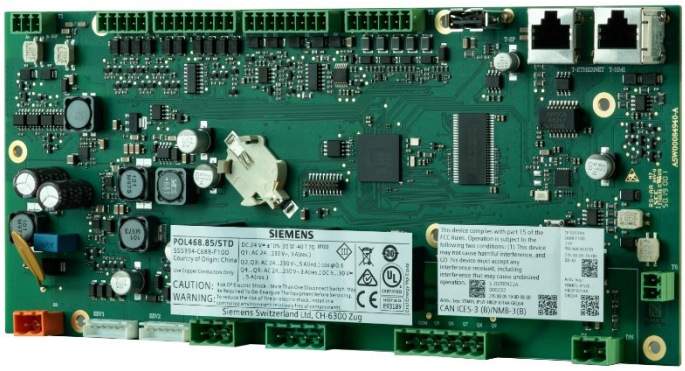
SIEMENS

Climatix™ C400

Climatix programmable controller

POL461, POL467, POL468



Climatix programmable controller C400 (POL461, POL468 and POL467) is HVAC controller optimized for residential heat pump, light commercial chiller, compact air handling unit and flat station application.

- Freely programmable controller
- Different variants with 28, 29 or 30 physical inputs / outputs
- Power supply DC 24 V
- DC 5 V on-board power supply for ratio metric sensor
- Operating temperature range -40…70 ℃
- Modbus RTU or BACnet MS/TP over RS485 for third-party communication
- Extension bus over RS485 for Climatix extension I/O module
- On-board M-bus interface for up to three meters (POL467)
- USB host interface for application and BSP (firmware) updates
- Local service port (RJ45) for user interface or PC tools
- Ethernet port (POL467 and POL468) for Climatix IC, Modbus TCP/IP and BACnet IP

Application and features

Field of application

Climatix C400 are designed for residential heat pump, light commercial chiller, compact air handling unit and flat station application, to provide a broad range of control and monitoring functions.

I/O mix

The number and type of I/Os on the C400 are optimized for above application types.

- POL461 has 28 IOs; 2 EEVs
- POL468 has 29 IOs; 2 EEVs
- POL467 has 30 IOs

Freely programmable

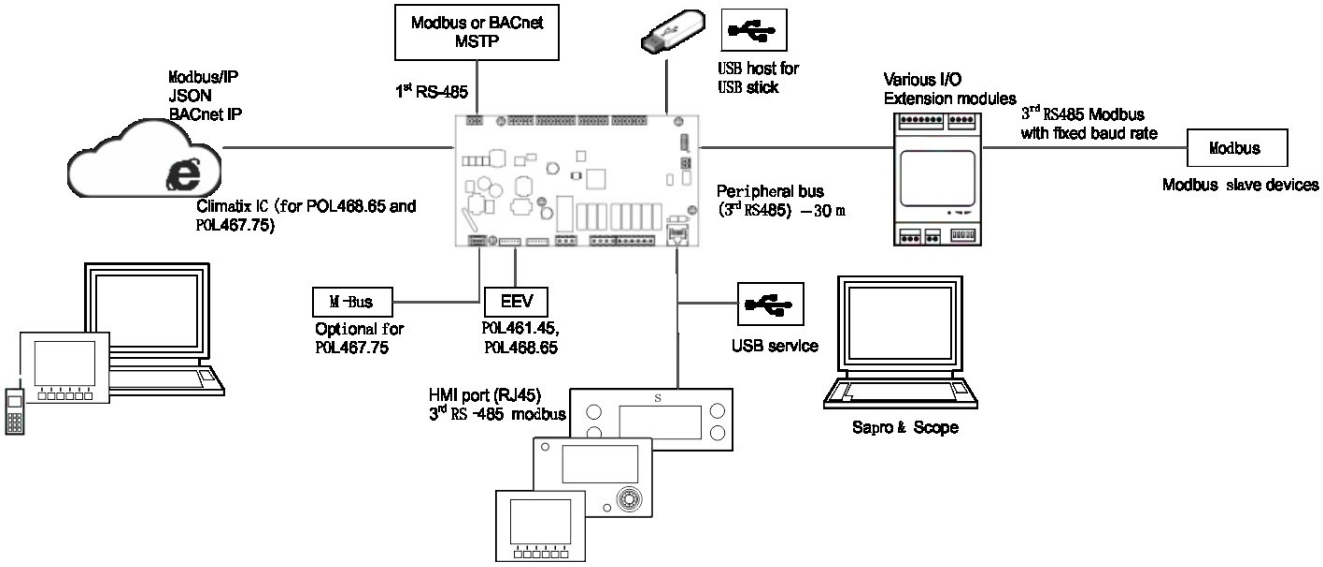
The Climatix C400 controllers are freely programmable using a powerful graphical software tool (SAPRO).

Communications

On-board communication interfaces complete the scalable and intelligent control system.

Different HMIs can be connected to the controllers.

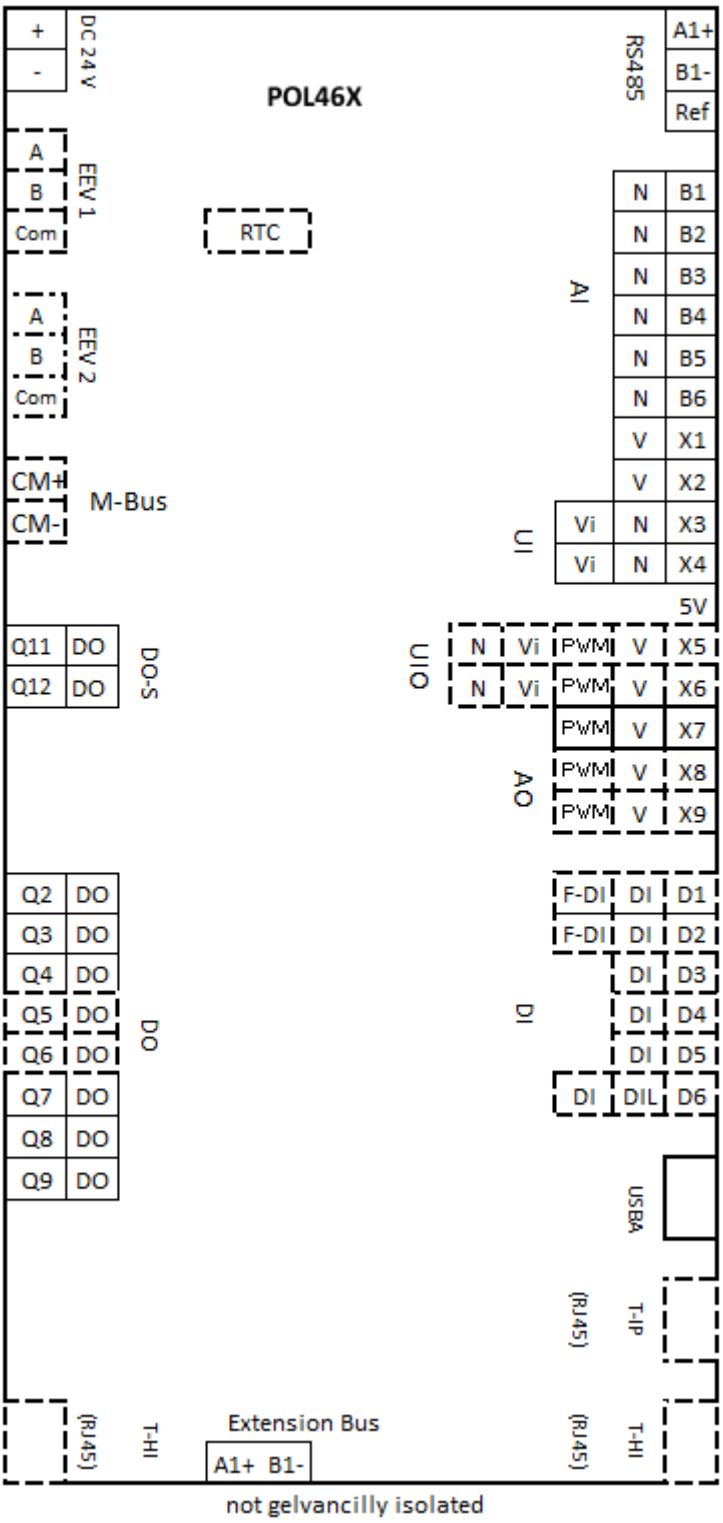
Topologies



Type summary

Type	Inputs	Outputs	Application focus
POL461.45	6 AIs, 4 UIs, 6 DIs	3 AOs and 9 DOs; 2 EEVs	Chillers/heat pumps
POL468.65	6 AIs, 4 UIs, 5 DIs, 1DL	4 AOs and 9 DOs; 2 EEVs	Residential heat pumps/light commercial chillers
POL468.85	6 AIs, 6 UIs, 5 DIs, 1DL	2 AOs and 9 DOs; 2 EEVs	Residential heat pumps/light commercial chillers
POL467.65	6 AIs, 4 UIs, 5 DIs, 1DL	5 AOs and 9 DOs	Flat stations, district heating substations, compact air handling units
POL467.75	6 AIs, 4 UIs, 5 DIs, 1DL	5 AOs and 7 DOs; 2 TRIAC	Flat stations, district heating substations, compact air handling units

Input/output signal types

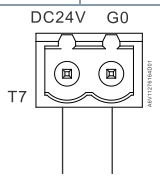


Note: terminals with dotted lines vary for different variants. Please refer to below list for detailed information.

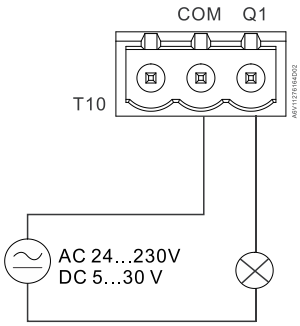
Climatix 46X variants list

Hardware I/Os			POL461.45	POL468.65	POL468.85	POL467.75	POL467.65
Analog inputs	B1…B6	NTC 10 k	✓	✓	✓	✓	✓
Configurable inputs	X1, X2	DC 0…10 V or 0…5 V	✓	✓	✓	✓	✓
	X3, X4	NTC 10k, DC 0…10 V	✓	✓	✓	✓	✓
	X5, X6	NTC 100k, DC: 0…10 V/0…5 V	-	-	✓	-	-
Digital inputs	D1, D2	Potential free (Fast DI)	✓	✓	-	✓	✓
		Active DI 24 AC/DC (Fast DI only with DC)	-	-	✓	-	-
	D3, D4, D5	Potential free	✓	✓	-	✓	✓
	D3, D4, D5	Active AC/DC 24 V	-	-	✓	-	-
	D6	Potential free	✓	-	-	-	-
	DL1	Active AC 115….230 V	-	✓	✓	✓	✓
Configurable outputs	X5, X6	DC 0…10 V analog/PWM output	✓	✓	-	✓	✓
	X7	DC 0…10 V analog/PWM output	✓	✓	✓	✓	✓
	X8	DC 0…10 V analog/PWM output	-	✓	✓	✓	✓
	X9	DC 0…10 V analog/PWM output	-	-	-	✓	✓
Digital outputs	Q1…Q5	Relay output	✓	✓	✓	✓	✓
	Q6, Q7		✓	✓	✓	-	✓
	Q8, Q9		✓	✓	✓	✓	✓
	Q6, Q7	Triac output	-	-	-	✓	-
Interfaces	RS485 interface (Modbus RTU or BACnet MSTP)		✓	✓	✓	✓	✓
	USB interface		✓	✓	✓	✓	✓
	Local service interface		✓	✓	✓	✓	✓
	EEV		2	2	2	0	0
	Extension interface (RS485)		✓	✓	✓	✓	✓
	Ethernet port		-	✓	✓	✓	✓
	M-Bus interface		-	-	-	✓	✓

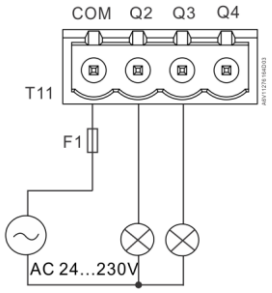
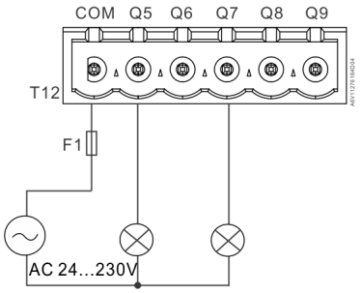
Power data

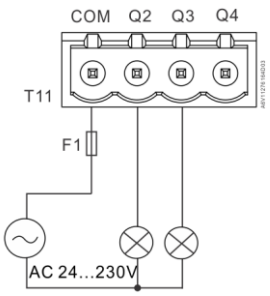
Power supply DC 24 V, G0 (T7)	
Operating voltage	DC 24 V ±10 %
Max. power consumption	35 W
Max. external supply line fusing	3 A slow wire fuse or circuit breaker
	

Outputs

Relay output Q1 (T10)	
Contact	Monostable, NO/NC contact, SPDT
Switching voltage (AC)	AC 24…230 V (-20 %, +10 %)
Switching voltage (DC)	DC 5…30 V
Rated current	AC/DC 4 A (res.), 2 A (cosφ 0.6, ind.)
Min. switching current at AC 19 V	30 mA
Min. switching current at DC 5 V	100 mA
Endurance	100,000 cycles at AC 230 V, 4 A (res.)
Max. external supply line fusing	10 A slow wire fuse or circuit breaker
	

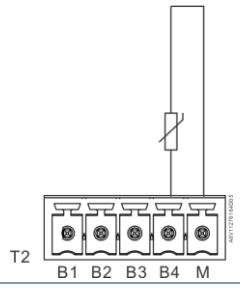
Relay output Q2, Q3 (T11) (POL461.45) Q4 (T11) Q5, Q6, Q7, Q8, Q9 (T12)	
Contact	Monostable, NO contact, SPST
Switching voltage (AC)	AC 24…230 V (-20%, +10%)
Switching voltage (DC)	DC 5…30 V

Relay output **Q2, Q3 (T11) (POL461.45)** **Q4 (T11)** **Q5, Q6, Q7, Q8, Q9 (T12)**	
Rated current	AC/DC 3 A (res.), 2 A (cosφ 0.6, ind.)
Min. switching current at AC 19 V	30 mA
Min. switching current at DC 5 V	100 mA
Endurance	100,000 cycles at AC 230 V, 3 A (res.)
Max. external supply line fusing F1	6.3 A slow wire fuse or circuit breaker
	
Caution: Total load for T11 or T12 common is 6.3 A max.	

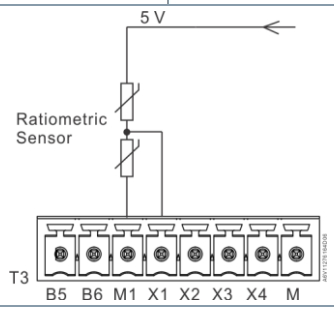
Relay output Q2, Q3 (T11) (POL467.65, POL467.75 and POL468.65)	
Contact	Monostable, NO/NC contact, SPST
Switching voltage (AC)	AC 24…230 V (-20%, +10%)
Switching voltage (DC)	DC 5…30 V
Rated current (ind.)	AC/DC 5 A (res.), 4 A (cosφ 0.6, ind.)
Min. switching current at AC 19 V	30 mA
Min. switching current at DC 5 V	100 mA
Endurance	100,000 cycles @ AC 230 V, 5 A (res.)
Max. external supply line fusing	10 A circuit breaker
	

Triac output Q6, Q7 (T12) (POL467.75)	
Switching voltage	AC 24…230 V (-20%, +10%)
Switching capacity	Max. 500 mA Min. 10 mA

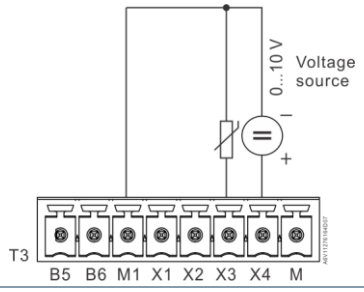
Inputs

Analog inputs **B1…B6 (T2)**		
NTC 10k		
Sensor current	120 µA at 25 °C	
Measure range	500 Ω…670 kΩ	
Resolution	< 44 Ω at 10 kΩ	
Accuracy	± 221 Ω at 10 kΩ (@25 °C environment)	
For example: NTC 10k ($B_{25/85}$=3977 K) sensor, refer to below		
Temperature	Accuracy	Resolution
-10 °C	0.8 K	0.1 K
0 °C	0.3 K	0.1 K
20 °C	0.4 K	0.1 K
50 °C	0.7 K	0.2 K
70 °C	1.3 K	0.3 K
90 °C	2.5 K	0.6 K
		

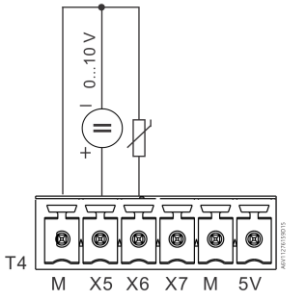
Analog inputs **X1, X2 (T3)**	
Reference potential	Terminals (M)

DC 0…5/0…10 V ratiometric sensor	
Resolution	50 mV
Accuracy	100 mV
Input resistance	100 kΩ
	

Configurable inputs and outputs

Configurable inputs X3, X4 (T3) (POL461.45, POL467.65, POL467.75 and POL468.65)	
Configurable	By software
Reference potential	Terminals (M)
	

NTC 10k ($B_{25/85}$=3977 K)
Refer to "Analog inputs B1…B6" on the section of Inputs [▶ 7]

Configurable inputs X5, X6 (T3): (POL468.85)	
Configurable	By software
Reference potential	Terminals (M)
	

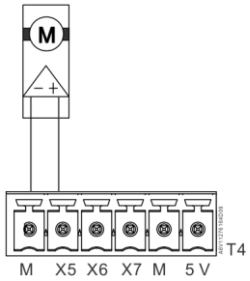
NTC 100k		
Sensor current	96 µA at 25 °C	
Measure range	500 Ω…670 kΩ	
Resolution	<450 Ω at 100 kΩ	
Accuracy	± 2500 Ω at 100 kΩ (@25 °C environment)	
For example: NTC 100k (B25/85=3977 K), refer to below		
Temperature	Accuracy	Resolution
-10 °C	0.25	0.06
0 °C	0.14	0.04
20 °C	0.11	0.03
50 °C	0.12	0.03
70 °C	0.15	0.04
90 °C	0.23	0.06

DC 0…5/0…10 V input Ratiometric sensors	
Resolution	50 mV
Accuracy	100 mV
Input resistance	33 K

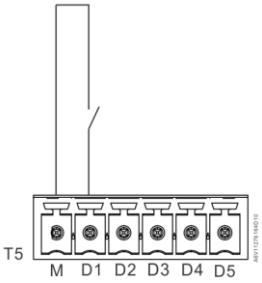
Configurable outputs X5, X6, X7 (T4) (POL461.45) X5, X6, X7, X8 (T4) (POL468.65) X7, X8 (T4) (POL468.85) X5, X6, X7, X8, X9 (T4) (POL467.65, POL467.75)	
Configurable	By software
Reference potential	Terminals (M)

DC 0…10 V output	
Resolution	30 mV
Accuracy	100 mV
Output current	Max. 1 mA

PWM output	
Frequency	500…2.5 kHz
Duty cycle	10…90 % (at an increment of 0.5 %)

PWM output	
Max. current	10 mA
Signal amplitude	10 V
	

Digital input D1, D2 (T5)	
Configurable	By software
Potential free (Fast DI) Active DI AC 24 V Active DI DC 24 V (Fast DI)	POL461.45, POL468.65, POL467.65, POL467.75 POL468.85 only POL468.85 only

0/1 digital signal (binary)	For potential free contacts
Sampling voltage/current	DC 24 V
Contact resistance	Max. 200 Ω (closed) Min. 50 kΩ (open)
Delay	10 ms
Pulse frequency	Max. 20 Hz
 Figure 1	
0/1 digital signal (binary)	For voltage input
Nominal voltage	AC 24 V (-15 %, +10 %)
	DC 24 V (-10 %, +10 %)
Frequency range	45…65 Hz
Input current	3.4 mA @ AC 24 V
	6.7 mA @ DC 24 V
Delay	100 ms
Pulse frequency	Max. 5 Hz

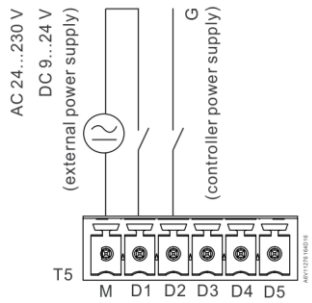


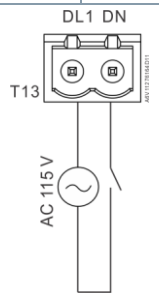
Figure 2

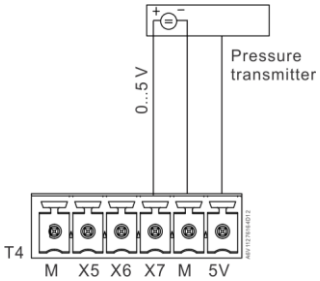
Pulse measurement	
Sensor	Open-collector
Sampling voltage	DC 24 V
Max. speed	30,000 RPM
PWM measurement	
Sensor	Open-collector
Sampling voltage	DC 24 V
Pulse frequency (Max.)	20 … 75 Hz
PWM width resolution	0 %~5 % range: 2 % 5 %~ 85 % range: 1 % 85 %~100 % range: 2 %

Digital inputs **D3, D4, D5 (T5) (POL461.45, POL467.65, POL467.75 and POL468.65)** **D6 (POL461.45 only)**	
0/1digital signal (binary)	For potential free contacts
Sampling voltage/current	DC 24 V
Contact resistance	Max. 200 Ω (closed) Min. 50 kΩ (open)
Delay	10 ms
Pulse frequency	Max. 20 Hz
See Figure 1	

Active digital input **D3, D4, D5 (T13) (POL468.85 only)**	
0/1 digital signal (binary)	For voltage input
Nominal voltage	AC 24 V (-15 %, +10 %)
	DC 24 V (-10 %, +10 %)
Frequency range	45…65 Hz
Input current	3.4 mA @ AC 24 V
	6.7 mA @ DC 24 V

Active digital input D3, D4, D5 (T13) (POL468.85 only)	
Delay	100 ms
Pulse frequency	Max. 5 Hz
See Figure 2	

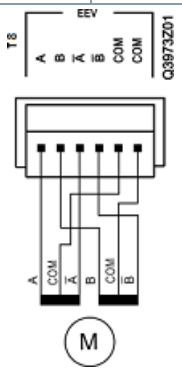
Active digital input DL1 (T13) (POL467.65, POL467.75 and POL468.65)	
Digital input (0/1 binary)	Galvanically isolated voltage input
Nominal voltage	AC 115…230 V (-15 %, +10 %)
Frequency range	45…65 Hz
Input current	3 mA @ AC 230 V
Delay	100 ms
Pulse frequency	Max. 5 Hz
	

Powering sensors Active / Ratiometric DC 5 V	
Voltage/current	DC 5 V ± 2.5 %, 20 mA
Reference potential	Terminals (M)
Connection	Short circuit protected
	

⚠ WARNING	
	● The relay circuits have no internal fuse. An external supply line fuse is required (for fuse set of Q2, Q3 and Q4, refer to basic documentation A6V11276161). ● Do NOT mix SELV / PELV and mains power on the same terminal block. ● Use external protection for inductive load. ● Avoid negative voltages at the analog inputs since conversion leads to undetermined results. ● Maintain clearing distance of 6.4 mm between SELV/PELV and mains power when different terminal blocks are used.

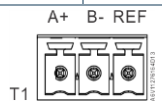
EEV

EEV (T8, T9) (POL461.45, POL468.65)	
Configurable	By software
Connector	B6B-XH-A, JST

Stepper motor drive	(Assembled in POL461.45 POL468.65 and POL468.85)
Motor	Unipolar stepper motor, full step or half step DC 12 V, Max. 2 x 260 mA per EEV
Connection	5/6 wires
Supply voltage	DC 12 V (short circuit protected)
Current limitation	Max.260 mA per phase EEV (both EEV1 and EEV2 are operating at the same time) Max.375 mA per phase EEV (both EEV1 and EEV2 are not operating at the same time)
Driver output	4 channels
Length of motor cable	< 3 m
	

Interfaces

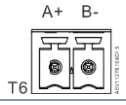
On-board RS-485 (Modbus RTU) **A+, B-, REF(T1)**	
RS-485 (EIA-485)	Modbus RTU or BACnet MS/TP[1)] mode
Bus connection	A+, B-, REF
Bus electronics	Galvanically isolated
Bus cable	Shielded if length > 3 m, twisted pair
Bus polarization	Configurable by software[2)]

On-board RS-485 (Modbus RTU) A+, B-, REF(T1)	
Bus termination	None[3)]
Baud rate	Max. 57,600
	

1) BACnet MS/TP

2) Climatix POL46X controllers offer software configurable polarization at the RS485 port. Bus polarization can be enabled or disabled.

3) On a RS485 network, use termination resistors that match the cable's characteristic impedance to prevent signal echoes from corrupting the data on the line.

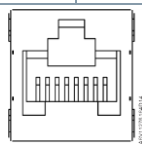
Extension interface (RS-485) A+, B- (T6)	
RS-485 (EIA-485)	Extension IO modules
Bus connection	A+, B-
Bus electronics	Not galvanically isolated
Bus cable	Shielded if length > 3 m, twisted pair; total length < 30 m
Bus termination	None*
Extension IO modules limitation	1
Baud rate	Fixed, default with extension IO**
Power consumption	External power for extension IO
	

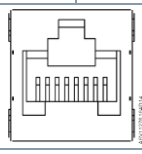
* Configure using the extension modules' DIP switch as needed.

** The default baud rate and protocol is 38400, E, 8, 1.

Tools/HMI Local service interface (T-HI)	
Cable connection	RJ45 jack, 8 pins, length < 3 m

Local-HMI	
RS-485 (EIA-485)	NOT galvanically isolated
Supply voltage	DC 24 V, Max. 80 mA (short circuit protected)

Tool	
USB	Use PC service cable POL0C2.40/STD for tools
	

Ethernet TCP/IP port (T-ETHERNET) POL467.65, POL467.75 and POL468.65	
Plug	RJ45
Interface type	10 base-T and 100 base-TX, IEEE802.3 compatible
Bitrates	10/100 Mbps Auto sensing
Multiple connections	Possible when use HUB or switch
Ethernet cable	CAT5 shielded twisted pair
Engineering and commissioning	Sapro and Scope tool
Cloud services	Climatix IC
Integration	Modbus TCP/IP, BACnet IP(B-ASC)
BACnet/IP interface	Supports B-ASC profile
	

M-Bus (T8) POL467.65, POL467.75	
Mode	M-bus master
Bus connection terminals	CM+, CM- (interchangeable)
Bus cable	2-wire, telephone cable (JYStY N*2*0.8 mm)
Bus connection/electronics	Galvanically isolated
Bus voltage	DC 28 V (short-circuit-proof)
Bus length	Max. 50 m
Number of bus devices (standard load 1.5 mA)	Max. 3
Cable types, bus topology, bus termination	Refer to M-bus norm DIN EN 13757
Baud rate	300, 2400
Supported data structures	See basic documentation A6V11276161

LEDs

LED for BSP run/stop		
Color	**Flash response**	**Function**
Red/green	Changes at 1 Hz	Software update mode: Download new application or firmware

LED for BSP run/stop		
Color	**Flash response**	**Function**
Green	Continuous	Application loaded and is running
Orange	Continuous	Application loaded but is not running
Orange	Flashing, 50 ms on/1000 ms off	Application not loaded
Red	Flashing at 2 Hz	Firmware error
Red	Continuous	Hardware fault

Download button

Along with a USB stick, the download button provides a simple and fast method for loading firmware and application files to the controller without additional tools.

Additional information on the download button is available in the SCOPE tool online help.

Data Matrix Code and QR Code

Data Matrix Code (DMC) and QR code

The controller has a Data Matrix Code (DMC) and QR on the label.

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.

DMC example:

1PS55394-C614-F100+31PPOL461.45 xx xx xx xx xx xx

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 example, can get activate key：

xxxxxx xxxxx xxxxx xxxxx

Connection terminals

Connection terminals	
Possible plugs for I/O signals and communication (available on request)	For compatible plugs, refer to "Connectors" on the section of Order data [▶ 20]
Solid wire	Pin distance 3.81 mm: 0.14…1.5 mm² Pin distance 5 mm: 0.2…2.5 mm²
Stranded wire (twisted or with ferrule)	0.5…1.5 mm²
Cable length	In compliance with the load, local regulations and installation documents

External connectors (not provided)	
Rated current	Pin distance: 3.81 mm, 8 A Pin distance: 5 mm, 12 A
Flame retardant grade as per UL 94	V0

Wire lengths

Interface	Wire lengths
Ethernet	Max. 100 m
Peripheral bus	● Overall length: Max. 30 m ● Voltage drop off on 0 V wire: ≤1.5 V
Third-party bus	● Overall length: Max. 1000 m @ 9.6kBaud ● Max. 500 m @ 9.6kBaud between 2 nodes ● Total 40 m stub lines; 1 stub line max. 20 m
Service interface	Max. 3 m
Signal wiring	Max. 80 m **NOTICE!** Restriction: Max. 30 m for NTC 10k, NTC 100k

NOTICE	
!	**Important: We do not guarantee any maximum cable lengths!** Cable resistance and any influence caused by EMC / HUM increases with the length of the cable. This impacts the accuracy of the analog value. Any indication of a maximum cable length for an application depends on factors including cable type, diameter, shield-ing, wiring, distance to high power devices as well requirements placed on measurement and control accuracy etc. and is the sole the responsibility of the customer.

Cable types

Interface	Specification
Ethernet	Always screened: ● Voltage drop off on 0 V wire: ≤1.5 V ● 100 BASE-TX, cable category 5 ● 10 BASE-T, cable category 4
Third-party bus	2 or 3-wire, twisted, shielded, if >3 m
Signal lines (Inputs/outputs)	● Wire: 0.5…2.5 mm^2 ● Stranded wire (twisted, terminating sleeves required): 0.5…1.5 mm^2 ● Stripping lengths: – 7 mm for screw terminals (MVSTBW) – 10 mm for spring cage terminals (FKCT)

WARNING! Installation of connections as per:

- Load
- Local regulations
- Applicable installation documents

Real-time clock

Real-time clock (RTC)	
POL461.45	Without RTC
POL467.65 POL467.75 POL468.65 POL468.85	Insert battery into holder for RTC function. For battery life time considerations, see section “Battery”.

Battery

Back-up battery	
Permissible battery type	BR2032
Operating temperature	-30…80 ℃
Lifetime	Continuous power supply for 1 year Refer to specifications from battery manufacturer

⚠ WARNING

- Power off before replacing batteries.
- Avoid accidental battery fall out to PCB.

USB

USB stick	
Max. capability	32 GB
File system	FAT and FAT32
Function	Download BSP or application
Supported current	100 mA
Supported type	USB 2.0*

Ambient conditions and standards

Ambient conditions and protection classification	
Climatic ambient conditions	
• Transport (packaged for transport) as per EN 60721-3-2	Temperature: -40...70 °C Air humidity: < 95 % r.h. (no condensation) Air pressure: Min. 260 hPa, corresponding to Max. 10,000 m above sea level
• Operation as per EN 60721-3-3.	Temperature -40...70 °C Air humidity < 95 % r.h. (no condensation). Air pressure Min. 700 hPa, corresponding to Max. 3,000 m above sea level

Ambient conditions and protection classification	
Mechanical ambient conditions ● Transport as per EN 60721-3-2	Class 2M2
Degree of protection of housing to EN 60529	IP00
Safety class	Suitable for use in plants with safety class II or class I

Standards, directives and approvals	
Product standard	EN 60730-1 Automatic electronic controls for household and similar use.
Electromagnetic compatibility (applications)	For residential, commercial, light-industrial and industrial environments.
EU conformity (CE)	A6V11437166*)
RCM conformity (EMC)	A6V11437168*)
UL Listings	UL916, UL60730. See https://productiq.ulprospector.com/en/
Federal Communications Commission ICES003	FCC CFR 47 Part 15 Class B Comply with ICES003 Class B
Environmental compatibility	The product environmental declaration*) (A5W90006021) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

*) The document can be downloaded at http://siemens.com/bt/download.

FCC

This equipment complies with the FCC Rules CFR 47 Part 15 Emission Class B limits.

This equipment has been tested and found to comply with the limits for a Class B, digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turnings the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

General data

General data	
Dimensions	195 x 105 x 30 mm (POL461.45) 249 x 109 x 30 mm (POL467.65) 249 x 109 x 30 mm (POL467.75) 249 x 109 x 30 mm (POL468.65) 249 x 109 x 30 mm (POL468.85)
Weight excl. packaging	POL461.45 196 g POL467.65 246 g POL467.75 246 g POL468.65 247 g POL468.85 244 g

Order data

When ordering, indicate product type, stock number and quantity.

Controller

Type （ASN）	Stock number （SSN）	Quantity
POL461.45/STN	S55394-C614-F120	24 per package box
POL467.65/STN	S55394-C676-F120	20 per package box
POL467.75/STN	S55394-C677-F120	20 per package box
POL468.65/STN	S55394-C686-F120	20 per package box
POL468.85/STN	S55394-C688-F120	20 per package box

Note: STN variants increased the memory compared with previous STD variants. Please see Climatix Technical Limited document (A6V101079056)” for more details.

Accessories

Type （ASN）	Stock number （SSN）	Description
POL0C2.40/STD	BPZ:POL0C2.40/STD	PC service cable 1.5 m
POL0B5.55/STD	S55843-Z555-F100	Power Supply DC 24 V / 75 W
POL903.00/100	S55803-Y130-A100	WLAN stick
POL002.43/STD	S55843-Z124-D100	Connector for remote EXT-IO

Connectors

It is highly recommended that, the Climatix controllers use Phoenix connectors certificated by Siemens. The connectors are listed below and can be ordered from Siemens. In the case that there are two entries in one row, different connector options can be applied.

POL461.45				
Terminal	**Poles**	**Siemens ASN**	**Color**	**Phoenix compatible connectors**
T1	3	POL004.35/STD	Green	1827130 MCVR 1.5/3-ST-3.81
T2	5	POL004.55/STD	Green	1827156 MCVR1,5/5-ST-3,81
T3	8	POL004.85/STD	Green	1827185 MCVR1,5/8-ST-3,81
T4	6	POL004.65/STD	Green	1827169 MCVR1,5/6-ST-3,81
T5	7	POL004.75/STD	Green	1827172 MCVR1,5/7-ST-3,81
T6	2	POL004.25/STD	Green	1827127 MCVR1,5/2-ST-3.81
T7	2	POL005.15/STD	Orange	1773879 MVSTBW 2,5/2-ST OG
T10	3	--	Green	1792537 MVSTBW 2,5/3-ST
		POL005.35/STD	Grey	1839908 MVSTBW 2,5/3-ST GY35
T11	4	--	Green	1792540 MVSTBW 2,5/4-ST
		POL005.25/STD (2x)	Grey	1937732 MVSTBW 2,5/2-ST GY35
T12	6	--	Green	1792566 MVSTBW 2,5/6-ST
		POL005.35/STD (2x)	Grey	1839908 MVSTBW 2,5/3-ST GY35

POL467.65, POL467.75				
Terminal	**Poles**	**Siemens ASN**	**Color**	**Phoenix compatible connectors**
T1	3	POL004.35/STD	Green	1827130 MCVR 1.5/3-ST-3.81
T2	5	POL004.55/STD	Green	1827156 MCVR1,5/5-ST-3,81
T3, T4	8	POL004.85/STD	Green	1827185 MCVR1,5/8-ST-3,81
T5	6	POL004.65/STD	Green	1827169 MCVR1,5/6-ST-3,81
T6, T8	2	POL004.25/STD	Green	1827127 MCVR1,5/2-ST-3.81
T7	2	POL005.15/STD	Orange	1773879 MVSTBW 2,5/2-ST OG
T10	3	--	Green	1792537 MVSTBW 2,5/3-ST
		POL005.35/STD	Grey	1839908 MVSTBW 2,5/3-ST GY35
T11	4	--	Green	1792540 MVSTBW 2,5/4-ST
		POL005.25/STD (2x)	Grey	1937732 MVSTBW 2,5/2-ST GY35
T12	6	--	Green	1792566 MVSTBW 2,5/6-ST
		POL005.35/STD (2x)	Grey	1839908 MVSTBW 2,5/3-ST GY35
T13	2	--	Green	1792524 MVSTBW 2,5/2-ST
		POL005.25/STD	Grey	1937732 MVSTBW 2,5/2-ST GY35

POL468.65, and POL468.85				
Terminal	**Poles**	**Siemens ASN**	**Color**	**Phoenix compatible connectors**
T1	3	POL004.35/STD	Green	1827130 MCVR 1.5/3-ST-3.81
T2	5	POL004.55/STD	Green	1827156 MCVR1,5/5-ST-3,81
T3, T4	8	POL004.85/STD	Green	1827185 MCVR1,5/8-ST-3,81
T5	6	POL004.65/STD	Green	1827169 MCVR1,5/6-ST-3,81
T6	2	POL004.25/STD	Green	1827127 MCVR1,5/2-ST-3.81
T7	2	POL005.15/STD	Orange	1773879 MVSTBW 2,5/2-ST OG
T10	3	--	Green	1792537 MVSTBW 2,5/3-ST
		POL005.35/STD	Grey	1839908 MVSTBW 2,5/3-ST GY35
T11	4	--	Green	1792540 MVSTBW 2,5/4-ST
		POL005.25/STD (2x)	Grey	1937732 MVSTBW 2,5/2-ST GY35
T12	6	--	Green	1792566 MVSTBW 2,5/6-ST
		POL005.35/STD (2x)	Grey	1839908 MVSTBW 2,5/3-ST GY35
T13	2	--	Green	1792524 MVSTBW 2,5/2-ST
		POL005.25/STD	Grey	1937732 MVSTBW 2,5/2-ST GY35

Connector packages (100 pcs per package) provided by Siemens:

Product number	Stock number	Description
POL005.15/STD	S55843-Z151-F100	RAST5, orange, 2 pole
POL005.25/STD	S55843-Z132-F100	RAST5, grey, 2 pole
POL005.35/STD	S55843-Z133-F100	RAST5, grey, 3 pole
POL004.35/STD	S55843-Z143-F100	RAST3.81, green, 3 pole
POL004.25/STD	S55843-Z142-F100	RAST3.81, green, 2 pole
POL004.55/STD	S55843-Z145-F100	RAST3.81, green, 5 pole
POL004.65/STD	S55843-Z146-F100	RAST3.81, green, 6 pole
POL004.75/STD	S55843-Z147-F100	RAST3.81, green, 7 pole
POL004.85/STD	S55843-Z148-F100	RAST3.81, green, 8 pole

Note: with the above connectors, the entire I/O configuration can be covered.

Product documentation

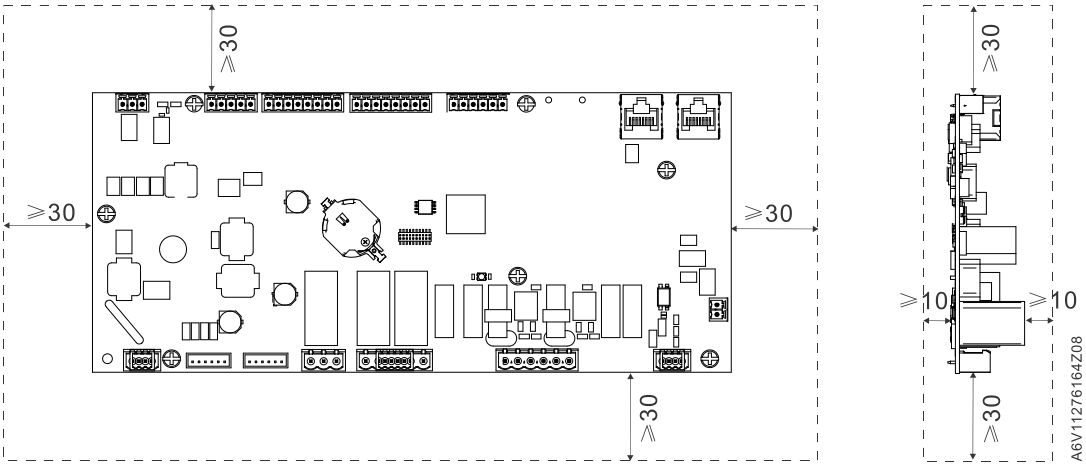
Document ID	Title	Description
A6V11276161	Basic documentation	Engineering, mounting and installation
A6V11437166	EU conformity (CE)	-
A6V11437168	RCM conformity (EMC)	-
A5W90006021	Product environmental compatibility	-

Notes

Mounting

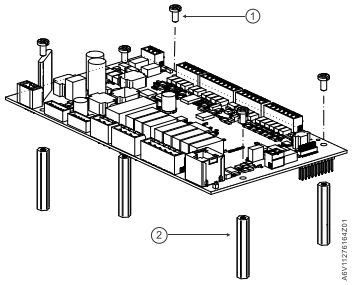
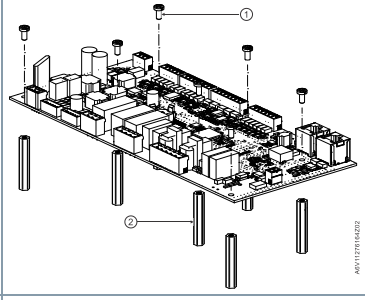
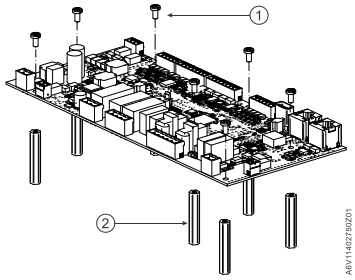
Clearance requirement

Dimensions in mm



Note:

- Minimum clearance distance as above is required for easy cabling and mounting.
- Minimum electric safety clearance distance is 10 mm.

POL461.45	POL468.65	POL467.65, POL467.75
		
① Five screws (GB818-M3.5×8) and five washers (⌀ 4) ② Five standoffs M3×L (L>10 mm)	① Seven screws (GB818-M3.5×8) and seven washers (⌀ 4) ② Seven standoffs M3×L (L>10 mm)	① Seven screws (GB818-M3.5×8) and seven washers (⌀ 4) ② Seven standoffs M3×L (L>10 mm)

Note: Mounting screws and washers are not included in the delivery package.

⚠ WARNING	
	**Always mount the controller with insulation washers.** Accidental fall-out of metallic screws may cause a short circuit.

	Notice
	Take appropriate measures to prevent against static electricity (e.g. use a grounding strap) when mounting the controller.

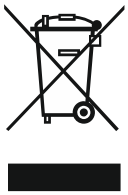
Engineering

- On voltages above 42 Veff, the device must be installed in an enclosure to protect against accidental contact with relay connections. A key or tool is required to open the enclosure.
- AC 115…230 V cables must be double-insulated against safety extra-low voltage (SELV) cables
- Do NOT mix SELV / PELV and mains power on the same terminal block. Use external protection for inductive loads of relay outputs
- Use external fuse for over-current protection of relay and triac outputs
- Use an ESD protected manufacturing environment (PCB only, no housing)
- Avoid negative voltage on analogue inputs since the measured ADC values are undefined. The accuracy of the 10 V analog inputs is valid for values above 100 mV.
- Make sure the device is powered with DC 24 V (AC may damage the device)

Maintenance

To prevent from possible damage from static electricity, take necessary measures (e.g. use a grounding strap) when mounting the controller.

Disposal



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.

Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

Open Source Software (OSS)

Software License Summary

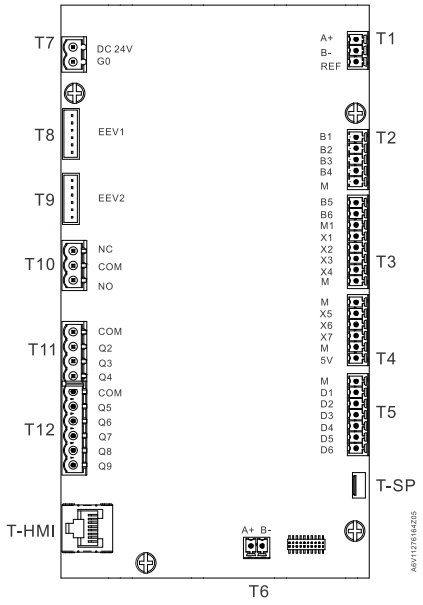
These devices incorporate open source software (OSS), please refer to the OSS document for the specific controller type and valid version set.

Title: License Summary Climatix C400 Controller – VVS11

All open source software components used within the product (including their copyright holders and the license conditions) can be found from the website http://www.siemens.com/download?A6V11435799.

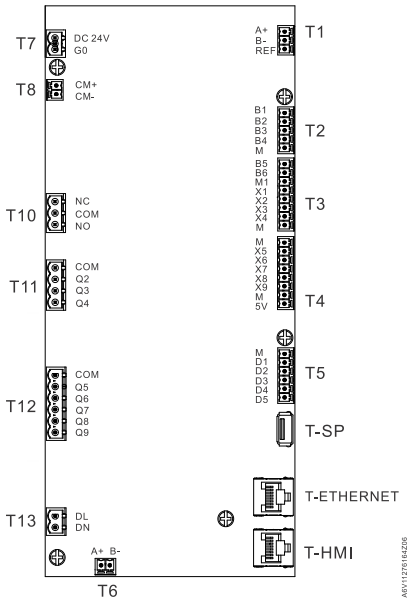
Connection terminals

POL461.45



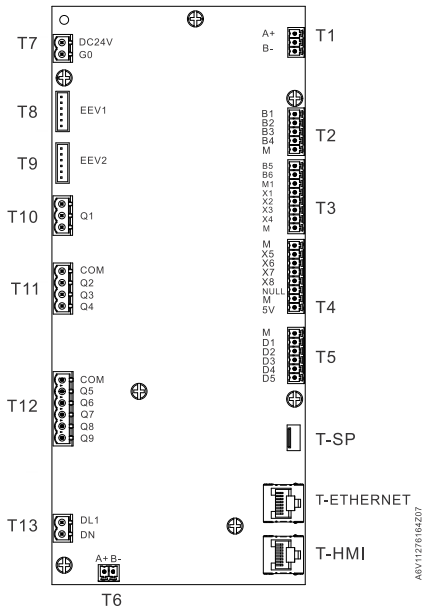
T1	RS485, galvanically isolated
T2	B1…B6: analog inputs
T3	X1…X4: universal inputs
T4	X5…X7: universal outputs; on-board power supply DC 5 V, 20 mA
T5	D1…D6: digital inputs
T6	Extension bus, not galvanically isolated
T-SP	T-SP
T7	Main power supply
T8, T9	EEV, unipolar, full/half stepper
T10	Normally open contact
T11, T12	Digital outputs
T-HMI	T-HMI (RJ45), not galvanically isolated

POL467.65, POL467.75



T1	RS485, galvanically isolated
T2	B1…B6: analog inputs
T3	X1…X4: universal inputs
T4	X5…X9: universal outputs; onboard power supply DC 5 V, 20 mA
T5	D1…D5: digital inputs
T-SP	T-SP
T-ETHERNET	T-IP (RJ45), Ethernet for Climatix IC
T-HMI	T-HMI (RJ45), not galvanically isolated
T6	Extension bus, not galvanically isolated
T7	Main power supply
T8	M-Bus master interface for up to 3 slaves
T10, T11, T12	Q1…Q9: digital outputs
T13	DL1, DN

POL468.65, POL468.85

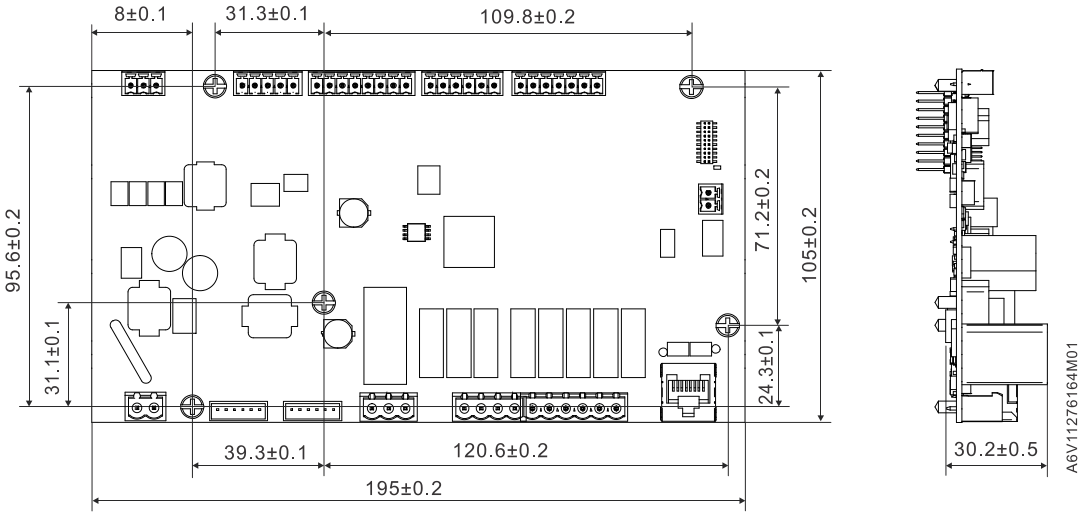


T1	RS485, galvanically isolated	
T2	B1…B4: analog inputs	
T3	B5, B6: analog inputs X1…X4: universal inputs	
T4	POL468.65	X5…X8: universal outputs; onboard power supply DC 5 V, 20 mA
	POL468.85	X5…X6: universal inputs; NTC 100 K, 0…10 V X7…X8: universal outputs; onboard
T5	D1…D5: digital inputs	
T-SP	T-SP	
T-Ethernet	T-IP, Ethernet for Climatix IC	
T-HMI	T-HMI (RJ45), not galvanically isolated	
T6	Extension bus, not galvanically isolated	
T7	Main power supply	
T8	EEV, unipolar, full/half stepper	
T9	EEV, unipolar, full/half stepper	
T10, T11, T12	Q1…Q9: digital outputs	
T13	DL1, DN	

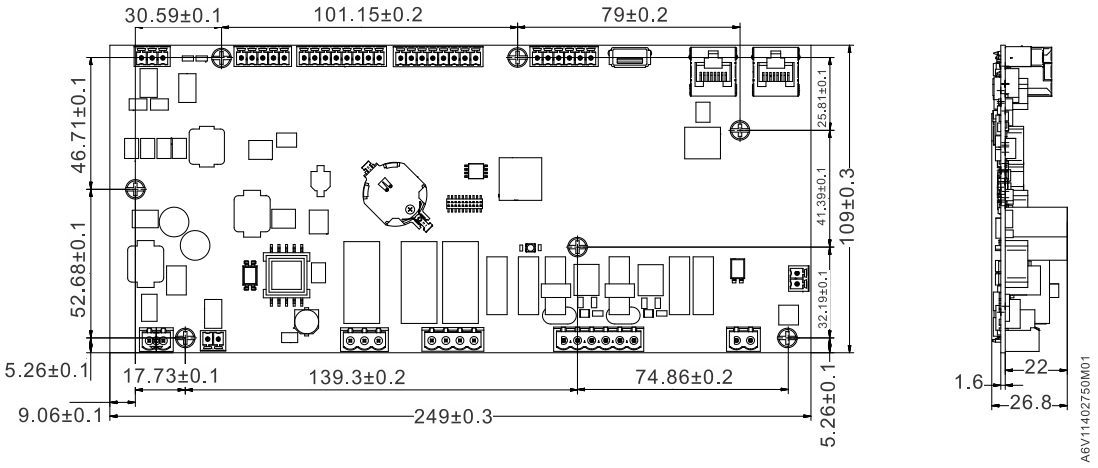
Dimensions

Dimensions in mm

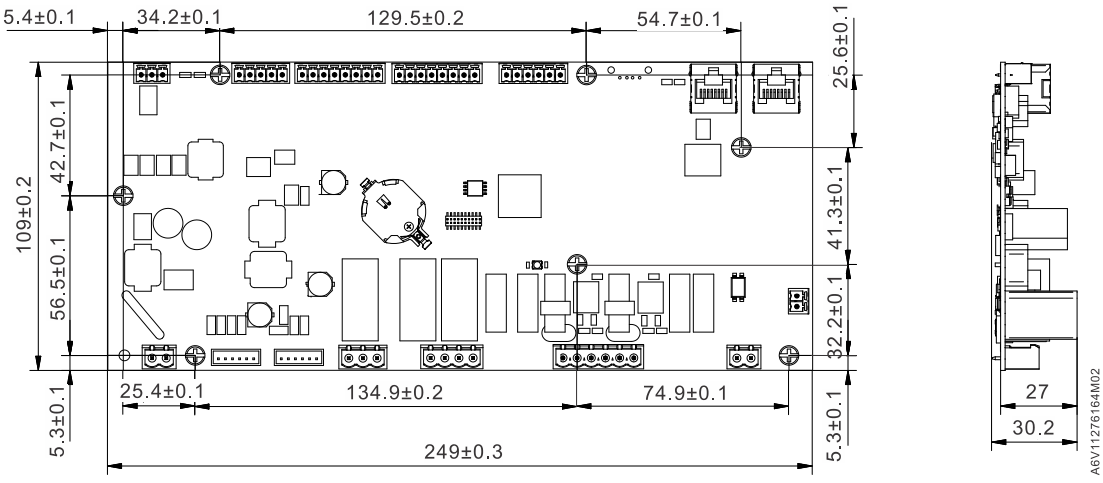
POL461.45



POL467.65, POL467.75



POL468.65, POL468.85



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