

### Decentralized Power Supply JB 125C33, 160 mA, AC 110 – 277V

5WG1125-4CB33

January 2022



#### Product and Application Description

The JB 125C33 junction box mount decentralized power supply provides KNX Bus power for Gamma and TRA installations. The device mounts to, or in, USA 4-11/16" square deep junction box. Power supply has integral choke to support KNX data telegrams. Bus short circuit protection includes visible operation status indicators.

KNX S-Mode installations requires at least one power supply per line segment, main line, and backbone. A second power supply can be added to handle bus loads exceeding 160 mA. Maximum of two (2) JB 125C33 can be wired in parallel for 320 mA bus load. For larger KNX installations, DIN mount power supplies are available from Siemens Gamma.

Note: If two (2) power supplies are operated in parallel on one bus line and if the overload LED is lit on one power supply, then the bus configuration must be changed until the overload display disappears on all units.

KNX TP (twisted pair) installation is "Free-Topology," "T" taps are allowed. The distance between any bus device and the closest power supply unit must not exceed 350 m (380 yds).

The power supply has voltage and current regulation, therefore is short-circuit proof. Short power disruptions can be bridged with a reserve interval of at least 100 ms.

To ensure uninterrupted network operation, separate (120 - 277Vac) power circuit should be used.

Total Room Automation (TRA) with DXR Controller can use 1 or 2 JB 125C33 power supplies to support the room devices. The DXR internal power supply must be deactivated when external power supplies are added to the (KNX) PL-LINK bus, see DXR Technical Product Information for details.

#### Technical Specifications

##### Input voltage

- operation voltage: AC 110 - 277 V, 50...60Hz

Rated power consumption approx. 3 W

##### Output voltage

- rated voltage: DC 24 V (class 2)
- safety extra low voltage (SELV)
- permissible range: DC 21 ... 30 V

##### Output current

- rated current 160 mA
- short-circuit current: limited to 0.39 A

##### Backup interval

on input voltage failure:  $\geq 100$  ms at rated current

##### Display elements

- 1 RED LED: shorted-out bus line or device over-load
- 1 GREEN LED: KNX power ON, normal operation

##### Connections

KNX Bus: screwless "Push-Connect" standard KNX terminal block (red/black). Connect can fit 4 pairs of terminations

BUS Wire: 18-22 AWG (0.6...0.8 mm) solid core, twisted, shielded wire - strip insulation 5 mm.

Siemens wire: KNX-TSP20LC-CMP

##### 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: IEC 61558-2-16, EN 50491-3

##### Physical specifications

- housing: plastic
- dimensions (L x W x D):  
length: 3.0 inch (76 mm)  
width: 3.62 inch (92 mm)  
depth: 1.76 inch (45 mm)
- weight: approx. 8 oz (210 g)
- fire load: approx. 4 MJ
- Installation: in a junction box (min. dimensions (L-W-D))  
Length: 4 11/16 inch (119 mm)  
Width: 4 11/16 inch (119 mm)  
Depth: 2 1/8 inch (54 mm)

##### Electromagnetic compatibility

complies with

IEC 61000-6-1, IEC 61000-6-2, IEC 61000-6-3, EN 50491-5-2, EN 50491-5-3

##### Environmental specifications

- Ambient operating temperature:  
- 5 ... + 45 °C (+ 23 ... + 113 °F)
- Storage temperature:  
- 25 ... + 70 °C (- 13 ... + 158 °F)
- Relative humidity (not condensing): 5 % ... 95 %
- Reliability
- Failure rate: 159 FIT at 40 °C (104 °F)

Markings KNX, UL, ULC, PLENUM RATED

#### Listings and Certifications

##### UL listed (E464611)

UL 916 Open Energy Management Equipment  
UL 2043 Plenum Rated - Suitable for installation in Air Handling or Plenum spaces

#### Electromagnetic compatibility

##### USA:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:  
(1) This device may not cause harmful interference, and  
(2) this device must accept any interference received, including interference that may cause undesired operation.

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.

This device complies with Part 15 of the FCC rules. Changes or modifications not expressly approved by Siemens Schweiz AG could void the user's authority to operate the equipment.

United States representative:

<https://new.siemens.com/us/en/products/building-technologies/home.html>

##### Canada:

CAN ICES-3(B)/NMB-3(B)



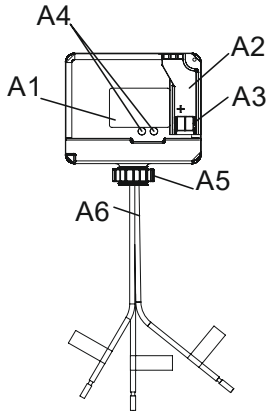
# WARNING

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

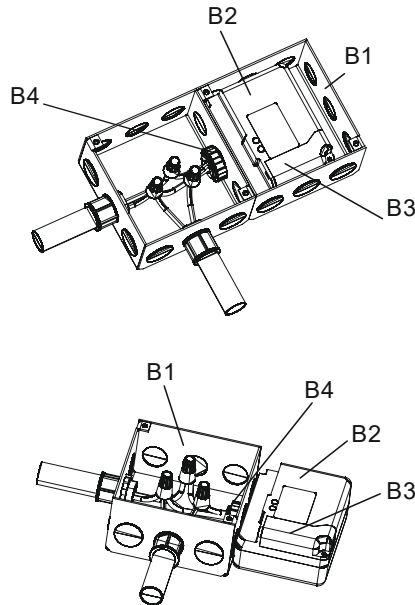
The device must not be opened.  
A faulty device should be returned to the local Siemens sales office or distributor.

The device must be mounted and commissioned by a factory trained person.  
The prevailing safety rules must be observed!  
Mount in dry locations only!

## Location and Function of Interface Elements



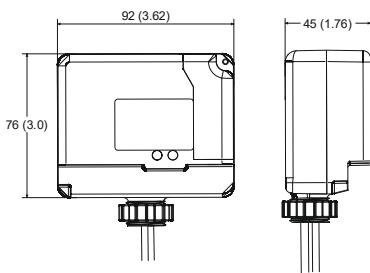
- A1 Type label
- A2 Protective lid over bus connection
- A3 Bus connection terminal block for single core conductors with  $\varnothing$  0.6...0.8 mm
- A4 Green LED for indicating KNX power present (ON)  
Red LED for indicating shorted-out bus line or device over-load (OVERLOAD)
- A5 1/2 inch screw nut
- A6 Wire (black) line (hot) (AWG #14)  
Wire (white) neutral (AWG #14)  
Wire (green) ground (AWG#14)



- B1 Junction Box
- B2 Device
- B3 Bus connection pins of the module for connection of the bus terminal block for single core conductors with  $\varnothing$  0.6...0.8 mm
- B4 1/2 inch screw nut

## Dimension Diagram

Dimensions in mm (inch)



## Mounting

### Option 1 (mounting inside a J-Box):

- Insert the thread of the JB module (B2) into the 1/2 inch knockout between two adjacent J-Boxes (B1)
- Fasten the JB module (B2) with the 1/2 inch thread nut (B4)
- Remove the protective lid (B3) and connect the bus wire to the bus terminal block (A4)
- Connect the wires from the device to the field wires using wire nuts (not provided in package)

### Option 2 (mounting outside of a J-Box):

- Insert the thread of the JB module (B2) into the 1/2 inch knockout of the J-Box (B1)
- Fasten the JB module (B2) with the 1/2 inch thread nut (B4) to the J-Box (B1)
- Connect the bus wire to the bus terminal block under the protective cover (B3)
- Connect the wires from the device to the field wires using wire nuts (not provided in package)
- Install the protective lid (B3) and fasten with screws (provided in package)

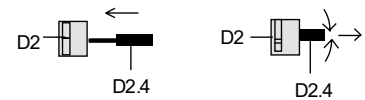
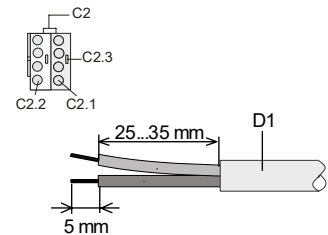
## Dismounting

- Disconnect power to the module
- Remove the wire nuts and bus connection
- Unfasten the 1/2 inch thread nut (B4) connecting the JB module (B2) to the J-Box (B1)
- Remove the JB module (B2) from the J-Box (B1)

## Wiring

### Slipping off/on bus connection blocks

The bus connection block consists of two components (C2.1 and C2.2) with four terminal contacts each. Take care not to damage the two test sockets (C2.3) by accidentally connecting them to the bus cable or with the screwdriver (e.g. when attempting to unplug the bus connection block).



### Slipping off bus connection blocks

- Carefully put the screwdriver to the wire insertion slit of the bus connection block's grey component (C2.2) and
- pull the bus connection block (C2) from the module.

## Note

Don't try to remove the bus connection block from the bottom side. There is a risk of shorting-out the device!

### Slipping on bus connection blocks

- Slip the bus connection block (C2) onto the guide slot of the module and
- press the bus connection block (C2) down to the stop.

## Connecting and Disconnecting bus cables

### Connecting bus cables

- The bus connection block (D1) can be used with single core conductors  $\varnothing$  0.6...0.8 mm.
- Remove approx. 5 mm of insulation from the conductor (D2) and plug it into the bus connection block (D1)  
(red = +, grey = -)

### Disconnecting bus cables

- Unplug the bus connection block (D1) and remove the bus cable conductor (D2) while simultaneously wiggling it.

## Connecting mains:

### Connect wires

Connect wire leads using wire nuts.