SIEMENS

Climatix™

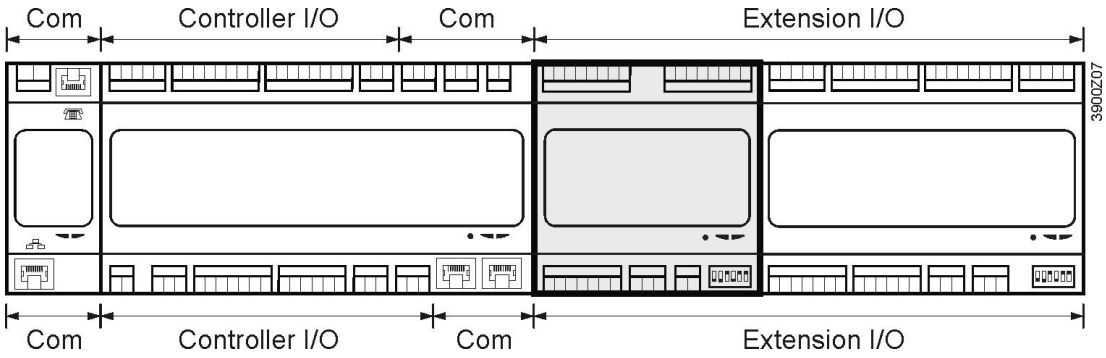
Climatix I/O extension module with 14 I/Os

POL955.00/XXX

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.

- 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

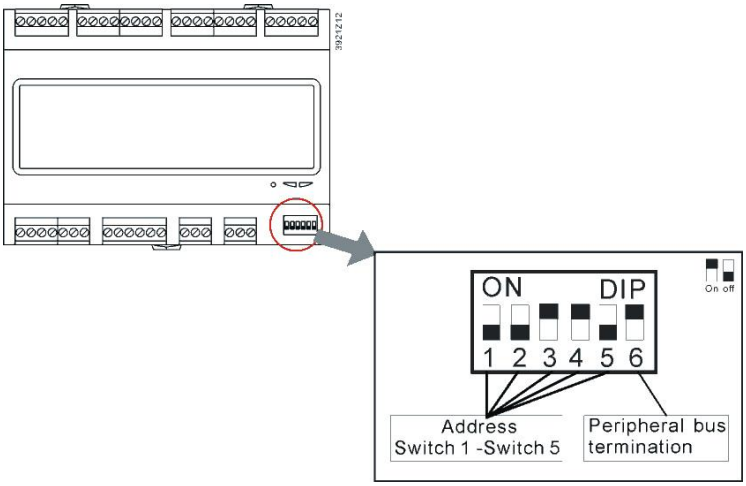
Installation concept



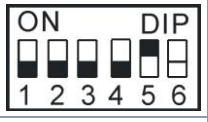
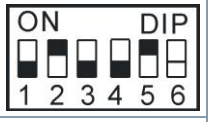
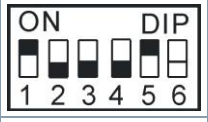
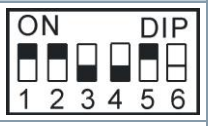
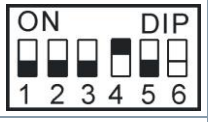
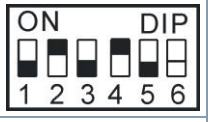
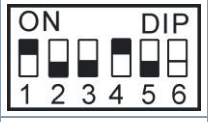
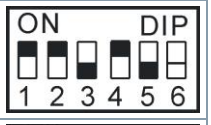
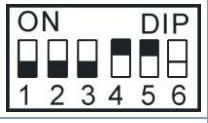
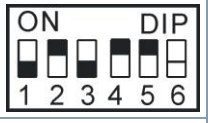
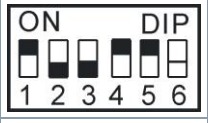
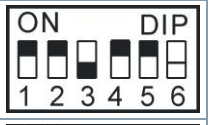
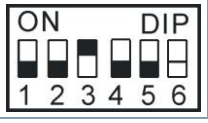
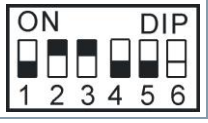
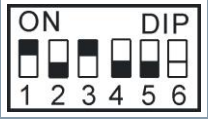
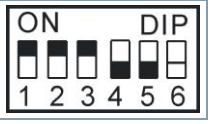
Functions

DIP switch

The extension module is equipped with a DIP switch to communicate with the controller. Switches 1, 2, 3, 4, and 5 are configurable to set the 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 addresses can be configured as follows:

No.	Schematics	No.	Schematics	No.	Schematics	No.	Schematics
1		9		17		25	
2		10		18		26	
3		11		19		27	
4		12		20		28	

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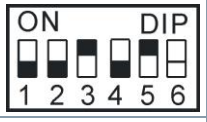
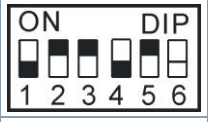
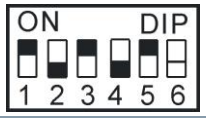
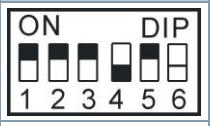
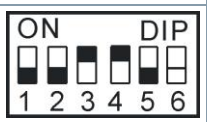
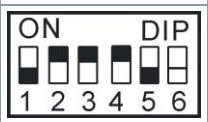
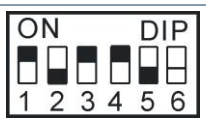
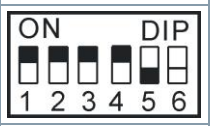
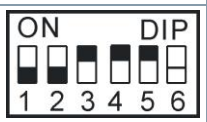
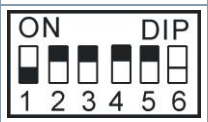
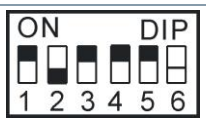
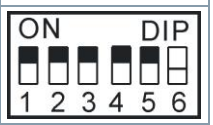
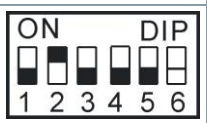
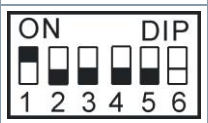
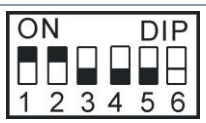
5		13		21		29	
6		14		22		30	
7		15		23		31	
8		16		24			

Table 1: DIP Switch configuration of Extension Module

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

Notes

Engineering notes

NOTICE	
!	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.

Disposal

	This symbol or any other national label indicate that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation. For additional details, refer to Siemens information on disposal.

Technical data

Power supply

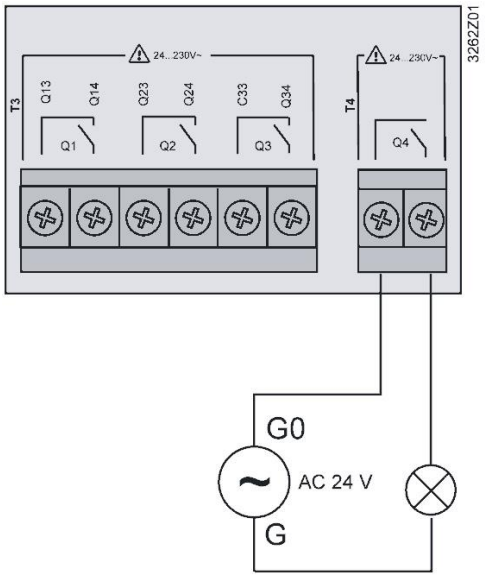
Operating voltage	AC 24 V ±20 %; DC 24 V ±10 %
Frequency	45…65 Hz
Max. AC-Current consumption	600 mA at AC 24 V
Max. DC-Current consumption	340 mA at DC 24 V
Connection	Peripheral bus

Power distribution

Max. pass through current	3.4 A at AC 24V 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

NOTICE	
!	**The following applies for relay and triac outputs:** ● 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.

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
Measure range	788…1803 Ω
Resolution	0.1 K
Accuracy within the range -50…150 °C	0.5 K

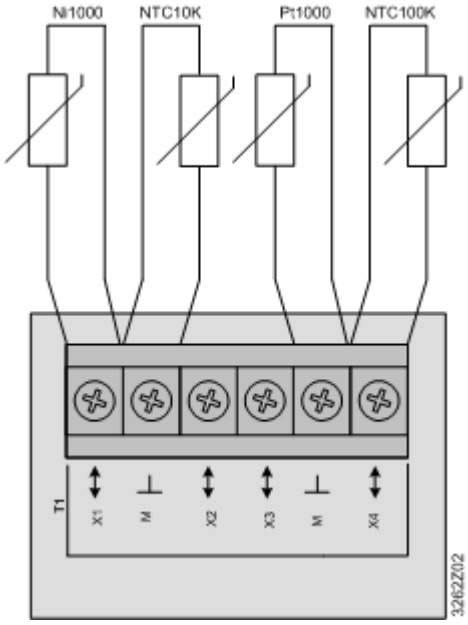
Pt1000	
Sensor current	1.8 mA
Measure range	823…1479 Ω
Resolution	0.1 K
Accuracy within the range -40…120 °C	0.5 K

NTC 10k ($B_{25/85}$ = 3977K)		
Sensor current	140 µA	
Measure range	173 Ω…688 kΩ	
Temperature range	**Accuracy**	**Resolution**
-50…-26 °C	1 K	0.2 K
-25…74 °C	0.5 K	0.1 K

NTC 10k ($B_{25/85}$ = 3977K)		
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	
Measure range	1805 Ω…1330 kΩ	
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



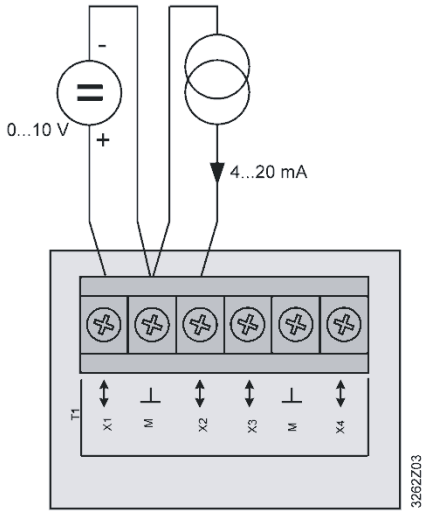
Connecting a ratiometric sensor to universal I/Os

Connecting NTC to universal I/Os

Analog inputs (X1…X8)

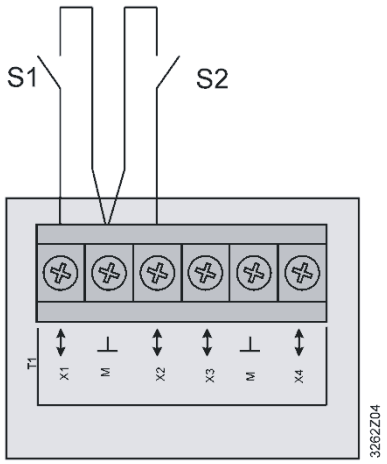
DC 0...10 V input	
Resolution	1 mV
Accuracy at 0 V	2 mV
Accuracy at 5 V	25 mV
Accuracy at 10 V	50 mV
Input resistance	100 kΩ

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

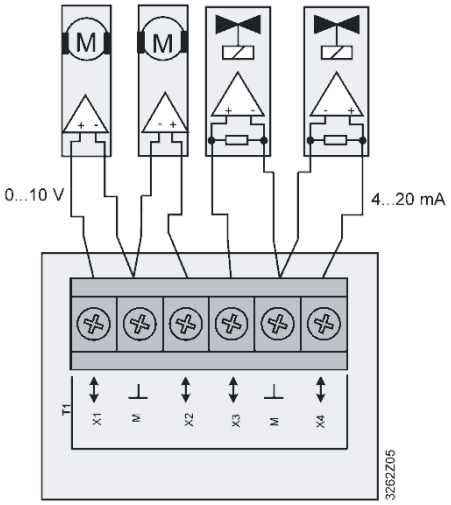


Connecting floating contacts to universal I/O

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)

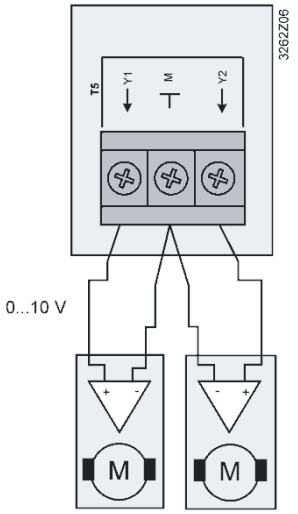
DC 4…20 mA output	
Resolution	22 µA
Accuracy at 4 mA	150 µA
Accuracy at 12 mA	196 µA
Accuracy at 20 mA	243 µA



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 Phoenix MVSTBW 2,5 / x-ST
Solid wire	0.5…2.5 mm^2
Stranded wire (twisted and with ferrule)	0.5…1.5 mm^2
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 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 mm^2
Stranded wire (twisted and with ferrule)	0.2…1.0 mm^2
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 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

Protection

Degree of protection	IP20 (EN 60529)
Protection class	Suitable for use in plants with safety class II

Standards

Product standard	EN 60730-1 Automatic electrical controls for household and similar use
Electromagnetic compatibility (applications)	For use in residential, commercial, light-industrial and industrial environments.
EU conformity (CE)	A6V10221450
UKCA conformity	A5W00192702A
RCM conformity	A5W90006892
Listings	UL916, UL873

Environmental compatibility

The product environmental declaration A6V14600550 contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

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 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

Order data

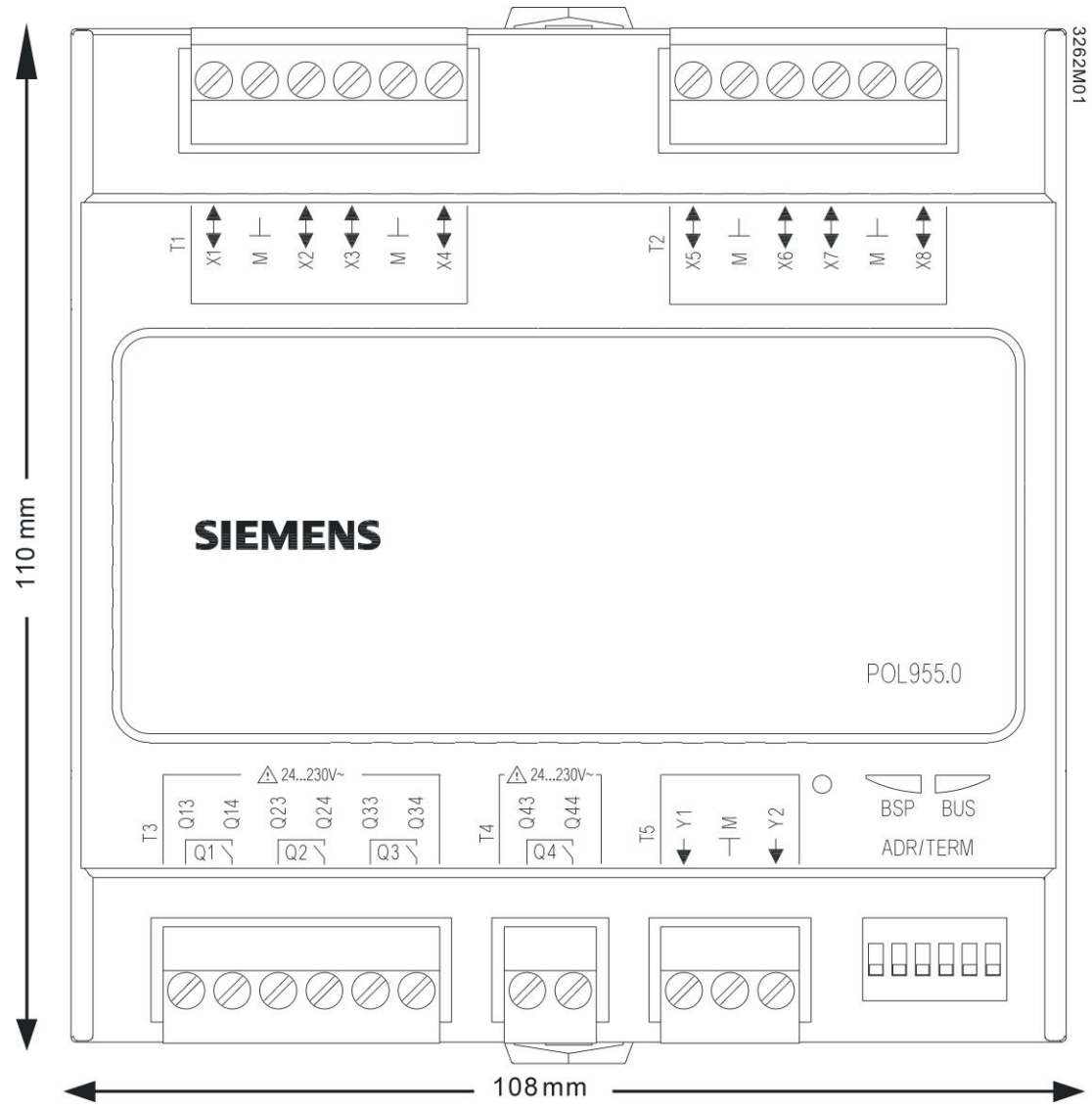
Type	Stock number (SSN)	Description	MOQ*
POL955.00/STD	S55663-J550-A100	Climatix I/O extension module 14 I/Os	1
POL095.56/STD	S55843-Z955-G100	Connector set (spring cage, cable top entry)	1
POL095.55/STD	S55843-Z955-F100	Connector set (screw, cable side entry)	1
POL002.43/STD	S55843-Z124-D100	Board-to-wire connector	50

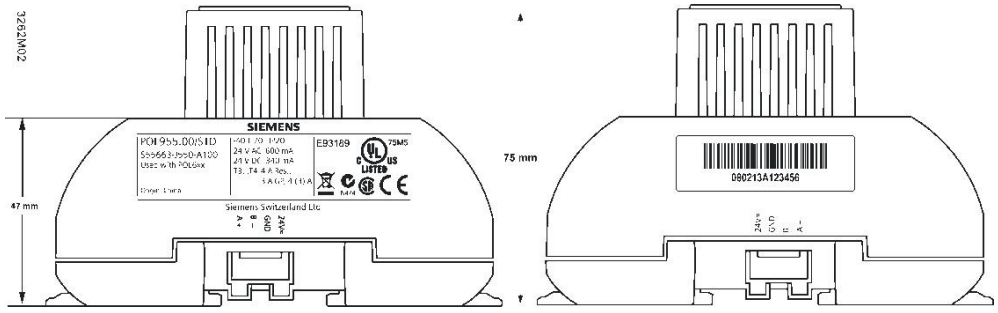
* MOQ: Minimum order quantity

Accessories

Accessory type	Phoenix type
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
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
POL002.43/STD	2 x Phoenix ZEC 1,0 / 4-ST-3,5 GY35AUC1R1,4

Dimensions





Right side

Left side

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