Operating and mounting instructions
DaliControl e64 Pro
Order No. 4101-145-02

General usage

The IPAS DALI Gateway DaliControl e64 Pro is a multi-master application controller for controlling electronic ballasts with DALI interface via the KNX installation bus. It supports ballasts according to EN 62386-102 ed1 (DALI1), devices according to EN 62386-102 ed2 (DALI2), as well as DALI2 motion sensors and light sensors according to EN 62386-303 and EN 62386-304.

The device transforms switching and dimming commands from the connected KNX system into corresponding DALI telegrams, or status and event information from the DALI bus into KNX telegrams.

The DaliControl e64 Pro has a DALI output which can control up to 64 ECGs. In addition, up to 8 DALI2 motion detectors or light sensors can be connected. Multi-master operation according to EN 62386-103 ed2 is permitted. The required power supply for the connected ECGs and motion sensors is provided directly from the device. Additional DALI power sup-plies are not required. When using sensors supplied via the DALI bus, it must be ensured that the current consumption of all connected DALI devices does not exceed the guaranteed value.

The device is available in a 4TE wide DIN rail housing for direct installation in an electrical distribution board. The bus connection is made via a standard bus connector. Mains and DALI lines are connected via screw terminals on the de-vice. Ethernet is connected via an RJ45 socket.

Per gateway the ECGs can be controlled in 16 groups. In addition to the group control the DaliControl e64 Pro also allows individual control of up to 64 ECGs.

In addition to the control of all standard operating devices, the DaliControl e64 Pro also allows the operation of single battery emergency lights (EN 62386-202). Emergency lighting systems with central battery are also supported.

A maximum of 8 motion detectors with light sensors can also be controlled.

The special interface for configuring the DALI segments is designed as a DCA (Device Control App) for the ETS5. Please make sure that the corresponding etsapp is installed in addition to the product database knxprod. This is available for download at Konnex or on the IPAS website.

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
- Automatic change of colour temperature depending on the light value (Dimm-To-Cold)
- Control of colour temperature via communication object for DT6, warm white and cool white
- Broadcast objects for controlling all connected ECGs simultaneously (also possible for colour values)
- 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
- Cross-device summary of errors in the entire system
- Manual operation of group and broadcast telegrams via operating keys and display on the device
- Signalling of error states and status diagnosis via LEDs and display on the device

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
DaliControl e64 Pro	Best.Nr.: 4101-145-02
DaliControl e64 ProS	Best.Nr.: 4101-145-03

Scope of delivery

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

The following application programs are currently available for the DaliControl e64 device:

DaliControl e64 Pro-01-0110

For application program functions, please see the application program description.

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 100 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: RJ-45 plug connector for standard patch cables

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)
- Security: KNX Data Secure

DALI-Bus
- Number of outputs: 1 DALI output
- Output type: Multi-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
- Number of sensors: max. 8 motion detectors and sensors according to EN 62386-303 / -304
- DALI voltage: typically 18 VDC, short-circuit proof max. 250mA, basic insulation (no SELV)
- Recommended wire cross-section: min. 1.5 mm²
- Guaranteed supply current: 160mA
- Maximum supply current: 250mA
- Shutdown delay: 600ms after DALI short circuit shutdown occurs
- Start-up attempt after shutdown: 5s after short-circuit detection

Ethernet
- Type:100BaseT (100Mbit/s)
- IP address allocation: via DHCP service or fixed IP address

Mechanical data
- DaliControl e64 Pro casing: Plastic ABS – V0
- Dimensions REG casing 4TE: Width: 72mm
Height: 58mm
Length: 86mm
- Weight 160 g
- Mounting: on 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: typical18V 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 %

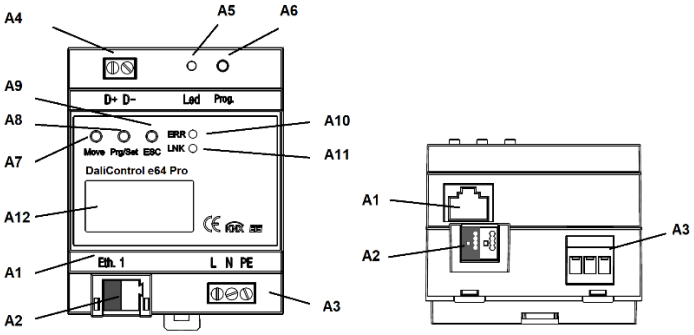
Certification
- KNX certified
- DIIA certified according to EN 62386-101 ed 2 and EN 62386-103 ed 2

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.

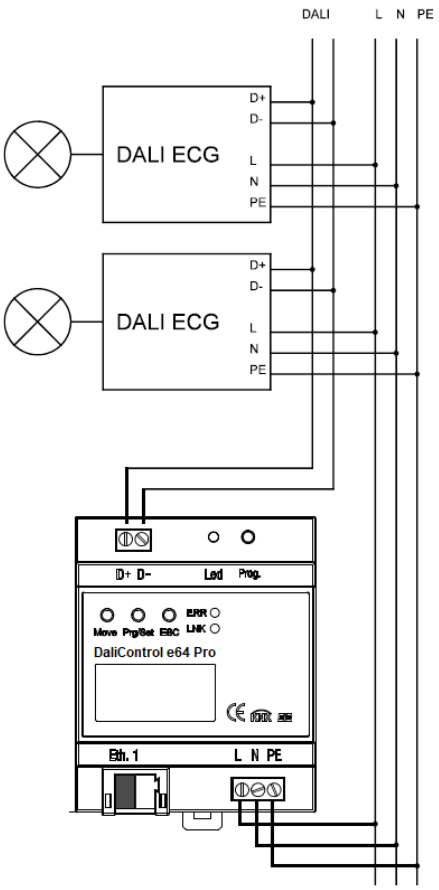
You must always follow the pin assignment as labelled on the casing!



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 Pro 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.



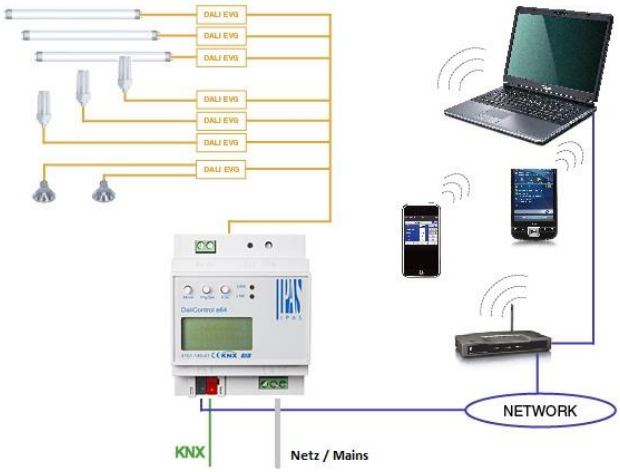
To dismount the device, the security latch can be pulled downwards with a suitable tool and then the device can be removed from the rail.

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 connector down on the left side 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