SIEMENS

Climatix™ C400 Controller

Controller with Modbus - Climatix IC gateway function and building automation and control system access, V7.00

POL448.01

POL448 controller with Modbus - Climatix IC gateway function provides access to Modbus registers via Climatix IC and building automation and control systems (BACS).

- Integrates up to 4 Modbus RTU or Modbus-IP devices into Climatix IC.
- Access from a building automation and control system (BACS) via Modbus or BACnet.
- Modbus device in Climatix IC:
  - Operating/monitoring as well as alarming with proven Climatix IC user interface.
  - Entire range of Climatix IC functionality (e.g. 'Site' structure, trends).
  - Programmable logic based on Climatix IC.
  - Requires a Climatix IC subscription.
- No programming effort when using preloaded application.
  - Connected Modbus device can react upon external triggers.
- Freely programmable controller as option including extension possibilities.
- For use with flammable refrigerants (A3 ready)

Application and features

Typical use of the POL448 offering

- Basis for optimizing business processes during servicing and plant maintenance by integrating Modbus device registers into Climatix IC featuring its functions.
- Addresses HVAC equipment manufacturers (OEMs).
- POL448 covers two different use cases:
  1. Use of a pre-installed gateway application (**Use Case A**)
  2. Use of the POL448 as freely programmable controller (**Use Case B**)
- Use case A and use case B can be extended with controller licenses. The details and overviews are contained in "Order data".

Use case A: Using pre-installed application

Use — Monitoring and control of Modbus devices in Climatix IC / BACS.

Configuration — Application configuration with Excel tool (included with the application), limited configuration via HMI4Web.

Quantity structure

DownStream (Modbus client application)		**Without** license #1 (**1 server**) Max available registers for 1 server	**With** license #1 (up to **4 servers**) Max available registers across all 4 servers
Present values			
	Analog inputs	100	250
	Digital inputs	50	120
Settings			
	Analog outputs	20	120
	Digital outputs	20	40
Multistate			
	Inputs or outputs	10	40
Total configured amount must not exceed…		**200** registers	**400** registers (across all 4 servers)

UpStream	BACS integration of 1st server
Available protocols	Modbus RTU, Modbus TCP, BACnet MSTP, BACnet IP, OPC UA

Interaction state machine	Interaction state machine to control the behavior of connected Modbus device(s) based on external triggers or to generate alarms in Climatix IC
Configuration with Excel tool	5 interactions

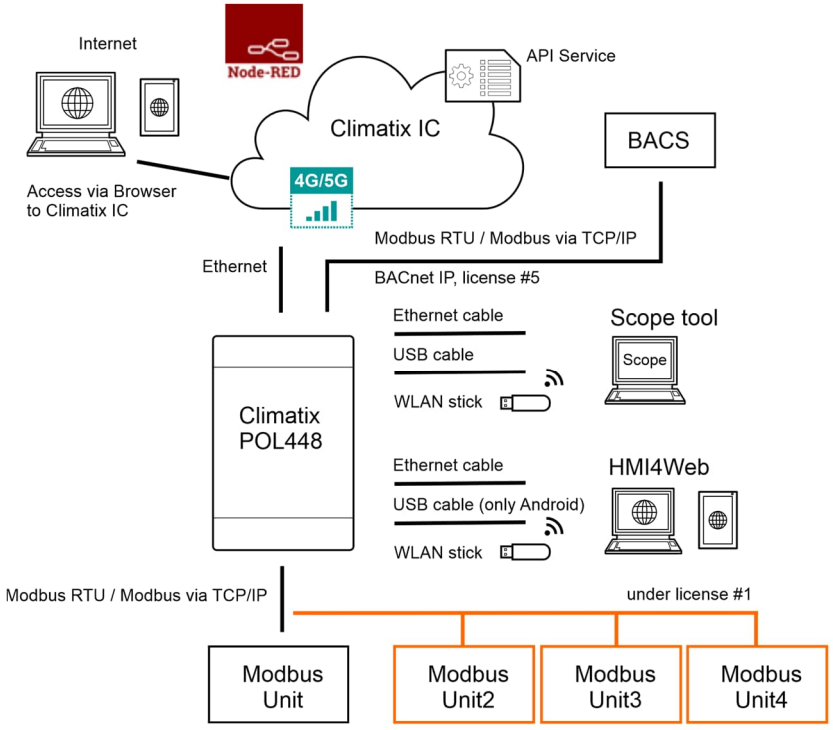
Use case B: POL448 as a freely programmable controller

Use	For programming own gateway or controller application.
Programming/ Configuration	With Climatix application programming and configuration tools
Controller profile	The POL448 becomes a freely programmable controller in conjunction with the use of controller licenses. For more information on general limitations and communication possibilities consult: ● Topology and technical data of this data sheet. ● Section 'Order data' for extensions with controller licenses ● POL448.01 offers the following limits

*Limits	POL448.01
Maximum application memory for MBRTCode	2 MB
Maximum file size of HMI4Web (uncompressed); size bases on loaded MBRT file.	3MB
Maximum file size of HMI file (uncompressed)	2 MB
Object instances	8000
Object store size	128 kByte
Maximum supported BACnet Server objects	500
Maximum BACnet COV Subscriptions total	1000

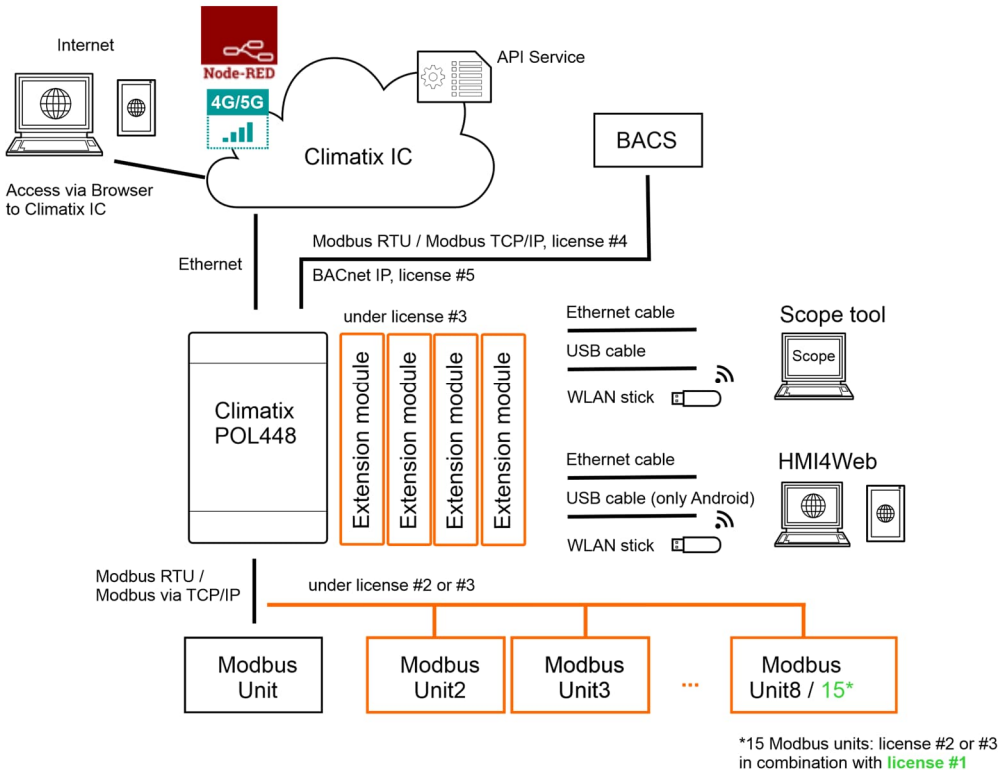
Topology

Use case A POL448 with pre-installed application



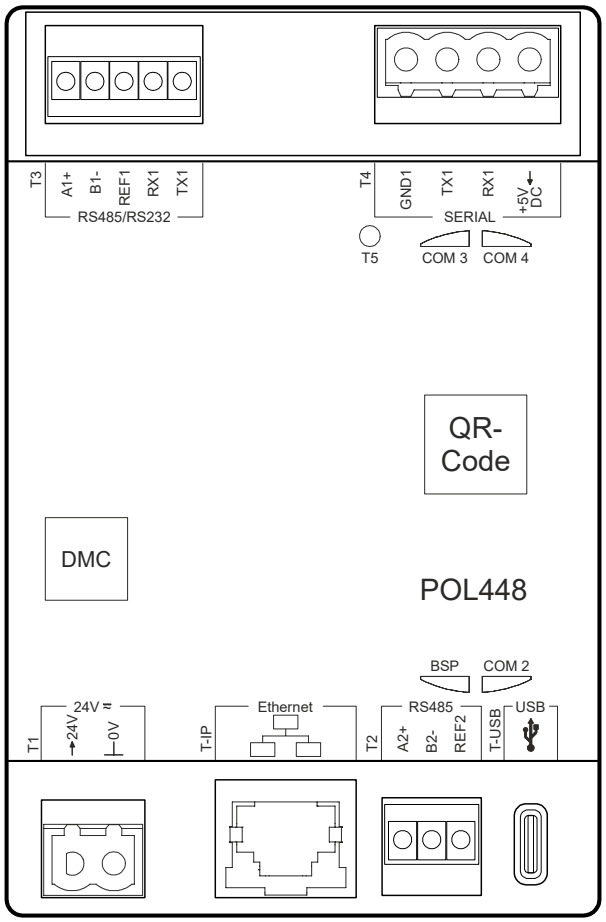
Note: licenses for communication protocols constantly expanded: for example, new #6 OPC-UA (see Order data).

Use case B POL448 as a freely programmable controller



Note: licenses for communication protocols constantly expanded: for example, new #6 OPC-UA (see Order data).

Mechanical design



Technical data

Housing and weight

Housing

Color	Base plate: Dove-blue (RAL 5014) Housing: Light gray (RAL 7035)
Dimensions	See "Dimensions [▶ 12]"

Weight

Type	Weight
POL448.01	130 g
Packaging	18 g

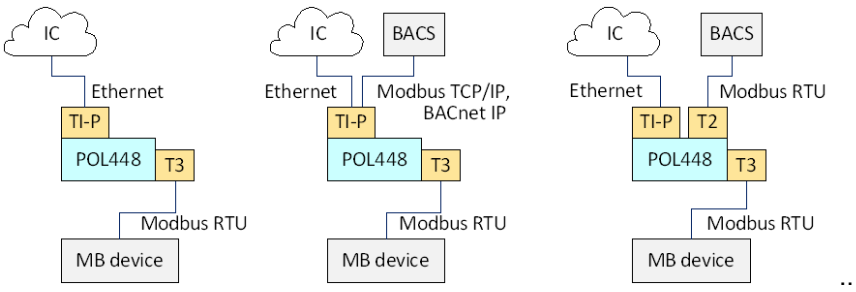
Power, T1

Power supply	
Operating voltage	AC 24 V ±20% (SELV) DC 24 V ±10% (SELV)
Frequency	50 Hz / 60 Hz
Internal fuse	(cannot be replaced)
External fuse	max. 4 A fuse or circuit breaker, type B, C or D
Power consumption including connected field devices	< 9W 370 mA @ AC 24 V, 215 mA @ DC 24 V

Interfaces

Interface	Application	Technical data
Ethernet (T-IP)	**Cloud services** ● Climatix IC integration ● Integration in building automation and control system ● Integration of Modbus devices ● Modbus TCP / IP (under license for free programmable controller)	Plug: RJ45, shielded Interface type: 10BASE-TX and 100BASE-TX, IEEE 802.3 compatible Bit rate: 10/100 Mbps, autosensing
USB-C (T-USB)	**Configuration / Commissioning** ● Scope tool (on PC: USB-A) ● WLAN stick **Data medium** ● Memory stick	● Plug: Type C ● OTG function supported (host/device) ● In host mode: 5 V max. 500 mA ● No galvanic isolation to ground ● Data rate: 1.5 Bps and 12 Bps. ● Memory Stick: FAT32
Modbus (T3)	● Modbus client application	● Integration of Modbus RTU servers. ● 3-pin connector: A1+, B1-, REF1 (RX1, TX1 no function) ● Galvanically separated ● Data rate 600 baud…115 kBaud. The application default value is 19200 baud. ● Bus termination (120 Ω + 1 nF) * ** ● Bus polarization (680 Ω / 680 Ω) ** * On RS485 networks, use termination resistors that match cable impedance to prevent signal echoes. **Note**: See section "Modbus function codes" and the POL448 user guide on the supported Modbus data types.
Modbus (T2)	● Modbus server application	● Connection to building automation and control system. ● 3-pin connector: A2+, B2-, REF2 ● Galvanically separated. ● Data rate 600 baud…115 kBaud. The application default value is 19200 baud. ● Bus termination (120 Ω + 1 nF) * ** ● **Note**: No bus polarization; it can only be used as a server. * On RS485 networks, use termination resistors that match cable impedance to prevent signal echoes. **Note**: See section "Modbus function codes" and the POL448 user guide on the supported Modbus data types.
Side connections: right side	Peripheral bus (under license)	● Connection of IO/Modules ● Max number of IO/Modules: 4 (ECV type POL94E and 94U excluded) ● Adresses 1…31, 0 not used ● Power supply via POL448: max 2 A AC / 3 A DC ● **Note**: Depending on the used extension modules an external power supply must be used! For details see P3900.
Serial interface (T4)		No function
		** switchable by software

POL448 connections (examples)



Line lengths

Interface	Line lengths
Ethernet	Maximum cable length: 100 m for 100 BASE-TX
USB-C	Maximum cable length: 1 m
RS485	Maximum cable length: <1000 m@19.2 kBaud Shielded twisted pair, if >3 m
Peripheral bus	Overall length: max. 30 m Voltage drop off on 0 V wire: ≤1.5 V

Wiring connections

Wiring connections	
Pluggable terminals	T1, power supply: ● Wire: 0.2…2.5 mm^2 ● Ferrules: 0.25…2.5 mm^2 ● Stripping: 7 mm
	T2, T3, signal wires: ● Wire: 0.14…1.5 mm^2 ● Ferrules: 0.25…1.5 mm^2 ● Stripping: 7 mm

Conformity

Ambient conditions and protection classification	
Classification as per EN 60730 Operation of automatic controller Degree of pollution Overvoltage category	 Type 1 2 II
Protect against shock	Suitable for systems safety class I or II
Degree of protection of housing to EN 60529	IP20
Climatic ambient conditions ● Transport and storage (packaged) Per IEC/EN 60721-3-2 / -3-1 ● Operation as per IEC/EN 60721-3-3	 ● Class 2K12 / 1K22 Temperature -40...+70 °C, Air humidity 5…95 % (non-condensing) ● Class 3K23 Operate in closed, dry locations, without temperature or humidity control Temperature -40...+70 °C, Air humidity 5...95 % (non-condensing)
Mechanical ambient conditions ● Transport (transport packaging) Transport per IEC 60721-3-2 ● Operation Per IEC/EN 60721-3-3	 ● Class 2M4 ● Class 3M11

Standards, directives and approvals	
Product standards	IEC/EN 60730-1 Automatic electronic controls for household and similar use
Electromagnetic compatibility	For residential, commercial, and industrial environments
EU conformity (CE)	A5W03013150A
RCM Conformity	A5W00228114A
UL certification Federal Communications Commission	cUL916, UL60730-1 https://iq.ulprospector.com FCC CFR 47 Part 15 Class B.(devices without WLAN/RF)
CSA approbation	C22.2
EAC	Eurasian compliance
Environmental compatibility	The product environmental declaration (A5W00231956A) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).
Flammable refrigerants	Conformity to IEC 60335-2-40:2022: limited to clause 22.116 and 22.117. Conformity to IEC 60335-2-89:2019: limited to Clause 22.112, Clause 22.113, and Clause 22.114. POL448.01 with max. surface temperature < 135 °C Risk assessment is mandatory for all flammable refrigerants according to the local applicable standards and regulations via system operator (see A5W03019917A).

Overview of software licenses
This device uses Open Source Software (OSS). Carefully read the OSS document on the applicable version (Valid Version Set). Title: Third-Party Software Information for OCI46x/POL44x (Ex)

Functions

LED indicator BSP (lower left)

LED	Color	Flash response	Function
BSP	Red/green	Changes at 1 Hz	Software update mode: Download application or new firmware
	Green	Continuous	Application loaded and operational
	Orange	Continuous	Application loaded but is not operating
	Orange	Flashing, 50 ms on / 1000 ms off	Application not loaded
	Red	Flashing at 2 Hz	Firmware error
	Red	Continuous	Hardware fault

COM LEDs

Name	Color	Function
COM2	Red, green, orange / flashing with different frequency patterns	Application specific
COM3	Red, green, orange / flashing with different frequency patterns	Application specific
COM4	Red, green, orange / flashing with different frequency patterns	Application specific

Button T5

1. Load firmware and application files to the POL448 (USB memory stick). No additional tools required.
2. Temporary activation of http communication to use the WLAN stick (for use case A only).

The POL448 user guide includes additional information on how to use the T5 key.

Data Matrix Code (DMC), left

The gateway has a Data Matrix Code (DMC). You can scan the code using a code reader app. The result is a text string that, for example, can be helpful on service calls. Example:

1PS55394-C480-B1230+31PPOL448.01/STN+S210721Z0000000005+23S00-A0-03-EF-01-04+3C3WSZHI-2J7SM-ETMN7-I3LO4-VDVNX

The text string is subdivided into code letters:

- 1P: Siemens stock number (SSN); fixed
- 31P: Siemens device type (ASN); fixed
- S: Date (YYMMDD), series, serial number, variable
- 23S: MAC address (hex); variable
- 3C: Climatix IC activation code (password); variable

QR-Code, right

The gateway has a QR code. You can scan the code using a code reader app. Example:

3WSZHI-2J7SM-ETMN7-I3LO4-VDVNX

The QR code includes the Climatix IC activation code to activate and preregister the device in Climatix IC.

Order data

Type	Stock number	Description
POL448.01/STN	S55394-C480-B120	Climatix POL448.01/STN C400 Controller with preloaded Climatix IC gateway gateway application.

Licensed features

#	Type	Stock number	Designation
1	POL0M2.23/STD	P55693-L222-D100	POL0M2.23/STD Climatix Option for POL488.01; upgrade to 4 Modbus servers (for S55394-C480-A100 with pre-loaded application) or 15 Modbus servers (in combination with POL0M2.20/STD or POL0M2.21/STD).
2	POL0M2.20/STD	P55693-L222-A100	POL0M2.20/STD Climatix Option for POL448.01; **free programmability***, 8 Modbus servers.
3	POL0M2.21/STD	P55693-L222-B100	POL0M2.21/STD Climatix Option for POL448.01; **free programmability***, 8 Modbus servers, 4 extension modules.
4	POL0M1.30/STD	P55693-L213-A100	POL0M1.30/STD Climatix Option for compatible controller, Modbus TCP/IP communication. Modbus TCP/IP in combination with POL0M2.20/STD or POL0M2.21/STD.
5	POL0M1.40/STD	P55693-L214-A100	POL0M1.40/STD Climatix Option for compatible controller, BACnet server. BACnet server in combination with 'Pre-loaded application' and 'Free programmable' (#2, #3)
6	POL0M1.20/STD	P55693-L212-A100	POL0M1.20/STD Climatix Option for compatible Controller, OPC UA communication

- The order of activation of the licenses has no influence on the scope of functions.

Available combinations for *free programmability

License combination	Free program.	No. of devices	Modbus TCP	BACnet IP	OPC-UA
license #2	X	8	No	No	No
license #2 and #4	X	8	Yes	No	No
license #2 and #5	X	8	No	Yes	No
license #2 and #6	X	8	No	No	Yes
license #2 and #4 and #5 and #6	X	8	Yes	Yes	Yes
license #2 and **#1**	X	15	No	No	No
license #2 and **#1** and #4	X	15	Yes	No	
license #2 and **#1** and #5	X	15	No	Yes	
license #2 and **#1** and #6	X	15	No	No	Yes
license #2 and **#1** and #4 and #5 and #6	X	15	Yes	Yes	Yes
license **#3** follows the same schema with the same no. of devices but provides in each case additionally 4 extension modules					

Accessories

Siemens accessories

Type	Stock number	Designation
POL903.00/100	S55803-Y130-A100	Climatix WLAN-Stick
POL90C.30/STD	S55803-Y173-A100	Teltonika 4G router
POL0B5.55/STD	S55843-Z555-F100	Power supply DC 24 V / 75 W
Siemens GS (Gateway setup) app		Android App, Google app store
Siemens GS (Gateway setup) app		iOS App, Apple app store

Accessory Siemens, plug

Terminal	Type	Stock number	Designation	Phoenix type
T1	POL005.15/STD	S55843-Z151-F100	Multipack, screw terminals, 2 pin, orange	1773879 MVSTBW 2,5/2-ST OG
T2, T3 *	POL003.25/STD	S55843-Z132-F100	Multipack, screw terminals, 2 pin, green	1862852 MCVW 1,5/ 2-ST-3,5
T2, T3 **	POL003.35/STD	S55843-Z133-F100	Multipack, screw terminals, 3 pin, green	1862865 MCVW 1,5/ 3-ST-3,5
T3	AGG9.853	AGG9.853	Multipack, screw terminals, 5 pin, green ***	1862881 MCVW 1,5/ 5-ST-3,5
Right side	POL001.45/STD	S55843-Z114-F100	Board to board connector for remote EXT-IO	n/A
Right side	POL002.43/STD	S55843-Z124-D100	Board to wire connector for remote EXT-IO	n/A

* for A1+ and B1- or A2+ and B2-

** for A1+, B1- and REF1 or A2+, B2- and REF2

*** RX1, TX1: no function

Product documentation

Topic	Title	Document ID
Data sheet	WLAN stick	CC1N7219
Product and service data sheet	Climatix IC (performance and subscriptions)	A6V10449189
Engineering	GS-App (Gateway Setup App), iOS and Android	A6V13841510

Notes

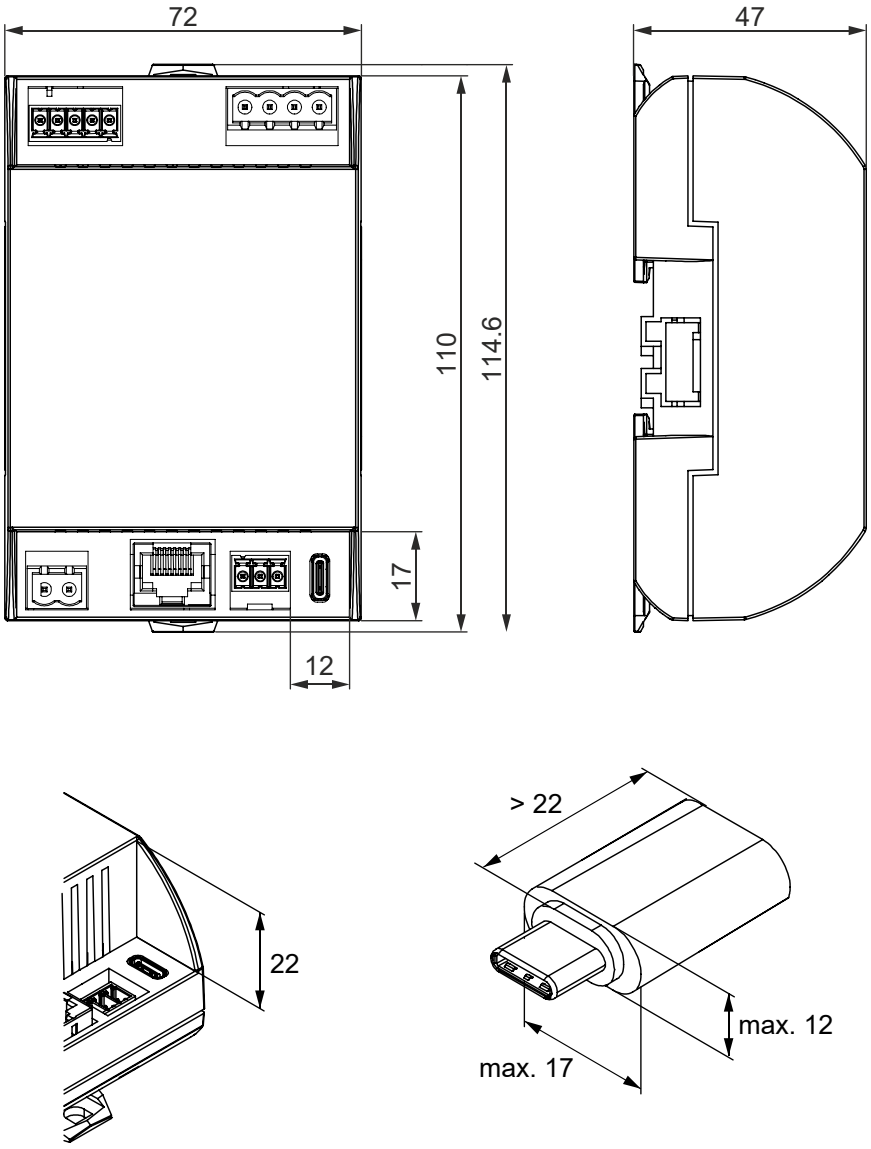
Safety

⚠ 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.

Disposal

	This symbol or any other national label indicate that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation. For additional details, refer to Siemens information on disposal.

Dimensions



POL448 dimensions and notes on a USB-C adapter

Modbus function codes

Supported function codes (for use case A only, pre-installed application)	
01 (0x01)	Read Coils
02 (0x02)	Read Discrete Inputs
03 (0x03)	Read holding register
04 (0x04)	Read input registers
05 (0x05)	Write Single Coil
06 (0x06)	Write Single Register
15 (0x0F)	Write Multiple Coils
16 (0x10)	Write Multiple Registers

Addition details available in the POL448 user guide, A6V13870242.

Issued by
Siemens Switzerland Ltd
Smart Infrastructure
Global Headquarters
Theilerstrasse 1a
CH-6300 Zug
+41 58 724 2424
www.siemens.com/buildingtechnologies

© Siemens Switzerland Ltd, 2026
Technical specifications and availability subject to change without notice.

Document ID A6V15979255_en_a
Edition 2026-09-24