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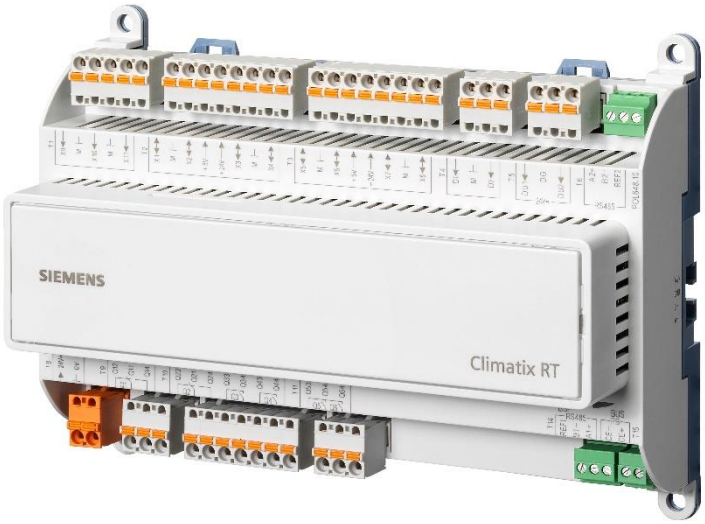


Climatix RT

RTU Controller: POL648.10/RTU

Installation Instructions

A6V12250551
2021-03-02

Smart Infrastructure

Legal note

Legal note concept

This guide includes notes that must be followed for your own personal safety as well as to prevent damage to property.

Notes on your personal safety are identified by a warning triangle and use the signal words WARNING or CAUTION.

WARNING identifies a situation that can result in severe injuries.

CAUTION identifies a situation that can result in slight injuries.

Notes dealing only with damage to property do not have the warning triangle and use the signal word NOTICE and an exclamation point.

The notes are depicted as follows:

	**⚠ WARNING**
	Type and source of hazard Consequences in the event the hazard occurs • Measures/prohibitions to prevent the hazard

	**⚠ CAUTION**
	Type and source of hazard Consequences in the event the hazard occurs • Measures/prohibitions to prevent the hazard

	***NOTICE***
	Type and source of hazard Consequences in the event the hazard occurs • Measures/prohibitions to prevent the hazard

Qualified personnel

Only qualified personnel may commission the device/system. In this regard, qualified personnel have the training and experience necessary to recognize and avoid risks when working with this device/system.

Proper use

The device/system described here may only be used in building technical plants and for the described applications only.

The trouble-free and safe operation of the device/system described here requires proper transportation, correct warehousing, mounting, installation, commissioning, operation, and maintenance.

You must comply with permissible ambient conditions. You must comply with the information provided in the Section "Technical data" and any notes in the associated documentation.

Fuses, switches, wiring and grounding must comply with local safety regulations for electrical installations. Observe all local and currently valid laws and regulations.

Exemption from liability

The content of this document was reviewed to ensure it matches the hardware and firmware described herein. Deviations cannot be precluded, however, so that we cannot guarantee that the document matches in full the actual device/system. The information provided in this document is reviewed on a regular basis and any required corrections are added to the next edition.

Software used

All open source software components used in this product (including copyright owners and license agreements) can be viewed on the controller's internal web server:

http://ip_address_of_the_device/licenses.html

Cyber security disclaimer

Products, solutions and services from Siemens include security functions to ensure the secure operation of building automation and control, fire safety, security management, and physical security systems. The security functions on these products, solutions and services are important components of a comprehensive security concept.

Drafting, implementing and managing a comprehensive and up-to-date security concept, customized to individual needs, is nevertheless necessary, and may result in additional plant- or site-specific preventive measures to ensure secure operation of your site regarding building automation and control, fire safety, security management, and physical security. These measures may include, for example, separating networks, physically protecting system components, user training, multi-level defensive measures, etc.

For additional information on security as part of building technology and our product, solution and service offerings, please contact your Siemens sales representative or project department. We strongly recommend to always comply with our security advisories on the latest security threats, patches and other related measures.

http://www.siemens.com/cert/en/cert-security-advisories.htm

Contents

Planning use

Climatic conditions

Application range: Temperature

Ambient conditions	Permissible range
Temperature	POL648.10/RTU: -40 to 158°F (-40 to 70°C)

Application range: Humidity

Ambient conditions	Permissible range	Comments
Relative humidity	5 to 90 %	Non-condensing

Ventilation

Ensure there is sufficient ventilation. The controller generates heat that must be removed to prevent heat buildup.

Installation conditions

Installation types

The Climatix RT controller is suitable for the following types of installation:

- On a flat surface (screwed in)
- On DIN rails per EN60715 TH 35-7.5 or TH 35-15 (attached with 4 screws)

Additional important information on both types of installation is available in "Mechanical conditions [→ 9]".

Mounting position

The following positions are permitted:

- Horizontal installation
- Vertical: The communication interface (left) on the controller must be on top

Not permitted:

- Suspended from the ceiling (above head)
- Laying on flat surfaces

Installation location

The controller must be installed in a locked panel for security reasons.

⚠ WARNING

Risk of electric shock caused by unintentional contact with electrical connections

Touching powered connections (over 42 Volt) can result in serious injury.

- Install the device in a protective housing (preferably a panel).
- A key or tool is required to open the protective housing.
- AC 230V cable must be double insulated versus safety extra-low voltage (SELV) cables.

Mechanical conditions

Installation: Avoid vibration

The following operating modes and mounting specifications apply to mechanical operating conditions as per EN 60721-3-3:

Class (acceleration)	Permitted operating mode	Mounting rules
3M1 (≤ 0.1 g)	Continuous operation	DIN rails
3M2 (> 0.1…0.5 g)	Continuous operation	DIN rails
	Continuous operation for longer periods where the controller is exposed to resonance frequencies	Fixed screwed
3M4 (> 0.5…1.0 g)	Vibration peaks (for example, at equipment start-up)	Fixed screwed

Mounting the controller on DIN rails or fixed screwed is described in "Mounting the controller [→ 13]".

Dimensions: Screws and DIN rails

Fixed screwed

The following recommendations apply to fixed screwing:

- Fillister head sheet metal screw with cross top ST 4.2
- Tightening torque 2.5 Nm

DIN rails

The following DIN rails per EN60715 are permitted:

- TH 35-7.5
- TH 35-15

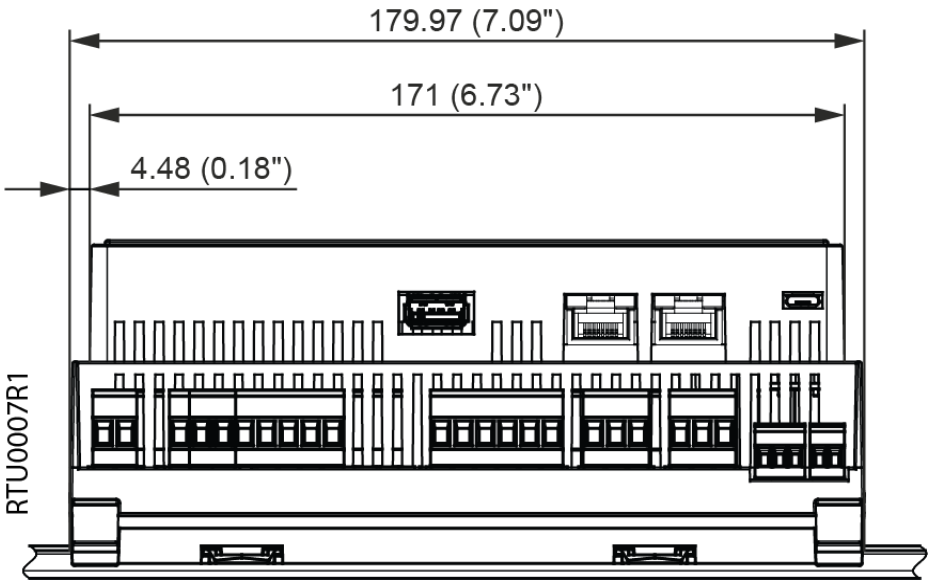
Comply with maximum pass-through current

The maximum overall current for a group of devices cannot exceed 4A.

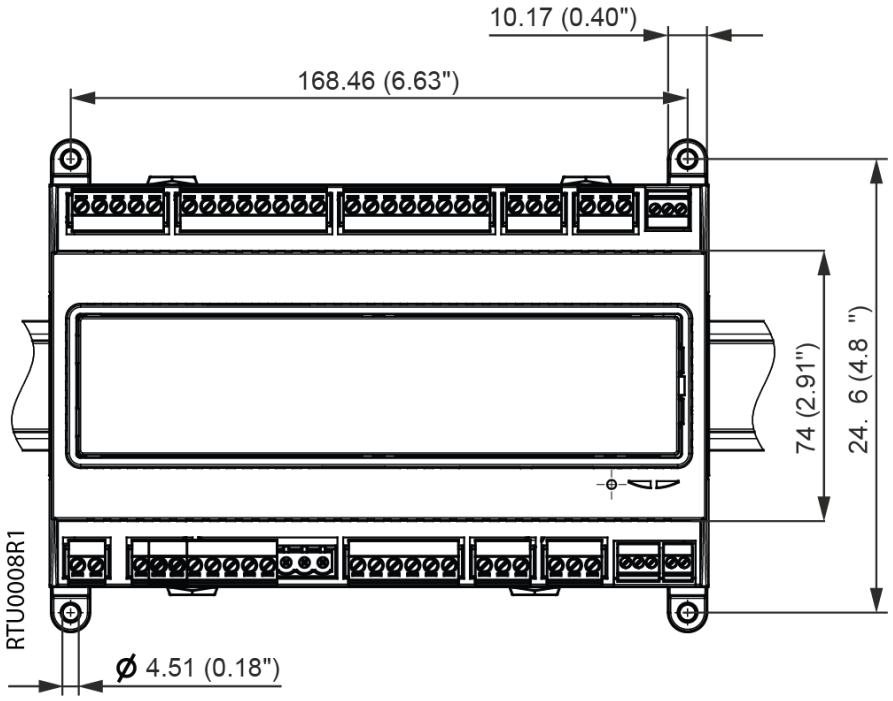
A group of controllers and extension modules may have to be subdivided into subgroups.

Dimensions

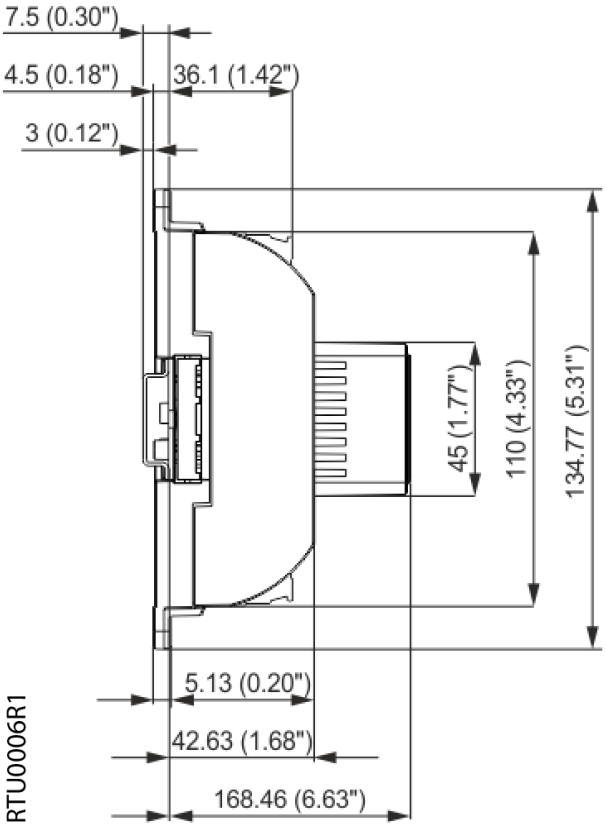
POL648.10/RTU (all dimensions in millimeters [inches])



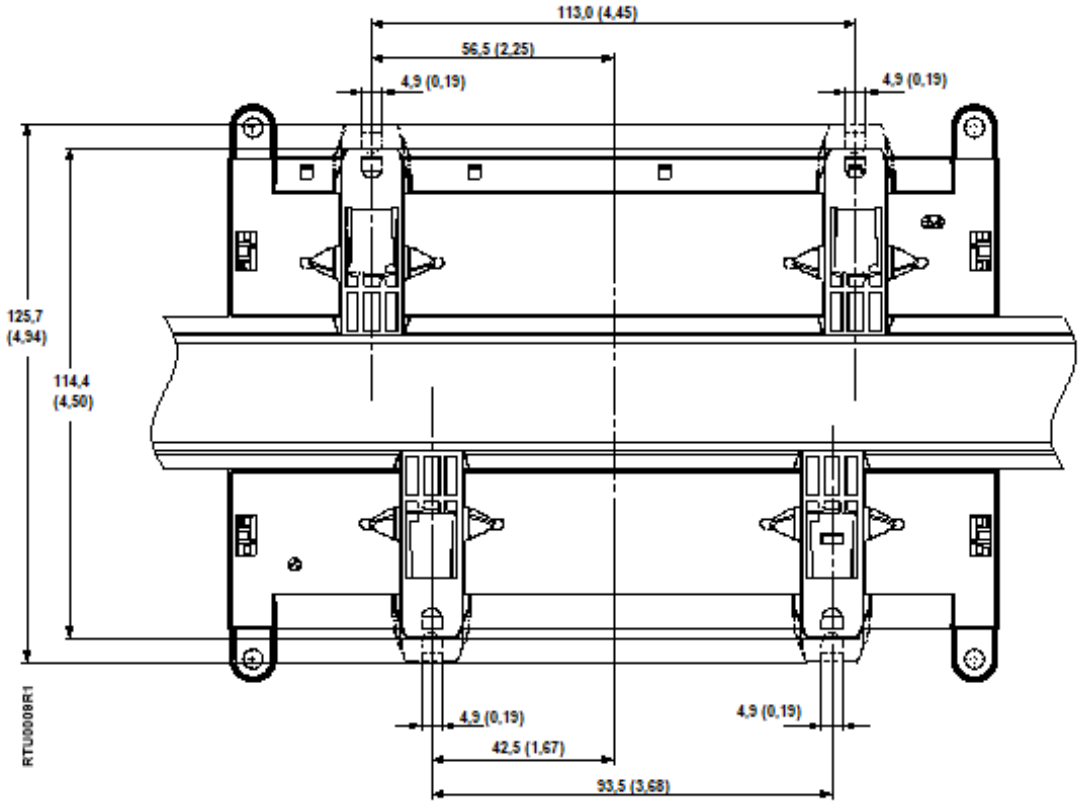
POL648..10/RTU Bottom View.



POL648.10.RTU Front View.



POL648.10/RTU Side VIew.



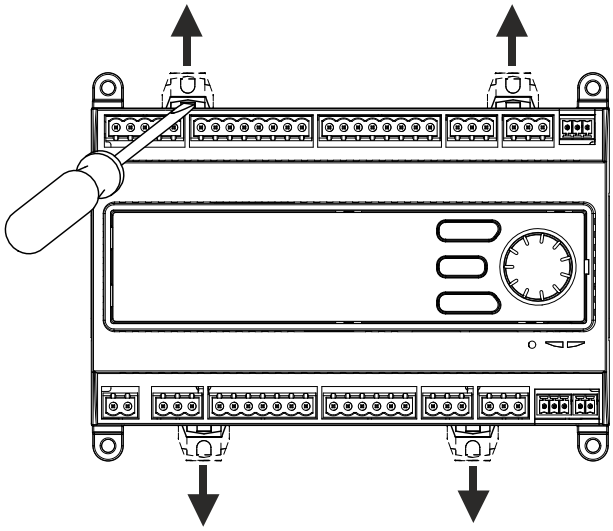
POL648.10/RTU Rear View.

Mounting the controller

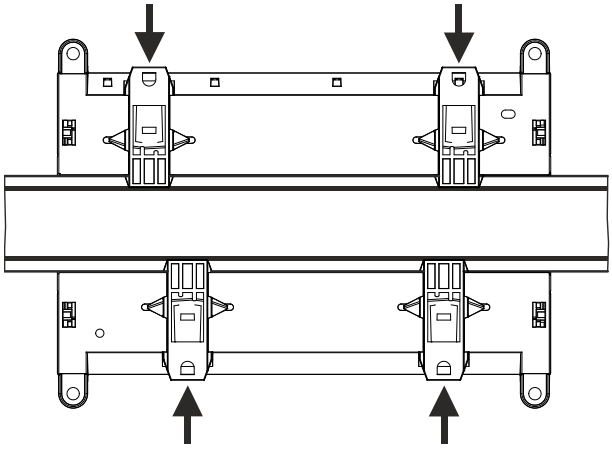
Connect to DIN rails

Proceed as follows to connect the controller to DIN rails:

1. Use a flat-blade screwdriver to attach the four fastening sliders to the extended position.



2. Attach the controller to the DIN rails.
3. Press the four fastening sliders to the retracted position.



⇨ The controller is connected to the DIN rails using the fastening sliders.

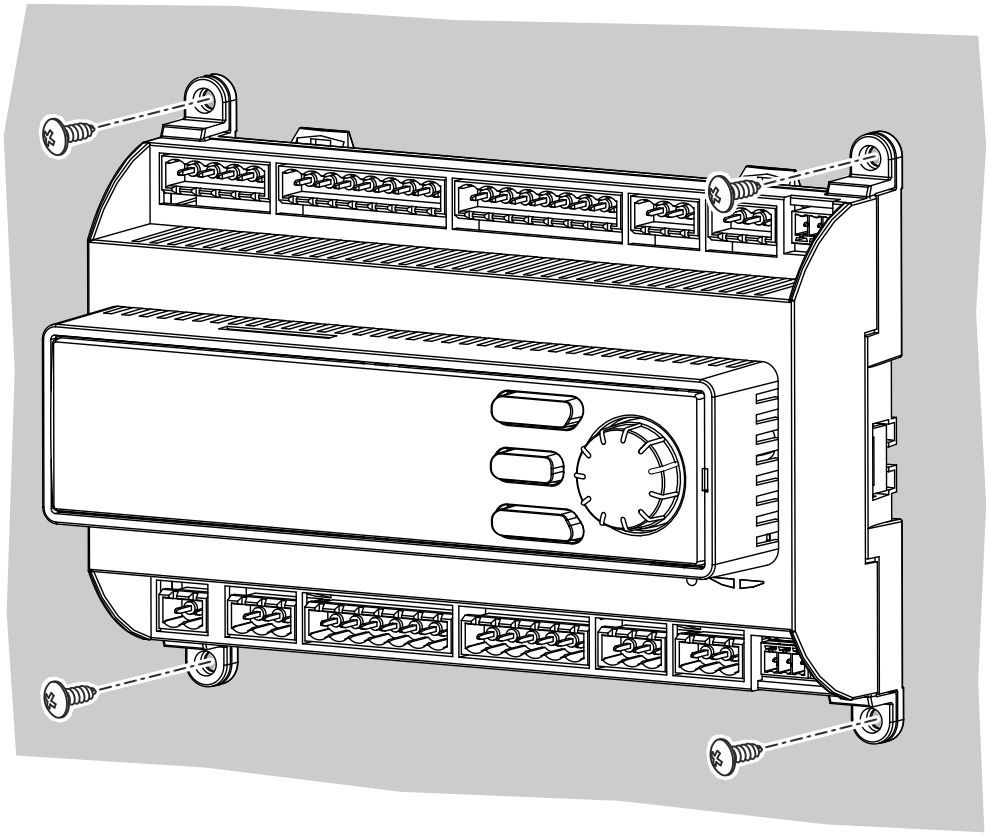
See *Dimensions: Screws and DIN rails* [→ 9] for permitted DIN rail types.

	***NOTICE***
	Combination of DIN rails and fixed screw A spacer must be added between the mounting surface and brackets if the controller is attached with screws in addition to the rail fasteners. The customer must provide the spacers since combining rails and fixed screws is not a standard solution

Screw to the surface

Proceed as follows to mount the controller to a surface:

- Screw the controller at the four brackets (on the device corners) to the mounting surface.



See *Dimensions: Screws and DIN rails* [→ 9]" for recommended screws.

Uninstall the controller

To remove the controller from DIN rails or the mounting surface, follow the steps for mounting in reverse order.

Install/replace battery for real-time clock

Clock function

The real-time clock integrated in the controller is required for time-based functions such as schedules, alarm timestamps, or the time base for data acquisition.

Backup battery

Backup battery for the real-time clock is

- 3 days without battery backup
- 4 years with battery backup

Install/replace back-up battery

!	***NOTICE***
	Damage to electronics from electrostatic discharge Take the appropriate measures against ESD prior to installing or changing the battery.

	**⚠ WARNING**
	Explosion or battery fire from short circuit, damaged, or burning of batteries Injuries from flying parts, fire • Prevent water from touching batteries. • Do not extinguish a burning battery with water. • The battery cannot get damaged. • The battery may not exceed 212°F (100°C) (spontaneous ignition temperature).

	**⚠ CAUTION**
	Leakage of small amounts of electrolyte Burns • Do not touch damaged battery with unprotected hands. • Immediately douse your eyes with water if they come into contact with electrolyte. Consult a doctor.

Note the following:

- Always use the same type battery.
- Pay attention to polarity (+/-).
- The battery must be new and undamaged.

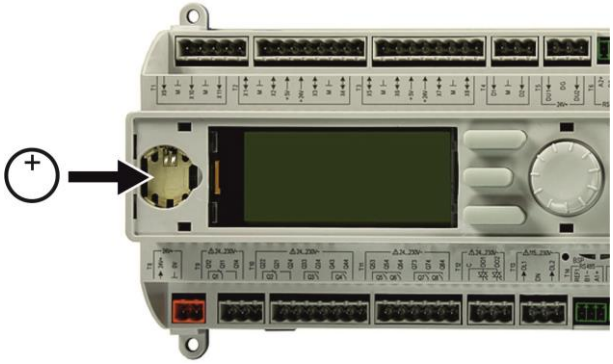
Comply with all laws, regulations, and directives for the storage, transport, and disposal of batteries. Comply with notes by the battery manufacturer.

- Use only BR2032 button cell Lithium batteries.
- The battery holder has space for a backup battery.

Instructions

1. Disconnect all power to the controller.
2. Remove the plastic front cover using a narrow, flat-head screwdriver.

3. Insert the BR2032 battery or replace it. **NOTICE! Pay attention to polarity! The plus faces up and is visible after inserting.**



4. Remount the plastic front cover by mounting the left side and then gently clicking the right side in place.

Wiring

Safety notes

Stripping cables

Comply with the following specification for stripping cables:

Stripping length

- 7 mm for screw terminals (MVSTBW)
- 10 mm for spring cage terminals (FKCT)

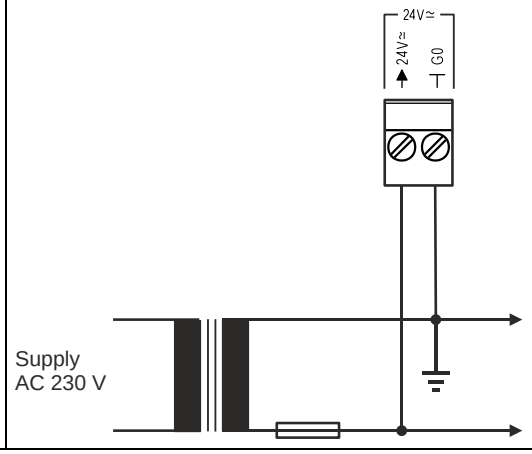
Terminating sleeves

Insulated or short-circuit proof terminating sleeves are recommended for wiring.

Safety notes in the data sheet

!	***NOTICE***
	Comply with all safety notes in the *Climatix RT Rooftop Unit Controller* data sheet (P/N A6V12001603) in the "Technical data" and "Notes" sections.

Power supply

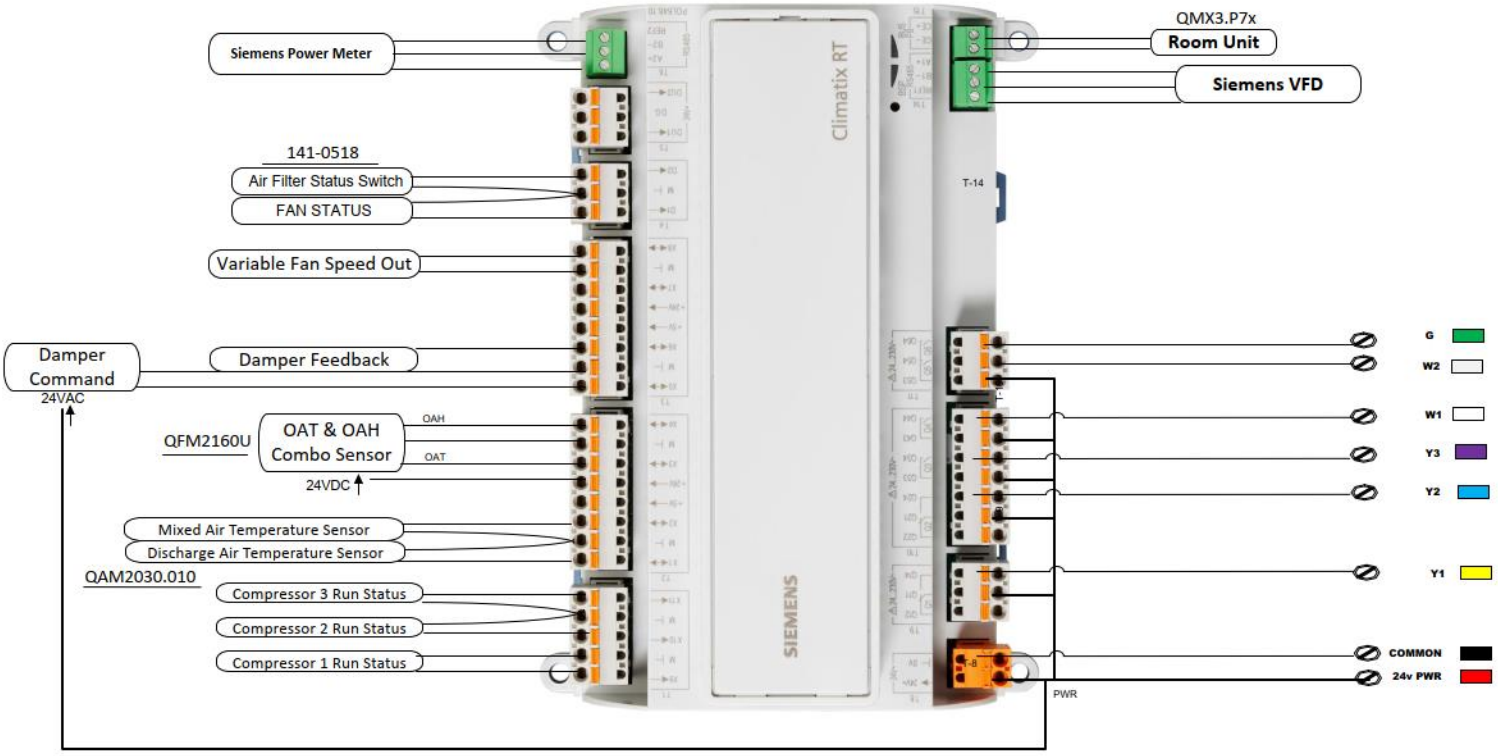
Terminal	**T8**
Diagram	

Signal wiring

The following graphic illustrates the pre-assigned terminals on the POL648.10/RTU.

For details on the Input/Output configuration, see the *Climatix RT Rooftop Unit Controller* data sheet (P/N A6V12001603).

POL648.10/RTU - Input/output pre-termination



Auxiliary Inputs

X9	Compressor 1 Run Status
X10	Compressor 2 Run Status
X11	Compressor 3 Run Status

Auxiliary Outputs

X1	Discharge Air Temperature Sensor
X2	Mixed Air Temperature Sensor
X3	Outside Air Temperature Sensor
X4	Outside Air Humidity Sensor
X5	Damper Command
X6	Damper Feedback
X7	Not assigned
X8	Not assigned

Digital Inputs

DI1	Traditional Fan Speed Feedback
DI2	Clog Filter Switch Status
DI3	Not assigned
DI4	Not assigned

Digital Outputs

DO1	Compressor 1 Run Enable
DO2	Compressor 2 Run Enable
DO3	Compressor 3 Run Enable
DO4	Heater Stage 1 Enable
DO5	Heater Stage 2 Enable
DO6	Traditional Fan Speed DO

Climatix documentation

This documentation is part of the Climatix documentation landscape. The following documents apply as well for mounting and installation:

Document ID	Title	Description	QR Code
A6V12001603	*Climatix RT Rooftop Unit Controler* Data Sheet	Functions, use, technical data, terminal concept, and dimensions for the POL648.10/RTU controller	
A6V12250551	*Climatix RT RTU Controller POL648.10/RTU* Installation Instructions	Mounting and wiring the Climatix controller	
A5W00153010	*Climatix RT RTU Controller POL648.10/RTU* Quick Start Guide	Pre-assigned I/O terminations for Clmatix RT	
A6V12053407	*Remote Monitoring and Intelligent Diagnostics for Roof Top Unit Controllers* Start Up	Startup document for Climatix RTU solution and Climatix IC setup	
A6V101099058_en	Climatix: Technical Limits	Technical limits of controller devices and integration	

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