EAE KNX IP Interface

Product Manual IPI200

Order Code: 50562

Content

1. General

The KNX IP Interface 200 serves as a universal interface for PC or Laptop to the KNX bus. The KNX bus can be accessed from any point on the LAN. For access via KNXnet/IP Tunneling max. 5 simultaneous connections are possible.

The IP address can be obtained by a DHCP server or by manual configuration (ETS) respectively. Power is supplied via the KNX bus.

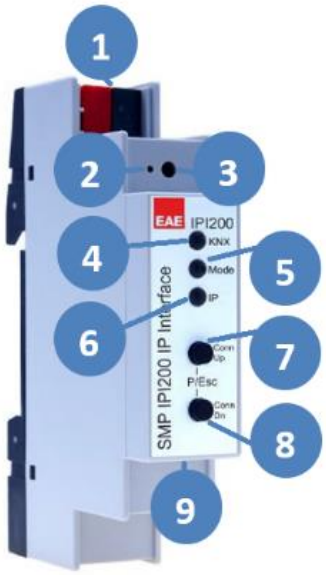
1.1. Technical Data

Power supply	Bus	DC 21…30V SELV
	KNX bus approx...	15 mA
Connections	IP Line KNX Line	RJ45 socket Bus connection terminal
Ethernet	10 Base T Supported internet protocols KNXnet/IP Tunneling connections	10Mbit/s ARP, ICMP, IGMP, UDP/IP, DHCP and Auto IP 5
KNX	Medium Interface protocols Max. APDU length Device model	TP cEMI 55 System 7
Display elements	LED KNX (Multicolor) LED Mode (Multicolor) LED IP (Multicolor) LED RED for program. mode	
Operating elements	2 Function Button Programming Button	
Installation	DIN rail mount	
Type of protection	IP 20	EN 60 529
Degree of Pollution	2	IEC 60664-1
Overvoltage class	III	IEC 60664-1
Temperature range	Operation	-5° C + 45° C non-condensing
	Storage	-25° C + 70° C
Humidity		%5 to 93 % no moisture condensation
Dimensions	Width W in units (18 mm modules)	
Weight	40 g	
Box	Housing plastic (PC)	
CE	▪ EMC directive 2014 / 30 / EU ▪ RoHS directive 2011 / 65 / EU ▪ EN 63000: 2018 EN 63044-3: 2018	▪ EN 50491-5-1: 2010 EN 50491-5-2: 2010 EN 50491-5-3: 2010 ▪ EN 61000-6-2: 2019 EN 61000-6-3: 2007 + A1: 2011

NOTE: Device default physical address is 15.15.255. In order to configure KNX Presence detector, ETS application file ".knxprod" is needed. It's possible to download the file on EAE website. ETS is required for programming the device. Parameter settings and related group addresses can be changed by ETS. Learn more by reading ETS help file.

1.2. Installation

The KNX IP Interface 200 is designed for installation on a DIN rail with a width of 1 unit (18mm). It features the following controls and displays:

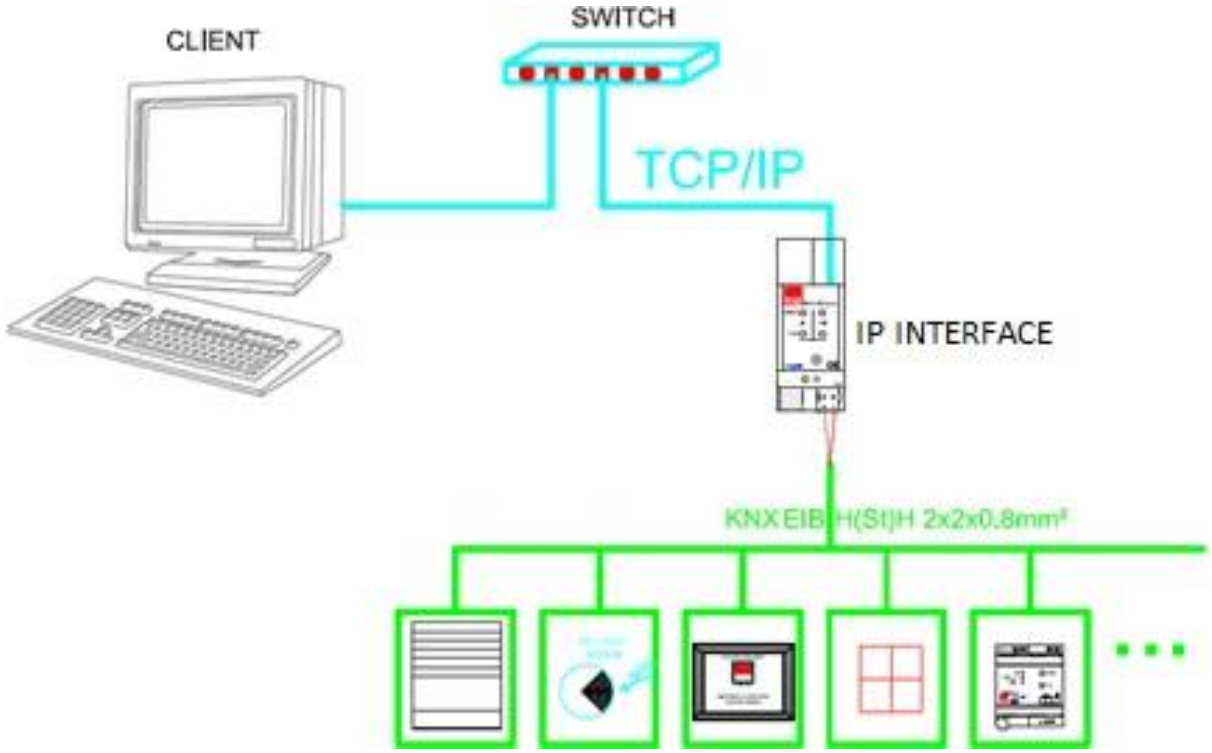


1. KNX Bus Connector
2. LED for Programming Mode (red)
3. Button for Programming Mode
4. LED KNX (multicolor)
5. LED Mode (multicolor)
6. LED IP (multicolor)
7. Button Connection up
8. Button Connection down
9. Ethernet/LAN Connector

The KNX IP Interface 200 is powered by the KNX bus. An external power supply is not necessary.

The device is not working without KNX bus power.

1.3. Connection



- After connection to the KNX bus system, the device works with its default settings
- Warning: Do not connect to 230 V. The device is supplied by the KNX bus and does notrequire any additional external power supply
- The device may only be installed and put into operation by a qualified electrician orauthorized personnel
- For planning and construction of electric installations the appropriate specifications,guidelines and regulations in force of the respective country have to be complied
- For mounting use an appropriate equipment according to IEC60715
- Installation on a 35 mm DIN rail (TH35)
- Connect the KNX bus line as for common KNX bus connections with a KNX bus cable,to be stripped and plugged into a KNX TP connector
- Do not damage electrical insulations during connecting
- Installation only in dry locations
- Accessibility of the device for operation and visual inspection must be provided
- For changing the configuration use the ETS
- The housing must not be opened
- Protect the device from moisture, dirt and damage
- The device needs no maintenance
- If necessary, the device can be cleaned with a dry cloth
- In the case of damage (at storage, transport) no repairs may be carried out by unauthorized personnel

2. KNX Programming Mode

The KNX programming mode is activated/deactivated either by pressing the flushed KNX programming button 3 or by simultaneously pressing the buttons 7 and 8.

3. Status display

The KNX LED 4 lights up green if the device is successfully powered by the KNX bus. The LED indicates telegrams on the KNX bus by flickering.

Communication failures (e.g. repetitions of telegram or telegram fragments) are indicated by a short change of the LED color to red.

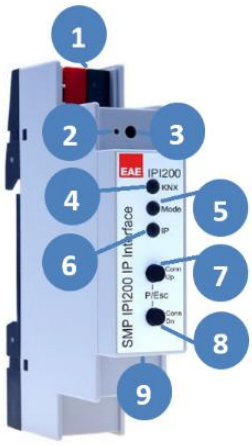
Overview of the different indications of the KNX LED 4:

LED Status	Meaning
LED lights green	KNX bus voltage available.
LED flickers green	Telegram traffic on the KNX bus
LED shortly red	Communication failures on the KNX bus

The IP LED 6 lights up when an Ethernet link is active. This LED is green if the device has valid IP settings (IP address, Sub net and Gateway). With invalid or nonexistent IP settings the LED is red. This is also the case if e.g. the device has not yet received the IP settings by a DHCP server. The LED indicates IP telegrams by flickering.

Overview of the different indications of the IP LED 6:

LED Status	Meaning
LED lights green	The device has an active Ethernet link and valid IP settings.
LED lights red	The device has an active Ethernet link and invalid IP settings or not yet received the IP settings by a DHCP server.
LED flickers green	IP telegram traffic



The Mode LED 5 can visualize the status of each KNXnet/IP tunneling connection.

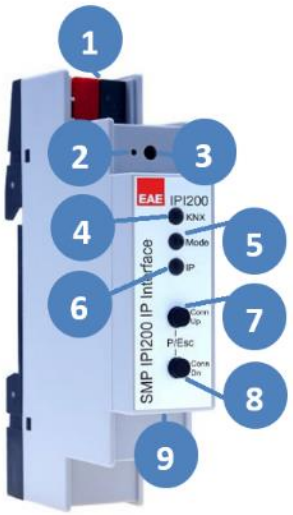
With the buttons Conn Up/Dn 7 8 you can chose each single connection. Conn Up 7 counts the connection numbers up and Conn Dn 8 down. The actually selected connection number is indicated by flashing (1x…5x) of the Mode LED 5. An available KNXnet/IP Tunneling connection is indicated by a green LED and a used tunneling connection is indicated by an orange LED.

Via the Escape function (Esc) this indication can be ended by simultaneously pressing the buttons Conn Up/Dn 7 8.

If neither programming mode nor manual operation are active the Mode LED 5 can visualize configuration errors.

Overview of the different indications of the Mode LED:

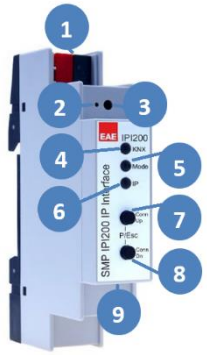
LED Status	**Meaning**
LED lights green	Device is working in standard operation mode.
LED lights red	Programming mode is active.
LED flashes green 1..5x	Programming mode is not active. Manual operation is active. The selected tunnel (1-5) is not used and free.
LED flashes orange 1x…5x	Programming mode is not active. Manual operation is active. The selected tunnel (1-5) is used.
LED flashes red	Programming mode is not active. Manual operation is not active. The device is not properly loaded e.g. after an interrupted download.



4. Factory Default Settings

Factory default configuration	
Individual device address	**15.15.255**
Number of configured KNXnet/IP tunneling configuration	**1**
Individual address of tunneling configuration	**15.15.250**
IP address assignment	**DHCP**

5. Factory Default Settings



- Separate the KNX Bus connector 1 from device
- Press the KNX programming button 3 and keep it pressed down
- Reconnect the KNX Bus connector 1 of device
- Keep the KNX programming button 3 pressed for at least another 6 seconds
- A short flashing of all LEDs (2 4 5 6) visualizes the successful reset of the device to factory default settings.

6. Interface settings within ETS

Within the ETS, KNX interfaces can be selected and set up via the ETS menu "Bus Interfaces".

The ETS can access configured KNX IP Interfaces even without a database entry. If the setup of the KNX IP Interface does not comply with the conditions of the KNX installation it must be configured via an ETS project. See the ETS database section for more information.

As factory default the assignment of the IP address is set to “automatically via DHCP” and thus no further settings are necessary. To use this feature a DHCP server on the LAN must exist (e.g. many DSL routers have an integrated DHCP server).

After connecting the KNX IP Interface to the LAN and the KNX bus it should automatically appear in the ETS within the menu "Bus" under "Discovered interfaces".

By clicking on the discovered interface it is selected as the current interface. On the right side of the ETS window all specific information and options of the connection appear.

The indicated device name and the "Host Individual Address" (individual address of the device) can be changed within your ETS project then.

Like all programmable KNX devices the KNX IP Interface 200 has an individual address which can be used to access the device. This is used, for example, of the ETS when downloading to the KNX IP Interface via the bus.

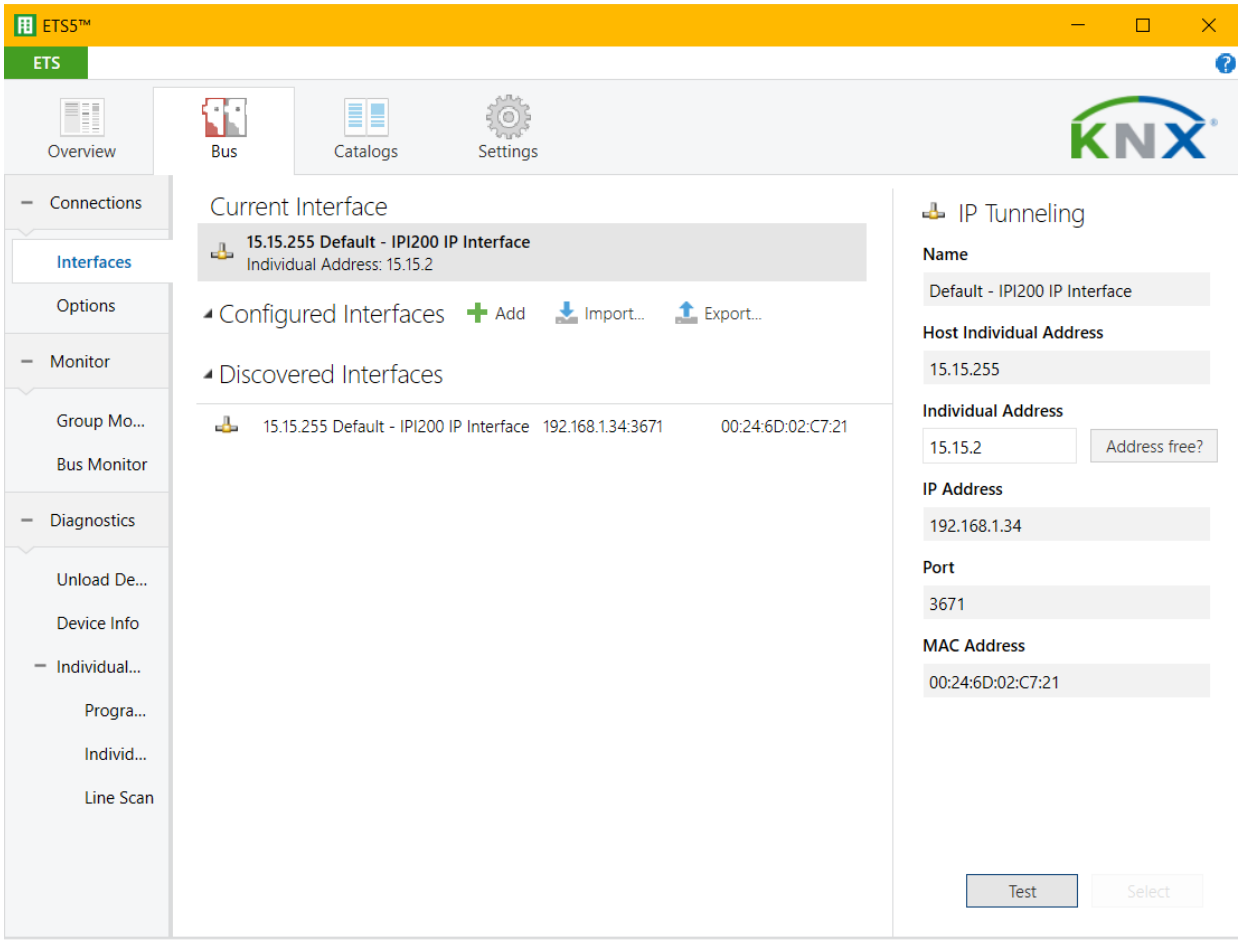
For the interface function the device contains additional individual addresses that can be set in the ETS (ETS 4.2 or higher). When a client (e.g. ETS) sends via the KNX IP Interface telegrams to the bus, they contain a sender address as one from the additional addresses. Each address is associated with a connection. Thus response telegrams can be clearly transmitted to the respective client.

The additional individual addresses must be selected from the address range of the bus line in which the interface is installed and may not be used by another device.

Example:

Device address	15.15.255	(address within ETS topology)
Connection1	15.15.1	(1. additional address)
Connection 2	15.15.2	(2. additional address)
Connection 3	15.15.3	(3. additional address)
Connection 4	15.15.4	(4. additional address)
Connection 5	15.15.5	(5. additional address)

Section “Individual Address” enables you to change the individual KNX address of the currently used KNXnet/IP Tunneling connection. To check if the address you want to assign is unique within your KNX installation you can click the button “Address free?”

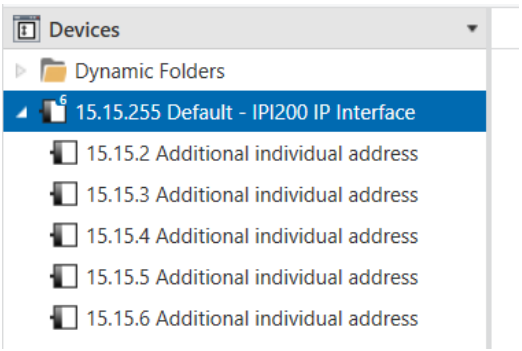


The individual KNX device address and the individual addresses for additional tunneling connections can be changed within the ETS project after the device has been added to the project.

7. ETS Database

The ETS database (for ETS 4.2 ETS or higher) can be downloaded from the product website of the KNX IP Interface 200 (https://www.eaetechnology.com). For existing installations a database for ETS 4 and higher versions are also available.

When using the ETS® product database for ETS 4 / 5 some settings are displayed in addition to the parameter dialog of the Properties dialog (on the right side of the ETS window). So the IP settings can be done here. In the ETS 4 or higher also the additional individual addresses will appear. In the ETS 5 those addresses appear in the topology view.

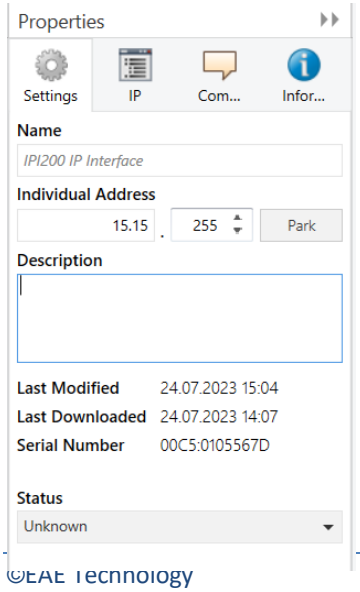


Each individual KNX address can be changed by clicking on the list entry and typing in the desired address into the “Individual Address” text field. If the text field frame switches to color red after entering the address, the address is already taken within your ETS project.

Make sure that none of the addresses above is already in use within your KNX installation.

If the physical KNX addresses of the tunneling connections have been assigned via the ETS project, a manual address setting on the device is not allowed.

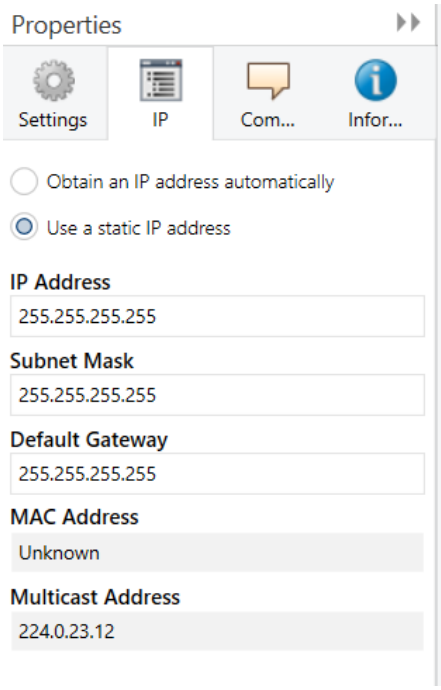
By clicking on the KNX IP Interface 200 device entry within your ETS projects topology view, an information column ‘Properties’ will appear on the right side of the ETS window. Within the ‘Settings’ overview, you can change the name of the device.



Within the “IP” overview the IP network specific options of the KNX IP Interface 200 can be changed.

By changing "obtain an IP address automatically (via DHCP)" to “Use a static IP address" (static IP address) the IP address, subnet mask, and default gateway can be set freely.

All changes in the properties menu become effective only after a successful application download.



7.1. IP Address

Here the IP address of the KNX IP Interface 200 can be entered. This is used to address the device via the IP network (LAN). The IP addressing should be coordinated with the administrator of the network.

7.2. Subnet Mask

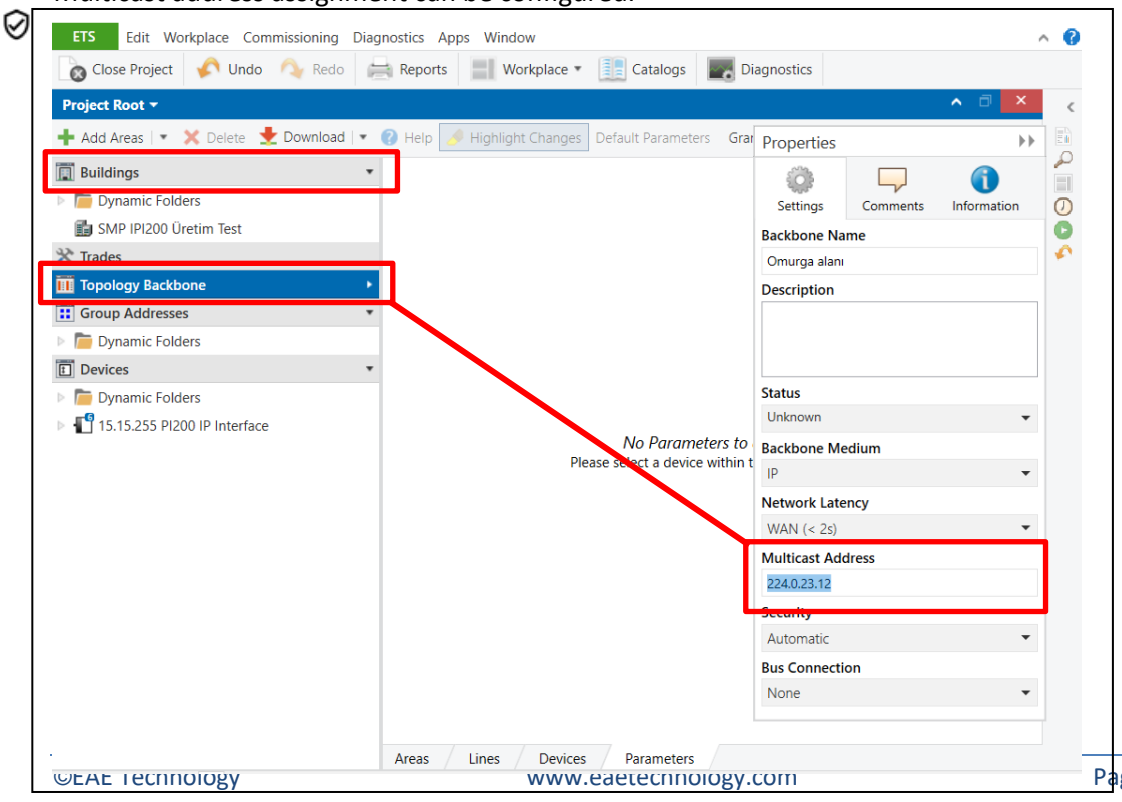
Enter the subnet mask here. The device uses the values entered in this mask to determine whether there is a communication partner in the local network. If there is no partner in the local network, the device will not send the telegrams directly to the partner but to the gateway that routes the telegram.

7.3. Default Gateway

Enter the IP address of the gateway here, e.g. the DSL router of the installation.

7.4. Multicast Address Change

Multicast address assignment can be configured.



7.5. Example of assigning IP addresses

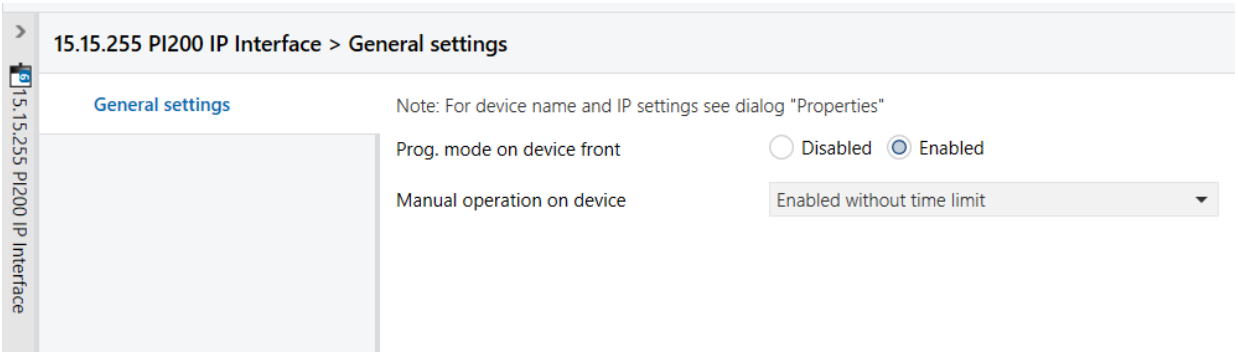
A PC is used to access the KNX IP Interface 200	
IP address of the PC	192.168.1.30
Subnet of the PC	255.255.255.0

The KNX IP Interface 200 is located in the same local LAN, i.e. it uses the same subnet. The subnet constrains the IP addresses that can be assigned. In this example, the IP address of the IP interface must be 192.168.1.xx, where xx can be a number from 1 to 254 (with the exception of 30, which is already in use). It must be ensured that no numbers are assigned twice.	
IP address of the IP Interface:	192.168.1.31
Subnet of the IP Interface:	255.255.255.0

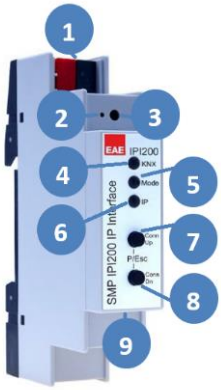
7.6. ETS parameter dialogue

The following parameters can be set using the ETS.

7.7. General settings



7.8. Programming mode on device front



In addition to the normal programming button 3 the device allows activating the programming mode on the device front without opening the switchboard cover. The programming mode can be activated and deactivated via pressing simultaneously both buttons 7 and 8.

This feature can be enabled and disabled via the parameter “Prog. mode on device front”. The recessed programming button 3 (next to the Programming LED 2) is always enabled and not influenced by this parameter.

7.9. Manual operation on device

The manual operation of the KNX IP Interface 200 only contains the status display. This parameter sets the duration of the manual mode. Upon completion the normal display mode is restored.

8. Programming

8.1. Via the KNX bus

The device only needs to be connected to the KNX bus. The ETS requires an additional interface (for example, USB) to have access to the bus. Via this way both the individual address and the entire application including IP configuration can be programmed. Programming via the bus is recommended if no IP connection can be established.

8.2. Via KNXnet/IP Tunneling

No additional interface is required. Programming via KNXnet/IP Tunneling is possible if the device already has a valid IP configuration (e.g. via DHCP). In this case the device is displayed in the interface configuration of the ETS and must be selected. The download is executed via the ETS project as with many other devices.

WARNING

- The device must be mounted and commissioned by an authorized electrician.
- 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.