CATALOGUE

CAMOZZI
Automation

FIELDBUS AND MULTIPOLE SYSTEMS

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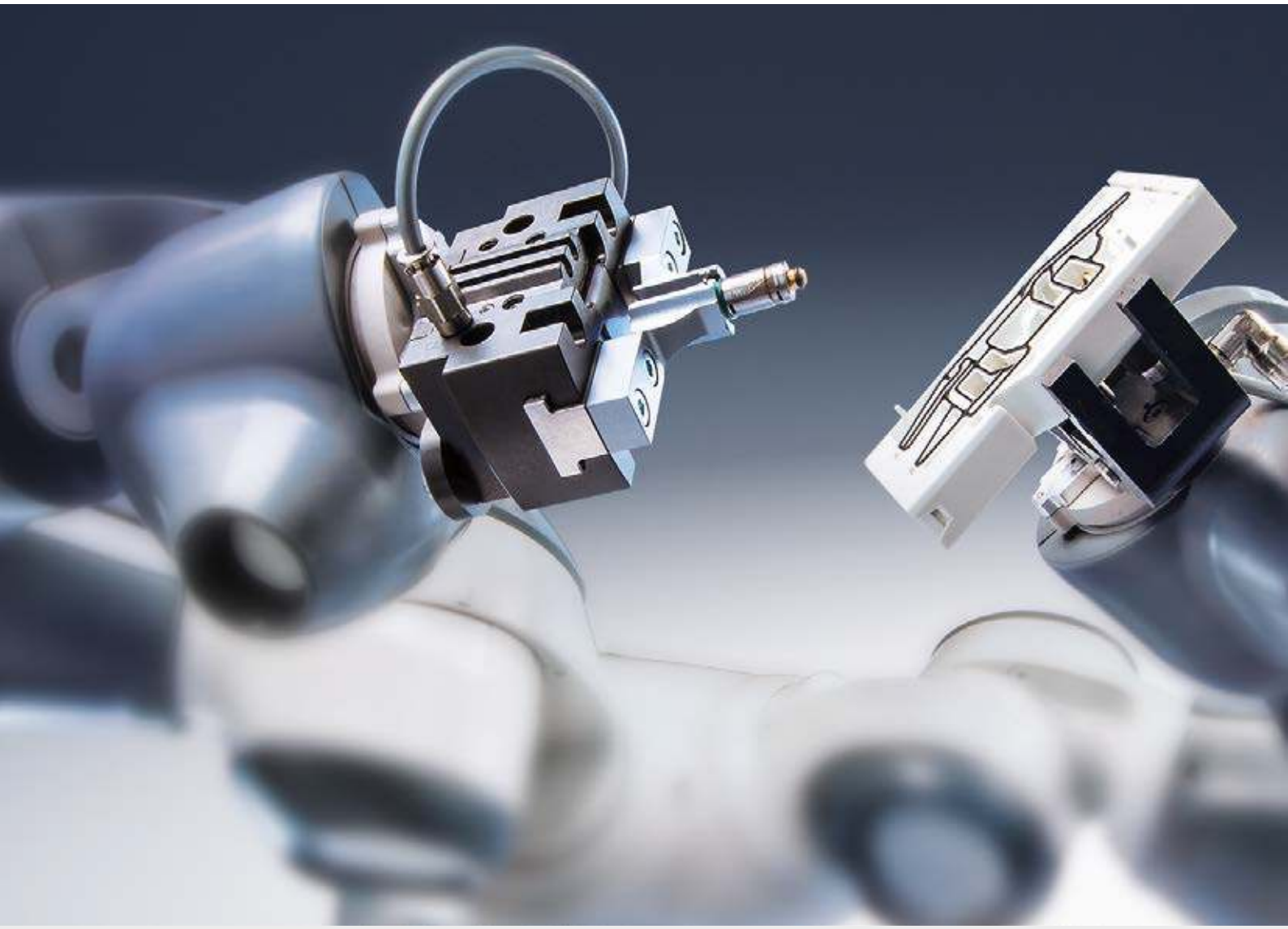

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CAMOZZI
Automation

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2 Compact cylinders
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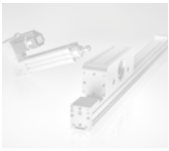
5 Cylinders not according standards
6 Rotary cylinders
7 Rodless cylinders
8 Proximity switches
9 Clamping elements and shock absorbers

Electric actuation



1 Electromechanical cylinders
2 Electromechanical axes
3 Drives
4 Motors

Handling and vacuum

1 Grippers
2 Suction pads
3 Ejectors
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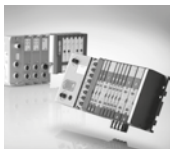
5 Vacuum filters

Valves and solenoid valves

1 Directly and indirectly operated 2/2, 3/2 solenoid valves
2 Solenoid valves, pneumatic valves
3 Mechanical and manual valves
4 Logic valves
5 Automatic valves
6 Flow control valves
7 Silencers

Fieldbus and multipole systems



1 Valve islands
2 Multi-serial modules

Proportional technology

1 Proportional valves
2 Proportional regulators

Air treatment

1 Series MX Modular FRL Units
2 Series MC Modular FRL Units
3 Series MD Modular FRL Units
4 Series N FRL Units
5 Pressure regulators
6 Pressure switches and vacuum switches
7 Accessories for air treatment

Pneumatic connection

1 Super-rapid fittings
2 Rapid fittings
3 Universal fittings
4 Fittings accessories
5 Quick-release couplings
6 Tubing, spirals and accessories

General index

1 Valve islands

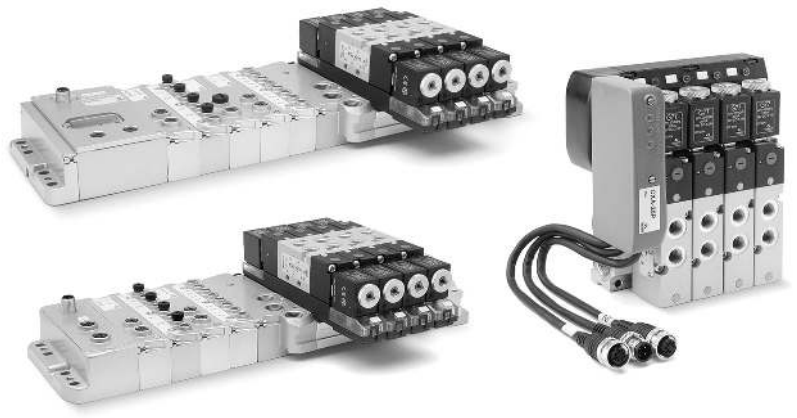
2 Multi-serial modules

Appendix

Alphanumeric index

Series 3 Plug-In valve islands, Multipole and Fieldbus

Plug-In system for Series 3 solenoid valves, G1/8 port.
Valve functions: 2x3/2, 5/2 and 5/3-way CO CC CP.
Multipole with a 25-pin Sub-D connector.
It can interface with all major serial communication protocols.



- Flexible assembly through monostable and bistable 2- and 3-position modules
- Electrical connection and front pneumatic outputs
- Available protocols: PROFIBUS-DP, DeviceNet, CANopen, EtherNet/IP, EtherCAT, PROFINET

The Multipole version of Series 3 Plug-In valve island can be easily installed thanks to the front position of the Sub-D connector. The accessories of the new connection system to the Series CX serial nets enable to handle up a multipole valve island by means of a Sub-D connector or through a node integrated in the island.
The modularity of the electric and pneumatic parts allows to install up to a maximum of 22 solenoids on 22 valve positions.

The electric and pneumatic modules have 2- and 3-position modularity. To optimize the signals distribution, electric modules are available for monostable and bistable valves. The pneumatic modularity enables the creation of zones with differentiated pressure.
Manuals, instruction sheets and configuration files can be found on catalogue.camozzi.com or on the QR code on the lable of the product.

GENERAL DATA

PNEUMATIC SECTION	
Valve construction	spool type with seals
Valve functions	5/2 - 5/3 CC - 5/3 CO - 5/3 CP - 2x3/2 NO - 2x3/2 NC - 1 3/2 NO + 1 3/2 NC
Materials	AL body, stainless steel spool, NBR seals, technopolymer
Mounting	through-out holes in the manifold
Ports	valve = G1/8 - manifold = G3/8
Installation	in any position
Operating temperature	from 0°C to 60°C (with dry air at -20°C)
Nominal flow rate	Qn 700 Nl/min
Nominal diameter	7 mm
Fluid	Filtered air, class 7.4.4 according to ISO 8573-1-2010, without lubrication. If lubricated air is used, it is recommended to use ISO VG32 oil, and to never interrupt the lubrication.
ELECTRICAL SECTION - MULTIPOLE VERSION	
Max absorption	3 A
Type of connection	Multipole 25-pin male Sub-D
Supply voltage	24 V DC +/- 10%
Max number of solenoids	22 on 22 valve positions
Signalling	yellow LED
Duty cycle	ED 100%
Protection class	IP65
ELECTRICAL SECTION - FIELDBUS VERSION	
General characteristics	see the section about the Series CX multi-serial module (2.3.50)
Max absorption	digital outputs/analogic inputs and outputs 3A digital/analogic inputs 3 A
Voltage tolerances	logic supply 24 V DC +/- 10% power supply 24 V DC +/- 10%

MULTIPOLE VERSION AND MULTIPOLE WITH SUB-D ADAPTER

In the Multipole version the front position of the 25 pin Sub-D connector makes the connection easier. The connectors with pre-wired cable, which are available in different lengths and with axial or radial orientation, simplify the electrical connection. The Island can be configured up to a max. of 22 solenoids, using monostable and bistable electrical modules, on 22 valve positions, for example 22 monostable solenoid valves.

Thanks to the 2- or 3-position pneumatic modularity, diaphragms and plates of supplementary supply, it is possible to create zones with differentiated pressure. The Multipole version of Series 3 valve island can be connected by means of a Sub-D adapter. In this way a standard Multipole Island can be inserted as expansion in the subnet of the Fieldbus version.

VERSIONS: FIELDBUS WITH CPU MODULE AND EXPANSION FIELDBUS

The Individual Fieldbus version of Series 3 can be interfaced through a specific module with the Series CX multi-serial module according to the different communication protocols (PROFIBUS-DP, DeviceNet, CANopen, EtherNet/IP, EtherCAT, PROFINET).
Like the Multipole one, the Fieldbus version is able to create islands with 22 coils on 22 valve positions adding a wide range of electrical modules like digital/analog inputs/outputs of 0-10 V and 4-20 mA.

It is possible to insert Initial Subnet Modules in the version with CPU module. These Modules enable to create a subnet with tree structure or in series. On the subnet you can connect Expansion Islands. These expansions have the same possibilities to use the different electric modules, like digital and analog inputs and outputs and further Initial Subnet Modules. Also with this version the same rules as the CPU module and Multipole apply.

CODING EXAMPLE - MULTIPOLE VERSION

3	P	8	-	03A	-	BDACAC	-	2BC3MU2BMXU2B2M	-	G77

3	SERIES
P	TYPE: P = Plug-In
8	SIZE: 8 = 1/8
03A	CONNECTION: 000 = no connector/cable CONNECTOR WITH CABLE AXIAL OUTPUT: 03A = 3 m 05A = 5 m 10A = 10 m 15A = 15 m 20A = 20 m 25A = 25 m CONNECTOR WITH CABLE RADIAL OUTPUT: 03R = 3 m 05R = 5 m 10R = 10 m 15R = 15 m 20R = 20 m 25R = 25 m CONNECTOR WITHOUT CABLE: 4XA = 25-pin axial 4XR = 25-pin radial
BDACAC	CONFIGURATION OF SUBBASE: A = 2 positions with bistable board B = 3 positions with bistable board C = 2 positions with monostable board D = 3 positions with monostable board
2BC3MU2BMXU2B2M	VALVE FUNCTION: E = empty position M = 5/2 Monostable, internal servo-pilot supply B = 5/2 Bistable, internal servo-pilot supply C = 2 x 3/2 NC, internal servo-pilot supply A = 2 x 3/2 NO, internal servo-pilot supply G = 1 x 3/2 NC + 1 x 3/2 NO, internal servo-pilot supply H = 5/3 Closed Centres, internal servo-pilot supply K = 5/3 Exhaust Centres, internal servo-pilot supply N = 5/3 Pressure Centres, internal servo-pilot supply D = 5/2 Monostable, external servo-pilot supply Y = 5/2 Bistable, external servo-pilot supply Q = 2 x 3/2 NC, external servo-pilot supply R = 2 x 3/2 NO, external servo-pilot supply S = 1 x 3/2 NC + 1 x 3/2 NO, external servo-pilot supply V = 5/3 Closed Centres, external servo-pilot supply Z = 5/3 Exhaust Centres, external servo-pilot supply W = 5/3 Pressure Centres, external servo-pilot supply L = plate with closed free position X = supply plate and supplementary exhausts T = diaphragm on channels 1, 3, 5 U = diaphragm in supply 1 J = diaphragm exhausts 3 and 5
G77	SOLENOID MATERIAL: G = PA U = PET

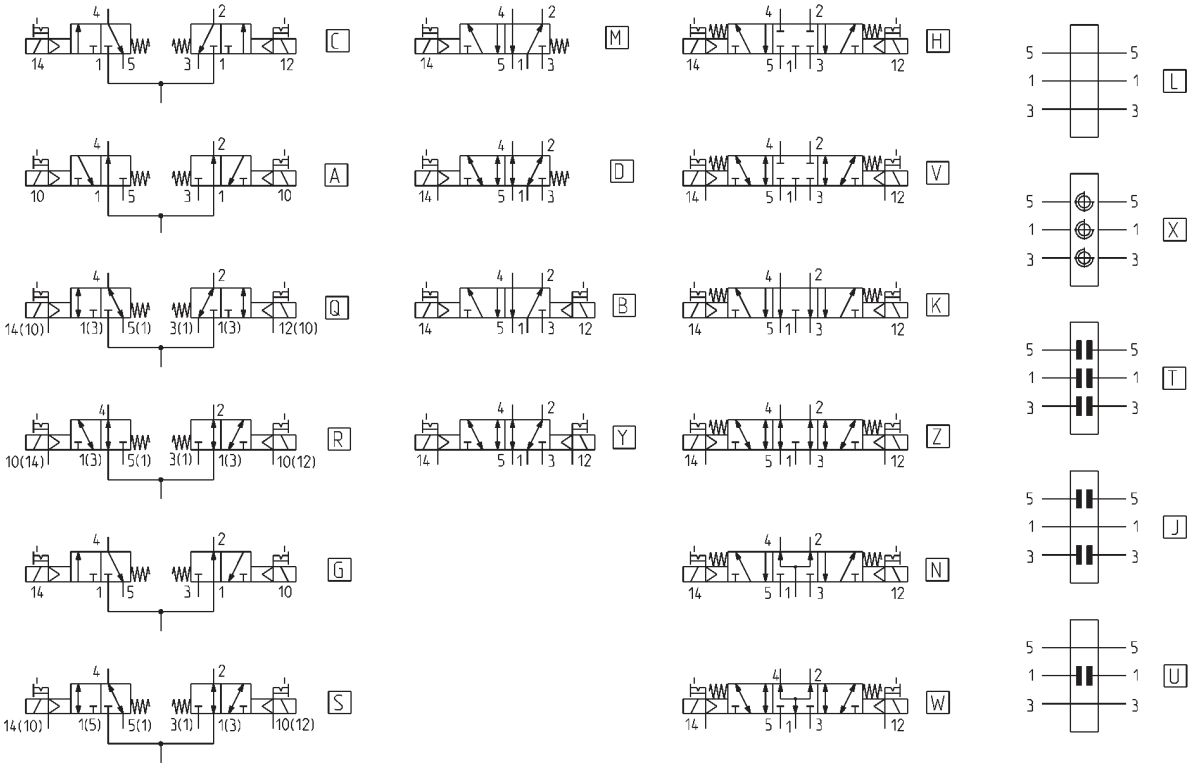
3P8-03R-ADCB-2B3MT2M3V-G77: valve island with 10 positions, radial connector and 3-meter cable.
Bases: the first with 2 bistables positions, the second with 3 monostable pos., the third with 2 monostable pos., the fourth with 3 bistable pos.
Valves: 2 bistable, 3 monostables, diafragm on channels 1,3,5, 2 monostables, 3 Closed Centres, 24 V Solenoids.

CODING EXAMPLE - FIELDBUS VERSION

3	S	8	-	01	-	2AQRS	-	BDACAC	-	2BC3MU2BMXU2B2M	-	G77

3	SERIES
S	CONNECTION: S = Fieldbus
8	SIZE: 8 = 1/8
01	PROTOCOL: 01 = PROFIBUS-DP 02 = DeviceNet 03 = CANopen 04 = EtherNet/IP 05 = EtherCAT 06 = PROFINET 99 = Expansion Module
2AQRS	INPUT / OUTPUT MODULES: 0 = no module A = 8 digital inputs M8 B = 4 digital inputs M8 C = 2 analog inputs 4-20 mA D = 2 analog inputs 0-10 V E = 1 analog input 4-20 mA + 1 input 0-10 V Q = 4 M12 duo digital outputs R = 2 analog outputs 4-20 mA T = 2 analog outputs 0-10 V U = 1 analog output 4-20 mA + 1 output 0-10 V V = 1 analog output 4-20 mA + 1 input 0-10 V Z = 1 analog output 4-20 mA + 1 input 4-20 mA K = 1 analog output 0-10 V + 1 input 0-10 V Y = 1 analog output 0-10 V + 1 input 4-20 mA S = Initial subnet module
BDACAC	CONFIGURATION OF SUBBASE: A = 2 positions with bistable board B = 3 positions with bistable board C = 2 positions with monostable board D = 3 positions with monostable board
2BC3MU2BMXU2B2M	VALVE FUNCTION: E = empty position M = 5/2 Monostable, internal servo-pilot supply B = 5/2 Bistable, internal servo-pilot supply C = 2 x 3/2 NC, internal servo-pilot supply A = 2 x 3/2 NO, internal servo-pilot supply G = 1 x 3/2 NC + 1 x 3/2 NO, internal servo-pilot supply H = 5/3 Closed Centres, internal servo-pilot supply K = 5/3 Exhaust Centres, internal servo-pilot supply N = 5/3 Pressure Centres, internal servo-pilot supply D = 5/2 Monostable, external servo-pilot supply Y = 5/2 Bistable, external servo-pilot supply Q = 2 x 3/2 NC, external servo-pilot supply R = 2 x 3/2 NO, external servo-pilot supply S = 1 x 3/2 NC + 1 x 3/2 NO, external servo-pilot supply V = 5/3 Closed Centres, external servo-pilot supply Z = 5/3 Exhaust Centres, external servo-pilot supply W = 5/3 Pressure Centres, external servo-pilot supply L = plate with closed free position X = supply plate and supplementary exhausts T = diaphragm on channels 1, 3, 5 U = diaphragm in supply 1 J = diaphragm exhausts 3 and 5
G77	SOLENOID MATERIAL: G = PA U = PET

FUNCTIONS OF SOLENOID VALVES SERIES 3



Mod.	Function	Actuation/return	Servo-pilot	Working pressure (bar)	Pilot pressure (bar)	Code
338D-015-02	2 x 3/2 NC	solenoid/spring	internal	2,5 ÷ 10	-	**C**
348D-015-02	2 x 3/2 NO	solenoid/spring	internal	2,5 ÷ 10	-	**A**
398D-015-02	1 x 3/2 NC + 1 x 3/2 NO	solenoid/spring	internal	2,5 ÷ 10	-	**G**
358-015-02	5/2 monostable	solenoid/spring	internal	2,5 ÷ 10	-	**M**
358-011-02	5/2 bistable	solenoid/solenoid	internal	1,5 ÷ 10	-	**B**
368-011-02	5/3 CC	solenoid/solenoid	internal	2 ÷ 10	-	**H**
378-011-02	5/3 CO	solenoid/solenoid	internal	2 ÷ 10	-	**K**
388-011-02	5/3 CP	solenoid/solenoid	internal	2 ÷ 10	-	**N**
338D-E15-02	2 x 3/2 NC	solenoid/spring	external	-0,9 ÷ 10	2,5 ÷ 10	**Q**
348D-E15-02	2 x 3/2 NO	solenoid/spring	external	-0,9 ÷ 10	2,5 ÷ 10	**R**
398D-E15-02	1 x 3/2 NC + 1 x 3/2 NO	solenoid/spring	external	-0,9 ÷ 10	2,5 ÷ 10	**S**
358-E15-02	5/2 monostable	solenoid/spring	external	-0,9 ÷ 10	2,5 ÷ 10	**D**
358-E11-02	5/2 bistable	solenoid/solenoid	external	-0,9 ÷ 10	1,5 ÷ 10	**Y**
368-E11-02	5/3 CC	solenoid/solenoid	external	-0,9 ÷ 10	2 ÷ 10	**V**
378-E11-02	5/3 CO	solenoid/solenoid	external	-0,9 ÷ 10	2 ÷ 10	**Z**
388-E11-02	5/3 CP	solenoid/solenoid	external	-0,9 ÷ 10	2 ÷ 10	**W**
CNVL/1L	free position (electrical and pneumatic cover)	-	-	-	-	**L**
CNVL-3P1	plate for supply and outlets	-	-	-	-	**X**
CNVL-3H-TP (x1)	diaphragm for supply (1)	-	-	-	-	**U**
CNVL-3H-TP (x2)	diaphragm for outlets (3-5)	-	-	-	-	**J**
CNVL-3H-TP (x3)	diaphragm for supply (1) and outlets (3-5)	-	-	-	-	**T**

MODIFICATION OF A VALVE FUNCTION

In case a solenoid valve type M is inserted in a free position and a monostable or bistable electrical conveyor is already available, the following components must be ordered:

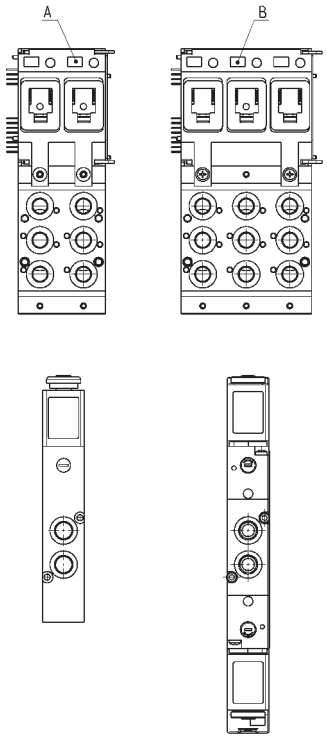
2x screws Cod. CNVL/21
3x interface seals Cod. CNVL-3H/7N
1x solenoid valve 358-015-02-(G77-U77)

In case a solenoid valve type B is inserted in a free position and a bistable electrical conveyor is already available*, the following components must be ordered:

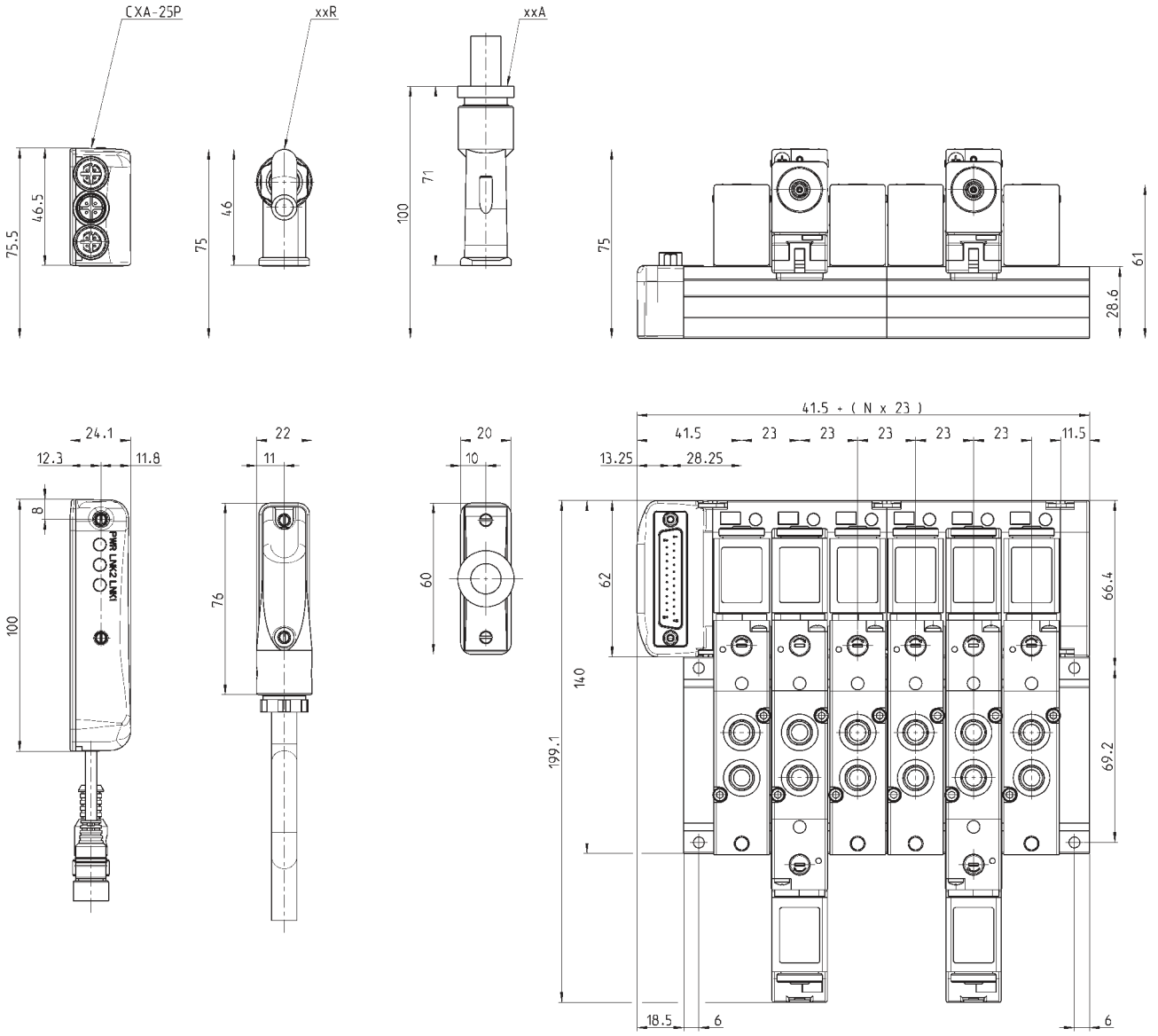
1x electrical module with bistable solenoid valve Cod. 3PAC-R-IF1
1x solenoid valve 358-015-02-(G77-U77)

* In case a monostable conveyor has been already mounted, it must be replaced by a bistable one, provided that the maximum number of 22 signals is not exceeded.

DRAWING NOTE:
A = grey label (monostable)
B = white label (bistable)

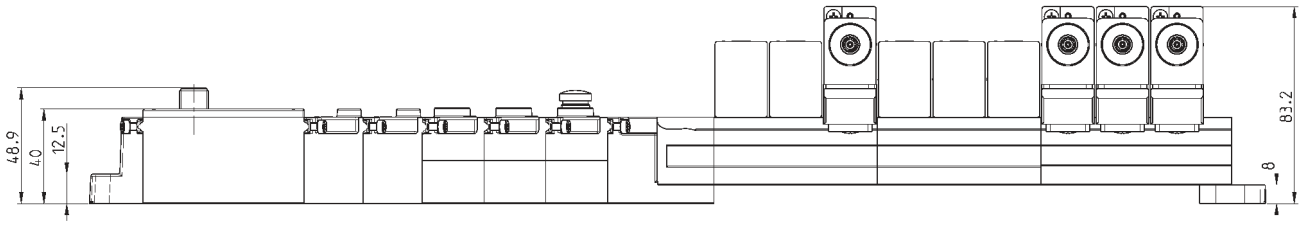


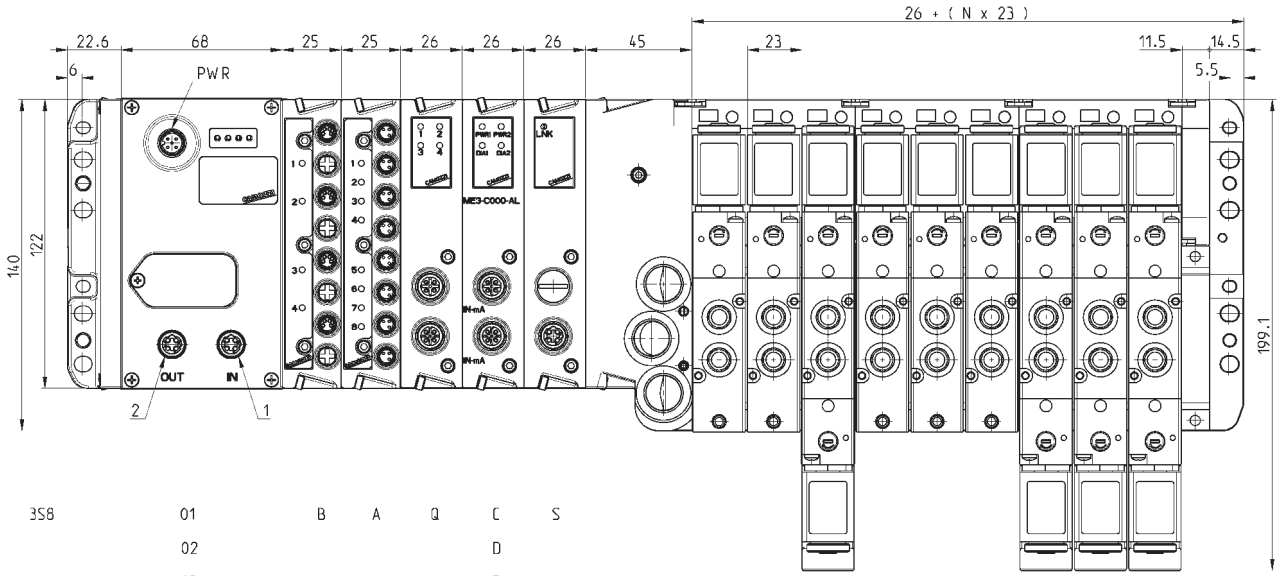
MULTIPOLE version - DIMENSIONS



FIELDBUS version with CPU MODULE - DIMENSIONS

DRAWING NOTE:
1. letters and numbers refer to the details which are reported in the coding example
2. N = number of valve positions

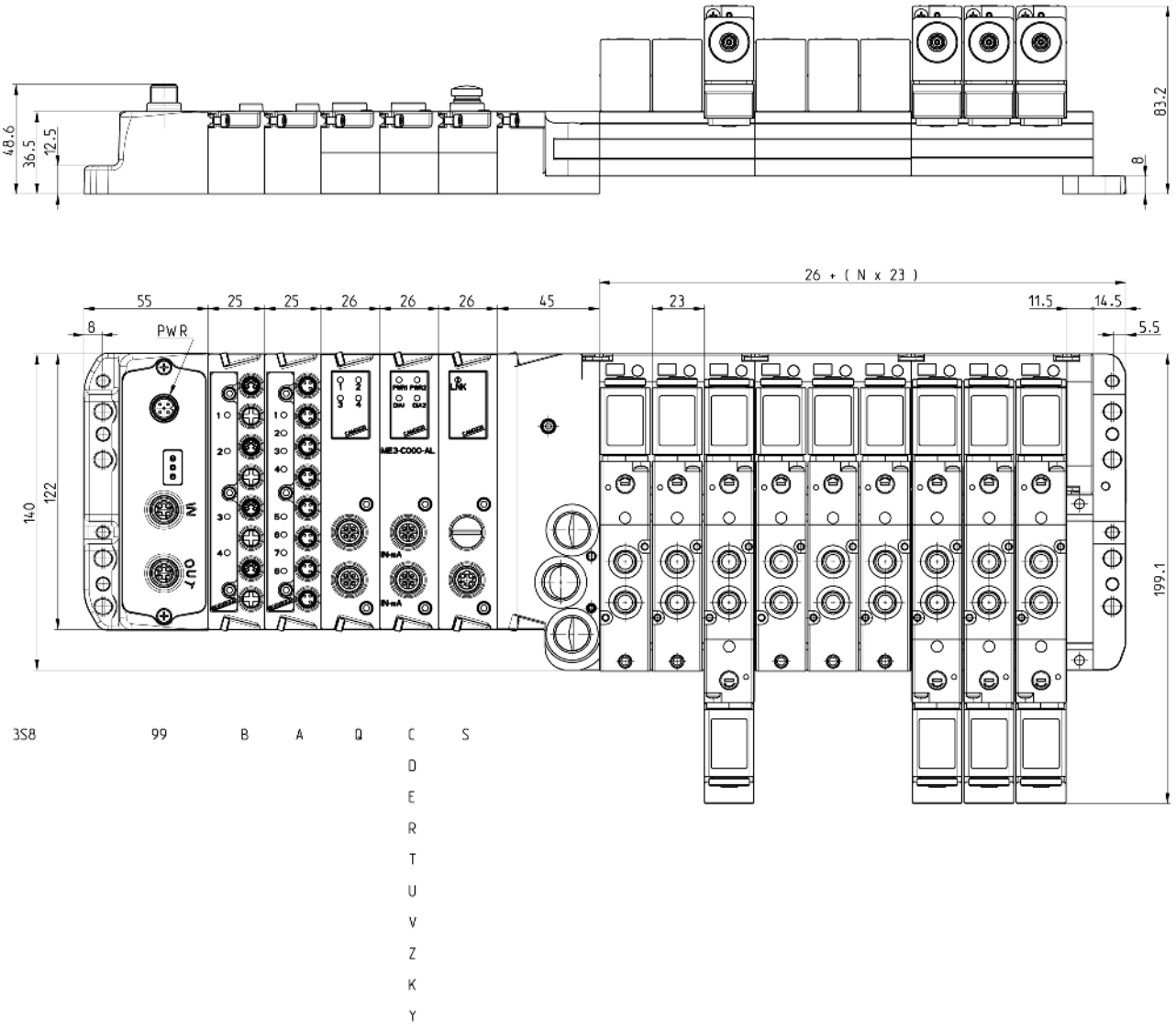




3S8	01	B	A	Q	C	S
	02				D	
	03				E	
	04				R	
	05				T	
	06				U	
					V	
					Z	
					K	
					Y	

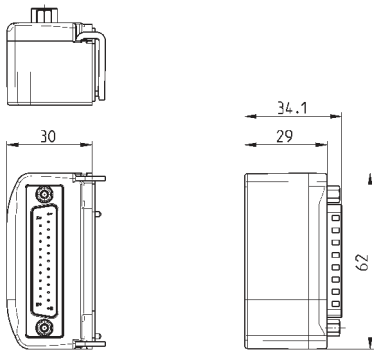
FIELDBUS version with EXPANSION MODULE - DIMENSIONS

DRAWING NOTE:
1. letters and numbers refer to the details which are reported in the coding example
2. N = number of valve positions



25-pin Sub-D connector module

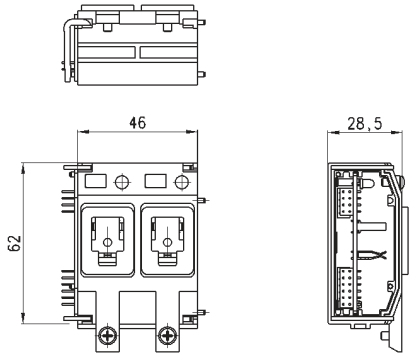
Initial module to connect the Intermediate Electrical Modules



Mod.
3PBC-N-XS0

Intermediate electrical module - 2 positions, mono and bistable

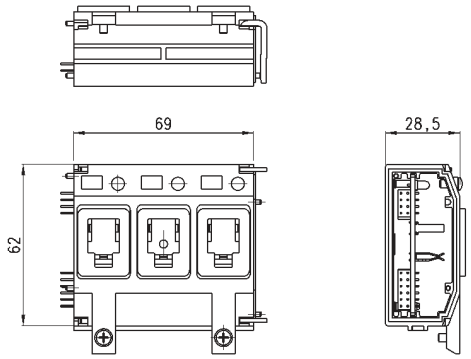
To be mounted with subbases with 2 positions.
The type label in correspondence of LEDs is:
- grey in monostable intermediate modules
- white in bistable intermediate modules



Mod.	
3PAC-M-XI2	Monostable module
3PAC-R-XI2	Bistable module

Intermediate electrical module - 3 positions, mono and bistable

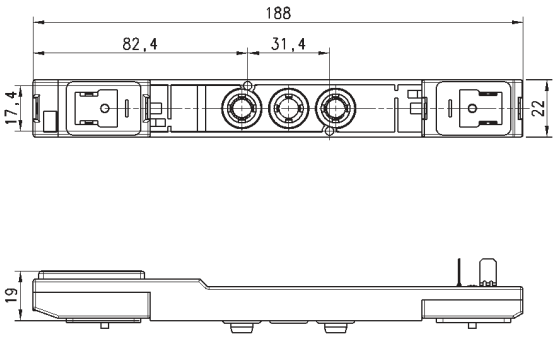
To be mounted with subbases with 3 positions.
The type label in correspondence of LEDs is:
- grey in monostable intermediate modules
- white in bistable intermediate modules



Mod.	
3PAC-M-XI3	Monostable module
3PAC-R-XI3	Bistable module

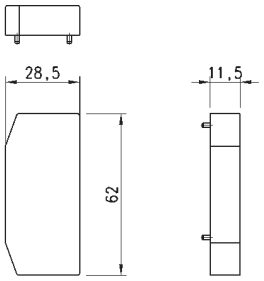
Electrical Module for a bistable solenoid valve

Supplied with:
2x screws for valve mounting
2x screws for solenoid mounting
1x interface seal
2x interface seals for solenoid



Mod.
3PAC-R-IF1

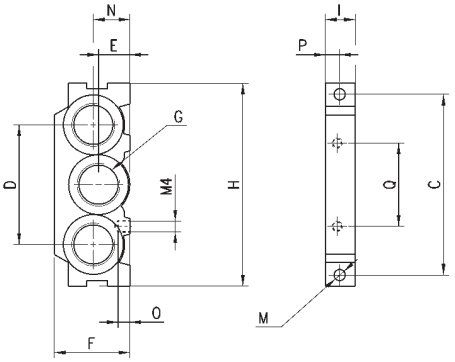
End cap for electric module



DIMENSIONS
Mod.
3PAC-R-TP1

Terminal module Mod. CNVL-3H

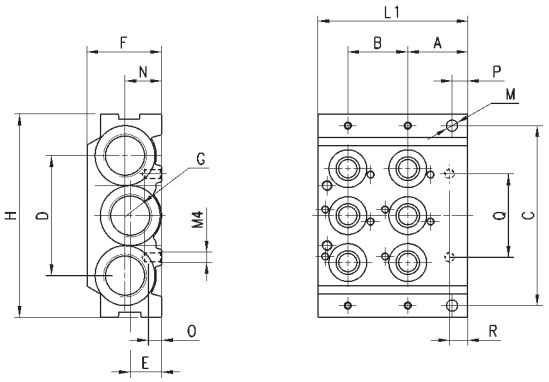
The following is supplied:
2x fixing nuts



DIMENSIONS												
Mod.	C	D	E	F	H	I	M	N	O	P	Q	G
CNVL-3H	69.5	46	12	29	78	11.5	4.3	14	5	6	32	3/8

Initial/terminal pneumatic Module - 2 positions

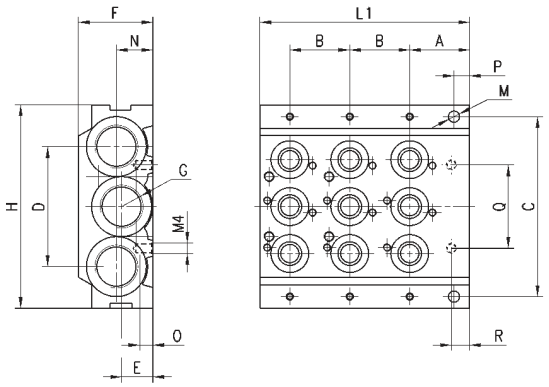
Supplied with:
3x O-rings
2x fixing screws
2x junction plugs
6x interface seals module/valve



DIMENSIONS															
Mod.	A	B	C	D	E	F	G	H	L1	M	N	O	P	Q	R
CNVL-3H2	23	23	69,5	46	12	29	3/8	78	57,5	4,3	14	5	6	32	7

Initial/terminal pneumatic Module - 3 positions

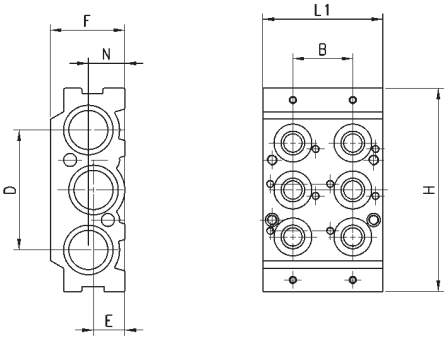
Supplied with:
3x O-rings
2x fixing screws
2x junction plugs
9x interface seals module/valve



DIMENSIONS															
Mod.	A	B	C	D	E	F	G	H	L1	M	N	O	P	Q	R
CNVL-3H3	23	23	69,5	46	12	29	3/8	78	80,5	4,3	14	5	6	32	7

Intermediate pneumatic Module - 2 positions

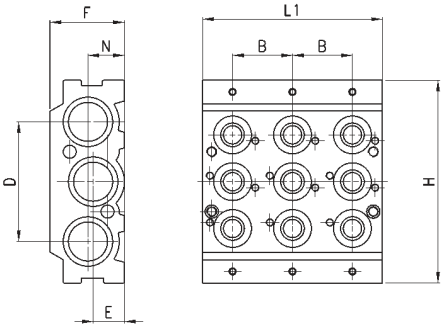
Supplied with:
3x O-Rings
2x fixing screws
2x junction plugs
6x interface seals module/valve



DIMENSIONS							
Mod.	B	D	E	F	H	L1	N
CNVL-3I2	23	46	12	29	78	46	14

Intermediate pneumatic Module - 3 positions

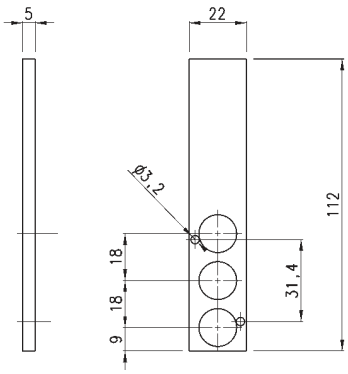
Supplied with:
3x O-rings
2x fixing screws
2x junction plugs
9x interface seals module/valve



Mod.	B	D	E	F	H	L1	N
CNVL-3I3	23	46	12	29	78	69	14

Excluder tap for free position (cod. L)

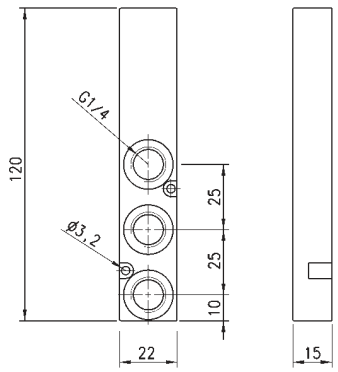
Supplied with:
3x O-rings
2x screws



Mod.
CNVL/1L

Intermediate plate for manifolds with outlets (cod. X)

Supplied with:
3x O-rings
2x screws

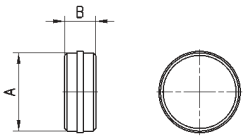


Mod.
CNVL-3P1

Diaphragm for separation channels 1 - 3 - 5

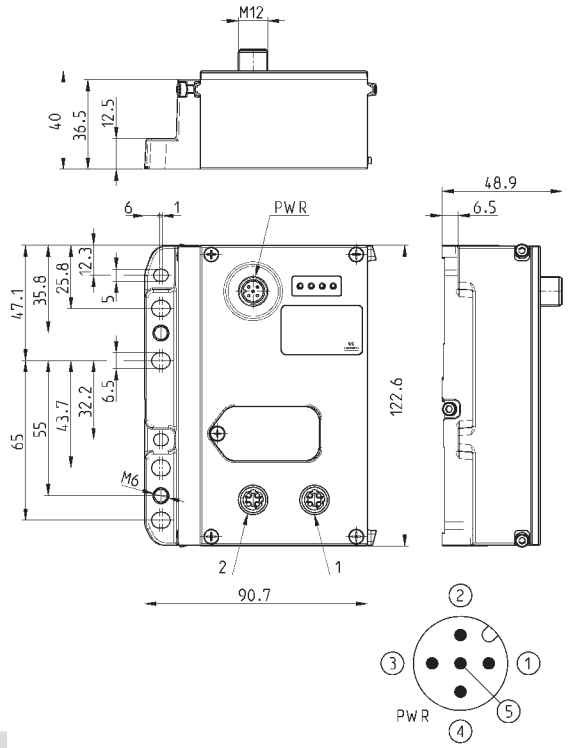
Supplied with:
1x diaphragm.

If you need cod. U, please order N° 1 piece.
If you need cod. J, please order N° 2 pieces.
If you need cod. T, please order N° 3 pieces.



Mod.	A	B
CNVL-3H-TP	15,6	6

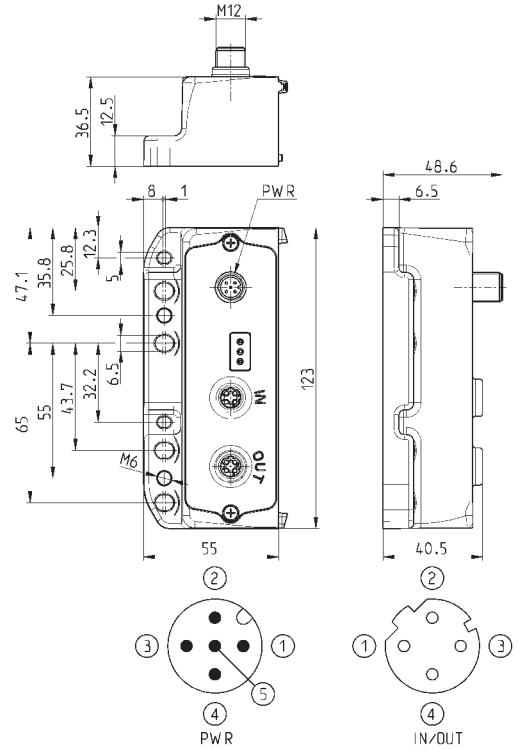
CPU Module - pin configuration



Mod.	Coding reference	Fieldbus Protocol	2	1	Bus-IN connector	Bus-OUT connector
CX01-0-0	01	PROFIBUS	Bus-IN	Bus-OUT	M12 B 5 pin male	M12 B 5 pin female
CX02-0-0	02	DeviceNet	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX03-0-0	03	CANopen	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX04-0-0	04	EtherNet/IP	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX05-0-0	05	EtherCAT	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX06-0-0	06	PROFINET	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female

Expansion Module - pin configuration

Note: to connect the Expansion with the subnet, we recommend the use of cables Mod. CS-SB04HB-... or CS-SC04HB-...



Mod.	Coding reference	Fieldbus Protocol	Bus-IN and Bus-OUT connector
CX99-0-0	99	Subnet expansion	M12 D 5 pin female

CPU Module - Characteristics

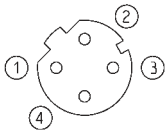
It is a slave node of the main PROFIBUS, CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFINET network and the Master module of the subnet.
All modules provided can be connected only on the right side of the CPU module, like the digital/analog inputs/outputs, direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet.
It has its own M12A 4 pin Male connection to supply the modules connected, distinguishing both logic supply and power supply.
Two M12 connections for Bus IN and Bus OUT of the main network, which M12 connection will take over the relative specifications according to the choosen protocol.
The addressing is performed by means of the Rotary Switch for the protocols with this feature, while for Ethernet protocols, addressing is performed by means of the protocol itself. Leds indicating the working state. A maximum number of 1024 inputs and 1024 outputs can be managed.

Expansion Module - Characteristics

At its right side, different modules can be connected like the digital/analog inputs/outputs, the direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet to re-amplify it or to create new branches. It has its own M12 A 4 pin male connection to supply the devices connected, distinguishing both logic supply and power supply. It has two M12 D 5 pin female connections for Bus-IN and Bus-OUT connection of the subnet. Leds indicate the working state.
The valve island equipped with the Expansion Module can be used only in presence of a subnet.

Initial subnet module Mod. ME3-0000-SL

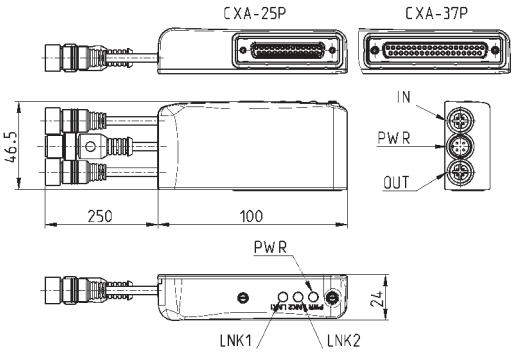
This module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices. Every subnet can have an extension of maximum 100 metres, with a maximum of 8 interruptions. Up to maximum 5 initial modules can be connected, one aside another or along the subnet in order to create a tree structure, in series or both, in order to optimize the length of the cables and the topology of the subnet in different applications. The module is equipped with the Bus-OUT connection only of subnet type M12 D 4 pin female.



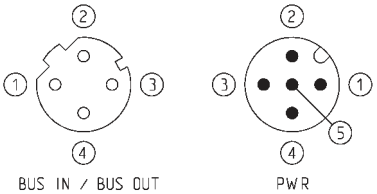
Mod.	Coding reference	Bus-OUT connection	Max number of modules for subnet	Max extension of subnet per module
ME3-0000-SL	S	M12D 4 pin female	5	100 m

Sub-D adaptor module 25 pin Mod. CXA-25P

It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D 25 pin connection. It can manage up to a maximum of 24 Output. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 4 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.



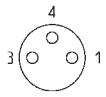
Led 1 = Yellow LNK1
Led 2 = Yellow LNK2
Led 3 = Green PWR, supply present and OK



Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W

Digital input Module Mod. ME3-0800-DC and ME3-0400-DC

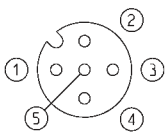
The Digital input module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet.
It has 8 or 4 M8 3 pin connections.



Mod.	Coding reference	Number of digital inputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Overvoltage protection	Absorption	Type of signal	Protection class	Operating temperature	Weight
ME3-0800-DC	A	8	M8 3 pin female	8	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 ÷ 50°C	110 g
ME3-0400-DC	B	4	M8 3 pin female	4	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 ÷ 50°C	110 g

Analog input/output module Mod. ME3-****-AL

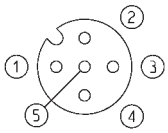
The analog input/output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections and it can be configured as 2 analog Outputs or 2 Inputs or 1 Input + 1 Output. Every analog output or input has a 12 bit resolution for both inputs and outputs available in the versions from 0-10 V DC and from 4-20mA.
The refreshment time of the analog devices is submitted to the delay of the subnet and therefore to its topology. An average delay is less than 6 ms, to which the delay of the main network managed by the PLC has to be added.



Mod.	Coding reference	Number of analog inputs	Number of analog outputs	Connection
ME3-C000-AL	C	2 inputs 4-20 mA	-	2x M12 A 5 pin female
ME3-D000-AL	D	2 inputs 0-10 V	-	2x M12 A 5 pin female
ME3-E000-AL	E	1 input 4-20 mA + 1 input 0-10 V	-	2x M12 A 5 pin female
ME3-00U0-AL	U	-	1 output 4-20 mA + 1 output 0-10 V	2x M12 A 5 pin female
ME3-00R0-AL	R	-	2 outputs 4-20 mA	2x M12 A 5 pin female
ME3-00T0-AL	T	-	2 outputs 0-10 V	2x M12 A 5 pin female
ME3-00Z0-AL	Z	1 input 4-20 mA	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00K0-AL	K	1 input 0-10 V	1 output 0-10 V	2x M12 A 5 pin female
ME3-00V0-AL	V	1 input 0-10 V	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00Y0-AL	Y	1 input 4-20 mA	1 output 0-10 V	2x M12 A 5 pin female

Digital power output module Mod. ME3-0004-DL

The digital output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections, each connection can manage 2 digital outputs and can provide a maximum of 10 W to 24 V DC. The device is useful to pilot a bistable valve or two monostable valves for each connector, or to activate the electric coils or other electric devices with maximum absorption of 10 W to 24 V DC. Connecting two outputs to one electric device only and activating them simultaneously, it is possible to provide maximum 20 W to 24 V DC.



Mod.	Coding reference	Number of digital outputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Max power for M12 connector	Max power for digital output	Type of signal	Protection class	Operating temperature	Weight
ME3-0004-DL	Q	4	M12 A 5 pin female	2	122 x 25 mm	1 yellow led for each output	24 V DC	20 W	10 W	NPN	IP65	0 ÷ 50°C	100 g

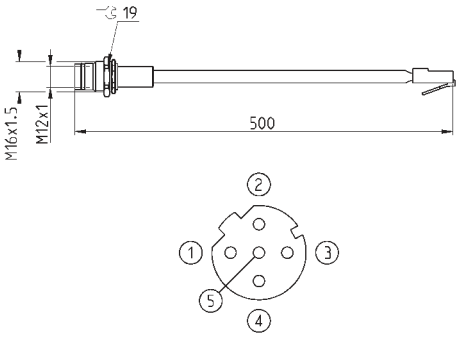
Pneumatic/electric interface Module for Fieldbus version

Supplied with:
1x module with card
1x foot for manifold

Mod.
ME3-003P-DI

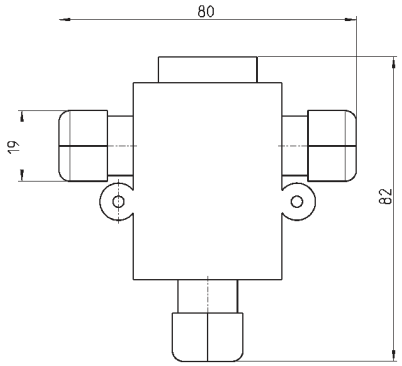
Adaptor and panel mount for Ethernet RJ45 to M12 D networks

For PROFINET, EtherCAT, EtherNet/IP



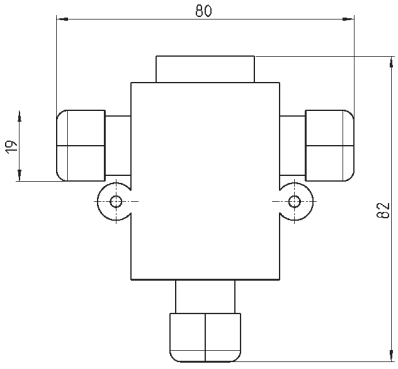
Mod.	description	type of connector	connection	cable length (m)
CS-SE04HB-F050	moulded cable	straight	RJ45 male, M12 D 4 pin female - Pin 5 is not connected	0.5

Profibus-DP data line tee



Mod.
CS-AA03EC

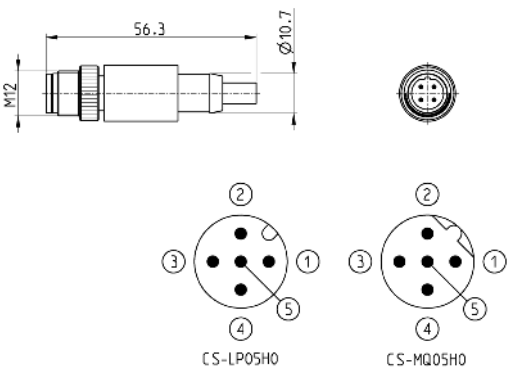
CANopen / DeviceNet data line tee



CS-AA05EC

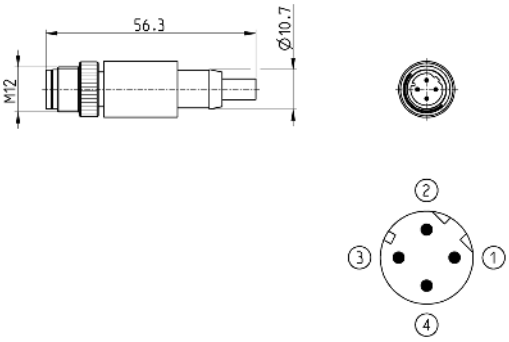
M12 male terminating resistor

For PROFIBUS, CANopen, DeviceNet



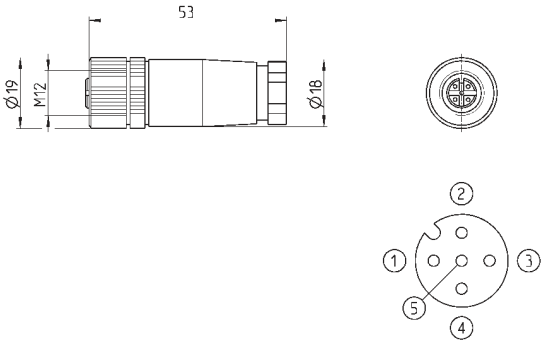
Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male - Pin 5 is not connected	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male - Pin 5 is connected	CANOpen / DeviceNet

Subnet terminating resistor



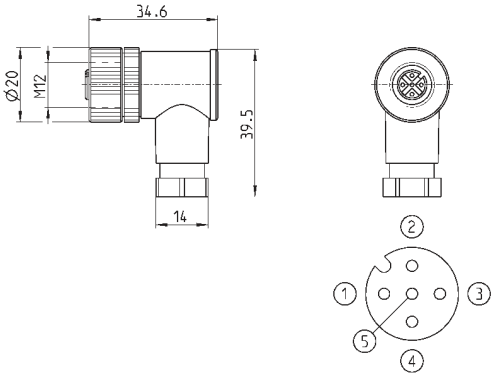
Mod.	description	type of connector	connection	Protocol
CS-SU04H0	moulded terminating resistor	straight	M12 D 4 pin	subnet

Straight connector for power supply



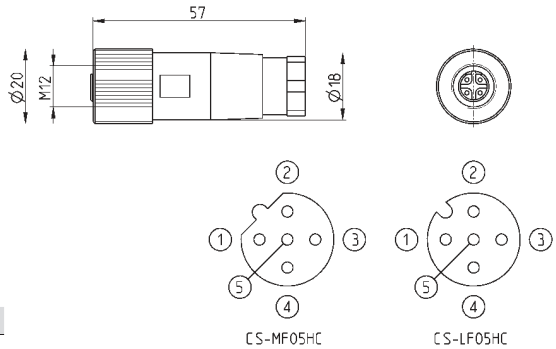
Mod.	description	type of connector	connection	cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female - Pin 5 is not connected	-

Angular connector for power supply



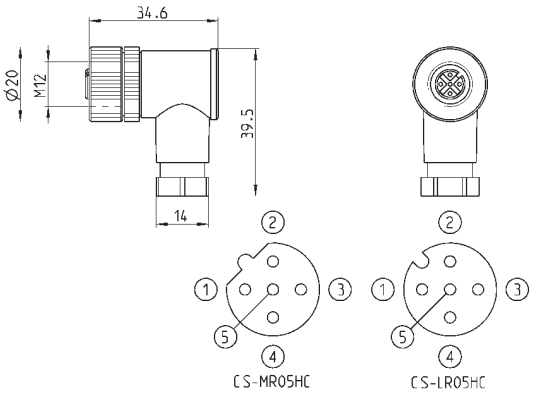
Mod.	description	type of connector	connection	cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female - Pin 5 is not connected	-

Straight female M12 connectors for Bus-IN



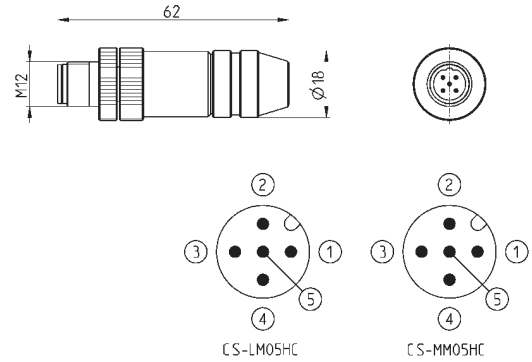
Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

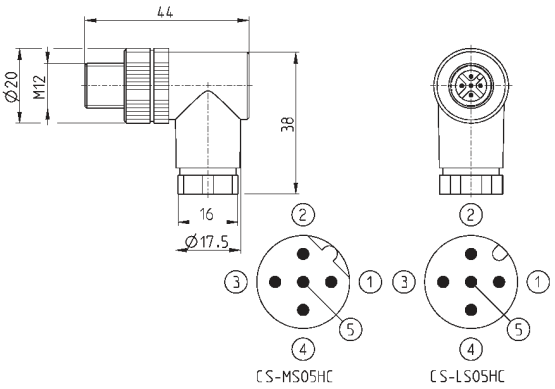
Straight male M12 connectors for Bus-OUT



Mod.	description	type of connector	connection	Protocol
CS-LM05HC	for metal wiring	straight	M12 A 5 pin male	CANopen / DeviceNet
CS-MM05HC	for metal wiring	straight	M12 B 5 pin male	PROFIBUS

Angular 90° male M12 connectors for Bus-OUT

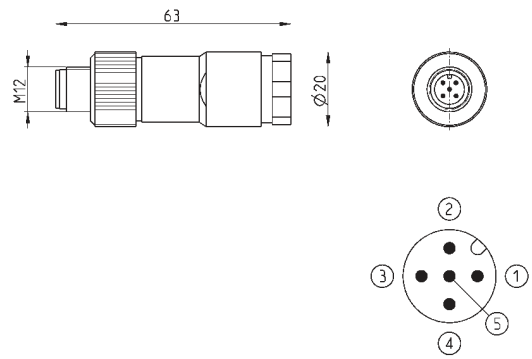
The Mod. CS-LS05HC can also be used for the connection of the digital output modules and of the analog input and output modules.



Mod.	description	type of connector	connection	Protocol
CS-LS05HC	for wiring	90°	M12 A 5 pin male	CANopen / DeviceNet
CS-MS05HC	for wiring	90°	M12 B 5 pin male	PROFIBUS

5 pin male straight M12 DUO connector

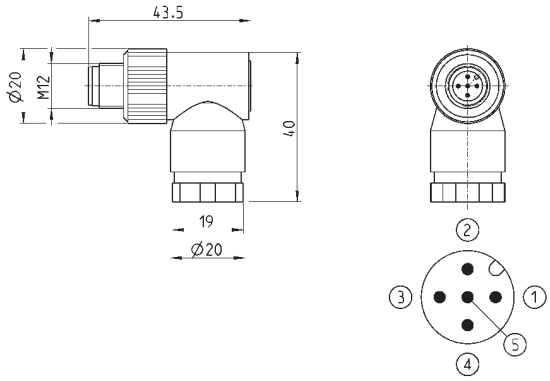
For the connection of the digital output modules and analog input/output modules.



Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

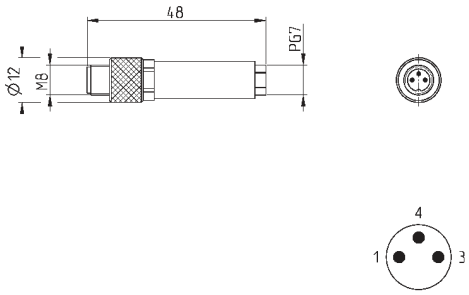
5 pin male angular M12 DUO connector

For the connection of the digital output modules ME3-0004-DL



Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

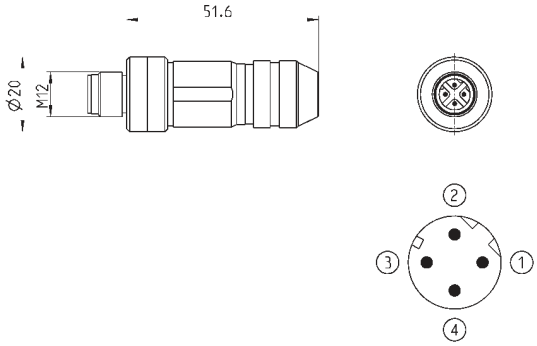
3 pin male M8 wiring connector for digital input modules



Mod.	description	type of connector	connection	cable length (m)
CS-DM03HB	for wiring	straight	M8 3 pin male	-

Male wiring connector for Bus-IN and Bus-OUT

For PROFINET, EtherCAT, EtherNet/IP and for the subnet

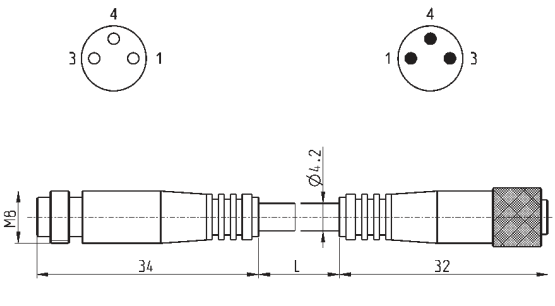


Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-

Extension with M8 connector, 3 pin male / female

Non shielded

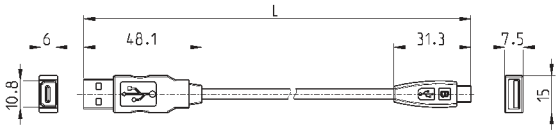
For the connection of the digital input modules ME3-0008 and ME3-0004



Mod.	description	type of connector	connection	L [cable length] (m)
CS-DW03HB-C250	moulded cable	straight	M8 3 poli male / female	2.5
CS-DW03HB-C500	moulded cable	straight	M8 3 pin male / female	5

USB to Micro USB cable Mod. G11W-G12W-2

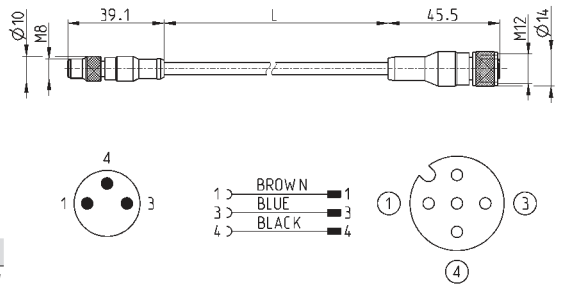
For the hardware configuration
of the Camozzi products



Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2

Adapter cable, M8 3-pin male - M12 4-pin female

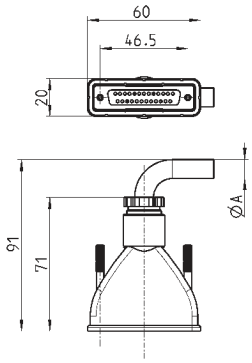
Protection class: IP69K



Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5

Straight Sub-D 25 pin female connector with axial cable

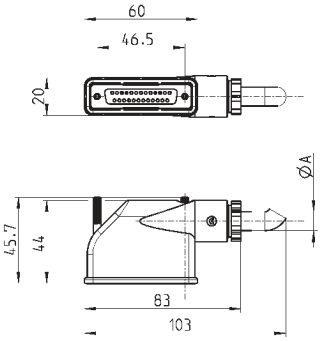
Protection class IP65



Mod.	øA	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with axial cable

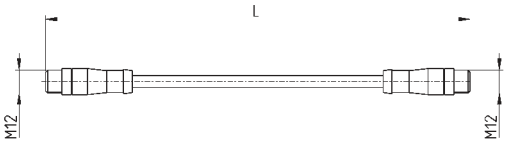
Protection class IP65

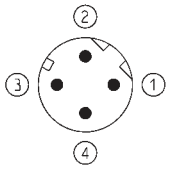


Mod.	øA	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

Cable with straight connectors

For PROFINET, EtherCAT, EtherNet/IP and subnet

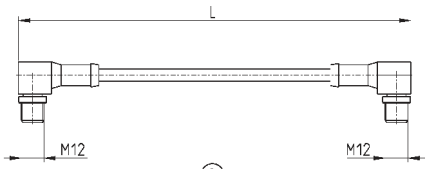


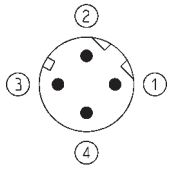


Mod.	description	type of connector	connection	L [cable length] (m)
CS-SB04HB-D100	moulded cable	straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	moulded cable	straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	moulded cable	straight	2x M12 D 4 pin male	10
CS-SB04HB-DD00	moulded cable	straight	2x M12 D 4 pin male	15
CS-SB04HB-DG00	moulded cable	straight	2x M12 D 4 pin male	20
CS-SB04HB-DJ00	moulded cable	straight	2x M12 D 4 pin male	25

Cable with 90° angular connectors

For PROFINET, EtherCAT, EtherNet/IP and subnet

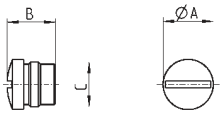




Mod.	description	type of connector	connection	L [cable length] (m)
CS-SC04HB-D100	moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	moulded cable	90°	2x M12 D 4 pin male	10
CS-SC04HB-DD00	moulded cable	90°	2x M12 D 4 pin male	15
CS-SC04HB-DG00	moulded cable	90°	2x M12 D 4 pin male	20
CS-SC04HB-DJ00	moulded cable	90°	2x M12 D 4 pin male	25

M8 and M12 connector cover caps

For digital and analog input/output modules and subnet

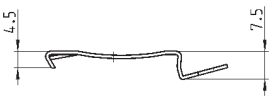


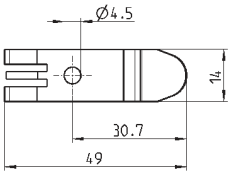
Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12

Mounting brackets for DIN rail

DIN EN 50022 (mm 7,5 x 35 - width 1)

Supplied with:
2x plates
2x screws M4x6 UNI 5931

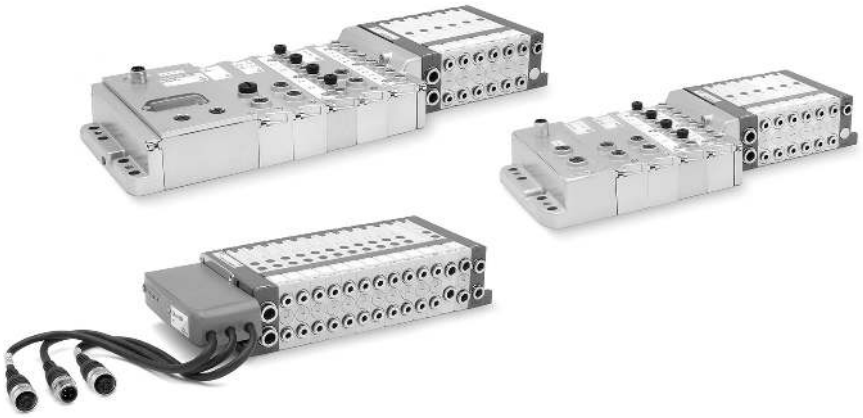




Mod.
PCF-E520

Series F valve islands, Multipole and Fieldbus

Multipole integrated electrical connection (PNP)
Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC
It can interface with all major serial communication protocols.



- Valve size: 12 and 14 mm
- Modularity: single
- Valve positions: from 2 to 24
- Manual override: Push or Push & Turn
- Available Protocols: PROFIBUS-DP, CANopen, DeviceNet, EtherNet/IP, PROFINET, EtherCAT

The Multipole version of Series F valve island can be easily integrated with the accessories of the new Series CX multi-serial module, thus connecting to the different serial nets provided.
It is also possible to manage a standard multipole island by means of a Sub-D adapter or through an integrated node in the island. The typical Series F single modularity allows the installation of up to 24 solenoids on 24 valve positions, even in the Fieldbus version.

The use of technopolymer in this Series has allowed to realize a valve island which is characterized by small dimensions, high flow and reduced weight. The reduced dimensions, its flexibility during the assembly as well as the wide range of valve functions make Series F a highly innovative product which is suitable for several application requirements.

Manuals, instruction sheets and configuration files can be found on catalogue.camozzi.com or on the QR code on the lable of the product.

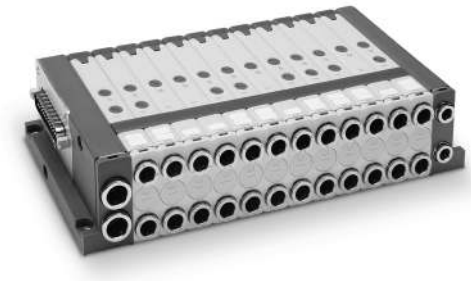
GENERAL CHARACTERISTICS

PNEUMATIC SECTION	
Valve construction	spool with seals
Valve functions	5/2 monostable and bistable 5/3 CC 2x2/2 NO 2x2/2 NC 1x2/2 NC + 1x2/2 NO 2x3/2 NO 2x3/2 NC 1x3/2 NC + 1x3/2 NO
Materials	aluminium spool HNBR seals other seals in NBR brass cartridges technopolymer body and end covers
Connections	Inlets 2 and 4, size 1 (12 mm) = tube ø4; ø6 Inlets 2 and 4, size 2 (14 mm) = tube ø4; ø6; ø8 Supply 1, size 1 and 2 = tube ø8; ø10 Servo pilot 12/14, size 1 and 2 = tube ø6 Exhausts 3/5, size 1 and 2 = tube ø8; ø10 Exhausts 82/84, size 1 and 2 = tube ø6
Temperature	0 ÷ 50°C
Air specifications	Filtered compressed air, non lubricated, class 6.4.4 according to ISO 8573-1:2010 standard. If lubrication is necessary, please use only oils with maximum viscosity of 32 Cst and the version with external servo-pilot supply. The servo-pilot supply air quality class must be 6.4.4 according to ISO 8573-1:2010 standard.
Valve sizes	12 mm 14 mm
Working pressure	- 0,9 ÷ 10 bar
Pilot pressure	3 ÷ 7 bar 4.5 ÷ 7 bar (with working pressure exceeding 6 bar for the versions 2x2/2 and 2x3/2)
Flow rate	250 Nl/min (12 mm) 500 Nl/min (14 mm)
Mounting position	any position
Duty cycle	ED 100%
Protection class (according to EN 60529)	IP40

ELECTRICAL SECTION - MULTIPOLE VERSION	
Supply voltage	24 V DC +/- 10%
Max number of solenoids	24
Max number of valve functions	24 (monostable)
Type of Sub-D connection	Sub-D 25 pin
Max absorption	0.8 A

ELECTRICAL SECTION - FIELDBUS VERSION	
General characteristics	see the section about the Series CX multi-serial module (2.3.50)
Max absorption	digital outputs / analogic outputs and inputs 3 A digital/analogic inputs 3 A
Supply voltage	logic supply 24 V DC +/- 10% power supply 24 V DC +/- 10%
Max number of operable coils	24 on 24 valve functions (monostable)

MULTIPOLE VERSION AND MULTIPOLE WITH SUB-D ADAPTER



In the Multipole version the front position of the 25 pin Sub-D connector makes the connection easier.
The connectors with pre-wired cable, which are available in different lengths and with axial or radial orientation, simplify the electrical connection. The Island can be configured up to a max. of 24 solenoids on 24 valve positions (24 monostable).

It is possible to create zones with differentiated pressure.
It is available with PNP logic connection, internal electrical connections on boards.
The Multipole Island can be connected by means of a Sub-D adapter.
In this way a Multipole Island can be inserted as expansion in the subnet of the Fieldbus version.

VERSIONS: FIELDBUS WITH CPU MODULE AND EXPANSION FIELDBUS

Thanks to the CX multi-serial node and a specific direct interface module with the pneumatic part of the island, Series F can be interfaced with the PROFIBUS-DP, DeviceNet, CANopen, PROFINET, EtherCAT, EtherNet/IP serial protocols. The Fieldbus version with CPU module follows the same configuration rules of the Multipole island and can be equipped with different electrical modules like digital/analog inputs/outputs of 0-10 V and 4-20 mA, as well as with Initial subnet modules.

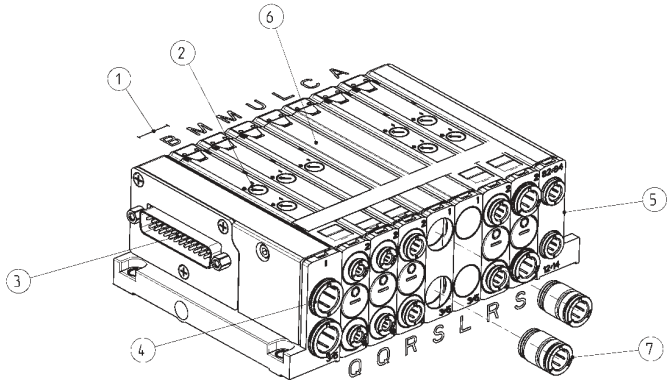
It is possible to insert Initial Subnet Modules in the version with CPU module. These Modules enable to create a subnet with tree structure or in series. On the subnet you can connect Expansion Islands. These expansions have the same possibilities to use the different electric modules, like digital and analog inputs and outputs and further Initial Subnet Modules. Also with this version the same rules as the CPU module and Multipole apply.

CODING EXAMPLE - MULTIPOLE VERSION

F	P	2	R	M	T	A	-	MB2CMUL2B	-	2QR3SLQR

F	SERIES
P	TYPE: P = pneumatic A = accessories
2	SIZE: 1 = 12 mm 2 = 14 mm
R	MANUAL OVERRIDE: P = pressure actuation control R = actuation control with push & turn device
M	ELECTRICAL CONNECTION: M = multipole
T	CARTRIDGES FOR LEFT TERMINAL: S = tube Ø 8 T = tube Ø 10 Note: the cartdriges for the right terminal are for tube Ø 6.
A	SERVO-PILOT SUPPLY: A = internal B = external
MB2CMUL2B	SOLENOID VALVES AND ADDITIONAL PLATES *: M = 5/2 monostable D = 5/2 monostable with bistable electric board B = 5/2 bistable C = 2x3/2 NC A = 2x3/2 NO G = 3/2 NC + 3/2 NO E = 2x2/2 NC F = 2x2/2 NO I = 2/2 NC + 2/2 NO V = 5/3 CC L = free position with passing electric board W = free position with bistable electric board Z = free position with monostable electric board X = supplementary supply and exhaust T = separated supply and exhaust U = separated supply, supplementary exhaust K = supplementary supply, separated exhaust
2QR3SLQR	CARTRIDGES FOR SOLENOID VALVES AND ADDITIONAL PLATES *: Q = tube Ø 4 R = tube Ø 6 S = tube Ø 8 (not for Size 1) L = free position (no cartridges) W = free position with bistable electric board (no cartridges) Z = free position with monostable electric board (no cartridges)
	* in case of identical and consecutive codes, in the choices "SOLENOID VALVES AND ADDITIONAL PLATES" and "CARTRIDGES FOR SOLENOID VALVES AND ADDITIONAL PLATES", replace the letters with the number. With the choice "CARTRIDGES FOR SOLENOID VALVES AND ADDITIONAL PLATES" both of the following connections are defined: 2 and 4; 1 and 3/5. Examples: FP2RMTA-MBCCMULMMMBB-QQRSSLRRRQRR FP2RMTA-MB2CMUL3M2B-2QR2SL3RQ2R

CODING - MULTIPOLE VERSION



1 2 3 4 5 6 7

F P 2 R M T A - B 2 M U L C A - 2 Q R S L R S

FP...

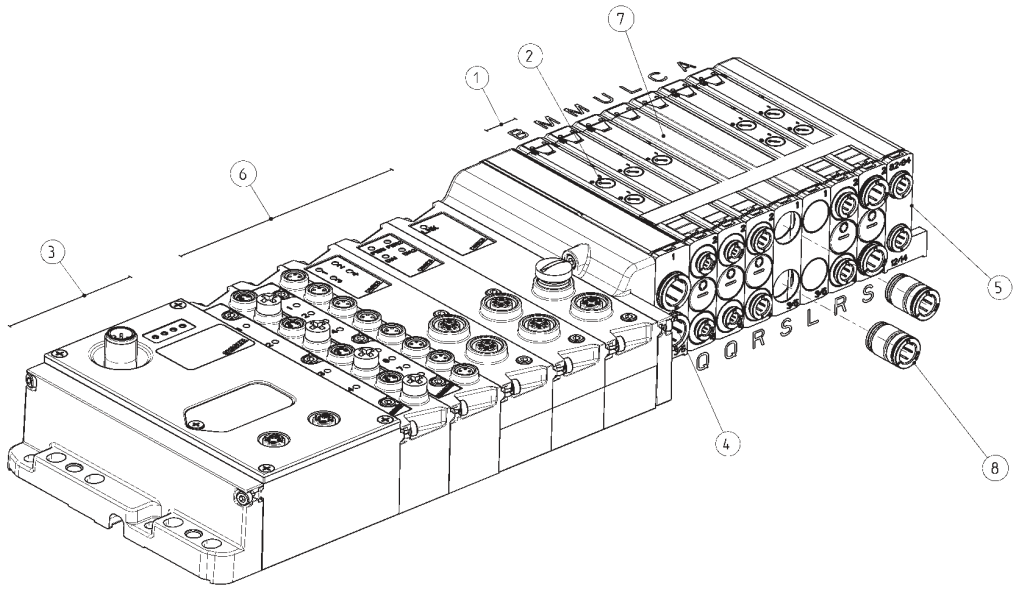
SIZE (1)	MANUAL OVERRIDE (2)	ELECTRICAL CONNECTION (3)	CARTRIDGES for LEFT TERMINAL (4)	SERVO-PILOT SUPPLY (5)	SOLENOID VALVES and ADDITIONAL PLATES (6)	CARTRIDGES for SOLENOID VALVES and ADDITIONAL PLATES (7)
1	P	M	S	A	M	Q
2	R		T	B	D	R
					B	S
					C	L
					A	W
					G	Z
					E	
					F	
					I	
					V	
					L	
					W	
					Z	
					X	
					T	
					U	
					K	

CODING EXAMPLE - FIELDBUS VERSION

F	P	2	R	01	T	A	-	ABCR	-	MB2CMUL2B	-	2QR3SLQR

F	SERIES
P	TYPE: P = pneumatic A = accessories
2	SIZE: 1 = 12 mm 2 = 14 mm
R	MANUAL OVERRIDE: P = pressure actuation control R = actuation control with push & turn device
01	PROTOCOL: 01 = PROFIBUS-DP 02 = DeviceNet 03 = CANopen 04 = EtherNet/IP 05 = EtherCAT 06 = PROFINET 99 = Expansion Module
T	CARTRIDGES FOR PNEUMATIC/ELECTRICAL TERMINAL: S = tube Ø 8 T = tube Ø 10 Note: the cartdriges for the right terminal are for tube Ø 6.
A	SERVO-PILOT SUPPLY: A = internal B = external
ABCR	INPUT / OUTPUT MODULES: 0 = no module A = 8 digital inputs M8 B = 4 digital inputs M8 C = 2 analog inputs 4-20 mA D = 2 analog inputs 0-10 V E = 1 analog input 4-20 mA + 1 input 0-10 V Q = 4 M12 duo digital outputs R = 2 analog outputs 4-20 mA T = 2 analog outputs 0-10 V U = 1 analog output 4-20 mA + 1 output 0-10 V V = 1 analog output 4-20 mA + 1 input 0-10 V Z = 1 analog output 4-20 mA + 1 input 4-20 mA K = 1 analog output 0-10 V + 1 input 0-10 V Y = 1 analog output 0-10 V + 1 input 4-20 mA S = Initial subnet module
MB2CMUL2B	SOLENOID VALVES AND ADDITIONAL PLATES: M = 5/2 monostable D = 5/2 monostable with bistable electric board B = 5/2 bistable C = 2x3/2 NC A = 2x3/2 NO G = 3/2 NC + 3/2 NO E = 2x2/2 NC F = 2x2/2 NO I = 2/2 NC + 2/2 NO V = 5/3 CC L = free position with passing electric board W = free position with bistable electric board Z = free position with monostable electric board X = supplementary supply and exhaust T = separated supply and exhaust U = separated supply, supplementary exhaust K = supplementary supply, separated exhaust
2QR3SLQR	CARTRIDGES FOR SOLENOID VALVES AND ADDITIONAL PLATES: Q = tube Ø 4 R = tube Ø 6 S = tube Ø 8 (not for Size 1) L = free position (no cartridges) W = free position with bistable electric board (no cartridges) Z = free position with monostable electric board (no cartridges)

CODING - FIELDBUS VERSION



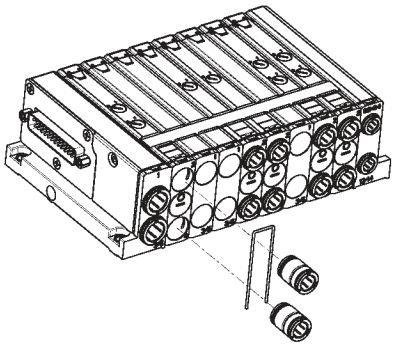
1	2	3	4	5		6					7							8						
F	P	2	R	01	T	A	-	A	B	Q	R	-	B	2	M	U	L	C	A	-	2	Q	R	S	L	R	S

FP...

SIZE (1)	MANUAL OVERRIDE (2)	PROTOCOL (3)	CARTRIDGES for LEFT TERMINAL (4)	SERVO-PILOT SUPPLY (5)	INPUT/OUTPUT MODULES (6)	SOLENOID VALVES and ADDITIONAL PLATES (7)	CARTRIDGES for SOLENOID VALVES and ADDITIONAL PLATES (8)
1	P	01	S	A	0	M	Q
2	R	02	T	B	A	D	R
		03			B	B	S
		04			C	C	L
		05			D	A	W
		06			E	G	Z
		99			Q	E	
					R	F	
					T	I	
					U	V	
					V	L	
					Z	W	
					K	Z	
					Y	X	
					S	T	
						U	
						K	

INTERCHANGEABLE CONNECTIONS

Thanks to a fixing clip the cartridge fittings can be substituted with another one according to the size of the tube that has to be connected: Ø4, Ø6 and Ø8 for solenoid valves and Ø8, Ø10 for supply and exhaust plates.

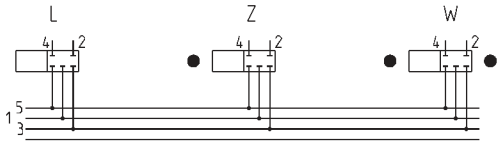


TYPE OF BOARDS ON INTERMEDIATE PLATES

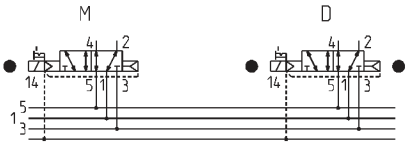
The solenoid valves Mod. M are equipped with an electrical board using a single signal. This enables to take full advantage of the characteristic of the Sub-D connector being able to connect up to 24 monostable valves.
To avoid that, in case of a change in the valve island, the addresses of the electrical coils positioned after the modification would change too, for example by replacing a monostable valve with a bistable one, the version with Cod. D is available and corresponds to a monostable valve equipped with a board that occupies two electrical signals.

The free position Cod. L is also available in the Z and W versions.

Cod. L: free position, no electrical signals are used
Cod. Z: free position with board
with 1 electrical signal (not used)
Cod. W: free position with board
with 2 electrical signals (not used)

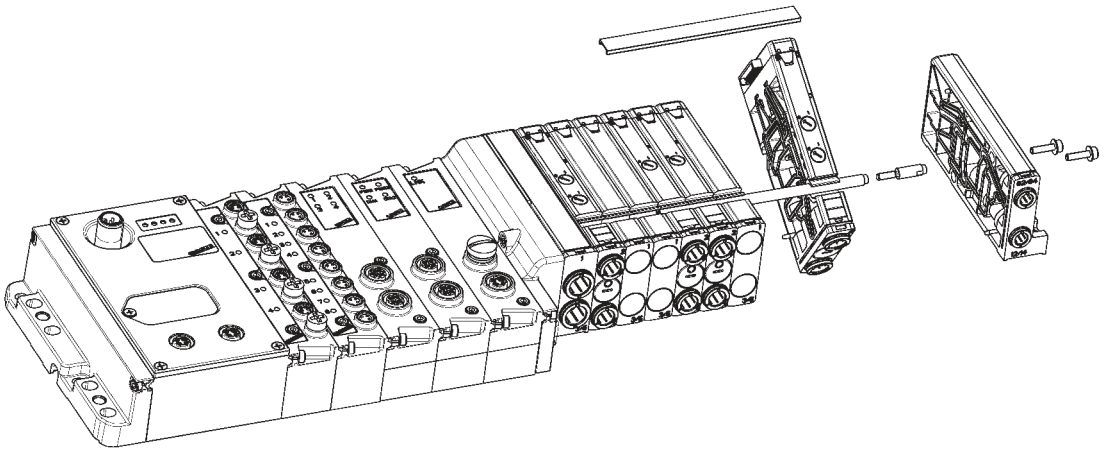


Cod. M: 5/2-way monostable valve with board
with 1 electrical signal
Cod. D: 5/2-way monostable valve with board
with 2 electrical signals (one is not used)

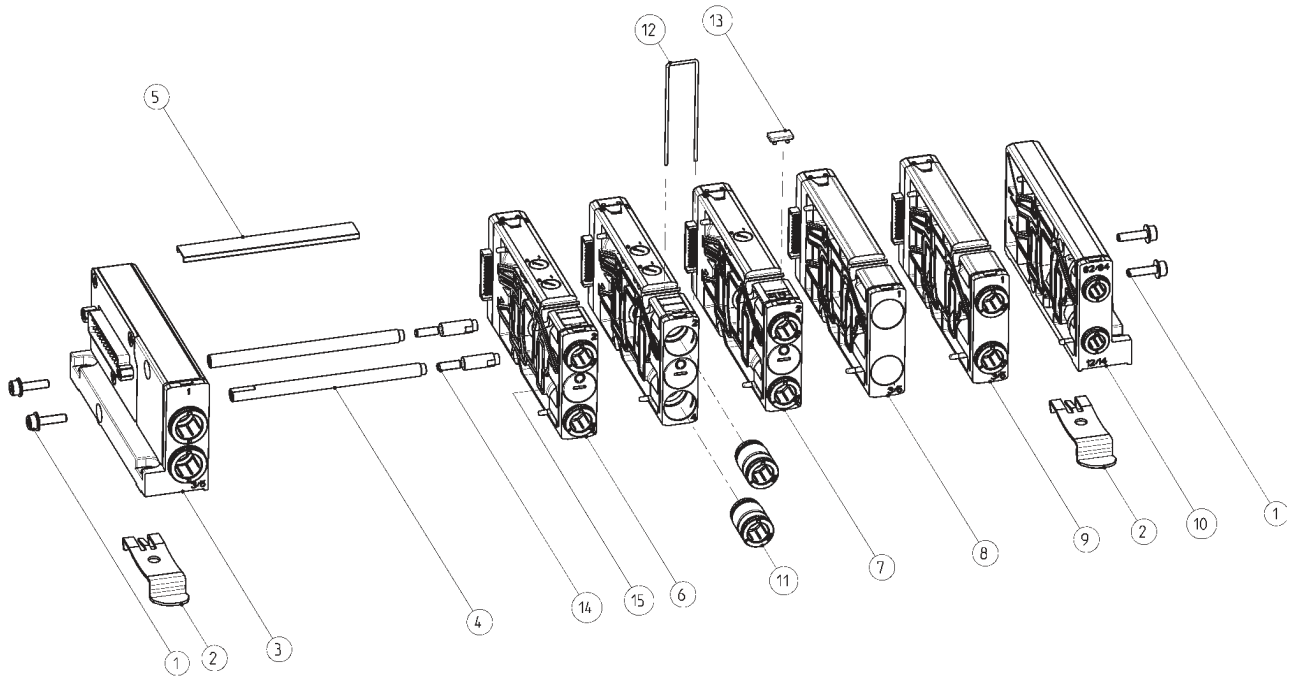


HOW TO MODIFY THE VALVE ISLAND (example)

In order to integrate or modify the valve island, it is enough to loosen the tie-rods, separate the valve function that has to be replaced and turn it so that it can be taken off.
Tie-rods can be supplied with even positions from 2 to 24 (see the following pages).
A single position joint bolt is supplied in case of a valve island with odd positions (see the following pages).
This operation can be performed on both versions with integrated serial node or with expansion module.

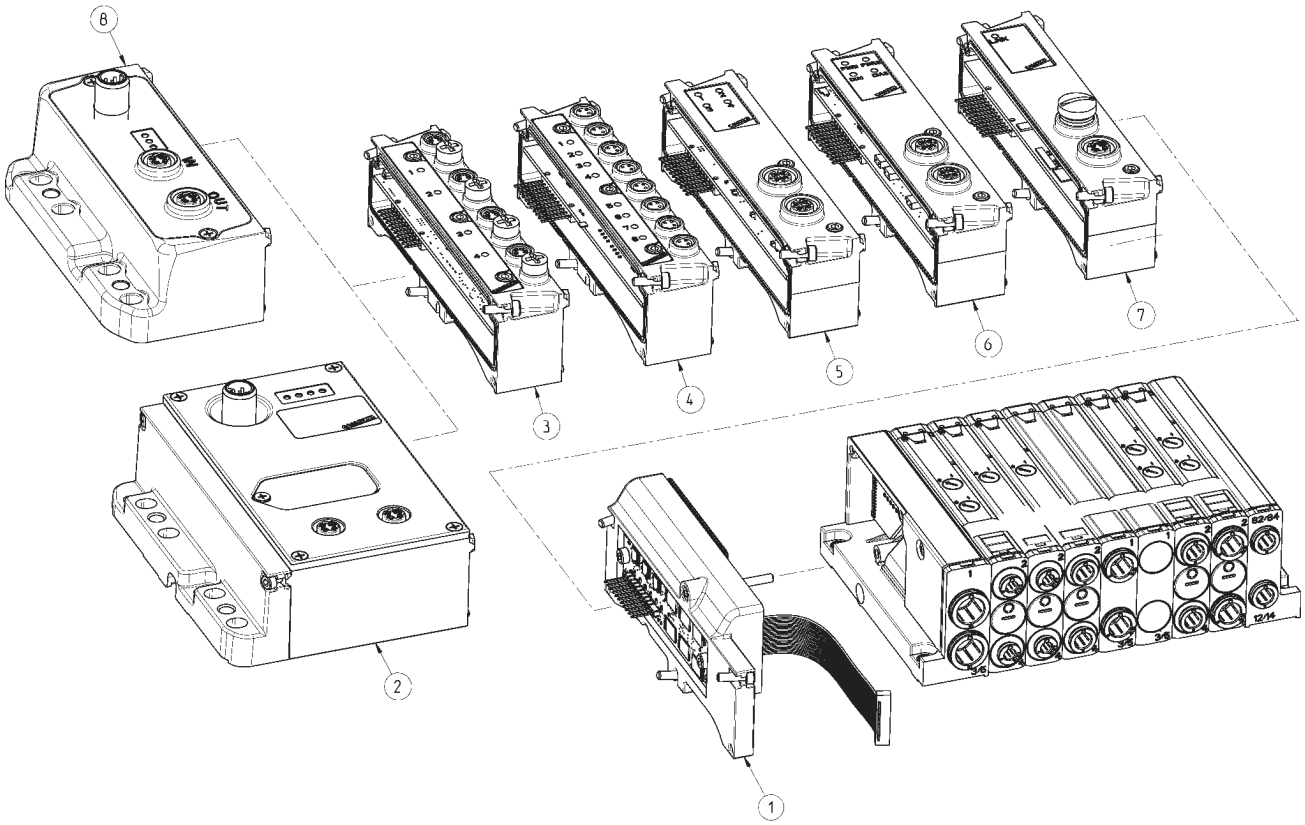


MULTIPOLE version - COMPONENTS



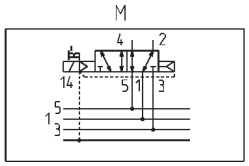
LIST OF COMPONENTS	
1	Grip screws with built-in washer
2	Bracket for the DIN rail connection
3	Left terminal
4	Tie-rods
5	Tie-rod plastic cover
6	Bistable solenoid valve
7	Monostable solenoid valve
8	Intermediate plate for free position
9	Intermediate plate for pressure zones with supplementary inlet and exhaust
10	Right terminal
11	Interchangeable cartdrige fittings
12	Fixing clip for the cartdrige fittings
13	Identification plates
14	Joint bolt for odd positions
15	Interface seal that cannot be lost

INDIVIDUAL FIELDBUS version and EXPANSION - COMPONENTS

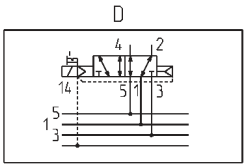


LIST OF COMPONENTS	
1	Direct interface with CX
2	CPU Series CX
3	4 digital Inputs module
4	8 digital Inputs module
5	4 digital Outputs module
6	Analog I/O module
7	Initial subnet module
8	Expansion module

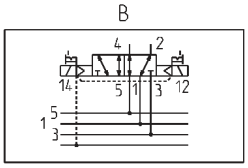
AVAILABLE FUNCTIONS - SOLENOID VALVES SYMBOLS for FP..R - manual override WITH push&turn device



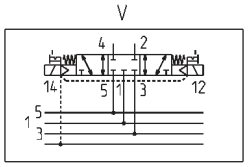
M = 5/2, monostable



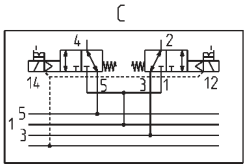
D = 5/2, monostable with bistable board



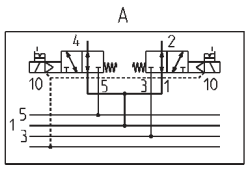
B = 5/2, bistable



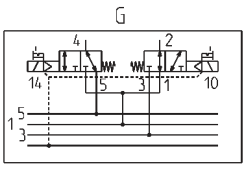
V = 5/3, Centres Closed



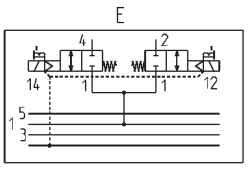
C = 2x3/2 NC



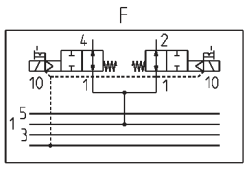
A = 2x3/2 NO



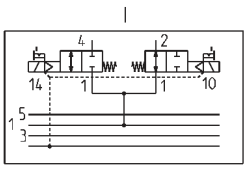
G = 1x3/2 NC +1x3/2 NO



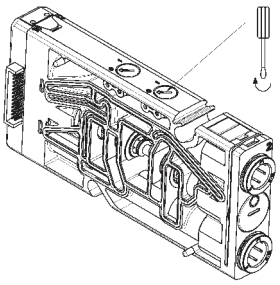
E = 2x2/2 NC



F = 2x2/2 NO

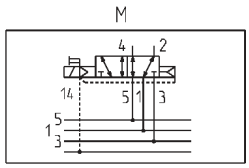


I = 1x2/2 NC + 1x2/2 NO

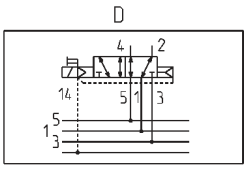


Manual override, version R: pressure actuation control with PUSH & TURN device.

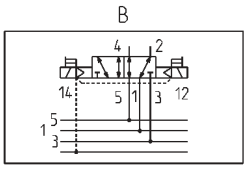
AVAILABLE FUNCTIONS - SOLENOID VALVES SYMBOLS for FP..P - manual override WITHOUT push&turn device



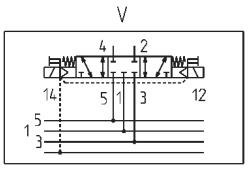
M = 5/2, monostable



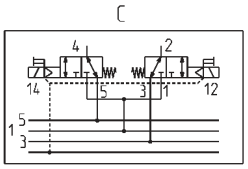
D = 5/2, monostable with bistable board



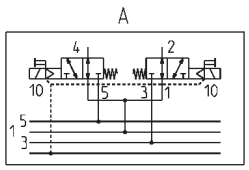
B = 5/2, bistable



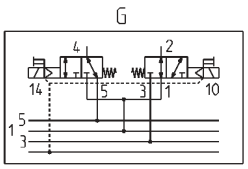
V = 5/3, Centres Closed



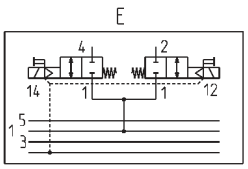
C = 2x3/2 NC



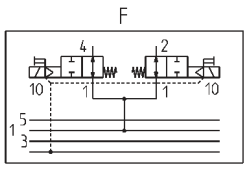
A = 2x3/2 NO



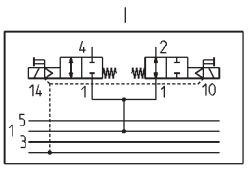
G = 1x3/2 NC +1x3/2 NO



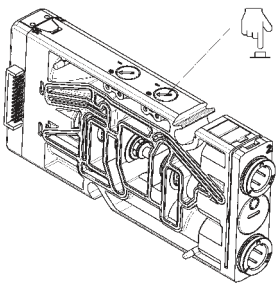
E = 2x2/2 NC



F = 2x2/2 NO



I = 1x2/2 NC + 1x2/2 NO

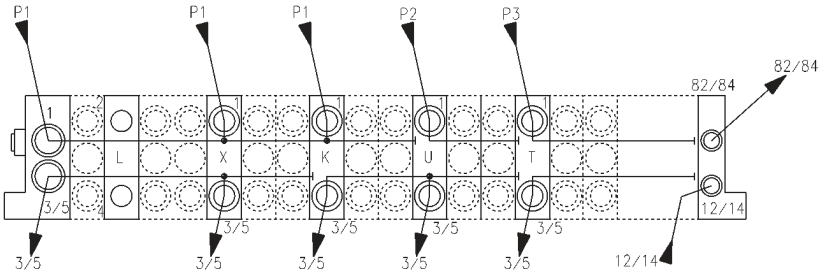


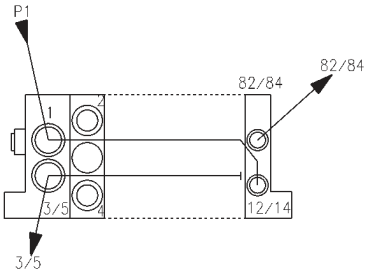
Manual override, version P: pressure actuation control without PUSH & TURN device (PUSH only).

AVAILABLE FUNCTIONS - INTERMEDIATE AND TERMINAL PLATES

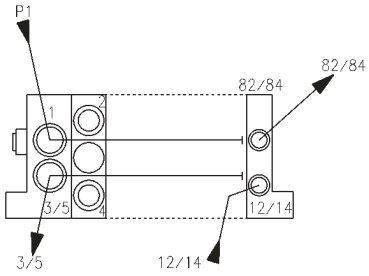
Example of valve island with differentiated pressures and exhausts.

DRAWING LEGEND:
A = internal servo-pilot
B = external servo-pilot
X = supplementary supply and exhaust
K = supplementary supply, separated exhaust
U = separated supply, supplementary exhaust
T = separated supply and exhaust
L = free position

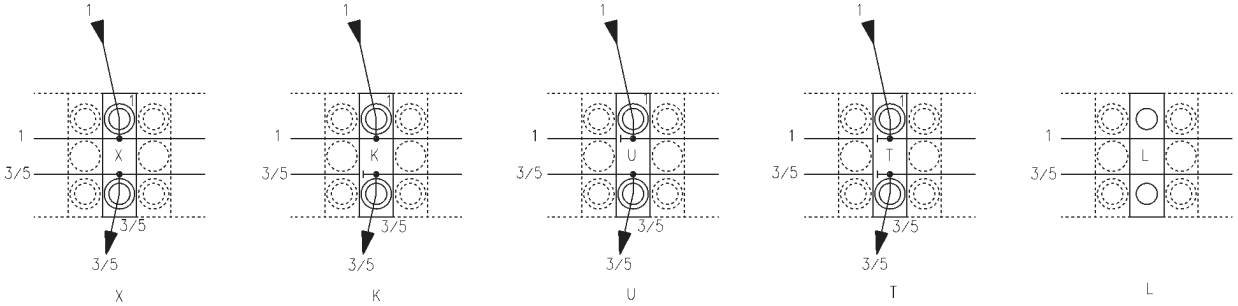




A

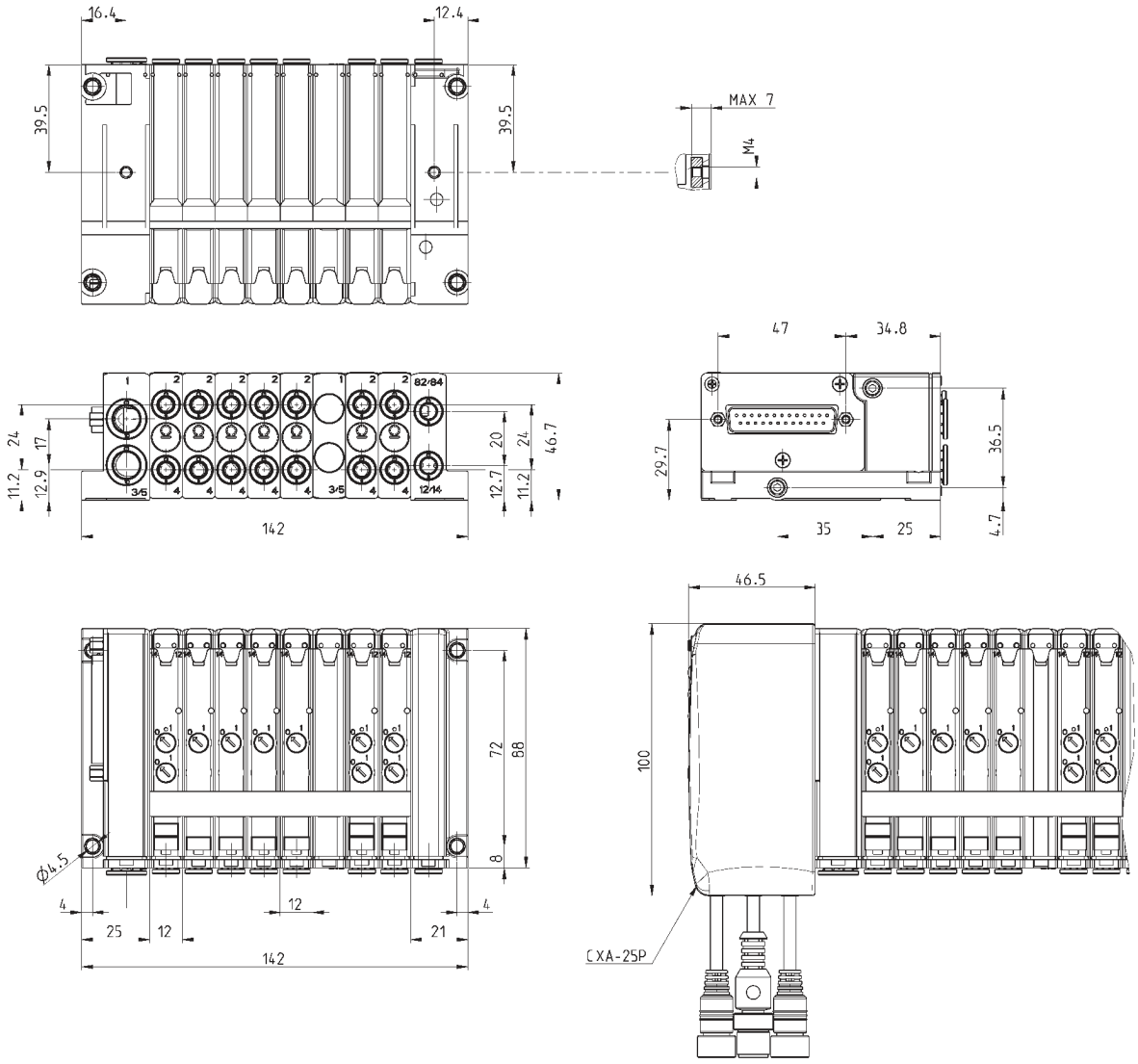


B

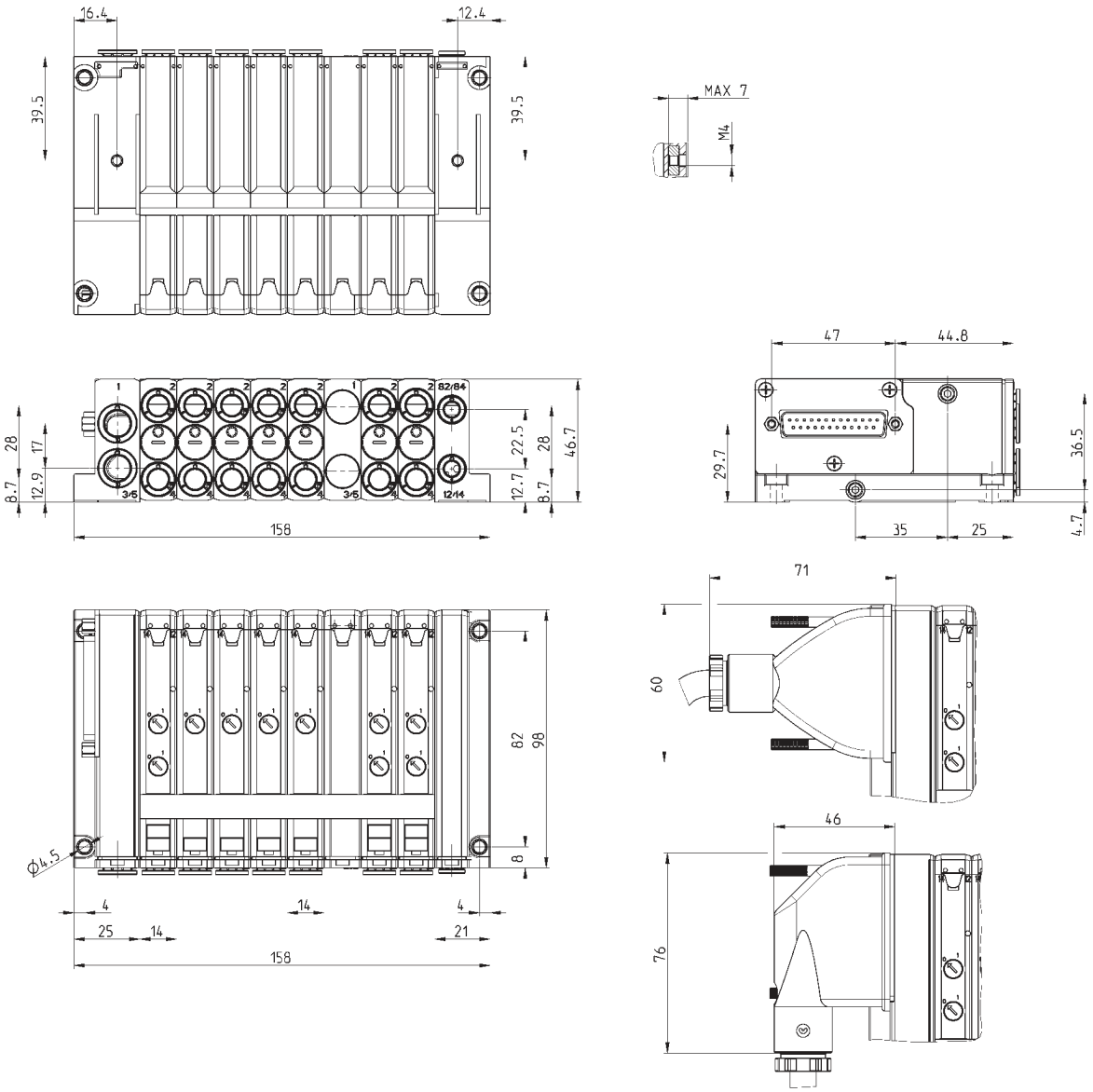


X K U T L

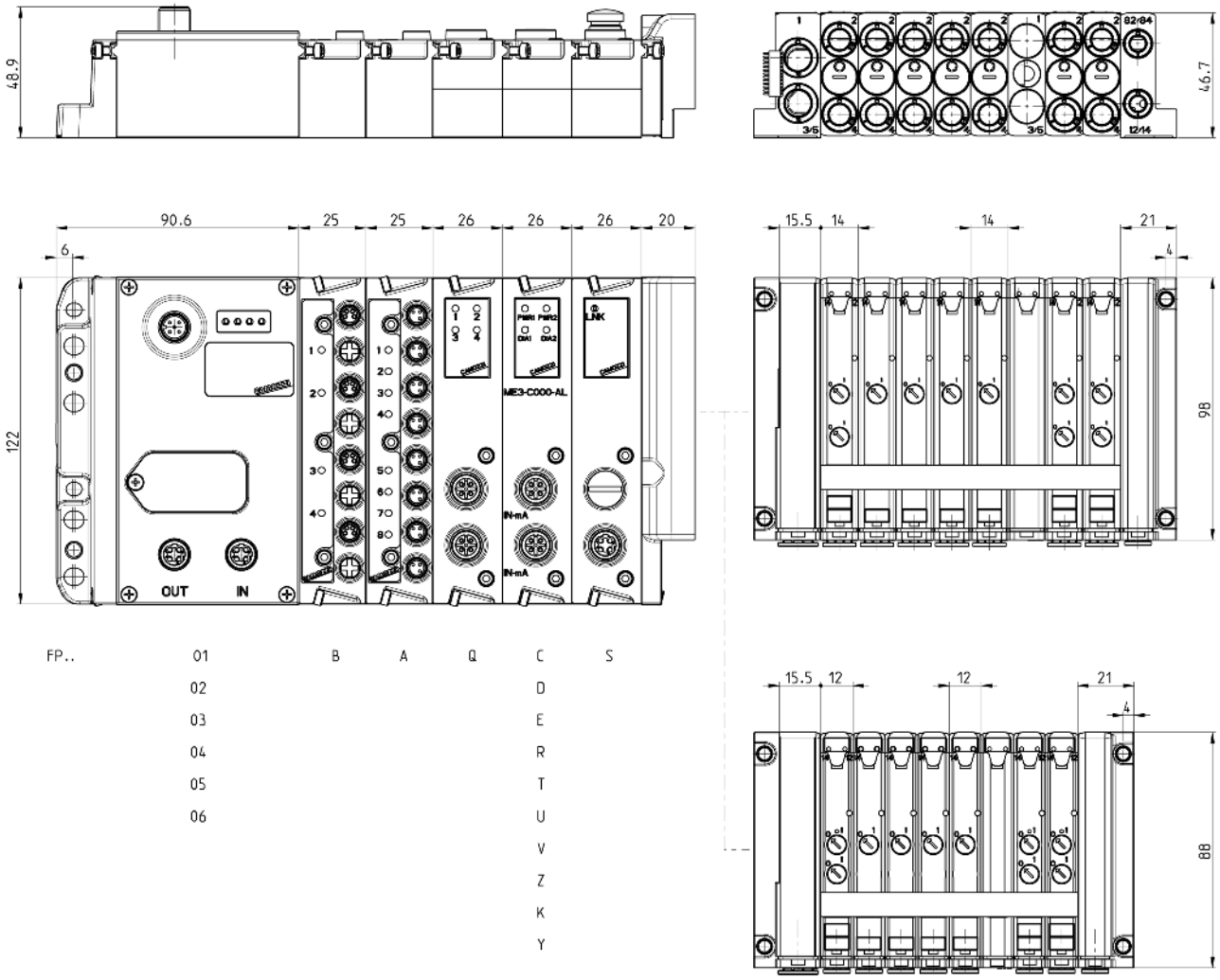
MULTIPOLE version - DIMENSIONS of size 12mm



MULTIPOLE version - DIMENSIONS of size 14mm

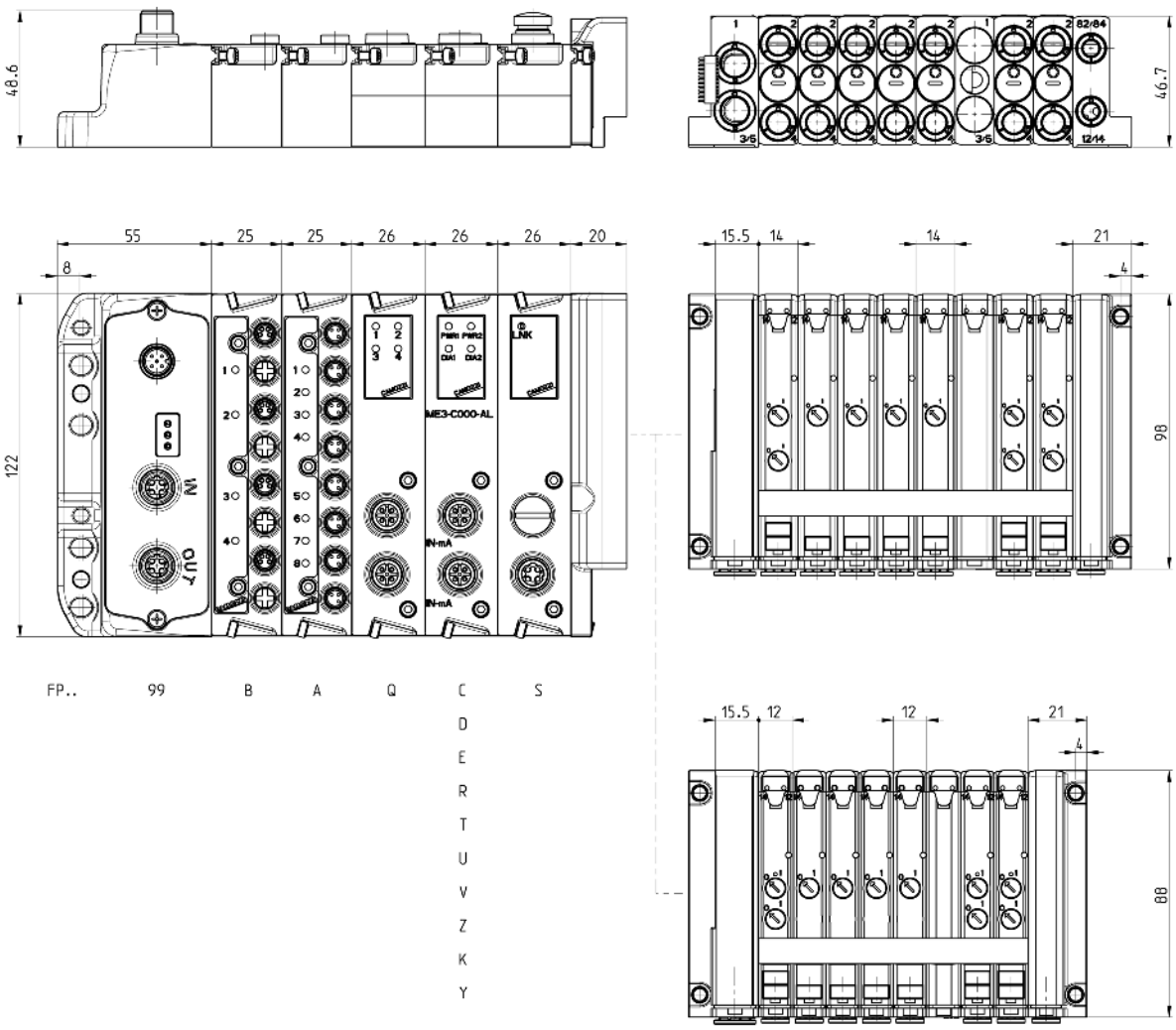


INDIVIDUAL FIELDBUS version - DIMENSIONS

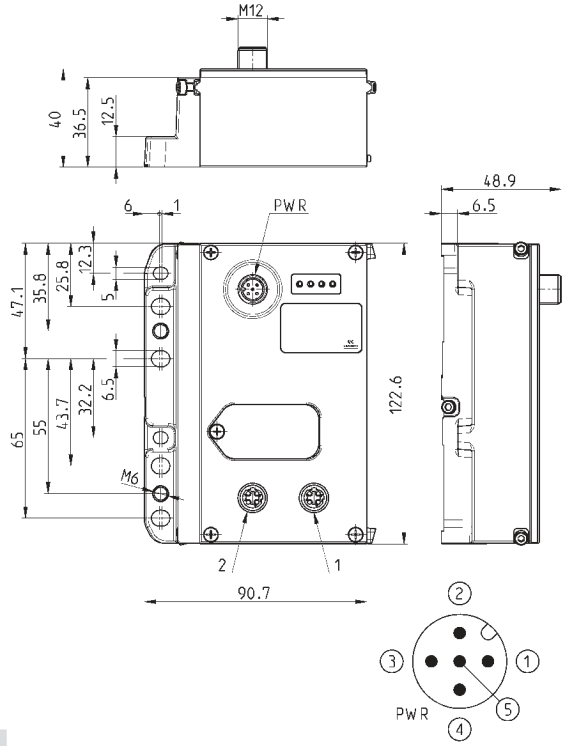


FP..	01	B	A	Q	C	S
	02				D	
	03				E	
	04				R	
	05				T	
	06				U	
					V	
					Z	
					K	
					Y	

EXPANSION of the FIELDBUS version - DIMENSIONS



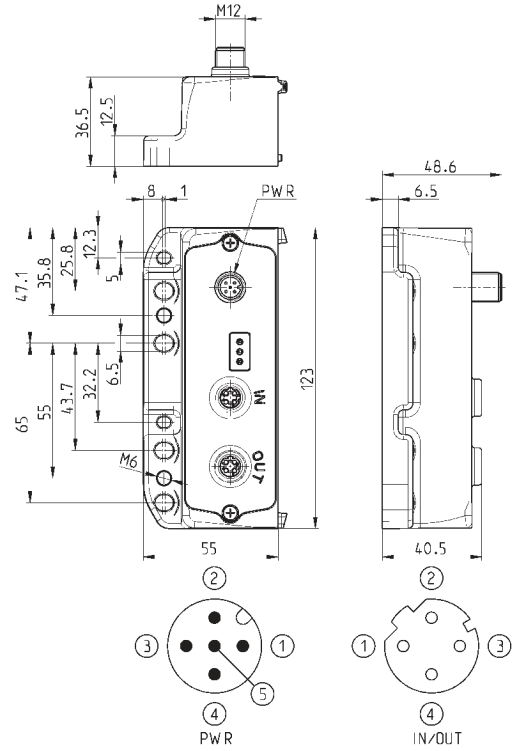
CPU Module - pin configuration



Mod.	Coding reference	Fieldbus Protocol	2	1	Bus-IN connector	Bus-OUT connector
CX01-0-0	01	PROFIBUS	Bus-IN	Bus-OUT	M12 B 5 pin male	M12 B 5 pin female
CX02-0-0	02	DeviceNet	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX03-0-0	03	CANopen	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX04-0-0	04	EtherNet/IP	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX05-0-0	05	EtherCAT	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX06-0-0	06	PROFINET	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female

Expansion Module - pin configuration

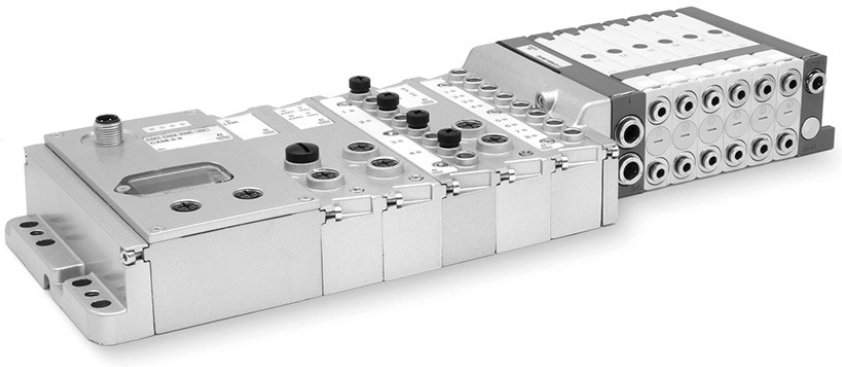
Note: to connect the Expansion with the subnet, we recommend the use of cables Mod. CS-SB04HB-... or CS-SC04HB-...



Mod.	Coding reference	Fieldbus Protocol	Bus-IN and Bus-OUT connector
CX99-0-0	99	Subnet expansion	M12 D 5 pin female

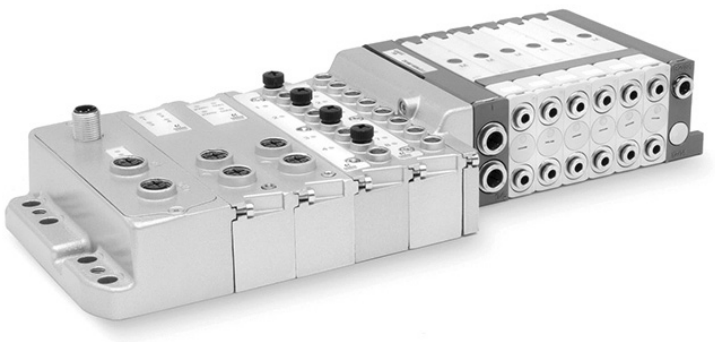
CPU Module - Characteristics

It is a slave node of the main PROFIBUS, CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFINET network and the Master module of the subnet. All modules provided can be connected only on the right side of the CPU module, like the digital/analog inputs/outputs, direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet. It has its own M12 A 4 pin male connection to supply the modules connected, distinguishing both logic supply and power supply. Two M12 connections for Bus-IN and Bus-OUT of the main network, which M12 connection will take over the relative specifications according to the choosen protocol.
The addressing is performed by means of the Rotary Switch for the protocols with this feature, while for Ethernet protocols addressing is performed by means of the protocol itself. Leds indicate the working state. A maximum number of 1024 inputs and 1024 outputs can be managed.



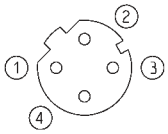
Expansion Module - Characteristics

At its right side, different modules can be connected like the digital/analog inputs/outputs, the direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet to re-amplify it or to create new branches. It has its own M12 A 4 pin male connection to supply the devices connected, distinguishing both logic supply and power supply. It has two M12 D 5 pin female connections for Bus-IN and Bus-OUT connection of the subnet. Leds indicate the working state. The valve island equipped with the Expansion Module can be used only in presence of a subnet.



Initial subnet module Mod. ME3-0000-SL

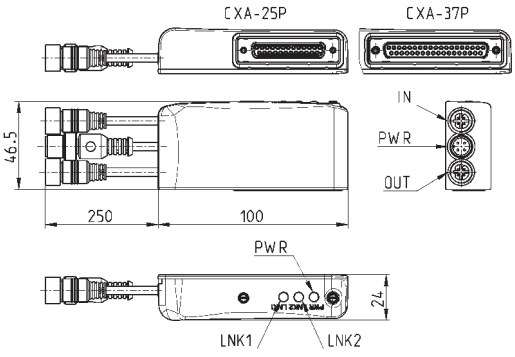
This module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices. Every subnet can have an extension of maximum 100 metres, with a maximum of 8 interruptions. Up to maximum 5 initial modules can be connected, one aside another or along the subnet in order to create a tree structure, in series or both, in order to optimize the length of the cables and the topology of the subnet in different applications. The module is equipped with the Bus-OUT connection only of subnet type M12 D 4 pin female.



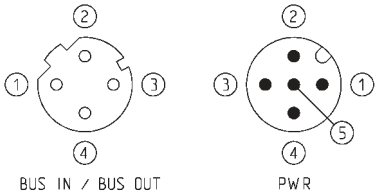
Mod.	Coding reference	Bus-OUT connection	Max number of modules for subnet	Max extension of subnet per module
ME3-0000-SL	S	M12D 4 pin female	5	100 m

Sub-D adaptor module 25 pin Mod. CXA-25P

It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D 25 pin connection. It can manage up to a maximum of 24 Output. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 4 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.



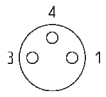
Led 1 = Yellow LNK1
Led 2 = Yellow LNK2
Led 3 = Green PWR, supply present and OK



Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W

Digital input Module Mod. ME3-0800-DC and ME3-0400-DC

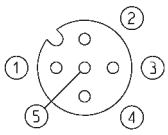
The Digital input module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet.
It has 8 or 4 M8 3 pin connections.



Mod.	Coding reference	Number of digital inputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Overvoltage protection	Absorption	Type of signal	Protection class	Operating temperature	Weight
ME3-0800-DC	A	8	M8 3 pin female	8	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 ÷ 50°C	110 g
ME3-0400-DC	B	4	M8 3 pin female	4	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 ÷ 50°C	110 g

Analog input/output module Mod. ME3-****-AL

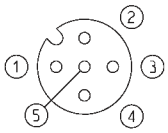
The analog input/output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections and it can be configured as 2 analog Outputs or 2 Inputs or 1 Input + 1 Output. Every analog output or input has a 12 bit resolution for both inputs and outputs available in the versions from 0-10 V DC and from 4-20mA.
The refreshment time of the analog devices is submitted to the delay of the subnet and therefore to its topology. An average delay is less than 6 ms, to which the delay of the main network managed by the PLC has to be added.



Mod.	Coding reference	Number of analog inputs	Number of analog outputs	Connection
ME3-C000-AL	C	2 inputs 4-20 mA	-	2x M12 A 5 pin female
ME3-D000-AL	D	2 inputs 0-10 V	-	2x M12 A 5 pin female
ME3-E000-AL	E	1 input 4-20 mA + 1 input 0-10 V	-	2x M12 A 5 pin female
ME3-00U0-AL	U	-	1 output 4-20 mA + 1 output 0-10 V	2x M12 A 5 pin female
ME3-00R0-AL	R	-	2 outputs 4-20 mA	2x M12 A 5 pin female
ME3-00T0-AL	T	-	2 outputs 0-10 V	2x M12 A 5 pin female
ME3-00Z0-AL	Z	1 input 4-20 mA	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00K0-AL	K	1 input 0-10 V	1 output 0-10 V	2x M12 A 5 pin female
ME3-00V0-AL	V	1 input 0-10 V	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00Y0-AL	Y	1 input 4-20 mA	1 output 0-10 V	2x M12 A 5 pin female

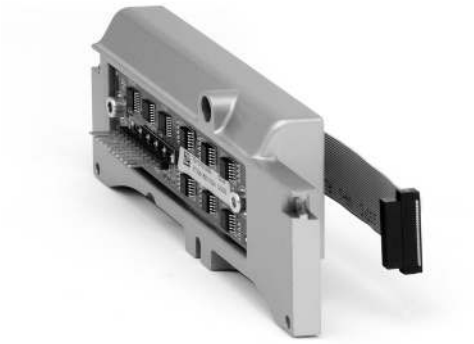
Digital power output module Mod. ME3-0004-DL

The digital output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections, each connection can manage 2 digital outputs and can provide a maximum of 10 W to 24 V DC. The device is useful to pilot a bistable valve or two monostable valves for each connector, or to activate the electric coils or other electric devices with maximum absorption of 10 W to 24 V DC. Connecting two outputs to one electric device only and activating them simultaneously, it is possible to provide maximum 20 W to 24 V DC.



Mod.	Coding reference	Number of digital outputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Max power for M12 connector	Max power for digital output	Type of signal	Protection class	Operating temperature	Weight
ME3-0004-DL	Q	4	M12 A 5 pin female	2	122 x 25 mm	1 yellow led for each output	24 V DC	20 W	10 W	NPN	IP65	0 ÷ 50°C	100 g

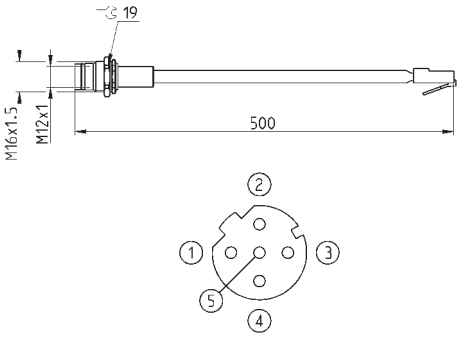
Electric interface module for Fieldbus version



Mod.
ME3-00F0-DI

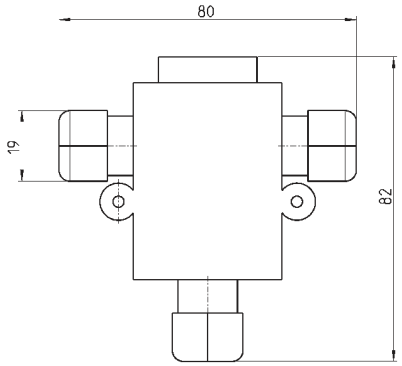
Adaptor and panel mount for Ethernet RJ45 to M12 D networks

For PROFINET, EtherCAT, EtherNet/IP



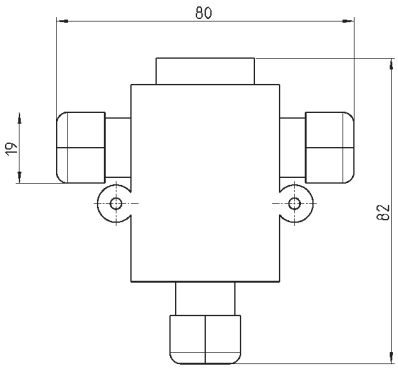
Mod.	description	type of connector	connection	cable length (m)
CS-SE04HB-F050	moulded cable	straight	RJ45 male, M12 D 4 pin female - Pin 5 is not connected	0.5

Profibus-DP data line tee



Mod.
CS-AA03EC

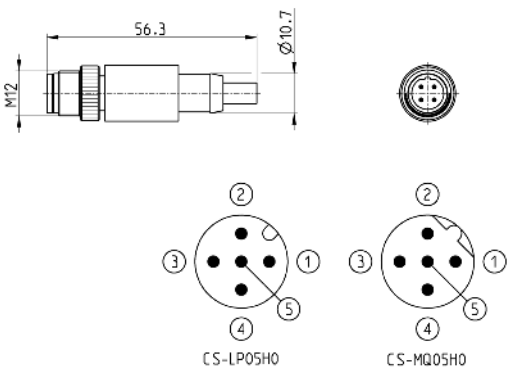
CANopen / DeviceNet data line tee



CS-AA05EC

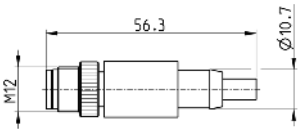
M12 male terminating resistor

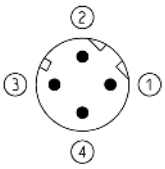
For PROFIBUS, CANopen, DeviceNet



Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male - Pin 5 is not connected	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male - Pin 5 is connected	CANOpen / DeviceNet

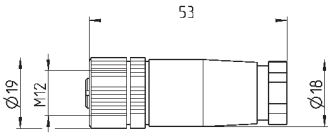
Subnet terminating resistor

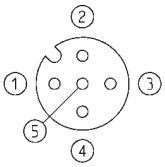




Mod.	description	type of connector	connection	Protocol
CS-SU04H0	moulded terminating resistor	straight	M12 D 4 pin	subnet

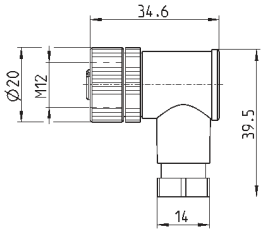
Straight connector for power supply

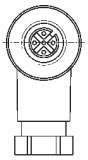


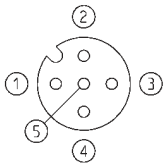


Mod.	description	type of connector	connection		cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female - is not connected	Pin 5	-

Angular connector for power supply

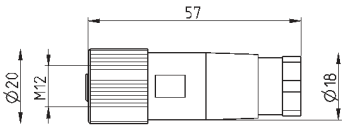


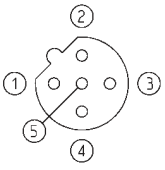




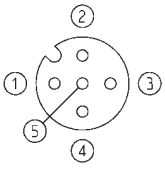
Mod.	description	type of connector	connection		cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female - 5 is not connected	Pin	-

Straight female M12 connectors for Bus-IN





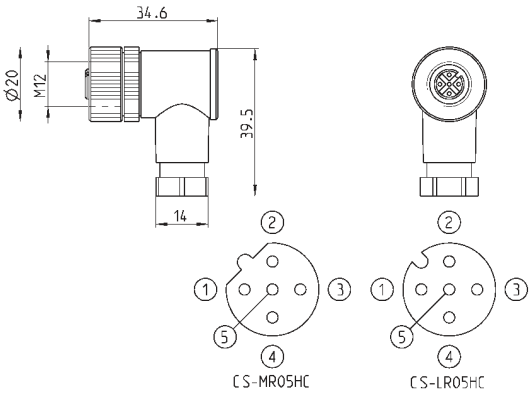
CS-MF05HC



CS-LF05HC

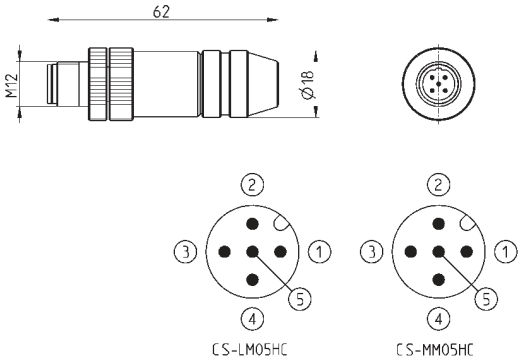
Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

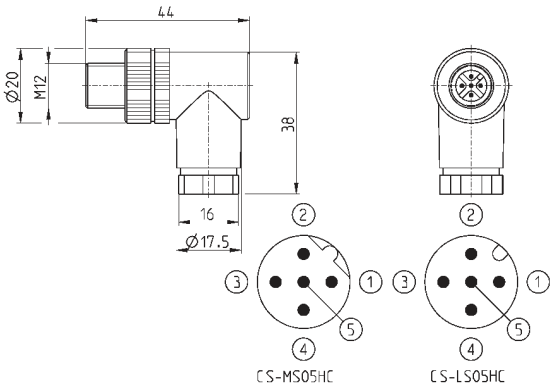
Straight male M12 connectors for Bus-OUT



Mod.	description	type of connector	connection	Protocol
CS-LM05HC	for metal wiring	straight	M12 A 5 pin male	CANopen / DeviceNet
CS-MM05HC	for metal wiring	straight	M12 B 5 pin male	PROFIBUS

Angular 90° male M12 connectors for Bus-OUT

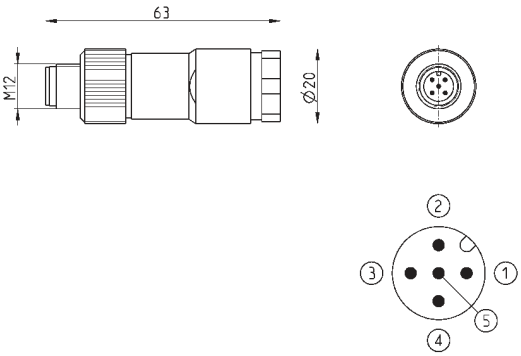
The Mod. CS-LS05HC can also be used for the connection of the digital output modules and of the analog input and output modules.



Mod.	description	type of connector	connection	Protocol
CS-LS05HC	for wiring	90°	M12 A 5 pin male	CANopen / DeviceNet
CS-MS05HC	for wiring	90°	M12 B 5 pin male	PROFIBUS

5 pin male straight M12 DUO connector

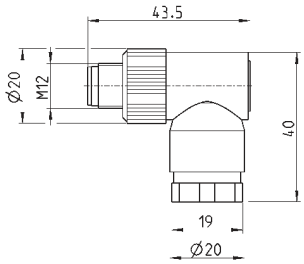
For the connection of the digital output modules and analog input/output modules.

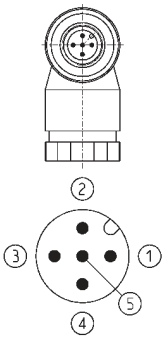


Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

5 pin male angular M12 DUO connector

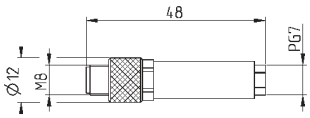
For the connection of the digital output modules ME3-0004-DL





Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

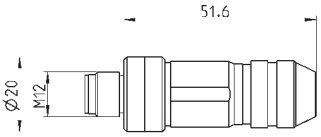
3 pin male M8 wiring connector for digital input modules

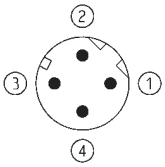


Mod.	description	type of connector	connection	cable length (m)
CS-DM03HB	for wiring	straight	M8 3 pin male	-

Male wiring connector for Bus-IN and Bus-OUT

For PROFINET, EtherCAT, EtherNet/IP and for the subnet



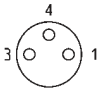


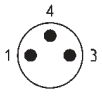
Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-

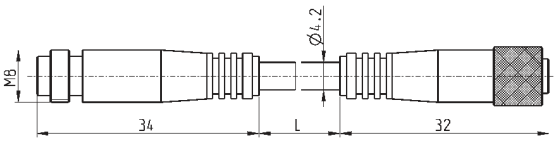
Extension with M8 connector, 3 pin male / female

Non shielded

For the connection of the digital input modules ME3-0008 and ME3-0004



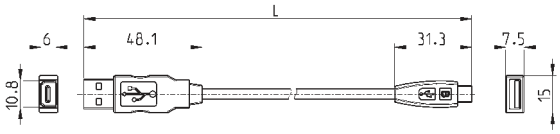




Mod.	description	type of connector	connection	L [cable length] (m)
CS-DW03HB-C250	moulded cable	straight	M8 3 pin male / female	2.5
CS-DW03HB-C500	moulded cable	straight	M8 3 pin male / female	5

USB to Micro USB cable Mod. G11W-G12W-2

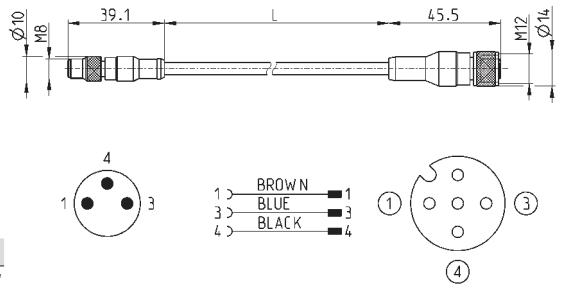
For the hardware configuration
of the Camozzi products



Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2

Adapter cable, M8 3-pin male - M12 4-pin female

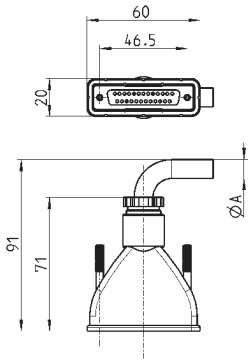
Protection class: IP69K



Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5

Straight Sub-D 25 pin female connector with axial cable

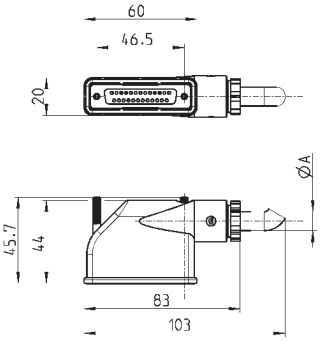
Protection class IP65



Mod.	øA	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with radial cable

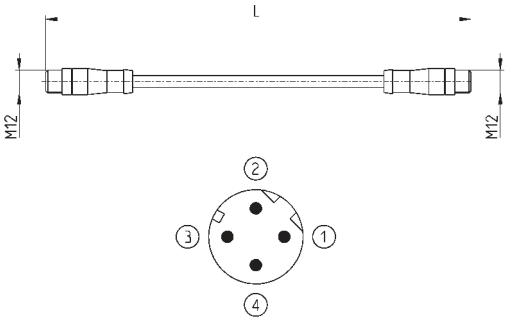
Protection class IP65



Mod.	øA	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

Cables with straight connectors

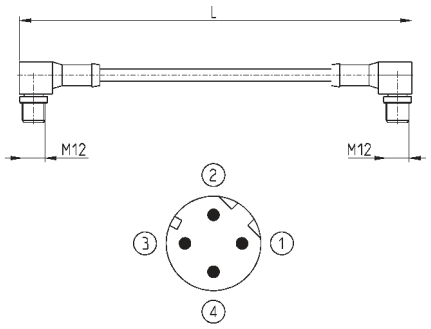
For PROFINET, EtherCAT, EtherNet/IP and for the subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SB04HB-D100	moulded cable	straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	moulded cable	straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	moulded cable	straight	2x M12 D 4 pin male	10
CS-SB04HB-DD00	moulded cable	straight	2x M12 D 4 pin male	15
CS-SB04HB-DG00	moulded cable	straight	2x M12 D 4 pin male	20
CS-SB04HB-DJ00	moulded cable	straight	2x M12 D 4 pin male	25

Cables with angular 90° connectors

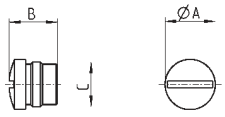
For PROFINET, EtherCAT, EtherNet/IP and for the subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SC04HB-D100	moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	moulded cable	90°	2x M12 D 4 pin male	10
CS-SC04HB-DD00	moulded cable	90°	2x M12 D 4 pin male	15
CS-SC04HB-DG00	moulded cable	90°	2x M12 D 4 pin male	20
CS-SC04HB-DJ00	moulded cable	90°	2x M12 D 4 pin male	25

M8 and M12 connector cover caps

For digital and analog input/output modules and subnet

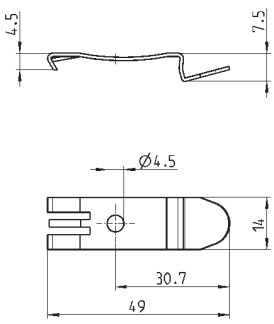


Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12

Mounting brackets for DIN rail

DIN EN 50022 (mm 7,5 x 35 - width 1)

Supplied with:
2x plates
2x screws M4x6 UNI 5931



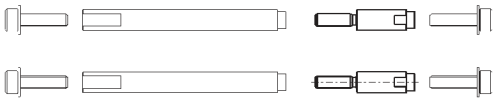
Mod.
PCF-E520

CODING EXAMPLES of SINGLE VALVE (spare part) and TERMINALS (accessories)

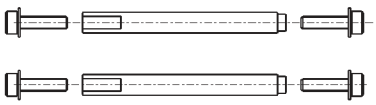
CODING EXAMPLE OF A SINGLE SOLENOID VALVE		CODING EXAMPLE OF INTERMEDIATE PLATES	
FP2V-MQR		**FP2V-WQ**	
F	Series	**F**	Series
P	Type: P = pneumatic	**P**	Type: P = pneumatic
2	Size: 1 = 12 mm 2 = 14 mm	**2**	Size: 1 = 12 mm 2 = 14 mm
V	Solenoid valve or additional plate	**V**	Solenoid valve or additional plate
-		**-**	
M	Type of function: M = 5/2 monostable D = 5/2 monostable with bistable board B = 5/2 bistable C = 2 x 3/2 NC A = 2 x 3/2 NO G = 3/2 NC + 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 2/2 NC + 2/2 NO V = 5/3 CC	**W**	Type of function: L = free position W = free position with bistable board Z = free position with monostable board X = supplementary power supply and exhaust T = separated power supply and exhaust U = separated power supply and supplementary exhaust K = supplementary power supply and separated exhaust
Q	Cartridges for solenoid valves: Q = Ø4 R = Ø6 S = Ø8 (not for Size 1)	**Q**	Cartridges for plates: Q = Ø4 R = Ø6 S = Ø8 (not for Size 1) L = free position (no cartridges) W = free position with bistable board (no cartridges) Z = free position with monostable board (no cartridges)
R	Type of manual override: R = push and turn (bistable) P = pressure (monostable)		
CODING EXAMPLE OF A LEFT TERMINAL		CODING EXAMPLE OF A RIGHT TERMINAL	
FA2T-S		**FA2T-AR**	
F	Series	**F**	Series
A	Accessory	**A**	Accessory
2	Size: 1 = 12 mm 2 = 14 mm	**2**	Size: 1 = 12 mm 2 = 14 mm
T	Type of accessory: T = terminal	**T**	Type of accessory: T = terminal
-		**-**	
S	Cartridges: = no cartridge S = Ø8 T = Ø10	**A**	Type of servo-pilot: A = internal B = external
		R	Cartridges: R = Ø6

Tie-rods for valves size 1 (12mm)

FA..K-1



FA..K-2 <—> FA..K-24



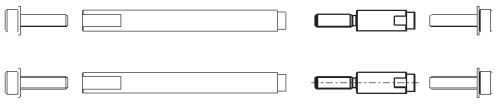
Mod.	Valve positions	NOTE
FA1K-2	2	*
FA1K-4	4	*
FA1K-6	6	*
FA1K-8	8	*
FA1K-10	10	*
FA1K-12	12	*
FA2K-12	14	*
FA1K-16	16	*
FA1K-18	18	*
FA1K-20	20	*
FA1K-22	22	*
FA1K-24	24	*
FA1K-1	-	**

* Tie-rod.
The supply includes
2 tie-rods and 4 screws.

** Joint bolt for odd positions.
The supply includes 2 joint bolts.

Tie-rods for valves size 2 (14mm)

FA..K-1



FA..K-2 <—> FA..K-24

Mod.	Valve positions	NOTE
FA2K-2	2	*
FA2K-4	4	*
FA2K-6	6	*
FA2K-8	8	*
FA2K-10	10	*
FA2K-12	12	*
FA2K-14	14	*
FA2K-16	16	*
FA2K-18	18	*
FA2K-20	20	*
FA2K-22	22	*
FA2K-24	24	*
FA2K-1	-	**

* Tie-rod.
The supply includes
2 tie-rods and 4 screws.

** Joint bolt for odd positions.
The supply includes 2 joint bolts.

Tie-rod plastic cover

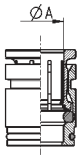
When ordering the cover, specify the length, measured in metres.

Mod.
LAMINA-EST-32

Interchangeable cartridges for valves/plates and for terminals

TABLE LEGEND:

✖ = compatible with
V F1 = solenoid valve or additional plate, size 1
Tdx F1 = right terminal, size 1
Tsx F1 = left terminal, size 1
V F2 = solenoid valve or additional plate, size 2
Tdx F2 = right terminal, size 2
Tsx F2 = left terminal, size 2



Mod.	ØA	V F1	Tdx F1	Tsx F1	V F2	Tdx F2	Tsx F2
6700 4-F1	4	✖					
6700 4-F2	4				✖		
6700 6-F1	6	✖	✖			✖	
6700 6-F2	6				✖		
6700 8-F1	8			✖			✖
6700 8-F2	8				✖		
6700 10-F1	10			✖			✖

Identification plates

The packaging contains
45 identification plates 9x5mm

Mod.
HP1/E

Series HN valve islands, Multipole and Fieldbus

Multipole connection with 25 or 37 pins
Serial connection with the most common communication protocols
Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC

- Valve flow: 400 and 850 Nl/min
- Modular subbases: 2 positions for valve size 10.5mm, single position for valve size 21mm
- Subbases for monostable and bistable valves (size 10.5mm)
- Protocols available: PROFIBUS-DP, CANopen, DeviceNet, EtherNet/IP, PROFINET, EtherCAT

Thanks to the large range of options available, the Series HN valve islands represent an excellent solution for different applications, particularly in automation systems.

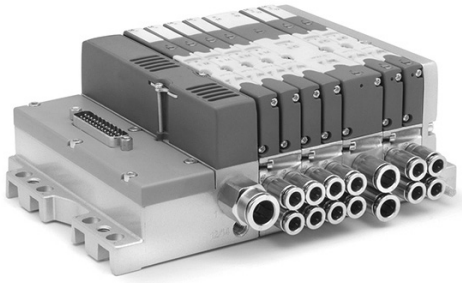
Small dimensions, high flow, pneumatic and electric modularity, electric connections on boards, possibility to interface with the multi-serial node Series CX, optimization of the signal distribution thanks to subbases for monostable and bistable solenoid valves are only some of the features that make this series a particularly innovative product.

Manuals, instruction sheets and configuration files can be found on catalogue.camozzi.com or on the QR code on the lable of the product.

GENERAL DATA

PNEUMATIC SECTION	
Valve construction	spool with seals
Valve functions	5/2 monostable and bistable 5/3 CC 2 x 2/2 NO 2 x 2/2 NC 1 x 2/2 NC+ 1 x NO 2 x 3/2 NC 2 x 3/2 NO 1 x 3/2 NC+ 1 x 3/2 NO
Materials	spool in aluminium spool seals in HNBR other seals in NBR cartridges in brass body and end covers in technopolymer subbases in aluminium
Connections	Inlets 2 and 4, size 10,5 mm: M7, tube Ø 4, tube Ø 6, tube Ø 8 Inlets 2 and 4, size 21 mm: G1/4, tube Ø 10 Supply 1: G1/4, tube Ø 8, tube Ø 10 Supply 12/14: M7 Exhausts 3 and 5: G1/4 or with integrated silencer Exhausts 82/84: M7
Temperature	0 ÷ 50°C
Air specifications	Filtered compressed air, non lubricated, class 6.4.4 according to ISO 8573-1:2010. If lubrication is necessary, please only use oils with maximum viscosity of 32 Cst and the version with external servo-pilot supply. The servo-pilot supply air quality class must be 6.4.4 according to ISO 8573-1:2010 (do not lubricate).
Valve sizes	10.5mm (2 valves for each subbase) 21mm (1 valve for each subbase)
Working pressure	- 0,9 ÷ 10 bar
Pilot pressure	3 ÷ 7 bar 4.5 ÷ 7 bar (with working pressure exceeding 6 bar for the versions 2x2/2 and 2x3/2)
Flow rate	400 Nl/min (10.5mm) 850 Nl/min (21mm)
Mounting position	any position
Protection class	IP 65
ELECTRICAL SECTION - MULTIPOLE VERSION	
Type of Sub-D connector	25 or 37 pins
Max. absorption	0.8 A (with Sub-D connector 25 pins) 1 A (with Sub-D connector 37 pins)
Supply voltage	24 V DC +/- 10%
Max. number of coils to operate	24 on 20 valve positions (with Sub-D connector 25 pins) 32 on 28 valve positions (with Sub-D connector 37 pins)
Valve signalling	yellow led
ELECTRICAL SECTION - FIELDBUS VERSION	
General data	see the CX section
Max. absorption	digital outputs / analog outputs and inputs 3A digital/analog inputs 3A
Supply voltage	logic supply 24 V DC +/- 10% power supply 24 V DC +/- 10%
Max. number of coils to operate	32 on 28 valve positions

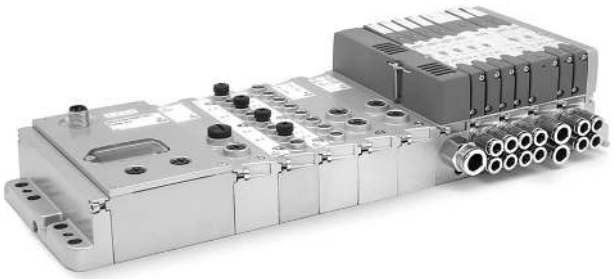
VERSIONS: MULTIPOLE and MULTIPOLE WITH SUB-D ADAPTOR



The Multipole version can be connected in a quick and secure way thanks to the electrical connection by means of a pre-wired cable with 25 or 37 pins with in-line or angular connection. It is possible to create zones with differentiated power supply and with separate pressure/exhaust. Thanks to the subbases with monostable board, islands can be realized up to maximum of 24 coils on 20 valve positions with the 25 pin connection and 32 coils on 28 valve positions with the 37 pin connection.

The Multipole Island of both 25 pins and 37 pins can be connected by means of a Sub-D adaptor, also of 25 or 37 pins.
In this way a standard Multipole Island can be inserted as expansion in the subnet of the Serial version.

VERSIONS: FIELDBUS WITH CPU MODULE AND EXPANSION FIELDBUS



Thanks to the Series CX Multi-serial node and a special direct interface module with the pneumatic part of the island, it is possible to interface the Series HN with the PROFIBUS-DP, DeviceNet, CANopen, PROFINET, EtherCAT and EtherNet/IP serial protocols.
The Fieldbus version with CPU has the same configuration rules of a Multipole island and can be equipped with different electric modules like digital/analog inputs/outputs of 0-10V and 4-20mA, as well as initial subnet Modules.

It is possible to insert Initial Subnet Modules in the version with CPU module. These Modules enable to create a subnet with tree structure or in series. On the subnet you can connect Expansion Islands. These expansions have the same possibilities to use the different electric modules, like digital and analog inputs and outputs and further Initial Subnet Modules. Also with this version the same rules as the CPU module and Multipole apply.

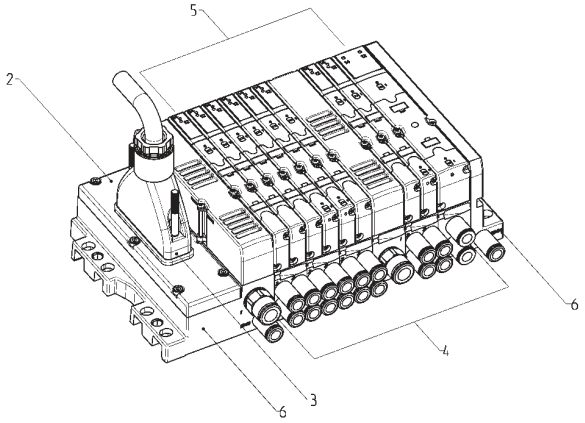
MULTIPOLE VERSION CODING EXAMPLE

HN	5	M	-	03A	-	2Q4AZ2A	-	2B8M4C	-	A

HN	SERIES		
5	SIZE: 1 = 10.5 2 = 21 5 = Mixed		
M	ELECTRICAL CONNECTION: M = Multipole 25 pin PNP N = Multipole 25 pin NPN H = Multipole 37 pin PNP L = Multipole 37 pin NPN		
03A	CONNECTION: 000 = without connector/cable	CONNECTOR WITH CABLE AXIAL OUTPUT: 03A = 3m 05A = 5m 10A = 10m 15A = 15m 20A = 20m 25A = 25m CONNECTOR WITH CABLE RADIAL OUTPUT: 03R = 3m 05R = 5m 10R = 10m 15R = 15m 20R = 20m 25R = 25m	CONNECTOR WITHOUT CABLE: 4XA = 25 pins axial 4XR = 25 pins radial 9XA = 37 pins axial 9XR = 37 pins radial
2Q4AZ2A	SUBBASES FOR 2 SOLENOID VALVES SIZE 1 (*): A (AZ) = M7 threads B (BZ) = 4 fittings for tube Ø4 C (CZ) = 4 fittings for tube Ø6 D (DZ) = channel 1, 3, 5 closed; M7 threads E (EZ) = channel 1, 3, 5 closed; fittings tube Ø4 F (FZ) = channel 1, 3, 5 closed; fittings tube Ø6 G (GZ) = channel 3, 5 closed; M7 threads H (HZ) = channel 3, 5 closed; fittings tube Ø4 I (IZ) = channel 3, 5 closed; fittings tube Ø6 L (LZ) = channel 1 closed; M7 threads M (MZ) = channel 1 closed; fittings tube Ø4 N (NZ) = channel 1 closed; fittings tube Ø6 (*) Subbases with "Z" at the end of their code are used with monostable solenoid valves FOR SOLENOID VALVES SIZE 2: Q = G1/8 threads R = fittings for tube Ø6 S = fittings for tube Ø8 P = G1/4 threads J = fittings for tube Ø10	SUBBASES FOR PNEUMATIC SUPPLY: X = supplementary supply and exhaust Y = supplementary supply and exhaust with integrated silencer W = supply from the exhausts FOR ELECTRICAL SUPPLY: K = separation of electrical supply	SEALS: T = diaphragm on channels 1, 3, 5 U = diaphragm on channel 1 V = diaphragm on channels 3, 5
2B8M4C	SOLENOID VALVES Size 1 and 2: 0 = island without solenoid valves M = 5/2 Monostable B = 5/2 Bistable V = 5/3 Centres Closed C = 2 x 3/2 NC A = 2 x 3/2 NO G = 1 x 3/2 NC + 1 x 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 1 x 2/2 NC + 1 x 2/2 NO L = free position	SOLENOID VALVE + PRESSURE REGULATOR on channel 1 (size 2 only): N = 5/2 Monostable P = 5/2 Bistable Q = 5/3 Centres Closed R = 2 x 3/2 NC S = 2 x 3/2 NO T = 1 x 3/2 NC + 1 x 3/2 NO U = 2 x 2/2 NC X = 2 x 2/2 NO Y = 1 x 2/2 NC + 1 x 2/2 NO	
A	THREADED TERMINAL PLATES: A = 1, 12/14 in common 3/5, 82/84 threaded ports B = 1, 12/14 separated 3/5, 82/84 threaded ports C = 1, 12/14 in common 3/5, 82/84 with integrated silencer D = 1, 12/14 separated 3/5, 82/84 with integrated silencer	TERMINAL PLATES with FITTINGS FOR TUBE Ø 8 on PORT 1: E = 1, 12/14 in common 3/5, 82/84 conveyable F = 1, 12/14 separated 3/5, 82/84 conveyable G = 1, 12/14 in common 3/5, 82/84 with integrated silencer H = 1, 12/14 separated 3/5, 82/84 with integrated silencer	TERMINAL PLATES with FITTINGS FOR TUBE Ø 10 on PORT 1: I = 1, 12/14 in common 3/5, 82/84 conveyable L = 1, 12/14 separated 3/5, 82/84 conveyable M = 1, 12/14 in common 3/5, 82/84 with integrated silencer N = 1, 12/14 separated 3/5, 82/84 with integrated silencer

In presence of identical consequent codes both for the subbases as for the valves you need to substitute the letter with the number.
Ex: HN5M-03A-ABCS-MMCCBBB-A is converted to HN5M-03A-ABCS-2M2C3B-A.

MULTIPOLE VERSION CODING



1 2		3		4		5		6
HN5M	-	03A	-	3BXBR	-	3M2BMXMVC	-	D

HN...

SIZE (1)	ELECTRICAL CONNECTION (2)	CONNECTION (3)	SUBBASES for 2 solenoid valves, size 1 (4)	SOLENOID VALVES Size 1 and 2 (5)	THREADED TERMINAL PLATES (6)
1	M	000	A / AZ	0	A
2	N	03A	B / BZ	M	B
5	H	05A	C / CZ	B	C
	L	10A	D / DZ	V	D
		15A	E / EZ	C	TERMINAL PLATES fittings for tube Ø8, on port 1
		20A	F / FZ	A	E
		25A	G / GZ	G	F
		03R	H / HZ	E	G
		05R	I / IZ	F	H
		10R	L / LZ	I	TERMINAL PLATES fittings for tube Ø10, on port 1
		15R	M / MZ	L	I
		20R	N / NZ		L
		25R	SUBBASES for solenoid valves, size 2	SOL. VALVE + PRESS. REG. channel 1, size 2 only	M
		4XA	Q	N	N
		4XR	R	P	
		9XA	S	Q	
		9XR	P	R	
			J	S	
			SUBBASES FOR PNEUMATIC SUPPLY	T	
			X	U	
			Y	X	
			W	Y	
			SUBBASES FOR ELECTRICAL SUPPLY		
			K		
			SEALS		
			T		
			U		
			V		

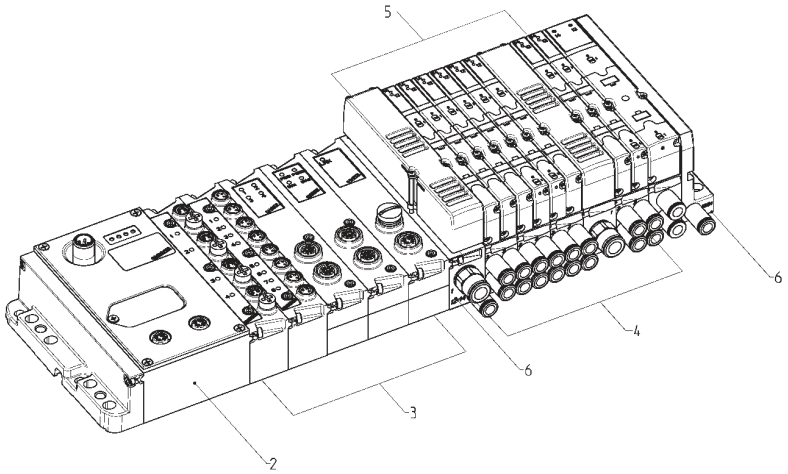
FIELDBUS VERSION CODING EXAMPLE

HN	5	01	-	ABCD	-	2Q4AZ2A	-	2B8M4C	-	A

HN	SERIES		
5	SIZE: 1 = 10.5 2 = 21 5 = Mixed		
01	PROTOCOL: 01 = PROFIBUS-DP 02 = DeviceNet 03 = CANopen 04 = EtherNet/IP 05 = EtherCAT 06 = PROFINET 99 = Expansion module		
ABCD	INPUT / OUTPUT MODULES: 0 = no module	INPUT / OUTPUT MODULES: A = 8 Digital Inputs M8 B = 4 Digital Inputs M8 C = 2 Analog Inputs 4-20mA D = 2 Analog Inputs 0-10V E = 1 Analog Input 4-20mA + 1 Input 0-10V Q = 4 Digital Outputs M12 duo R = 2 Analog Outputs 4-20mA T = 2 Analog Outputs 0-10V U = 1 Analog Output 4-20mA + 1 Output 0-10V V = 1 Analog Output 4-20mA + 1 Input 0-10V Z = 1 Analog Output 4-20mA + 1 Input 4-20mA K = 1 Analog Output 0-10V + 1 Input 0-10V Y = 1 Analog Output 0-10V + 1 Input 4-20mA	INPUT / OUTPUT MODULES: S = Initial subnet module
2Q4AZ2A	SUBBASES FOR 2 SOLENOID VALVES SIZE 1 (*): A (AZ) = M7 threads B (BZ) = 4 fittings for tube Ø4 C (CZ) = 4 fittings for tube Ø6 D (DZ) = channel 1, 3, 5 closed; M7 threads E (EZ) = channel 1, 3, 5 closed; fittings tube Ø4 F (FZ) = channel 1, 3, 5 closed; fittings tube Ø6 G (GZ) = channel 3, 5 closed; M7 threads H (HZ) = channel 3, 5 closed; fittings tube Ø4 I (IZ) = channel 3, 5 closed; fittings tube Ø6 L (LZ) = channel 1 closed; M7 threads M (MZ) = channel 1 closed; fittings tube Ø4 N (NZ) = channel 1 closed; fittings tube Ø6 (*) Subbases with "Z" at the end of their code are used with monostable solenoid valves FOR SOLENOID VALVES SIZE 2: Q = G1/8 threads R = fittings for tube Ø6 S = fittings for tube Ø8 P = G1/4 threads J = fittings for tube Ø10	SUBBASES FOR PNEUMATIC SUPPLY: X = supplementary supply and exhaust Y = supplementary supply and exhaust with integrated silencer W = supply from the exhausts FOR ELECTRICAL SUPPLY: K = separation of electrical supply	SEALS: T = diaphragm on channels 1, 3, 5 U = diaphragm seal on channel 1 V = diaphragm seal on channels 3, 5
2B8M4C	SOLENOID VALVES Size 1 and 2: 0 = island without solenoid valves M = 5/2 Monostable B = 5/2 Bistable V = 5/3 Centres Closed C = 2 x 3/2 NC A = 2 x 3/2 NO G = 1 x 3/2 NC + 1 x 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 1 x 2/2 NC + 1 x 2/2 NO L = free position	SOLENOID VALVE + PRESSURE REGULATOR on channel 1 (size 2 only): N = 5/2 Monostable P = 5/2 Bistable Q = 5/3 Centres Closed R = 2 x 3/2 NC S = 2 x 3/2 NO T = 1 x 3/2 NC + 1 x 3/2 NO U = 2 x 2/2 NC X = 2 x 2/2 NO Y = 1 x 2/2 NC + 1 x 2/2 NO	
A	THREADED TERMINAL PLATES: A = 1, 12/14 in common 3/5, 82/84 threaded ports B = 1, 12/14 separated 3/5, 82/84 threaded ports C = 1, 12/14 in common 3/5, 82/84 with integrated silencer D = 1, 12/14 separated 3/5, 82/84 with integrated silencer	TERMINAL PLATES with FITTINGS Ø8: E = 1, 12/14 in common 3/5, 82/84 conveyable F = 1, 12/14 separated 3/5, 82/84 conveyable G = 1, 12/14 in common 3/5, 82/84 with integrated silencer H = 1, 12/14 separated 3/5, 82/84 with integrated silencer	TERMINAL PLATES with FITTINGS Ø10: I = 1, 12/14 in common 3/5, 82/84 conveyable L = 1, 12/14 separated 3/5, 82/84 conveyable M = 1, 12/14 in common 3/5, 82/84 with integrated silencer N = 1, 12/14 separated 3/5, 82/84 with integrated silencer

X, Y and K sub-bases will be equipped with threads or cartridges of the same size of port 1, see the choice "Type of terminal plates". In presence of identical consequent codes both for sub-bases and for valves, you need to substitute the letter with the number.
Ex: HN501-ABCD-ABCS-MMCCBBB-A is converted to HN501- ABCD-ABCS-2M2C3B-A.

FIELDBUS VERSION CODING

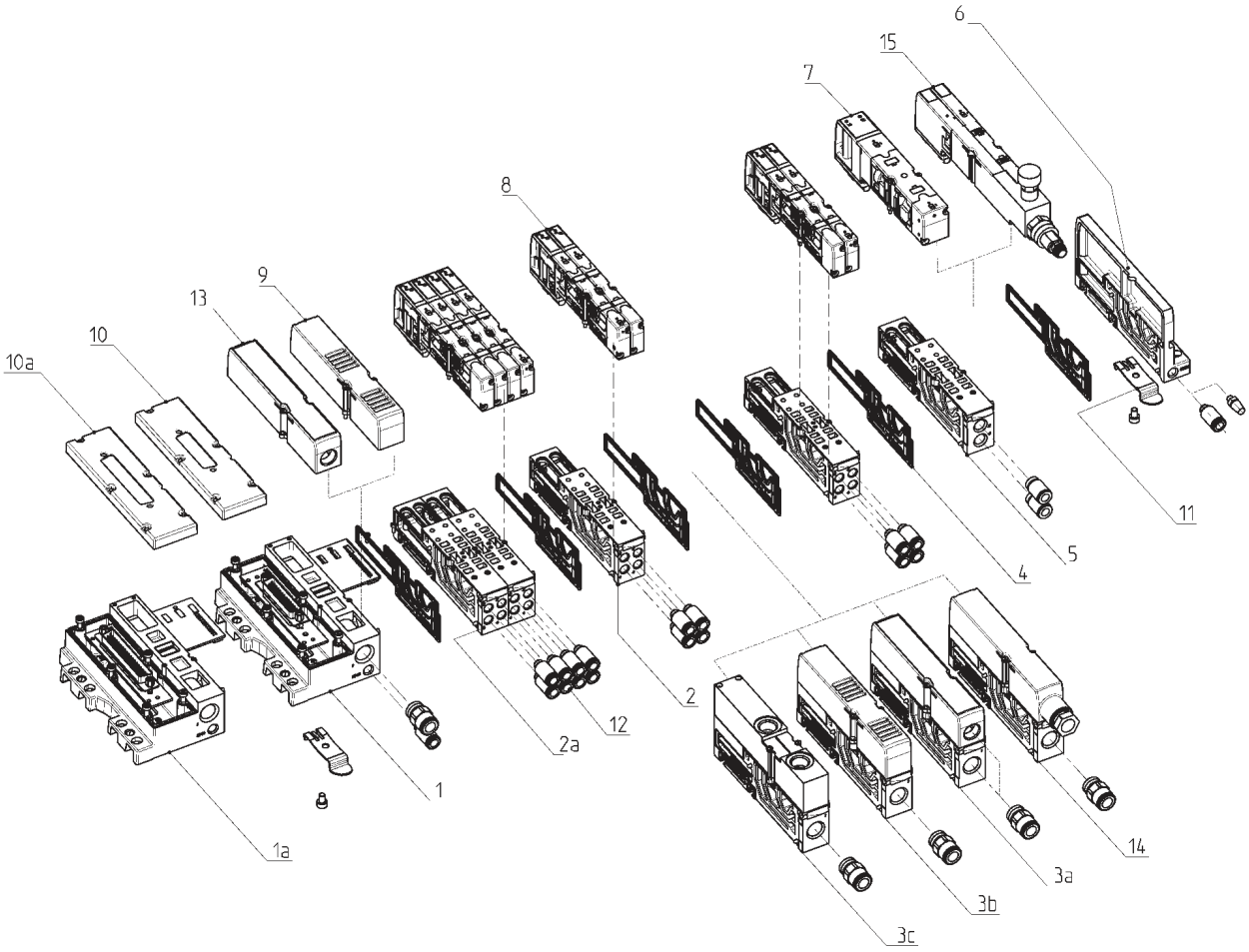


1	2		3		4		5								6
H	N	1	01	-	A	B	Q	R	S	-	3	B	X	B	R	-	3	M	2	B	M	X	M	V	C	-	D

HN...

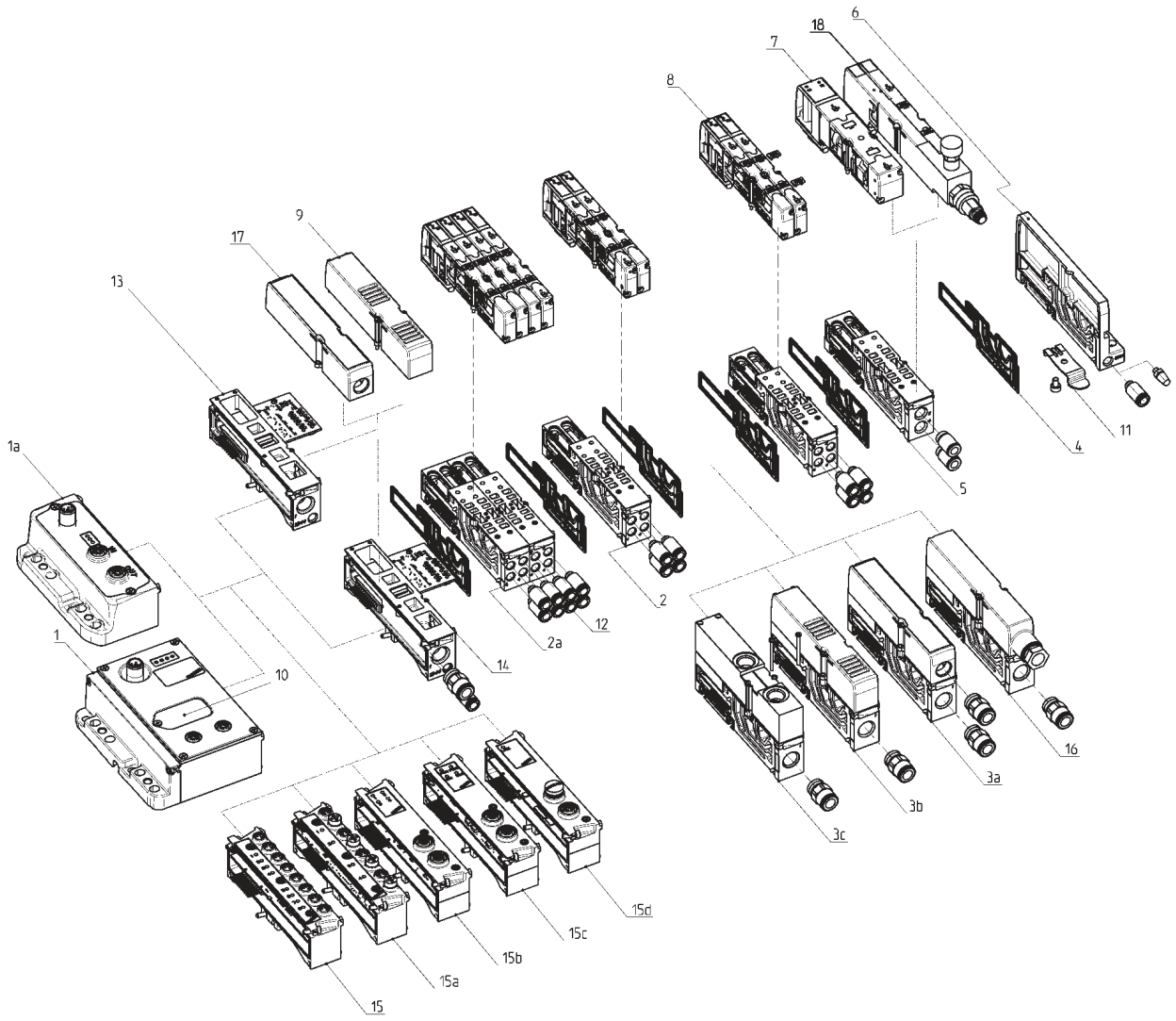
SIZE (1)	PROTOCOL (2)	INPUT / OUTPUT MODULES (3)	SUBBASES FOR 2 SOLENOID VALVES, size 1 (4)	SOLENOID VALVES Size 1 and 2 (5)	THREADED TERMINAL PLATES (6)
1	01	0	A / AZ	0	A
2	02	A	B / BZ	M	B
5	03	B	C / CZ	B	C
	04	C	D / DZ	V	D
	05	D	E / EZ	C	TERMINAL PLATES cartridges Ø8
	06	E	F / FZ	A	E
	99	Q	G / GZ	G	F
		R	H / HZ	E	G
		T	I / IZ	F	H
		U	L / LZ	I	TERMINAL PLATES cartridges Ø10
		V	M / MZ	L	I
		Z	N / NZ		L
		K	SUBBASES for SOLENOID VALVES, size 2	SOL. VALVE + PRESS. REG. channel 1, size 2 only	M
		Y	Q	N	N
		S	R	P	
			S	Q	
			P	R	
			J	S	
			SUBBASES FOR PNEUMATIC SUPPLY	T	
			X	U	
			Y	X	
			W	Y	
			SUBBASES FOR ELECTRICAL SUPPLY		
			K		
			SEALS		
			T		
			U		
			V		

MULTIPOLE version COMPONENTS



COMPONENTS			
1	Electric interface group Multipole 25 pin	**7**	Solenoid valve, size 2
1a	Electric interface group Multipole 37 pin	**8**	Solenoid valve, size 1
2	Threaded subbase, size 10.5 - modularity 2	**9**	Cover with silencer
2a	Subbases without electric board	**10**	Multipole electric cover 25 pins
3a	Conveyable plate for supply and supplementary exhaust	**10a**	Multipole electric cover 37 pins
3b	Plate for supply and exhaust with silencer	**11**	Mounting bracket for DIN rail
3c	Plate for supply from exhausts	**12**	Quick-release fittings
4	Interface seals	**13**	Cover to convey exhausts 3 and 5
5	Threaded subbase, size 21 - modularity 1	**14**	Module to separate electrical supply and supplementary pneumatic supply
6	Right terminal (HA0T-H)	**15**	Valve size 10.5 with incorporated pressure regulator

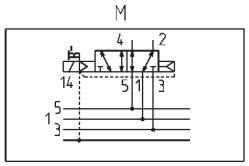
MULTI-SERIAL version and EXPANSION MODULE COMPONENTS



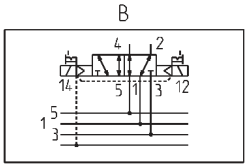
COMPONENTS

1 **1a**	Multi-serial Module CX Expansion Module	**11**	Mounting bracket for DIN rail
2 **2a**	Threaded subbase, size 10.5 - modularity 2 Subbases without electric board	**12**	Quick-release fittings
3a **3b** **3c**	Conveyable plate for supply and supplementary exhaust Plate for supply and exhaust with silencer Plate for supply from exhausts	**13**	Direct interface module with Series HN with internal pilot supply
4	Interface seals	**14**	Direct interface module with Series HN with external pilot supply
5	Threaded subbase, size 21 - modularity 1	**15** **15a**	8 Digital Inputs module 4 Digital Inputs module
6	Right terminal (HA0T-H)	**15b** **15c** **15d**	4 Digital Outputs module IN/OUT analog module Initial subnet module
7	Solenoid valve size 2	**16**	Cover to convey exhausts 3 and 5
8	Solenoid valve size 1	**17**	Module to separate electrical supply and supplementary pneumatic supply
9	Cover with silencer	**18**	Valve size 10,5 with integrated pressure regulator
10	Cover for the access to rotary switches and for programming		

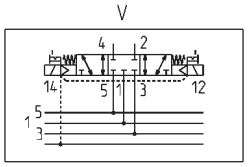
AVAILABLE FUNCTION - SYMBOLS FOR SOLENOID VALVES



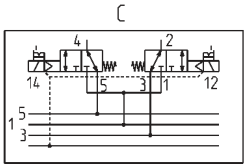
M = 5/2-way, Monostable



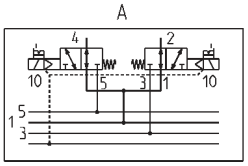
B = 5/2-way, Bistable



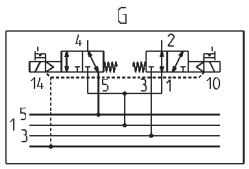
V = 5/3-way Centres Closed



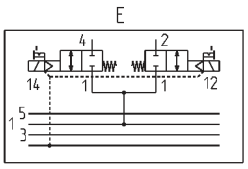
C = 2 x 3/2-way NC



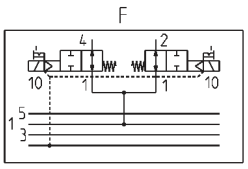
A = 2 x 3/2-way NO



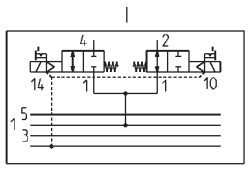
G = 1 x 3/2-way NC + 1 x 3/2-way NO



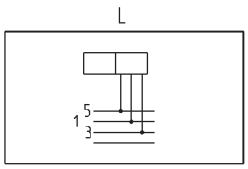
E = 2 x 2/2-way NC



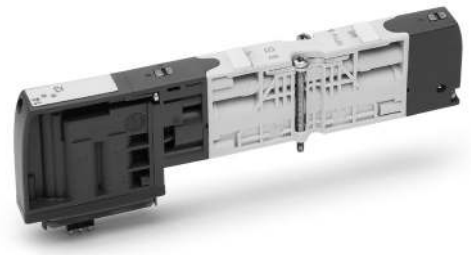
F = 2 x 2/2-way NO



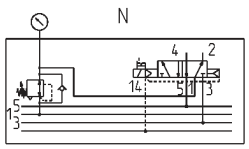
I = 1 x 2/2-way NC + 1 x 2/2-way NO



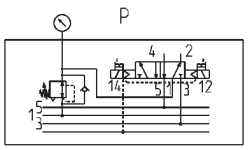
L = free position



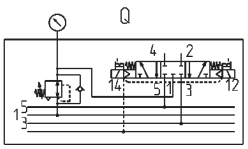
AVAILABLE FUNCTIONS - SYMBOLS FOR SOLENOID VALVES WITH PRESSURE REGULATOR



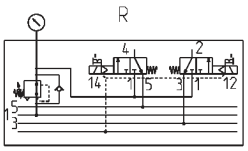
N = 5/2-way, Monostable



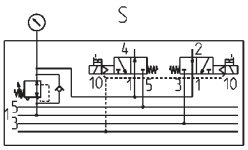
P = 5/2-way, Bistable



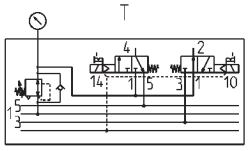
Q = 5/3-way Centres Closed



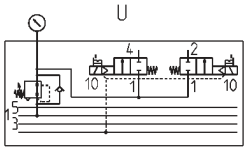
R = 2 x 3/2-way NC



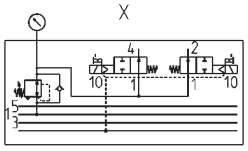
S = 2 x 3/2-way NO



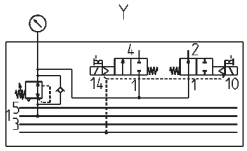
T = 1 x 3/2-way NC + 1 x 3/2-way NO



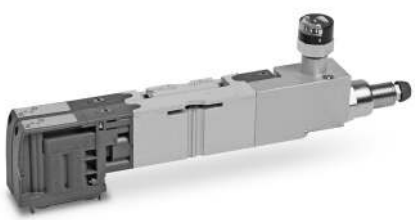
U = 2 x 2/2-way NC



X = 2 x 2/2-way NO



Y = 1 x 2/2-way NC + 1 x 2/2-way NO



It can be assembled on subbase size 21 only.

AVAILABLE FUNCTIONS - SUBBASE TYPES

Through-subbase s. 10.5
A=M7, B=Ø4, C=Ø6 [*]

Diaphragm lines 1, 3 5
D=M7, E=Ø4, F=Ø6 [*]

Diaphragm line 1
L=M7, M=Ø4, N=Ø6 [*]

Diaphragm lines 3, 5
G=M7, H=Ø4, I=Ø6 [*]

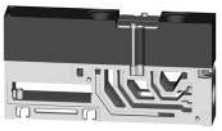
Through-subbase s. 21
Q = 1/8, R = Ø6, S = Ø8

X = supplementary supply and exhaust

K = interm. plate to sep. elec. and suppl. supply

Y = supplem. supply + exhaust with silencer

Z = electro-pneum. interface for HP...F/G/R



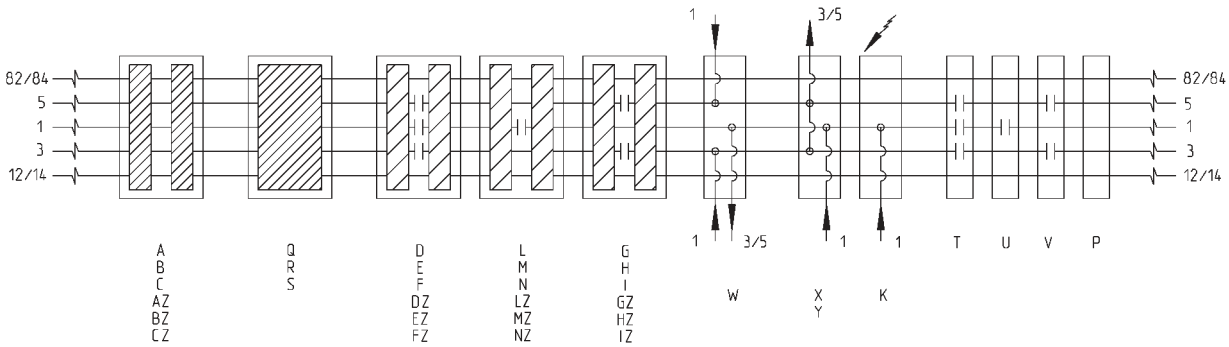
W = plate for supply from exhausts

U = Diaphragm seal - Line 1

V = Diaphragm seal - Lines 3, 5

P = Through seal

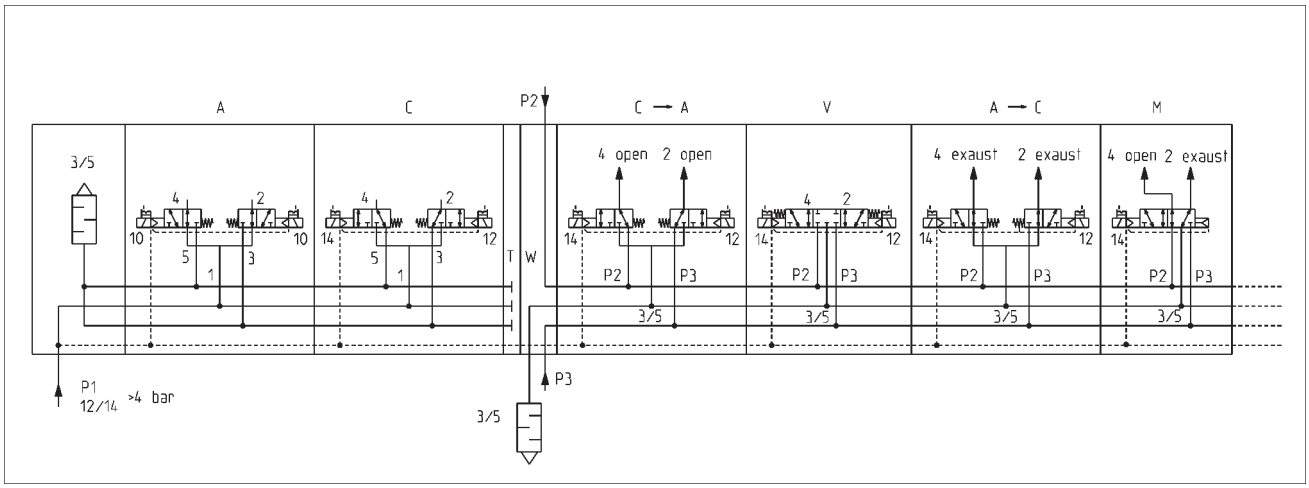
T = Diaphragm seal - Lines 1, 3, 5



[*] The subbases A, B, C, D, E, F, G, H, I, L, M, N are available also with a board to be used with monostable solenoid valves.
To order this version it is necessary to add Z at the end of the code of the standard subbase. Example: AZ instead of A.
For further details we suggest you to see the coding example.

PROPER USE OF VALVE FUNCTIONS WITH INTERMEDIATE PLATE TYPE W

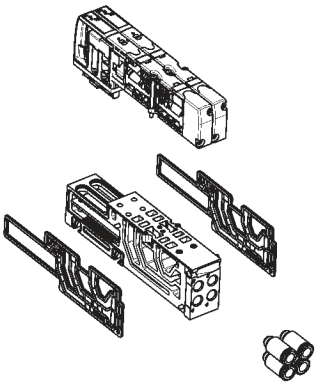
The intermediate plate cod. W is composed by a subbase which is equipped with a upper connection bracket. On this bracket there are two connections on which it is possible to apply two different pressures (ex. P2 and P3). In this configuration, the connection 1 on the subbase represents the exhaust 3/5. With this plate it is possible to supply the valves positioned downstream through the exhausts 3 and 5. When supplied from the exhausts, these valves have a different function compared with the ones supplied in the standard way. Some examples: Solenoid valve mod. C at rest has outlets 2 and 4 active and corresponds to model "A", in presence of electrical inputs 12 and 14 outlets 2 (P3) and 4 (P2) close respectively; the configuration of solenoid valve mod. V at rest doesn't change, in presence of electrical input 12 outlet 4 (P2) is activated, in presence of electrical input 14 outlet 2 (P3) is activated; outlets 2 and 4 are closed in solenoid valve mod. A at rest which corresponds to model "C", in presence of electrical inputs 12 and 14 outlets 2 (P3) and 4 (P2) open respectively; outlet 4 (P2) is active in solenoid valve mod. M at rest, in presence of electrical input 14 the active outlet becomes outlet 2 (P3). All the valve functions, both 10.5 and 21 sizes, have this different operation. Solenoid valves with an integrated pressure regulator can't be used after an intermediate plate W. This plate requires in the initial part of the valve island a supply pressure of 4 bar at least. Otherwise, it is necessary to use the version with external servo pilot supply and apply a pressure of at least 4 bar on the connection 12/14. It is necessary to insert a seal type T before plate W.



SUBBASES WITH MONOSTABLE BOARD

The subbases for valves Size 1 (10.5 mm) are set for housing 2 solenoid valves that may be both with double solenoid.
Each subbase uses 4 electric signals. Even in case of monostable solenoid valves the subbase uses 4 electrical signals.
To increase the number of valve positions that can be connected with a single Sub-D connector, all the subbases Size 1 can add "Z" at the end of their code thus using 2 electrical signals. They are, therefore, suitable for the connection of monostable solenoid valves.

Examples:
Code A --> AZ with board for monostable solenoid valves
Code N --> NZ with board for monostable solenoid valves

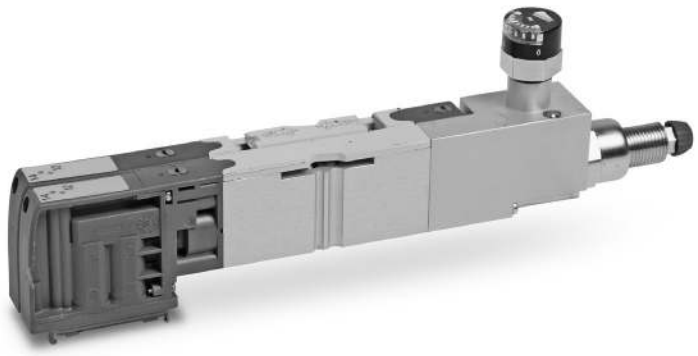


MODULE TO SEPARATE ELECTRIC AND PNEUMATIC SUPPLY HA0M-K

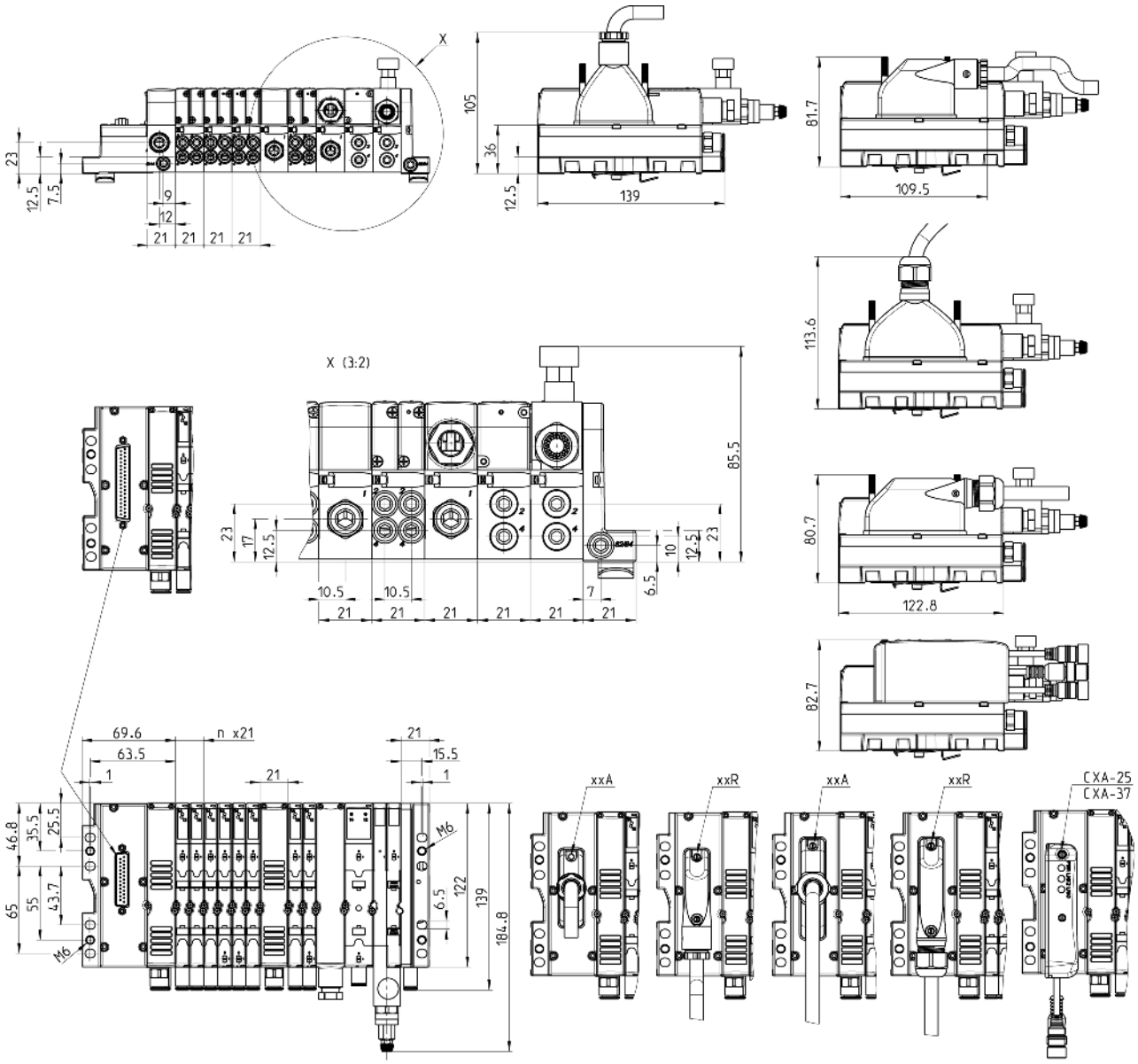
GENERAL DATA	
Connection	3 poles terminal block to be wired
Dimensions	130 x 20 mm
Signalling	None
Supply	24 V DC (+/- 10%)
Electrical protection	Fuse 2 A
Protection class	IP 65
Temperature	0°C ÷ 50°C
Material	Plastics - Aluminium
Weight	100 g

VALVE WITH INTEGRATED PRESSURE REGULATOR HP2V

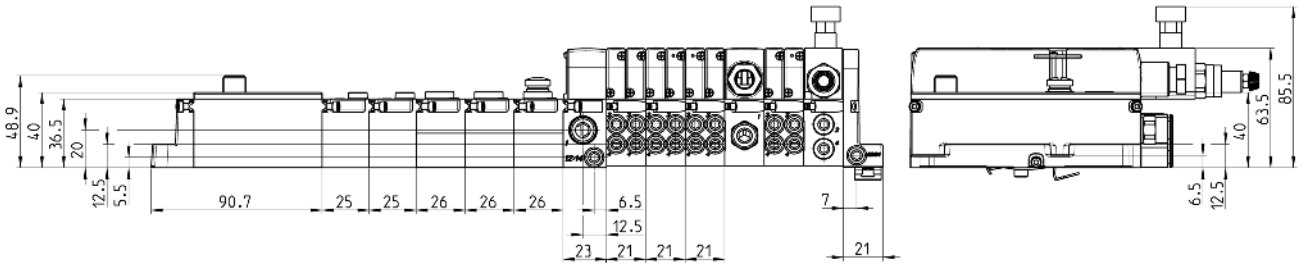
This solution has the advantage of reducing the valve island's overall height compared to traditional "sandwich" solutions.
The pressure regulator allows to set the supply pressure of the lateral valve.

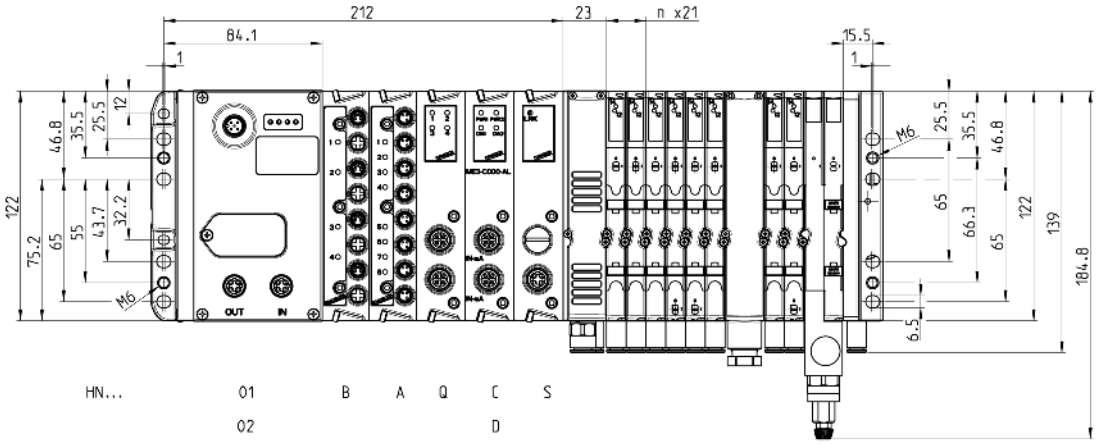


MULTIPOLE version 25 and 37 pin DIMENSIONS



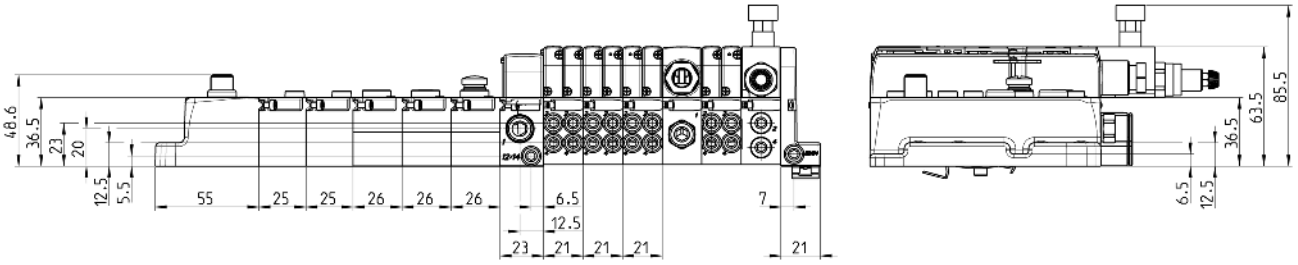
MULTI-SERIAL version DIMENSIONS

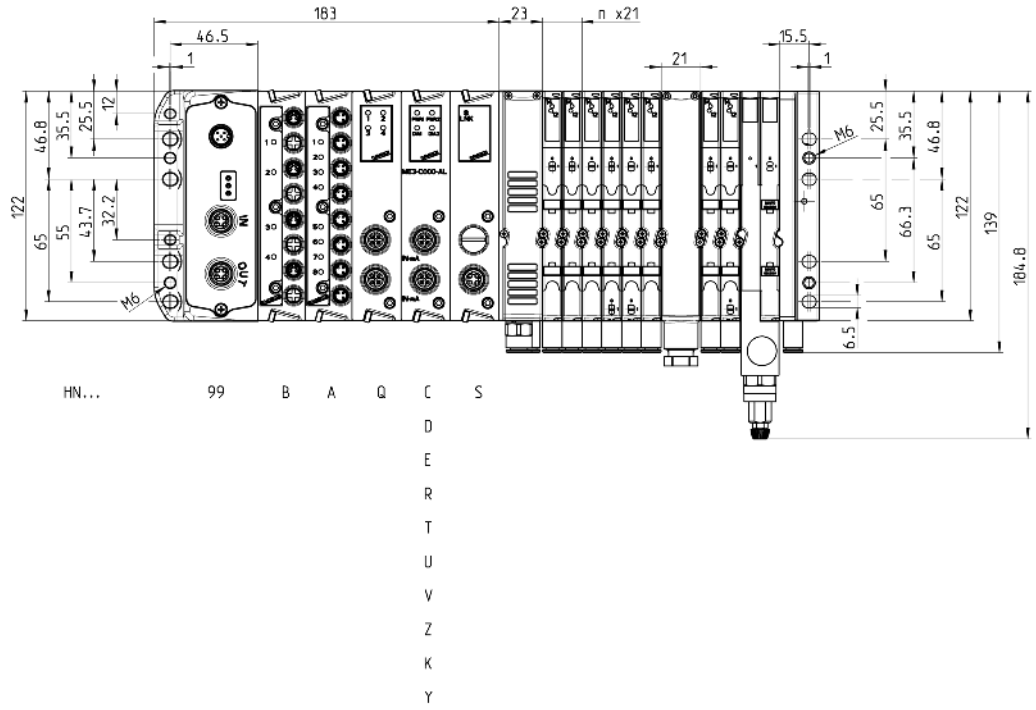




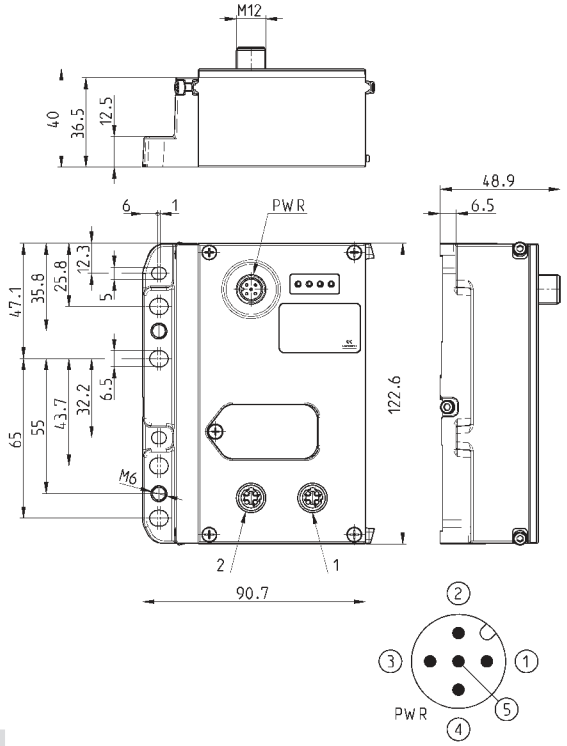
HN...	01	B	A	Q	C	S
	02				D	
	03				E	
	04				R	
	05				T	
	06				U	
					V	
					Z	
					K	
					Y	

DIMENSIONS of the EXPANSION MODULE of the multi-serial version





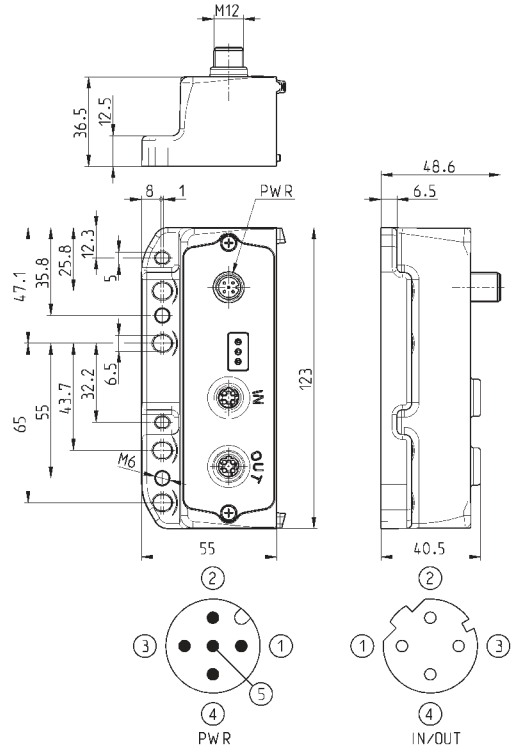
Multi-serial module - pin configuration



Mod.	Coding reference	Fieldbus Protocol	2	1	Bus-IN connector	Bus-OUT connector
CX01-0-0	01	PROFIBUS	Bus-IN	Bus-OUT	M12 B 5 pin male	M12 B 5 pin female
CX02-0-0	02	DeviceNet	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX03-0-0	03	CANopen	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX04-0-0	04	EtherNet/IP	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX05-0-0	05	EtherCAT	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX06-0-0	06	PROFINET	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female

Expansion Module - pin configuration

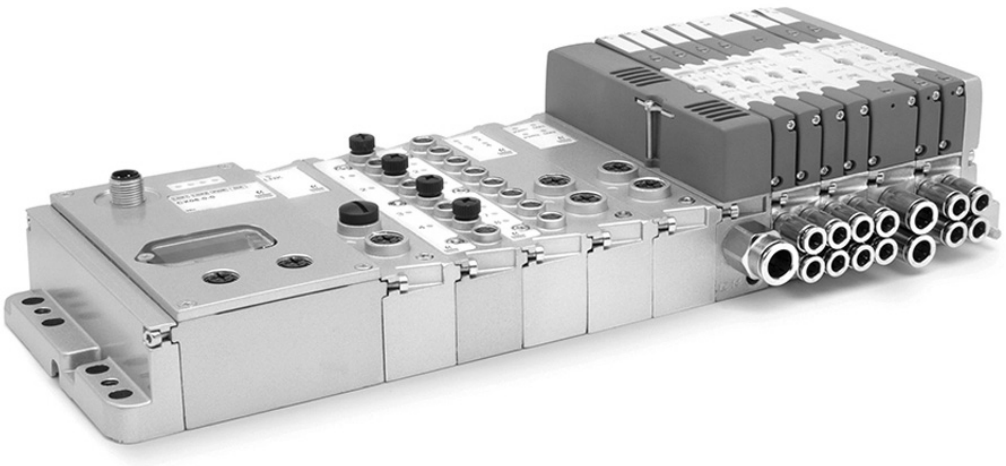
Note: to connect the Expansion with the subnet, we recommend the use of cables Mod. CS-SB04HB-... or CS-SC04HB-...



Mod.	Coding reference	Fieldbus Protocol	Bus-IN and Bus-OUT connector
CX99-0-0	99	Subnet expansion	M12 D 5 pin female

Multi-serial module - characteristics

It is a slave node of the main PROFIBUS, CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFINET network and the Master module of the subnet.
All modules provided can be connected only on the right side of the CPU module, like the digital/analog inputs/outputs, direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet.
It has its own M12 A 4 pin male connection to supply the modules connected, distinguishing both logic supply and power supply.
Two M12 connections for Bus-IN and Bus-OUT of the main network, which M12 connection will take over the relative specifications according to the choosen protocol.
The addressing is performed by means of the Rotary Switch for the protocols with this feature, while for Ethernet protocols addressing is performed by means of the protocol itself. Leds indicate the working state. A maximum number of 1024 inputs and 1024 outputs can be managed.

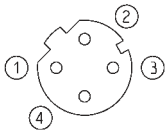


Expansion Module - Characteristics

At its right side, different modules can be connected like the digital/analog inputs/outputs, the direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet to re-amplify it or to create new branches. It has its own M12 A 4 pin male connection to supply the devices connected, distinguishing both logic supply and power supply. It has two M12 D 5 pin female connections for Bus-IN and Bus-OUT connection of the subnet. Leds indicate the working state.
The valve island equipped with the Expansion Module can be used only in presence of a subnet.

Initial subnet module Mod. ME3-0000-SL

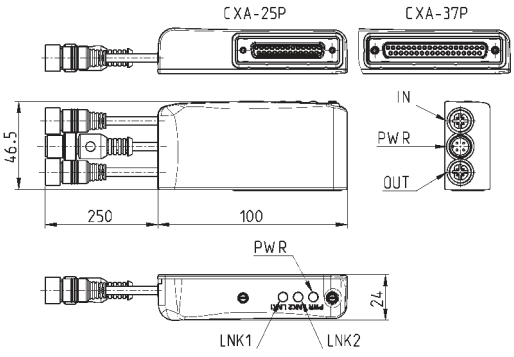
This module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices. Every subnet can have an extension of maximum 100 metres, with a maximum of 8 interruptions. Up to maximum 5 initial modules can be connected, one aside another or along the subnet in order to create a tree structure, in series or both, in order to optimize the length of the cables and the topology of the subnet in different applications. The module is equipped with the Bus-OUT connection only of subnet type M12 D 4 pin female.



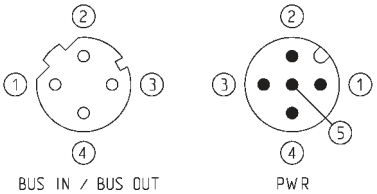
Mod.	Coding reference	Bus-OUT connection	Max number of modules for subnet	Max extension of subnet per module
ME3-0000-SL	S	M12D 4 pin female	5	100 m

Sub-D adaptor module 25 and 37 pin Mod. CXA-25P and CXA-37P

It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D connection. In the 25 pin version, it can manage up to a maximum of 24 outputs, while with 37 pin version, the outputs become 32. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 4 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.



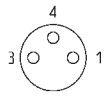
Led 1 = Yellow LNK1
Led 2 = Yellow LNK2
Led 3 = Green PWR, supply present and OK



Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W
CXA-37P	Sub-D 37 broches	32	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W

Digital input Module Mod. ME3-0800-DC and ME3-0400-DC

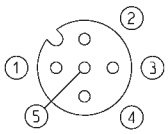
The Digital input module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet.
It has 8 or 4 M8 3 pin connections.



Mod.	Coding reference	Number of digital inputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Overvoltage protection	Absorption	Type of signal	Protection class	Operating temperature	Weight
ME3-0800-DC	A	8	M8 3 pin female	8	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 ÷ 50°C	110 g
ME3-0400-DC	B	4	M8 3 pin female	4	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 ÷ 50°C	110 g

Analog input/output module Mod. ME3-****-AL

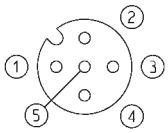
The analog input/output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections and it can be configured as 2 analog Outputs or 2 Inputs or 1 Input + 1 Output. Every analog output has a 12 bit resolution for both inputs and outputs available in the versions from 0-10 V DC and from 4-20mA.
The refreshment time of the analog devices is submitted to the delay of the subnet and therefore to its topology. An average delay is less than 6 ms, to which the delay of the main network managed by the PLC has to be added.



Mod.	Coding reference	Number of analog inputs	Number of analog outputs	Connection
ME3-C000-AL	C	2 inputs 4-20 mA	-	2x M12 A 5 pin female
ME3-D000-AL	D	2 inputs 0-10 V	-	2x M12 A 5 pin female
ME3-E000-AL	E	1 input 4-20 mA + 1 input 0-10 V	-	2x M12 A 5 pin female
ME3-00U0-AL	U	-	1 output 4-20 mA + 1 output 0-10 V	2x M12 A 5 pin female
ME3-00R0-AL	R	-	2 outputs 4-20 mA	2x M12 A 5 pin female
ME3-00T0-AL	T	-	2 outputs 0-10 V	2x M12 A 5 pin female
ME3-00Z0-AL	Z	1 input 4-20 mA	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00K0-AL	K	1 input 0-10 V	1 output 0-10 V	2x M12 A 5 pin female
ME3-00V0-AL	V	1 input 0-10 V	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00Y0-AL	Y	1 input 4-20 mA	1 output 0-10 V	2x M12 A 5 pin female

Digital power output module Mod. ME3-0004-DL

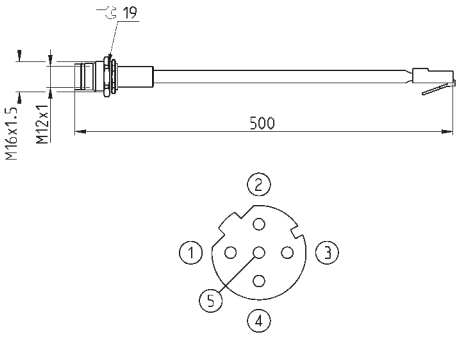
The digital output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections, each connection can manage 2 digital outputs and can provide a maximum of 10 W to 24 V DC. The device is useful to pilot a bistable valve or two monostable valves for each connector, or to activate the electric coils or other electric devices with maximum absorption of 10 W to 24 V DC. Connecting two outputs to one electric device only and activating them simultaneously, it is possible to provide maximum 20 W to 24 V DC.



Mod.	Coding reference	Number of digital outputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Max power for M12 connector	Max power for digital output	Type of signal	Protection class	Operating temperature	Weight
ME3-0004-DL	Q	4	M12 A 5 pin female	2	122 x 25 mm	1 yellow led for each output	24 V DC	20 W	10 W	NPN	IP65	0 ÷ 50°C	100 g

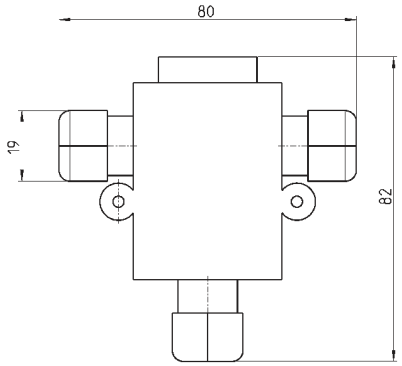
Adaptor and panel mount for Ethernet RJ45 to M12 D networks

For PROFINET, EtherCAT, EtherNet/IP



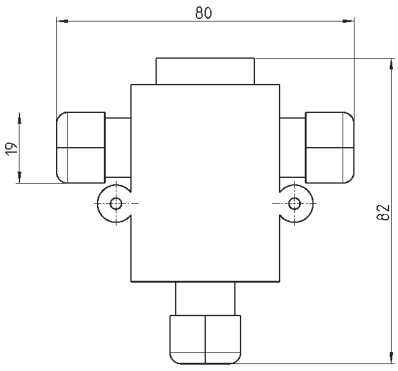
Mod.	description	type of connector	connection	cable length (m)
CS-SE04HB-F050	moulded cable	straight	RJ45 male, M12 D 4 pin female - Pin 5 is not connected	0.5

Profibus-DP data line tee



Mod.
CS-AA03EC

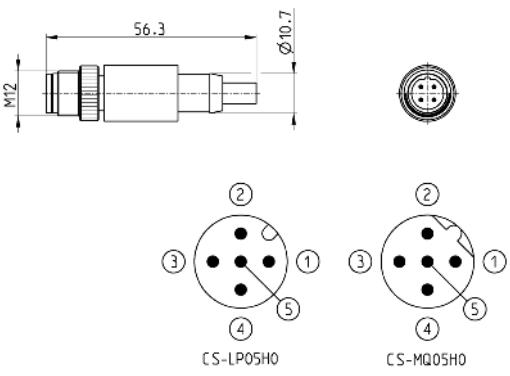
CANopen / DeviceNet data line tee



CS-AA05EC

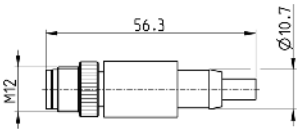
M12 male terminating resistor

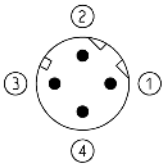
For PROFIBUS, CANopen, DeviceNet



Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male - Pin 5 is not connected	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male - Pin 5 is connected	CANOpen / DeviceNet

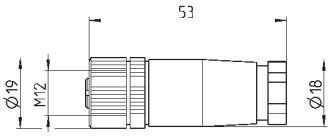
Subnet terminating resistor

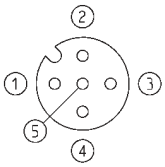




Mod.	description	type of connector	connection	Protocol
CS-SU04H0	moulded terminating resistor	straight	M12 D 4 pin	subnet

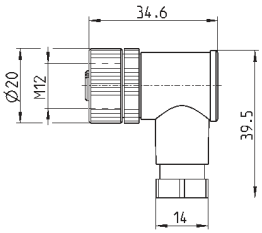
Straight connector for power supply

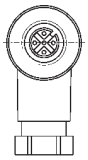


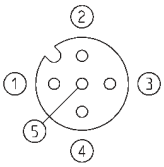


Mod.	description	type of connector	connection	cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female - Pin 5 is not connected	-

Angular connector for power supply

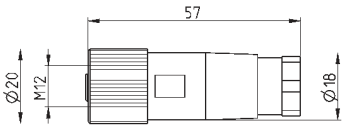


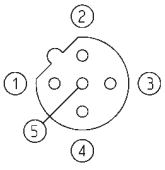




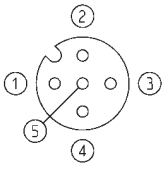
Mod.	description	type of connector	connection	cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female - Pin 5 is not connected	-

Straight female M12 connectors for Bus-IN





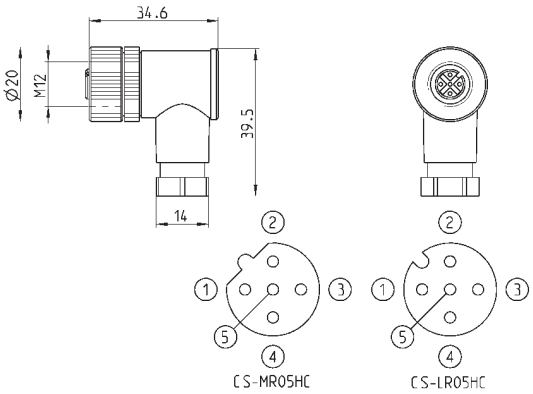
CS-MF05HC



CS-LF05HC

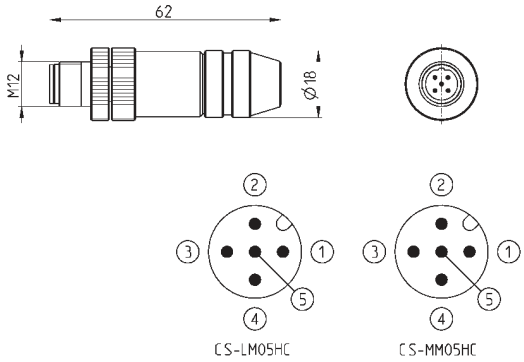
Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

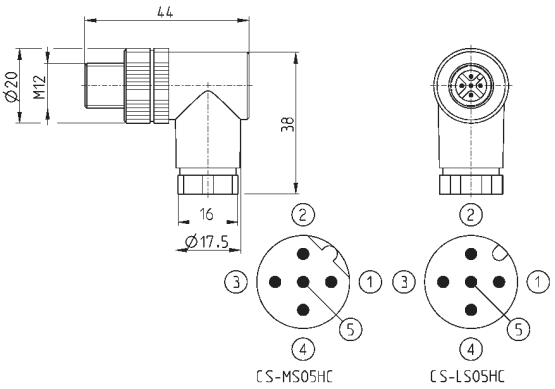
Straight male M12 connectors for Bus-OUT



Mod.	description	type of connector	connection	Protocol
CS-LM05HC	for metal wiring	straight	M12 A 5 pin male	CANopen / DeviceNet
CS-MM05HC	for metal wiring	straight	M12 B 5 pin male	PROFIBUS

Angular 90 ° male M12 connectors for Bus-OUT

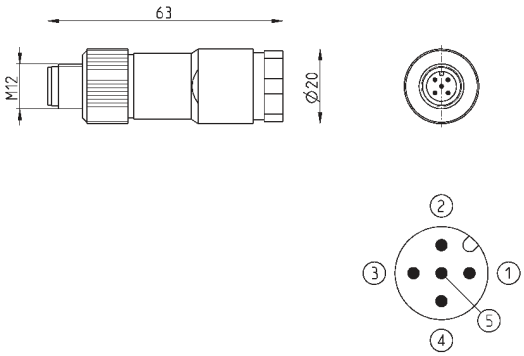
The Mod. CS-LS05HC can also be used for the connection of the digital output modules and of the analog input and output modules.



Mod.	description	type of connector	connection	Protocol
CS-LS05HC	for wiring	90°	M12 A 5 pin male	CANopen / DeviceNet
CS-MS05HC	for wiring	90°	M12 B 5 pin male	PROFIBUS

5 pin male straight M12 DUO connector

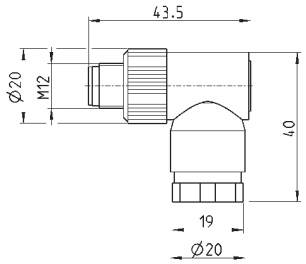
For the connection of the digital output modules and analog input/output modules.

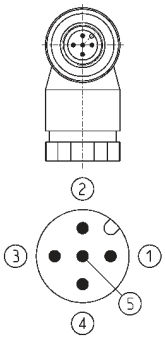


Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

5 pin male angular M12 DUO connector

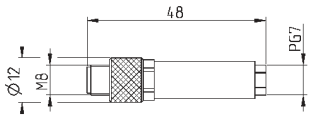
For the connection of the digital output modules ME3-0004-DL





Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

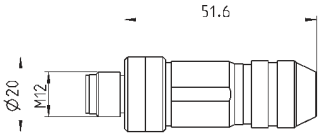
3 pin male M8 wiring connector for digital input modules

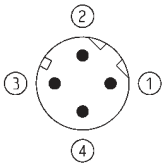


Mod.	description	type of connector	connection	cable length (m)
CS-DM03HB	for wiring	straight	M8 3 pin male	-

Male wiring connector for Bus-IN and Bus-OUT

For PROFINET, EtherCAT, EtherNet/IP and for the subnet



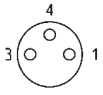


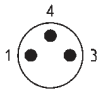
Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-

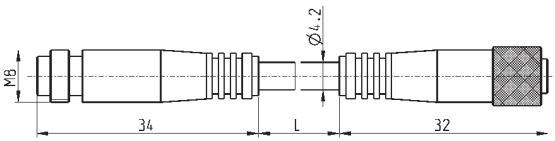
Extension with M8 connector, 3 pin male / female

Non shielded

For the connection of the digital input modules ME3-0008 and ME3-0004



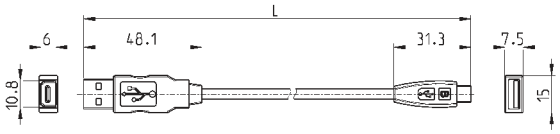




Mod.	description	type of connector	connection	L [cable length] (m)
CS-DW03HB-C250	moulded cable	straight	M8 3 pin male / female	2.5
CS-DW03HB-C500	moulded cable	straight	M8 3 pin male / female	5

USB to Micro USB cable Mod. G11W-G12W-2

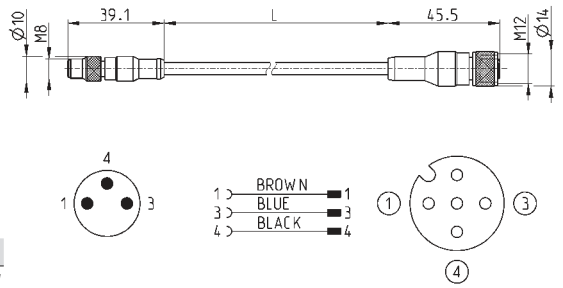
For the hardware configuration
of the Camozzi products



Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2

Adapter cable, M8 3-pin male - M12 4-pin female

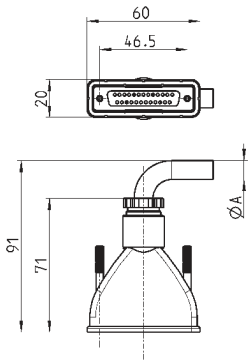
Protection class: IP69K



Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5

Straight Sub-D 25 pin female connector with axial cable

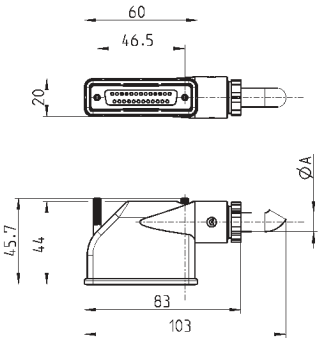
Protection class IP65



Mod.	øA	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with radial cable

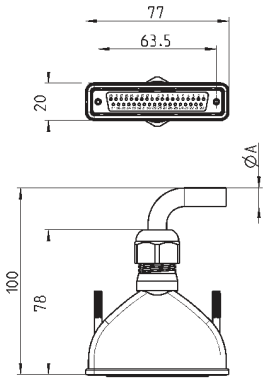
Protection class IP65



Mod.	øA	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

Straight Sub-D 37 pin female connector with axial cable

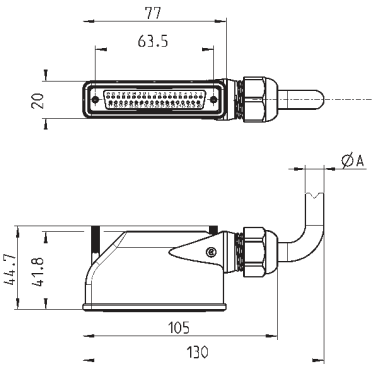
Protection class IP65



Mod.	øA	PIN	cable length (m)
G9X-3	12	37	3
G9X-5	12	37	5
G9X-10	12	37	10
G9X-15	12	37	15
G9X-20	12	37	20
G9X-25	12	37	25

Right angle Sub-D 37 pin female connector with radial cable

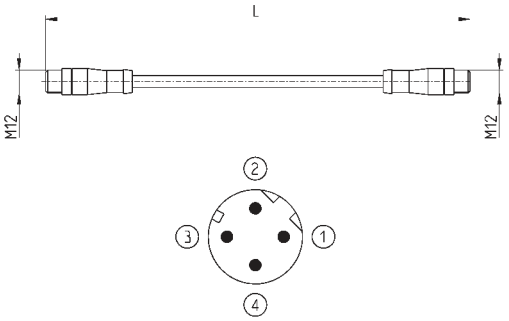
Protection class IP65



Mod.	øA	PIN	cable length (m)
G9X1-3	12	37	3
G9X1-5	12	37	5
G9X1-10	12	37	10
G9X1-15	12	37	15
G9X1-20	12	37	20
G9X1-25	12	37	25

Cables with straight connectors

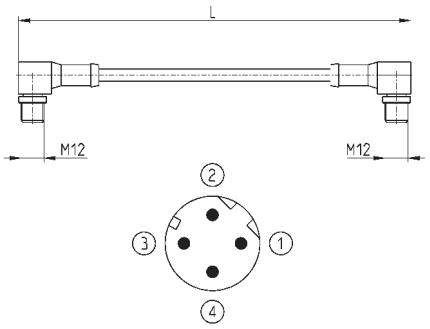
For PROFINET, EtherCAT, EtherNet/IP and for the subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SB04HB-D100	moulded cable	straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	moulded cable	straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	moulded cable	straight	2x M12 D 4 pin male	10
CS-SB04HB-DD00	moulded cable	straight	2x M12 D 4 pin male	15
CS-SB04HB-DG00	moulded cable	straight	2x M12 D 4 pin male	20
CS-SB04HB-DJ00	moulded cable	straight	2x M12 D 4 pin male	25

Cables with 90° angular connectors

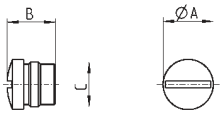
For PROFINET, EtherCAT, EtherNet/IP and for the subnet



Mod.	description	type of connector	connection	L [cable length] (m)
CS-SC04HB-D100	moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	moulded cable	90°	2x M12 D 4 pin male	10
CS-SC04HB-DD00	moulded cable	90°	2x M12 D 4 pin male	15
CS-SC04HB-DG00	moulded cable	90°	2x M12 D 4 pin male	20
CS-SC04HB-DJ00	moulded cable	90°	2x M12 D 4 pin male	25

M8 and M12 connector cover caps

For digital and analog input/output modules and subnet

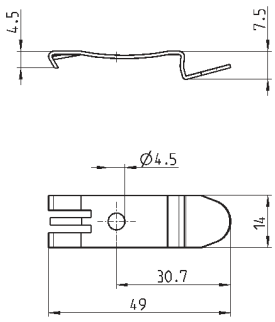


Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12

Mounting brackets for DIN rail

DIN EN 50022 (mm 7,5 x 35 - width 1)

Supplied with:
2x plates
2x screws M4x6 UNI 5931



Mod.
PCF-E520

CODING EXAMPLE OF MULTIPOLE AND FIELDBUS INTERFACES - Accessories

HN	A	0	M	-	A

HN	SERIES
A	TYPE: A = Accessory
0	SIZE: 0 = not defined
M	ELECTRICAL CONNECTION: M = 25 pin PNP Multipole N = 25 pin NPN Multipole H = 37 pin PNP Multipole L = 37 pin NPN Multipole I = HN interface with Series CX
A	TERMINALS: A = 1, 12/14 in common - 3/5, 82/84 with thread B = 1, 12/14 separated - 3/5, 82/84 with thread C = 1, 12/14 in common - 3/5, 82/84 with silencer D = 1, 12/14 separated - 3/5, 82/84 with silencer NOTE: The Right Terminal is supplied with seals and fixing screws and available as accessory with the commercial code HA0T-H

Detailed descriptions of the available accessories can be found in the components list on page 1.40.08 (Multipole version) e 1.40.09 (Fieldbus version)

CODING EXAMPLE OF SINGLE VALVE (Spare part)

H	P	1	V	-	M

H	SERIES	
P	TYPE: P = pneumatic	
1	SIZE: 1 = 10.5 2 = 21	
V	TYPE OF ACCESSORY: V = Solenoid valve	
M	SOLENOID VALVE: M = 5/2 Monostable B = 5/2 Bistable V = 5/3 Centres Closed C = 2 x 3/2 NC A = 2 x 3/2 NO G = 1 x 3/2 NC + 1 x 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 1 x 2/2 NC + 1 x 2/2 NO L = free position	SOLENOID VALVE + REGULATOR + SUBBASE N = 5/2 Monostable P = 5/2 Bistable Q = 5/3 Centres Closed R = 2 x 3/2 NC S = 2 x 3/2 NO T = 1 x 3/2 NC + 1 x 3/2 NO U = 2 x 2/2 NC X = 2 x 2/2 NO Y = 1 x 2/2 NC + 1 x 2/2 NO

Detailed descriptions of the available accessories can be found in the components list on page 1.40.08 (Multipole version) e 1.40.09 (Fieldbus version)

CODING EXAMPLE OF SUBBASES - Accessories

H	A	1	R	-	A

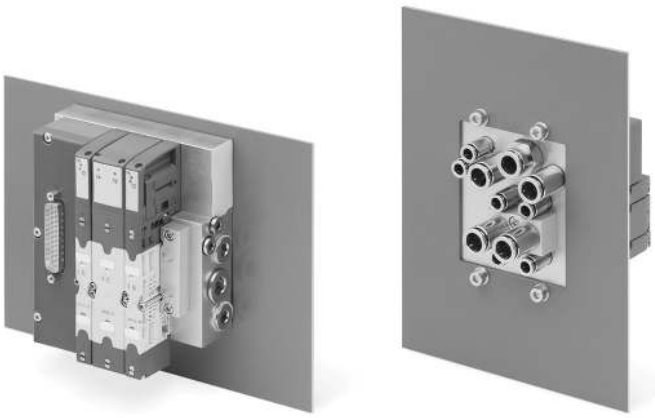
H	SERIES
A	TYPE: A = accessories
1	SIZE: 0 = for X-Y-K-T-U-V-Z 1 = 10.5 2 = 21
S	TYPE OF ACCESSORY: R = subbase for multipole connection G = seal W = subbase without electronic board (option valid only for position 2a. See the components list on page 1.40.08 - Multipole version - and 1.40.09 - Fieldbus version)
A	SUBBASE: A = through - M7 threads AZ = through - M7 threads, monostable D = channel 1, 3, 5 closed - M7 threads DZ = channel 1, 3, 5 closed - M7 threads, monostable G = channel 3, 5 closed - M7 threads GZ = channel 3, 5 closed - M7 threads, monostable P = through - G1/4 threads Q = through - G1/8 threads X = supplementary supply and exhaust Y = supplementary supply and exhaust with integrated silencer W = supply from the exhausts K = separation of electrical supply and supplementary pneumatic supply SEAL: T = diaphragm seal for the closure of channels 1, 3, 5 U = diaphragm seal for the closure of channel 1 V = diaphragm seal for the closure of channels 3, 5 P = through

Detailed descriptions of the available accessories can be found in the components list on page 1.40.08 (Multipole version) e 1.40.09 (Fieldbus version)
NOTE: subbases are always supplied without connection fittings.

Series HC valve island
Cabinet version

New

Multipole connection with 25 or 37 pins
Valve functions: 2x2/2, 2x3/2, 5/2, 5/3 CC



- Valve flow: 400 and 700 Nl/min
- Subbases: from 4 to 32 positions for valve size 10.5mm, from 2 to 16 positions for valve size 21mm
- Same subbase for both sizes
- Rear pneumatic outlets
- Interface seal with the internal part of the Cabinet

In applications which are subject to washing or operate in particularly dirty environments, having a specific solution represents a distinct advantage. With the Series HC it is possible to exploit the subbase and relative perimetric seal to close the passage window of all tubings. In this way the external environment is isolated from the internal part of the cabinet, guaranteeing a high protection level against solid and liquid particles that, upon entering, may damage the components.

All pneumatic connections are immediately available avoiding operations for the installation of panel mount fittings. Series HC uses the same valve functions as those available in Series HN.

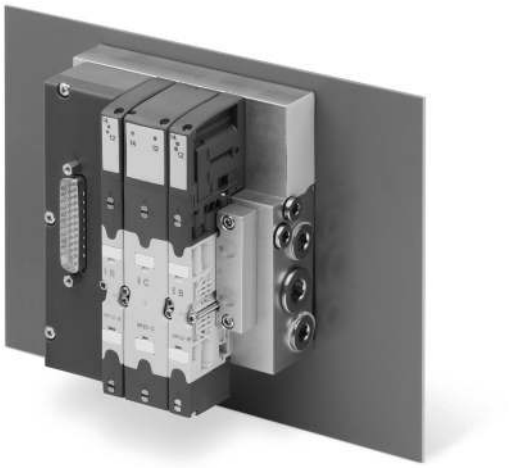
Thanks to a particularly flexible use of the valve positions, different configurations can be realized (further details can be found on the following pages regarding the correct management of electrical signals).

GENERAL DATA

PNEUMATIC SECTION	
Valve construction	spool with seals
Valve functions	5/2 monostable and bistable 5/3 CC 2 x 2/2 NO 2 x 2/2 NC 1 x 2/2 NC+ 1 x NO 2 x 3/2 NC 2 x 3/2 NO 1 x 3/2 NC+ 1 x 3/2 NO
Materials	spool in aluminium spool seals in HNBR other seals in NBR cartridges in brass body and end covers in technopolymer subbases in aluminium
Connections	Inlets 2 and 4, size 10.5mm: M7, tube Ø 4, tube Ø 6 Inlets 2 and 4, size 21mm: G1/4, tube Ø 6, tube Ø 8, tube Ø 10 Supply 1: G3/8, tube Ø 8, tube Ø 10, tube Ø 12 Supply 12/14: M7, tube Ø 6 (6512 6-M7-M) Exhausts 3 and 5: G1/4, tube Ø 10 (6512 10-1/4-M) Exhausts 82/84: M7, silencer (2931 M7)
Temperature	0 ÷ 50°C
Air specifications	Filtered compressed air, non lubricated, class 6.4.4 according to ISO 8573-1:2010. If lubrication is necessary, please only use oils with maximum viscosity of 32 Cst and the version with external servo-pilot supply. The servo-pilot supply air quality class must be 6.4.4 according to ISO 8573-1:2010 (do not lubricate).
Valve sizes	10.5mm 21mm
Working pressure	-0.9 ÷ 10 bar
Pilot pressure	3 ÷ 7 bar 4.5 ÷ 7 bar (with working pressure exceeding 6 bar for the versions 2x2/2 and 2x3/2)
Flow rate	400 Nl/min (10.5mm) 700 Nl/min (21mm)
Mounting position	any position
Protection class	IP 65

ELECTRICAL SECTION	
Type of Sub-D connector	25 or 37 pins
Max. absorption	0.8 A (with Sub-D connector 25 pins) 1 A (with Sub-D connector 37 pins)
Supply voltage	24 V DC +/-10%
Max. number of coils to operate	Size 10.5mm: 24 coils on 12 valve positions (with Sub-D connector 25 pins) 32 coils on 32 valve positions (with Sub-D connector 37 pins) Size 21mm: 24 coils on 6 valve positions (with Sub-D connector 25 pins) 32 coils on 16 valve positions (with Sub-D connector 37 pins) Sizes 10.5 mm and 21 mm simultaneously (further details can be found on the following pages the correct management of electrical signals)
Valve signalling	yellow led

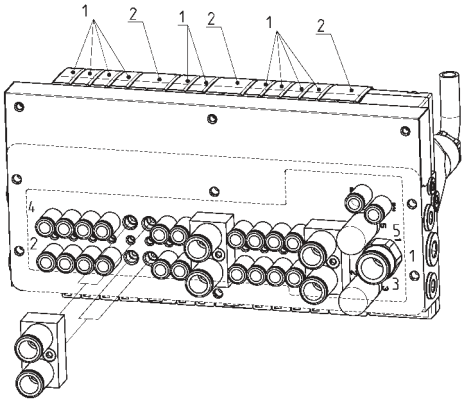
MULTIPOLE VERSION and MULTIPOLE WITH SUB-D ADAPTOR VERSION

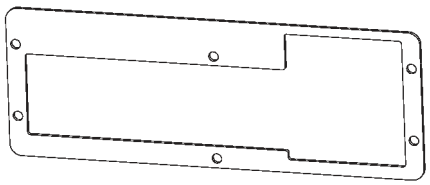


The Series HC can be connected in a quick and secure way thanks to the multipole electrical connection and to the pre-wired cable with 25 or 37 pins with in-line or angular connection.

The multipole valve island can be integrated in a serial structure managed by the Series CX multi-serial module.

SUBBASE CHARACTERISTICS





All the pneumatic connections are available on the lower side. The Series HC subbase has all the outlets for valves size 1. To use the major flow of valve size 2, a specific interface is used which joints the two outlets "2" and "4" of size 1 together into a single outlet "2" and "4" of size 2. This allows to use the same subbase regardless of valve size.

A specific seal can be placed on this side, thus allowing to isolate the internal part of the Cabinet as well as the components inside from the external environment. The solution is particularly useful in presence of liquid substances, as for example in the Food & Beverage sector and in the process industry. The valves can be placed as desired in any position. In case it is necessary to optimize the electric signals, we would recommend initially installing valves size 1 with two solenoids.

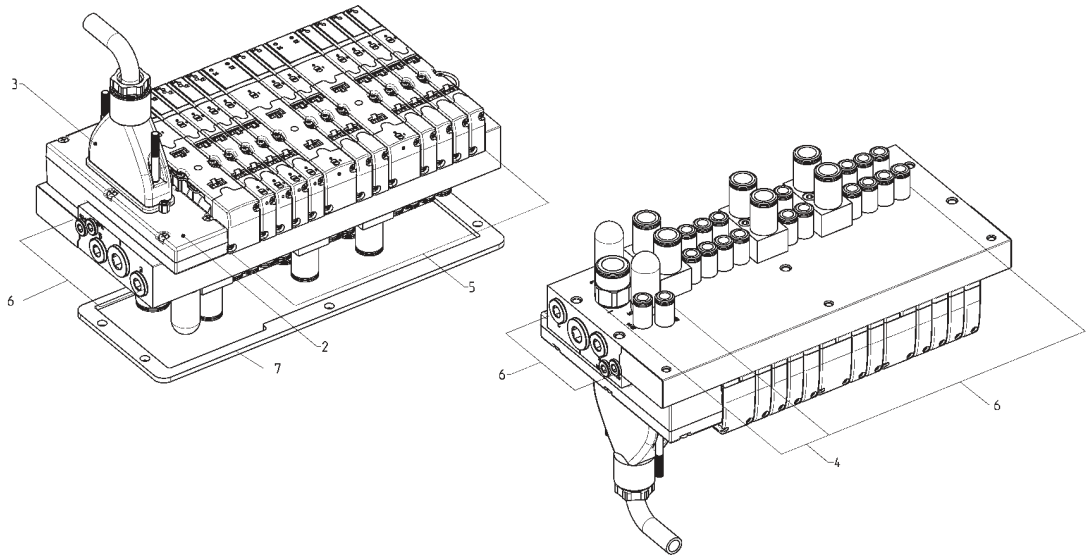
CODING EXAMPLE - MULTIPOLE VERSION

HC	5	H	-	03A	-	T4GTGST3G	-	M2B2CBMZV3M	-	G

HC	SERIES		
5	SIZE: 1 = 10.5 2 = 21 5 = Mixed		
H	ELECTRICAL CONNECTION: M = Multipole 25 pin PNP H = Multipole 37 pin PNP		
03A	CONNECTION: 000 = without connector/cable	CONNECTOR WITH CABLE AXIAL OUTPUT: 03A = 3m 05A = 5m 10A = 10m 15A = 15m 20A = 20m 25A = 25m CONNECTOR WITH CABLE RADIAL OUTPUT: 03R = 3m 05R = 5m 10R = 10m 15R = 15m 20R = 20m 25R = 25m	CONNECTOR WITHOUT CABLE: 4XA = 25 pins axial 4XR = 25 pins radial 9XA = 37 pins axial 9XR = 37 pins radial
T4GTGST3G	VALVE DIMENSION AND TYPE OF CONNECTION: Size 1 F = M7 threads G = with fittings for tube ø 4 L = with fittings for tube ø 6	 Size 2 M = G1/4 threads N = with fittings for tube ø 6 P = with fittings for tube ø 8 T = with fittings for tube ø 10 S = silencers for 2 plate	
M2B2CBMZV3M	SOLENOID VALVES Size 1 and 2: M = 5/2 Monostable B = 5/2 Bistable V = 5/3 CC C = 2 x 3/2 NC A = 2 x 3/2 NO G = 1 x 3/2 NC + 1 x 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 1 x 2/2 NC + 1 x 2/2 NO L = free position	SOLENOID VALVE + PRESSURE REGULATOR on channel 1, Size 2: N = 5/2 Monostable P = 5/2 Bistable Q = 5/3 CC R = 2 x 3/2 NC S = 2 x 3/2 NO T = 1 x 3/2 NC + 1 x 3/2 NO U = 2 x 2/2 NC X = 2 x 2/2 NO Y = 1 x 2/2 NC + 1 x 2/2 NO	PLATES: Z = plate for supplementary exhaust K = plate for supplementary supply
G	CONNECTIONS: Internal servo-pilot Internal servo-pilot and silencers External servo-pilot External servo-pilot and silencers If the connection on the right side only, add X at the end of the code. For example: GX (Internal servo-pilot, silencers, fitting tube ø 8) The connections on the sides that are not used are equipped with closing taps.	Supply fitting (1) Thread ø 8 ø 10 ø 12 A E I P - G M R B F L Q - H N S Fitting ø 10 on exhausts 3/5 Fitting ø 6 on servo-pilot 12/14 If the connection on the left side only, dd K at the end of the code. For example: GK A and B versions are equipped with taps on the left side and on the right one.	 If the connection is on both sides, add W at the end of the code. For example: GW

In presence of identical consequent codes both for the subbases as for the valves you need to substitute the letter with the number.
Ex: HC5H-03A-TGGGGTGSTGGG-MBBCCBMZVMMM-G is converted to HHC5H-03A-T4GTGST3G-M2B2CBMZV3M-G.

CODING - MULTIPOLE VERSION

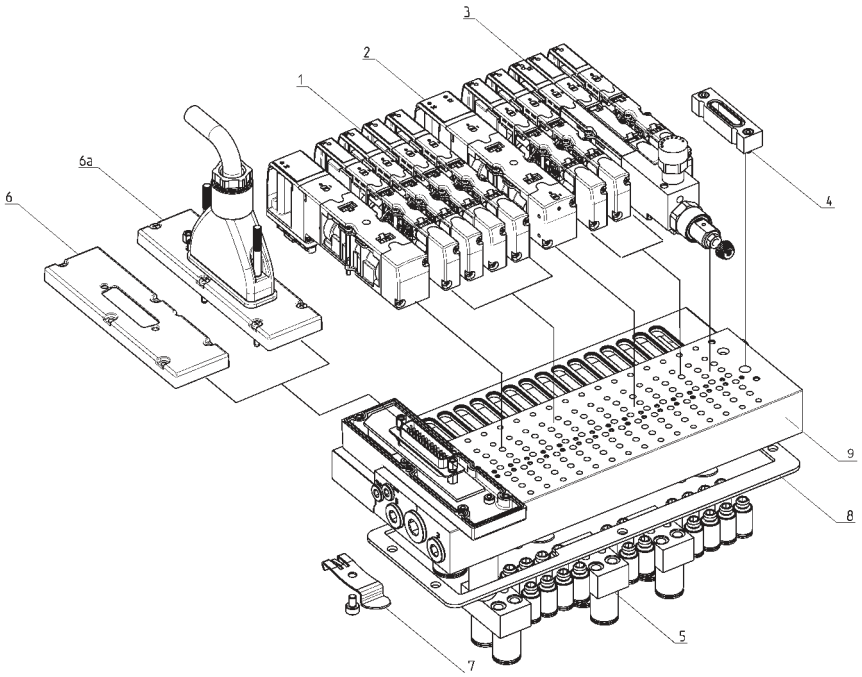


1	2		3		4								5										6		7
H	C	5	H	-	0	3	A	-	T	4	G	T	G	S	T	3	G	-	M	2	B	2	C	B	M	Z	V	3	M	-	G	-	G

HC...

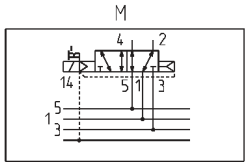
SIZE (1)	ELECTRICAL CONNECTION (2)	CONNECTION (3)	VALVE DIMENSION and CONNECTION Size 1 (4)	SOLENOID VALVES Size 1 and 2 (5)	CONNECTIONS / SERVO PILOT Threaded (low side) (6)	ACCESSORIES (7)
1	M	000	F	M	A	G
2	H	03A	G	B	B	
5		05A	L	V	CONNECTIONS / SERVO PILOT Fittings tube Ø 8 (low side)	
		10A	VALVE DIMENSION and CONNECTION Size 2	C	E	
		15A	M	A	F	
		20A	N	G	G	
		25A	P	E	H	
		03R	T	F	CONNECTIONS / SERVO PILOT Fittings tube Ø 10 (low side)	
		05R	S	I	I	
		10R		L	L	
		15R		SOLENOID VALVE + PRESSURE REGULATOR channel 1, size 2	M	
		20R		N	N	
		25R		P	CONNECTIONS / SERVO PILOT Fittings tube Ø 12 (supply)	
		4XA		Q	P	
		4XR		R	Q	
		9XA		S	R	
		9XR		T	S	
		CXA		U	See the notes at the end of the coding example	
				X		
				Y		
				PLATES		
				Z		
				K		

MULTIPOLE version - COMPONENTS

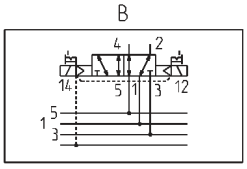


COMPONENTS	
1	Solenoid valve size 1 (10.5 mm)
2	Solenoid valve size 2 (21 mm)
3	Valve size 2 with pressure regulator
4	Plate for internal/external servo pilot
5	Outlet interface for valves size 2
6	Multipole electric cover 25 pins
6a	Multipole electric cover 37 pins
7	Mounting bracket for DIN rail
8	Interface seal
9	Subbase

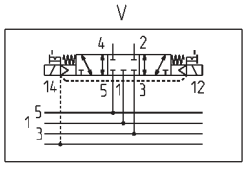
AVAILABLE FUNCTION - SYMBOLS FOR SOLENOID VALVES



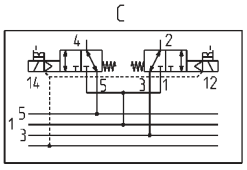
M = 5/2-way, Monostable



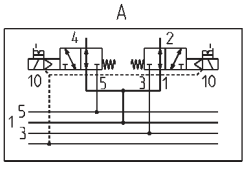
B = 5/2-way, Bistable



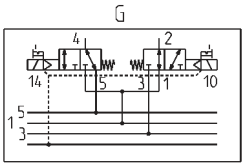
V = 5/3-way Centres Closed



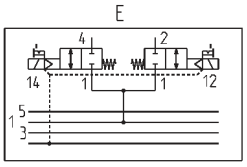
C = 2 x 3/2-way NC



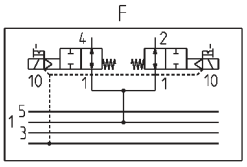
A = 2 x 3/2-way NO



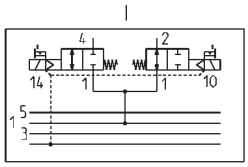
G = 1 x 3/2-way NC + 1 x 3/2-way NO



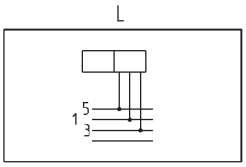
E = 2 x 2/2-way NC



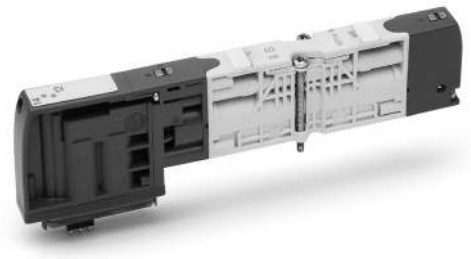
F = 2 x 2/2-way NO



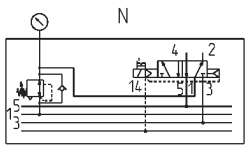
I = 1 x 2/2-way NC + 1 x 2/2-way NO



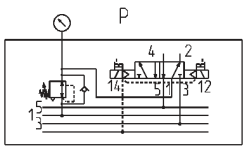
L = free position



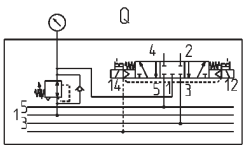
AVAILABLE FUNCTIONS - SYMBOLS FOR SOLENOID VALVES WITH PRESSURE REGULATOR



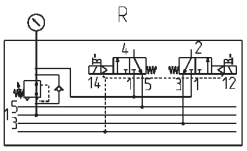
N = 5/2-way, Monostable



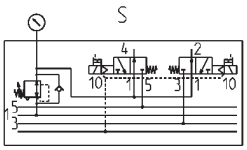
P = 5/2-way, Bistable



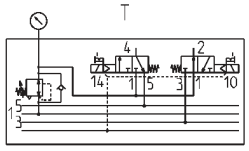
Q = 5/3-way Centres Closed



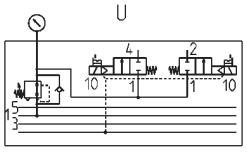
R = 2 x 3/2-way NC



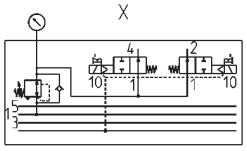
S = 2 x 3/2-way NO



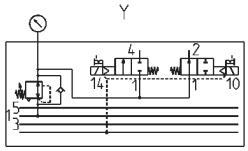
T = 1 x 3/2-way NC + 1 x 3/2-way NO



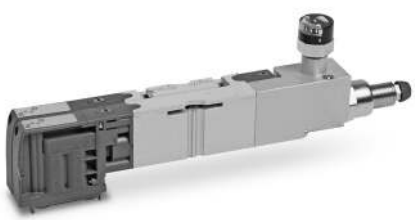
U = 2 x 2/2-way NC



X = 2 x 2/2-way NO

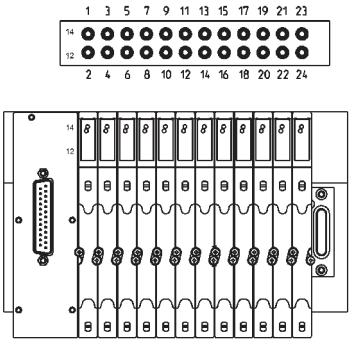


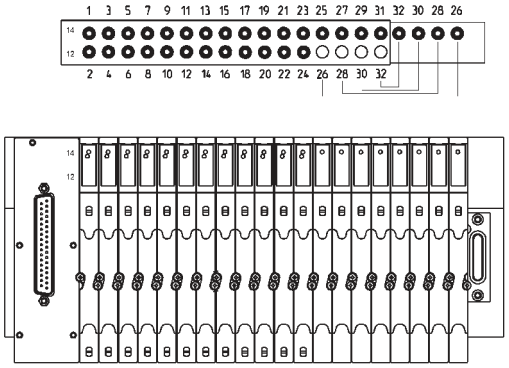
Y = 1 x 2/2-way NC + 1 x 2/2-way NO



CORRECT MANAGEMENT OF ELECTRICAL SIGNALS - SIZE 10.5mm

○ = (A)
● = (B)
⊘ = (C)



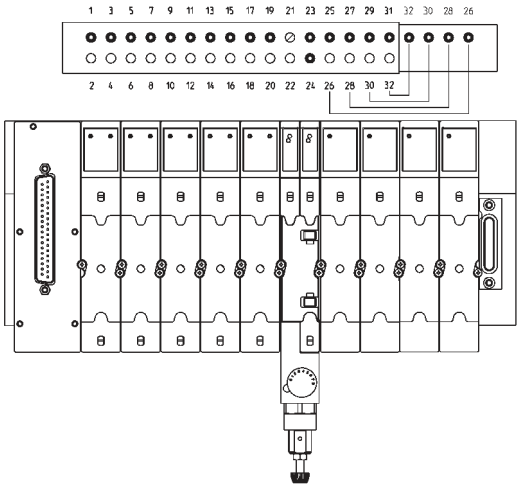


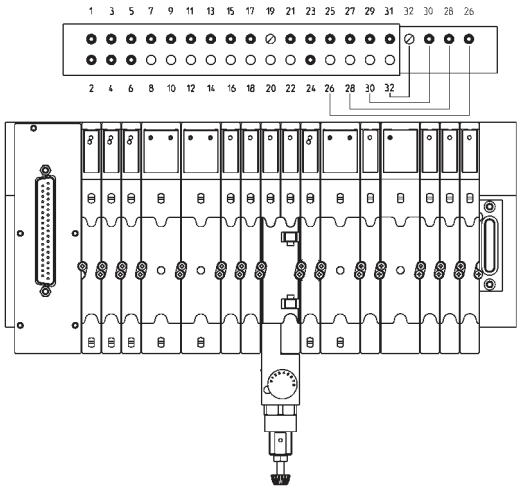
A = free pin
B = pin used to control the solenoid
C = pin not usable
12 14 = solenoid position

25-pin connector: 24 signals usable and available on a max of 12 valve positions size 1. The 12 pos. can be freely configured between size 1 and 2, valves size 2 occupy 2 pos. size 1.

37-pin connector: 32 signals can be freely used up to a max of 16 valve positions, bistable or monostable size 1. To make the best of electrical signals, it is necessary to use valves with two solenoids in the first positions. Signals that are not necessary to control the solenoids are not lost but can be used on the internal expansion board (see pins 32/30/28/26 in the above example).

CORRECT MANAGEMENT OF ELECTRICAL SIGNALS - SIZE 21mm





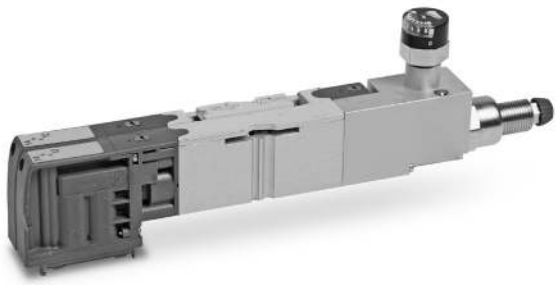
The valve size 2 does't need commands with even numbers (of pins) placed in the lower part of the board.
These can be used in the expansion board, thus allowing the realization of valve islands consisting of up to 16 valves.

37-pin connector: with valves size 2, 32 signals can be used up to a max of 16 valve positions, bistable or monostable.

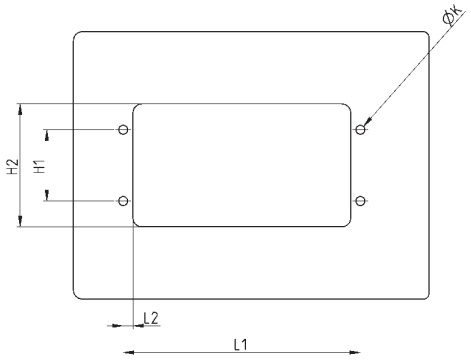
Of valves with two solenoids are not grouped in the initial positions, the possibility to expand is reduced.
In the above example, signals Nell'esempio i segnali placed before the pin 26 cannot be used in the expansion board.

Valve with integrated pressure regulator HP2V-...

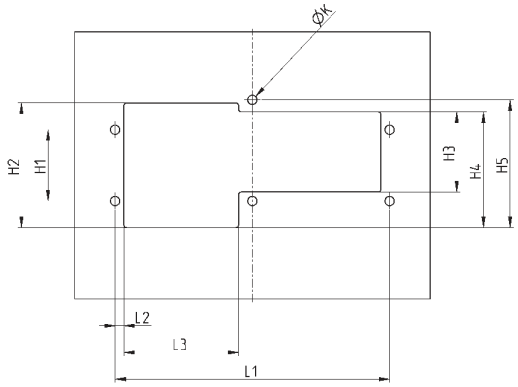
This solution has the advantage of reducing the valve island's overall height compared to traditional "sandwich" solutions.
The pressure regulator allows to set the supply pressure of the lateral valve.



SIZE AND SHAPE OF THE PASSAGE WINDOW



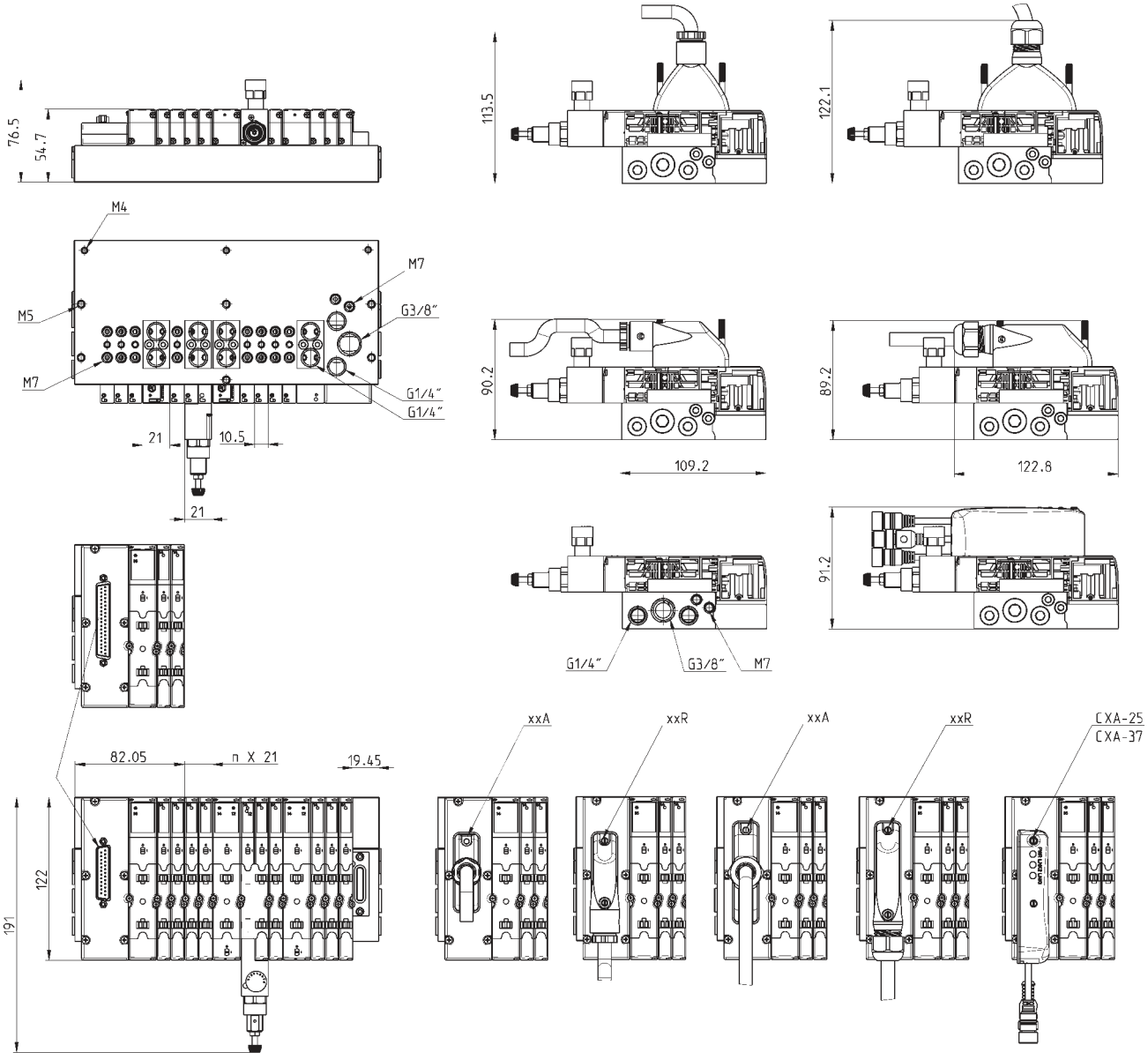
VALVE ISLANDS FROM 4 TO 8 PLACES



VALVE ISLANDS FROM 10 TO 16 PLACES

Nr of PLACES	H1	H2	L1	L2	ØK	Nr of PLACES	H1	H2	H3	H4	H5	L1	L2	L3	ØK
4	40	70	91.5	5	5	**10**	40	70	45	65	71.7	154.5	5	64.5	5
6	40	70	112.5	5	5	**12**	40	70	45	65	71.7	175.5	5	64.5	5
8	40	70	133.5	5	5	**14**	40	70	45	65	71.7	196.5	5	64.5	5
						16	40	70	45	65	71.7	217.2	5	64.5	5

MULTIPOLE version 25 and 37 pin - DIMENSIONS



CODING EXAMPLE OF SINGLE VALVE (Spare part)

H	P	1	V	-	M

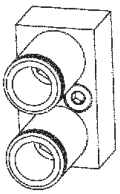
H	SERIES	
P	TYPE: P = pneumatic	
1	SIZE: 1 = 10.5 2 = 21	
V	TYPE OF ACCESSORY: V = Solenoid valve	
M	SOLENOID VALVE: M = 5/2 Monostable B = 5/2 Bistable V = 5/3 Centres Closed C = 2 x 3/2 NC A = 2 x 3/2 NO G = 1 x 3/2 NC + 1 x 3/2 NO E = 2 x 2/2 NC F = 2 x 2/2 NO I = 1 x 2/2 NC + 1 x 2/2 NO L = free position	SOLENOID VALVE + REGULATOR + SUBBASE N = 5/2 Monostable P = 5/2 Bistable Q = 5/3 Centres Closed R = 2 x 3/2 NC S = 2 x 3/2 NO T = 1 x 3/2 NC + 1 x 3/2 NO U = 2 x 2/2 NC X = 2 x 2/2 NO Y = 1 x 2/2 NC + 1 x 2/2 NO

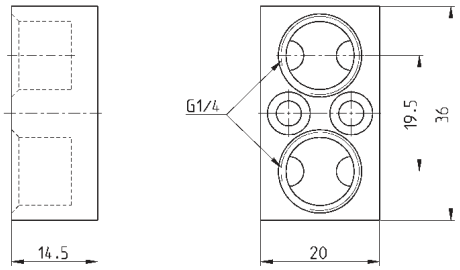
CODING EXAMPLE OF SUBBASES - Accessories

HC	A	1	R	-	10

HC	SERIES
A	TYPE: A = accessories
1	SIZE: 1 = 10.5
R	TYPE OF ACCESSORY: R = subbase for multipole connection G = seal
10	VALVE POSITIONS: 4 = 4 6 = 6 8 = 8 10 = 10 12 = 12 14 = 14 16 = 16 20 = 20 24 = 24 28 = 28 32 = 32

Interface for valve outlets size 10.5mm



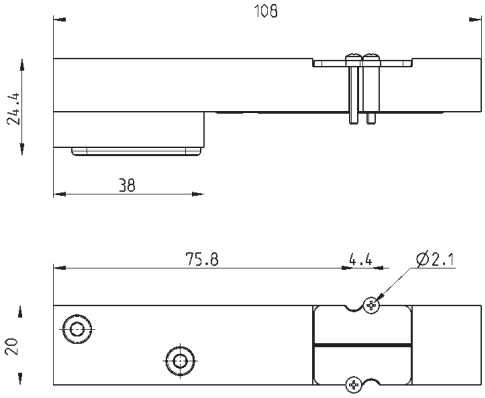


Supplied with:
1x interface
2x M4 screws
4x O-rings

Mod.
HC-M7-1/4

Plate for supplementary supply

It enables to integrate the supply. It uses two valve positions and allows, through the HC-M7-1/4 interface for the valve outlets, to integrate the air flow in the supply 1 channel.

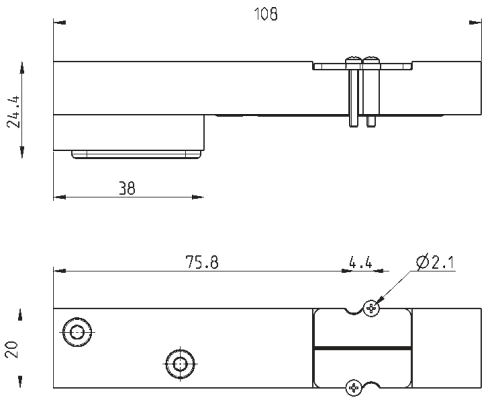


Supplied with:
1x plate
1x interface HC-M7-1/4

Mod.
HC-K-1/4

Plate for supplementary exhaust

It improves the flow characteristics of the exhaust. It is positioned on the sub-base, uses two valve positions and enables to increase the quantity of exhaust air, while keeping unchanged the aesthetics on the valve side. Also in Cabinet applications, it allows not to supply air into the protected area.



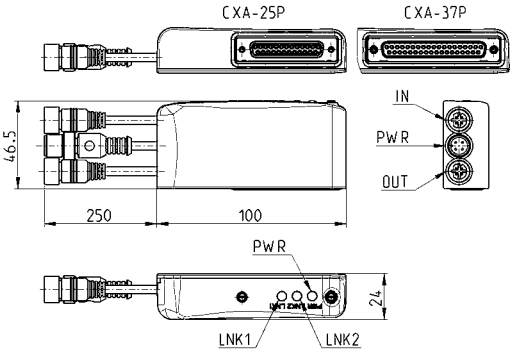
Supplied with:
1x plate
4x silencers 2931 M7

Mod.
HC-4Z-M7

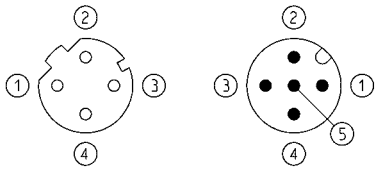
Sub-D adaptor module 25 and 37 pin Mod. CXA-25P and CXA-37P

Led 1 = Yellow LNK1
Led 2 = Yellow LNK2
Led 3 = Green PWR, supply present and OK

It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D connection. In the 25 pin version, it can manage up to a maximum of 24 outputs, while with 37 pin version, the outputs become 32. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 4 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.

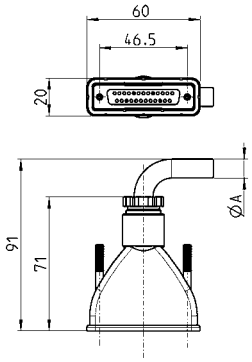


Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W
CXA-37P	Sub-D 37 pin	32	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W



Straight Sub-D 25 pin female connector with axial cable

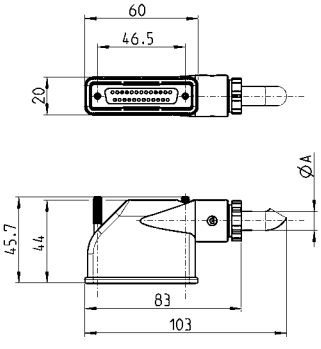
Protection class IP65



Mod.	ØA	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with radial cable

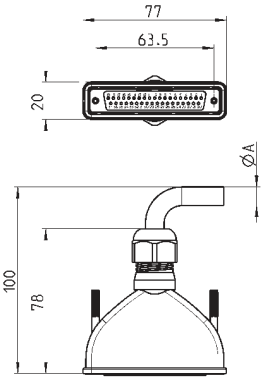
Protection class IP65



Mod.	ØA	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

Straight Sub-D 37 pin female connector with axial cable

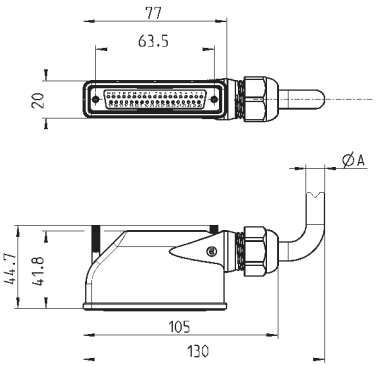
Protection class IP65



Mod.	øA	PIN	cable length (m)
G9X-3	12	37	3
G9X-5	12	37	5
G9X-10	12	37	10
G9X-15	12	37	15
G9X-20	12	37	20
G9X-25	12	37	25

Right angle Sub-D 37 pin female connector with radial cable

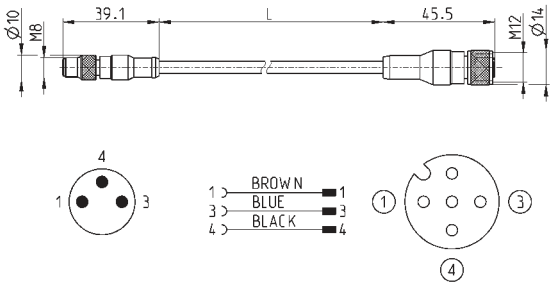
Protection class IP65



Mod.	øA	PIN	cable length (m)
G9X1-3	12	37	3
G9X1-5	12	37	5
G9X1-10	12	37	10
G9X1-15	12	37	15
G9X1-20	12	37	20
G9X1-25	12	37	25

Adapter cable, M8 3-pin male - M12 4-pin female

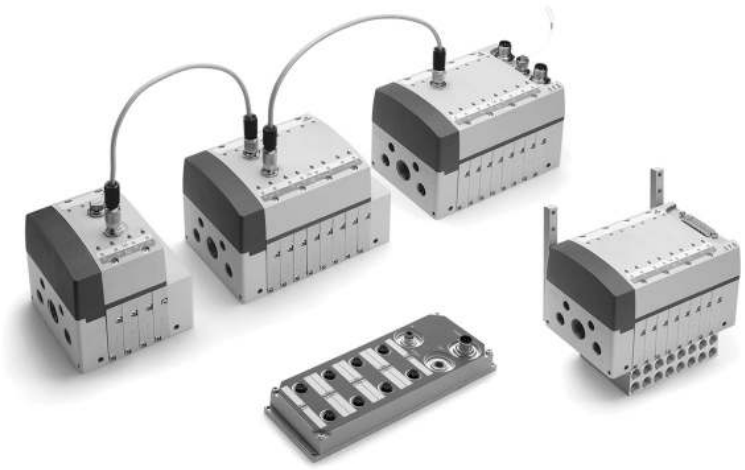
Protection class: IP69K



Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5

Series Y valve islands, Individual, Multipole and Fieldbus

Valve island with integrated Pneumatics and Electronics. Available versions: Individual, Multipole, Fieldbus (Profibus-DP, DeviceNet, CANopen). Valve functions: 2x2/2; 2x3/2; 5/2; 5/3 CC



Series Y solenoid valves are based on particular solutions regarding both the pneumatic, as well as the electronic part.

Sub-bases and valve bodies are integrated in a sole "module".
Different kinds of cartridges and spools are inserted in the module to configure the desired valve function.
The valve island can be expanded and modified and its maintenance is easy and safe.
Several solutions are possible for the electric connection through the use of modules for digital electric inputs.

Manuals, instruction sheets and configuration files can be found on catalogue.camozzi.com or on the QR code on the lable of the product.

- Pneumatic modularity: 2, 4, 6 and 8 valve positions
- Valve size: 12,5 mm
- Flow rate: 800 Nl/min

GENERAL AND ELECTRICAL DATA

Enclosed in the package there is a label on which it is possible to write each individual coil number.

PNEUMATIC SECTION	
Valve construction	Spool with seals
Valve functions	5/2 monostable and bistable 5/3 CC 2 x 2/2 NC 2 x 2/2 NO 1 x 2/2 NC + 1 x 2/2 NO 2 x 3/2 NC 2 x 3/2 NO 1 x 3/2 NC + 1 x 3/2 NO
Materials	Aluminium spool brass cartridge seals in NBR end covers and covers in technopolymer
Connections	Outlets 2 and 4: G1/8 Inlets 1 and 11: G1/4 Pilot ports: 12/14 and respective exhaust 82/84 G1/8 Exhausts 3/5: G1/2
Temperature	0 ÷ + 50°C
Air specifications	Filtered compressed air, non lubricated, class 3.4.3 according to ISO 8573.1 standard. If lubrication is necessary, please use only oils with maximum viscosity of 32 Cst and the version with external servo-pilot supply. The servo-pilot supply air quality class must be 3.4.3 according to ISO 8573.1 standard.
Dimensions/size	12.5 mm
Working pressure	-0.9 ÷ 10 bar (with external servo pilot supply)
Pilot pressure	3 ÷ 7 bar
Flow rate	800 Nl/min

INLETS SECTION	
Voltage	24 V ±10%
Max current	350 mA
Operating temperature	0°C ÷ +50°C
Relative humidity	30-90% +25°C 30-50% +50°C
Conform with standards	EN 61131-2 EN 61000-6-2 EN 61000-6-4
Protection class	IP65
Max. number of connected inlets	48
Max. number of connected Inlet Modules	3
Max. distance between init. mod. and last input or expansion mod.	50 m
Max. cable length between sensor and input module	30 m

ELECTRICAL SECTION	
Voltage	24V ±10%
Max. absorption	1300mA continuous 1600 mA latch
Operating temperature	0°C ÷ +50°C
Continuous current	ED 100%
Protection class	IP50 Individual version IP65 Multipole version PNP IP65 Fieldbus versions
Baud rate	Profibus-Dp 12 Mbit/s EN 50170 DeviceNet 500 Kbit/s EN 50235 CAN open 500 Kbit/s EN 50235
Maximum number of nodes	Profibus-Dp 32/127 DeviceNet 64 CAN open 127
Maximum number of expansions per node	15
Max. length of internal Fieldbus	50 m
Relative humidity	30-90% +25°C 30-50% +50°C
Conform with standards	EN 61326-1 EN 61010-1
Max. number of solenoids connected/activated at the same time	32

HOW TO COMPOSE THE VALVE ISLAND (EXAMPLE)

- one or more pneumatic modules with either 2, 4, 6 or 8 valve positions incorporating the sub-base with two separated channels for supply and exhaust, and the seat for the valves. It is possible to join the different modules together with pins and fixing screws, thus increasing the number of valve positions;
- two terminal plates (right and left) on which it is possible to connect pressure inlets and exhausts;
- seals among the various elements;
- cartridges and spools which reproduce the different valve functions (further information on the following pages)
- one or more covers which integrate electronics and pilots distributing signals to valves (further information on the following pages)

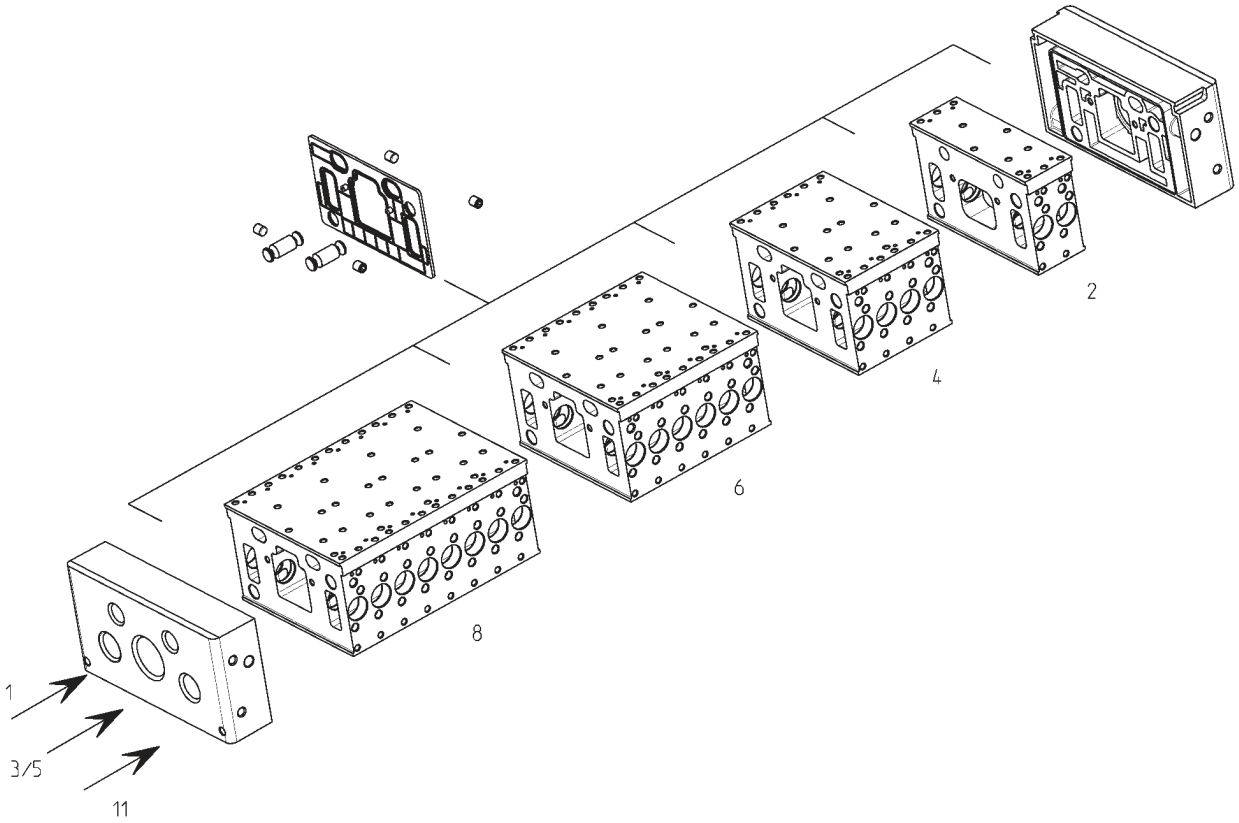
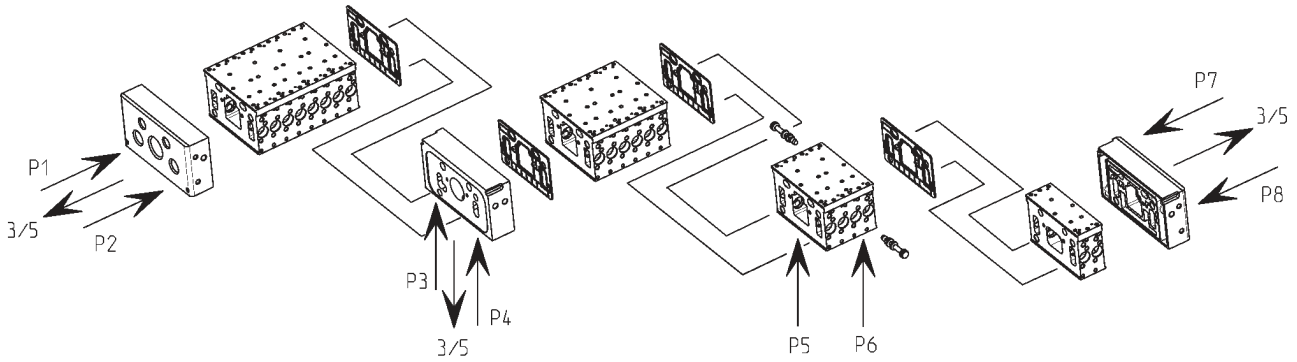


Plate for supplementary supply and exhaust

The two independent supplies allow the same valve to have different pressure values on outlets 2 and 4.
In this way a higher pressure can be used for the working operations and a lower pressure for the repositioning of the actuators, reducing the costs for generating compressed air.
The modularity of 2, 4, 6 or 8 valve positions allows, through the specific seals, to subdivide the island in pressure/exhaust zones without loosing valve positions. Functions W or X can be used to supply the intermediate pressure zones of an island.
To avoid any possible problem during exhaust, the exhaust itself has been increased and it passes through on both sides.



Air specifications - filtering elements

To guarantee a proper air quality and to not compromise the functioning of the valves, we advise to adopt filtering elements according to class 3 of table DIN ISO 8573-1.

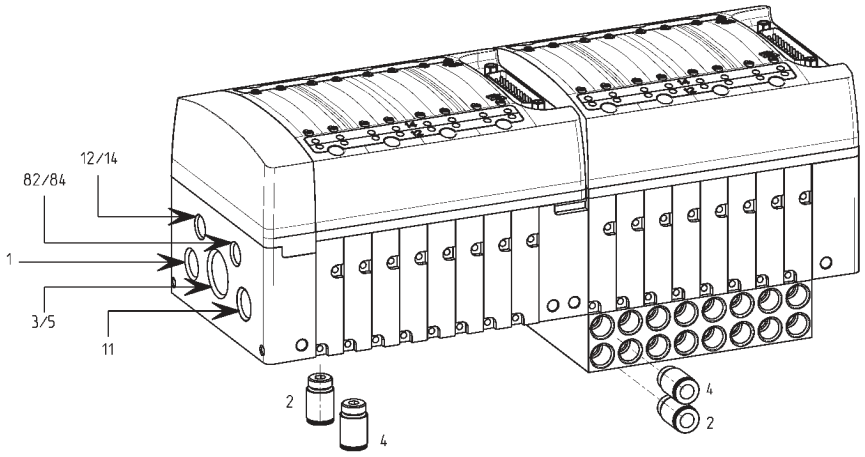
Filter models:
MC104-F10
MC238-F10
MC202-F10
N108-F10
N104-F10

AIR QUALITY CLASS ACCORDING TO STANDARD DIN ISO 8573-1			
Class	Solid bodies Max. dimension of the particles	Water contents dew-point	Oil quantity max. concentration mg/m³
1	0,1 µ	-70°C	0,01
2	1 µ	-40°C	0,1
3	5 µ	-20°C	1
4	15 µ	+3°C	5
5	40 µ	+7°C	25

Connection by means of terminal plates

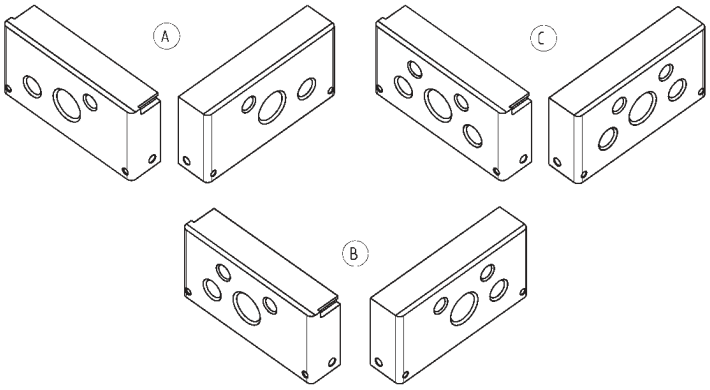
The connection to the compressed air source by means of terminal plates enables different types of connection. The fitting Mod. 6512 * (for dimensions see section 4/1.05) can be connected to inlets 2 and 4.

* It is possible to connect the following fittings, supplied with O-ring:
6512-4-1/8-M
6512-6-1/8-M
6512-8-1/8-M



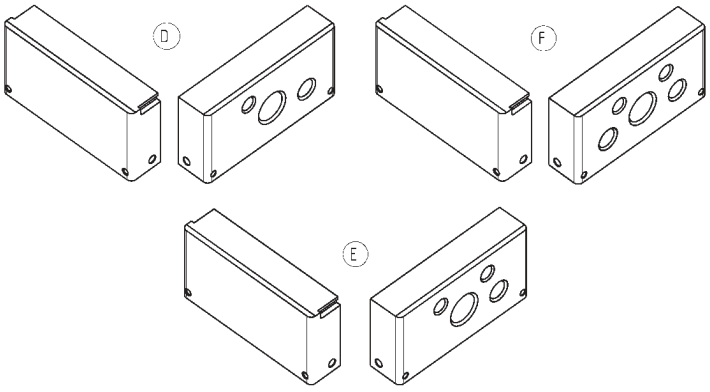
Supply (1-11)	Exhaust (3/5)	Servo-pilot supply (12/14)	Servo-pilot exhaust (82/84)	Inlets (2-4)
G1/4	G1/2	G1/8	G1/8	G1/8

TERMINAL PLATES - pneumatic connections from left and right



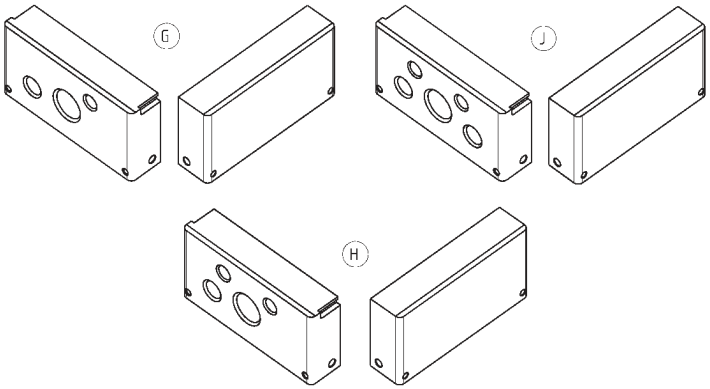
Terminal Plates		
Code	Common connections	Separated connections
A	1 - 11 12/14	82/84 3/5
B	1 - 11	12/14 82/84 3/5
C	-	1 - 11 12/14 82/84 3/5

TERMINAL PLATES - pneumatic connections from the right



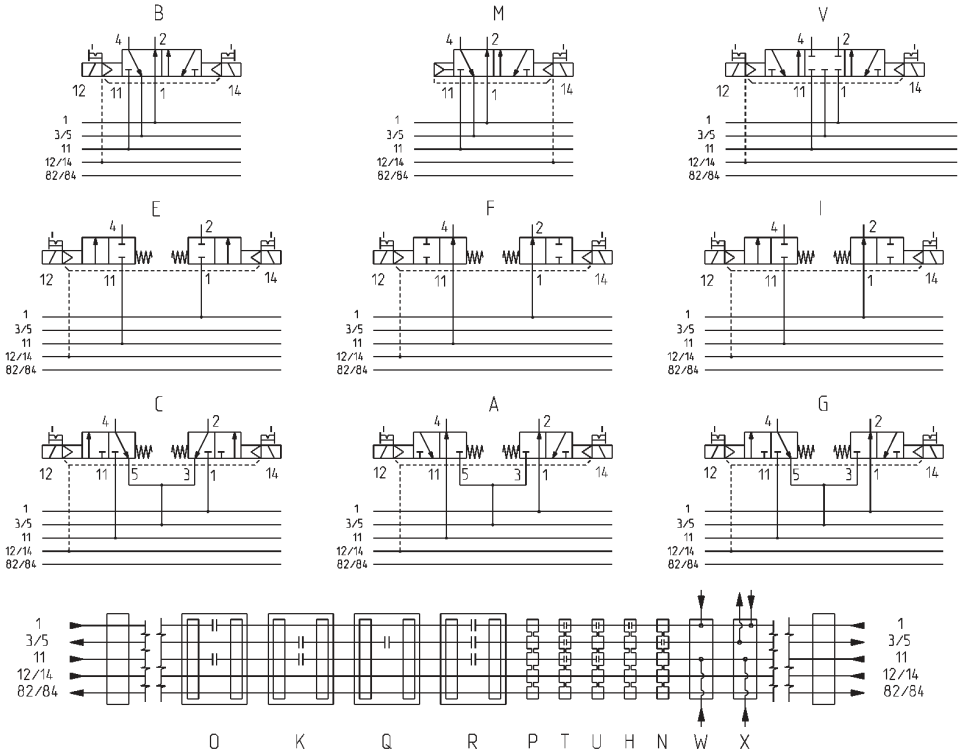
Terminal Plates		
Code	Common connections	Separated connections
D	1 - 11 12/14	82/84 3/5
E	1 - 11	12/14 82/84 3/5
F	-	1 - 11 12/14 82/84 3/5

TERMINAL PLATES - pneumatic connections from the left



Terminal Plates		
Code	Common connections	Separated connections
G	1 - 11 12/14	82/84 3/5
H	1 - 11	12/14 82/84 3/5
J	-	1 - 11 12/14 82/84 3/5

Available functions

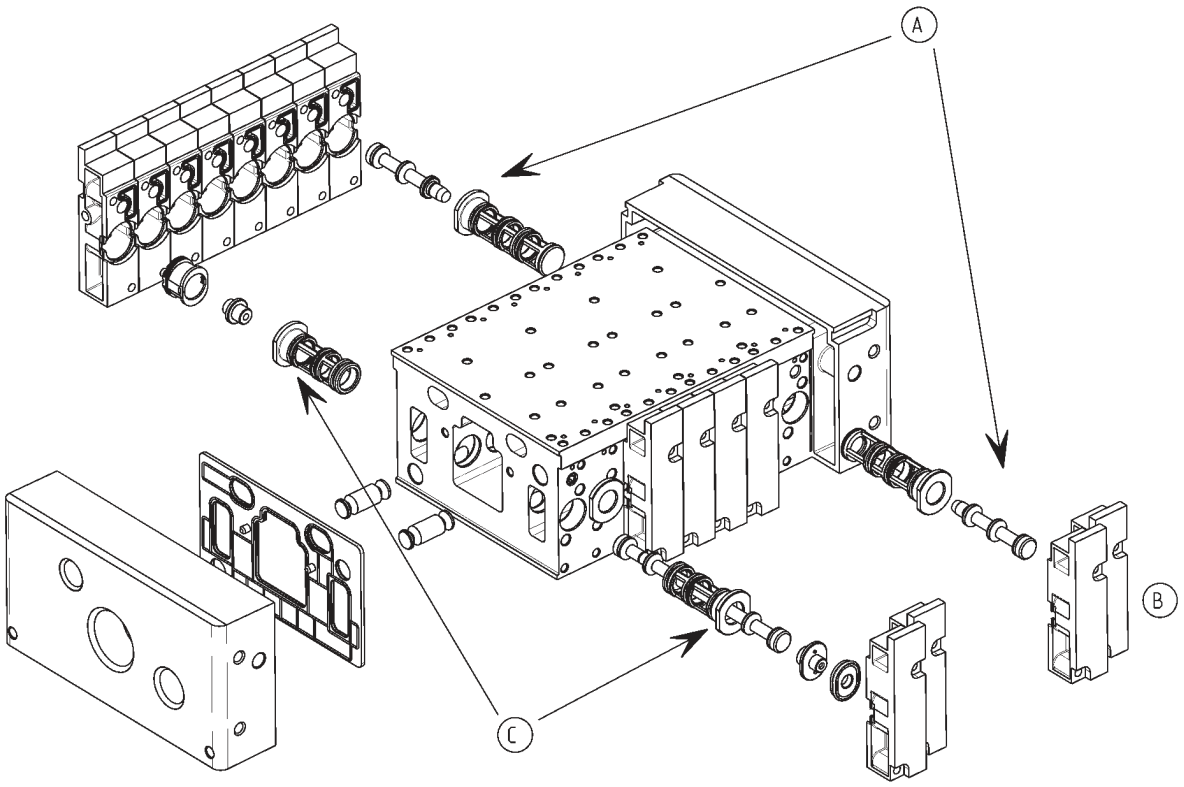


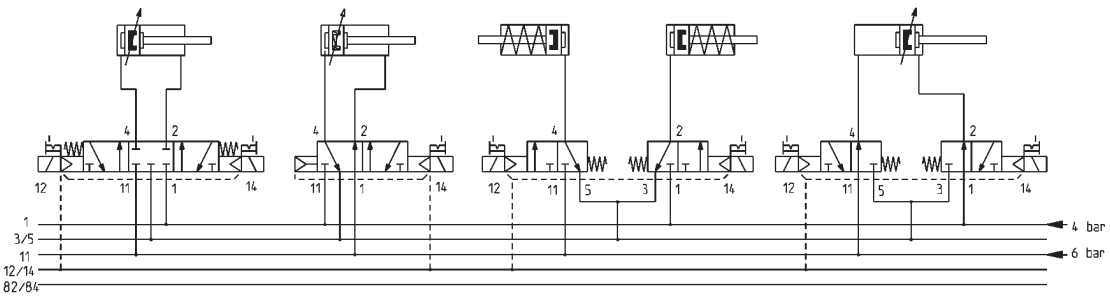
Code	Function	Actuation/return	Working pressure (bar)	Pilot pressure (bar)	Symbol
M	5/2 Monostable	solenoid/pneumatic spring	-0,9 ÷ 10	3 ÷ 7	M
B	5/2 Bistable	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	B
V	5/3 Centres Closed	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	V
I	2 x 2/2 (1 NO + 1 NC)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	I
E	2 x 2/2 (NC)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	E
F	2 x 2/2 (NO)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	F
G	2 x 3/2 (1 NO + 1 NC)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	G
C	2 x 3/2 (NC)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	C
A	2 x 3/2 (NO)	solenoid/solenoid	-0,9 ÷ 10	3 ÷ 7	A
L	Free position	-	-	-	L
W	Additional supply from 2 and 4	-	-	-	W
T	Diaphragm seal (module's separation)	-	-	-	T
P	Through seal (module's separation)	-	-	-	P
T/	Diaphragm seal (separation of both modules and covers)	-	-	-	T
P/	Through seal (separation of both modules and covers)	-	-	-	P
U	Diaphragm seal 3/5 open	-	-	-	U
H	Diaphragm seal 3/5 - 11 open	-	-	-	H
N	Diaphragm seal 1 - 11 open	-	-	-	N
U/	Diaphragm seal 3/5 open (separation of both modules and covers)	-	-	-	U
K	Expansion module, 2 positions with 3/5 - 11 closed	-	-	-	K
R	Expansion module, 2 positions with 3/5 - 1 - 11 closed	-	-	-	R
O	Expansion module, 2 positions with 1- 11 closed	-	-	-	O
Q	Expansion module, 2 positions with 3 - 5 closed	-	-	-	Q
X	Module for additional supply	-	-	-	X

Cartridges and spools for the creation of valve functions

The different valve functions are obtained by inserting the cartridges and spools in the seats of the pneumatic module. These seats have been designed at right angles with respect to the terminal plates.
The shape of cartridges and spools depends on the valve function required.
Example:
(A) = Cartridge and spool for a 3/2-way function
(B) = End cover
(C) = Cartridge and spool for a 5/2-way function

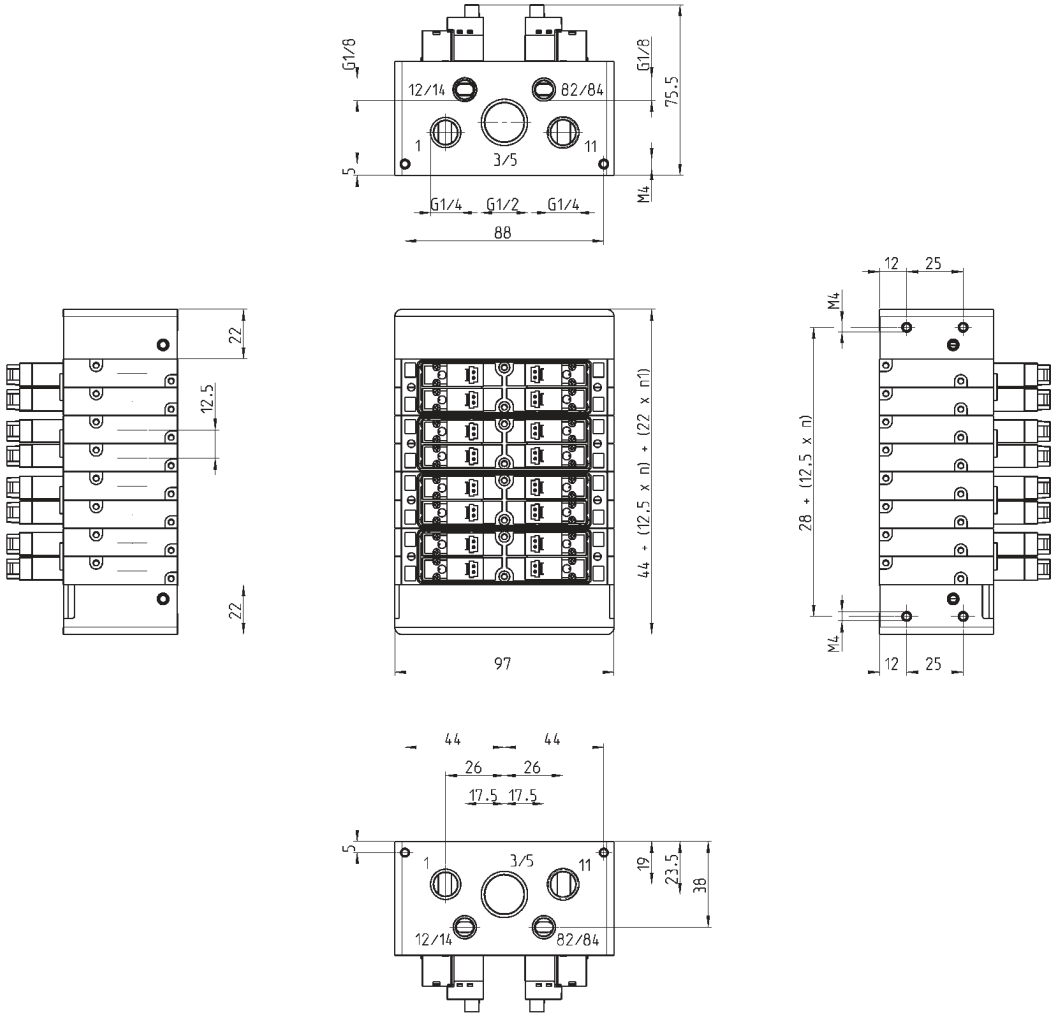
The modification or maintenance of a valve position is obtained removing the end cover "B" and replacing both the cartridge and the spool. During modification/maintenance, the tubing for the pneumatic connection can stay connected to the island, thus simplifying and optimising the whole operation.





Individual version - dimensions

n = number of valves
n1 = number of supplementary power supply modules (cod. X)

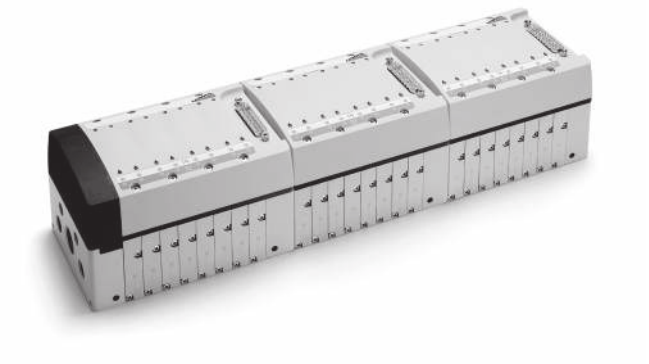


Covers

The Multipole and Fieldbus versions use covers for the pilot valves, which guarantee the IP65 protection class as well as the mechanical protection of internal parts.
The covers combine:
- manual override in the monostable and bistable functions.
A simple pressure is enough to obtain a monostable function, whereas the bistable function is obtained coupling a rotation.
- LEDs for the voltage signalling on the coil
- diagnostic LEDs on Fieldbus versions
- ports for the electrical connectors
- integrated electronic boards
- connection interface with the pilot valves
- outlet protection against overvoltage, reversed polarity and short circuit
- connections realized on printed circuit boards

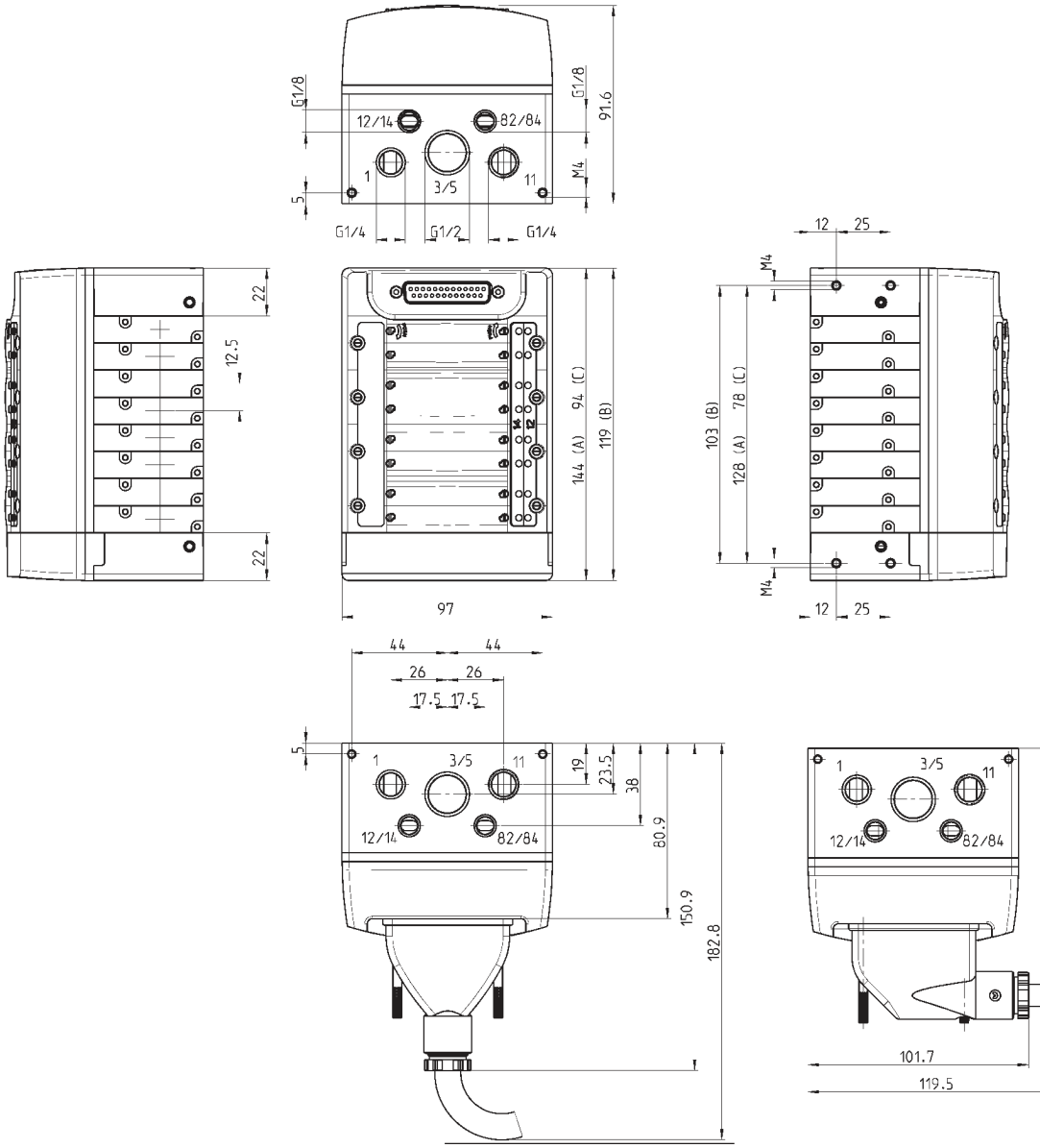
Covers - Multipole version

The Multipole cover is available in three sizes and allows the connection to valve islands with 4, 6 or 8 valve positions. Every position can be freely equipped with either monostable or bistable solenoid.
It is possible to join two or more valve islands placing a plate for intermediate supply, type "X", under every Sub-D plug.
Pneumatic modules can be composed of 2, 4, 6 or 8 valve positions and separated by various seals.
A module for additional supply type "X" or a function "W" must be always inserted between two seals separating channels 1 and 11.



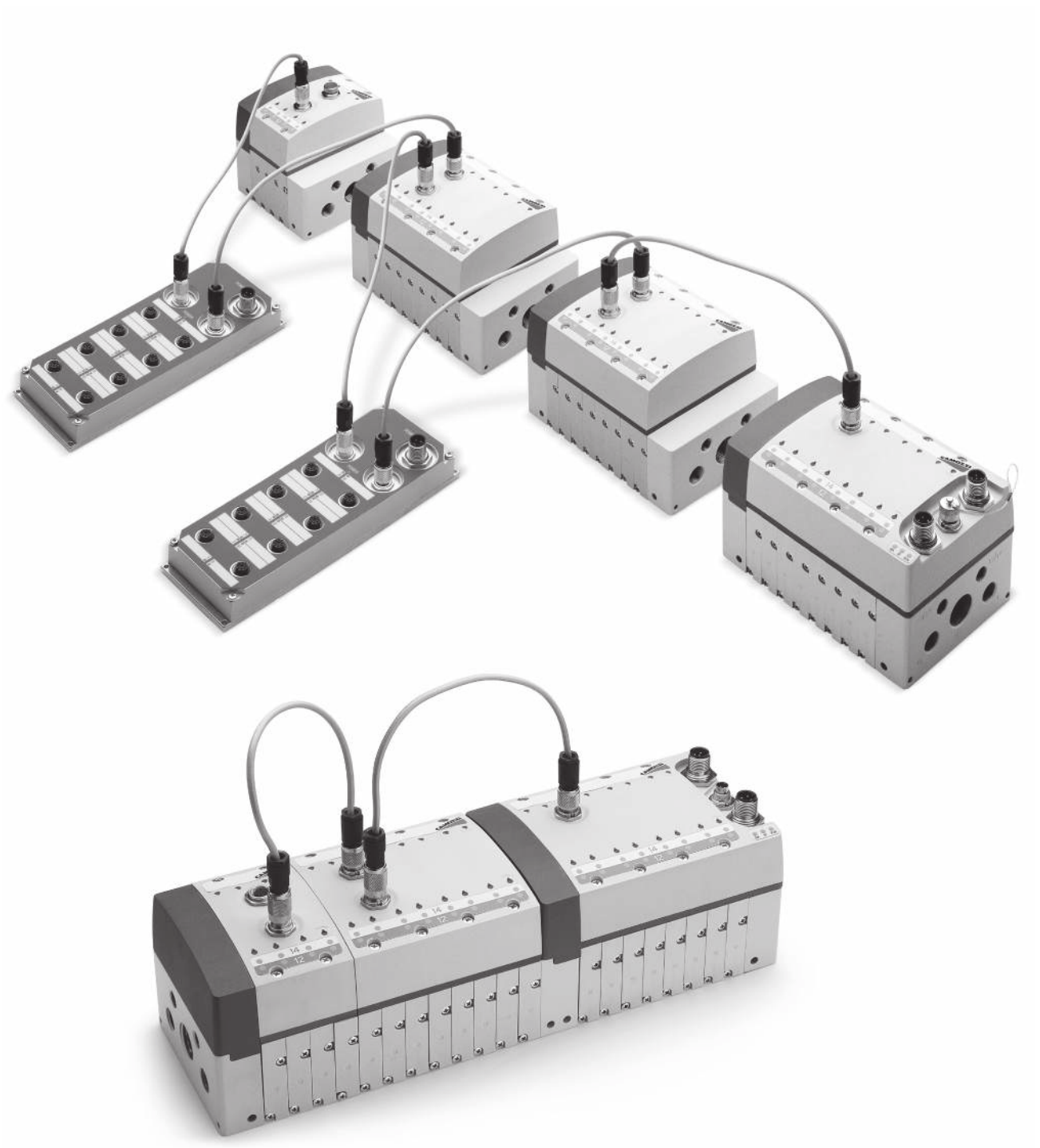
Multipole version - dimensions

A = 8 positions
B = 6 positions
C = 4 positions



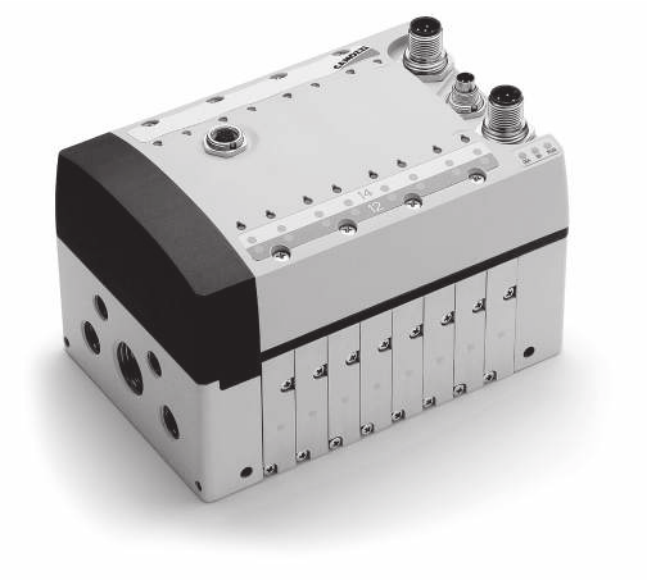
Covers - Fieldbus version

This version allows the direct connection to Profibus-Dp, DeviceNet, CANOpen. The main feature of this version is a starting module called "Initial module" to which the subfieldbus is connected for the management of the expansion modules. The Initial module can arrange up to 32 solenoids (outputs) and 48 inlets.
To optimize the electronic part, a proper function allows the remoting of unused outlets on the expansion modules. It is thus possible to pilot 32 solenoids on 32 valve positions without loosing any output signal.
Advantages:
- cost reduction thanks to a reduced number of initial modules that can be replaced by expansion modules;
- simplified code as the type of subbase is the same for bistable or monostable solenoid valves;
- saving of electrical signals that are not consumed by free positions and/or diaphragm seals;
- reduced dimensions, simplified connections and optimization of installation costs thanks to the covers modular structure which allows several islands to be joined together.



Fieldbus Initial Module - characteristics

The initial module has always 8 positions.
It is only the initial module to which the Fieldbus and electrical supply (24V DC) is connected.
The coils addressing can be sequential or customized by a specific configuration software that can be downloaded from our website http://catalogue.camozzi.com/Downloads, as well as the configuration file.
Pneumatic modules, available with 2, 4, 6, or 8 valve positions, can be separated by proper seals and allow the creation of different pressure/exhaust zones.



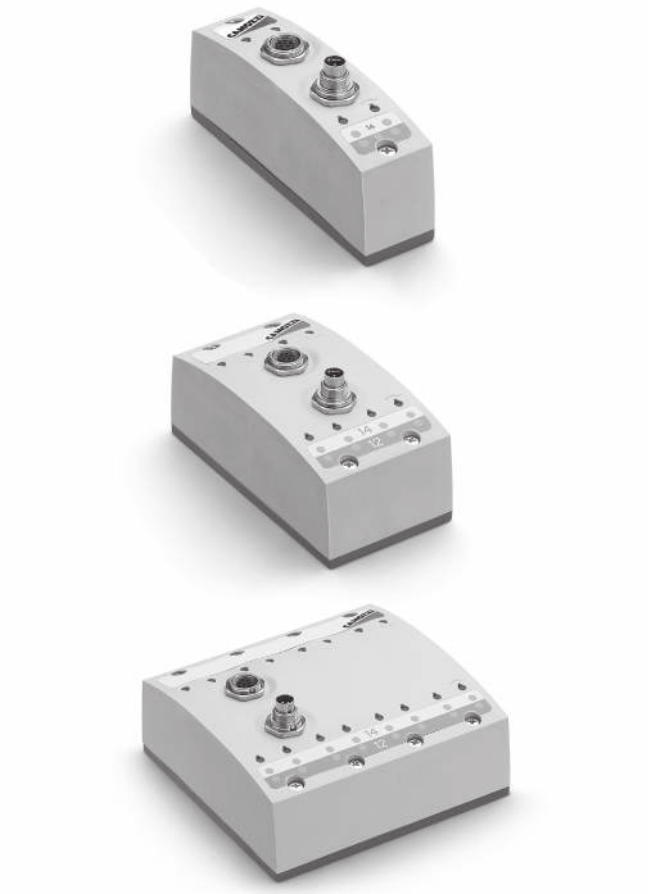
Fieldbus Expansion Module - characteristics

Versions available:
2 valve positions
4 valve positions
8 valve positions

The expansion modules:
- communicate among themselves and with the initial module through the Cam.I.Net subfieldbus.
- can be easily added to enlarge the valve island, thus avoiding the use and costs of free positions;
- can be positioned up to 50 metres from initial module and subdivided into up to 15 groups.

The particular construction of the islands allows the in-line mounting of all the Expansion modules.

Pneumatic modules, available with 2, 4, 6, or 8 valve positions, can be separated by proper seals and allow the creation of different pressure/exhaust zones.



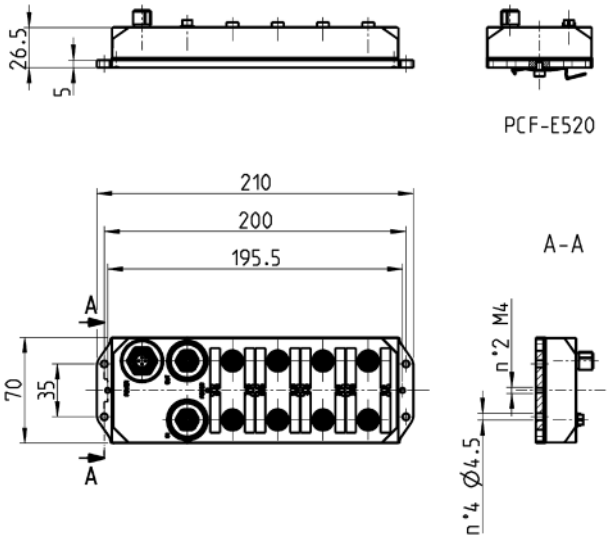
Electrical digital inputs module ME-1600-DL* - Characteristics

It allows the connection of 16 electrical input signals via 8 M12 DUO 5 poles connections. It is thus possible to connect 2 inputs for each connection.
The input module can be positioned at any point of the Cam.I.Net. sub-fieldbus.
3 input modules at most can be connected to the initial module, for a total of 48 inputs.

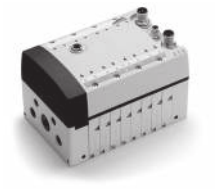
* not for the DeviceNet version

Digital Inputs Module ME-1600-DL* - dimensions

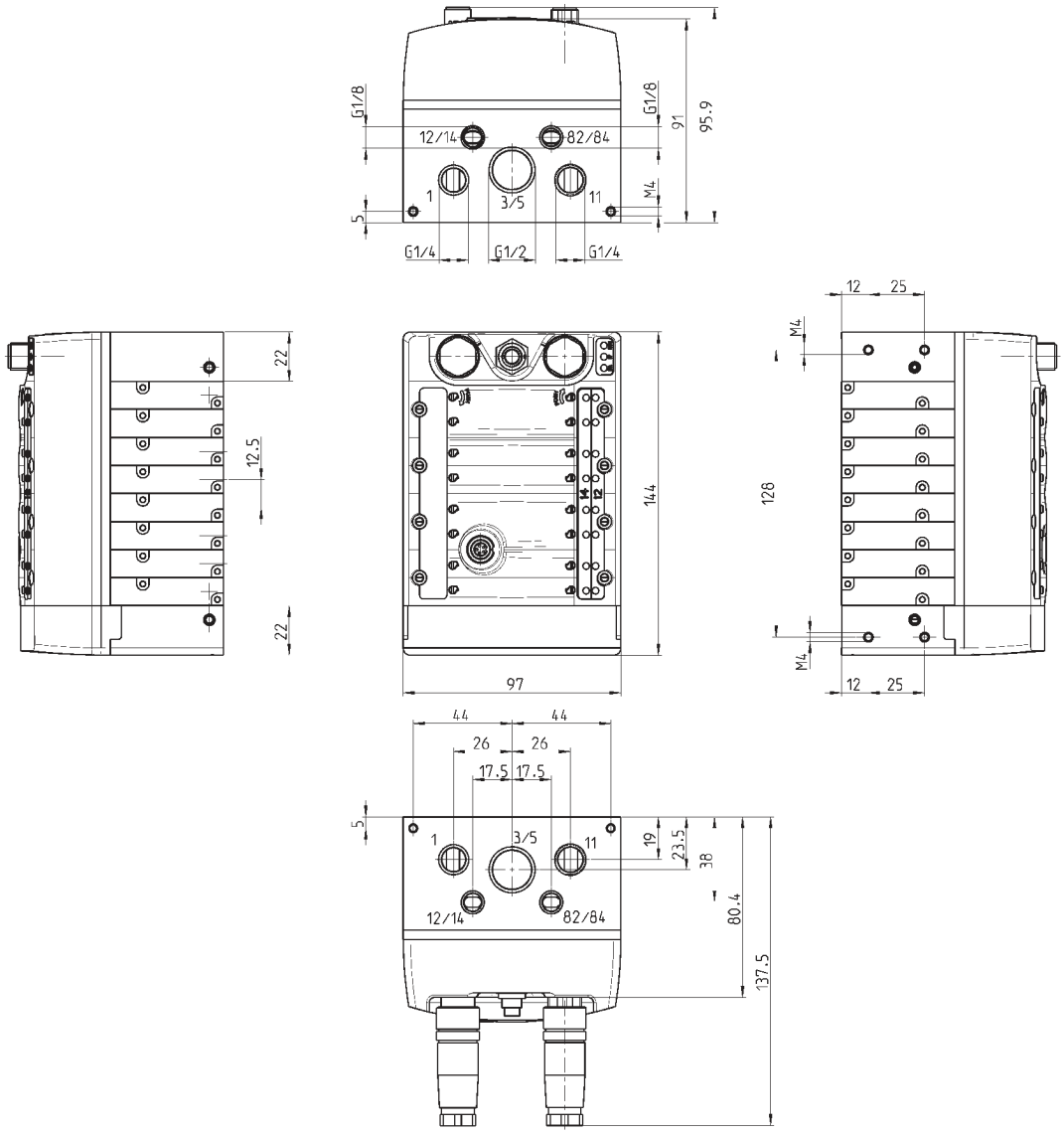
* not for the DeviceNet version



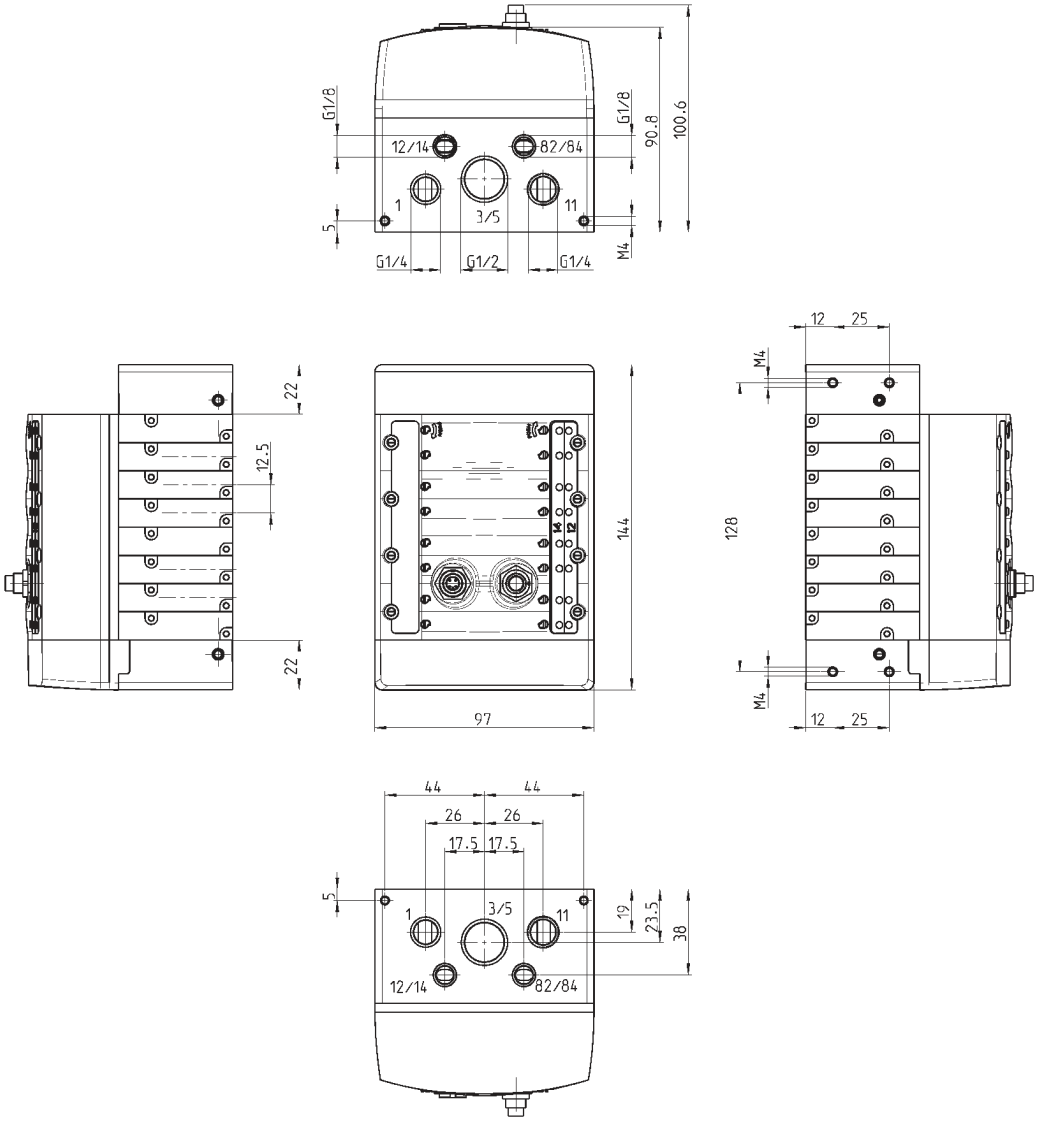
Fieldbus Initial Module - dimensions



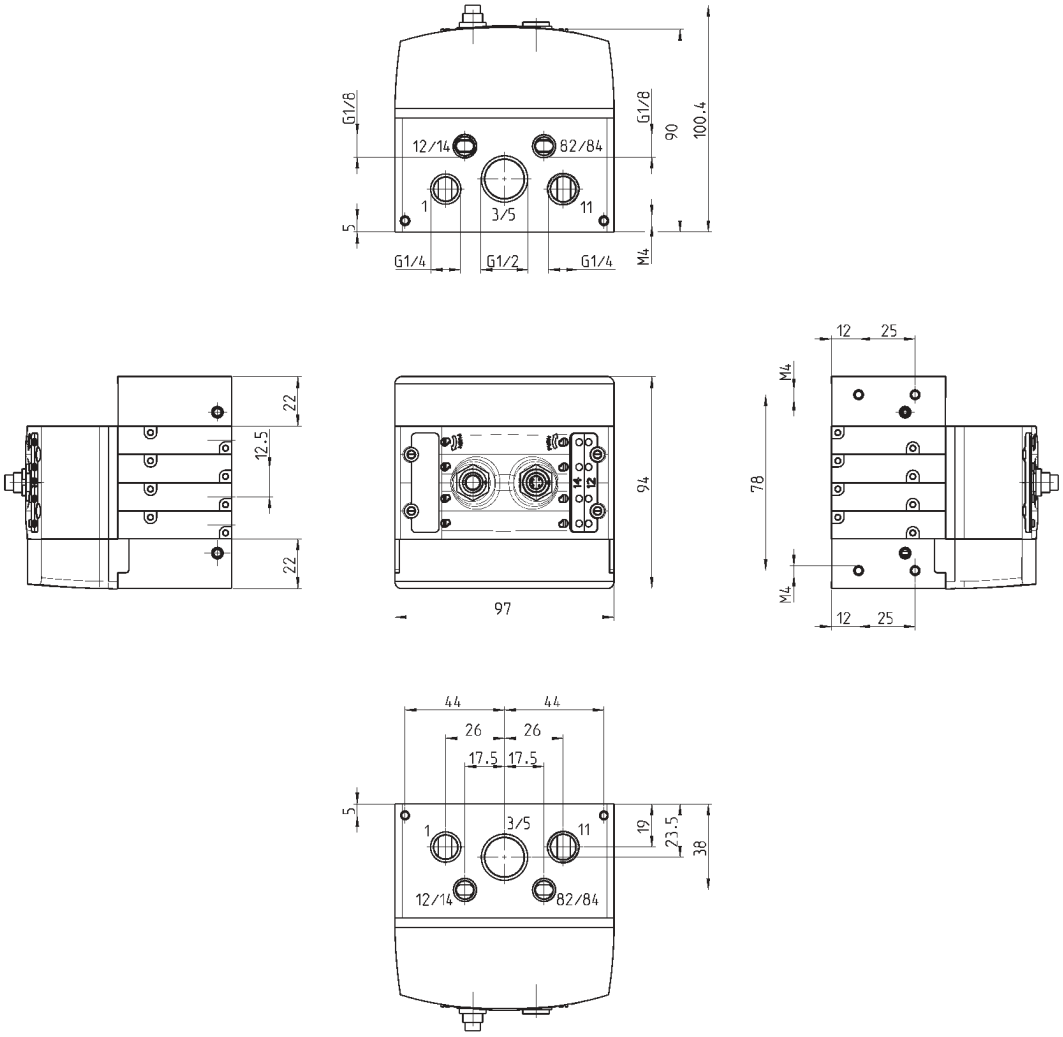
Dimensions don't change according to the different Fieldbus versions
(Profibus-DP, CANopen, DeviceNet).



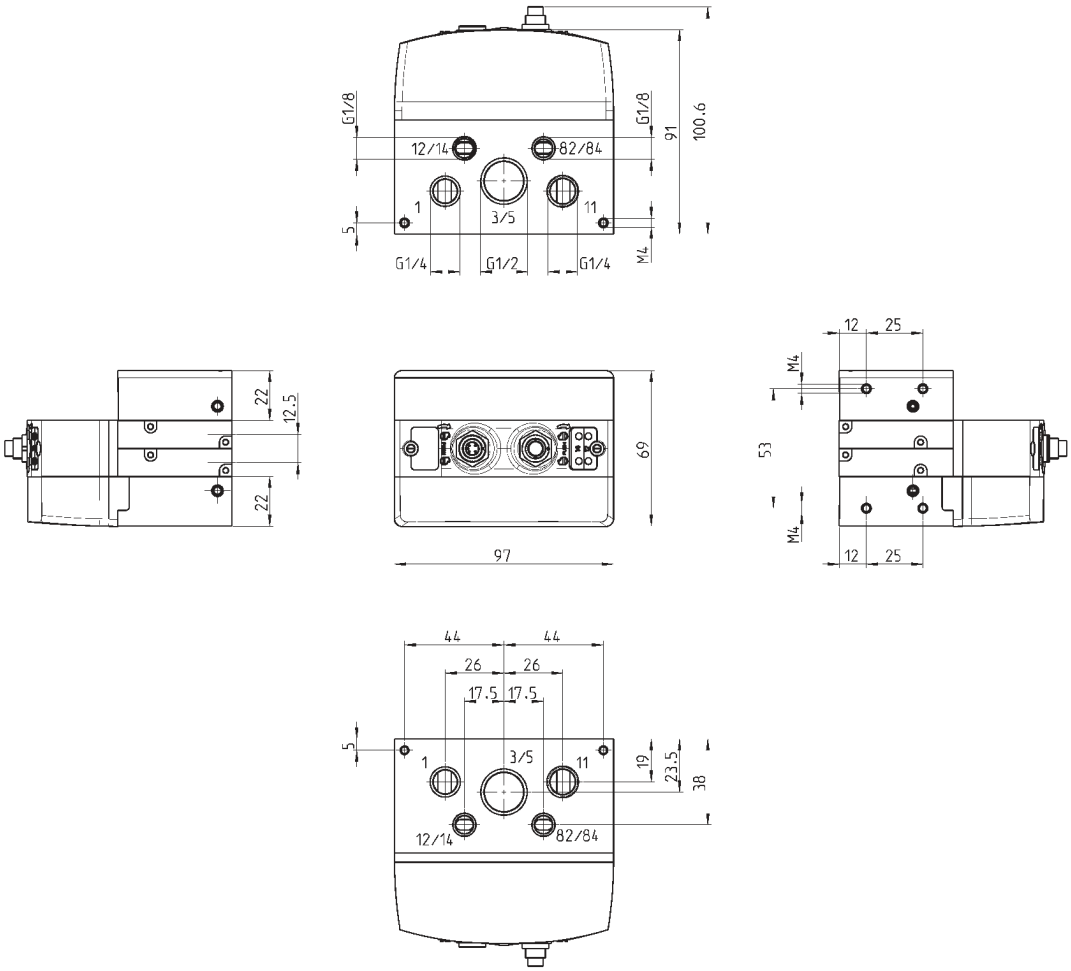
Fieldbus Expansion Module with 8 valve positions - dimensions



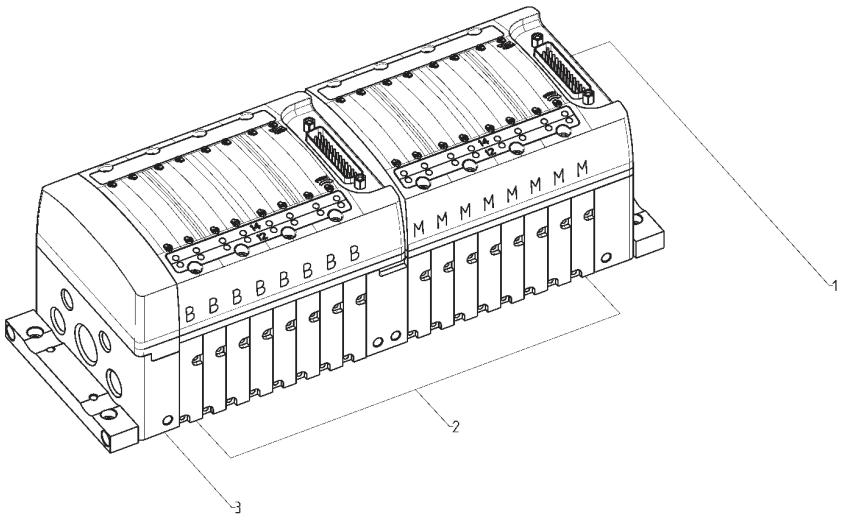
Fieldbus Expansion Module with 4 valve positions - dimensions

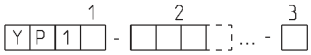


Fieldbus Expansion Module with 2 valve positions - dimensions



CODING





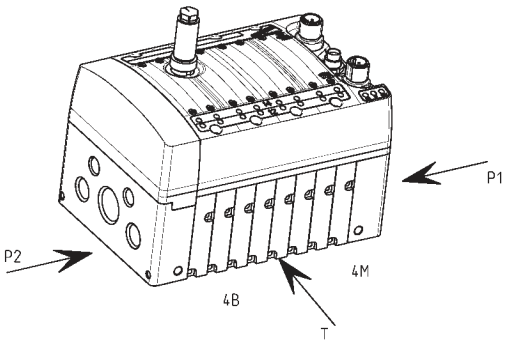
Type of electrical connection	(1)	Type of valve	(2)	Type of terminal plates	(3)
Individual	**K**	-		-	
Multipole (PNP)	**M**	-		-	
Profibus-Dp	**P**	-		-	
DeviceNet	**D**	-		-	
CANopen	**C**	-		-	
Expansion	**E**	-		-	
-		5/2 Monostable	**M**	-	
-		5/2 Bistable	**B**	-	
-		5/3 CC	**V**	-	
-		2 x 2/2 1 NO + 1 NC	**I**	-	
-		2 x 2/2 NC	**E**	-	
-		2 x 2/2 NO	**F**	-	
-		2 x 3/2 1 NO + 1 NC	**G**	-	
-		2 x 3/2 NC	**C**	-	
-		2 x 3/2 NO	**A**	-	
-		Free position	**L**	-	
-		Additional supply module from 2 and 4	**W**	-	
-		Diaphragm seal (modules separation)	**T**	-	
-		Through seal (modules separation)	**P**	-	
-		Diaphragm seal (modules and cover separation)	**T/**	-	
-		Through seal (modules and cover separation)	**P/**	-	
-		Diaphragm seal 3/5 opened	**U**	-	
-		Diaphragm seal 3/5-11 opened	**H**	-	
-		Diaphragm seal 1-11 opened	**N**	-	
-		Diaphragm seal 3/5 opened, modules and cover separ.	**U/**	-	
-		Module with 2 positions and 3/5-11 closed	**K**	-	
-		Module with 2 positions and 3/5-1-11 closed	**R**	-	
-		Module with 2 positions and 1-11 closed	**O**	-	
		Module with 2 positions and 3/5 closed	**Q**	-	
-		Additional supply module	**X**	-	
-		-		in common 1/11 - 12/14 individual 82/84 - 3/5	**A**
-		-		in common 1/11 individual 12/14 - 82/84 - 3/5	**B**
-		-		individual 1/11 - 12/14 - 82/84 - 3/5	**C**
-		-		in common 1/11 - 12/14 individual 82/84 - 3/5	**D**
-		-		in common 1/11 individual 12/14 - 82/84 - 3/5	**E**
-		-		individual 1/11 - 12/14 - 82/84 - 3/5	**F**
-		-		in common 1/11 - 12/14 individual 82/84 - 3/5	**G**
-		-		in common 1/11 individual 12/14 - 82/84 - 3/5	**H**
-		-		individual 1/11 - 12/14 - 82/84 - 3/5	**J**
-		-		modules without terminal plate	**Z**

Coding example 1

Valve island with Profibus-DP connection made of:
4x solenoid valves type M
1x diaphragm seal Mod. T
4x solenoid valves type B
Terminals with 1 and 11 in common on both sides and 12 /14 separated.

Code:
YP1P-4MT4B-B

For the code composition see the coding table on the previous page.

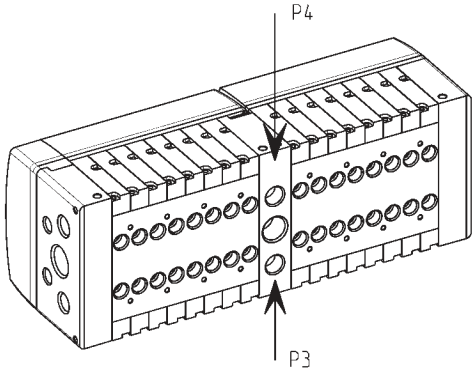


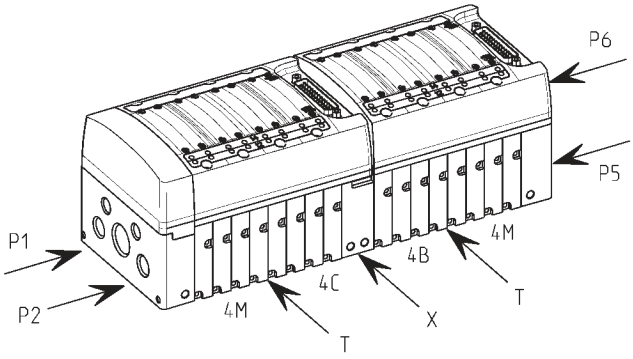
Coding example 2

Valve island with Multipole connection made of:
4x solenoid valves type M
1x diaphragm seal Mod. T for the separation of pressure zones
4x solenoid valves type B
1x through-out seal Mod. P
1x intermediate additional supply module Mod. X
1x through-out seal Mod. P
Terminals with individual connection
4x solenoid valves type C
1x diaphragm seal Mod. T for the separation of pressure zones
4x solenoid valves type M

Code:
YP1M-4MT4BPXP4CT4M-C

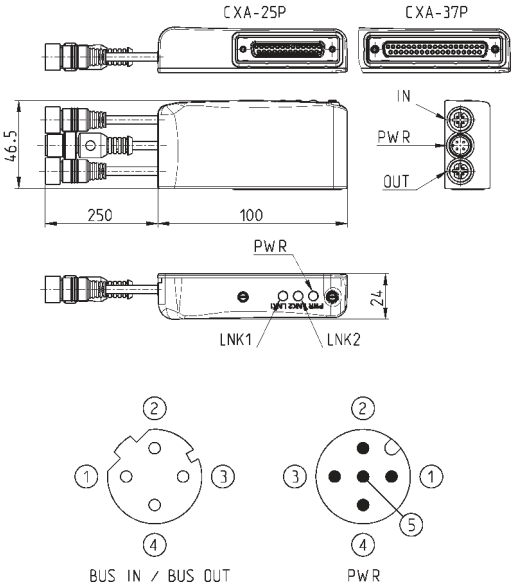
For the code composition see the coding table on the previous page.





Sub-D adaptor module 25 pin Mod. CXA-25P

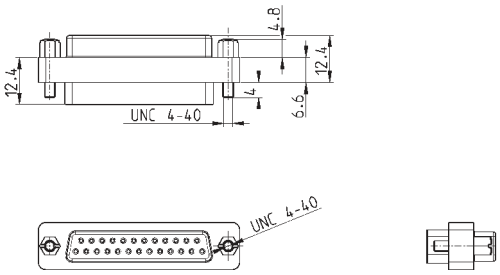
It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D 25 pin connection. It can manage up to a maximum of 24 Output. It has its own M12 A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 4 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a maximum length of maximum 100 metres. The power of a single Output is 3 W to 24 V DC. Thanks to the PWM technique it is possible to set a power reduction to only maintain operation.



Led 1 = Yellow LNK1
Led 2 = Yellow LNK2
Led 3 = Green PWR, supply present and OK

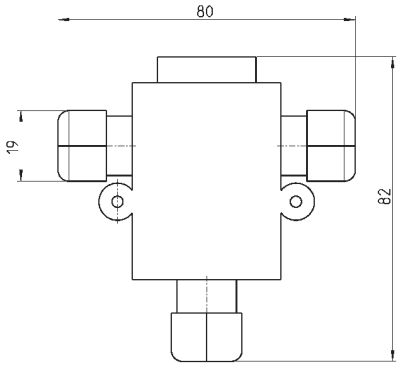
Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W

25M-25F Sub-D adaptor



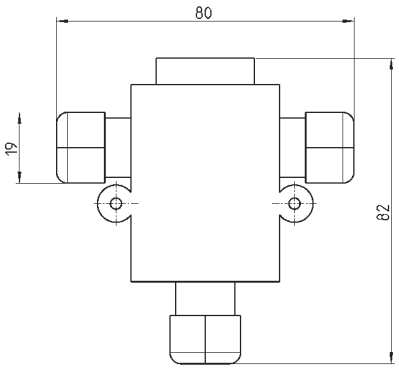
Mod.	description	type of connector	connection	cable length (m)
G2X-G2W	moulded adaptor	in line	Sub-D 25 pin female - Male	-

Profibus-DP data line tee



Mod.
CS-AA03EC

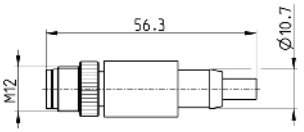
CANopen / DeviceNet data line tee

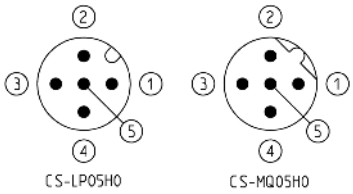


CS-AA05EC

M12 male terminating resistor

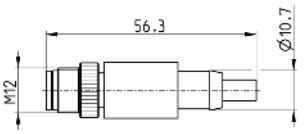
For PROFIBUS, CANopen, DeviceNet

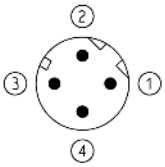




Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male - Pin 5 is not connected	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male - Pin 5 is connected	CANOpen / DeviceNet

Series CX subnet terminating resistor

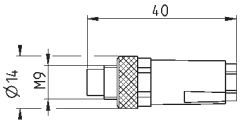


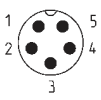


Mod.	description	type of connector	connection	Protocol
CS-SU04H0	moulded terminating resistor	straight	M12 D 4 pin	subnet

Terminal resistance Cam.I.Net

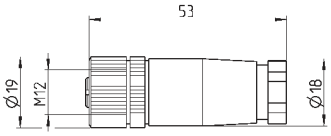
Connector with sub-serial terminal resistance

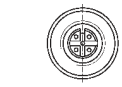


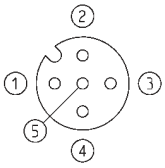


Mod.
CS-FP05H0

Straight connector for power supply

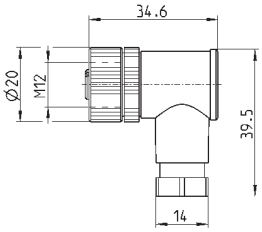


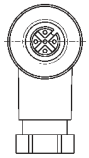


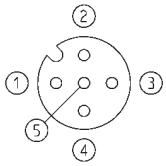


Mod.	description	type of connector	connection		cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female - is not connected	Pin 5	-

Angular connector for power supply

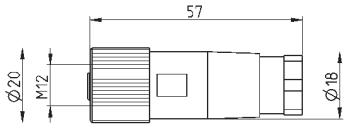


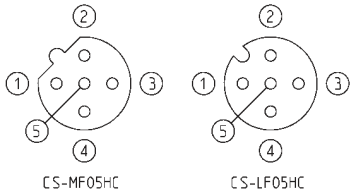




Mod.	description	type of connector	connection		cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female - is not connected	Pin 5	-

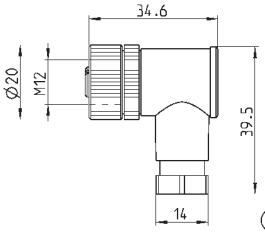
Straight female M12 connectors for Bus-IN

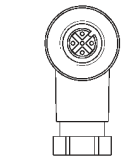


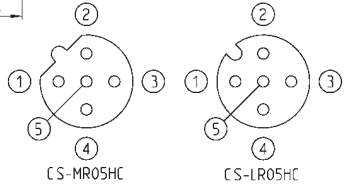


Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



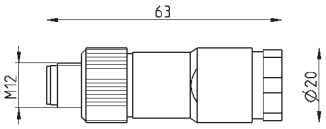


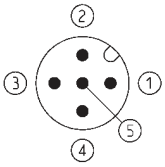


Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

5 pin male straight M12 DUO connector

For the connection of the digital input modules.

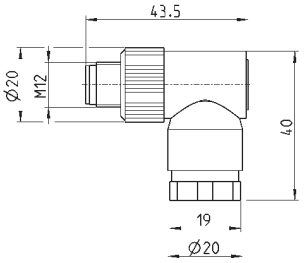


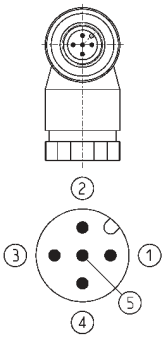


Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

5 pin male angular M12 DUO connector

For the connection of the digital input modules.

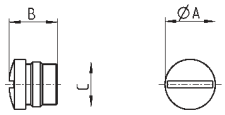




Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

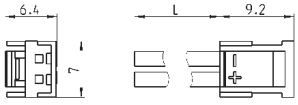
M8 and M12 connector cover caps

For digital and analog input/output modules and subnet



Mod.	A	B	C [Connection]
CS-LFTP	13.5	13	M12

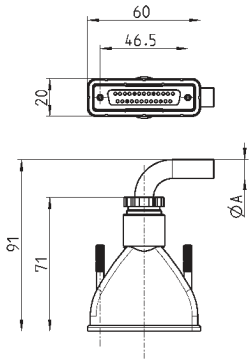
Connector Mod. 121-8.. for Individual version



Mod.	description	colour	L = cable length (mm)	cable holding
121-803	crimped cable	black	300	crimping
121-806	crimped cable	black	600	crimping
121-810	crimped cable	black	1000	crimping
121-830	crimped cable	black	3000	crimping

Straight Sub-D 25 pin female connector with axial cable

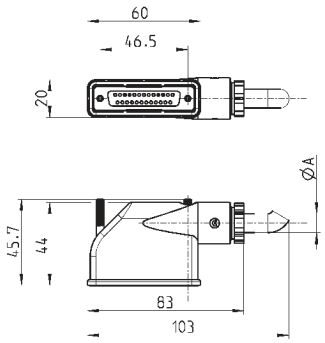
Protection class IP65



Mod.	øA	PIN	cable length (m)
G3X-3	7.7	16	3
G3X-5	7.7	16	5
G3X-10	7.7	16	10
G3X-15	7.7	16	15
G3X-20	7.7	16	20
G3X-25	7.7	16	25
G4X-3	9	25	3
G4X-5	9	25	5
G4X-10	9	25	10
G4X-15	9	25	15
G4X-20	9	25	20
G4X-25	9	25	25

Right angle Sub-D 25 pin female connector with axial cable

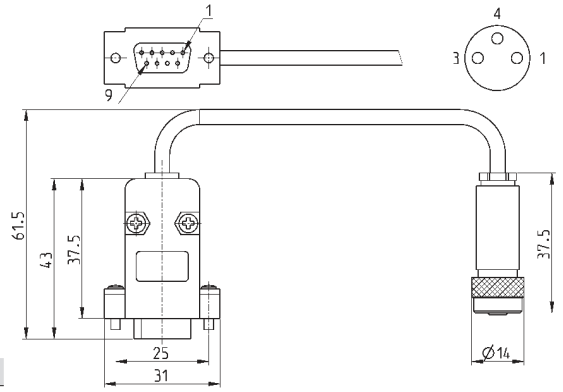
Protection class IP65



Mod.	øA	PIN	cable length (m)
G3X1-3	7.7	16	3
G3X1-5	7.7	16	5
G3X1-10	7.7	16	10
G3X1-15	7.7	16	15
G3X1-20	7.7	16	20
G3X1-25	7.7	16	25
G4X1-3	10	25	3
G4X1-5	10	25	5
G4X1-10	10	25	10
G4X1-15	10	25	15
G4X1-20	10	25	20
G4X1-25	10	25	25

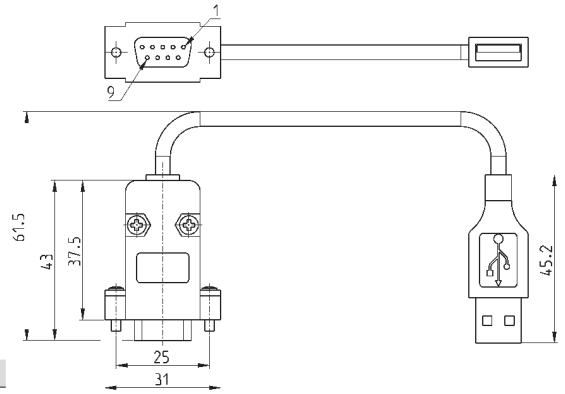
Programming cable

Manuals, configurator and configuration files are available on our website http://catalogue.camozzi.com in the section Downloads.



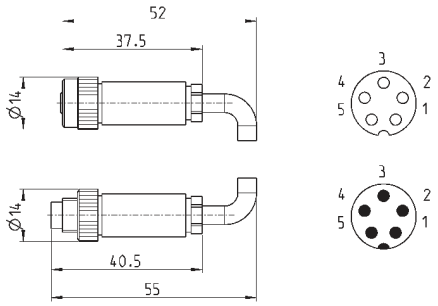
Mod.	cable length (m)
CS-FZ03AD-C500	5

USB SERIAL converter for programming cable



Mod.	cable length (m)
G8X3-G8W-1	1

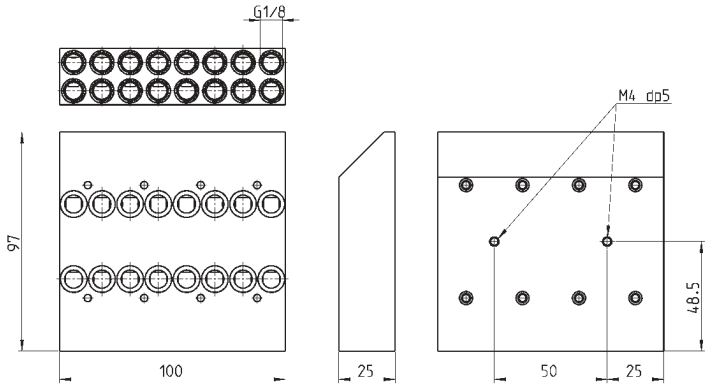
Expansion cable



Mod.	cable length (mt)
CS-FW05HE-D025	0,25
CS-FW05HE-D100	1
CS-FW05HE-D250	2,5
CS-FW05HE-D500	5
CS-FW05HE-DA00	10

Interface with 8 valve positions

Outlets 2 and 4 are located in the lower part of the module and can be oriented on end-covers side using this interface sub-base.

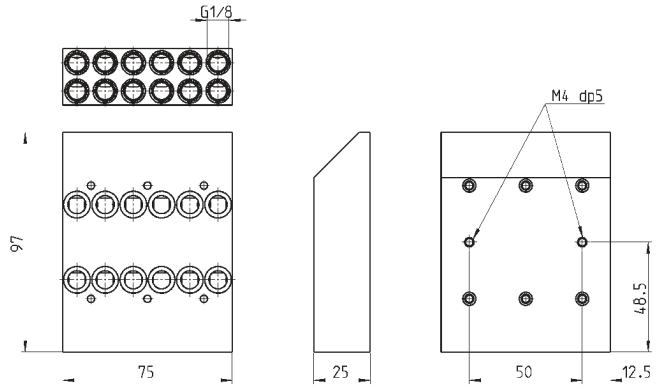


Supplied with:
1x interface 8 pos.
8x screws M3x25 UNI 5931
16x interface seals

Mod.
YA1K-N8

Interface with 6 valve positions

Outlets 2 and 4 are located in the lower part of the module and can be oriented on end-covers side using this interface sub-base.

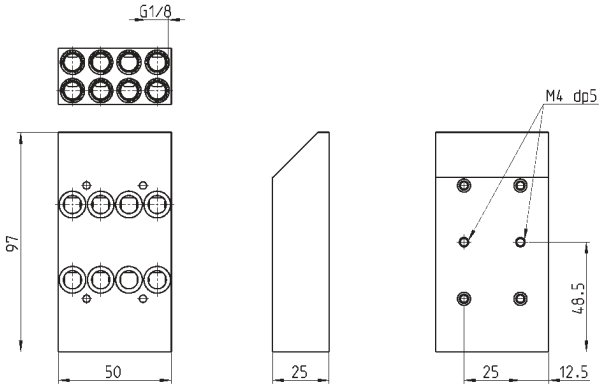


Supplied with:
1x interface 6 pos.
6x screws M3x25 UNI 5931
12x interface seals

Mod.
YA1K-N6

Interface with 4 valve positions

Outlets 2 and 4 are located in the lower part of the module and can be oriented on end-covers side using this interface sub-base.

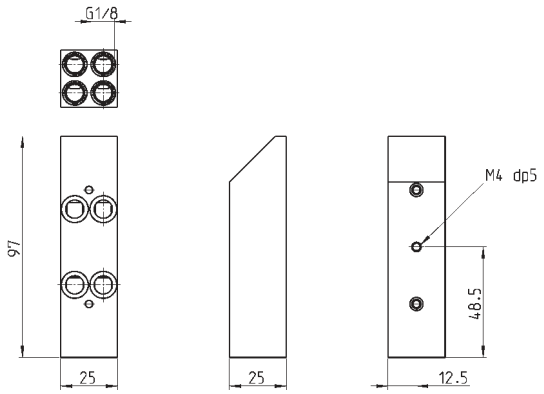


Supplied with:
1x interface 4 pos.
4x screws M3x25 UNI 5931
8x interface seals

Mod.
YA1K-N4

Interface with 2 valve positions

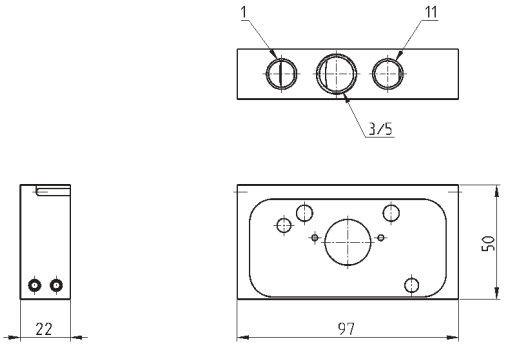
Outlets 2 and 4 are located in the lower part of the module and can be oriented on end-covers side using this interface sub-base.



Supplied with:
1x interface 2 pos.
2x screws M3x25 UNI 5931
4x interface seals

Mod.
YA1K-N2

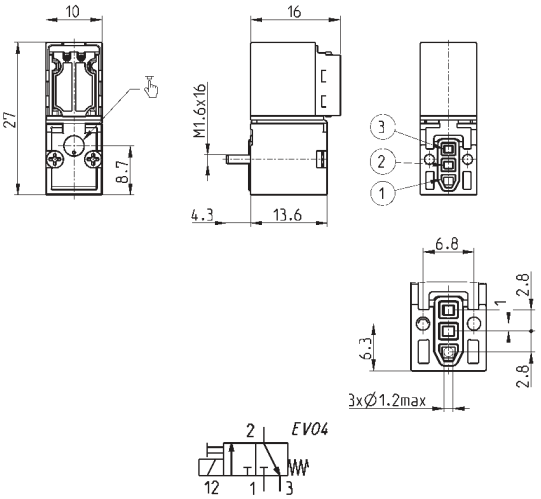
Intermediate plate for supplementary supplies and exhausts cod. X



Mod.	1	3/5	11
YA1K-N1X/1	G1/4	G3/8	G1/4

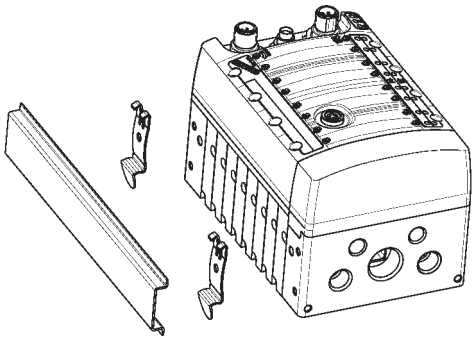
Solenoid valve Mod. KN000-303-KY3N - spare part for Series Y

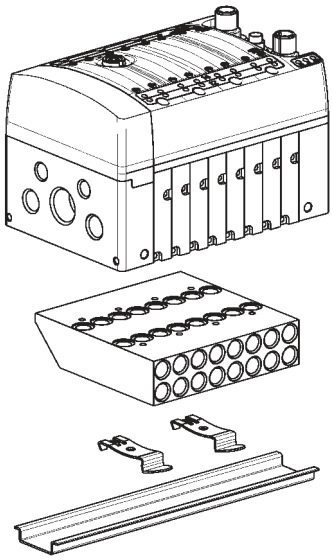
Supplied with:
1x interface seal
2x screws M1.6x16 UNI 10227



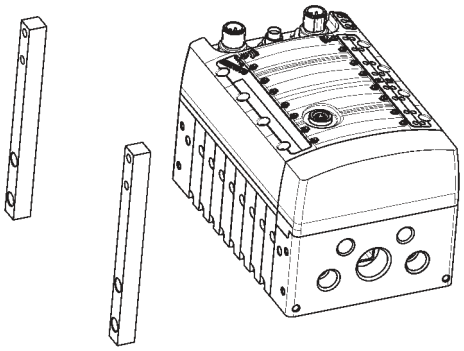
Mod.
KN000-303-KY3N

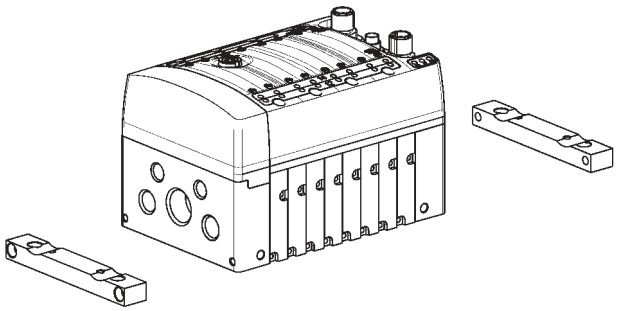
Mounting solutions on DIN EN 50022 rail





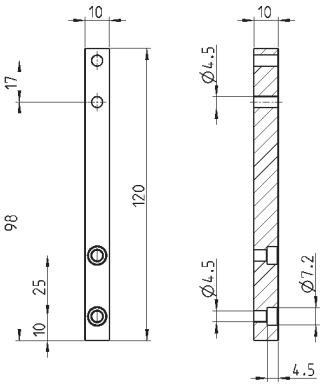
Wall mounting solutions





Vertical foot

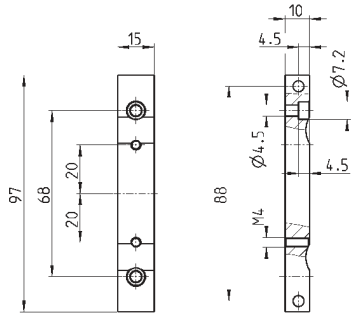
Supplied with:
2x vertical feet
2x screws M4x10 UNI 5931



Mod.
YA1K-B2

Horizontal foot

Supplied with:
2x horizontal feet
2x screws M4x14 UNI 5931

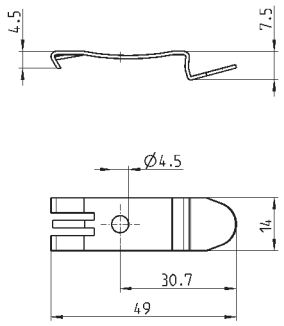


Mod.
YA1K-B1

Mounting brackets for DIN rail

DIN EN 50022 (7,5mm x 35mm - width 1)

Supplied with:
2x plates
2x screws M4x6 UNI 5931



DIMENSIONS
Mod.
PCF-E520

Series CX multi-serial module

Interface with: PROFIBUS, CANopen, DeviceNet, EtherNet/IP, PROFINET, EtherCAT
Compatible with all Camozzi valve islands

- Maximum flexibility in use
- Mounting in hard application conditions
- Easily changeable
- Analog I/O modules
- Digital I/O modules
- Multi-communication protocols

The Series CX serial module, with IP65 protection class, interface with all major serial communication protocols as well as the new generation EtherCAT, EtherNet/IP and PROFINET protocols. The highly resistant aluminium structure makes it suitable for mountings even in hard application conditions.

This serial module can be coupled with electric input and output modules and is able to handle up to a maximum of 1024 I/O. Its interface modules enable direct connection to Series F, HN and 3 valve islands. Through a subnet the connection system can be extended to remote valve islands.

Manuals, instruction sheets and configuration files can be found on catalogue.camozzi.com or on the QR code on the lable of the product.

GENERAL DATA

Number of digital outputs	1024
Number of digital inputs	1024
Maximum input absorption	1,5 A
Maximum output absorption	3 A
Logical supply voltage *	24 V DC +/-10%
Power supply voltage *	24 V DC +/-10%
Protection	overload and reverse polarity
Protection class	IP65
Conform with standards	EN-61326-1 EN-61010-1
Operating temperature	0-50°C
Material	Aluminium

* the voltage range can change according to the range required by the external connected elements.

CODING EXAMPLE

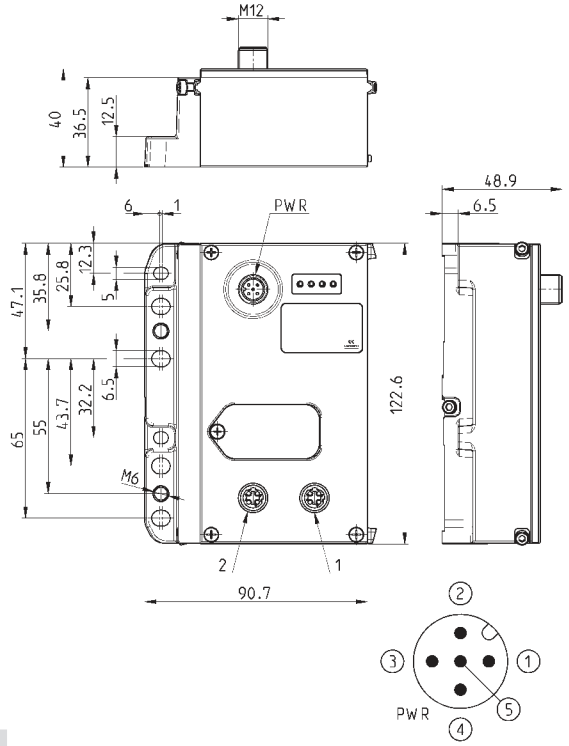
CX	05	-	2AC	-	QT2S

CX	SERIES
05	PROTOCOL: 01 = PROFIBUS 02 = DeviceNet 03 = CANopen 04 = EtherNet/IP 05 = EtherCAT 06 = PROFINET 99 = Expansion Module
2AC	INPUTS: 0 = no module nA = 8 digital inputs M8 nB = 4 digital inputs M8 nC = 2 IN 4-20 mA nD = 2 IN 0-10 V nE = 1 IN 4-20 mA + 1 IN 0-10 V
QT2S	OUTPUTS: 0 = no module nQ = 4 M12 duo digital outputs nR = 2 OUT 4-20 mA nT = 2 OUT 0-10 V nU = 1 OUT 4-20 mA + 1 OUT 0-10 V nV = 1 OUT 4-20 mA + 1 IN 0-10 V nZ = 1 OUT 4-20 mA + 1 IN 4-20 mA nK = 1 OUT 0-10 V + 1 IN 0-10 V nY = 1 OUT 0-10 V + 1 IN 4-20 mA nS = initial subnet module

Fieldbus protocols - Technical data

Protocol	Max nr of nodes defined by the protocol	Communication speed defined by the protocol	Max number of I/O	LED 1 Yellow-Green	LED 2 Yellow-Green	LED 3 Red-Green	LED 4 Red
PROFIBUS	32/127	9,6 kBit/s per 1000 m 12 Mbit/s per < 100 m	1024 Input 1024 Output	absent	Green RUN	Red DIA	Red BF
CANopen	127	125 kBit/s 500 m 1 Mbit/s per 4 m	1024 Input 1024 Output	absent	Green IO	Red DIA	Red BF
DeviceNet	64	125 kBit/s 500 m 500 kbit/s per 100 m	1024 Input 1024 Output	absent	Green RUN	Red NS	Red MF
PROFINET	unlimited	100 Mbit/s per 100 m	1024 Input 1024 Output	Yellow LNK1	Yellow LNK2	Green PWR	Red DIA
EtherNet/IP	unlimited	100 Mbit/s per 100 m	1024 Input 1024 Output	Yellow LNK1	Yellow LNK2	Green PWR	Red DIA
EtherCAT	unlimited	100 Mbit/s per 100 m	1024 Input 1024 Output	Yellow LNK1	Yellow LNK2	Green PWR	Red DIA

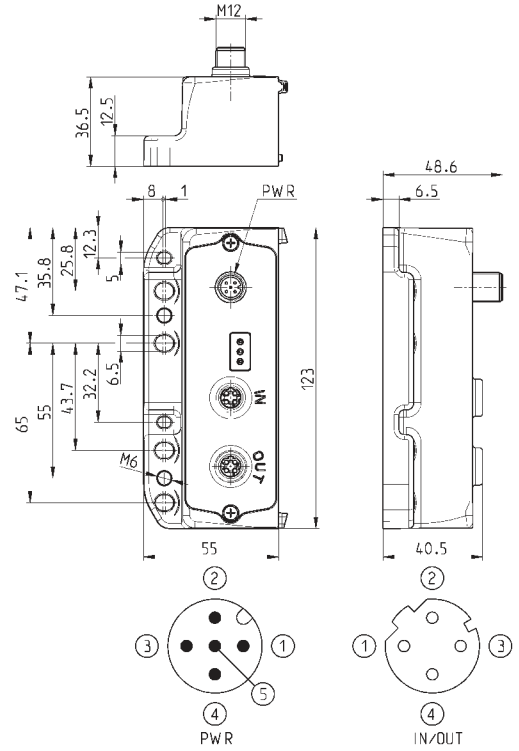
CPU Module - pin configuration



Mod.	Coding reference	Fieldbus Protocol	2	1	Bus-IN connector	Bus-OUT connector
CX01-0-0	01	PROFIBUS	Bus-IN	Bus-OUT	M12 B 5 pin male	M12 B 5 pin female
CX02-0-0	02	DeviceNet	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX03-0-0	03	CANopen	Bus-IN	Bus-OUT	M12 A 5 pin male	M12 A 5 pin female
CX04-0-0	04	EtherNet/IP	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX05-0-0	05	EtherCAT	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female
CX06-0-0	06	PROFINET	Bus-OUT	Bus-IN	M12 D 5 pin female	M12 D 5 pin female

Expansion Module - pin configuration

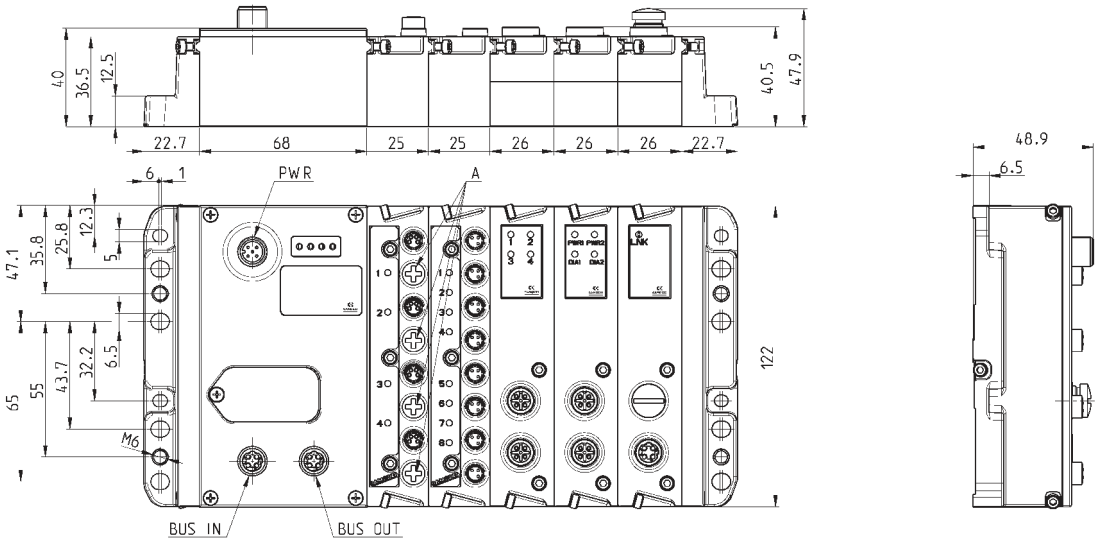
Note: to connect the Expansion with the subnet, we recommend the use of cables Mod. CS-SB04HB-... or CS-SC04HB-...



Mod.	Coding reference	Fieldbus Protocol	Bus-IN and Bus-OUT connector
CX99-0-0	99	Subnet expansion	M12 D 5 pin female

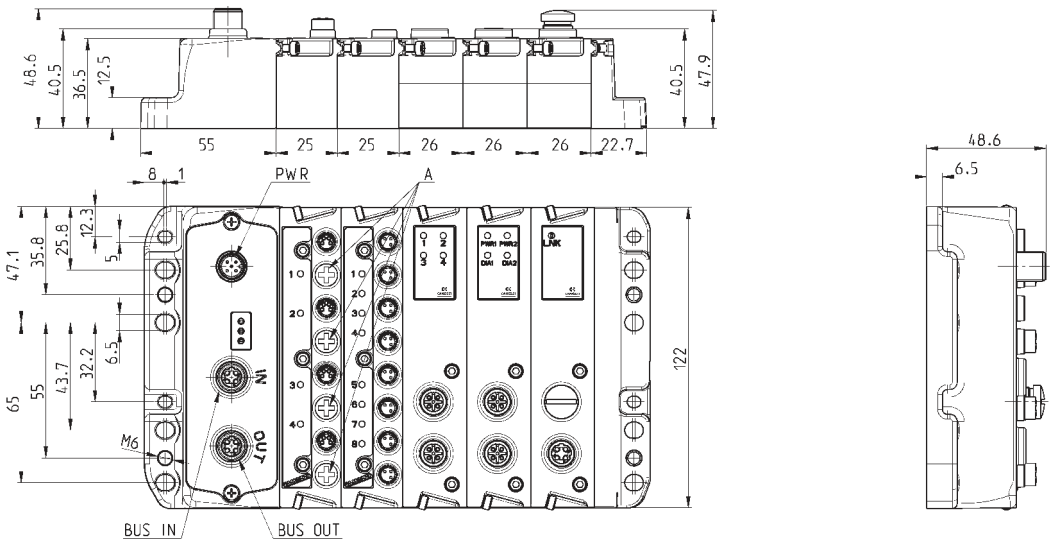
CPU Module - Characteristics

It is a slave node of the main PROFIBUS, CANopen, DeviceNet, EtherNet/IP, EtherCAT, PROFINET network and the Master module of the subnet.
All modules provided can be connected only on the right side of the CPU module, like the digital/analog inputs/outputs, direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet.
It has its own M12 A 4 pin male connection to supply the modules connected, distinguishing both logic supply and power supply.
Two M12 connections for Bus-IN and Bus-OUT of the main network, which M12 connection will take over the relative specifications according to the choosen protocol.
The addressing is performed by means of the Rotary Switch for the protocols with this feature, while for Ethernet protocols addressing is performed by means of the protocol itself. Leds indicate the working state. A maximum number of 1024 inputs and 1024 outputs can be managed.



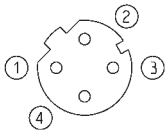
Expansion Module - Characteristics

At its right side, different modules can be connected like the digital/analog inputs/outputs, the direct interface modules for the valve islands (Series F, HN and 3) and the initial module of the subnet to re-amplify it or to create new branches.
It has its own M12 A 4 pin male connection to supply the devices connected, distinguishing both logic supply and power supply.
It has two M12 D 5 pin female connections for Bus-IN and Bus-OUT connection of the subnet. Leds indicate the working state.
The valve island equipped with Expansion Module can be used only in presence of a subnet.



Initial subnet module Mod. ME3-0000-SL

This module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices. Every subnet can have an extension of maximum 100 metres, with a maximum of 8 interruptions. Up to maximum 5 initial modules can be connected, one aside another or along the subnet in order to create a tree structure, in series or both, in order to optimize the length of the cables and the topology of the subnet in different applications. The module is equipped with the Bus-OUT connection only of subnet type M12 D 4 pin female.

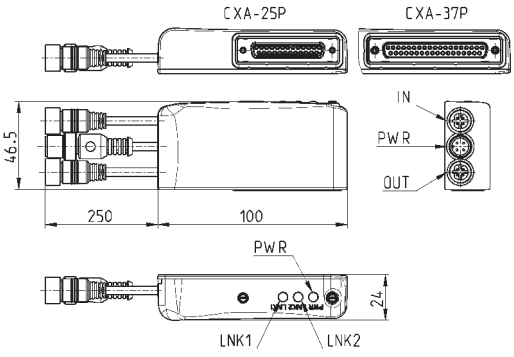


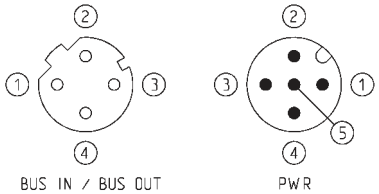
Mod.	Coding reference	Bus-OUT connection	Max number of modules for subnet	Max extension of subnet per module
ME3-0000-SL	S	M12D 4 pin female	5	100 m

Sub-D adaptor module 25 and 37 pin Mod. CXA-25P and CXA-37P

Led 1 = Yellow LNK1
Led 2 = Yellow LNK2
Led 3 = Green PWR, supply present and OK

It is an Expansion module of the subnet and can be connected to all valve islands with Sub-D 25 pin connection (Series F, HN and 3) or 37 pin connection (Series HN). It has its own M12A 4 pin male connection for the supply of the valves connected, distinguishing both logic supply and power supply and two M12 D 4 pin female connections for the Bus-IN and Bus-OUT of the subnet. The subnet can have a length of maximum 100 metres. The 25 pin adaptor module manages a fixed number of 24 digital outputs, while the 37 pin adaptor module manages a fixed number of 32 digital outputs. In both cases, every output can provide a maximum of 3 W to 24 V DC, with PWM outputs for which it is possible to set the working frequency value.

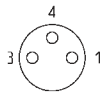




Mod.	Interface	Digital Outs	Bus-IN connection	Bus-OUT connection	PWR connection	Supply	Power for every Output
CXA-25P	Sub-D 25 pin	24	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W
CXA-37P	Sub-D 37 pin	32	M12D 4 pin female	M12D 4 pin female	M12A 4 pin male	24 V DC	3 W

Digital input Module Mod. ME3-0800-DC and ME3-0400-DC

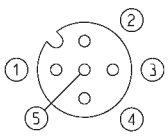
The Digital input module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet.
It has 8 or 4 M8 3 pin connections.



Mod.	Coding reference	Number of digital inputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Overvoltage protection	Absorption	Type of signal	Protection class	Operating temperature	Weight
ME3-0800-DC	A	8	M8 3 pin female	8	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 ÷ 50°C	110 g
ME3-0400-DC	B	4	M8 3 pin female	4	122 x 25 mm	1 yellow led for each input	24 V DC	400 mA for 4 sensors	10 mA	PNP	IP65	0 ÷ 50°C	110 g

Analog input/output module Mod. ME3-****-AL

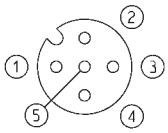
The analog input/output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 female pin connections and it can be configured as 2 analog Outputs or 2 Inputs or 1 Input + 1 Output. Every output or input occupies 12 digital I/O, in order to create a 12 bit digital/analogic conversion, for both inputs and outputs available in the versions from 0-10 V DC and from 4-20mA.
The refreshment time of the analog devices is submitted to the delay of the subnet and therefore to its topology. An average delay is less than 6 ms, to which the delay of the main network managed by the PLC has to be added.



Mod.	Coding reference	Number of analog inputs	Number of analog outputs	Connection
ME3-C000-AL	C	2 inputs 4-20 mA	-	2x M12 A 5 pin female
ME3-D000-AL	D	2 inputs 0-10 V	-	2x M12 A 5 pin female
ME3-E000-AL	E	1 input 4-20 mA + 1 input 0-10 V	-	2x M12 A 5 pin female
ME3-00U0-AL	U	-	1 output 4-20 mA + 1 output 0-10 V	2x M12 A 5 pin female
ME3-00R0-AL	R	-	2 outputs 4-20 mA	2x M12 A 5 pin female
ME3-00T0-AL	T	-	2 outputs 0-10 V	2x M12 A 5 pin female
ME3-00Z0-AL	Z	1 input 4-20 mA	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00K0-AL	K	1 input 0-10 V	1 output 0-10 V	2x M12 A 5 pin female
ME3-00V0-AL	V	1 input 0-10 V	1 output 4-20 mA	2x M12 A 5 pin female
ME3-00Y0-AL	Y	1 input 4-20 mA	1 output 0-10 V	2x M12 A 5 pin female

Digital power output module Mod. ME3-0004-DL

The digital output module can be connected only in presence of a CPU or Expansion module and can be mixed with other either digital or analog Input and Output devices and with the initial module of the subnet. It has two M12 A 5 pin female connections, each connection can manage 2 digital outputs and can provide a maximum of 10 W to 24 V DC. The device is useful to pilot a bistable valve or two monostable valves for each connector, or to activate the electric coils or other electric devices with maximum absorption of 10 W to 24 V DC. Connecting two outputs to one electric device only and activating them simultaneously, it is possible to provide maximum 20 W to 24 V DC.



Mod.	Coding reference	Number of digital outputs	Connection	Number of connectors	Dimensions	Signalling	Sensor supply	Max power for M12 connector	Max power for digital output	Type of signal	Protection class	Operating temperature	Weight
ME3-0004-DL	Q	4	M12 A 5 pin female	2	122 x 25 mm	1 yellow led for each output	24 V DC	20 W	10 W	NPN	IP65	0 ÷ 50°C	100 g

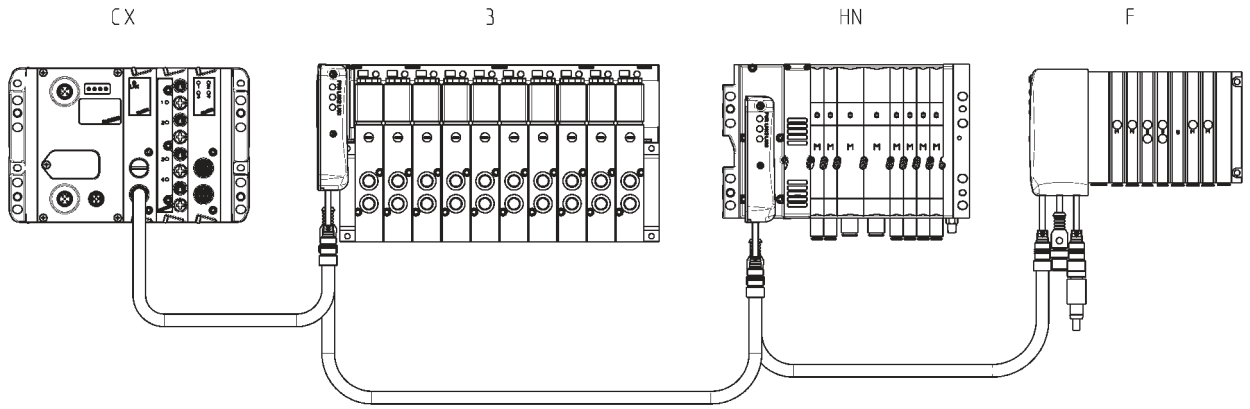
Direct interface with Series F, Series HN and Series 3 valve islands

These direct interface modules allow to connect a CPU, CX or an expansion module directly to a valve island of the Series F, HN or 3. Before these interface modules you can only connect different digital or analog electric modules or the initial module of the subnet.

Downstream the interface modules, only the provided valve islands can be connected. The valve islands that can be connected to the interface modules have the same rules as the multipole version of the same Series.

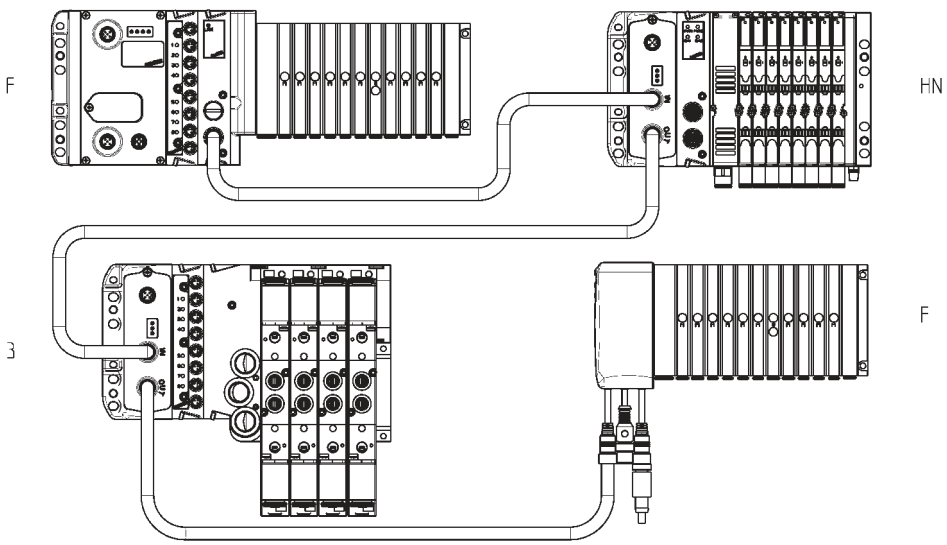
Network topology configuration with the CX solution - Example 1

Multi-serial solution composed of:
- a CX module with initial subnet module
- a Series 3 Multipole valve island with CXA-25P adaptor
- a Series HN Multipole valve island with CXA-25P adaptor
- a Series F Multipole valve island with CXA-25P adaptor



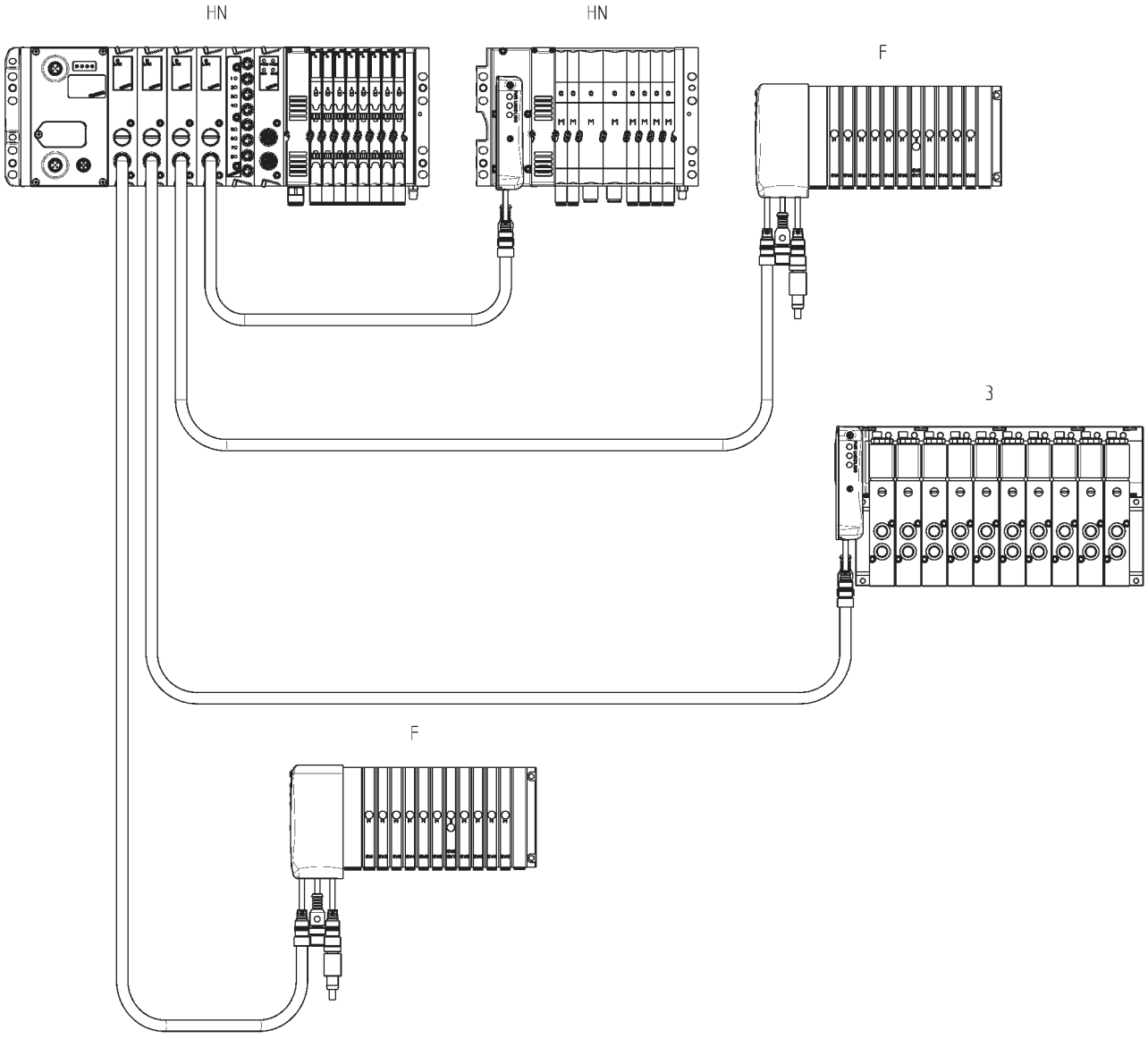
Network topology configuration with the CX solution - Example 2

Multi-serial solution composed of:
- a Series F Fieldbus valve island
- a Series HN Fieldbus expansion
- a Series 3 Fieldbus Expansion
- a Series F Multipole valve island with CXA-25P adaptor



Network topology configuration with the CX solution - Example 3

Multi-serial solution with star connection composed of:
- a Series HN Fieldbus valve island with initial subnet modules
- on the first branch a Series F Multipole valve island with CXA-25P adaptor
- on the second branch a Series 3 Multipole valve island with CXA-25P adaptor
- on the third branch a Series F Multipole valve island with CXA-25P adaptor
- on the fourth branch a Series HN Multipole valve island with CXA-37P adaptor



Network topology configuration with the CX solution - Example 4

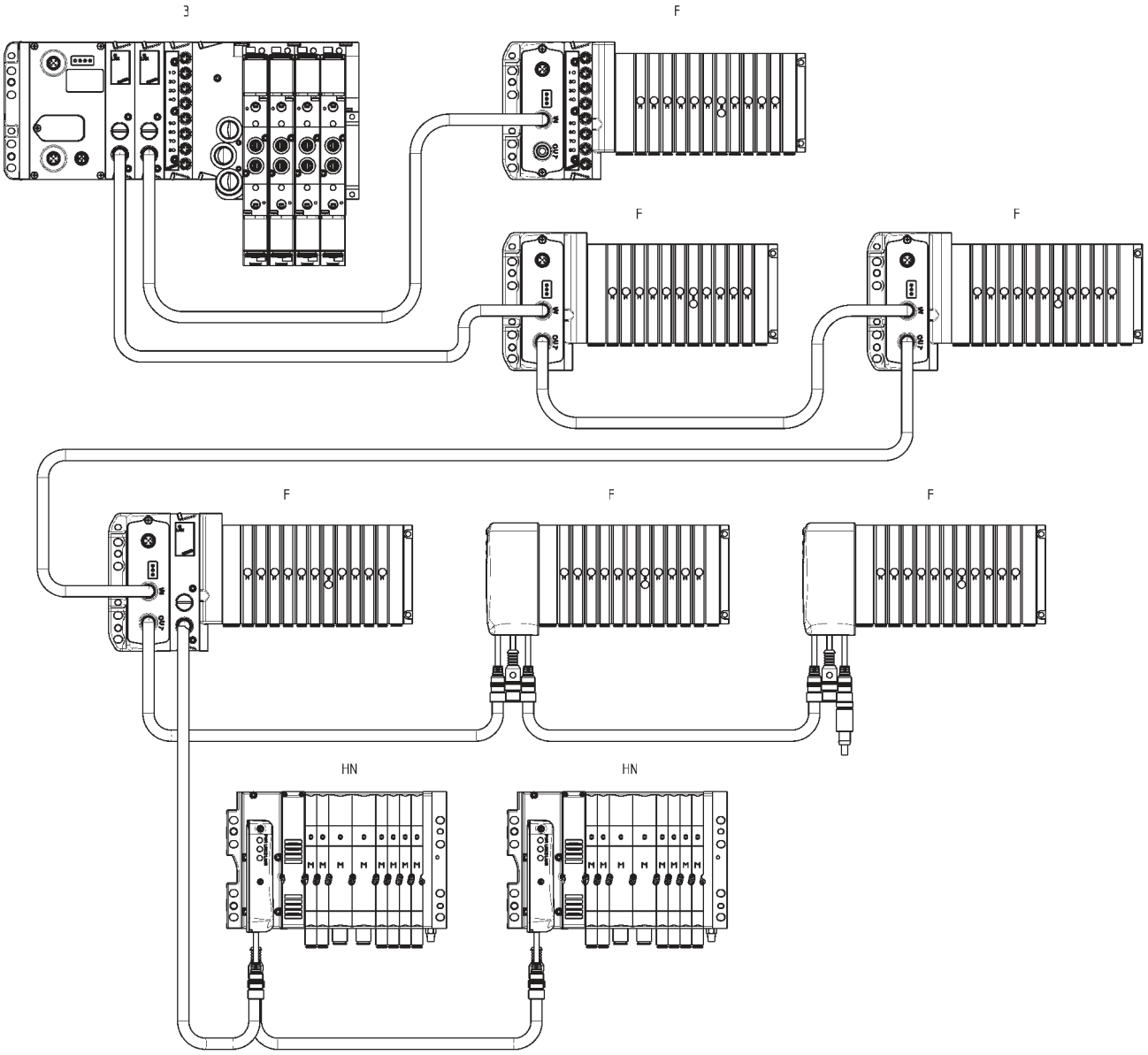
Multi-serial solution with tree connection composed of an initial module, two branches and a further branch.

Initial module:
- Series 3 Fieldbus valve island with 2 initial subnet modules

First branch of the initial module:
- 5 Series F valve islands of which 3 Fieldbus and 2 Multipole with CXA-25P adaptor

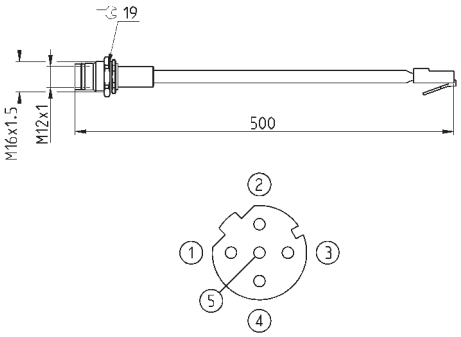
Further branch:
- 2 Series HN Multipole valve islands with CXA-25P and CXA-37P adaptor

Second branch of the initial module:
- a Series F Fieldbus Expansion



Adaptor and panel mount for Ethernet RJ45 to M12 D networks

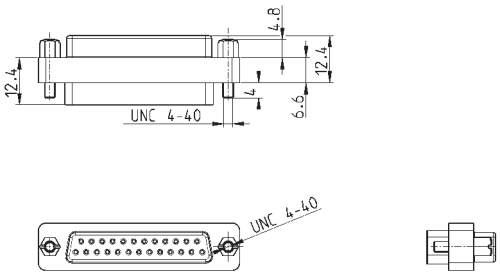
For PROFINET, EtherCAT, EtherNet/IP



Mod.	description	type of connector	connection	cable length (m)
CS-SE04HB-F050	moulded cable	straight	RJ45 male, M12 D 4 pin female - Pin 5 is not connected	0.5

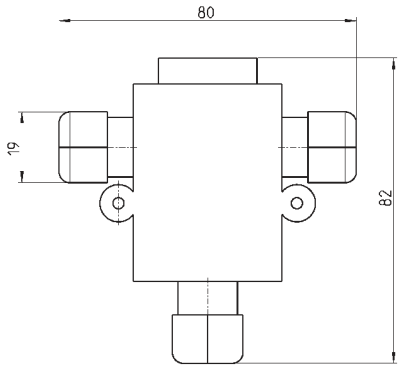
25M-25F Sub-D adaptor

For Series Y valve islands with CXA-25P



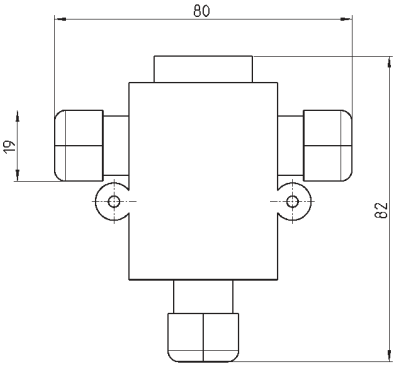
Mod.	description	type of connector	connection	cable length (m)
G2X-G2W	moulded adaptor	in line	Sub-D 25 pin female - male	-

Profibus-DP data line tee



Mod.
CS-AA03EC

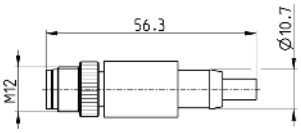
CANopen / DeviceNet data line tee

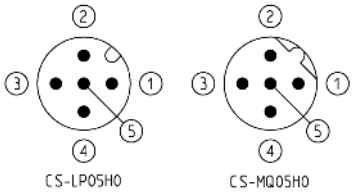


CS-AA05EC

M12 male terminating resistor

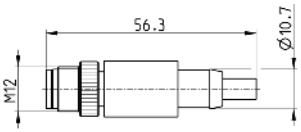
For PROFIBUS, CANopen, DeviceNet

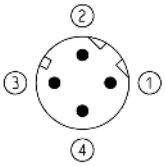




Mod.	description	type of connector	connection	Protocol
CS-MQ05H0	moulded terminating resistor	straight	M12 B 4 pin male - Pin 5 is not connected	PROFIBUS
CS-LP05H0	moulded terminating resistor	straight	M12 A 5 pin male - Pin 5 is connected	CANOpen / DeviceNet

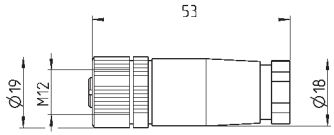
Subnet terminating resistor

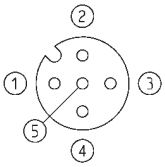




Mod.	description	type of connector	connection	Protocol
CS-SU04H0	moulded terminating resistor	straight	M12 D 4 pin	subnet

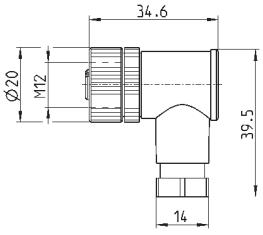
Straight connector for power supply

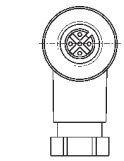


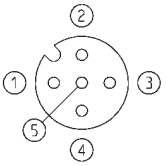


Mod.	description	type of connector	connection		cable length (m)
CS-LF04HB	for wiring	straight	M12 A 4 pin female - is not connected	Pin 5	-

Angular connector for power supply

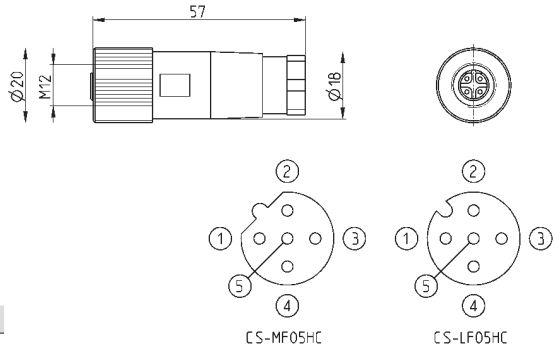






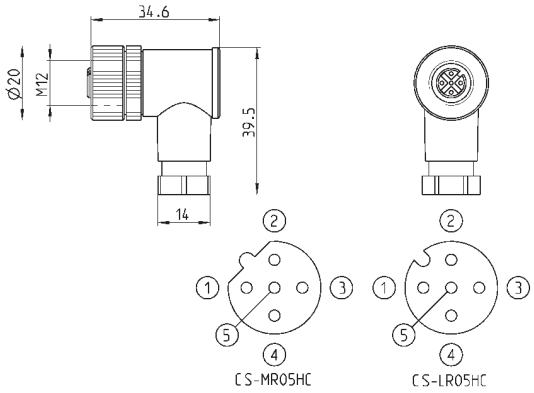
Mod.	description	type of connector	connection		cable length (m)
CS-LR04HB	for wiring	90°	M12 A 4 pin female - is not connected	Pin 5	-

Straight female M12 connectors for Bus-IN



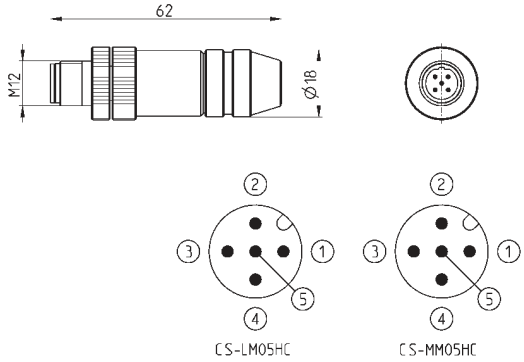
Mod.	description	type of connector	connection	Protocol
CS-LF05HC	for wiring	straight	M12 A 5 pin female	CANopen / DeviceNet
CS-MF05HC	for wiring	straight	M12 B 5 pin female	PROFIBUS

Angular 90° female M12 connectors for Bus-IN



Mod.	description	type of connector	connection	Protocol
CS-LR05HC	for wiring	90°	M12 A 5 pin female	CANopen / DeviceNet
CS-MR05HC	for wiring	90°	M12 B 5 pin female	PROFIBUS

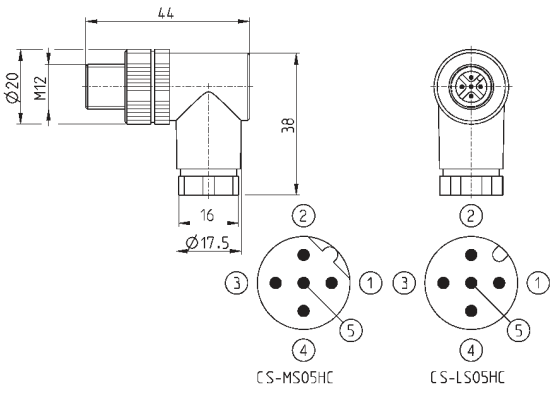
Straight male M12 connectors for Bus-OUT



Mod.	description	type of connector	connection	Protocol
CS-LM05HC	for metal wiring	straight	M12 A 5 pin male	CANopen / DeviceNet
CS-MM05HC	for metal wiring	straight	M12 B 5 pin male	PROFIBUS

Angular 90° male M12 connectors for Bus-OUT

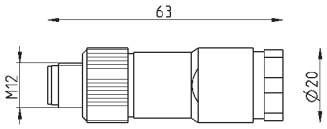
The Mod. CS-LS05HC can also be used for the connection of the digital output modules and of the analog input and output modules.

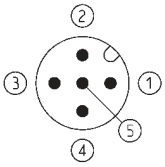


Mod.	description	type of connector	connection	Protocol
CS-LS05HC	for wiring	90°	M12 A 5 pin male	CANopen / DeviceNet
CS-MS05HC	for wiring	90°	M12 B 5 pin male	PROFIBUS

5 pin male straight M12 DUO connector

For the connection of the digital output modules and analog input/output modules.

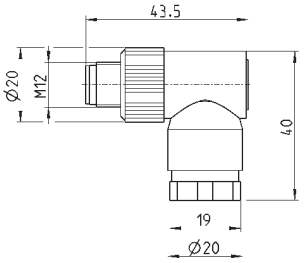


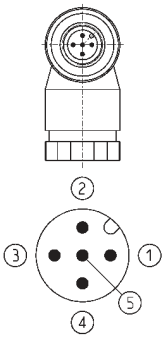


Mod.	description	type of connector	connection	cable length (m)
CS-LD05HF	for wiring	straight	M12 A 5 pin male	-

5 pin male angular M12 DUO connector

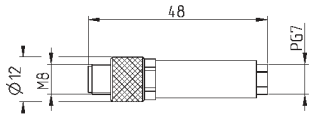
For the connection of the digital output modules ME3-0004-DL





Mod.	description	type of connector	connection	cable length (m)
CS-LH05HF	for wiring	90°	M12 A 5 pin male	-

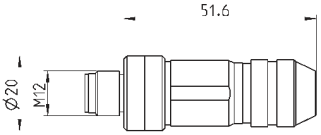
3 pin male M8 wiring connector for digital input modules

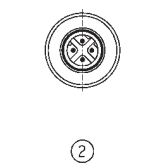


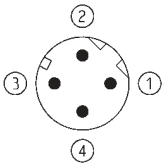
Mod.	description	type of connector	connection	cable length (m)
CS-DM03HB	for wiring	straight	M8 3 pin male	-

Male wiring connector for Bus-IN and Bus-OUT

For PROFINET, EtherCAT, EtherNet/IP and subnet





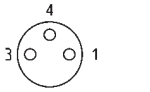


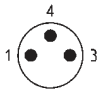
Mod.	description	type of connector	connection	cable length (m)
CS-SM04H0	for metal wiring	straight	M12 D 4 pin	-

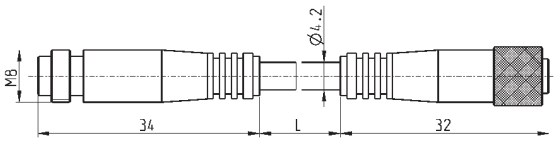
Extension with M8 connector, 3 pin male / female

Non shielded

For the connection of the digital input modules ME3-0008 and ME3-0004



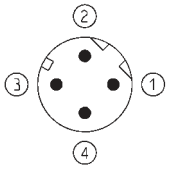




Mod.	description	type of connector	connection	L [cable length] (m)
CS-DW03HB-C250	moulded cable	straight	M8 3 pin male / female	2.5
CS-DW03HB-C500	moulded cable	straight	M8 3 pin male / female	5

Cable with straight connectors

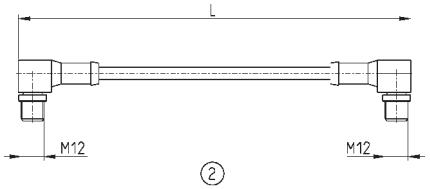
For PROFINET, EtherCAT, EtherNet/IP and subnet

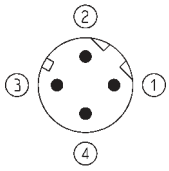


Mod.	description	type of connector	connection	L [cable length] (m)
CS-SB04HB-D100	moulded cable	straight	2x M12 D 4 pin male	1
CS-SB04HB-D500	moulded cable	straight	2x M12 D 4 pin male	5
CS-SB04HB-DA00	moulded cable	straight	2x M12 D 4 pin male	10

Cable with 90° angular connectors

For PROFINET, EtherCAT, EtherNet/IP and subnet

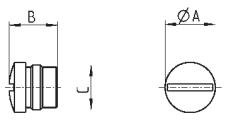




Mod.	description	type of connector	connection	L [cable length] (m)
CS-SC04HB-D100	moulded cable	90°	2x M12 D 4 pin male	1
CS-SC04HB-D500	moulded cable	90°	2x M12 D 4 pin male	5
CS-SC04HB-DA00	moulded cable	90°	2x M12 D 4 pin male	10

M8 and M12 connector cover caps

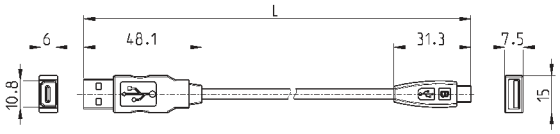
For digital and analog input/output modules and subnet



Mod.	A	B	C [Connection]
CS-DFTP	10	11	M8
CS-LFTP	13.5	13	M12

USB to Micro USB cable Mod. G11W-G12W-2

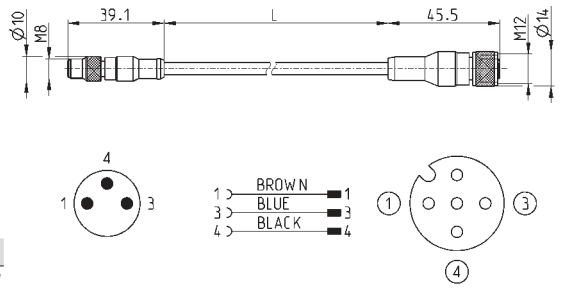
For the hardware configuration
of the Camozzi products



Mod.	description	connections	material for outer sheath	cable length "L" (m)
G11W-G12W-2	black shielded cable 28 AWG	standard USB to Micro USB	PVC	2

Adapter cable, M8 3-pin male - M12 4-pin female

Protection class: IP69K

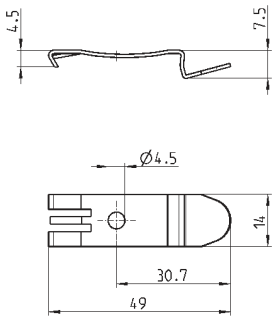


Mod.	description	max voltage	max current	Nr conn. wires	connections	outer sheath	cable "L" (m)
CS-AG03HB-C250	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	2.5
CS-AG03HB-C500	3-pin cable 24 AWG, high flexibility	50V AC / 60V DC	3 A	3	M8 3-pin male - M12 4-pin fem.	PUR black	5

Mounting brackets for DIN rail

DIN EN 50022 (mm 7,5 x 35 - width 1)

Supplied with:
2x plates
2x screws M4x6 UNI 5931



Mod.
PCF-E520

NOTES

Quality: our priority commitment

Research, technological innovation, training, respect for personnel, employee and environmental safety and total customer care are all factors that Camozzi considers strategic in the achievement of quality.

To Camozzi quality is a system that ensures excellence, not only of the final product but throughout the entire business process.

Our certifications

Camozzi's main goals include quality and safety, the protection of the environment and compatibility of our activities with the territories in which they are performed.

Since 1993 Camozzi has been certified in accordance with the ISO 9001 standard for quality management. In 2003 the company obtained ISO 14001 certification for environmental management.

In the same year, DNV, the global quality assurance and risk management company, certified Camozzi's Integrated Management System, which includes both ISO 9001 and ISO 14001 standards. Furthermore, in 2013 Camozzi obtained ISO/TS 16949 certification for the Series C-Truck and Series 9000 fuel fittings, then transitioned to the new edition of the IATF 16949 standard in 2018.

From 1 July 2003, all products sold in the European Union and destined to be used in potentially explosive areas, had to be approved according directive 94/9/CE, also known as ATEX.

This directive covered both electrical and non-electrical parts, including for instance pneumatic power and control equipment.

Mandatory directives
- Directive 99/34/EC concerning liability for defective products modified by Legislative Decree 02/02/01 n° 25.
- Directive 2014/35/EU "Equipment designed for use within certain voltages".
- Directive 2014/30/EU "Electromagnetic Compatibility EMC" and relative additions.
- Directive 2014/34/EU "Atex".
- Directive 2006/42/EC "Machinery".
- Directive 2014/68/EU "Pressure Equipment Directive".
- Directive 2001/95/EC "General product safety".
- Regulation 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Technical standards
- ISO 4414 - Pneumatic fluid power - General rules and safety requirements for systems and their components

Environmental notes
- Packaging: we respect the environment, so use materials which can be recycled, including recyclable PE and paper.
- Green Design Project: in the study of new products, the environmental impact is always taken into consideration (real project, elaboration, etc.).

Information for the use of Camozzi products

In order to ensure proper functioning of Camozzi products these general guidelines should be noted.

Air quality

While resources such as electricity, water and gas are normally supplied by external companies to guaranteed standards, compressed air is produced from the ambient atmosphere. It is therefore the user that has to guarantee compressed air quality.

High quality air is essential for proper functioning of pneumatic systems. One cubic metre of air at atmospheric pressure typically contains the following:
- more than 150 million solid particles with dimensions from 0,01 µm to 100 µm,
- fumes due to combustion,
- water vapour, with volume depending on temperature; at 30° there are about 30 g/m³ of water
- oil, up to about 0,03 mg
- micro organisms
- plus a variety of chemical contaminants, odours etc ...

The further the air is compressed, the higher the air quantity in the same volume and therefore the higher the amount of contaminants.

In order to reduce unwanted contents, compressors are fitted with filters, driers and oil separators at the inlet and outlet.

In spite of these precautions, the air, during its passage along pipes and tubes or while in storage tanks, can collect contaminants such as flakes of rust. Further, water vapour contained in the air can cool down and liquefy, then absorb and retain oil fumes.

For this reason it is advisable to fit compressed air systems and pneumatic machinery with air treatment equipment.

Air treatment: classification according to ISO 8573-1-2010 standard

ISO 8573-1-2010 Class	Solid particles				Water		Oil
	Max. Number of Particles per m³			Max Concentration mg/m³	Water pressure dew point °C	Liquid g/m³	Total content (liquid, aerosol and vapour) mg/m³
	0,1 - 0,5 µm	0,5 - 1 µm	1 - 5 µm				
0	More strict than class 1, defined by the device user						
1	≤ 20,000	≤ 400	≤ 10	-	≤ - 70°	-	≤ 0,01
2	≤ 400,000	≤ 6,000	≤ 100	-	≤ - 40°	-	≤ 0,1
3	-	≤ 90,000	≤ 1,000	-	≤ - 20°	-	≤ 1
4	-	-	≤ 10,000	-	≤ + 3°	-	≤ 5
5	-	-	≤ 100,000	-	≤ + 7°	-	-
6	-	-	-	≤ 5	≤ + 10°	-	-
7	-	-	-	5 - 10	-	≤ 0,5	-
8	-	-	-	-	-	0,5 - 5	-
9	-	-	-	-	-	5 - 10	-
X	-	-	-	> 10	-	> 10	-

Different types of air treatment equipment have different functions: isolation valves, pressure regulators, soft-start valves and of course filters.
In some applications lubricators are still used, but this is increasingly unusual.
Regarding filtering, there are international standards, such as ISO 8573-1-2010, that classify air according to its quality.

ISO 8573-1-2010 classifies compressed air according to the presence of three contaminating categories: solid particles, water or water vapour, and concentration of micro mist or oil vapours. In general, if not specified otherwise in the characteristics of the single component, Camozzi products require an ISO 8573-1-2010 class 7-4-4 air quality.

- class 7 = air has a maximum concentration of SOLID PARTICLES of 5 mg/m³.
The filtering elements are designed to separate solid particles with a dimension of more than 25 µm.
The air exiting from our filters and therefore the air at the inlet of all other components can contain solid particles with a maximum concentration of 5 mg/m3 and with a maximum dimension of 25 µm.

- class 4 = the compressed AIR temperature has to be ≤ 3°C in order for entrained water vapour to condense and become liquid.
Conventional filters have characteristics that separate the humidity in the air only if it is in a liquid or near-liquid state.
It is the cooling of the air that enables condensation and removal of water vapour.
The air flow entering the bowl of the filter sustains a minimum expansion phase, (according to the Gas Law when gas suddenly expands, its temperature drops) followed by a vortex, this enables the heavier particles and the water vapour (condensing due to the expansion) to adhere to the sides of the bowl and slide down towards the drain.
Except for specific versions, users of Camozzi filters have to install driers in their compressed air production systems that, by cooling the air, dehumidify it.

- class 4 = the concentration of OIL PARTICLES must be of maximum 5 mg/m³.
It should be noted that compressors use oil for lubrication and that this can be carried into the compressed air system in the form of aerosol, vapour or liquid.
This oil, as with all other contaminants, can be transported by the air into the pneumatic circuit. It can then contact the seals of the components and subsequently pass into the environment through the outlets of the solenoid valves. In this case coalescing filters are used to aggregate those micro-molecules of oil suspended in the air and remove them.
The use of Camozzi coalescing filters enable to reach classes 2 and 1.
It is important to keep in mind that best performance is reached only by means of a multi-phase filtering process with subsequent phases.
As illustrated, different filters have different characteristics - a very efficient filter for a certain contaminant may not be so effective for other contaminants.

The filtering elements determine the class of the filters, these elements should be replaced after a specified period or after a specified number of working hours. These parameters vary according to the characteristics of the incoming air.

Camozzi filters are subdivided into different groups:
- Filtering element of 25 µm, class 7-8-4
- Filtering element of 5 µm, class 6-8-4
- Filtering element of 1 µm, class 2-8-2 with pre-filter class 6-8-4
- Filtering element of 0,01 µm, class 1-8-1 with pre-filter class 6-8-4 residual oil content of 0,01 mg/m³
- Activated carbon, class 1-7-1 with pre-filter class 1-8-1 residual oil content of 0,003 mg/m³

The components are factory greased with special products and do not need an additional lubrication. In case it should be necessary, use ISO VG 32 oil.
The quantity of oil introduced into the circuit depends on the applications.
Camozzi suggests a maximum dosage of three drops per minute.

Pneumatic cylinders

The choice of the correct cylinder mounting and also that of the rod attachment to any moving parts, are as important as the control of parameters relating to speed, mass and radial loads.
The control of these parameters has to be guaranteed by the user.
The location of position sensors (reed switches), and their switching response times to magnetic fields, is dependent upon the type and bore size of the cylinder and the appropriate precautions need to be taken when fixing these items. (see notes on the pages about sensors).

We do not advise the use of a cylinder as a shock absorber or for pneumatic cushioning. If used at the maximum speed, we recommend gradual deceleration to avoid a violent impact between piston and the cylinder end cover.
As a general value, we calculate a maximum average speed of 1 m/sec.
In this case no lubrication is required as the lubrication introduced during assembly is sufficient to guarantee good operation.
If faster speeds are required, we suggest lubrication in the quantities described above.

Directive ATEX 2014/34/EU: Products classified for the use in potentially explosive atmospheres

ATEX 2014/34/EU

Since 19 April 2016 all products which are sold in the European Union and destined to be used in **potentially explosive atmospheres** have had to be approved according to new Directive 2014/34/EU, also known as ATEX. This Directive applies to both electrical and non-electric items, such as pneumatic drives.

Main changes introduced by Directive 2014/34/EU:

- Non-electric apparatus and devices, such as pneumatic cylinders, have to comply with the Directive.
- Equipment is classified into different categories, which identifies the potentially explosive zones in which they may be used.
- The products are identified with the CE mark Ex.
- The instructions for use and the declarations of conformity should be supplied with each product that is to be used in potentially explosive zones.
- The Directive applies to products intended to be used in zones that are potentially explosive due to the presence of dust as well as to zones where potentially explosive gases may be present.
  A potentially explosive atmosphere could be composed of gas, mist, steam or dust, which may be present constantly, intermittently or created by processes conducted within the zone. An explosion can occur when there are one or more inflammable substances plus an ignition source present.

An ignition source could be:

- Electrical (electric arcs, induced current, heat generated by the Joule effect, i.e. heat created when an electric current flows through a resistance.)
- Mechanical (heat between surfaces caused by friction, sparks generated by the collision of metallic bodies, electrostatic discharges, adiabatic compression, i.e. compression of an atmosphere causing a temperature rise)
- Chemical (exothermic reactions between materials)
- Naked flames. The products which are subject to approval are those which, during their normal use or because of a malfunction, present one or more ignition sources within a potentially explosive atmosphere.

The manufacturer has to guarantee that the product conforms to the declarations and carries the appropriate markings. Moreover, the product should always be accompanied by the appropriate instructions.

The maker and/or user of the equipment should identify the risk zone(s), as defined by Directive 99/92/CE, in which the products are to be used and ensure all instructions are followed.

In the case where a product is made up of two or more components with different markings, the component which is classified in the lowest category defines the class to which the complete product belongs.

Example:
solenoid suitable for Category 3 marked ...
Ex - II 3 Ex...

and valve suitable for Category 2 ...
Ex - II 2 Ex...

The valve unit with solenoid can be used only in Category 3 or Zone 2/22.

Zones, groups and categories

In the places and for the types of equipment subject to Directive 99/92/CE, the user should identify the classification of the zones in relation to the danger of the creation of explosive atmospheres because of the presence of gas or dust.

Apparatus and equipment for the use in potentially explosive zones are divided in groups:

Group I > apparatus used in mines

Group II > apparatus used in installations above ground

Group I: Apparatus used in mines

CATEGORY M1
Functioning in explosive atmospheres

CATEGORY M2
Non-supplied equipment in explosive atmospheres

Group II: Apparatus for installations above ground

Product category	Gas	Dust
1	Zone 0	Zone 20
2	Zone 1	Zone 21
3	Zone 2	Zone 22

Classification of zones according to Directive 99/92/CE

Category 1	Zone 0 -	Area in which (permanently, for long periods or often) an explosive atmosphere is present, consisting of a mixture of air and inflammables in the form of gas, vapour or mist.
	Zone 20 -	Area in which (permanently, for long periods or often) an explosive atmosphere is present in the form of a dust/powder cloud which is combustible in air.
Category 2	Zone 1 -	Area in which, during normal activities, the formation of an explosive atmosphere is probable, consisting of a mixture of air and inflammables in the form of gas, vapours or mist.
	Zone 21 -	Area in which occasionally during normal activities the formation of an explosive atmosphere is probable, in the form of a dust cloud which is combustible in air.
Category 3	Zone 2 -	Area in which, during normal activities, the formation of an explosive atmosphere, consisting of a mixture of air and inflammables in the form of gas, vapour or mist is not probable and, whenever this should occur, it is only of a short duration.
	Zone 22 -	Area in which, during normal activities, the formation of an explosive atmosphere in the form of a combustible dust cloud is not probable and, whenever this should occur, it is only of a short duration.

Example of Marking: Ⓔx II 2 GD c T100°C (T5) -20°C≤Ta≤60°C

II	II Group: Devices which are to be used in spaces exposed to risks of an explosive atmosphere, different from underground spaces, mines, tunnels, etc., classified according to the criteria in Annex I of the Directive 2014/34/EU (ATEX).
2	Category: Devices designed to function in compliance with the operational parameters determined by the manufacturer and guarantee a high protection level.
GD	Qualification gas and dusts: Protected against gas (G) and explosive dusts (D).
c	Non-electrical devices: Non-electrical devices for potentially explosive atmospheres. Protection through constructive security.
T 100°C	Max. temperature for components for dusts: Max. superf. temp. of 100°C regarding potential hazards resulting from striking within the vicinity of hazardous dusts.
T5	Max. temperature for components for gas: Max. superf. temp. of 100°C regarding potential hazards which may result from striking within gas environments.
Ta	Environmental temperature: **-20°C≤Ta≤60°C.** Environmental temperature range (with dry air)

Group I: Temperature classes

Temperature = 150°C or = 450°C according to the level of dust on the apparatus.

Group II: Temperature classes

Temp. classes for gas (G)	Admissible surface temperatures
T1	450°C
T2	300°C
T3	200°C
T4	135°C
T5	100°C
T6	85°C

ATEX certified Camozzi products

APPARATUS classified as ATEX Group II

Cylinders

Series	Category	Zone	Gas/Dust
16*	2 DE-3 SE	1/21 DE -2/22 SE	G/D
24*	2 DE-3 SE	1/21 DE-2/22SE	G/D
25*	2 DE-3 SE	1/21 DE-2/22SE	G/D
31-32	2 DE-3 SE	1/21DE-2/22SE	G/D
31-32 Tandem/multi-position	2 DE	1/21 DE	G/D
40*	2 DE	1/21 DE	G/D
41*	2 DE	1/21 DE	G/D
60*	2 DE-3 SE	1/21 DE-2/22 SE	G/D
61*	2 DE-3 SE	1/21 DE-2/22 SE	G/D
62*	2 DE	1/21 DE	G/D
63*	2 DE-3 SE	1/21 DE-2/22 SE	G/D
27	2 DE	1/21 DE	G/D
QP-QPR	2 DE-3 SE	1/21 DE-2/22 SE	G/D
QN	3 SE	2/22 SE	G/D
42	2 DE-3 SE	1/21 DE-2/22 SE	G/D
ARP	2	1/21	G/D
QCT-QCB-QXT-QXB	2	1/21	G/D

Proximity switches

Series	Category	Zone	Gas/Dust
CSH/CST/CSV	3	2/22	G/D
CSG	3	2/22	G/D

Valves

Series	Category	Zone	Gas/Dust
P	3	2/22	G/D
W	3	2/22	G/D
Y	3	2/22	G/D

Solenoids

Series	Category	Zone	Gas/Dust
U70	3	2/22	G/D
H80I**	2	1/21	G/D

Pressure switches

Series	Category	Zone	Gas/Dust
PM 11**	1	0/20	G/D

Freely installable **COMPONENTS** classified as ATEX Group II

Products	Category	Zone	Gas/Dust
Silencers	2	1/21	G/D
Quick release couplings	2	1/21	G/D
Manifolds	2	1/21	G/D
Sub-bases	2	1/21	G/D
Feet	2	1/21	G/D
Caps	2	1/21	G/D
Plates	2	1/21	G/D

Valves

Series	Category	Zone	Gas/Dust
9#*	2	1/21	G/D
A#	2	1/21	G/D
2	2	1/21	G/D
3#	2	1/21	G/D
4#	2	1/21	G/D
NA (NAMUR) #	2	1/21	G/D
E (pneumatic)	2	1/21	G/D

FRL

Series	Category	Zone	Gas/Dust
MC#	2	1/21	G/D
N	2	1/21	G/D
MX#	2	1/21	G/D
T	2	1/21	G/D
CLR	2	1/21	G/D
M	2	1/21	G/D
MD#	2	1/21	G/D

* According to ISO standard
** Products with ATEX and IECEX certification
# Without solenoid

» The order code number of the certified products is obtained by adding "EX" to the standard article number
Es. 358-015 standard solenoid valve
Es. 358-015EX ATEX certified solenoid valve

Accessories available in Category 2 Zone 1/21: couplings, junctions, brackets, piston rod nuts, nuts, counter brackets, bushings, pins, clevis pins, caps, gaskets, diaphragm, sub-bases, plates, feet, hand operated valves, flow valves, flanges, screw, tie rods, automatic and blocking valves, silencers and pressure gauge, connector kits, clamps, rapid and super rapid push-in fittings, hoses, sealing rings, locking nuts. Accessories available in Category 3, Zone 2/22: adaptors, slot covers, extensions, connectors. For more information on this kind of products see the website:
http://catalogue.camozzi.com within the section: Downloads > Certifications > ATEX Directive 2014/34/EU > List of products excluded from the directive 2014/34/EU ATEX.

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93-0518-0GB009 03/2019

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