# KNX-SA41 / KNXSA24

Universal Switch Actuator
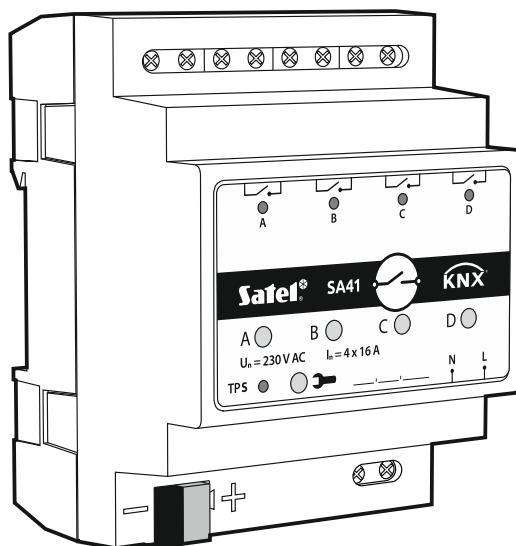
Quick installation guide

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

IMPORTANT

The device should be installed by qualified personnel.

Prior to installation, please read carefully this manual.

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

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Please visit us at:
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The declaration of conformity may be consulted at www.satel.eu/ce

The following symbols may be used in this manual:

- *i*   - note;

- ⚠   - caution.

This manual only regards the installation of modules KNX-SA41 and KNX-SA24. For more information about modules and their configuration, please refer to the full manual available at **www.satel.eu**.

1. Description

The KNX-SA41 / KNX-SA24 module is an universal switch actuator, which makes it possible to control electrical devices (lighting, sirens, ventilation).

i *The modules differ by the number of outputs, the KNX-SA41 having four and the KNX-SA24 eight relay outputs (see "Electric diagram of relay outputs").*
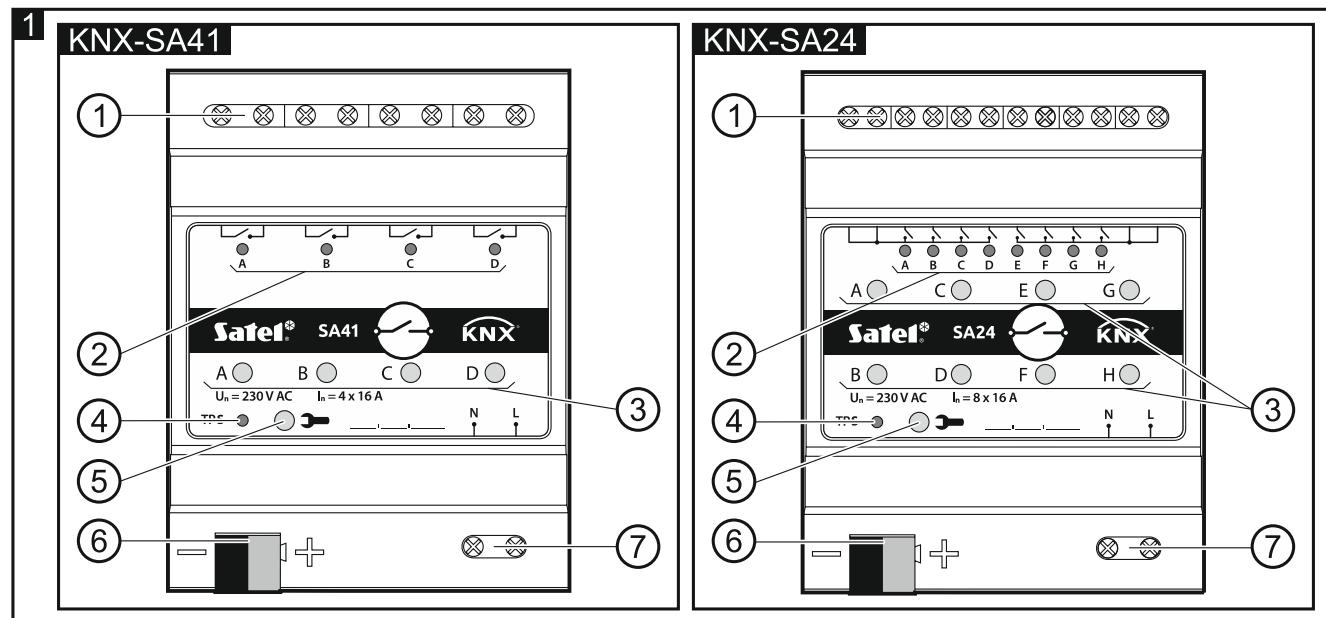
① load circuit terminals for connecting loads (2 terminals per channel).

② green LEDs indicating the channel state. One channel state LED is assigned to each channel:

    ON – channel enabled,

    OFF – channel disabled.

③ buttons to manually change the channel state. One ON/OFF button is assigned to each channel.

i *The manual change of channel state is monitored by the module. The values of communication objects responsible for storing information about the current state of individual channels are systematically updated, according to the changes made.*

The buttons are also used to restore the module factory default settings (see "Restoring the module factory default settings").

④ red LED – is ON when physical address is being set using the ETS program. Setting the address may be activated manually, using the ⌁ button on the enclosure, or remotely from the ETS program.

⑤ programming button (used when setting the physical address).

⑥ terminal to connect KNX bus.

⑦ mains supply terminals.

1.1   Electric diagram of relay outputs

The KNX-SA41 and KNX-SA24 modules differ by the number of independent circuits and the number of relays per each of these circuits. The KNX-SA41 has 4 independent circuits with 1 relay per circuit, while the KNX-SA24 has 2 independent circuits with 4 relays per circuit (Fig. 2).
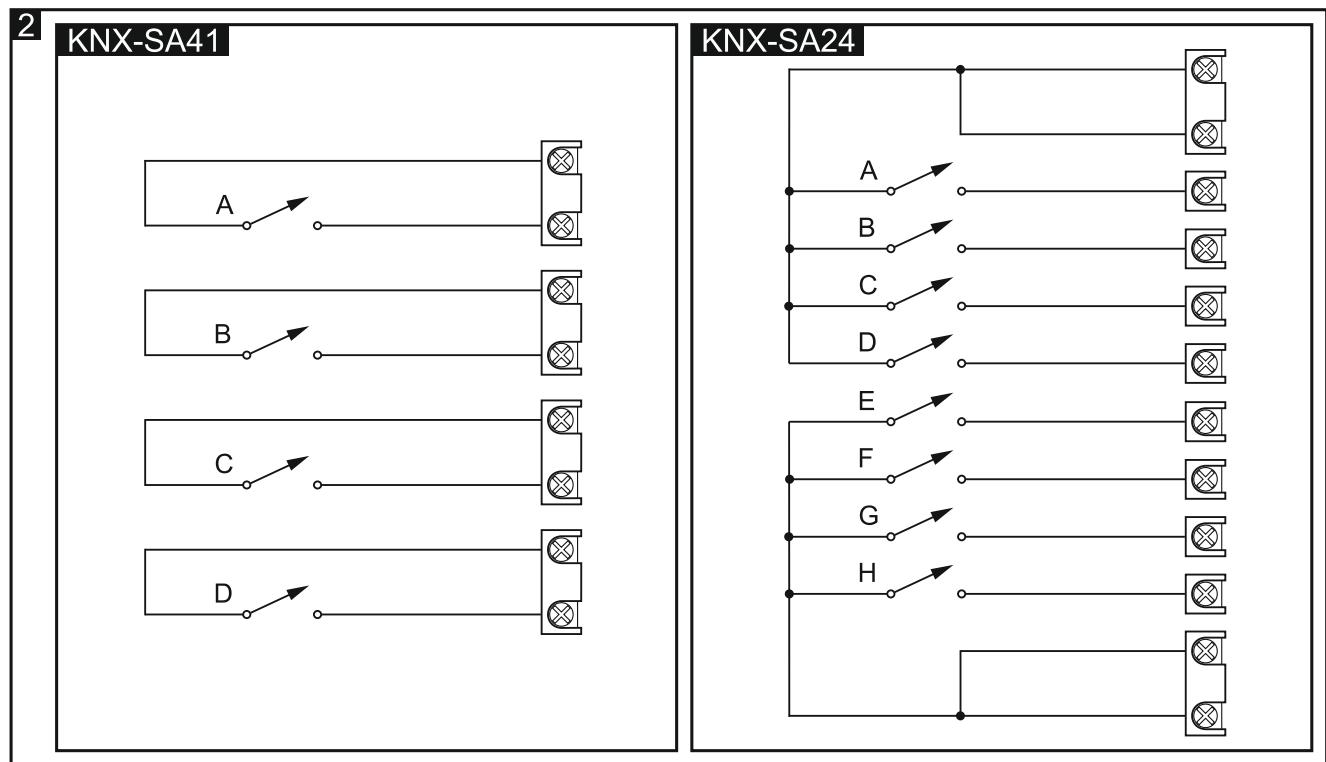
i | *Information on what is the number of circuits and relays in the module is contained in the module symbols (KNX-SA41/KNX-SA24). The first digit in the symbol means the number of circuits in the module, and the second – the number of relays per one circuit.*

1.2   Enclosure

PCB of the KNX SA41 and KNX SA24 modules is mounted in enclosures, which have identical shape and dimensions. The enclosures only differ by their panels for manual control of channel state. In the figure 3, the enclosure dimensions are presented based on the example of KNX-SA41 module. The module occupies 4 units on the DIN rail (35 mm).
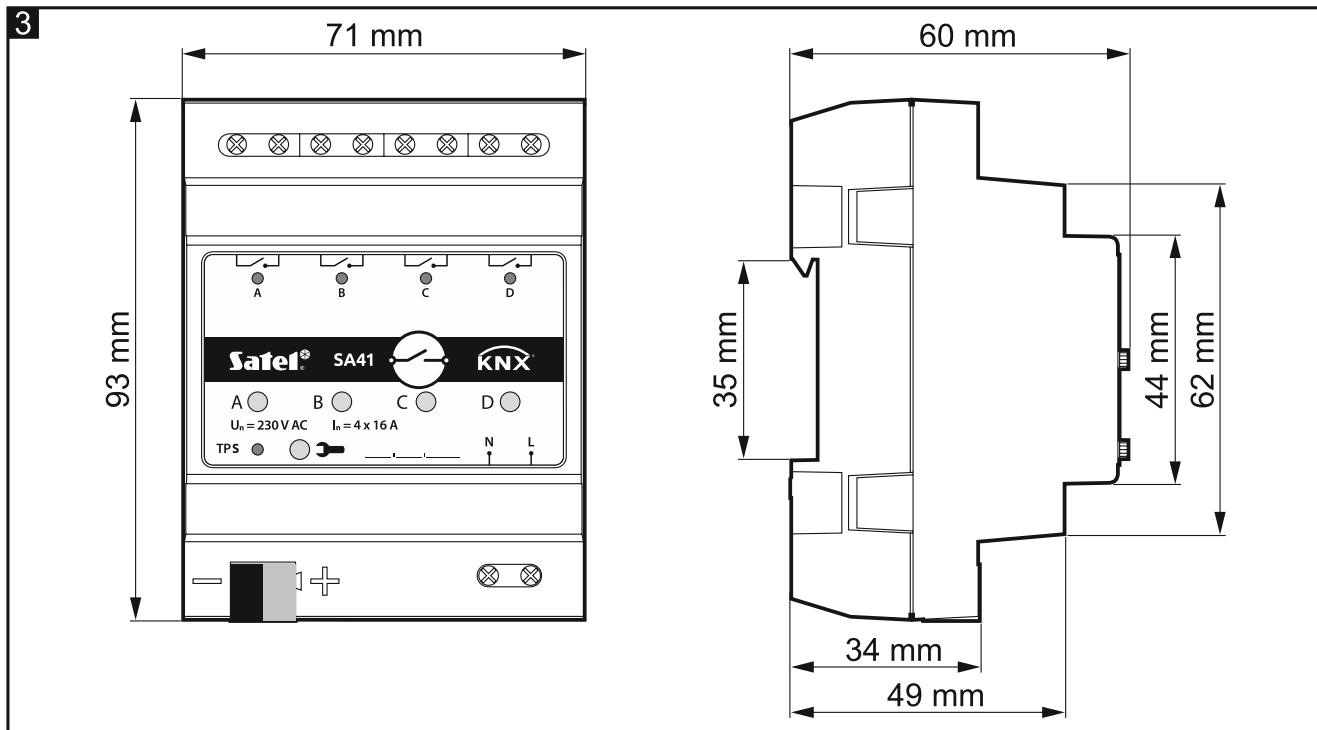
2.   Installation

⚠ **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 mounting rail.
2. Use the connecting terminal to connect KNX bus cable to the module.
3. Connect the loads to load circuit terminals.
4. Connect module power to N and L terminals.

i | *All connections should be made in accordance with the wiring diagram for the given module (see "Wiring diagram").*

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

i | *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   Wiring diagram
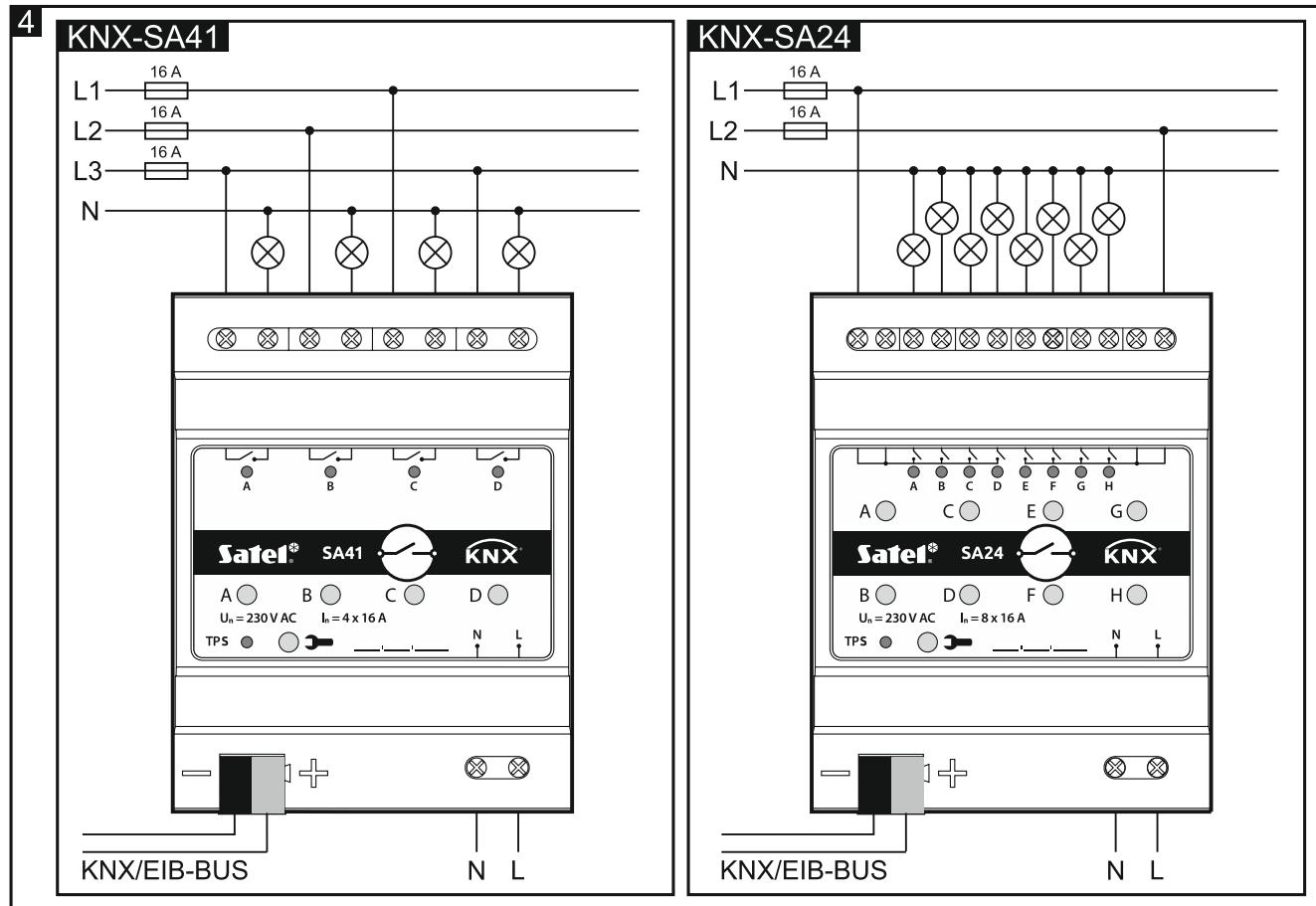
3.   Restoring the module factory default settings

1. Disconnect the module from KNX bus.
2. Power off the module.
3. Power on the module again.
4. Press simultaneously the four channel state control buttons situated on the module enclosure (see "Description"). For the KNX-SA24 module, use the control buttons grouped in the upper row of buttons (A,C,E,G) to reset memory. The indicator LEDs situated above the buttons will go on.
5. Hold down the buttons until the indicator LEDs go off (about 10 seconds). The module will restart with restored factory default settings.
6. Connect the module to KNX bus.

4.   Specifications

Power supply

Supply voltage ....230 VAC
Maximum power consumption .... 5 W
KNX bus voltage ....20…30 VDC
Current consumption from KNX bus .... <10 mA

Number of relay outputs

KNX-SA41 (4 independent circuits with 1 relay per circuit)..4

Relays

Rated load (capacity):

      AC1 .... 16 A / 250 VAC

      AC15 .... 3 A / 120 V   1.5 A / 240 V (B300)

      AC3 .... 750 W (single-phase motor)

      DC1 .... 16 A / 24 VDC

      DC13 .... 0.22 A / 120 V   0.1 A / 250 V (R300)

Minimum switching current .... 10 mA

Maximum inrush current .... 168 A 20 ms; 800 A 200 μs

Rated current .... 16 A

Maximum breaking capacity in AC1 category .... 4 000 VA

Maximum operating frequency:

      at rated load in AC1 category .... 600 cycles/hour

      no load .... 3 600 cycles/hour

Electrical life (number of cycles):

      resistive AC1, 600 cycles/hour .... $>10^5$ 16 A / 250 VAC

      resistive DC1, 600 cycles/hour .... $>10^5$ 16 A / 24 VDC

      AC3, I = 3.5 A .... $>2.5 \times 10^5$

      at incandescent lamp load, 1000 W .... $>0.9 \times 10^5$

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 KNX-SA41/KNX-SA24 .... 69/133

Maximum number of group addresses 256

Maximum number of associations 256

Mechanical 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

      KNX-SA41 .... 192 g

      KNX-SA24 .... 240 g

4.1   Maximum output loads

Resistive load .... 3680 W

Capacitive load .... 16 A, max. 200 μF

4.2   Maximum output loads for lighting

Incandescent lamps ....1000 W

HV 230V halogen lamps ....3680 W

LV halogen lamps:

      inductive transformer .... 2000 VA

      electronic transformer..2500 W

Fluorescent lamps:

      non compensated...3680 W

      parallel compensated .... 2500 W, 200 µF

      series compensated .... 3680 W, 200 µF

Compact fluorescent lamp (CFL):

      non compensated...3680 W

      parallel compensated .... 2500 W, 200 µF

High-pressure mercury lamps:

      non compensated...3680 W

      parallel compensated .... 3680 W, 200 µF

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