Altenburger Digital Lighting Controls

- DALI Controller Basic with scene control and Multi-Sensor program control
- DALI D/A Converter (digital → analog 1-10V / 0-10V).
- DALI Dim/Converter Control with 6 Switch-Dim- and Converter-Functions.
- Programmable EIB/KNX DALI Switch-Dim-Actuator with 25 internal Scene memories, sequence- and colour (RGB)-control.
- EIB-Programmable Dimming Control System
The DALI operating system

- it makes a direct multi-functional control of fluorescent lamps with DALI ballasts or low-voltage halogen lamps with DALI-transformers in combination with DALI-lighting control modules possible.
- Analog lighting controls for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers or electronic transformers as well as fluorescent lamps and low-voltage halogen lamps with ballasts or transformers with 1-10 V interface can be integrated with the ALTENBURGER digital → analog converters.
- For the integration of analog controls and potentiometers into DALI-systems the DALI Dim/Converter Control DC NV would be suitable.
- With programmable EIB/KNX lighting control modules (DALI switch-dim-actuators, type IBDA-DP) the DALI-integration into EIB-systems can be realized.
- With the DALI Dim/Converter Controls a complete programmable lighting control system with scene settings and selections can be performed.
- The integration of multi-sensors, operating in dependence of the daylight and presence detection not only provides for light energy saving. It also makes a combination of static and dynamic scenes possible. Both scenes are programmed as usual. Just with a pushbutton touch static scenes, not changing in dependence of the daylight and presence can be changed into dynamic scenes, operating in dependence of the daylight and presence detection.
- As autonomous systems DALI-lighting controls also can be integrated into building management systems.

The ALTENBURGER DALI-Lighting Control program comprises:

The DALI Controller Basic (Type DCB NV)
(Details see page 6 f.)

Functions: Programming and selection of 4 lighting scenes. Any assignment of lamps to groups without changing the installation.
Multi-Sensor controls (combined daylight- and presence-depending controls or just daylight- or just presence-depending controls) can be realized.
An ON/OFF switching is integrated in the module. Infrared or radio controls in combination with ALTENBURGER IR-control modules, type IR-ST/S (suitable for IR- as well as for radio controls) can be realized.

Applications: Schools, conference rooms, hotels and restaurants, museums, exhibitions, multi-purpose halls, hospitals, private residences
Digital → analog converter for DIN rail systems (Type DK) or as light fitting Type KDK
(Details see pages 14 f.)

**Functions:**
Conversion of digital (DALI) signals into analog ones (1-10V or 0-10V). With the DALI-interface of the converter ALTENBURGER dimmers as well as electronic ballasts with 1-10V interface can be dimmed. If the converter is not connected to a DALI-system it can be used for a 1-pushbutton-function (BRIGHTER-DARKER-ON/OFF).

**Applications:**
Integration of analog dimmers into DALI-installations in connection with the DALI Basic Controller as well as the direct control of fluorescent lamps or low-voltage halogen lamps with electronic ballasts or transformers with 1-10V interface with a 1-push-function.

DALI Dim/Converter Control (type DC NV)
(Details see pages 17 f.)

**Functions:**
Lighting control with multi-function panels. For example: with the ALTENBURGER panel type NS6WV fluorescent lamps with DALI ballasts directly can be controlled with the functions 6xPreset, Brighter, Darker, ON, OFF.
Or: 1-pushbutton function (Brighter-Darker-ON/OFF) or 2-push-function (ON-Brighter and Darker-OFF), dimming with potentiometers, ON/OFF controls via analog control voltages, like multi-sensor-controls.

**Applications:**
Digitalization of (existing) analog lighting controls, and light level settings in auditoriums, foyers, VIP lounges, exhibition halls and all areas with a combination of digital controlled fluorescent lamps with analog lamps (incandescent, high-voltage halogen, low-voltage halogen, neon etc.).

Programmable EIB/KNX DALI switch-dim-actuators (type IBDA-DP)
(Details see pages 25 f.)

**Functions:**
This module integrates DALI ballasts into EIB lighting control systems. It has 25 internal scene memories, each one with presettable fade times from 0-9999 secs. Always 3 of the modules can be combined to a sequence control (for instance RGB). The IBDA-DP controls up to 100 DALI ballasts. For larger systems several modules can be combined. With a pushbutton (230V) a 1-pushbutton function (brighter-darker-ON/OFF) can be realized.

**Applications:**
The EIB/KNX DALI dim-actuator is one component within comprehensive EIB-programmable dimming control systems (see page 32/33). In combination with load dimmers and control components it is suitable for the following functions:
• 25 Lighting scenes with a fade time per scene from 0-9999 secs.
• Light sequences (among others RGB Controls)
• IR- or radio programming and selection
• Visualization with layout panels or touch panels
• Assigner (room division) lighting controls
Hotels, congress centers, museums, airports, hospitals, universities, fashion centers and exhibitions are main objects for programmable dimming control systems.

DALI DIM-CONTROL LE (DC LE), lamp fixture built-in type with (Multi-)sensor control and 1- or 2-push switch dim-function
(Details see pages 34 f.)
**Altenburger Digital Lighting Controls**

**DALI Converter Digital** → 1...10V / 0...10V
Type: DK 1...10V NV

**DALI Converter Digital** → 1...10V / 0...10V
Type: KDK 1...10V

**DALI Controller Basic NV**
Type: DCB NV
- programming and selection of 4 scenes
- 4 separate lighting groups
- multi sensor controls operating in dependence of the daylight and presence detection
- up to 64 DALI ballasts

**DALI Dim / Converter Control NV**
Type: DC NV
- up to 100 DALI-balls commonly can be controlled
- multi-sensor controls operating in dependence of daylight and presence detection
- integrated A/D converter 0...10V/1...10V → DALI e.g. for existing controls with Altenburger dimmers or 1...10V analog control

**EIB/KNX Switch Dim Actuator**
Type: IBDA-DP
- for the realization of lighting controls with touch panels, visualization, pushbutton panels with layout
- switching, dimming, setting values, fade time settings
- 25 integrated scene memories
- sequence control (e.g. RGB)
- cleaning light and corridor light functions

**Load Dimmer**

**Electronic Ballasts** 1, 2...

** DALI Converter Digital** / 1...10V / 0...10V

**DALI Controller Basic NV**

**DALI Dim / Converter Control NV**

**EIB/KNX Switch Dim Actuator**

**DALI**

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

- fluorescent lamps (1...10V)
- low voltage halogen lamps (with 1...10V transformers)

- programming and selection of 4 light levels
  (with customary pushbuttons or Altenburger control panels)

- multi sensor controls, operating in dependence of the daylight and presence detection
  (up to 6 sensors can be connected)
- the multi-sensors can be distributed to 3 different lighting groups

DALI ballasts via converted 1...10V / 0...10V

Control of the DALI-ballasts via the Integrated converter 1...10V / 0...10V → DALI

Load dimmer
1...10V manual control
or 1...10V control modules
in combination with the respective control panels

- 1...10V electric ballasts
- electric transformers with 1...10V interface
- control of dimmers with 0...10V interface

Programmable EIB/KNX switch dim-actuators for 1...10V / 0...10V

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

Type: IBDA-KP

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

Type: IBDA600-D/P

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

- 1...10V electr. ballasts
- electr. transformers with 1...10V interface
- control of dimmers with 0...10V interface

DALI switch dim-actuators type IBDA-DP, also in
programmable EIB-dimmers, 1...10V switch dim-
the touch panels and pushbutton layout panels
Functions of the DALI CONTROLLER BASIC:

- Programming and selection of 4 lighting scenes, individual dimming and switching of light circuits and master controls with the 5-pushbutton panel or 5 customary pushbuttons of up to 64 DALI ballasts or transformers and digital → analog converters (see page 14).

- Combined presence detection and constant light control in connection with ALTENBURGER Multi-Sensors.

Each individual lamp with its DALI ballast or transformer can be initiated with the 5-pushbutton panel and assigned to one of 4 lighting groups. Additional devices for the programming are not required. Lighting systems are becoming more flexible, requiring less expenses for installation.

The DALI-interface combines dim- and switch functions through a common control line. DALI ballasts or transformers and DALI Converters (digital-> analog) can individually be controlled. Fluorescent lamps, low-voltage halogen lamps or incandescent lamps thus can individually be dimmed or switched on the same circuit. A re-configuration is possible without any changing of the installation.
Functions of the DALI Controller Basic:

- **Basic functions**
  After being connected to mains the Controller automatically carries out a basic assignment of light levels to each of the 4 groups being set ex works. The following light levels can be selected with the 4 pushbuttons:
  - Pushbutton 1 = 100% brightness
  - Pushbutton 2 = approx. 30% of the maximum brightness
  - Pushbutton 3 = approx. 50% of the maximum brightness
  - Pushbutton 4 = approx. 70% of the maximum brightness

  These light levels also can be restored after other light levels have been programmed just by operating the reset-pushbutton at the basic controller. In this case after disconnection from mains the button has to be pressed continuously for approx. 10 secs. Also without programming with the master button at the control panel the following switch and dim functions can be realized:
  - ON/OFF switching by short pressing the master button
  - continuously pressing the master: lighting goes into brighter and darker
  - releasing the button: lighting stops at the respective light level.
  - short pressing the button: lighting switches OFF
  - short pressing the button again: lighting goes into approx. 80 % of its max. brightness.

- **Group selection**
  Up to 64 DALI ballasts can be assigned to 4 groups with the Basic Controller: Through simultaneously pressing the buttons 1+2+Master a lamp blinks and shows that it can be assigned to a group. The required group is determined through the pushbuttons 1 – 4 and confirmed with a master button.

- **Setting and selection of lighting scenes**
  After each lamp has been assigned to one of the 4 groups the light levels can be set with the master and group buttons. The lighting scenes are stored by continuously pressing the respective buttons 1 - 4 (scenes).

- **Dimming and switching with Multi-Sensors**
  With the connection of the controller to mains all connected Multi-Sensors (max. 6 sensors) automatically are recognized. On presence detection the controller automatically goes into scene 1 and operates the lighting in dependence of motion and daylight. The pre-selected lighting scene is the set value for the daylight-dependent constant light control. The delay time after the end of presence detection can be set at the controller between 1 and 30 min. After this time lighting goes into 1-2% of its max. value and finally switches off after approximately 10 min.

  If during the sensor mode a group is switched, dimmed or another scene (2-4) selected the active constant light control is left. Presence detection however continues also in the new scene. If lighting is switched OFF and ON again it returns into scene 1.

**Messages**
Fault messages are identified with an LED at the module and a fault contact (voltage-free relay contact).

**DALI faults**
If no DALI is connected, a DALI wire interrupted or short circuited the red fault LED at the module blinks and the fault contact (optional: indicator lamp) switches synchronously.

**Lamp fault**
A lamp fault is identified with the red LED at the module and the fault contact (optional indicator lamp) is closed.

**Operation**
The green LED signalizes the readiness for operation.
The yellow LED indicates DALI-signals.
System Survey: DALI CONTROLLER BASIC (DCB NV)

- up to 64 DALI ballasts
- DALI ballasts

- DALI-transformers

- DALI-Converter 1...10V /0...10V
  for DIN rail systems

- DALI-Converter 1...10V /0...10V
  for lamp fixtures

- Dimmer

- Multi-Sensors for daylight and motion

- Indicator lamp
  - DALI fault
  - Lamp fault at DALI-control lamps

- DALI Controller BASIC NV

Control panel with the functions:
- master switch or master dimming control of all DALI ballasts with the master button
- assignment of all connected DALI ballasts to one of up to 4 groups
- switching and dimming of up to 4 groups
- storing and selection of up to 4 scenes
- pushbutton 1 (scene 1) is responsible for daylight-dependent control

- The controller automatically recognizes connected Multi-Sensors in scene 1 and controls the lighting in scene 1 in dependence of the daylight and motion

- for the connection of up to 6 sensors
## Technical data

**DALI CONTROLLER BASIC NV, Type DCB NV**

<table>
<thead>
<tr>
<th>Designation</th>
<th>DALI Controller BASIC NV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>DCB NV</td>
</tr>
<tr>
<td>Order-Number</td>
<td>85.01.000</td>
</tr>
<tr>
<td>Power supply</td>
<td>230V~ 50/60HZ DC not permitted</td>
</tr>
<tr>
<td>Load consumption</td>
<td>Approx. 4 - 9W, dependent on the connected loads</td>
</tr>
<tr>
<td>Protection</td>
<td>Modules / fault contact external 6A</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>max. 45°C</td>
</tr>
<tr>
<td>Protective class</td>
<td>II (protective isolation)</td>
</tr>
<tr>
<td>Protective type</td>
<td>IP 20</td>
</tr>
<tr>
<td>Fault contact</td>
<td>Voltage-free relay contact (normally open contact), max. 250V~/5A~ resistive load</td>
</tr>
<tr>
<td>LEDs at the module</td>
<td>green: ready for operation</td>
</tr>
<tr>
<td></td>
<td>yellow: DALI-interface active</td>
</tr>
<tr>
<td></td>
<td>red: lamp fault</td>
</tr>
<tr>
<td>Delay time setting after</td>
<td>1-30 minutes at the module</td>
</tr>
<tr>
<td>presence detection</td>
<td></td>
</tr>
<tr>
<td>Characteristic</td>
<td>accord. to DALI-specification</td>
</tr>
<tr>
<td>Pushbutton input</td>
<td>5 pushbutton inputs (normally open contacts). Pushbuttons for the operation of the module</td>
</tr>
<tr>
<td>Sensor inputs</td>
<td>3 inputs for light sensors (max. 6 sensors), 1 sensor for motion detection</td>
</tr>
<tr>
<td>Sensor supply</td>
<td>for 6 Multi-Sensors or individual light or motion sensors</td>
</tr>
<tr>
<td>DALI-interface</td>
<td>- interface according to DALI-specification</td>
</tr>
<tr>
<td></td>
<td>- current supply for DALI ballasts: approx. 16V/150mA DC, Ik&lt;250mA DC, electr. current limitation and protection against overheating</td>
</tr>
<tr>
<td>Terminals</td>
<td>2x 0,3 – 2,5mm² solid wire or ; 2x 0,3 – 1,5mm² Litz wire with sleeve</td>
</tr>
<tr>
<td>Housing</td>
<td>Isolated housing for DIN rail systems</td>
</tr>
<tr>
<td>Dimensions</td>
<td>WxHxD 140x90x61mm</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 550g</td>
</tr>
<tr>
<td>Sensors and accessories</td>
<td>Light sensors and motion detectors (Multi-Sensors), pushbuttons, DALI ballasts, DALI converters</td>
</tr>
<tr>
<td>Wiring</td>
<td>see module print, manual and wiring diagrams. Wiring fault: destruction possible!</td>
</tr>
</tbody>
</table>

**Dimensional drawing: DALI Controller Basic NV**
The controller operates not in the automatic (sensor) mode. Sensors are not required.

All groups are in the manual control mode.

Maximal 64 DALI ballasts can be switched or dimmed.

The DALI ballasts can be divided into 4 groups.

Up to 4 Lighting scenes can be set and selected.

Controls can be made with customary pushbuttons (normally open contacts).

Pushbuttons can be switched in parallel.

The indicator lamp is optional. This contact can be used for the evaluation of fault messages.
Wiring Diagram
DALI Controller with 1 light sensor at LS 1

Lighting scene 1: Automatic lighting in group 1

- The light sensor is connected with light sensor input LS1 and is assigned to group 1 (pushbutton 1).
- The groups 2, 3 and 4 (pushbuttons 2-4) are used for the selection of the respective scenes (no daylight-dependent control).
- LS1 can be connected with up to 6 additional light sensors in parallel, altogether forming a mean light level.
- As soon as the daylight exceeds the set light level lighting is reduced to a minimum of 1-2 % and finally switches OFF after approx. 10 minutes.
Wiring Diagram
DALI Controller with two at LS1 parallel connected Multi-Sensors (operating in dependence of the daylight and presence detection)

In lighting scene 1 (pushbutton 1): daylight dependent lighting control, forming a mean daylight dependent light level, with presence detection and extended range of recognition.

- The multi-sensors are connected in parallel with LS1 and are automatically assigned to group 1 (pushbutton 1). In this group the multi-sensor-control is realized.
- Groups 2 - 4 remain in the manual scene selector mode.
- As soon as daylight exceeds the set light level to be kept constant, or if presence no longer is recognized lighting goes to its minimum level and finally switches OFF after 10 minutes.
- The multi-sensors are switched in parallel such providing for a more sensitive recognition in a smaller area of identification or an extension of the area of detection in large rooms, corridors or stair cases.
- Without presence detection the lighting switches OFF after the set delay time.
- As soon as motion is recognized again automatically lighting scene 1 is selected.
**Wiring Diagram**  
DALI Controller with 3 Multi-Sensors at LS 1 to LS 3

**Lighting scene 1:** Lighting control of groups 1, 2 and 3 (e.g. 3 light rows)  
Presence detection with extension of the range of recognition.

- The Multi-Sensors are connected with LS1 to LS3 and assigned to the respective group.
- In lighting scene 1 all 3 groups (1 – 3) are in the automatic (Multi-Sensor) mode (e.g. 3 light rows).
- Group 4 is the normal lighting control group (not sensor-controlled).
- If daylight exceeds the set light level at a group lighting goes to minimum (1-2%) and finally switches OFF after 10 min.
- All motion outlets are switched in parallel such providing for a more sensitive recognition in a small area or an extension of the area of detection in large rooms.
- Without presence detection lighting switches OFF after the set delay time.
- After presence is recognized again lighting automatically goes into scene 1.

Please also refer to page 22.
DALI D/A Converter (digital → analog 1-10V/0-10V interface)
The DALI D/A Converter has a combination interface, converting DALI-signals into 1-10V or 0-10V, conventional electronic ballasts and electronic transformers (1-10V) as well as dimmers (0-10V). It is suitable for dimming, switching and controlling.

With the converters a complete lighting system of DALI ballasts and transformers, incandescent lamps, halogen lamps, neon lamps etc. can be controlled.

There are two DALI converter versions:

**DALI D/A Converter for DIN rail systems (type DK 1-10V/0-10V NV)**
This module has an internal load contact being connected with the phase. The control characteristic can be selected with a switch at the module between 1-10V or a linear control of 0-10 V.

**DALI D/A Converter to be mounted to light fixtures (Type KDK 1-10V/0-10V)**
The functions of this module are identical with those of the aforementioned type DK.

**DALI D/A Converter**
For the connection of non-DALI-compatibel ballasts or transformers with 1-10V interface or of ALTENBURGER dimmers with 0-10V interface to DALI-systems

For the conversion of analog interfaces 1-10V or 0 – 10V to digital DALI-interfaces the DALI Dim/Converter Control NV is available (see pages 17 f.) With the DALI Dim/Converter Control analog controls (conventional dimmers of all kind) can be converted into DALI, or DALI ballasts and controls can be integrated into existing analog systems.

**Lighting controls for room subdivisions (assinger controls)**
In rooms with folding walls the DALI Controller Basic NV in connection with DALI converters D/A are applicable.

In rooms without DALI ballasts all lamps are controlled with a DALI Controller Basic in combination with a DALI converter D/A. If folding walls are open the control panels in each individual room are switched in parallel with external relays. A basic controller realizes the control at all rooms. The control outputs for each room as well as for light and motion sensors (optional) are externally interconnected.

For installations only with DALI ballasts a DALI Dim/Converter Control (DC-NV) and a D/A Converter is connected to the DALI Basic Controller (see the following schematic diagram). If lamps with ballasts or transformers with 1-10V interface are used no DALI Dim/Converter Control would be required. In rooms with different groups for each group a DALI D/A converter and a DC-NV (for lamps with DALI ballasts) would be required.

Lighting scenes are set at the programmable scene selector panels in each individual room at closed walls.
Schematic diagram for room partitions (assigner functions)

Technical Data

DALI D/A Converter (digital → analog 1-10V/0-10 V) interfaces

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>DALI Converter 1 ... 10V NV</th>
<th>DALI Converter 1 ... 10V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>DKT ... 10V NV</td>
<td>KDKT ... 10V</td>
</tr>
<tr>
<td>Order-No.</td>
<td>85.01.001</td>
<td>85.02.000</td>
</tr>
<tr>
<td>Power supply</td>
<td>230V~50/60Hz DC not permitted</td>
<td>approx. 1W external max. 10A</td>
</tr>
<tr>
<td>Load consumption protection</td>
<td>1W</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>45°C</td>
<td>50°C</td>
</tr>
<tr>
<td>Protective class</td>
<td>III (protective isolation)</td>
<td>I (protective earthing)</td>
</tr>
<tr>
<td>Protective type</td>
<td>IP 20</td>
<td></td>
</tr>
<tr>
<td>Contamination grade</td>
<td>2 (dry, non-conductive)</td>
<td></td>
</tr>
<tr>
<td>Load contact</td>
<td>Relay contact (norm.open contact) internally connected with L max. 250V~/50A resistive load, or log. for 1 ... 10V / 0 ... 10V interface 1 ... 10V /0 ... 10V</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>DALI D/A Converter Control DC NV</th>
<th>DALI D/A Converter Control DC NV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control output</td>
<td>DALI Controller BASIC NV</td>
<td>DALI Controller BASIC NV</td>
</tr>
<tr>
<td>Pushbutton inputs</td>
<td>1...10V max. 100mA DC (approx. 100 elec. ballasts or transformers, see manufacturers data)</td>
<td>0...10V max. 5mA DC (approx. 5 Altenburger dimmers)</td>
</tr>
<tr>
<td>DALI-interface</td>
<td>1 pushbutton input T (norm. open contact max. 250V~) pushbutton for 1-pushbutton function (Brighter-Darker-Stop-ON/OFF) Current consumption &lt;2mA DC Interface according to DALI-specification</td>
<td></td>
</tr>
</tbody>
</table>

| Terminals | Screw terminals: 0,3 - 2,5mm² solid wire or litz wire | Plug terminals: 0,3 - 1,5mm² solid wire or 0,3 - 1,0mm² litz wire |
| Housing | Isolated housing for DIN Rail system | Metal housing for the integration into light fixtures with screw fixation |
| Dimensions | WxHxD 72x90x64mm | WxHxD 189x30x29mm |
| Weight | approx. 220g | approx. 190g |

Sensors and accessories, modules
Phase controlled or phase-interval controlled dimmers, (multi-) sensors with 0 ... 10V interface, electronic ballasts or transformers with 1 ... 10V interface

Operation
See print at the modules, wiring diagrams and manuals. Wiring fault: destruction possible!
Wiring diagram: DALI Converter digital → analog 1...10V/0...10V interface
DALI Control in combination with analog dimmers

1-pushbutton operation (brighter-darker-stop-ON/OFF) in combination with analog dimmers

Please observe contact loads!
DALI DIM/CONVERTER CONTROL (DC NV)
1 – 10V (0-10 V) analog → DALI Converter
with (Multi-) Sensor-control and 1 – and 2-Switch dim functions

Dim-and Switch Functions:
The DALI Dim/Converter Control DC NV is suitable for the control of max. 100 DALI ballasts or transformers. Just after connection to mains the module is ready for operation. A commencement or a group assignment is not required. The module includes the current supply for the interface of the 100 DALI ballasts.

The DALI Dim/Converter Control has a selector switch for:

- The analog-digital-conversion from electronic ballasts or transformers with 1-10V interface and from Altenburger-dimmers with 0-10V interface to the DALI-interfaces
- 1-pushbutton and 2-pushbutton switch dim-functions
- (Multi-)Sensor- functions

Conversions

While the DALI Converter (digital → analog 1 – 10V/0-10V) transfers the DALI-signals into analog signals (see page 14 f.) the DALI Dim/Converter Control transforms the analog signals into digital signals.

This offers the following possibilities:

- ON/OFF switching of DALI ballasts with analog control voltages
- Dimming with potentiometers
- Operation with ALTENBURGER-control modules with multiple pushbutton panels (e.g. setting of up to 6 light levels, Brighter, Darker, ON, OFF – see ALTENBURGER catalogue ALTOQUICK (AQ)-dimming controls).
- Combination with Multi-Sensors for the daylight dependent control and presence detection.

Additional functions: see page 19 f.

Direct Lighting control functions:

With connections to terminals T1/T2 and/or the analog control input AS the following switch/dim-functions directly with DALI ballasts can be realized:

O 1-switch-dim function
- ON/OFF, Brighter/Darker
- Storing a light level with double click
- The stored light level also is the switch ON value

O 2-pushbutton switch dim function
- ON/Brighter, Darker/OFF
- Light level storing by pressing both pushbuttons at a time
- The set light level is the switch ON value

(Multi)-Sensor-controls

The DC NV automatically recognizes immediately the connection of (Multi)-Sensors. The sensors are operating in dependence of the daylight and presence detection, alternatively with just one of both functions.

Up to 6 Multi-Sensors, daylight- or motion sensors can be connected (see page 21). The delay time after presence detection can be set at the module between 1 and 30 min. After this time lighting goes to a minimum level of 1 – 2 % and finally switches OFF after 10 min.
Technical Data  
DALI Dim/Converter Control (DC NV)

Designation : DALI Dim/Converter Control NV  
Type : DC NV  
Order-No. : 85.01.002

Power supply : 110V-240V AC 50/60Hz, 110V-240V DC  
Own consumption : approx. 0.7 - 5.8W, depending on the load  
Protection : external 16A  
Ambient temperature : max. 45°C  

Protection class : II (protective isolation)  
Protective type : IP20  
Contamination degree : 2 (dry, non-conductive)

Delay time setting : adjustable between 1 and 30 minutes. After this time the light level is reduced to 1-2 % and finally switches OFF after approx. 10 min.  
DALI - interface : according to DALI-specification, interface poled  
Power supply for max. 100 DALI ballasts, approx. 200mA/13V DC  
(Uo approx. 15V DC)  
- Ik<250mA DC, max. 22.5V DC  
- electronic current limitation,

pushbutton inputs : 2 pushbutton inputs (<6V DC) (normally open contact)  
Analog Control input : voltage input (analog 0-10V/DC)  
Terminal 5 (1-10V) : internal power supply (approx. 450 µA) for the bridge at 1..10V interface  
(for operations in systems with 1…10V interface, potentiometers for another manual control an external bridge from terminal 6 to terminal 5 has to be made)  
Sensor inputs : 1 Light input (analog <5V DC), 1 motion input (<5V DC)  
Sensor supply : approx. 10V/18mA DC (supply for the sensors)  
Sensors : max. 6 sensors in parallel (see sensors and manual)

DALI–interfaces and control inputs (pushbutton inputs /sensoric/analog signals) have no basic isolation, no protective low-voltage

Indicators at the module: 3x LEDs, indicating the working conditions of the module,1x selector switch for the different functions  
Controls : 1x Trimmer/Potentiometer for the setting of the delay time (1-30 min.)  
1x pushbutton: optional

Terminals : Screw terminals for solid and litz wires with sleeve  
Supply : L, N  
Control inputs : T2, T1, AS  
DALI-interface : DA+, DA-  
Sensors : B, LS, Vcc  
0V (DA-) : 0V

Wire length: : max. 100m  
- DALI-wires max. 300m with 1,5mm² or accord. to Table (distance of controller to DALI ballasts, -converter)

<table>
<thead>
<tr>
<th>Wire section in mm²</th>
<th>2x0,5</th>
<th>2x0,75</th>
<th>2x1,0</th>
<th>2x1,5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire length (distance) in m</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>300</td>
</tr>
</tbody>
</table>

- DALI- and supply wires must be separated from the control wires (not in one cable)

Wiring : The respectively requirements for installations (wiring, isolation, protection/ minimum sections) have to be observed.

Housing : Isolation housing for DIN rail systems

Dimensions : WxHxD=72x90x64mm

Weight : approx. 200g

Designation : CE, DALI

wireing : according to wiring diagrams and print at the module

Except to the supply terminals no supply potentials may be connected to the module. All potentials for the control and operation may have a basis isolation.
Selection of the different functions at the DALI DIM/CONVERTER CONTROL

The following lighting control and converter functions can be selected with the switch at the front of the module:

**Position 1:**

**Conversion of analog signals 1 – 10V (0-10V) to digital DALI-signals**
*(input terminals AS and T1)*

- ON/OFF switching via a switch contact (relays, contact/switch), connection to terminal T1
  - contact closed = ON; contact open = OFF
- Control of the brightness via the analog voltage input [AS]
  - the respective voltage (1...10V) is the switch ON or control value
- Switching of the lighting through a motion sensor if the contact at terminal [T1] is closed
- Switching of the lighting in dependence of the daylight through a light sensor if the contact at [T1] is closed
  - Automatic switch ON if daylight falls below the set light level and if motion is recognized: contact T1 = closed.
  - No automatic switch ON if motion is recognized, daylight however exceeds the set light level.

**Position 2:**

**Analog control without switch contact:**

Conversion from 1...10V (0 ... 10V) to the digital DALI-interface with ON/OFF only through an analog control voltage (input terminal [AS])

- ON/OFF switching through an analog control voltage [terminal AS]
  - voltage >1.4V = ON; voltage <1.4 = OFF
- Control of the brightness through the analog voltage input [terminal AS]
  - voltage >1.4V is the Switch ON or the control value
- If a motion sensor is connected: switch ON at motion, if the voltage at [terminal AS] >1.4V
- Automatic switch ON through a light sensor if the daylight falls below the set light level and the voltage at [terminal AS] > 1.4V
- Multi-Sensor-control (combined light and motion sensor):
  - Automatic switch ON if the daylight falls below the set light level and motion is recognized (voltage at terminal AS >1.4V)
  - No automatic switch ON if motion is recognized, however daylight exceeds the set light level.

**Position 3:**

1-pushbutton switch dim function: control input = terminal T1

- ON/OFF switching through pushbutton (normally open contact) at [T1]
  - Short pushing: ON/OFF
- Control of the brightness through pushbutton (normally open contact) at [T1]
  - Continuously pressing the button: lighting goes to brighter-darker-brighter
- Light level setting at [T1]:
  - As soon as the required light level to be kept constant is achieved during the brighter-darker-brighter operation a double click stores the value as switch ON or control value being kept constant. The set light level is indicated through a short flash of the lighting.
- Connection of a motion sensor: lighting automatically switches ON to the set light level as soon as motion is recognized.
- Connection of a light sensor: automatic switch ON into the set light level as soon as daylight falls below this level.
- Multi-Sensor control (light- and motion-depending):
  - Automatic switch ON if daylight falls below the set light level
  - No automatic switch ON if motion is recognized, daylight however exceeds the set light level
Position 4:

2-pushbutton-switch-dim function: control input terminals T1/T2

- ON/Brighter with pushbutton (normally open contact) at control input [T1]
  - Short touch: ON; continuous touch: brighter
- Darker/Off through a pushbutton (normally open contact) at control input [T2]
  - Continuously pressing = darker - short pressing = off
- Light level setting for a constant light control through light sensor and control inputs [T1/T2]
  - Continuously pressing both buttons [T1/T2] for > 3 sec.: The setting of the light level to be kept constant is signalized through a short flash of the connected lighting
  - The stored light level is the automatic switch ON or control value
- With the connection of a motion sensor: automatic switch ON of the lighting if motion is recognized
- With the connection of a light sensor: automatic switch ON if daylight falls below the set light level
- With the connection of a multi-sensor (light- and motion sensor in one):
  - Automatic switch ON if daylight falls below the set light level and motion is recognized
  - No automatic switch ON if daylight exceeds the set light level although motion is recognized.

Position 5:

1-pushbutton switch dim function with interlocking of the automatic switch ON control:

- Function identical with position 3,
  however no automatic switch ON if daylight falls below the set light level.
  - switch ON to be made manually.

Position 6:

2-pushbutton switch dim function with interlocking of the automatic switch ON control:

- Function identical with position 4,
  however no automatic switch ON if daylight falls below the set light level.
  - switch ON to be made manually

The changing of different positions is possible only after power ON!

Messages

Operation
The green LED signalizes readiness for operation, the yellow LED indicates DALI-signals.

DALI-Faults
If DALI ballasts are not connected or DALI-wires are interrupted, the red LED flashes twice.
The double flash continues unless the fault is removed.

DALI short circuit
In case of a short circuit on DALI-connections the red LED flashes three times.
This is repeated unless the fault is removed.
System survey DALI Dim/Converter Control (DC NV)

- Converter 1-10V/(0-10V) analog ➔ DALI
- 1-pushbutton switch dim-function
- 2-pushbutton switch dim-function and Multi-Sensor-Control

DALI Dim / Converter Control (DC NV)

- The DALI Dim / Converter Control automatically recognizes the connected Multi-Sensors and controls the lighting in dependence of the daylight and presence
- up to 6 sensors can be connected

Multi-Sensors for daylight and motion

DALI-transformers

DALI ballasts

- up to 100 DALI ballasts (all ballasts are commonly and directly controlled)

Direct lighting function

1-pushbutton switch dim-function
- ON/OFF, BRIGHTER/DARKER
- Light level setting through double click
- the set light level is the switch ON value

2-pushbutton switch dim-function
- ON/BRIGHTER, DARKER/OFF
- Light level setting through simultaneously and continuously pressing both pushbuttons
- the set light level is the switch ON value

Analog control function

Converter function 1-10V/(0-10V) ➔ DALI

- 1-10V manual control
- 1 potentiometer (22k)

- 1-10V/(0-10V) control modules
  (in this case: 6x preset, 1x brighter, 1x darker, 1x ON, 1x OFF)
Sensors

The sensors automatically are being identified. If lighting sensors are connected, lighting operates in dependence of the daylight. If motion sensors are connected lighting operates in dependence of presence detection. Without sensors lighting is controlled manually with the different functions.

For the extension of areas or for the increasing of sensitivities up to 6 sensors can be connected in parallel. If several light sensors are connected a mean value of all sensors is computed. By using several motion sensors the area of detection is extended or the sensitivity increases.

The DALI Dim/Converter Control can be operated with light or motion sensors individually or with multi-sensors, combining light and motion in one. The sensors are connected to the terminals [LS] and [B].

If the module shall return to a manual control mode it must first being set voltage free, the sensors have to be disconnected and power ON has to be restored without sensors.

Multi-Sensors (daylight-and motion depending), also to be used with the individual functions (constant light control or motion) to be combined with all DALI controllers

<table>
<thead>
<tr>
<th>Type</th>
<th>Order no.:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-Sensor</td>
<td>LBS/d</td>
</tr>
<tr>
<td>Combined daylight and motion sensor, ceiling mounted</td>
<td>51.21.031</td>
</tr>
<tr>
<td>Daylight sensor</td>
<td>LS/d</td>
</tr>
<tr>
<td>Ceiling mounted</td>
<td>51.21.032</td>
</tr>
<tr>
<td>Multi-Sensor</td>
<td>LB/db</td>
</tr>
<tr>
<td>Ceiling recessed for 1-gang boxes</td>
<td>51.21.038</td>
</tr>
<tr>
<td>Multi-Sensor</td>
<td>LB/dk</td>
</tr>
<tr>
<td>Swivelling, in a 50 mm halogen lamp housing, ceiling recessed</td>
<td>51.21.039</td>
</tr>
<tr>
<td>Multi-Sensor for</td>
<td>LBS/de</td>
</tr>
<tr>
<td>the insertion into ceilings or light fittings</td>
<td>51.21.033</td>
</tr>
</tbody>
</table>
Wiring diagrams DALI Dim/Converter Control DC NV
Control with analog voltage (dim-functions with switch contact)

When connecting controls with a 1...10V interface (such as for EVG’s and transformers) or manually operated with a potentiometer (22kΩ) the bridge 5 – 6 has to be made.

For controls with a 0…10V interface (such as for ALTENBURGER Dimmers) no connection has to be made between terminals 5 and 6.

Control with analog voltage (dim-functions without switch contact)

When connecting controls with a 1...10V interface (such as for EVG’s and transformers) or manually operated with a potentiometer (22kΩ) the bridge 5 – 6 has to be made.

For controls with a 0…10V interface (such as for ALTENBURGER Dimmers) no connection has to be made between terminals 5 and 6.
Wiring diagrams DALI Dim/Converter Control NV

Control with pushbuttons: 1- or 2-pushbutton switch dim-functions

Connection of light- and motion sensors
Programmable EIB/KNX DALI Switch-Dim-Actuator

Type : IBDA-DP
Order-No. : 80.14.170

Application and function
The EIB/KNX DALI switch-dim-actuator is suitable for the control of max. 100 DALI ballasts or transformers and digital → analog converters. It performs the following functions:

- The integration of DALI ballasts or transformers into EIB-Lighting systems. DALI ballasts are being switched and dimmed with EIB/KNX DALI switch-dim-actuators.

- The module has 25 internal scene memories with fade time settings from scene to scene, cleaning and corridor lighting controls. Additionally scenes can be programmed to a sequence and selected accordingly (scene sequence control). With the combination of 3 EIB/KNX DALI switch-dim-actuators e.g. a colour sequence (RGB) can be programmed. Additionally the EIB/KNX DALI switch-dim-actuator is one of the components for a complete EIB-programmable dimming control system.

  If the number of DALI ballasts or of converters exceeds the number of 100, additional EIB/KNX DALI switch-dim-actuators can be integrated (see system survey pages 32/33).

- The EIB/KNX DALI switch-dim-actuator can be operated with customary EIB-controls or with a suitable visualization. The module however also can be controlled directly with a pushbutton input and a customary pushbutton for mains (1-pushbutton-dim function). Details for the parametrizing and to objects: see application description.

- The actuator includes already the current supply for the interfaces of 100 DALI ballasts.

Scene memory
All 25 internal scene memories can be stored and selected with 1-byte instructions. 8 of the 25 scenes also can be stored and selected with 1-bit-instructions. Through the defined fade control all circuits achieve after the scene selection their final light level at the same time. This provides a smooth transfer from scene to scene.

Scene sequence control
Several scenes can be combined to an automatic sequence. The order of scenes, stops and the number of repetitions can be programmed. Programming is made with the ETS-software or in real time. Up to 2 sequences can be stored and selected with the module. In one sequence 10 stops can be programmed. If 2 sequences are programmed 5 stops can be realized (see software application).

Pushbutton input
There is a possibility to connect a pushbutton for mains (normally open contact to L) for a direct control of the actuator. This function is available also outside the EIB-system. A power supply however (24 V, T/C 50 mA) would be required. An EIB-power supply can be used as well.

EIB-Programmable dimming controls
The internal memories of the dim-actuators provide for a comprehensive programmable dimming control system. With the integration of pre-programmed EIB-dimmers (ALTENBURGER ALTODIM-P) or programmable EIB-switch-dim-actuators (type: IBDA-KP) all dimmable lighting systems can be integrated into the system.

The system comprises:

a. The required EIB-dim-actuators, converters and EIB-dimmers

b. Radio- or IR-sensors for the programming and selection of scenes.

c. One radio or IR-decoder

d. One handheld-radio or IR-programmer (alternatively touch panels or program- and selector panels)

e. One radio or IR-transmitter for the scene selection (if required in parallel to touch panels or pushbutton panels).

(Combination of the different components see schematic diagram page 32/33).
Multi-Sensor-Controls, static and dynamic scenes

Into the programmable lighting control system also sensor controls, static and dynamic scene selections can be integrated. ‘Static’ means that the respective scene remains unchanged as long as not another scene is selected – independent of the daylight and presence detection. ‘Dynamic’ means that a scene smoothly adjusts to the daylight and lighting only burns if motion is recognized. Optionally daylight dependence and motion control also individually can be integrated into the system.

DALI-interface

The DALI-interface of the EIB-dim-actuator supplies all DALI-interfaces at a time. The total current of 250 mA however may not be exceeded. In order to avoid the max. permissible voltage drop on the DALI-wires of 2V according to DALI-definition the wire sections must be in correspondence with the table of the technical data.

Important: The DALI-interface of the EIB-dim-actuators may be used only for DALI-components. Other components with mains at the DALI-interface may not be connected. A combination of the dim-actuators with a mains control causes a destruction of the actuator!

Direction for use

In order to achieve a uniform dimmer curve all DALI ballasts should be of the same type.

Voltage drop, supply, DALI, EIB/KNX

1. In case of a voltage drop lighting is restored at voltage return – after a short delay – into its last set light level. The same applies if the DALI-supply fails.

2. If the supply of the EIB-dim-actuator fails, the connected DALI ballasts or converters are switching the lamps to full brightness. Mains however still must be available. On return of the supply through the Dim-Actuator lighting for a short moment switches OFF and immediately goes back into the last set light level.

3. If the DALI-interface supply fails lighting goes into its brightest level. After return of the supply lighting goes into the last set light level.

4. If the EIB/KNX voltage supply fails the DALI ballasts and converters go into full brightness. In this case the power supply of the DALI ballasts, converters and of the dim-actuator however must still be available. After return of the EIB-supply lighting goes into the light level which has been set in the ETS-software with the parameter ‘bus-voltage return’ (see application instructions).

System messages

Operation

The green LED signalizes readiness for operation. The yellow LED indicates DALI-signals.

DALI-Faults

If DALI ballasts are not connected or DALI-wires are interrupted, the red LED flashes twice, The double flash continues unless the fault is removed.

DALI short circuit

In case of a short circuit on DALI-connections the red LED flashes three times. This is repeated unless the fault is removed.

Safety and installation instructions

- The device may only be installed by a qualified electrician.
- Work may only be performed only if the device is set voltage-free.
- The device may not be opened respectively may not be put into operation without housing.
- The valid safety and accident prevention regulations must be adhered to.
- Please observe wiring diagrams and technical data.
Technical data EIB/KNX DALI Switch-Dim-Actuator

Designation : EIB/KNX DALI switch-dim-actuator
Type : IBDA-DP
Order-No.: 80.14.170

Power supply : 110V-240V AC 50/60Hz, 110V-240V DC
Own consumption : approx. 0,7 to 5,8W depending on the load
Protection : external 16A
Ambient temperature : 45°C

Protective class : II (protective isolation)
Protective type : IP 20
Contamination degree : 2 (dry, not conductive)

DALI - interface : interface accord. to DALI-specification, interface poled
- Current supply for max. 100 DALI-modules approx. 200mA/13V DC (Uo approx. 15V DC)
  - Ik<250mA DC, max. 22,5V DC
  - electronic current limitation
- DALI–interface basic isolation, no protective low-voltage -

Pushbutton input T : max. 240V (pushbutton for mains)

Internal display- : 3x LED: display for module functions
Control units : 1xEIB/KNX-Programmer-LED
                   1xEIB/KNX-Programmer-pushbutton

Terminals : screw terminals: solid or litz wire with sleeve: 0,25-2,5mm²
supply : L, N
Pushbutton input : T
Not connected : NC

DALI-interface : DA+ DA-
- Terminals (7/8, 5/6)
- Terminals 7 and 8 are internally connected
- Terminals 5 and 6 are internally connected

Wire length : max. 100m
- DALI-wires : max. 300m with 1,5mm² or according to table
  (distance programmable EIB-Dim-actuator IBDA-DP to DALI ballasts or converters)

<table>
<thead>
<tr>
<th>Wire section in mm²</th>
<th>2x0,5</th>
<th>2x0,75</th>
<th>2x1,0</th>
<th>2x1,5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire length (distance) in m</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>300</td>
</tr>
</tbody>
</table>

Housing : Isolation housing for DIN rail systems
Dimensions : WxHxD=72x90x64mm
Weight : approx. 200g

EIB/KNX : contacts with WAGO-plugs
Wiring : EIB/KNX-cables
Supply EIB/KNX : 24VDC (+6V/-3V) EIB/KNX-supply module
Load consumption : max. 290mW at 29VDC
- object / parameters see application manual -

Designation : CE, EIB/KNX, DALI
wiring : see wiring diagrams and print at the module

Except to the supply terminals no supply potentials may be connected to the module. All potentials for the control and operation may have a basis isolation.
Wiring diagram EIB/KNX DALI Switch-Dim-Actuator, Type IBDA-DP

mains 110-240V AC (50/60Hz) DC

IBDA-DP 80.14.170
Components survey

The ALTENBURGER EIB-Programmable dimming control system covers the complete range of dimmable lamps with the following components:

1. Programmable EIB-dimmers, type ALTODIM/P with integrated dim-actuators operating in the phase-control (leading edge) mode

for incandescent lamps, high-voltage halogen lamps, low-voltage halogen lamps with wire-wound transformers, neon lamps.

Types and loads:

ALTODIM 600 W/P for DIN rail systems
ALTODIM 1300 W/P for DIN rail systems
ALTODIM 2000 W/P for DIN rail systems
TH EIB-P 3 KW plug-in module for back plate mounting
TH EIB-P 5 KW plug-in module for back plate mounting
TH EIB-P 8 KW plug-in module for back plate mounting

2. Programmable EIB-dimmers, Type ALTODIM/P with integrated dim-actuators, operating in the phase-interval (lagging edge) control mode

for low-voltage halogen lamps with electronic transformers.

Types and loads:

ALTODIM 600-0/P (600 W) for DIN rail systems
ALTODIM 1400-0/P (1400W) for DIN rail systems
TH EIB 2KW-0/P plug-in module for back plate mounting

3. Programmable dim-Actuators 1-10V

for fluorescent lamps with electronic ballasts with 1-10V interface and low-voltage halogen lamps with electronic transformers with 1-10V interface.

Type: Dim-actuator 1-10V, IBDA/KP

4. Programmable EIB/KNX DALI switch-dim-actuator

for max. 100 DALI ballasts

Type: EIB/KNX Dali switch-dim-actuator IBDA-DP

Details for 'ALTODIM-EIB-Dimmer': see brochure 'ALTODIM EIB-Dimmers'
Components for the infrared or radio programming and selection of lighting scenes

**IR-Sensor**
- green - supply (Vcc)
- brown - ground
- yellow - data

**Radio-receiver**

**IR- and radio decoder**

**Handheld-IR-or radio programmer**
for the programming of groups, scenes, and fade times

**Handheld IR- or radio-transmitter**
for the selection of the programmed functions

**Programmable EIB-pushbutton panels**

For the setting of up to 12 lighting scenes, brighter/darker or jalousie controls, ON/OFF.

Both panels have identical functions. The respective sizes remain the same also if functions are different.

**Pushbutton-panel 200 x 120 mm**

**Pushbutton-panel 81 x 81 mm**
for 1-gang VDE or BS-boxes
Programmable EIB-panels

Touch Panel

With the possibility of programming static and dynamic lighting scenes, sequence controls, jalousie and climatization controls, meteorologic data etc.

Restaurant and conference room

Scene selection conference room

ON
OFF

scene

static scenes
dynamic scenes

ON
OFF

scene

static scenes
dynamic scenes

Restaurant scene

Conference room scene

Lobby and circulation area

Scene selection for lobby and circulation area

Wellness area

(scene selection wellness area)

Multi-Sensor-Control (MSC)

wellness area, inside

wellness area, outside

start
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.

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 ...
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.


- IR- or radio transmitters and decoders for the programming and scene selection.

Switching, Dimming, light-level and fade time setting

Cleaning and corridor light

Shutters

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

25 integrated scene memories

Scene sequences

Scenes to be combined to sequences e.g. RGB colour controls (3 devices required)

- Pushbutton or touch panels for the programming and scene selection

If specified with layouts and integrated lamps and controls.

Touch Panels / pushbutton panels

IR- / radio-decoder

EIB - Gateway

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-ballsats
- electronic transformers with DALI-interface

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

ALTODIM /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

ALTODIM /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
DALI DIM-CONTROL LE (DC LE) for the mounting into light fittings (DC LE) with Multi-Sensor-Control and 1- or 2-pushbutton switch dim function

Range of application

The DALI Dim-Control LE is suitable of up to 64 DALI ballasts. Just after connection to mains the module is ready for operation. A commencement or a group assignment is not required. The module includes the current supply for the interfaces of the 64 DALI ballasts.

The DC LE offers:

- 1-pushbutton and 2-pushbutton switch dim function
- (Multi-) Sensor functions

1- and 2-pushbutton switch dim function:

With connections to the terminals T1, T2 or T3 the following switch/dim-functions directly with DALI ballasts can be realized:

**1-pushbutton switch dim function**
- ON/OFF, Brighter/Darker
- Storing a light level with double click
- The stored light level also is the switch ON value

**2-pushbutton switch dim function**
- ON/Brighter, Darker/OFF
- Light level storing by pressing both pushbuttons at a time
- The set light level is the switch ON value

(Multi)-Sensor-controls

The DC LE automatically recognizes connected (Multi-) Sensors. Are light sensors connected, only lighting is controlled in dependence of the daylight. If just motion sensors are connected the control operates in dependence of presence detection. Without sensors only a manual control is possible. For an extension of the range of recognition up to 6 sensors can be connected in parallel. Light sensors are computing a mean value of all connected sensors, motion sensors are extending the range of recognition.

The respective sensors are connected to the inputs [LS] and [B]. The delay time after presence detection can be set between 1 and 30 min. After this time lighting is reduced to a minimum level of 1 – 2 % and finally switches OFF after 10 min.

For the returning from the automatic sensor mode into a manual mode the DC LE must be switched voltage-free. The sensors at the input have to be removed and the power-on without sensors has to be made.
SYSTEM SURVEY: DALI Dim-Control LE (DC LE) for light fixtures

up to 64 DALI ballasts or transformers can commonly and directly be controlled

DALI ballasts

DALI-transformers

Multi-Sensors for light and motion
or individual sensors just for constant light control or presence detection

- the Dalí Dim-Control automatically recognizes connected (Multi-) Sensors and controls the lighting in dependence of the daylight and presence detection
- up to 6 sensors can be connected

DALI DIM-Control LE (DC LE)

1-pushbutton switch dim-function, 2-pushbutton switch dim-function and multi-sensor-controls

1-pushbutton switch dim-function
- ON/OFF, BRIGHTER/DARKER
- Light level setting through double click
- the set light level is the switch ON value

2-pushbutton switch dim-function
- ON/BRIGHTER, DARKER/OFF
- Light level setting through simultaneously and continuously pressing of both pushbuttons
- the set light level is the switch ON value