

KNX Gateway DMX - IP
Art.-No.: 13516111

Operationsmanual

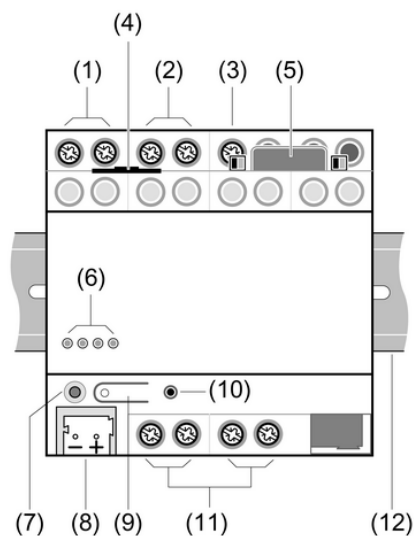
1 Safety instructions

Electrical equipment may only be installed and fitted by electrically skilled persons.

Failure to observe the instructions may cause damage to the device and result in fire and other hazards.

These instructions are an integral part of the product, and must remain with the end customer.

2 Device components



picture 1

- (1) DMX input (DMX IN - / DMX IN +)
- (2) DMX output (DMX Out - / DMX Out +)
- (3) DMX earth (GND)
- (4) IP connection
- (5) RS232 connection
- (6) Status LEDs
- (7) Programming LED
- (8) KNX connection
- (9) Programming button
- (10) Reset button
- (11) Connection of external power supply
- (12) DIN rail (not in scope of supply)

3 Function

System information

This device is a product of the KNX system and complies with the KNX directives. Detailed technical knowledge obtained in KNX training courses is a prerequisite to proper understanding.

Intended use

- Unidirectional data exchange between KNX and a DMX system
- Mounting on DIN rail to EN 60715

Product characteristics

The Gateway has two operating modes:

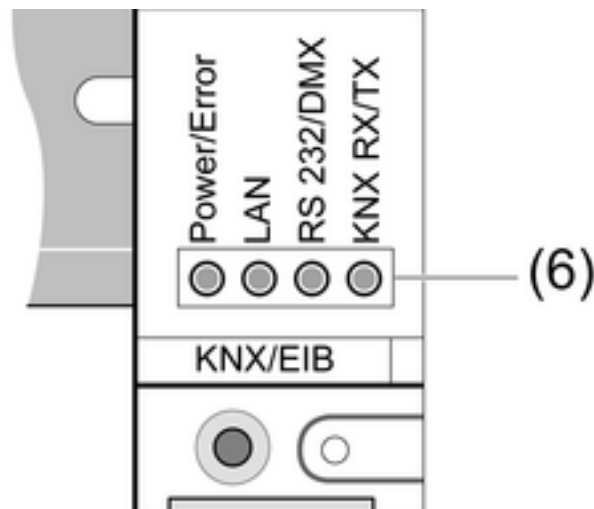
Operating mode "DMX master"

- Translation of KNX values into DMX data bytes
- Cyclic transmission of KNX values to the assigned DMX channels in the DMX bus with 250,000 kBit/s
- Control of RGB or RGBW luminaires via special logic modules
- Mapping of the functions switching (1-bit), relative dimming (4-bit) and absolute dimming (1-byte)
- Master dimming object (1-byte) for channel groups

Operating mode "DMX slave"

- Reception of data bytes from the DMX bus
 - Translation of the DMX data bytes into KNX values
- i** Assignment between DMX channels and KNX group addresses is performed using a table stored in the gateway. Assignment of the KNX group addresses and configuration of the operating mode are performed using the Windows software **DMX-Gate2** (or higher). The most recent updates of the software and detailed descriptions of commissioning are available on the Internet.

Status LEDs (6)



picture 2

Power/Error	Lit up green: Normal operation. Flashing orange: Invalid project or no project. Flashing red: Invalid firmware.
LAN	Lit up yellow: Reception via the IP interface.

RS 232/DMX	Flashing green: Receiving/transmitting via the RS232 interface. Flashing red: Receiving/transmitting via the DMX interface. Lit up red: No receiving/transmitting of valid DMX telegrams for one second.
KNX RX/TX	Flashing red: Reception from the KNX bus. Flashing green: Transmitting to the KNX bus. Flashing red/green: No KNX bus detected.

Reset button (10)

Pressing the Reset button (10) restarts the gateway. All of the stored configurations are retained.

4 Information for electrically skilled persons

4.1 Fitting and electrical connection



DANGER!

**Electrical shock on contact with live parts in the installation environment.
Electrical shocks can be fatal.**

Before working on the device, disconnect the power supply and cover up live parts in the working environment.

General notes

Use a data cable with 120 ohm characteristic impedance (e.g. CAT 5, 6, 7 network cable) for the DMX bus.

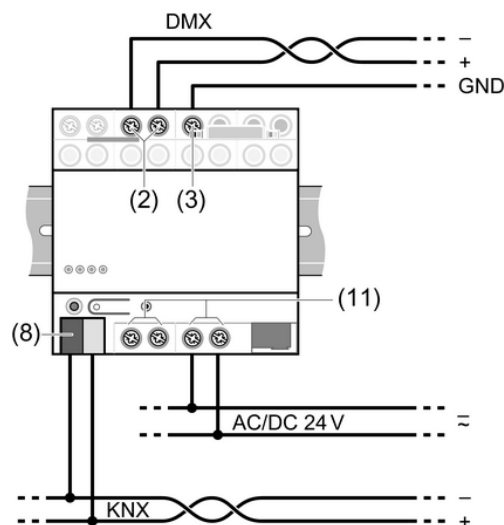
Use a common wire pair each for the signals **DMX In + / -** and **DMX Out + / -**.

Do not use the terminal pairs **DMX In** and **DMX Out** to loop through a DMX signal. The terminal pairs are only used individually depending on the operating mode.

Do not wire DMX bus in a star configuration.

For external power supply, use only power supplies that provide safe SELV low voltage.

Connecting the device – operating mode "DMX master"



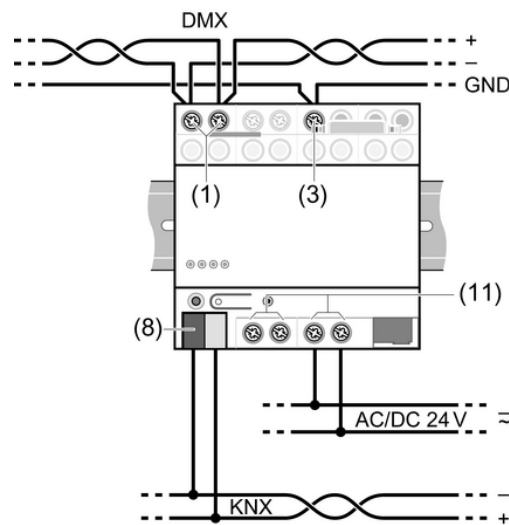
picture 3

In the operating mode "DMX master" the gateway functions as a DMX data generator. The terminals **DMX Out** and **GND** are used for connection to the DMX bus.

Connect a maximum of 32 DMX devices per gateway.

- i Only a single data generator is permitted in a DMX system. In order to combine the gateway with an additional DMX data generator (e.g. a DMX lighting console), a so-called "DMX merger" is required.
 - Connect DMX bus to the terminals **DMX Out +** and **DMX Out -** (2) and **GND** (3).
 - Connect KNX bus to the KNX terminals (8).
 - Connect external power supply to one of the terminal **AC/DC 24 V** terminal pairs (11).

Connecting the device – operating mode "DMX slave"

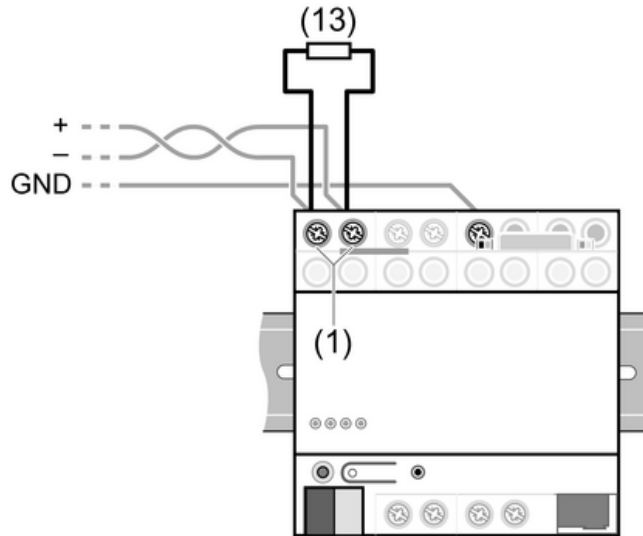


picture 4

In the operating mode "DMX slave" the gateway functions as a DMX receiver. The terminals **DMX In** and **GND** are used for connection to the DMX bus. When additional receivers are connected to the DMX bus the DMX cable has to be continued over terminals **DMX In** and **GND** (picture 4). Do not use **DMX Out** terminals.

- Connect DMX bus to the terminals **DMX In +** and **DMX In -** (2) and **GND** (3).
- Connect KNX bus to the KNX terminals (8).
- Connect external power supply to one of the terminal **AC/DC 24 V** terminal pairs (11).

Connecting the terminating resistor (operating mode "DMX slave" only)



picture 5

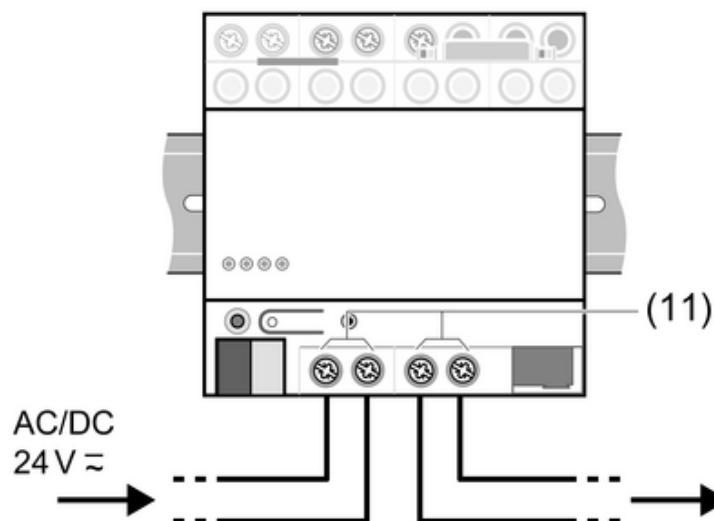
A DMX bus should be provided with a terminating resistor at its last device. Otherwise reflections at the end of the cable could lead to signal distortion.

Terminate cables only with the supplied terminating resistor (13).

- i** Only provide a DMX bus with a terminating resistor if the gateway of the last device is in the DMX bus line.
- i** There may never be more than one terminating resistor on a DMX bus.
 - Connect terminating resistor (13) to terminals **DMX In +** und **DMX In -** parallel to the DMX bus line.

Looping through external power supply

The two terminal pairs (11) can be used to loop through the external power supply (picture 6). The total current consumption of all looped-through loads may not exceed 1.5 A.



picture 6

4.2 Commissioning

Commissioning

The gateway is commissioned using a Windows PC and the software **DMX-Gate2** (or higher). The most recent updates of the software and the associated documentation are available on the Internet at www.elka.de.

Either the IP or the RS232 interface can be used to connect the PC to the gateway.

- i** To connect a PC directly to the IP connection, a crosslink network cable has to be used.
- i** To connect a PC directly to the RS232 interface, a RS232 cable (plug > socket) with 1:1 assignment (not a null modem cable) has to be used. Not the transmission rate (See Technical data).
 - Connect PC with the gateway via IP or RS232 connection.
 - Switch on PC.
 - Switch on external power supply.
 - Wait until the status LED **Power/Error** lights up green.
 - Start **DMX-Gate2** software and follow the instruction on the screen.

Loading the physical address

The physical address is loaded using ETS or **DMX-Gate2**.

Proceed as follows when assigning the physical address using ETS.

- Switch on KNX bus voltage.
- Press programming button (9) (picture 1).
- Download the physical address to the device using ETS.
- i** There is no application software for the gateway. Assignment of KNX group addresses is performed using the **DMX-Gate2** software. Use a dummy application to assign the group addresses in the associated ETS project and to create the filter tables properly.
- i** Assignment of the physical address using **DMX-Gate2** is described in the documentation for the software.

5 Appendix

5.1 Technical data

External supply	
Rated voltage AC/DC	AC/DC 24 V SELV ($\pm 10\%$)
Mains frequency	50 / 60 Hz
Power consumption	max. 2.0 VA
Ambient conditions	
Ambient temperature	-5 ... +45 °C
Storage/transport temperature	-25 ... +70 °C
Safety class	III
Fitting width	72 mm / 4 modules
Weight	approx. 175 g
Network communication	
IP transmission rate	10 / 100 Mbit/s
IP connection mode	RJ45 socket
RS232	
RS232 transmission rate	38.4 kbit/s
RS232 connection	9pole D-sub socket
KNX	
KNX medium	TP 1
Start-up mode	S mode
Rated voltage KNX	DC 21 V ... 32 V SELV
Connection mode KNX	Standard KNX/EIB connection terminals
Power consumption KNX	typical 150 mW
DMX	

Input interface

USITT DMX512-A

Output interface

USITT DMX512-A

Connection of power supply and DMX

Connection mode

Screw terminal

Single stranded

0.5 ... 4 mm²

finely stranded without conductor sleeve

0.34 ... 4 mm²

Finely stranded with conductor sleeve

0.14 ... 2.5 mm²

5.2 Warranty

We reserve the right to make technical and formal changes to the product, as long as they are the result of technical progress.

Our products are under warranty within the scope of the statutory provisions.

Please return the device, postage paid, to our central service department, giving a brief description of the fault:

ELKA-Elektronik GmbH

Service Center

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D-58509 Lüdenscheid

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