

Switching/Dimming Actuator N 525/02
1 x 230 V AC / 16 A
5WG1 525-1AB02

Product and Applications Description



The switching/dimming actuator N 525/02 is a N-system DIN-rail mounted device for controlling fluorescent lamps via the DC 10 V control terminal of an electronic control gear (ECG-Dynamic-type).

In addition there is a switching contact for direct switching on/off of fluorescent lamps. This contact can be operated manually via a slide switch which also provides information on the actual switching state (when switching manually as well as when switching via the bus).

Different functions can be parameterised such as for switching on/off fluorescent lamps, increasing / decreasing brightness or setting a particular level of brightness.

With a N 525/02 switching/dimming actuator several ECG-Dynamic-Type ballasts can be controlled. The number is limited by the switching capacity and the control power. If the on/off function actuator is not used via the switching contact of the switching/dimming actuator, the number of controllable ECGs is only dependent on the load of the DC 10 V control voltage. (see Technical Specifications below).

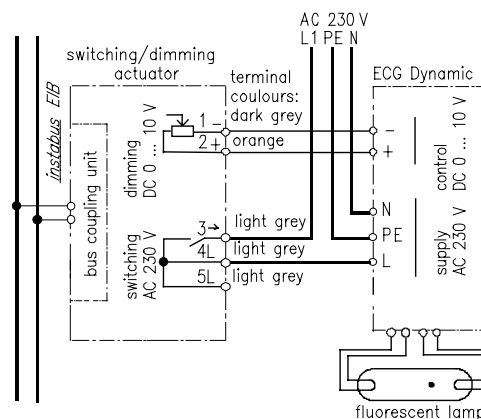
With the ETS (EIB Tool Software) the application program is selected, its parameters and addresses are assigned appropriately, and downloaded to the switching/dimming actuator N 525/02.

Application Programs

20 A1 Switch/Dim actuator 905001

- single switch/dim actuator for switching on/off, dimming, set-value
- allows switching on bus voltage failure
- allows switching on bus voltage recurrence
- dim value on switching can be specified
- allows state to be read via bus
- allows dimming to 0 % (i.e. switching off)
- allows dimming and set value operations while switched off without having to switch on

Example of Operation



Installation Instructions

- The device may be used for permanent interior installations in dry locations within distribution boards.



WARNING

- The device may be built into distribution boards (230/400V) together with appropriate VDE-devices and must be mounted and commissioned by an authorised electrician.
- A safety disconnection of the device must be possible.
- Free DIN rail areas with sticked-in data rail must be covered with covers, order no. 5WG1 192-8AA01.
- The prevailing safety rules must be heeded.
- The device must not be opened. A device suspected faulty should be returned to the local Siemens office.

Technical Specifications

Power supply

via bus line

Outputs

- number: 1 output (voltage free contact)
- rated voltage: AC 12 ... 230 V, 50 ... 60 Hz
- rated current: 0,5 ... 16 A resistive load
- switching current at AC 230 V:
max. 10 A inductive load, $\cos\phi = 0,6$
- DC switching current:
 - DC 12 ... 50 V: max. 16 A resistive load
 - DC 230 V: max. 1 A resistive load
- switching characteristic:
set in parameter list according to application program

Switching power at AC 230 V

- at fluorescent lamp (FL) load:
 - Siemens ECG Dynamic for 36 W FL: max. 45 units
 - Siemens ECG Dynamic for 58 W FL: max. 30 units

Control voltage

1 ... 10 V (ECG Dynamic)

Control power

- ECG Dynamic: max 50 units
- signal amplifier: max 50 units

Electric protection

an electric safeguard protects the control circuit against destruction by accidental connection to AC 230 V.

Control elements

- 1 learning button:
for switching between normal operating mode and addressing mode
- 1 slide switch for manual operation

Display elements

- 1 red LED:
for monitoring bus voltage and displaying mode, selected with the learning button
- 1 slide switch providing switching state information

Connections

- load and control circuits, physical:
strip insulation for 9 ... 10 mm
permissible conductor types/cross sections:
 - 0,5 ... 2,5 mm² single core or flexible conductor, 8 mm ultrasonically compacted
 - 0,5 ... 2,5 mm² flexible conductor with terminal pin, crimped on gas tight
 - 0,5 ... 1,5 mm² flexible conductor with connector sleeve
 - 1,0 and 1,5 mm² plain flexible conductor

- load circuit, electrical:
 - plain flexible conductor, min. 1 mm²:
current carrying capacity max. 6 A
 - flexible conductor with terminal pin, crimped on gas tight, min 1,5 mm²:
current carrying capacity max. 10 A
 - all other conductors, min. 1,5 mm²:
current carrying capacity max. 16 A



WARNING

When looping through the L-conductor (connection blocks 4 and 5), take care that the maximum connection current of 16 A (as governed by the maximum permissible printed conductor load) is not exceeded!

- control circuit, electrical:
 - length of control cable:
max. 300 m unshielded
 - loop resistance of the control cable:
max. 10 Ω
- bus line, pressure contacts on data rail

Physical specifications

- housing: plastic
- N-system DIN-rail mounted device,
width: 4 SUs (1SU = 18mm)
- weight: approx. 180 g
- fire load: approx. 3050 kJ \pm 10 %
- installation: rapid mounting on
DIN EN 50022-35 x 7,5 rail

Electrical safety

- fouling class (according to IEC 664-1): 2
- protection (according to EN 60529): IP 20
- overvoltage class (according to IEC 664-1): III
- bus: safety extra low voltage SELV DC 24 V
- the device complies with
EN 50090-2-2 and EN 60669-2-1

Reliability

rate of failure: 416 fit at 40 °C

Electromagnetic compatibility

complies with
EN 50081-1, EN 50082-2 and EN 50090-2-2

Environmental specifications

- climatic conditions: EN 50090-2-2
- ambient temperature operating: - 5 ... + 45 °C
- ambient temperature non-op.: - 25 ... + 70 °C
- relative humidity (non-condensing): 5 % to 93 %

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Certification

EIB certificate

CE norm

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

Location and Function of the Display and Operator Elements

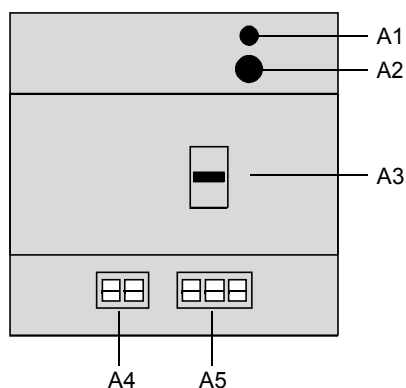


Figure 1: Location of the display and operator elements

- A1 LED for indicating normal operating mode (LED off) and addressing mode (LED on); upon receiving the physical address the device automatically returns to normal operating mode
- A2 Learning button for switching between normal operating mode and addressing mode for receiving the physical address
- A3 Slide switch for manual operation and for displaying the switching position.
Slide in upper position: relay contact closed
Slide in lower position: relay contact open
- A4 Screwless plug-in terminals for connecting control circuits
- A5 Screwless plug-in terminals for connecting load circuits

Mounting and Wiring

General description

The N-system DIN-rail device (4 SUs) can be installed to N-system distribution boards, surface or flushmounted, or to any DIN-rail EN 50022-35 x 7,5 available that has a data rail installed.

The connection to the bus line is established by clicking the device onto the DIN-rail (with a data rail installed). Take care that the type plates of all devices on a DIN-rail can be read in the same direction, guaranteeing the devices are polarised correctly.

Mounting DIN-rail devices (Figure 2)

- Slide the device (B1) onto the DIN-rail (B2) and
- swivel back the device until the slide clicks into place audibly.

Dismounting DIN-rail devices (Figure 2)

- Remove all connected wires,
- press down the slide (C3) with a screw-driver and
- swivel the device (C1) from the DIN-rail (C2).

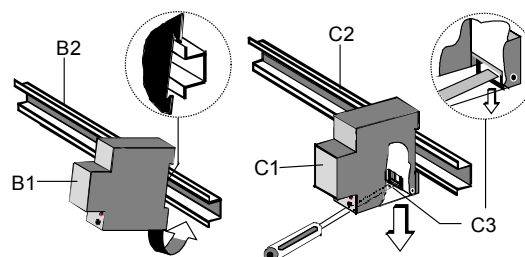


Figure 2: Mounting and dismounting a DIN-rail device

Connecting load circuits (Figure 3)

- The load circuits are connected via screwless plug-in terminals (D1).
- Remove approx. 9 to 10 mm of insulation from the wire (D1.1) and plug it into the terminal (D1).

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Conductor cross sections:

- load and control circuits, physical:
 - strip insulation for 9 ... 10 mm
 - permissible conductor types/cross sections:
 - 0,5 ... 2,5 mm² single core or flexible conductor, 8 mm ultrasonically compacted
 - 0,5 ... 2,5 mm² flexible conductor with terminal pin, crimped on gas tight
 - 0,5 ... 1,5 mm² flexible conductor with connector sleeve
 - 1,0 and 1,5 mm² plain flexible conductor
- load circuit, electrical:
 - plain flexible conductor, min. 1 mm²: current carrying capacity max. 6 A
 - flexible conductor with terminal pin, crimped on gas tight, min 1,5 mm²: current carrying capacity max. 10 A
 - all other conductors, min. 1,5 mm²: current carrying capacity max. 16 A

**WARNING**

When looping through the L-conductor (connection blocks 4 and 5), take care that the maximum connection current of 16 A (as governed by the maximum permissible printed conductor load) is not exceeded!

- control circuit, electrical:
 - length of control cable: max. 300 m unshielded
 - loop resistance of the control cable: max. 10 Ω

Disconnect load and control circuits (Figure 3)

- Press the terminal lock (E1.2) with a screw-driver and
- remove the wire (E1.1) from the terminal (E1).

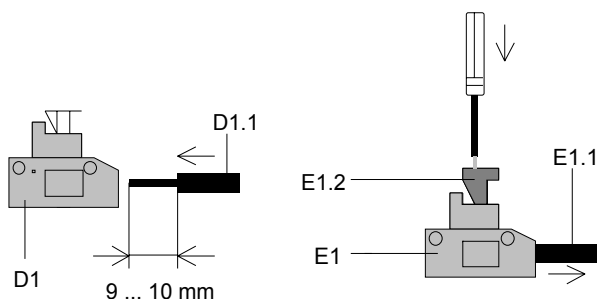
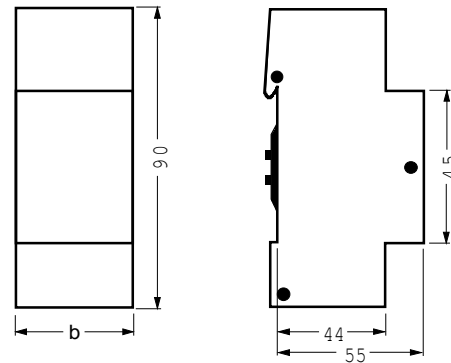


Figure 3: Connecting and disconnecting wires

Dimension Diagram

Dimensions in mm



1 Spacer Unit (SU) = 18 mm