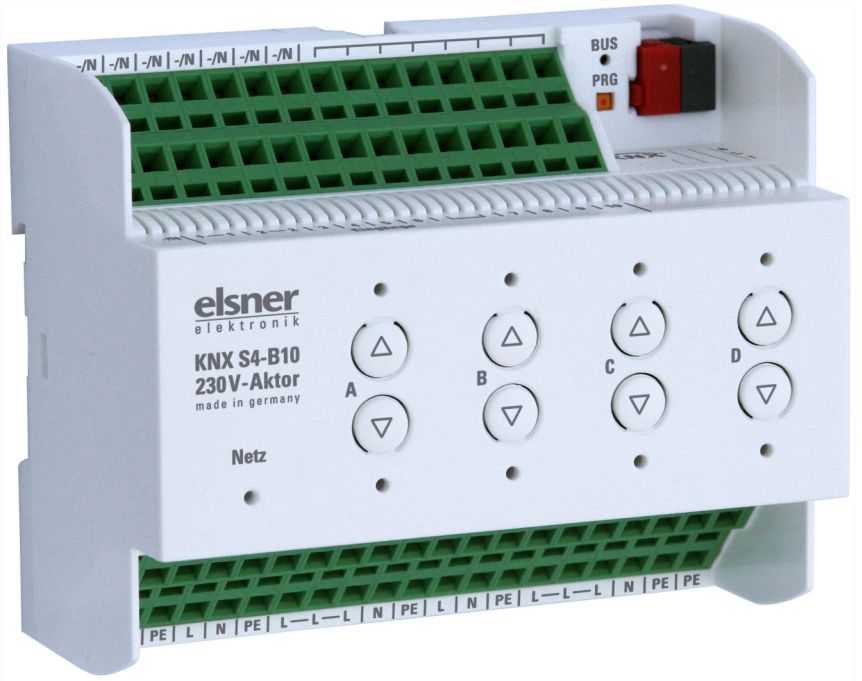
KNX S4-B10 230 V

Multifunctional Actuator

Technical Specifications and Installation Instructions

Item number 70137



Elsner Elektronik GmbH Control and Automation Engineering
Sohlengrund 16
D - 75395 Ostelsheim Phone +49 (0) 70 33 / 30 945-0 info@elsner-elektronik.de
Germany Fax +49 (0) 70 33 / 30 945-20 www.elsner-elektronik.de

Technical Service: +49 (0) 70 33 / 30 945-250

1. Description

The **KNX S4-B10 230 V Actuator** with integrated facade control has 4 multifunctional outputs, 4 pairs of buttons and monitoring LEDs. Each of the four multifunctional outputs can connect to either a drive with Up/Down control (blinds, awnings, shutters, windows) or two switchable devices (On/Off for light and ventilation). The connected drives and devices can be operated directly on
KNX S4-B10 230 V and via hand switches.

The automation can be specified externally or internally. Internally, there are numerous options available for blocking, locking (e.g. master-slave) and priority definition (e.g. manual-automatic). Scenes can be saved and called up via the bus (scene control with 16 scenes per drive).

Ten binary inputs can be used either for direct operation (e.g. hand switches) or as bus switches (or also for e.g. alarm notifications). The desired behaviour can be defined precisely through selection of the response times in Standard, Comfort or Deadman mode.

Functions:

- **4 multifunctional outputs** each for a **230 V drive** (shade, window) or for connecting two **switchable devices** (light, fan)
- Keypad with **4 button pairs** and status LEDs
- **10 binary inputs** for use as hand switches or as bus switches with variable voltage (6...80 V DC, 6...240 V AC)
- **Automatic runtime measurement** of the drives for positioning (including fault notification object)
- Position feedback (movement position, also slat position for blinds)
- Position storage (movement position) via 1-bit object (storage and call-up e.g. via button)
- Control via **internal or external automation**
- Integrated **shade control** for each drive output (with **slat tracking** according to sun position for blinds)
- **Scene control** for movement position with 16 scenes per drive (also slat position for blinds)
- Mutual **locking** of two drives using zero position sensors prevents collisions e.g. of shade and window (master–slave)
- Blocking objects and alarm notifications have different priorities, so safety functions always take precedence (e.g. wind block)
- Manual or automatic priority setting via time or communication object

Configuration is made using the KNX software ETS. The **product file** can be downloaded from the Elsner Elektronik homepage on **www.elsner-elektronik.de** in the “Service” menu.

1.1. Technical data

Housing	Plastic
Colour	White
Assembly	Series installation on mounting rails
Protection Category	IP 20
Dimensions	approx. 107 x 88 x 60 (W × H × D, mm) 6 width units
Weight	approx. 360 g
Ambient temperature	Operation -20...+70°C, Storage -55...+90°C
Ambient humidity	max. 95% rF, avoid condensation
Operating voltage	230 V AC, 50 Hz
Power consumption	Operation max. approx. 3.5 W Standby max. approx. 0.6 W
Current	on bus: 10 mA
Outputs	4 × outputs each with 2 connections for drive up/down or 2 devices, 230 V (PE/N/1/2), total. max 10 A and max. 4 A per connection
Inputs	10 × binary inputs, universal voltage (6...80V DC, 6...240 V AC)
Max. cable length Binary inputs	50 m
Data output	KNX +/- Bus connector terminal
BCU type	own microcontroller
PEI type	0
Group addresses	max. 1024
Assignments	max. 1024
Communication objects	535

The product conforms 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.

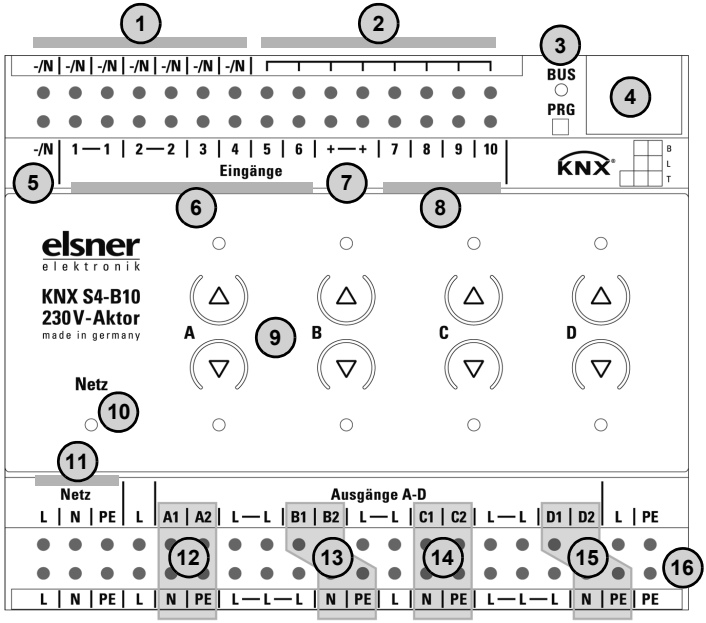
After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

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. Device design

The device is designed for series installation on mounting rails and occupies 6TE.



1) *–/N (bridged internally with terminal No. 5). When an external auxiliary voltage is used (6...80 V DC, 6...240 V AC), one of the –/N terminals is to be assigned with – or N*
2) *Free contacts (bridged internally)*
3) *Programmer LED and programmer buttons (PRG)*
4) *Bus terminal slot (KNX +/-)*
5) *–/N (bridged internally with terminal No. 1).*
6) *Binary inputs 1-6 (1 and 2: two bridged connections)*
7) *Internal auxiliary voltage + 24 V DC. Only for binary inputs!* ***Do not assign any external voltage!***
8) *Binary inputs 7-10*
9) *Up/Down button pairs and LEDs channel A-D*
10) *Power LED, Indication of operation mode. See “Indication of operation mode with the Power LED” on page 9.*
11) *Operating voltage input 230 V AC L/N/PE*
12) *Output A1 - A2: "Up"-"Down" or "Device1"-"Device2", max. 4 A*
13) *Output B1 - B2: "Up"-"Down" or "Device1"-"Device2", max. 4 A*
14) *Output C1 - C2: "Up"-"Down" or "Device1"-"Device2", max. 4 A*
15) *Output D1 - D2: "Up"-"Down" or "Device1"-"Device2", max. 4 A*

Nº 12-15 together max. 10 A

16) *All terminals L, N, PE of the lower connection strip are bridged internally with „Main L, N, PE“.*

STOP A mix of different auxiliary voltages for the binary inputs is not permitted.

2.2.1. Indication of operation mode with the Power LED

Behaviour	Colour	
On	Green	Normal operation. Bus connection/bus voltage available.
Flashes	Green	Normal operation. *No* bus connection/bus voltage available.
On	Orange	Device starts up or is beeing programmed via the ETS. No automatic functions are executed.
Flashes	Green (on), Orange (flashing)	Programming mode active.

2.2.2. Status display by the channel LEDs

Behaviour	LED	
To	top	Drive in top end position/device on.
To	bottom	Drive in bottom end position/drive on.
Flashes slowly	top	Drive moves up.
Flashes slowly	bottom	Drive moves down.
Flashes quickly	top	Drive in top end position, blocking active.
Flashes quickly	bottom	Drive in bottom position, blocking active.
Flashes quickly	both simultaneously	Drive in intermediate position, blocking active.
Extend	both	Drive in intermediate position.
Flashes	both alternately	Automatic runtime determination error. If the drive can be moved, drive it into the end position by hand (drive in/drive out completely or open/close) in order to restart the runtime determination. If the drive cannot be moved, check the connections.
"Runlight" above all LEDs	all channels	Incorrect application version was loaded. Use the version compatible with the device!

2.3. Notes on mounting and commissioning

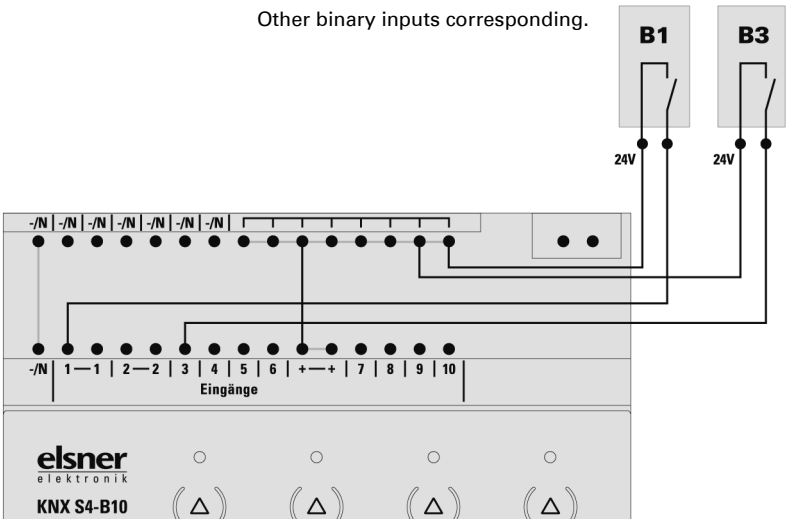
Device must not be exposed to water (rain). This could result in the electronic being damaged.
A relative air humidity of 95% must not be exceeded. Avoid bedewing.

After the operating 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.

For KNX devices with safety functions (e.g. wind or rain blocks), periodical monitoring of the safety objects must be set up. The optimal ratio is 1:3 (example: if the weather station sends a value every 5 minutes, the actuator must be configured for a monitoring period of 15 minutes).

2.4. Connection examples for binary inputs

2.4.1. Using the internal auxiliary voltage of the actuator



2.4.2. Using an external voltage