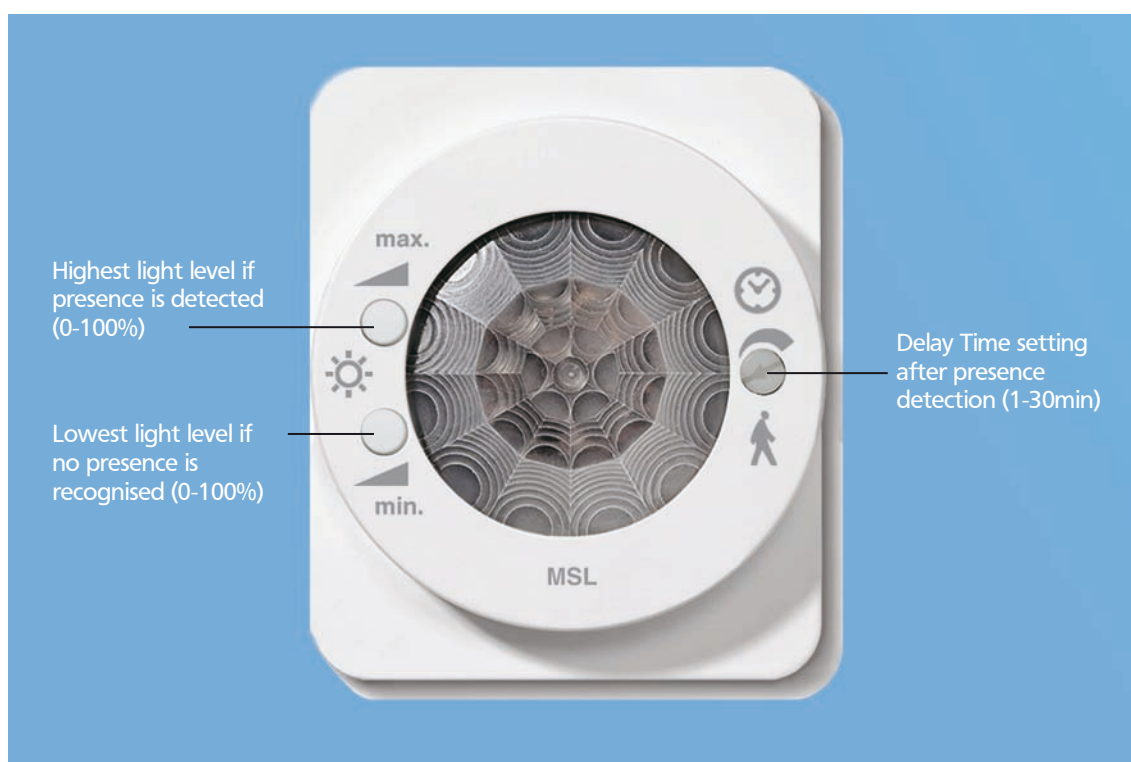


Energy Conservation through sensor technology in Lighting



Multi-Sensor dimmers and switches, light value control switches (operating daylight and presence dependent)

- Maximum/minimum limitation of light levels at presence detection
- EIB/KNX and DALI versions
- Programming also with external pushbuttons or IR-transmitters
- Programming of the light level to be kept constant and manual dimming control with just one pushbutton

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Conventional Multi-Sensor dimmers and switches

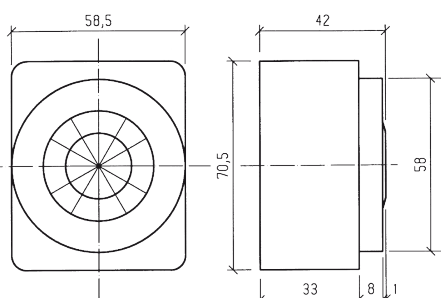
MSD Multi-Sensor-Dimmer
Daylight dependent constant light control with presence detection and setting of the light level to be kept constant at the module or with a remote pushbutton.



Type MSD
Order-No. 50.13.500

Characteristics:

- Simply to be integrated into light installations with dimmable electronic ballasts with 1-10 V interface or with ALTENBURGER load dimmers (0-10 V interface). Also to be fitted to fluorescent lamp tubes or fixtures.
- Optional the light level to be kept constant can be set at an external pushbutton. With the same pushbutton a manual control with the functions Brighter-Darker-ON/OFF can be performed.
- Possibility of a deactivation of presence detection or daylight dependent control.
- Capacity of the switch output = 5 A
- **Range of presence detection for all Multi-Sensors = 7 m in diameter at a mounting height of 3 m.**



MSD-T Multi-Sensor-Dimmer with external light level setting and manual control with 1 (or more) pushbuttons.



Type MSD-T
Order-No. 50.13.520

Characteristics:

- Setting of the light level to be kept constant with an external pushbutton.
- Retention of the set light level also after re-engagement
- After setting of the constant light level LED indication at the module.
- Possibility of deactivation of presence detection or daylight dependent control.
- Capacity of the switch output = 5 A

Pushbutton

for the setting of the light level to be kept constant and for the manual dimming control



Type TU
Order-No. 55.70.035

MSL Multi-Sensor-Dimmer with maximum/minimum light level limitation or switch function.



Type MSL
Order-No. 50.13.510

Characteristics:

- The MSL operates between pre-settable maximum and minimum light levels.
- The maximum light level is achieved after presence is recognized and daylight level falls below the set light level to be kept constant.
- Minimum light level applies if no presence is recognized. Lighting could not fall below this level.
- The presence-dependent switch function can be used for presence-dependent controls of non-dimmable lamps and other devices (ventilators, AC's, heaters etc.)
- Possibility of deactivation of presence detection or daylight dependent control.
- With a code switch at the back of the MSL 6 different modes of operation can be selected. The aforementioned function is set at works.
- Capacity of the switch output = 5A

Conventional Multi-Sensor dimmers and switches

IR-MSD Multi-Sensor Dimmer with IR-control



Type IR-MSD
Order-No. 50.13.540

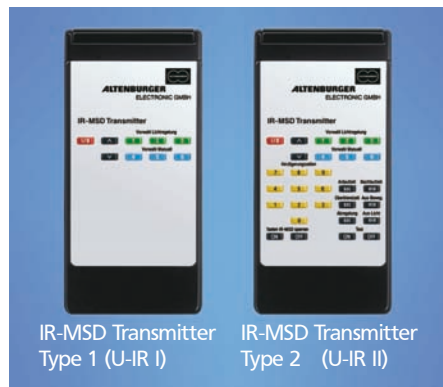
Characteristics:

Setting of the light level to be kept constant, delay time setting after presence detection, semi-automatic operation through deactivation of presence detection at the IR-MSD.

Programming and operation with an IR-transmitter with the functions:

- Programming of 3 light levels to be kept constant and respective selections.
- Programming of 3 light scenes and their selection.
- Manual control with the functions Brighter-Darker-ON/OFF
- Delay time setting after presence detection.
- Setting of fade times
- Integration of remote controls for switching, dimming and programming.
- Interlocking key at the IR-transmitter.

Handheld IR-transmitters / programmers



IR-MSD Transmitter Type 1 (U-IR I) IR-MSD Transmitter Type 2 (U-IR II)
Type U-IR I U-IR II
Order-No. 50.13.545 50.13.546

IR-MSD-Transmitter Type 1

For the programming and selection of lighting scenes and light levels to be kept constant.

IR-MSD-Transmitter Type 2

For the programming and selection of lighting scenes, light levels to be kept constant, delay time settings after presence detection and fade times from scene to scene.

MS-LRS Multi-Sensor light value control switch

For the presence- and daylight-dependent switching of all types of lamps.



Type MS-LRS
Order-No. 50.13.530

Characteristics:

- Simple fitting into existing lighting installations.
- The daylight-dependent light levels for the switch ON and switch OFF functions can be set at the module or with an external potentiometer.
- ON/OFF switching with an external pushbutton.
- Capacity of the switch output = 5 A

Option:

The light level setting for the daylight dependent switch ON and OFF can also be made with an external rotary potentiometer with integrated pushbutton for a manual ON/OFF switching.

Rotary potentiometer with integrated on/off pushbutton



Type DPUT
Order-No. 51.01.022

AQ-MSS Multi-Sensor-Controller
for up to 6 individual Multi-Sensors, DIN rail mounted.

Suitable sensor types:
LBS/e, LB/K, LB/b
(pages 8 + 9).



Type **AQ-MSS**
Order-No. 50.14.140

The AQ-MSS is suitable for the control of a maximum of 6 Multi-Sensors for presence detection and constant light control

- They are controlling lighting systems with electronic ballasts with 1-10V interface or up to 3 ALTENBURGER dimmers with an interface of 0-10V with a load capacity up to 8KW.
- Programming of the light level to be kept constant with an external pushbutton. The same pushbutton can be used for a manual dimming control (Brighter - Darker - ON/OFF).
- All connected sensors are computing a mean constant light level based on the daylight levels individually being acquired by the sensors.
- With a code switch at the AQ-MSS up to 8 different functions can be selected.
- **Range of presence detection for each Multi-Sensor = 7 m in diameter at a mounting height of 3 m.**
- Capacity of the switch output = 5 A

IB-MSD
EIB/KNX Multi-Sensor-Dimmer
for the daylight- and presence
dependent lighting control



Type **IBMSD**
Order-No. 80.14.800

KNX-projection with the following functions:

- light switching ON/OFF
- light dimming
- Set light level to be kept constant in dependence of the daylight and storing
- Activation and deactivation of constant light control
- Presence detection ON/OFF
- Function heating, airconditioning, ventilation etc. ON/OFF
- Additional motion dependent ON/OFF command for external functions (heating, airconditioning, ventilation) etc. to be projected time dependent.

The presence detection comprises a diameter of 7m at a mounting height of the module of 3m. For the extension of the range of detection up to 64 multi-sensor modules, type IBMSD can be combined on the KNX Bus.

IBMSC-NV
EIB/KNX Multi-Sensor-Controller
for up to 6 individual Multi-Sensors, DIN rail mounted.

Suitable sensor types:
LBS/d, LS/d, LB/db, LB/dk,
LBS/de (pages 8 + 9).



Type **IBMSC-NV**
Order-No. 80.14.810

The controller has the same functions as the EIB/KNX Multi-sensor IBMSD, it can however be combined with up to 6 IBMSD sensors for the extension of the range of presence detection.

The sensors have no electronic control. This is integrated in the controller. Its switch capacity is 16A for resistive loads and 10A for inductive loads.

All connected sensors are computing a mean constant light level based on the daylight levels individually being acquired by the sensors.

DALI

IB-LWS 3
EIB/KNX light-value control switch operating in dependence of the daylight



Type IB-LWS 3
Order-No. 80.14.016

The IBLWS 3 switches 3 connected light circuits in dependence of daylight ON and OFF. The light level for each channel can be set at the module between 20 and 2000 lux and between 200 and 20000 lux. With the ETS parameter it can be decided if the switch telegram shall be sent after the set light levels have exceeded or fallen down.

DCNV
Dali-Dim-Converter Control 1-10V (0-10V) analog -> DALI-converter with Multi-Sensor-control and 1 or 2 switch dim-functions



Type DCNV
Order-No. 85.01.002

Suitable sensor types: LBS/d, LS/d, LB/db, LB/dk, LBS/de (pages 8 + 9).

Characteristics:
The DCNV automatically recognizes the connection of (Multi) Sensors. Up to 6 sensors can be connected. Basic functions: see AQ-MSS (page 5), without the code switch.

Up to 100 DALI ballasts commonly can be controlled with one Multi-Sensor.

AQAD-S
Daylight dependent constant light control, smoothly adjusting to the daylight with ON/OFF function.
In combination with light sensors type LF/w/D (see bottom left)



Type AQAD-S
Order-No. 50.14.116

Characteristics:
The AQAD-S is suitable for the daylight dependent control of up to 100 electronic ballasts or transformers with 1-10V Interface as well as for 3 AL-TENBURGER dimmers with any load up to 8 KW each with 0-10 V interface. Its integrated switch capacity = 10A.

The setting of the light level to be kept constant can also be made with an external potentiometer with integrated pushbutton type DPUT-S.

Accessory:
LF/w/D
Light sensor, wall mounted, swivelling, IP 55
The LF/w/D is also suitable for daylight controls type AQAD-S (see right column) LWS1, LWS3, LM3 (page 7)



Type LF/w/D
Order-No. 51.21.010

Accessories:
Multi-Sensors
Type LBS/d, LB/db, LBS/de, LS/d, LB/dk (page 9)



Accessory:
DPUT-S
External pushbutton for the setting of the daylight-dependent light level to be kept constant with integrated ON/OFF pushbutton



Type DPUT-S
Order-No. 50.50.002

Conventional daylight-dependent controls

LWS1

1-channel Light Value Control Switch operating in dependence of the daylight for all kind of lamps.

Applicable sensor: typ LF/w/D (page 6)



Type LWS1
Order-No. 50.14.011

Working range

with the slide switch the required working range can be set at the module between lux x 1 or lux x 20 (one range between 10 and 1000 lux, the other one between 200 and 20000 lux).

Light level setting

With the potentiometer „switch OFF value“ the light level is set at which lighting shall be switched OFF. With the potentiometer „switch ON value“ the presentage of the switch OFF Value is set at which lighting shall be switched ON again (between 50 and 95 % of the switch OFF value). If for instance the switch OFF value is set to 500 lux and the switch ON value is set to 80%, lighting switches ON as soon as daylight level falls below 400 lux.

Delay times

can be set between 5 secs and 20 min, individually for switch ON and switch OFF.

Switch capacity

The LWS 1 has an own switch capacity of 10A/250V. With its voltage-free contact external relays or contactors can be switched.

LWS3

3-channel Light Value Control Switch operating in dependence of the daylight for all kind of lamps.

Applicable sensor: typ LF/w/D (page 6)



Type LWS3
Order-No. 50.14.016

Working range

with the slide switch the required working range can be set at the module between lux x 1 or lux x 20 (one range between 10 and 1000 lux, the other one between 200 and 20000 lux).

Light level setting

With the 3 potentiometers the „switch OFF value“ for each circuit are being set. The hysteresis for the switch ON level is 10 %. If the daylight falls 10 % below the set light level lighting for the respective circuit switches ON again.

Indication of the switch state

3 LED's at the LWS 3 indicate the expected switch state. As soon as a LED lights the lighting is switched ON or will be switched ON after the set delay time

Delay times

can be set between 5 secs and 20 min, individually for switch ON and switch OFF

Switch capacity

The LWS 3 has an own switch capacity of 3x10A/250V. With its voltage-free contact external relays or contactors can be switched.

LM3

Electronic lux-instrument transformer with 3 channels for Building Management Systems in combination with light sensors, type LF/w/D (page 6)



Type LM3
Order-No. 50.14.102

The LM3 acquires for each circuit from a light sensor the brightness and transforms it into a linear D/C in parallel to the brightness. To each circuit an individual light sensitivity (measuring range) can be assigned. Ex works a working range of 0-20000 lux has been set. The light levels are being transformed into a voltage of 0-10V.

Setting of measuring ranges

The settings ex works can be changed inside the module (see manual)

Mode of operation

The Lux instrument transformer type LM3 can be operated in 2 modes:

Mode A:

Each control circuit is operated individually, each voltage input has a voltage output. To each circuit one of the 4 Lux-value ranges can be assigned.

Mode B:

In the case all circuits are getting the same light level setting. The voltage outputs are interconnected. The circuit which acquires the highest light level is responsible for all circuits (see wiring diagrams).

KMSS Multi-Sensor Control
with combined light and presence detector LBS/e for fitting into light fixtures.



Type **KMSS**
Order-No. 50.13.321

Function:
Daylight-dependent constant light control and presence detection with target value setting with a pushbutton to be integrated into the light fitting or mounted at a remote place.

Integrated switch output: 5A
(for higher loads an additional switch relay would be required).

LBS/e
Multi-Sensor
to be fitted into lamps or ceilings



Type **LBS/e**
Order-No. 51.21.030

Characteristics:
(Multi-) Sensor for the mounting into ceiling- or floor standing lamps or directly into a ceiling with recessed housings, e.g. type LB/k or LB/b (see page 9), always in combination with Multi-Sensor-Controls like

- AQ-MSS (page 5)
- KMSS (see left side)

Mini-Constanter
Daylight dependent, compact constant light control for fluorescent lamps and low-voltage halogen lamps with electronic ballasts or transformers with 1-10V interface.



Type **MK/1L**
Order-No. 50.13.400

Characteristics:

- Quick and low cost installation (wiring with two wires at the control output of the electronic ballast or transformer)
- No additional voltage supply required.
- Suitable for the simultaneous control of up to 100 single or twin electronic ballasts or transformers.

Applications:



floor lamps



wall lamps
ceiling or pendulum lamps



Type **MK/LSK**
Order-No. 50.13.411

Characteristics:

Mini Constanter with stainless steel clamp for fluorescent lamp tubes with a diameter of 26mm for compact fluorescent lamps and 60cm cable.

Individual (Multi-) Sensors

LB/k and LB/dk

Multi-Sensors for the AQ-MSS, EIB/KNX (IBMSC-NV) and DALI-DCNV controllers (pages 5 and 6) with swivelling downlight-housing. (up to 6 sensors per controller).



For the AQ-MSS controller: (page 5)

Type	LB/k
Order-No.	51.21.037

For the EIB/KNX- and DC-NV DALI controllers: (pages 5 and 6)

Type	LB/dk
Order-No.	51.21.039

LBS/d

Ceiling mounted Multi-Sensor in combination with EIB/KNX and DALI controllers.



Type	LBS/d
Order-No.	51.21.031

The LBS/d has no own electronic. This is integrated in the Multi-Sensor controllers type IBMSC-NV EIB/KNX (page 5) and the DC-NV DALI Dim/ converter control (page 6). Both controllers are suitable for a connection of up to 6 LBS/d sensors.

LS/d

Daylight dependent sensor in combination with EIB/KNX and DC-NV DALI controllers (pages 5 and 6) (up to 6 sensors per controller)



Type	LS/d
Order-No.	51.21.032

The LS/d can be mounted to ceilings or directly inserted into light fixtures or it can be ceiling recessed with housing and flat cover plate type M-UP (page 10).

LB/b and LB/db

Multi-Sensors for the AQ-MSS, EIB/KNX (IBMSC-NV) and DALI-DCNV controllers with ceiling recessed housing and square coverplate (up to 6 sensors per controller).



For the AQ-MSS controller: (page 5)

Type	LB/b
Order-No.	51.21.046

For the EIB/KNX- and DC-NV DALI controllers: (pages 5 and 6)

Type	LB/db
Order-No.	51.21.048

LBS/de

Multi-Sensor, ceiling recessed or to be fixed to light fittings, operating in combination with EIB/KNX or DALI controllers (pages 5 and 6) (up to 6 sensors per controller)



Type	LBS/de
Order-No.	51.21.033

The LBS/de can directly be inserted into light fixtures or they are ceiling recessed with housing and flat cover plate type M-UP (page 10)

M-UP

Ceiling recessed housing and cover plate for all kind of sensor controls and individual sensors.



Type
Order-No.

M-UP
50.13.519

M-UP is suitable for the accommodation of the following sensor controls and sensors:

- MSD
- MSD-T
- MSL
- MS-LRS
- IB-MSD
- IR-MSD
- LBS/d
- LS/d

Sensor and cover plate are placed nearly flat at the ceiling.

MSD, MSD-T, MSL, MS-LRS
Libraries, archives, book stores



MSD, IBMSD, MS-LRS, IBLWS3, DALI DCNV
Class rooms, auditoriums, training rooms, cafeterias, assembly halls



MSD-T, MSL, KMSS (fitting into lamp fixtures) Mini-Constanter
Lobbies, Prefunction, indoor swimming pools, wellness



MSL (Multi-) Sensors with maximum/minimum limitation
Corridors, stair cases, elevator platforms, offices, meeting points



MSL, MS-LRS, LWS1 and 3, DALI DCNV with Multi-Sensor, Mini-Constanter
Passages, moving walkways, terminals, exhibitions, conservatories



MSD-T, MSL, Mini-Constanter, AQ-MSS, MSL, DALI DCNV
Hotels, restaurants, shopping malls, casinos



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Guarantee: 12 months

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