

## Universal Dimmer N 528C01 5WG1 528-1CB01

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### Product and Applications

The Universal Dimmer is a KNX device with two dimmer outputs used for switching or dimming different types of dimmable lamps. **2-channel** applications with two independently controlled outputs or **1-channel**

application only uses one output A or B with higher load.

The device is configured and commissioned with the KNX / ETS (Engineering Tool Software) version ETS4 or later. If the device is unloaded with ETS, it has no functionality any more.

#### Building site function

The building site function enables switching on and off lighting via bus wall switches and actuators, even if those devices are not commissioned with ETS. This function is activated by default.

#### Protection against over-load and RESET

After 5 seconds in an over-load condition the universal dimmer turns itself OFF. At the earliest, 2 minutes after an over-load or short-circuit tripping, the dimmer may be turned ON again. First send an "OFF" or a "dimming value =0" command to turn the device off and then turn it ON again by sending an "ON" or a "dimming value > 0" command.

#### Protection against short-circuit

In a short-circuit condition the dimmer turns the load off for 3 seconds and, within 1 minute, once automatically tries to switch the output ON to the currently set dimming value. If the short-circuit condition still persists the output is turned OFF until reset.

Turn the output ON again by following the instructions for RESET.

#### Protection against over-temperature

In case the maximum permissible temperature is exceeded the dimmer dims down to the minimal dimming value. If after 2 minutes the dimmer has cooled down sufficiently, it automatically dims back to the currently set dimming value. If after 2 minutes the maximum permissible over-temperature is still exceeded, the output is turned OFF until RESET.

Turn the output ON again by following the instructions for RESET.

#### Application Program

The Universal dimmer application program: "07 B0 A2 Dimmer 983901".

### 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

- Rated voltage: 120V AC +10%/ -15%, 50/60 Hz
- Rated current:
  - 2-channel: 2 x 1.3 A @ cosφ = 1.0
  - 1-channel: 1 x 2.2 A @ cosφ = 1.0
- Power loss if output is off: 0.9 W / channel

#### Load output

At 35°C operating temperature; derating to 80% at 45°C.

Lamp type	Use of	
	2 channels	1 channel
Incandescent lamps	150 W	250 W
Low voltage halogen lamps with magnetic transformers	120 VA	200 VA
Dimmable LED	≤ 50 VA*)	≤ 100 VA*)

\*) The maximum total power depends on the lamp type and control mode (leading / trailing edge).

#### Connections

- Load connections: Screw-type terminals, insulation strip length 7...9 mm (~ 5/16")  
The following conductor cross-sections are permitted:
  - single core cooper 0.5...4.0 mm<sup>2</sup> (AWG 20-10)
  - finely stranded copper 0.5...2.5 mm<sup>2</sup> (AWG 20-13)
  - Tightening torque 0.5 – 0.6 Nm (4.4 to 5.3 lb inch)
  - use bladed screwdriver, size: 0.6 x 3.5 mm
- KNX bus line: Bus terminal block, screw less, conductor cross-section 0.6...0.8 mm Ø (18 to 22 AWG) single core, insulation strip length 5 mm (~3/16")

#### Operating elements

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

#### Display elements

- 1 Red LED: for checking the bus voltage and for displaying normal mode/addressing mode
- 1 Bicolor LED per channel to indicate the status of the channel connections

LED Indication	Description
Off	Device is not powered by KNX.
Red, on	Channel output is turned on.
Green, on	Channel output is turned off.
Orange, 0.2 Hz	Channel failure / power failure
Orange, 0.5 Hz	Over temperature
Orange, 1 Hz	Over load: load is too high
Orange, 5 Hz	Short circuit: current is too high

#### Note:

- In case of over temperature, overload, or short circuit, the dimmer turns off the output. You can restart the dimmer by using an "on" or "dimming value > 0" command.
- In case of over temperature, wait at least 1 minute and then restart the dimmer (cool down time).

#### Physical specifications

- Polymer casing
- N-system DIN-rail mounted device, width: 4 MU (1 MU = 18 mm)
- Weight: approx. 220 g (~ 8 oz)
- Installation: rapid mounting on DIN rail complying with EN 60715-TH35-7,5 and -15

#### Environmental specifications

- Ambient temperature operating: - 5 ... + 45° C (23...113°F)
- Max. ambient temperature range: - 25 ... + 70° C (-13...158°F)
- Relative humidity (non-condensing): 5 % to 93 %

#### Electrical safety

Protection type (EN 60529): IP20

### Listings and Certifications

#### UL Certified (E464611)

UL 916, Open Energy Management Equipment

#### cUL Certified (E464611)

CSA-C22.2 No. 205, Signal Equipment

#### CE mark

Complies with the EMC Directive (residential and functional buildings) and Low Voltage Directive.

#### KNX / EIB certified

#### Electromagnetic compatibility

This device is rated for use with FCC labeled lighting parts and assemblies.

USA: Complies with FCC Part 15, Class B

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

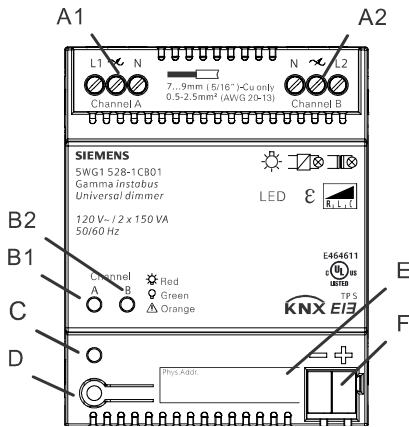
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide

reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.
- Look for and eliminate Ground-Loops that can amplify interference.

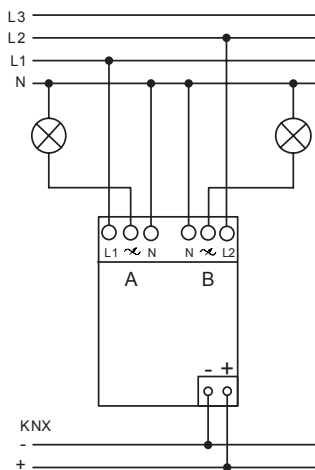
Canada: Complies with CAN ICES-005(B)/NMB-005(B)

### Location and function of the display and control elements



A1, A2	Power Terminals channel A, B for connecting the control circuits
B1, B2	Status LED channel A, B
C	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
D	Learning button < 2 s: - Enable addressing mode. The programming LED is on. After receiving a physical address, the dimmer returns to normal mode. - Return to normal mode from other modes. (Programming LED is off). > 20 s: Reset the dimmer to factory settings. Programming LED flashes 8 s. <b>Note:</b> All configurations are lost. The building site function is re-activated.
E	Label for physical address
F	Bus terminal block, screw-less

### Typical circuit



## ! WARNING

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

**CAUTION:** Risk of Electric Shock – More than one disconnect switch may be required to de-energize the equipment before servicing.

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!

### Mounting

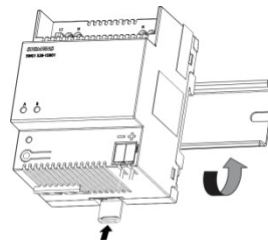
#### General description

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 or -15

This equipment is intended for field installation within the enclosure of another product.

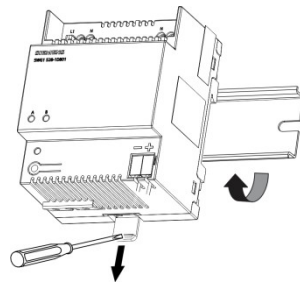
#### Mounting the unit to a DIN-rail

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



#### Dismounting DIN-rail devices

- Remove all connected wires,
- pull down the slide with a screw-driver and swivel the DIN-rail device from the DIN-rail.



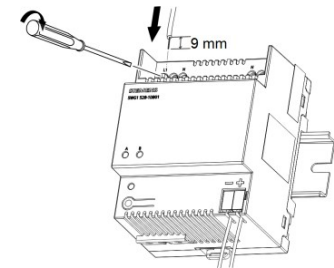
### Wiring mains

#### Connecting

- Power feed is connected via a screw type terminals.
- Remove approx. 9 mm (3/8") of insulation from the wire and fix it via a screw driver into the terminal.

#### Disconnect

- Release screw of terminal with a screw-driver and
- Remove the wire from the terminal.



### Wiring safety extra low voltage block

#### Slipping on

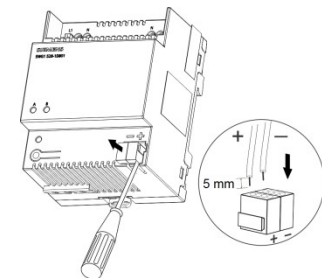
- slip the connection block onto the guide slot and
- press the connection block down to the stop

#### Connecting

- The connection block (E1) can be used with single core conductors Ø 0.6 ... 0.8 mm.
- Remove approx. 5 mm (~3/16") of insulation from the conductor (E2) and plug it into the connection block (E1) (red = +, black = -).

#### Disconnecting

- Unplug the connection block (E1) and remove the bus cable conductor (E2) while simultaneously wiggling it.



Technical Documentation:  
<http://www.siemens.com/gamma-td>



Technical Support:  
<http://www.siemens.com/supportrequest>