

## Overview

MEAN WELL KNX-DALI Gateway brings together the crossfunctional KNX installation bus and the lighting control specific DALI-Bus (IEC 60929). Being a cost effective solution, DALI Electronic Control Gear (ECG), for example LED driver, can therefore be integrated into an overall KNX architecture and operated via the multitude of existing KNX devices.

MEAN WELL KNX-DALI Gateway KDA-64 is a device used to control ECGs with DALI interface via KNX Bus. This device is designed to be bidirectional meaning it converts commands e.g. switch and dim from the connected KNX system into DALI telegrams and return DALI Bus information into KNX telegrams.

KDA-64 is a Category 1 device (in accordance with EN 62386-103). This means the device must only be used in DALI segments with connected ECGs and not with other DALI control devices within the segment (No multi-master function).

Power supply for the up to 64 connected DALI ECGs comes directly from the KDA-64. An additional DALI power supply is not required and not permitted.

The device comes in a 4 unit's wide DIN Rail casing so it can be directly integrated into the mains distribution box. Connection to the KNX bus is via a standard KNX bus connector. Network and DALI lines are connected via screw terminals on the device.

DALI ECGs can be switched, dimmed and set to a defined value in 16 groups per gateway. In addition to group control, the KDA-64 offers the possibility to individually control up to 64 DALI ECGs.

Please remember that once DALI ECGs have been assigned to a group, they can no longer be controlled individually. An ECG can only be allocated to one DALI group. The KDA-64 does not support multi-group allocations. If multi-group allocation is required, it must be performed via KNX communication objects.

Numerous communication objects are available for the visualisation of status and error information on an ECG as well as group and gateway level.

In addition to all standard operating devices, KDA-64 also support and allow the control of self-contained emergency lights (EN 62386-202). For self-contained emergency lights including battery, a distinction is made between devices with switchable ECGs (usually emergency lights with one ECG) and devices with non-switchable ECGs (converters), which are usually used in connection with another "normal" ECG (2 ECGs per light). KDA-64 allows for the mixed control of different ECG types within a DALI segment. Emergency lighting systems with a central battery are also supported.

A scene module for the extensive programming of up to 16 scenes from groups and individual ECGs as well as an effect module for the control of processes and light effects are also available on the device.

KDA-64 enables different forms of DALI commissioning (allocation of DALI ECGs to individual groups and changes in configuration):

1. Commissioning on the device
2. Commissioning via integrated web server

The ETS (Engineering Tool Software) with the data base entry of the current application program is also required for the final commissioning of the KNX communication.

For more details regarding the commissioning of a DALI segment, please check the online instruction manual.

## What is in the Box

The following individual components are included in the delivery of KDA-64 device:

- Complete device with connected bus connector.
- 1x heat shrinkable tubing 1.2 x 2cm for additional insulation of the bus cable.
- Quick installation guide.
- Delivered in break-proof individual packaging.

## Application programs (Product data)

The following application programs are currently available for the KDA-64 device:

MW\_KDA-64.knxprod.

Currently only support ETS4, 5 only. For ETS3 and other details, please see the online instruction manual.

## Warnings

- Risk of death by electric shock.
- The device is intended for interior installation in dry rooms.
- The device must only be installed and commissioned by an accredited electrical engineer.
- Please follow country-specific safety and accident prevention rules as well as all current KNX guidelines.
- Please follow country-specific rules and regulations for the planning and construction of installations, especially with regard to emergency lighting systems.
- For the installation the device must be switched to zero potential.
- Do not open the device! Faulty devices must be returned to the manufacturer.

## Technical data

### Power supply

- Mains connector for 100 to 240 V, 50 to 60Hz AC or DC
- Maximum power consumption 7W
- In addition via **KNX** bus, SELV 30V

### Connectors

- Mains connector L N PE: Screw connector 3x 1- 2.5mm<sup>2</sup> single or threaded core
- DALI-Bus D+, D- : Screw connector 2x 1-2.5 mm<sup>2</sup> single or threaded core
- Bus connector: **KNX** bus connector
- Ethernet Eth1: RJ-45 plug connector for standard patch cables

### Control elements

- Programming Button to toggle between normal and addressing mode
- 3 buttons (Move, Prg/Set, ESC) on display front to commission the device and set parameters

### Display elements

- LED red: Indicates KNX communication in normal/addressing mode
- PWR-LED red: Signals fault status
- ERR-LED yellow: Signals device Ethernet readiness
- LC-Display, 2x12 characters: for the commissioning and configuration menu

### Output DALI-Bus

- Connection of up to 64 ECGs in accordance with IEC 60926
- DALI-Voltage 16-20 VDC, short circuit proof max. 250 mA
- Category-1 device (in accordance with EN 62386-103). No other control devices (DALI-Master) must be used.
- Additional DALI power supply is not required or permitted.

### Ethernet

- IP-connection via Ethernet, speed 100 Mbit / second
- IP address allocation via DHCP service or fixed IP address



### Mechanical data

- KDA-64 casing: Plastic ABS – V0
- Dimensions:

Width: 72mm  
Height: 55mm  
Length: 86mm  
200 g

- Weight
- Mounting: 35mm DIN rail

### Electrical safety

- Pollution class (in accordance with EN60664-1): 2
- Protection type (in accordance with EN 60529): IP20
- Protection class (according to IEC 1140): I
- Overvoltage category: III
- KNX Bus: Separated extra-low voltage SELV DC 30 V
- DALI Bus: Functional extra-low voltage FELV DC 18 V (base isolation)

### EMC requirements

Complies with EN 50090-2-2

### Environmental conditions

- Weather resistance: EN 50090-2-2,
- Environmental conditions during operation: -5°C to +45°C
- Storage temperature: -25°C to +70°C
- Rel. humidity (non condensing): 5 % to 93 %

### Certification

KNX certified

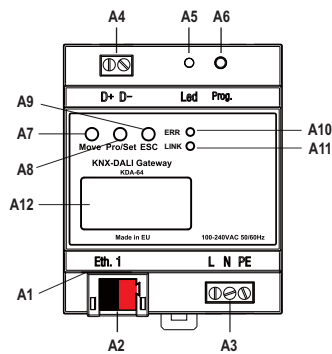
### CE-declaration

According to EMC-Guidelines (Residential and commercial buildings), Low Voltage guidelines

### Function of the display and buttons

The device connectors as well as the programming button and programming LED that are required for commissioning are only accessible in the distribution box when the cover is removed.

The 3 buttons (MOVE, Prg/Set, ESC) that are required to commission and configure the DALI and the 2-line display and control LEDs (ERR and LINK) are accessible when the cabinet cover is closed.



- A1: RJ-45 plug for Ethernet connection
- A2: KNX bus connector
- A3: Power supply connector
- A4: DALI output connector
- A5: Programming LED for normal/addressing mode
- A6: Programming button normal/addressing mode
- A7: MOVE button
- A8: Prg/Set button
- A9: ESC button
- A10: ERR-LED red: Signals fault status
- A11: LINK-LED yellow: Signals device Ethernet readiness
- A12: Display 2x12 characters for DALI configuration

User must follow the terminal pin assignment as labelled on the casing!

### Mounting and wiring

KDA-64 is suitable for mounting in distribution boxes on 35 mm DIN rails. To mount the device it must be angled to slide onto the DIN rail from above and then locked into place with a downward movement. Please make sure that the security latch at the bottom side of the device snaps into place and that the device is firmly attached to the rail.

To dismount the device, the security latch can be pulled downwards with a suitable tool and then the device can be removed from the rail.

After the device has been inserted, the cable for the DALI bus should be attached to the upper left connector. In accordance with IEC90929, the DALI control lines can be carried in a 5-wired cable together with the power supply (simple basic insulation is sufficient). However, please make sure that these are labelled clearly. For the entire DALI installation of a segment, a maximum length of 300m must not be exceeded. (Recommended cross-sectional area 1.5mm<sup>2</sup>).

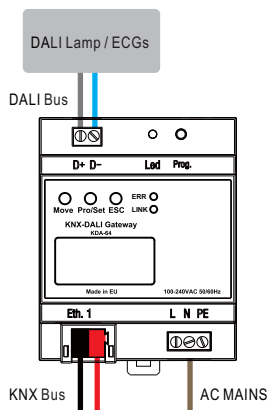
The power supply is connected to the bottom right-hand side connector according to the order indicated on the casing.

To connect the KNX cable, a standard bus connector is plugged into the respective entry on the device. Please make sure that there is double basic insulation between the KNX installation and the power supply. To do so, please insulate the wires of the KNX cable up to the bus connector with the enclosed shrinkable tubing.

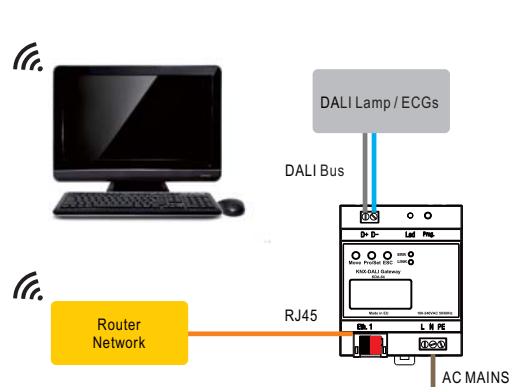
After the device has been mounted and the bus connector connected, you can plug the RJ-45 Ethernet connector into the respective socket on the underside of the device. Use a standard patch cable to connect the device with a switch or router of the IP network (Ethernet). **When connecting the network, please make sure that the cables are laid in a way that ensures sufficient distance between the IP cable and the power cable.**

The two typical applications are illustrated in below.

#### KNX application:



#### Ethernet (Web browser) application:



After all the connections have been completed and the power supply is turned on, the product name and firm ware version appear on the display. You can now start the commissioning of the DALI segment and programming with ETS. For all further processes, please see the online instruction manual.