

KNX S1E-BA4-UP PS

Actuator with integrated power supply for a 24 V DC motor

Technical specifications and installation instructions
Item number 70515



1. Description

The **Actuator KNX S1E-BA4-UP PS** with integrated façade controller regulates the 24 V DC motor for a shutter, an awning, a blind or window. The electronic output with polarity changer switches silently. An internal power supply transforms the 230 V AC mains voltage into 24 V DC to power the motor (500 mA maximum).

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

The **KNX S1E-BA4-UP PS** has four inputs that are used as binary inputs (switches, alarm messages etc.) or as analogue inputs for T-NTC temperature sensors.

Functions:

- Electronic (semiconductor) **24 V DC output** with polarity changer for one drive (shade, window)
- Integrated **power supply** transforms the 230 V AC mains voltage into 24 V DC to power the motor (500 mA maximum)
- **4 inputs** for binary contacts or temperature sensor
- **Automatic runtime measurement** of the drives for positioning (incl. fault reporting object)
- Position feedback (movement position, also slat position for shutters)
- Position storage (movement position) via 1-bit object (storage and call-up e.g. via buttons)
- Parameters for taking drive and mechanics downtimes into account
- Control via **internal or external automation functions**
- Integrated **shade control** with **slat tracking** according to sun position for shutters
- **Scene control** for movement position with 16 scenes per drive (also slat position for shutters)
- Mutual **locking** of two drives using zero position sensors prevents collisions e.g. of shade and window (master-slave)
- **Blocking objects** and alarm reports have different **priorities**, so safety functions always take precedence (e.g. wind block)
- Manual or automatic priority setting via time or communication object
- **4 temperature switching outputs** in the application program with adjustable threshold values (presetting the parameters or communication object)
- **Brief time limit** (movement command blocked) and **2 movement limits**

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.

1.1. Deliverables

- Actuator

1.2. Technical specification

Housing	Plastic
Colour	White
Assembly	Flush mounting (in junction box Ø 60 mm, 60 mm deep)
Protection category	IP 20
Dimensions	approx. 50 x 50 x 52 (W x H x D, 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
Current at the bus	10 mA
Power consumption	Standby: ca. 0.3 W (1.6 VA)
Output	1 x output 24 V DC with polarity changer for drive Up/Down (+/-motor). Load capacity: at 500 mA up to 60 seconds motor travelling time at 400 mA up to 150 seconds motor travelling time at 300 mA up to 320 seconds motor travelling time
Inputs	4x analogue/ digital, max. cable length 10 m.
Setting range for the T-NTC temperature sensor at the input	-30°C...+80°C
Data output	KNX +/- bus plug-in terminals
BCU type	Integrated microcontroller
PEI type	0
Group addresses	max. 1024
Assignments	max. 1024
Communication objects	184

The product is compliant with the provisions of EU guidelines.

2. Installation and commissioning

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. Installation

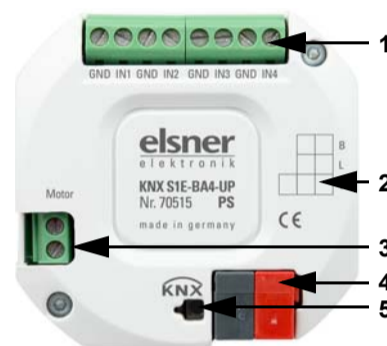


Fig. 1

- 1 Connector analogue/ digital inputs
- 2 Label field
- 3 Connector motor +/-
Connector independent of polarity:
Direction of rotation is set in the ETS.
- 4 KNX plug terminal +/-
- 5 Programming LED and programming button (countersunk)

Analogue/digital inputs connector assignment:

1: GND | 2: IN1 | 3: GND | 4: IN2 | 5: GND | 6: IN3 | 7: GND | 8: IN4
All GND connectors are internally bridged.



Fig. 2

- 1 Connector operating voltage 230 V AC L/N

2.3. Connection

The **Actuator KNX S1E-BA4-UP PS** is installed in a flush-mounted socket. The connection is made using a KNX connector on the KNX data bus. In addition 230 V AC are connected that are transformed into 24 V DC by the internal power supply to power the drive.

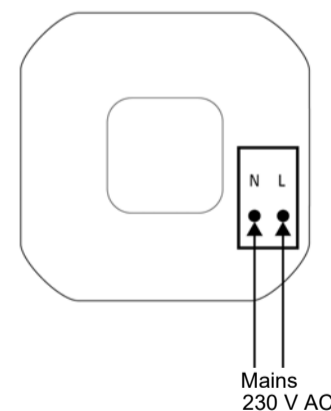


Fig. 3

Connection for the operating voltage

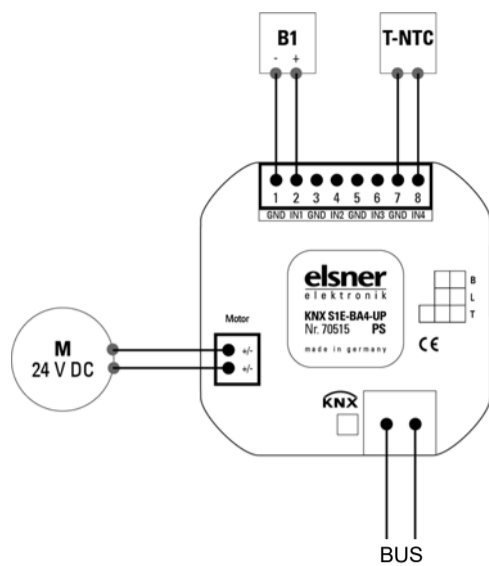


Fig. 4
Inputs:
Connection example with
binary contact at input 1 and tem-
perate sensor T-NTC to input 4.
Connection of the temperature
sensor is independent of the po-
larity.

Motor (24 V DC):
Connection of the drive is inde-
pendent of the polarity. Direction
of rotation is set in the ETS

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

2.4. Instructions for assembly and initial start-up

Never expose the actuator 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.

For KNX devices with safety functions (e.g. wind or rain blocks), it is important to set up periodical monitoring of the safety objects. The ideal 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).

3. Addressing of the device at the bus

The device is supplied with the bus address 15.15.250. You can program another address into the ETS by overwriting the 15.15.250 address or by teaching via the programming key.