

IP Interface Secure

N 148/23



IP Interface Secure is used for communication between KNX devices and PCs or other devices with an Ethernet interface and for remote access to a KNX installation.

- Easy to connect to higher-level systems by using the internet protocol (IP)
- LED displays for operational readiness, KNX communication and IP communication
- Easy and secure configuration using ETS
- Easy to connect to visualization systems and facility management systems

Function

Functions of IP Interface Secure

IP Interface Secure is a rail-mounted device for installation in distributions. The device uses the KNXnet/IP standard and acts as an interface to KNX/EIB via data networks using the internet protocol (IP). To do so, this device enables bus access from a PC or other data processing devices.

Connections and power supply The connection to KNX is established using a bus connector terminal (black and red terminals). The connection to the data network (IP via 10 or 100BaseT (depending on the switch)) is established using an RJ-45 socket.

IP Interface Secure also needs operating voltage in order to operate. IP Interface Secure can obtain this operation voltage via the network line using “Power over Ethernet” as per IEEE 802.3af. Alternatively, the operating voltage can be obtained via the second terminal block (white-yellow terminals) from an AC/DC 24 V safety extra low voltage supply or from a bus voltage supply (unchoked voltage, DC 29 V). As soon as the safety extra low voltage supply is connected to the second terminal block, operating voltage is drawn from it.

Remote access Even if there is no direct network connection between a PC and an IP router, you can use a suitable network infrastructure for remote access to a KNX installation. Five simultaneous connections (remote accesses) are possible.

Setting up remote access

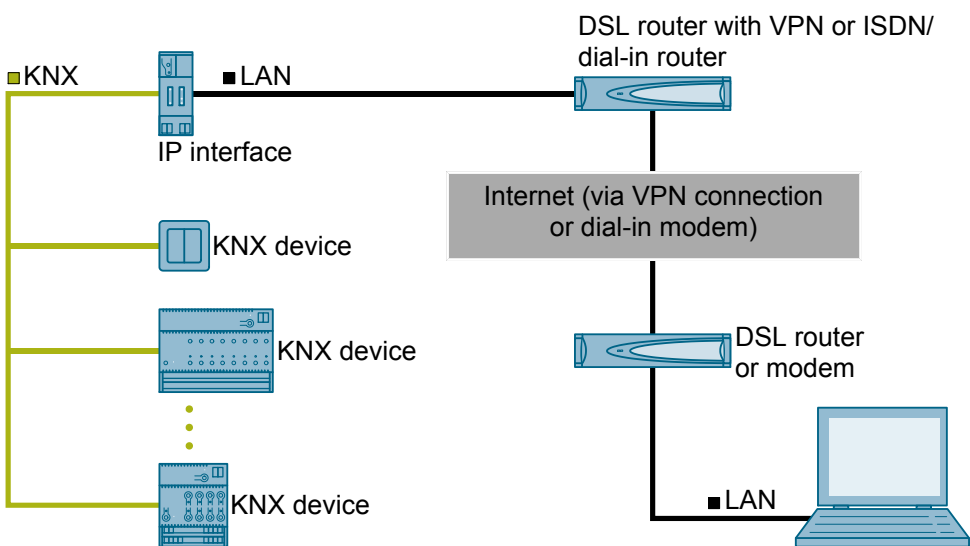


Fig. 1: Secure remote access

- Additional functions IP Interface Secure has the following attributes:
- Easy to connect to higher-level systems by using the internet protocol (IP)
 - Direct access to the KNX installation from every point in the IP network (KNXnet/IP tunneling)
 - Up to five KNXnet/IP tunneling connections are possible at the same time
 - LED displays for operational readiness, KNX communication and IP communication
 - Easy and secure configuration using ETS
 - Easy to connect to visualization systems and facility management systems
 - Slot for SD card (not in use)

Security functions of IP Interface Secure

IP Interface Secure supports the “**KNX IP Secure**” security standard and offers the following security functions, among others:

- Secured access only from authenticated devices
- Secure commissioning via ETS

During secure commissioning via ETS, the device certificate printed onto the device (FDSK = Factory Default Setup Key) is imported and stored for this exact device in the ETS project.



For more information on KNX IP Secure, refer to the ETS software help or go to the following website: <https://support.knx.org>



Alternatively, insecure commissioning without KNX IP Secure is also possible. In this case, the device is insecure and responds like other KNX devices without IP Secure.

Technology

Position and function of the connections, operating and display elements

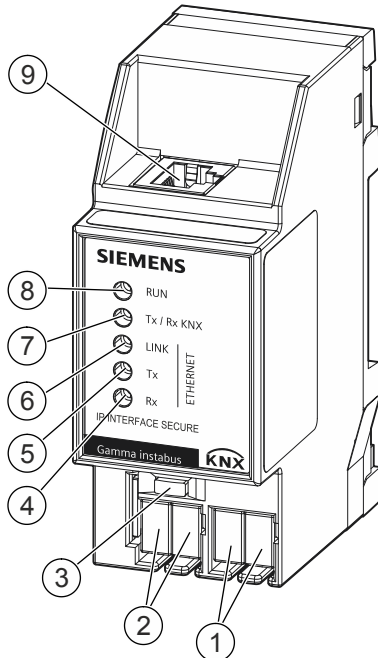


Fig. 2: IP Interface Secure LEDs and connections

Pos. no.	Element	Function
1	Connection terminals for additional power supply, screwless	They supply the device with power if there is no power supply via the RJ-45 connection (Power over Ethernet).
2	KNX bus terminal blocks, screwless	KNX bus connection
3	LED status display Button: Learning mode	Short press of button (< 1 s): → Display status (LED on = active) Very long push of button (> 20 s): → Reset to factory settings (LED starts blinking after 20 s)
4	LED "Rx"	LED lights up if data is received via the RJ-45 connection (Ethernet)
5	LED "Tx"	LED lights up if data is sent via the RJ-45 connection (Ethernet)
6	LED "LINK"	LED lights up as soon as there is a connection via the RJ-45 (Ethernet) connection
7	LED "Tx / Rx KNX"	LED lights up when telegrams are sent or received via the KNX bus
8	LED "RUN"	LED lights up as soon as power supply is established and the device is ready for operation
9	RJ-45 connection	Connecting the device to the network

Location of the device certificate QR code

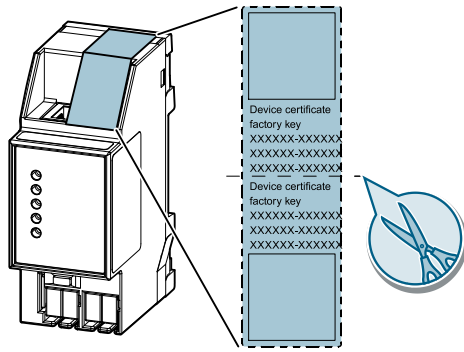


Fig. 3: Device certificate

The QR code of the device certificate is affixed to the device as a sticker. There is a duplicate QR code, which can be removed for easy commissioning.

Type overview

Type	Description	Order number
N 148/23	IP Interface Secure	5WG1 148-1AB23

Version of the Engineering Tool Software and application program

Application	Version
Engineering Tool Software (ETS)	ETS 5.7.3 and up

Product documentation

Documents related the product, such as operating and installation instructions, application program description, product database, additional software and CE declarations can be downloaded from the following website:

<http://www.siemens.com/gamma-td>



Frequently asked questions

For frequently asked questions about the product and their solutions, see:

<https://support.industry.siemens.com/cs/products?dtp=FAQ&mf=ps&lc=en-WW>



Support

Contact details for additional questions relating to the product:

Tel.: +49 89 9221-8000

<http://www.siemens.com/supportrequest>



⚠ CAUTION**National safety regulations**

Failure to comply with national safety regulations may result in personal injury and property damage.

- Observe national provisions and comply with the appropriate safety regulations.



If you pass on the device, ensure you also pass on the documentation for the device, such as, the operating instructions.

Notes on secure data transfer**Instructions for secure operation of KNX IP Secure products**

- Only operate the device in a protected network environment and do not allow direct access from the Internet.
- Additionally secure remote access to the device via a VPN connection.
A virtual private network (VPN) establishes an encrypted and authorized connection (VPN tunnel) from a remote connection to a network via the internet. This VPN connection enables secure communication protected from eavesdropping between a remote device and the KNX installation.
- Only operate the device in secure mode. The device is in secure mode when the device has been commissioned via secure commissioning, secure tunneling is enabled and strong and different passwords are used.
- Set up a separate IP network with its own hardware for KNX communication.
- Use user IDs and strong passwords to restrict access to the (KNX) IP network.
- Restrict access to the (KNX)IP network to an authorized group of people using user IDs and strong passwords..
- Document network settings and give them to the building owner/operator or LAN administrator.
- Coordinate the administration of access rights to this KNXnet/IP device in an IP network with the respective IP network administrator.

Measures after replacing a device in the network

If an IP Router Secure or an IP Interface Secure in secure mode is stolen from a network or replaced due to a defect, secure commissioning has to be repeated for all other devices in the network. To do this, deactivate the “Secure commissioning“ option for each device in the settings of the project, activate the option again and load the data to the devices again. (There is no need to load the data into the device between deactivation and reactivation.)

Secure commissioning has to be repeated because it is not possible to exclude the possibility that the keys that are in the secure section of the device can be read. Recommissioning has the effect that new keys are generated and the old keys become worthless. The removed device no longer works in the network.

More information on KNX security

For more information on KNX security, including, for example, a security check, refer to the “KNX Secure” section on the KNX website (<http://www.knx.org>).

Connection**Areas of use**

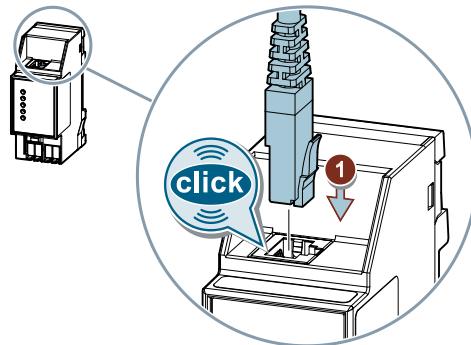
The device can be used for fixed installations in interior spaces, for installations in dry locations, within distribution boards or small casings with DIN rails EN 60715-TH35.



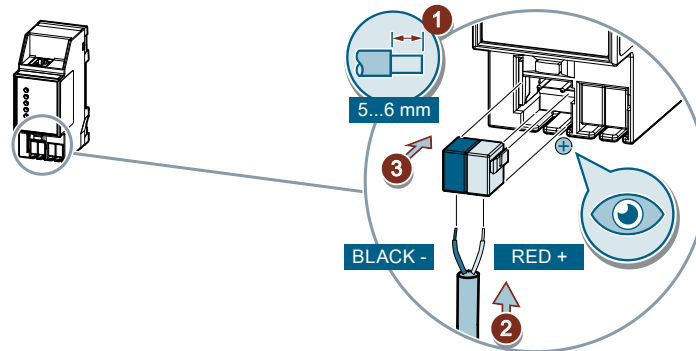
- Electrical expertise is required for the installation.
- The installation must be performed by a specialist.
- Do not open the casing of the device.

Incorrect installation can deactivate electrical safety features without this being apparent to a lay person.

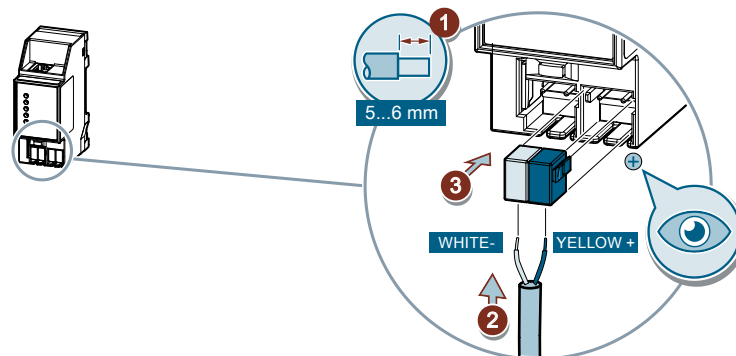
Ethernet RJ-45 connection



KNX 24 VDC type SELV connection

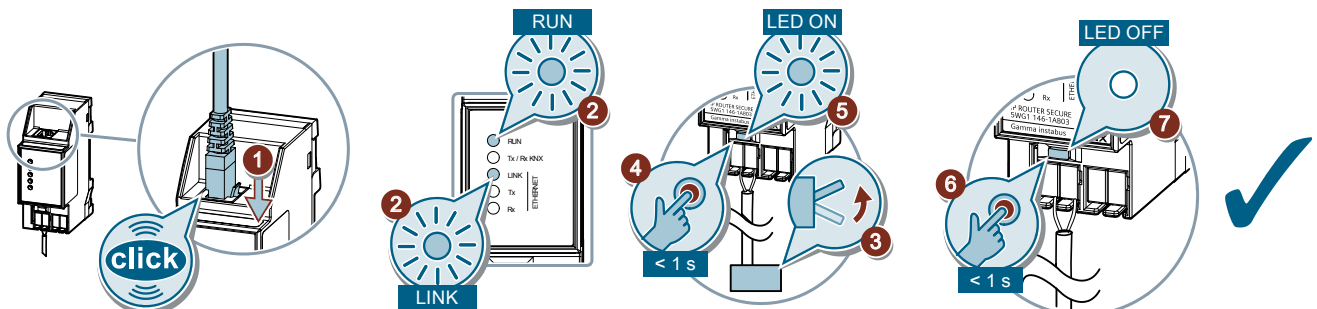


Power supply connection AC 16...24 V, DC 16...30 V

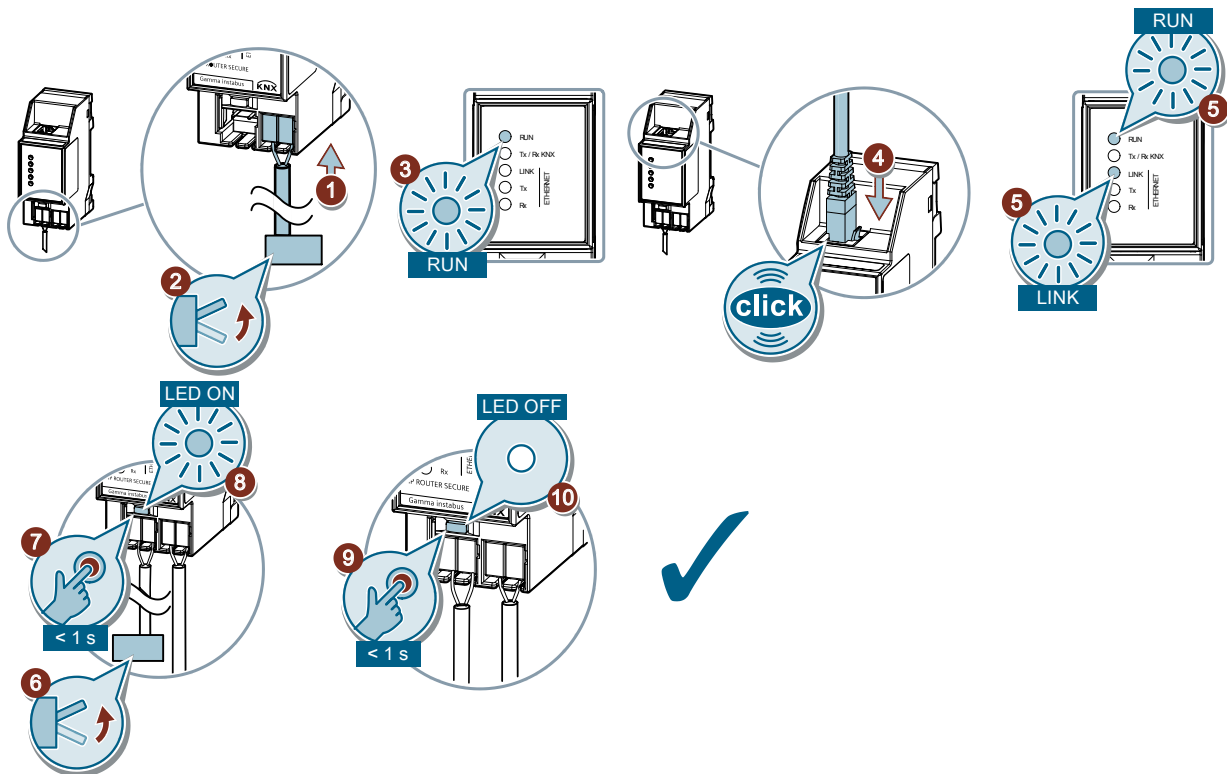


Checks

Checking the power supply via Ethernet (PoE) / Ethernet RJ-45 and KNX



Checking the power supply via the terminal block (yellow and white)



Resetting the device to factory settings

NOTICE	
!	<p>Loss of data due to resetting device! When you reset the device, all parameters and settings entered are deleted.</p> <ul style="list-style-type: none"> • Ensure that the device is really supposed to be reset.

Resetting the device to factory settings

- ◆ Press the Learn button (at least 20 seconds) until the programming LED starts flashing quickly.
- ⇒ The programming LED flashes for 8 seconds.
- ⇒ The device has been reset to factory settings. All parameter settings have been deleted.

Disposal



Defective devices can be returned to the appropriate sales office with a return delivery note. To do this, contact support: Product documentation and support [▶ 5]



The device is considered an electronic device for disposal in accordance with European Directive and may not be disposed of as domestic waste.

- Use only designated channels for disposing the devices.
- Comply with all local and currently applicable laws and regulations.

Update

Do not interrupt power supply to the device while the data on the device is being updated!

Interfaces

Network communication	
Standard for interfaces	Ethernet
Internet protocols supported	ARP, ICMP, IGMP, TCP/IP, UDP/IP, DHCP, AutoIP
KNXnet/IP as per KNX system specification	Core v2, Tunneling v2, Device Management, IP Secure, Data Security

Power supply

Power supply	
KNX bus voltage	DC 24 V (DC 21...30 V)
KNX power consumption	4 mA
Auxiliary power supply	From "Power over Ethernet" DC 48 V (as per IEEE 802.3af) max. 1.7 W Alternatively, from external operating voltage AC/DC 24 V (AC 16. 24 V, DC 16...30 V) max. 1.7 W (57 mA at DC 24 V)
Recommended power supplies	Unchoked voltage from KNX power supplies N 125
Power loss (internal consumption)	1.7 W

Physical specifications

Physical specifications	
Housing material	Plastic
Dimensions	Dimensions [► 11]
Weight (device)	approx. 100 g
Fire load	3 MJ

Ambient conditions

Ambient conditions	
Ambient temperature during operation minimum	-5 °C
Ambient temperature during operation maximum	+45 °C
Storage temperature minimum	-25 °C
Storage temperature maximum	+70 °C
Transport temperature minimum	-25 °C
Transport temperature maximum	+70 °C
Relative humidity (non-condensing) minimum	5 % r.h.
Relative humidity (non-condensing) maximum	90 % r.h.

Ambient conditions	
Climatic resistance	EN 60721-3-3 class 3k5

Protection settings

Protection settings	
Degree of pollution (according to IEC 60664-1)	2
Overtoltage category (according to IEC 60664-1)	III
Protection type IP	IP20
Electrical safety, bus	Safety extra low voltage
Standard for which the device meets the requirements (electrical safety)	EN 50491-3:2010
Standard for which the device meets the requirements (EMV)	EN 50491-5-1 EN 50491-5-2 EN 50491-5-3 EN 61000-6-1 EN 61000-6-2 EN 61000-6-3

Reliability

Reliability	
Failure rate (at 40°C)	489 fit

Connection examples

Power supply Power over Ethernet

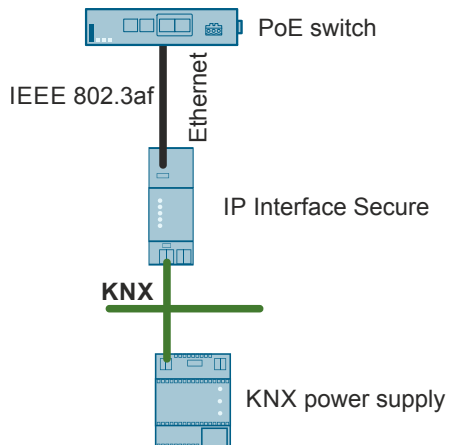


Fig. 4: Example: Power supply via Power over Ethernet (PoE)

Connection with separate power supply

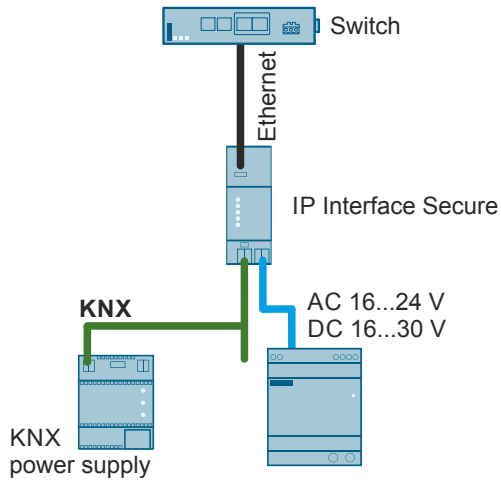


Fig. 5: Example with separate power supply

Power supply via KNX

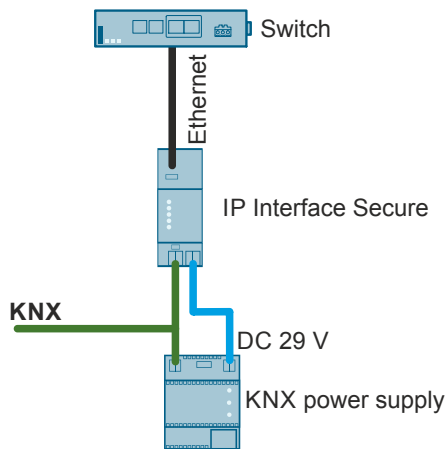


Fig. 6: Example with unchoked bus power supply

Dimensions

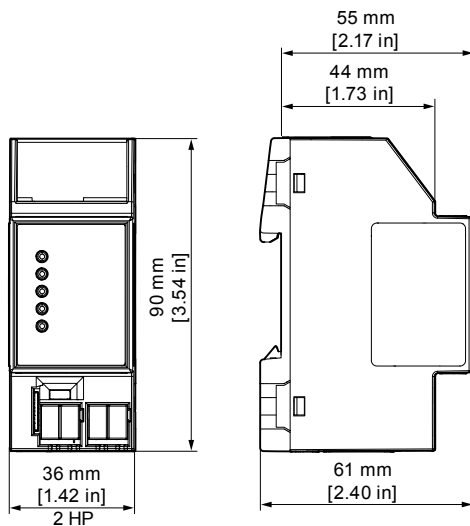


Fig. 7: Dimensions

HP Horizontal pitch
1 HP = 18 mm

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