

# KNX S1E-UP Multifunctional Actuators

## Technical specifications and installation instructions

Item numbers 70517 (KNX S1E-UP), 70518 (KNX S1E-BA2-UP), 70519 (KNX S1E-BA4-UP)



## 1. Description



With the **Actuators KNX S1E-UP** with integrated façade control have a multifunctional output which 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 electronic output switches silently.

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** and **KNX S1E-BA2-UP** models are equipped with inputs which are used as bus inputs (buttons, alarms, etc.) or for T-NTC temperature sensors. The **KNX S1E-UP** model does not have any analogue/digital inputs.

### Functions:

- Electronic **output for a 230 V-drive** (shade, window)
- **Inputs** for binary contact or temperature sensor (not on KNX S1E-UP) or connection of two **switchable devices** (light, fan)
- **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](http://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 54 (W x H x D, mm)
Weight	approx. 100 g
Ambient temperature	Operation -20...+50°C, storage -30...+85°C
Ambient humidity	5...80% RH, non-condensing
Operating voltage	KNX bus voltage
Current at the bus	10 mA
Output	1 x Output with 2 connections for drive up/down or 2 devices (Power supply, PE/N/Up/Down), Loadable to a maximum of 400 W
Minimum load for run time recording	40 W
Inputs	KNX S1E-UP: no inputs KNX S1E-BA2-UP: 2x analogue/digital KNX S1E-BA4-UP: 4x analogue/digital max. output 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	KNX S1E-UP: 147 KNX S1E-BA2-UP: 174 KNX S1E-BA4-UP: 200

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

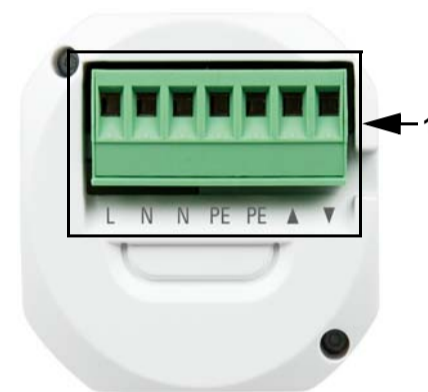


Fig. 1: Output side  
1 Connecting terminal for drive/consumers 230 V AC

#### Devices with inputs (KNX S1E-BA4-UP, KNX S1E-BA2-UP):

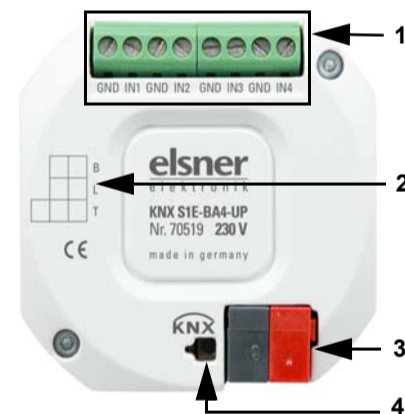


Fig. 2: Bus side  
1 Connecting terminal analogue/digital outputs (not present on KNX S1E-UP)  
2 Label field  
3 KNX plug terminal +/-  
4 Programming LED and programming button (countersunk)

#### Analogue/digital inputs connector assignment:

KNX S1E-BA2-UP: 1: GND | 2: IN1 | 3: GND | 4: IN2

KNX S1E-BA4-UP: 1: GND | 2: IN1 | 3: GND | 4: IN2 | 5: GND | 6: IN3 | 7: GND | 8: IN4

All GND connectors are internally bridged.

#### Device without input (KNX S1E-UP):

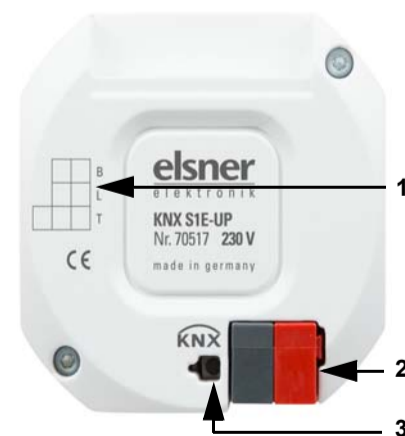


Fig. 3: Bus side  
1 Label field  
2 KNX plug terminal +/-  
3 Programming LED and programming button (countersunk)

### 2.3. Connection

The **Actuators KNX S1E-UP** are installed in a flush-mounted socket. The connection is made using a KNX connector on the KNX data bus. In addition, a 230 V AC mains supply is necessary for the connected drive or consumers (L).

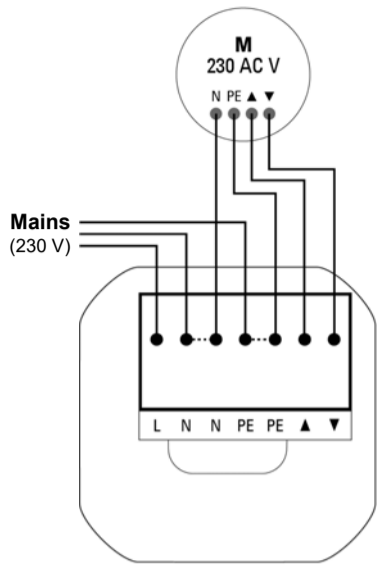


**Follow the guidelines and standards for SELV electric circuits while installing and cable laying of the KNX connection and inputs!**

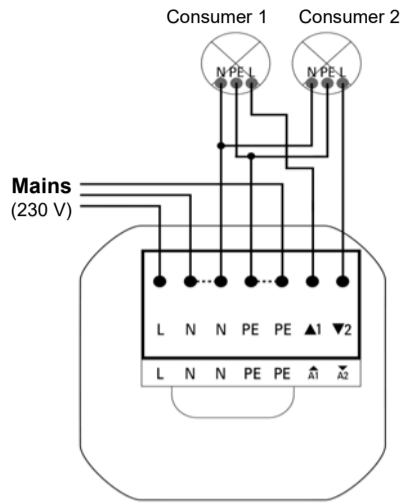
The physical address is assigned by the KNX software. There is a button with a control LED for this on the actuator.

### 2.3.1. Connection examples

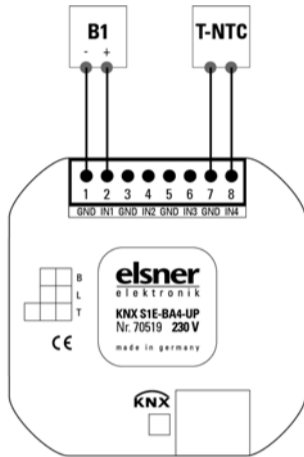
**230 V drive at the output:**



**Two 230 V consumers at the output:**



**Inputs:**



*Example KNX S1E-BA4-UP with binary contact on input 1 and T-NTC temperature sensor on input 4.*

*Connection of the temperature sensor is independent of the polarity.*

### 2.4. Instructions for assembly and initial 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.

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.