# System products and accessories

### Fitting power supplies for every KNX system

Each bus line needs its own power supply unit. The power supply unit provides the system power necessary for the instabus KNX.
The KNX system provides for decentralized and central power supply units. Central power supply units are installed as DIN rail mounted devices in distribution boards and control cabinets, while decentralized power supply units are designed for installation in junction boxes, in parapet channels or in room control boxes.

Central power supply units provide 320 mA or 640 mA bus current. Maximum up to two central power supply units may be attached to a single bus line. A second unit is not required unless the supply voltage at a bus device is less than 21 V.
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 should be arranged near these bus devices. The distance between power supply unit and any of its bus devices must not exceed 350 m.

A decentralized power supply provides 80 mA bus current. This allows for decentralized solutions for self-sufficient control of a single room or, by integration of several room control islands, of a floor or even a complete building. Up to eight decentralized power supply units may be operated in parallel, such that a complete KNX bus line can be setup with e.g. eight room control boxes.
When several bus devices are installed in short bus cable distance (e.g. 10 m), e.g. in distribution boards, or in a room control box AP 641, the power supply units shall be arranged near these bus devices. The distance along the bus wire between any bus device and the closest power supply unit must not exceed 350 m. If only the decentralized power supply RL 125/23 is used, then the maximum KNX cable length in a bus line is 350 m for one, 700 m for two, and 1000 m for 3 or more decentralized power supplies RL 125/23.

In principle, central and decentralized power supply units can be operated in parallel with each other. Consideration must be taken regarding the sum of the short circuit currents of the power supply units, which must be lower than 3 amperes.

The following table shows the respective short circuit current:

| Material number | Type | Short circuit current | Bus current |
|---|---|---|---|
| 5WG1 125-4AB23 | RL 125/23 | < 0.2 A | 80 mA |
| 5WG1 125-1AB12 | N 125/12 | < 1.0 A | 320 mA |
| 5WG1 125-1AB22 | N 125/22 | < 1.5 A | 640 mA |

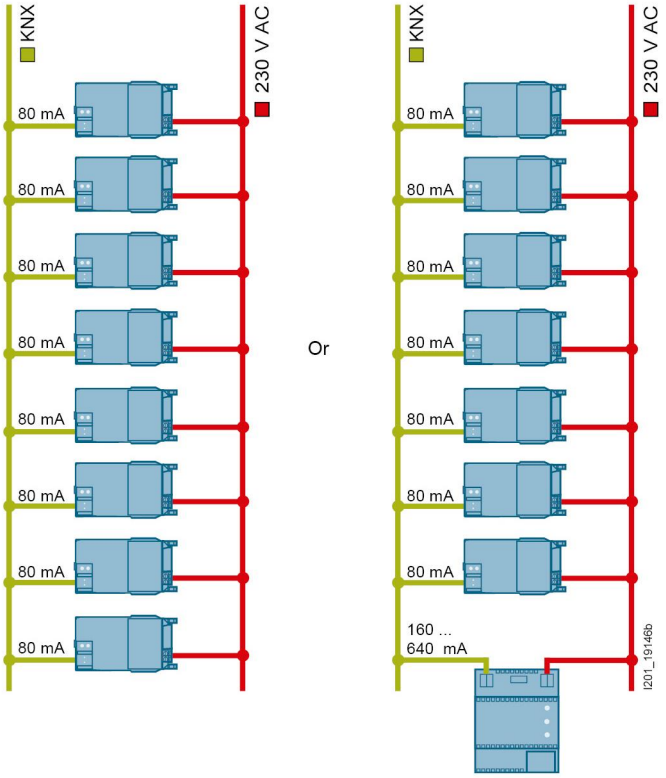
With eight decentralized power supply units RL 125/23 operated in parallel the maximum short circuit current is 1.6 A.

Additionally, it is possible to operate a power supply unit N 125/12 in parallel to eight RL 125/23. Only with the power supply unit N 125/22 observe that it has a short circuit current of 1.5 A, which is why only seven decentralized power supply units can be operated in parallel.

To ensure an uninterrupted power supply a separate circuit with safety separation should be used for the power supply unit N 125/x2 power supply line.

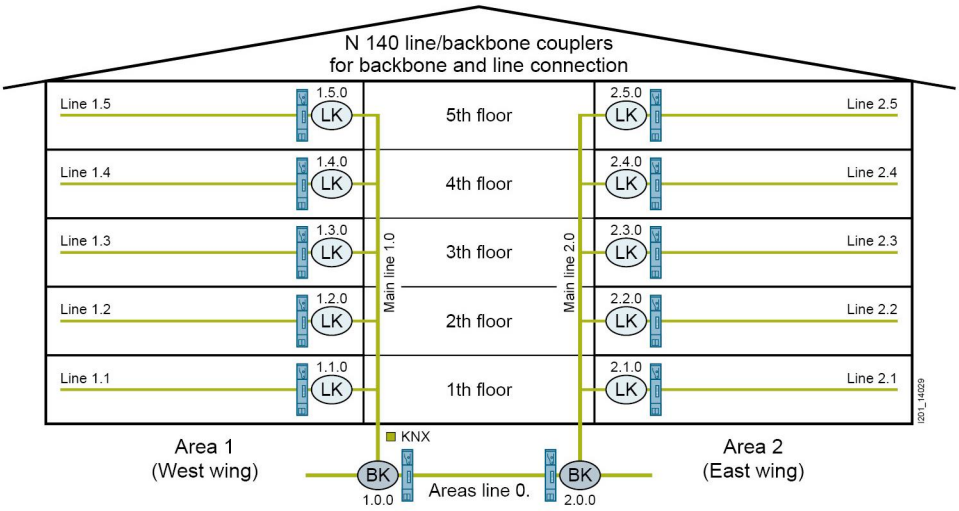
The power supply units N 125/x2 can supply DC 24 V power from an additional pair of terminals (yellow-white).

All power supply units N 125/x2, RL 125/23 can be powered by AC 120...230 V or by DC 220 V.
A minimum cable length is not required between these power supply units from Siemens.



For example

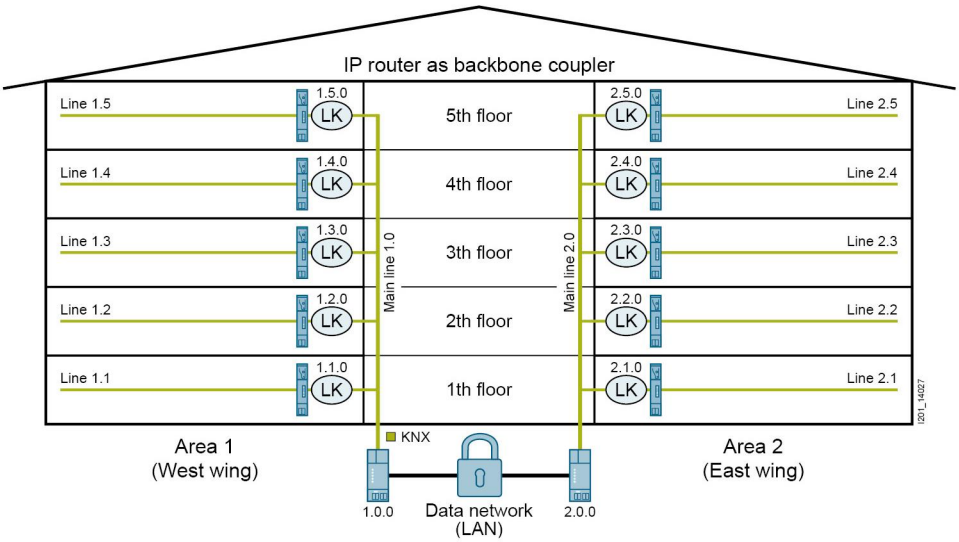
### Classic topology




In conventional topologies, all line and backbone couplers have usually been designed as KNX couplers.

This topology is proven and widely used. For the most part, the bus line lengths are limited to one building.

### Modern and safe topology

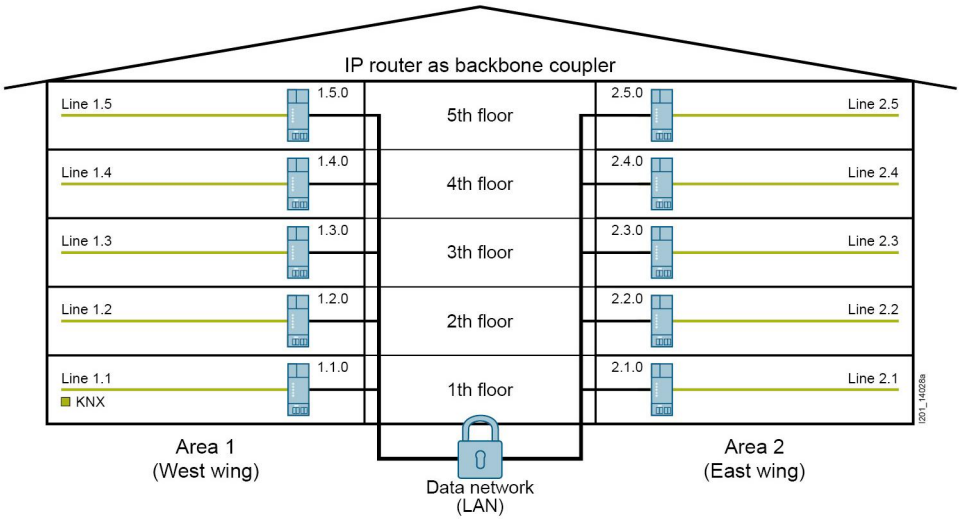



In this modern and save topology, the backbone couplers are replaced with IP routers Secure.

Thanks to the use of standard network components, the connection for example of two building sections is no longer limited to bus line lengths.

Use of other media such as fiberoptic cabling or WLAN is also possible for the purpose of coupling distant buildings and exchanging group address telegrams.

### Innovative and save topology




In this innovative and save topology, all line couplers are replaced with IP routers Secure.

Backbone couplers are no longer needed. This configuration allows to connect every building floor by Ethernet (LAN) and utilize existing LAN networks safe.

Moreover, correct configuration of the IP router enables major projects to be commissioned as smaller, individual subprojects in a simpler, clearer manner.

It's possible to exchange group address telegrams despite the separation into individual projects.

## Power supply units

| Type |  N 125/12 |  N 125/22 |  RL 125/23 |  JB 125C33 |
|---|---|---|---|---|
| **Enclosure data** | | | | |
| Modular installation devices for mounting on TH35 EN 60715 mounting rail | ■ | ■ | | |
| Device for installation in Control Module Box AP 118 or Room Control Box AP 641 | | | ■ | |
| Device for installation in Junction Box 4" x 4" | | | | ■ |
| **Dimensions** | | | | |
| • Width (1 MW = 18 mm) | 4 MW | 4 MW | 47.8 mm | 70 mm |
| • Height [mm] | | | 86.5 mm | 90 mm |
| • Depth [mm] | | | 36.2 mm | 44.6 mm |
| **Bus connection** | | | | |
| Integrated chokes | ■ | ■ | ■ | ■ |
| Bus connection via bus terminal | ■ | ■ | ■ | ■ |
| **Outputs** | | | | |
| Rated operational voltage | | | | |
| • AC V | 120...230 | 120...230 | 120...230 | 120...277 |
| • DC V | 220 | 220 | 220 | |
| 50...60 Hz | ■ | ■ | ■ | ■ |
| Output voltage, DC [V] | 29 | 29 | 29 | 29 |
| Output current [mA] | 320 | 640 | 80 | 160 |
| Additional unchoked output for DC 29 V, for powering a second bus line via an external choke (e. g. N 120/02) | ■ | ■ | | |

## Network gateways

| Type |  N 148/23 |  N 146/03 |  N 152/01 |  N 143/01 |
|---|---|---|---|---|
| **Enclosure data** | | | | |
| Design | N | N | N | N |
| Modular installation devices for mounting on TH35 EN 60715 mounting rail | ■ | ■ | ■ | ■ |
| **Dimensions** | | | | |
| Width (1 MW = 18 mm) | 2 MW | 2 MW | 4 MW | 4 MW |
| **Display/control elements** | | | | |
| LEDs for indicating that the device is ready-to-run, KNX communication, IP communication | ■ | ■ | ■ | ■ |
| **Power supply** | | | | |
| Electronics powered via an external nominal AC/DC power supply unit for | AC/DC 24 V | AC/DC 24 V | DC 24 V | AC/DC 24 V |
| Power consumption at DC 24 V [mA] | 60 | 60 | 50 | 60 |
| Power supply for the electronics via "Power over Ethernet" according to IEEE 802.3af | ■ | ■ | | |
| **Bus connection** | | | | |
| Integrated bus coupling units | ■ | ■ | ■ | ■ |
| Bus connection via bus terminal | ■ | ■ | ■ | ■ |
| **Mains connection** | | | | |
| Ethernet connection via RJ45 socket | ■ | ■ | ■ | ■ |
| Plug-in terminal block for the connection of an external power supply unit | ■ | ■ | ■ | ■ |
| **Gateway** | | | | |
| Supports KNXnet/IP | ■ | ■ | ■ | ■ |
| Supports KNX IP Secure | Yes | Yes | No | No |
| Line coupler function (Routing) | | ■ | | |
| Interface functions (Tunneling) | 5 | 5 | 1 | 1 |
| Weekly scheduling program | | | ■ | |
| Astro function | | | ■ | |
| Yearly time switching functions | | | ■ | |
| Event entries | | | ■ | |
| Logic gates | | | ■ | |
| Web servers | | | ■ | ■ |

## UP 117C12

### KNX Bus Coupling Unit (BTM), NEMA

- For connection of a modular bus device to the bus line
- 10-pole Bus Transceiver Interface (BTI) socket for clipping on an application module with BTI plug connector, with DC converter with output voltage / current of DC 5 V / 30 mA and DC 20 V / 25 mA for supply of the clipped on bus device via the bus line
- Mounting bracket for installation in a NEMA wall box with minimum inside dimensions 50 x 89 x 40 mm (W x H x D), with screw connection
- Mounting depth 19mm
- Bus connection via bus terminal
- Type of protection: IP 20

The matching design frame must be ordered separately. See Chapter Display and Operation Units - Pushbutton accessories.

| | |
|---|---|
| Data sheet | A6V11808813 |
| Dimensions (W x H x D) | 111 x 65 x 19 mm |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1117-2CB12 | **UP 117C12** |

## UP 117/12

### KNX Bus transceiver modules, mounting depth 18 mm

- For connection of a modular bus device to the bus line
- 10-pole BTI socket (BTI - Bus Transceiver Interface) for plugging of bus terminal devices with BTI connector
- For installation in flush-mounting switch and socket boxes with Ø 60 mm in diameter 40 mm deep
- Screw fixing
- Bus connection via bus terminal

| | |
|---|---|
| Data sheet | A6V10416065 |
| Dimensions (W x H x D) | 71 x 71 x 18 mm |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1117-2AB12 | **UP 117/12** |

## KNX Decentralized power supply, 80 mA, AC 230 V

**RL 125/23**

- Integrated choke
- Output voltage DC 29 V
- Output current 80 mA
- Connection of choke-protected output voltage via a plug-in extra-low voltage terminal or bus terminal
- Type of protection: IP 20 (installed)
- Rated operational voltage AC 120...230 V, 50...60 Hz, DC 220 V
- For mounting in AP 118 automation module box or AP 641 room control box

The AP 641 room control box and AP 118 automation module box must be ordered separately.
See Chapter Modular Installation System - Room control box - Module boxes.

| | |
|---|---|
| Data sheet | A6V11535388 |
| Dimensions (W x H x D) | 48 x 87 x 36 mm |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1125-4AB23 | **RL 125/23** |

## N 125/..2

### Power supply unit

- Integrated chokes
- Bus connection via bus terminal
- Parallel operating mode power supplies
- Rated operational voltage AC 120...230 V, 50...60 Hz, DC 220 V
- Output voltage DC 29 V
- Additional unchoked output for DC 29 V, for powering a second bus line via an external choke N 120/2
- Modular installation devices for mounting on TH35 EN 60715 mounting rail

| | |
|---|---|
| Data sheet | A6V10416488 |

### Range overview N 125/..2

| Product Title | Dimensions (WxHxD) [mm] | Dimension width (1 MW = 18 mm) | Stock no. | Product no. |
|---|---|---|---|---|
| KNX Power supply unit DC 29 V, 160 mA with additional unchoked output, N 125/02 | 72 x 90 x 60 | 4 MW | 5WG1125-1AB02 | **N 125/02** |
| KNX Power supply unit DC 29 V, 320 mA with additional unchoked output, N 125/12 | 72 x 90 x 60 | 4 MW | 5WG1125-1AB12 | **N 125/12** |
| KNX Power supply unit DC 29 V, 640 mA with additional unchoked output, N 125/22 | 72 x 90 x 60 | 4 MW | 5WG1125-1AB22 | **N 125/22** |

## JB 125C33

### KNX Power Supply, 160 mA, AC 110 ... 277 V

- Integrated choke
- Output voltage DC 29 V
- Output current 160 mA
- Connection of choke-protected output voltage via bus terminal
- Rated operational voltage AC 110 ... 277 V, 50...60 Hz
- Built-in device with 1/2 inch thread connection for mounting to or in a UL/NEMA Junction Box with feedthrough of the function wires through the 1/2 inch threaded connector

| | |
|---|---|
| Data sheet | A6V12688327 |
| Dimensions (W x H x D) | 92 x 76 x 45 mm |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1125-4CB33 | **JB 125C33** |

## KNX Choke, 640 mA

**N 120/02**

- For operation with a KNX power supply without integrated choke or for connection to the unchoked output of the KNX N 125/x2 power supplies
- Low-voltage terminal for unchoked voltage and bus
- Modular installation devices for mounting on TH35 EN 60715 mounting rail

| | |
|---|---|
| Data sheet | A6V10416067 |
| Dimensions (W x H x D) | 36 x 90 x 60 mm |
| Dimension width (1 MW = 18 mm) | 2 MW |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1120-1AB02 | **N 120/02** |

## N 146/03

### KNX IP Router Secure


- For interconnection of bus lines or bus areas via a fast data network (Ethernet 10BaseT or 100BaseT) with Internet Protocol (IP)
- To be used as line, area and system coupler
- Uses the KNXnet/IP protocol or secured access and data transmission via KNXnet/IP Secure
- Up to five KNXnet/IP Tunneling connections for parallel bus access by ETS and further PC software
- Assignment of the network parameters by the installer using ETS, automatically by a DHCP server in the network
- 5 LEDs for display of availibility, KNX communication and IP communication
- Electronics powered via “Power over Ethernet” according to IEEE 802.3af or alternatively by an external safety extra low voltage power supply for AC/DC 24 V
- Pluggable terminal block for connection of external power supply unit (not included)
- Ethernet connection via RJ45 socket
- Housing: plastic, color RAL 7035 (light grey), N-system
- DIN rail mounted device for mounting on rail TH35 according to DIN EN 60715
- Type of protection: IP 20

| | |
|---|---|
| Data sheet | A6V11656735 |
| Dimensions (W x H x D) | 36 x 90 x 60 mm |
| Dimension width (1 MW = 18 mm) | 2 MW |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1146-1AB03 | **N 146/03** |

### Accessories for N 146/03

| Product Title | Stock no. | Product no. |
|---|---|---|
| LOGO! Power 24 V/1.3 A | 6EP3331-6SB00-0AY0 | **LOGO!POWER 24 V/1,3 A** |

## N 140/13

### KNX Line/backbone coupler

- For data exchange between two KNX bus lines with telegrams of up to 64 byte
- For use as line coupler for connecting a line to the main line or as backbone coupler for connecting a main line to the backbone line or as repeater for connecting two segments of the same line, with electrical isolation of the two bus lines
- Loadable filter table for control of the data exchange between the two bus lines
- Additional loadable filter table for telegrams with LTE addressing
- Detection of a communication fault on the lower-level line and signaling to the higher-level line
- 3 LEDs for display of availability and receipt of a telegram per line
- Power supply from the main line
- Modular installation devices for mounting on TH35 EN 60715 mounting rail
- With bus connection to the line and to the main line via bus terminal.

| | |
|---|---|
| Data sheet | A6V10416071 |
| Dimensions (W x H x D) | 36 x 90 x 60 mm |
| Dimension width (1 MW = 18 mm) | 2 MW |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1140-1AB13 | **N 140/13** |

## KNX IP Interface Secure

**N 148/23**


- For communication between KNX devices and PCs or other devices with Ethernet (10BaseT or 100BaseT) interface, for remote access to an KNX installation
- Uses the KNXnet/IP protocol or secured access and data transmission via KNXnet/IP Secure
- Up to five KNXnet/IP Tunneling connections for parallel bus access by ETS and further PC software
- Assignment of the network parameters by the installer using ETS, automatically by a DHCP server in the network
- 5 LEDs for display of availibility, KNX communication and IP communication
- Electronics powered via “Power over Ethernet” according to IEEE 802.3af or alternatively by an external safety extra low voltage power supply for AC/DC 24V
- Pluggable terminal block for connection of external power supply unit (not included)
- Ethernet connection via RJ45 socket
- Housing: plastic, color RAL 7035 (light grey), N-system
- DIN rail mounted device for mounting on rail TH35 according to DIN EN 60715
- Type of protection: IP 20

| | |
|---|---|
| Data sheet | A6V11689764 |
| Dimensions (W x H x D) | 36 x 90 x 60 mm |
| Dimension width (1 MW = 18 mm) | 2 MW |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1148-1AB23 | **N 148/23** |

### Accessories for N 148/23

| Product Title | Stock no. | Product no. |
|---|---|---|
| LOGO! Power 24 V/1.3 A | 6EP3331-6SB00-0AY0 | **LOGO!POWER 24 V/1,3 A** |

## KNX IP Router Secure

**N 146/03**


- For interconnection of bus lines or bus areas via a fast data network (Ethernet 10BaseT or 100BaseT) with Internet Protocol (IP)
- To be used as line, area and system coupler
- Uses the KNXnet/IP protocol or secured access and data transmission via KNXnet/IP Secure
- Up to five KNXnet/IP Tunneling connections for parallel bus access by ETS and further PC software
- Assignment of the network parameters by the installer using ETS, automatically by a DHCP server in the network
- 5 LEDs for display of availibility, KNX communication and IP communication
- Electronics powered via “Power over Ethernet” according to IEEE 802.3af or alternatively by an external safety extra low voltage power supply for AC/DC 24 V
- Pluggable terminal block for connection of external power supply unit (not included)
- Ethernet connection via RJ45 socket
- Housing: plastic, color RAL 7035 (light grey), N-system
- DIN rail mounted device for mounting on rail TH35 according to DIN EN 60715
- Type of protection: IP 20

| | |
|---|---|
| Data sheet | A6V11656735 |
| Dimensions (W x H x D) | 36 x 90 x 60 mm |
| Dimension width (1 MW = 18 mm) | 2 MW |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1146-1AB03 | **N 146/03** |

### Accessories for N 146/03

| Product Title | Stock no. | Product no. |
|---|---|---|
| LOGO! Power 24 V/1.3 A | 6EP3331-6SB00-0AY0 | **LOGO!POWER 24 V/1,3 A** |

## N 152/01

## KNX IP Control Center

Visualisation controller for full-graphic visualizations on web-compatible end devices such as PCs, tablets and smart phones with a standard web browser.
For communication between KNX devices and PCs and, in connection with a LAN-/WLAN modem or DSL router, for remote access to a KNX installation, for usage as an interface for the ETS 3/4/5 and as an interface for a visualization, with usage of the KNXnet/IP protocol, with the following simultaneously usable functions:

- Web server for operating and monitoring up to 1250 statuses and values transmitted by the KNX network, which can be displayed using a standard browser on PCs, tablets, or smartphones connected to the IP network
- Special web-configuration page for a firmware update, to set the IP configuration, SMTP server, security settings, password protection, certificates, Sonos module, API connection and restart
- Graphical web editor for a creation of fully graphical visualization with control and display elements, configurable in various styles
- Smart editor for the creation of a visualisation, tuned for mobile browsers, smartphones, tablets with control and display elements, configurable in various styles and layouts
- Annual timer, with astronomical calendar, for 300 time switch schedules with up to 30 time switch commands per time switch schedule
- Scene module with up to 5000 scenes or events
- Chart module for recording and reporting of up to 10 data points
- Monitoring module for monitoring and storage of up to 1000 events into a ring buffer
- IP interface for control of up to 20 IP-devices via up to 20 TCP/UDP commands per IP-device
- Fully graphical logic module with up to 1000 logic functions
- Alarm function for up to 250 different alarms
- E-mail function, with up to 20 contacts, for transmission of chart data from chart module, logged data from monitoring module or alarm data
- Data point management for viewing, managing, editing and categorizing all available data points
- Module for controlling SONOS loudspeakers
- Module for controlling the Philips HUE LED lighting system
- Ethernet interface 10/100 Mbits/s with RJ45 socket for connection to the IP network using the Internet Protocol
- 2 LED displays for IP connection/communication and for error messages
- Integrated bus connector and bus terminal for connection to a KNX network
- Power supply of the electronics by an external voltage source for AC/DC 24 V, 50 mA
- Series installation device for mounting on support rails TH35 DIN EN 60715

| | |
|---|---|
| Data sheet | A6V10417875 |
| Dimensions (W x H x D) | 72 x 90 x 60 mm |
| Dimension width (1 MW = 18 mm) | 4 MW |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1152-1AB01 | **N 152/01** |

### Accessories for N 152/01

| Product Title | Stock no. | Product no. |
|---|---|---|
| LOGO! Power 24 V/1.3 A | 6EP3331-6SB00-0AY0 | **LOGO!POWER 24 V/1,3 A** |

## IP Gateway KNX/BACnet

**N 143/01**

- BACnet Application Specific Controller (B-ASC) as Gateway between KNX TP and BACnet IP
- Up to 250 BACnet objects
- Up to 455 BACnet COV subscriptions
- Automatic translation of KNX communication objects into BACnet objects according to the configuration with ETS
- For communication between KNX devices and PCs or other devices with Ethernet (10BaseT) interface, as well as in conjunction with a LAN modem or DSL router for remote access to an KNX installation
- For use as an interface e.g. for ETS or for visualization software
- Use the KNXnet/IP protocol
- KNXnet/IP Tunneling connection for parallel bus access by ETS and further PC software
- Assignment of the network parameters by the installer using ETS, or automatically by a DHCP server in the network
- 2 LEDs for display of operational availability and IP communication
- Additional power supply by an external safety extra low voltage power supply for AC/DC 24 V, 40 mA
- Pluggable terminal block for connection of external power supply unit (not included)
- Integrated bus coupling unit with bus connection via bus terminal
- Ethernet connection via RJ45 socket
- Mounting on DIN rail EN 60715-TH35-7.5

| | |
|---|---|
| Data sheet | A6V10466141 |
| Dimensions (W x H x D) | 72 x 90 x 60 mm |
| Dimension width (1 MW = 18 mm) | 4 MW |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1143-1AB01 | **N 143/01** |

### Accessories for N 143/01

| Product Title | Stock no. | Product no. |
|---|---|---|
| LOGO! Power 24 V/1.3 A | 6EP3331-6SB00-0AY0 | **LOGO!POWER 24 V/1,3 A** |

## KNX Bus terminal, 2-pole, 4 plug-in connectors, red/dark gray

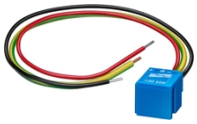
**S 193/01**

- For connection of bus devices to the bus cable
- For connection of up to 4 bus cables
- Comprising two engaged clamp parts + (red) and - (dark gray), each with 4 screwless plug-in terminals per clamp part for solid conductors, ∅ 0.6 mm...0.8 mm

| | |
|---|---|
| Dimensions (W x H x D) | 10 x 12.4 x 10 mm |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1193-8AB01 | **S 193/01** |

## S 190/01



### KNX Overvoltage protection, as fine protection for bus devices

- For the overvoltage fine protection of bus devices
- For inserting in a bus device instead of a 193 bus terminal or for direct connection to a bus terminal
- For surge protection through connection of the yellow/green ground conductor to the next grounding point
- 2 socket contacts (1 mm ∅) for insertion in bus devices
- 2 solid wires (0.8 mm ∅) for connection to the bus terminal
- A solid wire (0.75 mm ∅) for surge protection
- Rated voltage DC 24 V
- Rated current 6 A
- Rated discharge surge current 5 kA
- Protection level 350 V

| | |
|---|---|
| Data sheet | A6V10416502 |
| Dimensions (W x H x D) | 11.6 x 10.5 x 11.1 mm |
| Warranty | 24 Months |

| Stock no. | Product no. |
|---|---|
| 5WG1190-8AD01 | **S 190/01** |