



#### Product and Applications Description

The JB520C23 solar protection actuator is a KNX device with one relay output. The device is installed in a 4 x 4 inch junction box. The bus is connected via a bus terminal block. The actuator electronics are supplied via the bus voltage.

The JB520C23 may be used to control blinds, shutters, awnings, windows, or doors.

The device is designed to drive (per channel) one AC 120V drive (motor) with electromechanical limit switches or with integrated electronics for disconnection at the limit positions.

For drives with electromechanical limit switches the actuator can be configured to detect the status of the electromechanical limit switches such that the travel time between the end positions can be measured via a synchronization run. The travel time of the blind / shutter is automatically measured from the upper end position to the lower end position and vice versa. The measurement is only reliable for drives with electromechanical limit switches. The travel time cannot be automatically adjusted for drives with integrated electronics for disconnection at the limit positions. These drives have to be controlled via a time limit. Their travel times have to be manually measured as precisely as possible and configured in the application program.

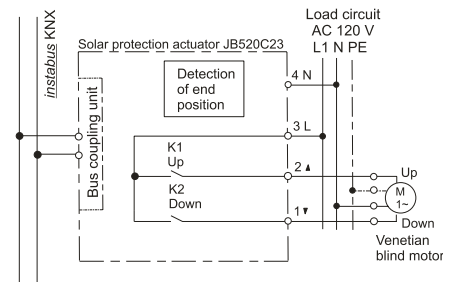
Parallel operation of several drives on one channel requires using a special separation relay. If such a separation relay is connected to the output to drive several drives in parallel, then the travel time has to be configured manually.

If the device is configured for automatic detection of the travel time, then parallel operation of several drives with electromechanical limit switches or mixed operation with drives with integrated electronics for disconnection at the limit positions is not permitted.

#### Application Program

The JB520C23 Solar protection actuator (JB module) needs the application program "07 B0 A1 Shutter Actuator 982A01".

#### Example of Operation



#### Technical Specifications

##### Power supply

- via the bus line
- KNX bus voltage:  
DC 24V (DC 21...30V) via KNX/EIB bus line
- KNX bus current: < 10 mA

##### Outputs

- Mains connection:  
carried out via the terminals for L and N of the actuator
- 1 drive channel with 2 relay contact outputs,  
- rated voltage: AC 120 V, 50/60 Hz
- rated current: 6A (resistive load)
- switching current at DC 24 V:  
- 6 A resistive load,  
- 4 A inductive load (L/R = 7 ms)

##### Maximum load

6 A @ 120 Vac (General Purpose)

##### Control elements

1 learning button:  
for switching between normal operating mode and addressing mode

##### Display elements

1 red LED:  
for monitoring bus voltage and for displaying normal mode/addressing mode

##### Connections

- Bus line : Bus connection pins for connection of the screwless bus terminal block (red-black) 0.6...0.8 mm Ø single core, strip insulation 5mm
- Load circuit:  
see Location and Function of Interface Elements

##### Physical specifications

- housing: plastic
- dimensions (L x W x D):  
length : 70 mm (2.76 inch)  
width : 90 mm (3.54 inch)  
depth: 44.6 mm (1.76 inch)
- weight: approx 198 g
- fire load: approx. 5 MJ
- Installation: in a junction box (min. dimensions (L-W-D))  
Length: 4 inch (101.6 mm)  
Width: 4 inch (101.6 mm)  
Depth: 2 inch (50.8 mm)

##### Electrical safety

- Degree of pollution (according to IEC 60664-1): 2
- Type of protection (according to EN 60529): IP 20
- Overvoltage category (according to IEC 60664-1): III
- Bus: safety extra low voltage SELV DC 24 V
- Device complies with: EN 50428

##### Electromagnetic compatibility

complies with EN 50428

##### Environmental specifications

- Ambient operating temperature:  
- 5 ... + 45 °C (+ 23 ... + 113 °F)
- Storage temperature:  
- 25 ... + 70 °C (- 13 ... + 158 °F)
- Relative humidity (not condensing): 5 % ... 93 %

##### Reliability

- Failure rate: 632 fit at 40°C

##### Markings

EIB, KNX, UL

#### Listings and Certifications

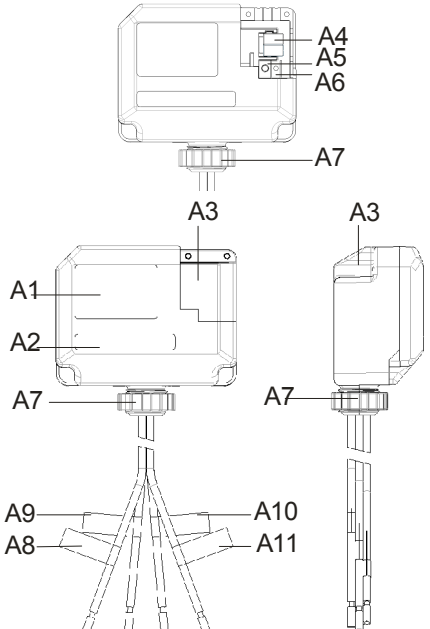
##### CE mark

complies with the EMC regulations (residential and functional buildings) and low voltage regulations

##### UL listed (E464611)

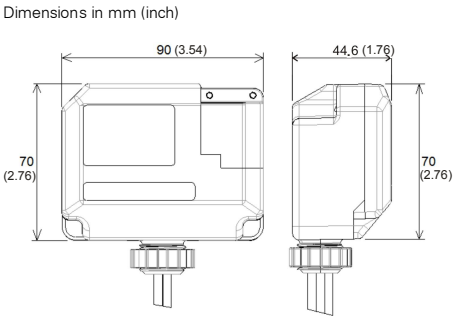
UL 916, Open Energy Management Equipment

Location and Function of the Interface Elements



- A1 Type label (with space for physical address of the device)
- A2 Identification number of the device
- A3 Protective lid over bus connection
- A4 Bus connection terminal block for single core conductors with 0.6...0.8 mm Ø
- A5 LED for indicating normal operating mode (LED off) or addressing mode (LED on); returns to normal operating mode automatically after receiving the physical address
- A6 Learning button for switching between normal operating mode and addressing mode for receiving the physical address
- A7 1/2 inch screw nut
- A8 Wire (red) Motor A up (AWG #14)
- A9 Wire (yellow) Motor A down (AWG #14)
- A10 Wire (black) Line (Hot) (AWG #14)
- A11 Wire (white) Neutral (AWG #14)

Dimension Diagram

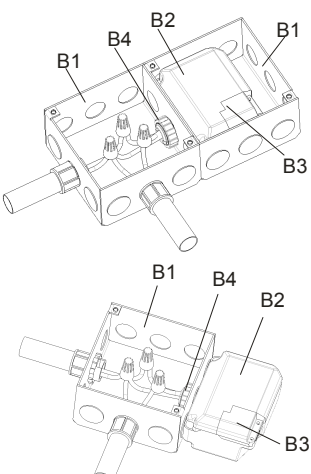


## WARNING

**Hazardous voltage.**  
Can cause death, or serious injury or property damage.

**The device must not be opened.**  
A faulty device should be returned to the local Siemens sales office or distributor.

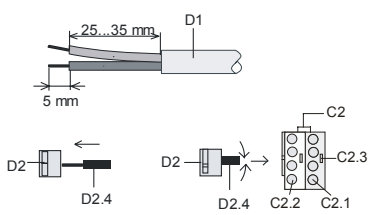
**The device must be mounted and commissioned by a factory trained person.**  
The prevailing safety rules must be observed!  
Mount in dry locations only!



- B1 4" x 4" Junction Box
- B2 Device
- B3 Bus connection pins of the module for connection of the bus terminal block for single core conductors with 0.6...0.8 mm Ø
- B4 1/2 inch screw nut

Mounting and Dismounting

- Mounting of a JB module:
  - Option 1 (mounting inside a J-Box)
    - Insert the thread of the JB module (B2) into the 1/2 inch knockout between two adjacent J-Boxes (B1)
    - Fasten the JB module (B2) with the 1/2 inch thread nut (B4)
    - Remove the protective lid (B3) and connect the bus wire to the bus terminal block (A4)
    - Connect the wires from the device to the field wires using wire nuts (not provided in package)
  - Option 2 (mounting outside of a J-Box)
    - Insert the thread of the JB module (B2) into the 1/2 inch knockout of the J-Box (B1)
    - Fasten the JB module (B2) with the 1/2 inch thread nut (B4) to the J-Box (B1)
    - Connect the bus wire to the bus terminal block under the protective cover (B3)
    - Connect the wires from the device to the field wires using wire nuts (not provided in package)
- Assignment of the Physical Address:
  - A short push (< 2 s) of learning button (A6) enables the addressing mode, which is indicated when the LED is continuously on (A5). The device returns to normal operating mode (LED Off) automatically after receiving the physical address or if the learning button is pushed again.
  - A very long push (> 20 s) of the learning button resets the device to factory settings. This is indicated by constant flashing for 8 seconds.
  - A long push (> 5 s up to 20 s) of the learning button enables the Connection Test for commissioning with Desigo. This mode can be disabled by a short push any time.
  - Install the protective lid (B3) and fasten with screws (provided in package)
- Dismounting a JB module:
  - Disconnect power to the module
  - Remove the wire nuts and bus connection
  - Unfasten the 1/2 inch thread nut (B4) connecting the JB module (B2) to the J-Box (B1)
  - Remove the JB module (B2) from the J-Box (B1)



Wiring

- Slipping off/on bus connection blocks  
The bus connection block consists of two components (C2.1 and C2.2) with four terminal contacts each. Take care not to damage the two test sockets (C2.3) by accidentally connecting them to the bus cable or with the screw driver (e.g. when attempting to unplug the bus connection block).
- Slipping off bus connection blocks  
- Carefully put the screw driver to the wire insertion slit of the bus connection block's grey component (C2.2) and  
- pull the bus connection block (C2) from the module.

Note

Don't try to remove the bus connection block from the bottom side. There is a risk of shorting-out the device!

Slipping on bus connection blocks

- Slip the bus connection block (C2) onto the guide slot of the module and
- press the bus connection block (C2) down to the stop.

Connecting and Disconnecting bus cables

Connecting bus cables

- The bus connection block (D2) can be used with single core conductors Ø 0.6...0.8 mm.
- Remove approx. 5 mm of insulation from the conductor (D1) and plug it into the bus connection block (D2) (red = +, grey = -)

Disconnecting bus cables

- Unplug the bus connection block (D2) and remove the bus cable conductor (D1) while simultaneously wiggling it.

Connecting mains and load circuit:

Connect wires

- Connect wire leads using wire nuts.