

**Power supply 160 mA**

Art. no.: 20160REG

**Power supply 320 mA**

Art. no.: 20320REG

**Power supply 640 mA**

Art. no.: 20640REG

**Power supply 1280 mA**

Art. no.: 21280REG

**Operating instructions**

**1 Safety instructions**



Electrical devices may only be mounted and connected by electrically skilled persons.

Serious injuries, fire or property damage possible. Please read and follow manual fully.

Danger of electric shock. During installation and cable routing, comply with the regulations and standards which apply for SELV circuits.

These instructions are an integral part of the product, and must remain with the end customer.

**2 Device components**

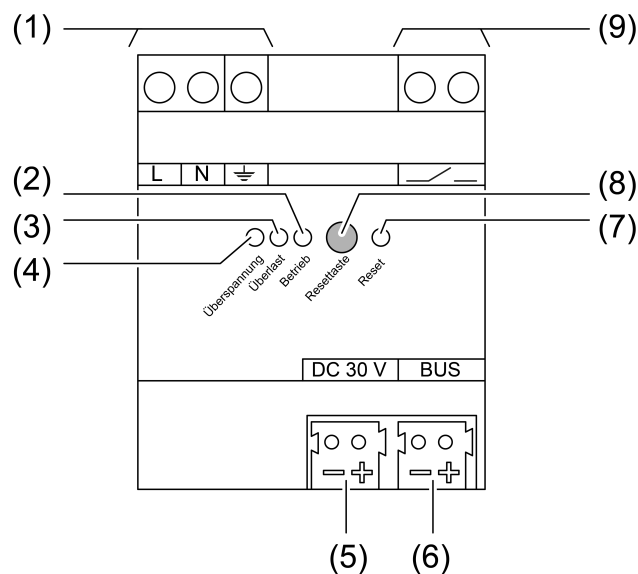


Figure 1: View

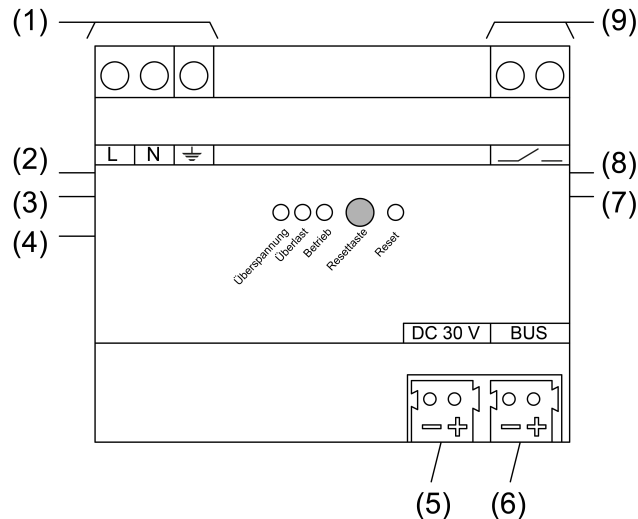


Figure 2: 1280 mA power supply – view

- (1) Connection of mains
- (2) LED **Betrieb**, green  
On: Normal operation  
Flashes: Overload or overvoltage  
Off: No mains voltage or internal error
- (3) LED **Überlast**, red  
On: Overload or short-circuit on KNX bus line or output **DC 30 V**
- (4) LED **Überspannung**, yellow  
On: Overvoltage on KNX bus line or output **DC 30 V**
- (5) Output **DC 30 V**
- (6) Output **Bus** for KNX bus line
- (7) LED **Reset**, red  
Flashes rapidly 2.5 Hz: Reset for 20 seconds  
Flashes slowly 0.25 Hz: Permanent reset
- (8) Button **Reset**  
Acknowledge the diagnostic message: Press briefly, < 0.5 seconds  
Switch off the KNX bus line for 20 seconds: Press between 2...4 seconds  
Permanently switch off the KNX bus line: Press longer than 4 seconds  
Terminate the permanent reset: Press the button
- (9) Signal contact for diagnostic message  
Closed: Normal operation  
Open: After overload, overvoltage or in case of a KNX power failure

### 3 Function

#### System information

This device is a product of the KNX system and complies with the KNX directives. Detailed technical knowledge obtained in KNX training courses is a prerequisite to proper understanding.

#### Intended use

- Supplying KNX devices with bus voltage
- Supplying devices with direct current
- Mounting on DIN rail according to EN 60715 in sub-distribution unit

#### Product characteristics

- Output with integrated inductance for supplying KNX bus lines
- DC 30 V output for supplying additional devices

- Nominal current can be subdivided to outputs as desired
- Reset button
- Short-circuit proof
- Overvoltage proof
- No-load proof
- Suitable for operation in systems with emergency power supply
- Potential-free signal contact for operating and diagnostic message
- Two identical power supplies can be connected in parallel (with the versions 160 mA, 320 mA and 640 mA)

## 4 Operation

### Acknowledging the diagnostic message

After detecting a overvoltage or a short circuit the LED and the signal contact signal the event until the message is acknowledged.

- Press the Reset button for less than 0.5 seconds.

### LED functions and signal contact

	LED <b>Betrieb</b> (2), green	LED <b>Überlast</b> (3), red	LED <b>Überspannung</b> (4), yellow	LED <b>Reset</b> (7), red	Signal con- tact (9)
Normal oper- ation	on	off	off	off	closed
Reset for 20 seconds	on	off	off	flashes 2.5 Hz	closed
Permanent reset	on	off	off	flashes 0.25 Hz	closed
Overvoltage	flashes 0.5 Hz	off	on (until the message is ac- knowledged)	off	open (until the message is acknow- ledged)
Overload, short-circuit	flashes 0.5 Hz	on (until the message is ac- knowledged)	off	off	open (until the message is acknow- ledged)
KNX voltage failed / in- ternal error	off	off	off	off	open

In normal operation the control of the power supply is not necessary. The button (8) is recessed and thus prevents that it is inadvertently actuated in operation.

### Reset function and Reset button

When resetting a bus segment, the output voltage of the power supply is switched off. At the same time the bus line is short-circuited so that all connected bus devices are disconnected from the bus voltage.

### Resetting the bus line for 20 seconds

- Press the **Reset** button (8) between 2 ... 4 seconds.  
The bus line is short-circuited for 20 seconds.  
The LED **Reset** (7) flashes quickly.  
After 20 seconds the bus voltage is switched on again and the LED **Reset** switches off.

**Permanently resetting the bus line**

- Press the **Reset** button (8) for more than 4 seconds.  
The bus line is short-circuited.  
The LED **Reset** (7) flashes slowly.

**Terminating the permanent reset**

Prerequisite: The bus line is permanently reset, the LED **Reset** (7) flashes slowly.

- Press the **Reset** button (8).  
The bus voltage is switched on again and the LED **Reset** switches off.

## 5 Information for electrically skilled persons

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**DANGER!**

Mortal danger of electric shock.  
Disconnect the device. Cover up live parts.

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### 5.1 Fitting and electrical connection

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**DANGER!**

Electrical shock when live parts are touched.  
Electrical shocks can be fatal.  
Before working on the device, disconnect the power supply and cover up live parts in the working environment.

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**Fitting the device**

Observe the temperature range. Ensure sufficient cooling.

- Mount the device on DIN rail. The terminals for the mains connection (1) must be at the top.

Connecting the device to mains voltage and bus

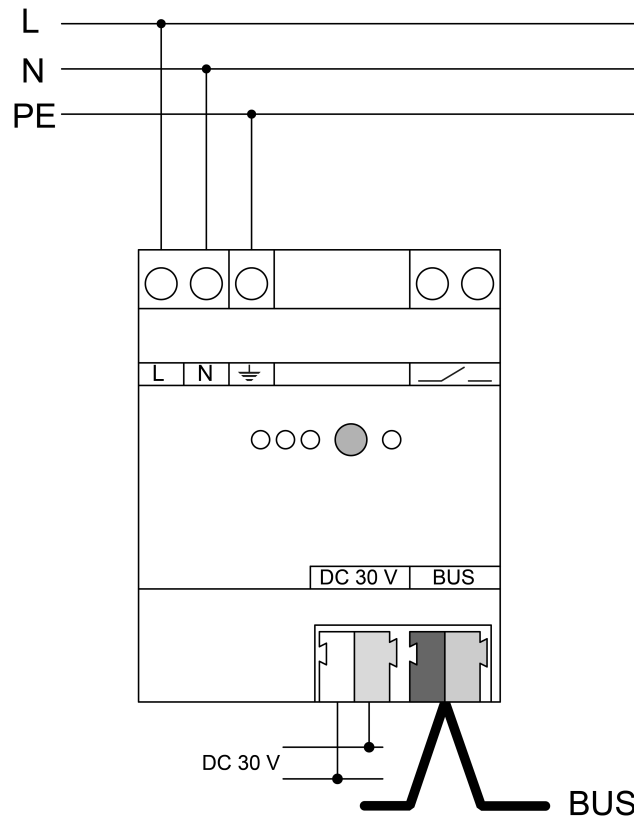


Figure 3: Wiring example – mains voltage and bus line

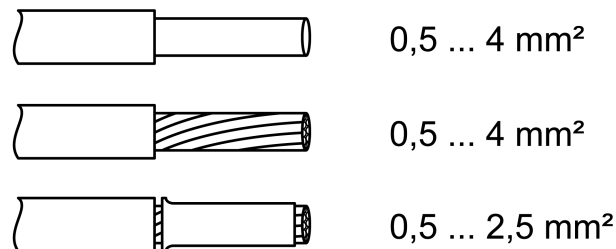


Figure 4: Clampable conductor cross-section

- Connect the mains voltage to the terminals **L** and **N** (1).
- Connect the protective conductor **PE** to the terminal  $\perp$ .
- Connect the KNX bus line to output **Bus** (6).
- Install the cover to protect the bus connection against hazardous voltages in the connection area.
- i** The total load of the outputs can be subdivided as desired. Do not exceed the total rated current.
- i** Do not connect any other products to the bus output. This might influence the bus communication.
- i** If required, an identical power supply can be connected in parallel for the device variants 160, 320 and 640 mA.

Connecting the diagnostic analyser

The power supply signals KNX voltage failure, overvoltage, overload and short circuit using a potential-free contact (9). A monitoring device can detect the switching status and forward it for diagnostic purposes.

**i** The signal output serves only for signalling purposes and may not be used as a load output.

A signal lamp, a signal relay or, e.g., a KNX binary input connected to a KNX bus line can be used as monitoring device.

- Connect the signalling device according to the connection example (Figure 5).

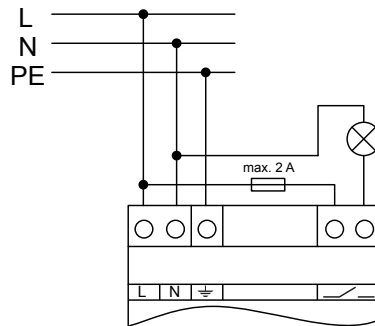


Figure 5: Application example – signal lamp for optical operating display

- Connect the KNX binary input according to the connection example (Figure 6).

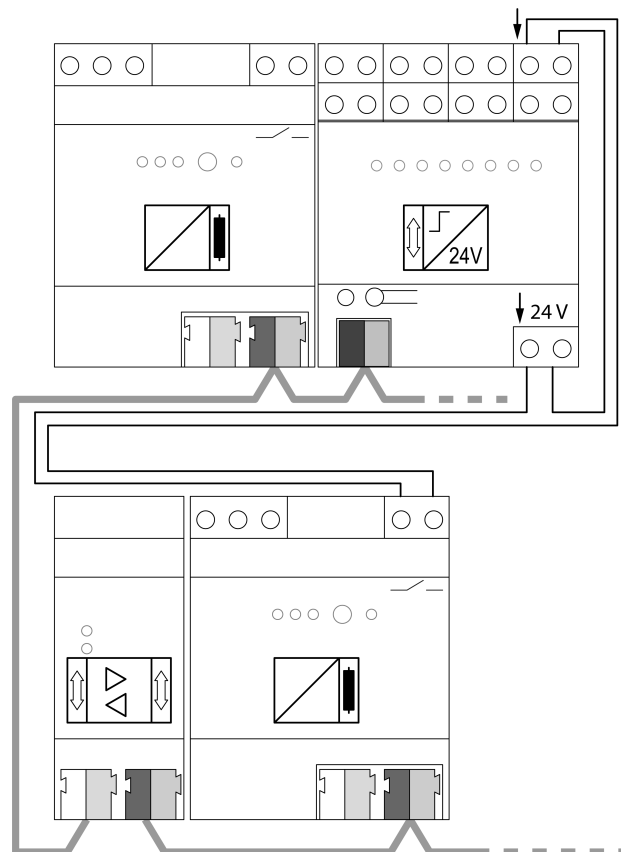


Figure 6: Application example – KNX binary input on main line for detecting and centrally signalling diagnostic messages

**i** Observe the wiring! Install the cables for the signal contact such that no loops are created. During operation loops can cause interference voltages to be coupled into.

- i** The signal contact indicates a power failure on the KNX line. When power supplies are connected in parallel, the signaling contact opens only if both power supplies are faulty or switched off (eg due to failure of the mains voltage on both devices).  
In this case too, the green operation LED will not extinguish until both power supplies are switched off.

### Operation with emergency power systems

The power supply can be used in combination with centrally supplied emergency power systems. In this way, the function of the KNX system and the control of the most important functions can be ensured in emergency operation.

- i** Statutory and standard specifications for emergency power and emergency lighting systems vary from country to country. In any event, the user / technical planner must check whether the specific specifications are observed.

### Cable lengths

For KNX line segments and power supplies the following rules apply:

- Bus line length per lin segment: Max. 1000 m
- Bus line length between power supply and KNX bus subscriber: Max. 350 m
- Bus line length between two KNX bus subscribers: Max. 700 m

## 6 Technical data

Rated voltage	AC 220 ... 240 V~
The device is operable in the range of 180 V AC ... 264 V AC.	
Mains frequency	50 / 60 Hz
Power loss (max. load on all outputs)	
Art. no. 20160REG	max. 1.5 W
Art. no. 20320REG	max. 1.8 W
Art. no. 20640REG	max. 2.9 W
Art. no. 21280REG	max. 6.4 W
Efficiency	
Art. no. 20160REG	approx. 76%
Art. no. 20320REG	approx. 84%
Art. no. 20640REG	approx. 87%
Art. no. 21280REG	approx. 86%
Rated voltage DC	DC 240...250 V
KNX	
KNX medium	TP256
Bus output voltage	DC 28 ... 31 V SELV
Output current	
Art. no. 20160REG	160 mA (all outputs)
Art. no. 20320REG	320 mA (all outputs)
Art. no. 20640REG	640 mA (all outputs)
Art. no. 21280REG	1280 mA (all outputs)
Short-circuit current	
Art. no. 20160REG	max. 1 A
Art. no. 20320REG	max. 1 A
Art. no. 20640REG	max. 1.5 A
Art. no. 21280REG	max. 3 A

Power supplies

Connection type for bus	device connection terminal
Parallel operation with identical power supply	
Art. no. 20160REG	Yes
Art. no. 20320REG	Yes
Art. no. 20640REG	Yes
Art. no. 21280REG	No
Output DC 30 V	
Output voltage	DC 30 V
Signal output	
Switching voltage AC	AC 12 ... 230 V~
Switching voltage DC	DC 2 ... 30 V
Switching current	5 mA ... 2 A
Ambient temperature	-5 ... +45 °C
Storage/transport temperature	-25 ... +70 °C
Relative humidity	max. 93 % (no condensation)
Fitting width	
Art. no. 20160REG	72 mm / 4 module
Art. no. 20320REG	72 mm / 4 module
Art. no. 20640REG	72 mm / 4 module
Art. no. 21280REG	108 mm / 6 module
Connection mode	device connection terminal
Finely stranded with conductor sleeve	0.5 ... 2.5 mm <sup>2</sup>

## 7 Warranty

The warranty is provided in accordance with statutory requirements via the specialist trade.

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