Series 2300 - ENOVA®

General

Technical innovation, rational design, high performance and extremely compact size: these are the main features the ENOVA® series bring to the market.
Each valve comprises all the necessary pneumatic and electrical functions needed to produce a solenoid valve assembly.
There are no limits to the configuration of the solenoid valve island, as full priority has been given to the end user's needs; the addition or removal of modules is a simple operation that can be swiftly and easily achieved.
The management of the electrical signals through the valves is optimized through a patented dedicated connector in each valve.
Electrical connections are made via a twenty-five pin connector, which is capable of controlling up to twenty-two solenoids.
Electrical and pneumatic connections are located on the same module at one end of the assembly.
Serial bus nodes compatible with most common protocols are easily integrated.
Most widely used and known communication protocols, such as PROFIBUS DP, CANopen®, DeviceNet, AS-Interface can be directly integrated with the valve manifold by simply plugging the necessary module onto the electrical connection, maintaining IP65 environmental protection.
The management of inputs has also been foreseen, and can be achieved by adding one or more expansion modules directly to the serial module.

"Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001, Pneumatic fluid power-Directional control valves-Measurement of shifting time"

Main characteristics

- Clean profile prevents accumulation of dirt
- Compact size: modules of 12.5 mm
- Connections available: 4 , 6 , 8 mm
- IP65 protection grade
- Optimized electrical connection system
- Electrical and pneumatic line connections on one side
- Quick coupling connection system with visual indicator: locked/unlocked
- Freedom of configuration

Functions

- 5/2 monostable
- 5/2 bistable
- 5/3 closed centres
- 2x3/2 NC/NC (5/3 open centres)
- 2x3/2 NO/NO (5/3 pressured centres)
- 2x3/2 NC/NO
- 2x2/2 NC/NC
- 2x2/2 NO/NO
- 2x2/2 NC/NO

Construction characteristics

Central body	Reinforced Technopolymer
External casing	Reinforced Technopolymer
Operators	Reinforced Technopolymer
Spool seals	PUR
Spools	Aluminium 2011
Springs	Spring steel with protective coating
Piston seals	Oil resistant nitrile rubber - NBR

Technical characteristics

Voltage	24 VDC ± 10% PNP (NPN on request)
Pilot consumption	0,9 Watt
Valve working pressure (1-11)	from vacuum to 10 bar max.
Pilot working pressure (12-14)	from 2,5 to 7 bar max.
Operating temperature	-5°C +50°C
Protection degree	IP65
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous

Attention: dry air must be used for applications below 0°C"

Solenoid - Differential (Monostable)

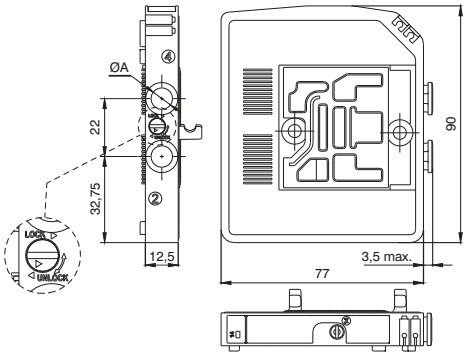
Coding: 23ⒺⒸ.52.00.36.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	12
Responce time according to ISO 12238, deactivation time (ms)	15

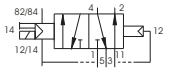
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓔ	ELECTRICAL CONTACTS
	0 = STANDARD-only one electric signal
	1 = CEB (Bistable Electrical contacts)-(two electrical signals)
Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE B4
SHORT CODE B6
SHORT CODE B8
SHORT CODE R4 (CEB)
SHORT CODE R6 (CEB)
SHORT CODE R8 (CEB)



Weight 115 g



Solenoid - Spring (Monostable)

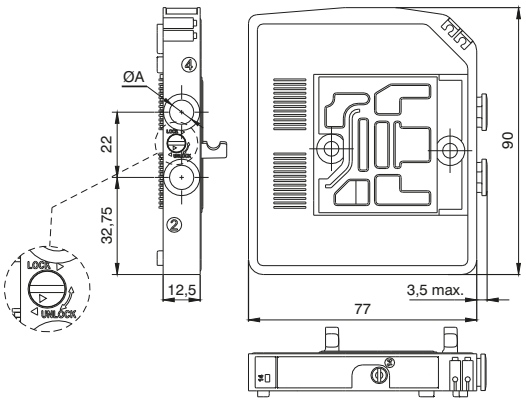
Coding: 23ⒺⒸ.52.00.39.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	9
Responce time according to ISO 12238, deactivation time (ms)	30

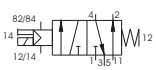
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓔ	ELECTRICAL CONTACTS
	0 = STANDARD-only one electric signal
	1 = CEB (Bistable Electrical contacts)-(two electrical signals)
Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE A4
SHORT CODE A6
SHORT CODE A8
SHORT CODE P4 (CEB)
SHORT CODE P6 (CEB)
SHORT CODE P8 (CEB)



Weight 115 g



Solenoid - Solenoid (Bistable)

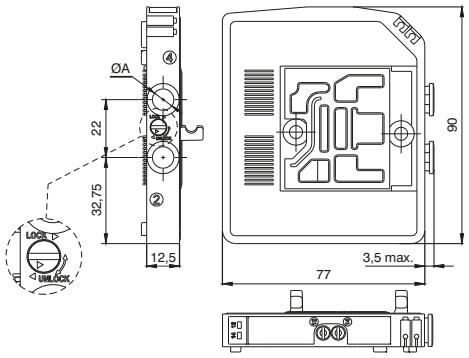
Coding: 230Ⓒ.52.00.35.Ⓥ

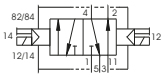
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	7
Responce time according to ISO 12238, deactivation time (ms)	7

Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE C4
SHORT CODE C6
SHORT CODE C8





Weight 115 g

Solenoid - Solenoid (Bistable-Closed centres)

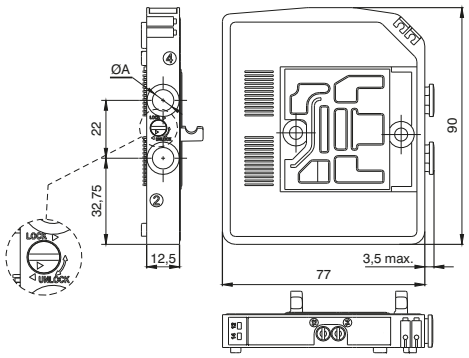
Coding: 230Ⓒ.53.31.35.Ⓥ

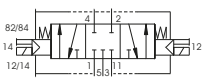
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	550
Responce time according to ISO 12238, activation time (ms)	15
Responce time according to ISO 12238, deactivation time (ms)	15

Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE E4
SHORT CODE E6
SHORT CODE E8





Weight 130 g

Solenoid - Solenoid 2x3/2 Bistable-N.C.-N.C. (=5/3 Open centres)

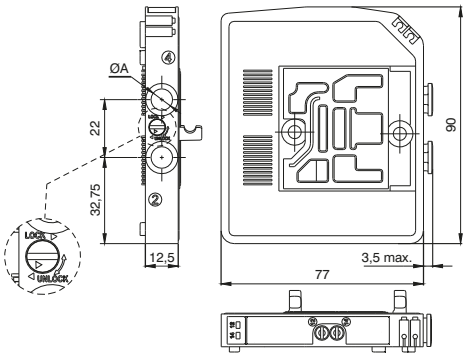
Coding: 230Ⓒ.62.44.35.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	9
Responce time according to ISO 12238, deactivation time (ms)	30

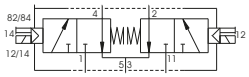
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE F4
SHORT CODE F6
SHORT CODE F8



Weight 130 g
5/3 Open Centres: Use the Solenoid valves with 2x3/2 N.C.-N.C. function
5/3 Pressured Centres: Use the Solenoid valves with 2x3/2 N.O.-N.O. function



Solenoid - Solenoid 2x3/2 Bistable-N.C.-N.O.

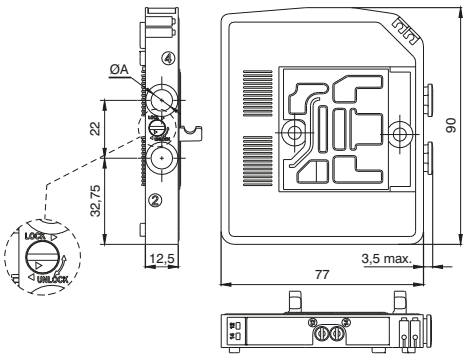
Coding: 230Ⓒ.62.45.35.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	9
Responce time according to ISO 12238, deactivation time (ms)	30

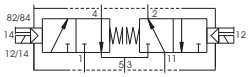
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE H4
SHORT CODE H6
SHORT CODE H8



Weight 130 g
5/3 Open Centres: Use the Solenoid valves with 2x3/2 N.C.-N.C. function
5/3 Pressured Centres: Use the Solenoid valves with 2x3/2 N.O.-N.O. function



Solenoid - Solenoid 2x3/2 Bistable-N.O.-N.O. (=5/3 Pressured centres)

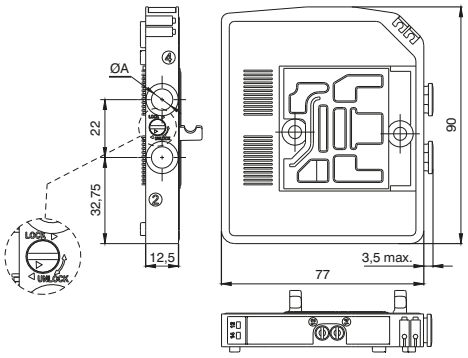
Coding: 230Ⓒ.62.55.35.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	9
Responce time according to ISO 12238, deactivation time (ms)	30

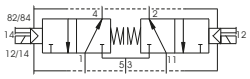
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE G4
SHORT CODE G6
SHORT CODE G8



Weight 130 g
5/3 Open Centres: Use the Solenoid valves with 2x3/2 N.C.-N.C. function
5/3 Pressured Centres: Use the Solenoid valves with 2x3/2 N.O.-N.O. function



Solenoid - Solenoid 2x2/2 Bistable-N.C.-N.C.

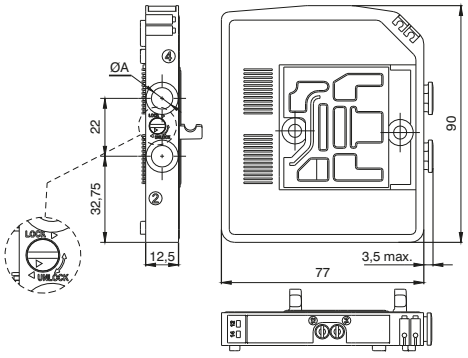
Coding: 230Ⓒ.42.44.35.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	9
Responce time according to ISO 12238, deactivation time (ms)	30

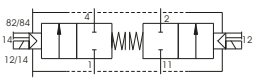
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE L4
SHORT CODE L6
SHORT CODE L8



Weight 130 g



Solenoid - Solenoid 2x2/2 Bistable-N.C.-N.O.

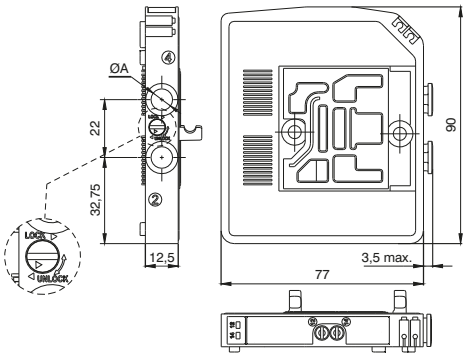
Coding: 230Ⓒ.42.45.35.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	9
Responce time according to ISO 12238, deactivation time (ms)	30

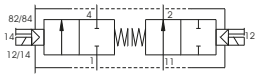
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE N4
SHORT CODE N6
SHORT CODE N8



Weight 130 g



Solenoid - Solenoid 2x2/2 Bistable-N.O.-N.O.

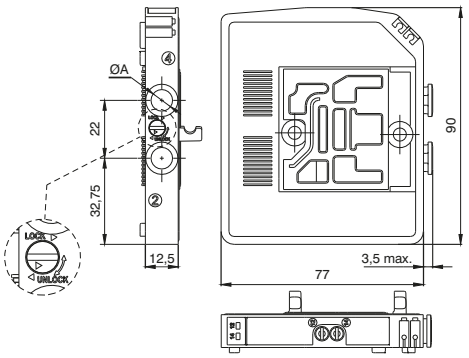
Coding: 230Ⓒ.42.55.35.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	9
Responce time according to ISO 12238, deactivation time (ms)	30

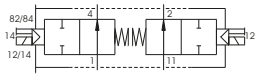
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓒ	ELECTRICAL CONTACTS
	4 = Quick connection for tube Ø4
	6 = Quick connection for tube Ø6
	8 = Quick connection for tube Ø8
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN

SHORT CODE M4
SHORT CODE M6
SHORT CODE M8



Weight 130 g

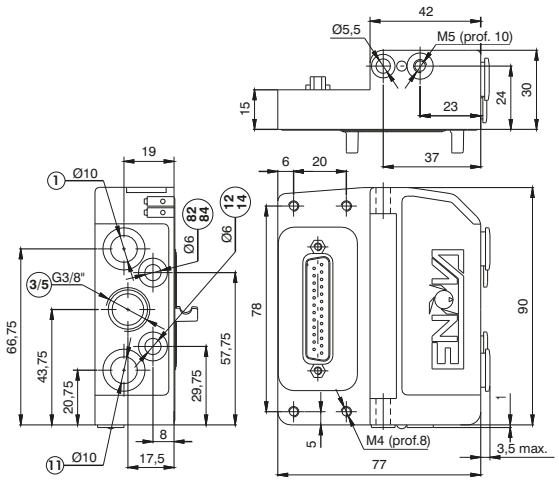


Left Endplates

Coding: 2311.ⒷⒸ

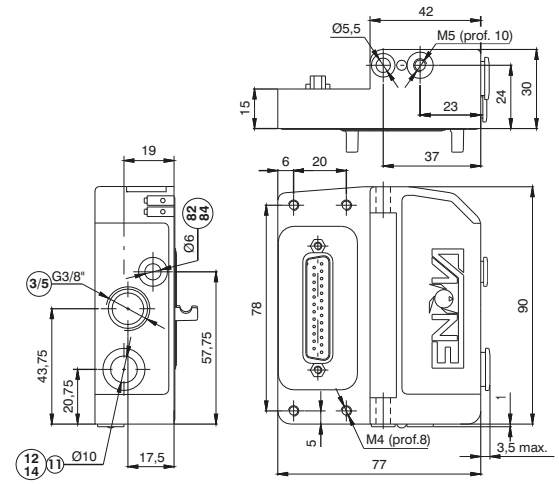
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50

Ⓑ	PORTS
	05 = 5 ports
	03 = 3 ports
Ⓒ	CONNECTIONS
	P = Electrical connection PNP
	N = Electrical connection NPN



Weight 190 g
1/11 Conduit (tube ø10): Main Solenoid valve feeding (pressure from vacuum to 10 bar maximum)
3/5 Conduit (G 3/8"): Main Solenoid valve exhaust

2311.05Ⓒ

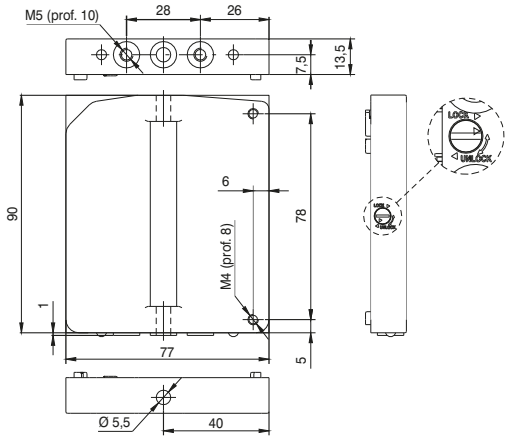


Weight 185 g
1/11-12/14 Conduit (tube ø10): Main Solenoid valve and pilot feeding (pressure from 2,5bar to 7 bar)
3/5 Conduit (G 3/8"): Main Solenoid valve exhaust
82/84 Conduit (tube ø6): Pilot exhaust

2311.03Ⓒ

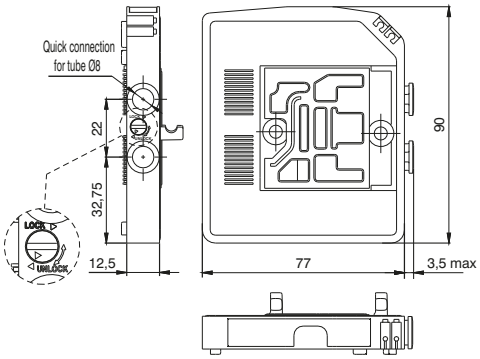
Right Endplates closed

Coding: 2312.00



Weight 100 g

Intermediate Inlet/Exhaust module



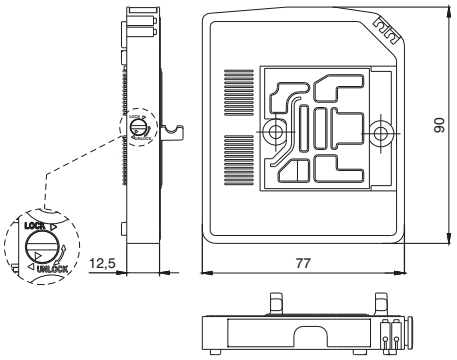
Weight 5 g

Coding: 2308.Ⓕ

Ⓕ	FUNCTION
	08 = Exhaust module
	12 = Inlet module
	20 = Inlet-Exhaust module

SHORT CODE J
SHORT CODE K
SHORT CODE W

Through module



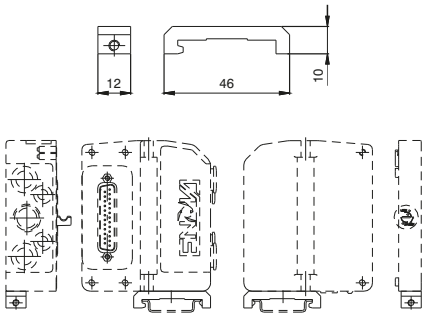
Weight 90 g

Coding: 2300.Ⓕ

Ⓕ	FUNCTION
	01 = 1 electric signal module
	02 = 2 electric signals module

SHORT CODE T1
SHORT CODE T2

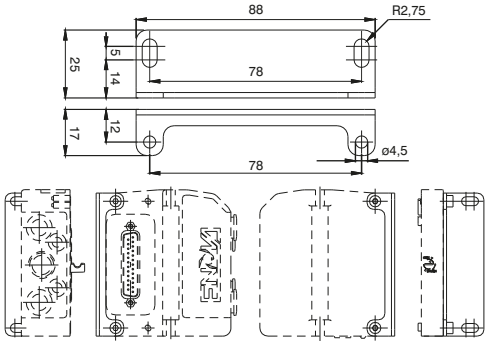
DIN rail adapter



Weight 12 g

Coding: 2300.16

Fixing brackets



Weight 45 g
for fixing dimensions see the Left endplates 3 and 5 ports

Coding: 2300.50

Exhaust Diaphragm

Coding: 2317.08

Weight 5 g
SHORT CODE Y

Inlet/Exhaust Diaphragm

Coding: 2317.20

Weight 5 g
SHORT CODE Z

Inlet Diaphragm

Coding: 2317.12

Weight 5 g
SHORT CODE X

Cable complete with connector, 25 Poles IP65

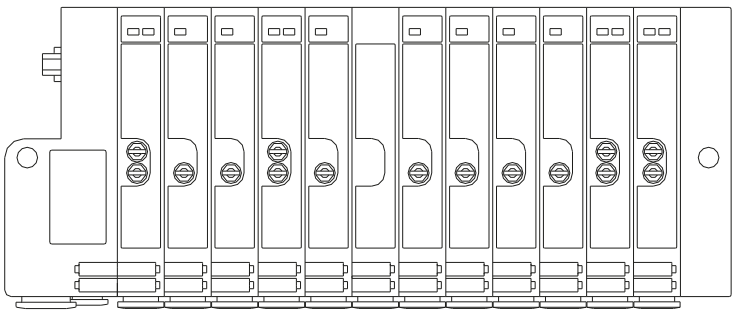
Coding: 2300.25.Ⓛ.Ⓒ

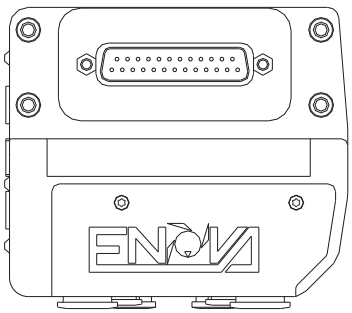
Ⓛ	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
Ⓒ	CONNECTOR
	10 = In line
	90 = 90° Angle

The electrical connection is achieved via a 25 pin connector and can manage up to 22 solenoid pilots.

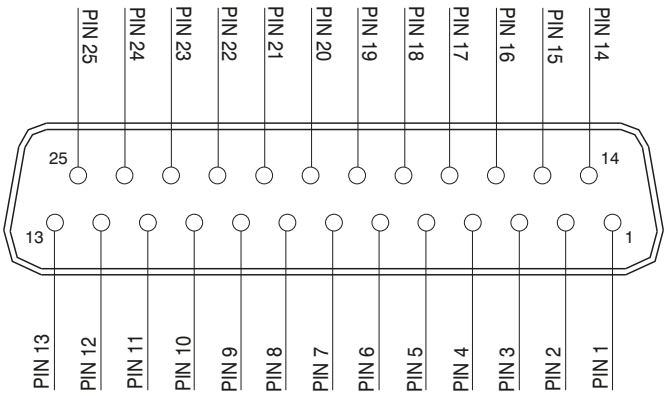
The management and distribution of the electrical signals between each valve is obtained thanks to a patented electrical connector which receives the signals from the previous module, uses one, two or none depending on the type, and carries forward to the next module the remaining. Bistable valves, 5/3 ; 2X3/2 e 2X2/2 valves which have two solenoid pilots built in, use two signals; the first is directed to the pilot side 14 the second to the pilot side 12.
Mono-stable valves can be fitted with two type of electrical connector: one that uses only one signal (connected to the pilot side 14) and carries forward the remaining and one called CEB (Electrical contact for bistable) which uses two signals, one is needed for the valve the other is not used.
This second solution (CEB) allows the modification of the manifold (replacement of monostable valves with bistable for example) without the need of reconfiguring the PLC outputs layout. On the other hand this solution limits the maximum number of valves to 11 (two signals for each position).
Intermediate supply / exhaust modules are fitted with a dedicated electrical connector which carries forward all electric signals without using any. This allows the use of intermediate modules in any position of the manifold.

Example of manifold samples with the corresponding pin layout.



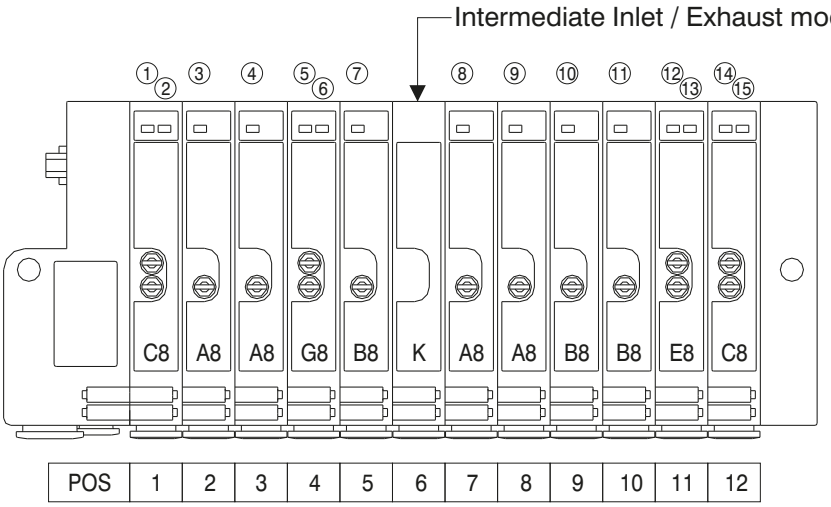


ELECTRIC CONNECTOR
SUB-D TYPE - 25 POLES



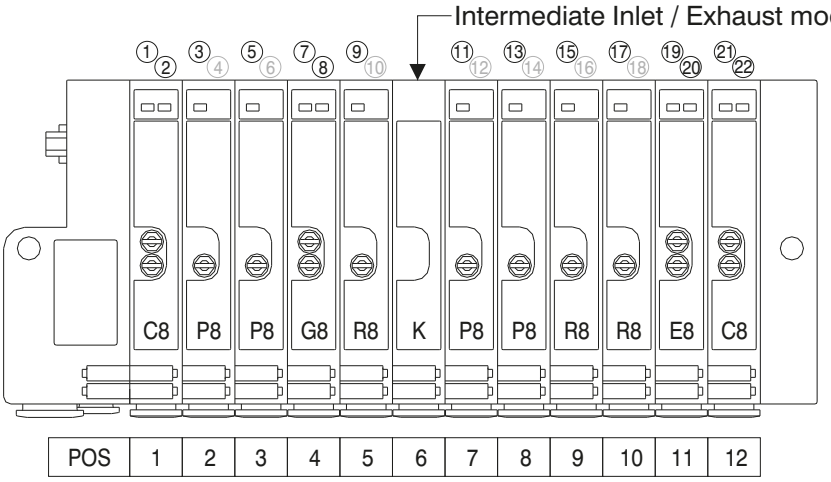
1 - 22 = Solenoid valves signals
23 - 24 - 25 = Common

25 PIN Connector correspondence for bistable, 2x3/2, 5/3 and standard monostable valves manifold



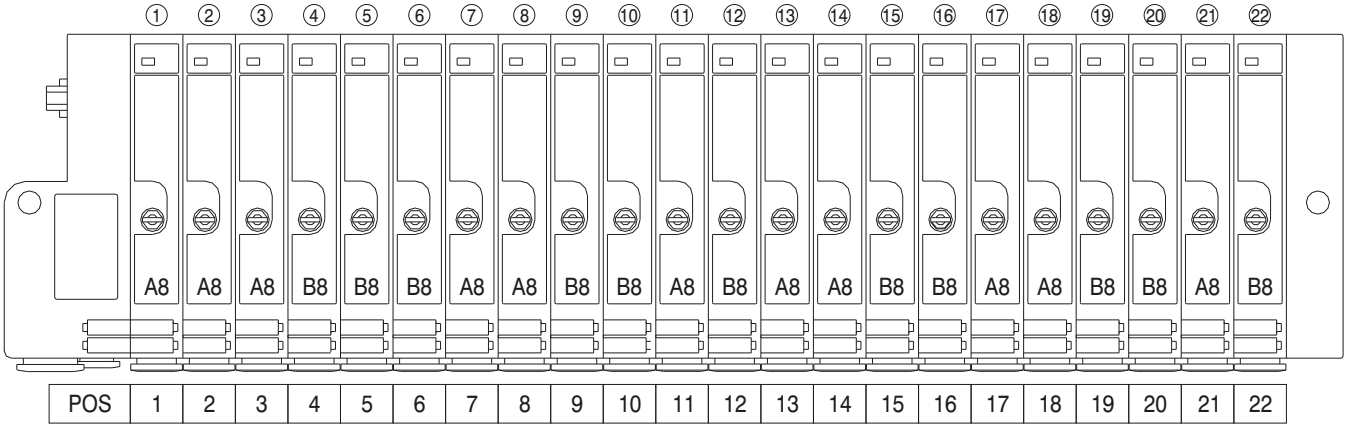
PIN 1 = PILOT 14 SV POS.1
PIN 2 = PILOT 12 SV POS.1
PIN 3 = PILOT 14 SV POS.2
PIN 4 = PILOT 14 SV POS.3
PIN 5 = PILOT 14 SV POS.4
PIN 6 = PILOT 12 SV POS.4
PIN 7 = PILOT 14 SV POS.5
PIN 8 = PILOT 14 SV POS.7
PIN 9 = PILOT 14 SV POS.8
PIN 10 = PILOT 14 SV POS.9
PIN 11 = PILOT 14 SV POS.10
PIN 12 = PILOT 14 SV POS.11
PIN 13 = PILOT 12 SV POS.11
PIN 14 = PILOT 14 SV POS.12
PIN 15 = PILOT 12 SV POS.12

25 PIN Connector correspondence for bistable, 2x3/2, 5/3 manifold and CEB monostable valves (electrical contact for bistable)



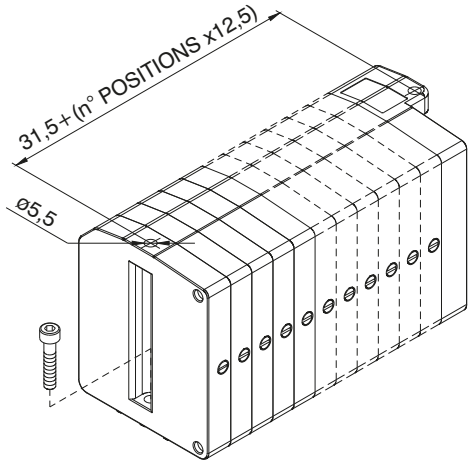
PIN 1 = PILOT 14 SV POS.1
PIN 2 = PILOT 12 SV POS.1
PIN 3 = PILOT 14 SV POS.2
PIN 4 = NOT CONNECTED
PIN 5 = PILOT 14 SV POS.3
PIN 6 = NOT CONNECTED
PIN 7 = PILOT 14 SV POS.4
PIN 8 = PILOT 12 SV POS.4
PIN 9 = PILOT 14 SV POS.5
PIN 10 = NOT CONNECTED
PIN 11 = PILOT 14 SV POS.7
PIN 12 = NOT CONNECTED
PIN 13 = PILOT 14 SV POS.8
PIN 14 = NOT CONNECTED
PIN 15 = PILOT 14 SV POS.9
PIN 16 = NOT CONNECTED
PIN 17 = PILOT 14 SV POS.10
PIN 18 = NOT CONNECTED
PIN 19 = PILOT 14 SV POS.11
PIN 20 = PILOT 12 SV POS.11
PIN 21 = PILOT 14 SV POS.12
PIN 22 = PILOT 12 SV POS.12

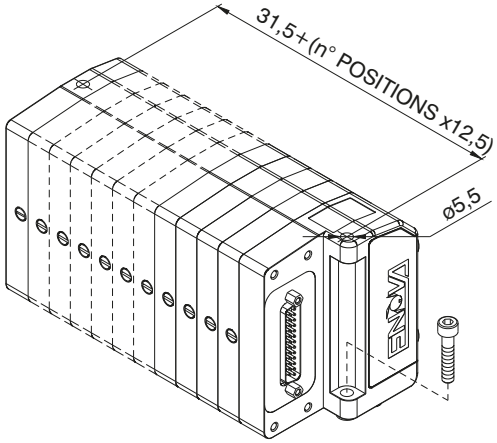
25 PIN Connector correspondence for manifold for 22 position manifold with standard monostable valves



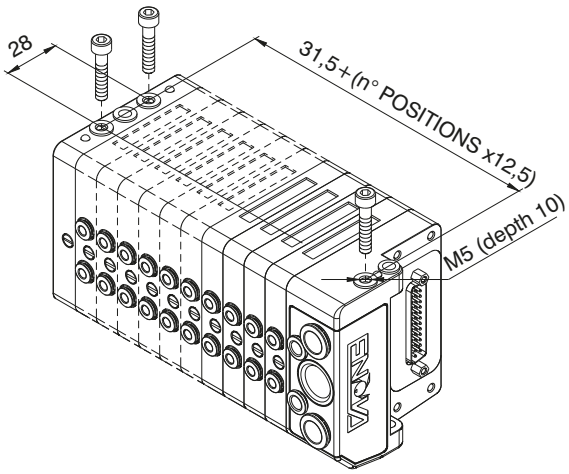
Mounting

From the top

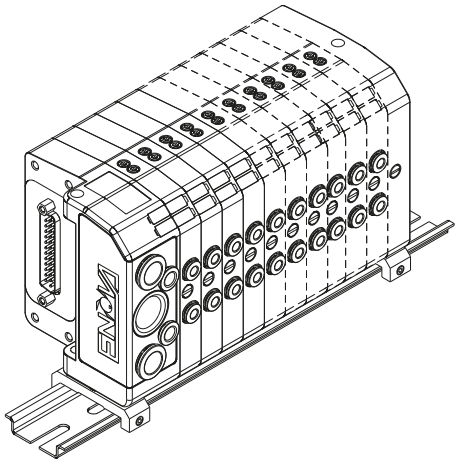




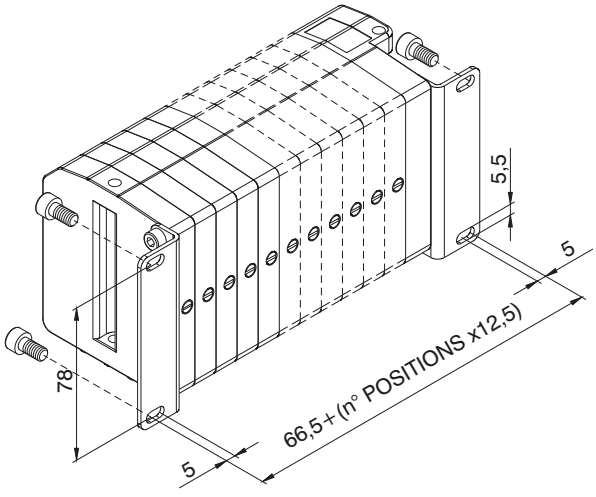
From the bottom



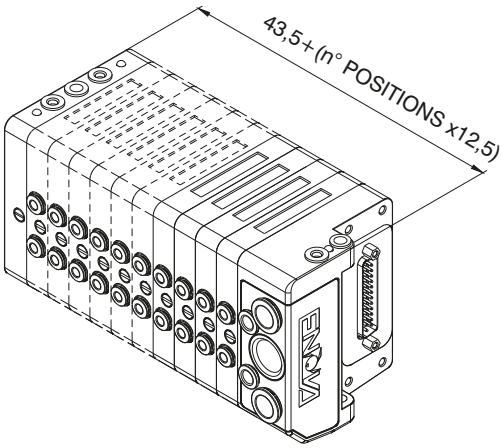
On DIN rail

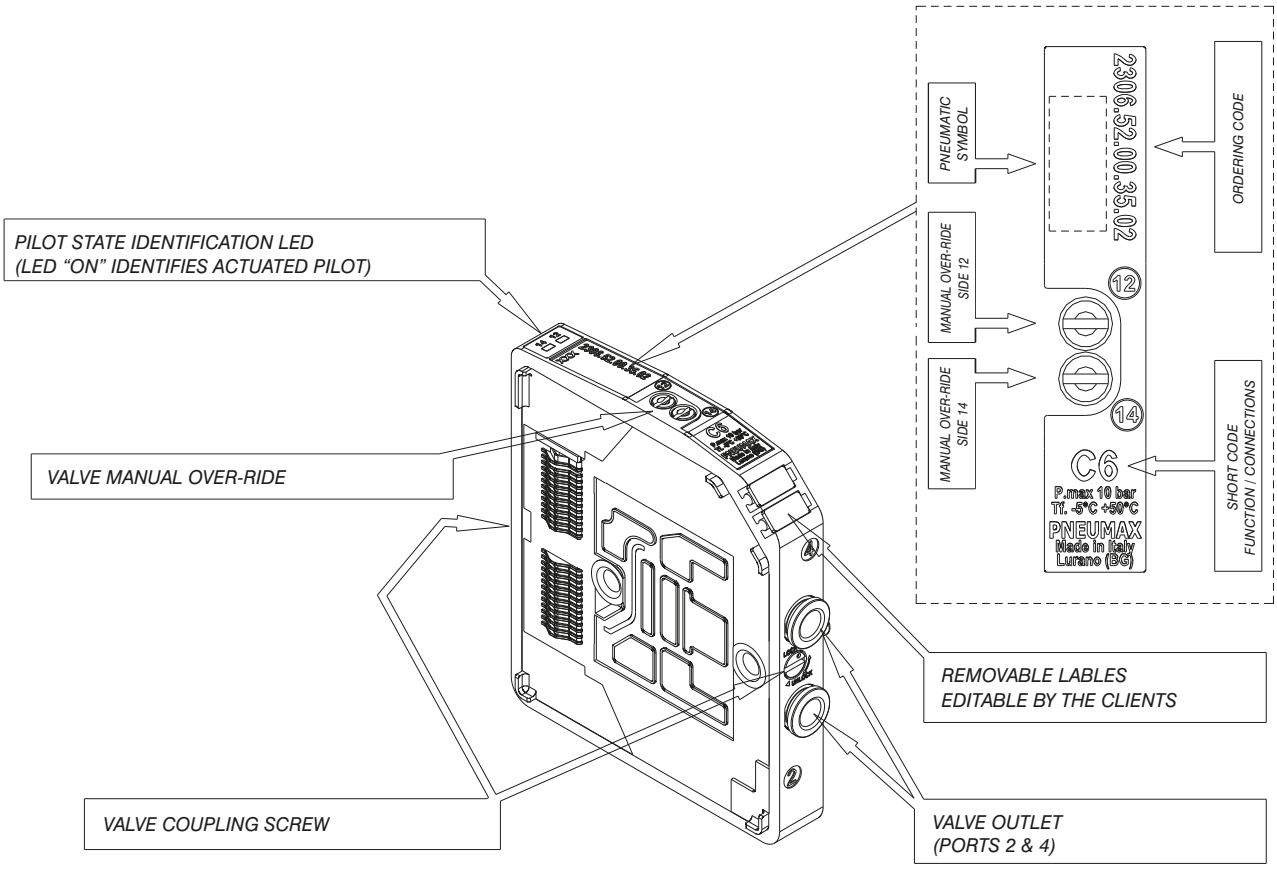


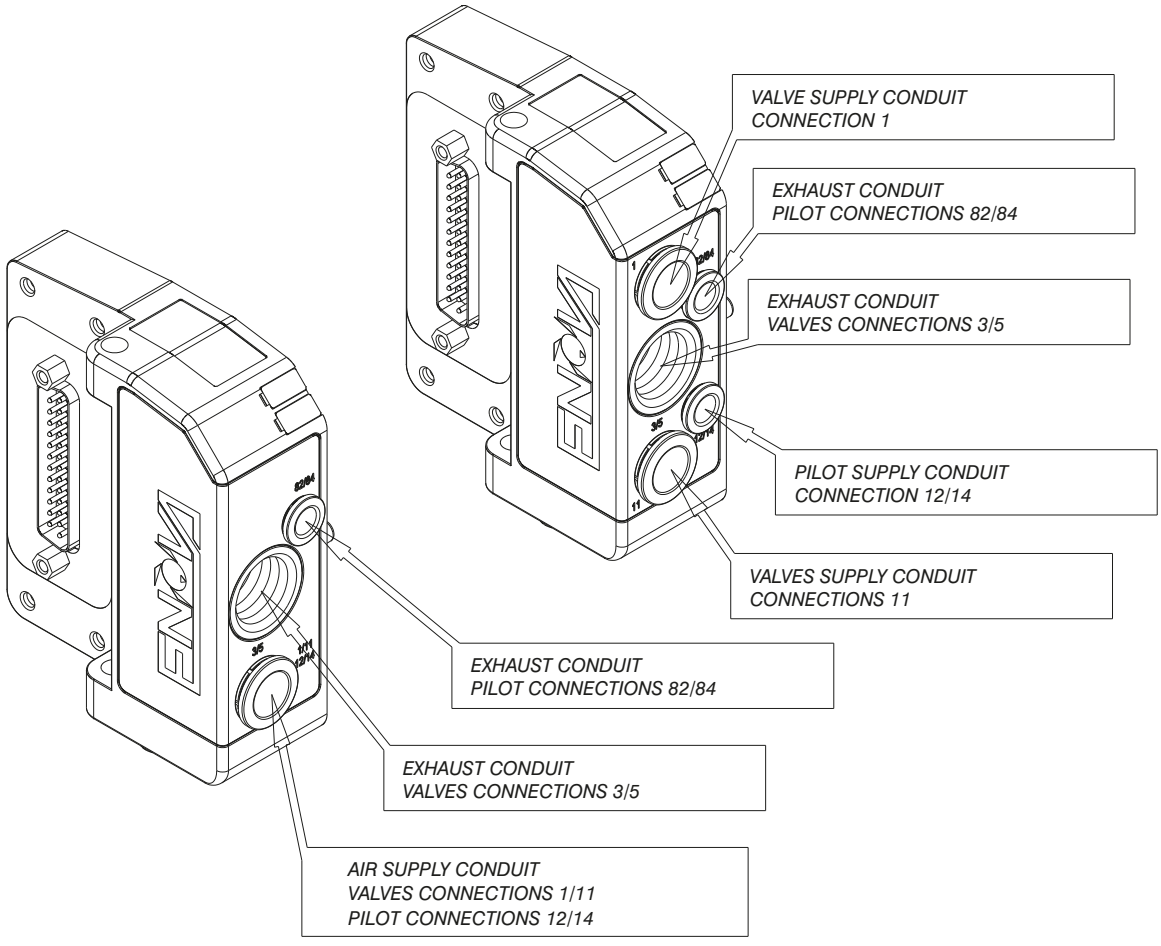
90° Bracket



Maximum envelop size based
on the number of positions

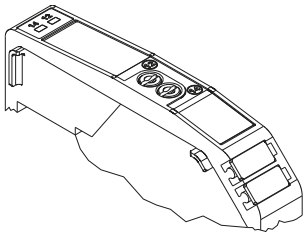


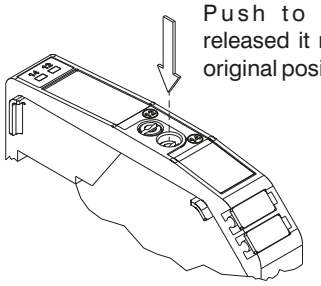




Manual over-ride function

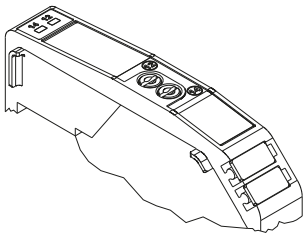
Unstable function

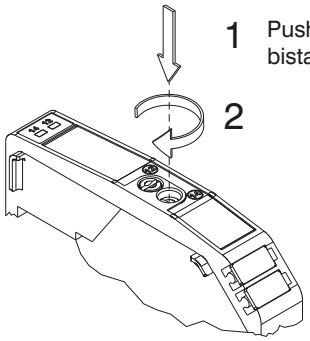




Push to actuate (when released it moves back to the original position)

Bistable function





1 Push and turn to get the bistable function

2

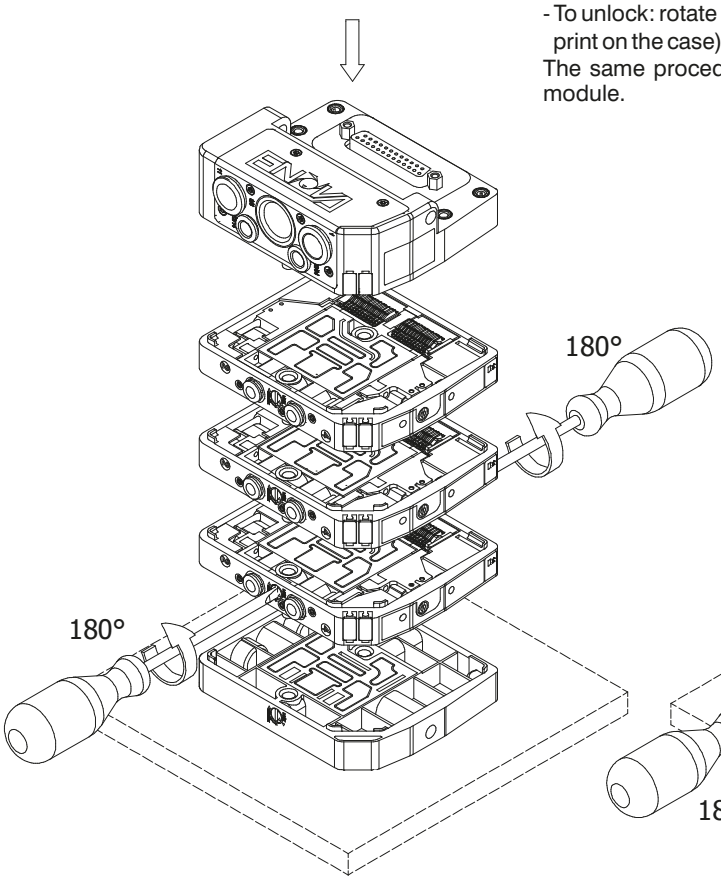
NOTE: It is strongly suggested to replace the original position after using

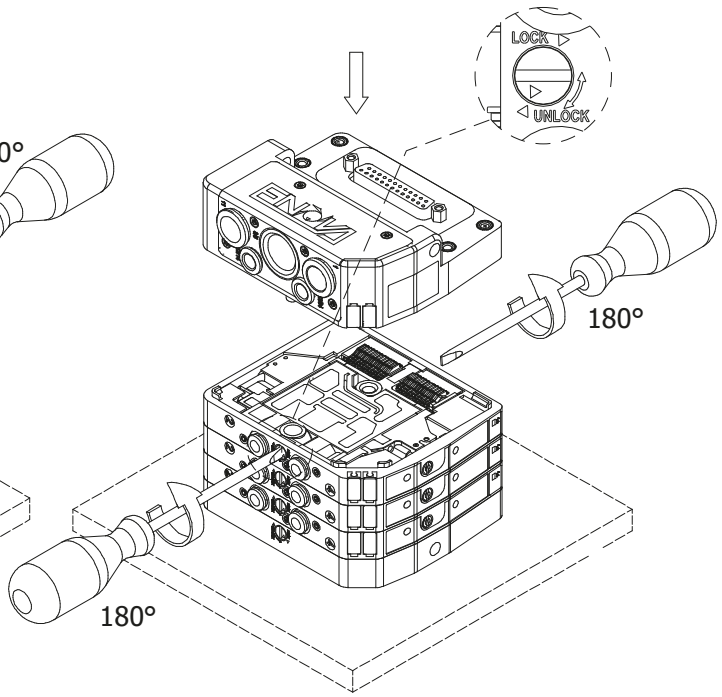
Manifold assembly

The assembly procedure should start from the end-plate which should be positioned on a flat surface. Add the requested modules by simply rotating by 180° the fastening pins by means of a 1x5.5 flat screw driver. The last module to be assembles shall be the inlet module

Fastening pins rotation direction:
- To lock: rotate anticlockwise (in the direction of the LOCK print on the case)
- To unlock: rotate clockwise (in the direction of the UNLOCK print on the case)

The same procedure shall be used to add or remove any module.





1
AIR DISTRIBUTION

Manifold Lay-Out configuration

ACCESSORIES :
0= none
D= DIN bar adapter
S= 90° Fixing bracket

ENDPLATES SELECTION :
A= 5 ports endplated left side plus right side endplated
B= 3 ports endplated left side plus right side endplated

ELECTRICAL CONNECTION:
MP= MULTIPOLAR PNP (standard)
MN= MULTIPOLAR NPN
CA= CANopen® 22 OUT
CB= CANopen® 22 OUT + 8 IN
CC= CANopen® 22 OUT + 16 IN
CD= CANopen® 22 OUT + 24 IN
DA= DeviceNet 22 OUT
DB= DeviceNet OUT + 8 IN
DC= DeviceNet 22 OUT + 16 IN
DD= DeviceNet OUT + 24 IN
PA= PROFIBUS 22 OUT
PB= PROFIBUS 22 OUT + 8 IN
PC= PROFIBUS 16 OUT + 16 IN

SHORT CODE
FUNCTION / CONNECTION:
A4= SV 5/2 MONOST. SOL.-SPRING Ø4
A6= SV 5/2 MONOST. SOL.-SPRING Ø6
A8= SV 5/2 MONOST. SOL.-SPRING Ø8
B4= SV 5/2 MONOST. SOL.-DIFFERENTIAL Ø4
B6= SV 5/2 MONOST. SOL.-DIFFERENTIAL Ø6
B8= SV 5/2 MONOST. SOL.-DIFFERENTIAL Ø8
C4= SV 5/2 BISTABLE SOL.-SOL. Ø4
C6= SV 5/2 BISTABLE SOL.-SOL. Ø6
C8= SV 5/2 BISTABLE SOL.-SOL. Ø8
E4= SV 5/3 CC SOL.-SOL. Ø4
E6= SV 5/3 CC SOL.-SOL. Ø6
E8= SV 5/3 CC SOL.-SOL. Ø8
F4= SV 2x3/2 NC-NC (= 5/3 CA) SOL.-SOL. Ø4
F6= SV 2x3/2 NC-NC (= 5/3 CA) SOL.-SOL. Ø6
F8= SV 2x3/2 NC-NC (= 5/3 CA) SOL.-SOL. Ø8
G4= SV 2x3/2 NO-NO (= 5/3 CP) SOL.-SOL. Ø4
G6= SV 2x3/2 NO-NO (= 5/3 CP) SOL.-SOL. Ø6
G8= SV 2x3/2 NO-NO (= 5/3 CP) SOL.-SOL. Ø8
H4= SV 2x3/2 NC-NO SOL.-SOL. Ø4
H6= SV 2x3/2 NC-NO SOL.-SOL. Ø6
H8= SV 2x3/2 NC-NO SOL.-SOL. Ø8
L4= SV 2x2/2 NC-NC SOL.-SOL. Ø4
L6= SV 2x2/2 NC-NC SOL.-SOL. Ø6
L8= SV 2x2/2 NC-NC SOL.-SOL. Ø8
M4= SV 2x2/2 NO-NO SOL.-SOL. Ø4
M6= SV 2x2/2 NO-NO SOL.-SOL. Ø6
M8= SV 2x2/2 NO-NO SOL.-SOL. Ø8
N4= SV 2x2/2 NC-NO SOL.-SOL. Ø4
N6= SV 2x2/2 NC-NO SOL.-SOL. Ø6
N8= SV 2x2/2 NC-NO SOL.-SOL. Ø8
P4= SV 5/2 MONOST. SOL.-SPRING CEB Ø4
P6= SV 5/2 MONOST. SOL.-SPRING CEB Ø6
P8= SV 5/2 MONOST. SOL.-SPRING CEB Ø8
R4= SV 5/2 MONOST. SOL.-DIFF. CEB Ø4
R6= SV 5/2 MONOST. SOL.-DIFF. CEB Ø6
R8= SV 5/2 MONOST. SOL.-DIFF. CEB Ø8
T1 = 1 ELECTRIC SIGNAL THROUGH MODULE
T2 = 2 ELECTRIC SIGNALS THROUGH MODULE

J= INTERMEDIATE EXHAUST MODULE Ø8
K= INTERMEDIATE INLET MODULE Ø8
W = INLET-EXHAUST MODULE Ø8

X= INLET DIAPHRAGM
Y= EXHAUST DIAPHRAGM
Z= INLET -EXHAUST DIAPHRAGM

NOTE:
While configuring the manifold always bear in mind that the maximum number of electrical signals available is 22.
N.B. CEB = Electrical connector for bistable valves (uses two electric signals)
Intermediate supply / exhaust modules require the same space as a valve but do not use any electric signals (as the electric connector carries forward all signals received from the module immediately before).
The separation diaphragms are positioned between two modules and replace the standard seal therefore do not increase the dimension of the assembly. When using a separation diaphragm of any type, it is necessary to add, in any position between diaphragm and the manifold and plate, an extra air supply / exhaust module depending on the type of diaphragm used.

General:

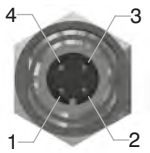
CANopen® module is directly integrated on Enova solenoid valves manifold via a 25 poles connector, normally used for multipolar cable connection.
Enova solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 22 solenoid valves, and, in the same time, a max number of 3 Input modules 5200.08.
CANopen® module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 22.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus CANopen® is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to CiA Draft Standard Proposal 301 V 4.10 (15 August 2006).
Transmission speed can be set by 3 dip-switches.
The node address can be set by 6 dip-switches using BCD numeration.
The module includes an internal terminating resistance that can be activated by a dip-switch.

Ordering code

5523.22

Scheme / Overall dimensions and I/O layout :

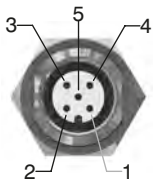
POWER SUPPLY connector



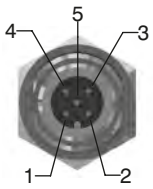
M12 4P MALE

PIN	DESCRIPTION
1	+24 VDC (NODE & INPUTS)
2	NC
3	GND
4	+24 VDC (OUTPUTS)

NETWORK connectors

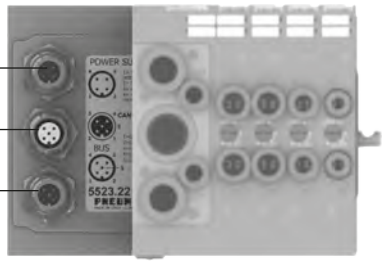


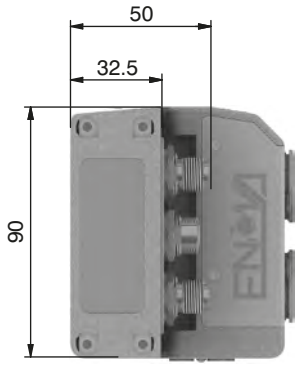
M12 5P FEMALE

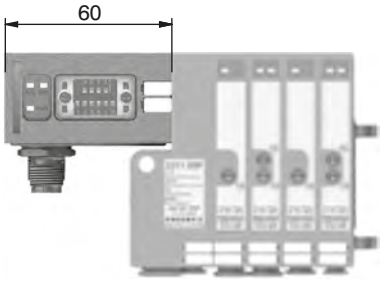


M12 5P MALE

PIN	SIGNAL	DESCRIPTION
1	CAN_SHLD	Optional CAN Shield
2	CAN_V+	Optional CAN external positive supply (Dedicated for supply of transceiver and Optocouplers, if galvanic isolation of the bus node applies)
3	CAN_GND	Ground / 0V / V-
4	CAN_H	CAN_H bus line (dominant high)
5	CAN_L	CAN_L bus line (dominant low)







Technical characteristics

	Model	5523.22
	Specifications	CiA Draft Standard Proposal 301 V 4.10 (15 August 2006)
	Case	Reinforced technopolymer
Power supply	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	25 mA
	Power supply diagnosis	Green led PWR
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for output	100 mA
	Maximum output number	22
	Max output simultaneously actuated	22
Network	Network connectors	2 M12 5P connectors male-female (IEC 60947-5-2)
	Baud rate	10 - 20 - 50 - 125 - 250 - 500 - 800 - 1000 Kbit/s
	Addresses, possibile numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m a 500 Kbit/s
	Bus diagnosis	Green led + Red led
	Configuration file	Available from our web site: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
	Temperature range	From -0° to +50° C

General:

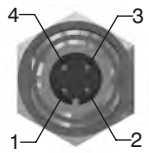
DeviceNet module is directly integrated on Enova solenoid valves manifold via a 25 poles connector, normally used for multipolar cable connection.
Enova solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 22 solenoid valves, and, in the same time, a max number of 3 Input modules 5200.08.
DeviceNet module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 22.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus DeviceNet is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to DeviceNet Specifications Volume I, release 2.0.
Transmission speed can be set by 3 dip-switches.
The node address can be set by 6 dip-switches using BCD numeration.
The module includes an internal terminating resistance that can be activated by a dip-switch.

Ordering code

5423.22

Scheme / Overall dimensions and I/O layout :

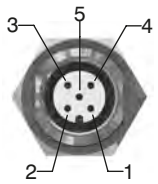
POWER SUPPLY connector



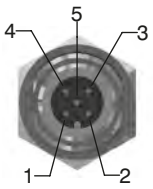
M12 4P MALE

PIN	DESCRIPTION
1	+24 VDC (NODE & INPUTS)
2	NC
3	GND
4	+24 VDC (OUTPUTS)

NETWORK connectors



M12 5P FEMALE



M12 5P MALE

PIN	SIGNAL	DESCRIPTION
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2	CAN_V+	Optional CAN external positive supply (Dedicated for supply of transceiver and Optocouplers, if galvanic isolation of the bus node applies)
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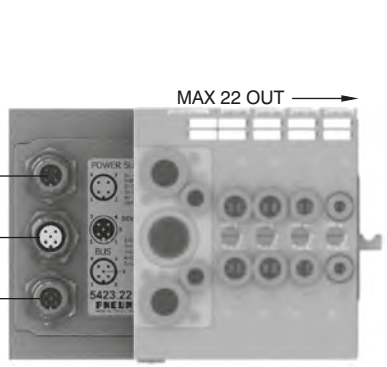
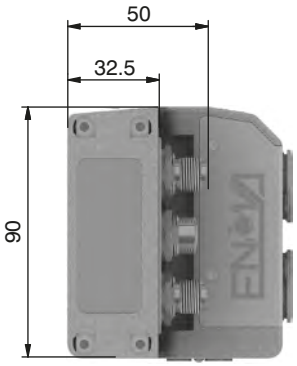
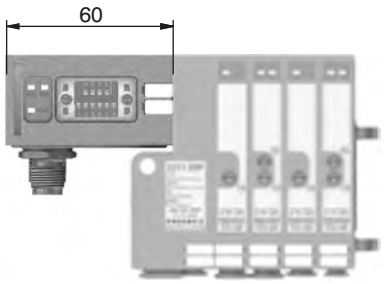






Technical characteristics

	Model	5423.22
	Specifications	DeviceNet Specifications Volume I, release 2.0.
	Case	Reinforced technopolymer
Power supply	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	25 mA
	Power supply diagnosis	Green led PWR
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for output	100 mA
	Maximum output number	22
	Max output simultaneously actuated	22
Network	Network connectors	2 M12 5P connectors male-female (IEC 60947-5-2)
	Baud rate	125 - 250 - 500 Kbit/s
	Addresses, possibile numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m a 500 Kbit/s
	Bus diagnosis	Green led + Red led
	Configuration file	Available from our web site: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
	Temperature range	From -0° to +50° C

General:

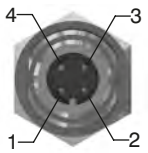
PROFIBUS DP module is directly integrated on Enova solenoid valves manifold via a 25 poles connector, normally used for multipolar cable connection.
Enova solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 22 solenoid valves, when is connected 0 or 1 INPUT modules, or 16 if node is fitted with 2 INPUT modules. The max number of INPUT modules 5200.08, is 2 .
PROFIBUS DP module recognizes automatically the presence of the Input modules on power on.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus PROFIBUS DP is possible via 2 M12 type B 5P male - female circular connectors; these two are connected in parallel and according to PROFIBUS Interconnection Technology (Version 1.1 : August 2001).
The node address can be set using BCD numeration: 4 dip-switches for the units and 4 dip-switches for the tens.
The module includes an internal terminating resistance that can be activated by a dip-switch.

Ordering code

5323.22

Scheme / Overall dimensions and I/O layout :

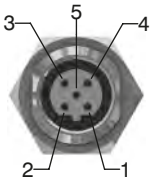
POWER SUPPLY connector



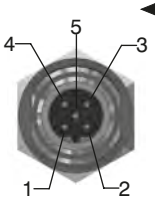
M12 4P MALE

PIN	DESCRIPTION
1	+24 VDC (NODE & INPUTS)
2	NC
3	GND
4	+24 VDC (OUTPUTS)

NETWORK connectors

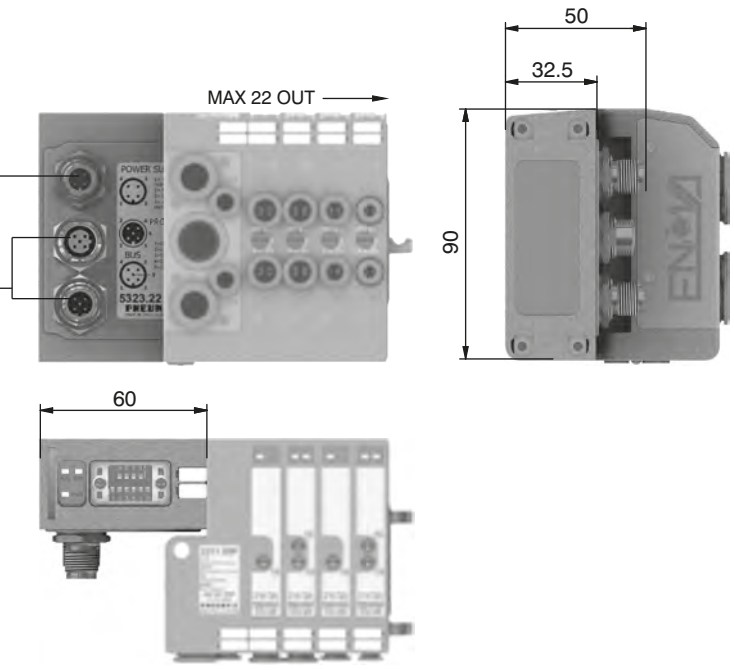


M12 5P FEMALE



M12 5P MALE

PIN	SIGNAL	DESCRIPTION
1	VP	Power supply plus, (P5V)
2	A-line	Receive / Transmit data -N, A-line
3	DGND	Data Ground (reference potential to VP)
4	B-line	Receive / Transmit data -plus, B-line
5	SHIELD	Shield or PE



Technical characteristics

	Model	5323.22
	Specifications	PROFIBUS DP
	Case	Reinforced technopolymer
Power supply	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	50 mA
	Power supply diagnosis	Green led PWR
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for output	100 mA
	Maximum output number	22 or 16 if node is fitted with 2 INPUT modules
	Max output simultaneously actuated	22
Network	Network connectors	2 M12 5P connectors male-female (IEC 60947-5-2)
	Baud rate	125 - 250 - 500 Kbit/s
	Addresses, possibile numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m a 500 Kbit/s
	Bus diagnosis	Green led + Red led
	Configuration file	Available from our web site: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
	Temperature range	From -0° to +50° C

General:

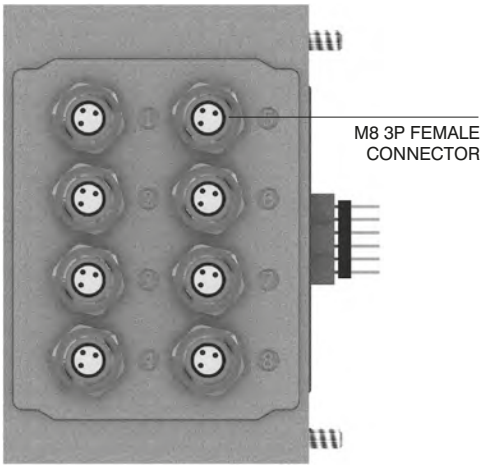
Modules have 8 connectors M8 3P female.

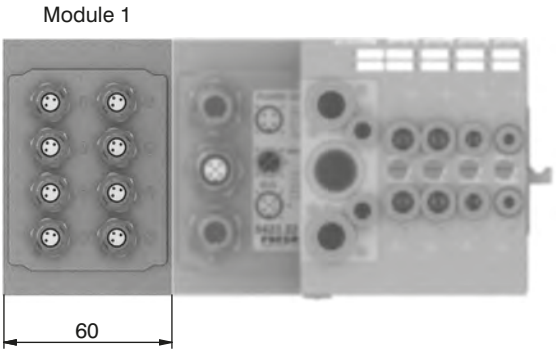
The Inputs are PNP equivalent 24 VDC ±10%.
To each connector it is possible to plug both 2 wires Inputs (switches, magnetic switches pressure switches, etc) or 3 wires Inputs (proximity, photocells, electronic sensors, etc).
The maximum current available for all 8 Inputs is 200 mA.
Each module includes a 200 mA resettable fuse. If a short circuit or a overcharge (overall current >200mA) occur the safety device acts cutting the 24 VDC power supply to all M8 connectors on the module and switching off the green led PWR. Any other Input module connected to the node will remain powered and will function correctly.
Once the cause of the fault disappears the green led PWR light up indicating the ON state and the node will re-start to operate.
The Maximum number of Input modules supported is 3 for CANopen and DeviceNet, 2 for PROFIBUS DP.

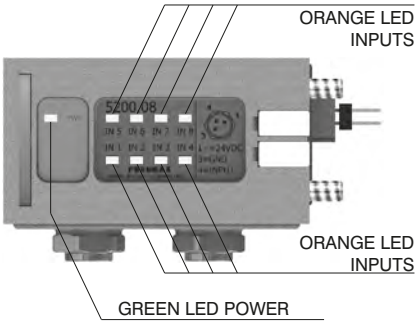
Ordering code

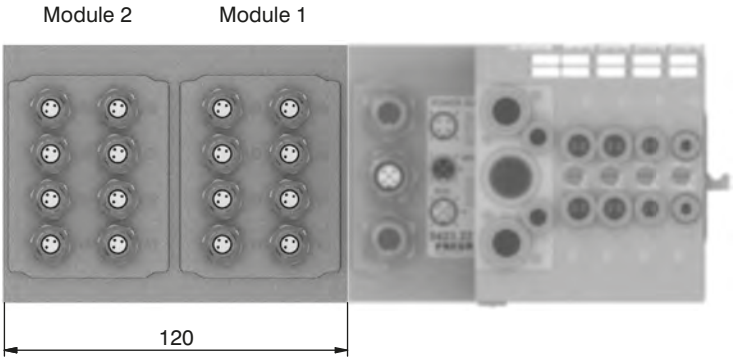
5200.08

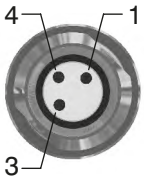
Scheme / Overall dimensions and I/O layout :



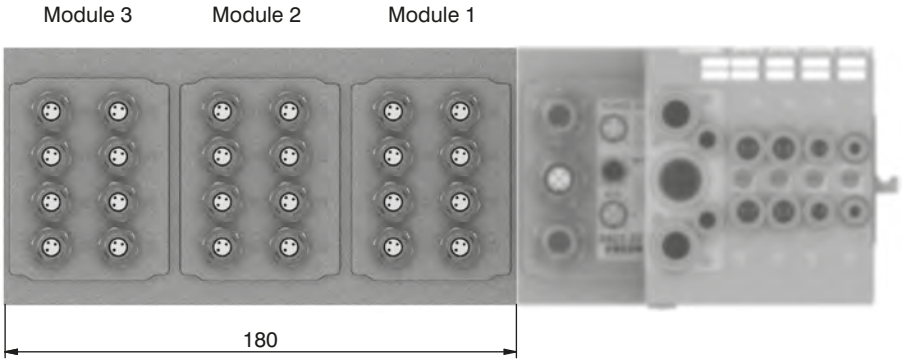








PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND



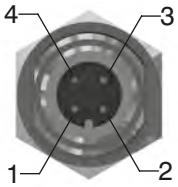
POWER SUPPLY connector

Socket for Power Supply
STRAIGHT CONNECTOR
M12A 4P FEMALE

Ordering code

5312A.F04.00

Upper view
Slave connector



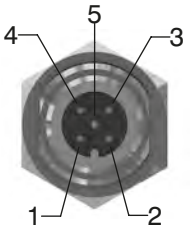
PIN	DESCRIPTION
1	+24 VDC Node
2	
3	0 V
4	+24 VDC Outputs

NETWORK connectors

Socket for Bus CANopen®
STRAIGHT CONNECTOR
M12B 5P FEMALE

Ordering code

5312A.F05.00



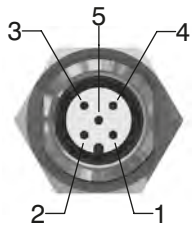
PIN	DESCRIPTION
1	(CAN_SHIELD)
2	(CAN_V+)
3	CAN_GND
4	CAN_H
5	CAN_L

Upper view
Slave connector

Plug for Bus CANopen®
STRAIGHT CONNECTOR
M12A 5P MALE

Ordering code

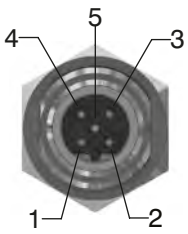
5312A.M05.00



Socket for Bus PROFIBUS
STRAIGHT CONNECTOR
M12B 5P FEMALE

Ordering code

5312B.F05.00



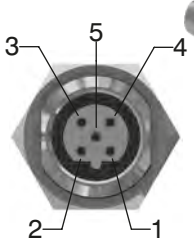
PIN	DESCRIPTION
1	Power Supply
2	A-line
3	DGND
4	B-line
5	SHIELD

Upper view
Slave connector

Plug for Bus PROFIBUS
STRAIGHT CONNECTOR
M12B 5P MALE

Ordering code

5312B.M05.00



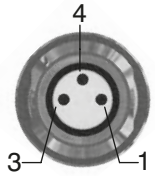
INPUT connectors

Plug for Input module
STRAIGHT CONNECTOR
M8 3P MALE

Ordering code

5308A.M03.00

Upper view
Slave connector



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

Plugs

M12 plug

Ordering code

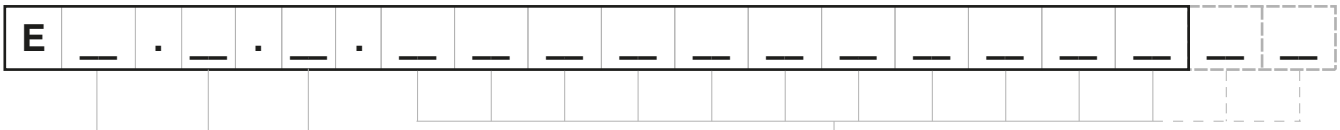
5300.T12

M8 plug

Ordering code

5300.T08

Manifold layout configuration complete with Serial systems



ACCESSORIES :
0= none
D= DIN bar adapter
S= 90° Fixing bracket

ENDPLATES SELECTION :
A= 5 ports endplated left side plus right side endplated
B= 3 ports endplated left side plus right side endplated

BUS CONFIGURATION :
CA= CANopen® 22 OUT
CB= CANopen® 22 OUT + 8 INPUTS
CC= CANopen® 22 OUT + 16 INPUTS
CD= CANopen® 22 OUT + 24 INPUTS
DA= DeviceNet 22 OUT
DB= DeviceNet 22 OUT + 8 INPUTS
DC= DeviceNet 22 OUT + 16 INPUTS
DD= DeviceNet 22 OUT + 24 INPUTS
PA= PROFIBUS 22 OUT
PB= PROFIBUS 22 OUT + 8 INPUTS
PC= PROFIBUS 16 OUT + 16 INPUTS

SHORT CODE
FUNCTION / CONNECTION:
A4= SV 5/2 MONOST. SOL.-SPRING Ø4
A6= SV 5/2 MONOST. SOL.-SPRING Ø6
A8= SV 5/2 MONOST. SOL.-SPRING Ø8
B4= SV 5/2 MONOST. SOL.-DIFFERENTIAL Ø4
B6= SV 5/2 MONOST. SOL.-DIFFERENTIAL Ø6
B8= SV 5/2 MONOST. SOL.-DIFFERENTIAL Ø8
C4= SV 5/2 BISTABLE SOL.-SOL. Ø4
C6= SV 5/2 BISTABLE SOL.-SOL. Ø6
C8= SV 5/2 BISTABLE SOL.-SOL. Ø8
E4= SV 5/3 CC SOL.-SOL. Ø4
E6= SV 5/3 CC SOL.-SOL. Ø6
E8= SV 5/3 CC SOL.-SOL. Ø8
F4= SV 2x3/2 NC-NC (= 5/3 CA) SOL.-SOL. Ø4
F6= SV 2x3/2 NC-NC (= 5/3 CA) SOL.-SOL. Ø6
F8= SV 2x3/2 NC-NC (= 5/3 CA) SOL.-SOL. Ø8
G4= SV 2x3/2 NO-NO (= 5/3 CP) SOL.-SOL. Ø4
G6= SV 2x3/2 NO-NO (= 5/3 CP) SOL.-SOL. Ø6
G8= SV 2x3/2 NO-NO (= 5/3 CP) SOL.-SOL. Ø8
H4= SV 2x3/2 NC-NO SOL.-SOL. Ø4
H6= SV 2x3/2 NC-NO SOL.-SOL. Ø6
H8= SV 2x3/2 NC-NO SOL.-SOL. Ø8
L4= SV 2x2/2 NC-NC SOL.-SOL. Ø4
L6= SV 2x2/2 NC-NC SOL.-SOL. Ø6
L8= SV 2x2/2 NC-NC SOL.-SOL. Ø8
M4= SV 2x2/2 NO-NO SOL.-SOL. Ø4
M6= SV 2x2/2 NO-NO SOL.-SOL. Ø6
M8= SV 2x2/2 NO-NO SOL.-SOL. Ø8
N4= SV 2x2/2 NC-NO SOL.-SOL. Ø4
N6= SV 2x2/2 NC-NO SOL.-SOL. Ø6
N8= SV 2x2/2 NC-NO SOL.-SOL. Ø8
P4= SV 5/2 MONOST. SOL.-SPRING CEB Ø4
P6= SV 5/2 MONOST. SOL.-SPRING CEB Ø6
P8= SV 5/2 MONOST. SOL.-SPRING CEB Ø8
R4= SV 5/2 MONOST. SOL.-DIFF. CEB Ø4
R6= SV 5/2 MONOST. SOL.-DIFF. CEB Ø6
R8= SV 5/2 MONOST. SOL.-DIFF. CEB Ø8
T1 = 1 ELECTRIC SIGNAL THROUGH MODULE
T2 = 2 ELECTRIC SIGNALS THROUGH MODULE

J= INTERMEDIATE EXHAUST MODULE Ø8
K= INTERMEDIATE INLET MODULE Ø8
W = INLET-EXHAUST MODULE Ø8

X= INLET DIAPHRAGM
Y= EXHAUST DIAPHRAGM
Z= INLET -EXHAUST DIAPHRAGM

NOTE:
While configuring the manifold always bear in mind that the maximum number of electrical signals available is 22.
N.B. CEB = Electrical connector for bistable valves (uses two electric signals)
Intermediate supply / exhaust modules require the same space as a valve but do not use any electric signals (as the electric connector carries forward all signals received from the module immediately before).
The separation diaphragms are positioned between two modules and replace the standard seal therefore do not increase the dimension of the assembly. When using a separation diaphragm of any type, it is necessary to add, in any position between diaphragm and the manifold and plate, an extra air supply / exhaust module depending on the type of diaphragm used.