KNX R1-B4 compact Switching Actuator

Technical specifications and installation instructions

Item number 70574

1. Description

The potential-free output of the **Actuator KNX R1-B4 compact** switches one consumer load up to 16 Ampere.

Time functions such as an on/off delay or a staircase lighting function can be configured in the device application.

4 digital inputs are available for the connection of binary contacts.For example, a pushbutton can be connected here.

Functions:
- **Free of potential relay output** for **a consumer load** with up to 16 A. Designed as double terminal, so that two loads can easily be connected as a group.
- **Timer functions**: on and/or off delay, staircase lighting timer switch with adjustable pre-warning (light blinks prior to switch-off)
- **Scene control** for switching state with 8 scenes
- **4 binary inputs**

Configuration is made using the KNX software ETS 5. The **product file** can be downloaded from the ETS online catalogue and the Elsner Elektronik website on **www.elsner-elektronik.de** in the "Service" menu.

1.0.1. Scope of delivery
- Actuator
- Connection line for inputs

1.1. Technical specification

Housing	Plastic
Colour	White
Assembly	Flush-mounted (in connector socket)
Protection category	IP 20
Dimensions	Ø approx. 52 mm, depth approx. 24 mm
Weight	approx. 40 g
Ambient temperature	Operation -20…+45°C, storage -30…+85°C
Ambient humidity	5...80% RH, non-condensing
Operating voltage	KNX bus voltage
Current at the bus	relay not energised: 15 mA relay energised: 25 mA
Output	1 × output, free of potential power supply U | 2× OUT A1 Output load capacity: • 16 A with alternating voltage 250 V AC • UL approval UseGroup B up to 15 A at 250 V AC • UL approval UseGroup D up to 10 A at 250 V AC • 5 A with direct current 30 V DC Cable cross section: 0.5 to 1.5 mm²
Inputs	4× digital, potential-free, maximum cable length 10 m
Data output	KNX +/- bus connector terminal
BCU type	Integrated microcontroller
PEI type	0
Group addresses	max. 254
Assignments	max. 254
Communication objects	45

The product is compliant with the provisions of EU guidelines.

2. Installation and start-up

2.1. Installation notes

Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.

⚡ **DANGER!**
Risk to life from live voltage (mains voltage)!
There are unprotected live components within the device.
- VDE regulations and national regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.

Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.
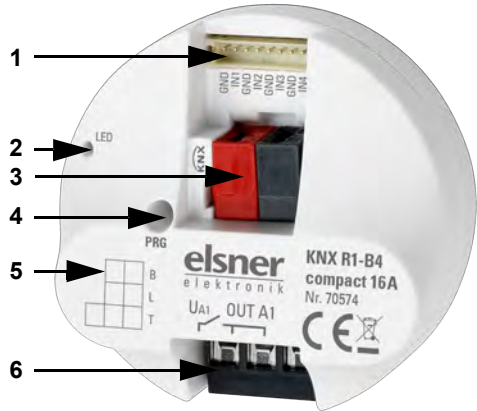
2.2. Connection

Fig. 1
1 Digital inputs: Slot for connection cable
2 Programming LED (recessed)
3 KNX plug connector +/-
4 Programming button (recessed)
5 Labeling field
6 Connetor for consumer (free of potential)
   U_{A1}: voltage (L), maximum 230 V AC
   2× OUT A1: switch consumer

The **Actuator KNX R1-B4 compact** is installed in a flush-mounted socket. The connection is made using a KNX connector on the KNX data bus. In addition, a power supply for the connected drive or consumer is necessary (output free of potential).

⚡ **Follow the guidelines and standards for SELV electric circuits while installing and cable laying of the KNX connection and inputs!**

The physical address is assigned by the KNX software. There is a button with a control LED for this on the actuator.

To connect the **digital inputs** (fig. 1 no. 1) use the attached breakout cable. The cables for the inputs can be extendet to up to 10 m. All GND connections of the inputs are bridged internally (black cable).
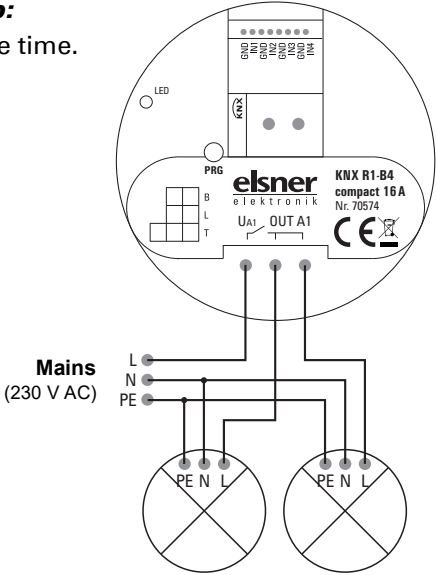

Fig. 2
Breakout cable for digital inputs:
Input 1: black (GND) / white
Input 2: black (GND) / yellow
Input 3: black (GND) / violet
Input 4: black (GND) / blue

2.2.1. Connection examples output

One consumer load:

Mains (230 V AC)
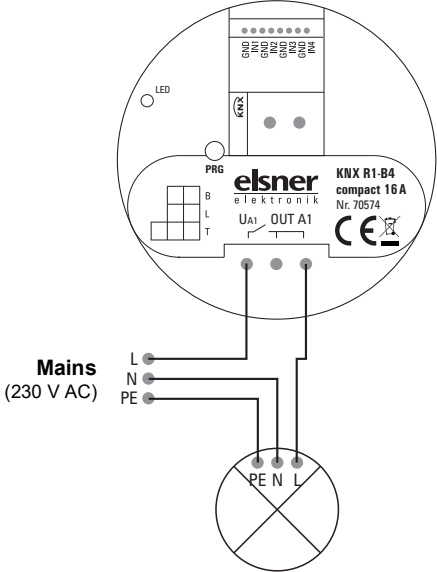
Two consumer loads as a group:
Both loads are switched at the same time.

2.3. Instructions for assembly and operational start-up.

Never expose actuators to water (e.g. rain) or dust. This can damage the electronics. You must not exceed a relative air humidity of 80%. Avoid condensation.

After the auxiliary voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.

3. Addressing of the device at the bus

The device is supplied with the bus address 15.15.255. You can program another address into the ETS by overwriting the 15.15.255 address or by teaching via the programming button.