SIEMENS

3262


Climatix™

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

**POL955.00/XXX**

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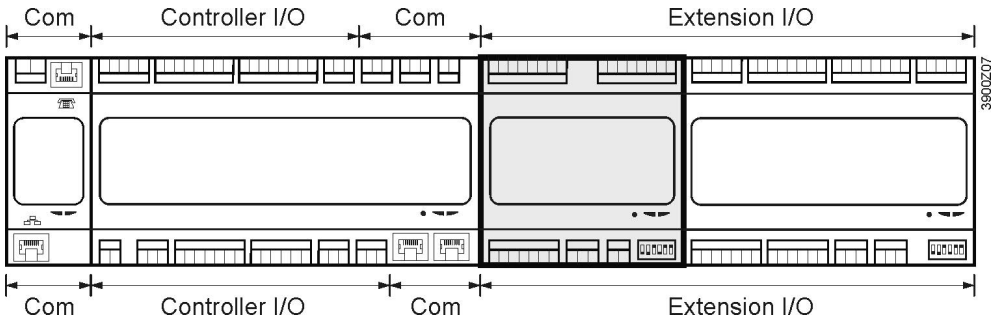
**The POL955.00/XXX is a versatile Climatix I/O extension module that can be connected to any type of Climatix POL6XX controller. Its high flexibility of universal inputs meets the requirements of the compact air handling unit industry plus those of other air conditioning applications and other applications. It is part of the Climatix product range (refer to Data Sheet 3900 and Mounting Instructions M3910).**

**The extension module 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)**
- **2 analog outputs (DC 0…10 V)**
- **Peripheral bus interface for local/remote extension I/Os**



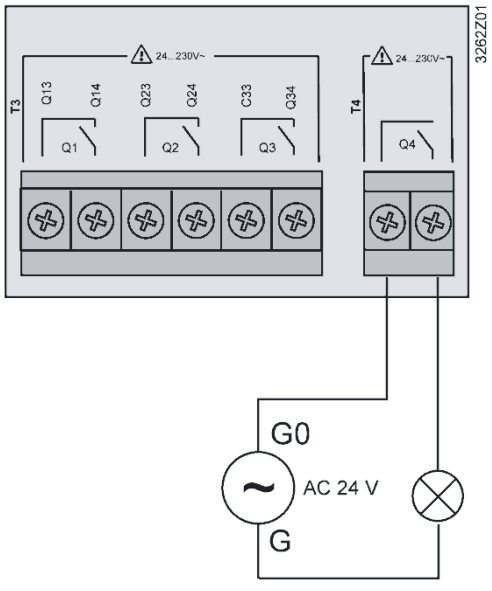

## Disposal

The devices are considered electronics devices for disposal in term of European Directive 2012/19/EU and may not be disposed of as domestic waste.

- Dispose of the device via the channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

## Technical data

| | | |
|---|---|---|
| **Power supply** | Operating voltage | AC 24 V ±20%; DC 24 V ±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<br>3.66 A at DC 24 V |
| **Relay outputs Q1...Q4** | Relay: type, contact | Monostable, NO contact |
| | Contact rating | |
| | Switching voltage | AC 24…230 V (-20%, +10%) |
| | Nominal current (res. / ind.) | Max. AC 4 A / 3 A (cosφ 0.6) |
| | Switching current at AC 19 V | Min. AC 30 mA |



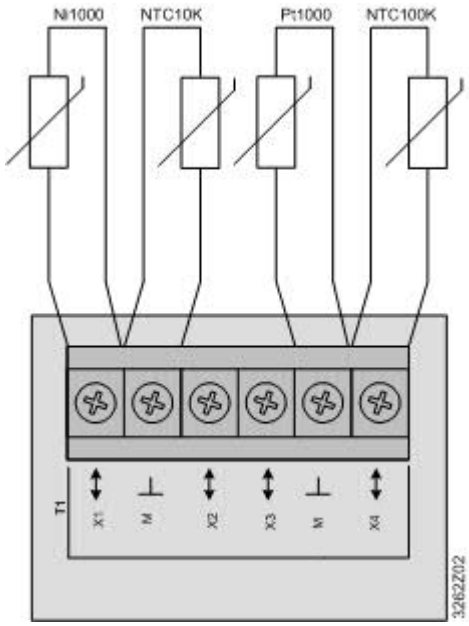

Connecting indicator lamps to relay output

**Universal I/Os X1…X8**

| | | |
|---|---|---|
| Configurable | By software | |
| Reference potential | Terminals ⊥ | |
| 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 -40…120 °C | 0.5 K | |
| NTC 10k ($B_{25/85}$ = 3977K) | | |
| Sensor current | 140 µA | |
| 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 µA | |
| 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 Ω | | |
| Sensor current | 1.8 mA | |
| Resolution | 1 Ω | |
| Accuracy | 4 Ω | |

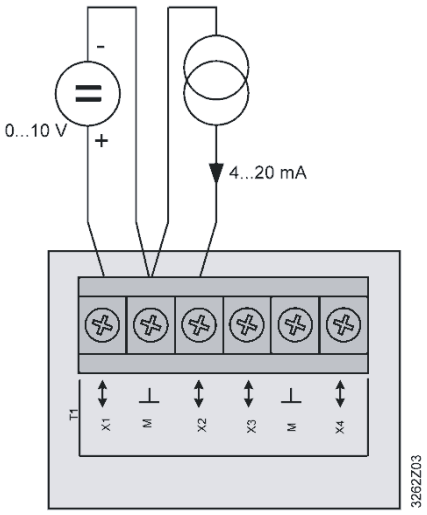



Connecting a ratiometric sensor to universal I/Os

Connecting NTC to universal I/Os

## Analog inputs (X1…X8)

| | |
|---|---|
| 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 kΩ |
| DC 0/4…20 mA input | |
| Resolution | 1 µA |
| Accuracy at 4 mA | 25 µA |
| Accuracy at 12 mA | 70 µA |
| Accuracy at 20 mA | 120 µA |
| Impedance of DC 0/4…20 mA input | Typ. 450 Ω |

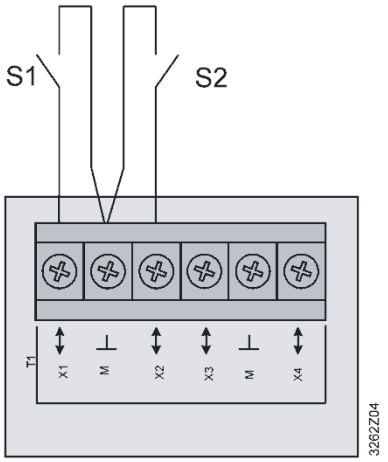



Voltage input DC 0…10 V

Current input 4…20 mA

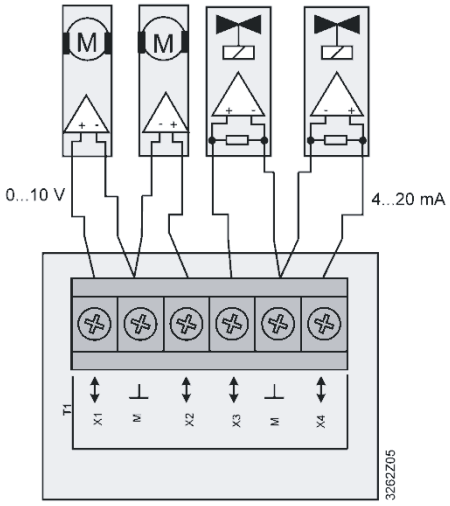
## Digital inputs (X1…X8)

| | |
|---|---|
| 0/1 digital signal (binary) | For potential-free contacts |
| Sampling voltage / current | DC 24 V / 8 mA |
| Contact resistance | Max. 200 Ω (closed) |
| | Min. 50 kΩ (open) |
| Delay | 10 ms |
| Pulse frequency | Max. 30 Hz |




Connecting floating contacts to universal I/O

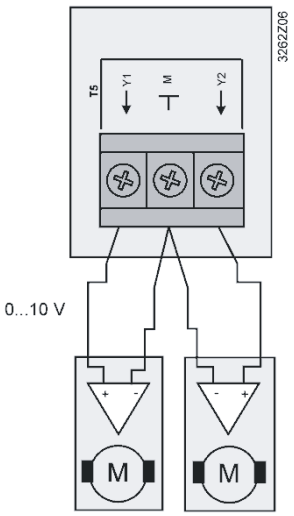
| Analog outputs (X1…X8) | |
|---|---|
| DC 0…10 V output | |
| Resolution | 11 mV |
| Accuracy at 0 V | 66 mV |
| Accuracy at 5 V | 95 mV |
| Accuracy at 10 V | 124 mV |
| Output current | 1 mA (short-circuit-proof) |
| DC 4…20 mA output | |
| Resolution | 22 µA |
| Accuracy at 4 mA | 150 µA |
| Accuracy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




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<br>Phoenix MVSTBW 2,5 / x-ST |
| | Solid wire | 0.5…2.5 mm² |
| | Stranded wire (twisted and with ferrule) | 0.5…1.5 mm² |
| | Cable lengths | In compliance with load, local regulations and installation documents |
| **Peripheral bus** | Power supply | $U_{eff}$ = AC 24 V ± 20%, $f_{main}$ = 45...65 Hz<br>or U = DC 24 V ± 10%, no internal fuse |
| | Bus termination selectable | (680 Ω / 120 Ω +1 nF / 680 Ω ) |
| | Solid wire | 0.2…1.0 mm² |
| | Stranded wire (twisted and with ferrule) | 0.2…1.0 mm² |
| | Cable lengths | Max. 30 m |
| | Addressing | DIP switch 1…5 |
| | Termination | DIP switch 6 |
| **Environmental conditions** | Operation | IEC 60721-3-3 class 3K5 |
| | Temperature | -40...70 °C |
| | Humidity | <90% r.h. (non-condensing) |
| | Atmospheric pressure | Min. 700 hPa, corresponding to<br>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<br>Max. 10,000 m above sea level |
| **Protection** | Degree of protection | IP20 (EN 60529) |
| | Safety class | Suitable for use in plants with safety class II |
| **Standards** | Product standard | EN 60730-1<br>Automatic electrical 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 (EMC) | CB1T3909en_C1 |
| | Listings | UL916, UL873 http://database.ul.com/<br>CSA Class 4812<br>http://www.csagroup.org |
| **Environmental compatibility** | The product environmental declaration CB1E3920en contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).<br><br>*) 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:

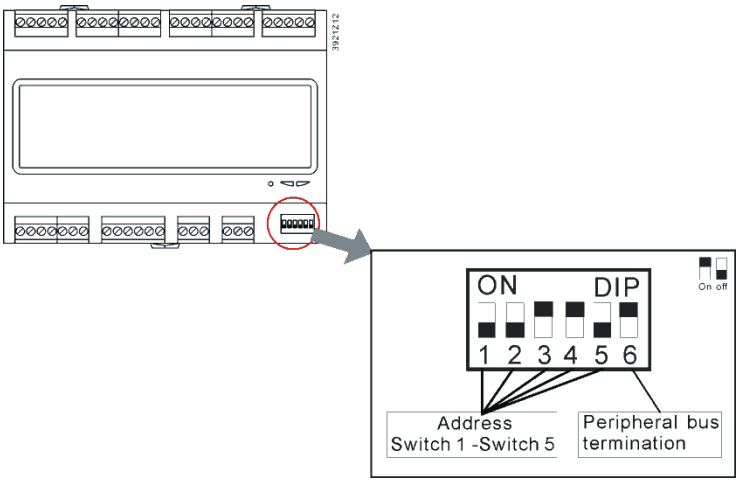
| Status | Meaning |
|---|---|
| Red flashing at 2 Hz | BSP error or slave address error |
| Green on | BSP running |

The status of BUS LED is defined as follows:

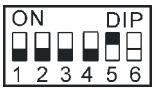
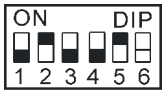
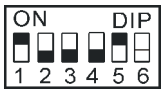
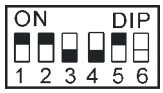
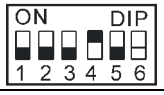
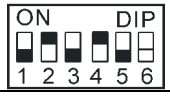
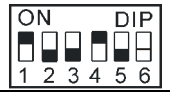
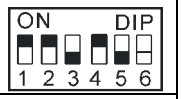
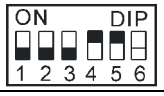
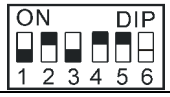
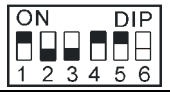
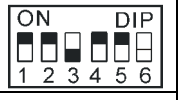
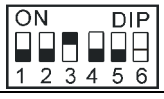
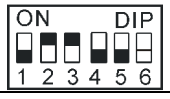
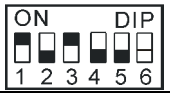
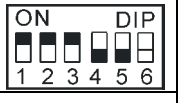
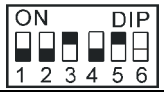
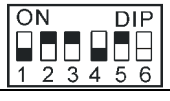
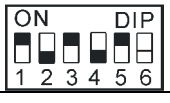
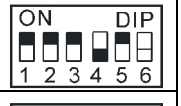
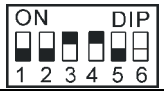
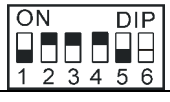
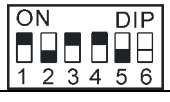
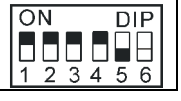
| Status | Meaning |
|---|---|
| Red on | Communication error |
| Green on | Communication running |
| Orange on | Communication running but parameter not successfully configured |

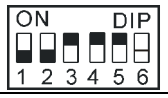
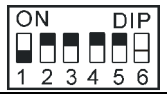
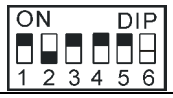
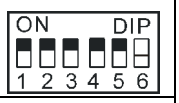
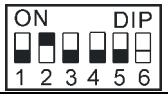
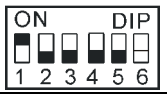
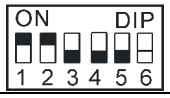
## DIP switch

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 |  |

| DIP Switch configuration of Extension Module | | | | | | | |
|---|---|---|---|---|---|---|---|
| **No.** | **Schematics** | **No.** | **Schematics** | **No.** | **Switch 5** | **No.** | **Schematics** |
| 7 |  | 15 |  | 23 |  | 31 |  |
| 8 |  | 16 |  | 24 |  | | |

***Note*** ☞ 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.

**Ordering data**

| | | |
|---|---|---|
| Climatix I/O extension module 14 I/Os | 1 pcs | POL955.00/STD |
| Connector set (spring cage, cable top entry) **or** | 1 pcs | POL095.56/STD |
| Connector set (screw, cable side entry) | 1 pcs | POL095.55/STD |

**Accessories**

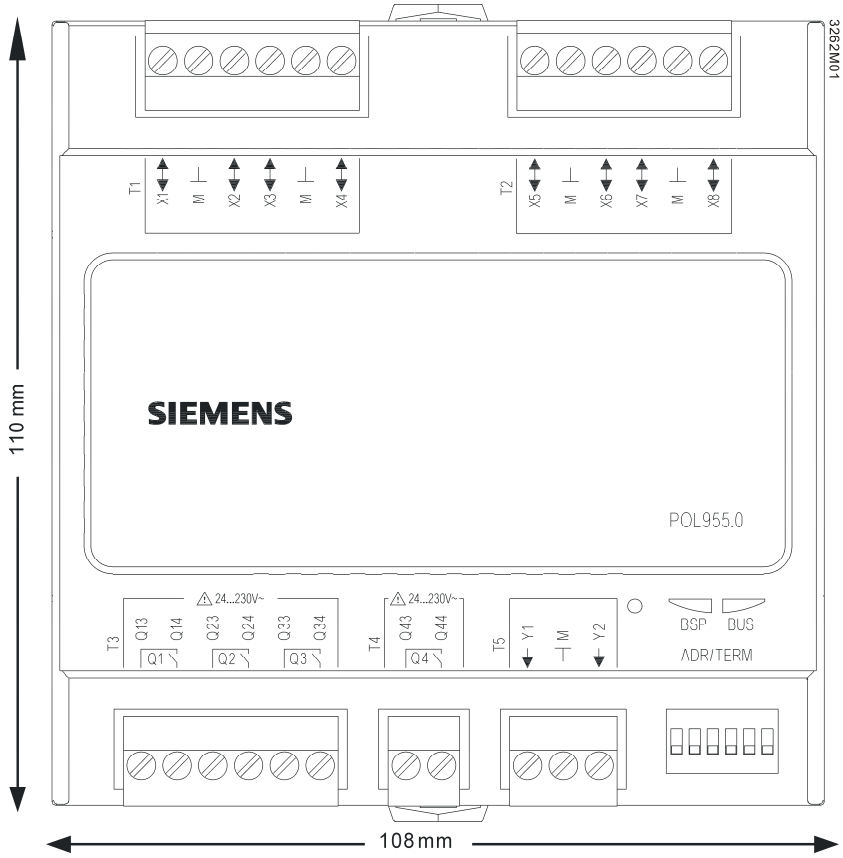
| | |
|---|---|
| Connector set (spring cage, cable top entry) | POL095.56/STD |
| 1 x Phoenix FKCT 2,5/2-ST GY7035 | |
| 1 x Phoenix FKCT 2,5/3-ST GY7035 | |
| 3 x Phoenix FKCT 2,5/6-ST GY7035 | |
| 1 x Phoenix ZEC 1,0 / 4-LPV-3,5 GY35AUC2CI1 | |
| Connector set (screw, cable side entry) | POL095.55/STD |
| 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 |

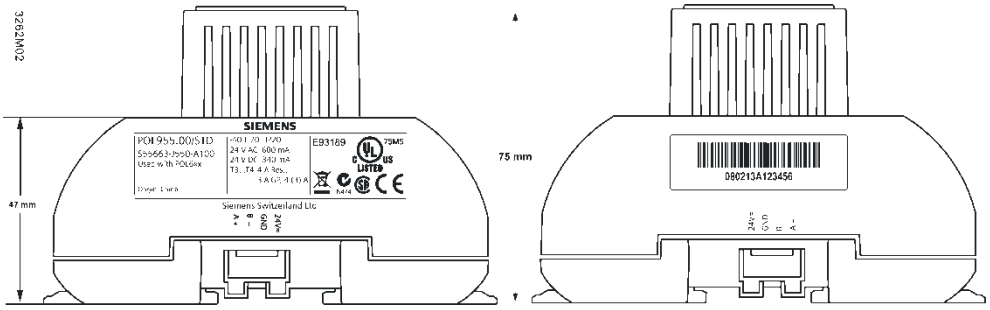
**Engineering notes**

⚠ To ensure protection against accidental contact with relay connections carrying voltages above 42 $V_{eff}$, 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.

AC 230 V cables must be double-insulated against safety extra low-voltage (SELV) cables.

## Dimensions




**Right side** **Left side**

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