

Climatix™

Communication module Modbus

POL902.00/xxx



Communication module to connect a Climatix POL6xx controller to a Modbus network

- Integration into a building automation and control system via RS485 Modbus RTU
- The module features 2 Modbus slave communication ports
- The module must be connected to the left side of a POL6xx.xx controller
- Galvanically isolated connection to the Modbus network
- The POL902.00/xxx communication module is part of the Climatix product range. Refer also to Data sheet Q3900 and Mounting instructions M3910

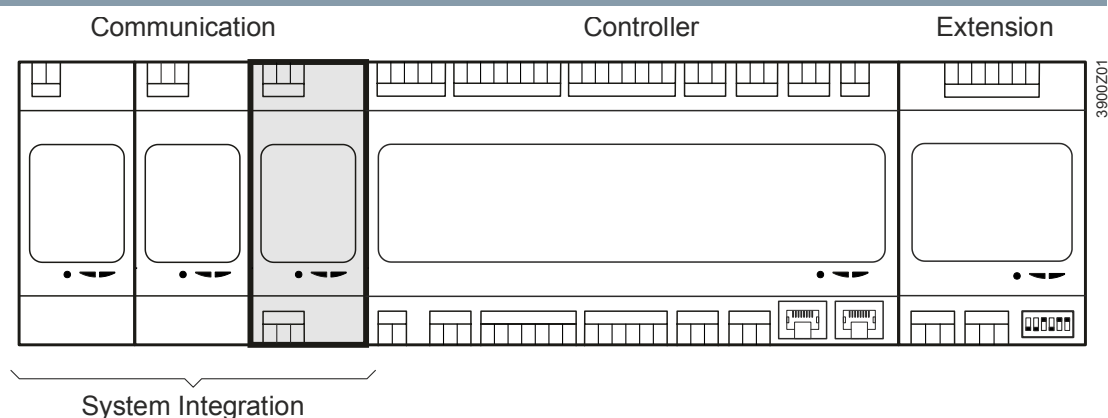
Modbus RTU mode

RTU stands for Remote Terminal Unit. Modbus is a master/slave protocol. This, by definition, means that a Modbus network contains only one master and at least one slave.

The Climatix communication Modbus module has 2 Modbus slave interfaces for the integration into a Building automation and control systems (BACS).

The Modbus protocol is based on the Modbus specification "Modicon Modbus Protocol Reference Guide PI MBUS 300 Rev. J".

You can find more information about Modbus on the following web page: www.modbus.org.

Installation concept

Technical data

General Data

Dimensions (w x h x d)	45 x 110 x 75 mm
Materials and Colors	<ul style="list-style-type: none"> Base: Plastic, pigeon-blue RAL 5014 Housing: Plastic, light-grey RAL 7035
Weight excl. packaging	85 g

Power supply

Power supply	Via system interface from controller DC 5 V ($\pm 5\%$), max. 140 mA
--------------	---

Interface

Modbus	RS-485 (EIA-485)	2 interfaces on terminal T1 and T2
	Bus connection and terminal	A+, B-, REF
	Bus electronic	Galvanic isolated
	Bus cable	Shielded twisted pair (like AWG 24)
	Bus termination*	Switchable by software (120 Ω + 1 nF) with bus polarization
	Bus polarization	Switchable by software (680 Ω) with bus termination
	Baud rate	600, 1200, 2400, 4800, 9600, 19200, 38400
	Network electrical loading	1

NOTICE! It is essential to use a network termination on each end of the RS485 line, which matches the cable impedance to prevent signal reflections and corrupting the data on RS485 network.

Terminal, wiring and interface

Connection terminal	Equipped with plugs: 2 x Phoenix FKCT 2,5 /3-ST
	For other types of plug (optional), refer to: Climatix range document 3900 (CB1Q3900en_xx)
Wiring	Solid wire: 0.5...2.5 mm ² Stranded wire (twisted or with ferrule): 0.5...1.5 mm ²
COMM interface plug	Equipped with board-to-board: ZEC1,0/10-LPV-3,5 GY35AUC2C11

Ambient conditions and protection classification

Degree of protection of housing to EN 60529	IP20
Climatic ambient conditions Transport as per EN 60721-3-2	Class 2K3 Temperature: -40...70 °C Humidity: <95 % r.h. Atmospheric pressure: Min. 260 hPa, corresponding to max. 10000 m above sea level
Operation as per EN 60721-3-3	Class 3K7 Temperature: -40...70 °C Air humidity: <90% r.h. Atmospheric pressure: Min. 700 hPa, corresponding to max. 3000 m above sea level

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)	CB1T3930xx
RCM conformity	CB1T3909en_C1
Listings	UL916, UL873 http://database.ul.com/ CSA Class 4812 http://www.csagroup.org
EAC	Eurasian conformity
Environmental compatibility	The product environmental declaration (CB1E3950_01) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

Register and mappings	
Only one slave channel configured	2 slave channels configured
<ul style="list-style-type: none"> • 1999 coils-registers • 1999 state-registers • 1999 holding-registers • 1999 input-registers • 1999 active mappings 	<ul style="list-style-type: none"> • 999 coils (per slave channel) • 999 state (per slave channel) • 999 holding (per slave channel) • 999 input (per slave channel) • 999 active mappings (per slave channel)

Functions

Pin button

The pin button has no function.

LEDs "BSP" and "BUS" for diagnostics

LED	Color	Flashing frequency	Meaning/Mode
BSP	Red/Green	1 s red / 1 s green	BSP upgrade mode in progress
	Green	Steady "on"	BSP operating and communication with controller working
	Orange	Steady "on"	BSP operating, but no communication with controller or BSP upgrade mode active
	Red	Flashing at 2 Hz	BSP error (Software error)
	Red	Steady "on"	Hardware fault
BUS	Green	Steady "on"	<ul style="list-style-type: none"> • All communication is running, or • Timeout is set to zero (communication monitoring is disabled)
	Orange	Steady "on"	<ul style="list-style-type: none"> • Startup, or • One configured channel is not communicating to the master (2 interfaces activated, but communication of one (T1 or T2) is interrupted)
	Red	Steady "on"	<ul style="list-style-type: none"> • All configured communications are down (no communication to the master within set timeout), or • Mapping file not loaded



If both LEDs stay dark: Power supply is outside the allowed range!

Ordering

Type	Stock number	Designation
POL902.00/STD	S55390-C103-A100	Climatix Modbus communication module

Delivery/Included:

Phoenix Type	Designation
ZEC 1,0/10-LPV-3,5 GY35AUC2CI1	Board-to-board COMM interface plug
2 x 3 pos - FKCT 2,5 /3-ST	Terminal plugs


Devices are from PHOENIX CONTACT, www.phoenixcontact.com.

Product documentation

Document ID	Title	Topic
Q3900en	Climatix range	Climatix product range
M3910	Mounting instruction Climatix	Mounting and installation
J3960en	Integration guide: Modbus communication, slave mode	Integration instructions

Notes


Security: National safety regulations

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

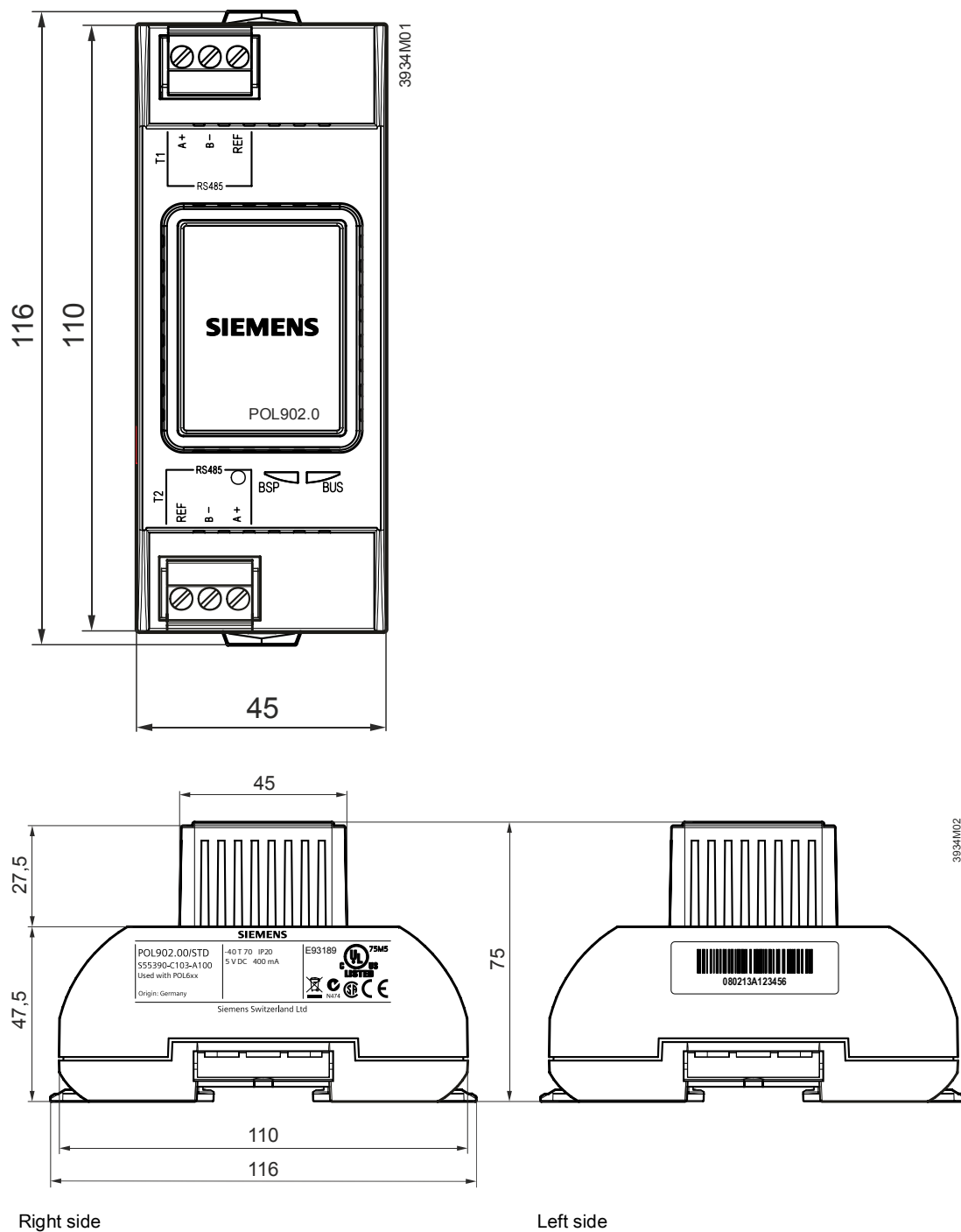
Engineering: concept

- The communication module is attached to the controller with a board-to-board connector
- The connection to the Modbus is made via the connector T1 and T2 ports

Disposal

	The device is considered an electronics device for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic garbage. <ul style="list-style-type: none">Dispose of the device through channels provided for this purpose.Comply with all local and currently applicable laws and regulations.
---	--

Dimensions



Issued by
Siemens Switzerland Ltd
Building Technologies Division
International Headquarters
Theilerstrasse 1a
CH-6300 Zug
Tel. +41 58 724 2424
www.siemens.com/buildingtechnologies

© Siemens Switzerland Ltd, 2009
Technical specifications and availability subject to change without notice.