

Climatix™

## Climatix I/O extension module with 14 I/Os

POL955.60



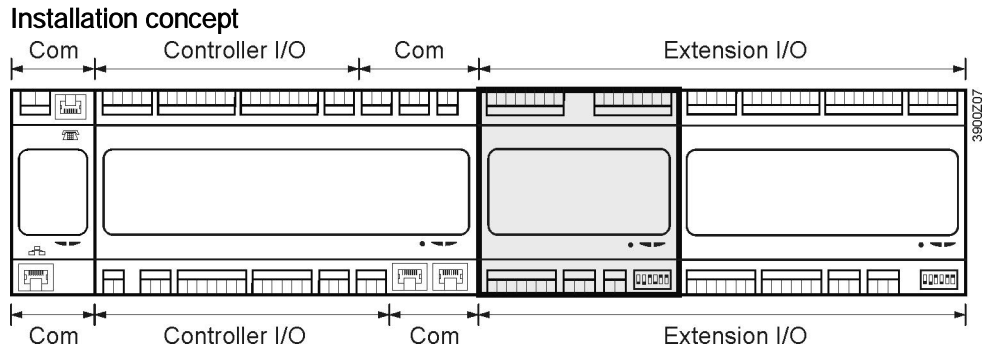
This product offers the following features:

- Power supply AC 24 V or DC 24 V via the controller
- 8 universal I/Os for analog or digital signals (configurable inputs/outputs)
- 4 relay outputs (NO contacts, three of them with high inrush capacity)
- 2 analog outputs (DC 0...10 V)
- Peripheral bus interface for local/remote extension I/Os

## Use

POL955.60/STN is a versatile Climatix I/O extension module that can be connected to any type of Climatix POL6XX controller. Its high flexibility of universal inputs meets the requirements of the compact air handling unit industry plus those of other air conditioning applications and other applications. It is part of the Climatix product range (refer to Data Sheet 3900 and Mounting Instructions M3910).

## Climatix product range



## Ordering

Climatix I/O extension module 14 I/Os	12 pcs POL955.60/STN
Connector set (spring cage, cable top entry)	12 pcs POL095.56/STD
Connector set (screw, cable side entry)	12 pcs POL095.55/STD

## Accessories

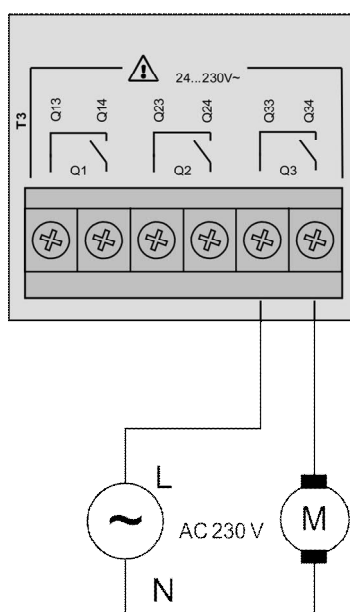
Connector set (spring cage, cable top entry)	POL095.56/STD
1 x Phoenix FKCT 2,5/2-ST GY7035	
1 x Phoenix FKCT 2,5/3-ST GY7035	
3 x Phoenix FKCT 2,5/6-ST GY7035	
1 x Phoenix ZEC 1,0 / 4-LPV-3,5 GY35AUC2CI1	
Connector set (screw, cable side entry)	POL095.55/STD
1 x Phoenix MVSTBW 2,5/2-ST GY7035	
1 x Phoenix MVSTBW 2,5/3-ST GY7035	
3 x Phoenix MVSTBW 2,5/6-ST GY7035	
1 x Phoenix ZEC 1,0 / 4-LPV-3,5 GY35AUC2CI1	
Board-to-wire connector	POL002.43/STD
2 x Phoenix ZEC 1,0 / 4-ST-3,5 GY35AUC1R1,4	50 pcs

## Technical data

Power supply	
Operating voltage	AC 24 V $\pm$ 20%; DC 24 V $\pm$ 10%
Frequency	45...65 Hz
Max. AC-Current consumption	600 mA at AC 24 V
Max. DC-Current consumption	340 mA at DC 24 V
Connection	Peripheral bus

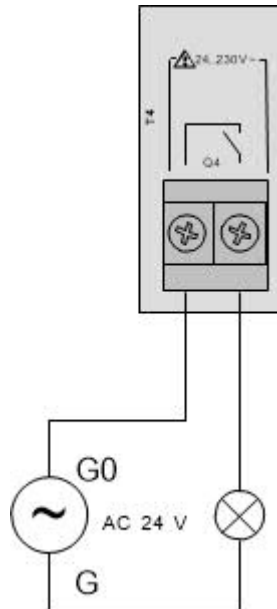
Power distribution	
Max. pass through current	3.4 A at AC 24V 3.66 A at DC 24 V

Relay outputs Q1...Q3 (with high inrush capacity)	
Relay: type, contact	Monostable, NO contact
Contact ratings	
Switching voltage	AC 24...230 V (-20%, +10%)
Nominal current (res. / ind.)	AC 4 A / 1 A ( $\cos\phi \geq 0.6$ )
Inrush current	Max. 80 A / max. 100 $\mu$ s
External overcurrent protection	Fuse slow max. 10 A or Circuit breaker max. 13 A
Operations	Min. 10,000
Minimum switching load	30 mA / 19 V respectively 10 mA / 200 V



Connecting Circulator Pumps to relay output

Relay output Q4 (T4)	
Relay: type, contact	Monostable, NO contact
Contact rating	
Switching voltage	AC 24...230 V (-20%, +10%)
Nominal current (res. / ind.)	AC 4 A / 1 A ( $\cos\phi \geq 0.6$ )
Inrush current	Max. 10 A / max. 10 ms
External overcurrent protection	Fuse slow max. 10 A or Circuit breaker max. 13 A
Operations	Min. 10,000
Minimum switching load	30 mA / 19 V respectively 10 mA / 200 V

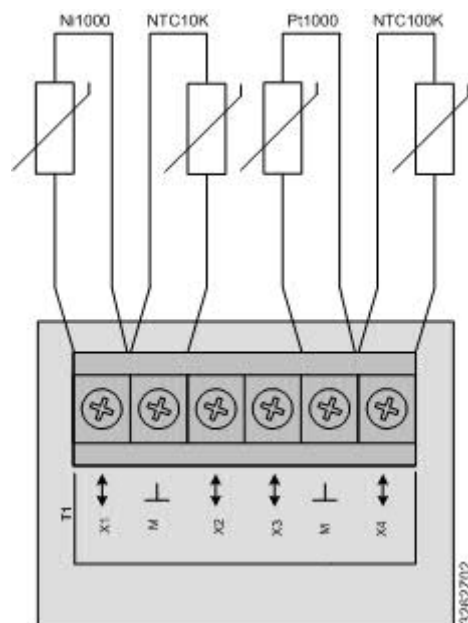


Connecting indicator lamps to relay output

Universal I/Os X1...X8	
Configurable Reference potential	By software Terminals $\perp$
Contact voltage	Max. DC 24 V (SELV)
Over voltage protection	Up to 40 V

Analog inputs (X1...X8)		
Ni1000		
Sensor current	1.4 mA	
Resolution	0.1 K	
Accuracy within the range -50...150 °C	0.5 K	
Pt1000		
Sensor current	1.8 mA	
Resolution	0.1 K	
Accuracy within the range -50...150 °C	0.5 K	
NTC 10k ( $B_{25/85} = 3977K$ )		
Sensor current	140 $\mu$ A	
Temperature range	Accuracy	Resolution
-50...-26 °C	1 K	0.2 K
-25...74 °C	0.5 K	0.1 K
75...99 °C	1 K	0.3 K
100...124 °C	3 K	1.0 K

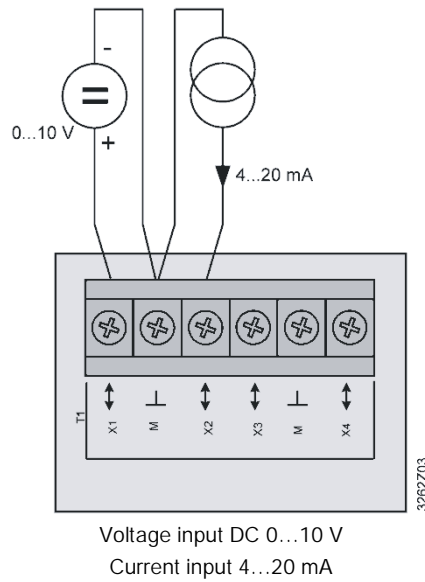
125...150 °C	6 K	2.5 K
NTC 100k ( $B_{25/85} = 3977K$ )		
Sensor current	140 $\mu$ A	
Temperature range	Accuracy	Resolution
-25...-11 °C	3 K	0.2 K
-10...9 °C	1 K	0.1 K
10...99 °C	0.5 K	0.1 K
100...150 °C	1 K	0.2 K
0...2,500 $\Omega$		
Sensor current	1.8 mA	
Resolution	1 $\Omega$	
Accuracy	4 $\Omega$	



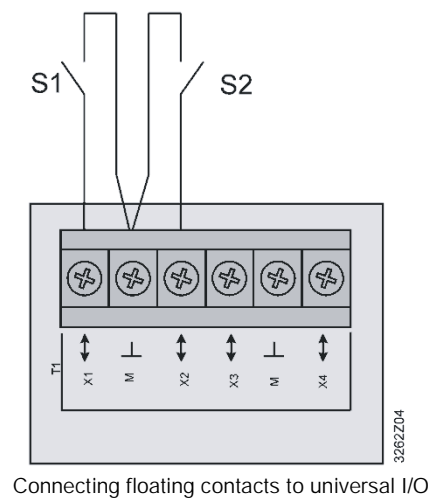
Connecting a ratiometric sensor to universal I/Os  
Connecting NTC to universal I/Os

<b>Analog inputs (X1...X8)</b>	
DC 0...10 V input	
Resolution	1 mV
Accuracy at 0 V	2 mV
Accuracy at 5 V	25 mV
Accuracy at 10 V	50 mV
Input resistance	100 k $\Omega$
DC 0/4...20 mA input	

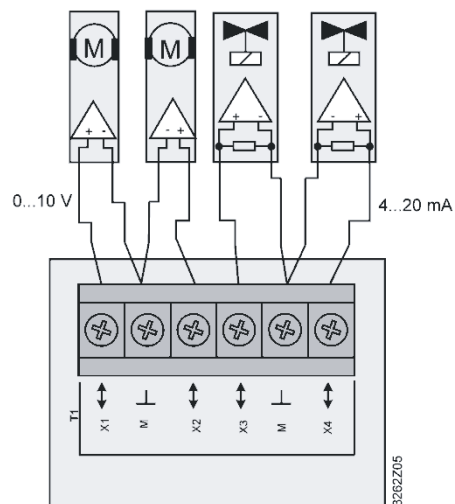
Resolution	1 $\mu$ A
Accuracy at 4 V	25 $\mu$ A
Accuracy at 12 V	70 $\mu$ A
Accuracy at 20 V	120 $\mu$ A
Impedance of DC 0/4...20 mA input	Typ. 450 $\Omega$



Digital Inputs (X1...X8)	
0/1 digital signal (binary)	For potential-free contacts
Sampling voltage / current	DC 24 V / 8 mA
Contact resistance	Max. 200 $\Omega$ (closed) Min. 50 k $\Omega$ (open)
Delay	10 ms
Pulse frequency	Max. 30 Hz

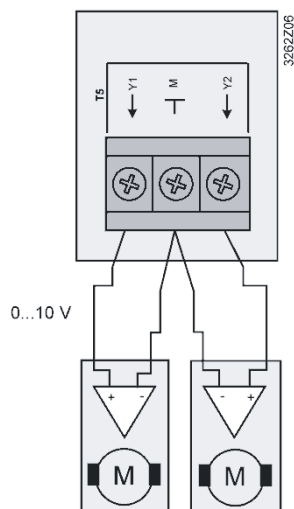


Analog outputs (X1...X8)	
DC 0...10 V output	
Resolution	11 mV
Accuracy at 0 V	66 mV
Accuracy at 5 V	95 mV
Accuracy at 10 V	124 mV
Output current	1 mA (short-circuit-proof)
DC 4...20 mA output	
Resolution	22 $\mu$ A
Accuracy at 4 V	150 $\mu$ A
Accuracy at 12 V	196 $\mu$ A
Accuracy at 20 V	243 $\mu$ A



Connecting voltage output and current output to universal I/O

Analog outputs Y1...Y2	
DC 0...10 V output	
Resolution	11 mV
Accuracy at 0 V	66 mV
Accuracy at 5 V	95 mV
Accuracy at 10 V	124 mV
Output current	1 mA



Connecting voltage output and offboard relays to analog output

Connection terminals	
Optional plugs for IO signals	Phoenix FKCVW 2,5 / x-ST Phoenix FKCT 2,5 / x-ST Phoenix MVSTBW 2,5 / x-ST
Solid wire	0.5...2.5 mm <sup>2</sup>
Stranded wire (twisted and with ferrule)	0.5... 1.5 mm <sup>2</sup>
Cable lengths	In compliance with load, local regulations and installation documents

Peripheral bus	
Power supply	$U_{\text{eff}} = \text{AC } 24 \text{ V} \pm 20\%$ , $f_{\text{main}} = 45...65 \text{ Hz}$ or $U = \text{DC } 24 \text{ V} \pm 10\%$ , no internal fuse
Bus termination selectable	(680 $\Omega$ / 120 $\Omega$ + 1 nF / 680 $\Omega$ )
Solid wire	0.2... 1.0 mm <sup>2</sup>
Stranded wire (twisted and with ferrule)	0.2... 1.0 mm <sup>2</sup>
Cable lengths	Max. 30 m
Addressing	DIP switch 1...5
Termination	DIP switch 6

Ambient conditions and protection classification	
Operation	IEC 60721-3-3 class 3K5
Temperature	-40...70 °C
Humidity	<90% r.h. (non-condensing)
Atmospheric pressure	Min. 700 hPa, corresponding to max. 3,000 m above sea level
Transport	IEC 60721-3-2 class 2K3/2K4
Temperature	-40...70 °C
Humidity	<95% r.h. (non-condensing)
Atmospheric pressure	Min. 260 hPa, corresponding to max. 10,000 m above sea level



Ambient conditions and protection classification	
Protection	
Degree of protection	IP20 (EN 60529)
Safety class	Suitable for use in plants with safety class II

Standards, directives and approvals	
Product standard	EN 60730-1 Automatic electronic controls for household and similar use.
Electromagnetic compatibility (applications)	For use in residential, commerce, light-industrial and industrial environments.
EU conformity (CE)	CB1T3920xx *)
RCM conformity	CB1T3909en_C1
Listings	UL916, UL873 <a href="http://database.ul.com/">http://database.ul.com/</a> CSA Class 4812 <a href="http://www.csagroup.org">http://www.csagroup.org</a>
Environmental compatibility	The product environmental declaration CB1E3920en contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

\*) The document can be downloaded from <http://siemens.com/bt/download>.

General Data	
Dimensions of controller	108 x 110 x 75 mm
Weight excl. packaging	183.5 g
Base	Plastic, pigeon-blue RAL 5014
Housing	Plastic, light-grey RAL 7035

### Status of LEDs

The status of BSP LED is defined as follows:

Status	Meaning
Red flashing at 2 Hz	BSP error or slave address error
Green on	BSP running

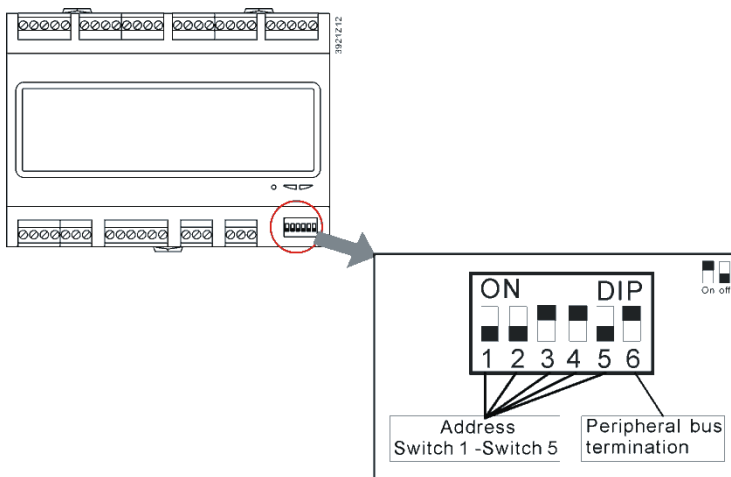
The status of BUS LED is defined as follows:

Status	Meaning
Red on	Communication error
Green on	Communication running
Orange on	Communication running but parameter not successfully configured

### DIP switch

The extension module is equipped with DIP switch to communicate with the controller. Switch 1, 2, 3, 4, and 5 are configurable to set the slave address, while switch 6 serves as

peripheral bus termination. If the extension module works as the termination in the network, switch 6 must be set to ON.



The order of bit is from 5 to 1. The lowest bit is 5 while the highest bit is 1. Max. 31 slave addresses can be configured as follows:

DIP Switch configuration of Extension Module							
No.	Schematics	No.	Schematics	No.	Switch 5	No.	Schematics
1		9		17		25	
2		10		18		26	
3		11		19		27	
4		12		20		28	
5		13		21		29	
6		14		22		30	
7		15		23		31	
8		16		24			



**NOTICE**

The same address of extension module must be set respectively in the application program of the controller. 0 cannot be set as the slave address.


## Notes

### Engineering notes

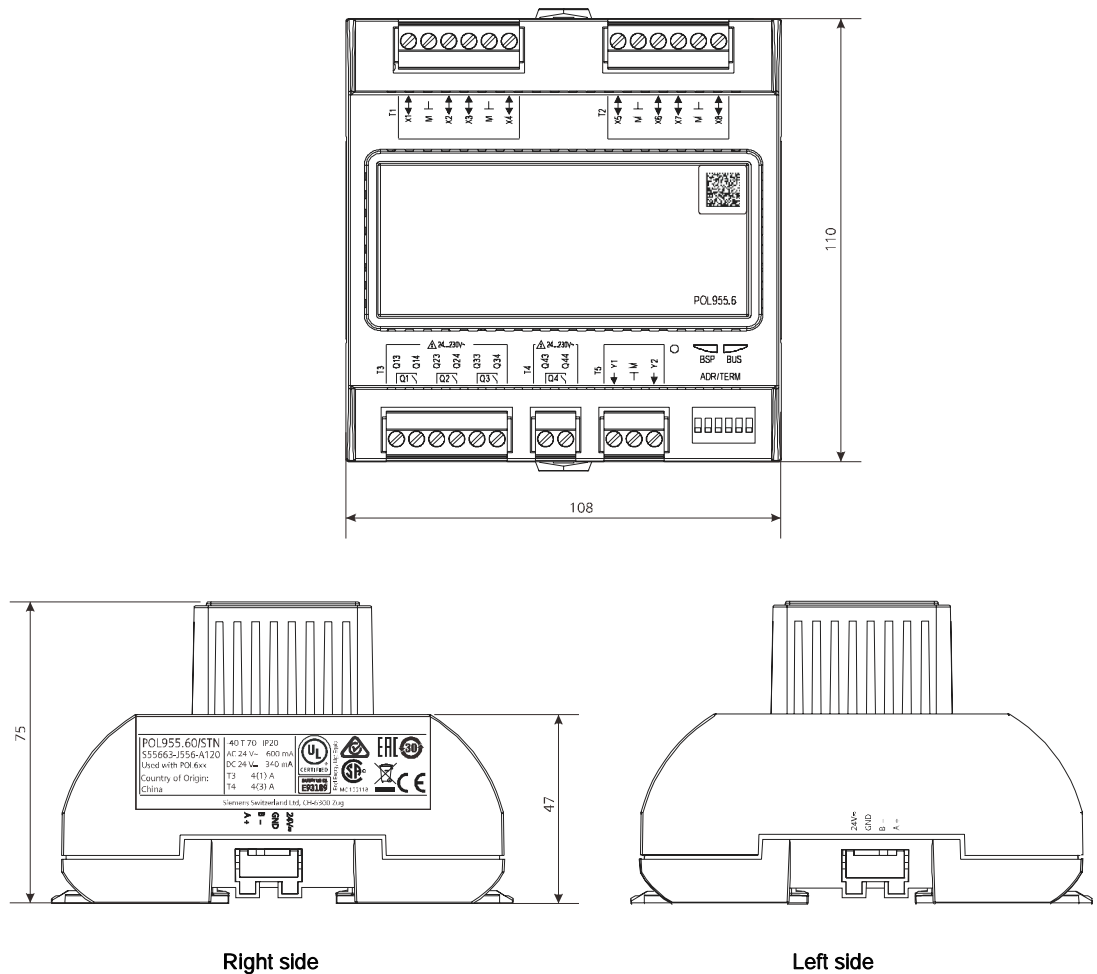
<b>!</b>	<p><b>NOTICE</b></p> <p>To ensure protection against accidental contact with relay connections carrying voltages above 42 V<sub>eff</sub>, the extension module must be installed in an enclosure (preferably a control panel). It must be impossible to open the enclosure without the aid of a key or tool.</p>
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AC 230 V cables must be double-insulated against safety extra low-voltage (SELV) cables

### Disposal

	<p>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.</p> <ul style="list-style-type: none"> <li>• Dispose of the device through channels provided for this purpose.</li> <li>• Comply with all local and currently applicable laws and regulations.</li> </ul>
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### Dimensions (in mm)



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