Operating and mounting instructions
DaliControl e64
Order No. 4101-145-01

General usage

The IPAS DALI Gateway DaliControl e64 is a device used to control electronic control gears (ECGs) with a DALI interface (in accordance with EN 62386) via the KNX installation bus. The device transforms switch and dim commands from the connected KNX system into DALI telegrams and status information from the DALI bus into KNX telegrams.
The DaliControl e64 is a so-called Single Master Application Controller (according to 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 operation). The required power supply for the up to 64 connected ECGs comes directly from the DaliControl e64. An additional DALI power supply is **not** required and **not** permitted. Supported are ECGs according to EN 62386-102 ed1 (DALI1) as well as devices according to EN 62386-102 ed2 (DALI2). To operate self-contained emergency ballasts according to EN 62386-202 is possible as well.
With firmware version 3.1.6 or higher the DaliControl e64 is certified according to EN 62386-101 and -103 ed2 (DALI2) and therefore entitled to bear the DALI-2 logo.

The device comes in a 4TE wide DIN Rail casing so it can be directly integrated into the mains distribution box.

Product features

- Addressing of 16 DALI groups and/or individual addressing of up to 64 individual ECGs
- Flexible DALI commissioning concept: directly on the device, via integrated web server or in the ETS5 (DCA)
- Coloured light control with the support of Device Type 8 (DT-8) ballasts and control via communication objects
- Coloured light control depending on ballast Sub-Type:
  - Colour Temperature (DT-8 Sub-Type Tc)
  - XY Colour (DT-8 Sub-Type XY)
  - RGB (DT-8 Sub-Type RGBWAF)
  - HSV (DT-8 Sub-Type RGBWAF)
  - RGBW (DT-8 Sub-Type RGBWAF)
- Automatic, time-controlled setting of light value, light colour and colour temperature (also for Human Centric Lighting applications) for groups and/or individual ECGs
- Various operating modes for groups such as continuous mode, night mode, staircase mode
- Integrated operating hours counter for each group and/or individual ECG with alarm when end of life is reached
- Individual fault detection with objects for each individual luminaire/EVG
- Complex error evaluation on group/device level with error number and error rate calculation
- Error threshold monitoring with individually adjustable threshold values
- Scene module for up to 16 scenes, which can be assigned to KNX scenes 1..64 as required
- Extensive scene programming, including the possibility of dimming scenes
- Setting of colour in DT-8 luminaires via scenes for groups and/or individual ECGs
- Effect module for sequence controls and lighting effects including colour adjustment in DT-8 luminaires
- Test mode for systems with emergency luminaires supplied by central battery
- Support of single-battery emergency lights DT-1
- Support of test procedures for emergency lights with time and date stamp
- "Quick Exchange Function" for easy replacement of individual defective ECGs
- "Energy saving function" allows the ECG power supply to be switched off when light is switched off via additional switching actuators
- Integrated web server with extensive options for commissioning and maintenance
- Integrated "Visualization" via Web browser for direct operation and display
- Manual operation of group and broadcast telegrams via operating buttons and display on the device
- Signalling of error states and status diagnosis via LEDs and display on the device

The special surface for the configuration of DALI segments is designed as DCA (Device Control App) for the ETS5.
Please remember to install the corresponding etsapp in addition to the product database knxprod. The etsapp is available for download on the IPAS website or from Konnex.

Device types and accessories

At present the following DaliControl device types are available:

DaliControl gc16	Best.Nr.: 4101-145-11
DaliControl gc16-2	Best.Nr.: 4101-145-21
DaliControl e64	Best.Nr.: 4101-145-01

Scope of delivery

The following individual components are included in the delivery of the DaliControl e64 device:

- Complete device with connected bus connector
- 1x heat shrinkable tubing 1.2 x 2cm for additional insulation of the bus cable
- Operating and mounting instructions
- Delivered in break-proof individual packaging

Application programs

At present the following application programs are available for the DaliControl e64 device:

DaliControl e64-01-0110

Installation advices

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 with return delivery note.

Technical data

Power supply
- Operating voltage 110 to 240 V, 50 to 60Hz AC or DC
- Maximum power consumption 8W
- Bus power supply via KNX bus line, SELV 24V, ca. 5mA

Connectors
- Mains connector L N PE: Screw connector 3x 1- 2.5mm² single or threaded core
- DALI-Bus D+, D- : Screw connector 2x 1-2.5 mm² single or threaded core
- Bus line: Bus connector KNX, screwless 0.6…0.8mm, single core
- Ethernet Eth 1: With standard Patch Cable

Control elements
- Programming button to toggle between normal and addressing mode of the KNX
- 3x buttons (Move, Prg/Set, ESC) for manual control and for activation of broadcast and service functions

Display elements
- LED red: Indicates normal/addressing mode
- LNK-LED yellow: Signals device Ethernet readiness
- ERR-LED red: Signals fault status
- LC-Display, 2x12 characters: for configuration menu manual operation and device adjustments

KNX-Bus
- KNX Medium: Twisted Pair (TP)

DALI-Bus
- Number of outputs: 1 DALI output
- Output type: Single-Master Application Controller according to EN 62386-103 ed 2
- Number of ballasts: max. 64 ECGs according to EN 62386-101 ed1 and ed 2
- DALI voltage: typically 16 VDC, short-circuit proof max. 250mA, basic insulation (no SELV)
- Recommended wire cross-section: min. 1.5 mm²
- Guaranteed supply current: 125mA
- Maximum supply current: 250mA
- Shutdown delay: 600ms after DALI short circuit shutdown occurs
- Start-up attempt after shutdown: 5s after short-circuit detection

Mechanical data
- DaliControl e64 casing: Plastic ABS – V0
- Dimensions REG casing 4TE: 71mm x 58mm x 90mm (WxHxL)
- Weight: ca. 158 g
- Mounting: 35mm DIN rail

Electrical safety
- Protection type (in accordance with EN 60529): IP20
- Protection class (according to IEC 1140) I
- Overvoltage category: III
- Pollution class (in accordance with EN60664-1): 2
- KNX Bus: SELV DC 24 V
- DALI Bus: typical16V DC, 250mA base isolation, (no SELV)

EMC requirements
Complies with directive 2014 / 30 / EU

Environmental conditions
- Weather resistance: EN 50090-2-2,
- Environmental conditions during operation: -5°C to +45°C
- Storage temperature: -25°C to +55°C
- Transportation temperature: -25°C to +70°C
- Rel. humidity (non condensing): 5 % to 93 %

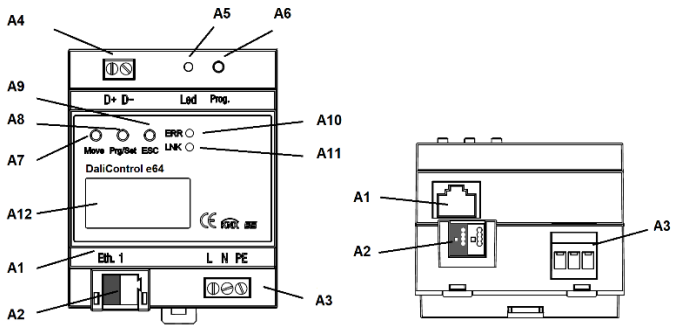
Certification
- KNX certified
- DIIA certified according to EN 62386-101 ed 2 and EN 62386-103 ed 2

CE-signage
According to EMC guidelines (residential and commercial buildings), low voltage guidelines

Location and function of display and control elements

The device connections, as well as the elements learn button and programming LED required for KNX commissioning are only accessible in the distribution board when the cover is removed.
The buttons required for DALI commissioning and parameterisation (MOVE, Prg/Set, ESC), as well as reading the 2-line display and the control LEDs (ERR and LNK) can be operated with the distribution board cover closed.

You must always follow the pin assignment as labelled on the casing!



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: Error-LED
A11: Ethernet-LNK-LED
A12: Display 2x12 characters for DALI configuration

Mounting and wiring

As a REG device the DaliControl e64 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.

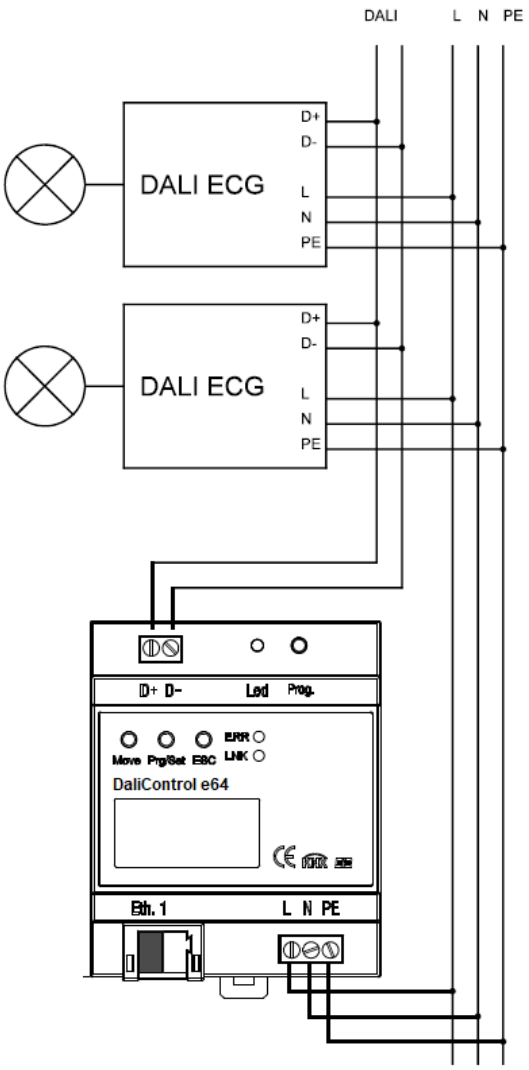
To dismount the device, the security latch can be pulled downwards with a suitable tool and then the device can be removed from the rail.

After the device has been inserted, the cable for the DALI bus should be attached to the upper left connector first. In accordance with EN 62386, 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.

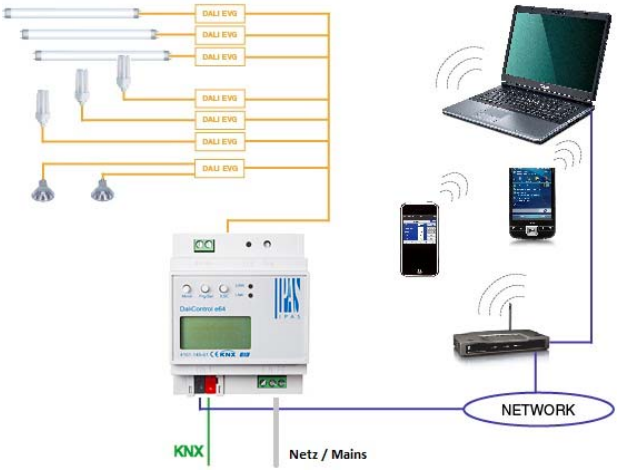
For the entire DALI installation of a segment, a maximum cable length of 300m must not be exceeded. (Recommended cross-sectional area 1.5mm²).

The power supply is connected to the top left-hand side connector in the order indicated on the casing.

To connect the KNX cable, a standard bus connector is plugged into the respective entry on the device.



Attention: 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.



Once the connection is complete and the power supply is turned on, you can start commissioning the DALI segment and programming with ETS. For all further processes, please see the application program description