

ALTENBURGER ELECTRONIC GMBH

77960 Seelbach, Schloßweg 5, Phone +49 (7823) 509-0, Fax +49 (7823) 27 61
email: info@altenburger.de Internet: http://www.altenburger.de

Operating instructions

Multi-Sensor-Dimmer EIB-KNX

Type: IBMSD, order-no. 80.14.800

Range of application

The EIB-Multi-Sensor-Dimmers are suitable for the daylight dependent constant light control and the presence detection in one unit. It operates within the EIB-system.

If motion is detected the control adjusts the artificial light to the daylight portion in a room. It adds only so much artificial light to the daylight as necessary for the achievement of the preset light level to be kept constant. If no motion is detected any longer the control reduces the daylight level after a set delay time to a low level and finally switches it off after a second delay time

Additionally switch operations in dependence of motion detection can be performed within the EIB of ventilators, air-conditioners, automatic doors, heaters etc. are within the range of application.

Lamps to be controlled

With the Multi-Sensor-Dimmer EIB-KNX electronic ballasts with 1-10V interface for fluorescent lamps, electronic transformers with 1-10 V interface for low-voltage halogen lamps, can be operated directly without any additional component. The IBMSD will be wired to the supply (phase for the switch contact), the low-voltage interface 1...10V and to the EIB-bus. Instead of to interfaces of 1...10V the IBMSD also could be wired to all ALTENBURGER dimmers with their interface of 0...10 V, such being able to dim also incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers or with electronic transformers (230V) and neon lamps.

The integrated switch contact can be used for the direct switching of a load of up to 5 A. For higher loads relays or contactors can be used.

Motiondetection

The motion sensor within the Multi-Sensor dimmer has an angle of detection of approx. 100°. The acquisition range is 7 m in diameter at a room height of 3 m.

If larger rooms or areas have to be controlled several IBMSD controls can be coupled. In this case each IBMSD would care for the constant light control in its individual range of detection while the motion control applies for all connected circuits even if just one IBMSD recognizes a presence. The IBMSD's also can be used just as motion detectors (without the function constant light control).

Constant Light control

The integrated light sensor part within the Multi-Sensor continuously measures the brightness at the IBMSD and compares this with the set light level. Artificial lighting is added or reduced according to the set light level. The light level measured at the sensor of course is not identical with the one at the workplace. Presettable are light values between 25 ...750 lux at the control = appr. 50 ...1500 lux at the workplace, depending on the room conditions (brightness of colours inside the room, reflections of floor and ceiling, furniture etc.). Thus the constant light level at a high daylight portion can differ a little from that at a low daylight portion. A direct exposure of the sensor to the daylight source (window or glass roof) has to be avoided.

Setting of light levels to be kept constant

The adjustment of the required light level can be performed as follows:

- Directly as a parameter in the ETS software.
- Via the object set light level room brightness or storage of the object set light level.
- Directly via the pushbutton for the storage and the IBMSD. In this case at the pushbutton for the light level to be set at the control directly the required light level is set by the dimming function (pressing the button). 10 secs. after the release of the pushbutton the set light level automatically is measured and stored.

Mounting of the IBMSD

The Multi-Sensor-Dimmer EIB is available for the surface mounting on ceilings or for the mounting to lamp tubes by clamps.

Before mounting to the ceiling the base plate is drawn from the control and is screwed to the ceiling. It is then wired according to the wiring diagram. The control part then is plugged onto the baseplate.

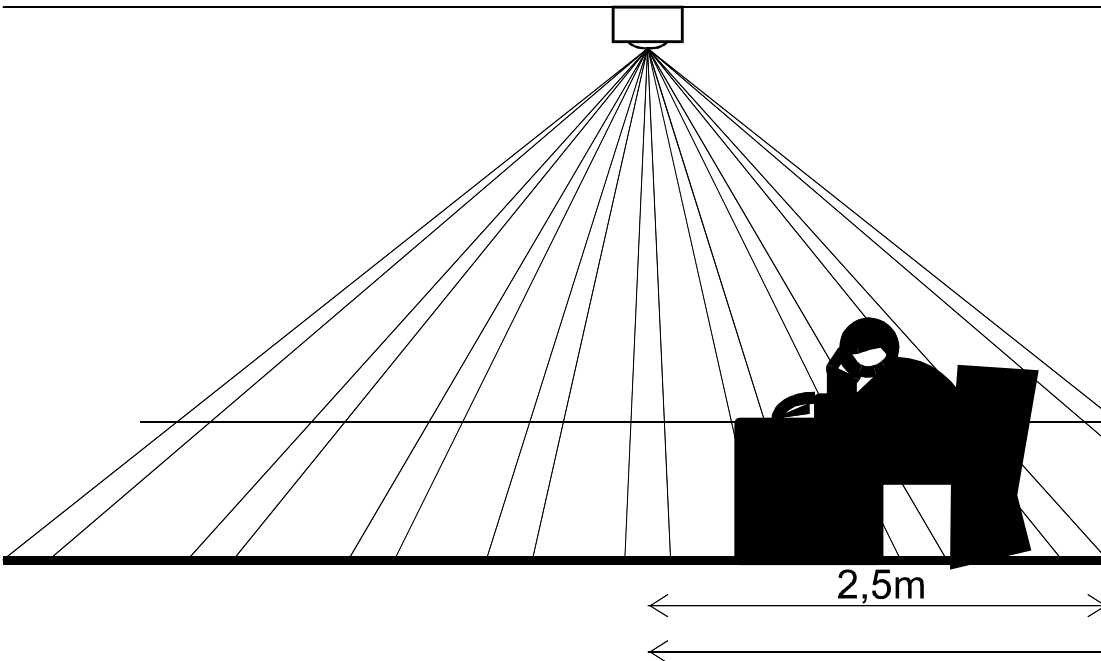
Please observe: after the wiring of master controls (phase and 1 ..10V connected) the enclosed cable insulation must be plugged onto the wire.

Action after bus-voltage return

The behaviour of the system after a bus-voltage return can be set as a parameter within the ETS-software. Generally the lighting is switched ON after a bus-voltage return independent of the set light level. After the control is in normal action again (after the delay time and the switch OFF time) the lighting switches OFF. If the motion detection however is deactivated the lighting remains ON unless it is switched OFF manually.

Sensitivity and interference protection

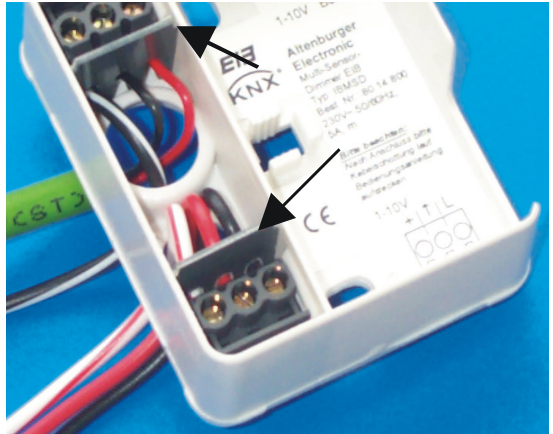
The sensitivity of the motion detection can be pre-adjusted as parameter setting within the ETS software (sensitivity motion detection) in 3 steps (reduced, medium and very high sensitivity). Additionally for the suppression of fault releases the minimum pulse range of the measured motion pulses can be fixed. If fault releases are observed the required length of pulses have to be increased. As the increase of the required length of pulses makes the evaluation a bit less sensitive, separate values for the switch ON and switch OFF states are to be set.



Wiring instructions

- The Multi-Sensor-Dimmer EIB-KNX should be mounted directly above the place where the constant light level is required (e.g. a working place). The brightness inside the room however should always be picked up by the sensor indirectly at the point of reference. A direct light on the sensor from the interior illumination or the illumination of the place of work is to be avoided.

- The optics of the motion sensor are designed for a ceiling height of 2,5 m to 3,0 m. In higher rooms the density detection of the sensor diminishes.
- During the setting of the light level to be kept constant no person should be present directly under the sensor in order to avoid a falsification of the measured brightness value.
- The mounting into a draught (e.g. close to a ventilator or air-conditioner) should be avoided.
- The regulations for the handling with SELV (safety extra low-voltage) have to be observed.



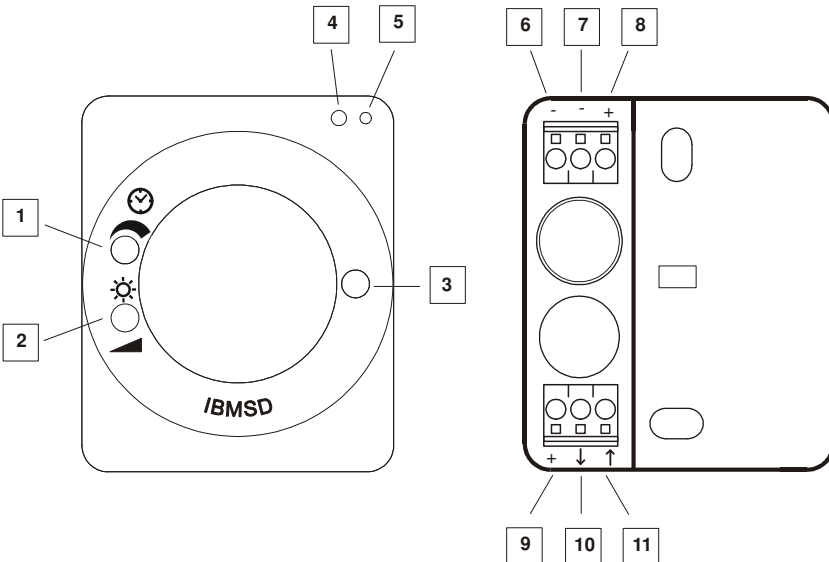
Communication objects and parameters

For the exact projection and parametrizing of the control please refer to the enclosed description of the application and the technical handbook.

Safety and installation requirements

- The IBMSD may be installed and put into operation only by skilled designated electricians.
- Wiring, mounting and other work may be performed only in a voltage-free state.
- Applicable safety instructions and regulations for the prevention of accidents have to be observed.
- For operation of the IBMSD in the lamp an UV-resistant cable has to be used.
- When clipping the IBMSD to lamp tubes an undue load must be avoided

MSD module and terminals



Control elements:

1. Potentiometer for the setting of the lagging time (adjustable between 1 and 30 min.)
2. Set pushbutton for the setting of the required brightness to be kept constant
3. Light value exposure
4. Learn pushbutton for programming of the physical address
5. Programming LED

Terminals: (also see wiring diagrams)

6. Chassis (0V).
7. Bus (-)
8. Bus (+)
9. 1...10V (passive for electronic ballasts)
10. Switch contact output
11. Switch contact input

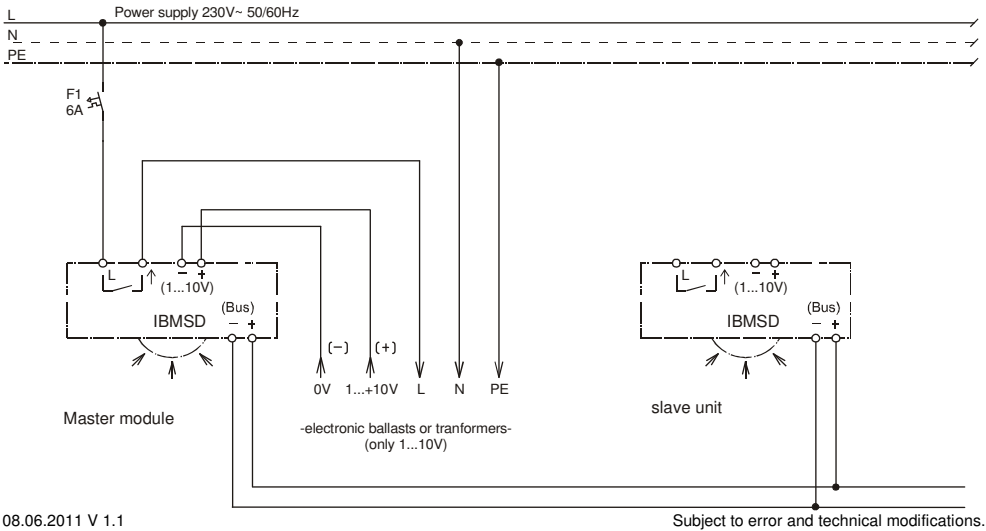
Technical Data

Description and order number:	Multi-sensor dimmer EIB-KNX, Type IBMSD Order-No.: 80.14.800
Operating temperature:	0°C.....+45°C
Selectable light values:	approx..25-750 lux (directly at the module, equivalent to approx. 50 - 1500 lux at the workplace)
Angle of detection:	approx. 100° (light-and motion sensor),
Height of assembly:	2,5 m – 3.0 m
Control terminals:	+,- (1..10V interface of ballasts or transformers)
Base insulation:	according to IEC 664 (10/92), not protective low-voltage
Load capacity control output:	50 mA (approx. 50 electronic ballasts or transformers – see manufacturer's specifications)
Load terminals:	switch contact input (↑), switch contact output (↓)
Wiring:	please refer to wiring diagrams – in case of miswiring, malfunction or damage possible
Load contact:	function switch ON/OFF, no safe release of contacts
Load capacity of the control output:	μ-contact slot). 5A resistive loads ⇒ 30p* elec. bal.1lamp 18W,20 p* elec. bal. 2lamps 18W 30p* elec. bal.1lamp 36W,20 p* elec. bal. 2 lamps 36W 20p* elec. bal.1lamp 58W,10 p* elec. bal.2 lamps 58W external through 6A
Protection:	II (protective insulation), IP 20
Protective class, protective system:	100 m (control wires 0.5 mm ² , load and supply wires 1.5 mm ²)
Max. cable length:	screw-type terminals for single-wires or litz wires
Wire connections:	0.3mm ² – 1.5 mm ² or with 1.5 m cable
EIB-connections:	bus +/-
EIB-supply:	24 V DC (+6V/- 4 V) EIB-power supply (SELV)
Construction:	Plastic housing for mounting on ceilings or lamp fixture louvres
Contamination level:	2 (dry, non-conducting, according to IEC664, 10/92)
Dimensions:	W x H x D = 58.5 x 70.5 x 42 mm
Weight:	approx. 100 g
Designation:	CE, EIB/KNX
Wiring of terminals:	see wiring diagrams

* Number of connectable electronic ballasts with 15 m cable of 1,5 mm² from the distribution rack to the IBMSD and further 20 m to the midst of the load circuit (impedance approx.800 mΩ). With greater cable diameters or shorter wires the permissible load would be reduced (e.g at an impedance of 400 mΩ by 20%).

Wiring diagram:

1 EIB-MSD for the dimming and switching of a large area with additional controls for motion detection



08.06.2011 V 1.1