

- ✓ BACnet
CEA-709
- ✓ Modbus
- ✓ DALI
- ✓ OPC

LDALI-ME204-U, LDALI-ME201-U

Datasheet #89021218



L-DALI Controllers are multifunctional devices for constant light control and gateway functions between BACnet and DALI (Digital Addressable Lighting Interface) systems and they can host user specific graphical pages. With Alarming, Scheduling, Trending and e-mail notification (AST™) the L-DALI Controller is a perfect solution for DALI lighting systems and for a smooth DALI integration into BACnet networks.

Built-In or External DALI Power Supply

The L-DALI Controller LDALI-ME201-U comes with a built-in DALI power supply. It can supply one DALI channel with a guaranteed supply current of 230 mA. The DALI bus power can be switched on and off via web interface or LCD UI. Thanks to the switching power supply, the device can handle input voltages from 85 – 240 V AC, 50/60 Hz.

The L-DALI Controller LDALI-ME204-U needs an external DALI power supply to power up the DALI network. Power supplies are available for single channel or up to four channel DALI networks.

BACnet/IP Connectivity

The L-DALI Controllers feature connectivity in BACnet networks via BACnet/IP or BACnet MS/TP. They also provide data exchange through Global Connections and support comprehensive AST™ functionality (Alarming, Scheduling, and Trending). Full L-WEB integration is supported as well.

Additionally, the L-DALI Controllers are equipped with two Ethernet ports including a built-in Ethernet switch.

Local Operation and Override

The L-DALI Controllers come with a built-in backlit display (128x64) and a jog dial for local operation and override. Using the local operation, maintenance tasks (DALI device replacement, burn-in mode, etc.) can be executed without the need of any software tool.

Constant Light Control

The integrated Constant Light Controller works with DALI and with BACnet devices. It supports various lighting control strategies based on presence and lux levels. Several parameters can be used to configure the Constant Light Controller for almost any use case.

Sunblind Control with Constant Light Control Interaction

The integrated Sunblind Controller application allows intelligent controlling of blinds connected via SMI (requires LSMI-804). It offers effective sun and anti-glare protection through active slat control and slat adjustment according to the sun position. Energy efficiency is ensured by linking room occupancy with sun protection. If a room is unoccupied, the L-DALI Controller opens or closes the sunblinds depending on the thermal requirements. This allows for instance to use the heat of the sun for heating in winter while in summer, the heat from the sun is reduced by the closed blinds to reduce the cooling load. Optionally, the sunblind and light control applications of a room or an area can be linked together. As both applications control the light available in the room this holistic approach assures maximum comfort and energy efficiency. In addition to the constant light and sunblind control, any mathematical calculation and function or logical operation (Boolean algebra) can be created on the device and process all available data points.

Device Configuration via Web Interface

The device configuration, commissioning, and parametrization of the connected DALI devices can be performed via the built-in web interface.

EnOcean, OPC and Modbus

EnOcean sensors and buttons can be integrated via the optional L-ENO EnOcean

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interface. To use the LDALI with an existing SCADA solution all run-time values and parameters can be accessed via BACnet, OPC (XML/DA and UA) and Modbus TCP.

Advanced DALI Functions

- **DALI Sensors**

The L-DALI Controllers support the integration of DALI multi-sensors for presence detection and light level recognition. In addition to the LOYTEC DALI multi-sensor LDALI-MS1, DALI sensors of well-known manufacturers can be selected from a list of tested devices.

- **DALI Pushbutton**

For manual operation, DALI pushbutton coupler and IR remote controls can be integrated into the system. Their functionality can be configured individually. In addition to controlling the lighting via DALI (dimming, scene recall, etc.) also commands can be sent into the building network with a single keystroke.

- **DALI Relay Modules**

Standard loads in the power grid can be controlled via DALI using DALI Relay Modules.

- **Auto Burn-In for Fluorescent Lamps**

Fluorescent lamps must be operated about 100 hours with 100 % brightness before they may be dimmed. This burn-in process is monitored by L-DALI for each lamp. After 100 hours burn-in time, the lamp's constant light control is enabled.

- **Automatic Test of Emergency Lighting Systems**

In emergency lighting systems, L-DALI can be used for testing the system. The results can be logged.

- **Provision of Important Operational Parameters**

For maximum transparency in the lighting system, L-DALI can record the operating hours of each lamp and also the projected energy consumption.

- **DALI Device Replacement made Easy**

Defective DALI ballasts can easily be replaced directly on the L-DALI Controller (LCD and jog dial) or via the web interface. No software tool is necessary.

Smooth DALI Integration into BACnet Networks

The L-DALI Controller maps information from the DALI network to BACnet objects that are used to control DALI ballasts or to display operating states. L-DALI represents a DALI-Master in the DALI network which can interact with selected DALI multi-sensors in Multi-Master mode.

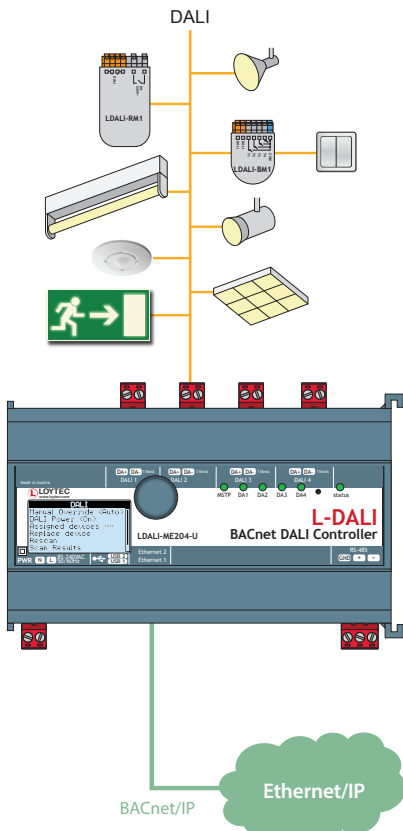
DALI Network Interface

The LDALI-ME204-U device is equipped with 4 independent DALI channels. The LDALI-ME201-U device is equipped with 1 DALI channel. Up to 64 DALI-based luminaries per DALI channel can be controlled individually or via 16 groups. All luminaries are monitored for lamp or ballast defect.

BACnet Interface

The following BACnet server objects are supported:

- Analog Output objects to control DALI ballasts, groups, and channels
- Multi-State Output objects for scene control of DALI groups and channels
- Analog Input objects providing feedback from DALI ballast, groups, and channels



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- Analog Input objects providing status information from DALI groups and channels
- Accumulator objects providing estimated energy usage of DALI groups and channels
- Analog Input objects providing lux level information from supported DALI sensors
- Binary Input objects providing occupancy information from supported DALI sensors
- Loop objects providing constant light controller functionality
- Binary Input objects providing button information from supported DALI sensors
- Various objects to control sunblinds

All data points are available on the web server in a tree structure and can be displayed and set via a web browser.

Features

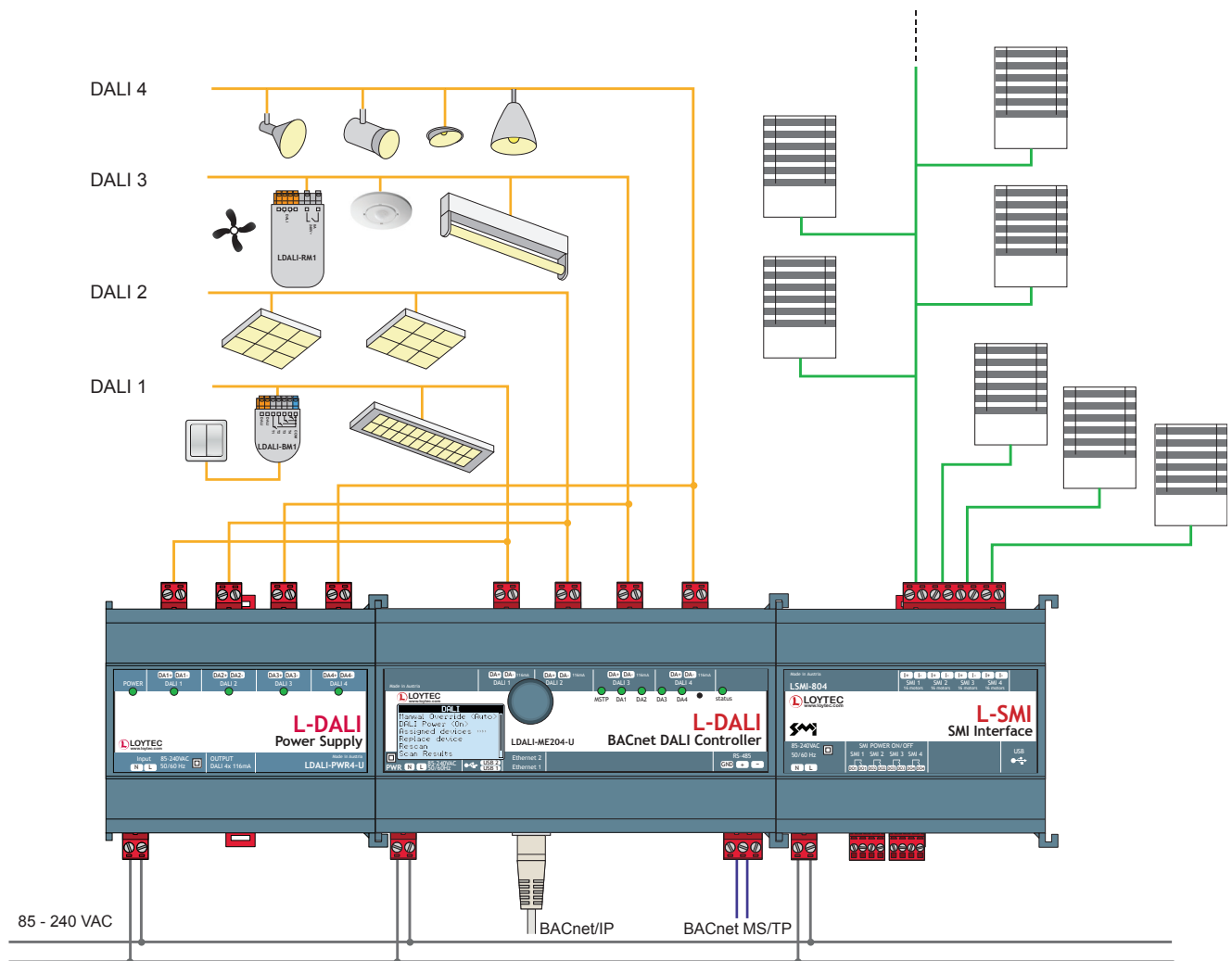
- DALI integration into BACnet networks
- Supports up to 64 DALI devices and 16 DALI groups per DALI channel
- Integrated DALI bus power supply, 16 VDC, 230 mA guaranteed supply current, 250 mA max. supply current (LDALI-ME201-U only)
- Manual operation using the jog dial and local access to information about device status and data points in clear text and symbols
- 128x64 graphic display with backlight
- Built-in web server for device configuration
- Test and assignment of DALI devices on the web interface
- Replacement of DALI devices without additional software tools
- Supports up to 16 DALI sensors
- Supports up to 64 DALI pushbuttons
- Supports the control of standard loads in the power grid via LDALI-RM1 Relay Modules
- Integrated Constant Light Controller
- Supports lamp burn-in mode
- Supports periodic testing of DALI emergency lights
- Integrated DALI Protocol Analyzer
- Compliant with ANSI/ASHRAE 135-2012 and ISO 16484-5:2012 standard
- Supports BACnet/IP or BACnet MS/TP
- Alarming, Scheduling, and Trending (AST™) locally or embedded in L-WEB (building management)
- Event-driven e-mail notification
- Supports Global Connections
- Built-in OPC XML-DA server
- Stores customized graphical pages
- Visualization of customized graphical pages through LWEB-900 (building Management), LWEB-803 (Monitoring and Control), or LWEB-802 (Web Browser)
- Stores user-defined project documentation
- Dual switched or separated Ethernet ports
- Modbus TCP (Master or Slave)
- Supports SMI (Standard Motor Interface) through LSMI-804
- Connection to EnOcean wireless devices via LENO-80x Interface
- Supports WLAN through LWLAN-800 Interface

BACnet/DALI Controller

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Specifications

Type	LDALI-ME204-U	LDALI-ME201-U
Dimensions (mm)	159 x 100 x 75 (L x W x H), DIM006	
Installation	DIN rail mounting following DIN 43880, top hat rail EN 50022	
Power supply	85-240 V AC, 50/60 Hz	85-240 V AC, 50/60 Hz, typ. 7.5 W
Operating conditions	0 °C to 40 °C, 10 – 90 % RH, non condensing, degree of protection: IP40, IP20 (terminals)	
DALI channels	4	1 with integrated DALI bus power supply 16 VDC, 230 mA guaranteed supply current, 250 mA max. supply current
Interfaces	2 x Ethernet (100Base-T): OPC XML-DA, OPC UA, BACnet/IP*, Modbus TCP, HTTP, FTP, SSH, HTTPS, Firewall, VNC, SNMP 1 x RS-485 (ANSI TIA/EIA-485): BACnet MS/TP* 2 x USB-A: WLAN (needs LWLAN-800), EnOcean (needs LENO-80x) SMI (needs LSMI-804) * Either BACnet/IP or BACnet MS/TP	
Tools	L-INX Configurator and configuration via web interface	



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Resource limits

DALI devices per DALI channel	64	BACnet client mappings	1 000
DALI groups per DALI channel	16	BACnet scheduler objects	25 per DALI channel
DALI sensors per DALI channel	16	BACnet calendar objects	25
DALI pushbuttons per DALI channel	64	BACnet notification classes	32
Scene control	16 scenes per DALI group	Trend logs	25 per DALI channel (max. \approx 1 MB)
Math objects	100	Data points in trend log	16 per DALI channel
Alarm logs	10	E-mail templates	100
OPC data points	2 000	Modbus data points	2 000
Connections (Local/Global)	1 000 / 250	Number of EnOcean devices	100
Number of L-WEB clients	32 (simultaneously)	EnOcean data points	1 000
SMI devices (per channel)	16		

Order number Product description

LDALI-ME204-U	BACnet/DALI Controller, 4 DALI channels
LDALI-ME201-U	BACnet/DALI Controller, 1 DALI channel, integrated DALI power supply
LDALI-PWR2-U	DALI power supply unit for 2 DALI channels
LDALI-PWR4-U	DALI power supply unit for 4 DALI channels
LDALI-MS1	DALI multi-sensor (motion detection, brightness sensor, IR sensor)
LDALI-BM1	Quadruple DALI pushbutton coupler
LDALI-RM1	DALI Relay Module 8 A
LDALI-RM2	DALI Relay Module 8 A, Analog Interface 1 – 10V
LENO-800	EnOcean Interface 868 MHz Europe
LENO-801	EnOcean Interface 902 MHz USA/Canada
LENO-802	EnOcean Interface 928 MHz Japan
LWLAN-800	Wireless LAN Interface IEEE 802.11 bgn
LSMI-804	Standard Motor Interface for 64 motors, 4 SMI channels via USB

