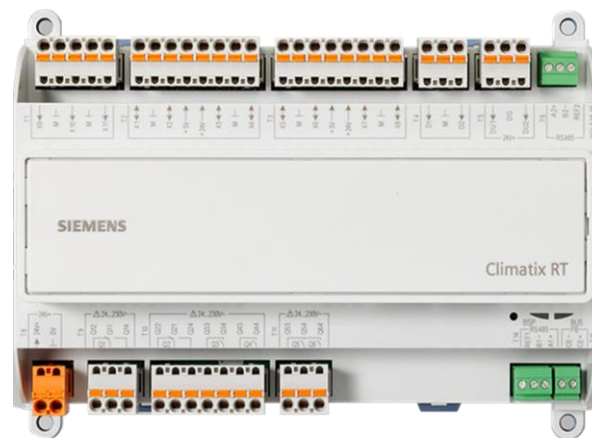


Climatix™ RT

Rooftop Unit Controller

POL648.10/RTU



Climatix RT controller for Rooftop equipment.

- Pre-defined application that works with Rooftop units. Designed for up to 20 tons.
- 21 physical inputs/outputs per controller.
- Simple configuration with the Climatix Mobile Application.
- Standard USB service connection for WiFi stick access.
- Ethernet port for Modbus/IP, BACnet/IP, OPC, servicing and Climatix IC.
- SD card interface for applications, firmware update, and archiving.
- RS-485 (galvanically separated) interface for Modbus RTU and BACnet MS/TP.
- RS-485 interface for Modbus RTU.
- Process bus for networking of Siemens devices.

Field of application

The Climatix RT Rooftop Unit Controller is designed for use in rooftop applications (up to 20 tons) and provides a broad range of control and monitoring functions through Climatix IC. The number and type of I/Os on the controller are optimized for this application type.

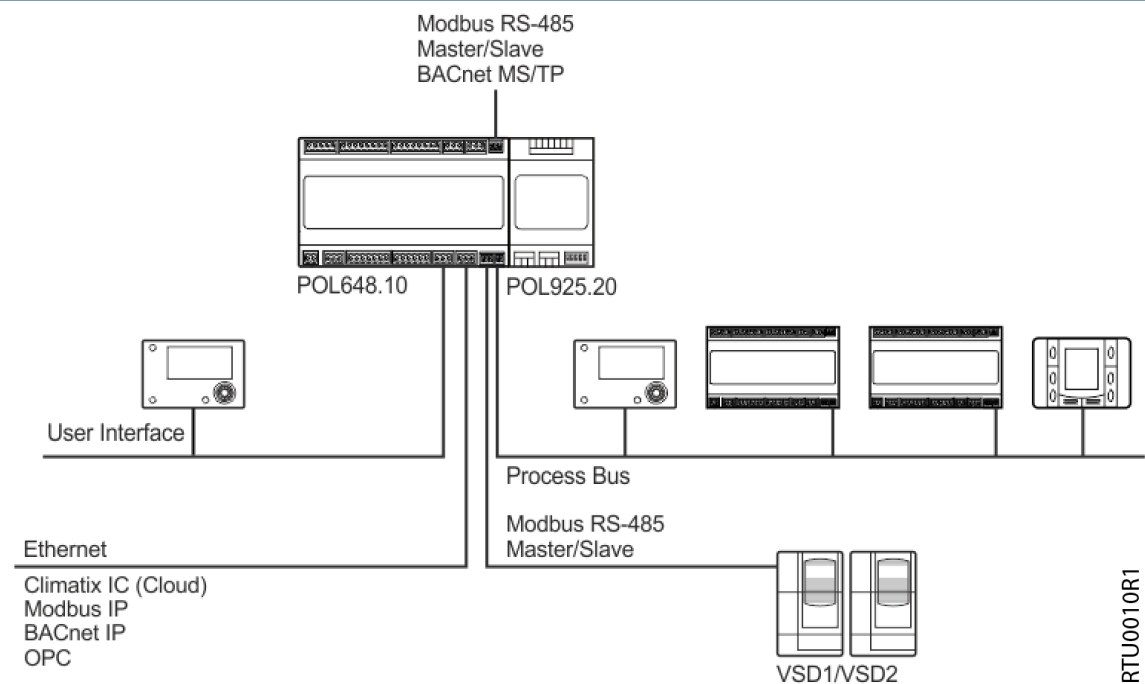
Configurable Application

The Climatix RT controller uses a pre-defined application that is configurable for many types of Rooftop Units. A number of defined inputs/outputs (analog or digital) plus configurable I/O for multi-use using the easy-to-use Climatix mobile application make it possible to control a number of manufactured Rooftop Units.

Communications

Onboard communication interfaces complete the scalable and intelligent control system. You can add additional communication modules to the system according to integration requirements.

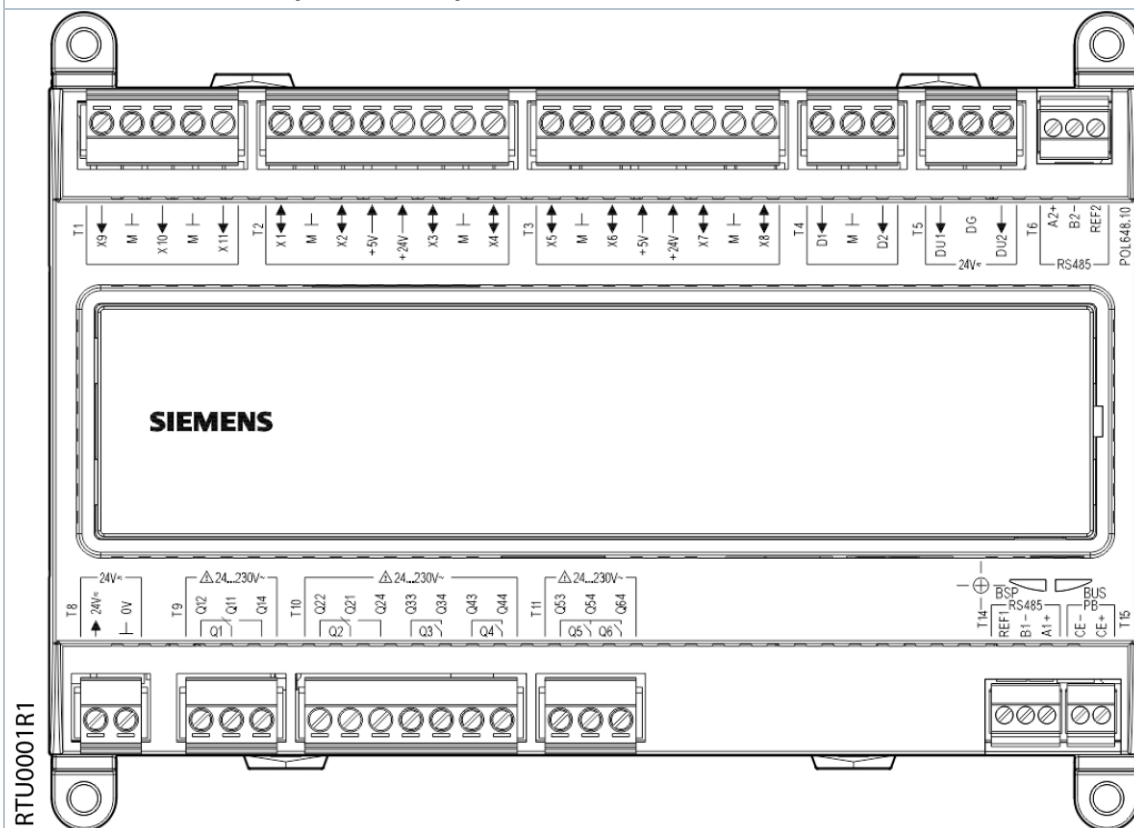
Topologies



Topologies.

The Climatix RT consists of a controller with 21 physical inputs and outputs.

POL648.10/RTU - 21 inputs and outputs



Additional interfaces on the bottom of the device:



POL648.10/RTU - Input/output configuration

X9	X10	X11	X1	X2	X3	X4	X5	X6	X7	X8	D1	D2	DU1	DU2
N	N	N	N	N	N	N	N	N	N	N	DI	Dlp	DG	DG
Ni	Ni	Ni	Ni	Ni	Ni	Ni	Ni	Ni	Ni	Ni				
Pt	Pt	Pt	Pt	Pt	Pt	Pt	Pt	Pt	Pt	Pt				
DI	DI	DI	R	R	R	R	R	R	R	R				
			V in	V in	V in	V in	V in	V in	V in	V in				
			mA in	mA in	mA in	mA in	mA in	mA in	mA in	mA in				
			Dlx	Dlx	Dlx	Dlx	Dlx	Dlx	Dlx	Dlx				
			V out	V out	V out	V out	V out	V out	V out	V out				
			mA out	mA out			DV	DV	DV	DV				
							VM	VM						
DS		DS	DO	DO		DO	DO							
Q1		Q2	Q3	Q4		Q5	Q6							

Key

Signal type	Short name	Description
Analog inputs	N	NTC10k/100k
	Ni	Ni1000
	Pt	Pt1000
	R	0...2.5 kΩ
	V in	0 to 5 Vdc for ratiometric sensors or 0 to 10 Vdc
	mA in	4 to 20 mA
Digital inputs	Dlx	Potential-free
	DI	Potential-free
	Dlp	Potential free, 300 Hz
	DG	Active, 24V (AC/DC)
	DA	Active, 230 Vac
Analog outputs	V out	0 to 10 Vdc
	mA out	4 to 20 mA
	VM	PWM
Digital outputs	DV	24 Vdc
	DS	Relay, NO/NC
	DO	Relay, NO
	DT	Triac

Technical data

Housing and weight

Housing

Color	<ul style="list-style-type: none">Base plate: Pigeon blue (RAL 5014)Housing: Light gray (RAL 7035)
Dimensions	See "Dimensions [→ 19]"

Weight

Type	Weight
POL648.10/RTU	15.97 oz. (453 grams)
Packaging	3.35 oz. (95 grams)

Battery compartment for back-up battery

Permissible battery type: BR2032

Processor and memory

Processor

Main processor	ARM Cortex M4 type, 120 MHz
----------------	-----------------------------

Storage

SDRAM	64 MB
Flash	64 MB

Power data

Power, T8	
Operating voltage	24 Vac -20% to +20%; 24 Vdc ±10%
Frequency	45 to 65 Hz
Protection class	III (SELV/PELV) UL Class 2
External fuse in the supply line	max. 4A non-renewable fuse or circuit breaker, Type B, C or D
Power consumption	39 VA/24 W
Current consumption AC	maximum 1.6A @ 24 Vac
Current consumption DC	maximum 1.0A @ 24 Vdc

Inputs/outputs

Universal inputs (T1)			
Analog inputs X9, X10, X11			
Typical sensor	Range	Resolution	Accuracy
NTC10k (@ 10 kΩ)	500 Ω to 670 kΩ	< 43 Ω	± 215 Ω
NTC100k (@ 100 kΩ)	500 Ω to 670 kΩ	< 856 Ω	± 2996 Ω
Ni1000/Pt1000 (@ 1100 Ω)	740 Ω to 2000 Ω	< 560 mΩ	± 2250 mΩ

Universal inputs (T1)	
Digital inputs X9, X10, X11	
0/1 digital signal (binary)	For potential-free inputs
Sensing voltage/current	Typical DC 18 V/7 mA
Contact resistance	Maximum 200 Ω (closed) Minimum 50 kΩ (open)

Universal I/Os (T2, T3)			
Analog inputs X1 through X8			
Type	Range	Resolution	Accuracy
NTC10k (@ 10 kΩ)	100 Ω to 760 kΩ	< 43 Ω	± 215 Ω
NTC100k (@ 100 kΩ)	100 Ω to 1280 kΩ	< 437 Ω	± 2166 Ω
Ni1000 (@ 1100 Ω)	100 Ω to 3800 Ω	< 396 mΩ	± 1980 mΩ
Pt1000 (@ 1100 Ω)	100 Ω to 3800 Ω	< 378 mΩ	± 1890 mΩ
Resistance input	0 Ω to 2500 Ω	< 1000 mΩ	< 4000 mΩ
Input 0 to 5 Vdc, ratiometric sensor	0 to 5V	< 1 mV	< 25 mV @ 5V
	Input resistance: > 100 kΩ		
Input 0 to 10 Vdc	0 to 10V	< 1 mV	< 50 mV @ 10V
	Input resistance: > 100 kΩ		
Input 0 to 20 mA	0 to 20 mA	< 1 µA	< 120 µA @ 20 mA
	Input resistance: < 500 Ω		

Universal I/Os (T2, T3)	
Digital inputs X1 through X8	
0/1 digital signal (binary)	For potential-free inputs
Sensing voltage/current	Typical 24 Vdc/6 mA
Contact resistance	Maximum 200 Ω (closed) Minimum 50 kΩ (open)

Universal I/Os (T2, T3)			
Analog outputs X1 through X8			
Type	Range	Resolution	Accuracy
Output 0 to 10 Vdc	0 to 10V	< 11 mV	< 124 mV @ 10V
	Output current: Maximum 1 mA (short-circuit proof)		
	Capacitive load: < 200 nF		

Universal I/Os (T2, T3)			
Analog outputs X1, X2			
Type	Range	Resolution	Accuracy
Output 0 to 20 mA	0 to 20 mA	< 22 μ A	< 243 μ A @ 20 mA
	Input resistance: < 500 Ω		

Universal I/Os (T2, T3)	
DC outputs, for example, for relay control X5 through X8	
Switching voltage	Typical 24 Vdc
Switching current	Maximum 25 mA

Universal I/Os (T2, T3)	
PWM outputs X5, X6	
Output voltage (high)	8 to 12 Vdc
Output voltage (low)	0 to 1 Vdc
Output current	Maximum 10 mA
PWM frequency	0.5 to 2.5 kHz NOTICE! Default settings is 500 Hz
Sampling ratio	0 to 100%
Resolution	0.5 %



NOTICE

The following applies to all inputs or inputs/outputs (X1 to X11):

- Can be configured using Climatix Mobile Applications
- System zero \perp is the reference potential
- Maximum contact voltage: 24 Vdc
- Overvoltage protection: Up to 40V
- Resolution and accuracy are indicated at 77°F (25°C) ambient temperature.

Supply power for active/ ratiometric sensors with 5V, 24V, 2 x 2 outputs (T2, T3)	
Sensor power output for active sensors	
Output voltage	24 Vdc (-25% to 15%)
Output current	Maximum 2 x 40 mA (short-circuit proof)
Reference potential	System zero \perp
Reference voltage output for ratiometric measurements NOTICE! Not designed for sensors with pulse-like energy demand.	
Output voltage	5 Vdc (\pm 2.5%)
Output current	Maximum 2 x 20 mA (short-circuit proof)

Digital inputs (T4)		
Digital inputs, potential-free D1, D2		
	D1	D2
0/1 digital signal (binary)	For potential-free contacts	<ul style="list-style-type: none"> • For potential-free contacts or pulse measurements

Digital inputs (T4)		
Digital inputs, potential-free D1, D2		
	D1	D2
Sensing voltage/current	24 Vdc/8 mA	
Contact resistance	<ul style="list-style-type: none"> Maximum, 200 Ω (closed) Minimum 50 kΩ (open) 	
Pulse frequency	Maximum 60 Hz	Maximum 60 Hz
Pulse measurement		Max. 18000 pulses/min.

Digital inputs (T5)	
24 V active digital inputs DU1, DU2	
0/1 digital signal (binary)	Galvanically separated voltage input
Nominal voltage	24 Vac (-20 % to +20 %) 24 Vdc (± 10 %)
Input current	8 mA @ 24 Vdc
Pulse frequency	Maximum 5 Hz

Digital inputs (T13)	
115...230 V active digital inputs DL1, DL2	
0/1 digital signal (binary)	Galvanically separated voltage input
Nominal voltage	115 Vac to 230 Vac (-15% to +10%)
Input current	< 1 mA @ 230 Vac
Frequency range	45 to 65 Hz
Pulse frequency	Maximum 5 Hz
Dielectric strength: Insulation on low voltage	2900V

Outputs

Relay outputs T9 through T11		
Q1, Q2 (T9, T10) and Q3 through Q8 (T10, T11)		
Relay: Type, contact	<ul style="list-style-type: none">Q1, Q2, monostable, NO/NCQ3...Q8, monostable, NO	
Switching voltage range	<ul style="list-style-type: none">12 Vac to 250 Vac (45 to 65 Hz)12 Vdc to 30 Vdc	
Switching current range		
NO contact	AC 0.01 to 4A	DC 0.01 to 4A
NC contact	AC 0.01 to 2A	DC 0.01 to 2A
Contact load rating		
NO contact	4A @ 250 Vac	3A @ 30 Vdc
NC contact	2A @ 250 Vac	1A @ 30 Vdc
Maximum inrush current		
NO contact	10 A (for ≤ 1 sec)	
NC contact	3 A (for ≤ 1 sec)	
Minimum load for reliable switching	<ul style="list-style-type: none">10 mA @ AC/DC 12 to 30V1 mA @ AC 230 V	

Relay outputs T9 through T11	
Q1, Q2 (T9, T10) and Q3 through Q8 (T10, T11)	
Electrical endurance (operations)	
NO contact	<ul style="list-style-type: none"> Q1, Q2: 100000 @ 3A @ 230 Vac (resistive load) Q3 through Q8: 100000 @ 4A @ 230 Vac (resistive load) Q1 through Q8: 500000 @ 300 mA @ 230 Vac (resistive load) 100000 @ 2A @ 230 Vac (inductive load, $\cos\varphi \geq 0.6$) 100000 @ 2A @ 30 Vdc
NC contact	Q1, Q2: <ul style="list-style-type: none"> 100000 @ 2A @ 230 Vac (resistive load) 100000 @ 1A @ 230 Vac (inductive load, $\cos\varphi \geq 0.6$) 100000 @ 1A @ 30 Vdc
Dielectric strength: Insulation on low voltage	2900V
External fuse in the supply line	maximum 6.3A non-renewable fuse or circuit breaker, Type B, C or D

Triac outputs (T12)	
DO1, DO2	
Switching voltage	19 to 250 Vac
Switching current (resistive)	Maximum 500 mA/Minimum. 30 mA
Maximum switch-on current	1.5A (for ≤ 1 sec)
Cos Phi	1 to 0.8
Dielectric strength: Insulation on low voltage	2900V
External fuse in the supply line	maximum 2.0A non-renewable fuse or circuit breaker, Type B, C or D

!	NOTICE
	The following applies for relay and triac outputs: <ul style="list-style-type: none"> Do not mix SELV/PELV and mains power on the same terminal block. Use external protection circuits for inductive loads. The outputs are not fused internally. An external fuse is required.

Interfaces



The device interfaces are depicted in "Design [→ 3]".

Interface	Symbol/ Location	Use	Technical data
USB host for WiFi stick	T-SP	Engineering and commissioning <ul style="list-style-type: none"> Climatix Mobile Application Auxiliary energy using USB <ul style="list-style-type: none"> Power to WLAN routers powered by USB 	<ul style="list-style-type: none"> Plug: Type A Provides supply current of maximum 500 mA NOTICE! No galvanic separation to ground. NOTICE! The interface only provides communication to the Mobile Application.
SD card	left, from top	Loading and archiving <ul style="list-style-type: none"> Load application programs Download the firmware See SCOPE online help 	<ul style="list-style-type: none"> Cards: SD, SDHC Memory card size: 128 MB up to 32 GB File system: FAT16, FAT32 CAUTION! Switching off the controller during a read/write action may result in a loss of data.
Ethernet	T-IP	Cloud services <ul style="list-style-type: none"> Climatix IC integration Integration <ul style="list-style-type: none"> Modbus, BACnet IP or OPC 	<ul style="list-style-type: none"> Plug: RJ45, screened Interface type: 10 BASE-T and 100 BASE-TX, IEEE 802.3 compatible Bitrates: 10/100 Mbps Auto sensing Multiple, simultaneous connections are possible when using a switch
Process bus	T15	Process bus <ul style="list-style-type: none"> Connection of CLIMATIX controllers and room units KNX-LTE, PL-Link 	<ul style="list-style-type: none"> Type: KNX TP1, galvanic separation Baud rate: 9.6 kbps Bus power: 50 mA Bus load: 5 mA Short-circuit proof
Third-party bus Siemens VFD over Modbus	T6, T14	Connect field devices <ul style="list-style-type: none"> Variable speed drive 	<ul style="list-style-type: none"> Plug: 3-pin connection for all interfaces RS-485 (EIA-485) interface Galvanically separated (T6 only) Data rate: max. 600 Baud to 115k Baud (can be set over software) Maximum connectable devices: Up to 31 devices Bus termination (can be set over software): 120 Ω + 1 nF (T6 only) Bus polarization (can be set over software): 680 Ω / 680 Ω NOTICE! The baud rate must be adapted to match the cable length.
Peripheral bus	Right side	Extension inputs/outputs <ul style="list-style-type: none"> Connection of Thermostat modules (POL925) 	<ul style="list-style-type: none"> Plug connection (see "Accessories [→ 14]") Addresses 1...31, 0 not used See "Power data [→ 5]". NOTICE! Not internally fused. Use an external fuse at 4A in the power supply line.

Wire lengths

Interface	Wire lengths
Ethernet	Max. 100 m
Process bus	<ul style="list-style-type: none"> Overall length: maximum 1000 m Between 2 nodes: maximum 700 m (per KNX specification)
Peripheral bus	<ul style="list-style-type: none"> Overall length: maximum 30 m Voltage drop off on 0V wire: $\leq 1.5V$
Third-party bus	<ul style="list-style-type: none"> Overall length: maximum 1000 m @ 9.6k Baud Max. 500 m @ 9.6k Baud between 2 nodes Total 40 m stub lines; 1 stub line maximum 20 m
Signal wiring	Max. 80 m NOTICE! Restriction: X9 through X11 on NTC10k, NTC100k: maximum 30 m

Cable types

Interface	Specification
Ethernet	Always screened: <ul style="list-style-type: none"> 100 BASE-TX, cable category 5 10 BASE-T, cable category 4
Process bus	Shielded, twisted pair: 24 to 14 AWG (0.5...1.5 mm ²) (per KNX specification)
Peripheral bus	4-wire (2 wires as twisted pair), shielded, if >3 m
Third-party bus	2 or 3-wire, twisted, shielded, if >3 m
Signal lines (Inputs/outputs)	<ul style="list-style-type: none"> Wire: 24 to 10 AWG (0.5...2.5 mm²) Stranded wire (twisted, terminating sleeves required): 24 to 14 AWG (0.5...1.5 mm²) Stripping lengths: <ul style="list-style-type: none"> 7 mm for screw terminals (MVSTBW) 10 mm for spring cage terminals (FKCT)



NOTICE

Installation of connections as per:

- Load
- Local regulations
- Applicable installation documents

Conformity

Ambient conditions and protection classification	
Classification as per EN 60730	
Operation of automatic controller	Type 1
Degree of pollution	2
Overvoltage category	III
Design type	Device suited for use with equipment of safety classes I and II
Degree of protection of housing to EN 60529	IP20
Climatic ambient conditions	
Transport (in transport packaging) as per EN 60721-3-2	Class 2K3 <ul style="list-style-type: none"> Temperature -13°F to 158°F (-25°C to 70°C) Air humidity 5 to 90% (non-condensing)

Ambient conditions and protection classification	
Operation per EN 60721-3-3	Class 3K5 <ul style="list-style-type: none"> Temperature: -40°F to 158°F (-40°C to 70°C) NOTICE! Avoid exposure to maximum temperatures for prolonged periods.
	<ul style="list-style-type: none"> Air humidity: 5 to 90% (non-condensing)
	<ul style="list-style-type: none"> Air pressure: Minimal 700 hPa (corresponds to a maximum 9,842 ft. (3000 m) above sea level)
Restrictions: Temperature range	<ul style="list-style-type: none"> Process bus reliability range: -13°F to 158°F (-25°C to 70°C)
Mechanical ambient conditions	
Transport to EN 60721-3-2	Class 2M2
Operation per EN 60721-3-3	Class 3M2, continuous operation Class 3M4, vibration peaks NOTICE! See Mounting Instructions "A6V10990056" for more details.

Standards, directives and approvals	
Product standard	EN 60730-1 Automatic electronic controls for household and similar use
Electromagnetic compatibility	For residential, commercial, and industrial environments
EU conformity (CE)	A5W00030674
RCM conformity	A5W00030679
UL Approbation Federal Communications Commission	UL916, UL873. http://database.ul.com FCC CFR 47 Part 15 Class B
CSA Approbation	C22.2
EAC	Eurasian compliance
Environmental compatibility	The product environmental declarations (A6V11135997_en, A6V11135999_en) contain data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

Software License Summary

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

Title: License Summary Climatix C600 Controller – VVS11

LED indicators "BSP" and "BUS"

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 operational
	Orange	Flashing, 50 ms on / 1000 ms off	Application not loaded
	Red	Flashing at 2 Hz	Firmware error
	Red	Continuous	Hardware fault
BUS	Off	None	Climatix cloud service is disabled
	Green	Flashing at 1 Hz	Climatix cloud service is active
	Orange	Continuous	Climatix cloud service is inactive (disconnected)

Download button

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



See the User Guide for additional information on the download button.

Real-time clock

- Backup without battery: 3 days
- Backup with battery: 4 years



The Mounting and installation instructions (A6V10990056) illustrate how to install or replace the backup batteries for the real-time clock.

Data Matrix Code (DMC)

The controller 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:

1PS55396-C488-A100+31PPOL648.80/STD+S160908Z0000000005+23S00-A0-03-EB-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

Climatix controllers

Type	Stock number	Description
POL648.10/RTU	S55396-C481-A123	Climatix C600 controller

Accessories**Siemens accessories**

Type	Stock number	Designation
POL064.85/STD	S55843-Z648-F100	Terminal set POL648, screw connection
POL064.86/STD	S55843-Z648-G100	Terminal set POL648, spring-cage connection
POL001.45/STD	S55843-2114-F100	Board-to-board connector for thermostat module

PHOENIX CONTACT accessories, www.phoenixcontact.com**Phoenix cable connector**

Phoenix type	Description
ZEC 1,0/ 4-LPV-3,5 GY35AUC2CI1	Printed circuit board connector, Board-to-Board to connect thermostat modules
ZEC 1,0/ 4-ST-3,5 GY35AUC1R1,4	Printed circuit board connector, Board-to-Board to connect thermostat modules

Phoenix terminal plug

Use the following overview of compatible types to select and order the Phoenix type:

Controller connectors	Compatible Phoenix connector types	Color
T1	1 × 5 pos - MVSTBW, FKCVW or FKCT 2,5/5-ST	Gray
T2	1 × 8 pos - MVSTBW, FKCVW or FKCT 2,5/8-ST	Gray
T3	1 × 8 pos - MVSTBW, FKCVW or FKCT 2,5/8-ST	Gray
T4	1 × 3 pos - MVSTBW, FKCVW or FKCT 2,5/3-ST	Gray
T5	1 × 3 pos - MVSTBW, FKCVW or FKCT 2,5/3-ST	Gray
T6	1 × 3 pos - MCVW 1,5/ 3-ST-3,5	Green
T7	1 × 5 pos - MVSTBW, FKCVW or FKCT 2,5/5-ST	Gray
T8	1 × 2 pos - MVSTBW, FKCVW or FKCT 2,5/2-ST	Orange
T9	1 × 3 pos - MVSTBW, FKCVW or FKCT 2,5/3-ST	Gray
T10	1 × 7 pos - MVSTBW, FKCVW or FKCT 2,5/7-ST	Gray
T11 (POL648)	1 × 3 pos - MVSTBW, FKCVW or FKCT 2,5/3-ST	Gray
T12	1 × 3 pos - MVSTBW, FKCVW or FKCT 2,5/3-ST	Gray
T13	1 × 3 pos - MVSTBW, FKCVW or FKCT 2,5/3-ST	Gray
T14	1 × 3 pos - MCVW 1,5/ 3-ST-3,5	Green
T15	1 × 2 pos - MCVW 1,5/ 2-ST-3,5	Green
T16	1 × 5 pos - MVSTBW, FKCVW or FKCT 2,5/5-ST	Gray

Product documentation


Document ID	Title	Description
A6V10990056	Installation C600 Climatix controller	Mounting and wiring the Climatix controller
M3910	Climatix mounting instructions	Connecting extension modules. Power variants.
Q3900en	Climatix range	The section "Connecting the extension modules" is important with sample calculations for permissible pass-through current
Q3993en	EMC design guidelines	Notes on EMC, especially for panel design
A6V101099058_en	Climatix: Technical Limits	Technical limits of controller devices and integration

Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following Internet address:


<http://siemens.com/bt/download>

Notes


Safety: National regulations

	⚠ CAUTION
	<p>National safety regulations</p> <p>Failure to comply with national safety regulations may result in personal injury and property damage.</p> <ul style="list-style-type: none">• Observe national provisions and comply with the appropriate safety regulations.

Engineering: Panel

	⚠ WARNING
	<p>Risk of electric shock caused by unintentional contact with electrical connections</p> <p>Touching powered connections (over 42 Volt) can result in serious injury.</p> <ul style="list-style-type: none">• Install the device in a protective housing (preferably a panel).• A key or tool is required to open the protective housing.• 230 Vac cable must be double insulated versus safety extra-low voltage (SELV) cables.

Installation

	⚠ WARNING
	<p>No internal line protection for supply lines to external consumers</p> <p>Risk of fire and injury due to short-circuits!</p> <ul style="list-style-type: none">• Adapt the line diameters as per local regulations to the rated value of the installed fuse.



⚠ WARNING

Electric shock on plug-in terminal blocks

The distance to parts potentially under power is very small when using plug-in terminal blocks.

- Ensure the device is not connected to power before using plug-in terminals.

Engineering



NOTICE

If an unintended program is loaded, the controller will stop running. Only Siemens-authorized programs are allowed.

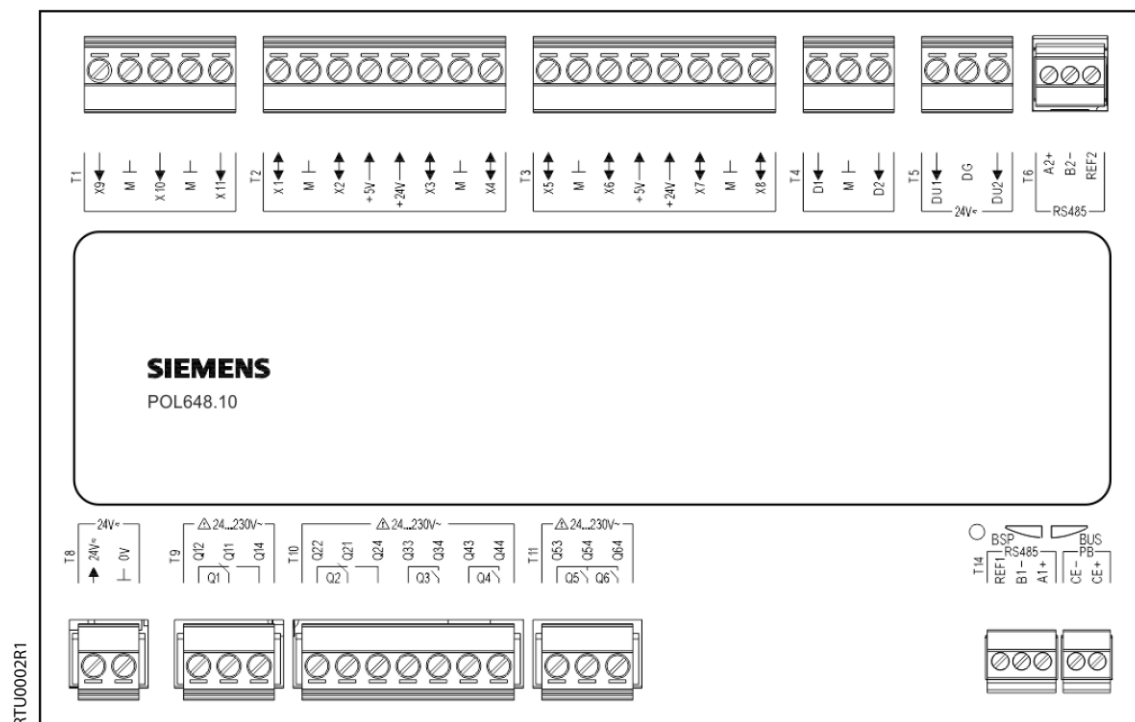
Disposal



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

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.
- Dispose of empty batteries in designated collection points.

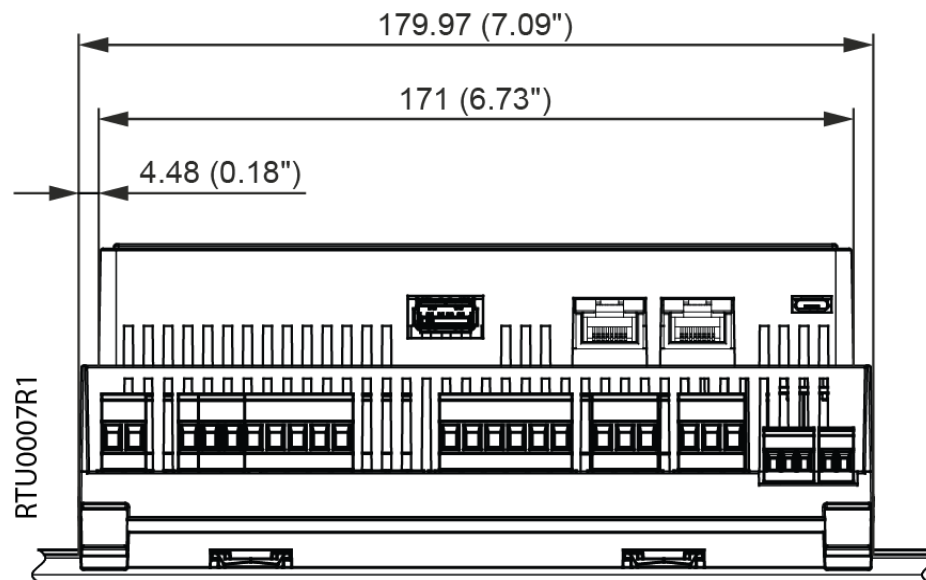
POL648.10/RTU



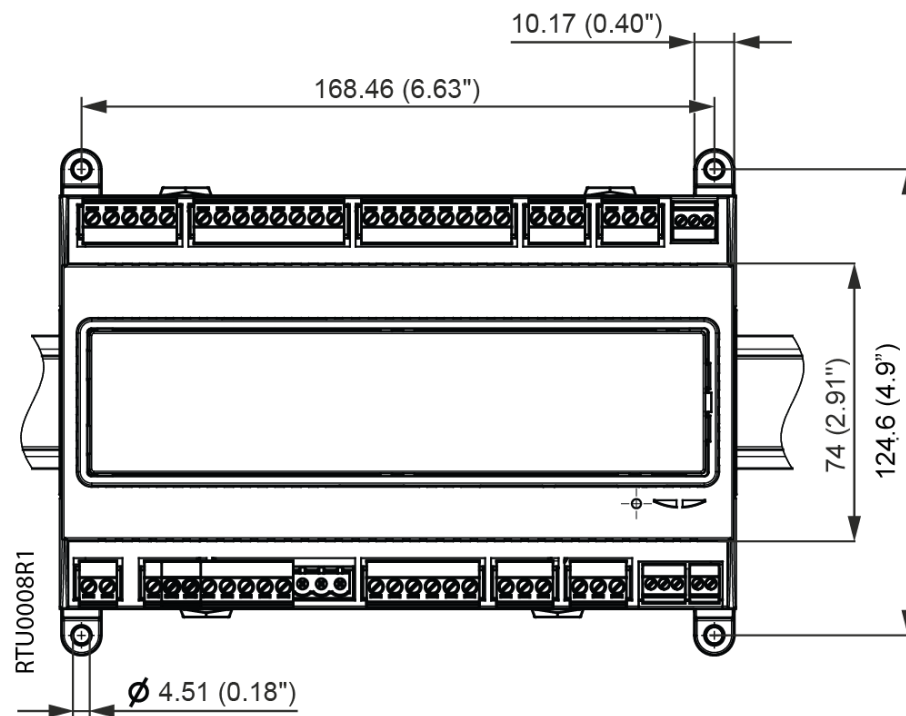
Slot	Terminal	Description
T1	X9, X10, X11	Universal inputs
	M	System zero
T2	X1, X2, X3, X4	Universal inputs/outputs
	M	System zero
	+5V	5V reference power
	+24V	24V sensor power
T3	X5, X6, X7, X8	Universal inputs/outputs
	M	System zero
	+5V	5V reference power
	+24V	24V sensor power
T4	D1, D2	Digital inputs (potential-free)
	M	System zero
T5	DU1, DU2	24 V active digital input
	DG	Reference potential 24V active digital input
T6	A2+, B2-, REF2	Third-party bus, RS-485 NOTICE! Galvanically separated
T8	24V~	Power 24 Vac/24 Vdc
	0V	System zero
T9	Q11	Input Q1
	Q12	NC (normally closed) contact Q1
	Q14	NO (normally open) contact Q1

Slot	Terminal	Description
T10	Q21	Input Q2
	Q22	NC (normally closed) contact Q2
	Q24	NO (normally open) contact Q2
	Q33	Input for Q3
	Q34	NO (normally open) contact Q3
	Q43	Input Q4
	Q44	NO (normally open) contact Q4
T11	Q53	Common input for Q5 and Q6
	Q54, Q64	NO (normally open) contacts for Q5 and Q6
T14	A1+, B1-, REF1	Third-party bus, RS-485 NOTICE! Not galvanically separated
T15	CE-, CE+	Process bus (based on KNX TP1)

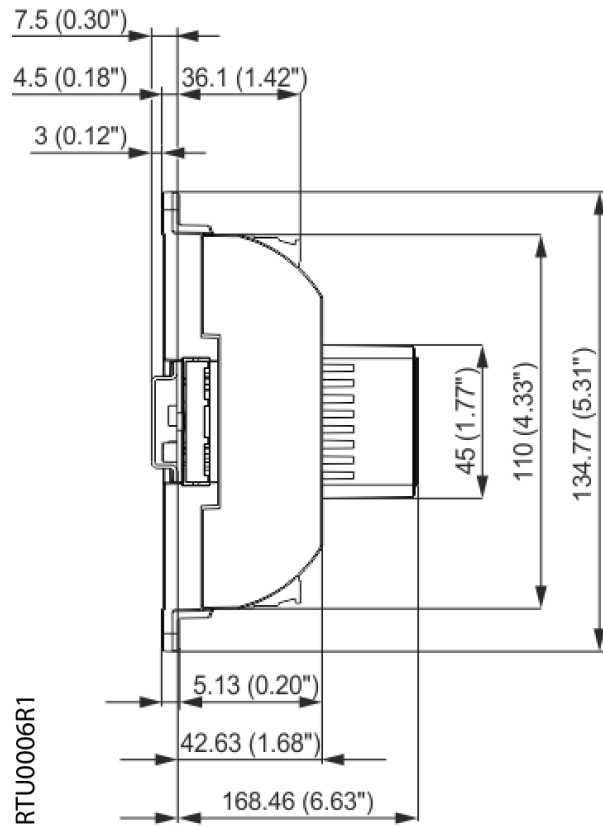
POL648.10/RTU (all dimensions in inches [mm])



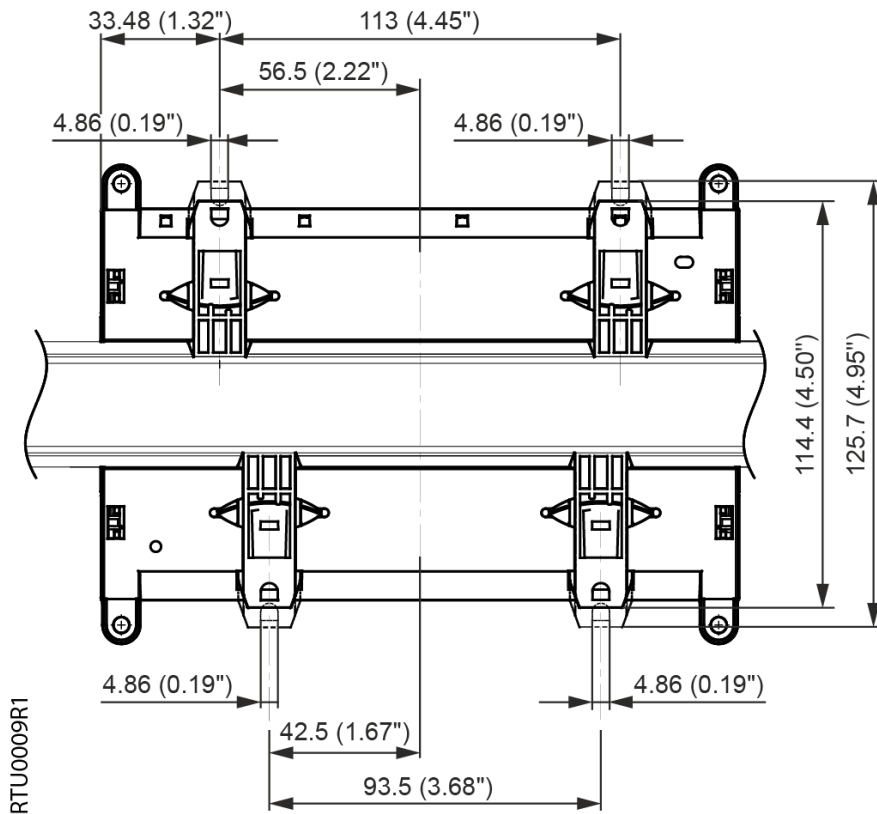
POL648..10/RTU Bottom View.



POL648.10.RTU Front View.



POL648.10/RTU Side View.



POL648.10/RTU Rear View.

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