ekinex
CONTROL YOUR LIVING SPACE

KNX - Dali Gateway
Code: EK-BG1-TP

KNX® CE S TP1

Description

The ekinex EK-BG1-TP gateway establishes the bidirectional data connection between a DALI system and a KNX bus system. The gateway allows you to control lighting devices equipped with a standard DALI interface and different light sources (such as fluorescent lamps, high intensity discharge lamps and LEDs) by means of KNX devices (such as buttons, motion and presence sensors or touchpanels). The device has an integrated KNX bus communication module and is designed for mounting on a 35 mm profile DIN rail. The device is powered at 90-260 Vac and supplies SELV power to the DALI bus.

DALI

DALI (Digital Addressable Lighting Interface) is an open and interoperable worldwide standard dedicated to lighting applications and specified by the IEC (International Electrotechnical Commission). The DALI protocol is included in the technical standard IEC 62386 Digital addressable lighting interface.

Starting from version A2.5, the device is certified and compliant with the DALI-2 standard.

For further information: www.dali-ag.org.

Main features

- Plastic case
- Version for mounting on 35 mm profile DIN rail (according to EN 60715)
- Degree of protection IP20 (according to EN 60529)
- Security class II
- Weight 200 g
- 4 UM modular device (1 UM = 18 mm)

- Dimensions 72 x 95 x 60 mm (LxHxP)

Technical data:

Connections:
- Power supply 90-260 Vac @50-60 Hz
- KNX bus
- DALI bus
- Ethernet

DALI System:
- Transmission medium: unshielded cable
- Topology: linear, star or mixed
- Current consumption: max 250 mA
- DALI voltage: 9.5 V ... 22.5 V (typical 16 V)
- Max cable length: 300 m (section 1.5 mm²)
- Baud rate: 1200 bps
- Max number of DALI devices: 64
- Max number of DALI groups: 16
- Max number of DALI scenes: 16

Environmental conditions:
- Temperature range: -5 ... + 45°C
- Relative humidity: 95% non condensing

Operating, signaling and connecting elements

The appliance is equipped with:
- One terminal for the KNX bus line connection (1)
- Two terminals for the power supply connection (4)
- Two 2-pole terminals for the DALI bus connection(5)
- One RJ45 connector (6)
- One KNX programming button (2) with associated LED (3)
- Three signaling LEDs (9, 10, 11)
- Two membrane keys (12)
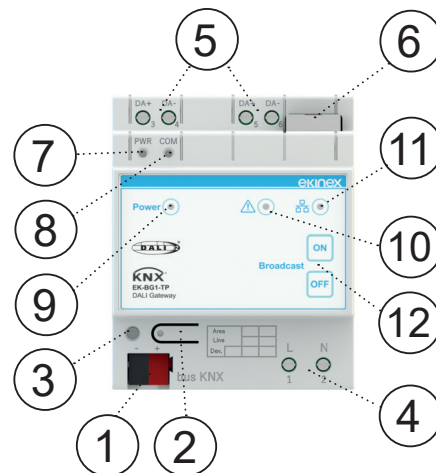
Mounting

The device has degree of protection IP20 and is therefore suitable for use in dry indoor environments. The enclosure is designed to be mounted on a DIN profile rail according to EN 60715 inside switchboards or electrical distribution cabinets. The device must be mounted in a vertical position; correct positioning is with the terminal for the KNX bus is located at the bottom.

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Note. *When installing in switchboards and distribution cabinets, the necessary ventilation must be ensured in order to maintain the temperature within the operating range allowed for the appliance.*

Connections

Electrical power supply

Warning! *The electrical connection of the device can be carried out only by qualified personnel. The incorrect installation may result in electric shock or fire. Before making the electrical connections, make sure the power supply has been turned off.*

The connection to the power supply takes place via the screw terminals located on the front of the appliance at the bottom.

Terminal characteristics:

- Screw tightening of conductors
- Max section of conductors 2,5 mm²
- Wire stripping recommended approx. 6 mm
- Max torque 0.5 Nm

Bus KNX

Warning! *In order to supply the KNX bus lines use only KNX bus power supplies (e.g. ekinex EK-AB1- TP or EK-AG1-TP). The use of other power supplies can compromise the communication and damage the devices connected to the bus.*

The connection to the KNX bus line takes place via the black / red terminal included in the supply and inserted in the special housing located on the front of the appliance at the bottom.

Characteristics of the KNX terminal:

- Spring tightening of conductors
- 4 conductor seats for each polarity
- Suitable for KNX bus cable with single-wire conductors with a diameter between 0.6 and 0.8 mm
- Recommended wire stripping approx. 5 mm
- Color coding: red = bus conductor + (positive), black = bus conductor - (negative)

DALI Bus

The connection to the DALI bus takes place via the screw terminals located on the front of the device on the top side. For convenience there are two pairs of terminals: the bus can be connected indifferently to one or the other pair. The remaining pair can be used for support or for other purposes (measurement etc.)

Characteristics of the DALI terminals:

- Screw tightening of conductors
- Max section of conductors 2,5 mm²
- Wire stripping recommended approx. 6 mm
- Max torque 0.5 Nm

Ethernet Port

The Ethernet port is used to program the device and for communication with a LAN network.

The Ethernet connection must be made with a cable of at least category 5E using the appropriate connector (10) located on the top side of the device. The maximum cable length should not exceed 100 m. The cable must comply with T568 standards for category 5 connections up to 100 Mbps.

Configuration and commissioning

For the configuration of the device, the standard KNX ETS application (v. 5.6.x or higher) must be installed on the PC; throgh ETS, you can define the type and behavior of the KNX communication objects that the device exposes.

It is also necessary to install the CGEKBG1TP software on the PC, which allows you to:

- configure the DALI system and define its parameters
- set the DALI devices (groups, scenes, IDs, etc.)
- test the communication on the DALI bus
- update the device

The software applications and files can be freelydownloaded from the website www.ekinex.com; their operation is described in the application manual. The software works with Microsoft Windows (7 and following).

Note. *The operation of the CGEKBG1TP configuration software may require the installation of .NET Framework 4, freely downloadable from the Microsoft website.*

These activities must be carried out in conformance with the building automation system project carried out by a qualified professional. For detailed information on the configuration options, refer to the appliance's application manual available on the website www.ekinex.com.

The following activities are finally required to complete the commissioning of the appliance:

- carry out the electrical connections as indicated above;
- apply power;
- connect to an active KNX bus;
- switch the appliance operation to programming mode by pressing the appropriate button located on the front. In this operating mode the programming LED is on;
- download the physical address and configuration to the device using the ETS program.

At the end of the download, the operation of the appliance automatically returns to normal mode; in this operating mode the programming LED is off. Now configure the DALI system using the CGEKBG1TP software. The bus device is programmed and ready for operation.

Markings

CE: the product complies with the Low Voltage Directive (2014/35 / EU) and the Electromagnetic Compatibility Directive (2014/30 / EU).

Maintenance

The appliance is maintenance-free. To clean it, use a dry cloth. The use of solvents or other aggressive substances is absolutely to be avoided.

Disposal

The product described in this technical sheet at the end of its useful life is classified as waste from electronic equipment according to the European Directive 2012/19 / EU (WEEE), and cannot be disposed of as unsorted municipal solid waste.

Warning! Incorrect disposal of the product can cause serious damage to the environment and human health. For correct disposal, inquire about the collection and treatment methods provided by the local authorities.

Warnings

- Assembly, electrical connection, configuration and commissioning of the appliance may only be carried out by qualified personnel in compliance with the applicable technical standards and laws in force in the respective countries
- The opening of the device housing determines the immediate interruption of the warranty period
- In the event of tampering, compliance with the essential requirements of the applicable directives for which the appliance has been certified is no longer guaranteed
- Faulty ekinex® appliances must be returned to the manufacturer at the following address: EKINEX S.p.A. Via Novara 37, I-28010 Vaprio d'Agogna (NO)

Other useful information

This datasheet refers to the releases A1.0 and A2.5 of the ekinex® device EK-BG1-TP, and is available for download at www.ekinex.com as a PDF (Portable Data Format) file.

File name	Version	Updated
STEKBG1TP_EN_v.1.x.pdf	A1.0	02 / 2021
STEKBG1TP_EN_v.2.x.pdf	A2.5	06 / 2023

- The instruction sheet must be delivered to the end customer together with the project documentation
- For more information on the product, you can contact ekinex® technical support at the e-mail address: support@ekinex.com or consult the website www.ekinex.com
- DALI and its logo is a registered trademark of the Digital Illumination Interface Alliance (DiiA).

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