

**Shutter switch N 524  
(DC 24 V, 4 x 1 A)**
**5WG1 524-1AB01**

## Product and applications description



The shutter switch N 524 is a DIN rail mounted device with N-system dimensions and a width of 6 module units. It can control up to four independent DC drives for the positioning of roller shutters, venetian blinds, windows, dampers or valves. Apart from the possibility to travel the sun-/ sight guard directly into one of its two final positions it is also possible for both the shutter and its slats to be moved independently into intermediate positions, defined in percentages, by positioning commands (EIS 6 objects). The accuracy achieved by the positioning of the sunblind or the slats depends on the constancy of the DC voltage, the motor and the gear used and not on the shutter switch N 524.

The N 524 is designed exclusively for the control of DC drives with electromechanical limit switches. It is allowed to connect several DC drives with electromechanical limit switches in parallel to the same output (channel) of the N 524 as long as the total current of 1 A per output is not exceeded. It may be exceeded only for a short time at the start of a positioning.

The travel time from one final position to the other has to be measured and the corresponding software parameter to be set to the measured value. When controlling venetian blinds the positioning time from the vertical to the horizontal slat position has to be measured and entered as accurately as possible.

For supply of the drives controlled by the N 524 an external DC power supply has to be connected to the corresponding terminals of the N 524. The DC voltage should be stabilised as voltage oscillations result in speed oscillations of the drive (different travel times, inexact intermediate positions). The external DC power supply may be rated between 6V and 24V. This means that also drives with a rated voltage of 6V or 12V may be controlled by the N 524. But all drives connected to the

same N 524 must be rated for the same voltage and the max. allowed current of 1A per output must not be exceeded.

The electronics of the N 524 is supplied, independent of the EIB bus voltage, via an integrated power supply unit to be connected to AC 230V. It is therefore possible to carry out shutter movement or slats adjustment independently of the EIB as long as AC 230V and the DC voltage are available.

There are two push buttons per channel on the front plate of the shutter switch to enable local operation. This is carried out via long and short push button actions in the same way as for an EIB push button.

## Application program

### 21 A4 Shutter 908201

The N 524 works only in connection with the application program 21 A4 shutter 908201 ([http://www.ad.siemens.de/et/gamma/html\\_00/support/techdoku.htm](http://www.ad.siemens.de/et/gamma/html_00/support/techdoku.htm)).

The program can be set to a single operation mode or to differ between automatic mode and local operation mode. In the two modes different numbers and types of communication objects are available. Together with a time, brightness or sun tracking control unit the shutter switch N 524 can be used for shading control with the greatest possible amount of daylight (diffused light). Its use for daylight directing is also possible, but only within the restrictions concerning the exactness and the step-width of the slats positioning resulting out of the constancy of the DC voltage and the mechanical characteristics of motor and gear.

In the automatic operation mode the local operating of a sun-/sight guard drive via a bus pushbutton initiates for the corresponding output immediately the switch-over into the local operation mode in which all command telegrams sent by a time, brightness or sun tracking control unit will be ignored. By means of a separate bus push button for switching-over from local to automatic operation mode the automatic control of the corresponding output can be reactivated at any time.

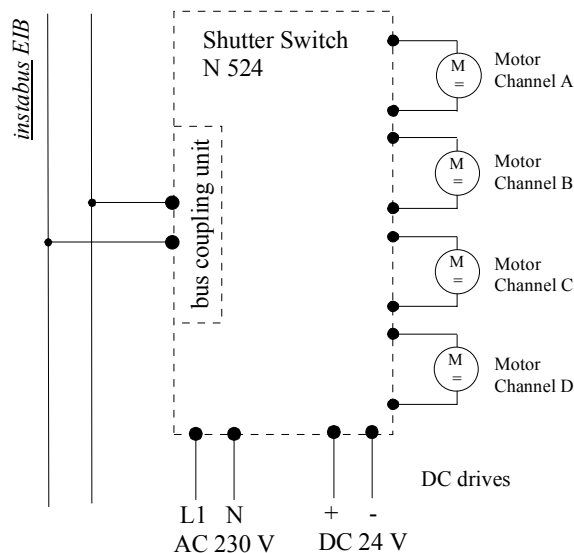
The current status of an output can be queried as sun blind or slats position in % (EIS 6) or will be automatically transmitted once a new setpoint position has been reached.

The program enables automatic slats adjustment per output into a preset position, once a shutter has been lowered to its final lower position.

When combined with a weather station, it is guaranteed that all sun blinds are automatically raised in the event of a safety alarm (e.g. caused by wind or rain). A local lowering of a sun blind will be blocked as long as a safety alarm is applied.

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**Example of operation**

**Installation instructions**

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


**DANGER**

- The device must be mounted and commissioned by an authorised electrician.
- When connecting the device, it is important to ensure that the device can be isolated.
- The device may not be opened.
- For planning and construction of electric installations, the relevant guidelines, regulations and standards of the respective country are to be considered.

**Technical specifications**
**Power supply**

- Bus voltage: via the bus line
- N 524 electronics: integrated power supply unit for AC 230V (+10% / -15%), 50 Hz
- External DC voltage for motor supply: 6V, 12V or 24V (to be protected by a fuse 4A T)

**Operating elements**

- 1 learning push button: for toggling between normal mode/addressing mode
- 4 x 2 push buttons: for local operation of the DC drives, independent of the EIB

**Display elements**

- 1 red LED: for checking the bus voltage and for displaying normal mode/addressing mode
- 1 green LED: for displaying the 230 V operating voltage

**Inputs/outputs**

- mains connection: 2-pole (L, N), for supplying the internal electronics
- External DC voltage: 2-pole (+, -), for supplying the drives
- 4 drive outputs (relay contacts): 4 x 2-pole
  - Rated voltage: DC 24 V
  - Rated current: max. 1 A per output
  - Switching cycles: >20.000

**CAUTION**

- The total switched current, which is limited by the permitted printed conductor load, may not exceed 4 A at the terminals for the external DC voltage!
- It is not permitted to connect DC drives without limit switches to the outputs (e.g. drives with built-in pulse transmitter for position control) as the drive or the sun guard might be damaged.

**Connections**

- Load circuit:
  - Screw terminals for mains voltage, DC voltage and drives.
  - The following conductor cross sections are permitted:
    - 2 x 0.5... 2.5 mm<sup>2</sup> single core or
    - 2 x 0.5... 1.5 mm<sup>2</sup> finely-stranded with connector sleeve,
  - insulation strip length 9 ... 10 mm.
- Bus line: screwless bus terminal
  - 0.6 ... 0.8 mm ∅ single core,
  - insulation strip length 5 mm.

**Mechanical data**

- Housing: plastic
- N-system DIN-rail mounted device,
  - width: 6 MU (1 MU = 18 mm)
- weight: approx. 410 g
- fire load: approx. 5550 kJ ± 10 %
- installation: clip-on mounting onto a rail TH35-7.5 according to EN 60715.

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**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 50090-2-2, EN 60669-2-1

**Electromagnetic compatibility**

- complies with EN 61000-6-2, EN 61000-6-3 and EN 50090-2-2

**Environmental conditions**

- Climatic withstand capability: EN 50090-2-2
- Ambient operating temperature: - 5 ... + 45 °C
- Storage temperature: - 25 ... + 70 °C
- Relative humidity (not-condensing): 5 % to 93 %

**Approval**

- EIB-certificate

**CE mark**

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

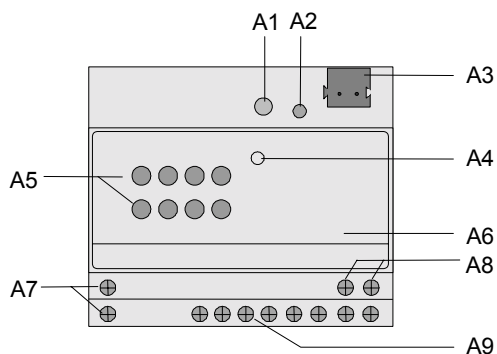
**Location and function of the display and operating elements**

Diagramm 1: Location of operating and display elements

- A1 Learning push button for toggling between normal and addressing mode for transfer of 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 connecting terminal
- A4 LED for displaying the operating voltage
- A5 Pushbuttons for local operation of the shutter drives Channel A to D

- A6 Type label
- A7 Screw terminals for connecting the mains voltage
- A8 Screw terminals for connecting the DC voltage
- A9 Screw terminals for connecting the DC drives

**Mounting and wiring**General description

The N-system DIN-rail mounted device (6 MU) can be inserted to N-system distribution boards, either surface- or flush mounted and wherever rails TH35-7.5 according to EN 60715 are available.

The connection with the bus line is carried out via a bus terminal block.

Installation of the DIN rail mounted device (Diagramm 2)

- Hang the device (B1) into the DIN rail (B2) and
- rotate the device downwards until the slide bar audibly clicks into position.

Dismantling the DIN rail mounted device (Diagramm 2)

- Remove all connected cables,
- press the slide bar (C3) downwards with a screwdriver and
- remove the device (C1) from the DIN rail (C2) with a swivel action.

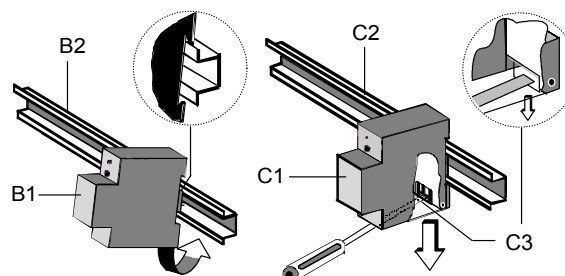


Diagramm 2: Installing and dismantling the DIN-rail mounted device

Removing the bus terminal (Diagramm 3)

- The bus terminal is located on top of the shutter switch N 524 (D1)
- The bus terminal block (D2) consists of two sections (D2.1 and D2.2), each with four terminal contacts. Care should be taken not to damage the two test sockets (D2.3) by accidentally connecting them to the bus conductor or with the screwdriver (when trying to remove the bus terminal).
- Carefully insert the screwdriver in the wire entry slot underneath the bus terminal (D2) and pull the bus terminal forwards out of the shutter switch N 524 (D1).

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Care should be taken as there is a risk to short circuit the bus voltage when removing the bus terminal block with a screw driver.

Plugging in the bus terminal (Diagramm 3)

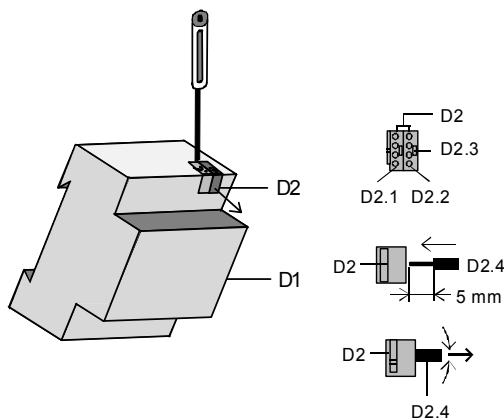
- Place the bus terminal (D2) to the guide slot and
- push the device backwards until it reaches the stop.

Connecting the bus cables (Diagramm 3)

- The bus terminal (D2) is suitable for single core conductors with 0.6 ... 0.8 mm Ø.
- Strip approx. 5 mm of the insulation from the conductors (D2.4) and plug in them into the terminal block (D2) (red = +, black = -).

Disconnecting the bus cables (Diagramm 3)

- Remove the bus terminal block (D2) and the conductors (D2.4) of the bus cable by rotating them simultaneously backwards and forwards.

Diagramm 3: *Connecting, disconnecting the bus cables*Connecting the mains and DC voltage and shutter drives

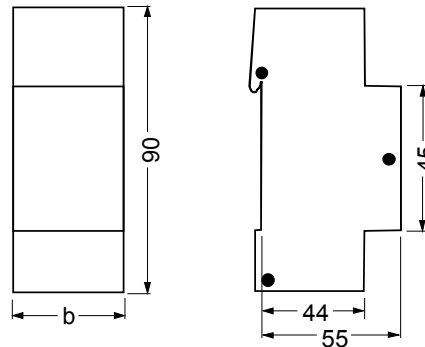
- The connections are carried out using screw terminals.
- Strip approx. 9-10 mm of insulation from the conductor, slide under the wire clamps of the respective terminal and screw into position.

Cross sections:

- The following conductor cross sections are permitted:
  - 2 x 0.5... 2.5 mm<sup>2</sup> single core or 2 x 0.5... 1.5 mm<sup>2</sup> finely-stranded with conductor sleeve.

**Dimension drawing**

Dimensions in mm



b = 6 module units (MU)

1 MU = 18 mm

**General Notes**

- Any faulty device should be returned to the local Siemens office.
- If you have further questions about the product, please contact our Technical Support:

☎ +49 (0) 180 50 50-222

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✉ [adsupport@siemens.com](mailto:adsupport@siemens.com)