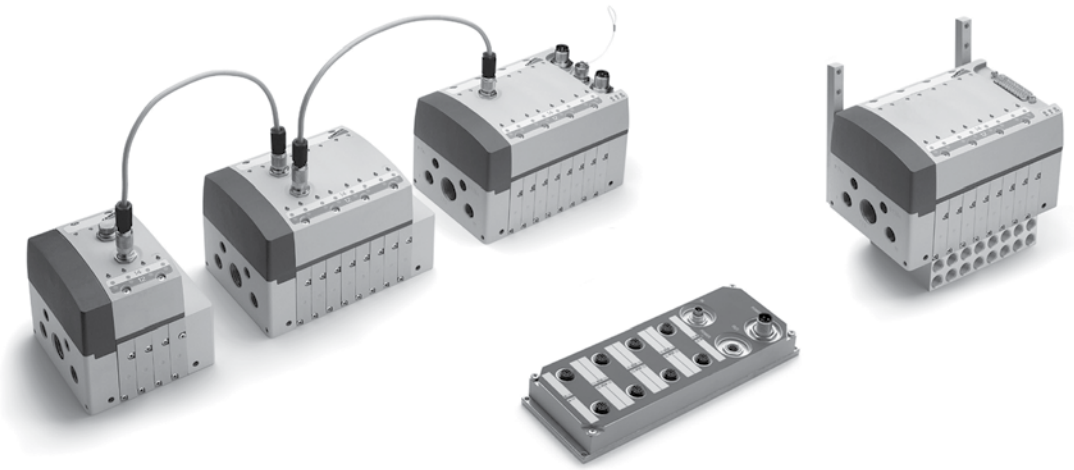
Valve Island Series Y

Electrical connection: Individual, Multipole, Profibus-Dp, DeviceNet, CANopen
Valve group 2 x 2/2 ; 2 x 3/2 ; 5/2 ; 5/3 C.C.



The valve island Series Y is based on particular solutions regarding both the pneumatic, as well as the electronic part.

Some of the characteristics are:
- Full integration of sub-base and a number of valve bodies that together represent a “module”, (2, 4 or 8 valve positions).
- Each valve position is configured individually through a number of kits containing cartridges and spools that reproduce the desired valve function.
- Easy to expand
- Possibility to connect electric input modules, bracket for Fieldbus version

» Modules of 2, 4 and 8 valve positions
» Dimensions 12,5 mm
» Flow rate 800 Nl/min

GENERAL DATA

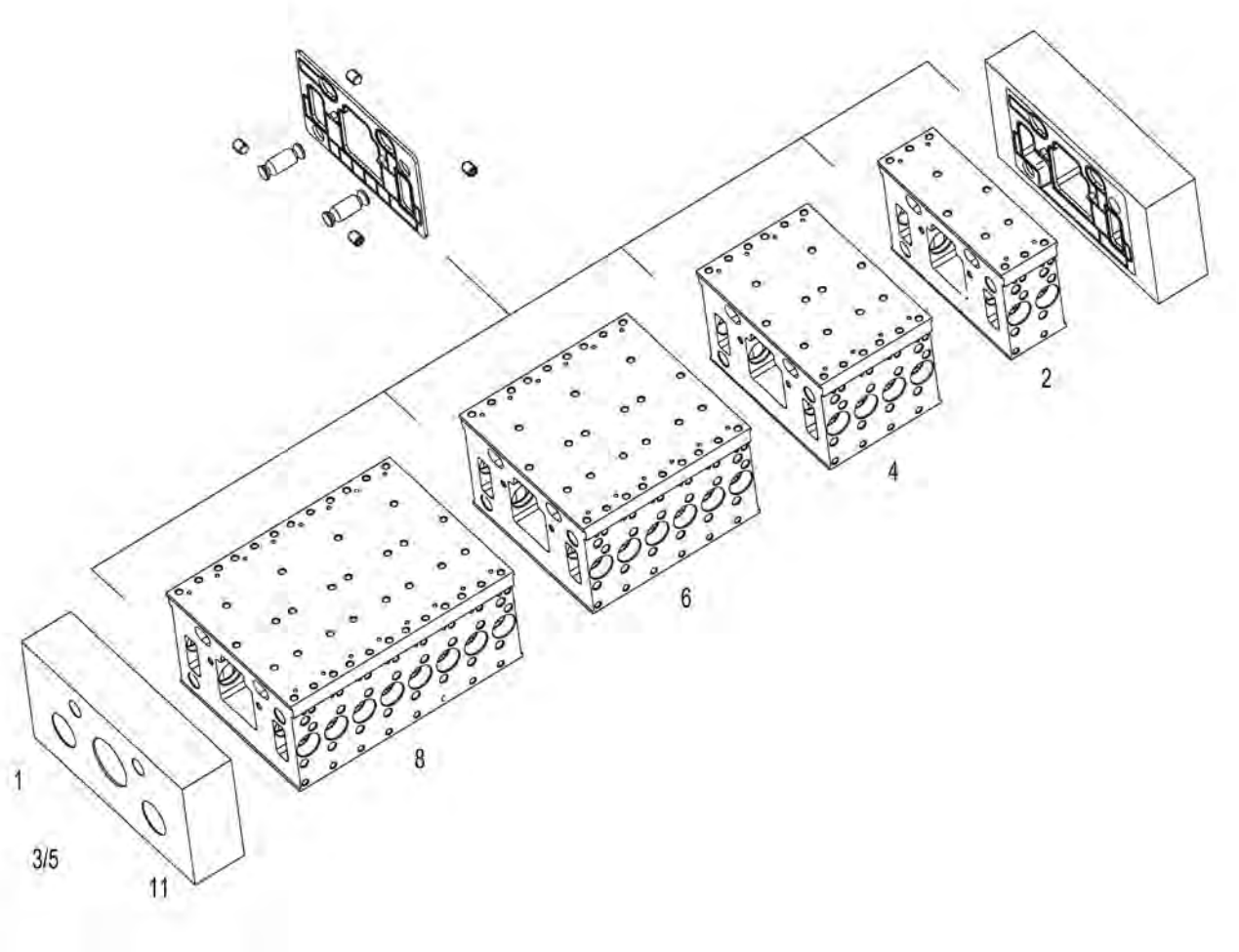
Enclosed in the package there is a label on which it is possible to write each individual coil number.

PNEUMATIC DATA	
Construction	Spool with seals
Ways / Positions	2 x 2/2 N.C.; 2 x 2/2 N.O.; 1 x 2/2 N.C. + 1 x 2/2 N.O. 2 x 3/2 N.C.; 2 x 3/2 N.O.; 1 x 3/2 N.C. + 1 x 3/2 N.O. 5/2 monostable and bistable 5/3 C.C.
Materials	Aluminium spool, brass cartridge, seals in NBR
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 air in class 5.4.4. according ISO 8573.1 In case of need, only use oil with a max. viscosity of 32 Cst.
Dimensions/size	12,5 mm
Working pressure	-0,9 ÷ 10 bar (with external pilot)
Pilot pressure	3 ÷ 7 bar
Flow rate	800 Nl/min
ELECTRICAL DATA INLET MODULE	
Voltage	24 V ±10%
Operating temperature	0°C ÷ +50°C
Relative humidity	30-90% +25°C 30-50% +50°C
Max current	350 mA
Conform with standards	EN 61131-2 EN 61000-6-2 EN 61000-6-4
Protection class	IP 65
Max. distance between init. mod. and last input or expansion mod.	50 m
Max. cable length between sensor and input module	30 m
ELECTRICAL DATA	
Continuous current	ED 100%
Protection class	IP 50 for individual connection IP 65 Multipole version PNP IP 65 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
Voltage	24V ±10%
Operating temperature	0°C ÷ +50°C
Relative humidity	30-90% +25°C 30-50% +50°C
Max. currents	1300mA continuous 1600 mA latch
Conform with standards	EN 61326-1 EN 61010-1
Max. number of solenoids connected/activated at the same time	32
Max. number of connected inlets	48
Max. munber of connected Inlet Modules	3

Construction specifications

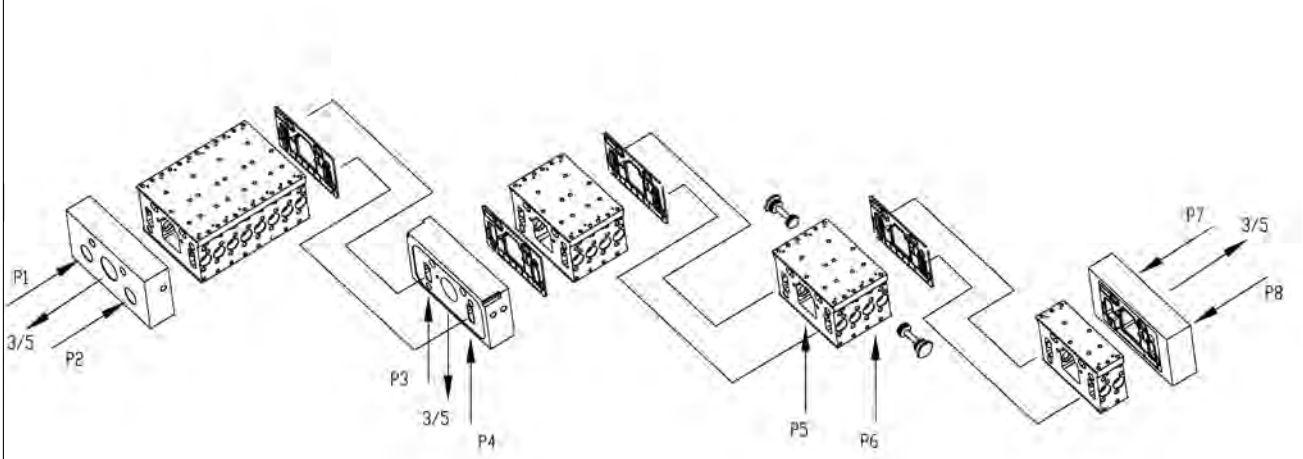
The valve island Series Y consists of:
- a module incorporating both the sub-base and seats of the valves.
- two terminal plates on which it is possible to connect the inlet and exhaust
- cartridges with their respective spools which reproduce the different valve functions (explanation in following pages)
- one cover with integrated electronics distributing signals to the pilot valves (explanation in following pages)

The module.
It's available in 4 sizes, with either 2, 4, 6 or 8 valve positions.
It is possible to join the different modules together increasing the number of valve positions.
To connect the modules, specifically designed pins are used together with fixing screws. Between the modules a special shaped seal is inserted.

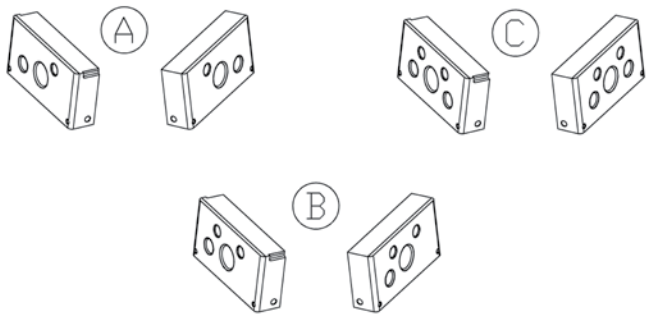


Intermediate plate for supplementary inlets and outlets

The characteristic of the two independent supplies allows 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 divide the island in pressure zones without loosing valve positions. To supply the intermediate zones of an island functions W or X can be used.
The exhaust is higher and passes on both sides.

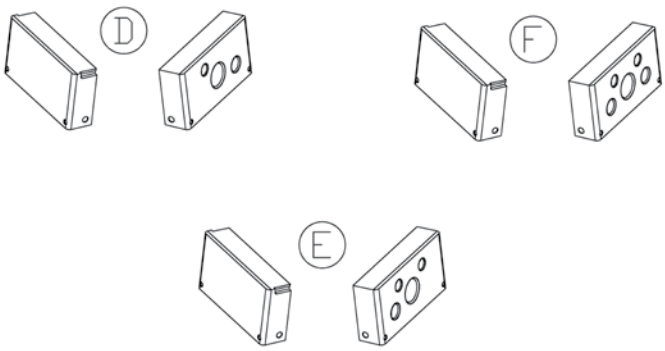


PNEUM. CONNECTIONS FROM THE LEFT AND THE RIGHT



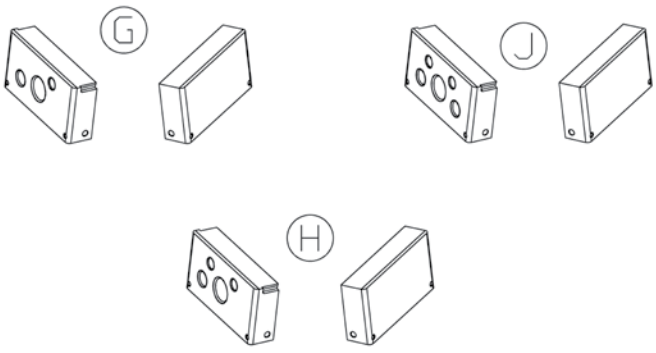
Terminal Plates		
Code	Common connections	Separate connections
A	1 - 11 12/14	82/84 3/5
B	1 - 11	12/14 82/84 3/5
C	-	1 - 11 12/14 82/84 3/5

PNEUMATIC CONNECTIONS FROM THE RIGHT



Terminal Plates		
Code	Common connections	Separate 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

PNEUMATIC CONNECTIONS FROM THE LEFT



Terminal Plates		
Code	Common connections	Separate 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

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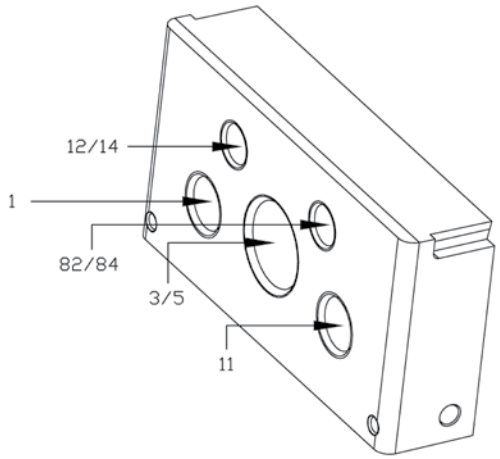
Connection

The connection of the inlets and exhaust to the valve island is made by means of terminal plates.



Supply	Supply	Exhaust	Servo-pilot supply	Servo-pilot exhaust
1	11	3/5	12/14	82/84

Filtering elements

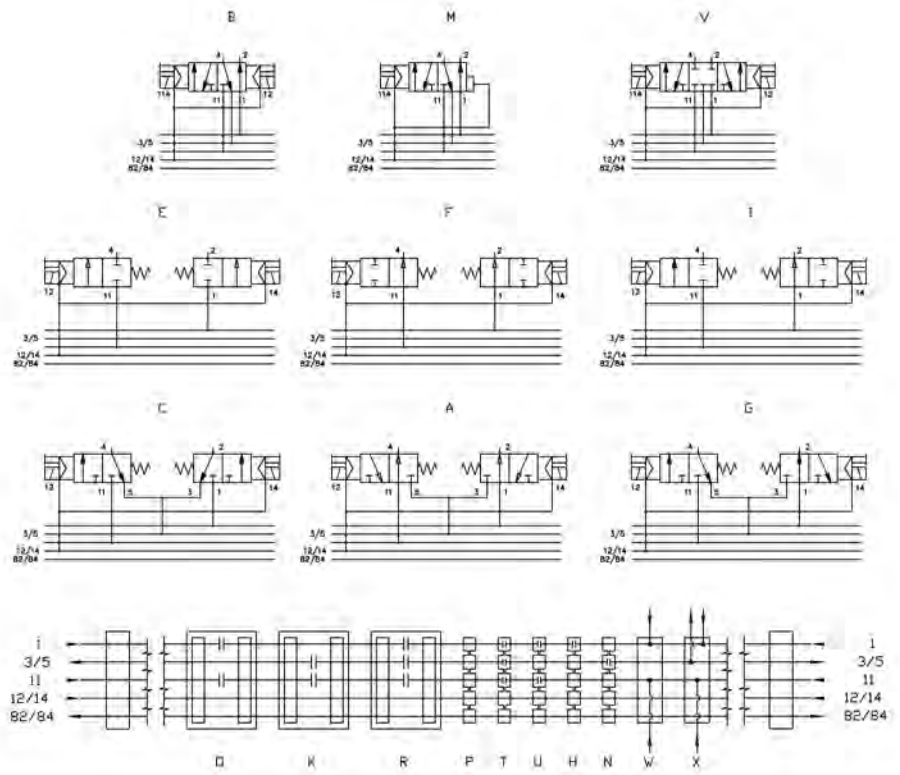
For those applications where the air quality is unknown, it is advised to supply the whole island or the pilot valve zone with filtering elements according to class 3 of table DIN ISO 8573-1.

Filter model:
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

Available functions



Code	Function	Symbol
M	5/2 Monostable	M
B	5/2 Bistable	B
V	5/3 Centres Closed	V
I	2 x 2/2 (1 N.O. + 1 N.C.)	I
E	2 x 2/2 (N.C.)	E
F	2 x 2/2 (N.O.)	F
G	2 x 3/2 (1 N.O. + 1 N.C.)	G
C	2 x 3/2 (N.C.)	C
A	2 x 3/2 (N.O.)	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
X	Module for additional supply	X

Cartridges and spools which reproduce the valve functions

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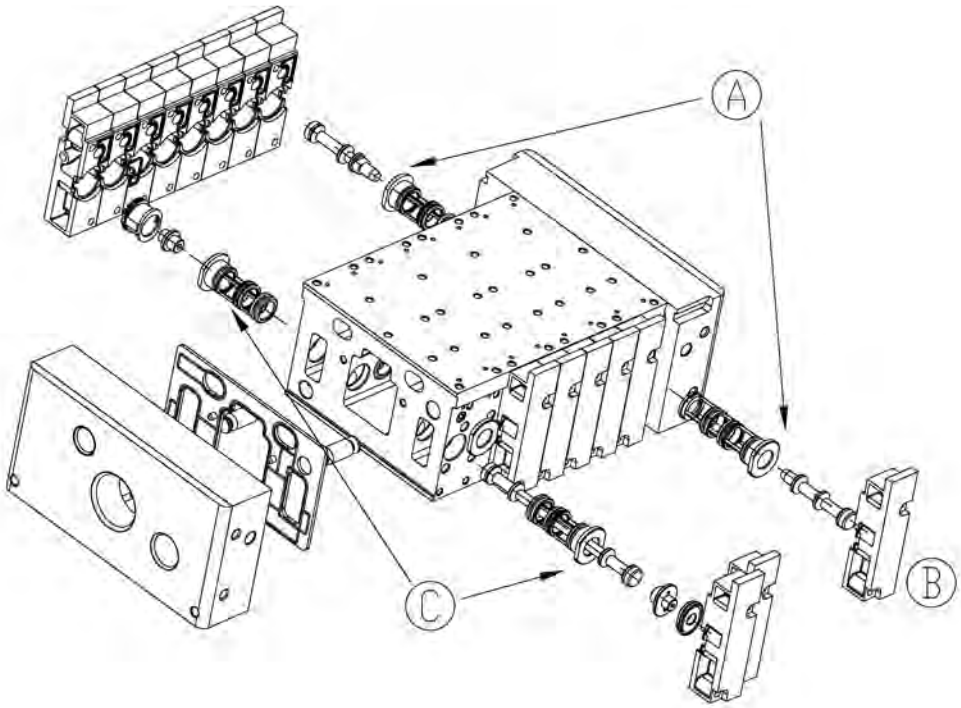
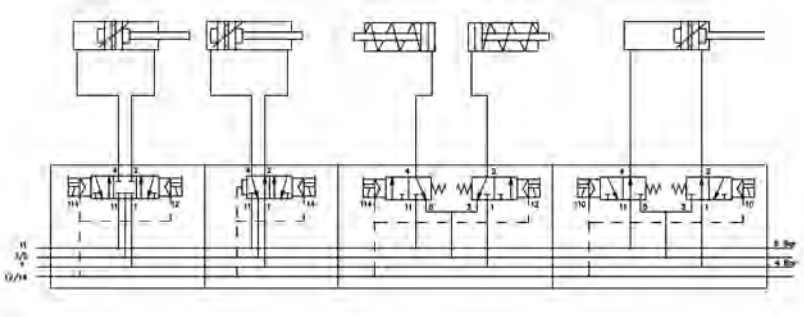
CONTROL

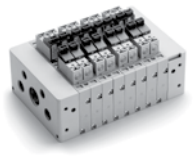
The different valve functions are obtained by inserting the cartridges together with their respective spool in the seats for each valve position located on the module. The shape of the cartridge and spool depends of the valve function required.
(A): Cartridges and spools for a 3/2-way function
(B) : End cover
(C) : Cartridges and spools for a 5/2-way function
The modification or maintenance of a valve position is obtained removing end cover “B” and replacing both the cartridge and the spool. All connecting tubes must not be removed.

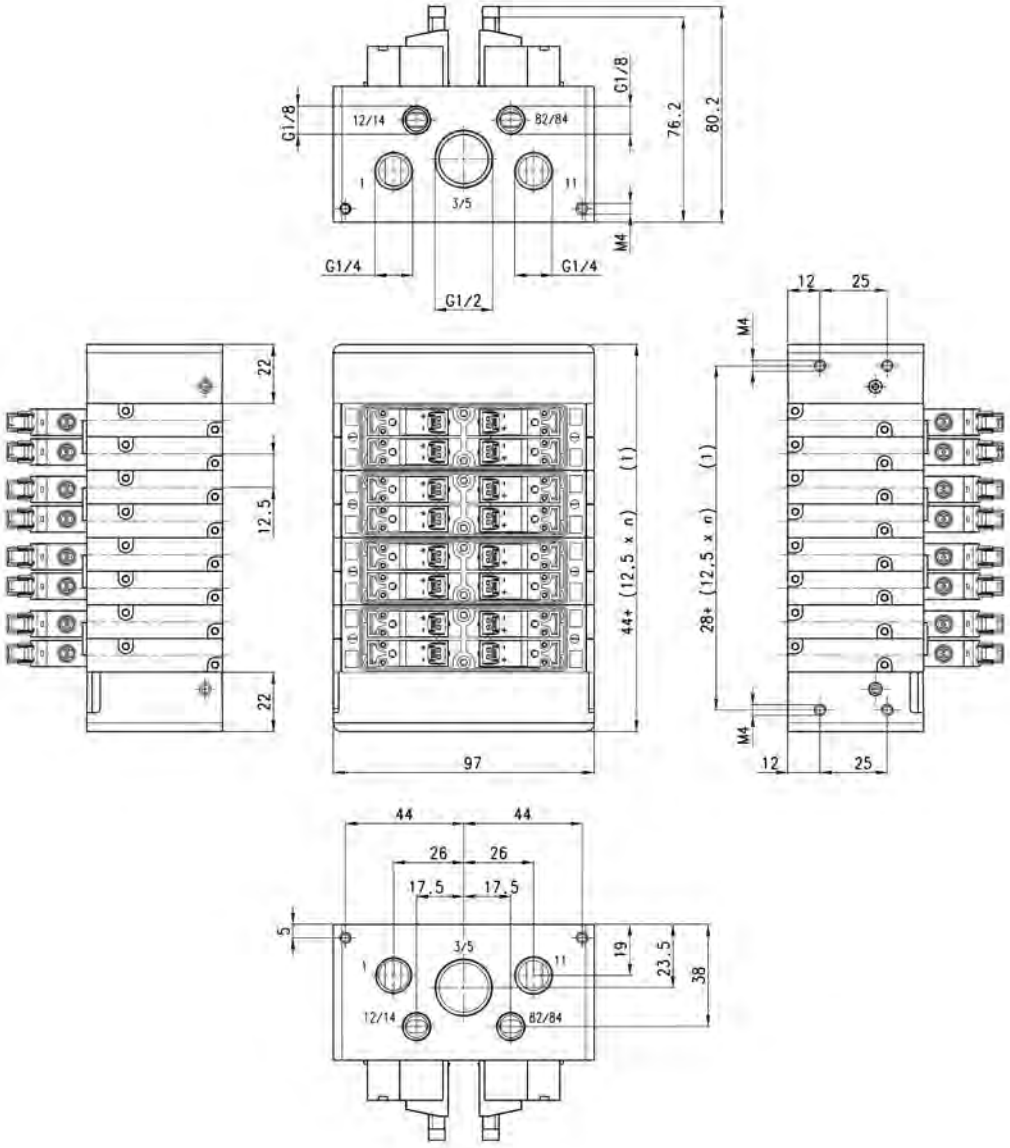




Valve island with individual connection Mod. YP1K-...

n = number of valves





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CONTROL

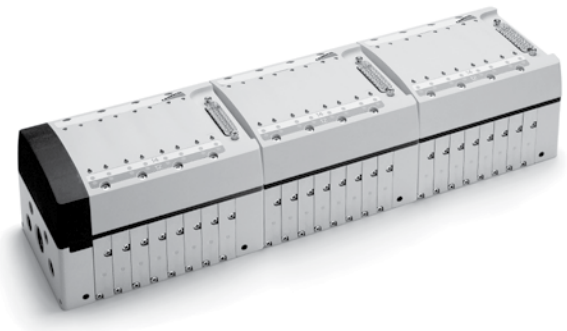
Covers

Both the multipole and the Fieldbus versions use covers for the pilot valves, this guarantees a protection class of IP 65.
Integrated in the covers are:
- The manual override. This has both a monostable and bistable function.
In order to obtain a monostable function of the manual override a simple pressure is needed; coupling a rotation the bistable function is obtained.
- the signalling LEDs of the solenoid valves
- the diagnostic LEDs (only Fieldbus version)
- the sockets for the electrical connectors
- the printed circuit boards
- the connection interface with the pilot valves

The connections are incorportated in the printed circuit board.
All outlets are protected against overvoltage, reversed polarity and shortcircuit.

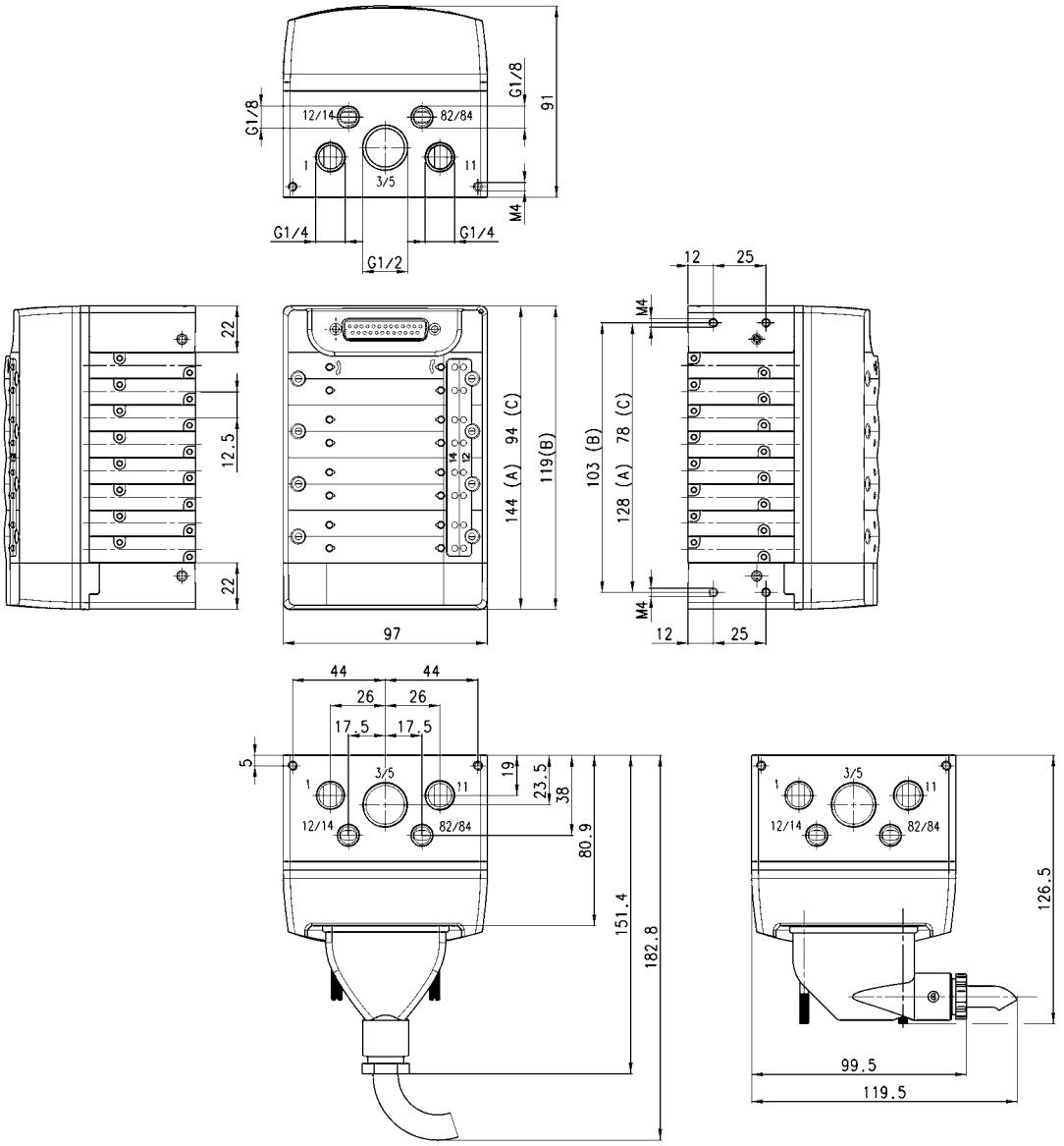
Multipole connection

The Multipole version is available in three sizes, with 4, 6 or 8 valve positions. These can be freely equipped with either monostable or bistable valves.
It is possible to join two or more valve islands simply by placing the intermediate plate for supplementary inlets and exhaust “X” under Sub-D.
Pneumatic modules can be composed of 2, 4, 6 or 8 valve positions and separated from various seals.
Between two seals between channels 1 and 11 must always be inserted a module for additional supply type “X” or a function “W”.



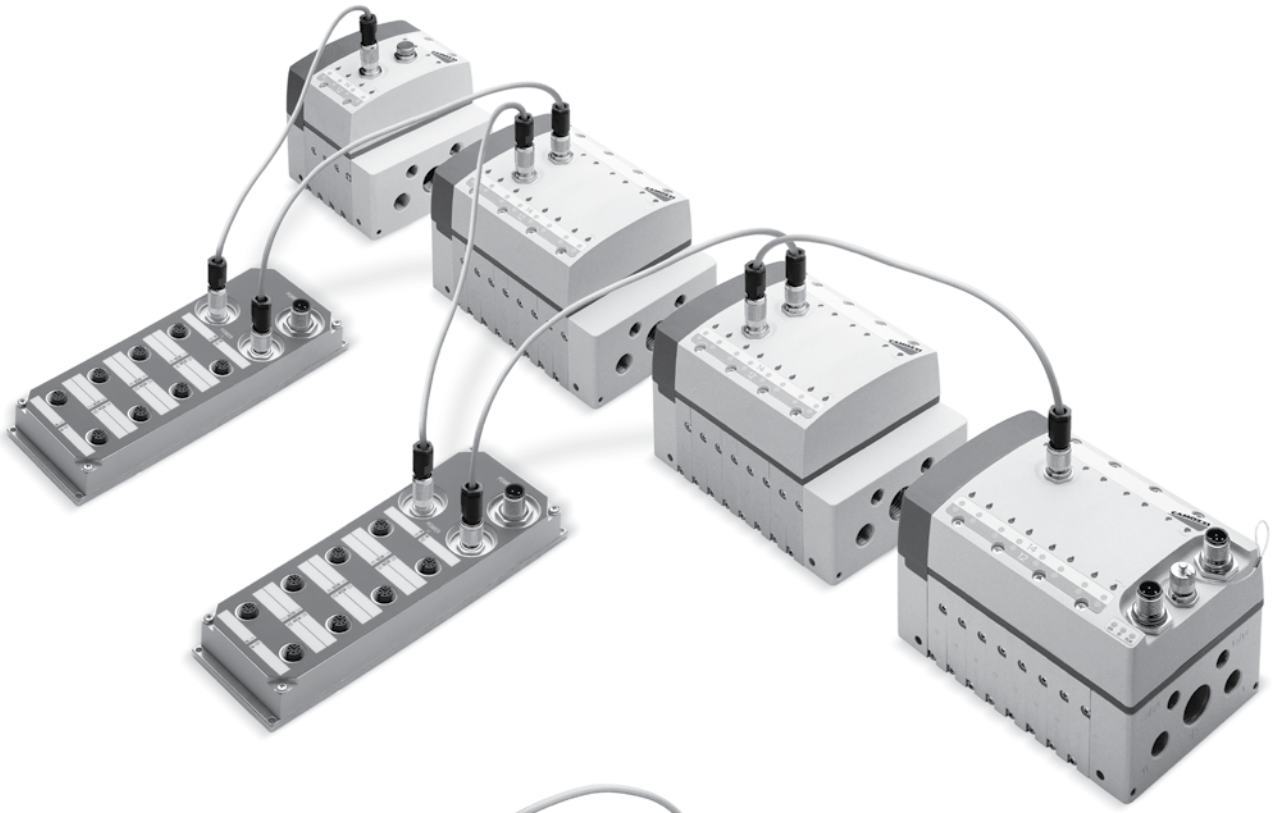
Valve island with multipole connection

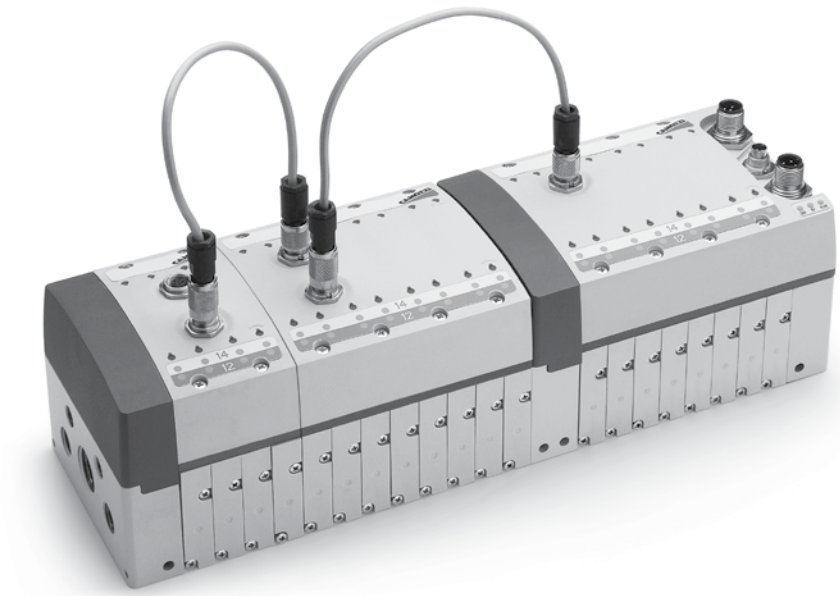
A = 8 positions
B = 6 positions
C = 4 positions



Fieldbus connection

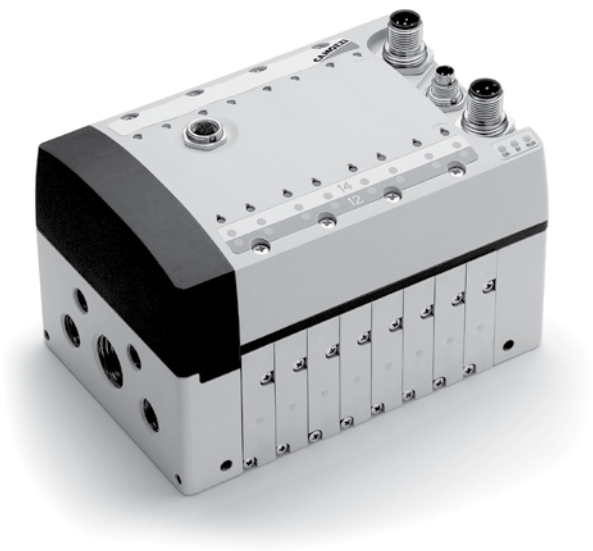
This version allows direct connection to fieldbus like: Profibus-Dp, DeviceNet, CANOpen. The main characteristic of this solution consists in a starting module called “Initial module” to which the fieldbus module is connected for the management of the expansion modules. The Initial module can accommodate up to 32 coils and 48 inlets. In order to optimize the electronic part, it has a function that permits remoting unused outlets on the expansion modules: in this way it is possible to pilot 32 solenoids on 32 valve positions.
Advantages:
- Reduction of the number of initial modules while increasing the number of expansion modules resulting in a cost reduction.
- When ordering, it is not necessary to define any type of subbase for bistable or monostable solenoid valves.
- The unused valve positions do not consume any electrical signals.
- The diaphragm seals used for the creation of different pressure zones, neither occupy any valve position, nor waste any electrical signal.
- Due to the modular structure, several islands can be joined together, reducing the overall dimensions and the number of connections resulting in reduced installation costs.





Initial module

The initial module always has 8 positions.
It is only the initial module to which the Fieldbus and electrical supply (24V DC) is connected.
Coils addressing can be sequential or customized by a specific configuration software that can be downloaded from Camozzi website, as well as the configuration file.
Pneumatic modules are available with 2, 4, 6, or 8 valve positions and can be separated by various type of seals.



Expansion module

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

The expansions communicate between theirselves and with the initial module using fieldbus Cam.I.Net.
Expansions can be easily added at any time, without using free positions (sometimes not used), for future implementations.

Pneumatic modules can have 2 / 4 / 6 or 8 valve positions and can be separated by different types of seals.
Expansion modules can be positioned up to 50 mt. far from initial module and divided into up to 15 groups. The particular construction of the islands allow side by side mounting.

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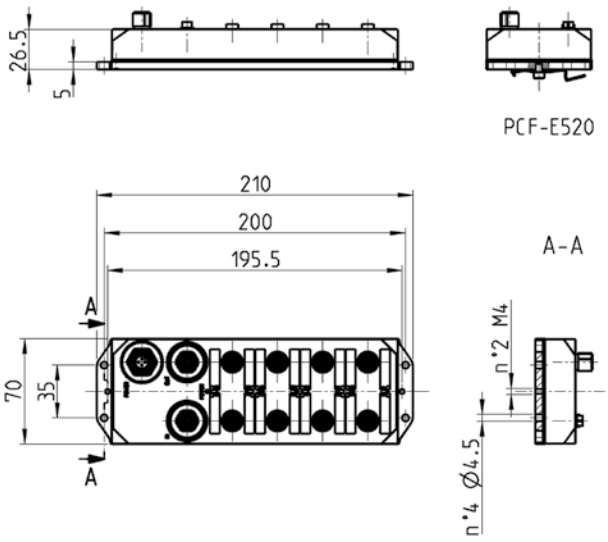
Electrical digital input module ME-1600 DL

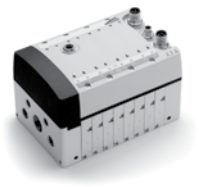
The Digital Input Module allows for connection of 16 electrical input signals via 8 M12 industry standard connections.
The M12 connections are a duo 5 pole version, with 2 input signals per connector position.
The input module can be positioned at any point of the fieldbus Cam.I.Net.
A maximum of 3 input modules can be connected to the initial module, for a total of 48 inputs.

Digital Input Module

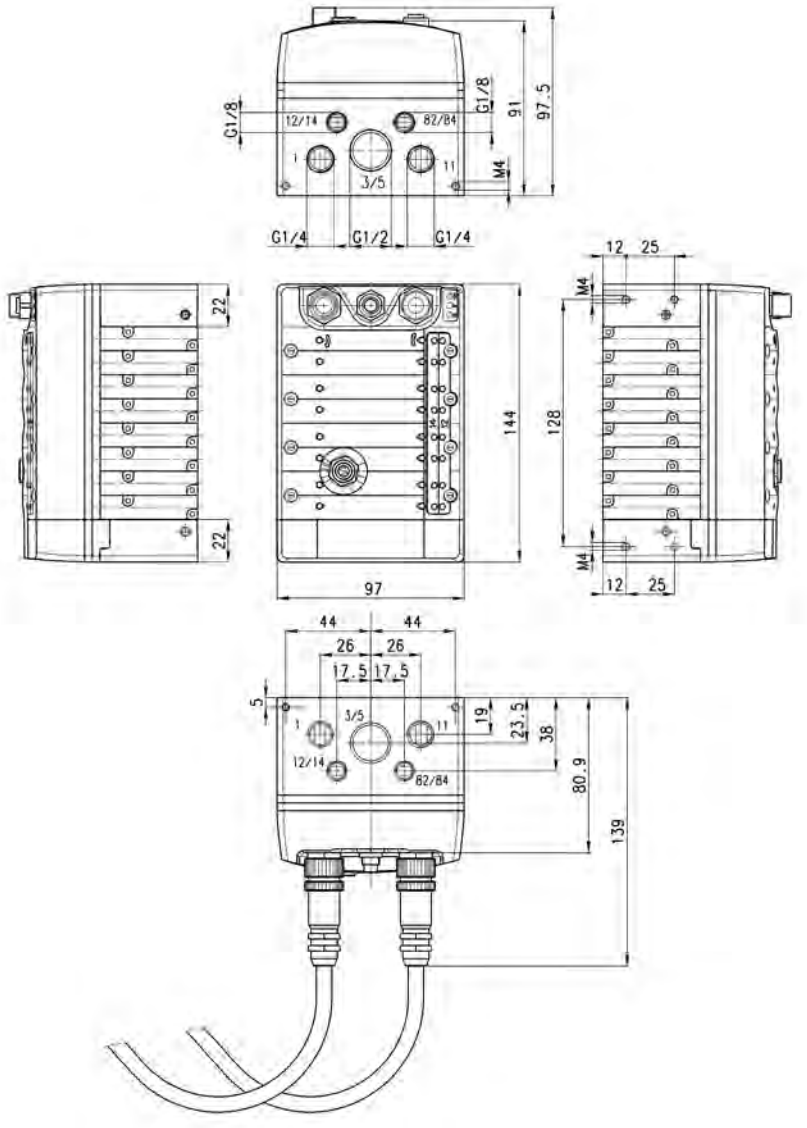
Model ME-1600-DL



Valve island with Fieldbus connection (initial module)



Dimensions don't vary with different Fieldbus versions.
(Profibus, CANOpen, Device-Net)



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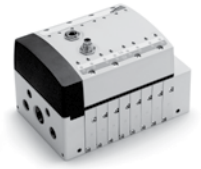
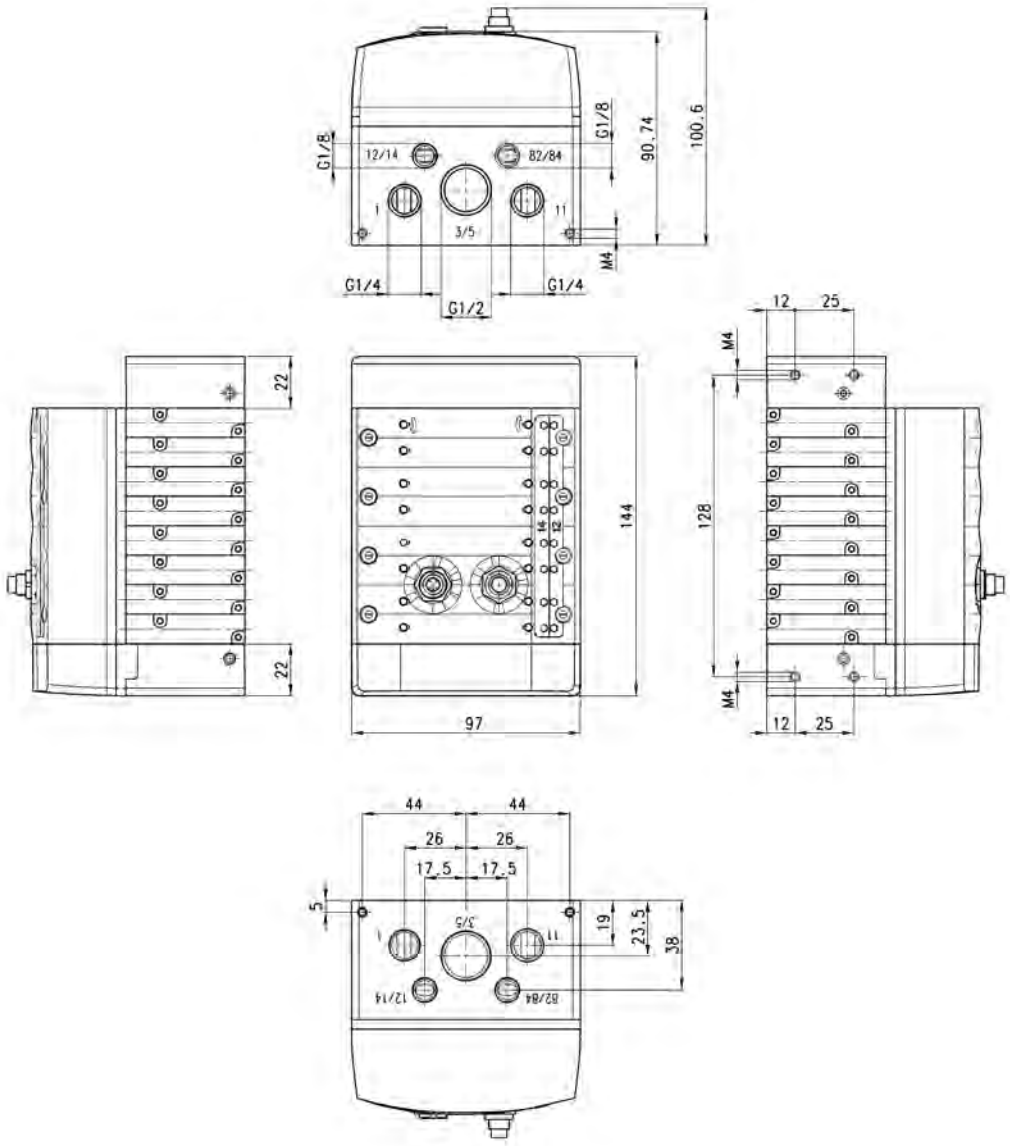
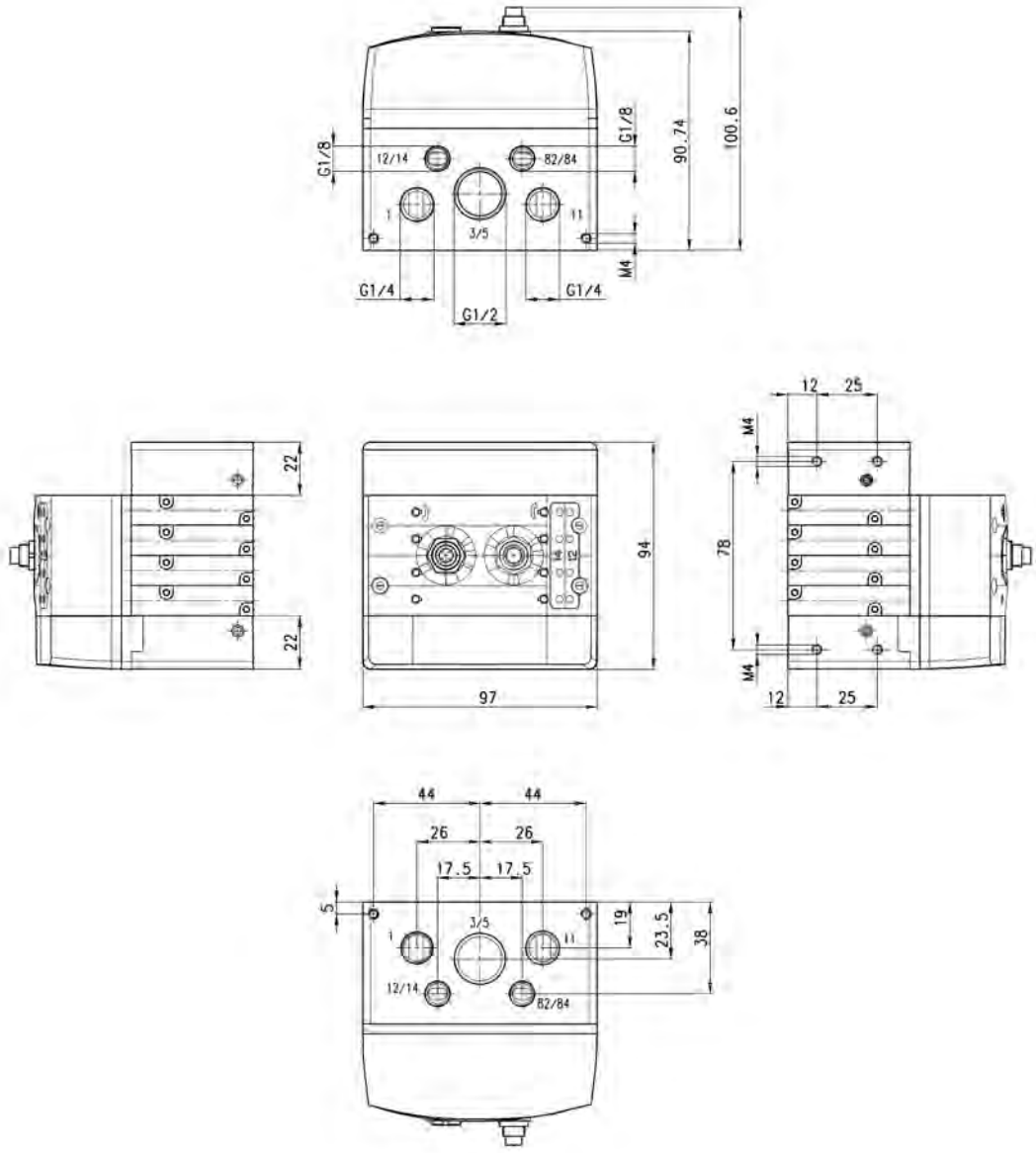
Expansion module 8 valve positions





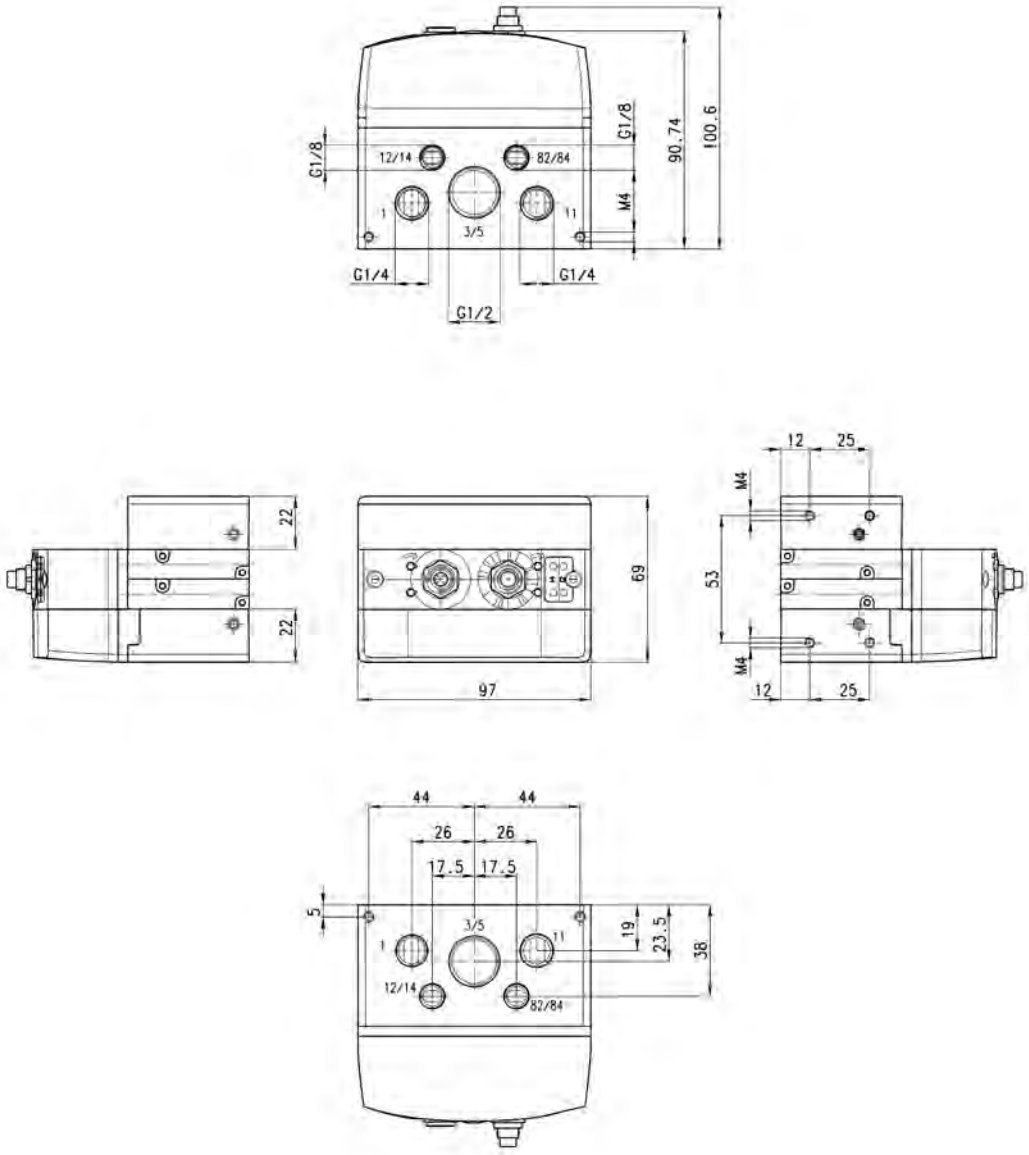
Expansion module 4 valve positions



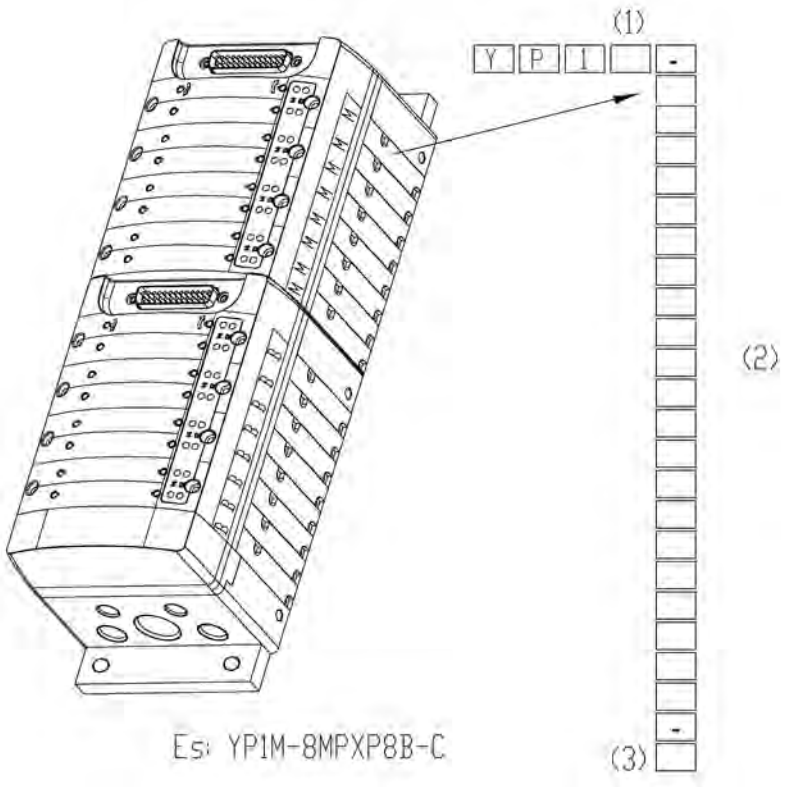
2

CONTROL

Expansion module 2 valve positions



Configuration example



(1) Type of electrical connection	(2) Valve type selection	(3) Terminal plates selection	Code
Individual	-	-	**K**
Multipole (PNP)	-	-	**M**
Profibus-Dp	-	-	**P**
Device-Net	-	-	**D**
Can-Open	-	-	**C**
Expansion	-	-	**E**
-	5/2 Monostable	-	**M**
-	5/2 Bistable	-	**B**
-	5/3 C.C	-	**V**
-	2 x 2/2 1 N.O. + 1 N.C.	-	**I**
-	2 x 2/2 N.C.	-	**E**
-	2 x 2/2 N.O.	-	**F**
-	2 x 3/2 1 N.O. + 1 N.C.	-	**G**
-	2 x 3/2 N.C.	-	**C**
-	2 x 3/2 N.O.	-	**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 3/5-11 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**

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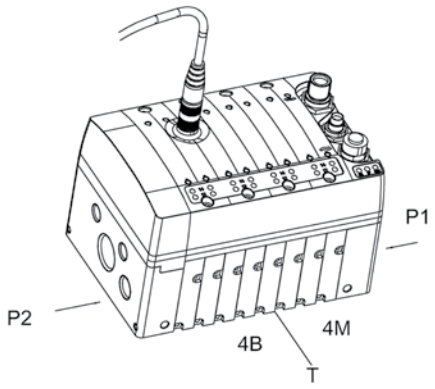
Example 1

Valve island with Profibus-DP connection made of:
N° 4 solenoid valves type M
Diaphragm seal Mod. T
N° 4 solenoid valves type B
Outlets with 1 and 11 in common on both sides and 12 /14 separated.
Code:
YP1P-4MT4B-B
For coding example see page: 2.3.10.19

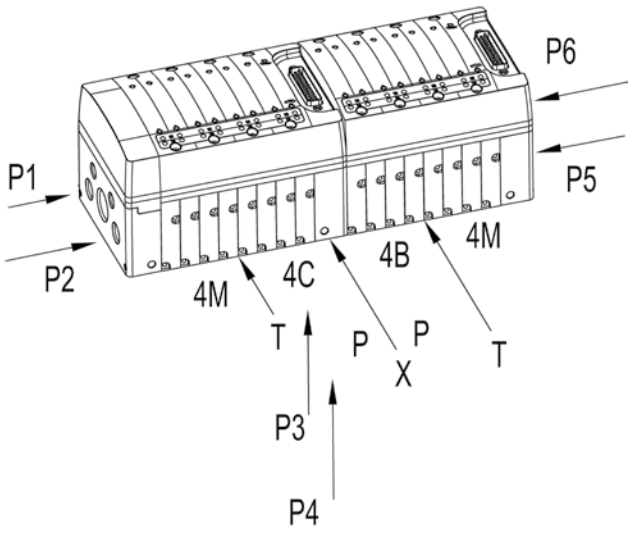


Example 2

Valve island with Multipole connection made of:
N° 4 solenoid valves type M
Diaphragm seal Mod. T to separate different pressure zones
N° 4 solenoid valves type B
Through seal Mod. P
Intermediate additional supply module Mod. X
Through seal Mod. P
Terminals with individual connection
N° 4 solenoid valves type C
Diaphragm seal Mod. T to separate different pressure zones
N° 4 solenoid valves type M

Code:
YP1M-4MT4BPXP4CT4M-C

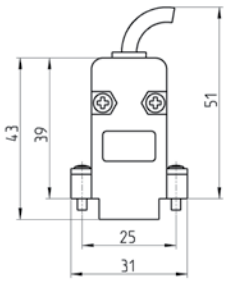
For coding example see page: 2.3.10.19



Programming cable

Cable length = 5mt.

Cable length = 5mt.

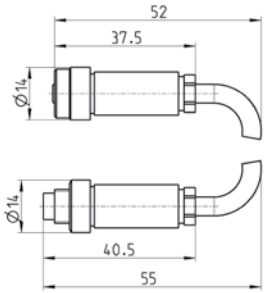


Mod.
CS-FZ03AD-C500

Instructions manual Series Y

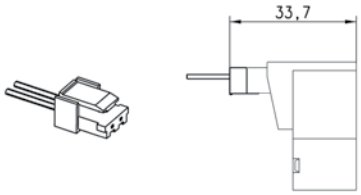
Mod.
YA1K-HB

Expansion cable



Mod.	Length
CS-FW05HE-D025	0,25 m
CS-FW05HE-D100	1 m
CS-FW05HE-D250	2,5 m
CS-FW05HE-D500	5 m
CS-FW05HE-DA00	10 m

Connectors for individual connection (YP1K-...)



Mod.	Length
121-803	with cable 300 mm
121-806	with cable 600 mm
121-810	with cable 1000 mm

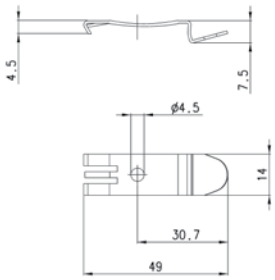
2

CONTROL

Fixing element

Fixing element for DIN rail

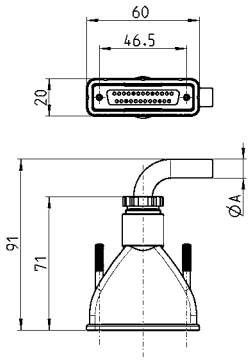
Supplied with:
N° 2 fixing elements
N° 2 screws M4x6 UNI 5931



Mod.
PCF-E520

Connector Mod. G3X-... and G4X-...

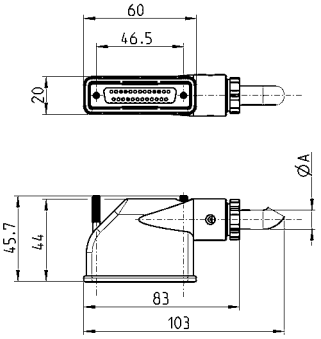
Connector with cable for Multipole valve islands.
15, 25 wire cable
Protection: IP65



Mod.	ØA	PIN	cable length	N° max valve pos.
G3X-3	8	15	3 m	6
G3X-5	8	15	5 m	6
G3X-10	8	15	10 m	6
G4X-3	10	25	3 m	11
G4X-5	10	25	5 m	11
G4X-10	10	25	10 m	11

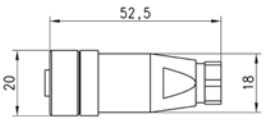
Connector Mod. G4X1-...

Connector with cable for Multipole valve islands.
25 wire cable
Protection: IP65



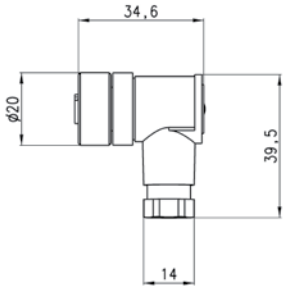
Mod.	ØA	PIN	Cable length	N° max valve pos.
G4X1-3	10	25	3 m	11
G4X1-5	10	25	5 m	11

Power supply connector



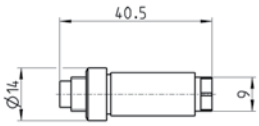
Mod.
CS-LF04HB

Power supply angular connector



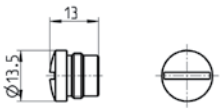
Mod.
CS-LR04HB

Connector with terminal resistance



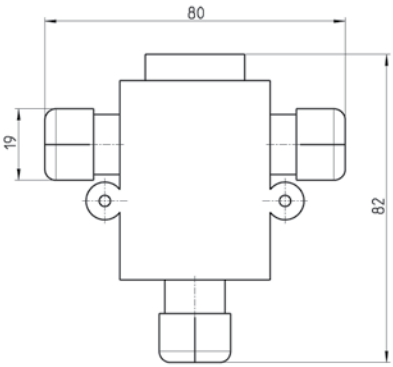
Mod.
CS-FP05H0

Blanking plug M12 for inputs



Mod.
CS-LFTP

CANOpen / DeviceNet data line tee

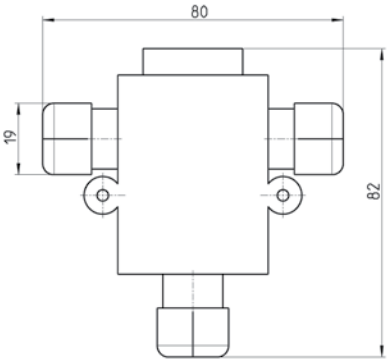


Mod.
CS-AA05EC

2

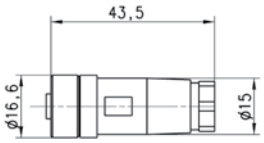
CONTROL

Profibus-DP data line tee



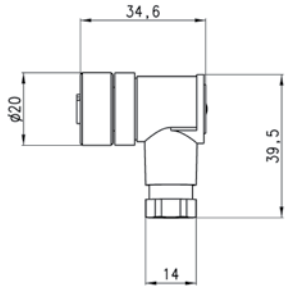
Mod.
CS-AA03EC

CANOpen / DeviceNet connector



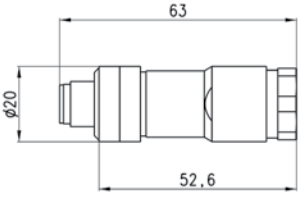
Mod.
CS-LF05HC

CANOpen / DeviceNet angular connector



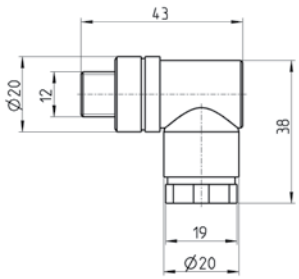
Mod.
CS-LR05HC

Connector M12 DUO for inlets



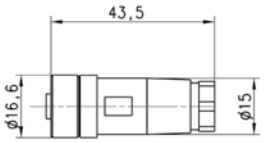
Mod.
CS-LD05HF

Angular connector M12 DUO for inlets



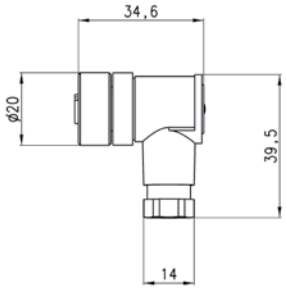
Mod.
CS-LH05HF

Profibus connector



Mod.
CS-MF05HC

Profibus angular connector



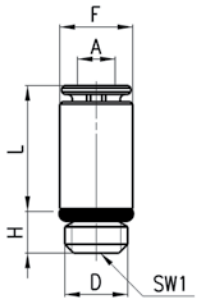
Mod.
CS-MR05HC

2

CONTROL

Fittings Mod. 6512 For ports 2 and 4

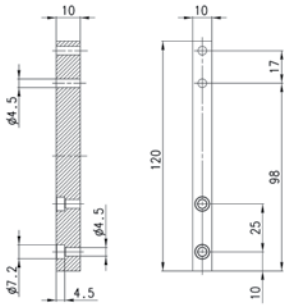
with O - Ring assembled



DIMENSIONS						
Mod.	A	B	F	H	L	SW1
6512- 4 - 1/8 -M	4	G1/8	12,4	5	13	2,5
6512- 6 - 1/8 -M	6	G1/8	11,2	5	14	4
6512- 8 - 1/8 -M	8	G1/8	12,4	5	18,5	5

Vertical foot

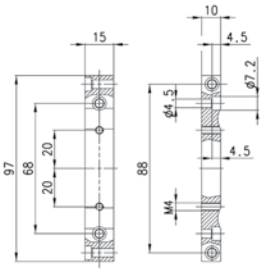
Supplied with:
N° 2 vertical feet
N° 2 screws M4x10 UNI 5931



Mod.
YA1K-B2

Horizontal foot

Supplied with:
N° 2 horizontal feet
N° 2 screws M4x14 UNI 5931

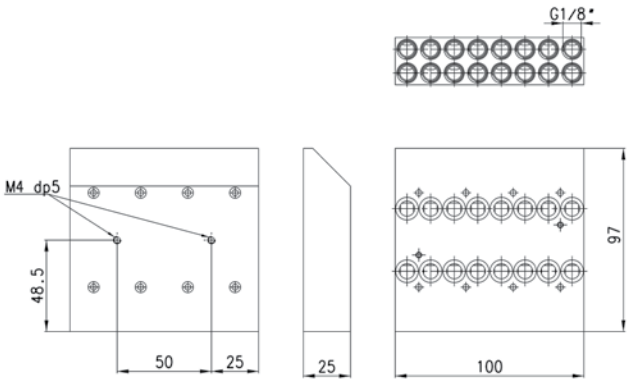


Mod.
YA1K-B1

Interface 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 an interface sub-base.

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

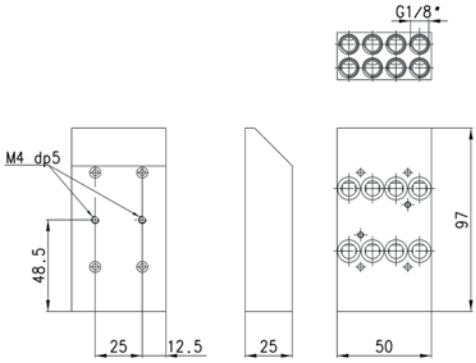


Mod.
YA1K-N8

Interface 4 valve positions

Pneumatic angular subbase 90° 4 valve positions

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

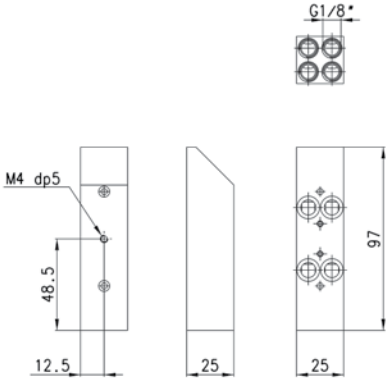


Mod.
YA1K-N4

Interface 2 valve positions

Pneumatic angular subbase 90° 2 valve positions

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

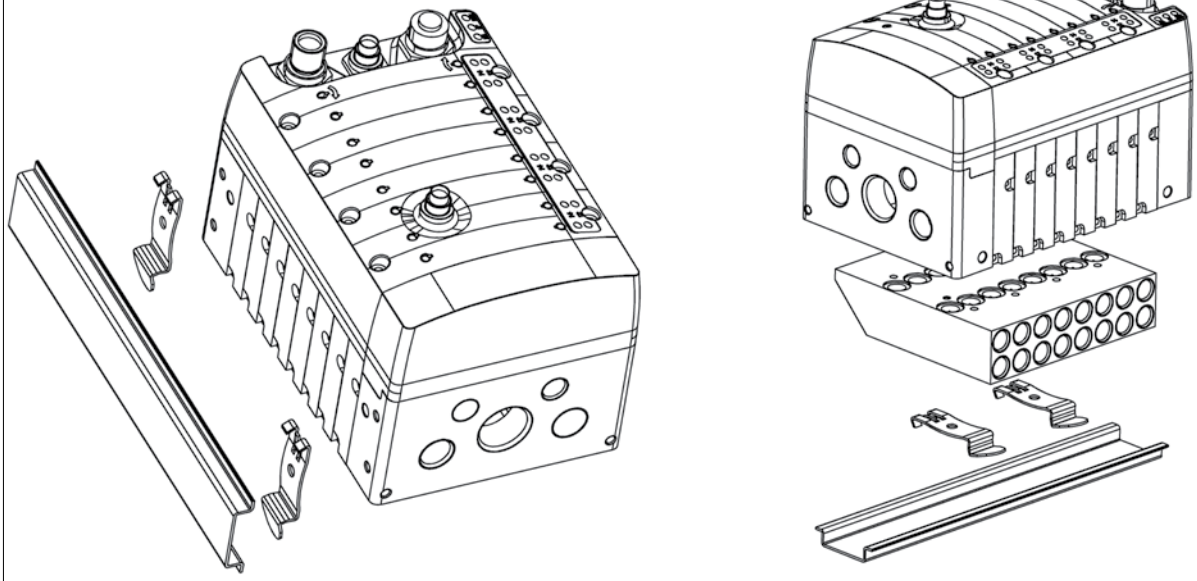


Mod.
YA1K-N2

2

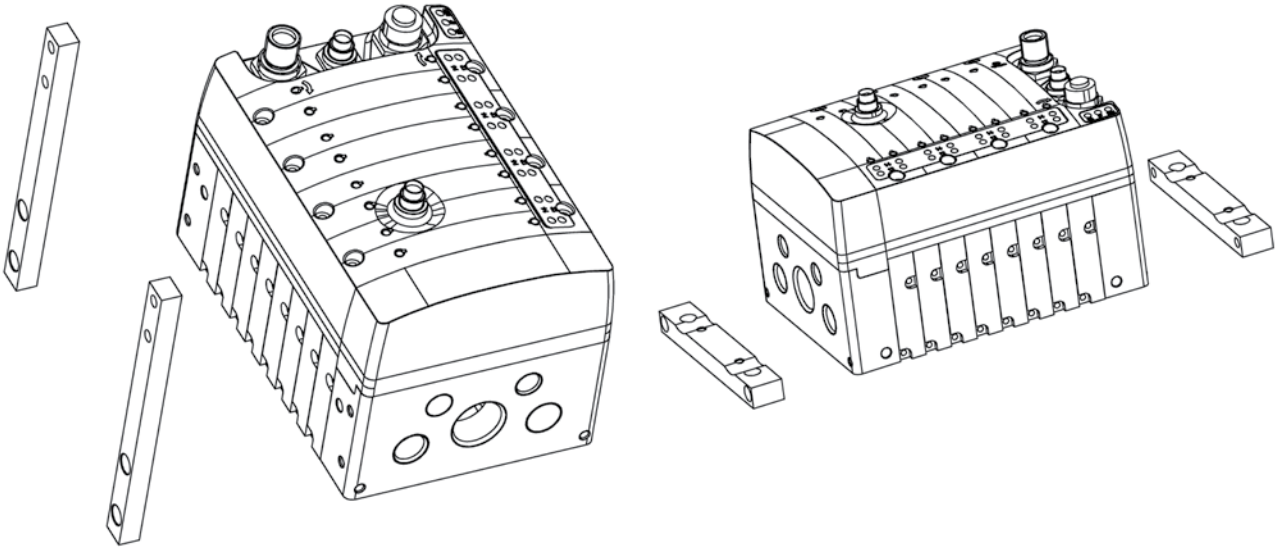
CONTROL

Mounting solutions on DIN EN 50022 rail



DINEN50022 rail

Wall mounting solutions



wall mounting