EXTENDER / EXTENDER 64

To extend the Blu2Light and LiCS Indoor System

The Extender can be used to extend the maximum number of DALI control gear units in a standard DALI system. This makes it possible to install the DALI Extender in place of a control gear unit, and to address it if necessary. Up to 64 DALI control gear units can be connected to the Extender output; each unit will respond in the same way depending on the input signal.

The Extender for DALI systems can only be used in connection with a DALI controller. With DALI commands, the Extender acts like a DALI ballast for fluorescent lamps.

As a full duplex repeater, the Extender 64 serves the purpose of system extension or lengthening DALI lines within a DALI system with up to 64 addresses. However, a maximum of three Extender 64 units can be connected per DALI system. Furthermore, the Extender 64 may be used only with control gear approved by Vossloh-Schwabe.

The Extender has a DALI bus supply on the output side, allowing connection of the maximum length of the DALI bus again in accordance with the standard.

The above-mentioned characteristics can be multiplied as often as required by connecting Extenders in series. This means the Extender is always used when large groups of DALI control gears are to be operated with the same signal at one DALI controller.

new

For larger applications, the Extender 64 also serves as a power supply for existing DALI applications to make them Blu2Light-enabled.
# Overview of the LiCS Indoor System

<table>
<thead>
<tr>
<th><strong>Product matrix</strong></th>
<th><strong>Light Controller L / LS</strong></th>
<th><strong>Light Controller LW / LSW</strong></th>
<th><strong>Light Controller S</strong></th>
<th><strong>Light Controller XS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>for integration into the distribution board</td>
<td>for integration into the distribution board – EnOcean wireless version</td>
<td>for independent operation</td>
</tr>
</tbody>
</table>

### MultiSensors

- MultiSensors (motion and brightness)

### High Bay Sensors

- HB Sensors (motion) or brightness (constant light control)

### Extender

- Accessories
  - max. 6 buttons (mains voltage-compatible)
  - antenna (magnetic-base or screw-base); max. 6 buttons (mains voltage-compatible); EnOcean wireless modules (max. 16 pcs.)
  - button (mains voltage-compatible)
  - button (mains voltage-compatible)

### Functions

<table>
<thead>
<tr>
<th>Functions</th>
<th>Light Controller L</th>
<th>Light Controller LS</th>
<th>Light Controller LW</th>
<th>Light Controller LSW</th>
<th>Light Controller S</th>
<th>Light Controller XS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control options</td>
<td>single and group</td>
<td>single and group</td>
<td>group</td>
<td>group</td>
<td>broadcast</td>
<td>broadcast</td>
</tr>
<tr>
<td>No. of groups</td>
<td>max. 16</td>
<td>max. 16</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>No. of operating devices (DALI-EBs, LiCS-Extender, HB sensors)</td>
<td>max. 64</td>
<td>max. 64</td>
<td>max. 64</td>
<td>max. 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of MultiSensors</td>
<td>max. 36</td>
<td>max. 36</td>
<td>max. 36</td>
<td>max. 36</td>
<td>max. 4</td>
<td></td>
</tr>
<tr>
<td>Motion detection</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Constant light control</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Scene settings</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>Push function (on/off, up and down)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimming (only up or only down)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ON/OFF function</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overriding central control</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stairwell function (timer)</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
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<tr>
<td>With integrated timer clock</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discourage burglaries</td>
<td>—</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System analysis software</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Password protection</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimising standby losses</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menu navigation in</td>
<td>German, English, French, Italian, Spanish</td>
<td>German, English, French, Italian, Spanish</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configuration using</td>
<td>rotary push key and screen</td>
<td>rotary push key and screen</td>
<td>dip switch</td>
<td>dip switch</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The values contained in this datasheet can change due to technical innovations. Any such changes will be made without separate notification.
Extender / Extender 64

To extend the Blu2Light and LiCS Indoor system

An extender enables the maximum number of DALI-compliant control gear units within a standard DALI system to be increased.

This means the DALI extender is installed in place of the ballast. At the extender output, up to 64 DALI ballasts can then be connected, which will all respond in the same way to the respective input signal.

As a full duplex repeater, the Extender 64 serves the purpose of system extension or lengthening DALI lines within a DALI system with up to 64 addresses.

The extender for DALI systems can only be used in combination with a DALI controller. When DALI commands are received, the extender behaves just like a DALI-compliant ballast for fluorescent lamps.

Technical notes
Configuration interface: via a DALI controller
Ambient temperature $t_a$: 0 to 50 °C
Max. casing temperature $t_c$: 65 °C
Screw terminals: 0.75–2.5 mm²
Degree of protection: IP20, Protection class II
RFI-suppressed

Connections
Mains connection: 220–240 V AC/DC, 0/50–60 Hz
Max. power consumption: 6.5 W
For DALI signals in acc. with IEC 62386
DALI current consumption: 2 mA
1 DALI bus to 3 terminal pairs: max. current on the DALI bus = 200 mA (see the respective data sheet for current consumption values of the individual components)
As a standard DALI bus is not SELV-compliant, the DALI cable must be rated for mains voltage.
The DALI bus features reversible electronic overload and short-circuit protection.

Functions
Connection of up to 64 ballasts to a single DALI address

Extender
To extend DALI-controlled lighting systems
Dimensions (LxWxH): 175x42x31.5 mm
Weight: 150 g
Ref. No.: 186194

Extender 64 Functions
Range extension from 300 m by a further 300 m to a total of 600 m.
Power supply for existing DALI applications to make them Blu2Light-enabled.

Extender 64
Full duplex system extension
Dimensions (LxWxH): 175x42x31.5 mm
Weight: 150 g
Ref. No.: 186667

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General safety information

- LiCS products may only be installed and commissioned by authorised and fully qualified staff.
- These instructions must be carefully read before installing and commissioning the system, as this is the only way to ensure safe and correct handling.
- Before any work is carried out on the equipment, it must be disconnected from the mains.
- All valid safety and accident-prevention regulations must be observed.
- The products should never be inexpertly opened as this poses lethal danger due to electrical shock. Repairs may only be undertaken by the manufacturer.
- On no account may the DALI control line be used to carry mains voltage or any other external voltage as this can destroy individual system components.
- Please refer to the manual at www.vossloh-schwabe.com for exact instructions on how to configure the system using the Extender.

Extender / Extender 64

Installation
- Independent installation, e.g. in false ceilings
- Easy and time-saving installation due to end caps that snap into place without needing tools
- Clearance: min. 0.1 m to walls, ceilings, insulation and to other electronic devices; min. 0.25 m to sources of heat (e.g. lamps)
- Surface: solid, must not permit the extender to sink into insulation material
- Fastening: using 4-mm screws

Installation instructions
- Cross-section of primary/secondary conductor: 0.75–2.5 mm²
- Cable preparation (see right)
- Screw terminals: max. tightening torque = 0.4 Nm
- Length of the secondary bus cable: max. 300 m
- A standard DALI bus only features basic insulation. All DALI cables must be rated for mains voltage. The power supply and the DALI line can be laid in a single cable [max. 100 m].
- Mains power cables and DALI cables should not be laid directly parallel to lamp cables (min. clearance = 0.25 m).
- A maximum of 64 DALI operating devices in total can be connected.
- Sensors must not be installed on the secondary side.
- A maximum of three Extender 64 units can be connected per DALI system.

Additional information
- The Extender can only be operated if connected to a DALI control unit. Please refer to the respective operating instructions for information on the control unit.
- Only Extender (186194): The DALI Extender is integrated into the DALI system using the “random address” assignment method.
- Only Extender 64 (186667): Three electrically connected DALI outputs make it easier to connect DALI ballasts. A maximum of 64 DALI operating devices in total can be connected.
- The outputs of several extenders must not be connected with each other.
- Nur Extender (186194): All control gear that is connected to the output of the DALI Extender is synchronously operated in “broadcast” mode; the output side is not addressed.
- To ensure safe operation of the Extender, the maximum casing temperature at the measuring point (tc) must not be exceeded.
- When using the Extender 64, the total number of 64 DALI addresses within the system may not be exceeded.
- The range extension achievable with the Extender 64 only applies in connection with VS DALI ballasts.

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Circuit diagram of the Extender

Circuit diagram Extender 64 in the Light Controller IP system

Circuit diagram Extender 64 in the Blu2Light System

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# Lighting Control System for Indoor Applications

## Extender / Extender 64

### Technical details

<table>
<thead>
<tr>
<th></th>
<th>Extender</th>
<th>Extender 64</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ref. No.</strong></td>
<td>186194</td>
<td>186667</td>
</tr>
<tr>
<td><strong>Supply voltage</strong></td>
<td>220–240 V AC/DC, 0/50–60 Hz</td>
<td></td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>6.5 W</td>
<td></td>
</tr>
<tr>
<td><strong>Control input</strong></td>
<td>DALI in, acc. with IEC 62386-102/-201</td>
<td></td>
</tr>
<tr>
<td><strong>DALI output</strong></td>
<td>max. 64 pcs. DALI operating devices or max. 200 mA (expandable with the Extender)</td>
<td></td>
</tr>
<tr>
<td><strong>Ambient temperature ta</strong></td>
<td>0 to 50 °C</td>
<td></td>
</tr>
<tr>
<td><strong>Casing temperature tc</strong></td>
<td>max. 65 °C</td>
<td></td>
</tr>
<tr>
<td><strong>Degree of protection</strong></td>
<td>IP20</td>
<td></td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td>II</td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>150 g</td>
<td></td>
</tr>
<tr>
<td><strong>CE requirements</strong></td>
<td>EMC in acc. with EN 61547, RFI in acc. with EN 55015, Safety in acc. with EN 61347-2-11</td>
<td></td>
</tr>
</tbody>
</table>

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