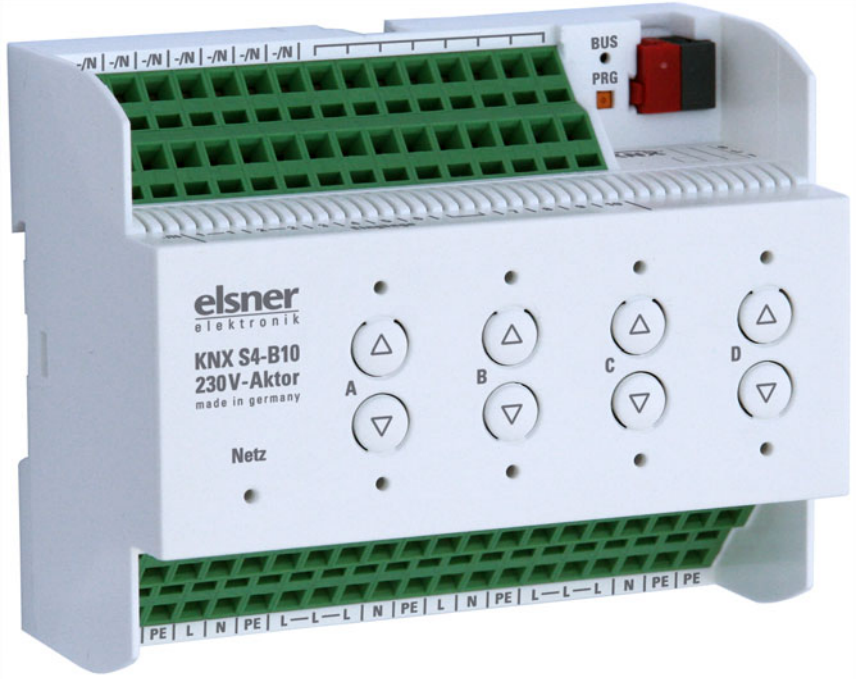
KNX S4-B10 230 V

Multifunctional Actuator

Technical Specifications and Installation Instructions



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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 performed using the KNX software ETS. The **programme file** (format VD), the data sheet and the manual 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 x drive/device 230 V (PE/N/1/2), total max. 10 A and max. 4 A per output
Inputs	10 x 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	518

The following standards have been considered for the evaluation of the product in terms of electromagnetic compatibility:
Transient emissions:
- EN 60730-1:2000 Section EMC (23, 26, H23, H26) (threshold category: B)
- EN 50090-2-2:1996-11 + A1:2002-01 (threshold category: B)
- EN 61000-6-3:2001 (threshold category: B)

Interference resistance:
- EN 60730-1:2000 Section EMC (23, 26, H23, H26)
- EN 50090-2-2:1996-11 + A1:2002-01
- EN 61000-6-1:2004

The product has been tested for the above mentioned standards by an accredited EMC laboratory.

2. Installation and start-up

2.1. Notes on installation

Warning, mains voltage!
National legal regulations are to be observed.

Installation, inspection, commissioning and troubleshooting of the device must only be carried out by a competent electrician.

Disconnect all lines to be assembled, and take safety precautions against accidental switch-on.

The device is exclusively intended for appropriate use. With each inappropriate change or non-observance of the instructions for use, any warranty or guarantee claim will be void.

After unpacking the device, check immediately for any mechanical damages. In case of transport damage, this must immediately be notified to the supplier.

If damaged, the device must not be put into operation.

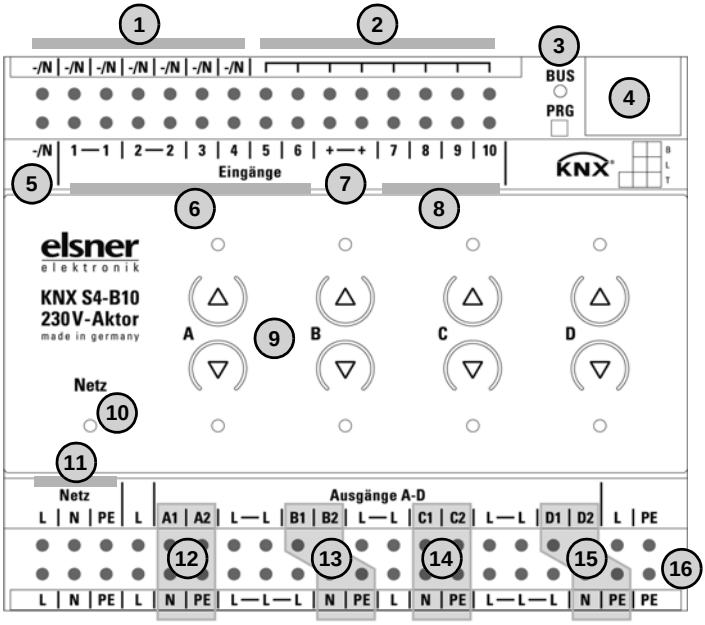
If an operation without risk may supposedly not be guaranteed, the device must be put out of operation and secured against accidental operation.

The device must only be operated as stationary system, i.e. only in a fitted state and after completion of all installation and start-up works, and only in the environment intended for this purpose.

Elsner Elektronik does not assume any liability for changes in standards after publication of this instruction manual.

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 6.*
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*

N° 12-15 together max. 10 A

16) *Additional outputs L, N, PE (e.g. to supply motors). All terminals L, N or PE of the lower connection strip are bridged internally.*

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.
Blinks	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.
Blinks	Green and Orange	Programming mode active.

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.

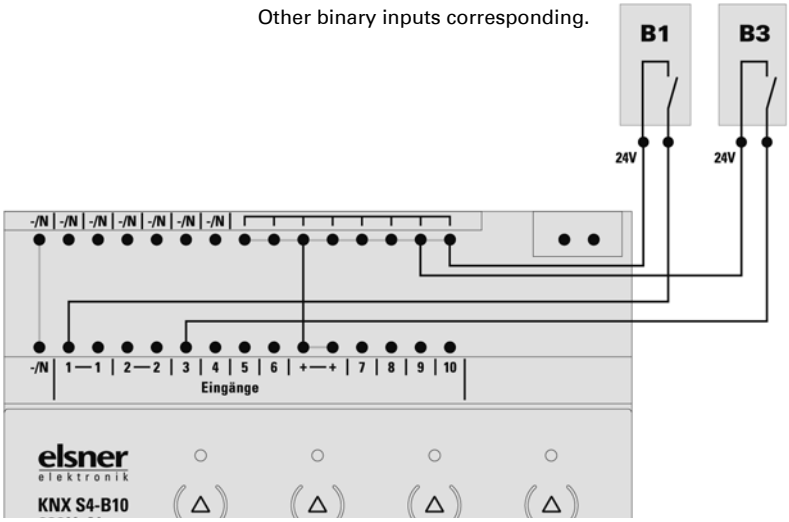
After the operating voltage has been applied, the device will enter an initialisation phase lasting 5 seconds. During this phase no information can be received via the bus.

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

Other binary inputs corresponding.



2.4.2. Using an external voltage

B1 directly at the phase.
B3 via internally bridged voltage.
Other binary inputs corresponding.

External auxiliary voltage
6...80 V DC resp. 6...240 V AC