

Power Supply Unit N 125
N125/01 (160 mA / with integrated choke)
N125/11 (160 mA / with integrated choke)
N125/21 (640 mA / with integrated choke)

5WG1 125-1AB01
5WG1 125-1AB11
5WG1 125-1AB21

Product and Applications Description



The power supply unit N 125 provides the system power necessary for the instabus EIB. The connection to the bus line is established by clicking the device onto the DIN-rail (with a data rail installed) and/or via the bus connection block located on the front side. If the power supply N 125 is installed the bus connector module REG 191 is not necessary (also for other DIN-rail devices connected to the same data rail) because the bus voltage is carried from the bus connection block to the data rail.

The integrated choke prevents the data telegrams from short-circuiting on the bus line. When the built-in reset switch is operated (operation > 20s), the bus devices are returned to their initial state.

For each bus line, at least one power supply unit N 125 is needed. Up to two power supply units may be attached to a single bus line. Note: With the power supply unit N125/21 no second power supply unit is permitted to be run in parallel on the bus line.

A second unit is not required unless the supply voltage at a bus device is less than 21 V. The cable length between the two power supply units must be at least 200 m.

When more than 30 bus devices are installed in short bus cable distance (e.g. 10 m), e.g. in distribution boards, the power supply unit N 125 should be arranged near these bus devices. The distance between power supply unit N 125 and any of its bus devices must not exceed 350 m.

The power supply unit N 125 has a voltage and current regulation and is therefore short-circuit proof. Short power failures can be bridged with a backup interval of approximately 200 ms.

To ensure an uninterrupted power supply a separate circuit with safety separation should be used for the power supply unit N 125's power supply line.

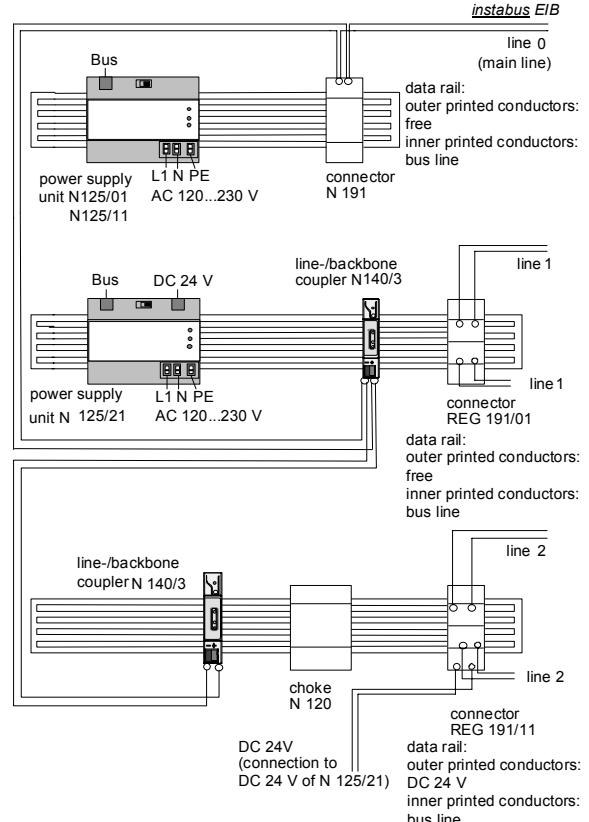
The power supply unit N125/21 can supply DC 24 V power from an additional pair of terminals (yellow-white). This DC 24 V output voltage can be used to

power e.g. an additional line via a separate choke N 120.

Application Programs

Requires no application programs

Example of Operation



Power Supply Unit N 125	
N125/01 (160 mA / with integrated choke)	5WG1 125-1AB01
N125/11 (160 mA / with integrated choke)	5WG1 125-1AB11
N125/21 (640 mA / with integrated choke)	5WG1 125-1AB21

Installation Instructions

- 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.



WARNING

- The device may be built into distribution boards (230/400V) together only with appropriate VDE-devices.
- The device must be mounted and commissioned by an authorised electrician.
- Free DIN rail areas with sticked-in data rails must be covered with covers, order no. 5WG1 192-8AA01.
- A safety disconnection of the device must be possible.
- The prevailing safety rules must be heeded.
- 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.

• A device suspected faulty should be returned to the local Siemens office.

Technical Specifications

Input voltage

- rated voltage: AC 120 ... 230 V, 50...60Hz
- permissible range: AC 102 ... 253 V

Rated power intake

approx. 24 VA

Output voltage

- rated voltage: DC 29 V
- safety extra low voltage (SELV)
- permissible range: DC 28 ... 30 V

Output current

- rated current 160 mA (N125/01),
320 mA (N125/11),
640 mA (N125/21)
- short-circuit current:
limited to 1,0 A (N125/01, N125/11), 1,5 A (N125/21)

Backup interval

on input voltage failure: approximately 200 ms at rated current

Operator elements

slide switch: for resetting the bus devices connected to the line (operation > 20 s)

Display elements

- 1 red LED: for indicating a voltage interruption on operating the slide switch in RESET-position
- 1 green LED: for indicating normal operation
- 1 red LED: for indicating a shorted-out bus line or device over-load

Connections

- mains connection, screwless plug-in terminals:
strip insulation for 9 ... 10 mm
permissible conductor types/cross sections:
- 0,5 ... 3,3 mm² (AWG 12) single core
- 0,5 ... 2,5 mm² plain flexible conductor
- 0,5 ... 3,3 mm² (AWG 12) stranded conductor
- 0,5 ... 3,3 mm² (AWG 12) flexible conductor with terminal pin, crimped on gas tight
- bus line:
pressure contacts on data rail,
screwless extra low voltage terminal (red-black)
Ø 0,6 ... 0,8 mm
- output voltage (no choke) – N125/21 only:
screwless extra low voltage terminal (yellow-white)
Ø 0,6 ... 0,8 mm

Physical specifications

- housing: plastic
- dimensions: N-system DIN-rail mounted device,
width: 4 SU (1 SU = 18 mm)
- weight: approx. 240 g
- installation: rapid mounting on DIN rail according to EN 60715-TH35-7,5

Electrical safety

- degree of pollution (according to IEC 60664-1): 2
- protection (according to EN 60529): IP 20
- bus: safety extra low voltage SELV DC 24 V
- device complies with EN 50 090-2-2, EN 61558-2-6 and EN 61558-2-17

Electromagnetic compatibility

complies with EN 50090-2-2

Environmental specifications

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

Power Supply Unit N 125	
N125/01 (160 mA / with integrated choke)	5WG1 125-1AB01
N125/11 (160 mA / with integrated choke)	5WG1 125-1AB11
N125/21 (640 mA / with integrated choke)	5WG1 125-1AB21

Certification

EIB KNX certified
UL listed

CE mark

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

Location and Function of the Display and Operator Elements

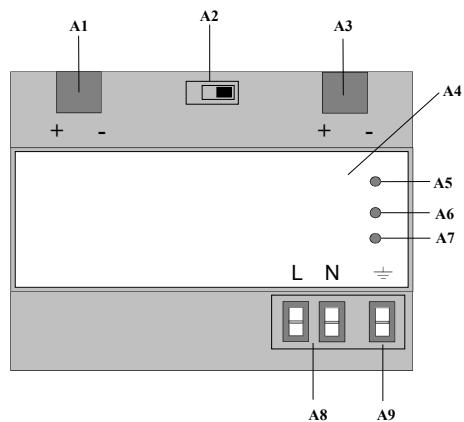


Figure 1: Location of the display and operator elements

- A1 extra low-voltage bus terminals (red-black)
- A2 reset switch
- A3 extra low-voltage terminals (yellow-white)
– N125/21 only
- A4 type plate
- A5 red LED for indicating that the power supply unit N 125 is in reset position
- A6 green LED for indicating normal operation of the power supply unit N 125
- A7 red LED for indicating a shorted-out bus line or a device over-load
- A8 screwless plug-in terminals for connecting the mains (mains terminals)
- A9 ground terminal

Mounting and Wiring

General description

The N-system DIN-rail device can be installed to N-system distribution boards, surface or flush mounted, or to any DIN rail 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.

Connection to the bus without data rail

If the connection is established via bus connection block (data rail not installed) the data rail connection system has to be covered with the enclosed insulation hood after removing the guiding hood e.g. with a screw driver to guarantee a sufficient insulation from the DIN rail.

Removing the guiding top (Figure 2)

- The guiding top (D3) surrounds the contact system (D2) on the back side of the device (D1).
- Insert the screw driver between the DIN-rail device (D1) and the guiding hood (D3) and remove the guiding hood.

Inserting the insulation top (Figure 2)

- Put the insulation top (D4) onto the contact system and click it into place by a slight pressure.

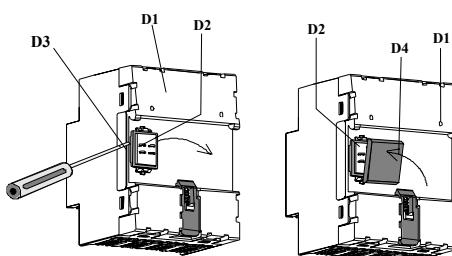


Figure 2: Mounting and dismounting a DIN-rail device

Power Supply Unit N 125**N125/01 (160 mA / with integrated choke)****N125/11 (160 mA / with integrated choke)****N125/21 (640 mA / with integrated choke)****5WG1 125-1AB01****5WG1 125-1AB11****5WG1 125-1AB21**Connecting mains (figure 3)

- The mains are connected via screwless plug-in terminals (E1).
- Remove approx. 9 to 10 mm of insulation from the wire (E2) and plug it into the terminal (E1).

Disconnecting the mains (figure 3)

- Press the terminal lock (E3) of the terminal (E1) with a screw-driver and
- remove the wire (E2) from the terminal (E1).

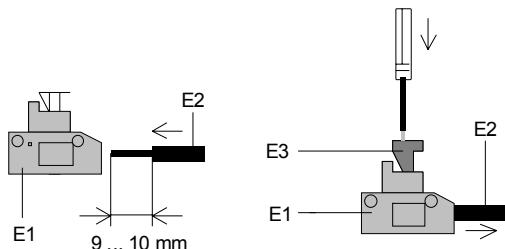


Figure 3: Connecting and disconnecting wires

Slipping on of the safety extra low voltage block

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

Connecting the safety extra low voltage block (figure 4)

- The connection block (F2) can be used with single core conductors Ø 0,6 ... 0,8 mm.
- The connection block (F2) consists of a red (yellow) connector (F2.1) and a black (white) connector (F2.2). Each connector can take up to four wires with single core conductors Ø 0,6 ... 0,8 mm.
- Remove approx. 5 mm of insulation from the conductor (F2.4) and plug it into the connection block (F2) (red = +, black = -).

Disconnecting the safety extra low voltage block

(figure 4)

- Unplug the connection block (F2) and remove the bus cable conductor (F2.4) while simultaneously wiggling it.

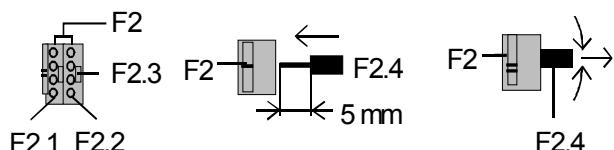
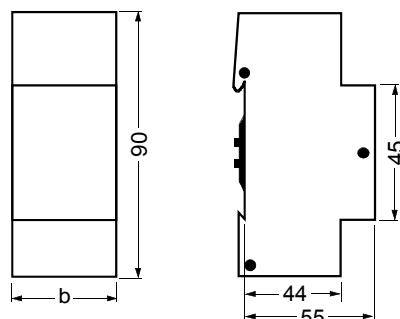


Figure 4: Connecting and disconnecting safety extra low voltage block

Dimension Diagram

Dimensions in mm

 $b = 4 \text{ SU}$

1 Standard unit (SU) = 18 mm