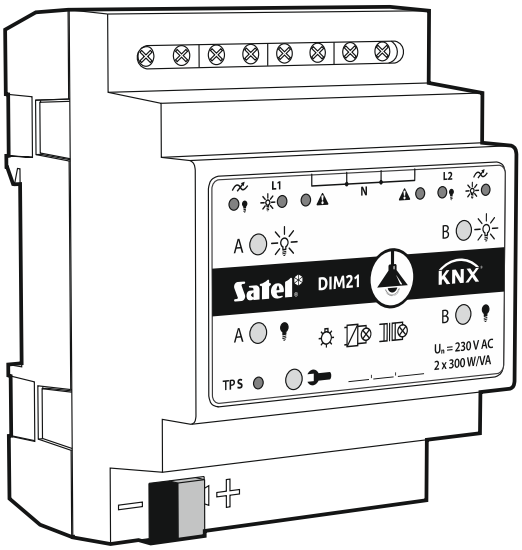
KNX-DIM21

Universal two-channel dimming actuator



Quick installation guide

Full manual is available on **www.satel.eu**

Firmware version 1.01

knx-dim21_sii_en 04/20

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IMPORTANT

The device should be installed by qualified personnel.

Prior to installation, please read carefully this manual in order to avoid mistakes that can lead to malfunction or even damage to the equipment.

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

SATEL aims to continually improve the quality of its products, which may result in changes in their technical specifications and software. Current information about the changes being introduced is available on our website.
Please visit us at:
http://www.satel.eu

The declaration of conformity may be consulted at www.satel.eu/ce

The following symbols may be used in this manual:

 - note;

 - caution.

This manual only regards the installation of module KNX-DIM21. For more information about module and its configuration, please refer to the full manual available at **www.satel.eu**.

1. Description

The KNX-DIM21 module is a universal two-channel dimming KNX actuator that allows stepless control of light sources up to 300 W per channel. The actuator can be used with resistive, inductive and capacitive loads (R, L, C).

This module is designed for use with 230 VAC power and may not be used for dimming light sources supplied with DC current, as this might damage the module and the connected load.

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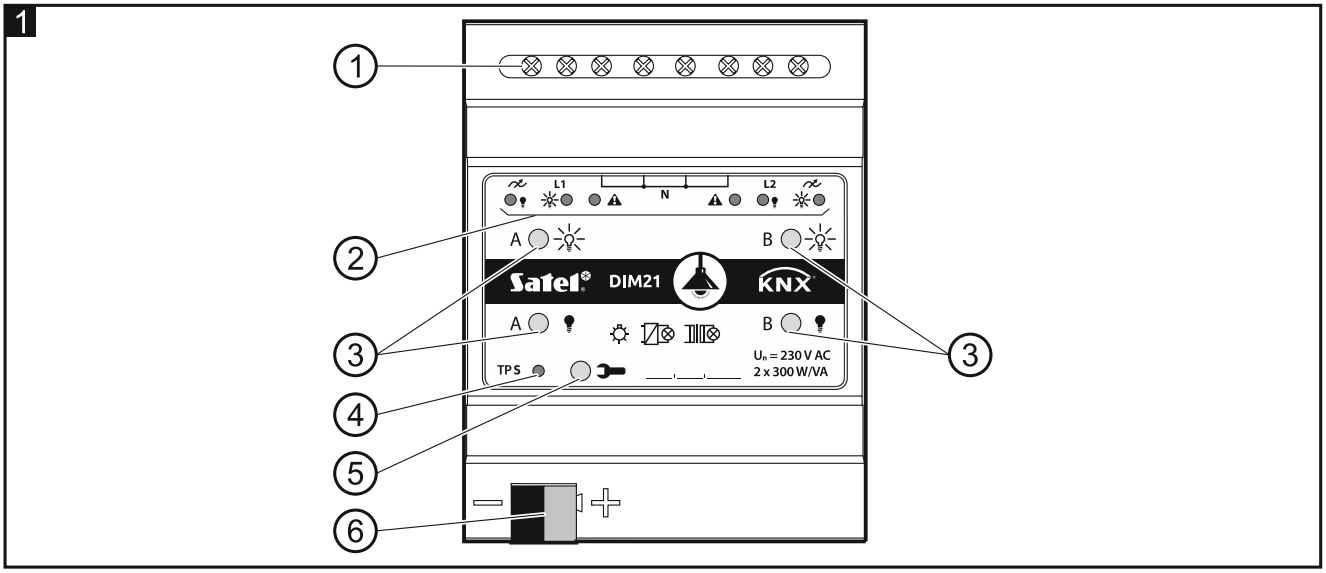


(1) load circuit terminals L1, L2, N, ⏦.

(2) LEDs to indicate channel status / troubles (☼ and ● – green, ⚠ – red) – see Table 1.

LED			A / B channel status
☼	●	⚠	
○	○	☼	blocked (startup delay)
☼	☼	○	mains synchronization / load detection
○	○	●	no load / unknown load type before detection
○	●	○	switched off
●	○	○	switched on
			Trouble type
○	○	☼	overload
☼	☼	☼	overheat
○	○	○	voltage trouble
●	●	●	hardware failure
○ – OFF, ● – ON, ☼ – flashing.			

Table 1.

If a hardware failure is reported, de-energize the 230 VAC load circuit and disconnect the KNX bus cable to reset the module. If, after power-on and restart of the module, the channel keeps on reporting failure, power off the module and

notify the service technicians about the fault. Further operation of the module may pose hazard to the health or life of the operator and may damage the module as well as the connected load.

③ buttons for manual control of the channels – see Table 2.

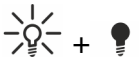
Button	Operation	Reaction
	short press	switch on
	long press	dim up
	short press	switch off
	long press	dim down
	short press	detection of load connected to the channel
The module will interpret button press as a long one when the button is held down longer than for 1 second.		

Table 2.

The brightness value set by using buttons is not saved to the non-volatile memory of the module.

Starting detection of the connected load by using the buttons is only possible when the automatic mode of load detection is selected for the channel in the ETS program (see full module manual).

You can also use the buttons to restore factory settings of the module (see "Restoring the module factory settings").

④ red LED – ON when a physical address is being assigned by using the ETS program. The address assignment can be activated manually with the button on the enclosure or remotely from the ETS program.

⑤ programming button (to be used to assign the physical address).

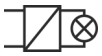
⑥ terminal to connect the KNX bus.

1.1 Load types

The module is designed for use with the following load types:

 – resistive (R),

 – inductive (L),

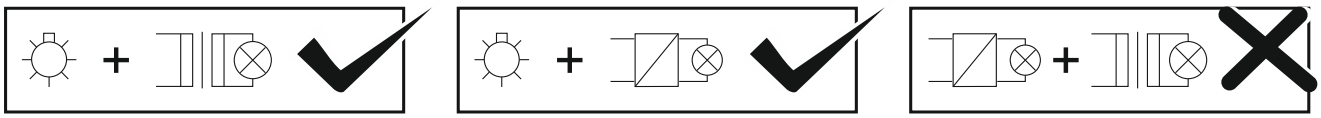
 – capacitive (C).

After connecting the mains voltage, the module can automatically recognize the type of connected load. How the connected load will be detected is defined separately for each channel in the ETS program (see the full manual to the module).

It is recommended that automatic detection of the connected load be performed. Selecting an incorrect type of load for the channel may damage the module and the connected load.

You can combine different types of loads within the lighting groups connected to one channel. Resistive (R) and inductive (L) loads, as well as resistive (R) and capacitive (C) loads can be combined into groups. For detailed information, see the full manual.

You must not combine inductive loads with capacitive ones. Connecting the loads of this type to one channel will damage the module.



1.2 Wiring diagram of module outputs

The module has two independent channels based on two independent circuits with a common neutral point.

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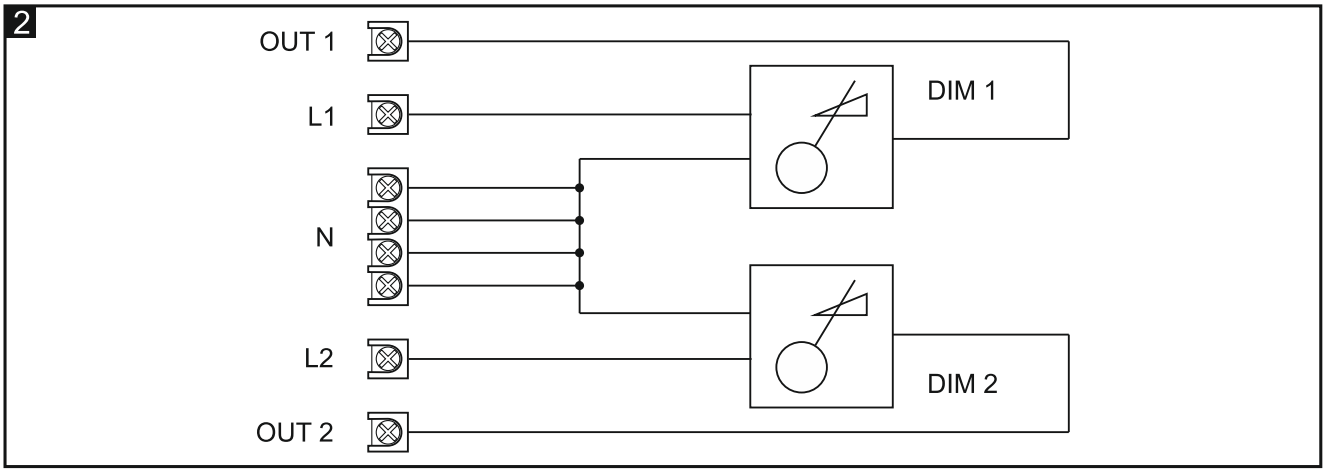

1.3 Enclosure

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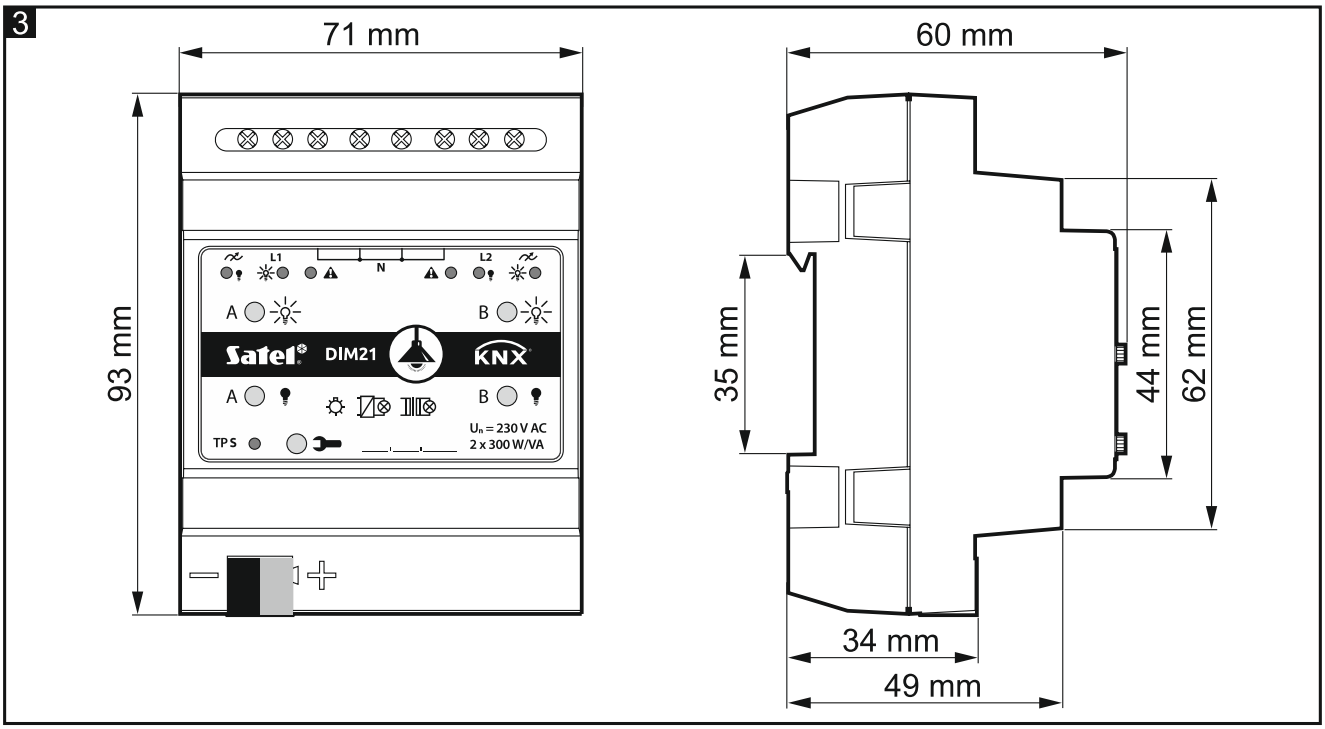

The module occupies 4 units on the 35 mm DIN rail.

2. Installation

Disconnect power before making any electrical connections.

The module is designed for indoor installation, in spaces with normal air humidity, e.g. in distribution boxes on 35 mm DIN rail.

1. Mount the module on the mounting rail.
2. Connect the loads to load terminals. For designations of the terminals see the front panel.

All connections should be made in accordance with the wiring diagram (see "Connection diagram").

3. Use the connection terminal to connect the KNX bus cable to the module.

The module is supplied with voltage from the KNX bus and requires no additional power supply.

4. Connect a computer running ETS program to the KNX bus and configure the module.

To configure the module, you will require a computer running the ETS program version 5.5 or newer, provided with USB or Ethernet (TCP/IP) connector. The SATEL ETS application file, which can be downloaded from www.satel.eu/ets, must be imported into the program.

2.1 Connection diagram

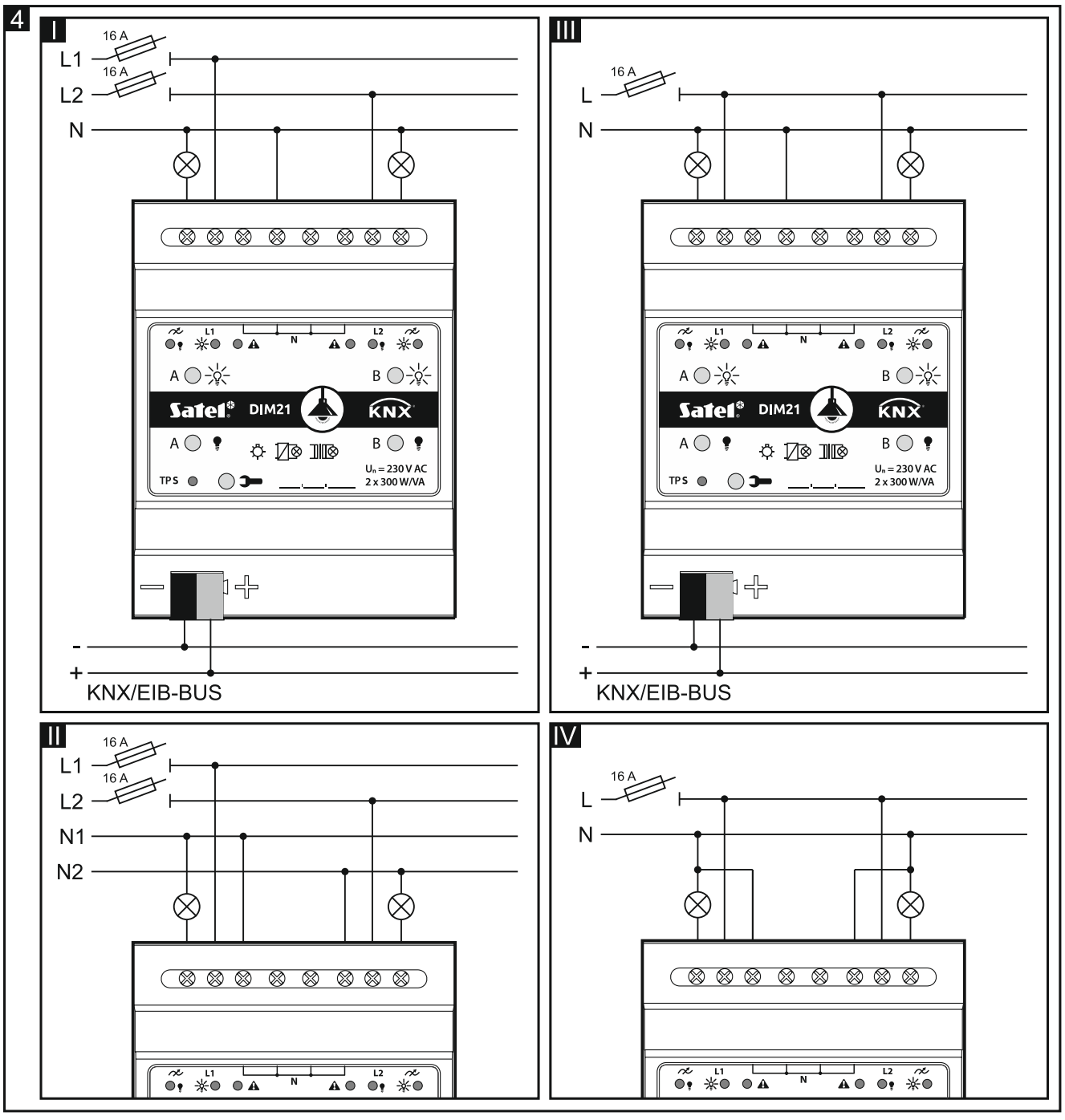

Fig. 4 shows how the load can be connected to the module:

I and II – multi-phase mode,

III and IV – single-phase mode.

The maximum load that can be connected to each channel is **300 W**. The load can only be connected to one channel.

Never connect the module channels in parallel to increase the maximum load power (Fig. 5). This may cause damage to the module and the connected load.

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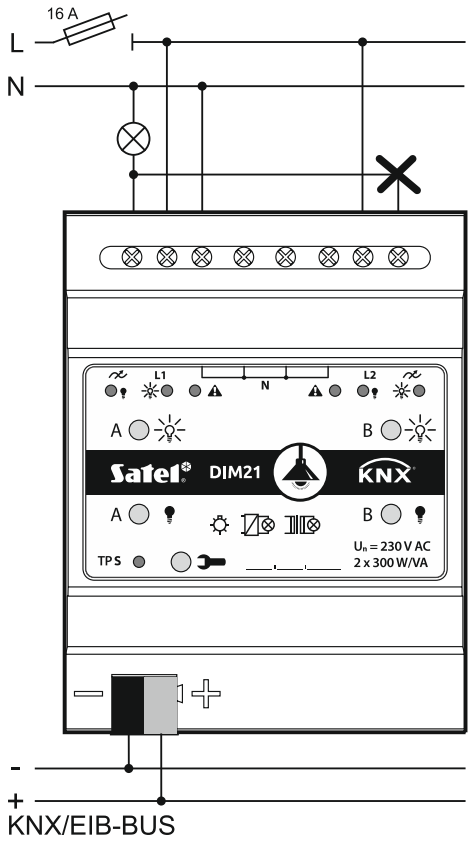

3. Restoring the module factory settings

1. Press simultaneously the four channel status control buttons situated on the module enclosure (see “Description”). The status LEDs above the buttons will come on.
2. Hold down the buttons until the status LEDs go off (about 10 seconds). Restart of the module will follow and the factory settings will be restored.

4. Specifications

Supply

Supply voltage (KNX bus) ..... 20…30 VDC

Current consumption from KNX bus ..... < 10 mA

Load circuit

Rated voltage U_n ..... 230 VAC

Mains frequency ..... 50/60 Hz

Maximum power loss ..... 4 W

Standby power loss ..... 0.8 W

Contact type ..... ε, MOSFET

Maximum output load
- Incandescent lamps ..... 300 W
- HV halogen lamps ..... 300 VA
- Inductive transformers ..... 300 W
- Tronic (electronic) transformers ..... 300 W
- HV-LED lamps ..... typical 3…60 W
- Compact fluorescent lamps ..... typical 3…60 W

Mixed load
- resistive-inductive ..... 20…300 VA
- resistive-capacitive ..... 20…300 W

Maximum device load ..... 600 W / VA

Connections

Maximum wire cross-section ..... 2.5 mm^2
Maximum tightening torque ..... 0.5 Nm

KNX parameters

Maximum time of reaction to telegram ..... < 20 ms
Maximum number of communication objects 58
Maximum number of group addresses 256
Maximum number of associations 256

Other parameters

Operating temperature range ..... 0°C...+45°C
Storage/transport temperature range ..... -25°C...+70°C
IP code IP20
Number of units on DIN rail 4
Enclosure dimensions ..... 70 x 92 x 60 mm
Weight ..... 160 g

Exceeding the limit values of the module working parameters may damage the module and pose hazard to human health or life.