



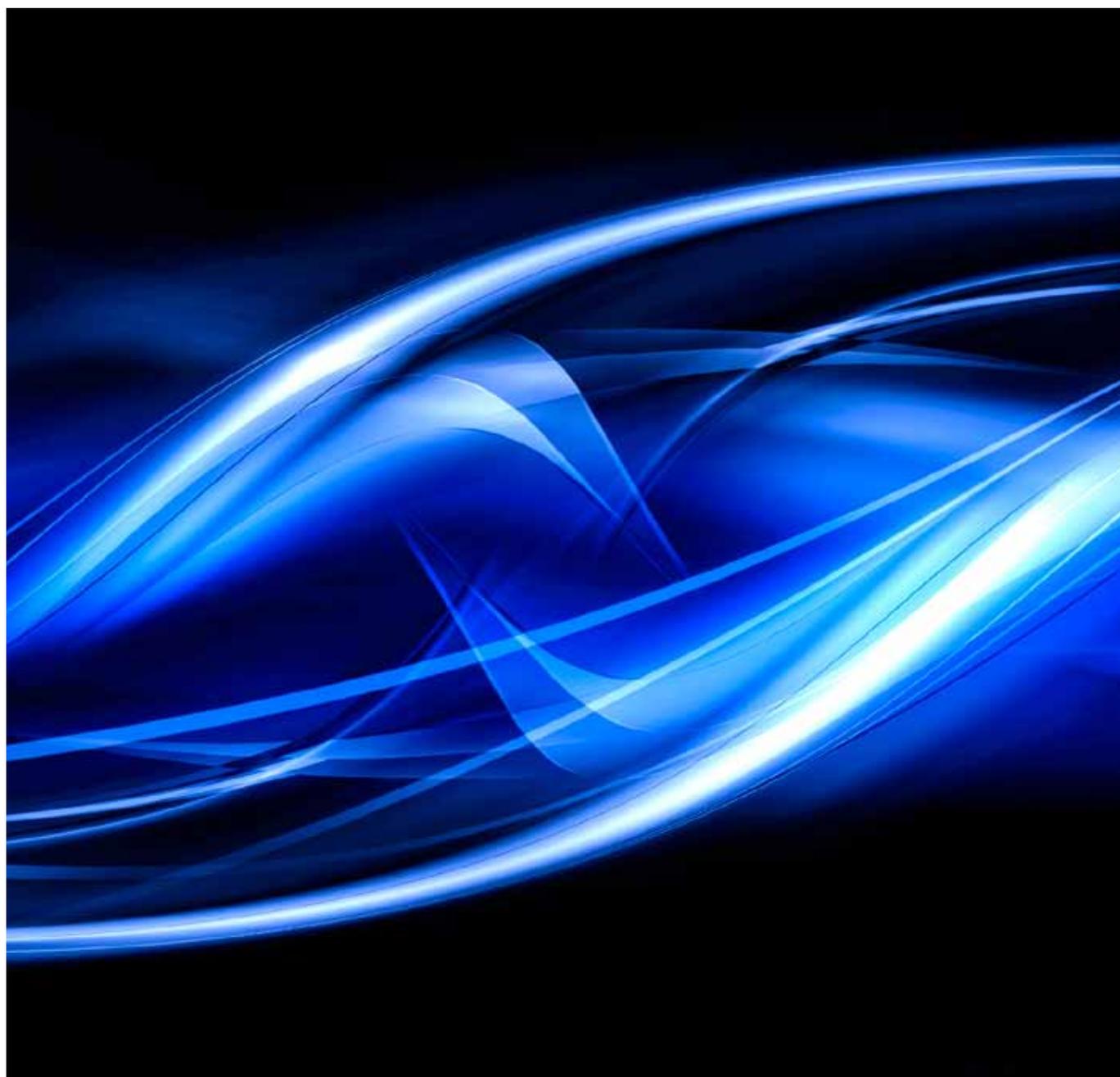
**ALTENBURGER**

ELECTRONIC GMBH

# **ALTENBURGER**

## **Competence in lighting controls**

EIB/KNX Programmable Dimming Control Systems



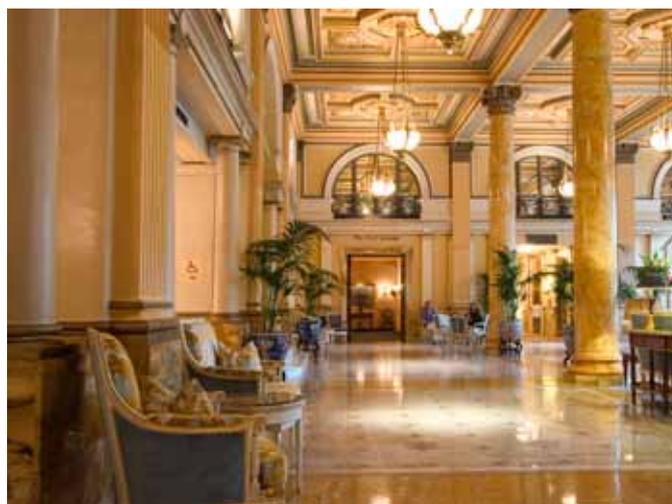
# Contents

Applications	3
Lamps to be controlled with the different control modes	4
How are dimmers working ?	5
Advanced dimmer technology by ALTENBURGER	6
Characteristics of ALTENBURGER dimmer modules	7
DIN rail and backplate-mounted dimmers	8
System survey EIB/KNX programmable dimming controls	10
The interaction of bus-components, dimmers and panels	12
Bus components	13
Sensor and decoders	14
Peripheral components	15
Pushbutton-operated panels, touch panels IR- and radio transmitters	16
Designs and Versions of touch panels	17
Layout Panels and EIB-Panels	18
Assigner controls (Dimming of rooms with dividers)	20
EIB/KNX modules	22
Multi-Sensors	27
Light value control switches	29
Planning Guides	30

# Applications

The Programmable Dimming Control Systems are operating within the KNX-installation bus system (KNX). The systems offers convenience in operating and service. It is highly decentralized in operation and simple in installation. The system is particularly suitable for:

- multi-purpose halls
- auditoriums
- offices
- schools, universities, seminars
- gymnasiums, wellness centres, pools
- conference rooms
- lobbies, prefunction, ballrooms
- hotels, restaurants, cafes
- shopping malls
- etc.



## It is applicable for:

- Incandescent lamps
- High-voltage halogen lamps
- Low-voltage halogen lamps with wire-wound transformers
- Low-voltage halogen lamps with electronic transformers with 230V interface
- Low-voltage halogen lamps with electronic transformers with 1-10V interface
- Fluorescent lamps with analog electronic ballasts with 1-10V interface
- Fluorescent lamps with DALI-electronic ballasts
- Cold cathode (neon) lamps with high-voltage transformers
- LED lamps
- Switching of non-dimmable lamp circuits
- The dimming system can be combined with room dividers, shutter controls, air-conditioners etc.

The system can be controlled by pushbutton-operated programmable scene selector panels or touch panels, also in combination with a wide range of sensors operating in dependence of the daylight or presence detection (or multi-sensors for both), air-conditioners, ventilators, room dividers, shutters, door and window control etc.

# Lamps to be controlled with the different control modes

Dimmers basically are divided into several modes of functioning – depending on the type of lamps, ballasts and transformers to be controlled

## Leading-edge controlled modules for:

- incandescent lamps
- high-voltage halogen lamps
- low-voltage halogen lamps with wire-wound transformers
- low-voltage halogen lamps with electronic transformers being suitable for leading-edge controls.
- Cold cathode lamps (neon lamps) with high-voltage transformers.

## Lagging-edge (transistor) controlled modules for:

- low-voltage halogen lamps with electronic transformers
- high-voltage halogen lamps
- incandescent lamps

## Universal modules for

- All dimmers to be operated in the leading and lagging edge mode. The universal dimmer identifies the required correct mode of control and adjusts automatically to the requirement.

## Low-voltage interface modules with 1-10V interface for

fluorescent lamps with analogue single or twin electronic ballasts with 1-10V interface

- Transformers for low-voltage halogen lamps with 1-10V interface.
- Transformers for LED-lamps

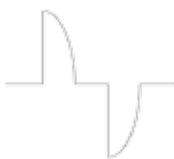
## Modules for the control of digital electronic ballasts and transformers (DALI)

DALI-ballast for fluorescent lamps

- DALI-transformers for low-voltage halogen and LED lamps

## Why leading edge and lagging edge mode ?

### Thyristor



inductive load  
(R, L)

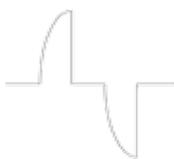
Leading Edge Mode

The light level changing and energy conservation in lighting of incandescent and low-voltage halogen lamps is a result of the vertical cutting of the sine wave: those portions of the sine wave being cut are not visible as light and consequently can not consume energy.

The leading edge control where the thyristors are firing somewhere on the sine wave, causing high-voltage peaks, current peaks and harmonics, possibly are damaging capacitors, thyristor or triacs.

Therefore it is necessary to arrange firing pulses at the zero crossing point of the sine wave.

### MOSFET/IGBT-Transistor



capacitive load  
(R, C)

Lagging Edge Mode /  
Trailing Edge Mode

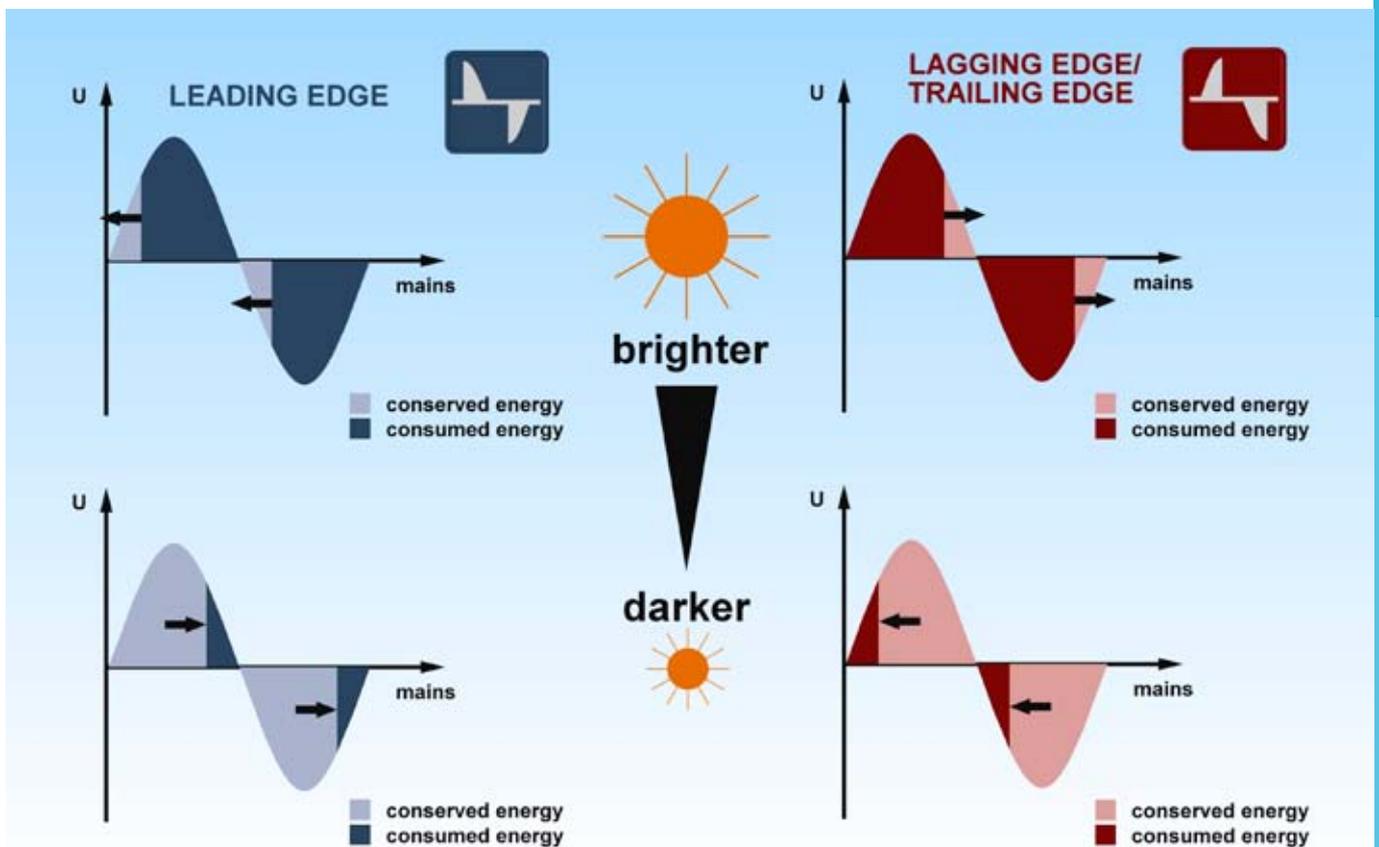
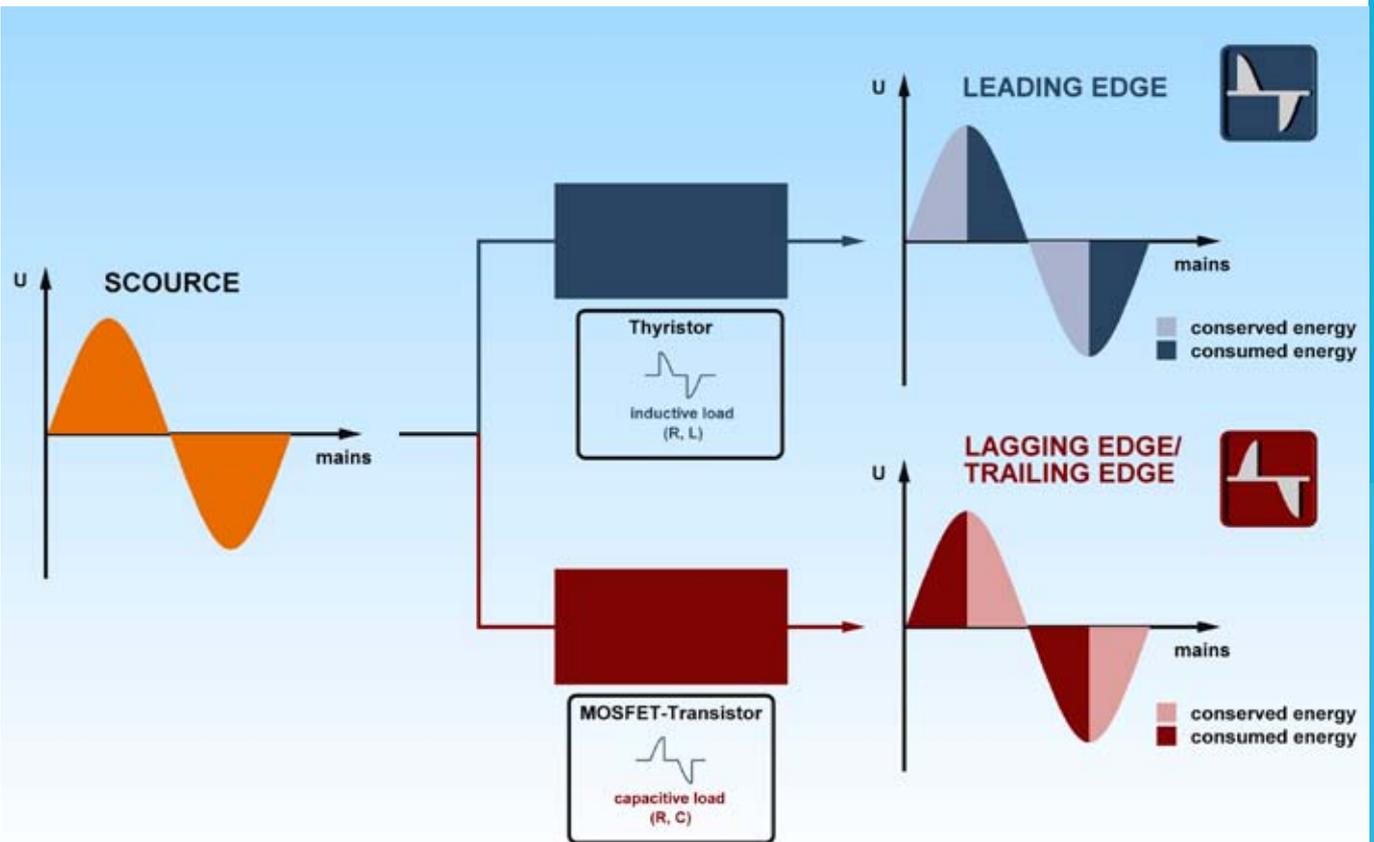
The lagging edge mode is mandatory only for the control of electronic transformers (e.g. for low-voltage halogen lamps). These transformers are of the capacitive type. Their power factor is  $<1$ .

A field effect transistor (also called MOSFET) provides for the zero crossing.

The zero crossing (lagging edge mode) is also suitable for the control of incandescent lamps and high-voltage halogen lamps.

# How are dimmers working?

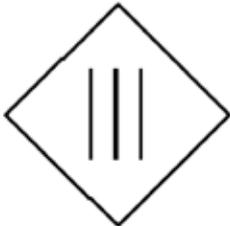
How are dimmer modules operating in the leading-and lagging-edge mode working ?



# Advanced dimmer technology by ALTENBURGER



- Instead of using one triac, ALTENBURGER uses two thyristors for one circuit.
- Using two heat sinks (one for each thyristor) leads to a better temperature behavior. ALTENBURGER dimmer modules do not require additional ventilation. Natural air-convection reliably dissipates the heat.



- Thyristors are capable of stand a higher overloads than triacs.
- Due to the advanced temperature management and the enhanced protection against overload, ALTENBURGER dimming modules provide extended service-life.



- Each circuit within an ALTENBURGER system is individually protected by additional MCB's. Combinations of several circuits to be protected with just one fuse or MCB are not made.



- Protection against radio interferences is going beyond the international requirements by the respective authorities.



- All controls are manufactured according to the CE and EMC requirements.

## ALTENBURGER is member of the KNX-Association

### KNX is the only global standard for home and building control - KNX is approved as:



- European Standard (CENELEC EN 50090 and CEN EN 13321-1).
- International Standard (ISO/IEC 14543-3).
- Chinese Standard (GB/Z 20965).
- US Standard (ANSI/ASHRAE 135).

# Characteristics of ALTENBURGER - Dimmer modules

(details: please refer to price list)

Load-Moduls					
	Leading-Edge-Mode	Lagging-Edge-Mode	Leading- & Lagging-Edge-Mode	EIB/KNX	Programmable

## DIN rail up to 2 KW

AQ	•			
AQ-0		•		
AQ-MFU	•	•	•	
Altodim – IBDA	•			•
Altodim – IBDA/P	•			•
Altodim – IBDA-0		•		•
Altodim – IBDA-0/P		•		•
Altodim – IBDA-U	•	•	•	•

## Back plate mounted up to 3 x 8 KW

TH	•			
TH 3-phase-modules	•			
TH-0		•		
TH-0 3-phase-modules		•		
TH-EIB/P	•			•
TH-EIB/P 3-phase-moduls	•			•
TH-EIB/P-0		•		•
TH-EIB/P-0 3-phase-moduls		•		•

## Programmable KNX dimmers

### 3. Programmable dimming control modules with scene memory

All aforementioned dimmers are available with an internal scene memory for up to 25 scenes with the following functions:

- Light circuit selection
- Assignment of circuits to a group
- Assignment of groups to a scene
- Setting of a fade time from 1 – 9999 secs
- This for up to 25 scenes

The programming is made with a handheld IR or radio programmer, the scenes are being selected by a handheld IR- or radio transmitter or at a wall-recessed programmable scene selector panel with pushbuttons, with touch panels or a PC. The number of light circuits to be controlled is not limited. One programmable dimming control system consequently would be able to control even the biggest light installations e.g. in auditoriums, conference centres, theatres, multi-purpose halls, exhibition halls etc.

The dimmers with memory are identified with ,P' (Programmable) at the end of each type designation.

### Advantages:

- plug-on load and control modules
- baseplate to be mounted and wired in advance, function part to be plugged onto the baseplate later
- load capacities up to 2 KW, controls for electronic ballasts and transformers with 1 – 10V interface and for DALI-ballasts and transformers
- for conventional as well as for EIB/KNX installations
- dimmers for loads to be controlled in the phase-controlled (leading-edge) mode, phase-interval controlled (lagging-edge) mode, universal dimmers (automatic recognition which mode is required), DALI and 1-10V controls.
- EIB/KNX dimmers with integrated dim-actuators and – optional – memory for up to 25 lighting scenes

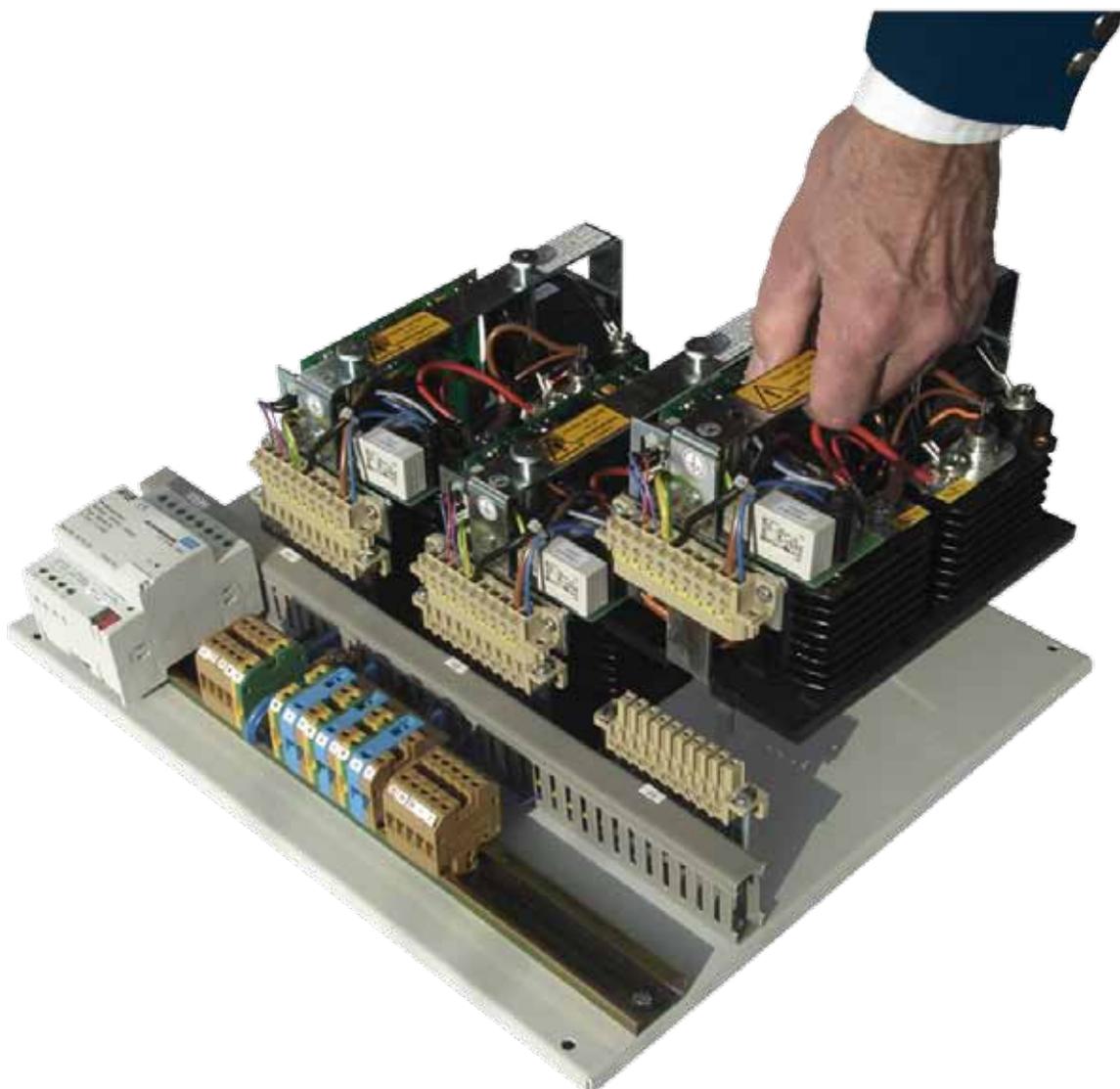


# ALTENBURGER plug-in dimmers

with load capacities up to 8 KW (1-phase) or 3x8KW (3-phase)

## Advantages:

- modules easily to be exchanged
- all modules with load capacities of 2, 3, 5 and 8 KW of the same size. Interlocked against an erroneous interchange.
- baseplate with terminals to be wired before the function part is plugged on.
- two thyristors with 2 heat sinks per circuit and consequently double convection – cooled.
- plug-in modules with all required control PCB's, to be plugged-in separately and with high-standard radio interference suppression.
- plug-in modules with quite different functions available (manual, pushbutton or touch panel control with lighting scenes, daylight dependent constant light control, time control, shutter controls etc.)



# System survey EIB/KNX-Programmable Dimming Controls

The system survey indicates the combination of different EIB/KNX-components:

- **EIB/KNX Switch-Dim-Actuators for 1-10V / 0-10V**  
for the direct control of electronic ballasts for fluorescent lamps and electronic transformers with 1-10V interface for low-voltage halogen lamps as well as for ALTENBURGER dimmers from 3 KW onwards.
- **EIB/KNX Switch-Dim-Actuators for DALI**  
for the direct control of electronic ballasts for fluorescent lamps and electronic transformers with DALI-interface.
- **EIB/KNX-Dimmers with integrated dim-actuators**  
Phase-controlled or phase-interval controlled dimmers for incandescent lamps, high voltage halogen lamps or low-voltage halogen lamps with wire-wound or electronic transformers.
- **IR- or radio transmitters and decoders**  
for the programming and scene selection.
- **Pushbutton or touch panels for the programming and scene selection**  
If specified with layouts and integrated lamps and control functions.

IR- or radio-receiver



IR- / radio-decoder



EIB/KNX power supply



Touch Panels / pushbutton panels



IR- or radio programmer



IR- or radio transmitter



EIB/KNX-BUS

EIB - Gateway



Comfortable EIB-lighting controls with Touch Panels, Visualization, pushbutton panels with the functions:

- Switching, Dimming, light-level and fade time setting
- 25 integrated scene memories
- Scene sequences  
Scenes to be combined to sequences  
e.g. RGB colour controls (3 devices required)
- Cleaning and corridor light
- Shutters

optional:

- communication with EIB, e.g. via Ethernet, ISDN
- combination with other systems, e.g. PLC, DALI ...
- remote maintenance ...



European Parliament



dimmer rack cabinet

**Programmable EIB/KNX Switch-Dim-Actuators for 1...10V/0...10V**



Type: IBDA-KP

- 1...10V Electronic ballasts
- electronic transformers with 1...10V interface
- ALTENBURGER dimmers with load capacities of 3-8 KW

**Programmable EIB/KNX Switch-Dim-Actuators for DALI**



Type: IBDA-DP

- DALI-ballasts
- electronic transformers with DALI-interface

**Programmable EIB/KNX dimmer with integrated dim-actuators operating in the phase-controlled (leading edge) mode**



ALTDIM /P dimmer with load capacities of 600/1300/2000W VA

- incandescent or high-voltage halogen lamps
- low-voltage halogen lamps with wire-wound transformers
- neon lamps

Type: IBDA600/P

Type: IBDA1300/P



Type: IBDA2000/P



**Programmable EIB/KNX dimmer with integrated dim-actuators operating in the phase-interval controlled (lagging edge) mode**



ALTDIM /P dimmer with load capacities of 600/1400W VA

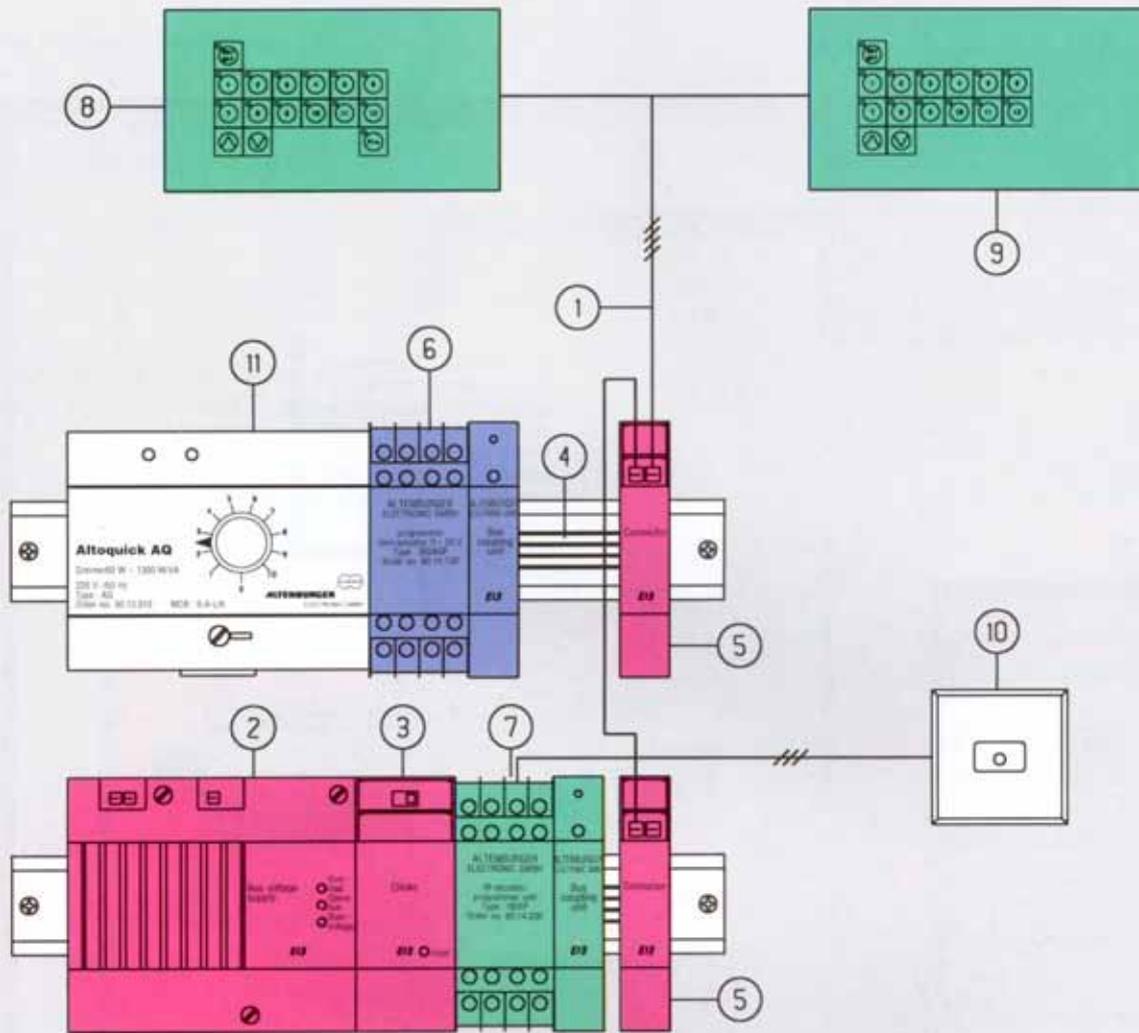
- incandescent or high-voltage halogen lamps
- low-voltage halogen lamps with electronic transformers

Type: IBDA600-0/P

Type: IBDA1400-0/P



# The interaction of KNX bus-components, dimmers and panels



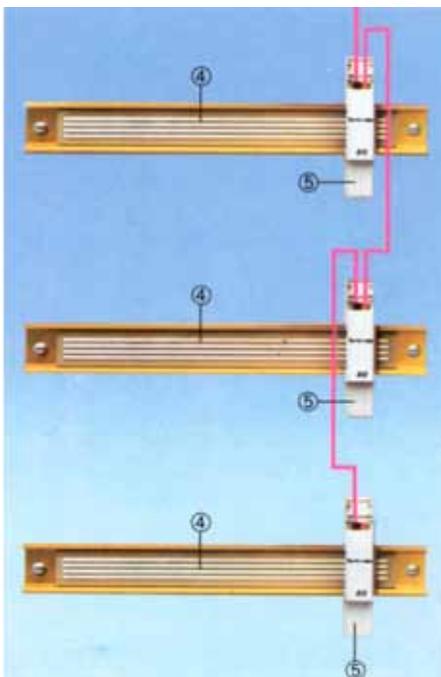
- (1) Bus wire (PYCY M 2 x2x0,8mm<sup>2</sup>) or (JY [12] Y 2x2x0,8mm<sup>2</sup>) or (SYT 1 PE 2x2x0,8 mm<sup>2</sup>)
- (2) Bus voltage supply
- (3) Choke module
- (4) Data wire
- (5) Connectors
- (6) Dim-actuators with the following options:
  - dim-actuators 1-10V for up to 50 electronic single- or twin-ballasts for fluorescent lamps with 1-10V interface (for larger systems signal amplifiers are available for the installation in lighting fixtures. Each amplifier can again control up to 50 single or twin ballasts).
  - dim-actuators with an interface of 0-10V, suitable for the common control of up to 20 ALTENBURGER dimmers not having an integrated dim-actuator for the control of up to 100 dimmable single or twin-ballasts.
  - programmable KNX/switch dim actuator with internal scene memory for 25 scenes with 1 - 10V or 0 - 10V interface.
  - programmable KNX/Dali-switch dim actuator with internal scene memory for up to 25 scenes, suitable for the control of up to 100 DALI-ballasts.
- (7) IR-and radio decoder/programmer unit
- (8) Programmable scene selector panel. Up to 63 programmable scene selector panels can be operated in parallel
- (9) Scene selector panel. Up to 63 scene selector panels can be operated in parallel
- (10) IR-sensor or radio receiver
- (11) (programmable) EIB/KNX dimmer ALTODIM with integrated dim-actuator (bus-coupling unit), optional with scene memory for up to 25 scenes

# Bus components

4. The EIB/KNX system, whose essential components are likewise accommodated in a DRC operate as follows:

### 4.1 at a data bus

All transmissions as well as the supply voltage proceed by way of a standard data bus (4) with two pairs of wires (2x2x0,8 mm<sup>2</sup>) to which the components are connected with terminals.



One pair of wires performs the actual functions; the other pair serves as a spare, for instance, in case of damage to the first pair. If several data busses are necessary in a distribution, the I-bus can be joined by means of connectors (5).

### 4.2 Bus voltage supply

The bus-voltage supply (2) (230V, primary; 24V, secondary) is drawn from the bus. The load maximum is 320mA (which corresponds to 64 dimming actuators or sensors). For heavier-duty requirements, additional voltage supply modules can be installed. A choke module (3) is installed between the voltage supply and bus for coupling the bus supply voltage into the bus. This device protects data present on the bus from interference by the current supply. Within the DRC, the data are transmitted by way of the data bus (4). A direct voltage of 24 V is supplied from the bus voltage supply unit by way of the outer two conductive tracks. This direct voltage is coupled with the I-bus.



### 4.3 Actuators

Actuators (6) are employed for executing the respective light control commands or other control functions and switching operations as desired. The actuators normally are integrated in the dimmers. Dimmers without actuator require a separate one being snapped on the DIN rail and connected with the databus.

Its purpose is the conversion of signals received from sensors, such as pushbutton switches, potentiometers, photosensors, or infrared detectors, to programmed commands.

The actuators (integrated into the dimmers or switches or not) are suitable for:

1. dimming and switching in conjunction with dimmers operating in the leading edge mode or lagging edge mode. The dimmers have an interface of 0-10 V. Universal dimmers are suitable for dimmer modules operating in the leading edge as well as in the lagging edge mode. The dimmer automatically identifies the correct mode.
2. Dimming and switching of lighting fixtures with electronic analog ballasts with 1-10V interface.
3. Dimming of DALI digital electronic ballasts
4. Switching of lighting fixtures which are not intended for, or not capable of dimming.

Dim-actuator 1-10V



for electronic dimmable ballasts and transformers with 1 – 10 V interface

(Programmable) KNX dimmers with integrated dim actuators.

(see page 24)



# Sensor and decoders

## 4.4. Sensors

Sensors within the programmable dimming control system are essentially:

- Pushbutton operated or touch panels for the selection of a maximum of 25 lighting scenes and for intermediate light levels for setting the levels to 'BRIGHTER' or 'DARKER'. Furthermore lighting control with IR- or radio remote controls operating in parallel with the panels and with the same functions.
- Infrared or radio sensors in combination with the respective decoders. The decoders are including the bus-coupling.
- Photoelectric, temperature, wind and humidity sensors, pushbutton controls for shutters, door and window controls etc.



## 4.5 Decoders

The decoder / programmer unit is accommodated in the DRC. Its function is to process the coded signals arriving from the infrared or radio sensor by means of the programming unit (bus-coupling) for execution by the dimming actuators.



# Peripheral components

The following components are to be installed outside of the DRC.

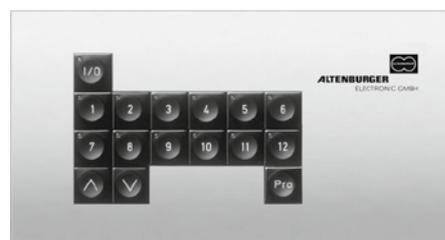
1. The handheld IR- or radio programmer generates coded signals by pressing of keys: These signals are received by IR- or radio sensors and transmitted to the decoder / programmer units located in the DRC.



2. Wall-recessed or wall mounted programmable scene selector panels correspond with the IR-/radio programmer (programming is feasible only after 'PROG' has been pressed on the stationary panel).



nel corresponds with the programmable dimming actuators by tabulation of the number of lighting scenes in the memory. The light levels and fade times programmed at the respective actuators for the individual lighting scenes are then selected by pressing the appropriate key.



3. handheld infrared/radio transmitters operate in parallel with the stationary programmable scene selector panels.

Basic programming of the system is performed at the factory or on the client's premises with the KNX software (ETS).

## EIB/KNX Programmable scene selector panel 81x81 mm

For 1-gang boxes DIN 55 mm Ø flat design (h= 12 mm)

Pushbutton functions:

12xscene selection with LED indication

1xBRIGHTER

1xDARKER

1xON/OFF with LED-indication

1xProgramming with LED-indication

colour combinations.

## PROGRAMMING OF THE SYSTEM

- Up to 12 light levels can be programmed for each circuit for any number of lighting circuits and consequently lighting scenes in combination with KNX dimmers with integrated dim-actuators (dimmer types = ALTODIM). Up to 25 light levels for any number of lighting circuits and consequently lighting scene can be programmed with programmable KNX/dimmers with an integrated memory for up to 25 scenes (dimmer types = ALTODIM/P).
- The transfer time from bright to dark (and vice versa) for the master functions BRIGHTER and DARKER is 7 secs. (it can be varied by means of the ETS software).
- The fade time from one lighting scene to the next one can be set from 0s to several hours (precisely: 9999s)  
The indicated programming is performed with the handheld IR- or radio programmer.



Furthermore, the programmable pa-

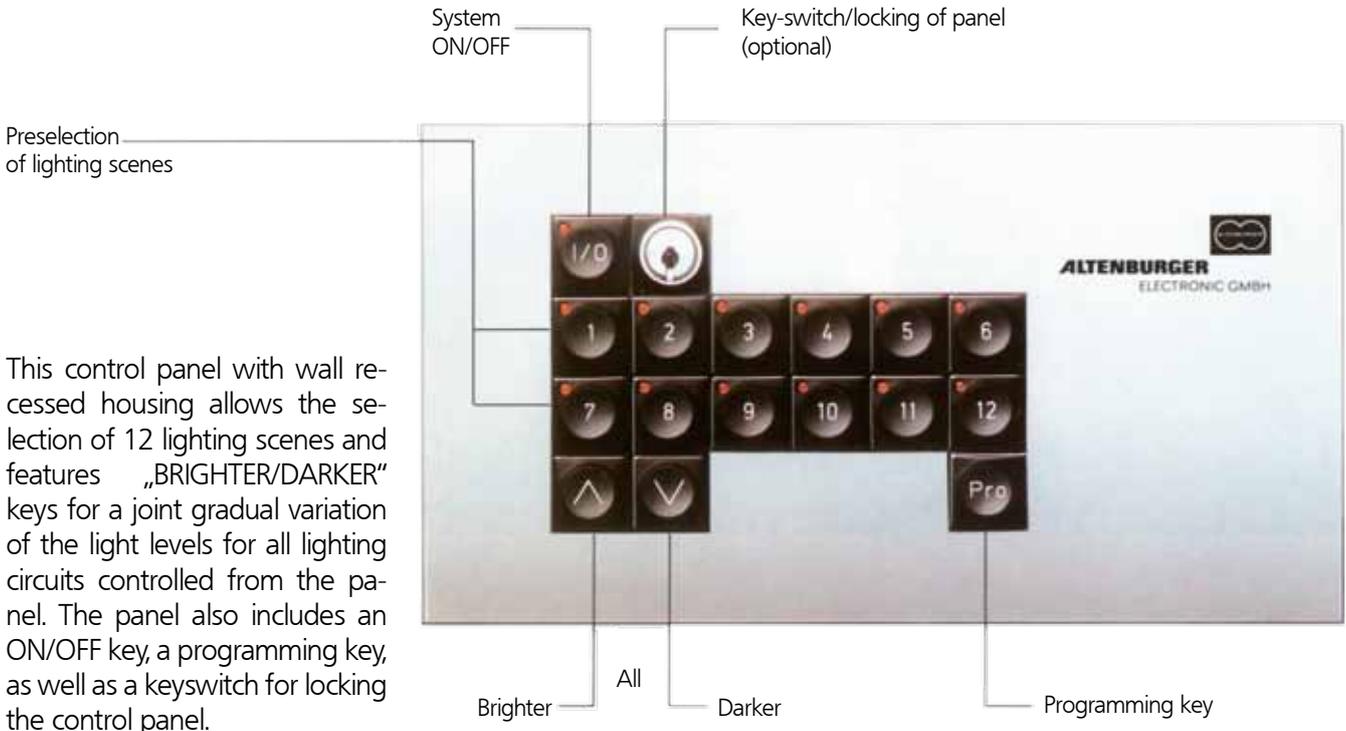
# Pushbutton operated panels

Touch panels, IR- and radio transmitters

All control panels are of the same size and are supplied with wall recessed or wall mounted housing. The panel face is available in three finishes (natural aluminium, gold-

plated brass and white acrylic plastic) as a standard feature and is fastened without screws. The panels are connected to the two-wire bus by means of two screw terminals. The easy

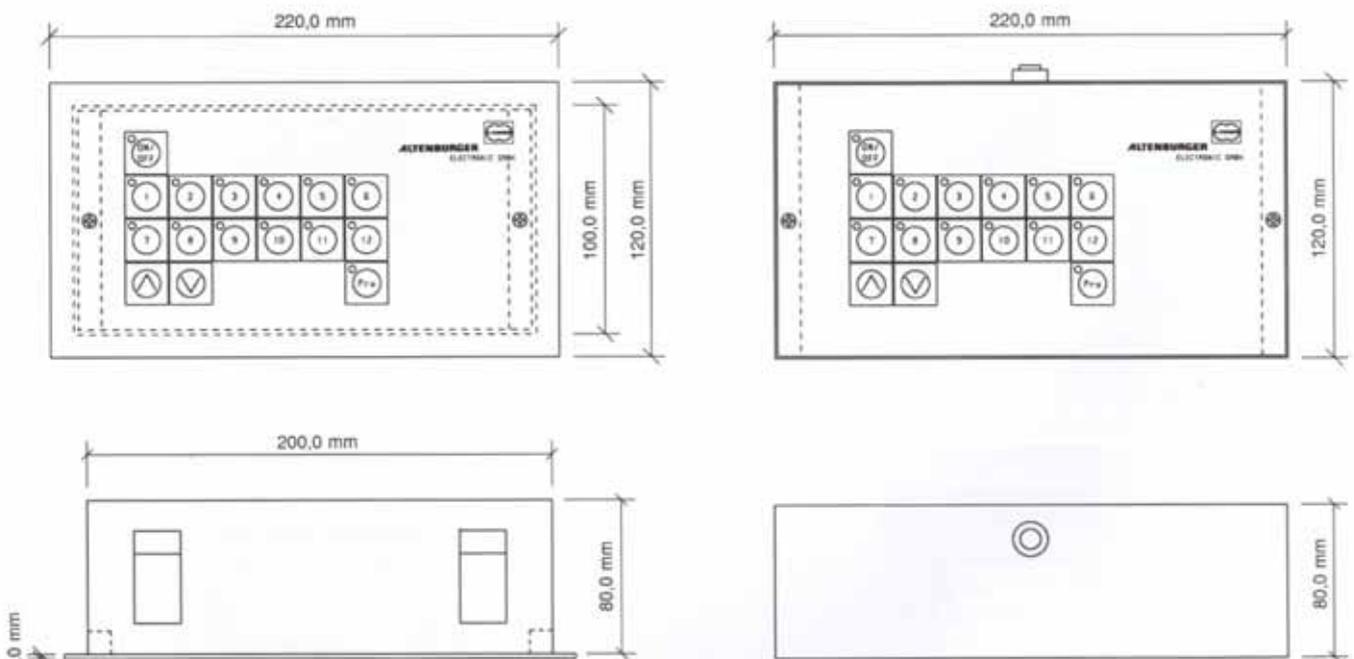
operating keyboard is provided with black caps with white lettering. The keys for ON/OFF and scene selection as well as the programming key are equipped with red LED's.



This control panel with wall recessed housing allows the selection of 12 lighting scenes and features „BRIGHTER/DARKER“ keys for a joint gradual variation of the light levels for all lighting circuits controlled from the panel. The panel also includes an ON/OFF key, a programming key, as well as a keyswitch for locking the control panel.

**Type: FIB 12/S/PRO/UP**

## Dimensional drawings



Control panel with wall recessed housing

Control panel with wall mounted housing

# Designs and versions

## ALTENBURGER touch-panels are available in different designs:

- With pedestal or swivel arm
- With wall-mounted housing
- With wall-recessed or table installation housing

## Different frames are available for touch panels in installation housing design:

- Aluminium anodised in different colours
- brass natural or gold-plated
- Stainless steel
- All RAL colours
- Special designs according to customer requirements are possible

ALTENBURGER touch panels are available in 6" to 15" screen diagonals

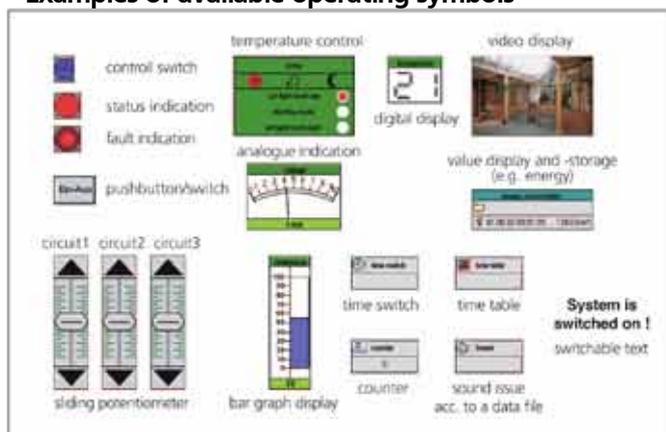


## Operating and display elements may be shown in different ways:

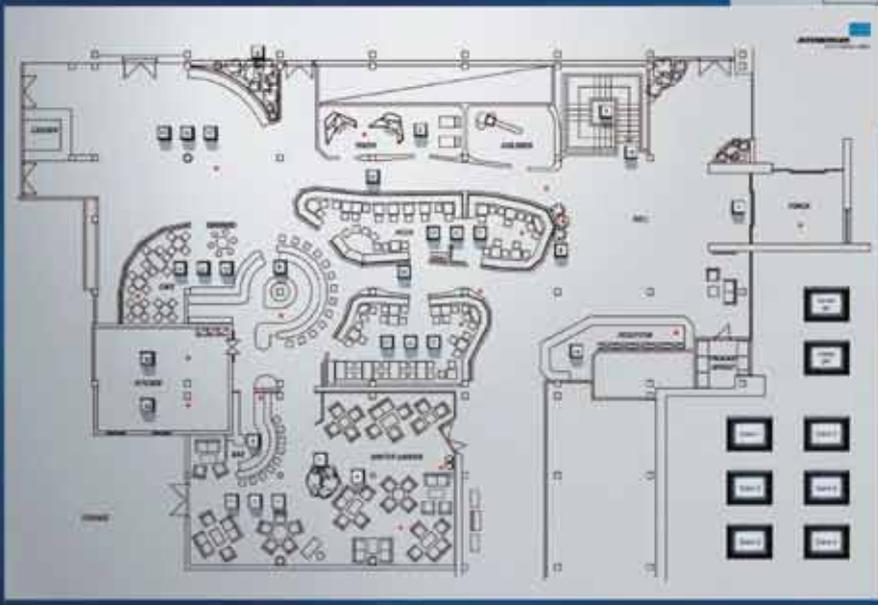
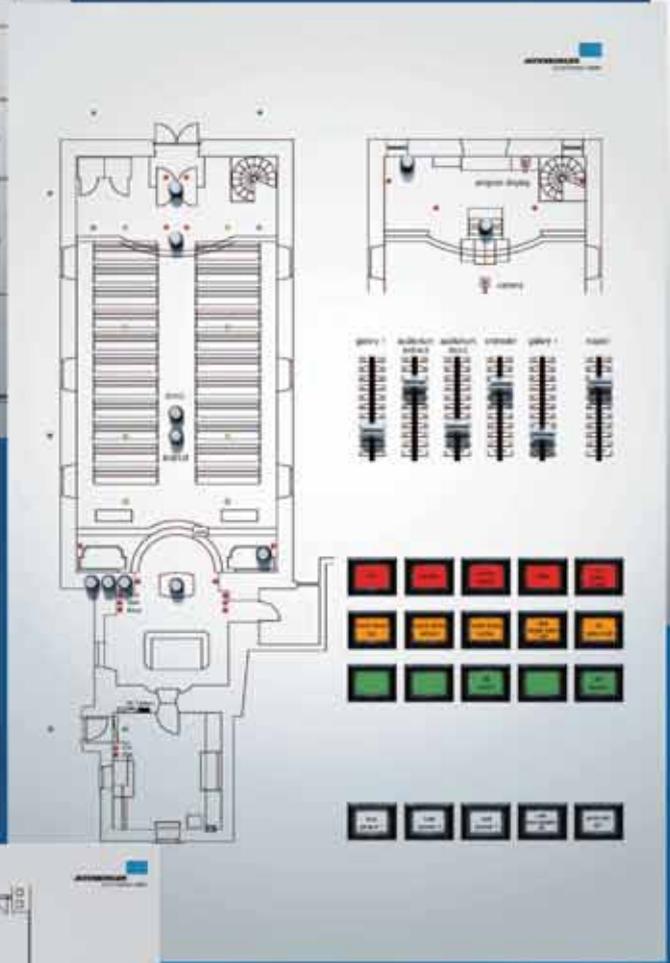
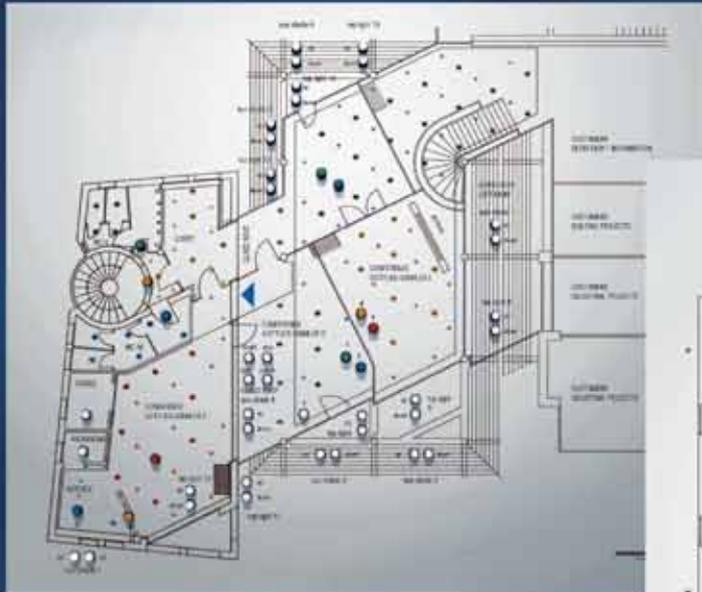
- Symbols for dimming, scene selection, scene storage, programming, etc.
- Symbols for keys, switches, status lamps, etc.
- Text display with static or switchable text
- Change of page
- Graphic function areas (images, photos, symbols)
- Time switch (annual clock, week clock)
- Fault message and data print-out
- Acoustic messages
- Different displays of measured values
- Running video pictures (e.g. door monitoring)
- Counter (e.g. to determine switching frequency, monitoring)
- Calendar (Hourly, weekly and permanent instruction schedules)
- Issue of SMS messages



## Examples of available operating symbols



# Layout-Panels and EIB-Panels





The design of large panels is outside of standards but also “conventional” and, if required, includes architectural layouts.

In all conventional panels, the functionality is supplemented by a design adapted to the environment. Material selection is not limited to special steel, brass, aluminium and plastics in different structures and forms of treatment but also includes natural materials the beauty and versatility of which are hardly exceeded (e.g. granite or fine wood).



Handheld IR or radio programmer for the programming of switching operations or lighting atmospheres (programming of any light levels and fade times) in combination with programmable scene selection panels.

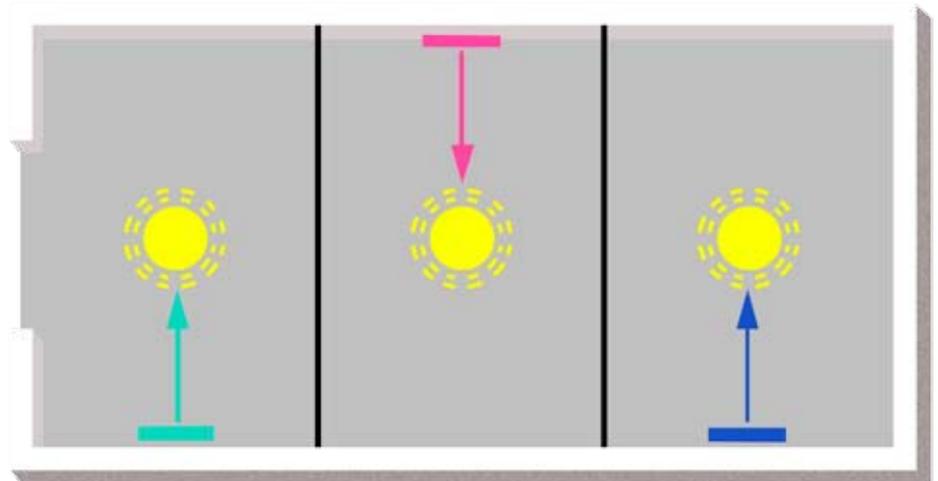
Selection of light levels or scenes with infrared handheld transmitter or (programmable) scene selection panels.

## Assigner controls (dimming of rooms with dividers)

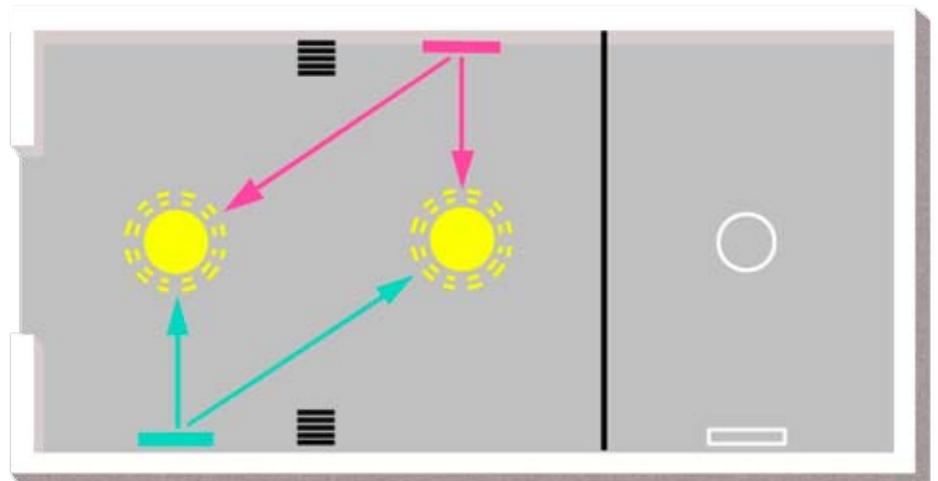
If a larger room is subdivided by means of folding partitions, the normally open contacts (for instance, end contacts) attached to the partitions generate commands from which the system recognizes which room sections are to be dimmed.

Example: A room subdivided into three sections by two folding partitions is equipped with a push-button panel in each section.

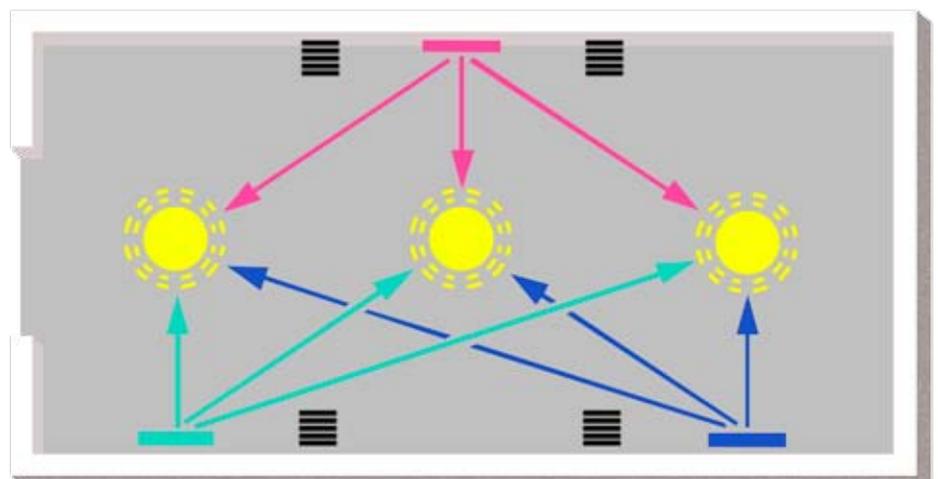
If both folding partitions are closed, the illumination in a section is individually controlled only from the panel which is located in that section.



If one folding partition is open, the illumination in the respective, combined room sections can be equivalently controlled from either of the two associated panels.



If both folding partitions are open, the illumination can be equivalently controlled for the entire room from any of the three panels.



# Programming of lighting scenes

Programming of lighting scenes is so simple that even unskilled personnel can learn the procedure within a few minutes:

1

In the room where lighting scenes are to be programmed, the „PROG“ key is first pressed at one programmable panel. Nearly any number of programmable panels can be located in the room. They are recognizable from the „PROG“ key located at the lower right.

2

At the same panel, the key at which the lighting scene shall be programmed is pressed. The panel may include up to twelve lighting scene keys.

3

With the use of the handheld IR- transmitter, the circuit to be programmed is now selected by pressing the „▶“ and „◀“ keys. The respective circuit called are indicated by a brief flashing to the associated lighting fixtures. The programming steps described in the following apply to the circuit which has flashed last.

4

Within the lighting scene, being set at the panel, the desired brightness is now selected for each individual circuit by pressing the „▲“ and „▼“ keys at the handheld programmer. The visually selected light level will be stored in the memory.

5

With the handheld IR- programmer, too, the fade time is set from 0 to 9999 sec. for each individual circuit selected (within the set lighting scene).

6

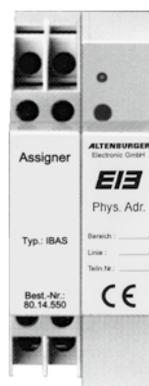
After completion of the programming, the values for the selected circuit are stored in the memory by pressing „STORE“ key.

## Subdivided room combination (assigner mode)

This dimmer permits the automatic individual and joint control of circuits, if a larger room is subdivided with the use of partitions. A normally open contact (e.g. an end contact) is connected to the folding wall.

Programmable scene selector panel with programming key and selection options for 12 lighting scenes and ON/OFF – as well as master function BRIGHTER/DARKER:

Handheld infrared or radio transmitter with the same keys as push-buttons at the control panel.



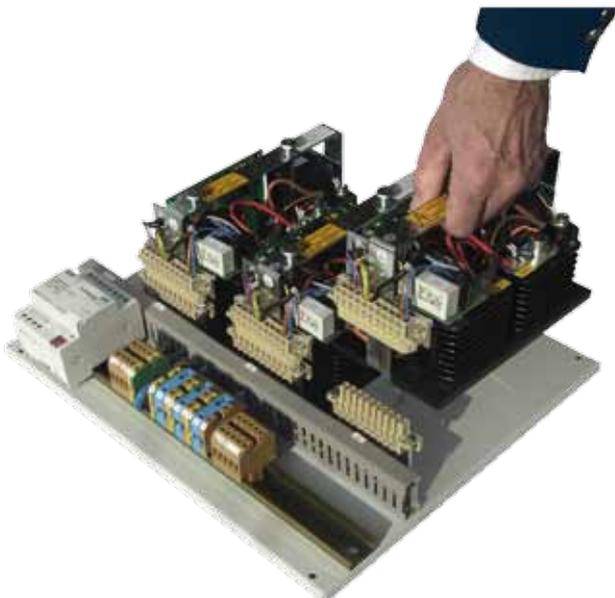
Control for divided rooms (Assigner)

The lighting scenes thus stored in memory (maximum: 12) can now be selected from the stationary programming panel, from additional programmable as well as non-programmable panels connected in parallel, or from handheld infrared remote controls with the same key assignment as on the stationary control panels.

# KNX modules - Advanced technique by ALTENBURGER



- ALTENBURGER supplies all kind of dimmers in DIN rail design (up to 2 KW) and in backplate plug-in design up to 8 KW (1-phase) or 3x8 KW (3-phase).
- All backplate-mounted modules are of the same size, however protected by interlock sockets.
- All plug-in dimmers have a baseplate with terminals for advanced wiring. The functional part is plugged onto the baseplate only after wiring is finished.





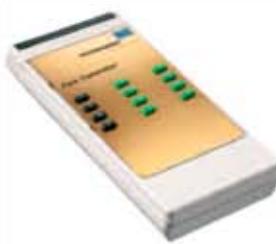
**Handheld IR-programmer or radio-programmer**

IR/PRO 50.13.552  
FU/PRO 50.13.547

**Remote Controls with the same pushbuttons as control panels** (f. i. see pages 3 and 4)

**Handheld-IR-transmitter** for the selection of  
12 x lighting scenes  
6 x Lighting scenes  
The transmitters can be operated in parallel to pushbutton or Touch Panels.

IR 12 50.13.548  
IR 6 50.13.549



**Radio-transmitter**

Functions identical with the IR-transmitter. The Handheld IR- or Radio transmitters can be extended through switch and other functions  
Standard design:

Housing: black  
Plate: aluminium anodized, natural colour  
Pushbuttons: black

FU 12 50.13.550  
FU 6 50.13.551



**Control for divided rooms (Assigner)**

IBAS 80.14.550



**IR-Sensor** (like illustration)

IR-ES/R 50.13.143

**IR-Sensor** with plastic cover without frame

IR-E/S 50.13.041



**Radio receiver**

FU-E/S 52.10.000



**IR- and radio decoder**

IBIR-P 80.14.402

## ALTODIM EIB/KNX Dimmers for DIN rail systems up to a load capacity of 2 KW without internal scene memory



**ALTODIM 600-0**  
Phase-interval (lagging edge) controlled dimmer for electronic transformers 600 W/VA

IBDA 600-0 80.13.061



**ALTODIM 1400-0**  
Phase-interval (lagging edge) controlled dimmer for electronic transformers 1400 W/VA

IBDA 1400-0 80.13.064



**ALTODIM 600**  
Phase-controlled (leading edge) dimmer for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers, neon lamps, 600W/VA

IBDA 600 80.13.065



**ALTODIM 1300**  
Phase-controlled (leading edge) dimmer for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers, neon lamps, 1300W/VA

IBDA 1300 80.13.062



**ALTODIM 2000**  
Phase-controlled (leading edge) dimmer for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers, neon lamps, 2000W/VA

IBDA 2000 80.13.063



**ALTODIM 1500 U**  
Universal dimmer for electronic transformers, incandescent lamps and low-voltage halogen lamps with wire-wound transformers, 1500W/VA

IBDA 1500 U 80.13.070



Dim-Jalousie-sensor

IBDIMJAL 80.14.230

Dim-actuator 1-10 V  
for electronic dimmable ballasts and transformers with 1-10V interface

IBDAN 80.14.110

Dim-actuator 0-10 V for  
ALTENBURGER Dimming controls

IBDAS 80.14.120

## ALTODIM/P EIB/KNX dimmers up to a load capacity of 2 KW with programmable internal scene memory



**ALTODIM 600-0/P**  
Phase-interval (lagging edge) controlled dimmer for electronic transformers 600

IBDA 600-0/P 80.13.161



**ALTODIM 1400-0/P**  
Phase-interval (lagging edge) controlled dimmer for electronic transformers 1400 W/VA

IBDA 1400-0/P 80.13.164



**ALTODIM 600/P**  
Phase-controlled (leading edge) dimmer for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers, neon lamps, 600W/VA

IBDA 600/P 80.13.165



**ALTODIM 1300/P**  
Phase-controlled (leading edge) dimmer for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers, neon lamps, 1300W/VA

IBDA 1300/P 80.13.162



**ALTODIM 2000/P**  
Phase-controlled (leading edge) dimmer for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers, neon lamps, 2000W/VA

IBDA 2000/P 80.13.163



1-phase  
TH-Plug-in module

**Conventional Dimmers, operating in the phase control (leading edge) mode** for the backplate mounting in cabinets, being suitable for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers and neon lamps with mounting plate and terminal blocks, plug-in load and control components

Up 2 KW/KVA	TH 2KW	51.02.000
Up 3 KW/KVA	TH 3KW	51.02.001
Up 5 KW/KVA	TH 5KW	51.02.002
Up 8 KW/KVA	TH 8KW	51.02.003



3-phase  
TH-Plug-in module

Up 3 x 2 KW/KVA	TH 3x2KW	51.11.000
Up 3 x 3 KW/KVA	TH 3x3KW	51.11.001
Up 3 x 5 KW/KVA	TH 3x5KW	51.11.002
Up 3 x 8 KW/KVA	TH 3x8KW	51.11.003

**Conventional dimmers, operating in the phase-interval (lagging edge) control mode**

for the backplate mounting in cabinets, for low-voltage halogen lamps with electronic transformers, incandescent lamps and high-voltage halogen lamps (design as above)

Up 2 KW/KVA	TH 2KW-0	51.02.100
Up 3x2KW/KVA	TH3 x2KW-0	51.11.100

The aforementioned dimmers can be combined with programmable EIB/KNX-switch-dim-actuators (page 9).

The following dimmers have already an integrated programmable EIB/KNX- switch dim-actuator:

**Programmable EIB/KNX-Dimmers operating in the phase-control (leading edge) mode with integrated EIB/KNX Dim-actuator** for the back plate mounting in cabinets, being suitable for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers and neon lamps with mounting plate and terminal blocks, plug-in load and control components. Functions: see page 7

Up 2 KW/KVA	TH-EIB/P 2KW	80.02.000
Up 3 KW/KVA	TH-EIB/P 3KW	80.02.001
Up 5 KW/KVA	TH-EIB/P 5KW	80.02.002
Up 8 KW/KVA	TH EIB/P 8KW	80.02.003

Up 3 x 2 KW/KVA	TH-EIB/P 3x2KW	80.11.000
Up 3 x 3 KW/KVA	TH-EIB/P 3x3KW	80.11.001
Up 3 x 5 KW/KVA	TH-EIB/P 3x5KW	80.11.002
Up 3 x 8 KW/KVA	TH-EIB/P 3x8KW	80.11.003

**Programmable EIB/KNX Dimmers operating in the phase-interval (lagging edge) control mode with integrated EIB/KNX dim-actuator** for the back plate mounting in cabinets, for low-voltage halogen lamps with electronic transformers, incandescent lamps and high-voltage halogen lamps

Up 2 KW/KVA	TH-EIB/P 2KW-0	80.02.100
Up 3x2KW/KVA	TH-EIB/P 3x2KW-0	80.11.100

# Multi-Sensors



## EIB/KNX Multi-Sensor-Controller

IBMSC-NV

80.14.810

The controller has the same functions as the Multi-Sensor IBMSD, it can however be connected with 6 IBMSD sensors for the extension of the range of motion detection. The sensors are not including the IBMSD control electronic. This is included in the controller IBMSC-NV. Its switch capacity is 16A for resistive loads and 10A for inductive loads.

The following Multi-Sensors can be operated in combination with the a.m. EIB/KNX Multi-Sensor-Controller Type IBMSC-NV



The LBS/d sensor has the same housing as the multi-sensor-dimmer IBMSD (please refer to page 9)

LBS/d

51.21.031

The sensor does not include the control electronic. The same applies for the following sensors.



The (Multi) Sensor has a ceiling recessed-downlight-housing with swivelling suspension

LB/dk

51.21.039



The (Multi-) Sensor is suitable for the mounting to lamp fixtures or other components

LBS/de

51.21.033



Programmable EIB/KNX Switch-Dim-Actuator with internal scene memory for 25 scenes with 1-10V and 0-10 V interface for the control of electronic ballasts and transformers as well as load dimmers

IBDA-KP

80.14.132



Programmable EIB/KNX DALI-Switch-Dim-Actuator with internal scene memory for up to 25 scenes

IBDA-DP

80.14.170



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

IBMSD

80.14.800



4-pushbutton EIB/KNX programming panel with manual control

NT 4L SO

80.14.545

With LED-display for the programming mode (automatic)

# Light value control switches



## EIB/KNX light-value control switch IBLWS 3 operating in dependence of the daylight

IB LWS 3

80.14.016

The IBLWS 3 switches 3 connected light circuits in dependence of the daylight ON and OFF. The low-voltage signals from a light sensor being mounted outside the building or close to a window are processed by the IBLWS 3 according to the set light levels. The light levels 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 below.

Set and display functions:

- 1) 3 Potentiometers for the setting of the switch ON/OFF levels for each of the 3 channels
- 2) 3 LED: display for the switch state (lighting up if lamps are switched ON)



## Photosensor for the light-value control switch

LF/w/D

51.21.010

Water proof (IP 55), swivelling for a 2-hole – mounting outside or inside close to a window.

Suitable in connection with the 3 channel EIB/KNX Light-value control switch, type IBLWS 3



## Photosensor for the light value control switch However with protection basket

LF/w/D-SK

51.21.091

# SPECIFICATIONS

## SPECIFICATIONS ON KNX PROGRAMMABLE DIMMING CONTROL SYSTEMS

The dimmer system consists of the following sections: 'DRC', 'programming', and 'control panels'.

The following specifications on the dimming control system are important:

### Dimmer Rack Cabinet (S):

- ... circuits with ...KW each for the controlling of incandescent lamps, high-voltage halogen lamps for low-voltage halogen lamps with wire-wound transformers.
- ...circuits with ...KW each for controlling low-voltage halogen lamps with electronic transformers (230V)
- ...circuits with ...KW each for controlling cold cathode (neon) lamps with high voltage transformers
- ...circuits with...electronic single-ballasts for fluorescent lamps with 1-10V interface.
- ...circuits with...electronic twin-ballasts for fluorescent lamps with 1-10V interface.
- ...circuits each with ...electronic transformers for low-voltage halogen lamps with 1-10V interface
- ...circuits with ...electronic DALI-ballasts for fluorescent lamps
- ...circuits with ...electronic DALI-transformers for low-voltage halogen lamps
- ...number of high-pressure sodium lamps with an individual load capacity of ... (not to be dimmed – just switched)

The necessary bus components need not be specified. They are correctly installed at the factory.

### Further specifications:

- Automatic switch-over between normal and emergency supply for circuits ....
- ...TP&N isolators (MCC B's or ELCB's)
- ...MCB's, input
- ...MCB's, output
- ...Main contactor
- ...Direct circuits with power indication

### Control functions:

- ...lighting scenes (up to 12 scenes with KNX dimmers without memory or up to 25 scenes with KNX dimmers with integrated memory)
- Fade times to be programmed between 0 and 9999 secs.
- Time controls
- Room divider (assigner) controls
- Separate circuits to be controlled in the multi-sensor mode (daylight and presence dependent, or just presence)
- Scene programming with a handheld IR-or radio programmer
- Scene selections with wall-recessed scene selector panels and handheld IR- or radio transmitters.
- RGB (red-green-blue) control
- Daylight-dependent controls with light-value control switches

# SUMMARY

ALTENBURGER programmable dimming control systems are based on the EIB/KNX system.

**The system comprises the following basic functions:**

1. A maximum of 12 selectable lighting scenes with dimmers or dim-actuators without memory and up to 25 scenes with dimmers and dim-actuators with integrated memory.
2. A fade time of 0 to 9999 seconds can be assigned to each circuit and scene.
3. Programming is performed in the respective room with the use of a handheld infrared remote control unit.
4. A maximum of 4 infrared preamplifiers can be installed in a room; thus, an action radius of more than 100 m can be attained.
5. No knowledge of circuit numbers is required for programming, since the circuits can be called by 'forward' and 'reverse' keying.
6. The circuits are indicated by flashing
7. Any number of lighting circuits can be controlled.
8. The programmable control panel accommodates the following features as a maximum:
  - \* ON/OFF for the overall system,
  - \* selection of twelve lighting scenes,
  - \* Master function for all 'brighter' or all 'darker'
  - \* programming mode key,
  - \* optional: key switch (locking of panel).
9. The panel is equipped with EIB/KNX components
10. The infrared or radio remote control units function in parallel with the panels.
11. The DRC is connected with the control panels by 2x2x0.8 mm<sup>2</sup> PYCYM wires.
12. The infrared sensors or radio receivers are connected with the DRC by 3 x 1.5 mm<sup>2</sup> wires.

Error and technical alterations reserved.



**ALTENBURGER** ELECTRONIC GMBH

D-77960 Seelbach/Germany, phone (x) 49-78 23 / 5 09-0, fax (x) 49-78 23 / 5 09 97 or (x) 49-78 23 / 2761  
email: [info@ALTENBURGER.de](mailto:info@ALTENBURGER.de), [www.ALTENBURGER.de](http://www.ALTENBURGER.de)