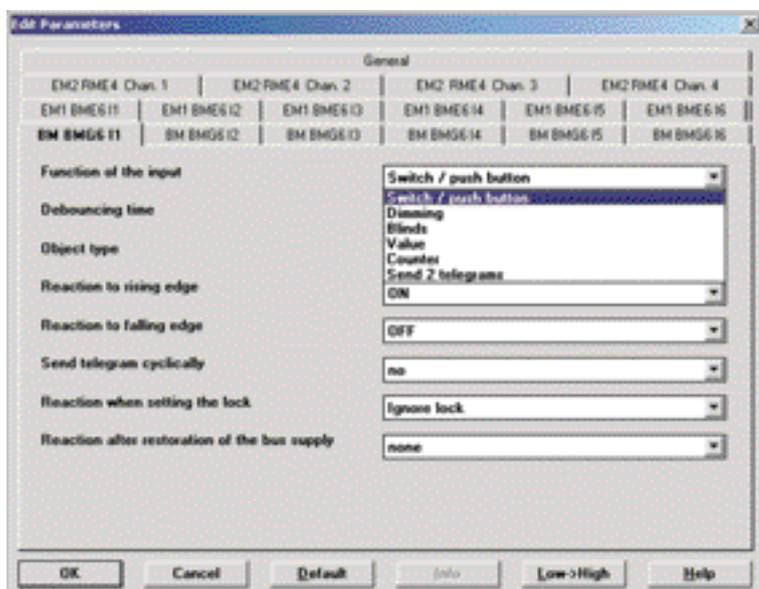
Switch/key function

The following object types are available:
- Switching (1-bit)
- Priority (2-bit)
- Value (1-byte)
- Temperature value (2-byte)

Advantages:
- The various object types mean that a connected switch/key can have an extensive range of uses
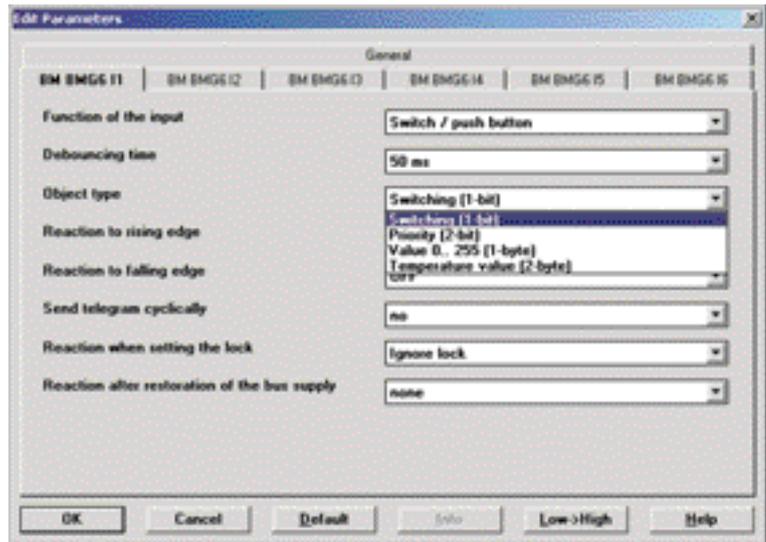
Dimming function

If the function "dimming" is selected at the input, it is possible to parameterize various responses to long and short keystrokes:
- Single-surface operation
- Brighter (long keystroke)/ON (short keystroke)
- Brighter/Toogle
- Darker/OFF
- Darker/Toogle

Advantages:
- Diverse dimming control options
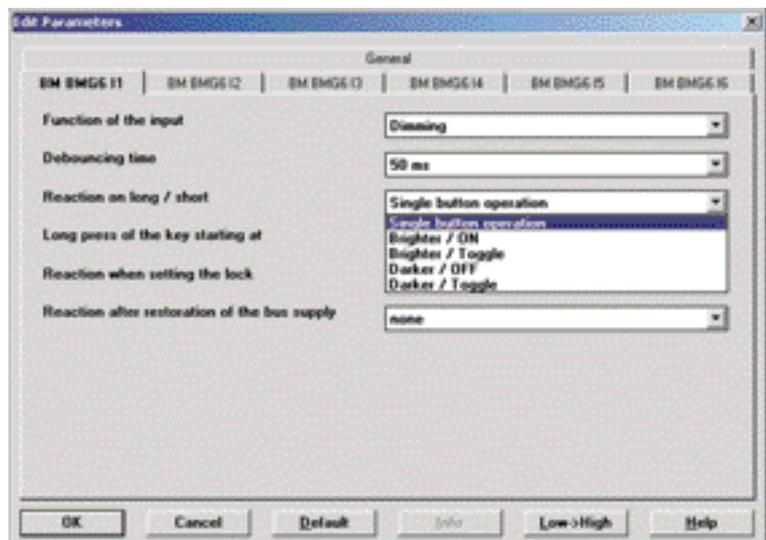
Valuator function

With the valuator function it is possible to create various parameterizations:
- Valuator short/long (various values for short/long keystroke)
- Percentage valuator (percentage value is set)
- Valuator for light setting (setting number is sent)
- Valuator for blinds (height and slat in % is sent)
- Repeat last message received

In addition, there are special functions for a long keystroke, such as:
- Send another value
- Save light setting
- etc.

Advantages:
- Diverse and flexible use of the inputs

Additional functions of the inputs are
- **Blinds**
- **Counter (event counter, comparison counter)**
- **Send 2 messages**
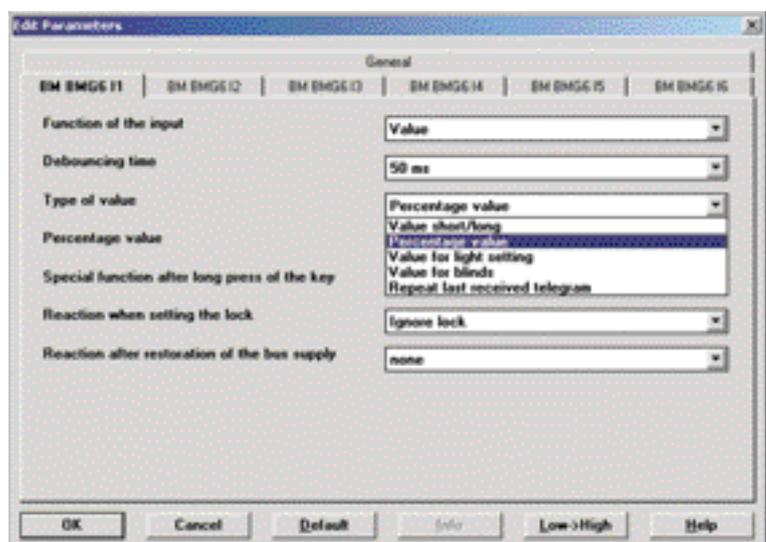
Binary input

Universal binary inputs for flush-mounted boxes   TA 2, TA 4, TA 6

Small, compact binary inputs for connecting to conventional keys and switches

TA 2
- **2-way binary input**

TA 4
- **4-way binary input**

TA 6
- **6-way binary input**

Description
The key interfaces TA 2, TA 4 and TA 6 are binary input/output devices.
The devices can be installed in combination with conventional keys/switches in flush-mounted boxes. This allows all switching programs to be integrated in EIB systems.

- Free choice of functions:
  Switch/sensor, dimming, blinds, valuator.
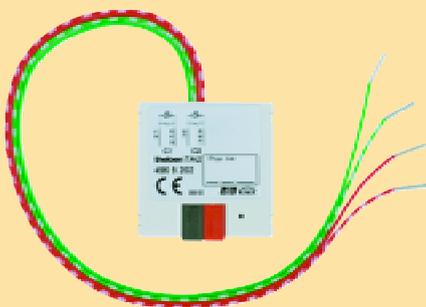
TA 2 2-way sensor interface
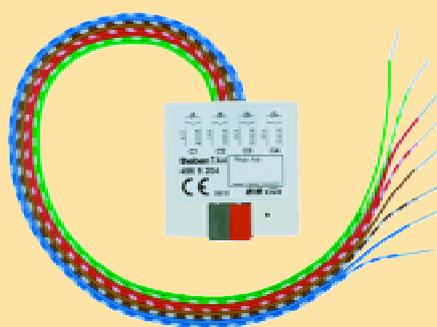
TA 4 4-way sensor interface
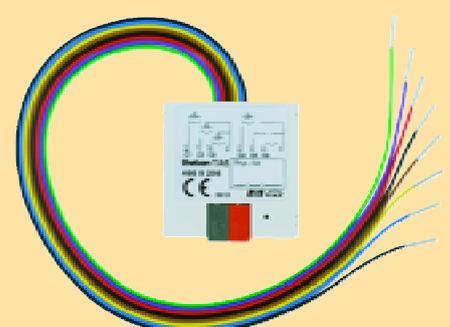
TA 6 6-way sensor interface

Characteristics

TA 2

- 2-way sensor interface with two inputs for connecting to up to 2 floating contacts
- 4-pole cable connection
- Colour coding of wiring pairs
- Inputs can be reconfigured to outputs for connecting LED (with communication object) display of ON/OFF.

TA 4

- 4-way sensor interface with four inputs for connecting to up to 4 floating contacts
- 8-pole cable connection
- Colour coding of wiring pairs
- Inputs can be reconfigured to outputs for connecting LED (with communication object) display of ON/OFF.

TA 6

- 6-way sensor interface with six inputs for connecting to up to 4 floating contacts
- 8-pole cable connection
- Colour coding of wiring pairs
- 4 inputs can be reconfigured to outputs for connecting LED (with communication object) display of ON/OFF

Advantages

- 2, 4 to 6 way touch sensors offer optimum adaptability to the project
- Very compact design of housing
- Grooves on the side of the housing to allow more space for the switch/key clamps
- Disable objects selectable or available
- Behaviour can be selected on restoration of bus power
- Configuration similar to BMG 6 and BME 6

Technical data:
Power supply:
Bus voltage
Permitted operating temperature:
–5 °C ... +45 °C
Current draw from bus voltage:
max. 10 mA
Bus connection: Bus terminal
Protection class: II
Protection rating: IP 20
Dimensions: L x W x H 37 x 37 x 10 mm
Output with LED configuration:
Low current 1 mA (LED 1 mA types)
Contact voltage: 3.3 V
Contact current: 0.5 mA
Behaviour on restoration of bus power:
adjustable
Max. interface extension: 5 m

Order numbers:	
TA 2 EIB/KNX	496 9 202
TA 4 EIB/KNX	496 9 204
TA 6 EIB/KNX	496 9 206

Application software TA 2, TA 4, TA 6
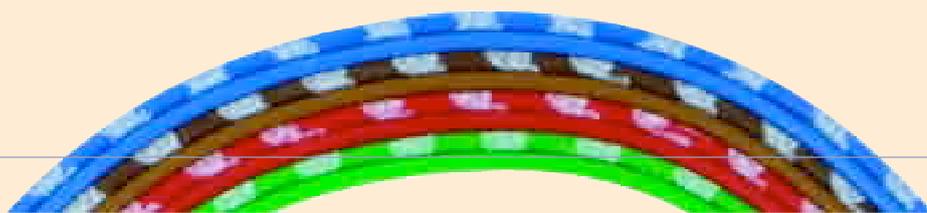
According to its function every channel has 1–2 output objects, e.g. switches ON/OFF or blinds UP/DOWN and blinds STEP/STOP. Each channel has its own disable object.

- 20 group addresses
- 20 possible associations
- 18 objects

	0	Switch ON/OFF	Channel 1 switching	1 Bit
	2	lock	Channel 1 lock	1 Bit
	3	Switch ON/OFF	Channel 2 dimming	1 Bit
	4	brighter / darker	Channel 2 dimming	4 Bit
	5	lock	Channel 2 lock	1 Bit
	6	Step / Stop	Channel 3 blinds	1 Bit
	7	UP	Channel 3 blinds	1 Bit
	8	lock	Channel 3 lock	1 Bit
	9	Switch ON/OFF	Channel 4 LED	1 Bit
	11	lock	Channel 4 lock	1 Bit
	12	Step / Stop	Channel 5 blinds	1 Bit
	13	UP	Channel 5 blinds	1 Bit
	14	lock	Channel 5 lock	1 Bit
	15	Recall/save light scene	Channel 6 value	1 Byte
	17	lock	Channel 6 lock	1 Bit

Binary input functions

The following functions are available at each input:
- Switch/key
- Dimming
- Blinds
- Valuator
- LED control

Benefit:
- Extensive functions possible on all channels

Disable object

Various responses can be configured for each channel for when the lock is set:
- Ignore lock
- No response when the lock is set
- Response the same as after rising edge
- Response the same as after falling edge

Benefit:
- The disable object can be used flexibly in a number of ways for each channel
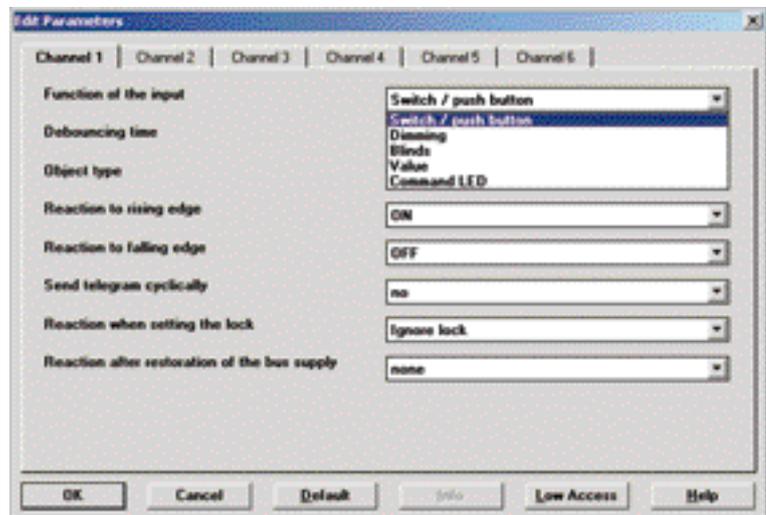
LED control

Inputs can be reconfigured to LED outputs.
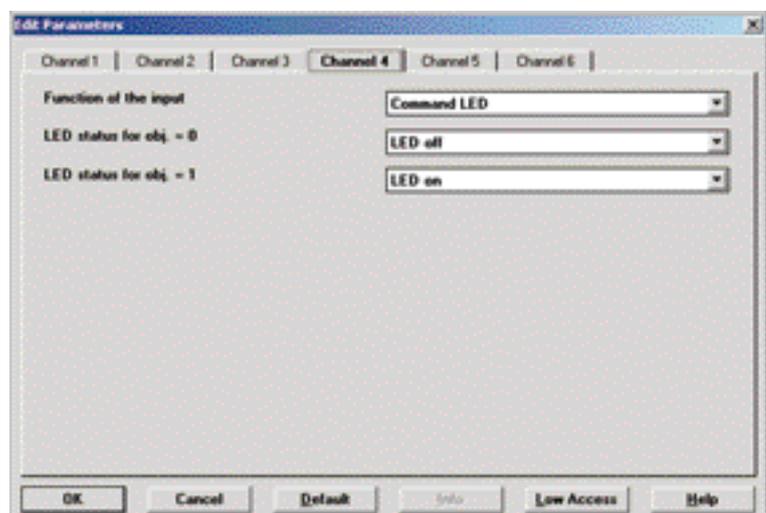
Blinds control
Setting of desired behaviour
via long and short key depression.
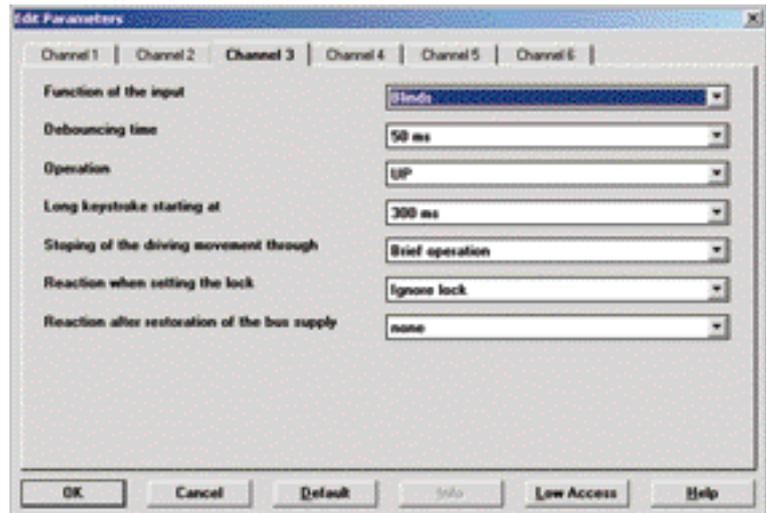
Dimming function
If the function "dimming" is selected at the
input, it is possible to configure various
responses to long and short keystrokes:
- Single-surface operation
- Brighter (long keystroke)/ON
  (short keystroke)
- Brighter/BY
- Darker/OFF
- Darker/BY

Benefit:
- Diverse dimming functions
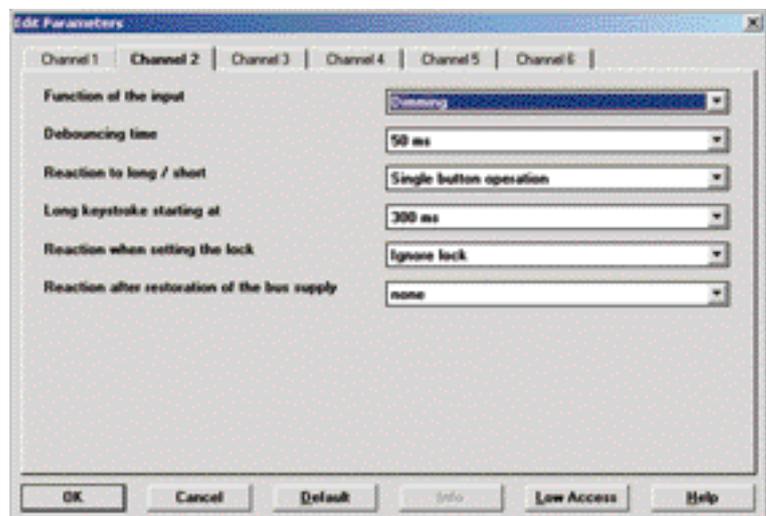
Valuator function
Various configuration types can be created
using the valuator function:
- Valuator short/long (various values for
  short/long keystroke)
- Percentage valuator
  (percentage value is sent)
- Valuator for light setting
  (scene number is sent)
- Valuator for blinds
  (height and slat values sent in %)
- Repeat last telegram received

In addition, there are special functions for
a long keystroke, such as:
- Send another value
- Save light setting
- etc.

Advantages
- Diverse and flexible use of the inputs

Binary inputs
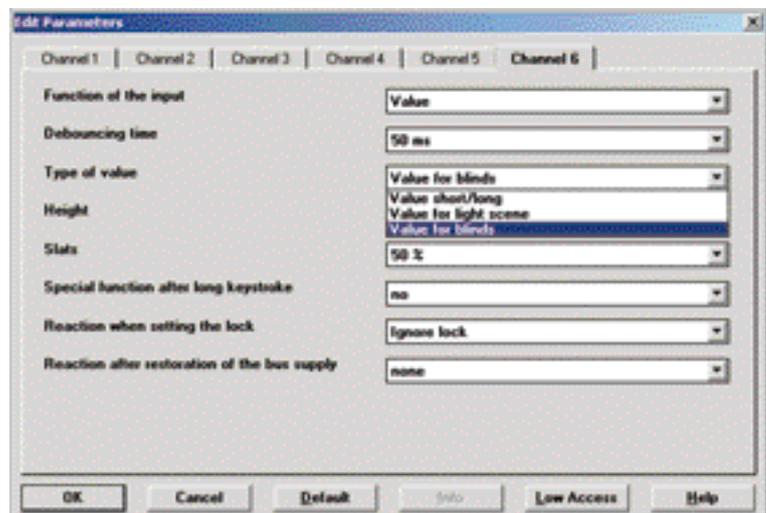
Saving costs – through switching actuators that can also accurately control the blinds

RMG 8 (basic unit)
- **Relay outputs for 4 drives or**
- **8 switching channels or**
- **random mixed operation of drive and switching functions**

RME 8 (extension unit)
- **Relay outputs for 4 drives or**
- **8 switching channels or**
- **random mixed operation of drive and switching functions**
- **Expansion unit for JMG 4, RMG 8, HMG 8**

Description
Flexible use means that each channel can be used selectively to switch consumers on and off (Switching function), or the phase sequence and runtime of motors can be controlled (Blinds function). The manual switches are used for Up/Down and for switching On/Off.

integrated bus coupler

Switch state display

Operating on-site
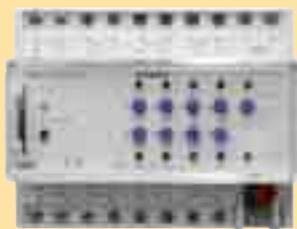
RMG 8 basic unit,
8 channels/4 drives

RME 8 extension unit,
8 channels/4 drives

channels with high switching capacity 10 A/250 V AC, cos φ = 1 and 6 A/250 V AC, cos φ = 0.6
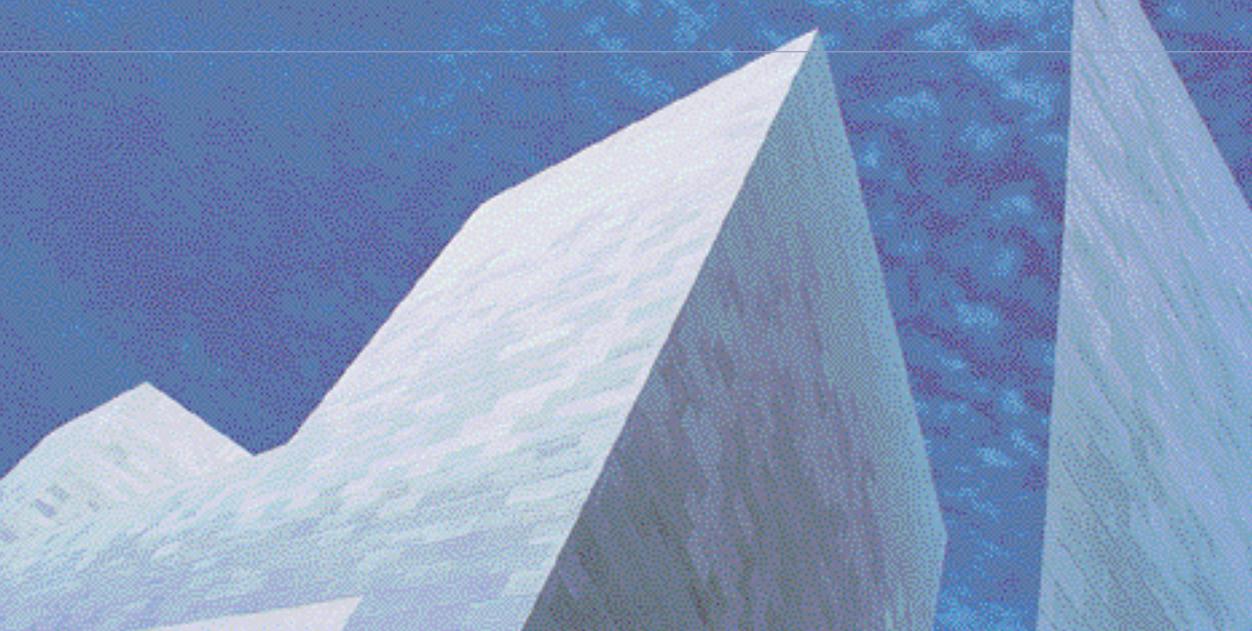
Characteristics

- Modular expandability from four to eight blinds or from eight to sixteen switching outputs
- Capability of addressing blind (including louver) or shutter positions directly for:
  – canvas blinds, blinds, shutters and several sun and sight protections
  – skylights and ventilation flaps
- Optimised repeatability of the programmed louver position
- The wide range of switching functions is ideal for:
  –shading, lighting and heating of greenhouses and conservatories
  – lighting of buildings, staircases
  – delayed on or off switching of groups of lights
  – short or long pulses for schoolyard bells or toilet flushing and ventilation
- In case of extensions of HMG 8 with RME 8 only switching channels are possible, no drive control

Advantages

- Manual operation on the unit without connection to a bus.
- Irrespective of where the blind is situated, the requested position is reached:
  – slip correction during travel from bottom to top
  – the end position is not exceeded
- Random combination of drive/switching action (RMG 8, RME 8).
- The drive parameters can be set independent for each channel.
- Expandability reduces channel costs.
- Behaviour adjustable for bus/main failure.
- Three safety objects (display by LED).
- Easy-to-operate product database.

Technical data:
RMG 8, RME 8
Operating voltage: 230 V/240 V ± 10 %
Rated frequency: 50 Hz
Product consumption: max. 4 VA
Current consumption of bus (only RMG 8): ≤ 8 mA
Contact material: Ag SnO$_2$
Type of contact: closing contact, floating
Switching capacity: 10 A 250 V AC, cos φ = 1, 6 A 250 V AC, cos φ = 0.6
Incandescent lamp load: 1400 W/VA
Halogen lamp load: 1400 W/VA
Permissible ambient temperature: –5 °C ... +45 °C
Class of protection: II after correct installation
Degree of protection: IP 20 (EN 60529)
Standard housing: 45 x 105 x 60 mm (6 modules)

Order no:	
RMG 8 EIB/KNX	490 0 251
RME 8 EIB/KNX	490 0 252
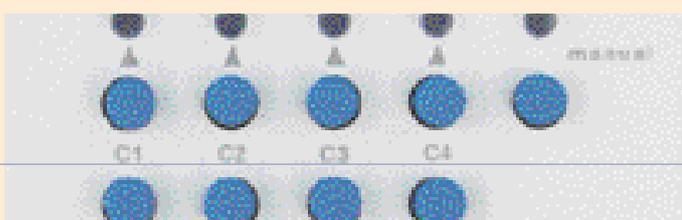
1 blind or 2 switching outputs can optionally be selected per channel.
The various channels can be assigned to central objects.
- 85 group addresses
- 85 possible associations
- 47 objects

|				
	0	Up / down	Drive 1 up / down	1 Bit
	1	Step/stop blind	Drive 1 Step/stop	1 Bit
	2	Height [%]	Drive 1 height	1 Byte
	3	Slats [%]	Drive 1 slats	1 Byte
	4	Auto comfort	Drive 1 auto comfort	1 Bit
	5	ON/OFF	Channel 2.1 switch	1 Bit
	6	Feedback	Channel 2.1 state	1 Bit
	7	ON/OFF	Channel 2.2 switch	1 Bit
	8	Feedback	Channel 2.2 state	1 Bit
	9	Inhibit channels 2.1 and 2.2	Inhibit channels 2.X"	1 Bit
	40	Security 1	Central priority 1	1 Bit
	41	Security 2	Central priority 2	1 Bit
	42	Security 3	Central priority 3	1 Bit
	43	Up / down	Drives central	1 Bit
	44	Forced up/down	Drives central priority	2 Bit
	45	Switch permanent	Central permanent ON	1 Bit
	46	Switch permanent	Central permanent OFF	1 Bit

The function of the channels
The channels can be used as desired for blinds/roller shutters or as switching output (e.g., for lighting).
Per channel: 1 drive or 2 switching outputs.
Advantage:
- Flexible use of the channels
- Saves bus users and reduces system costs
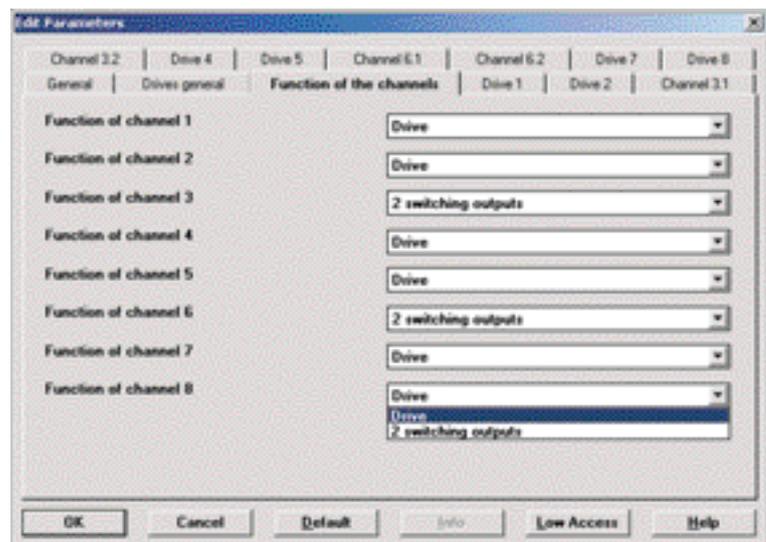
Blind/shutter drive
The running time, the turning of the slats and the stepping pace is chosen on the basis of how the blinds/shutters are hung.
Besides safety objects can be specified that define a certain behaviour.
You can choose how the system should react when the bus fails and when the bus/mains is restored.
Advantage:
- Simple indication of time
- Flexible safety functions
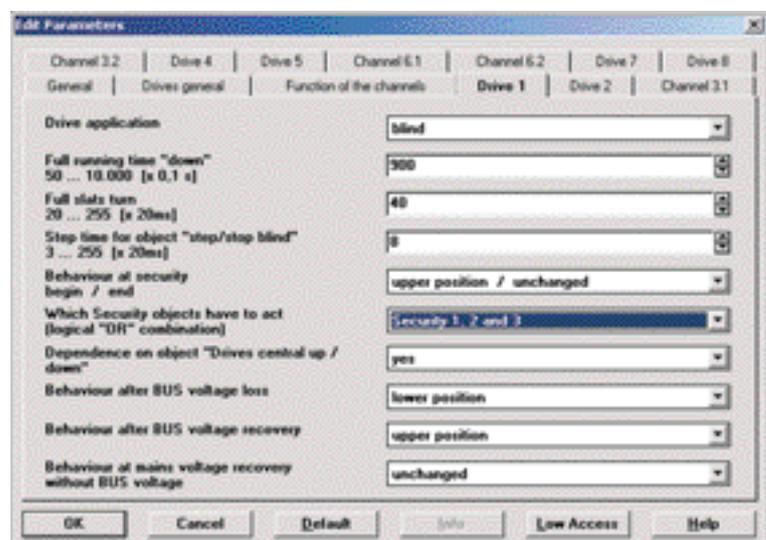
Actuation in general

Even with common drives, positions can be approached accurately (height/angle of slat). When adjusting height, the slat angle can be adopted again, if so desired.

The slippage compensation of the drives carries out an automatic adjustment while traveling from down to up allowing a desired position to be approached from both directions contemporarily.

Advantage:
• Exact positioning
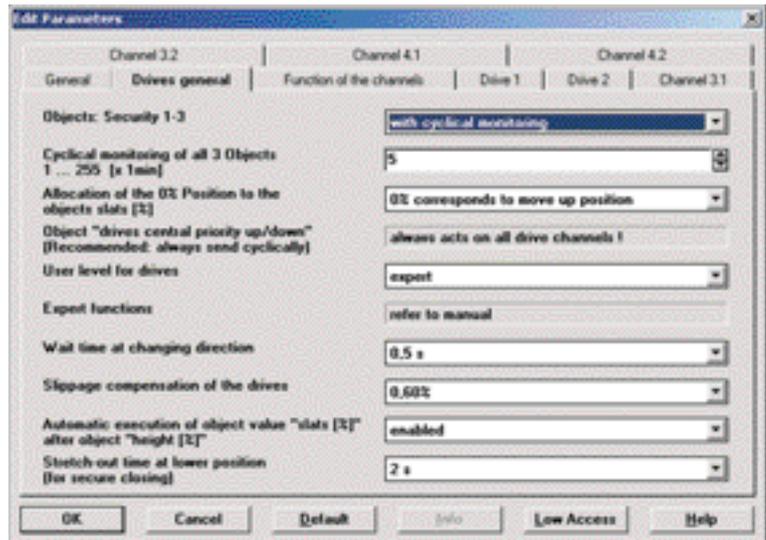
Switching functions

You may select from the following switching functions:
• Switching On/Off
• Automatic stairway lighting with pre-warning function in accordance with DIN 18015-2
• Pulse function
• Delay On/Off

Central switching

The relay can be switched with priority by being entered in a central steady-On or steady-Off object.

You can choose the reaction when the bus fails and when the bus/mains is restored.

Advantage:
• Extensive switching functions possible on all channels
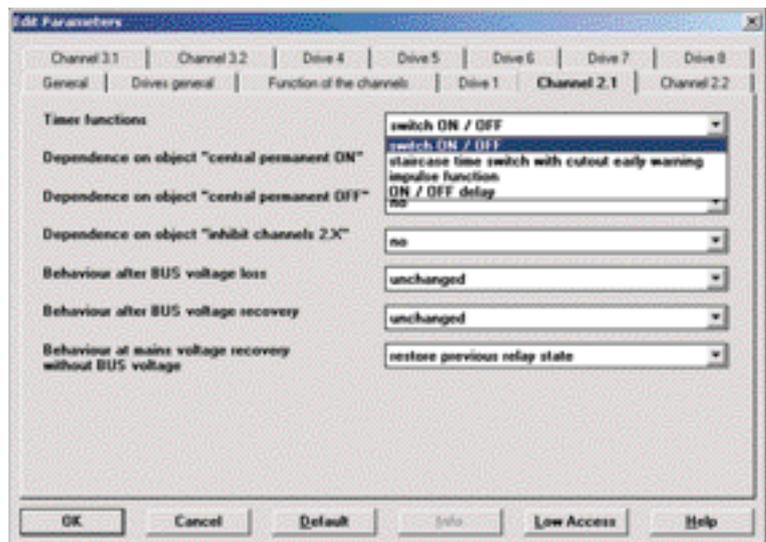
Stairway light function
• Simple entry of the stairway light time
• You can select the maximum number of switching pulses to be added up.
  This allows the operating time to be set from every button (e.g. cleaning week).

Switching/Blind
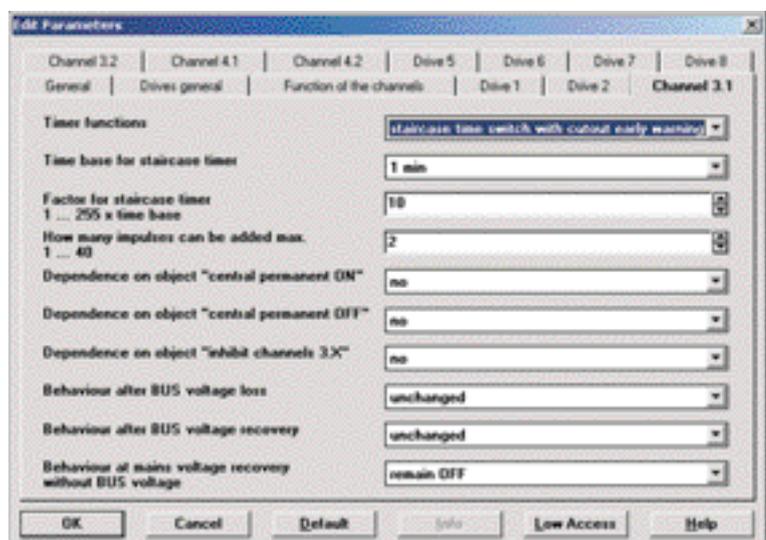
Provides exact control of awnings, roller shutters and blinds – the economical solution for blinds in domestic use

JMG 4 24VDC (basic unit)
• **4 driving channels 24 VDC**

JME 4 24VDC (extension unit)
• **4 driving channels 24 VDC**

Description
The blind actuators of the JMG 4 24VDC type are suited for use with interior blinds and sun roller blinds.

By the use of these blind actuators, the rotational direction and running times of the motors can be switched on and off. Hand switch Up/Down.

JMG 4 24 VDC, basic unit with 4 drives   **JME 4 24 VDC,** extension unit for 4 driving channels

Characteristics

- Modular expandability from four to eight blinds
- Capability of addressing blind (including louver) or shutter positions directly for:
  – canvas blinds, blinds, shutters and several sun and sight protections
  – skylights and ventilation flaps
- Optimised repeatability of the programmed louver position
- With the extra window contact module you can stop the inside blinds going up and down when the window is open.

Advantages

- Manual operation on the unit without connection to a bus
- Irrespective of where the blind is situated, the requested position is reached
- The drive parameters can be set independent for each channel
- Expandability reduces channel costs
- Behaviour adjustable for bus/main failure
- Eight safety objects (display by LED)
- Easy-to-operate product database

Technical data:
JMG 4 24VDC, JME 4 24VDC
Operating voltage: 230 V/240 V ± 10 %
Rated frequency: 50 Hz
Product consumption: max. 4 VA
Current consumption of bus: ≤ 8 mA
Load circuit: 24 VDC
Contact material: AgNi
Type of contact: closing contact, floating
Switching capacity: 5 A/24 VDC,
                                            5 A/12 VDC
Permissible ambient temperature:
–5 °C ... +45 °C
Protection class:
II after correct installation
Protection type:
 IP 20 in compliance with EN 60529
Housing: 45 x 105 x 60 mm
Weight: 450 g

Order no:

JMG 4 24VDC EIB/KNX	490 0 253
JME 4 24VDC EIB/KNX	490 0 254

- 85 possible group addresses
- 85 possible associations
- 48 objects

Each channel has a safety object that defines a certain behaviour.

	0	Step/stop blind	Drive 1 step/stop	1 Bit
	1	Up/down	Drive 1 up/down	1 Bit
	2	Height [%]	Drive 1 height	1 Byte
	3	Slats [%]	Drive 1 slats	1 Byte
	4	Auto comfort	Drive 1 auto comfort	1 Bit
	5	Stop shutter	Drive 2 stop	1 Bit
	19	Auto comfort	Drive 4 auto conf.	1 Bit
	20	Indication	Window E1	1 Bit
	21	Indication	Window E2	1 Bit
	22	Indication	Window E3	1 Bit
	23	Indication	Window E4	1 Bit
	24	Indication	Window E5	1 Bit
	25	Indication	Window E6	1 Bit
	26	Indication	Window E7	1 Bit
	27	Indication	Window E8	1 Bit
	40	Security	Security C1	1 Bit
	41	Security	Security C2	1 Bit
	42	Security	Security C3	1 Bit
	43	Security	Security C4	1 Bit

Device selection
The desired extension module is selected very simply.
Advantage:
- Flexible application
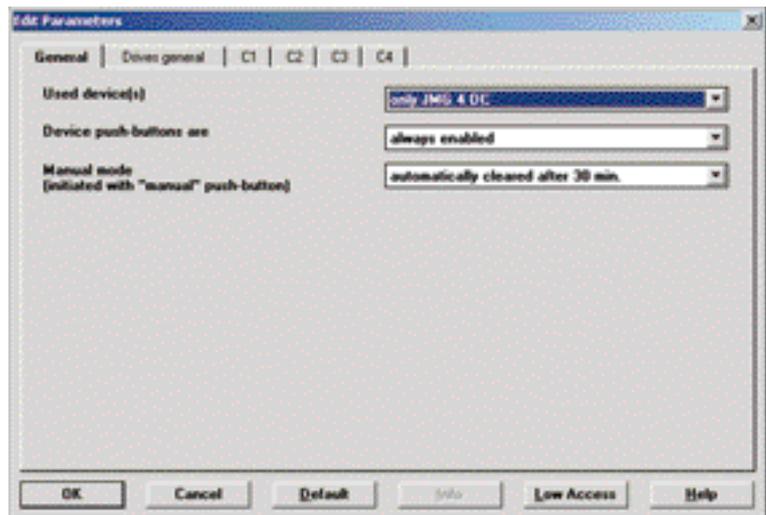
Actuation in general
The setting of general parameters and operating modes optimizes the travel accuracy.

Advantage:
- Exact positioning
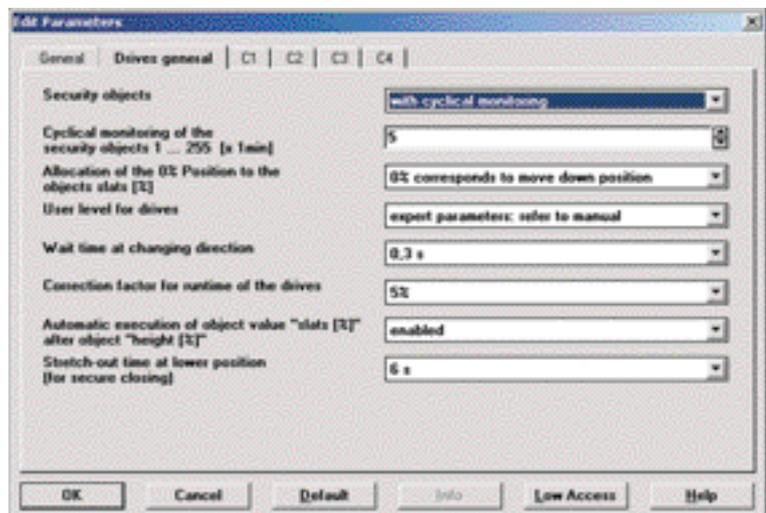
Blind/shutter drive

The running time, the turning of the slats and the stepping pace is chosen on the basis of how the blinds/shutters are hung. Besides safety objects can be specified per channel that define a certain behaviour.

You can choose how the system should react when the bus fails and when the bus/mains is restored.

Advantage:

- Simple indication of time
- Flexible safety functions
- Blinds are protected when sensors no longer send signals
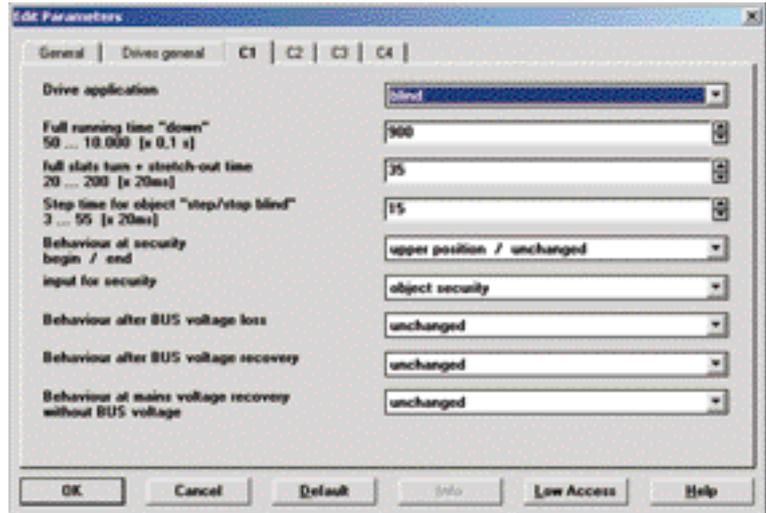
Fabric sun protection/canvas etc.

Operating mode for fabric sun protection, skylight windows, canvases etc.

Here too, safetyobjects can be specified per channel that define a certain behaviour.

You can choose how the system should react when the bus fails and when the bus/mains is restored.

Advantage:

- Simple indication of time
- Flexible safety functions
- Blinds are protected when sensors no longer send signals
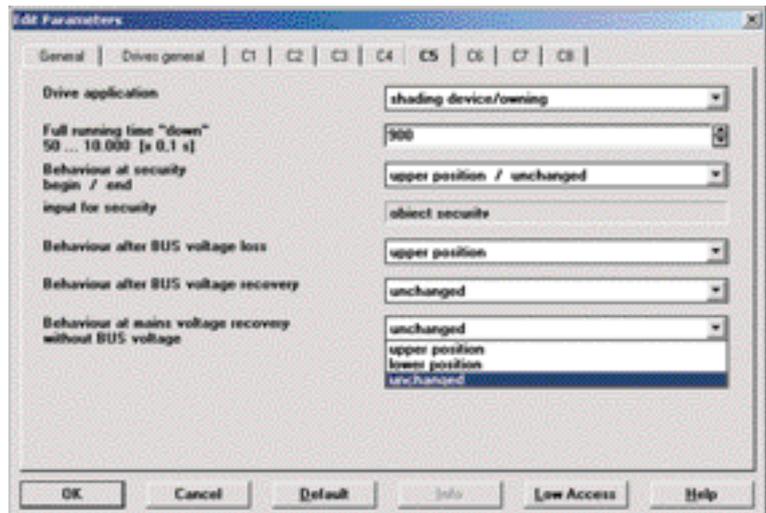
Heating actuators with triacs for floor heating HMT 6, HMT 12

Simple to install – the heating actuator for the heating circuit distributor

HMT 6
6 channel heating actuator for controlling of thermic actuating drives

HMT 12
12 channel heating actuator for controlling of thermic actuating drives

Actuator EIB/KNX
Theben actuators can substitute the thermostats most commonly used on radiators.
In the case of under floor heating, the Theben actuators are mounted on the valves of the heat distributor.

Actuator ALPHA 4 24 V
(see page 60)

HMT 6/12
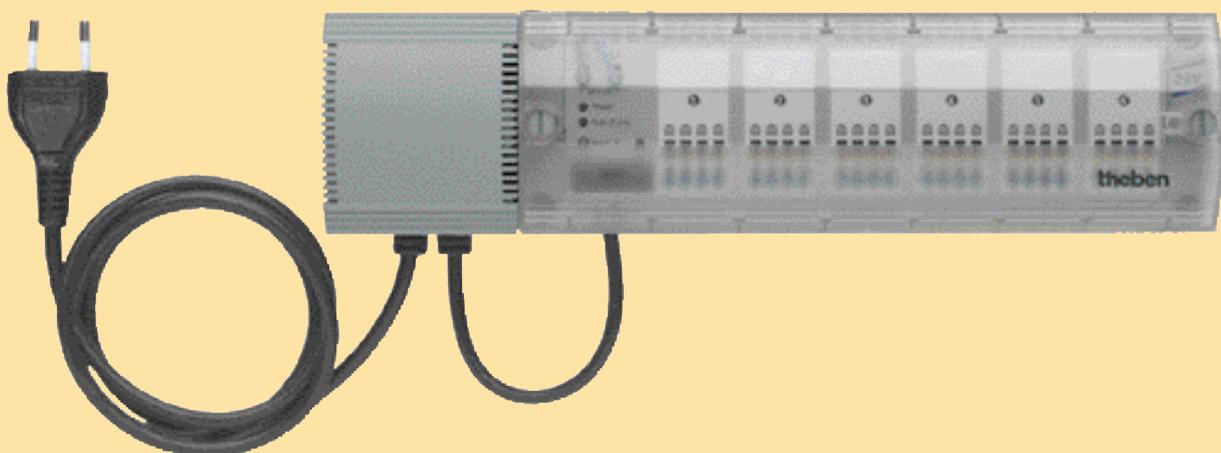
Description

The house is suitable for the mounting of heating circuit distributors with triacs enabling noisless switching of the actuating drives.
The heating actuators (HMT 6/HMT 12) optimise the efficiency when using room temperature controllers together with thermic actuating drives and enable the integration of a boiler control.

Characteristics

- Easy wiring of the drives (24 V)
- Mounting directly on the wall or on the rail in the heating circuit distributor
- Plug at the transformer for easy installation
- Connection of up to 13 thermic actuating drives (24 V) and power supply through built-in transformer
- Continuous and switching controller output can be chosen
- Compulsory mode via object
- Summer mode omits undesired heating in summer (valve protection in the summer mode can be chosen)
- Emergency mode in case of bus or sensor failure
  – Behaviour in case of failure adjustable
- Cyclic checking of the controller output (for determination of the maximum controller output)
- Treating of the continuous controller output

- Automatic releasing of the thermal actuators after switching on
- Determination of the max. correcting variable to be considered by the boiler control

Advantages

- Ideal design for mounting in the heating circuit distributor
- Touchable protection low voltage (SELV)
- Convenient and uncomplicated wiring through screwless terminal block technology
- By determining the greatest correcting variables of all channels and sending them to the boiler control, the forward flow temperature can be adapted, resulting in energy savings of up to 30 %.

Technical data:
Operating voltage: 230 V AC/24 V DC
Max. power consumption: 50 W
Protection: T 2 A
Max. number of drives: 13
Heating programs optional: 2
Dimensions H/B/L: 70 x 75 x 302 mm
Weight: 1700 g
Protection class: II after correct installation
**Degree of protection:** IP 20 (EN 60529)
Massive power: 0.5 – 1.5 mm^2
Flexible power*: 1.0 – 1.5 mm^2
*wires of the drives can be used with end sleeves for strands, mounted ex works.

Order no:	
HMT 6 EIB/KNX	490 0 273
HMT 12 EIB/KNX	490 0 274
Actuator ALPHA 4 24 V	907 0 439

Application software HMT 6, HMT 12
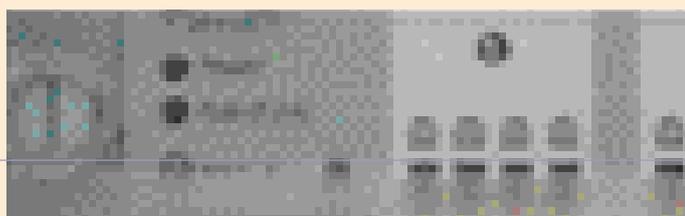
Optionally, a permanent or switching correcting variable can be selected per channel.
• 66 possible group addresses
• 66 possible associations
• 38 objects

	0	value [%]	actuating value channel 1	1 Byte
	1	value [%]	actuating value channel 2	1 Byte
	2	value [%]	actuating value channel 3	1 Byte
	3	value [%]	actuating value channel 4	1 Byte
	4	value [%]	actuating value channel 5	1 Byte
	5	value [%]	actuating value channel 6	1 Byte
	12	ON / OFF	forced mode channel 1	1 Bit
	13	ON / OFF	forced mode channel 2	1 Bit
	14	ON / OFF	forced mode channel 3	1 Bit
	15	ON / OFF	forced mode channel 4	1 Bit
	16	ON / OFF	forced mode channel 5	1 Bit
	17	ON / OFF	forced mode channel 6	1 Bit
	24	ON / OFF	summer mode	1 Bit
	25	value [%]	highest actuating value of all channels	1 Byte
	26	1 = yes, 0 = no	timeout of actuating value signal chan. 1	1 Bit
	27	1 = yes, 0 = no	timeout of actuating value signal chan. 2	1 Bit
	28	1 = yes, 0 = no	timeout of actuating value signal chan. 3	1 Bit
	29	1 = yes, 0 = no	timeout of actuating value signal chan. 4	1 Bit
	30	1 = yes, 0 = no	timeout of actuating value signal chan. 5	1 Bit
	31	1 = yes, 0 = no	timeout of actuating value signal chan. 6	1 Bit

Selection via parameters, regardless if 6- or 12-channel devices are used.
The failure of a correcting variable can be transmitted by bus. For valve protection during summer operation, the valve is flushed (opened) once a day.
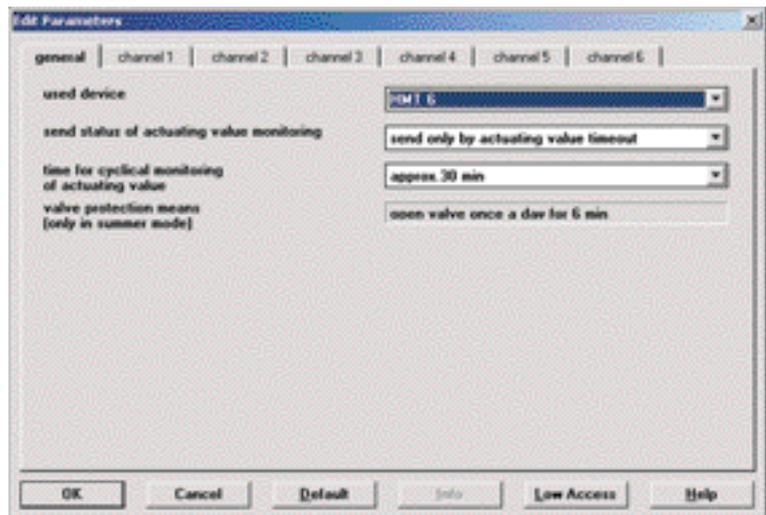
The correcting variable is transformed into On and Off cycles within the PWM period (Pulse, Width Modulation). This prevents variations in temperature as in the case of using switching actuators.
Advantage:
• The continuous controller can send the value to the heating actuator for immediate elaboration
• Better room comfort control
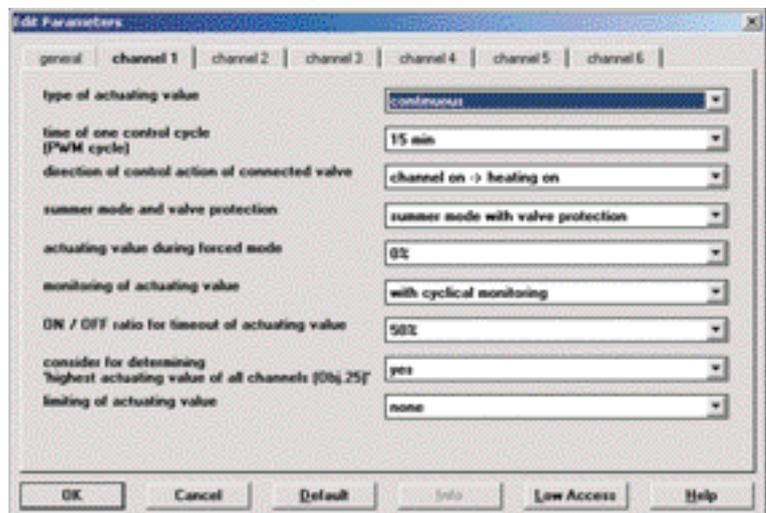
Limiting the correcting variable

Limiting the maximum correcting variable prevents a continual pressure to be placed upon the wax cartridge of the thermal actuator. The service life of the thermal drive is thereby increased. Limiting the minimum correcting variable enables a quick adjustment of the desired temperature in heating operation.
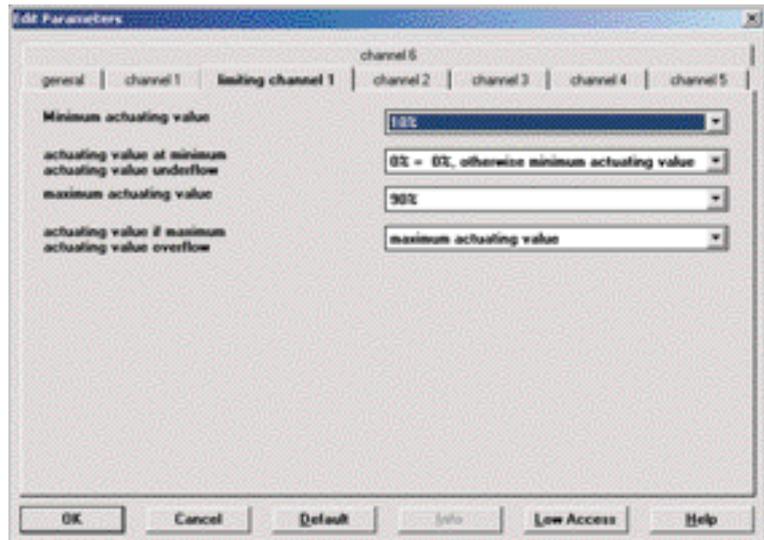
Single room regulation with floor heating

❶ Temperature regulator RAM 713 S is mounted in every room and connected to the bus

❷ EIB timer enables temperature control as needed by means of weekly or yearly programs, e.g., for schools, offices, practices…

❸ Heating actuator HMT 6 for heating circuit distributor controls the

❹ Theben thermal actuator in the heating circuit distributor

HMT 6 application example
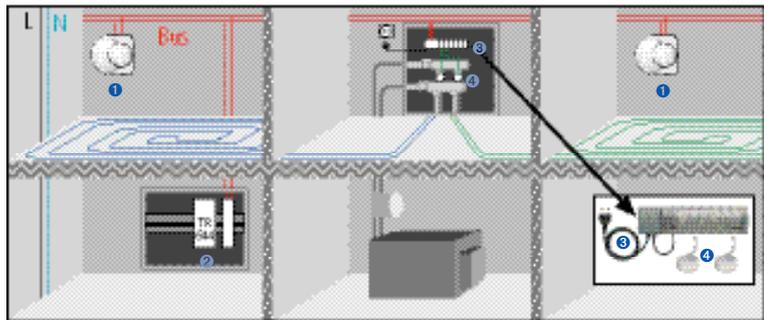
Heating

Single-room temperature regulator RAM 713 S

Ideal to use – the regulator that can additionally use conventional switches
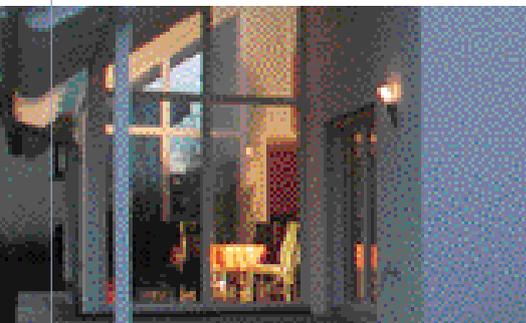
**RAM 713 S
Single-room temperature regulator for controlling heating or motorized actuators**

Description

The RAM 713 S EIB is a single-room regulator for wall mounting with integrated bus coupling. Two setting wheels are included in delivery:
– an absolute scale (mounted)
– a relative scale (extra)
We support the old objects for defining the operating mode (comfort, night, anti-freeze) as well as the new objects (operating mode, presence, window status).

CHEOPS drive (continuous regulation for radiators)

HMG 4

RAM 713 S

Floor sensor

HMT 6 (floor heating control)
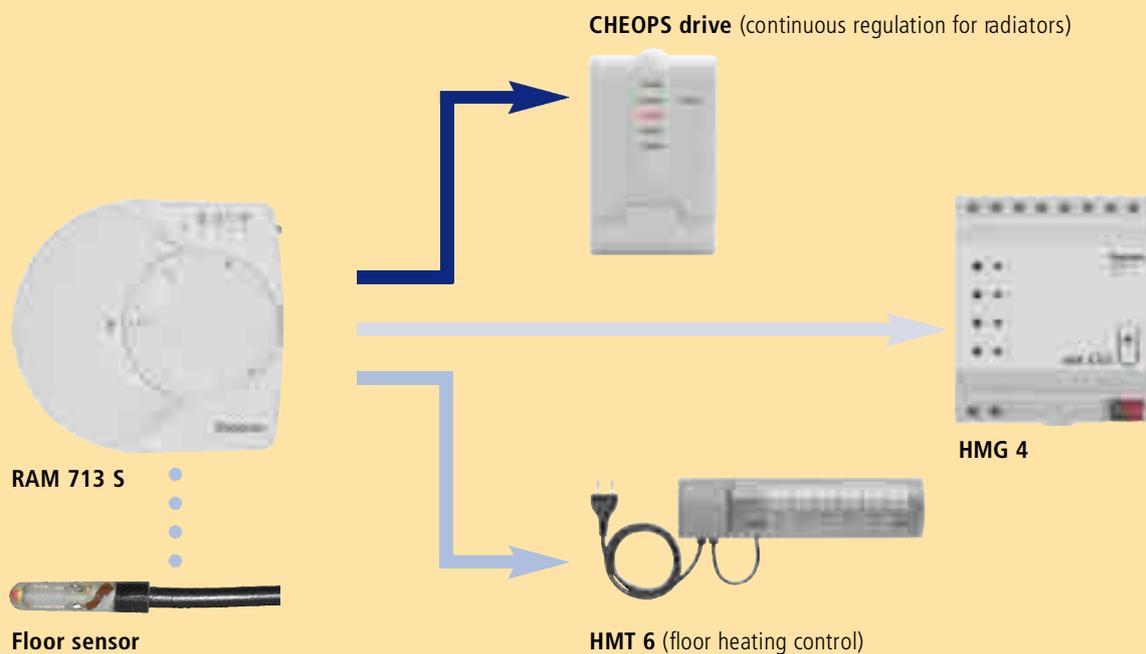
Characteristics

- The manual button can be used as operating mode selector as well as presence button.
- RAM 713 S can be used as both a continuous controller and a 2 stage controller (can also be combined).
- A status LED indicates if the system is currently heating (red), cooling (blue) or if the desired temperature has been reached (off).
- Constant PI control that can be be configured for 2-stage heating (basic and supplemental stage, e. g., floor heating and radiators) or for heating and cooling (radiator and cooling ceiling)
- Manual button for presence or operating modes: Comfort, standby, nighttime switch-off, anti-freeze protection
- Status LED (red/blue/off) shows the user which functions the regulator momentarily carries out
- The setting wheel can be limited with an adjustable stop mechanically or by means of parameters. The system can be shut off completely by means of software.
- 3 inputs for conventional switches/buttons for the functions: switching, dimming, blind adjusting.
- The inputs can also be used for external temperature sensor, window contact or presence signal

Advantages

- A floor sensor can be connected for limiting the floor temperature.
- Connecting a floor sensor prevents the floor from becoming too hot (thereby damaging the floor) or too cold (bath area).
- By means of the binary inputs, the user has the possibility to use already existing conventional switching and, just the same, send telegrams on the bus. They support:
  – Switching
  – Dimming
  – Blind adjusting

Technical data:
Setting range: 10 °C ... 28 °C
Measure range: 0 °C ... 40 °C
Operating voltage: Bus voltage
Product consumption: ≤ 10 mA
Degree of protection:
IP 20 according to EN 60529-1
Housing: 80 x 84 x 27 mm

With optional floor sensor:
Temperature restriction:
through external floor sensor 5 °C... 48 °C
Temperature sensor:
encased with 4 m connecting cable

Order no:	
RAM 713 S EIB/KNX	713 9 201
Floor sensor, optional	907 0 321

Application software RAM 713 S
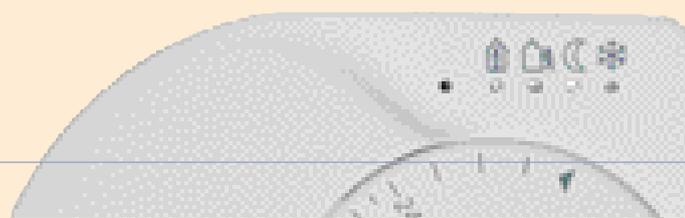
The nominal and actual values can be transmitted via object.

The "operating mode/ presence/window position" or "comfort/ night/anti-freeze" can be selected as object for the operating mode.

The three binary inputs make possible the activation of blinds as well as the switching or the dimming of lights.

- 36 group addresses
- 36 associations
- 12 objects

	0	offset / indicate	Manual set point value offset	2 Byte
	1	indicate current set point val	Current set point value	2 Byte
	2	Transmit actual value	actual value	2 Byte
	3	1 = night mode, 0 = standby mo	Night <-> Standby	1 Bit
	4	1 = comfort mode	Comfort	1 Bit
	5	1 = frost protection	Frost protection	1 Bit
	6	indicate current operating mod	Current operating mode	1 Byte
	7	transmit current actuating val	actuating value heating	1 Byte
	9	control slats	blind step / stop	1 Bit
	10	transmit up / down telegrams	blind up / down	1 Bit
	11	transmit ON / OFF telegrams	switch Input 3	1 Bit

Settings

Standard setting is heating control only. However, the user also has the following control functions available:

- Heating control only
- Heating and cooling
- 2-stage heating with switching supplemental stage
- 2-stage heating with permanent supplemental stage

Advantage:
By means of the various control functions, the RAM 713 S can be used in almost all fields of application.
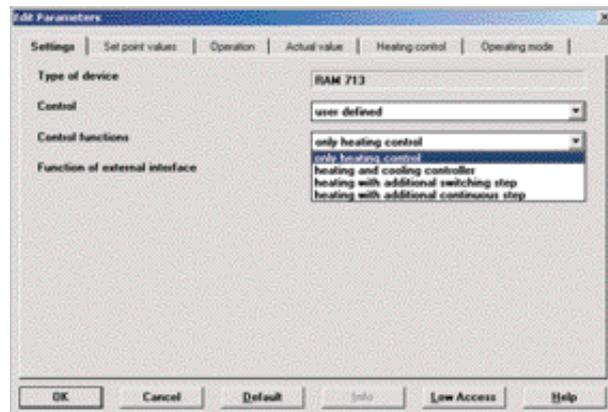
Heating control

The control parameters adjust themselves automatically through the choice of the system type (radiator or floor heating). Specialists, however, also have the possibility to define the proportional band and integrating time themselves.

Advantage:
- Simple parameterization via the system type
- User defined settings make possible customer-specific adaptations
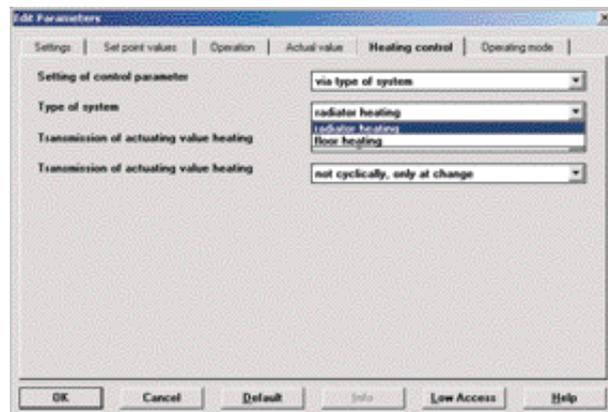
Cooling control

The control parameters adjust themselves automatically through the choice of the system type (cooling ceiling, fan coil unit). Specialists, however, also have the possibility to define the proportional band and integrating time themselves.
Switching between heating and cooling occurs either automatically or via object.

Advantage:
- Simple parameterization via the system type
- User defined settings make possible customer-specific adaptations

Application software RAM 713 S
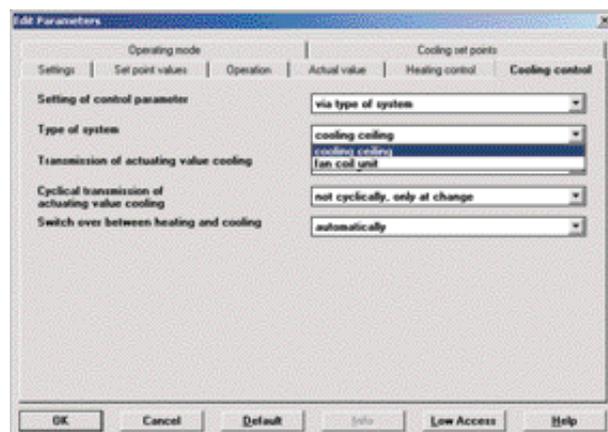
Operation

The RAM 713 S is delivered with two setting wheels, with absolute and relative scales. If the setting wheel with absolute scale is selected, the "basic nominal value" must be set as function. In addition, the range to be regulated during comfort operation is limited by means of the minimum and maximum setting.

Advantage:

- Saving energy because overheating of the room is prevented through limiting.
- On-site temperature adjustments can be limited individually.
- The function of the setting wheel can also be disabled.

If the setting wheel with relative scale is selected, the "Manual shift" must be selected as function.

Here, too, the manual shifting of the nominal value can be limited by parameter.
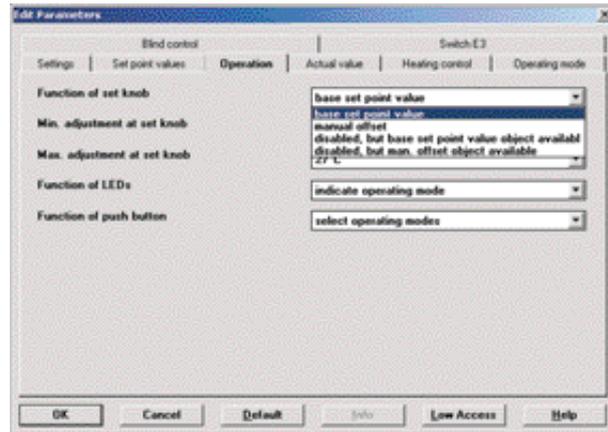
Operating mode

the RAM 713 S supports the old objects for defining the operating modes:

- Comfort
- Night/Standby
- Anti-freeze protection

As well as the new objects:

- Operating mode preselection
- Presence
- Window status

Advantage:

User can connect group addresses as usual or use the advantages of the new objects.
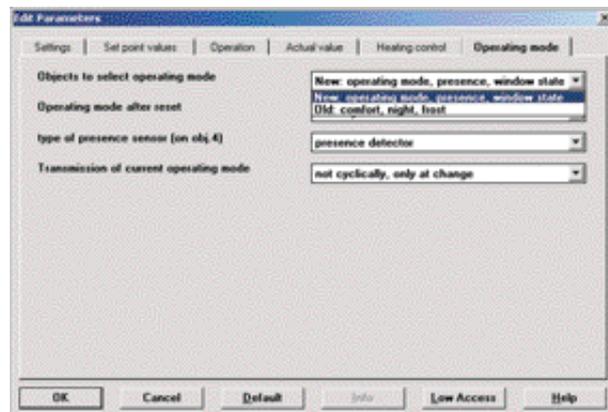
External sensor

An external sensor can be connected at the output E3. This can be used for temperature regulation.

Furthermore. this sensor can also be used for temperature limitation of the floor temperature, i.e., the room temperature is regulated with the internal sensor and, contemporarily, the floor temperature is limited with the external sensor so that the floor does not cool off completely nor heat up excessively.

Advantage:

- The floor is not damaged by overheating
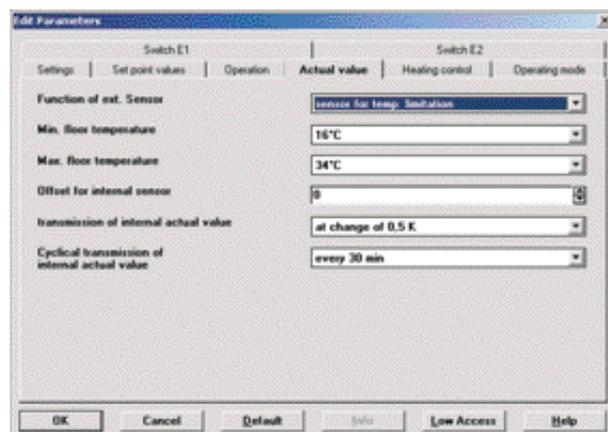
Individual room control RAM 713 FC

Fan coil continuous regulator with additional binary inputs for conventional switches/keys

RAM 713 FC
Individual room temperature control for controlling fan coil heaters

Description
The RAM 713 FC EIB/KNX is an individual room controller designed for wall installation with integrated bus coupler.
Two rotary controls are included in delivery:
– an absolute scale (installed)
– a relative scale (enclosed)
Objects can be configured for setting operating modes, presence as well as window status.

RAM 713 FC

Level I   Level II   Level III

Cooling   Heating   Additional heating
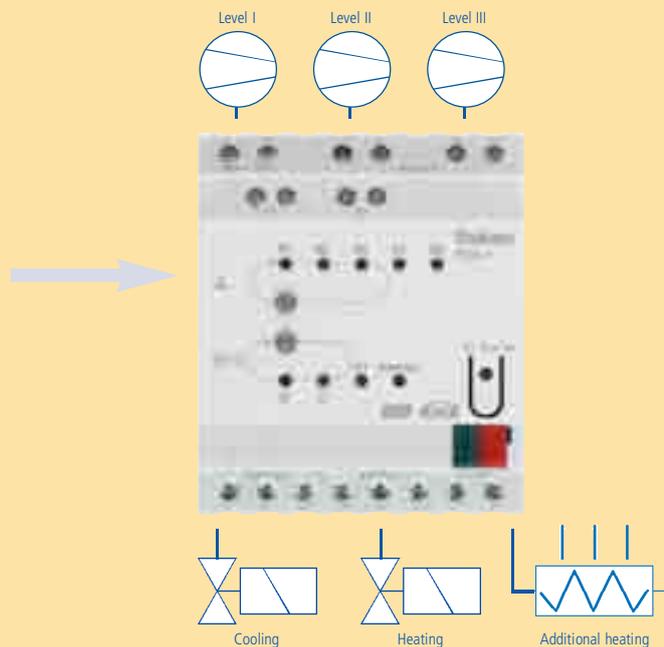
FCA 1 (see pages 50–53)

Characteristics

- Manual switch can be used as operating mode selector for OFF, auto or fan stage 1,2 or 3.
- LEDs display heating (red) or cooling (blue) status or whether the desired temperature has been reached
- The manually or automatically operated fan stages can be displayed via 3 LEDs
- Continuous PI controller for heating and cooling
- Status LED (red/blue/off) shows the user which function is being performed by the controller
- Rotary controls can be set mechanically using tappets or via parameters. The software can be used to turn it off completely
- 3 inputs for conventional switches/keys for the following functions: switching, dimming, blinds
- Inputs can also be used for external temperature sensors, window contact or presence signal

Advantages

- Binary inputs enable the customer to continue using the existing conventional switch program and still transmit telegrams on the bus.
  This supports:
  – Switching
  – Dimming
  – Blinds

Technical data:
Setting range: 10 °C … 28 °C
Measuring range: 0 °C … 40 °C
Operating voltage: Bus voltage
Power consumption: ≤ 10 mA
Protection rating: IP 20 in accordance with EN 60529
Housing: 80 x 84 x 27 mm

Order numbers:

RAM 713 FC EIB/KNX   **713 9 202**

Application software RAM 713 FC

The setpoint and actual values can also be sent via objects.
"Operating mode/ presence/window status" or "Comfort/ night/frost protection" can be selected as operating mode objects.

The three binary inputs enable the control of blinds as well as the switching of dimmers or lights.
• 36 group addresses
• 36 associations
• 16 objects

	0	Define set point temperature	Base set point value	2 Byte
	1	indicate current set point val	Current set point value	2 Byte
	2	Transmit actual value	Actual value	2 Byte
	3	Preselection of operating mode	Preselection of operating mode	1 Byte
	4	Input of presence signal	Presence	1 Bit
	5	input for window contact	window state	1 Bit
	6	indicate current operating mod	Current operating mode	1 Byte
	7	transmit current actuating val	actuating value heating	1 Byte
	8	transmit current actuating val	actuating value cooling	1 Byte
	16	transmit fan step	fan step	1 Byte

Settings
Other optional external interfaces can be configured for keys, switches or remote temperature sensors.
Advantages:
Considerable savings can be made using available binary inputs by using conventional keys or switches e. g. for lighting and shutters.
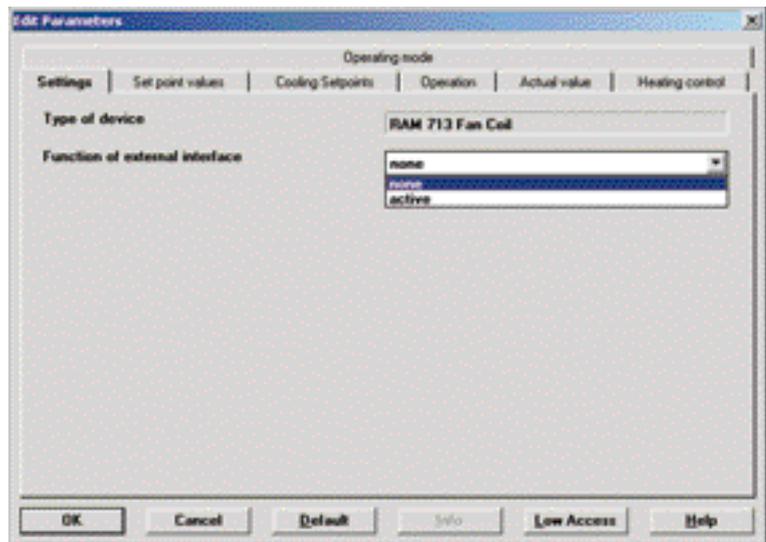
Heating/cooling control
The control parameters are set automatically by selecting system type (2- or 4-pipe system).
Advantages:
• Easy configuration via system type
• User-defined settings allow customer-specific adjustments

Application software RAM 713 FC
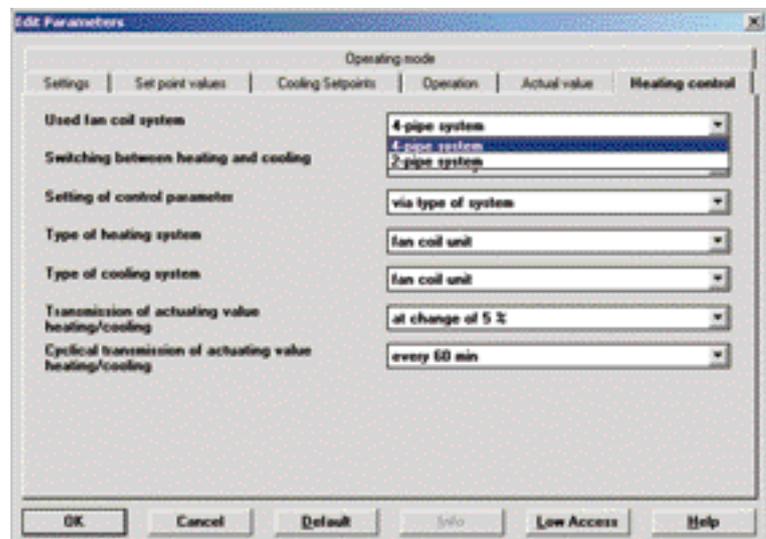
Heating control

The type of heating system can be configured as a "Fan coil unit" or "Radiator heating". Switching between heating and cooling is achieved automatically or via an object.

Advantages:

• Flexible adjustment of heating system via parameters.
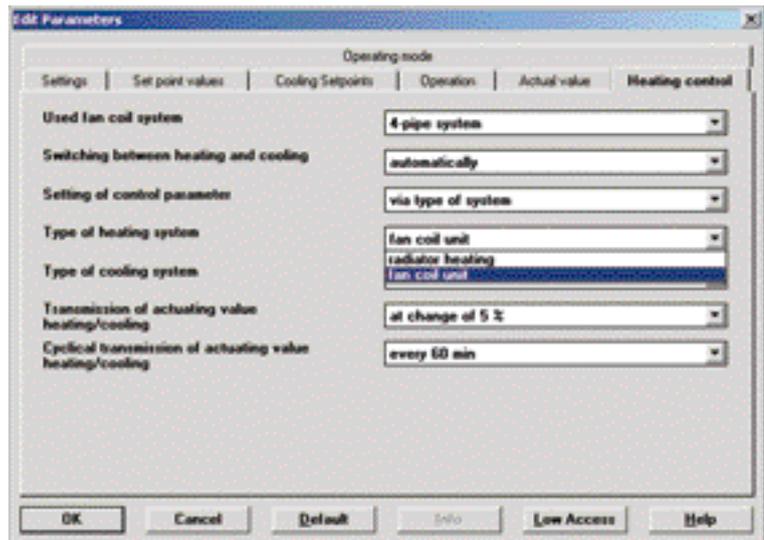
Cooling control

The type of cooling system can be configured as a "Fan coil unit" or as "Radiator heating". Switching between heating and cooling is achieved automatically or via an object.

Advantages:

• Flexible adjustment of cooling system via parameters.
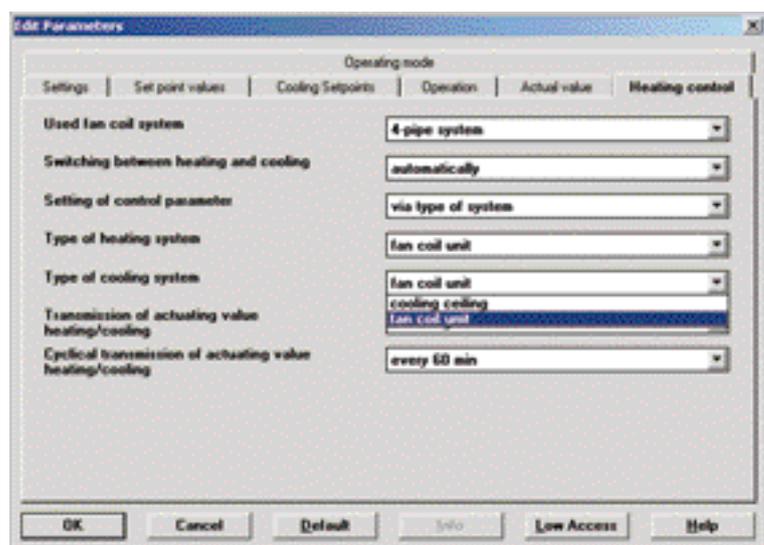
FCA 1 Fan coil actuator

Ideal control for fan coils or fan coil systems

FCA 1
FCA1 actuator, for 1-3-stage control of fan coils

Description

FCA1 is a fan coil actuator suitable for operation on the EIB/KNX.
FCA1 controls the fan coil with up to 3 fan stages. It also controls the heating and cooling valve, whereby 2-way and 3-way valves can be actuated. An additional relay allows the selective control of an electric heater bank or an electric cooler bank.
2-pipe systems and 4-pipe systems are supported.
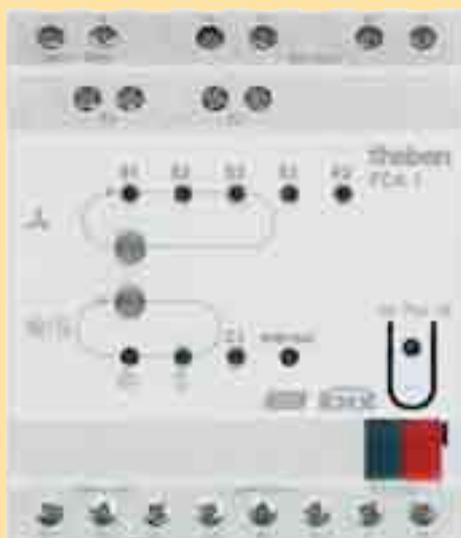
FCA 1 Fan coil actuator

FCA 1 has 2 free-floating inputs for window contacts and monitoring condensation.
The window contact input can be reconfigured as a temperature sensor.

The operating state is displayed via 9 LEDs:

• 3 LEDs (red) for displaying the fan stage
• 1 red LED for displaying heating mode
• 1 blue LED for displaying cooling mode
• 1 red LED for displaying additional relay ON
• 2 red LEDs for displaying input 1 and/or input 2 closed
• 1 red LED for displaying manual mode

FCA 1 has 2 keys for easier set-up. One key selects various fan stages.
The other key enables toggling between heating and cooling modes.

Advantages

• On-site operation for set-up on the device
• LED output status display
• Up to max. three fan stages
• Fan motor protection by locking the fan stages
• Floating switching contact for cooler or heater bank
• For 2-way and 3-way valves
• Window contact can be connected
• Condensate detector can be connected
• Adjustable response to bus failure and restoration of the bus / mains power
• Suitable for 2 and 4-pipe heating systems
• Keys for function check during set-up
• Feedback signal for heating, cooling, fan stage etc.
• With emergency program
• With dew point alarm (object)
• Input E1 can be used for temperature sensor
• Adjustment of setpoint value for cooling in relation to external temperature

Technical data:
Operating voltage: 230 V, ± 10 %
Nominal frequency: 50-60 Hz
Power draw from the mains: max. 3 VA
Bus power draw: max. 10 mA
Bus connection: Bus terminal
Permissible ambient temperature:
−5 °C ... +45 °C
Protection class: II provided it is correctly installed
Protection rating: IP 20 in accordance with EN 60529
Standard housing: 90 x 72 x 68 mm (4 modules), installation on DIN top hat rail

Outputs
Valves (triacs switching capacity):
0.5 A (~24–230 V AC)
Switching capacity, additional relay: 16 A
Switching capacity, ventilator relay: 8 A
Response in the event of bus failure:
adjustable

Order numbers:

FCA 1 EIB/KNX	492 0 200

Applications software FCA 1

Objects for functions including:
- Number of fan stages, switching thresholds
- Basic settings available for heating and cooling valves etc.

- 64 group addresses
- 64 possible associations
- 28 possible objects

	0	receive	Actuating value heating	1 Byte
	1	receive	Actuating value cooling	1 Byte
	2	report	Heating status	1 Bit
	3	report	Cooling status	1 Bit
	4	report	Fan step	1 Byte
	5	Switching	Auxiliary relay	1 Bit
	6	1 = lock	Lock additional ventilation	1 Bit
	7	1 = lock	Fan lock	1 Bit
	8	fan control with % value	Forced fan step	1 Byte
	9	0 = auto 1..3 = highest level	Limitation of fan step	1 Byte
	10	report	Status of window contact at E1	1 Bit
	11	report/reset	manual mode	1 Bit
	12	report	Drip tray monitoring status	1 Bit
	13	input	Dew point alarm	1 Bit
	14	input	Outdoor temperature	2 Byte
	15	delta in K	Adjust set point	2 Byte

Functions

"Heating", "Cooling", "Venting" and "Heating and venting" functions can be configured. The functions adjust automatically to the "Supported function" and "Control type" parameters as well as "General" parameters.

System types heating system/cooling system

"Fan coil" or "Convector" can be selected as heating and as cooling systems.

Fan stages

The number of fan stages can be set to a maximum of 3 levels.
The switching thresholds can be configured. The minimum duration of a fan stage can also be adjusted.
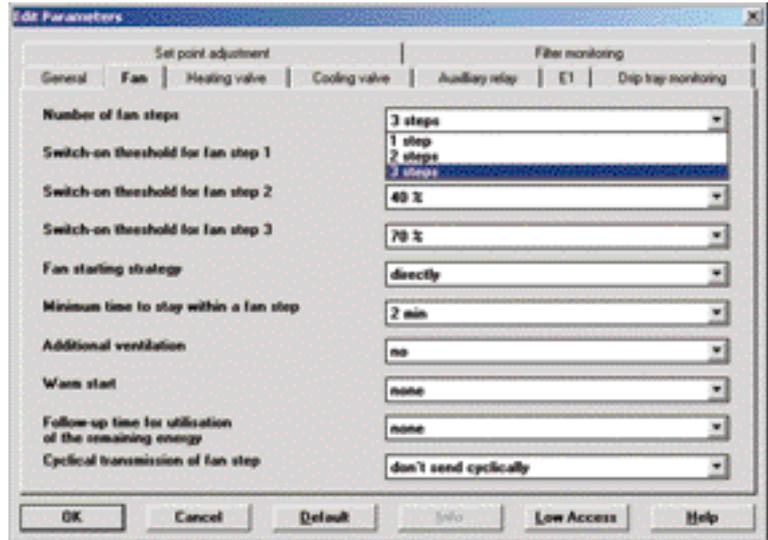
Selection of valve type

2-way valves can be configured for standard positioning drives (open/closed) or
3-way valves for linear motorised positioning drives.

Heating
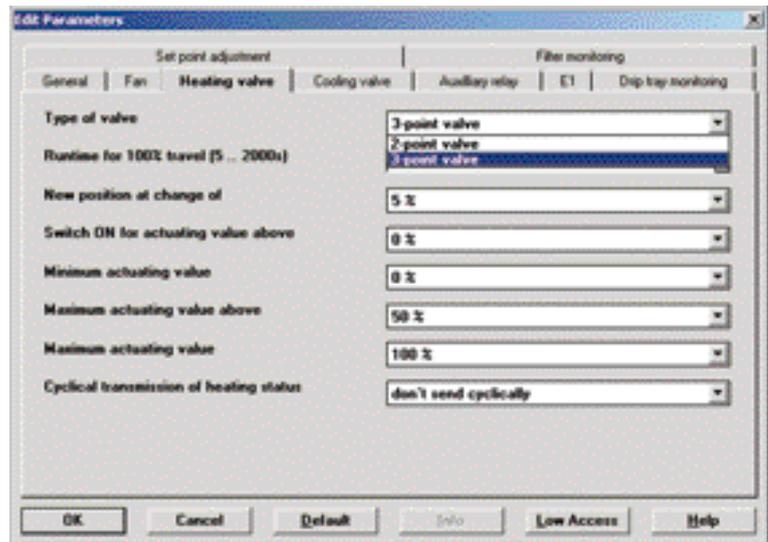
Motorised Actuators CHEOPS control, CHEOPS drive

Compact and with excellent design – the independent single-room regulation with visual control display

CHEOPS control
motor-driven actuating drive with independent room temperature control and integrated temperature sensor (actual value detection). Possibility for manual operation on the drive via keys.

CHEOPS drive
motor-driven actuating drive with stroke index. The setting commands are transmitted by room temperature sensors.

Description
The actuators have been developed for a continual valve regulation. The connection to the EIB is done directly without separate connector. The drives are provided with their supply voltage by the EIB.
The integrated regulation of Cheops control with actual temperature detection makes an absolutely independent individual room temperature control possible. By means of the keys the temperature can be changed at any time.

reddot
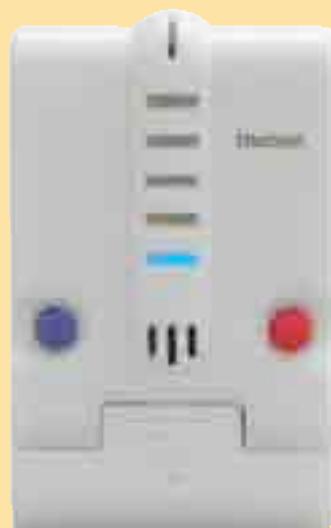
CHEOPS control

CHEOPS drive

CHEOPS control

Motor-driven actuating drive with independent regulation and temperature detection (actual value detection)

- Independent room temperature regulation, manual operation on the unit via 2 keys possible (actual value modification)
- Display via 5 LEDs (red/blue for warmer/cooler)
- Connection for remote sensor
- The following functions can be configured:
  – Heating control (continuous regulation)
  – 2-step heating
  – Heating and cooling
- CHEOPS control can additionally transmit a correcting variable for a second heating stage or for a cooling system. This correcting variable can be elaborated by the CHEOPS drive or by a heating actuator.
- On pressing both keys at once the stroke index (adjusted position) is shown by the 5 LEDs

CHEOPS drive

Motor-driven actuating drive without regulation
- Stroke index (adjusted position)
  by the 5 LEDs (red)

Characteristics

- Quit, service free drive
- Fully automatic valve stroke detection adjusting the regulating distance dynamically according to the valve used
- 2 inputs for e.g. window contact, presence detector
- Compulsory modes e.g. frost protection, regulator failure
- Protection against vandalism possible by lock
- Easy mounting by snapping on valve adapter (valve adapter for all well-known valves included in the delivery)
- Can be used in the heating circuit distributor
- Valve protection in the summer mode to omit valves sticking
- Behaviour in case of telegram failure can be adjusted
- Master – slave function:
  The Cheops control can send the commands as well to the Cheops drive

Advantages

- Display of the valve lift
- All necessary adapters included in delivery
- CHEOPS control is an actuator in which the regulator has already been integrated.

Technical data:
Supply voltage provided by the EIB net
Controlsignals: EIB-Telegramm
Behaviour in case of control signal failure: changes to adjustable position
Operating temperature: 0 °C ...+50 °C
Stock temperature: –20 °C ...+60 °C
Medium temperature: +100 °C
Degree of protection: EN 60529 – drive: IP 21
– control: IP 20
Protection class: III, EN 60730-2-14
Product consumption: 240 mW (max. 350 mW)
Max. setting stroke: 6 mm
Running time: < 20 s/mm
Stroke index: 120 N
Stroke index drive: 5 LEDs (5 x red)
Requested value display control:
5 LEDs (2 x blue, 3 x red)
Detection of valve limit stop: automatically
Valves which can be used: Actuator with valve adapter for Danfoss RA, Heimeier, MNG, Schlösser from 3/93, Honeywell Braukmann, Dumser (heating circuit distributor), Reich (heating circuit distributor), Landis + Gyr, Oventrop, Herb, Onda
Linearization of valve characteristics: possible via software
Internal/external temperature sensor: with Cheops control
Connection cable: 1.0 m
Standard housing: 82 x 50 x 65 mm

Order no:

CHEOPS control EIB/KNX	732 9 201
CHEOPS drive EIB/KNX	731 9 200
Remote sensor, optional	907 0 191
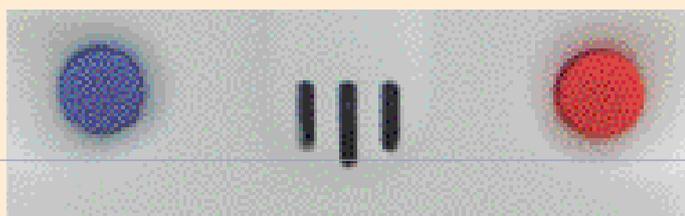
The "operating mode/presence/window position" or "comfort/ night/anti-freeze" can be selected as object for the operating mode. Object 6 "Nominal temperature adjustment" enables the desired temperature not only to be sent by the manual button on the device but also via the telegram of a normal "EIB button". The control parameters are mostly identical to RAM 713 S.
• 30 group addresses
• 30 associations
• 12 objects

	0	Define set point temperature	Base set point value	2 Byte
	1	shift set point temperature	Manual shift of set point value	2 Byte
	2	Transmit real value	real value	2 Byte
	3	Preselection of operating mode	Preselection of operating mode	1 Byte
	4	Input of presence signal	Presence	1 Bit
	5	Input of window state	window state	1 Bit
	6	1 = decrease, 0 = increase	Adjustment of set point temperature	1 Bit
	7	Current actuating value heatin	actuating value heating	1 Byte
	9	Transmit	Current set point value	2 Byte
	10	Transmit	Current operating mode	1 Byte

The settings
The default setting ex-works are:
• Heating control
• One degree of nominal value offset for each press of the button
• New operating modes with operating mode preselection/ presence/window contact
• Standard valve sealing with typical valve characteristics

This default setting covers all standard applications and the customer does not have to do any additional parameterization. He does, however, have the possibility to make user-defined settings.

Advantages:
• No parameterization necessary for standard systems
• User defined settings make possible customer-specific adaptations
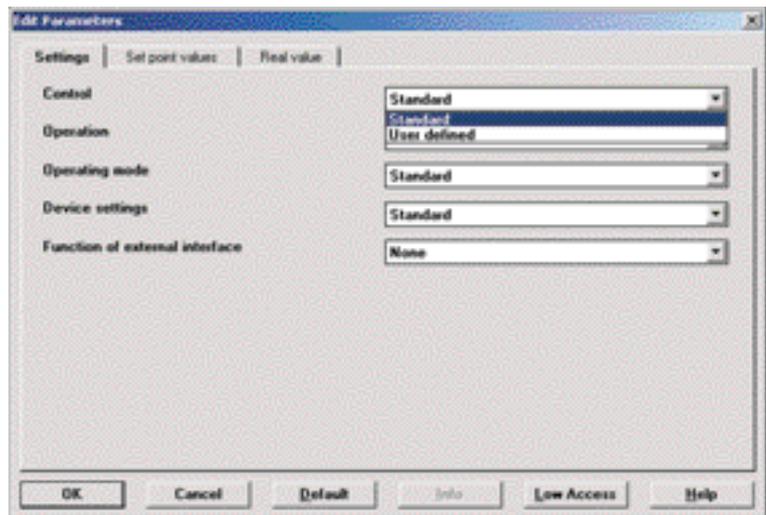
Control functions
Standard setting is heating control only. However, the user also has the following control functions available:
• Heating control only
• Heating and cooling
• 2-stage heating with switching supplemental stage
• 2-stage heating with permanent supplemental stage

Advantage:
Thanks to its wide range of control functions, the CHEOPS control can be used in practically any area of application.
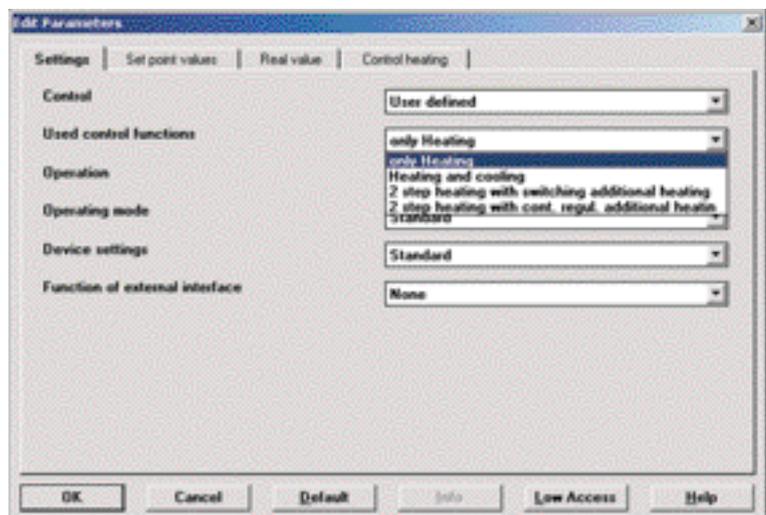
Application software CHEOPS control

Heating control

The control parameters adjust themselves automatically through the choice of the system type (radiator or floor heating). Specialists, however, also have the possibility to define the proportional band and integrating time themselves.

Limiting the minimum correcting variable prevents a "whistling" of the valve in an almost closed condition.

A CHEOPS drive can be actuated with the "Heating correcting variable"

Advantage:

- Simple parameterization via the system type
- Master-Slave operation possible between CHEOPS control and CHEOPS drive
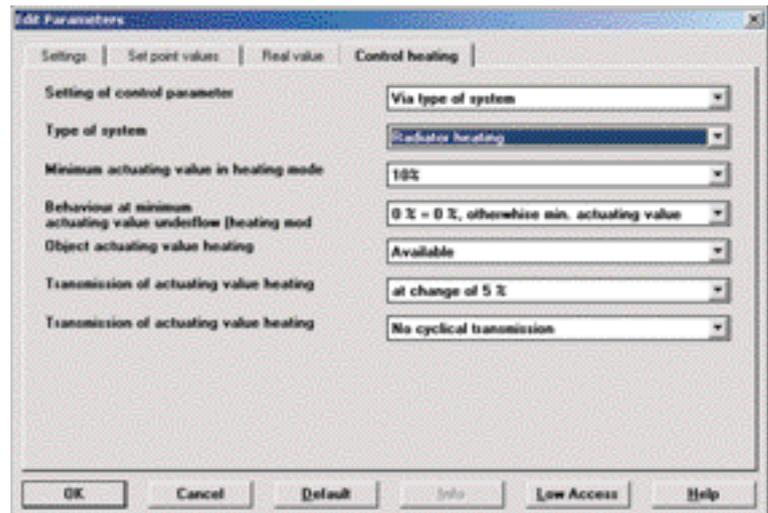
Operation

The LEDs display the nominal value offset (warmer/red and colder/blue) or the valve position. The display can be limited in time (10 seconds) or switched off completely.

The buttons can be disabled to prevent the user from changing the parameterized temperature.

If the buttons are enabled, it can be set by how many degrees the temperature should be increased or decreased.

Advantage:

- The LEDs can be switched off when used in bedrooms
- Buttons can be disabled when used in schools/offices
- The parameterized setpoint temperature can be offset by up to 5 kelvins
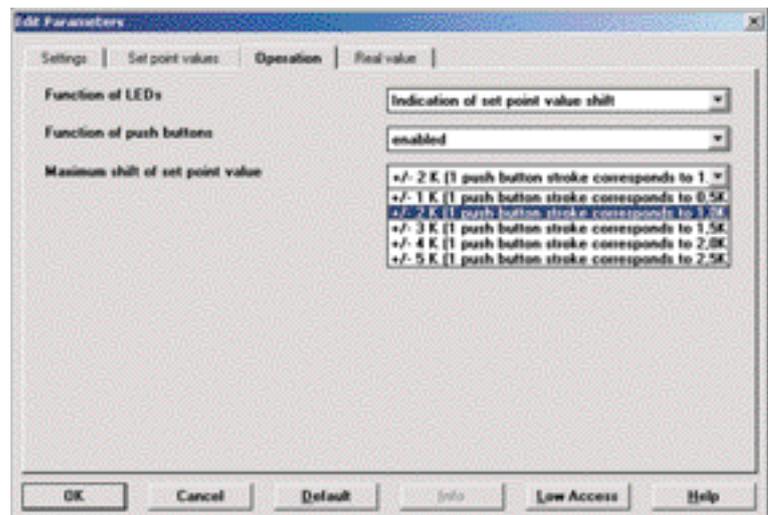
Operating mode

The CHEOPS control supports the old operating modes:

- Comfort
- Night/Standby
- Anti-freeze protection

As well as the new objects:

- Operating mode preselection
- Presence
- Window status

If the actuator is in night operation, pressing the red button brings back the comfort operation. The time for the comfort extension can be set here.

Advantage:

The user can connect group addresses as usual or use the advantages of the new objects.
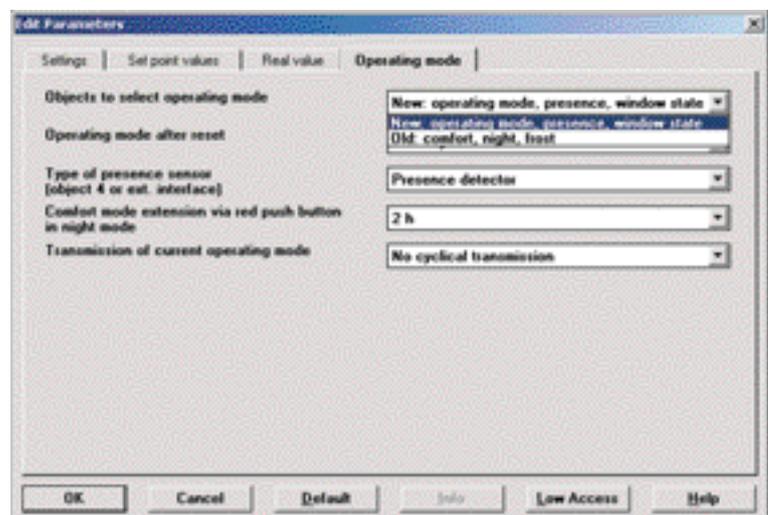
Nominal values

The basic nominal value corresponds to the comfort temperature, the setting is carried out in Kelvin for the reduction in the standby and night operations. Should the base nominal value (comfort temperature) be changed via object, the distances between standby and night are maintained.

Advantage:

- If the comfort temperatures in a building are generally too high or too low, all actuators are modified via the base nominal value.
- Standby and night temperature correct themselves at the same time automatically.
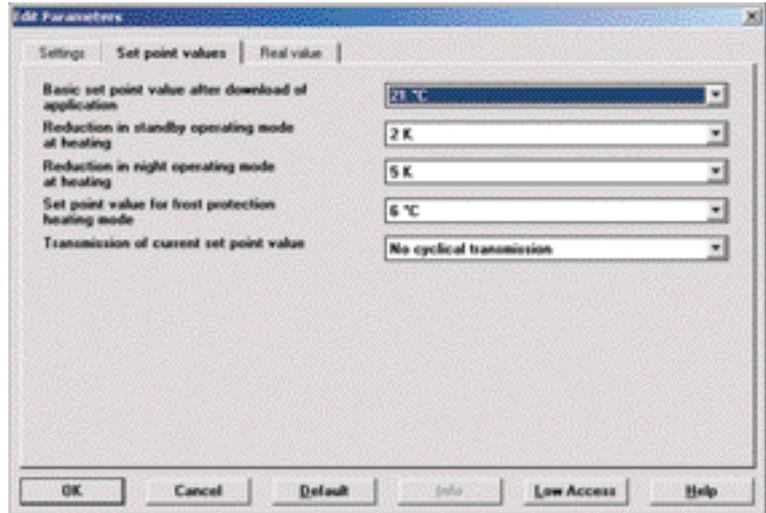
Device setting

The valve characteristics set ex-workscover almost every standard valve. The valve positions acquire an automatic adjustment after the commissioning automatically.

However, the user still has the possibility to intervene manually to, e. g. additionally press down leaking rubber seals. Furthermore, the typical characteristics of a valve are stored, but here, too, individual characteristics can be entered.

Object 6 can be used in different ways:

- Increase/decrease nominal value
  – temperature is changed via button
- Determine maximum correcting variable – for boiler control
- Transmit actual valve position
  – valve position can be monitored
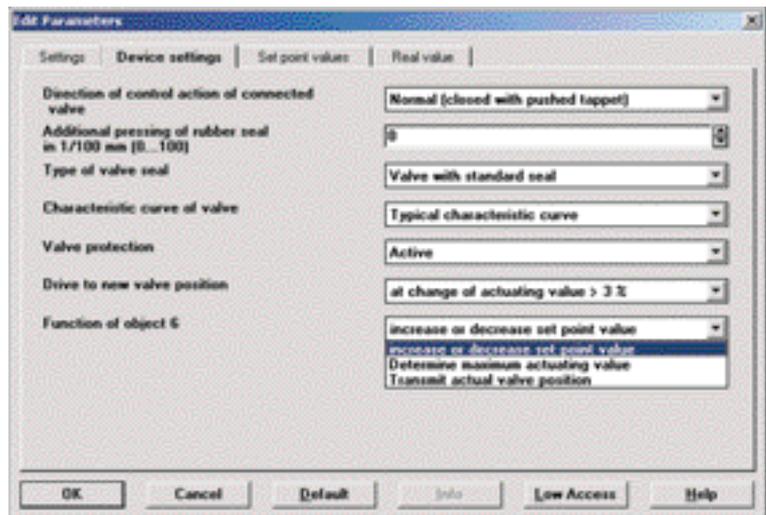
Cheops drive

The current valve position can also be sent via bus. The "Maximum position" is used by an EIB boiler control for regulating the forward flow temperature.

If both inputs are used, e. g. for window contacts, the window status can also be signaled by means of the bus.

If the actuator receives no adjustment command from the room temperature control, the lack of a correcting variable is signaled by bus.

- 18 possible group addresses
- 18 possible associations
- 8 objects

	0	Drive to position	actuating value	1 Byte
	1	Drive to forced position	Forced position	1 Bit
	2	indicate actual valve position	actual valve position	1 Byte
	3	Determine maximum position	Maximum position	1 Byte
	4	Close valve in summer	Summer mode	1 Bit
	5	indicate state of window conta	Window contact	1 Bit
	6	indicate state of presence con	Presence contact	1 Bit
	7	signal failure of actuating va	Failure of actuating value	1 Bit

Application software CHEOPS drive

Valve characteristics

The valve characteristics set ex-works cover almost every standard valve. The valve position automatically adjusts itself after commissioning. However, the user still has the possibility to intervene manually to, e. g., additionally press down leaking rubber seals. Furthermore, the typical characteristics of a valve are stored, but here, too, individual characteristics can be entered.

Limiting the minimum correcting variable prevents a "whistling" of the valve in an almost closed condition.

Advantage:

- Customer can take the specific valve characteristics into account
- No settings are necessary when using standard valves
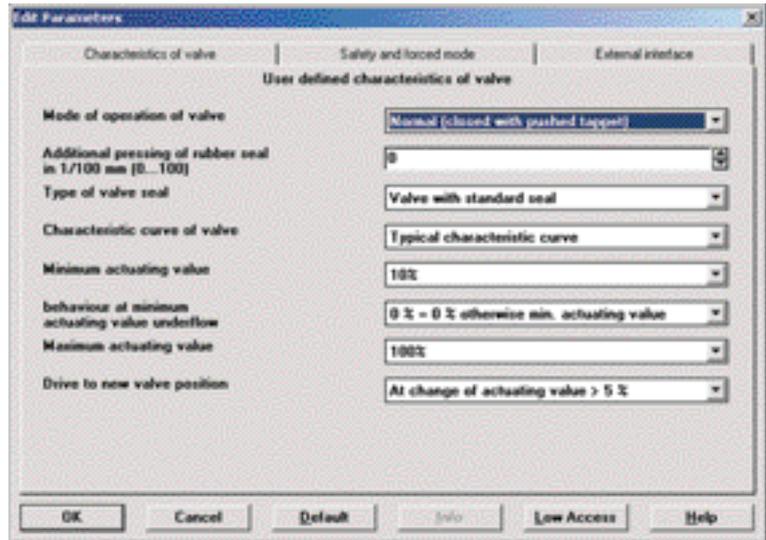
Safety behaviour

Should the actuator receive no more telegrams from the room thermostat, it takes on a forced position to prevent a cooling off of the room. Besides this, the lack of the correcting variable can be signaled via bus. The valve protection is set for summer operation, in this state the valve is flushed (opened) once a day.

Advantage:

- Safety behaviour in case of defective room thermostat
- Errors in the system are signaled via bus.
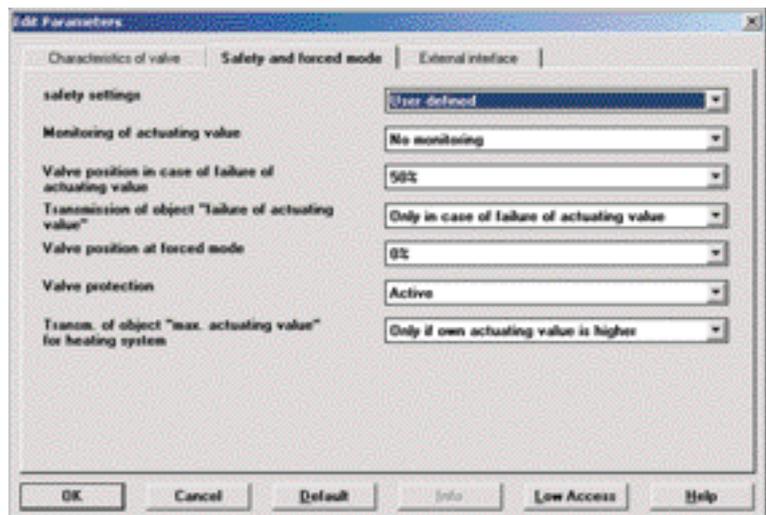
External interfaces

The actuator has two inputs on which a window contact and a presence detector can be connected. This prevents heating with the window open. Additionally, a signal can go over the bus to indicate that the window is open.

If a presence detector is connected, notification is made via the bus if someone is in the room. The room temperature control then only regulates to comfort temperature in the presence of people. Otherwise, the temperature is reduced to standby.

Advantage:

- Efficient energy savings
- No heating with the window opened
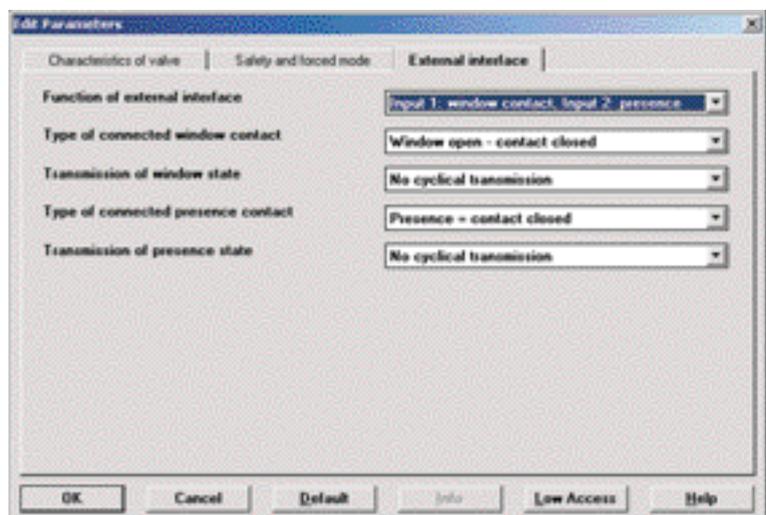
Actuator ALPHA 4 24 V, ALPHA 4 230 V~

Simple and elegant – the silent thermal actuators

Actuator ALPHA 4 for individual room control enables customised temperature reduction

Description:
Thanks to a wide range of adapter pieces, these electrothermal actuators can be installed on practically any radiator. Extremely easy to install, because no intervention in the piping system of the heater is necessary.

For driving the following actuator, a Theben clock thermostat is required.

Actuator ALPHA 4 230 V~
- Actuator for radiators, heating circuit distributors or individual heating circuits
- „First open function" for simple mounting and start-up of heating
- Plug-in mounting of valve adapter
- 100% protection against leaky valves
- Function and adjustment checking
- Protection against disassembly by means of removable SaveGuard
- Guaranteed overvoltage protection

Actuator ALPHA 4 24 V
- Positioning actuator as before, but for 24 V AC/DC

Actuator ALPHA 4

VA 78   **VA 80**
Valve adapter

Technical data:
Operating voltage: 230 V AC, 50/60 Hz
24 V, 0–60 Hz
Functioning principle:
noise-free expansion element
Valve currentless: closed
Switch-on current:
max. 300 mA for max. 200 ms
max. 250 mA for max. 2 min
Operating power: 1,8 W
Closing/opening times: approx. 2.5 min
Travel: 4 mm
Spring resistance: 100 N, ± 5 %
Permissible ambient temperature: 0 °C… 60 °C
Stock temperature: –25 °C… 60 °C
Degree of protection: IP 54 in accordance with EN 60529
Protection class: II in accordance with EN 60 730-1
Length of the connecting lead: 1000 mm
Color of housing: white (RAL 9003)
Housing: 60 x 44 x 61 mm

Valve adapter VA 78
- Valve adapter for Danfoss RA

Valve adapter VA 80
- Valve adapter for Onda, Schlösser (from 3/93), Oventrop, Heimeier, Herb, Therm-Concept, Frank, Roth (distributor), Dinotherm (distributor)

Further valve adapters on request.

Order no:

Actuator ALPHA 4 230 V~	**907 0 438**
Actuator ALPHA 4 24 V	**907 0 439**
Valve adapter VA 78	**907 0 436**
Valve adapter VA 80	**907 0 437**

Brightness value transmitter LUNA 133

Following the sun – the brightness value transmitter for measuring the brightness on different sides of the building

LUNA 133

Description:

Brightness value transmitter, can be combined above all with the Theben weatherstation.

Characteristics:

- LUNA 133 measures the current brightness value and transmits this value to the bus
- The brightness value is transmitted cyclically, or when there is a change
- Power supply directly from the bus

In combination with the Theben weatherstation it is possible to record and take into account the brightness on several sides of a building (up to 3). This can be used, for example, to adjust shutters and blinds individually for different brightness conditions on the various sides of the building.

Advantages:

- Ideal for combination with the Theben weatherstation
- Unit is connected directly to the bus, meaning fewer cables are needed
- Very cost-effective solution

Technical data:

Operating voltage: Bus voltage
Bus interface module: integrated
Brightness measuring range: 1-100,000 lux
Tolerance: ±20% or ±5 lux
Power consumption: < 150 mW
Permissible ambient temperature:
-25 °C ... +55 °C
Protection rating: IP 54 in accordance with DIN EN 60529
Housing: 110 x 72 x 54 mm
Weight: approx. 140 g

LUNA 133

Order no:

LUNA 133 EIB	**133 9 200**

Weather station

The universal genius – processes measured values of wind, rain, brightness and temperature in one device
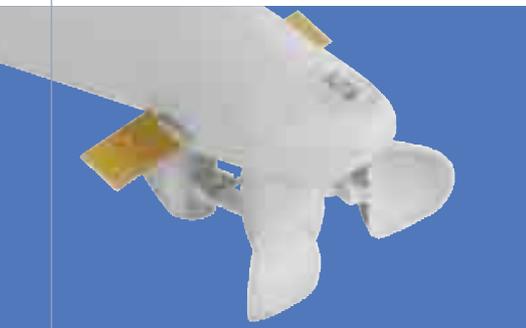
Weather station
Combination device for commercial units as well as for larger family houses

Description

This combination weather station may be used exclusively as a brightness, temperature, rain and wind sensor. The various threshold values may also be combined in any way desired, e. g. wind and brightness only.

7 different channels can be used, each with adjustable threshold values. 4 of these are universal channels that allow any combination of the measurement variables, and 3 sun protection channels that are optimized especially for blind, awning and roller shutter applications.

The automatic sun protection controls the blinds/shutters/awnings independently during the day, without making any intervention necessary.
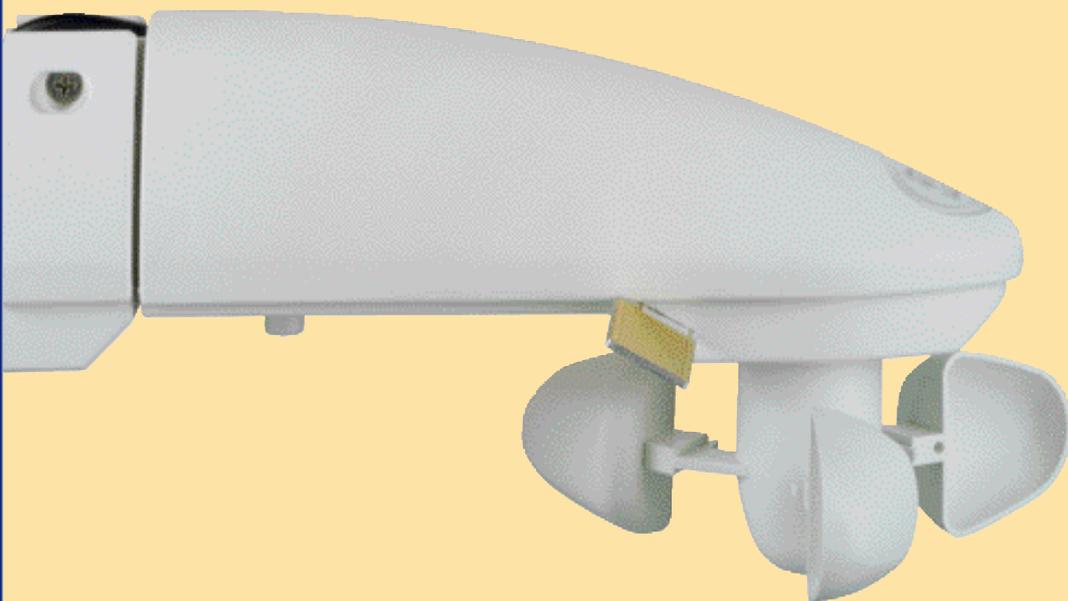
Weather station

When a threshold is reached, two separate telegrams can be sent, e. g. for height and slant of a blind or a value and switch telegram.

Because the brightness values for 2 sun protection channels can be specified via only a single channel, the weather station can also calculate the sun protection function for sides of the building other than where it is installed. The ideal sensor for this is the LUNA 133 brightness value transmitter (see Page 61).

The teach-in objects for the brightness threshold are quite user-friendly. This makes it possible for the customer to redefine the thresholds with the touch of a button, without having to parameterize the weather station again.

Characteristics:

- Recording of wind, rain, brightness and temperature
- Measurement variables can be directly transmitted on the bus
- Wind, brightness, temperature are transmitted as 2 byte value, rain as 1 bit value
- Wind can optionally be transmitted in m/s or km/h
- Evaluation takes place directly in the device
- Voltage supply of bus voltage and 230 V
- Brightness range: 1–100.000 Lux
- Temperature range: –20 °C … +55 °C
- 4 universal channels
- 3 sun protection channels (especially for blind and roller shutter application)
- Automated sun protection mechanism for independent control of blind, awning etc.
- Integrated bus coupler
- Integrated heater for rain sensor
- Teach-in object for brightness threshold

Advantages

- Only one weather station in a housing that records all variables and evaluates them.
- Can be connected directly to existing bus lines. This makes further cabling unnecessary.
- Any parameterization of the various channels possible
- Sun protection for up to 3 sides of the building is possible

Technical data
Measure range: –20 °C ... +55 °C
Brightness range: 1–100.000 Lux
**Light detection angle:** 150°
Operating voltage:
Bus voltage and 230 V necessary for heating
Product consumption: ≤ 10 mA
Degree of protection: IP 44 (EN 60529)
Housing: 280 x 160 x 135 mm

280

66

135

160
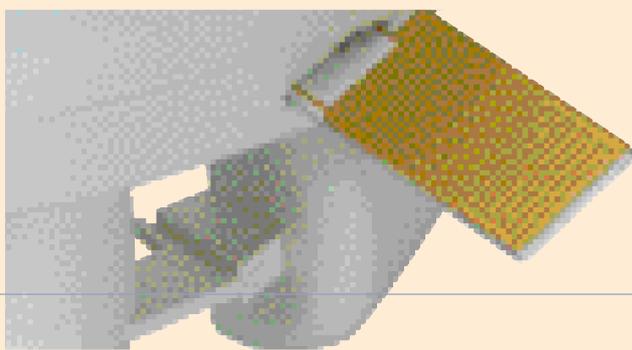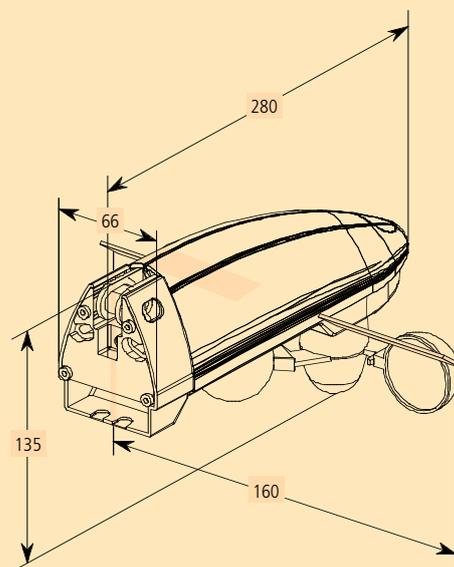
Order no:

Weather station EIB/KNX   **132 9 201**

Pole fixture for
Ø 60–80 mm   **907 0 380**

The individual physical values (brightness, temperature, wind) along with the message whether or not it is raining can be transmitted on the bus.
The brightness thresholds can also be input via object.

- 108 group addresses
- 108 possible associations
- 41 objects

	0	Physical value	Brightness value	2 Byte
	1	Physical value	Temperature value	2 Byte
	2	Physical value	Wind velocity	2 Byte
	3	Rain / no rain	Rain sensor	1 Bit
	4	switch	C1.1 Brightness threshold	1 Bit
	7	Input	C1 set brightn. threshold	1 Byte
	8	switch	C2.1 Temperature threshold	1 Bit
	12	drives up/down	C3 up/down	1 Bit
	13	Height	C3 Blinds	1 Byte
	14	Position	C3 Slats	1 Byte
	15	Morning=1 / Evening=0	C3 Sun control	1 Bit
	16	Input	C3 Safety	1 Bit
	17	Input	C3 set brightn. threshold	1 Byte
	40	report	Brightness thresholds	2 Byte

Channel use

There are 7 channels available, of which 3 channels are preprogrammed for sun protection, e. g. for east, south, west directions.
The 4 remaining channels may be parameterized as

- brightness sensor
- temperature sensor
- safety channel (OR operation of wind, temperature, rain)
- universal channel (AND operation of brightness, wind, temperature and rain)
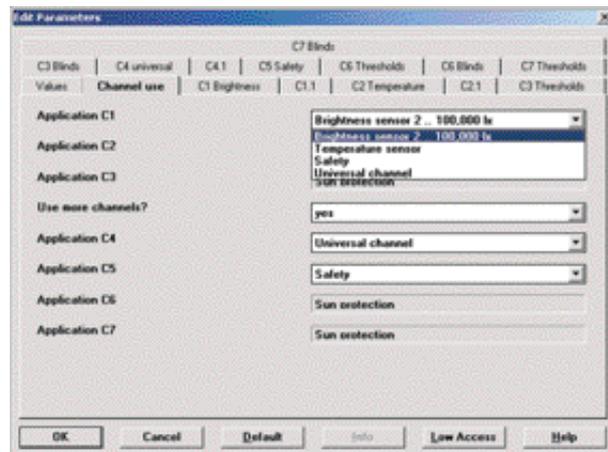
Channel use of the brightness sensor

The brightness threshold may lie between 2 and 90.000 Lux. Additionally, the hysteresis and the delay time is set.

Advantage:

- Simplest parameterization of the brightness condition
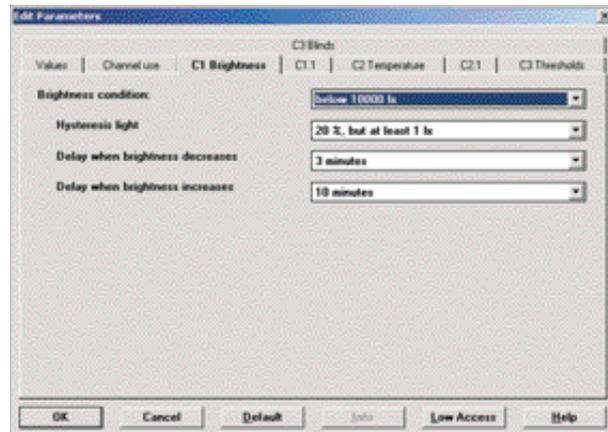
Reaching the threshold

When a parameterized threshold or condition is reached, a

- switching command (1 bit)
- priority (2 bit)
- value telegram (1 byte)

can be transmitted as desired. In so doing, it is differentiated if the condition is fulfilled or not.

- An independent second telegram (1 bit, 2 bit or 1 byte) can likewise be transmitted.

Weather

Application software weather station

Sun protection

The sun protection function allows you to choose between:
- blinds
- roller shutter/textile sun protection
- sending value
- scenes via 1 bit telegrams

The automatic sun protection can be activated via object or twilight threshold.

Advantage:
- Comfortable automatic control of the sun protection without manual intervention

Threshold for sun protection function

The twilight threshold is used for activating the automatic sun protection. In addition, up to 3 brightness thresholds can be para-meterized that represent the conditions for the automatic sun protection.

Advantage:
- With increasing brightness, the hanged elements (blinds, shutters) are moved to parameterized values to attain comfortable lighting conditions.

Universal channel

The individual measurement variables of brightness, wind, temperature and rain can combined as desired (AND-operation).
When so doing, all 4 measurement values or any selection of the individual measurement variables can be combined.

Advantage:
- Each and every situation can be described
- The user remains very flexible
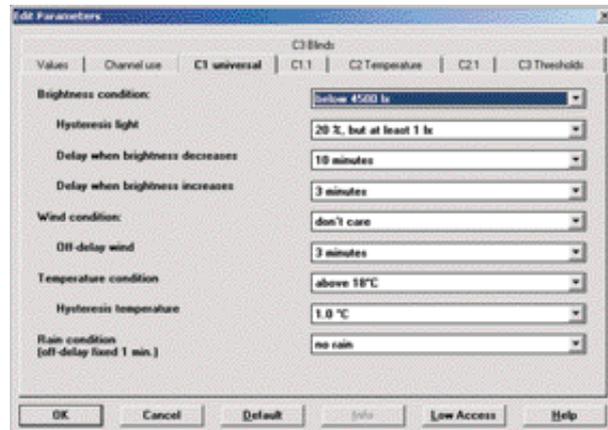
Safety channel

The safety channel can combine wind, temperature and rain in any way desired (OR-operation).
Should one of the set conditions apply, the safety telegram is transmitted.

Advantage:
- The safety channel can be combined ideally with the sun protection channel for control-ling awnings, blinds, etc.
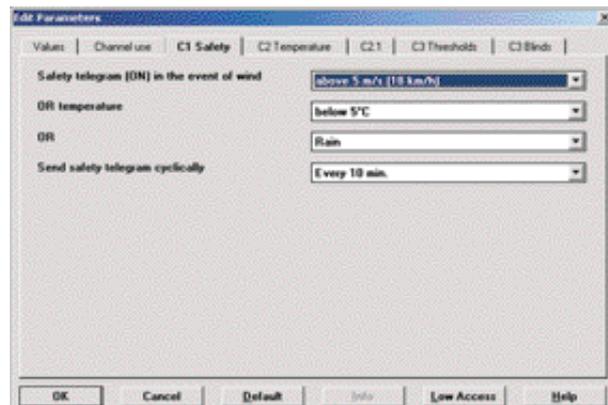
Motion sensor SPHINX 330

Barely visable – the flush fitting motion sensor for ceiling installation

SPHINX 330

Description

Motion sensor for brightness-dependent and motion-dependent control of lighting, especially in office and hallway areas. 1-channel motion sensor incl. constant light control with BCU.

- Exclusively motion-dependent lighting control
- Motion-dependent and brightness-dependent lighting control
- Continuous/light-dependent constant light control

SPHINX 330
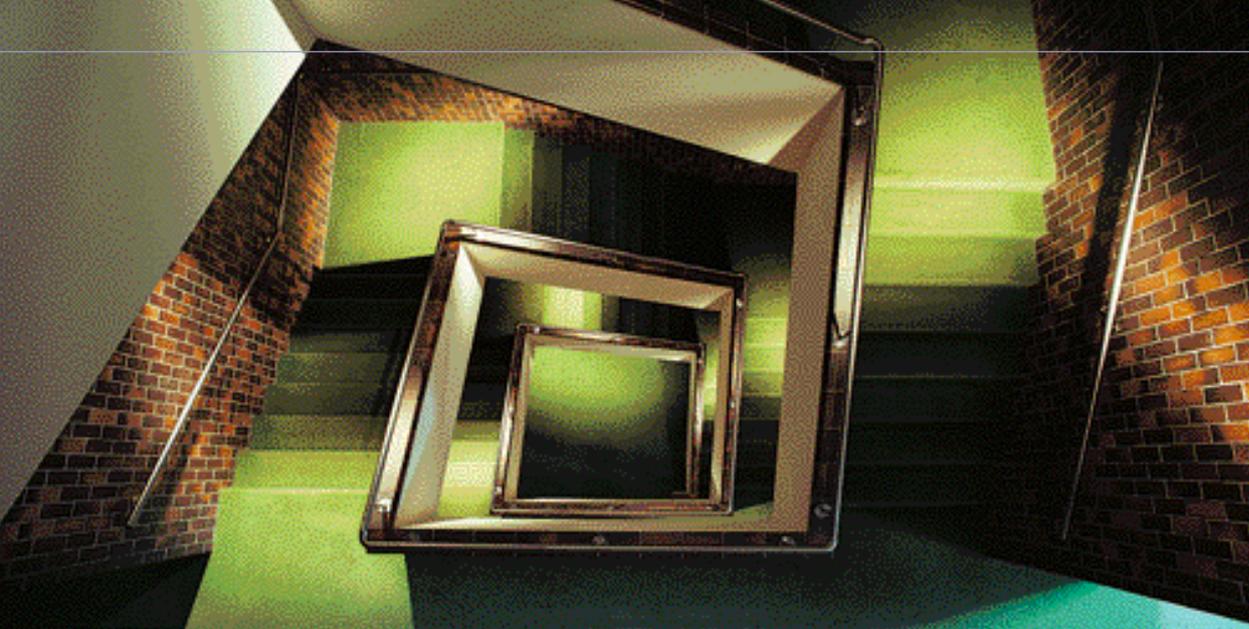
Characteristics

- Motion sensors
- Master/Slave function
- Settings per ETS:
  - Brightness range: 0-700 lux
    (with correction factor to 5600 lux)
  - Switch-off delay: 1 s–120 min
- Detection range: 7 m diameter (2.8 m installation height)
- Very inconspicuous thanks to flat integrated housing for the ceiling
- Setpoint adjustment for brightness (lux value) by means of object, teaching or parameter
- Functions:
  - Lighting ON/OFF
  - Time functions (switch-off delay)
  - Disabling the motion sensor
  - Constant light control
  - Master/Slave function
- Power supply from bus voltage

Advantages

- Very flush fitting (projects 5 mm from the ceiling), and thus very inconspicuous
- Low-cost solution for smaller detection areas
- Bus coupling integrated into housing

Technical data:
Supply voltage (bus): 30 V
Current consumption (bus): < 10 mA
Mounting hole: Ø 64 mm
Front: Ø 76 mm
Installation height: approx. 5 mm
Installation depth: 60 mm
Ambient temperature: −5 °C… +45 °C
Protection class: II
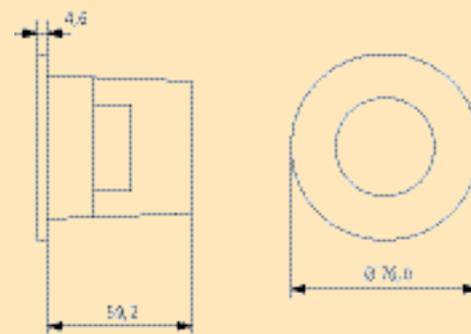
Motion

Order no:

SPHINX 330 EIB/KNX   **107 9 210**
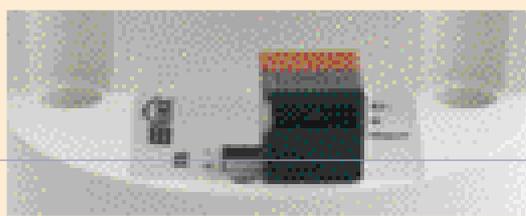
SPHINX 330 has disable objects for motion sensors and constant light control. In addition, the brightness threshold for daylight-dependent switching can be taught via an object. It is likewise possible to teach the brightness value for the constant light control via an object, or to specify it via an object or a parameter.

- 45 group addresses
- 46 possible associations
- 11 objects

	0	Switch on Movement	Movement	1 Bit
	1	PIR-Locking	PIR-Locking	1 Bit
	2	Input/Output	Master-Trigger	1 Bit
	3	$01 = recall / $01 = save	recall /save actual lux level	1 Byte
	4	Setpoint Lux Level	Lux Level for Movement	2 Byte
	9	Brightness value	Brightness value	2 Byte
	10	Input	Test Mode	1 Bit

Response for motion detection

The "master device" receives messages from the "slave devices" and assumes the light on/ off function. If the "retrigger parameter" is set to "ON", then with each detected motion within the switch-off delay time, this is re-started and the light is not switched off until there is no motion within the delay time.

Advantages:

- If the detection area is covered by more than one motion sensor, then the lighting circuit can be controlled by multiple motion sensors in master/slave operation.
- The switch-off delay can be set as desired from 0 s–120 min
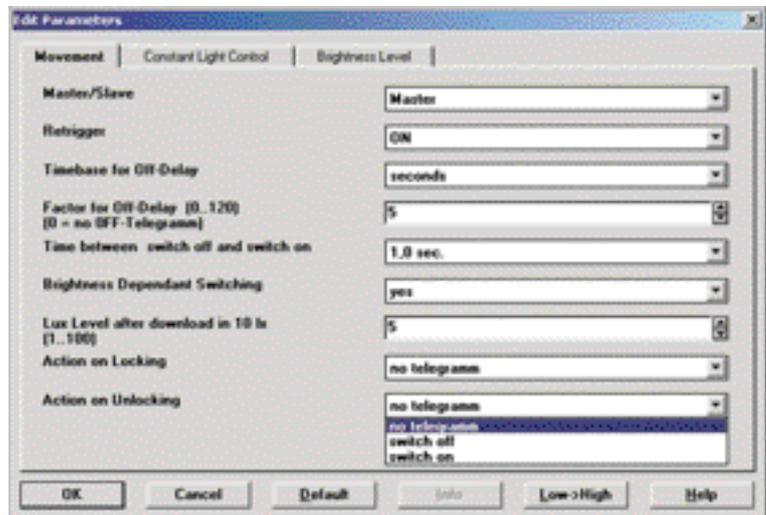
Slave function

If the motion sensor is parameterized as a "slave", then it signals any detected movement to the master. It is possible to superimpose additional parameters so that the "slave" signals motion to the master and itself sends switching messages for its own switching group.

Advantages:

- Quick parameterization for simple slave functions
- The slave can control independent light groups in parallel
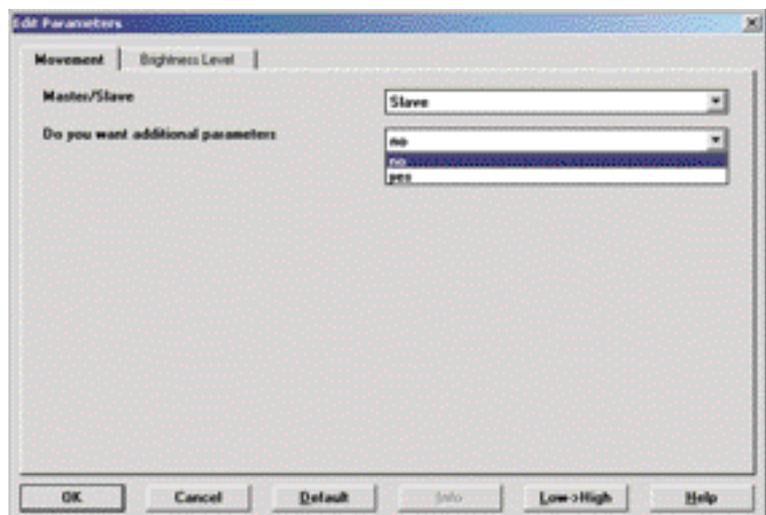
Motion

Constant light control

It is possible to switch off the constant light control, to use it only for motion, or to have the light permanently controlled to the para-meterized value and switched on and off via the disable object. The constant light control can control a dimmer via a 4-bit or 8-bit object.

Advantages:

The motion sensor can be used

- only for constant light control
- for constant light control in the event of motion
- or without constant light control, thus allowing high flexibility.
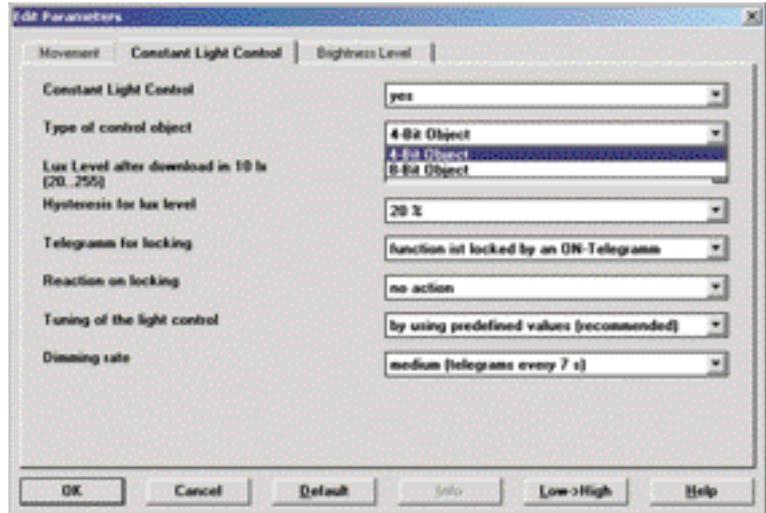
Brightness threshold

In this manner the difference between the brightness in the area of use (for example a writing desk) and the brightness at the installation location are balanced. The brightness value can also be transmitted to the bus.

Advantages:

- Calibration of the brightness sensor optimises the function
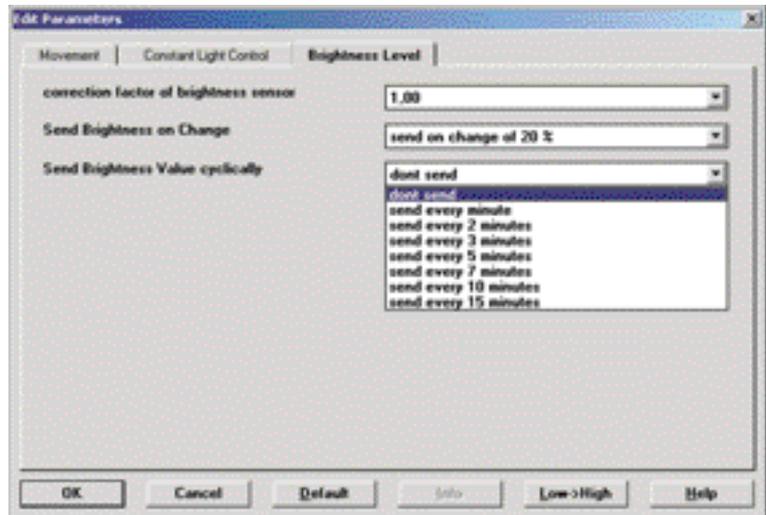
Detection range
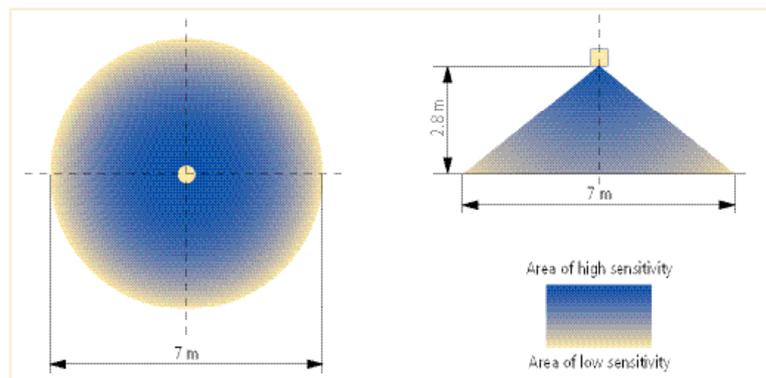
Installation frame with clip mounting

Motion

Presence detector for wall and ceiling installation, suitable for large rooms

ECO-IR 180EIB-AC
- **Passive infra-red sensor for wall installation**
- **Detection range 180°**

ECO-IR 360EIB-AC
- **Passive infra-red sensor for ceiling installation**
- **Square detection range 360°**

Description

Presence detector for large-area applications in classrooms, offices and public areas.
- Automatic control of lighting and HVAC
- "Genuine daylight measurement"
- Light output
- Lighting control with light threshold value and self-learning run-on time
- Choice of fully or semi-automatic operation
- Presence output for HVAC control with run-on time

ECO-IR 180EIB-AC

ECO-IR 360EIB-AC

Characteristics

- The switching behaviour of the presence detector is controlled by presence and light.
- The lighting switches on with darkness and presence and off with sufficient light or absence.
- Fully or semi-automatic: In "Fully automatic" mode the light switches on and off automatically according to presence and light. In "Semi-automatic" mode it must be switched on manually and switches off automatically.
- The presence detector has "Genuine light measurement" and is only suitable for switching fluorescent lamps (FL/PL).
- The ECO-IR180EIB-AC detects moving bodies in a radius of approx. 8 m. Seated persons can be reliably detected in an area of 8 m x 4 m. The recommended installation height is 2.2 m.
- Presence output for HVAC control: Switching behaviour is only controlled by presence.
- Master/slave parallel switching: Several detectors can be connected with each other to increase the detection area. The master controls lighting and HVAC. All other detectors merely provide presence information as slaves.
- Master or slave operating mode is selected via configuration.
- Master/master parallel switching: Several detectors can be connected with each other to control several lighting groups.

Every master controls its lighting group according to its own light measurements. Presence is detected by all the detectors.

- Test operating mode checks the detection range and configuration.
- The parameters are set by ETS or potentiometer.

Advantages

- The self-learning run-on time adjusts to the user behaviour
- Manual override: Lighting can be manually controlled at any time
- The square detection range of the ECO-IR 360EIB-AC ensures accurate and simple planning
- Genuine daylight measurement

Accessories

- Suitable bus coupler EIB/KNX bus coupler (order no. 907 0 524)
- A suitable AP frame (order no. 907 0 512 for ECO-IR 360, order no. 907 0 511 for ECO-IR 180) is available for surface-mounted installation.
- Ceiling installation of presence detector ECO-IR 360EIB-AC with QuickFix installation housing for false and concrete ceilings

Technical data

Genuine daylight measurement:
approx. 100–1600 lux
can be deactivated, approx. 25–200 lux (extended)
Light run-on time: 30 s-20 min
Presence run-on time: 30 s-60 min
Mounting plate: 70 x 70 mm
Screwless bus terminal: EIB
Size of flush-mounted socket: Socket Ø 55 mm (NIS, PMI)
Ambient temperature: +0 °C... +45 °C
Protection rating: IP 40

ECO-IR 180EIB-AC
Detection range: 180° horizontal
Recommended installation height:
approx. 1.6 m–2.2 m
Range: < 10 m

ECO-IR 360EIB-AC
Detection range: 360° horizontal , 120° vertical
Recommended installation height: 2.0 m–3.5 m
Max. range: max. 8 x 8 m at a height of 2.5 m
max. 10 x 10 m at a height of 3.5 m
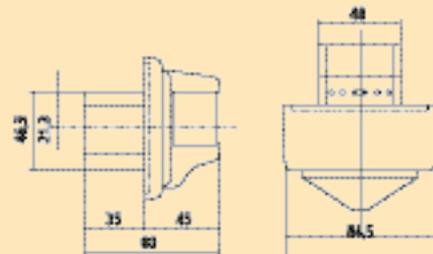
Order numbers:

ECO-IR 180EIB-AC EIB/KNX	202 9 250
ECO-IR 360EIB-AC EIB/KNX	202 9 250
EIB/KNX BCU bus coupler required, flush-mounted installation	907 0 524
AP-frame ECO-IR 180	907 0 511
AP-frame ECO-IR 360	907 0 512

2 applications are available:
Application V 1.0 (A) e.g. with light disable object
Application V 1.01 (C) e.g. with light/dark switch output object

Application V 1.0 (A)
- 4 group addresses
- 4 possible associations
- 4 objects

Application V 1.01 (C)
- 6 group addresses
- 6 possible associations
- 6 objects

◻	0	Light	Switched output	1 Bit
◻	1	HVAC	Switched output	1 Bit
◻	3	Disable light	Input	1 Bit

Application V 1.0 (A)

◻	0	Light	Switched output	1 Bit
◻	1	HVAC	Switched output	1 Bit
◻	2	Push button	Input	1 Bit
◻	4	bright / dark	Switched output	1 Bit

Application V 1.01 (C)

Operating mode

Master in individual switching mode: Presence detector works as independent device. Master in parallel switching mode: to extend the detection range additional detectors are connected as "slaves" to a "master in parallel switching mode".
Slave: Slaves are used to extend the detection range. They supply exclusive presence information to the master.
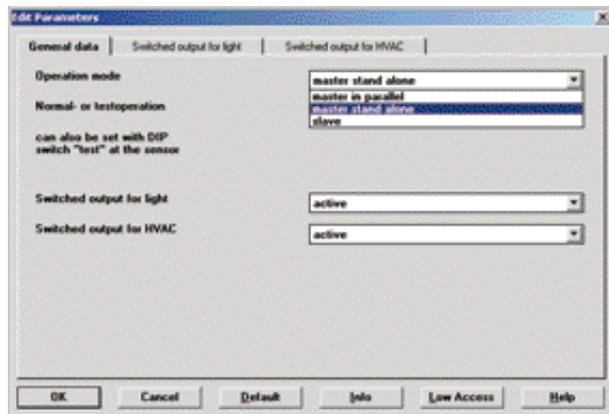
Light switch output active/inactive

Light switch output active:
Presence detector operates lighting group dependent on the presence of persons and natural daylight.
Light switch output inactive:
The presence detector is not used for lighting control.
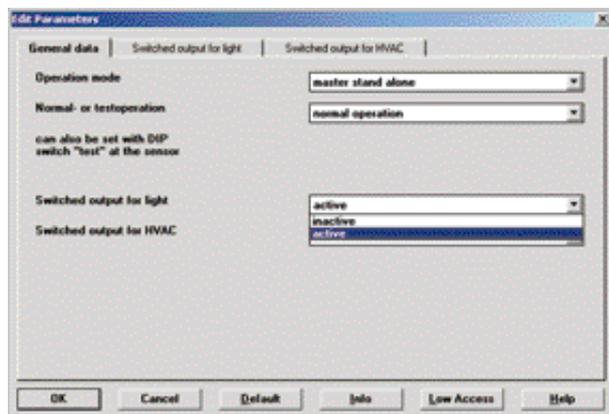
Light and run-on time

The desired light switching value can be set between 25 and 1600 lux or deactivated. The genuine daylight measurement only registers daylight, artificial light from FL and PL lights is suppressed.
Application (C):
In the "Fully automatic" operating mode the light switching output automatically turns the lighting ON and OFF depending on presence and ambient lighting.
In the "Semi-automatic" operating mode switching must always be completed manually using a key. Switch off occurs automatically.

72
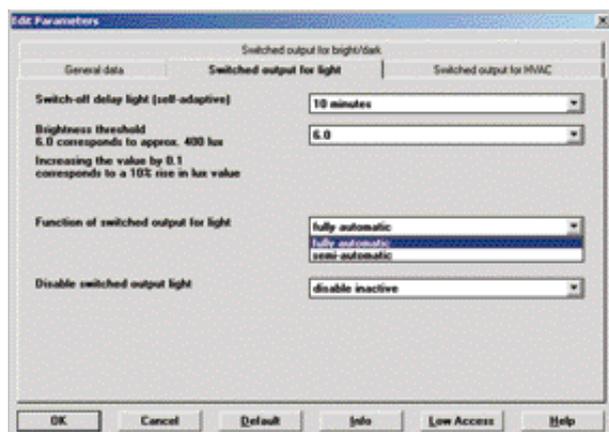
HVAC run-on time

Switching behaviour is only controlled by presence. If presence is detected an ON telegram is sent and an OFF telegram in the case of absence. The telegrams can be suppressed if required.

The desired HVAC run-on time can be set for between 30 sec. and 60 mins.

It is restarted with every new movement.
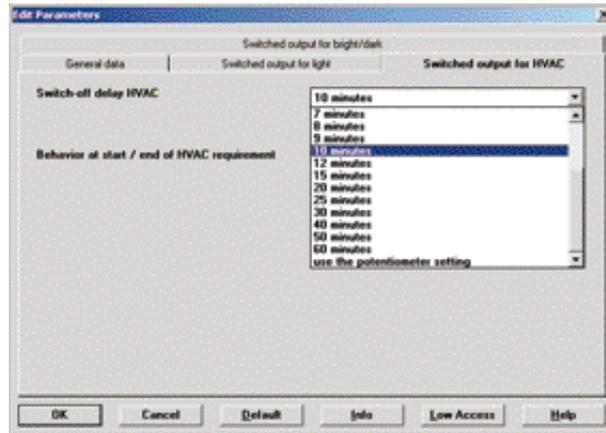
Manual ON/OFF via keys

Application (C):

The light switching output can be switched on and off using the key input. An EIB key is connected with the key input of the detector for this event.

Any telegram to the key input switches the light output over (changeover function).

Additional switching behaviour is set in the fully automatic/semi-automatic operating mode.
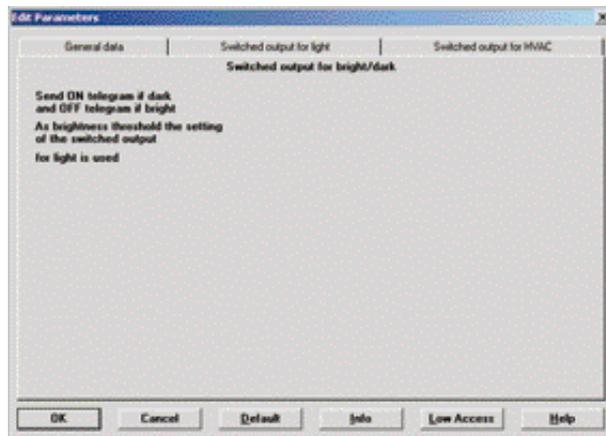
Detection range

ECO-IR 360EIB-AC EIB/KNX

Installation	height seated persons	moving persons
2.0 m	4.5 m x 4.5 m	6.0 m x 6.0 m ± 0.5 m
2.5 m	6.0 m x 6.0 m	8.0 m x 8.0 m ± 0.5 m
3.0 m	7.0 m x 7.0 m	9.0 m x 9.0 m ± 0.5 m
3.5 m	8.0 m x 8.0 m	10 m x 10 m ± 1 m
4.0 m	–	11 m x 11 m ± 1 m

ECO-IR 180EIB-AC EIB/KNX

ECO-IR 360EIB-AC EIB/KNX
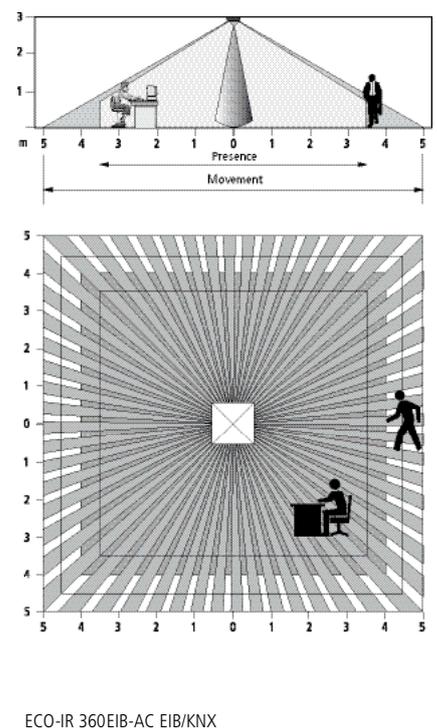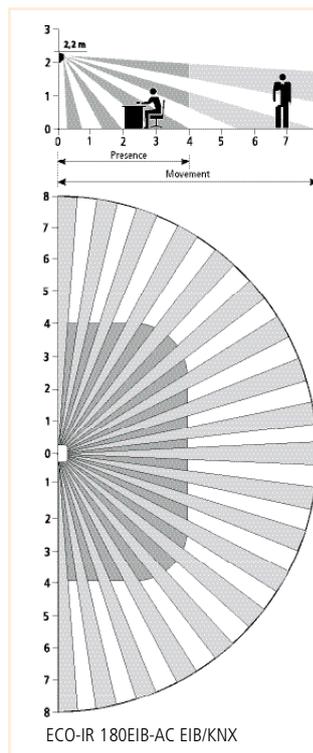
Presence detector for ceiling installation for automatic control of 2 lighting groups

ECO-IR DUAL-EIB
- **Passive infra-red presence detector for ceiling installation**
- **2 lighting groups can be controlled automatically**

Description

Presence detector for large-area applications in classrooms, offices and public areas.

- Realisation of daylight controls with two different light bands as well as two light setpoint values for example
- Depending on user behaviour the self-learning run-on time varies between the set minimum value and 15 mins.
- Square detection range, 360°
- Automatic control of two lighting groups
- Double "Genuine daylight measurement"
- Two light outputs
- Lighting control with two light threshold values and self-learning run-on time
- Choice of fully or semi-automatic operation

ECO-IR DUAL-EIB

Characteristics

- The switching behaviour of the presence detector is controlled by presence and light.
- The lighting switches on with darkness and presence and off with sufficient light or absence.
- Fully or semi-automatic: In "Fully automatic" mode the light switches on and off automatically according to presence and light. In "Semi-automatic" mode it must be switched on manually and switches off automatically.
- The presence detector has double "Genuine light measurement" and is only suitable for switching fluorescent lamps (FL/PL).
- Master/slave parallel switching: Several detectors can be connected with each other to increase the detection area. The master controls lighting and HVAC. All other detectors merely provide presence information as slaves.
- Master/master parallel switching: Several detectors can be connected with each other to control several lighting groups. Every master controls its lighting group according to its own light measurements. Presence is detected by all the detectors.
- Master or slave operating mode is selected via configuration.
- Test operating mode checks the detection range and configuration.
- The parameters are set by ETS or potentiometer.

Advantages

- The self-learning run-on time adjusts to user behaviour.
- Manual override: Lighting can be manually controlled at any time
- The square detection range allows accurate and simple planning.

Accessories

- Suitable bus coupler EIB/KNX (order no. 907 0 524)
- A suitable AP frame (order no. 907 0 512) is available for surface-mounted installation.
- Ceiling installation with QuickFix installation housing for false ceilings (order no. 907 0 522) with round cover (order no. 907 0 517) or square cover (order no. 907 0 516)
- Ceiling installation with QuickFix installation housing for concrete ceilings (order no. 907 0 521) with round cover (order no. 907 0 519) or square cover (order no. 907 0 518)

Technical data:
Detection range: 360° horizontal , 120° vertical
Recommended installation height: 2.0 m–3.5 m
Max. range: max. 8 x 8 m at a height of 2.5 m
max. 10 x 10 m at a height of 3.5 m
Genuine daylight measurement:
approx. 100–1600 lux can be deactivated, approx. 25–200 lux (extended)
Light run-on time: 30 s-20 min
**Assembly plate**: 70 x 70 mm
Screwless bus terminal: EIB
Size of flush-mounted socket: Socket Ø 55 mm (NIS, PMI)
Ambient temperature: +0 °C... +45 °C
Protection rating: IP 40
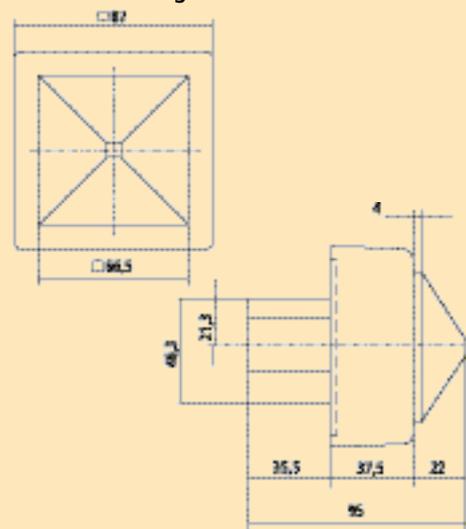
Order numbers:

ECO-IR DUAL-EIB EIB/KNX	202 9 200
EIB/KNX BCU bus coupler required, flush-mounted installation	907 0 524
AP-frame ECO-IR 360	907 0 512

Each with its own switching object for light A
and light B as well as a key object for key A
and key B.

- 6 group addresses
- 6 possible associations
- 6 objects

	0	Light A	Switched output	1 Bit
	1	Light B	Switched output	1 Bit
	2	Push button A	Input	1 Bit
	3	Push button B	Input	1 Bit
	5	Disable light	Input	1 Bit

Operating mode

Master in individual switching mode:
Presence detector works as independent device.
Master in parallel switching mode: to extend
the detection range, additional detectors are
connected as "slaves" to a "master in parallel
switching mode" or several "masters in para-
llel switching mode" are connected with each
other.
Slave:
Slaves are used to extend the detection range.
They supply exclusive presence information to
the master.
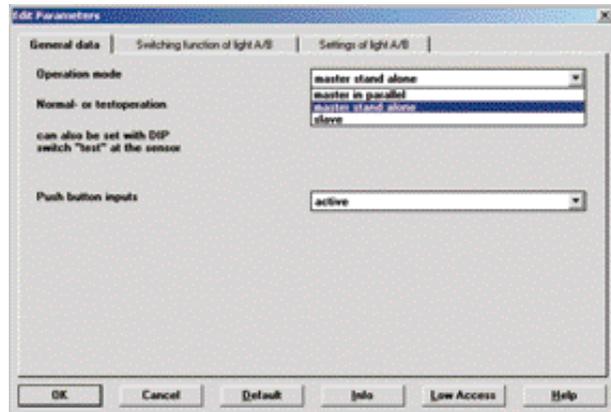
Light switching outputs

Switching behaviour is controlled by presence
and daylight. With darkness and presence
there is an ON telegram, with light or absence
an OFF telegram. The telegrams can be sup-
pressed if required.
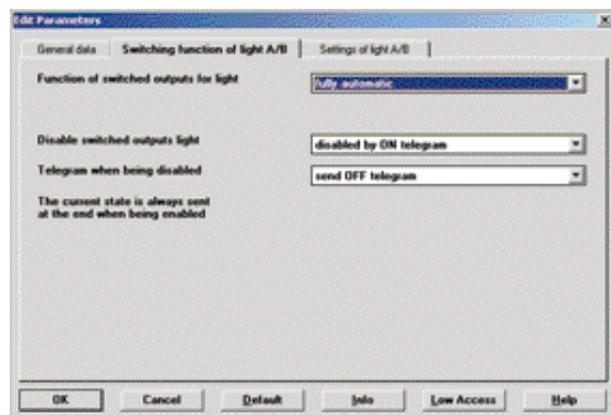
Fully or semi-automatic

In the "fully automatic" operating mode the
light switching output automatically switches
the lighting On and OFF depending on pres-
ence and ambient lighting.
In the "Semi-automatic" operating mode
switching must always be completed manually
using a key. Switch off occurs automatically.
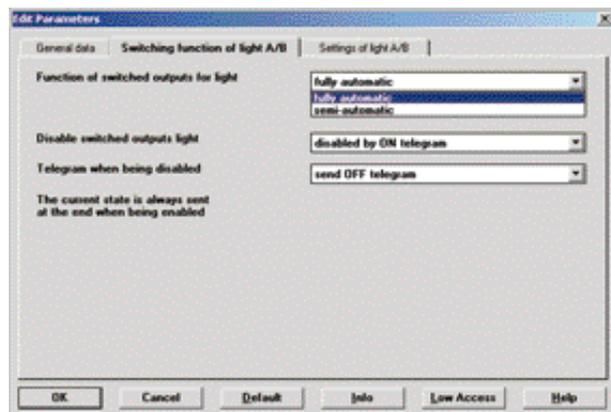
Run-on time

The desired light run-on time can be set for between 30 sec. and 20 mins. It is restarted with every new movement. The run-on time changes on auto-learning basis for settings between 2 - 15 mins. Depending on user behaviour it varies between the set minimum value and 15 mins.
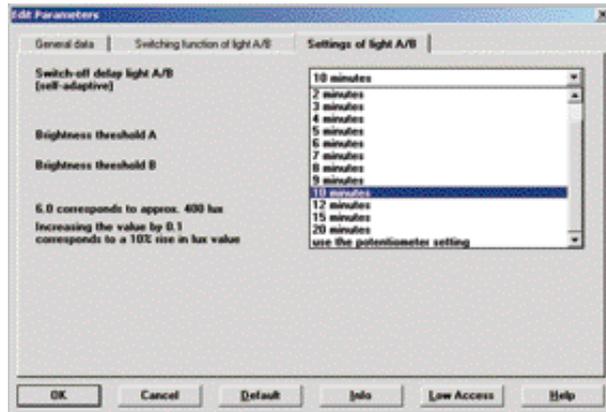
Light threshold value

The desired light switching value can be set between 25 and 1600 lux or deactivated. The genuine daylight measurement only registers daylight, artificial light from FL and PL lights is suppressed.
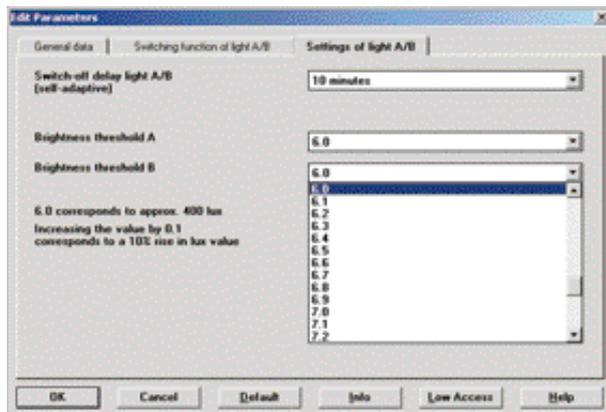
Detection range

Installation height	seated persons	moving persons
2.0 m	4.5 m x 4.5 m	6.0 m x 6.0 m ± 0.5 m
2.5 m	6.0 m x 6.0 m	8.0 m x 8.0 m ± 0.5 m
3.0 m	7.0 m x 7.0 m	9.0 m x 9.0 m ± 0.5 m
3.5 m	8.0 m x 8.0 m	10 m x 10 m ± 1 m
4.0 m	–	11 m x 11 m ± 1 m
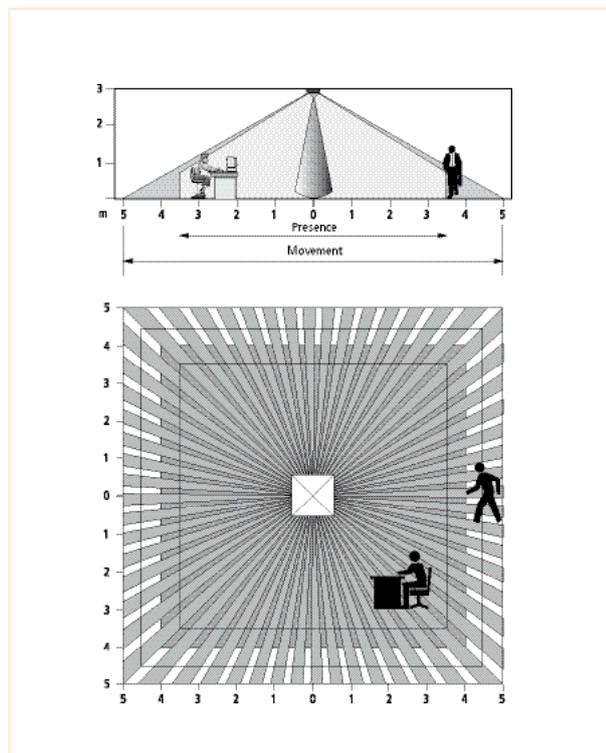
Intelligent presence detector with continuous light control and auto-learning run-no time
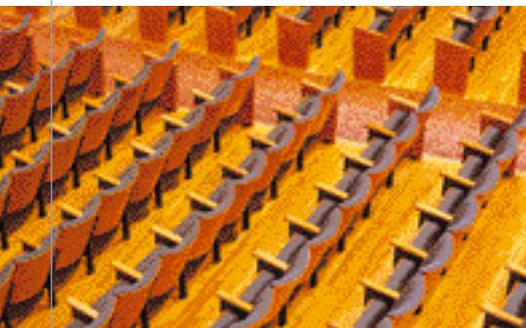
compact office EIB
Ceiling presence detector for controlling up to 2 lighting groups as well as output to HVAC control

Description

The easy-to-use presence detector for use in the office, meeting and rest rooms as well as halls and corridors.

- Passive infra-red presence detector for ceiling installation
- Square detection range, 360°
- Mixed light measurement
- Two light outputs to control two lighting groups
- Switching or constant light control
- Choice of fully or semi-automatic operation
- Presence output for HVAC control with switch on delay and run-on time
- Room monitoring with selective movement detection
- Integrated bus coupling
- QuickSet plus service remote control (optional)
- clic user remote control (optional)

compact office EIB

Characteristics

- The switching behaviour of the presence detector is controlled by presence and light, as required in switching or constant light control operating modes.
- In the "Switching" operating mode, the lighting switches on with darkness and presence and off with sufficient light or absence. In the "constant light control" operating mode the sensor controls the artificial light daylight-dependent on a constant lighting level.
- Fully or semi-automatic: In "Fully automatic" mode the light switches on and off automatically according to presence and light. In "Semi-automatic" mode it must be switched on manually and switches off automatically.
- The presence detector has a mixed light measurement and is suitable for controlling the following types of lamp: fluorescent lamps(FL/PL), halogen and glow lamps.
- Presence output for HVAC control : Switching behaviour is only controlled by presence.
- The switch-on delay prevents instantaneous switch on. The presence output only switches after the delay is completed.
- The monitoring output works with reduced sensitivity and indicates the presence of persons with a high level of accuracy.

- The light output makes the light information available for visualisation purposes.
- Master/slave parallel switching: Several detectors can be connected with each other to increase the detection area. The master controls lighting and HVAC. All other detectors merely provide presence information as slaves.
- Master/master parallel switching: Several detectors can be connected with each other to control several lighting groups. Every master controls its lighting group according to its own light measurements. Presence is detected by all the detectors.
- Master or slave operating mode is selected via configuration.
- Test operating mode checks the detection range and configuration.

Advantages

- The self-learning run-on time adjusts to user behaviour.
- Manual override: Lighting or dimming can be manually controlled at any time.
- The square detection range enables accurate and simple planning.

Technical data:
Detection range: 360° horizontal , 120° vertical
Recommended installation height: 2.0 m-3.0 m
Max. range: max. 6 x 6 m at a height of 2.5 m
max. 8 x 8 m at a height of 3.5 m

Mixed light measurement:
approx. 10–1500 lux, can be deactivated
Light run-on time: 30 sec.–20 mins
Light stand-by time: 0 sec.–60 mins/on

Presence run-on time: 30 s-120 min
**Presence switch on delay:** 0 s-30 min

Assembly plate: 70 x 70 mm
Screwless bus terminal: EIB
Size of flush-mounted socket: Socket Ø 55 mm (NIS, PMI)
Ambient temperature: +0 °C... +50 °C
Protection rating: IP 40
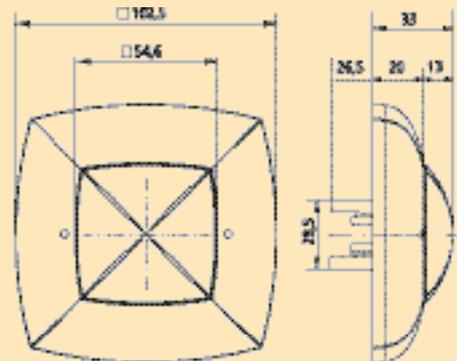
compact office has disable objects for motion sensors and constant light control.

- 90 group addresses
- 90 possible associations
- 27 objects

	0	switching	Output light A	1 Bit
	8	disable/enable	Outputs light A,B	1 Bit
	9	switching	Output presence	1 Bit
	10	disable/enable	Output presence	1 Bit
	12	scene 1/2	Input scene	1 Bit
	19	blinds up/down	IR external channel 2	1 Bit
	20	lamella open/close	IR external channel 2	1 Bit
	21	report	Surveillance	1 Bit
	22	confirmation	Surveillance	1 Bit
	24	enable	Surveillance	1 Bit
	25	sending LUX value	Output brightness	2 Byte
	26	switching brightness value	Outputs light A,B	1 Bit

Operating mode

Master in individual switching mode: Presence detector works as independent device. Master in parallel switching mode: According to the requirement to extend the detection range additional sensors are connected to a "master in parallel switching" mode as "slaves".
Slave:
Slaves are used to extend the detection range. They exclusively deliver presence information to the master.
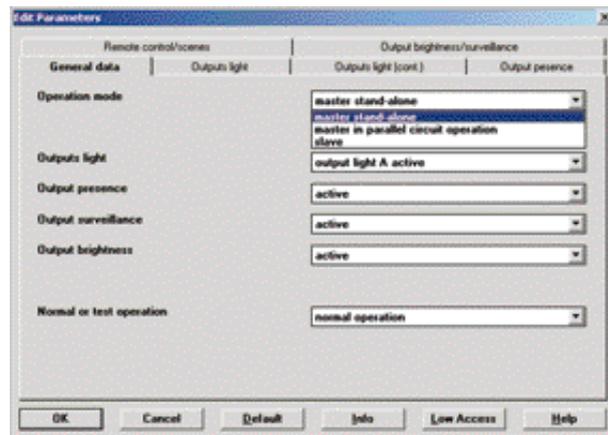
Light outputs

Light output A active: Presence detector switches or controls a lighting group depending on the presence of persons and of natural daylight.
Light outputs A, B active: The presence detector switches or controls two lighting groups depending on the presence of persons and of natural daylight.
Light outputs inactive: The presence detector is not used for lighting control.
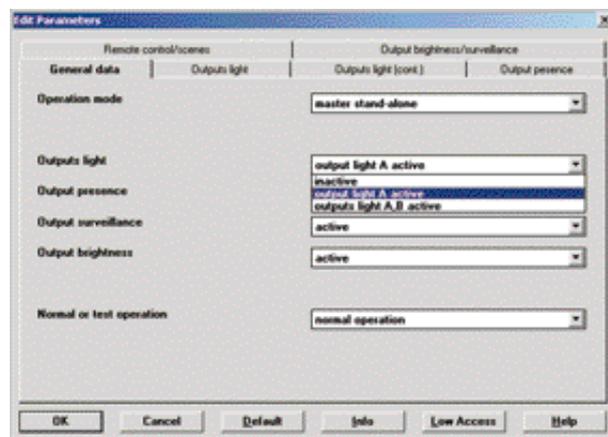
Switching or constant light control

Switching (ON/OFF)
The light output sends an ON telegram on recognition of movement and insufficient light. An OFF telegram is sent on completion of the run-on time or in case of sufficient light.

Constant light control
On recognition of movement and insufficient light the light output controls the lighting to a set lighting setpoint value and keeps it constant with variations in daylight. A second light output can also be controlled with a brightness fill-in.
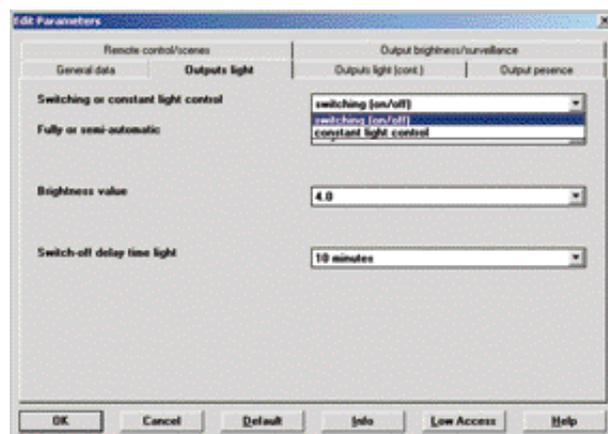
Stand-by time

(in case of constant light control)
In standard operating mode an activated stand-by time ensures that both lighting groups are dimmed to minimum brightness after the completion of the run-on time. The stand-by time can be set between 0 sec. and 60 mins.
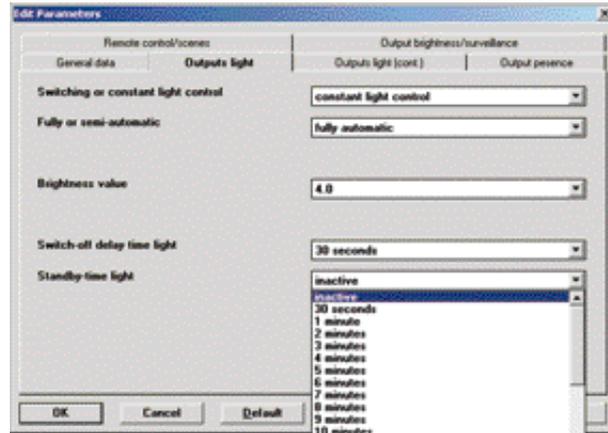
clic remote control (optional)

Internal switching/dimming: A short depression on the left keys ▲/▼ on clic switches the light output A on or off. A long key depression dims the light for the duration of the depression. If both A and B light outputs are active, the right row of keys controls ▲/▼ light output B analogically.

External switching/dimming: A short depression of the relevant row of keys ▲/▼ on clic switches an external consumer on or off (channel 1 or 2). A long key depression dims the external consumer for the duration of the depression.

External blinds: A long depression of the relevant row of keys ▲/▼ on clic raises or lowers the blinds. A short key depression opens or closes the slats.
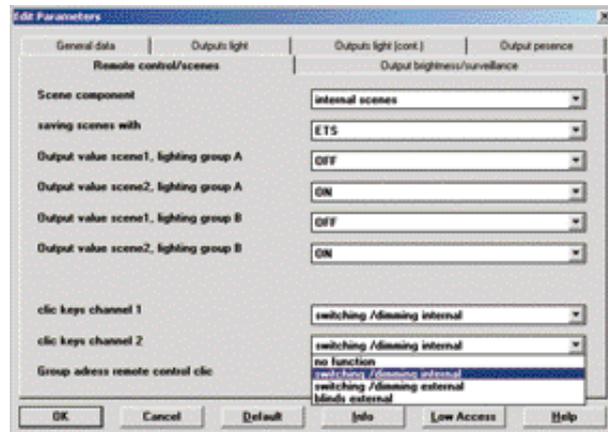
Detection range

Installation height	seated persons	moving persons
2.0 m	3.0 m x 3.0 m	4.5 m x 4.5 m ± 0.5 m
2.5 m	4.0 m x 4.0 m	6.0 m x 6.0 m ± 0.5 m
3.0 m	4.5 m x 4.5 m	7.0 m x 7.0 m ± 1 m
3.5 m	–	8.0 m x 8.0 m ± 1 m
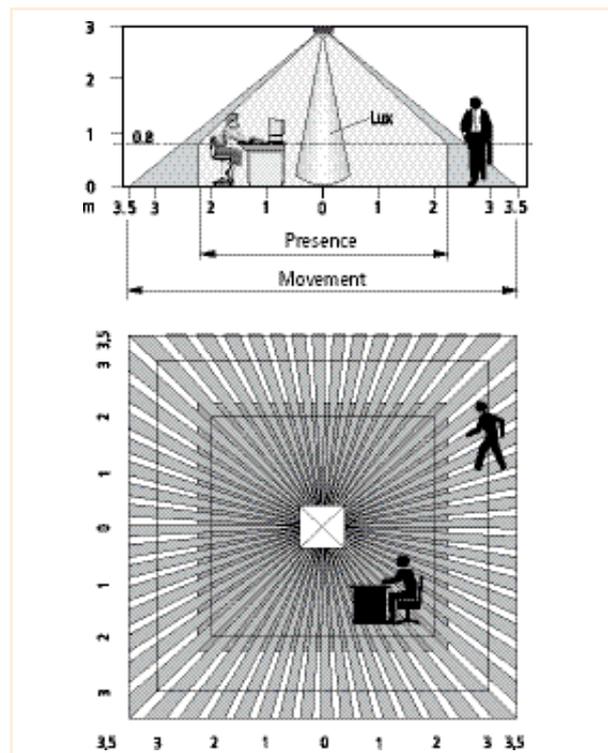
Easy-to-use commissioning and operation via intelligent remote controls

QuickSet plus
Service remote control

clic
User remote control

Description

QuickSet plus
- Infrared remote control for easy commissioning of Theben HTS presence detectors
- Rapid adjustment to changed operating conditions without uninstalling the detectors
- Transmission of individual settings or complete value packages to the detector
- Call up of pre-defined value packets for typical rooms
- Storing and calling-up 8 user-defined value packets
- The service remote control QuickSet plus for the electrician enables efficient start-up and flexible adaptation to new applications.

QuickSet plus

clic

- Setting of all potentiometer by pressing button.
- Functions such as test/reset can be called up.
- Setting changes made with QuickSet plus are saved even in case of loss of power or resetting of detector.
- Settings that are frequently used, can be saved, retrieved as required at any time and transmitted to the sensor.
- Typical values for different rooms (office, corridor, WC, etc...) are pre-defined in QuickSet plus.
- User defined settings can be stored in QuickSet plus. 8 memory locations are available per sensor type.

clic
- Infrared remote control for compact office EIB
- Switching and dimming of lighting, scene control
- 2 channels for 2 light groups
- 2 programmable scenes
- 5 group addresses for defining the channels
- Coding switch and programming key for the easy allocation of lighting groups and channels
- The user remote control clic features 2 channels for controlling 2 light groups.
- clic enables the switching and dimming of up to 2 light groups
- Light scenes can be called up and saved.
- Settings in the presence detector cannot be changed with clic.
- In combination with the presence detector compact office EIB the functions of the clic keys can be selected as required, e.g. for blinds control UP/DOWN

Technical data:

QuickSet plus
Power supply:
9 V battery, 1 x PP3/6F22
Transmission medium: Infra-red
Range: approx. 4 m
Emission angle. ± 15º
Dimensions: 140 x 62 x 30 mm
Temperature range: +0 ºC... +50 ºC
Colour: Black

clic
Power supply:
2 x 1.5 V batteries, LR03/AAA
Transmission medium: Infra-red
Range: approx. 10 m
Emission angle: ± 15°
Dimensions: 120 x 57 x 24 mm
Temperature range: +0 ºC... +50 ºC
Colour: Light grey

Order numbers:

QuickSet plus
Service remote control   907 0 532

clic
User remote control   907 0 515
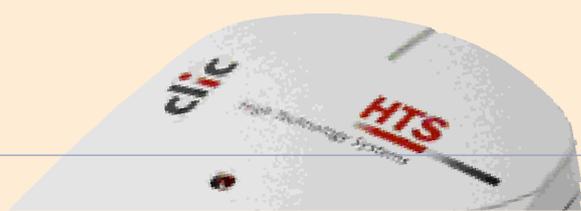
Combination sensor for brightness and temperature LU 131 S

Equipping outdoor areas –
comfort conditions for conservatories
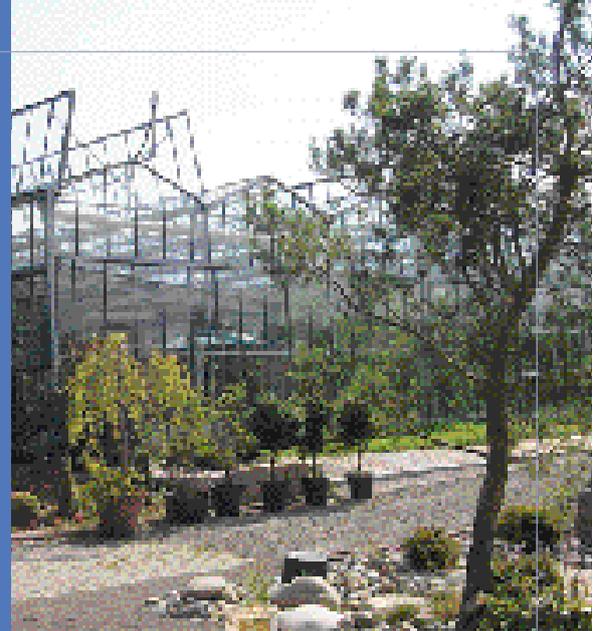
LU 131 S

Description

The EIB combination sensor LU 131 S EIB records the brightness and temperature. These values can be transmitted to the bus.

Characteristics

- Recording brightness and temperature
- The device has 4 universal channels and 1 sun protection channel
- The measured variables can be transmitted directly on the bus.
- Brightness and temperature are each sent as 2 byte values.
- The data are evaluated in the device itself

- The universal channels can be used for sub-tasks (e.g. a pure brightness threshold) or for a combination of brightness and temperature.
- The universal channel allows linking of brightness and temperature
- Teach-in feature for brightness threshold

Possible applications

The LU 131 S EIB is suitable for the following applications:

- multi-stage lighting control
- temperature control such as the control of script-type heaters in anti-freeze applications
- control of awnings
- conservatory control
- greenhouse control
- systems, in which brightness and outdoor-temperatures have to be visualised

Technical data:
Operating voltage: bus voltage
Connections:
1 bus connection (by bus port terminal)
Measuring ranges
Brightness: 1...100.000 Lux
Temperature: −20 °C ... +55 °C
Degree of protection:
IP 54 in accordance with DIN EN 60529
Permissible ambient temperature:
−25 °C...+55 °C
Housing: 110 x 72 x 54 mm
Weight: approx. 140 g

LU 131 S

Order no:	
LU 131 S EIB	**131 9 201**

Application software LU 131 S

The individual physical values (brightness, temperature) can be transmitted on the bus. The brightness thresholds can also be input via object.

- 108 group addresses
- 108 possible associations
- 41 objects

	0	Physical value	Brightness value	2 Byte
	1	Physical value	Temperature value	2 Byte
	4	switch	C1.1 Brightness threshold	1 Bit
	7	Input	C1 set brightn. threshold	1 Byte
	8	switch	C2.1 Temperature threshold	1 Bit
	12	drives up/down	C3 up/down	1 Bit
	13	Height	C3 Blinds	1 Byte
	14	Position	C3 Slats	1 Byte
	15	Morning=1 / Evening=0	C3 Sun control	1 Bit
	16	Input	C3 Safety	1 Bit
	17	Input	C3 Teach in	1 Byte
	40	report	Brightness thresholds	2 Byte

Channel use of the brightness sensor

The brightness threshold may lie between 2 and 90.000 Lux. Additionally, the hysteresis and the delay time is set.

Advantage:
- Simplest parameterization of the brightness condition

Sun protection

The sun protection function allows you to choose between:
- blinds
- roller shutter/textile sun protection
- sending value
- scenes via 1 bit telegrams

The automatic sun protection can be activated via object or twilight threshold.

Advantage:
- Comfortable automatic control of the sun protection without manual intervention

Threshold for sun protection function

The twilight threshold is used for activating the automatic sun protection. In addition, up to 3 brightness thresholds can be para-meterized that represent the conditions for the automatic sun protection.

Advantage:
- With increasing brightness, the hanged elements (blinds, shutters) are moved to parameterized values to attain comfortable lighting conditions.

3 channel brightness sensor LU 130

When comfort is called for –
the intelligent lighting control

LU 130
for brightness-dependent light scene control with integrated bus coupler

Description
The LU 130 EIB is suited excellently for applications in which a comfortable lighting control is to be created on the basis of brightness.

Characteristics
Brightness sensor with 4 scenes
- Measuring range 1–100 lux or 100–20.000 lux-selectable
- Measuring range can be divided into 4 areas by 3 steps
- Each subdomain can be allocated a light scene from 3 switching objects and 1 dim object
- Adjustable special scene, retrievable via the holiday object

- Brightness sensor with 3 thresholds
- 3 integrated triggers
- Adjustable threshold between 1 and 20.000 lux
- The behavior when the threshold value is not reached or and/or exceeded can be set with the following parameters; no message, ON message, OFF message, ON message (transmit cyclically), OFF message (transmit cyclically)
- Further parameters: hysteresis, delay time, cycle time
- Blocking object blocks transmission per channel

Possible applications:
- Control of several lines of fluorescent luminaires
- With the brightness sensor max. four different brightness steps can be monitored.

Technical data:
Treshold values, dimming stages and switching delay settable via software
Operating voltage: bus voltage
Range: 1–20.000 Lux
Switching delay: 8–240 s
Product consumption: < 10 mA
Permissible ambient temperature:
−5 °C ...+45 °C (-5T45)
Degree of protection:
IP 20 in accordance with EN 60529
Length of sensor line (max.): approx. 100 m
Cross-section sensor line: 2 x 0.75 mm^2
Captive hinged cover, tamper proof
Housing: 45 x 35 x 60 mm (2 modules)

	Behaviour with holiday	Brighter than threshold 1	Bet. threshold 1 and threshold 2	Bet. threshold 2 and threshold 3	Darker than threshold 3
switching obj. 1	OFF	OFF	ON	ON	ON
switching obj. 2	OFF	OFF	OFF	ON	ON
switching obj. 3	OFF	OFF	OFF	OFF	ON
Dim object	0	0	80	160	255

LU 130

T h e re are 2 different applications:

Brightness sensor with three thresholds
- 6 group addresses
- 5 possible associations
- 4 objects

Brightness sensor with 4 scenes
- 6 group addresses
- 5 possible associations
- 5 objects

	01.01.008	Luna 130 EIB	130 9 200	brightness sensor with 3 thresholds
	0	switch at threshold 1	channel 1	1 Bit
	1	switch at threshold 2	channel 2	1 Bit
	2	switch at threshold 3	channel 3	1 Bit
	3	input inhibit telegram	inhibit	1 Byte
	01.01.009	Luna 130 EIB	130 9 200	brightness sensor with 4 scenes
	0	send value	value object	1 Byte
	1	send switching telegr.	switching object 1	1 Bit
	2	send switching telegr.	switching object 2	1 Bit
	3	send switching telegr.	switching object 3	1 Bit
	4	inhibit	inhibit	1 Byte

Brightness sensor with 3 thresholds
Upon reaching the threshold, if wanted, a switch telegram (1 bit) is transmitted singly or cyclically.
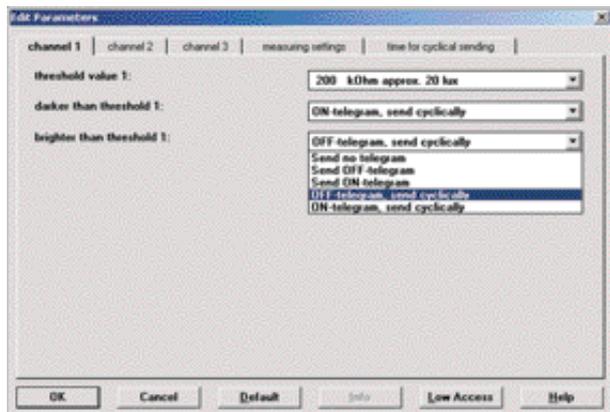
Brightness sensor with 4 scenes
First, the 3 switch thresholds from 1–100 Lux or 100–20.000 Lux can be selected. Additionally, the hysteresis and the delay time when reaching the threshold is defined.
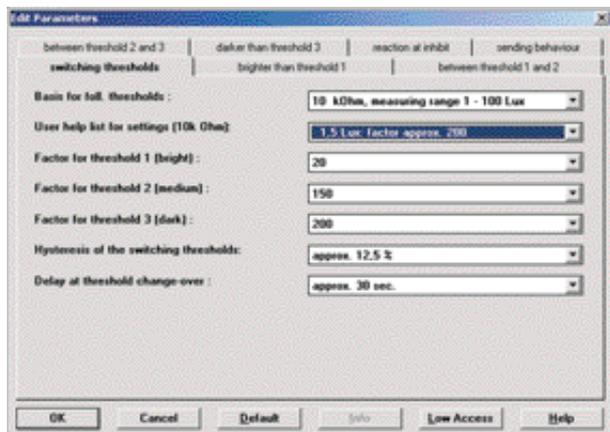
Brightness sensor with 4 scenes
Between each of the thresholds, up to 4 telegrams can be transmitted contemporarily. Three of them are switch telegrams (1 bit) and 1 is a value telegram (1 byte).
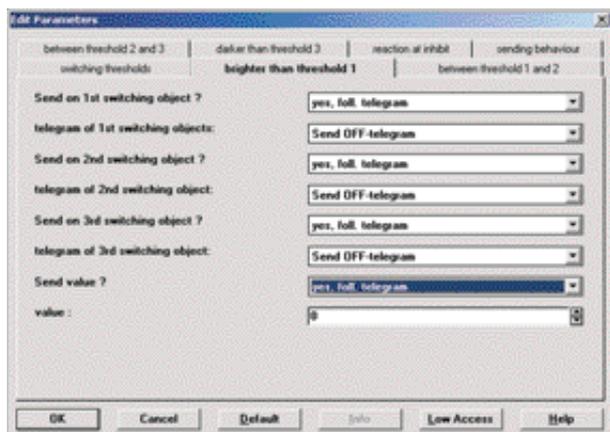
Time transmitter ZS 600 DCF

Has the time come? – The time transmitter for synchronization of bus devices

ZS 600 DCF

Description
Time transmitter for hour and date

Characteristics
- Time transmitter sends time and date to the bus
- Synchronizes other bus devices, e.g. slave clocks
- Can be operated with and without DCF77 antenna
- LED for status display (DCF reception OK)
- Integrated voltage supply for DCF77 antenna
- Quick start-up thanks to preset date and time (CET or CEST)
- Automatic summer/winter time switchover
- Individual changeover rules can be set

Advantages
- Cost-effective solution for time and date synchronization of bus devices
- Can be used with and without DCF77 antenna
- Antenna connection in protection class III possible

DCF77 antenna
for time synchronization, optional

Technical data:
Bus power supply
Power consumption: max. 10 mA
Permissible ambient temperature: -10 °C ... +50 °C
Power reserve: 10 years
Length of line for antenna: max. 100 m
Accuracy (without antenna): 1 s/day
The application allows calibration of the time.
Protection class: III
Protection rating in accordance with EN 60 529
subject to correct installation: IP 20
Housing: 45 x 35 x 60 mm (2 modules)

ZS 600 DCF   **DCF77 antenna**

Order no:

ZS 600 DCF EIB/KNX	**600 9 200**
DCF77 antenna EIB/KNX	**907 0 271**

2 channel week time switch TR 612 S

Affordable functional variety – the timer for the single-family house

TR 612 S
with preset time and integrated bus coupler

Description
Ideal EIB time switch for detached houses and smaller EIB projects.

Characteristics
2 scenes with switching, valuator device, priority. Switching, priority, dim and/or value messages can be transmitted on 2 channels. A scene with max. 4 objects can be controlled with both channels.

- Via holiday object (blocked object) the switching program of the clock can be suppressed
- On resetting the holiday object, the current state of the clock is transmitted
- With a switching interval, max. 4 messages can be transmitted to the bus via a channel (e.g. after work: switch off main lighting, lower blinds, lower room temperature, lock outside doors)

TR 612 S

Technical data:
Operating voltage: bus voltage
Channels: 2
Memory Capacity: 36 (free block formation)
Automatic program:
Day and week program
Summer/winter time adjustment:
automatic
Power consumption: < 3.5 mA
Minimum switching interval: 1 min
Accuracy: ≤ 1 sec/day at 20 °C
Power reserve: 6 years (Lithium)
Permissible ambient temperature:
−5 °C... +45 °C
Degree of protection: IP 20 (EN 60529)
captive hinged cover, tamper proof
Housing: 45 x 35 x 60 mm (2 modules)

Order no:

TR 612 S EIB   **612 9 201**

Timer

4 channel yearly time switch TR 644 S DCF

Reliable and versatile – complex time functions securely under control
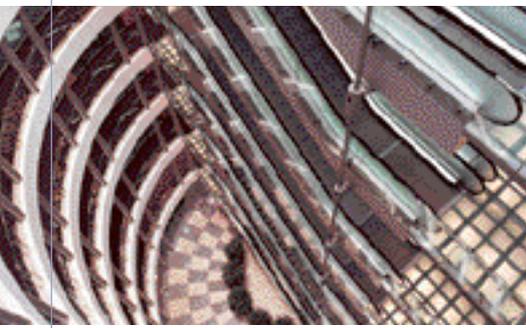
TR 644 S DCF
TR 644 S
Quartz-controlled or DCF 77 radio-controlled with time/data transmission to the bus.

Programming at PC with programming set OBELISK 2.1 or button input at device. Bi-directional data transfer possible between PC and device.

Description
Ideal EIB time switch for objects in which complex time functions are required. Simple reprogramming with easy-to-use Windows software "OBELISK 2.1".

TR 644 S DCF

OBELISK memory card
with EEPROM for the transmission of the program between PC and the time switch

Characteristics

Switching, valuator device, temperature, receive
time and date
8 possible group addresses
8 possible associations
On each of the 4 channels, the following types
of message can be selected:

- Switching message (1 bit)
- Priority message (2 bit)
- Dim and/or value message (8 bit)
- Temperature message (16 bit)
- Random message in EIS 5 format (16 bit)
- Cyclical transmission selectable
- Clock can be set via time and data messages

Scene with switching, valuator device, priority
10 possible group addresses
10 possible associations
Switching, priority, dim and/or value message
can be transmitted on 4 channels. A scene with
max. 4 objects can be controlled with the 4th
channel.

- Via holiday object (blocked object) the swit-
  ching program of the clock can be suppressed
- Cyclical transmission selectable

Possible applications:

- Transmission of radio signal DCF 77 with time
  and date to the entire EIB system
- Time and date synchronization of other bus
  users (e.g. EIB secondary clock, control
  systems etc.)
- Time-dependent switching of lighting, heating,
  blinds, alarm systems, electrical door openers,
  water flushing device in toilet facilities,
  irrigation systems, movement of water in
  swimming pools etc.
- Time controlled dimming of path lighting
  (e.g. hotels, hospitals, schools)
- Scene control of lighting with simultaneous
  switching and dimming (e.g. cinemas, theatre,
  other functional buildings)
- Time-dependent definition of different
  temperature stages for single-room control
  systems (e.g. RAM 713 EIB, CHEOPS control)
- Time-dependent forced control (ON and/or
  OFF has precedence) of consumers by priority
  messages
- Random switching for absence control

Technical data:

Operating voltage: bus voltage, with
TR 644 S DCF additional mains voltage 230 V
for integrated antenna power supply unit
Channels: 4
Memory locations:
324 (free block formation)
Automatic program:
Day, week, year and pulse program
Special program: 9 week programs
Summer/winter time adjustment:
automatic or by the DCF77 radio signal
Power consumption: < 10 mA
Power reserve:
1.5 years (lithium battery exchangeable)
Captive hinged cover, tamper proof
Housing: 45 x 105 x 60 mm (6 modules)
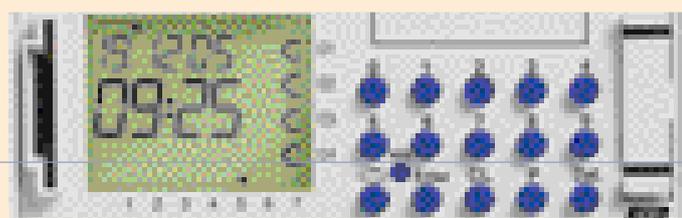
Order no:

|	
TR 644 S EIB	**644 9 203**
DCF retrofitting impossible	
TR 644 S DCF EIB	**644 9 204**
Accessories for DCF77 synchronization	
requisite DCF77 antenna EIB	**907 0 271**
OBELISK 2.1	
programming set	**907 0 305**
OBELISK memory card	**907 0 223**

16 channel yearly time switch TR 648 S DCF

Takes regional conditions into consideration – when astronomical programs are to activate various time functions

TR 648 S DCF
Quartz-controlled or DCF 77 radio-controlled with time/data transmission to the bus

Description

This appliance is the ideal EIB time switch for objects in which complex time functions are required. Due to the integrated astronomical program no light sensor is necessary. Damage on the sensor can therefore be omitted. Up to 4 channels can be used with astronomical program. The astronomical program takes geographic differences (sunrise and sunset) into consideration. Depending on the location the daily sunrise and sunset is calculated. The programming of the astronomical program is only possible by the Obelisk 2.1 sofware.

PC based programming with the programming set for Obelisk 2.1 or by local keypad entry. Bi-directional data transfer between PC and devices is supported.

TR 648 S DCF

OBELISK memory card
with EEPROM for the transmission of the program between PC and the time switch

Possible applications

- Energy saving switching off at night possible
- Time depending sending of the heating-cooling-climatization mode for individual room control systems (e.g. Theben CHEOPS control, RAM 713 EIB)
- Simple reprogramming with easy-to-use Windows software "OBELISK 2.1"
- Transmission of radio signal DCF 77 with time and date to the entire EIB system
- Time and date synchronization of other bus users (e.g. EIB secondary clock, control systems etc.)
- Time-dependent switching of lighting, heating, roller blinds, alarm systems, electrical door openers, water flushing device in toilet facilities, irrigation systems, movement of water in swimming pools etc.
- Time controlled dimming of path lighting (e.g. hotels, hospitals, staircases)
- Scene control of lighting with simultaneous switching and dimming (e.g. cinemas, theatre, other functional buildings)
- Time-dependent definition of different temperature stages for single-room control systems (e.g. RAM 710 EIB)
- Time-dependent forced control (ON and/or OFF has precedence) of consumers by priority messages
- Random switching for absence control

Technical data:

Operating voltage:
bus voltage; additional mains voltage 230 V AC for integrated antenna power supply unit by connection of DCF77 antenna

Channels: 16

number of astronomical channels:
4 on C1, C2, C3, C4

Memory locations: 500 saved by EEPROM

Automatic program:
Day, week, year and puls program

Possible manual operations:
Preliminary manual override, permanent manual override or random switching

Inputs: Supply voltage for the DCF part, DCF77 antenna, 1 x bus

Programming:
Via key pad or by PC programming software Obelisk 2.1 and memory card Obelisk (64 K)

Minimum switching interval:
1 min, via puls program 1 sec

Block formation: free block formation of the week days and the switching channels

Summer/winter time adjustment:
automatic or by the DCF77 radio signal

Power consumption: < 10 mA

**Accuracy:** $\leq \pm 1$ s/day or DCF77 synchronous

Power reserve:
1.5 years (lithium battery exchangeable)

Captive hinged cover, tamper proof

Housing: 45 x 105 x 60 mm (6 modules)

Order no:

TR 648 S DCF EIB	648 9 201
DCF77 Antenna EIB	907 0 271
OBELISK 2.1 programming set	907 0 305
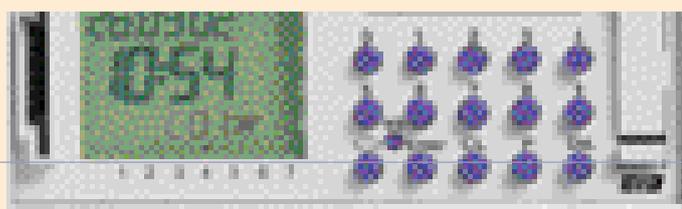
Slave clocks

Everywhere the right time – stylish clocks that can be read exactly
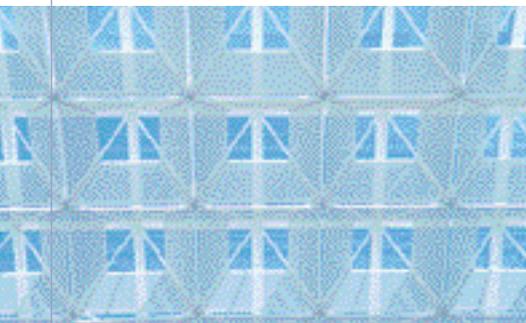
OSIRIA 220
single-sided wall clock
Housing diameter   26.5 cm

OSIRIA 230/240
single-sided wall clocks
Housing diameter   31.5 cm
41.5 cm

**Description:**

OSIRIA 220 single-sided wall clocks

- EIB indoor clock, round
- Impact-resistant plastic housing, matt border
- Flat, shock-resistant Plexiglas
- Dial Ø 250 mm
- White metallic dial with black A rabic numerals or DIN bar numerals
- Dial printing in acc. with DIN 41091
- Black DIN bar hour and minute hands, red second hand
- Housing dimensions: Ø 265 mm, Housing depth 60 mm
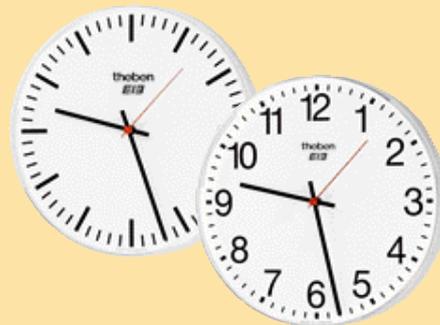
OSIRIA 230/240

OSIRIA 220
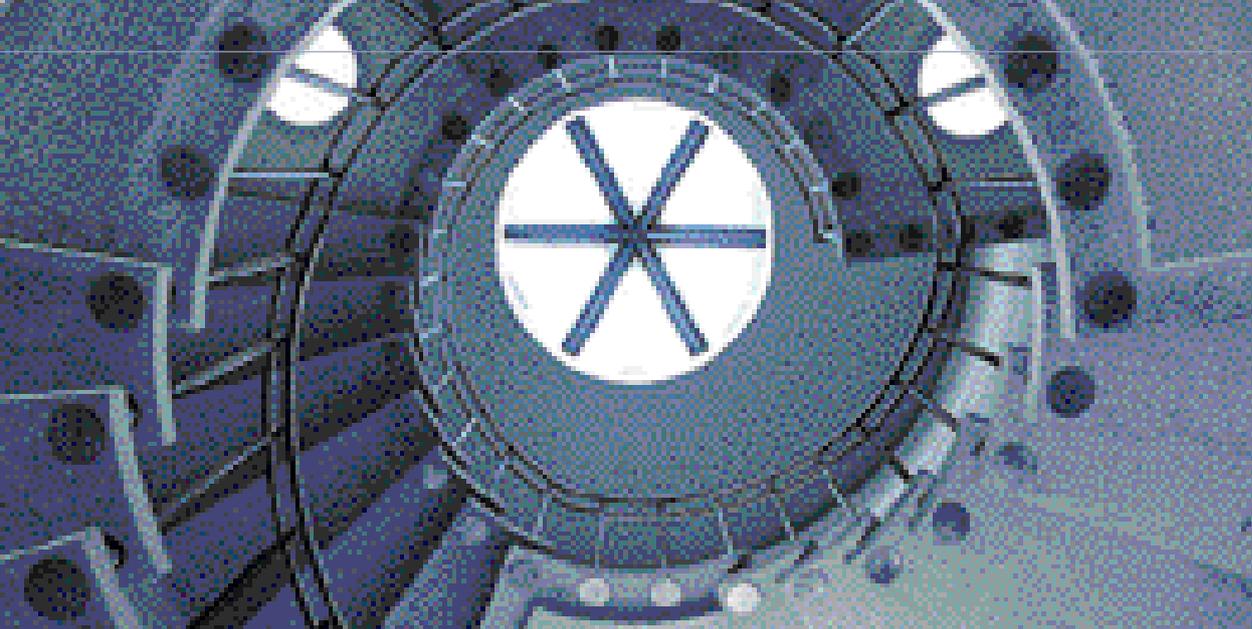
OSIRIA 230/240 single-sided wall clocks
- EIB indoor clock, round
- Impact-resistant plastic housing, matt border
- Flat, shock-resistant Plexiglas
- Dial Ø 300 mm or 400 mm
- White metallic dial with black Arabic numerals or fine-line numerals
- Dial printing in acc. with DIN 41091
- Black bar hour and minute hands, red second hand
- Housing dimensions:
  Ø 315 mm, housing depth 60 mm
  Ø 415 mm, housing depth 64 mm

Technical data:
OSIRIA 220 AR
Dial dim.: Ø 25 cm
Housing dim.: Ø 26.5 cm, height: 6 cm
Description: Arabic numerals, impact-resistant plastic housing

OSIRIA 230 AR
Dial dim.: Ø 30 cm
Housing dim.: Ø 31.5 cm, height: 6 cm
Description: Arabic numerals, impact-resistant plastic housing

OSIRIA 230 SR
Dial dim.: Ø 30 cm
Housing dim.: Ø 31.5 cm, height: 6 cm
Description: Fine-line numerals, impact-resistant plastic housing

OSIRIA 240 AR
**Dial dim.:** Ø 40 cm
Housing dim.: Ø 41.5 cm, height: 6.4 cm
Description: Arabic numerals, impact-resistant plastic housing

OSIRIA 240 SR
Dial dim.: Ø 40 cm
Housing dim.: Ø 41.5 cm, height: 6.4 cm
Description: Fine-line numerals, impact-resistant plastic housing
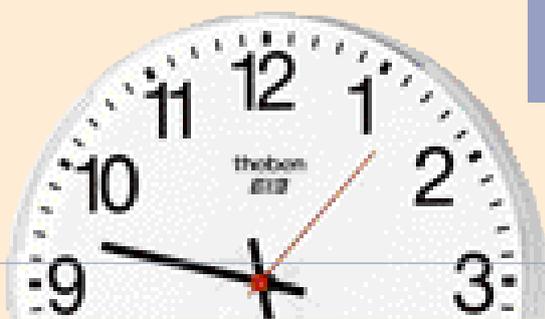
Order no:	
OSIRIA 220 AR EIB/KNX	500 9 200
OSIRIA 230 AR EIB/KNX	500 9 210
OSIRIA 230 SR EIB/KNX	500 9 211

Order no:	
OSIRIA 240 AR EIB/KNX	500 9 230
OSIRIA 240 SR EIB/KNX	500 9 231
Further types on request.	

Slave clocks

## Everywhere the right time – stylish clocks that can be read exactly

OSIRIA 241
single-sided wall clocks
Housing diameter 40 cm

OSIRIA 242
double-sided wall clocks
Housing diameter 42 cm

Description

OSIRIA 241 single-sided wall clocks
- EIB indoor clock, round
- High-quality chrome-plated metallic housing
- Domed, shock-resistant Plexiglas
- Dial Ø 400 mm
- White metallic dial with black A rabic numerals or DIN bar numerals
- Dial printing in acc. with DIN 41091
- Black DIN bar hour and minute hands, red second hand
- Housing dimensions: Ø 400 mm Housing depth 72 mm
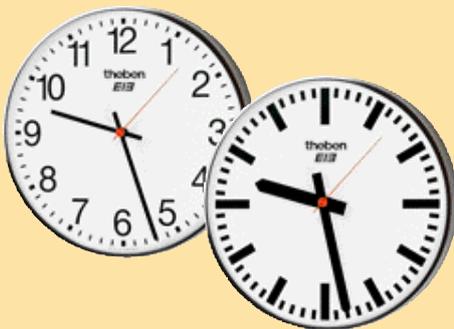
OSIRIA 241

OSIRIA 242
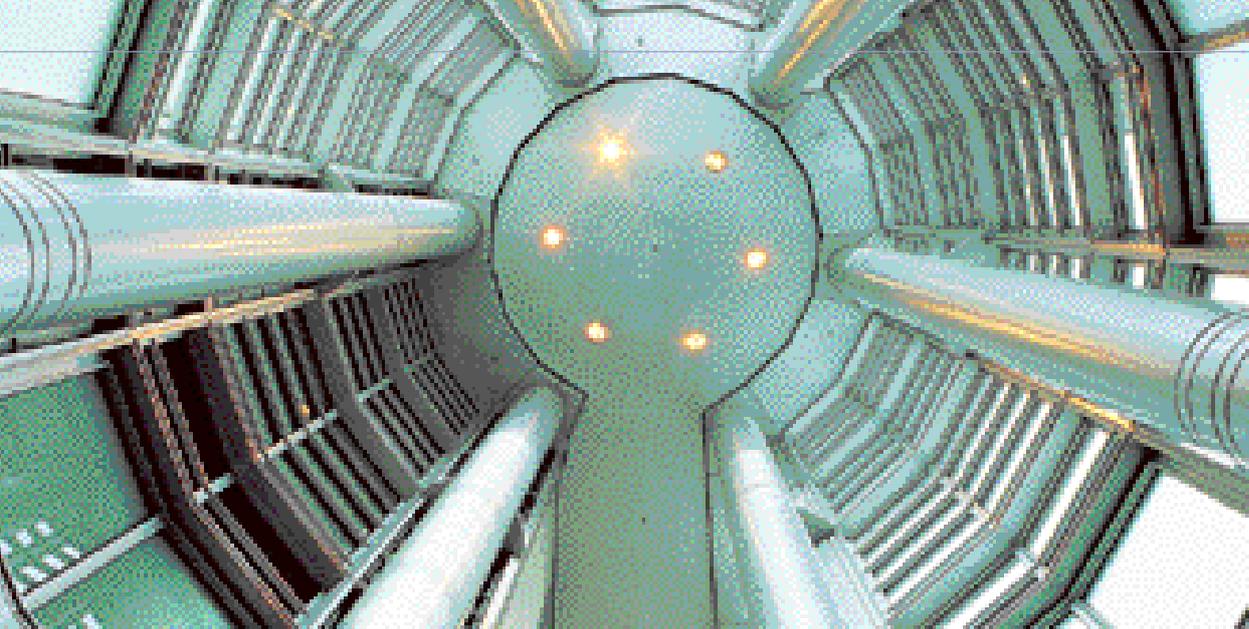
OSIRIA 242 double-sided wall clocks

- EIB indoor clock, round
- With wall or ceiling holder (150 mm)
- Very stable, white painted metallic housing (RAL 9016) for high-stress applications
- Shock-resistant Plexiglas lenses
- Dial Ø 400 mm
- White dials with black Arabic numerals or fine-line numerals
- Dial printing in acc. with DIN 41091
- Black bar hour and minute hands, red second hand
- Housing dimensions: Ø 420 mm
  Housing depth 116 mm

Technical data:
OSIRIA 241 AR
Dial dim.: Ø 40 cm
Housing dim.: Ø 40 cm, height: 7.2 cm
Description: Arabic numerals, chrome-plated metallic housing

OSIRIA 241 BR
Dial dim.: Ø 40 cm
Housing dim.: Ø 40 cm, height: 7.2 cm
Description: DIN bar numerals, chrome-plated metallic housing

OSIRIA 242 AR
Dial dim.: Ø 40 cm
Housing dim.: Ø 42 cm, height: 11.6 cm
Description: Arabic numerals, white painted metallic housing

OSIRIA 242 SR
Dial dim.: Ø 40 cm
Housing dim.: Ø 42 cm, height: 11.6 cm
Description: Fine-line numerals, white painted metallic housing

Order no:	
OSIRIA 241 AR EIB/KNX	500 9 240
OSIRIA 241 BR EIB/KNX	500 9 241

Order no:	
OSIRIA 242 AR EIB/KNX	500 9 250
OSIRIA 242 SR EIB/KNX	500 9 251
Further types on request.	
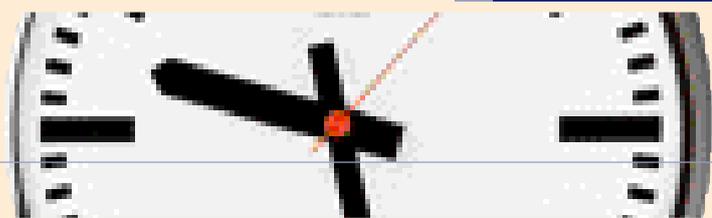
Slave clocks

Everywhere the right time – stylish clocks that can be read exactly

OSIRIA 280
digital calendar clock
Housing dimensions 50 x 51 cm

OSIRIA 232 BQ
flush-mounting wall clock
Housing dimensions 30.1 x 30.1 cm

OSIRIA 251 BQ
wall clock, protected against thrown balls
Housing dimensions 40 x 40 cm

Description:
OSIRIA 280 B digital calendar clock
- Analogue clock with 1-line, 9-segment LCD digital display
- Extra-flat metallic housing (W/H/D 500 x 510 x 40 mm), painted metallic silver
- Analogue-mechanical time display
- Dial Ø 280 mm
- Freewheeling black bar hands, red second hand
- No front lens
- Height of date numerals 50 mm
- Can be read from approx. 20 m
- Optional temperature display, alternating with date

OSIRIA 280 B

OSIRIA 251 BQ

OSIRIA 232 BQ
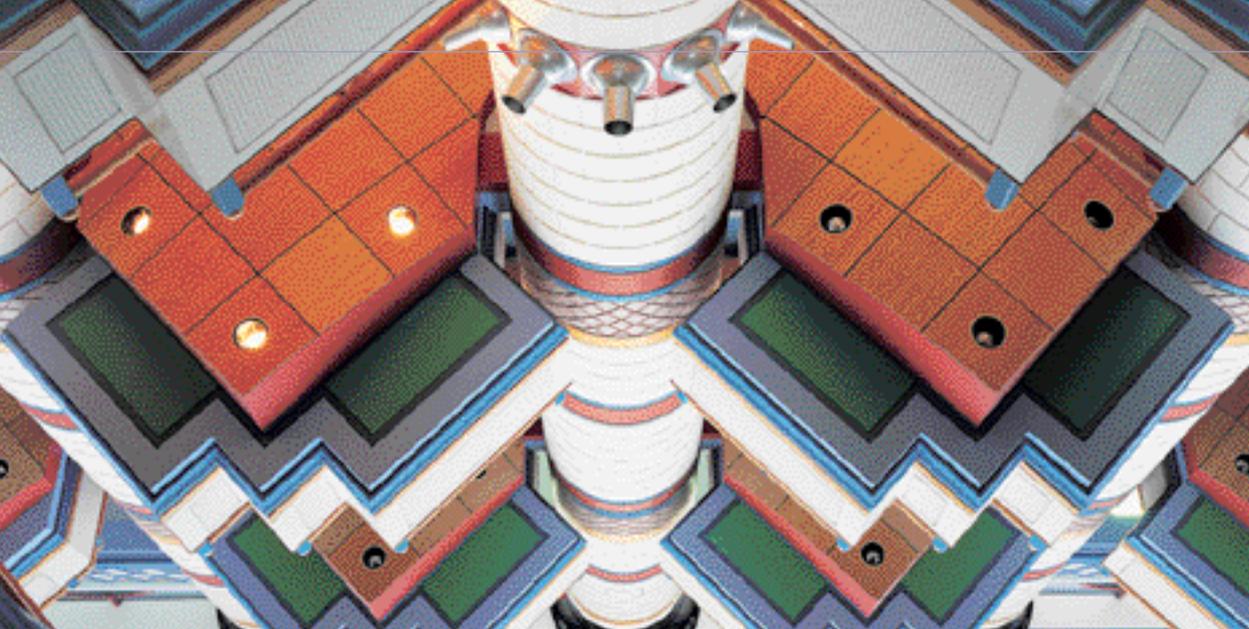
OSIRIA 232 BQ flush-mounting wall clock

Flush-mounted analogue clock (for operating theatres)

- Housing frame for installation flush with tiles or wall (W/H/D 301 x 301 x 60 mm), of V4A stainless steel for wall installation (flush mounting)
- 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
- White metallic dial with black DIN bar numerals
- Dial printing in acc. with DIN 41091
- Black DIN bar hour and minute hands, red second hand

OSIRIA 251 BQ wall clock, protected against thrown balls

e.g. for sports halls, schools, etc.

- EIB indoor clock, square (400 mm x 400 mm)
- Single-sided, very stable white painted metallic housing (RAL 9016) for high-stress applications
- Laminated safety glass
- 3-point fastening resistant to being pried out
- White metallic dial with black DIN bar numerals
- Dial printing in acc. with DIN 41091
- Black bar hour and minute hands, red second hand
- Protected against thrown balls! (FMPTA inspection certificate acc. to DIN 18 032 part 3 available)

Technical data:

OSIRIA 280 B
Dial dim.: Ø 28 cm
Housing dim.: 50 x 51 cm, height: 4 cm
Description: Bar numerals, Height of date numerals 50 mm

OSIRIA 232 BQ
Dial dim.: 25 x 25 cm
Housing dim.: 30.1 x 30.1 cm, height: 6.0 cm
Description: DIN bar numerals, stainless steel housing

OSIRIA 251 BQ
Housing dim.: 40 x 40 cm, height: 10 cm
Description: DIN bar numerals, white painted metallic housing

Displays

Order no:

OSIRIA 280 B EIB/KNX	500 9 280
OSIRIA 232 BQ EIB/KNX	500 9 223
OSIRIA 251 BQ EIB/KNX	500 9 252

Further types on request.

23.06.05

Theben

System devices

## Simple and dependable – system devices for the programming and supply voltage of your EIB system

**Power supply
640 mA**

**Power supply
320 mA**

Description:

Power supply 640 mA

The EIB voltage supply generates and monitors the EIB system voltage. By means of the integrated reactor, the bus line is decoupled from the EIB voltage supply. The connection to EIB is made with a bus terminal. When the reset button is pressed, a reset is triggered for 20 seconds (regardless of how long the button remains pressed). The bus line is enabled and the bus users connected to this bus line are reset to the basic status. If a longer reset is needed, the bus terminal must be disconnected from the supply voltage. A 30 V DC auxiliary voltage output is provided by an additional terminal.
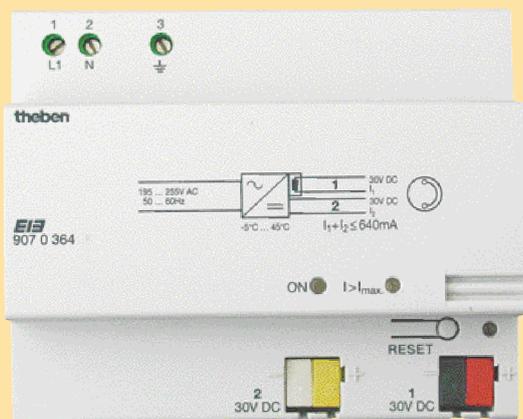
EIB power supply 640 mA

EIB power supply 320 mA

Power supply 320 mA

The 320 mA voltage supply generates and monitors the EIB system voltage. Via the BUS output, it supplies a bus line with max. 32 insta-bus users without any additional EIB reactor. The 30 V DC output is without reactance and makes possible the supply of a further line (e. g., main line) by means of a separate EIB reactor, to be installed separately, as well as a line coupler. Alternatively, this output can be used for the supply of further functional devices (e. g., auxiliary voltage for binary inputs). The load can be distributed to the outputs as desired; the total nominal current must not be exceeded, however. The mounting of the REG is done on a 35 mm mounting rail.

- Connection of the bus lines via EIB terminals, no data bus required
- Switch for resetting the bus line
- Colored LED for displaying operation, overload, overvoltage and reset

Technical data:
Power supply 640 mA
Power supply: 230 V AC, 50…60 Hz
Voltage range: 195…255 V AC, 45…65 Hz
Power consumption: max. 45 VA
Dissipation: max. 6 W

Outputs:
EIB-output: 1 line with integrated reactor
EIB nominal voltage: 30 V DC ±2 V, SELV
Auxiliary voltage output:
1 (without reactance)
Auxiliary voltage, nominal value:
30 V DC ±2 V, SELV
Nominal current (total):
640 mA, short-circuit proof
(sum of EIB and 30 V outputs)
Short-circuit current: max. 1.4 A
Mains failure ride-through interval:
min. 200 ms
Operating temperature range:
−5 °C … +45 °C
Degree of protection:
IP 20 according to EN 60 529
Housing: 90 x 108 x 64 mm

Technical data:
Power supply 320 mA
Nominal AC voltage:
161 to 264 V AC, 50/60 Hz
Output BUS (with reactance)
Voltage: 28 to 31 V DC
max. bus cable length: 350 m for each output with reactance
Output 30 VDC (without reactance)
Voltage: 28 to 31 V DC
Nominal current: max. 320 mA for both outputs (11 + 12). Can be distributed as desired, short-circuit proof
Permissible ambient temperature:
−5 °C … +45 °C
Degree of protection:
IP 20 according to EN 60 529
Installation width: 72 mm (4 modules)

**Order no:**

Power supply	
640 mA	907 0 364
320 mA	907 0 374
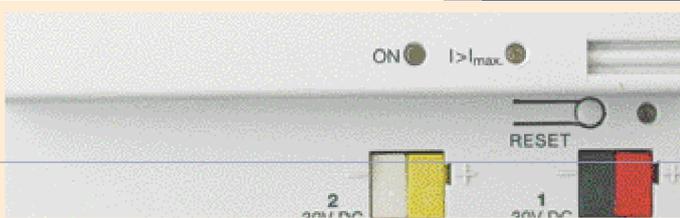
System devices

Simple and dependable – system devices for the programming and supply voltage of your EIB system

USB interface

Line coupler

USB interface

Description:
- The USB interface enables communication between a PC and the EIB system being programmed. The data transmission is indicated by the EIB LED and the USB LED. The USB can be used with ETS3 V1.0 and later.

USB interface
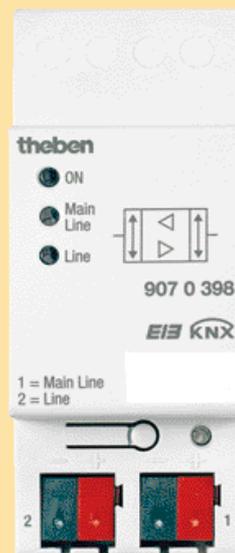
Line coupler EIB/KNX

Line coupler

Description:

- The line coupler is used in larger installations to connect EIB/KNX lines or areas. The lines/areas are electrically isolated from each other. At the same time, it is possible to filter out messages in order to reduce the message traffic in a line. The line coupler has bus connection terminals for the main line and subordinate line. The line coupler can also be used within a line as a line amplifier (repeater).

Technical data:
USB interface
Power supply: Bus
Interface: USB
Operating temperature range:
−5 °C… +45 °C
Protection rating: IP 20 in accordance with EN 60 529
Dimensions: 90 x 35 x 64 mm

Technical data:
Line coupler
Power supply: Bus
Operating voltage:
Primary/secondary line 24 V DC (21 … 31 V DC)
Temperature range:
−5 °C … +45 °C (operation)
−25 °C … +55 °C (transport/storage) at relative humidity (without condensation) 5 % … 93 %
Protection rating: IP 20 in accordance with EN 60 259
Protection class: III

Connection
Electrical connection is via the bus connection terminals.

Order no:	
USB interface EIB/KNX	907 0 397
Line coupler EIB/KNX	907 0 398
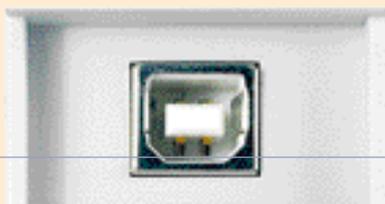
Upgrade options for the MX series

12 x switching

RMG 4S

RME 4S

RME 4S

12 x C load

RMG 4 C-load

RME 4 C-load

RME 4 C-load

6 x dimming

DMG 2

DME 2

DME 2

18 x binary inputs

BMG 6

BME 6

BME 6

12 x heating

HMG 4

HME 4

HME 4

12 x blinds
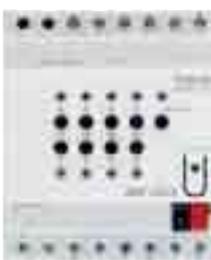
JMG 4S
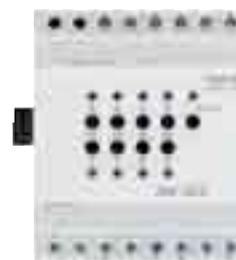
JME 4S
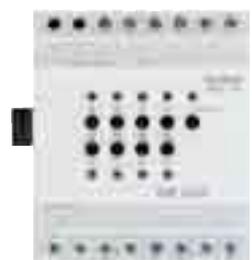
JME 4S

Advantage:
These upgrade modules can be used to achieve low channel prices

MX series

Various combination options for the MIX series

4 x switching + 4 x dimming

RMG 4 S   DME 2   DME 2

8 x switching + 4 x C load

RMG 4S   RME 4S   RME 4 C-load

6 x binary inputs + 4 x switching + 2 x dimming

BMG 6   RME 4S   DME 2

4 x heating + 6 x binary inputs + 4 x switching

HMG 4   BME 6   RME 4S

4 x blinds + 4 x switching + 4 x C load
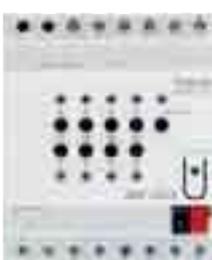
JMG 4S   RME 4S   RME 4 C-load

4 x blinds + 2 x dimming + 6 x binary inputs
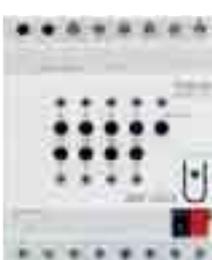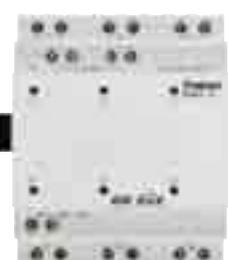
JMG 4S   DME 2   BME 6

⋮   ⋮   ⋮

etc.   etc.   etc.

Each basic module can be expanded by adding up to 2 upgrade modules from the MIX series.
Advantages:
This MIX ability gives you extremely high flexibility and low system costs.

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from specialists
theben
for specialists