# KNX RF R1-B2 compact 16 A
# Radio Switching Actuator

***Technical specifications and installation instructions***

Item number 70720


## 1. Description

The potential-free output of the **Radio Actuator KNX RF R1-B2 compact 16 A** 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.

2 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
- **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 16 scenes
- **2 binary inputs**
- Communication via radio KNX RF, S Mode

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 (socket installation) |
| Protection category | IP 20 |
| Dimensions | Diametre approx. 52 mm, depth approx. 29 mm |
| Weight | approx. 80 g |
| Ambient temperature | Operation -20…+50°C, storage -30…+85°C |
| Ambient humidity | 5...80% RH, non-condensing |
| Operating voltage | 230 V AC, 50 Hz |
| Output | 1 × output, free of potential<br>power supply U \| 1x OUT<br>Output load capacity:<br>• 16 A with alternating voltage 250 V AC<br>• UL approval UseGroup B up to 15 A at 250 V AC<br>• UL approval UseGroup D up to 10 A at 250 V AC<br>• 5 A with direct current 30 V DC<br>Cable cross section: 0.5 to 1.5 mm² |
| Inputs | 2× digital, potential-free, maximum cable length 10 m |
| BCU type | Integrated microcontroller |
| PEI type | 0 |
| Group addresses | max. 254 |
| Assignments | max. 254 |
| Communication objects | 27 |
| Radio frequency | 868,3 MHz (KNX RF) |

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.

**WARNING!**
**Risk of injury caused by components moved automatically!**
If the wireless connection between the control unit and the wireless actuator is interrupted, connected devices can no longer be operated.
- For that reason do not connect drives to the wireless actuator which could be hazardous to human life!

## 2.2. Notes on wireless equipment

When planning facilities with devices that communicate via radio, adequate radio reception must be guaranteed. The range will be limited by legal regulation and structural circumstances. Avoid sources of interference and obstacles between receiver and transmitter, that could disturb the wireless communication. Those would be for example:

- Walls and ceilings (especially concrete and solar protection glazing).
- Metal surfaces next to the wireless participants (e. g. aluminium construction of a conservatory).
- Other wireless devices and powerful local transmitters (e.g. wireless headphones), which transmit on the same frequency. Please maintain a minimum distance of 30 cm between wireless transmitters for that reason.

## 2.3. Connection

The **Radio Actuator KNX RF R1-B2 compact 16 A** is installed in a flush-mounted socket.

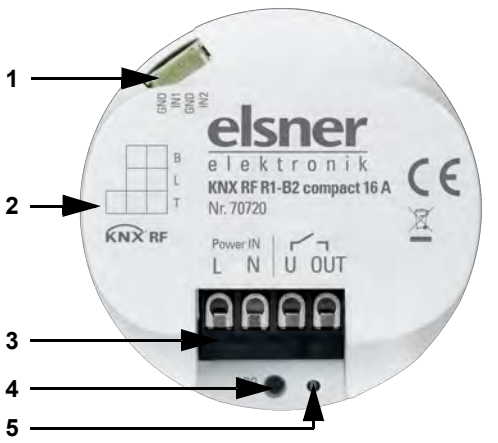



*Fig. 1*
*1 Digital inputs: Slot for connection cable*
*2 Labelling field*
*3 Connector for operating „Power IN“ 230 V AC, 50 Hz, L/N and for drive/consumers „OUT“(free of potential):*
*U: voltage, maximum 270 V AC*
*OUT: switch consumer*
*4 Programming button (recessed)*
*5 Programming LED (recessed)*

The connection to the **KNX data bus** is made via radio (KNX RF). The device is integrated into the KNX system via a KNX RF USB stick or via a media coupler (refer to the relevant manual/data sheet).

Connect the **operating voltage** (230 V AC, 50 Hz) to the “Power IN“ L/N terminals.

Connect **the load** to the U/OUT terminals. The output is free of potential and supplied with voltage U.

To connect the **digital inputs** (fig. 1 no. 1) use the attached cable. The cables for the inputs can be extendet to up to 10 m.

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

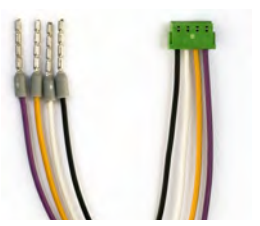
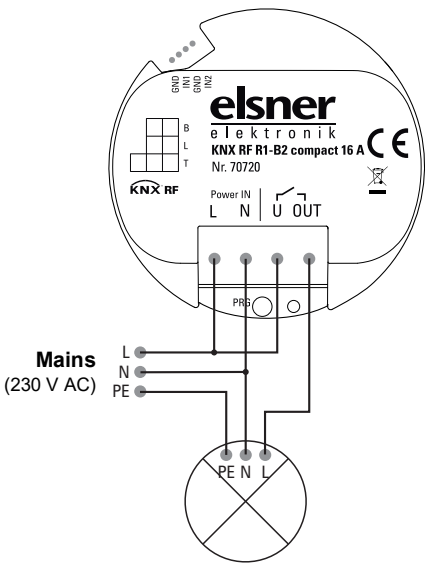


*Fig. 2*
*Breakout cable for digital inputs:*
*Input 1: black (GND) / white*
*Input 2: yellow (GND) / violet*

### 2.3.1. Connection examples output

***One consumer load 230 V AC:***




## 2.4. 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 bus 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.