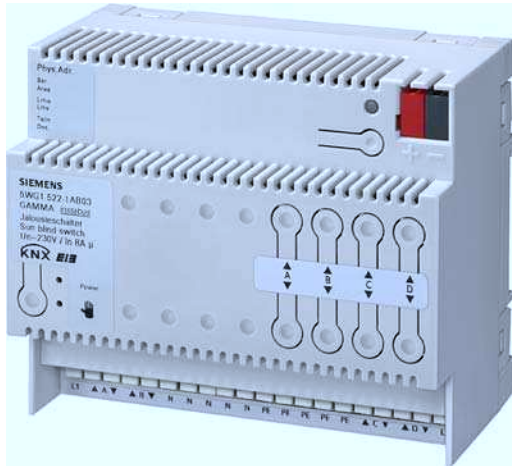| Venetian blind actuator N 522/03 4 x 230 V AC / 8 A	5WG1 522-1AB03

Product and functional description

The Venetian blind actuator N 522/03 is a DIN rail mounted device with N-system dimensions and a width of 6 module units. It can control four independent drives for carrying out blind movement and slats adjustment. Apart from the possibility to drive the sun-/sight guard directly into one of its two final positions it is also possible for both the blind and the slats to be moved independently into intermediate positions, defined in percentages, by positioning commands. The accuracy achieved by the positioning of the blind or the slats depends on the motor and drive used and not on the Venetian blind actuator.

Drives (motors) with electromechanical limit switches as well as drives with integrated electronic limit switches can be connected to the outputs of the N 522/03. It is not permitted to connect both types of drives to the same output or to connect drives with electromechanical limit switches in parallel, since the opening of the drive's limit switches is queried by the actuator and used to synchronize the movement times into the final positions. If a drive with integrated limit switch electronics is used the movement times into the final positions are not adjusted automatically. These drives are controlled exclusively by using the movement times from one final position to the other. Therefore the movement times of the motors should be measured as exactly as possible and set in the application program. When connecting a relay for group control of several drives to an output of the N522/03 this relay has to be controlled like a drive with integrated limit switch electronics.

The actuator electronics are supplied via an integrated power supply unit for AC 230V, independent of the KNX bus voltage. In direct mode it is therefore possible to carry out shutter movement or slats adjustment independently of the bus, even if no bus voltage is available, the N 522/03 still has to be taken into operation with the ETS (Engineer-

ing Tool Software) or communication over the bus has been interrupted.

With the N 522/03, "direct mode" is switched on by means of a pushbutton at bottom left on the upper side of the actuator. When this pushbutton is pressed for the first time, the yellow LED shines with a steady light to indicate the direct mode. This mode can be terminated either at any time with another press of the "direct mode" pushbutton or it will be terminated automatically if the set On-period expires without any pushbutton being pressed during this time. The yellow LED for indicating direct mode then goes out and the actuator is back in bus mode.

There are two push buttons available per drive output on the upper side of the Venetian blind actuator for direct operation. This is carried out via long and short push button actions in the same way as via a KNX push button.

Application program

The Venetian blind actuator N 522/03 can be used together only with application program 25 A4 Sunblind 981101, which can be configured and loaded with the Engineering Tool Software (ETS) from version ETS2 V1.3.

The program is structured so that, in the supplied state, there is sufficient basic functionality in combination with 12 basic communication objects for a simple application in standard mode available: the "Status direct mode" object, an "Alarm" object that influences all channels, a "Movement blockade" object that also influences all channels, a "Sun blind, central up/down" object that influences all channels, and two 1-bit command objects per channel which make it possible to move a blind to one of its limit positions and to stop the movement or to stepwise adjust the slats.

It can be selected via the ETS parameter window "Functions, Objects" whether each channel should be configured individually or whether configuration should be carried out identically for all channels together. Furthermore, the following functions and objects can be added as needed per device or per channel:

– An 8-bit scene control integrated into the actuator,
– Two 1-bit objects for saving and restoring any two desired sun protection positions 1 and 2,
– One "Alarm" object per channel,
– One "Movement blockade" object per channel,
– One "Sun blind, central up/down" object per channel.

In addition to the setting of the type of sun protection and the limit switching for all channels or the respective channel, further objects can be added via the parameter window "Channel A-D" resp. "Channel x":

– The objects for automatic mode,
– Two 8-bit command objects in standard mode (blind and slat position in %),

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− Two 8-bit status objects (blind and slat position in %) and optionally
− One "Sunshine on/off" object per device or channel that is used with the use of a blind control module to lock/release the blind and slat positioning in automatic mode after optionally the blind was moved to the upper or lower limit position.

Connection example

Jalousieaktor N522/03
Venetian blind actuator N 522/03
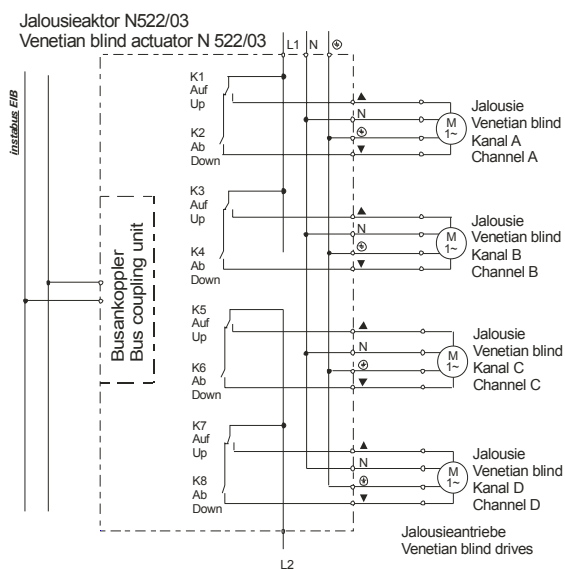
Notes for installation

The device may be used for permanent interior installations in dry locations within distribution boards or small casings with DIN rail EN 60715-TH35-7.5.

⚠ DANGER

• The device must be mounted and commissioned by an authorised electrician.
• When connecting the device, it should be ensured that the device can be isolated.
• The device must not be opened.
• For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.
• In the case of motors with electronic limit switches, the switching points must be adapted on site.

Technical data

Power supply
• KNX bus voltage: carried out via the bus line
• KNX bus current: 5 mA (only half a standard bus load!)
• Electronics:
  - integrated power supply for AC 230 V, +10 % / -15 %, 50 Hz
  - Mains connection: 2-pole (terminals L1 and N)
  - Power consumption: max. 1.5 W

Operating elements
• 1 push button:
  for toggling between normal mode / addressing mode
• 1 push button:
  for toggling between bus / direct operation
• 4 x 2 push buttons:
  for direct operation of the Venetian blind drives, independent of the KNX bus

Display elements
• 1 red LED: for displaying
  normal mode / addressing mode (off / on)
• 1 green LED: for displaying
  the operating voltage (On = AC 230V available)
• 1 yellow LED: for displaying
  bus / direct operation (off / on)

Inputs/outputs
• Mains connection: 2-pole (L1, L2) and 2x 5-pole for
  - supplying the internal electronics via the terminals for L1 and N,
  - the outputs A and B via the terminal for L1,
  - the outputs C and D via the terminal for L2
  - and for looping through the N- and PE-conductors to the connected motors.
• 4 load outputs for 4 drives: 4-pole (DOWN; UP; N, PE)
  - Rated voltage: AC 230 V, 50 Hz
  - Rated current: 8 A (resistive load) per relay contact
  - Switching cycles: >20.000 for cos φ = 0.4 and I = 2 A

Connections
• Mains and output circuits:
  - Plug-in terminals, insulation strip length 9 ... 10 mm
• The following conductor cross-sections are permitted:
  - 0.5 ... 2.5 mm² single-core
  - 0.5... 2.5 mm² finely stranded with plug connector, sealed crimp connection
  - 0.5 ... 1.5 mm² finely stranded, with connector sleeve
• *EIB*-Bus line:
  - pressure contacts on data rail,
  - screw-less bus connection block,
  - 0.6 ... 0.8 mm Ø single core, insulation strip length 5 mm

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⚠ DANGER

> **Due to the permitted printed conductor load care has to be taken when looping through the N- and PE-conductor that the total terminal current of 10 A may not be exceeded! If different L-conductors are connected to L1 and L2 each of them must be fused with a circuit-breaker of characteristic B or C for a max. rated current of 10 A. If the same L-conductor is connected to terminal L1 and to L2 then this L-conductor must be fused with a circuit-breaker of characteristic B or C for a max. rated current of 10 A. The PE and N terminals may only be used for connecting the blind motors that are controlled by the device.**

Mechanical data
- Housing: plastic
- Dimensions: DIN rail mounted device in N-system dimensions, width: 6 modules (1 module = 18 mm)
- Weight: approx. 335 g
- Fire load: approx. 4650 KJ
- Installation: snap-on fixing onto DIN rail EN 60715-TH35-7.5

Electrical safety
- Degree of pollution (in accordance with IEC 60664-1): 2
- Protection type (in accordance with EN 60529): IP 20
- Bus: safety extra-low voltage SELV DC 24 V
- Device complies with EN 50090-2-2 and EN 60669-2-1

EMC requirements
complies with EN 50090-2-2

Environmental conditions
- Ambient operating temperature: - 5 ... + 45 °C
- Storage temperature: - 25 ... + 70 °C
- Relative humidity (not condensing): 5 % to 93 %

Markings
KNX / EIB

CE mark
In accordance with the EMC guideline (residential and functional buildings) and the low voltage guideline

Location and function of the display and operating elements
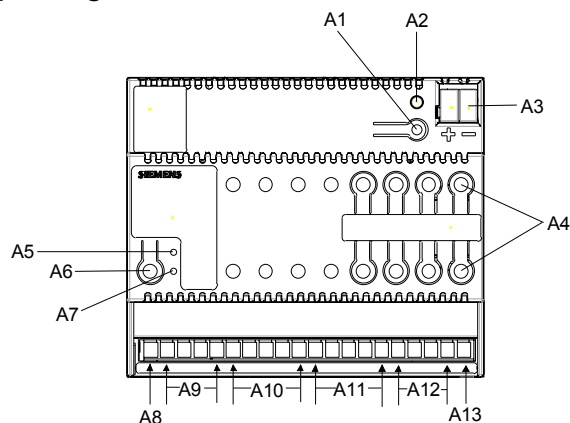

Figure 1: _Location of the display and operating elements_

A1 Button for toggling between normal / addressing mode for transferring the physical address
A2 LED for displaying normal mode (LED off) or addressing mode (LED on); it is automatically extinguished once the physical address has been transferred
A3 Plug for bus connection block
A4 Buttons for direct operation of the drive outputs A...D
A5 LED for displaying the operating voltage
A6 Button for toggling between bus mode and direct mode
A7 LED for displaying when direct mode is switched on
A8 Terminal for L1
A9 Terminals for outputs A and B
A10 Terminals for N
A11 Terminals for PE
A12 Terminals for outputs C and D
A13 Terminal for L2

Mounting and wiring
General description
The DIN rail mounted device with N-system dimensions can be inserted in N-system distribution boards, either surface- or flush-mounted, and wherever DIN rails EN 60715-TH35-7.5 are available.

Assembling the DIN rail mounted device (Figure 2)
- Place the device (B1) on the DIN rail (B2) and
- rotate the device downwards until the slide switch audibly clicks into position.

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Dismantling the DIN rail mounted device (Figure 2)
- Remove all the connected cables,
- press the slide switch (B3) down with a screwdriver and
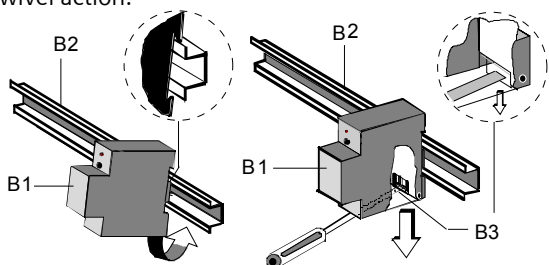- remove the device (B1) from the DIN rail (B2) with a swivel action.

Figure 2: _Assembling and dismantling the DIN rail mounted device_

Removing the bus terminal (Figure 3)
- The bus terminal is located on the top of the Venetian blind actuator N 522/03 (C1)
- Carefully insert the screwdriver into the black part of the bus terminal (C2.1) and pull the bus terminal forwards out of the Venetian blind actuator N 522/03 (C1).

Note

When removing the bus terminal, there is a danger of short circuits.

Plugging in the bus terminal (Figure 3)
- Place the bus terminal (C2) in the guide slot and press downwards until it reaches the stop.
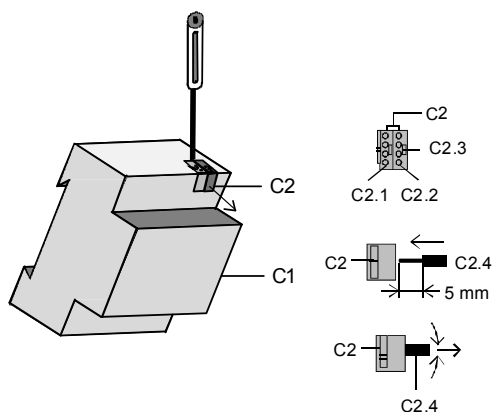
Figure 3: _Connecting and removing the cable_

Connecting the mains voltage and Venetian blind drives
- The connections are carried out with plug-in terminals.
- Strip approx. 9-10 mm of insulation from the conductor and slide into the respective terminal.

Mounting the insulating cap
If the device should be mounted on a DIN rail without an data rail, the contact system must be covered with the supplied insulating cap.
- Removing the locating clamp: (Figure 4)
  The locating clamp (D3) encloses the contact system (D2) on the rear of the Venetian blind actuator (D1). Insert the screwdriver between the DIN rail mounted device (D1) and the locating clamp (D3) and remove the clamp.
- Clipping on the insulation cap: (Figure 4)
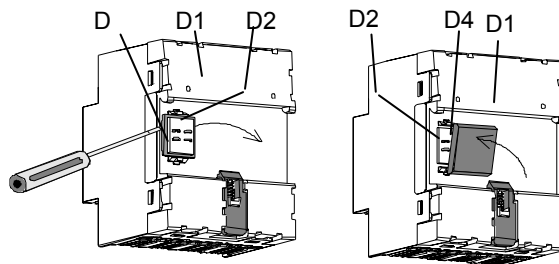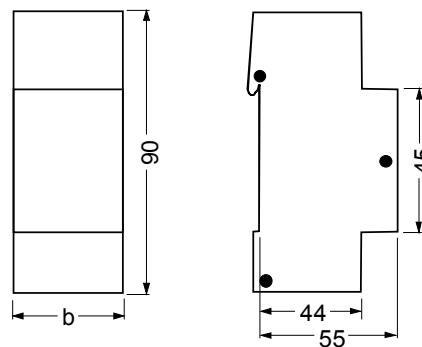 Place the insulating cap (D4) on the contact system and press so that it snaps in place.

Figure 4: _Covering the contact system_

Dimension drawing

Dimensions in mm

b = 6 module units; 1 module unit = 18 mm

General notes
- Any faulty devices should be returned to the local Siemens office.
- Should you have any additional queries, please contact our Technical Support department:

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