

KNX 12/24/48 Vdc 2-channel dimmer Tunable White

Code: EK-GD2-TP-2-LV



Datasheet STEKGD2TP2LV_EN

KNX standard bus luminaire with 12/24/48 Vdc 2-channel power supply, with brightness control function for LED sources, with white color temperature management and dimmable in PWM modulation. Suitable for use in KNX standard home and building automation systems.



REFLEKGD2TP2LV

EK-GD2-TP-2-LV

Description

The 2-channel Tunable White (TW) dimmer KNX 12/24/48 Vdc EK-GD2-TP-2-LV allows PWM brightness control of monochromatic LED loads and CCT, with white color temperature management. Designed specifically for dimmable LED strips and loads, it is compatible with the KNX system and suitable for use with 2 single channels or with dynamic TW color temperature control (warm or cold white) on a single channel, consisting of 2 coupled channels. Installation is simple via DIN rail mounting, ensuring perfect integration into electrical panels. The device has an integrated bus communication module with SELV voltage 30 Vdc, KNX certified.

Main functional characteristics

- ON/OFF control and dimming of individual or grouped luminaires
- PWM output frequency selection from ETS, 250 Hz to 6 kHz
- Two configurations available: one TW coupled channel, or two independent channels
- TW function: allows you to control two LED strips, one warm white and the other cold white, so that by appropriately adjusting the brightness of each channel, you can gradually switch between the minimum and maximum white color temperature

- Outputs can be connected in parallel to increase output power
- Fade time on and off, minimum and maximum brightness level, linear or logarithmic dimming curve settable via ETS
- Soft or instantaneous switching on and off, with settable delay
- Configuration of behaviour after power reset, bus ON/OFF, unloading via ETS
- Channels can be set by the ETS as independent, in parallel or with copy function from another channel
- Locking function, forced operation, staircase light, scenes, night, counter and logic functions for each channel, settable via ETS
- Automatic temperature regulation based on light intensity: as the brightness decreases, the color temperature of the strips connected in TW warms up, gradually moving from a neutral white to a warmer and more intense color
- Power failure alarm
- Auxiliary output function via relay (external) with status indication via KNX
- Installer mode (with KNX bus active): pressing the programming button for approx. 2 seconds activates/deactivates the flashing of the programming LED and the load every 1 s approx.

Technical Data

Inputs

- Constant input voltage: 12/24/48 Vdc
- Supply voltage: min: 10.8 Vdc .. max: 52.8 Vdc
- Max. input current: 12 A

Outputs

- PWM voltage output 12/24/48 Vdc
- Output current: 6A for a single channel, or 12A for 2 channels connected in parallel
- Rated power @12Vdc: 72 W for single output
- Rated power @24Vdc: 144 W for single output
- Rated power @48Vdc: 288 W for single output

Dimming

- PWM dimming mode in the range 250 Hz to 6 kHz
- Dimming range: 1-100%.

Environmental conditions and other characteristics

- Operating temperature: -20 °C ... + 40 °C
- Storage temperature: -40 °C ... + 60 °C
- Transport temperature: -40 °C ... + 60 °C
- Max. nominal enclosure temperature (t_a): 50 °C
- Relative humidity: 91% non-condensing
- Degree of protection: IP00 (IP20 in junction box or switch cabinet)
- Power and load wiring: 0.05 ÷ 2.5 mm² (30 ÷ 12 AWG)
- KNX bus wiring: 0.6 ÷ 0.8 mm² (19 ÷ 18 AWG)
- Wire stripping: 8.0 mm
- Plastic casing
- Luminaire for flush-mounting or panel mounting on DIN rail (with accessory supplied)
- Weight: 37 g
- Dimensions (WxHxD): 53 x 61 x 29 mm

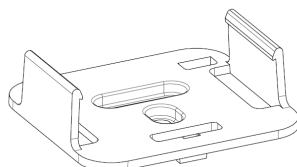
Protections

- Input overvoltage protection
- Output overvoltage protection
- Reverse polarity protection

Accessories

Rail mounting bracket

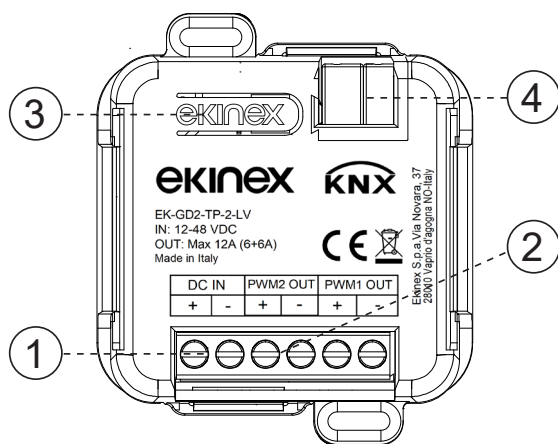
The luminaire can be mounted on a 35 mm profile rail (according to EN 60715) using the plastic bracket supplied.



Control, signalling and connection elements

The devices are equipped with a screw terminal for connecting the input voltage (1) and the output load (2). There is also a terminal for connecting the KNX bus (4) and a button for local installer test and KNX programming with LED (3).

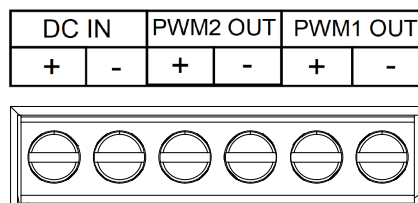
In the presence of KNX power supply, a local ON/OFF test can be performed by the installer: by pressing the programming button for approximately 2 seconds, the programming LED and the connected load will flash approximately every 1 second. To deactivate the flashing, press and hold the button again for approximately 2 seconds.



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No.	Abbreviation	Link
1	DC IN	Input voltage connection terminal
2	PWM1 OUT	Output load connection terminal channel 1
	PWM2 OUT	Output load connection terminal channel 2
3	-	KNX programming button and LED
4	-	KNX bus terminal

Below is the terminal detail for input power supply and output loads.



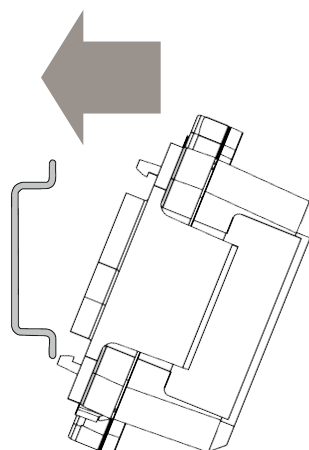
Power and load terminal for
EK-GD2-TP-2-LV

Abbreviation	Link
DC IN	12/24/48 Vdc input power supply
PWM1 OUT	Output load connection terminal channel 1
PWM2 OUT	Output load connection terminal channel 2

Assembly

The luminaires have an IP00 degree of protection (IP20 in a junction box or switchboard) and are therefore suitable for use in dry indoor environments. They can be mounted in flush-mounted boxes, or on a profile rail according to EN 60715 inside switchboards and electrical distribution cabinets, using the specific plastic support provided.

To assemble, insert the holder into the moulded profile of the device, then engage the notches on the profile rail from below. Finally, push the upper part towards the rail for final attachment.



When disassembling the unit, make sure that the inputs, outputs and power supply are disconnected. Using a screwdriver, slide down the latch pin and remove the unit from the profile rail.



Note: For installations in switchboards and distribution cabinets, the necessary ventilation must be ensured so that the temperature remains within the permissible operating range for the device.

Setup and Installation

The steps for installing the device are as follows:

1. Connect the loads to the PWM1 OUT (possibly PWM2 OUT) output terminals of the device
2. Connect the KNX bus to the corresponding terminal of the device
3. Connect the 12/24/48 Vdc power supply to the DC IN terminals of the device

Connection to the KNX bus network

The connection to the bus network is made via the KNX terminal, which is included in the scope of delivery and plugged into the appropriate receptacle on the front of the device at the top.

KNX terminal features

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



Warning! Only use KNX bus power supplies (e.g. ekinex EK-AH1-TP or EK-AM1-TP) for the supply of KNX bus lines. The use of other power supply devices may impair communication and damage devices connected to the bus.

Power connection and loads

Connection to the 12/24/48 Vdc power supply and loads is via the screw terminals at the bottom of the device.

Characteristics of power and load terminals

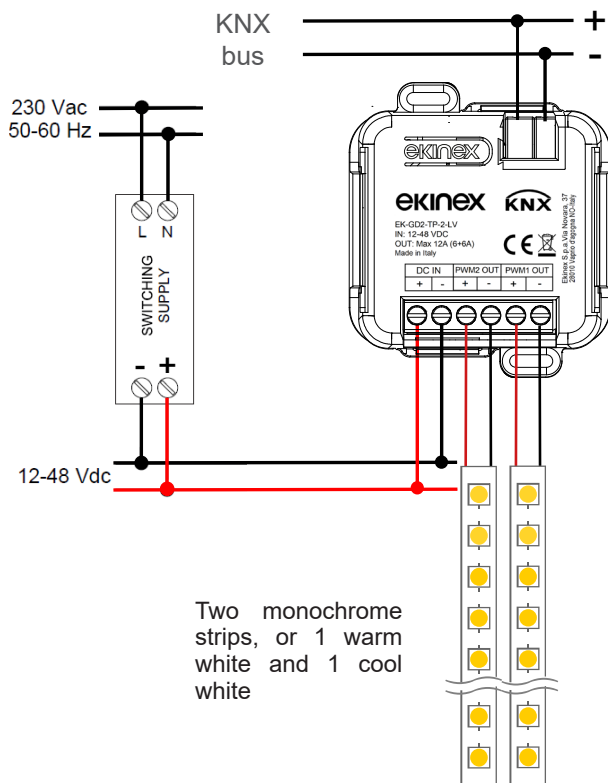
- Screw tightening of conductors
- Power and load wiring: $0,05 \div 2.5 \text{ mm}^2$ (30 $\div$ 12 AWG) for single cable
- Recommended conductor stripping: 8.0 mm

INSTALLATION TECHNICAL NOTES

- Installation and maintenance must be performed only if the power supply has been turned off.
- Installation and maintenance must only be performed by qualified personnel in compliance with current regulations.
- The product must be installed inside a wall mounting box or an electrical panel, where it is recommended to install a surge protector.
- The product must be protected by a suitably sized fuse.
- The product must be protected by a suitably sized magnetothermic switch on the main input line.
- The product must be installed in a vertical position with the front / label facing the front or in a horizontal position with the front / label facing upwards. Other product installation positions are not allowed.
- Do not connect inductive loads.
- Protection from accidental contacts is guaranteed by the casing.
- Use in thermally harsh environments could limit the output power.
- In the system, keep the 90-230Vac circuits and the non-SELV circuits separate from the SELV circuits at very low safety voltage and from the KNX bus
- It is absolutely forbidden to connect, for any reason whatsoever, directly or indirectly, the 90-230Vac mains voltage to the KNX bus or to the loads.
- Use double insulated cables.



Connection diagram is shown in the next page.



Wiring diagram for EK-GD2-TP-2-LV



Warning! The electrical connection of the appliance must only be carried out by qualified personnel. Incorrect installation may result in electric shock or fire. Before making electrical connections, ensure that the mains voltage is switched off.

Outputs

The cables connected to the outputs must be correctly dimensioned and must be insulated from any wiring or parts with different voltages. The length and type of connection cables must comply with the regulations in force.

Configuration and Commissioning

Configuration and commissioning of the device requires the use of the ETS programme® (Engineering Tool Software) V5 or later versions. These activities must be carried out in accordance with the building automation system project by a qualified professional.



Note. Configuration and commissioning of KNX devices require specialised skills. To acquire these skills, it is essential to attend courses organised at KNX certified training centres.

To configure the device parameters, the following must be loaded into the ETS programme® the corresponding application programme or the entire ekinex product database®. For detailed information on configuration possibilities, please refer to the device application manual available at www.ekinex.com.

Commissioning

For the commissioning of the appliance the following activities are required:

- Make the electrical connections as indicated;
- energize the bus;
- Switch the device into programming mode by pressing the programming button (3) on the front panel. In this operating mode the programming LED is lit;
- download the physical address and configuration to the device via the ETS® program.

At the end of the download, the device operation automatically returns to normal mode; in this operating mode the programming LED is off. The bus device is programmed and ready for operation.

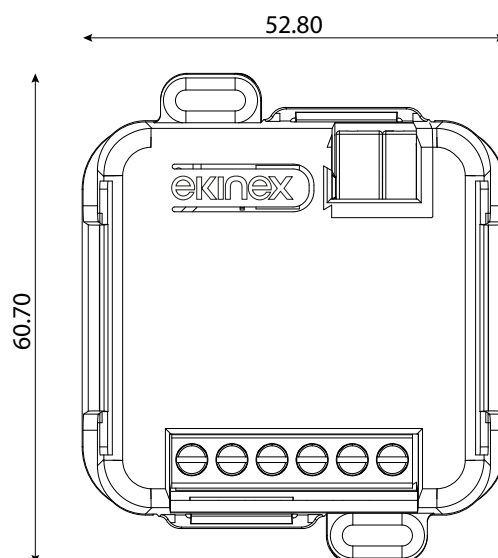
Device reset

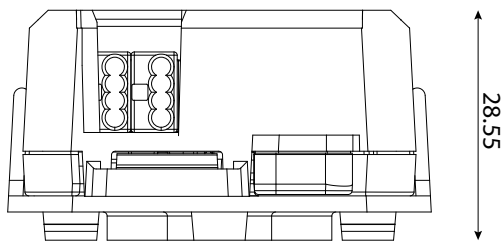
To reset the device, power off the KNX bus; then press the programming button and, while holding it down, power the KNX bus on again: if, after approx. 10 s, the programming LED flashes quickly, this means that the reset has been carried out. At this point, the addressing and configuration of the device via ETS must be carried out again.



Warning! The reset resets the device to the factory delivery state. The addressing and value of the parameters set during configuration are lost.

Dimensions [mm]





Marking

- KNX
- CE, UKCA: The product complies with the Electromagnetic Compatibility Directive (2014/30/EU), the Low Voltage Directive (2014/35/EU) and the RoHS III Directive (2011/65/EU). Tested in accordance with EN 63044-5-1:2019, EN 63044-5-2:2019.

Maintenance

The device is maintenance-free. Use a dry cloth for cleaning. Solvents or other aggressive substances must not be used.

Disposal



The product described in this data sheet at the end of its useful life is classified as waste from electronic equipment according to the European Directive 2012/19/EU (WEEE recast), implemented in Italy with no. 49 of 14 March 2014, and cannot be disposed of as undifferentiated municipal solid waste.



Warning! Improper disposal of the product can cause serious damage to the environment and human health. For proper disposal, please inform yourself about the collection and treatment methods prescribed by your local authorities.

Document

This data sheet refers to the A1.0 release of ekinex devices® code EK-GD2-TP-2-LV and is available for download at www.ekinex.com in PDF (Portable Data Format).

File name	Device release	Update
STEKGD2TP2LV_EN.pdf	A1.0	11 / 2025

Warnings

- The assembly, electrical connection, configuration and commissioning of the device may only be performed by trained personnel in compliance with the applicable technical standards and laws in force in the respective countries
- Opening the device housing results in immediate termination 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
- Defective ekinex® devices 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 data sheet is addressed to installers, system integrators and designers.
- For more information on the product, please contact ekinex Technical Support to the e-mail address: support@ekinex.com or consult the website www.ekinex.com
- Each ekinex® device has a unique serial number on the label. The serial number can be used by installers and system integrators for documentation purposes and must be added to any communication addressed to EKINEX technical support in case of device malfunction.
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