

### Product and Applications Description

The IP Router N146 is a DIN rail mounted device.

The device connects EIB lines via data networks using the Internet Protocol (IP). Also this device offers communication of EIB devices with PC's or other data processing equipment.

The physical connection to the EIB is established via a bus connector terminal block. For connection to the data network (IP via 10BaseT) the device contains an RJ45 socket.

To operate the IP Router requires AC/DC 24 V, which is provided via a second terminal block. The IP Router is powered via this operating voltage terminal connector. This allows the IP Router to send a bus voltage failure notification onto the data network.

The IP Router implements the EIBnet/IP standard for routing of EIB telegrams between lines and for concurrent access to the bus line from any PC.

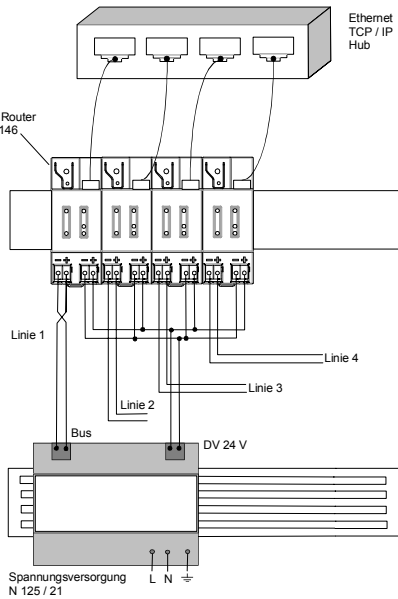
The IP Router N146 logically connects EIB bus lines by transmitting EIB telegrams between them via a data network but separates them galvanically. This allows to run each bus line independently from other bus lines.

The N146 can be used as line coupler or area coupler in existing EIB networks as well as in new KNX EIB networks. The N146 holds a filter table determining, which bus telegrams are transmitted or blocked from or to the bus line thus reducing the bus load. The filter table is automatically generated by the ETS (EIB Tool Software) during configuration and start-up of the system.

### Additional Information

<http://www.siemens.de/gamma>

### Example of Operation



– door bell transformer 4AC2 105, AC 230V / AC 12V (primary / secondary), 1,33A, 2SU width

### Power usage

- From the bus line: max. 10mA @ DC 29V
- From the auxiliary power supply: max. 800mW (25mA @ DC 24V)

### Connections

- bus line: screwless bus connection block (red-black) 0,6...0,8 mm Ø single core remove approx. 5mm of isolation
- Ethernet / IP network: RJ45 socket
- auxiliary power: screwless extra low voltage terminal (yellow-white) Ø 0,6 ... 0,8 mm Ø single core remove approx. 5mm of isolation

### Physical specifications

- N-system DIN-rail mounted device, width: 2 SU (1SU = 18mm)
- weight: approx. 100g

### Electrical safety

- protection (according to EN 60529): IP 20

### Environmental specifications

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

### Operator Elements

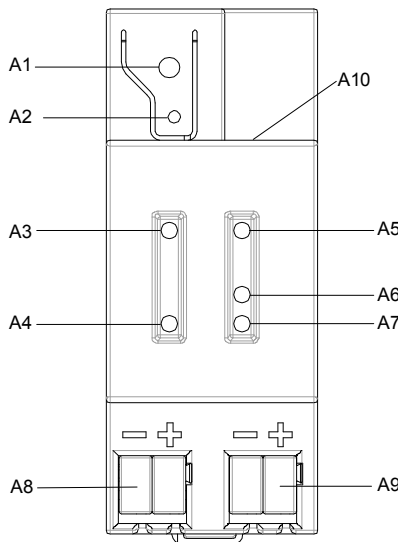


Figure 1: Location of the display and operator elements

- A1 LED red: indicating normal operating mode (LED off) and addressing mode (LED on)
- A2 learning button for switching between normal operating mode and addressing mode for receiving the physical address
- A3 LED green: Operation
- A4 LED yellow: data transmission on bus line (Line)
- A5 LED green: Ethernet Link signal (Lk)
- A6 LED yellow: Ethernet Receive signal (Rx)
- A7 LED red: Ethernet Transmit signal (Tx)
- A8 extra low-voltage bus terminals (red-black)
- A9 extra low-voltage terminals (yellow-white)
- A10 RJ45 socket for data network cable

### 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 must be mounted and commissioned by an authorised electrician.
- Free DIN rail areas with stuck-in data rails must be covered with covers, order no. 5WG1 192-8AA01.
- 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.

### Mounting and Wiring

#### General description

The N-system DIN-rail device can be installed in N-system distribution boards, surface or flush mounted, or on any DIN rail complying with EN 60715-TH35-7,5. The connection to the bus line is established via the bus connector terminal (red-black) on the top side. The RJ45 socket on the device front side provides the connection to the Ethernet-IP data network.

#### Slipping off bus connection blocks (Figure 2)

The bus connection block (D2) is situated on the top of the device (D1). The bus connection block (D2) consists of two components (D2.1 and D2.2) with four terminal contacts each. Take care not to damage the two test sockets (D2.3) by accidentally connecting them to the bus cable or with the screw-driver (e.g. when attempting to unplug the bus connection block). Carefully put the screw-driver to the wire-inserting slit of the bus connection block's grey component and pull the bus connection block (D2) from the device (D1).

#### Slipping on bus connection blocks (Figure 2)

Slip the bus connection block onto the guide slot and press the bus connection block (D2) down to the stop.

#### Connecting bus cables (Figure 2)

The bus connection block (D2) can be used with single core conductors Ø 0,6 ... 0,8 mm. Remove approx. 5 mm of insulation from the conductor (D2.4) and plug it into the bus connection block (D2) (red = +, black = -).

#### Disconnecting bus cables (Figure 2)

Unplug the bus connection block (E1) and remove the bus cable conductor (E1.4) while simultaneously wiggling it.

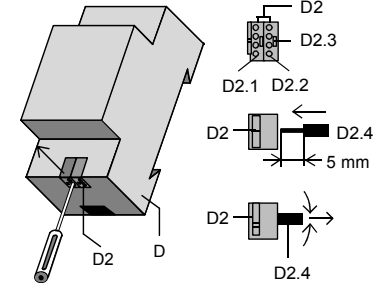


Figure 2: Connecting and disconnecting bus wires

#### Slipping off / on auxiliary power connection block

Follow the instructions for the bus connection block when slipping off/on the auxiliary power connection block.

### General Notes

- Any faulty devices should be returned to the local Siemens office.
- If you have further questions about the product, please contact our Technical Support:

☎ +49 (0) 180 50 50-222  
 ☎ +49 (0) 180 50 50-223  
 ✉ [adsupport@siemens.com](mailto:adsupport@siemens.com)

### Technical Specifications

#### Network communication

- Ethernet: 10BaseT (10 Mbit/s)
- Supported Internet Protocols: ARP, ICMP, IGMP, UDP/IP, DHCP
- EIBnet/IP according to Konnex System Specification: Core, Routing, Tunneling, Device Management

#### Rated voltage

- Bus: DC 24V (DC 21...30V)
- Auxiliary power supply: AC/DC 24V (AC/DC 12...30V)

#### Power supply

- Bus voltage: via EIB bus line
- Operating voltage: from external SELV power supply AC/DC 24V nominal, permissible input voltage range: AC/DC 12 ... 30 V
- Recommended power supplies:
  - DC 24V (before choke) from EIB power supplies N121, N122, N125/21
  - door bell transformer 4AC2 102, AC 230V / AC 12V (primary / secondary), 1,33A, 2SU width