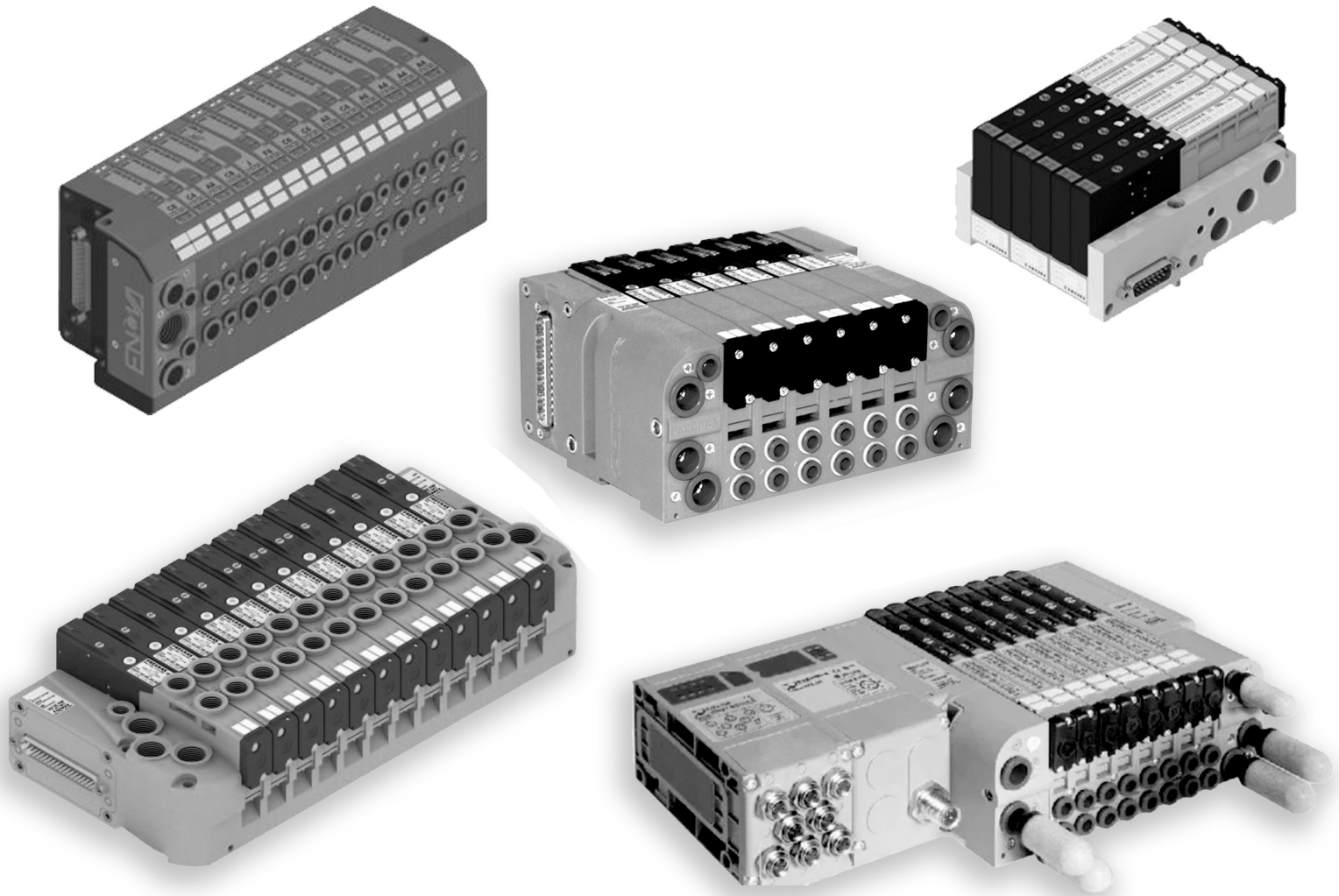




**PNEUMAX**



# SOLENOID MANIFOLDS

OPTYMA-S - OPTYMA-Sc - OPTYMA-T - OPTYMA-F - ENOVA®

## Solenoid manifolds



Series 2200 Optyma-S	3	Series 2500 Optyma-F	38	Series 2300 Enova® Serie	106
Series 2200 Optyma-Sc	29	Series 2500 Optyma-T	68		

## Series 2200 "OPTYMA-S"

### General

Optyma32-S has been designed in order to complete the Optyma series of valves. Optyma-S, 12.5mm size, integrates all the technical features already developed and implemented on the Optima T & F such as the integrated electrical connection. Further technical specifications are:

- Flow rate: up to 550[Nl/min], using the modular base with Ø8 quick fitting tube.
- Modular base available with Ø4, Ø6, Ø8 quick fitting tube.
- The solenoid pilots are low consumption and fitted on the same side of the valve.
- Mono and bistable valves have the same dimension.
- Easy and fast assembly on the sub base thanks to the "one screw" mounting solution.
- Possibility to replace a valve without the need of disconnecting the pneumatic pipes.
- Electrical and pneumatic connections positioned on the same side.
- Possibility to operate with different pressures and vacuum.
- Management of 32 electrical signals, (16 bi-stable or any combination of mono and bi-stable valves up to max 32 signals).
- The protection grade is IP65 directly integrated in the manifold components.
- The electrical connection is achieved thanks to a 37 pole connector.
- Possibility to integrate with Field Bus modules CANopen®, PROFIBUS DP, DeviceNet, EtherNet/IP, PROFINET IO RT/IRT, EtherCAT® and CC-Link IE Field Basic.

**"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

One size: 12.5mm thick  
Monostable and bistable valves with same dimensions  
Modular subbase with two positions  
Modular subbases assembled via tie rods  
Quick coupling connections directly integrated in sub base  
Integrated and optimized electrical connection system.  
IP65 protection grade as standard

### Construction characteristics

Body	Technopolymer
Operators	Technopolymer
Spacers	NBR
Spacer	Technopolymer
Spools	AISI 303 stainless steel
Springs	AISI 303 stainless steel
Pistons	Technopolymer
Piston seals	NBR

### Functions

SV 5/2 MONOSTABLE SOLENOID-SPRING  
SV 5/2 MONOSTABLE SOLENOID-DIFFERENTIAL  
SV 5/2 BISTABLE SOLENOID-SOLENOID  
SV 5/3 C.C. SOLENOID-SOLENOID  
SV 2x3/2 N.C.-N.C. (=5/3 O.C.) SOLENOID-SOLENOID  
SV 2x3/2 N.O.-N.O. (=5/3 P.C.) SOLENOID-SOLENOID  
SV 2x3/2 N.C.-N.O. SOLENOID-SOLENOID  
SV 2x3/2 N.O.-N.C. SOLENOID-SOLENOID

### Technical characteristics

Voltage	24VDC ±10% PNP (NPN and AC on request)
Pilot consumption	0,5 Watt
Pilot working pressure (12-14)	from 2,5 to 7 bar max.
Valve working pressure [1]	from vacuum to 10 bar max.
Operating temperature	from -5°C to +50°C
Protection degree	IP65
Life (standard operating conditions)	50000000
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous



## Solenoid valves manifold Series 2200 "OPTYMA-S"

### Solenoid - Spring

Coding: 2241.52.00.39.✓

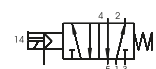
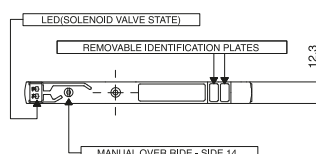
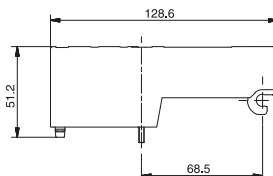
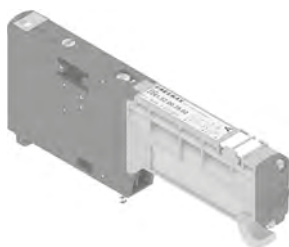
#### Operational characteristics

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 $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	12
Response time according to ISO 12238, deactivation time (ms)	20

VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

SHORT FUNCTION CODE "A"  
Weight 67 g

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



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.✓ tube Ø4 = 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø6 = 400  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø8 = 550

### Solenoid-Differential

Coding: 2241.52.00.36.✓

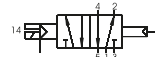
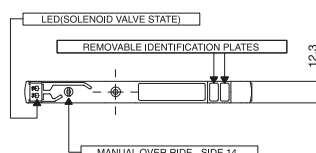
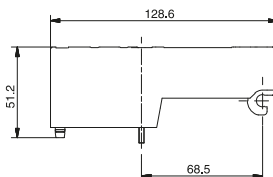
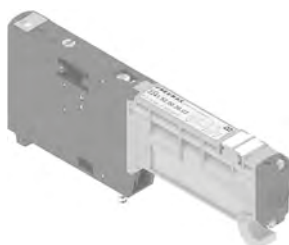
#### Operational characteristics

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 $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	20
Response time according to ISO 12238, deactivation time (ms)	25

VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

SHORT FUNCTION CODE "B"  
Weight 67 g

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



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.✓ tube Ø4 = 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø6 = 400  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø8 = 550

### Solenoid-Solenoid

Coding: 2241.52.00.35.✓

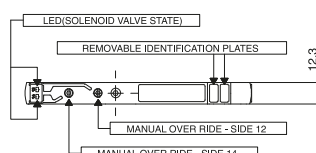
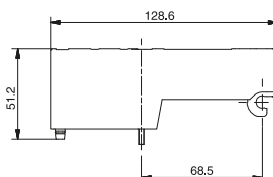
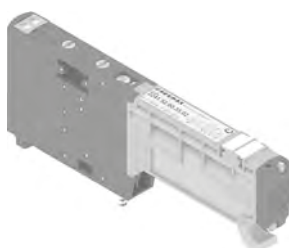
#### Operational characteristics

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 $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	10

VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

SHORT FUNCTION CODE "C"  
Weight 67 g

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



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.✓ tube Ø4 = 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø6 = 400  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.✓ tube Ø8 = 550



## Solenoid-Solenoid 5/3 (Closed centres)

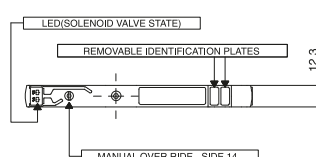
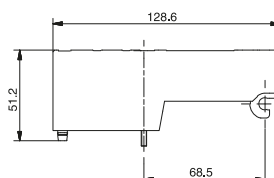
Coding: 2241.53.31.35.V

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 $\Delta p=1$ (NI/min)	400
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	20

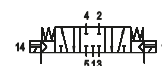
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

V	VOLTAGE
02	= 24 VDC PNP
12	= 24 VDC NPN
05	= 24 VAC

SHORT FUNCTION CODE "E"  
Weight 83 g



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.V tube Ø4 = 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.V tube Ø6 = 300  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.V tube Ø8 = 400



## Solenoid-Solenoid 2x3/2

Coding: 2241.62.F.35.V

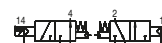
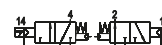
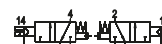
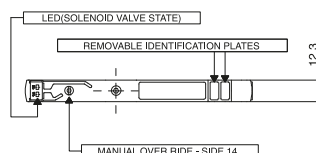
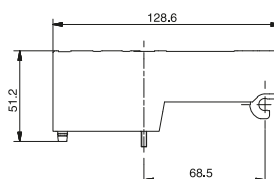
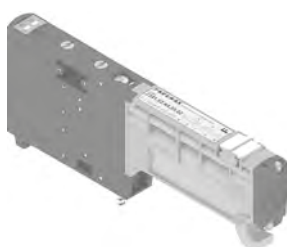
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	$\geq 3 + (0,2 \times \text{Inlet pressure})$
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	420
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	25

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

F	FUNCTION
44	= NC-NC (5/3 Open centres)
45	= NC-NO (normally closed-normally open)
54	= NO-NC (normally open-normally closed)
55	= NO-NO (5/3 Pressured centres)

V	VOLTAGE
02	= 24 VDC PNP
12	= 24 VDC NPN
05	= 24 VAC

SHORT FUNCTION CODE:  
NC-NC (5/3 Open centres) = "F"  
NO-NO (5/3 Pressured centres) = "G"  
NC-NO = "H"  
NO-NC = "I"  
Weight 75 g



Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2244.01.V tube Ø4 = 140  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.V tube Ø6 = 360  
Flow rate at 6 bar with  $\Delta p=1$  (NI/min) with Base cod. 2246.01.V tube Ø8 = 420



# Solenoid valves manifold Series 2200 "OPTYMA-S" - Accessories

## Left Endplates

Coding: 2240.●.●

### Operational characteristics

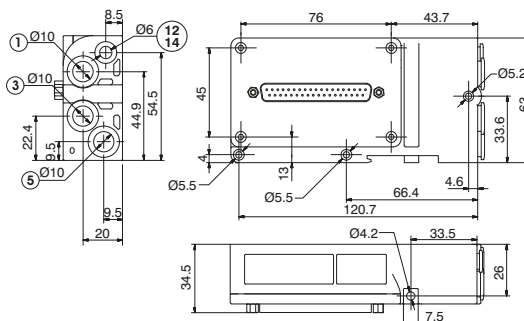
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (External pilot base) 2,5-7 (Self-feeding base)
Pressure range (bar)	2,5 ÷ 7 (External pilot base)
Temperature °C	-5 ÷ +50

VERSION	
● 02 = External feeding	
12 = Self-feeding	
ELECTRICAL CONNECTION	
37P = Connectors 37 poles PNP	
25P = Connectors 25 poles PNP	
37N = Connectors 37 poles NPN	
● 25N = Connectors 25 poles NPN	
37A = Connectors 37 poles AC	
25A = Connectors 25 poles AC	



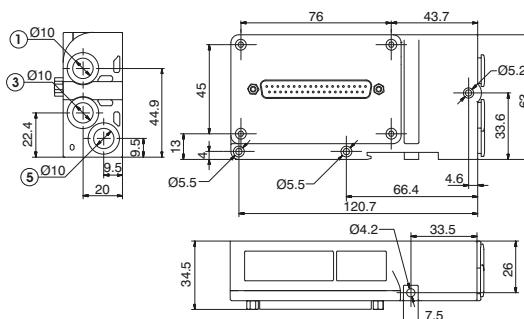
Weight 174 g  
12/14 separated from port 1

2240.02.●



Weight 174 g  
12/14 connected to port 1

2240.12.●



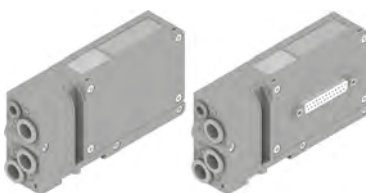
## Right Endplates

Coding: 2240.03.●

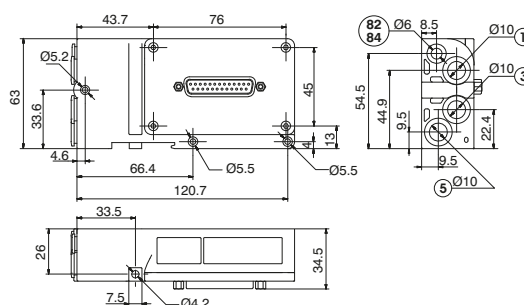
### Operational characteristics

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

ELECTRICAL CONNECTION	
● 00 = Electrical connection	
25P = Connectors 25 poles	



Weight 147 g  
PORT 82/84= DO NOT PRESSURIZE, SOLENOID PILOTS EXHAUST

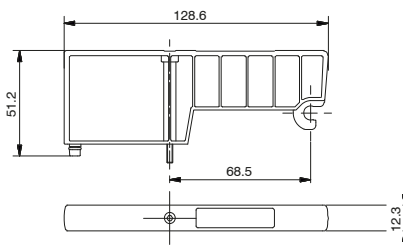


## Closing plate

Coding: 2240.00

### Operational characteristics

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

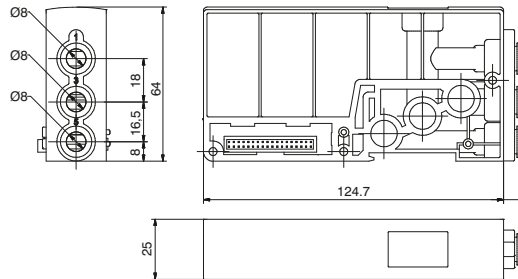


Weight 30 g  
SHORT FUNCTION CODE "T"

## Intermediate Inlet/Exhaust module

Coding: 2240.10

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



Weight 105 g  
SHORT FUNCTION CODE "W"

## Modular base (2 places)

Coding: 224C.F.V

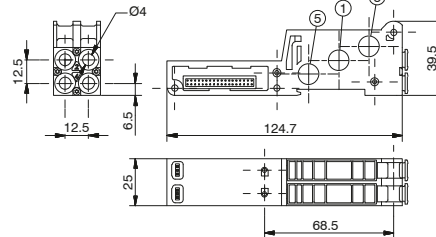
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50



2244.C.V

Weight 75 g

SHORT FUNCTION CODE "3" (Monostable) Opened ports  
SHORT FUNCTION CODE "33" (Monostable) Ports 1-5 separated  
SHORT FUNCTION CODE "34" (Monostable) Ports 1-3 separated  
SHORT FUNCTION CODE "35" (Monostable) Port 5 separated  
SHORT FUNCTION CODE "36" (Monostable) Separated ports  
SHORT FUNCTION CODE "37" (Monostable) Port 1 separated  
SHORT FUNCTION CODE "38" (Monostable) Ports 3-5 separated  
SHORT FUNCTION CODE "39" (Monostable) Port 3 separated



SHORT FUNCTION CODE "4" (Bistable) Opened ports  
SHORT FUNCTION CODE "43" (Bistable) Ports 1-5 separated  
SHORT FUNCTION CODE "44" (Bistable) Ports 1-3 separated  
SHORT FUNCTION CODE "45" (Bistable) Port 5 separated  
SHORT FUNCTION CODE "46" (Bistable) Separated ports  
SHORT FUNCTION CODE "47" (Bistable) Port 1 separated  
SHORT FUNCTION CODE "48" (Bistable) Ports 3-5 separated  
SHORT FUNCTION CODE "49" (Bistable) Port 3 separated

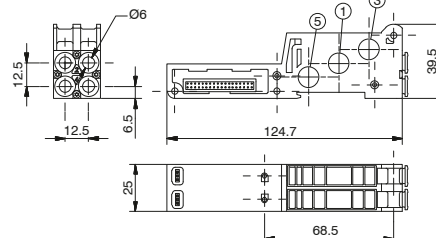
TUBE DIAMETER	
4	= Ø4
6	= Ø6
8	= Ø8
FUNCTION	
01	= Opened ports
03	= Ports 1-5 separated
04	= Ports 1-3 separated
05	= Ports 5 separated
06	= Separated ports
07	= Ports 1 separated
08	= Ports 3-5 separated
09	= Ports 3 separated
VERSION	
M	= for Monostable SV
B	= for Bistable SV



2246.C.V

Weight 75 g

SHORT FUNCTION CODE "5" (Monostable) Opened ports  
SHORT FUNCTION CODE "53" (Monostable) Ports 1-5 separated  
SHORT FUNCTION CODE "54" (Monostable) Ports 1-3 separated  
SHORT FUNCTION CODE "55" (Monostable) Port 5 separated  
SHORT FUNCTION CODE "56" (Monostable) Separated ports  
SHORT FUNCTION CODE "57" (Monostable) Port 1 separated  
SHORT FUNCTION CODE "58" (Monostable) Ports 3-5 separated  
SHORT FUNCTION CODE "59" (Monostable) Port 3 separated



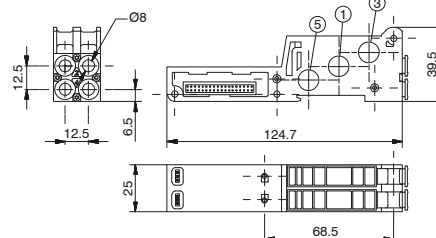
SHORT FUNCTION CODE "6" (Bistable) Opened ports  
SHORT FUNCTION CODE "63" (Bistable) Ports 1-5 separated  
SHORT FUNCTION CODE "64" (Bistable) Ports 1-3 separated  
SHORT FUNCTION CODE "65" (Bistable) Port 5 separated  
SHORT FUNCTION CODE "66" (Bistable) Separated ports  
SHORT FUNCTION CODE "67" (Bistable) Port 1 separated  
SHORT FUNCTION CODE "68" (Bistable) Ports 3-5 separated  
SHORT FUNCTION CODE "69" (Bistable) Port 3 separated



2248.C.V

Weight 75 g

SHORT FUNCTION CODE "7" (Monostable) Opened ports  
SHORT FUNCTION CODE "73" (Monostable) Ports 1-5 separated  
SHORT FUNCTION CODE "74" (Monostable) Ports 1-3 separated  
SHORT FUNCTION CODE "75" (Monostable) Port 5 separated  
SHORT FUNCTION CODE "76" (Monostable) Separated ports  
SHORT FUNCTION CODE "77" (Monostable) Port 1 separated  
SHORT FUNCTION CODE "78" (Monostable) Ports 3-5 separated  
SHORT FUNCTION CODE "79" (Monostable) Port 3 separated



SHORT FUNCTION CODE "8" (Bistable) Opened ports  
SHORT FUNCTION CODE "83" (Bistable) Ports 1-5 separated  
SHORT FUNCTION CODE "84" (Bistable) Ports 1-3 separated  
SHORT FUNCTION CODE "85" (Bistable) Port 5 separated  
SHORT FUNCTION CODE "86" (Bistable) Separated ports  
SHORT FUNCTION CODE "87" (Bistable) Port 1 separated  
SHORT FUNCTION CODE "88" (Bistable) Ports 3-5 separated  
SHORT FUNCTION CODE "89" (Bistable) Port 3 separated



## Solenoid valves manifold Series 2200 "OPTYMA-S" - Accessories

### Polyethylene Silencer Series SPL-R

Coding: SPLR.**D**



TUBE DIAMETER
<b>D</b> 6 = 6 mm
10 = 10 mm

### Diaphragm plug

Coding: 2230.17



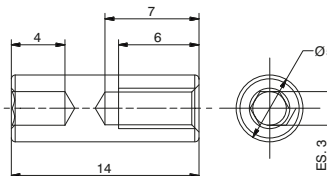
Weight 6,5 g

### Tie-rod M3

Coding: 2240.KD.00

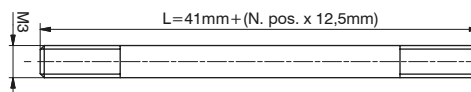


The Kit includes 6 pieces



### Tie-rod M3

Coding: 2240.KT.**P**



The Kit includes 3 pieces

N. POSITIONS
02 = Nr. 2 Positions
04 = Nr. 4 Positions
06 = Nr. 6 Positions
08 = Nr. 8 Positions
10 = Nr. 10 Positions
12 = Nr. 12 Positions
14 = Nr. 14 Positions
<b>P</b> 16 = Nr. 16 Positions
18 = Nr. 18 Positions
20 = Nr. 20 Positions
22 = Nr. 22 Positions
24 = Nr. 24 Positions
26 = Nr. 26 Positions
28 = Nr. 28 Positions
30 = Nr. 30 Positions
32 = Nr. 32 Positions

### Cable complete with connector, 25 Poles IP65

Coding: 2300.25.**L.C**



CABLE LENGTH
<b>L</b> 03 = 3 meters
05 = 5 meters
10 = 10 meters
FUNCTION
<b>F</b> 31 = Closed centres
32 = Open centres
33 = Pressured centres

### Cable complete with connector, 37 Poles IP65

Coding: 2400.37.**L.C**



CABLE LENGTH
<b>L</b> 03 = 3 meters
05 = 5 meters
10 = 10 meters
FUNCTION
<b>F</b> 31 = Closed centres
32 = Open centres
33 = Pressured centres

### Cable complete with connector, 25 Poles IP65

Coding: 2400.25.**L.25**



CABLE LENGTH
<b>L</b> 03 = 3 meters
05 = 5 meters
10 = 10 meters

## Electrical connection

The electrical connection is made using a 37 pin connector and can manage up to 32 electrical signals. Alternatively a 25 pin connector can be used which is suitable for up to 22 electrical signals. The distributions of the electrical signals between sub-bases achieved thanks to a dedicated electrical connector positioned in each sub-base which diverts the signals needed to operate the solenoid pilots of the valve mounted on the sub-base and passing unused signals forward to the next base.

The Optyma-S sub-bases are designed to carry two valves and are available in the following configurations:

Sub-base configurations	Signals used for the single position	Total number of used signal
Sub-base for 2 bistable valves	2 signals used for the first position	4
	2 signals used for the second position	
Sub-base for 2 monostable valves	1 signal used for the first position	2
	1 signal used for the second position	

### Sub-base for 2 bistable valves

On the sub base for 2 bistable valves the first electrical signal is used to actuate the solenoid pilot on side 14 of the first position, the second signal is used to actuate the solenoid pilot on side 12 of the first position. Each sub base uses 4 electric signals. The same layout applies to the following position therefore the third signal is used to actuate the solenoid pilot on side 14 of the second position and the fourth signal is used to actuate the solenoid pilot on side 12 of the second position.

The remaining signals are transferred downstream.

On a bistable sub base it is possible to mount both bistable or monostable valves (in the second case 1 electrical signal for each valve is wasted). This solutions enables the user to change the manifold layout without the need to re-configure the output correspondence on the PLC. The use of bistable sub-bases reduces the maximum number of valves that can be mounted on the manifold: If the 37 pole connector is used the maximum number of valves is 16 If the 25 pole connector is used the maximum number of valves is 10.

### Sub-base for 2 monostable valves

On the sub base for 2 monostable valves the first electrical signal is used to actuate the solenoid pilot on side 14 of the first position, the second signal is used to actuate the solenoid pilot on side 12 of the second position. Each sub base uses 2 electric signals.

The remaining signals are transferred downstream. On a monostable sub base it is possible to mount only monostable valves (should a bistable valve be mounted on a monostable sub base it will not be possible to actuate the solenoid pilot on side 12). This solutions enables the user to maximise the manifold lay out using all the electrical signals available.

If the 37 pole connector is used the maximum number of valves is 32

If the 25 pole connector is used the maximum number of valves is 22



**Note:**

Monostable valves, which are fitted with only one solenoid pilot can be mounted on both monostable or bistable sub bases.

Bistable valves ,5/3; 2x3/2;2x2/2, which are fitted with 2 solenoid pilots and therefore always use two electrical signals must always be mounted on bistable subbases.

### Additional exhaust and air supply modules:

The Additional exhaust and air supply module is fitted with a dedicated electrical connector which does not use any electric signal but simply carries forward all signals which have not been used by the valves mounted before it.

This enables its use in any position of the manifold.

## Unused electrical signals

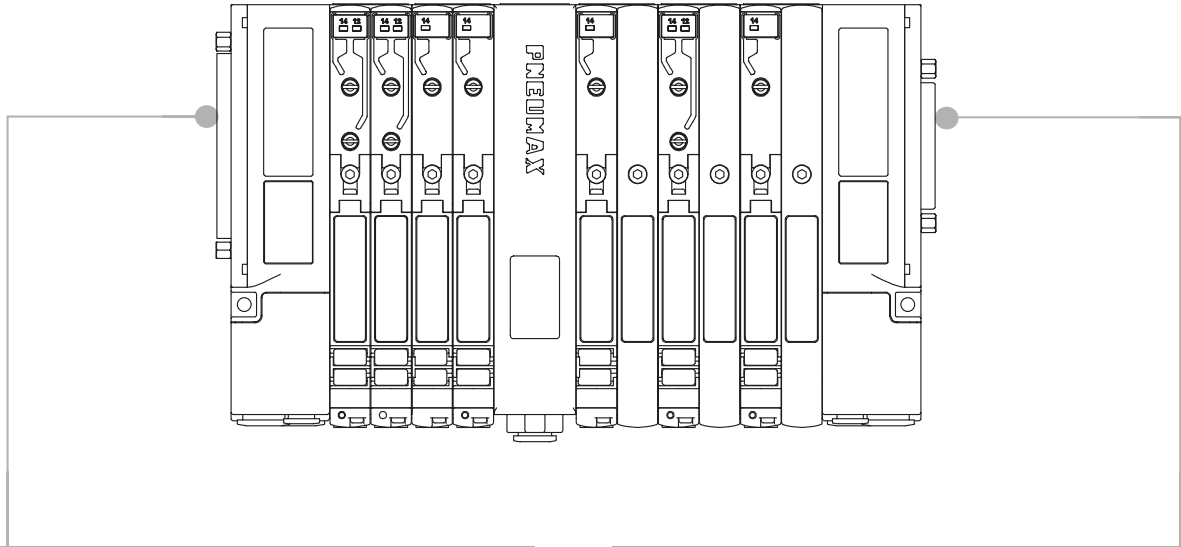
The electrical signals which have not been used in the manifold can be made available by using the end plate fitted with the 25 pole connector.

The number of electric signals available depends on the type of connector mounted on the inlet plate and on the number of signals used in the manifold:

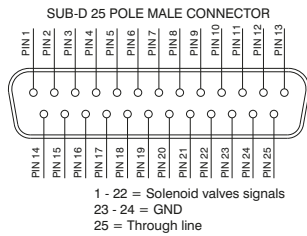
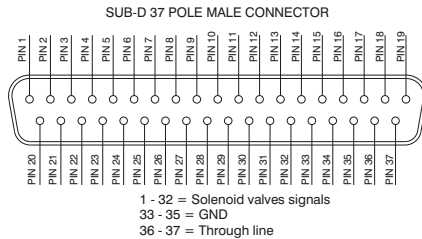
37 pole Inlet connector : N. of outputs= 32 – used signals (max 22)

25 pole Inlet connector : N. of outputs= 22 – used signals

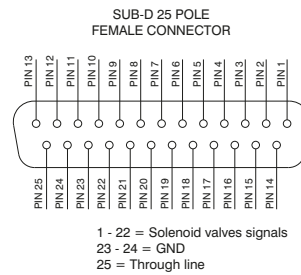
Here are some examples of possible configurations and the corresponding pin layout both on the inlet and end plate :



### INLET ELECTRIC CONNECTIONS

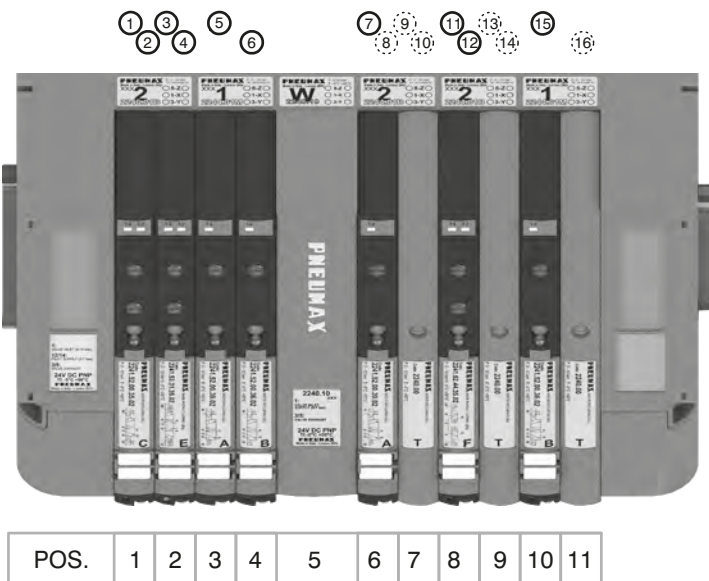


### OUTLET ELECTRIC CONNECTIONS (IF PRESENT)



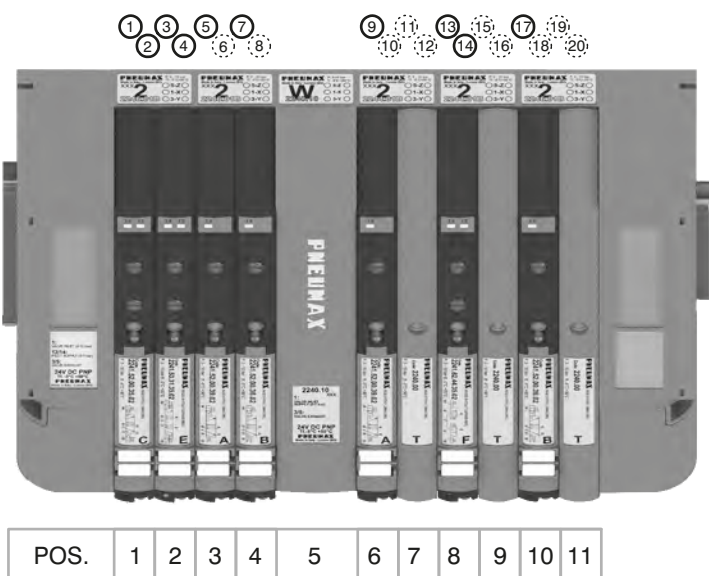


### 37 PIN Connector correspondence for valves assembled on mixed bases



- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 12 SV POS.2
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = PILOT 14 SV POS.4
- PIN 7 = PILOT 14 SV POS.6
- PIN 8 = NOT CONNECTED
- PIN 9 = NOT CONNECTED
- PIN 10 = NOT CONNECTED
- PIN 11 = PILOT 14 SV POS.8
- PIN 12 = PILOT 12 SV POS.8
- PIN 13 = NOT CONNECTED
- PIN 14 = NOT CONNECTED
- PIN 15 = PILOT 14 SV POS.10
- PIN 16 = NOT CONNECTED

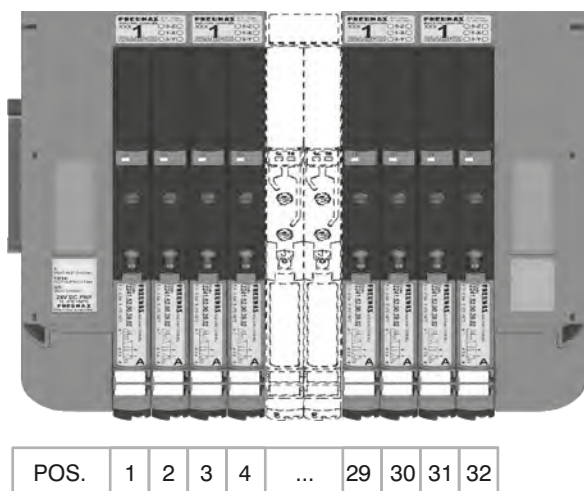
### 37 PIN Connector correspondence for manifold mounted on bases for bistable valves



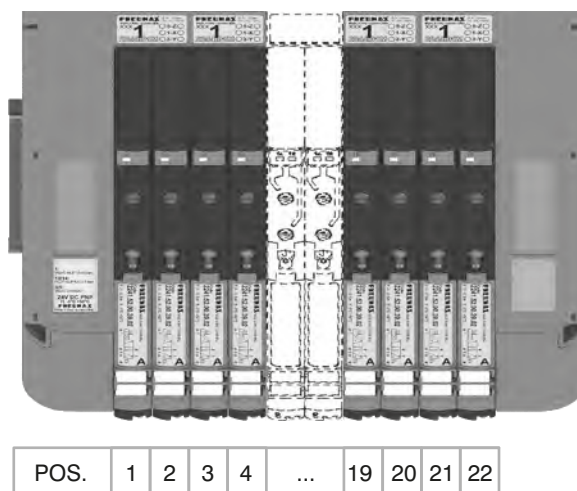
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 12 SV POS.2
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = NOT CONNECTED
- PIN 7 = PILOT 14 SV POS.4
- PIN 8 = NOT CONNECTED
- PIN 9 = PILOT 14 SV POS.6
- PIN 10 = NOT CONNECTED
- PIN 11 = NOT CONNECTED
- PIN 12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

### 37 PIN Connector correspondence for manifold for 32 position manifold with monostable valves on double bases

37P ① ② ③ ④ ... ②⑨ ③① ③②



25P ① ② ③ ④ ... ①⑨ ②① ②②





**General :**

Using the 2240.03.25P output terminal it is possible to make any electrical signals not used by valves available on a 25 sub-D female connector at the right end of the manifold.

It is possible to then join a multi-core cable to link to the next manifold, or connect directly to one or two I/O modules.

The I/O modules can accept input or output signals, depending upon what is connected.

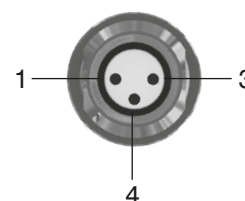
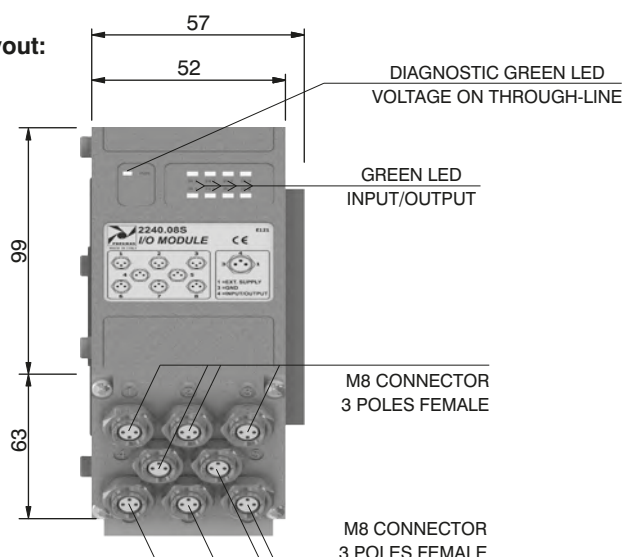
**Ordering code****2240.08S**

**Please note:** If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

It is possible to connect the manifold to up to two I/O modules.

Each I/O module includes 8 diagnostic LEDs which indicate the presence of an Input / Output signal for each connector.

**Please note:** For an LED to function, a signal of at least +15VDC must be present on pin 4 of the connector. If this signal is lower, the LED will not light, this does not compromise the normal Input / Output function of the unit.

**Overall dimensions and I/O layout:**

PIN	DESCRIPTION
1	+24 VDC
4	INPUT/OUTPUT
3	GND

**Input features:**

Each connection can accept either two wire (switches, magnetic switches, pressure switches, etc.) or three wire connections (photocells, electronic end of stroke sensors, etc.) if +24VDC is required on at Pin 1 of each connector, it is possible to provide this via the through-line pin of the multi-pole connector.

I.E :

Pin 25 of the 25 pin multi-pole connector (code 2240.02.25P or 2240.12.25P)

Pin 36-37 of the 37 pin multi-pole connector (code 2240.02.37P or 2240.12.37P)

**Output features:**

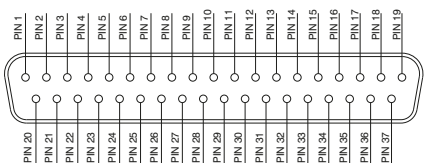
**Attention:** The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

**General characteristics**

Model	2240.08S
Case	Reinforced technopolymer
I/O Connector	M8 connector 3 poles female (IEC 60947-5-2)
PIN 1 voltage (connector used as Input)	by the user
PIN 4 voltage diagnosis	Green LED
Node consumption (Outlets excluded)	7mA per each LED with 24 VDC signal
Outlets voltage	+23,3 VDC (serial) /by the user (multipolar)
Input voltage	Depend by the using
Maximum outlet current	100 mA (serial) / 400 mA (multipolar)
Maximum Input/Output	8 per module
Multiconnector max. Current	100 mA
Connections to manifold	Direct connection to 25 poles connector
Maximum n. of moduls	2
Protection degree	IP65 when assembled
Ambient temperature	from -0° to +50° C

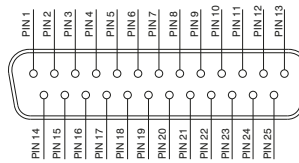
## CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

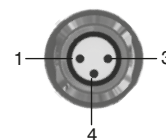


1 - 32 = SIGNALS  
33 - 35 = GND  
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



1 - 22 = SIGNALS  
23 - 24 = GND  
25 = THROUGH LINE



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

### Connection modes:

The I/O module changes its operation depending on the way the manifold is controlled. There are two possible modes:

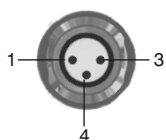
- A) Control via multi-pole connection
- B) Control via fieldbus

#### A) Control via multi-pole :

M8 connector used as Input:



**Attention:** Voltage applied to each connector is passed to multi-pole connector pin.



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

In order to use the I/O module, the correct right hand endplate with 25 pole female outlet connector must be used. (Code 2240.03.25P).



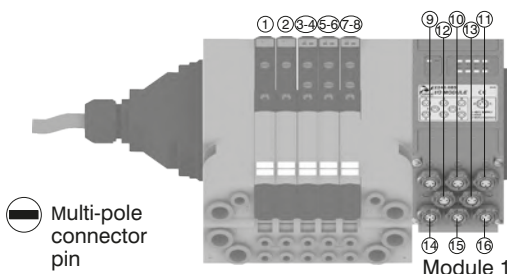
M8 connector used as Output:

Output voltage will be the same as is applied at the multi-pole connector pin.

The maximum output current depends upon the power unit used, but we recommend no more than 250mA.



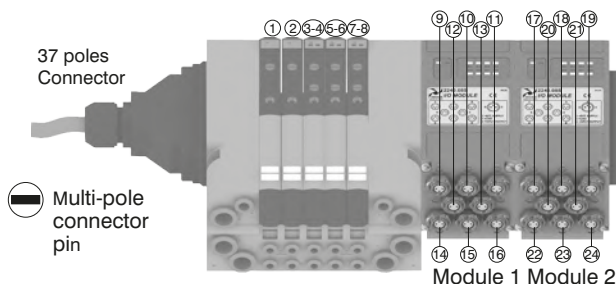
**Attention:** Since every cable has a degree of resistance, there will always be a voltage drop depending on the cable's length, sectional area and the current.



Multi-pole connector pin



**Attention:** Only one more I/O module can be added.



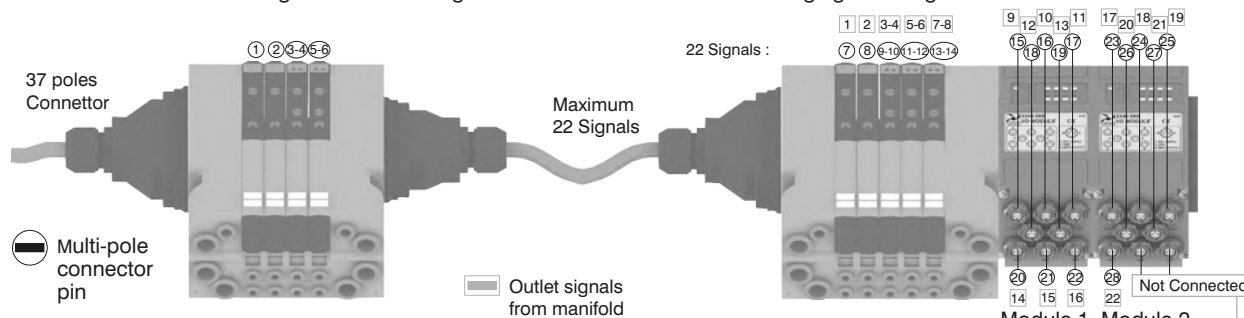
Multi-pole connector pin



**Attention:** No more additions are possible

**Attention :** Optyma 32-S solenoid valve manifolds permit up to 22 electrical signals that are not used by manifolds to be made available: these signals can be managed by another manifold and / or by I/O modules.

The I/O module will manage these unused signals. Connections that are not managing useful signals will remain unconnected.



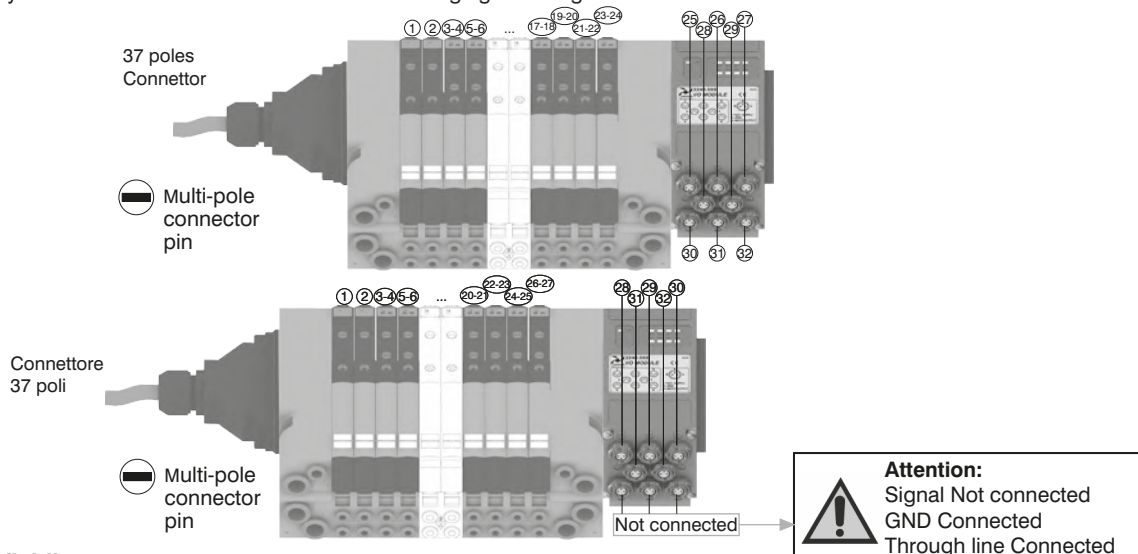
Outlet signals from manifold



**Attention:** Signal Not connected  
GND Connected  
Through line Connected

**Please note:** this example considers a 37 pin multi-pole connector. The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 16

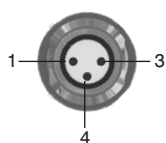
**Please note:** Optyma 32-S solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



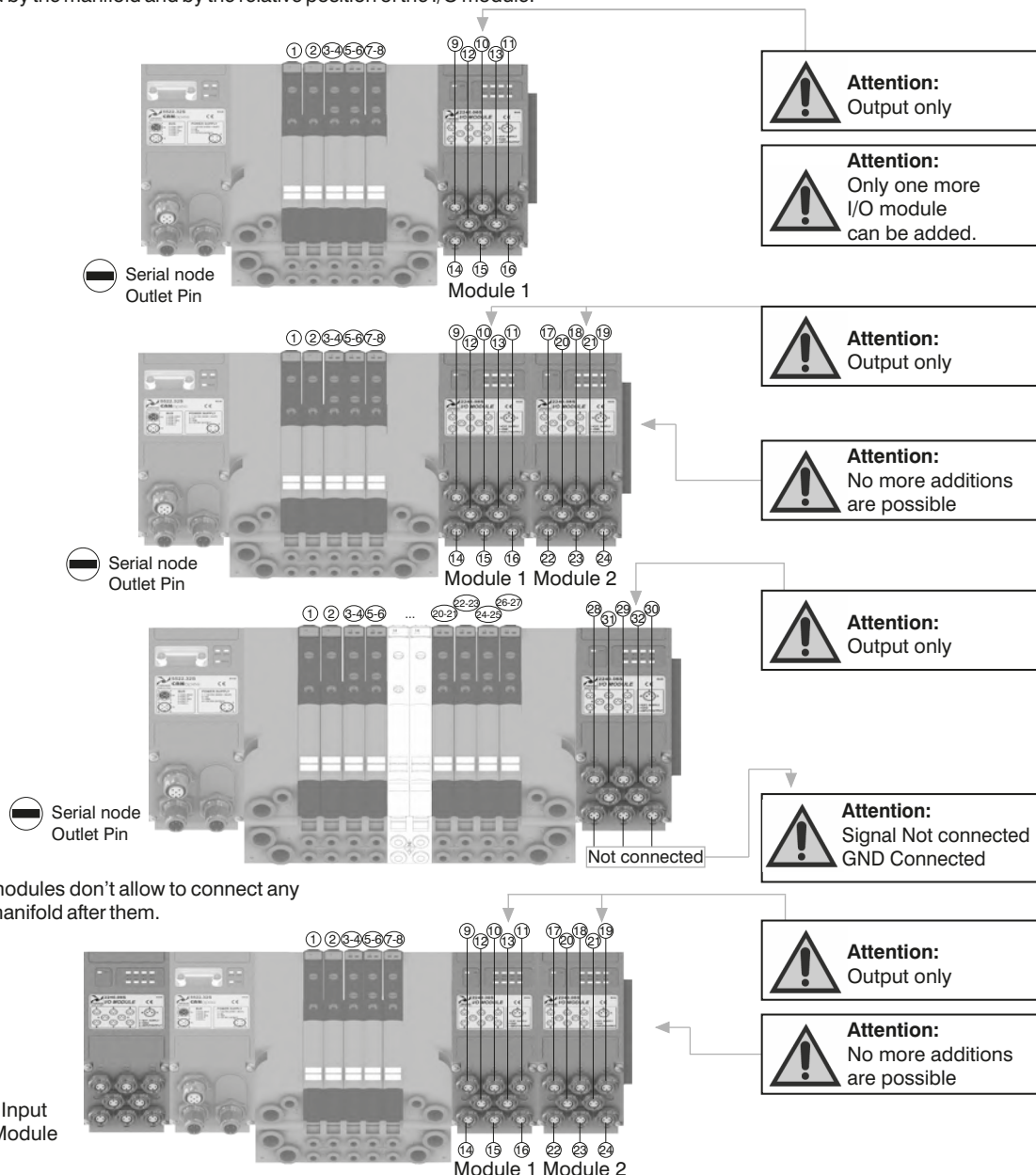
### B) Control via fieldbus:

With this kind of control the I/O module can only be used as an output. Pin 1 of each connector is not connected. The output voltage will be 0.7V lower than that applied to Pin 4 of the connector.

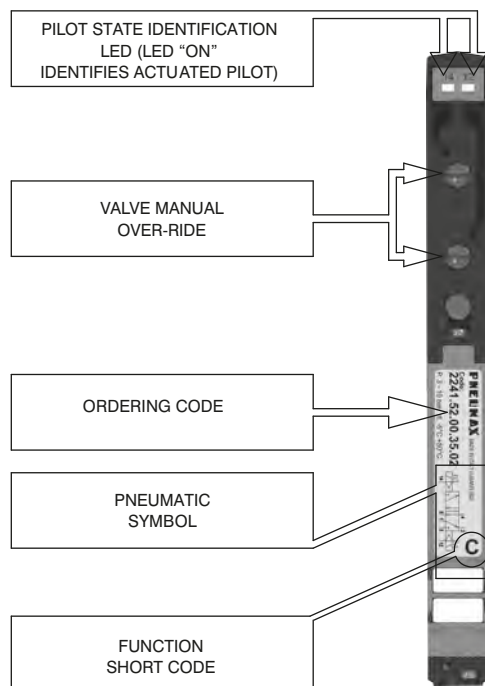
The maximum output current for each output is 100mA. The correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.



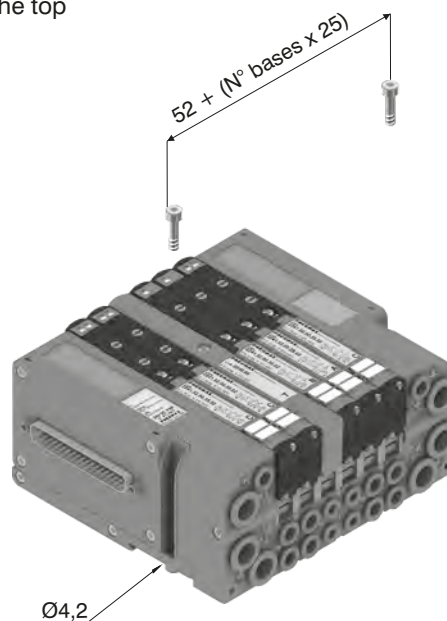
PIN	DESCRIPTION
1	NOT CONNECTED
4	SIGNAL
3	GND



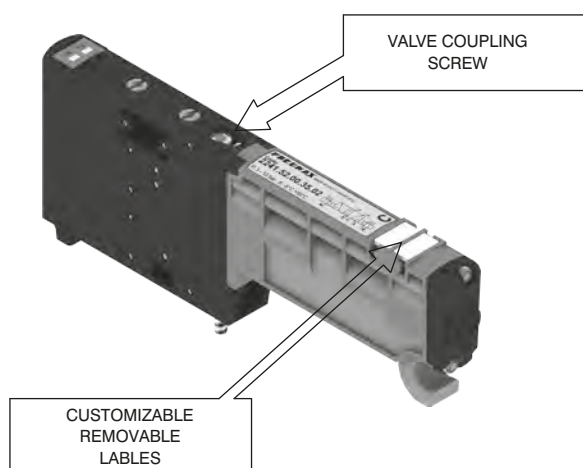
**Please note:** I/O modules don't allow to connect any additional valves manifold after them.



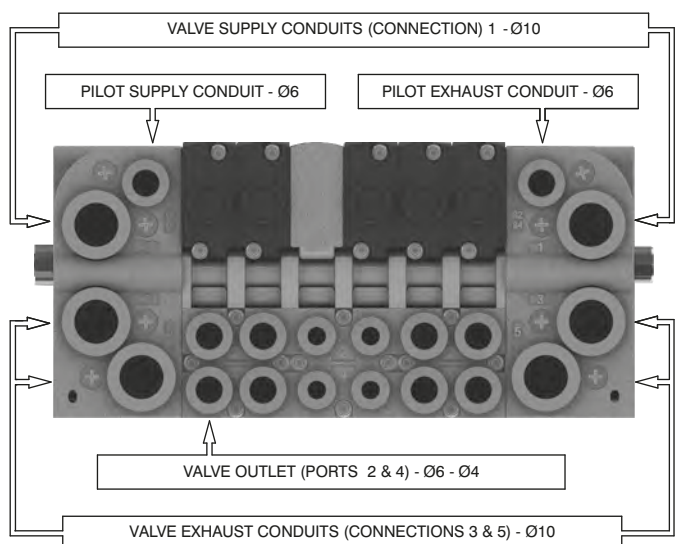
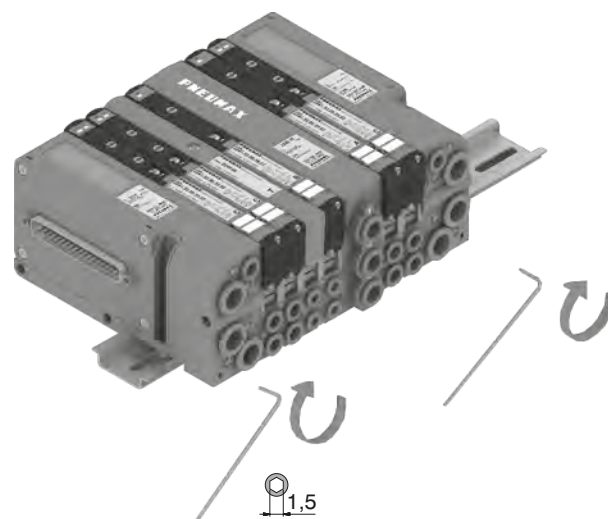
From the top



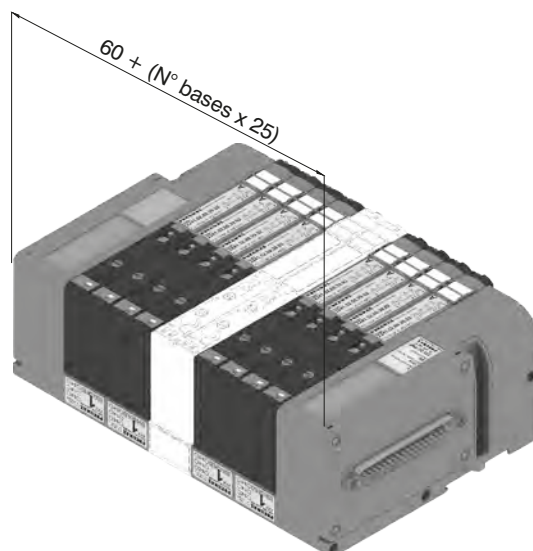
AIR DISTRIBUTION



DIN rail fixing

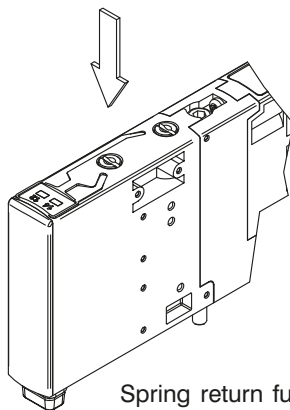
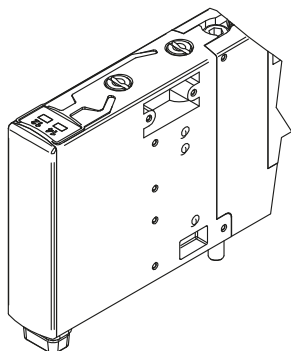


Maximum possible size  
According to valves used

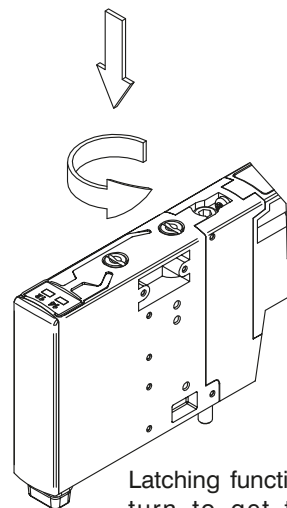




## Manual override actuation



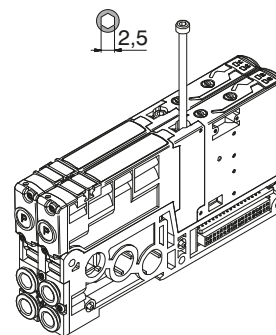
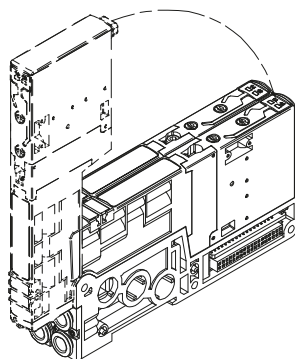
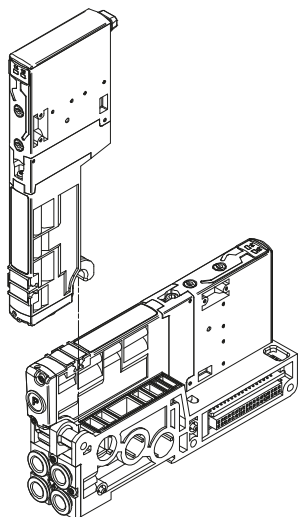
Spring return function: push to actuate (when released it moves back to the original position).



Latching function: push and turn to get the latching function

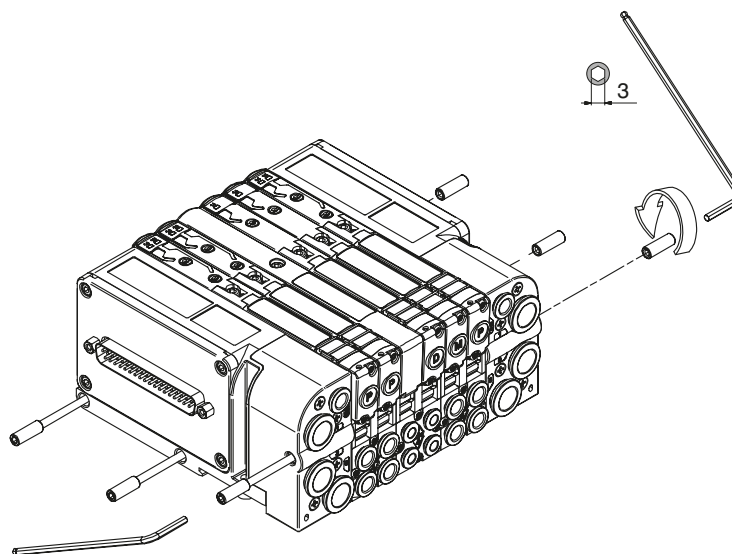
NOTE : It is strongly suggested to replace the original position after using

## Valve Installation



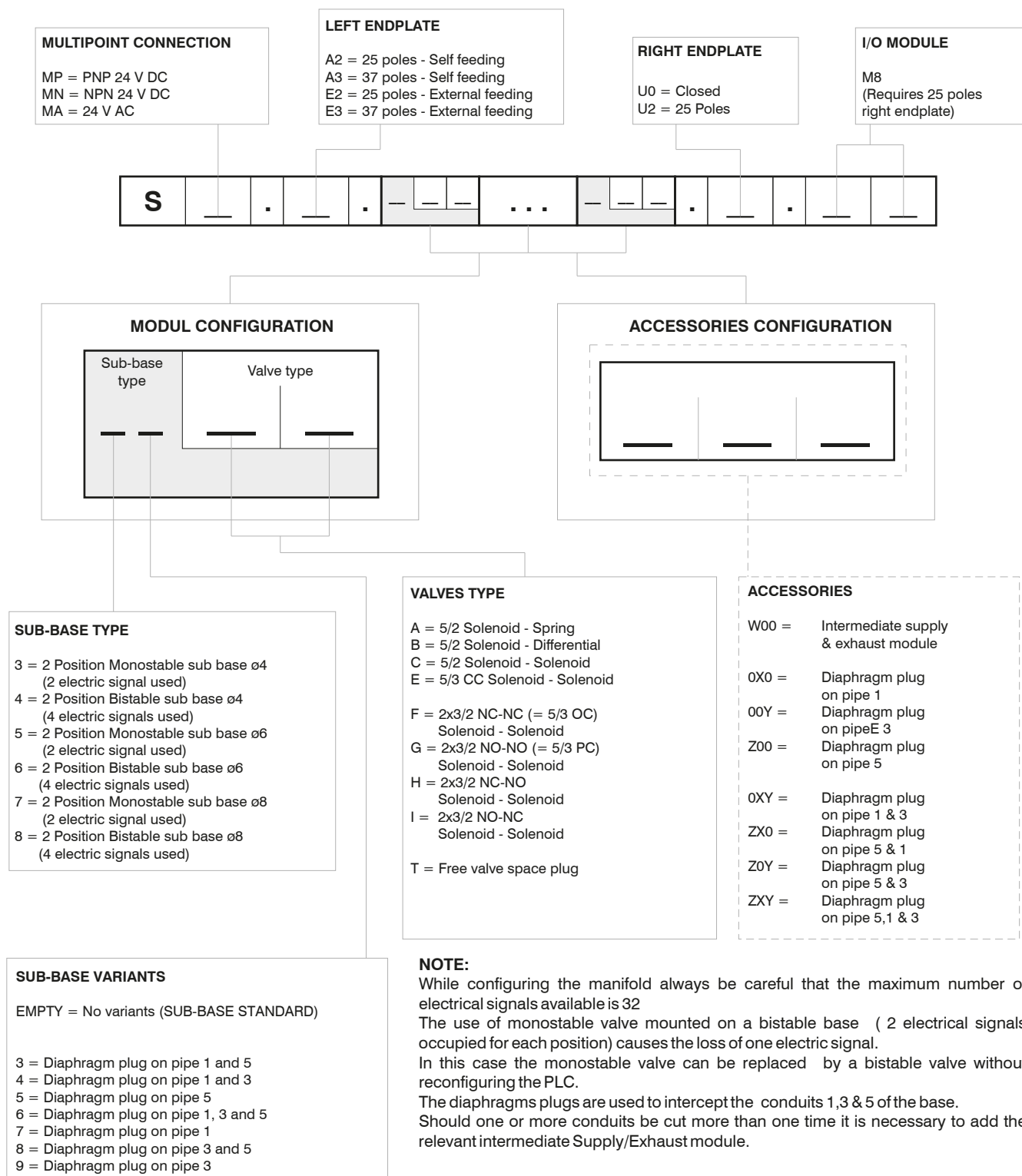
Torque moment (Nm) : 0,8

## Manifold assembly




Min. torque moment : 2 Nm  
Max. torque moment: 2,5 Nm

## Manifold Layout configuration



Series 2200 OPTYMA-S solenoid valve manifolds managed by multipoint connection are  
"well tried components"

	Well-tryed component	<ul style="list-style-type: none"> <li>- The product is a well-tryed product for a safety-related application according to ISO 13849-1.</li> <li>- The relevant basic and well-tryed safety principles according ISO 13849-2 for this product are fulfilled.</li> <li>- The suitability of the product for a precise application must be verified and confirmed by the user.</li> </ul>
B <sub>10d</sub>	50.000.000	

## General:

CANopen® module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-S 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

CANopen® module recognizes automatically the presence of the Input modules on power on.

Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining 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 Recommendation 303-1 (V. 1.3 : 30 December 2004).

Transmission speed can be set by 3 dip-switches.

The node address can be set by 6 dip-switches using BCD numeration.

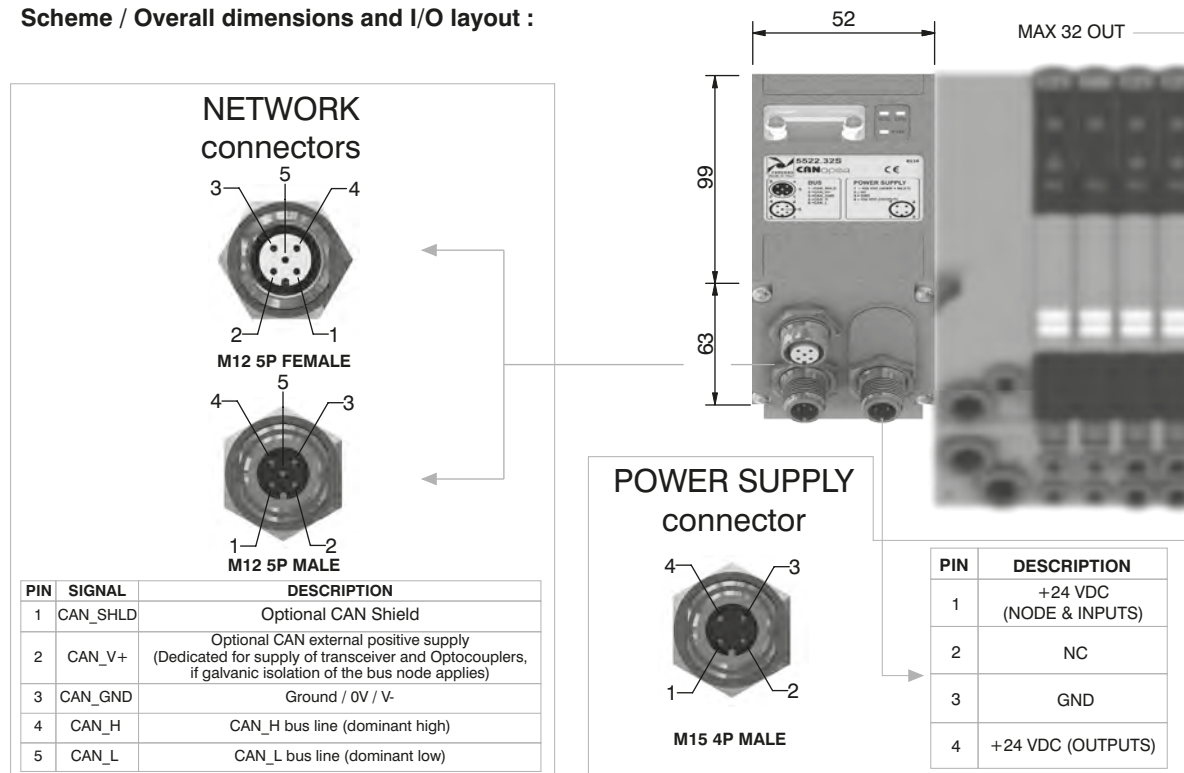
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5522.32S**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

Power supply	Model	5522.32S
	Specifications	CiA Draft Standard Proposal 301 V 4.10 (15 August 2006)
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
Outputs	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	30 mA
	Power supply diagnosis	Green LED PWR
	PNP equivalent outputs	+24 VDC +/- 10%
Network	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 5P connectors male-female Type A (IEC 60947-5-2)
	Baud rate	10 - 20 - 50 - 125 - 250 - 500 - 800 - 1000 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



**General:**

DeviceNet module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-S 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

DeviceNet module recognizes automatically the presence of the Input modules on power on.

Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

Node power supply is made by a M12 4P male circular connector.

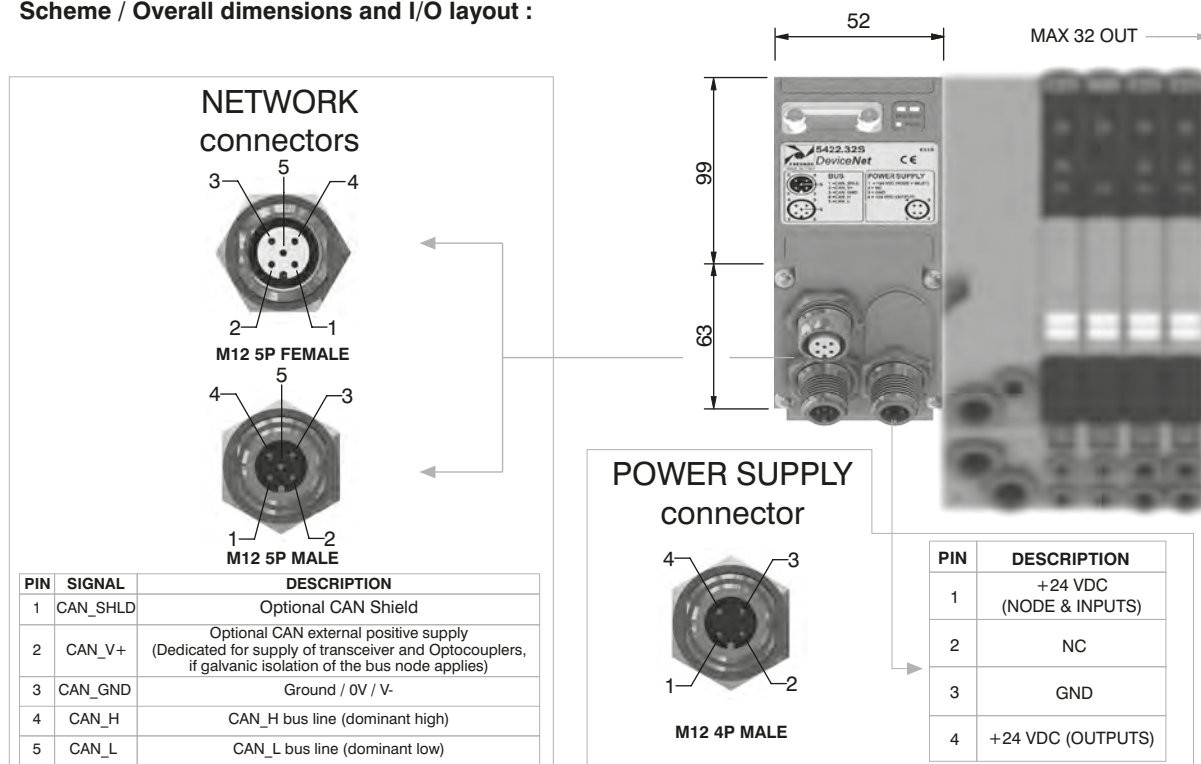
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining powered the node and inputs, if present.

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****5422.32S**1  
AIR DISTRIBUTION**Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5422.32S
	Specifications	DeviceNet Specifications Volume I, release 2.0.
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
<b>Outputs</b>	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	30 mA
	Power supply diagnosis	Green LED PWR
	PNP equivalent outputs	+24 VDC +/- 10%
<b>Network</b>	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 5P connectors male-female Type A (IEC 60947-5-2)
	Baud rate	125 - 250 - 500 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General:

PROFIBUS DP module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-S 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

PROFIBUS DP 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 32.

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 maintaining 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.

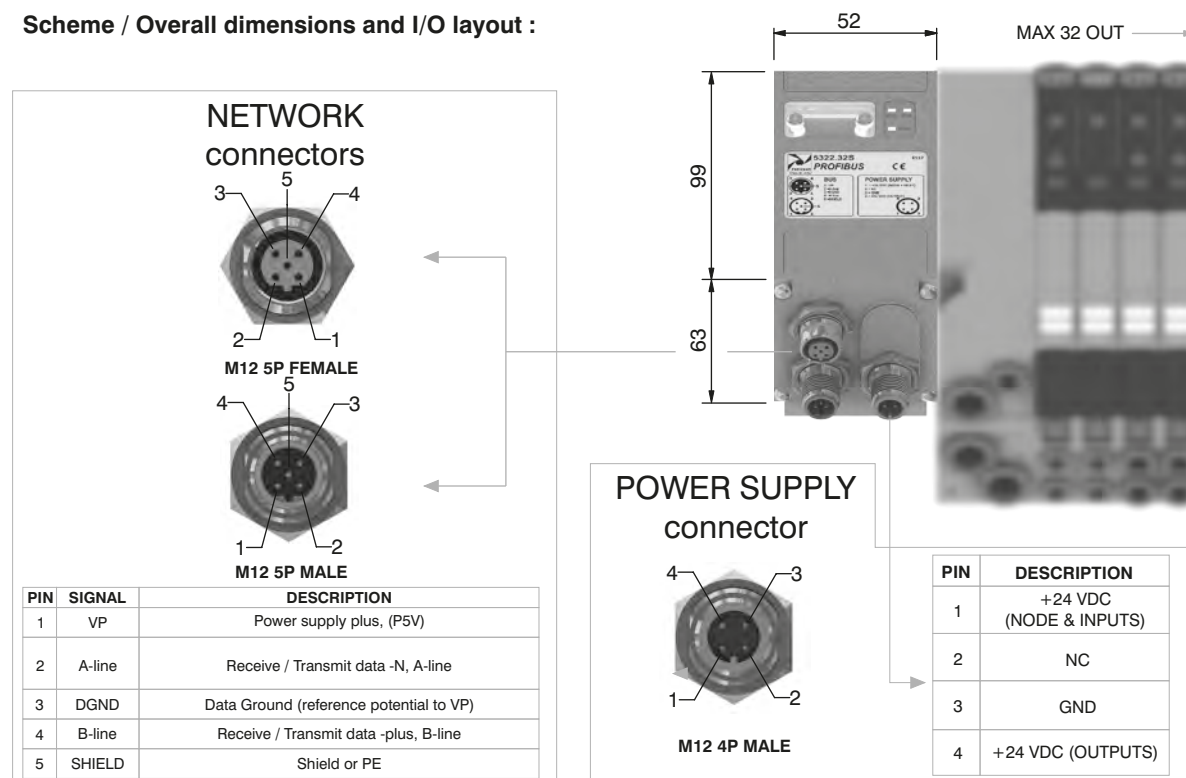
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5322.32S**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5322.32S
	Specifications	PROFIBUS DP
Power supply	Case	Reinforced technopolymer
	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 each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 5P male-female connectors Type B
	Baud rate	9,6 - 19,2 - 93,75 - 187,5 - 500 - 1500 - 3000 - 6000 - 12000 Kbit/s
	Addresses, possible numbers	From 1 to 99
	Max nodes in net	100 (slave + master)
	Bus maximum recommended length	100 m at 12 Mbit/s - 1200 m at 9,6 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

**General:**

EtherCAT® module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-S 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

The EtherCAT® module, regardless the number of Input module connected, reports to have connected 4 Input modules.

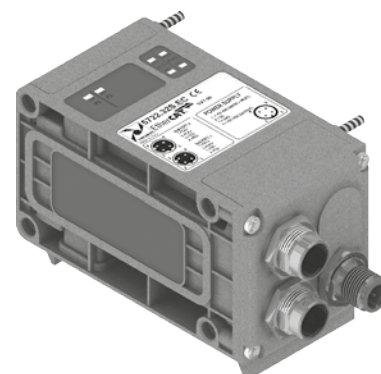
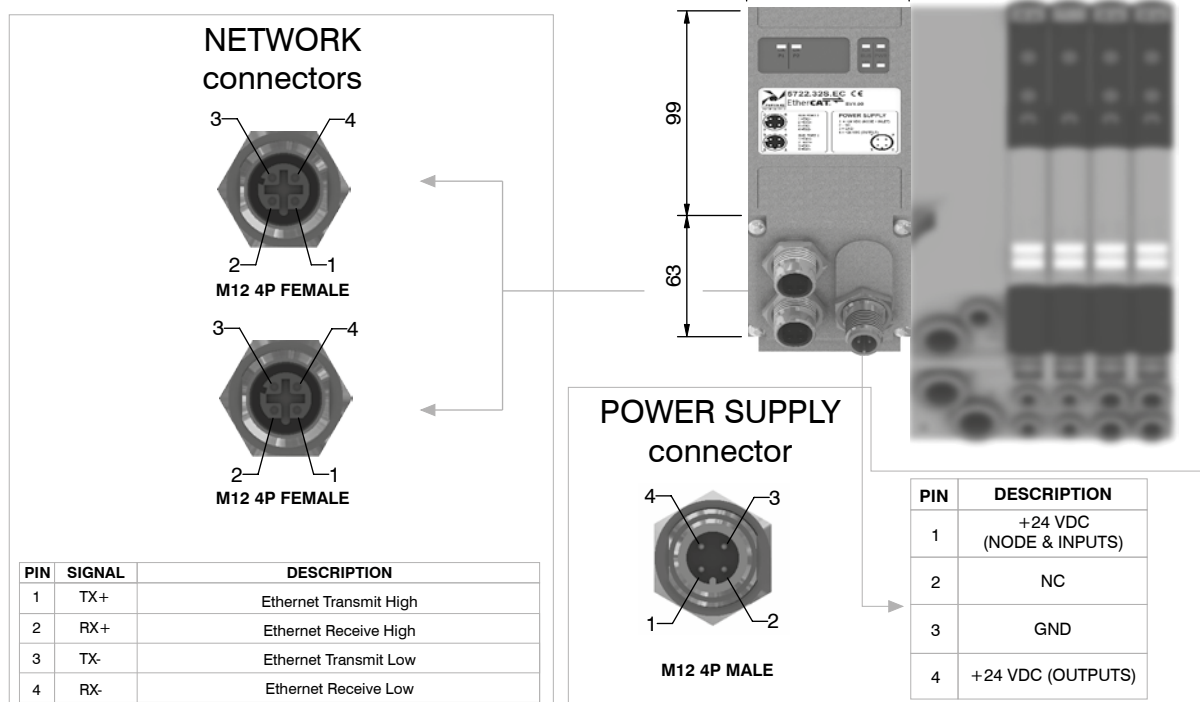
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

Connection to Bus EtherCAT® is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

The node address is assigned during configuration.

**Ordering code****5722.32S.EC.A**1  
AIR DISTRIBUTION**Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5722.32S.EC.A
	Specifications	EtherCAT® Specifications ETG.1000 series
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
<b>Outputs</b>	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
<b>Network</b>	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	From 1 to 65535
	Max nodes in net	65536 (Master + Slave)
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General:

PROFINET IO RT module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-S 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

The PROFINET IO RT module, regardless the number of Input module connected, reports to have connected 8 Input modules.

Regardless of the number of Input modules connected, the managable solenoid valves are 32.

Node power supply is made by a M12 4P male circular connector.

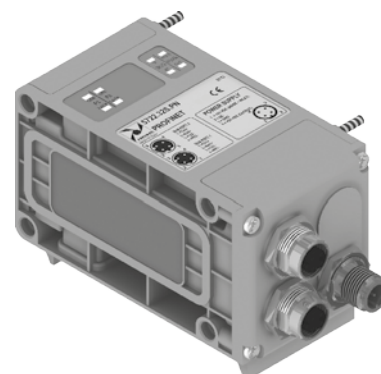
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining powered the node and inputs, if present.

Connection to Bus PROFINET IO RT is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

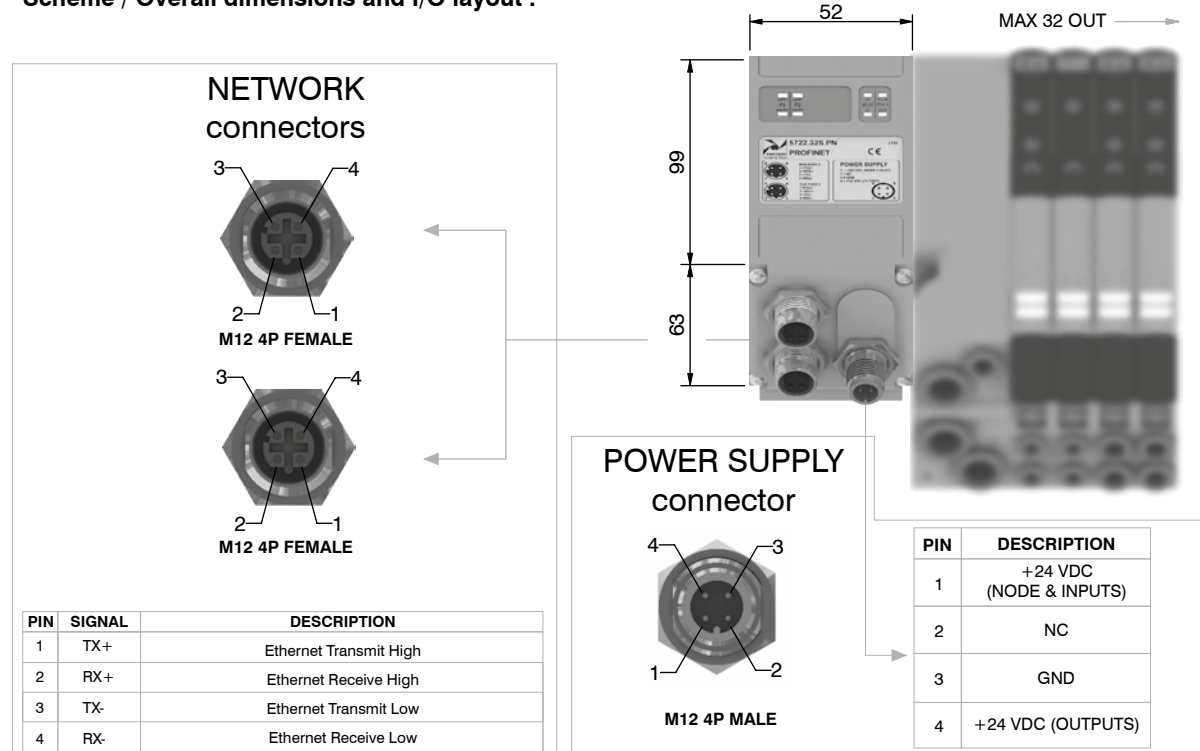
The node address is assigned during configuration.

## Ordering code

**5722.32S.PN.A**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5722.32S.PN.A
	Specifications	PROFINET IO RT
	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) 60 mA Power supply diagnosis Green LED PWR / Green LED OUT
	Outputs	PNP equivalent outputs +24 VDC +/- 10% Maximum current for each output 100 mA Maximum output number 32 Max output simultaneously actuated 32
	Network	Network connectors 2 M12 4P female connectors Type D (IEC 61076-2-101) Baud rate 100 Mbit/s Max nodes in net As an Ethernet Network Maximum distance between 2 nodes 100 m Bus diagnosis 2 red LEDs for status + 4 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



**General:**

EtherNet/IP module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-S 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

The EtherNet/IP module, regardless the number of Input module connected, reports to have connected 8 Input modules.

Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

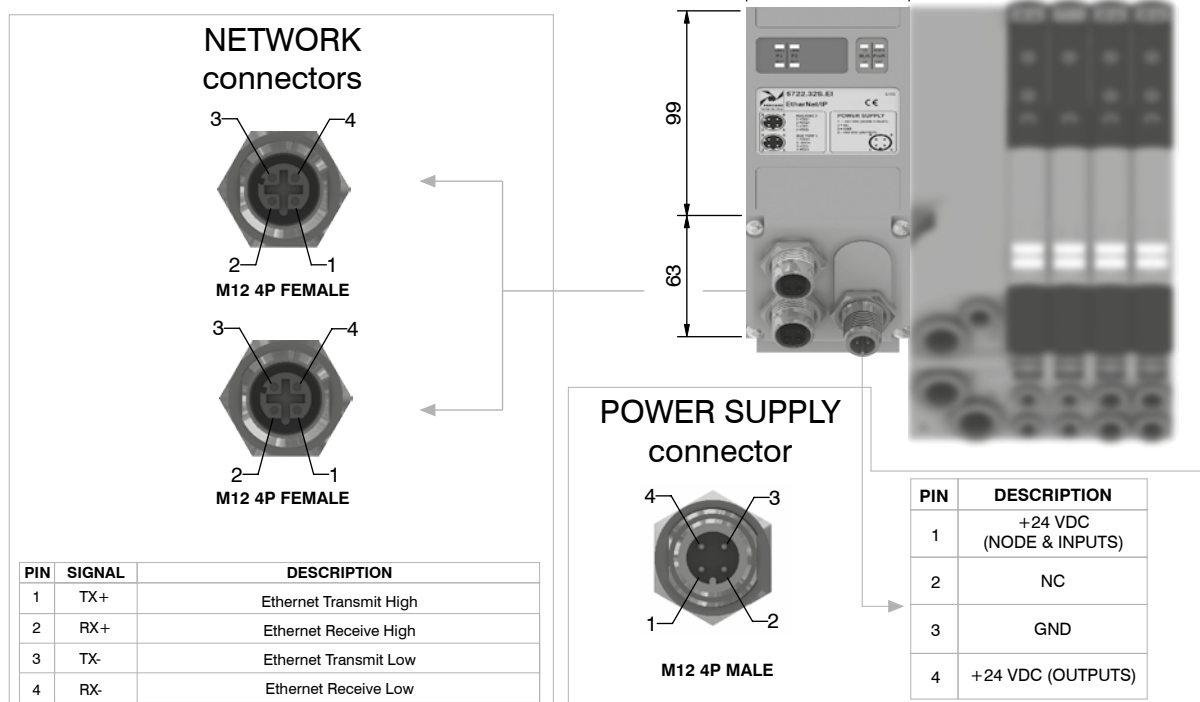
Connection to Bus EtherNet/IP is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

The node address is assigned during configuration.

**Ordering code****5722.32S.EI.A**

1

AIR DISTRIBUTION

**Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5722.32S.EI.A
	Specifications	The EtherNet/IP Specification
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
<b>Outputs</b>	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
<b>Network</b>	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	2 bi-colors LEDs green/red for status + 4 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

### General:

IO-Link module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
 Optyma-S 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.  
 Regardless of the number of Input modules connected, the manageable solenoid valves are 32.  
 Valve power supply will be provided through an external M12, 5 poles, A type connector, directly through the communication connector for Class B port option.  
 IO-Link module support the IO-Link communications speed COM2.  
 IODD configuration files will be provided by Pneumax.

### Ordering code

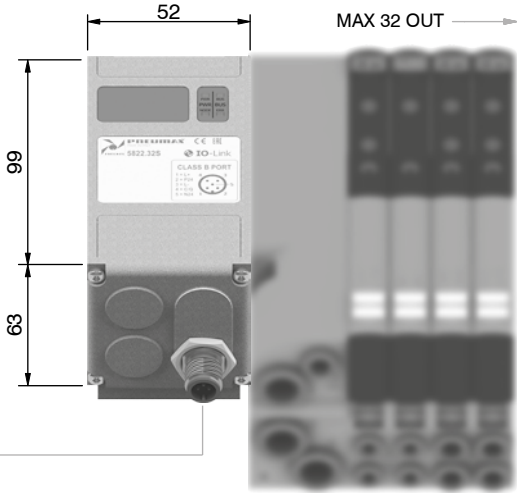
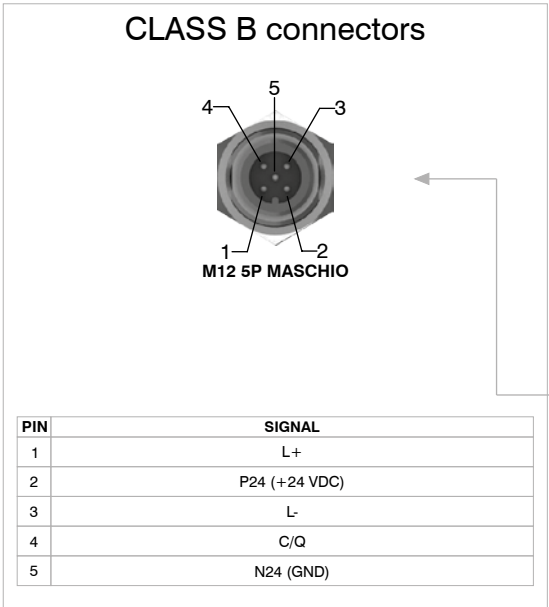
5822.32S



1

AIR DISTRIBUTION

### Scheme / Overall dimensions and I/O layout :



### Technical characteristics

Outputs	Specifications	IO-Link Specification v1.1
	Case	Reinforced technopolymer
	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
Network	Max output simultaneously actuated	32
	Network connectors	Class B ports
	Communication speed	COM 2
	Maximum distance from Master	20 m
	Vendor ID/Device ID	1257 (hex 0x04E9) / 5800 (hex 0x16A8)
	Bus diagnosis	1 green and 1 red LED for status
	Configuration file IODD	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General:

CC-Link IE Field Basic module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-S 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

The CC-Link IE Field Basic module, regardless the number of Input module connected, reports to have connected 8 Input modules.

Regardless of the number of Input modules connected, the managable solenoid valves are 32.

Node power supply is made by a M12 4P male circular connector.

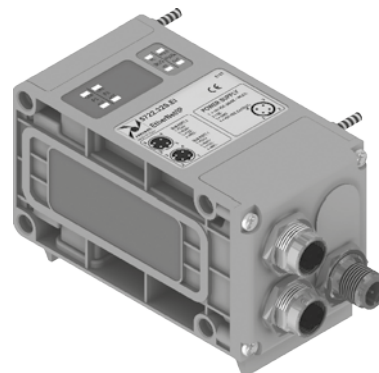
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining powered the node and inputs, if present.

Connection to Bus CC-Link IE Field Basic is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

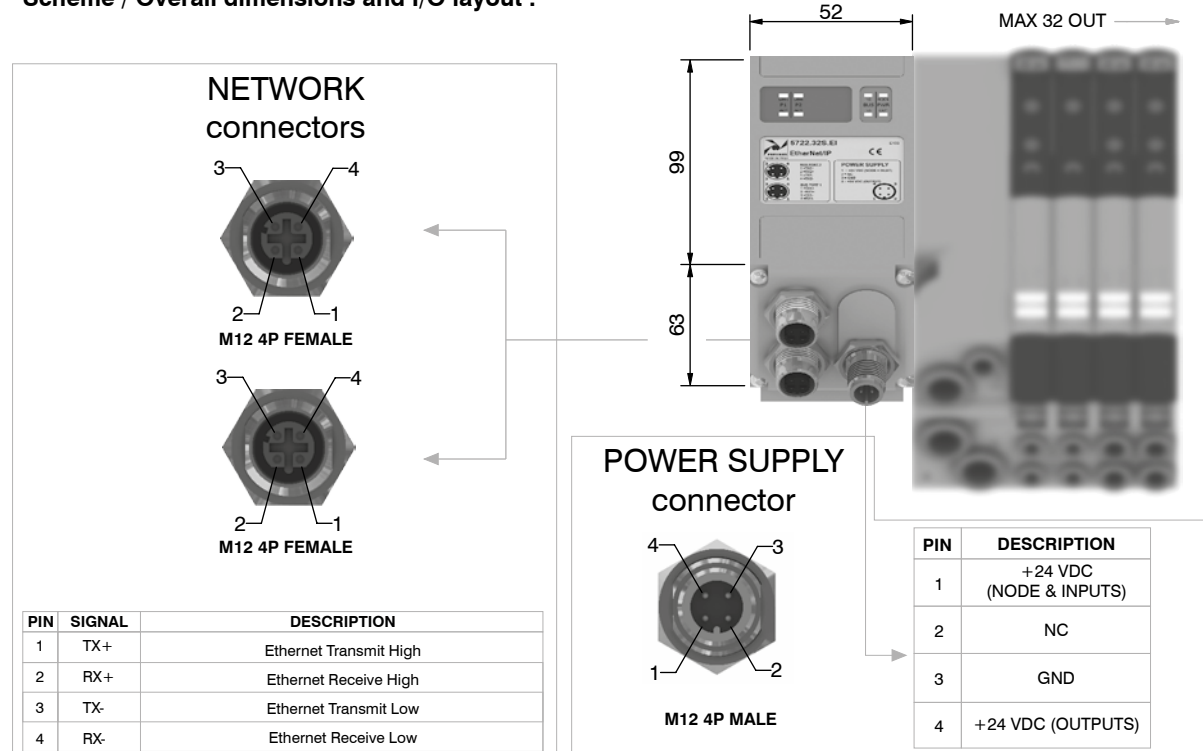
The node address is assigned during configuration.

## Ordering code

5722.32S.CL.A



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5722.32S.CL.A
	Specifications	CC-Link IE Field Basic Specification
	Case	Reinforced technopolymer
	Power supply	Power supply connection Power supply voltage Node consumption (without inputs) Power supply diagnosis
	Outputs	PNP equivalent outputs Maximum current for each output Maximum output number Max output simultaneously actuated
	Network	Network connectors Baud rate Max nodes in net Maximum distance between 2 nodes Bus diagnosis
		Configuration file IP protection grade Temperature range



## General:

Modules have 8 connectors M8 3P female.

The Inputs are PNP equivalent 24 VDC  $\pm 10\%$ .

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 300 mA.

Each module includes a 300 mA self-mending fuse. If a short circuit or a overcharge (overall current  $>300\text{mA}$ ) 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 lights up indicating the ON state and the node will re-start to operate.

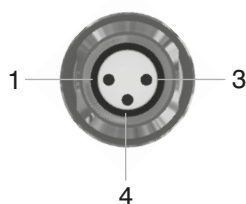
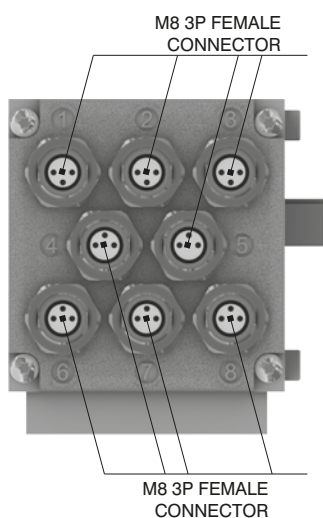
The maximum number of Input modules supported is 4.

## Ordering code

**5222.08S**

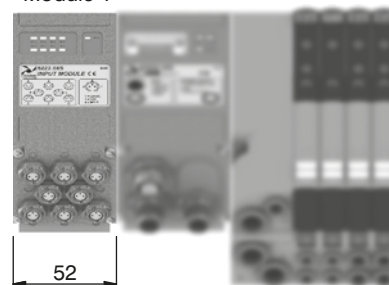


## Scheme / Overall dimensions and I/O layout :

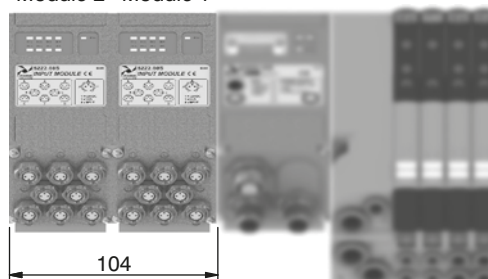


PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

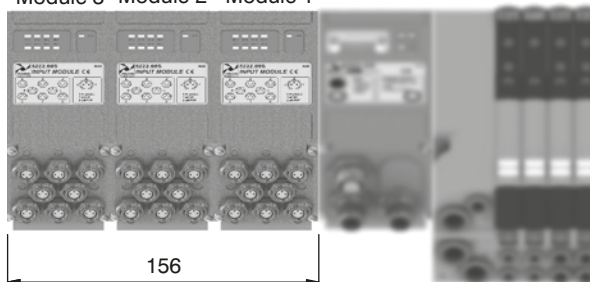
Module 1



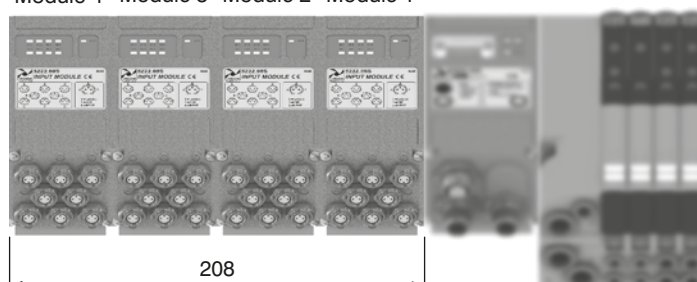
Module 2 Module 1



Module 3 Module 2 Module 1



Module 4 Module 3 Module 2 Module 1



Socket for Power Supply  
STRAIGHT CONNECTOR  
M12A 4P FEMALE

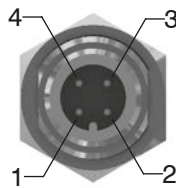
Ordering code

5312A.F04.00



## POWER SUPPLY connector

Upper view  
Slave connector

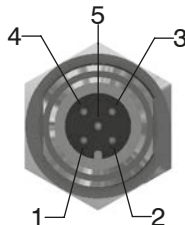


PIN	DESCRIPTION
1	+24 VDC Node
2	NC
3	GND
4	+24 VDC Outputs

Socket for Bus CANopen®/DeviceNet  
STRAIGHT CONNECTOR  
M12A 5P FEMALE

Ordering code

5312A.F05.00



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

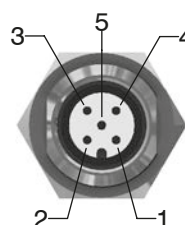
Upper view  
Slave connector

## NETWORK connectors

Plug for Bus CANopen®/DeviceNet  
STRAIGHT CONNECTOR  
M12A 5P MALE

Ordering code

5312A.M05.00



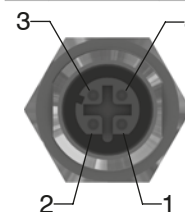
Plug for Bus EtherCAT®,  
PROFINET IO RT  
and EtherNet/IP  
STRAIGHT CONNECTOR M12D 4P MALE

Ordering code

5312D.M04.00



PIN	SIGNAL	DESCRIPTION
1	TX+	Ethernet Transmit High
2	RX+	Ethernet Receive High
3	TX-	Ethernet Transmit Low
4	RX-	Ethernet Receive Low

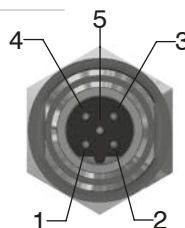


Upper view  
Slave connector

Socket for Bus PROFIBUS DP  
STRAIGHT CONNECTOR  
M12B 5P FEMALE

Ordering code

5312B.F05.00



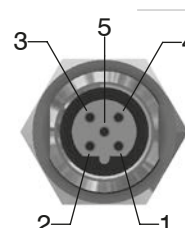
PIN	DESCRIPTION
1	Power Supply
2	A-line
3	DGND
4	B-line
5	SHIELD

Upper view  
Slave connector

Plug for Bus PROFIBUS DP  
STRAIGHT CONNECTOR  
M12B 5P MALE

Ordering code

5312B.M05.00



Plug for Input module  
STRAIGHT CONNECTOR  
M8 3P MALE

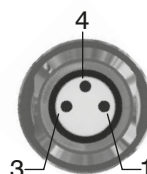
Ordering code

5308A.M03.00



## INPUT connectors

Upper view  
Slave connector



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

M12 plug

Ordering code

5300.T12



## Plugs

M8 plug

Ordering code

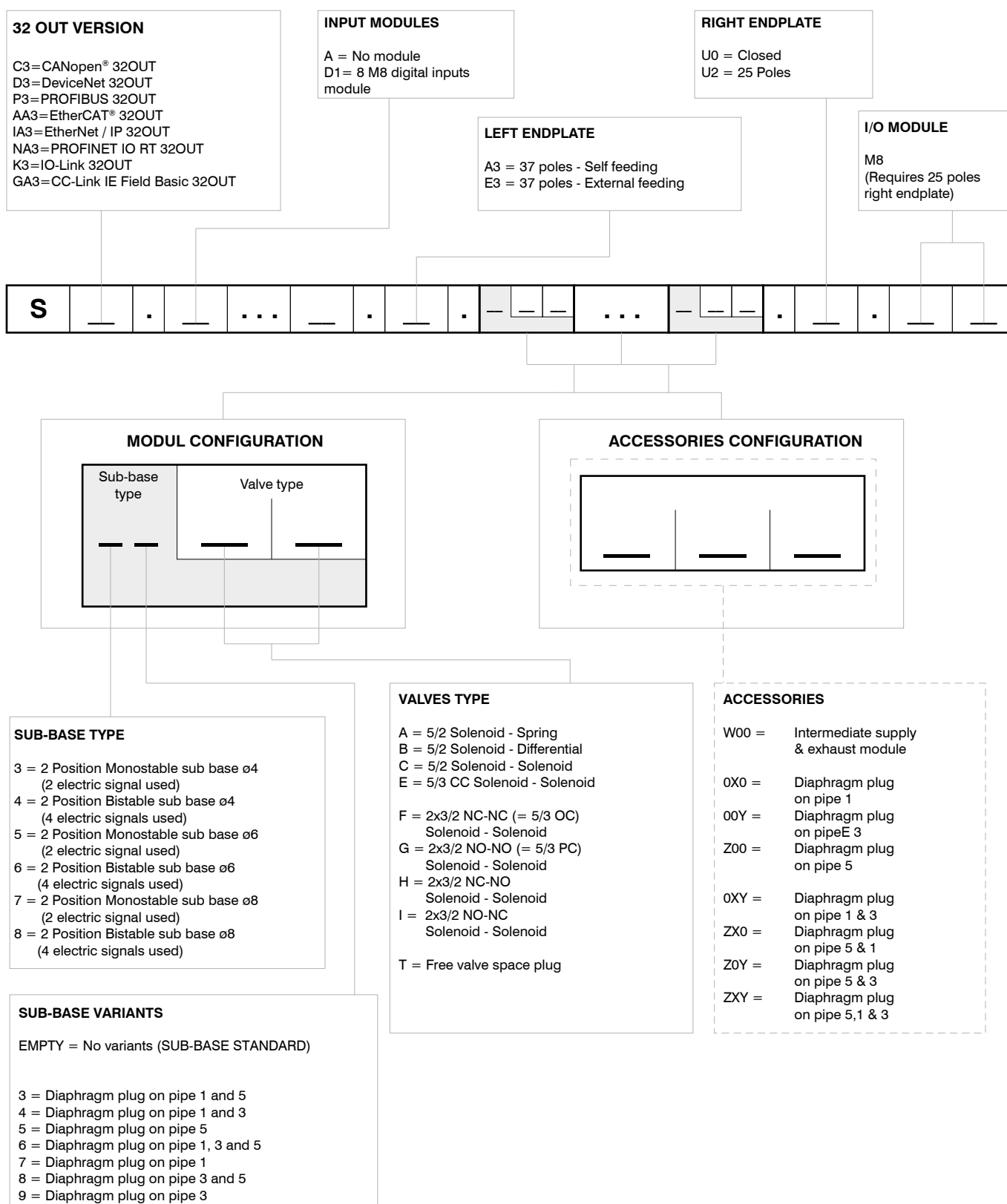
5300.T08



Trademarks: EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

## Manifold Layout configuration with serial systems

1  
AIR DISTRIBUTION



### NOTE:

While configuring the manifold always be careful that the maximum number of electrical signals available is 32

The use of monostable valve mounted on a bistable base (2 electric signals occupied for each position) causes the loss of one electric signal.

In this case the monostable valve can be replaced by a bistable valve without reconfiguring the PLC.

The diaphragms plugs are used to intercept the conduits 1,3 & 5 of the base.

Should one or more conduits be cut more than one time it is necessary to add the relevant intermediate Supply/Exhaust module.

## Series 2200 "Optyma-Sc"



Optyma solenoid valves series comes completed by "Compact" version, useful when a limited number of solenoid valves is needed without managing input and output signals.

Standard base blocks provide 4 or 6 solenoid valves positions. Standard base blocks can be individually sold even without solenoid valves to allow maximum configuration flexibility. Solenoid valves can be chosen from whole Optyma-S range.

Manifolds made in this way allow great room and weight saving against correspondent pneumatic group from Optyma-S series.

- Flow rate: up to 550[Nl/min], using the modular base with Ø8 quick fitting tube.
- Modular base available with Ø4, Ø6, Ø8 quick fitting tube.
- The solenoid pilots are low consumption and fitted on the same side of the valve.
- Mono and bistable valves have the same dimension.
- Easy and fast assembly on the sub base thanks to the "one screw" mounting solution.
- Possibility to replace a valve without the need of disconnecting the pneumatic pipes.
- Electrical and pneumatic connections positioned on the same side.
- Possibility to operate with different pressures and vacuum.
- 4 or 6 electric signals management (two signals per position, independently of the mounted solenoid valve).
- The electrical connection is achieved thanks to a 9 or 15 poles connector.
- The protection grade is IP65 directly integrated in the manifold components.

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

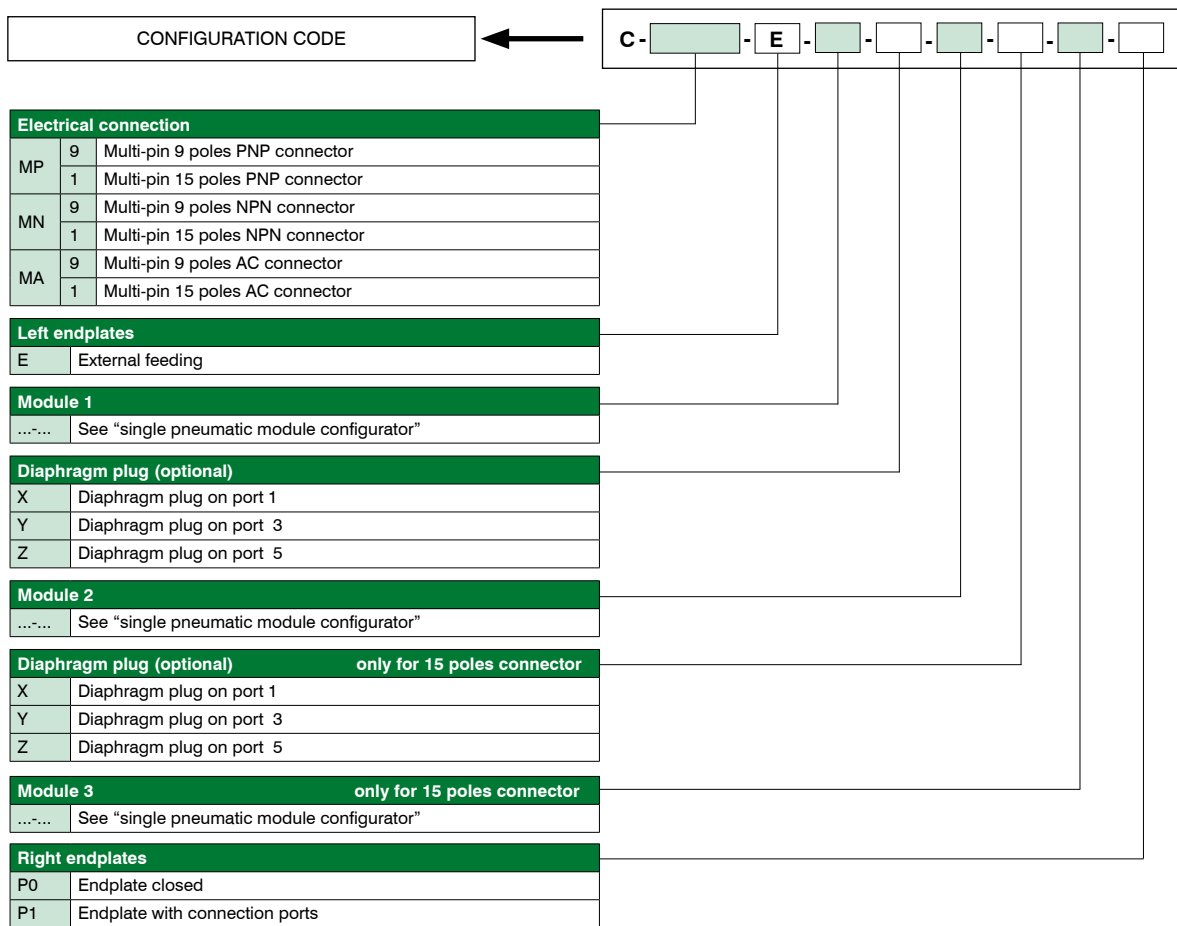
### Construction characteristics

Body	Technopolymer
Seals	NBR
Piston seals	NBR
Springs	Stainless Steel
Operators	Technopolymer
Pistons	Technopolymer
Spools	Stainless Steel

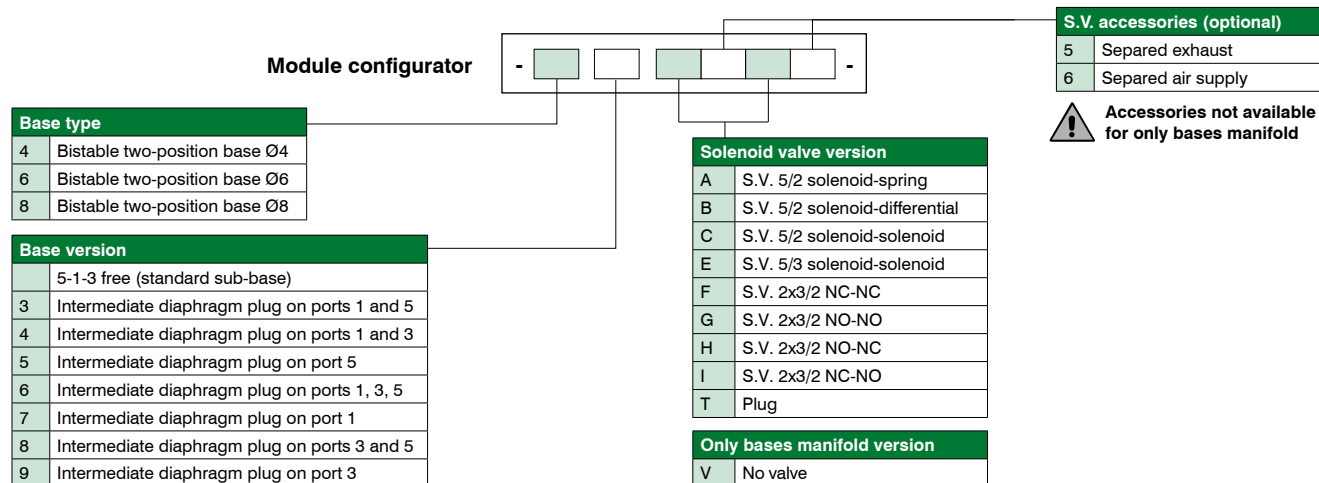
### Operational characteristics

Supply voltage	24V DC $\pm 10\%$
Pilot consumption	1,3W nominal in energy saving mode
Pilot working pressure (12-14)	from 2,5 to 7 bar max.
Valve working pressure [1]	from 0 to 10 bar max.
Operating temperature	from -5°C to +50°C
Protection degree	IP40
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous

### Rules and configuration scheme



### Single pneumatic module configurator



**It's possible to order an only base manifold by select the field V as described.  
This selection MUST be done for every place into the manifold.  
It's NOT possible to configure manifolds with positions both filled with S.V. and free.**

### Configurable on Cadenas platform



**CADENAS**

**Note:**

When composing the configuration, always bear in mind that the maximum number of electrical signals available is:

- 8 for multi-pin 9 poles connector (MP9)
- 12 for multi-pin 15 poles connector (MP1)

Consider that every base uses 4 signals and the number of available signals depends on the electrical connection type, so the number of bases you can use is related to the electrical connection you chose. You can order a "bases only" manifold by selecting "V" option in the solenoid valves dedicated field.

If a monostable valve is used on a bistable type base (2 electrical signals occupied), an electrical signal is lost.

However, this makes it possible to replace the monostable valve with a bistable valve in the same position.

Diaphragm plugs are used to interrupt ports 1, 3 and 5 of the sub-base.

If it is necessary to interrupt more than one port at the same time, put the letters that identify their position in sequence (e.g.: if it is necessary to intercept the ports 3 and 5 you must put the letters YZ).

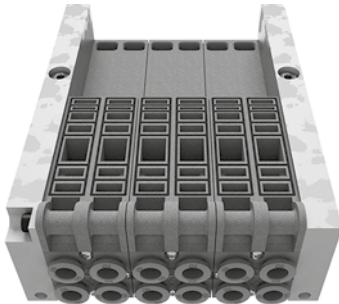


#### Only base configuration example: C-MP1-E-6VV-6VV-6VV-P0

- 15 poles multi-pin connection
- Standard left endplate
- Bistable standard base Ø6 without solenoid valves (6VV)
- Bistable standard base Ø6 without solenoid valves (6VV)
- Bistable standard base Ø6 without solenoid valves (6VV)
- Right Endplates closed



**Attention:** Complete with solenoid valves before use.

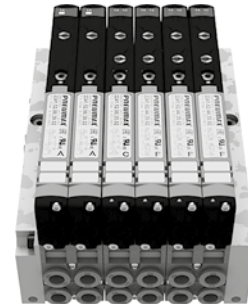


#### Standard configuration example: C-MP1-E-6AA-6CF-6FF-P1

- 15 poles multi-pin connection
- Standard left endplate
- Bistable standard base Ø6 with AA type solenoid valves (6AA)
- Bistable standard base Ø6 with CF type solenoid valves (6CF)
- Bistable standard base Ø6 with FF type solenoid valves (6FF)
- Right endplate with supply and exhaust ports



**Attention:** The signal allocation is 2 signals for every positions, regardless of solenoid valve type.



PILOT STATE IDENTIFICATION LED  
(LED "ON" IDENTIFIES ACTUATED PILOT)

VALVE MANUAL  
OVERRIDE

SUB-BASE  
FIXING SCREW

ORDERING CODE

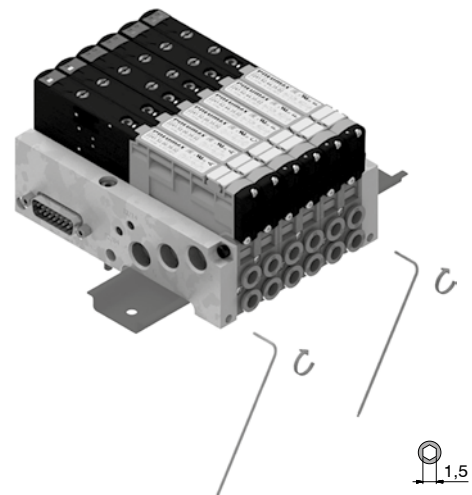
PNEUMATIC SYMBOL

CUSTOMIZABLE  
REMOVABLE  
LABELS

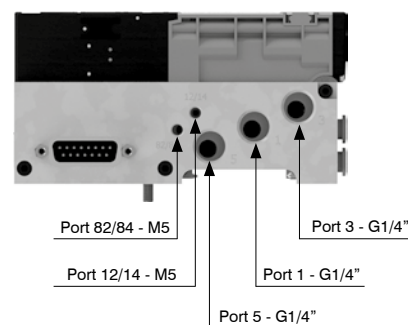
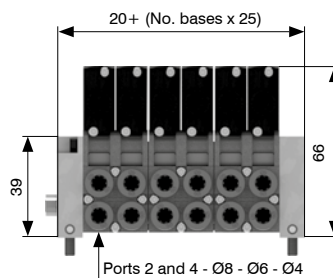
FUNCTION SHORT CODE



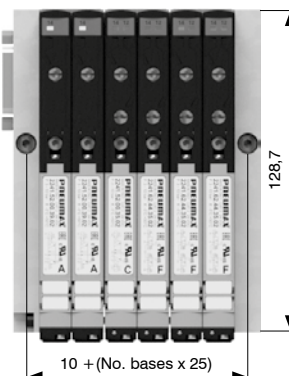
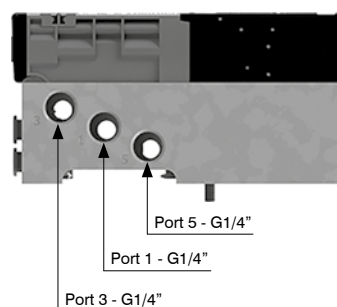
#### DIN rail fixing



#### Supply ports and maximum possible size according to valves used



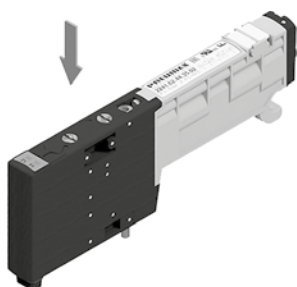
Right endplate with supply  
and exhaust ports (P1)



## Manual override actuation

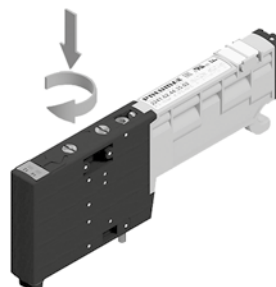
### Instable function:

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



### Bistable function:

Push and turn to get the bistable function



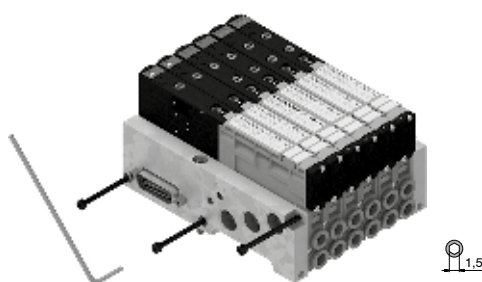
**Note:** we recommend the manual override is returned to it's original position when not in use

## Solenoid valves installation



**Note:** Torque moment 0,8 Nm

## Sub-base assembly



Minimum torque moment: 2 Nm  
Maximum fixing torque for fittings: 2,5 Nm



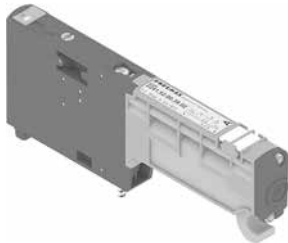
## Solenoid-Spring

Coding: 2241.52.00.39.

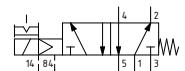
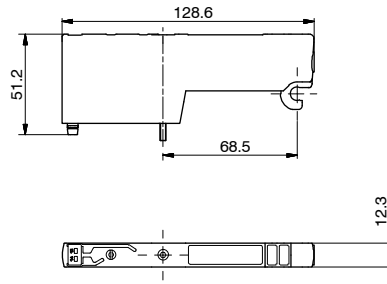
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		2,5 ... 7
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (NI/min)	with modular base, tube ø4	140
	with modular base, tube ø6	300
	with modular base, tube ø8	400
Response time according to ISO 12238, activation time (ms)		15
Response time according to ISO 12238, deactivation time (ms)		20

	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC

SHORT FUNCTION CODE "A"



Weight 67 g



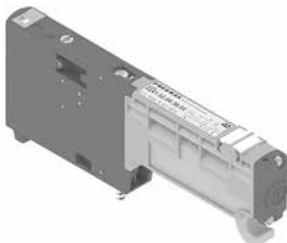
## Solenoid-Differential

Coding: 2241.52.00.36.

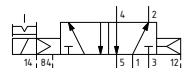
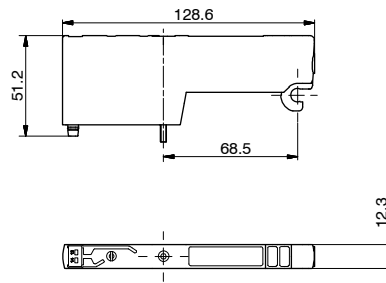
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		2,5 ... 7
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (NI/min)	with modular base, tube ø4	140
	with modular base, tube ø6	400
	with modular base, tube ø8	550
Response time according to ISO 12238, activation time (ms)		20
Response time according to ISO 12238, deactivation time (ms)		25

	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC

SHORT FUNCTION CODE "B"



Weight 67 g



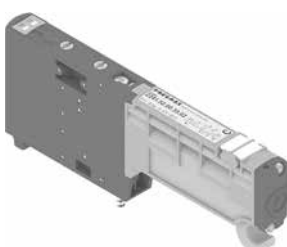
## Solenoid-Solenoid

Coding: 2241.52.00.35.

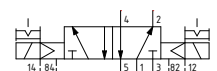
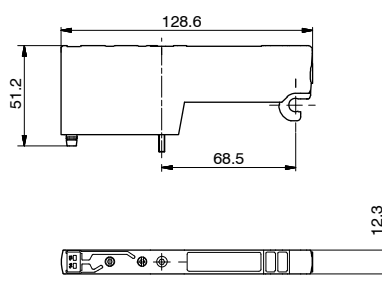
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		2,5 ... 7
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (NI/min)	with modular base, tube ø4	140
	with modular base, tube ø6	400
	with modular base, tube ø8	550
Response time according to ISO 12238, activation time (ms)		10
Response time according to ISO 12238, deactivation time (ms)		10

	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC

SHORT FUNCTION CODE "C"



Weight 67 g



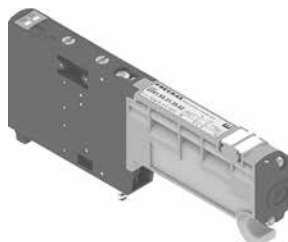
## Solenoid-Solenoid 5/3 (Closed centres)

Coding: 2241.53.31.35.

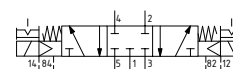
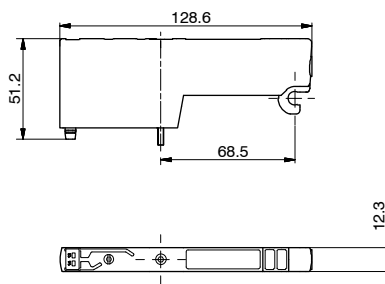
Technical characteristics		
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous	
Working pressure (bar)	From vacuum to 10	
Pilot pressure (bar)	2,5 ... 7	
Temperature °C	-5 ... +50	
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	with modular base, tube ø4	140
	with modular base, tube ø6	300
	with modular base, tube ø8	400
Response time according to ISO 12238, activation time (ms)	15	
Response time according to ISO 12238, deactivation time (ms)	20	

	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC

SHORT FUNCTION CODE "E"



Weight 83 g



## Solenoid-Solenoid 2x3/2

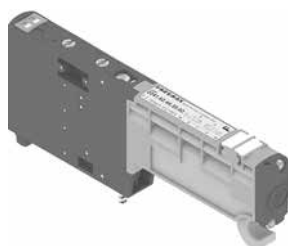
Coding: 2241.62. .35.

Technical characteristics		
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous	
Working pressure (bar)	From vacuum to 10	
Pilot pressure (bar)	$\geq 3 + (0,2 \times \text{inlet pressure})$	
Temperature °C	-5 ... +50	
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	with modular base, tube ø4	140
	with modular base, tube ø6	360
	with modular base, tube ø8	420
Response time according to ISO 12238, activation time (ms)	15	
Response time according to ISO 12238, deactivation time (ms)	25	

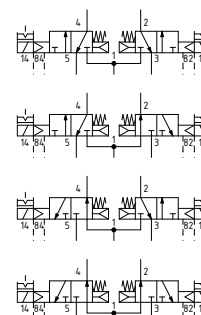
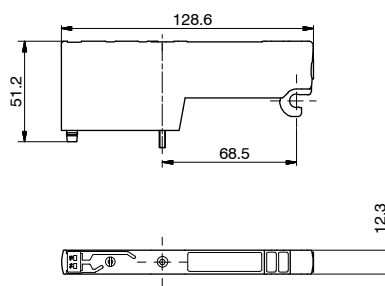
	FUNCTION
	44 = NC-NC (5/3 Open centres)
	45 = NC-NO (normally closed - normally open)
	54 = NO-NC (normally open - normally closed)
	55 = NO-NO (5/3 Pressured centres)
	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC

SHORT FUNCTION CODE:  
NC-NC (5/3 Open centres) = "F"  
N.O. - N.O. (5/3 Pressured centres) = "G"  
N.C. - N.O. = "H"  
N.O. - N.C. = "I"

Example: If inlet pressure is set at 5 bar then pilot pressure must be at least  $P_p = 3 + (0,2 \times 5) = 4$  bar



Weight 75 g



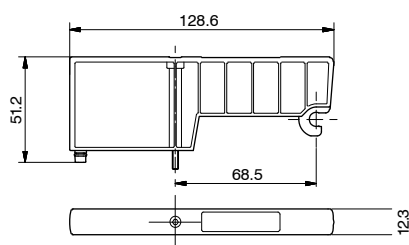
## Closing plate

Coding: 2240.00

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



Weight 30 g



SHORT FUNCTION CODE "T"

Coding: 22C0.V.S

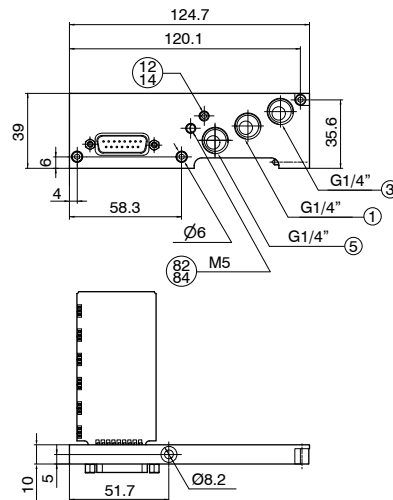
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

V	VERSION
	<b>15</b> = 15 poles multi-pin connection
	<b>09</b> = 9 poles multi-pin connection



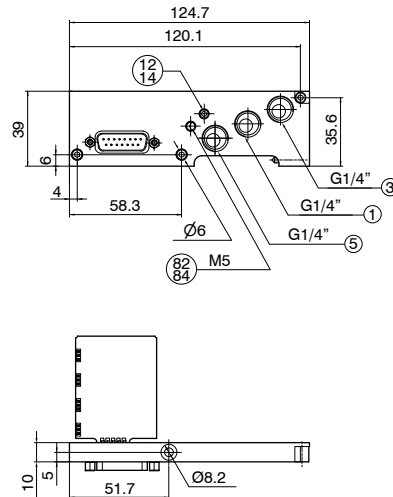
PORT 12/14 SEPARATED FROM PORT 1.  
DO NOT PRESSURIZE PORT 82/84.  
PILOTS EXHAUST.  
Weight 199 g

22C0.15.S



PORT 12/14 SEPARATED FROM PORT 1.  
DO NOT PRESSURIZE PORT 82/84.  
PILOTS EXHAUST.  
Weight 199 g

22C0.09.S



### Right Endplate

**Coding: 22C0.Ⓟ**

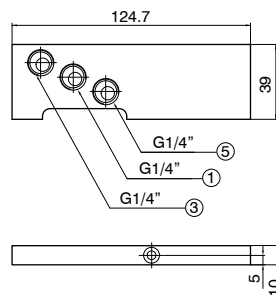
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

	VERSION
●	<b>00</b> = Blind plate
	<b>03</b> = With alimentation/exhaust ports



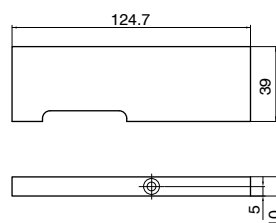
PORT 12/14 SEPARATED FROM PORT 1.  
DO NOT PRESSURIZE PORT 82/84.  
PILOTS EXHAUST.  
Weight 148g

22C0.03



Weight 148g

22C0.00

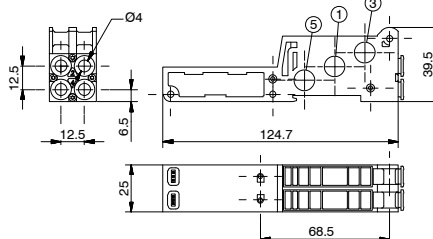


## Modular base (2 places)

Coding: 224**C.F**C

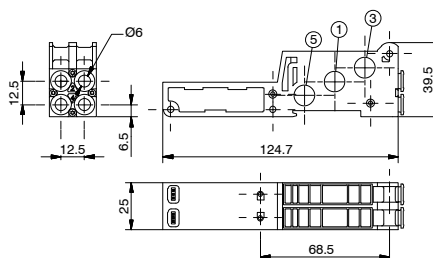
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ... +50

<b>C</b>	TUBE DIAMETER
	4 = Ø4
	6 = Ø6
	8 = Ø8
<b>F</b>	FUNCTION
	01 = Opened ports
	03 = Ports 1-5 separated
	04 = Ports 1-3 separated
	05 = Port 5 separated
	06 = Separated ports
	07 = Port 1 separated
	08 = Ports 3-5 separated
	09 = Port 3 separated



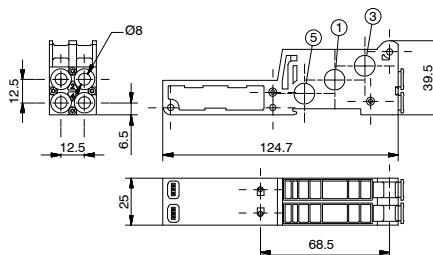
Weight 75 g

2244.**C**



Weight 75 g

2246.**C**



Weight 75 g

2248.**C**

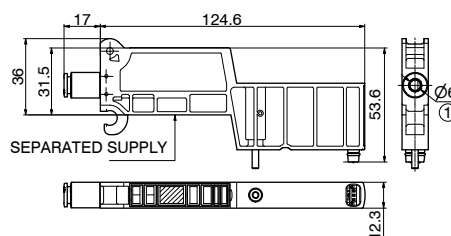
## Individual supply or exhaust module

Coding: 22E0.**V.06**

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 3 ... 7 (piloting 12/14)
Temperature °C	-5 ... +50

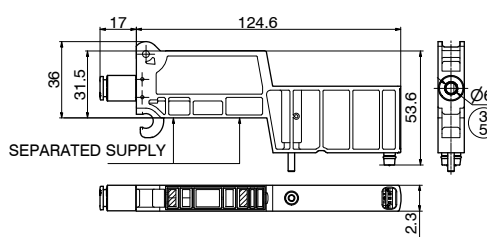
<b>V</b>	VERSION
	01 = Port 1 separated
	35 = Ports 3-5 separated

The flow rate of the solenoid valve will be reduced compared to that shown in the general catalogue



Weight 44 g

22E0.01.06



Weight 44 g

22E0.35.06



► SEP type silencer

Coding: SEP14



Weight 2 g

► Diaphragm plug

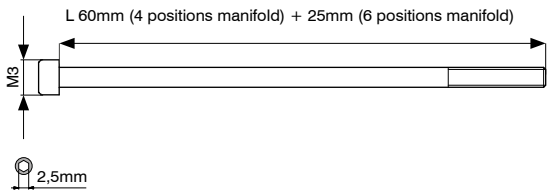
Coding: 2230.17



Weight 1,3 g

► TCEI M3 screw kit

Coding: 22C0.KV.V



The Kit includes 3 pieces

VERSION	
V	04 = L 60mm (4 positions manifold)
	06 = L 60mm (6 positions manifold)

► Cable complete with connector, 9 Poles, IP40

Coding: 2400.09.L.00



CABLE LENGTH	
L	03 = 3 meters
	05 = 5 meters
	10 = 10 meters

► Cable complete with connector, 15 Poles, IP40

Coding: 2400.15.L.00



CABLE LENGTH	
L	03 = 3 meters
	05 = 5 meters
	10 = 10 meters

## Series 2500 "OPTYMA-F"

### General

The solenoid valves base mounted line including electrical connection into the manifold.

Many technical features make the new product interesting:

- Flow rate of 1000 Nl/min
- Low consumption coils placed all in one side of the valve
- Quick mounting of the valve to the base using just one screw
- Quick connection of the bases thanks to 180 degree rotating pins
- Possibility to use different pressures along the manifold (including vacuum)
- IP65 environmental protection
- Electrical connection directly integrated into the base, 32 electrical signals available (can be used to build up a manifold of 32 monostable valves, 16 bistable valves or any combination within that limit).
- The electrical connection is made via 37 pin D-SUB connector.
- It is also available a 25-pole connector that is able to manage a maximum number of 22 electrical signals.

Possibility to integrate with Field Bus modules CANopen®, PROFIBUS DP, DeviceNet, EtherNet/IP, PROFINET IORT/IRT, EtherCAT® and CC-Link IE Field Basic. Possibility to connect input modules, even on the base that does not have the Field Bus module. Large use of technopolymer material reduces the overall weight of the manifold.

**"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

Integrated and optimized electrical connection system.  
IP65 protection degree.  
Only one 19mm size  
Electrical line connections on one side  
Monostable and bistable solenoid valves with the same size dimensions.  
Easy and fast manifold assembly

### Construction characteristics

Body	Technopolymer
Operators	Technopolymer
Spacers	NBR
Spacer	Technopolymer
Spools	Nickel - plated steel / Technopolymer
Springs	AISI 302 stainless steel
Pistons	Technopolymer
Piston seals	NBR

### Functions

SV 5/2 MONOSTABLE SOLENOID-SPRING  
SV 5/2 MONOSTABLE SOLENOID-DIFFERENTIAL  
SV 5/2 BISTABLE SOLENOID-SOLENOID  
SV 5/3 C.C. SOLENOID-SOLENOID  
SV 2x3/2 N.C.-N.C. (=5/3 O.C.) SOLENOID-SOLENOID  
SV 2x3/2 N.O.-N.O. (=5/3 P.C.) SOLENOID-SOLENOID  
SV 2x3/2 N.C.-N.O. SOLENOID-SOLENOID

### Technical characteristics

Voltage	24VDC ±10% PNP (NPN and AC on request)
Pilot consumption	1,3 Watt
Pilot working pressure (12-14)	From 3 to 7 bar max.
Valve working pressure [1]	from vacuum up to 10 bar
Operating temperature	-5°C +50°C
Protection degree	IP65
Life (standard operating conditions)	50000000
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous





## Solenoid valves manifold Series 2500 "OPTYMA-F"

### Solenoid - Spring

Coding: 2531.52.00.39.✓

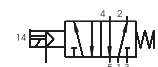
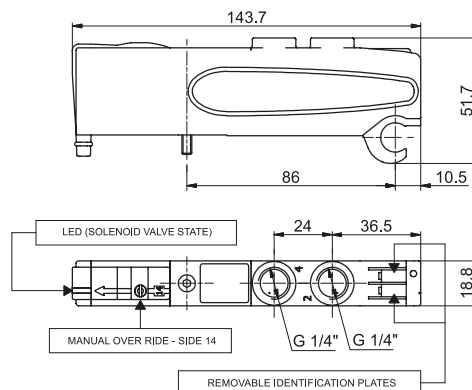
#### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	1000
Response time according to ISO 12238, activation time (ms)	14
Response time according to ISO 12238, deactivation time (ms)	40

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

VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

SHORT FUNCTION CODE "A"  
Weight 123 g



### Solenoid-Differential

Coding: 2531.52.00.36.✓

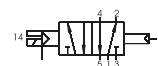
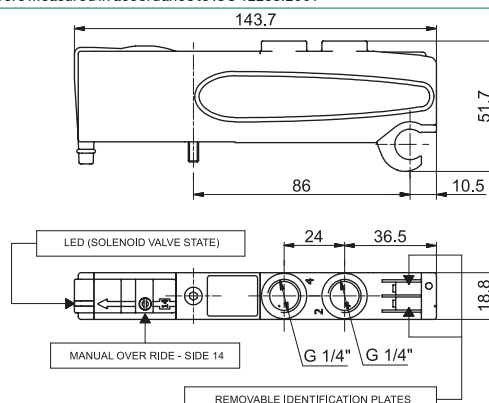
#### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	1000
Response time according to ISO 12238, activation time (ms)	20
Response time according to ISO 12238, deactivation time (ms)	29

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

VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

SHORT FUNCTION CODE "B"  
Weight 120 g



### Solenoid-Solenoid

Coding: 2531.52.00.35.✓

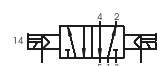
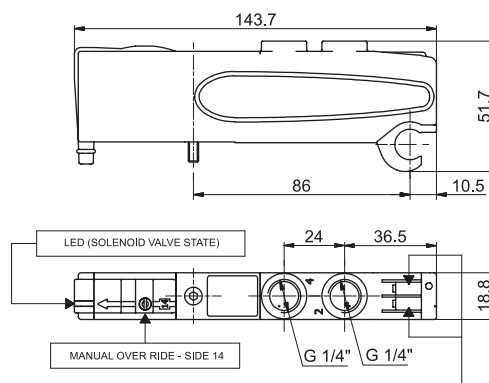
#### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	1000
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	14

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

VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

SHORT FUNCTION CODE "C"  
Weight 128 g



## Solenoid-Solenoid 5/3

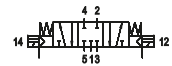
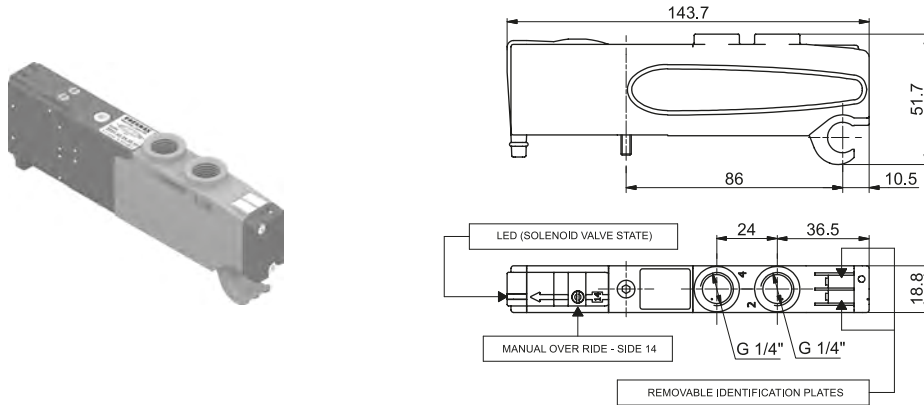
Coding: 2531.53.31.35.V

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	600
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	20

VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

SHORT FUNCTION CODE "E"  
Weight 126 g

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



## Solenoid-Solenoid 2x3/2

Coding: 2531.62.F.35.V

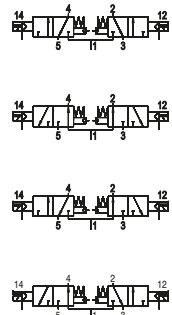
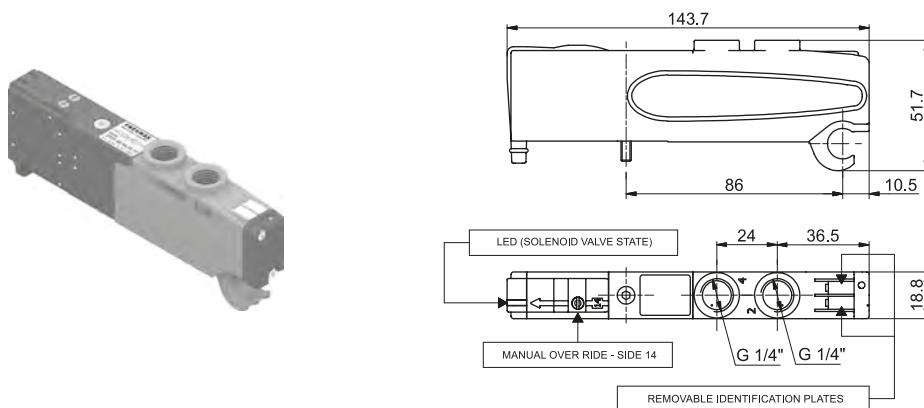
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	$\geq 2,5 + (0,2 \times P_{alim.})$
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	25

FUNCTION
44 = NC-NC (5/3 Open centres)
55 = NO-NO (5/3 Pressured centres)
45 = N.C.-N.O. (normally closed-normally open)
54 = N.O.-N.C. (normally open-normally closed)
VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

SHORT FUNCTION CODE:  
NC-NC (5/3 Open centres) = "F"  
NO-NO (5/3 Pressured centres) = "G"  
NC-NO = "H"  
NO-NC = "I"

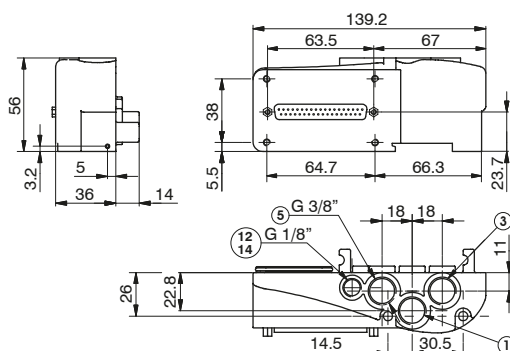
Weight 115,5 g

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



### Left Endplates

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (External pilot base only)
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50

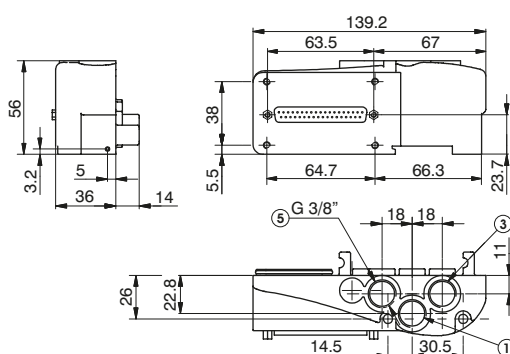


Weight 206 g

2530.02.©

**Coding:** 2530.V.C

	VERSION
V	02 = External feeding
	12 = Self-feeding
	ELECTRICAL CONNECTION
	37P = Connectors 37 poles PNP
	25P = Connectors 25 poles PNP
	37N = Connectors 37 poles NPN
C	25N = Connectors 25 poles NPN
	37A = Connectors 37 poles AC
	25A = Connectors 25 poles AC
	C16 = Terminal 16 signals PNP



Weight 206 g

2530.12.©

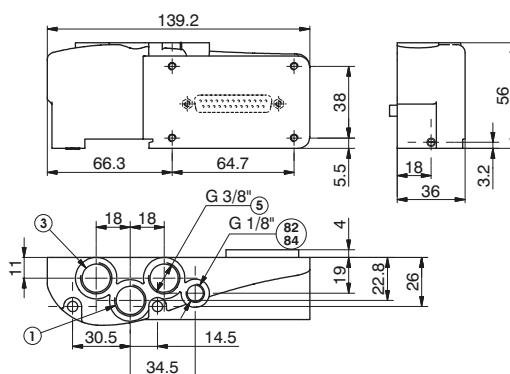
## Right Endplates

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

**Coding:** 2530.03.©

C	ELECTRICAL CONNECTION
	00 = Electrical connection
	25P = Connectors 25 poles

Weight 181,5 g



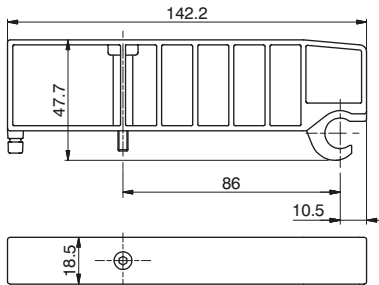
PORT 82/84= DO NOT PRESSURIZE. SOLENOID PILOTS EXHAUST

Closing plate

Coding: 2530.00

SHORT FUNCTION CODE "T"  
Weight 53,5 g

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



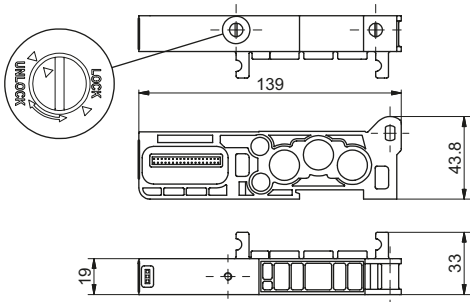
Modular base

Coding: 2530.01

VERSION
<b>M</b> = for Monostable SV
<b>B</b> = for Bistable SV

SHORT CODE "1" (per EV Monostabile)  
SHORT CODE "2" (per EV Bistabile)  
Weight 91,5 g

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

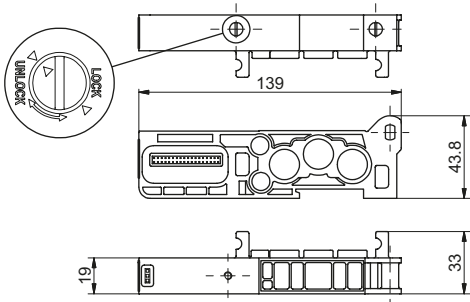


Intermediate Inlet/Exhaust module

Coding: 2530.10

SHORT FUNCTION CODE "W"  
Weight 110 g

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



## General :

Each Optyma-F manifold lets to manage 32 command signals for the valves.  
Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and CC-Link IE Field Basic) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve it is necessary to interrupt all the valves. The additional power supply module lets to interrupt at the same time the first 2/4/6/8 available command signals for the valves after the module itself. The additional power supply module

is particularly useful also when you use control signals that block the valves. This application is effective both with serial management and multi-pole connection of the manifolds.

This module has the same characteristics of an intermediate supply and exhaust module and fits directly into the Optyma-F series solenoid valve manifolds.

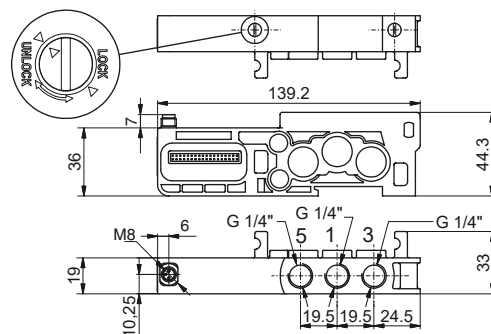
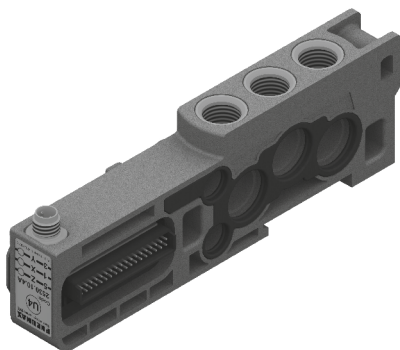
## Ordering code

**2530.10.2A = 2 positions**

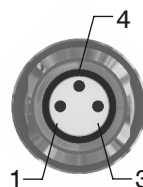
**2530.10.4A = 4 positions**

**2530.10.6A = 6 positions**

**2530.10.8A = 8 positions**



In particular this module is fitted with a M8 3 pins connector:  
+24V, not connected, GND.



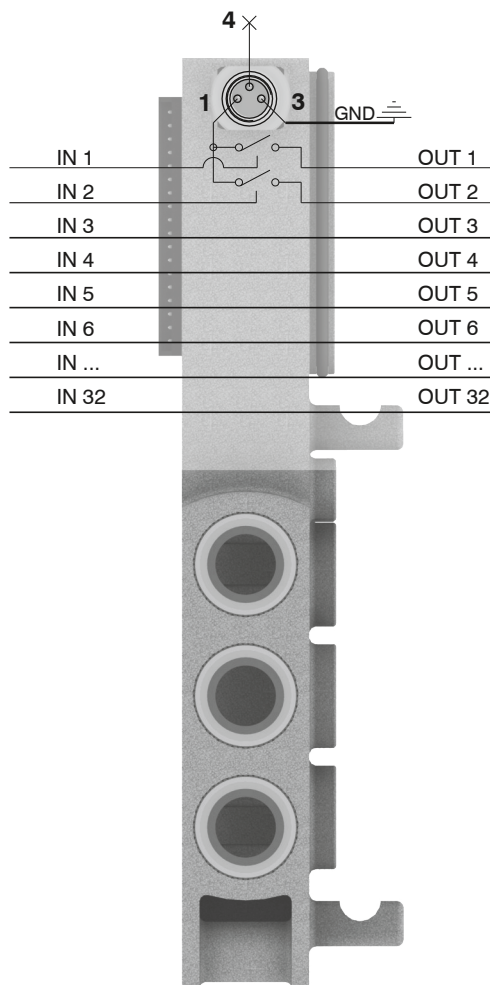
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

## WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

This module uses an external power supply (+24VDC) to manage the solenoid valves.

The output signal from serial node / multi-pole connection is used as command signal: when it is high the +24VDC will be present at the module output.

If you want to cut off the power supply to a group of 2 valves it is sufficient to take away the +24VDC provided to the module by the M8 connector.



**Please note:** It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

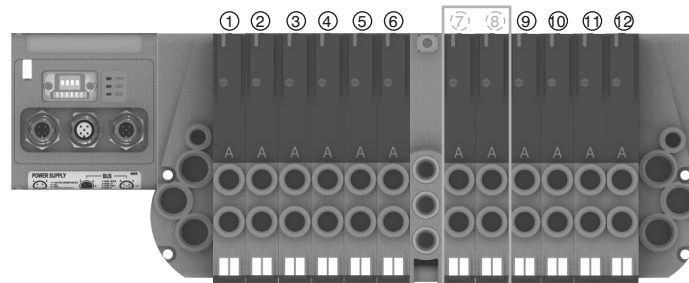


**Usage examples:****EXAMPLE 1:**

Manifold of 12 monostable valves on which you want to interrupt signals 7-8

**Assembly:**

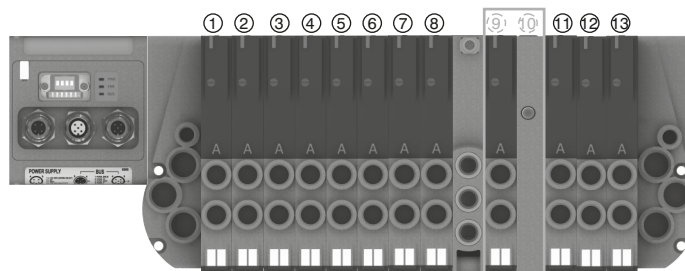
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 2 monostable of these are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

**EXAMPLE 2:**

Manifold of 12 monostable valves on which you want to interrupt signal 9

**Assembly:**

- 8 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 1 monostable valve (interruptible),
- 1 closing plate mounted on a monostable base,
- 3 monostable valves (work correctly managed directly by the corresponding command signals).



**Please note:** Each additional power supply module interrupts always 2 electrical signals.



If you need to interrupt less than 2 signals you can:

- assemble the valves to interrupt in the last positions of the manifold, so you don't need to worry about the interrupted exceeding signals;
- use a bistable base and mount a monostable valve (for each signal less than the 2 standard);
- use a monostable base and mount a closing plate (for each signal less than the 2 standard).

**EXAMPLE 3:**

Manifold of 7 monostable e 3 bistable valves on which you want to interrupt signals 2-3 and 8-9.

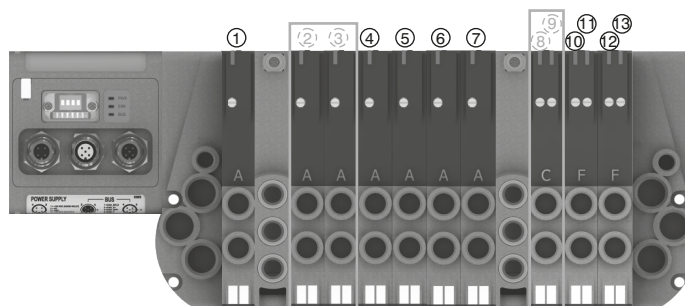
**Assembly:**

- 1 monostable valve (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves.

Please note: the first 2 monostable of these are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

- 1 additional power supply module,
- 3 bistable valves.

**Please note:** the first bistable of these valves is interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.



## General :

Each Optyma-F manifold allows you to manage 32 command signals for the solenoid valves. Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and CC-Link IE Field Basic) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve it is necessary to interrupt all the valves. The additional power supply module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself according to the selected device version. The additional power supply module is particularly useful also when you use control signals that block the valves. This application is effective both with serial management and multi-pole connection of the manifolds.

Furthermore, the electro-pneumatic cut off module allows you to interrupt the air flow that feeds the 12/14 pilots coming from upstream.

A threaded connection port incorporated in the module allows to pneumatically feed each pilot of a limited number of solenoid valves downstream.

This module has the same characteristics of an intermediate supply and exhaust module and fits directly into the Optyma-F series solenoid valve manifolds.



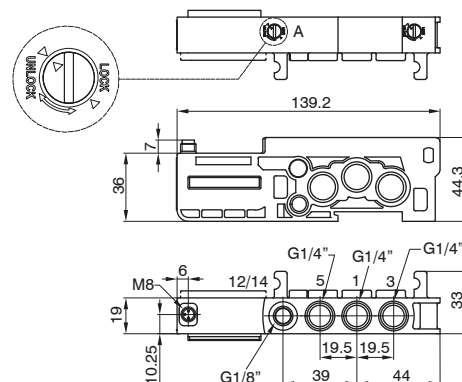
## Ordering code

**2530.11.2A = 2 positions**

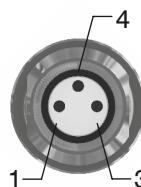
**2530.11.4A = 4 positions**

**2530.11.6A = 6 positions**

**2530.11.8A = 8 positions**



In particular this module is fitted with a M8 3 pins connector:  
+24V, not connected, GND.

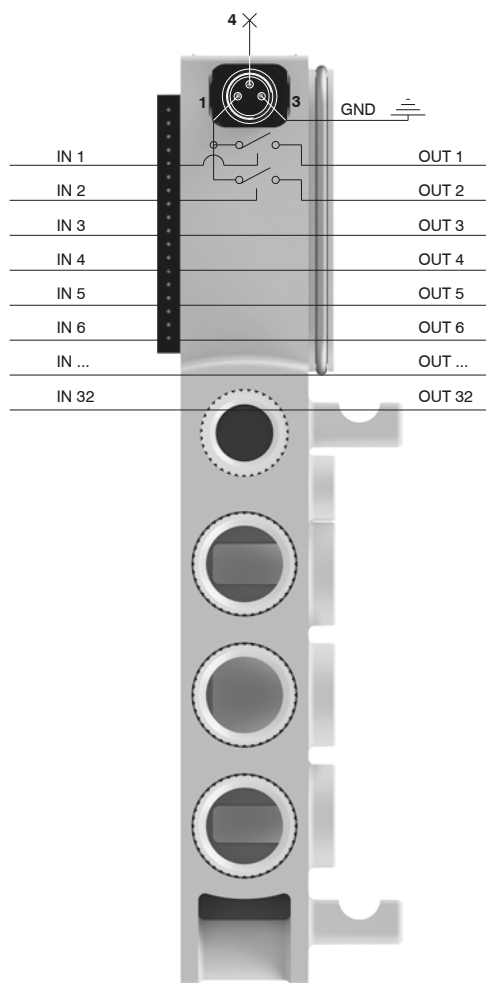


PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

## WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

This module uses an external power supply (+24VDC) to manage the solenoid valves.

The output signal from serial node / multi-pole connection is used as command signal: when it is high the +24VDC will be present at the module output.



If you want to cut off the power supply to a group of 2 valves it is sufficient to take away the +24VDC provided to the module by the M8 connector.



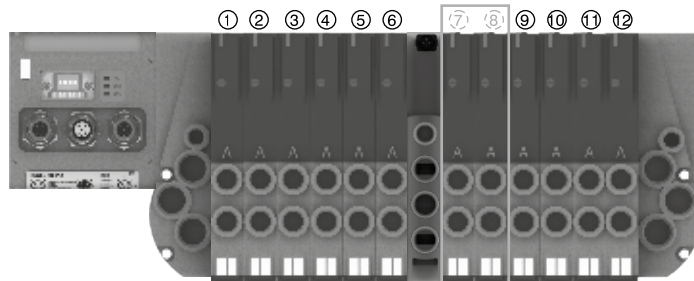
**Please note:** It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

**Usage examples:****EXAMPLE 1:**

Manifold of 12 monostable valves on which you want to interrupt signals 7-8.

**Assembly:**

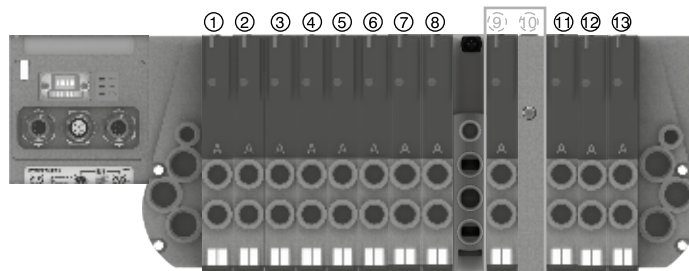
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 2 monostable of these are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

**EXAMPLE 2:**

Manifold of 12 monostable valves on which you want to interrupt signals 9

**Assembly:**

- 8 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 1 monostable valves (interruptible),
- 1 closing plate mounted on a monostable base,
- 3 monostable valves (work correctly managed directly by the corresponding command signals).



**Please note:** Each additional power supply module interrupts always 2 electrical signals.



If you need to interrupt less than 2 signals you can:

- assemble the valves to interrupt in the last positions of the manifold, so you don't need to worry about the interrupted exceeding signals;
- use a bistable base and mount a monostable valve (for each signal less than the 4 standard);
- use a monostable base and mount a closing plate (for each signal less than the 4 standard).

**EXAMPLE 3:**

Manifold of 7 monostable e 3 bistable valves on which you want to interrupt signals 2-3 and 8-9.

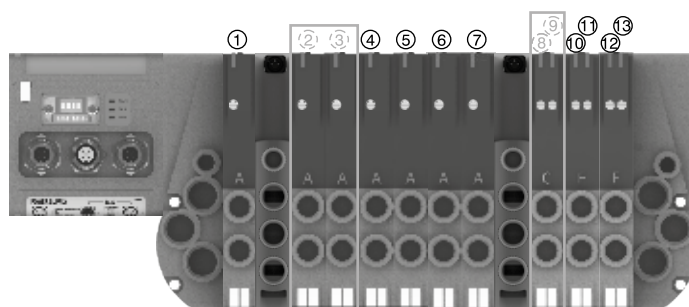
**Assembly:**

- 1 monostable valve (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves.

Please note: the first 6 monostable of these are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

- 1 additional power supply module,
- 3 bistable valves.

**Please note:** the first 3 bistable of these valves are interruptible by the module, while the following will work correctly managed directly by the corresponding command signals.





Solenoid valves manifold  
Series 2500 "OPTYMA-F" - Accessories

1  
AIR DISTRIBUTION

Polyethylene Silencer Series SPL-P

Coding: SPLP.ⓓ



	TUBE DIAMETER
ⓓ	18 = 1/8"
	14 = 1/4"
	38 = 3/8"

Diaphragm plug

Coding: 2530.17



Cable complete with connector, 25 Poles IP65

Coding: 2300.25.ⓓ.ⓐ



ⓓ	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
ⓐ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.ⓓ.ⓐ



ⓓ	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
ⓐ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres

Cable complete with connector, 25 Poles IP65

Coding: 2400.25.ⓓ.25



ⓓ	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters

The electrical connection is achieved by a 37 pin connector and can manage up to 32 solenoid pilots.

It is also possible use a 25 sub-D pin connector and, in this case, it is possible to manage a maximum of 22 outputs. It is also available a terminal, able to manage a maximum of 16 outputs.

The management and distribution of the electrical signals between each valve is obtained thanks to an 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 and 2x3/2 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. Modular bases can be fitted with two type of electrical connector: the monostable version uses only one signal (connected to the pilot side 14) and carries forward the remaining, the bistable version which always uses two signals.

This solution allows the modification of the manifold (replacement of monostable valves without bistable for example) without having to reset the PLC output layout.

On other hand this solution limits the maximum number of valves to 16 when it is used a 37 pin connector or 11 when it is used a 25 pin connector. When using a Endplates with terminal, the maximum number of valves are 8.

Intermediate supply/exhaust module uses an electrical connector directly forwarding signals to the next one without any kind of modification.

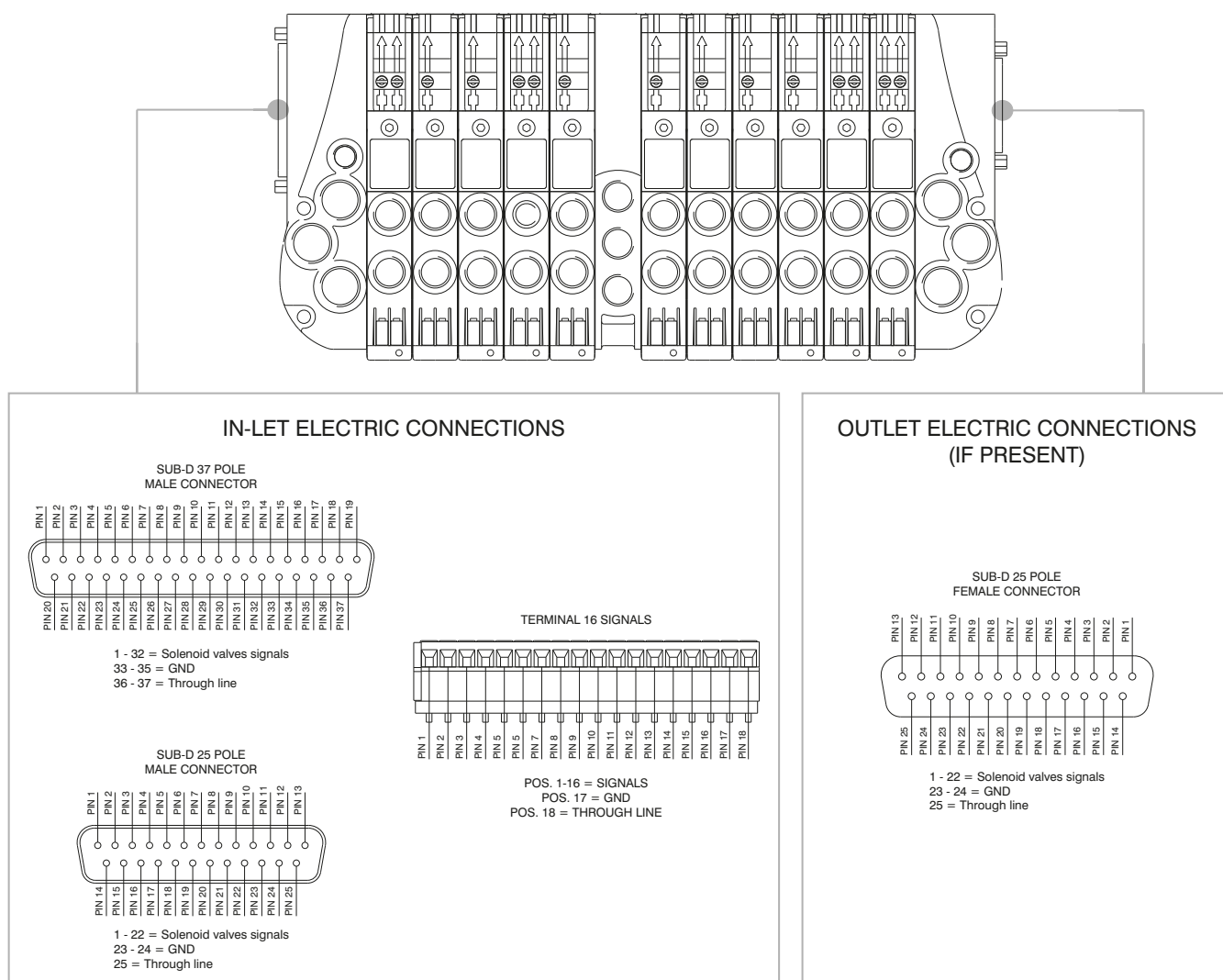
This allows the use of intermediate modules in any position of the manifold.

All the electrical signals that have not been used on the manifold can be used placing at the end of the manifold the end plate complete with the 25 sub-D female connector.

The number of available signals depends of the connector used to the type of the left end plate and by the total signals used along the manifold:

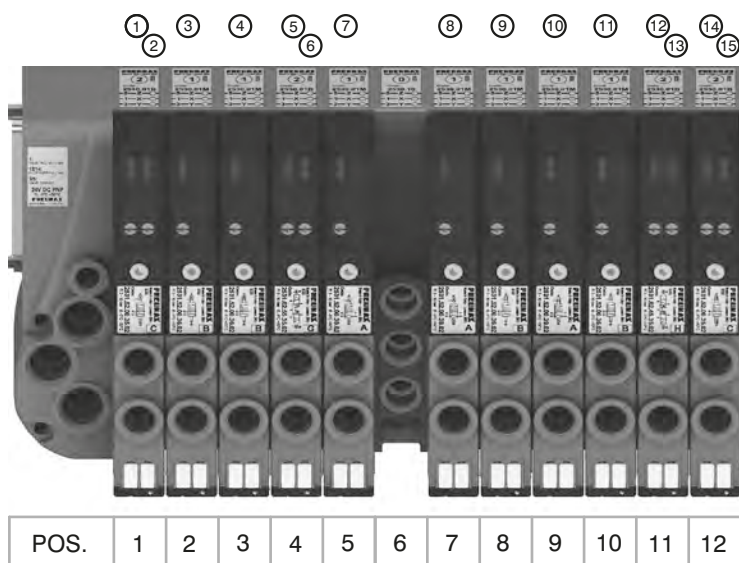
37 pin connector	nr of output = 32 – (total of used signals)
25 pin connector	nr of output = 22 – (total of used signals)
Terminal	nr of output = 16 – (total of used signals)

Following we show some examples of possible combination and the relative pin assignment.



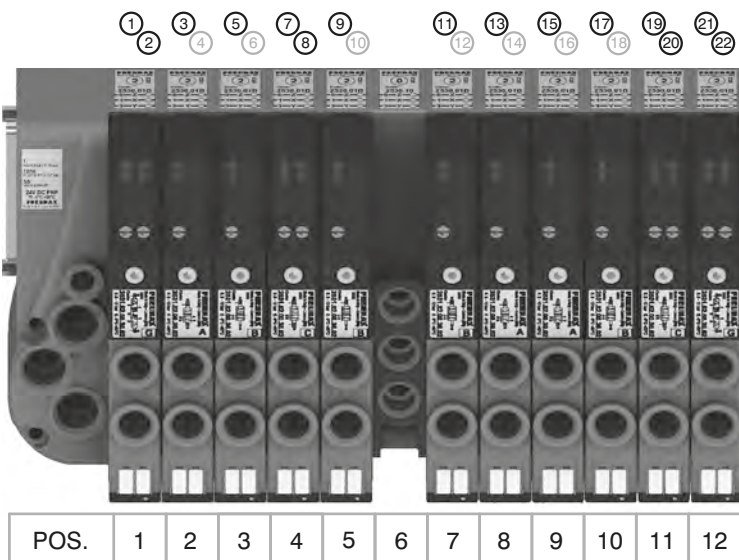


### 37 PIN Connector correspondence for valves assembled on mixed bases



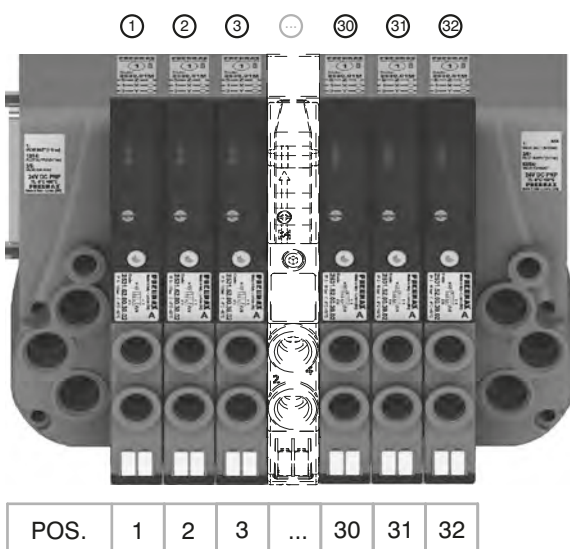
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 14 SV POS.3
- PIN 5 = PILOT 14 SV POS.4
- PIN 6 = PILOT 12 SV POS.4
- PIN 7 = PILOT 14 SV POS.5
- PIN 8 = PILOT 14 SV POS.7
- PIN 9 = PILOT 14 SV POS.8
- PIN 10 = PILOT 14 SV POS.9
- PIN 11 = PILOT 14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

### 37 PIN Connector correspondence for manifold mounted on bases for bistable valves

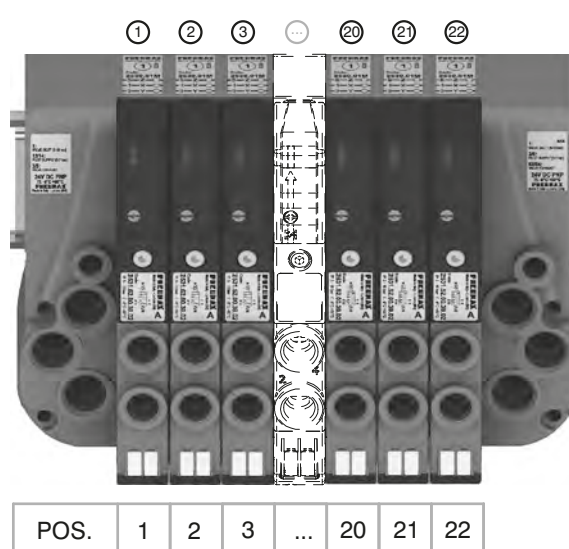


- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = NOT CONNECTED
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = NOT CONNECTED
- PIN 7 = PILOT 14 SV POS.4
- PIN 8 = PILOT 12 SV POS.4
- PIN 9 = PILOT 14 SV POS.5
- PIN 10 = NOT CONNECTED
- PIN 11 = PILOT 14 SV POS.7
- PIN 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

### 37 PIN Connector correspondence for manifold for 32 position manifold with monostable valves on base



### 25 PIN Connector correspondence for manifold for 22 position manifold with monostable valves on base

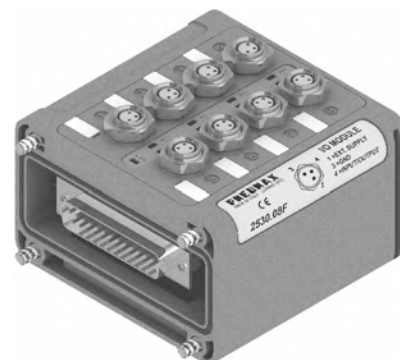


**General :**

Using the 2530.03.25P output terminal it is possible to make any electrical signals not used by valves available on a 25 sub-D female connector at the right end of the manifold.

It is possible to then join a multi-core cable to link to the next manifold, or connect directly to one or two I/O modules.

The I/O modules can accept input or output signals, depending upon what is connected.

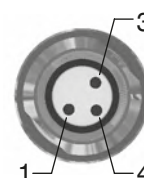
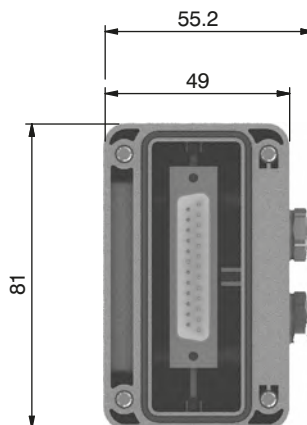
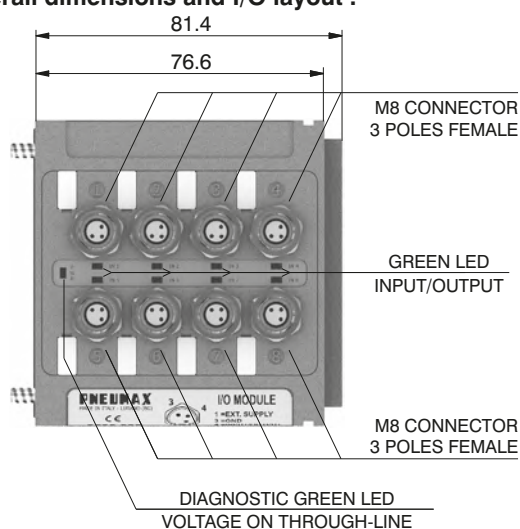
**Ordering code****2530.08F**

**Please note:** If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

It is possible to connect the manifold to up to two I/O modules.

Each I/O module includes 8 diagnostic LEDs which indicate the presence of an Input / Output signal for each connector.

**Please note:** For an LED to function, a signal of at least +15VDC must be present on pin 4 of the connector. If this signal is lower, the LED will not light, this does not compromise the normal Input / Output function of the unit.

**Overall dimensions and I/O layout :**

PIN	DESCRIPTION
1	+24 VDC
4	INPUT/OUTPUT
3	GND

**Input features:**

Each connection can accept either two wire (switches, magnetic switches, pressure switches, etc.) or three wire connections (photocells, electronic end of stroke sensors, etc.) If +24VDC is required on at Pin 1 of each connector, it is possible to provide this via the through-line pin of the multi-pole connector.

I.E :

Pin 25 of the 25 pin multi-pole connector (code 2530.02.25P or 2530.12.25P)

Pin 36-37 of the 37 pin multi-pole connector (code 2530.02.37P or 2530.12.37P)

**Output features:**

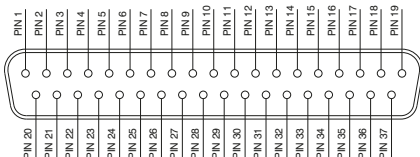
**Attention:** The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

**General characteristics**

Model	2530.08F
Case	Reinforced technopolymer
I/O Connector	M8 connector 3 poles female (IEC 60947-5-2)
PIN1 voltage (connector used as Input)	By the user
PIN 4 voltage diagnosis	Green LED
Node consumption (Outlets excluded)	7mA per each LED with 24 VDC signal
Outlets voltage	+23,3 VDC (serial) /by the user (multipolar)
Input voltage	Depend by the using
Maximum outlet current	100 mA (serial) / 400 mA (multipolar)
Maximum Input/Output	8 per module
Multiconnector max. Current	100 mA
Connections to manifold	Direct connection to 25 poles connector
Maximum n. of moduls	2
Protection degree	IP65 when assembled
Ambient temperature	from -0° to +50° C

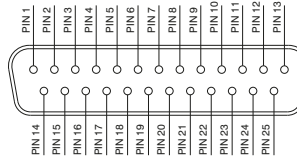
## CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

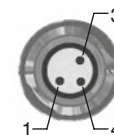


1 - 32 = SIGNALS  
33 - 35 = GND  
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



1 - 22 = SIGNALS  
23 - 24 = GND  
25 = THROUGH LINE



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

### Connection modes:

The I/O module changes its operation depending on the way the manifold is controlled. There are two possible modes:

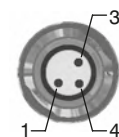
- A) Control via multi-pole connection
- B) Control via fieldbus

#### A) Control via multi-pole :

M8 connector used as Input:



**Attention:** Voltage applied to each connector is passed to multi-pole connector pin.



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

In order to use the I/O module, the correct right hand endplate with 25 pole female outlet connector must be used.  
(Code 2530.03.25P).

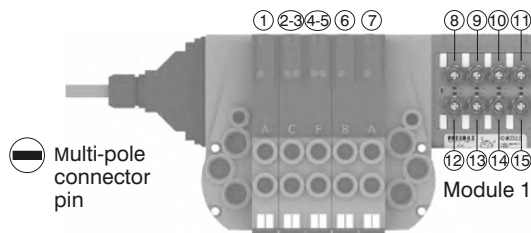


M8 connector used as Output:

Output voltage will be the same as is applied at the multi-pole connector pin.  
The maximum output current depends upon the power unit used, but we recommend no more than 250mA.



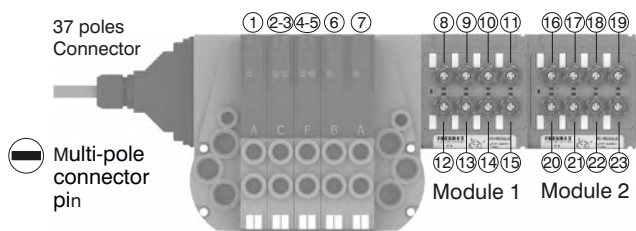
**Attention:** Since every cable has a degree of resistance, there will always be a voltage drop depending on the cable's length, sectional area and the current.



Multi-pole connector pin



**Attention:**  
Only one more I/O module can be added.

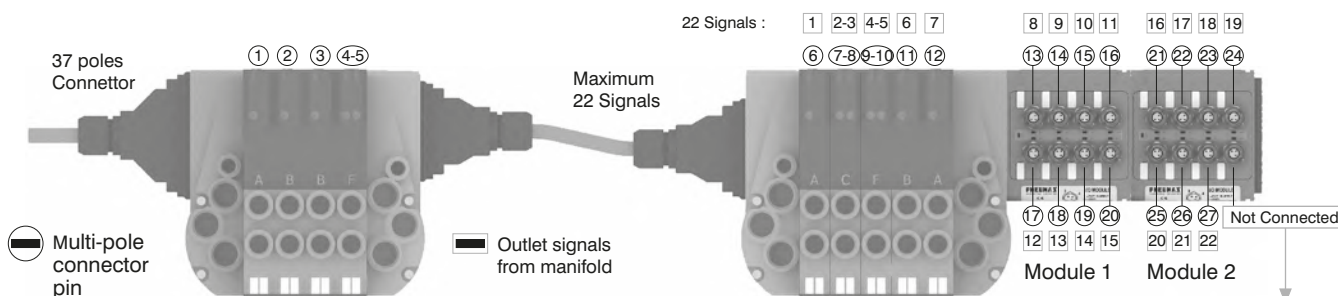


Multi-pole connector pin



**Attention:**  
No more additions are possible

**Attention :** Optyma 32-F solenoid valve manifolds permit up to 22 electrical signals that are not used by manifolds to be made available: these signals can be managed by another manifold and / or by I/O modules.  
The I/O module will manage these unused signals. Connections that are not managing useful signals will remain unconnected.



Multi-pole connector pin

Outlet signals from manifold

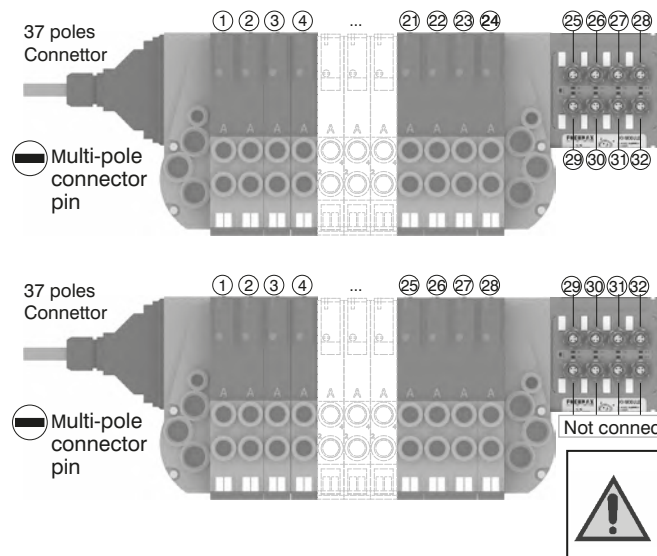


**Attention:**  
Signal Not connected  
GND Connected  
Through line Connected

**Please note:** this example considers a 37 pin multi-pole connector.  
The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 17



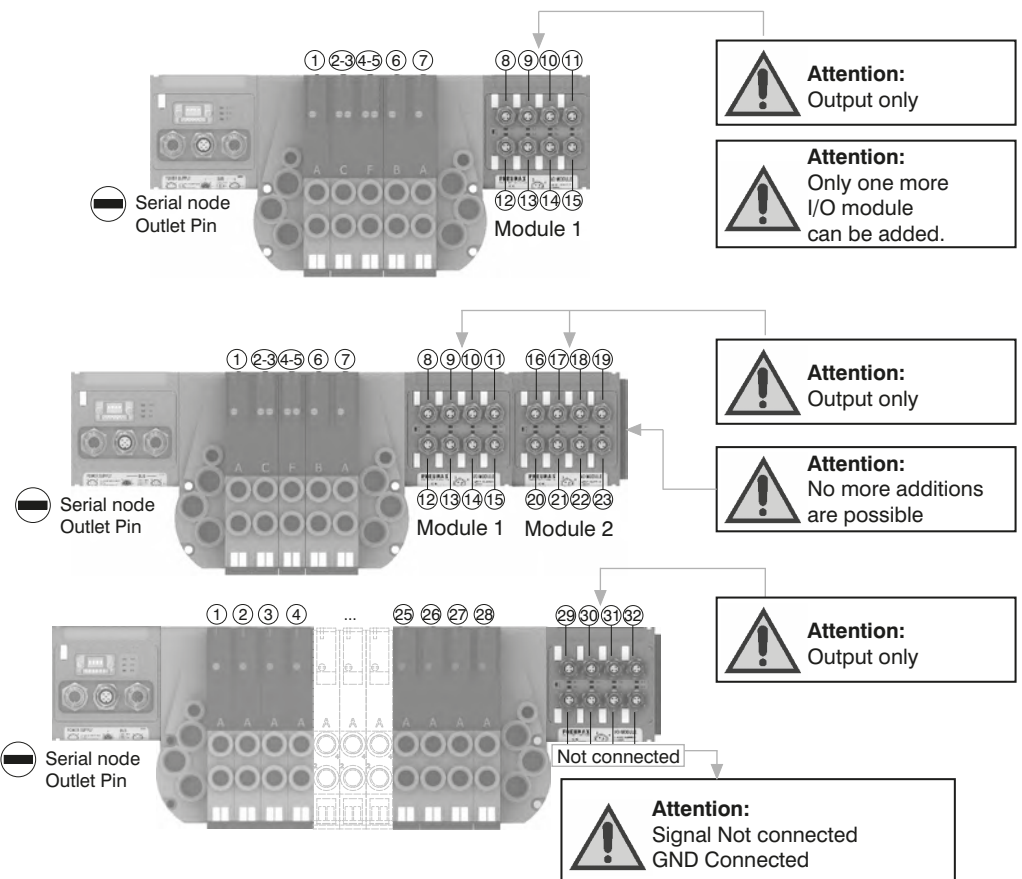
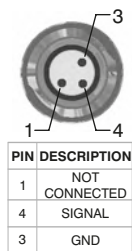
**Please note:** Optyma 32-F solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



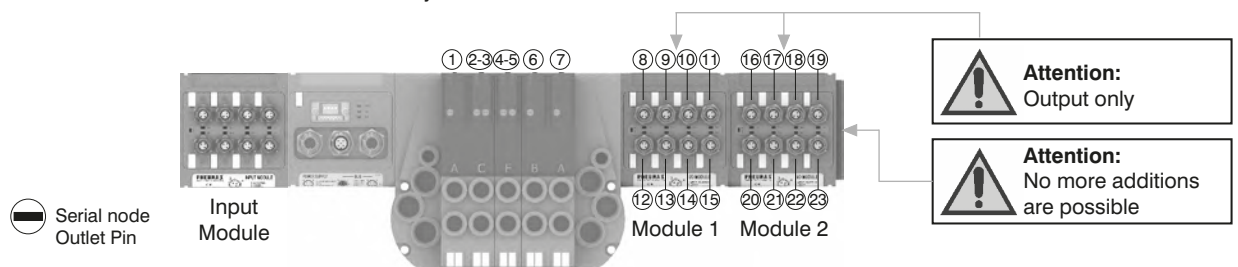
### B) Control via fieldbus:

With this kind of control the I/O module can only be used as an output. Pin 1 of each connector is not connected. The output voltage will be 0.7V lower than that applied to Pin 4 of the connector.

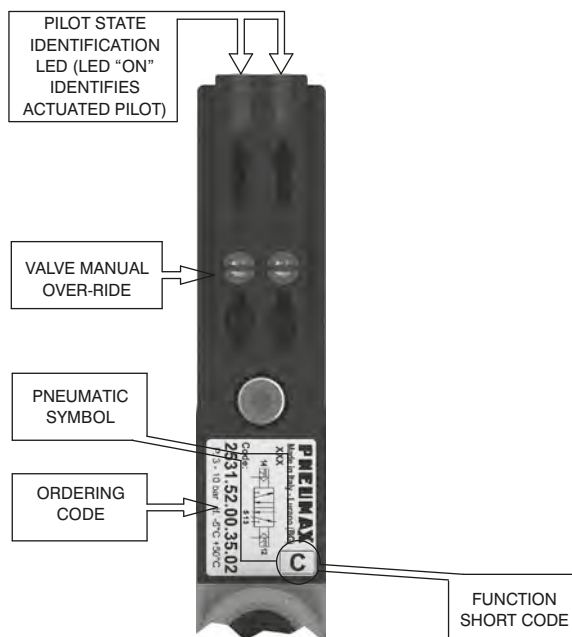
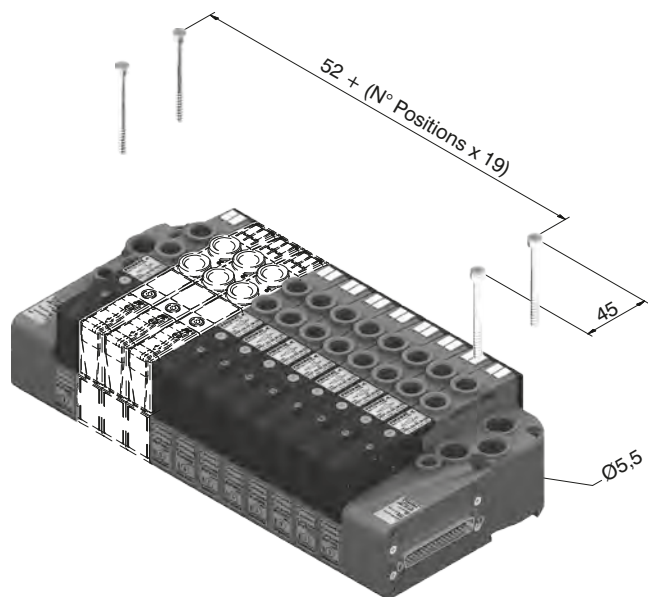
The maximum output current for each output is 100mA. The correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.



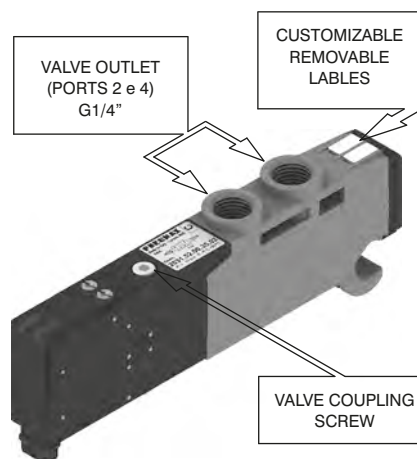
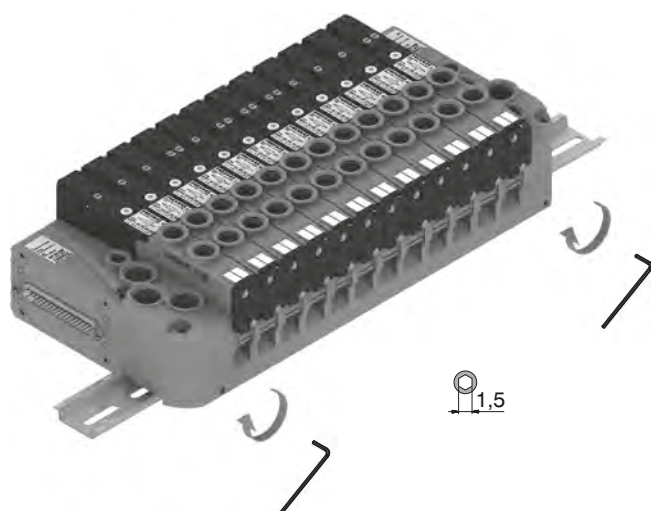
**Please note:** I/O modules don't allow to connect any additional valves manifold after them.



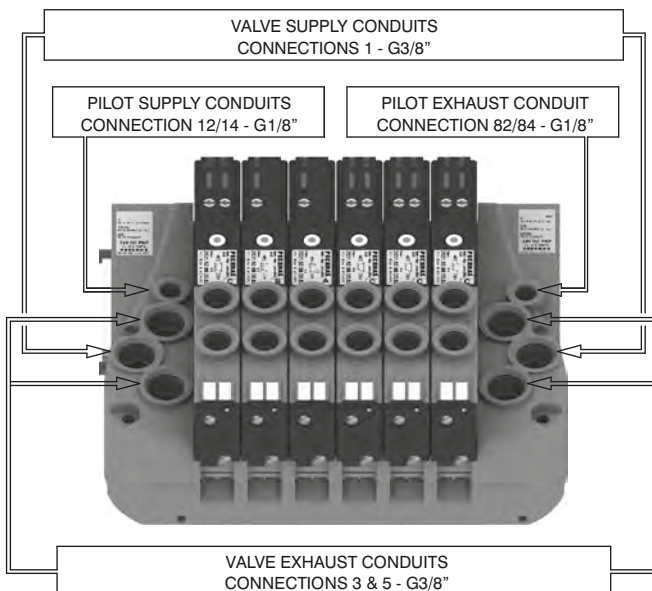
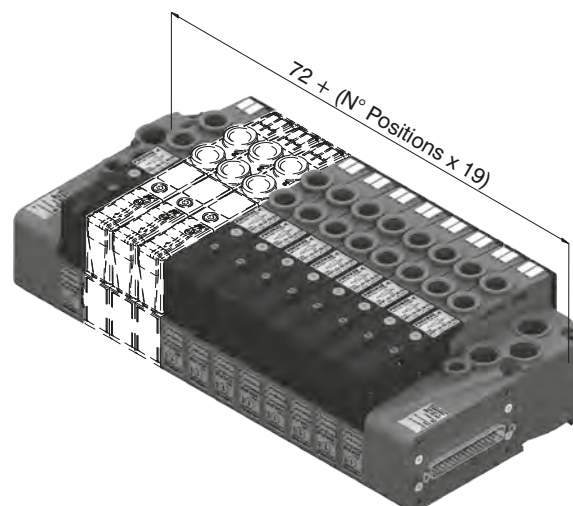
From the top



DIN rail fixing

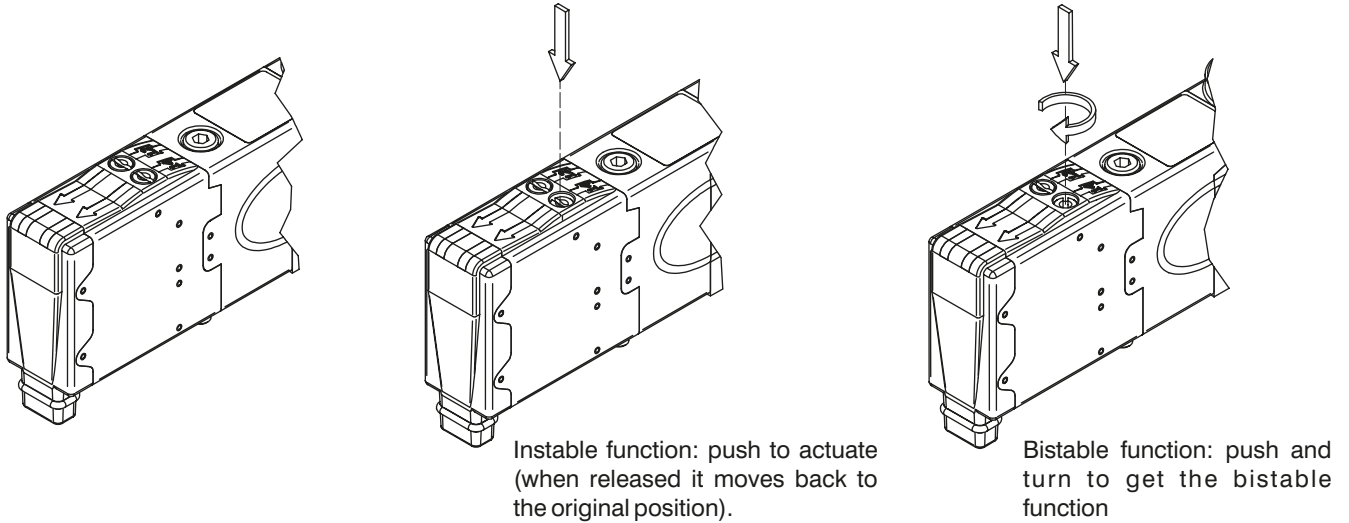


Maximum possible size according to valves seats



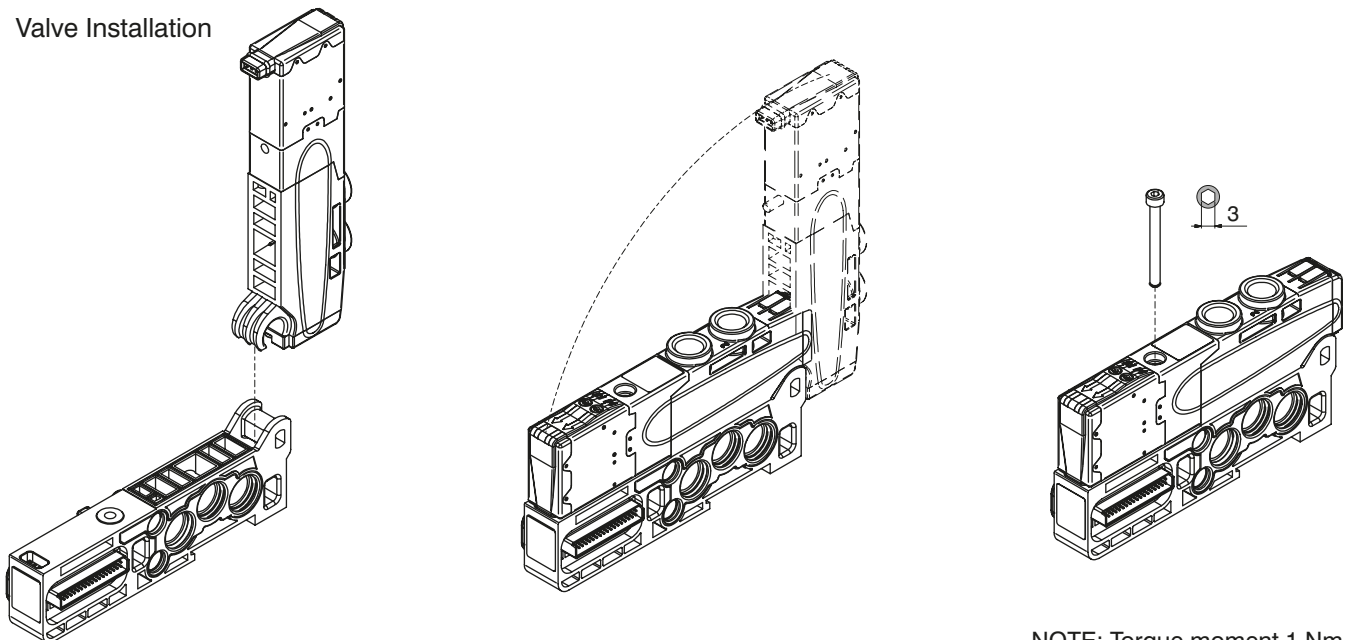


## Manual override actuation



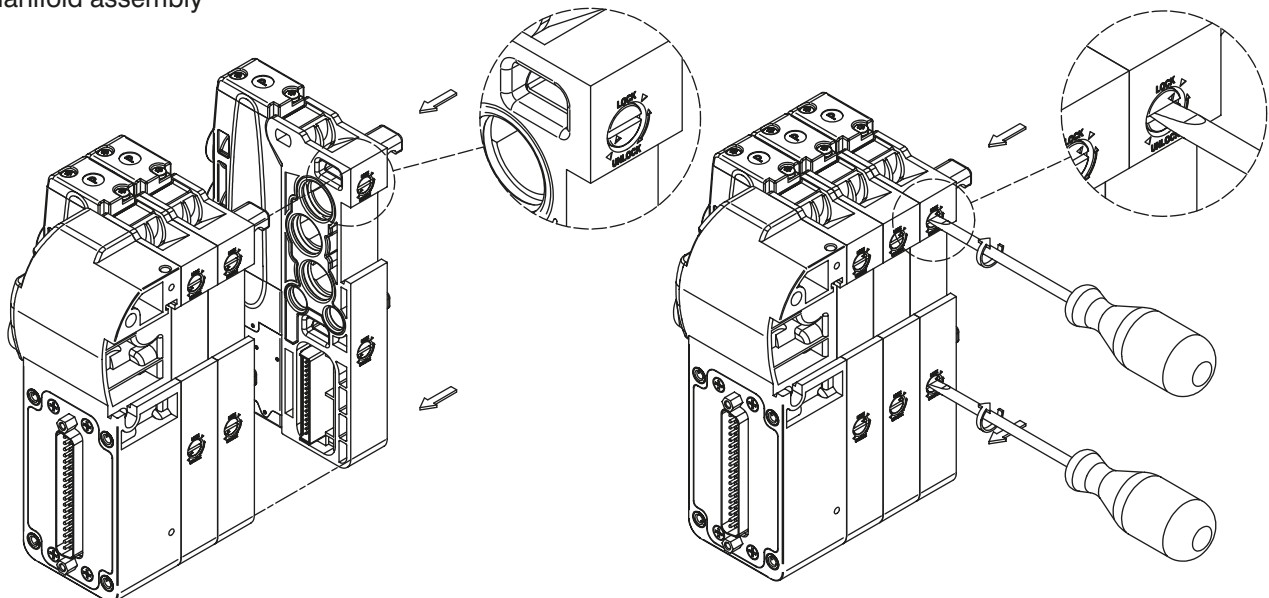
NOTE : It is strongly suggested to replace the original position after using

## Valve Installation



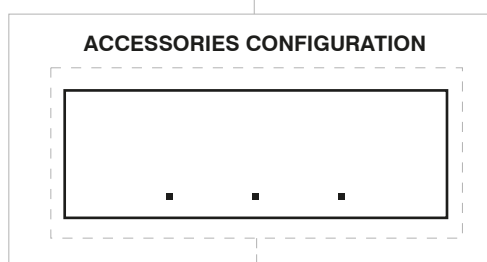
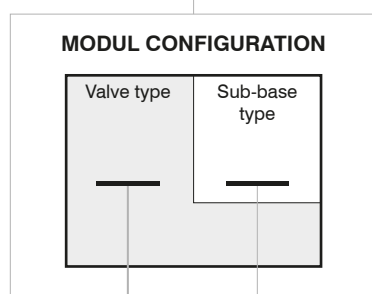
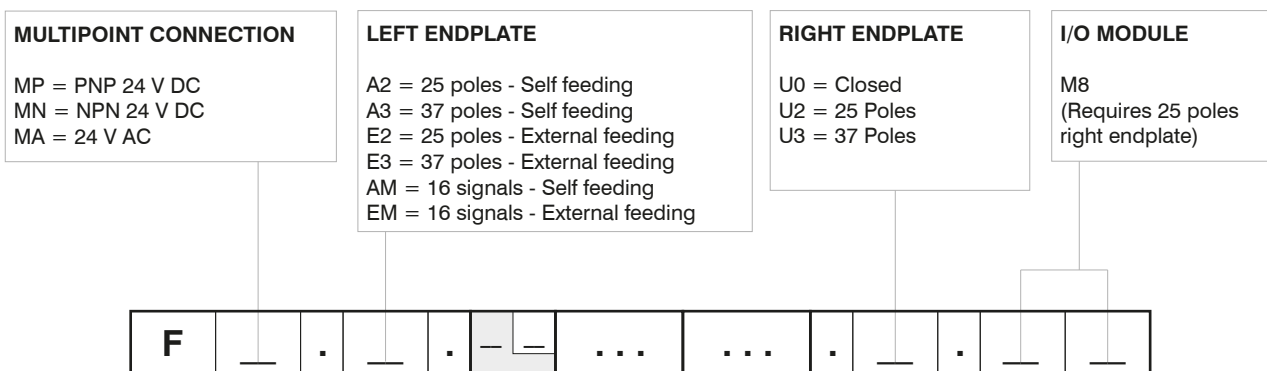
NOTE: Torque moment 1 Nm

## Manifold assembly



## Manifold Layout configuration

1  
AIR DISTRIBUTION



### SHORT CODE FUNCTION / CONNECTION :

A1= 5/2 SOL.-SPRING + BASE TYPE 1 (1 electrical signal occupied)  
A2= 5/2 SOL.-SPRING + BASE TYPE 2 (2 electrical signals occupied)  
B1= 5/2 SOL.-DIFFERENTIAL + BASE TYPE 1 (1 electrical signal occupied)  
B2= 5/2 SOL.-DIFFERENTIAL + BASE TYPE 2 (2 electrical signals occupied)  
C2= 5/2 SOL.-SOL. + BASE TYPE 2 (2 electrical signals occupied)  
E2= 5/3 CC SOL.-SOL. + BASE TYPE 2 (2 electrical signals occupied)  
F2= 2x3/2 NC-NC (= 5/3 OC) SOL.-SOL. + BASE TYPE 2 (2 electrical signals occupied)  
G2= 2x3/2 NO-NO (= 5/3 PC) SOL.-SOL. + BASE TYPE 2 (2 electrical signals occupied)  
H2= 2x3/2 NC-NO SOL.-SOL. + BASE TYPE 2 (2 electrical signals occupied)  
I2= 2x3/2 NO-NC SOL.-SOL. + BASE TYPE 2 (2 electrical signals occupied)  
T1= FREE VALVE SPACE PLUG + BASE FOR MONOSTABLE VALVE  
T2= FREE VALVE SPACE PLUG + BASE FOR BISTABLE VALVE

### NOTE:

While configuring the manifold always be careful that the maximum number of electrical signals available is:  
32 when an input 37 poles endplate is used.  
22 when an input 25 poles endplate is used.  
The use of monostable valve mounted on a base type 2 ( 2 electrical signals occupied ) causes the loss of one electric signal.  
In this case the monostable valve can be replaced by a bistable valve. The diaphragms plugs are used to intercept the conduits 1,3 & 5 of the base. If it is necessary to interrupt more than one conduit in the same time then put in line the letters which identifies the position (for example : regarding the 3 & 5 conduits, put the Y & Z letters).  
Should one or more conduits be cut more than one time it is necessary to add the relevant intermediate Supply/Exhaust module.

### ACCESSORIES

U2 = Electric and electro-pneumatic cut off module 2 positions  
K2 = Electric and electro-pneumatic cut off module 2 positions with external pilot  
U4 = Electric and electro-pneumatic cut off module 4 positions  
K4 = Electric and electro-pneumatic cut off module 4 positions with external pilot  
U6 = Electric and electro-pneumatic cut off module 6 positions  
K6 = Electric and electro-pneumatic cut off module 6 positions with external pilot  
U8 = Electric and electro-pneumatic cut off module 8 positions  
K8 = Electric and electro-pneumatic cut off module 8 positions with external pilot  
W = Intermediate supply & exhaust module  
X = Diaphragm plug on pipe 1  
Y = Diaphragm plug on pipe 3  
Z = Diaphragm plug on pipe 5  
XY = Diaphragm plug on pipe 1 & 3  
ZX = Diaphragm plug on pipe 5 & 1  
ZY = Diaphragm plug on pipe 5 & 3  
ZXY = Diaphragm plug on pipe 5, 1 & 3

**Series 2500 OPTYMA-F solenoid valve manifolds managed by multipoint connection are "well tried components"**

	<b>Well-tried component</b>	<ul style="list-style-type: none"> <li>- The product is a well-tried product for a safety-related application according to ISO 13849-1.</li> <li>- The relevant basic and well-tried safety principles according ISO 13849-2 for this product are fulfilled.</li> <li>- The suitability of the product for a precise application must be verified and confirmed by the user.</li> </ul>
<b>B<sub>10d</sub></b>	50.000.000	

**General:**

CANopen® module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-F 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 2 Input modules 5225.25F.

CANopen® module recognizes automatically the presence of the Input modules on power on.

Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

Node power supply is made by a M12 4P male circular connector.

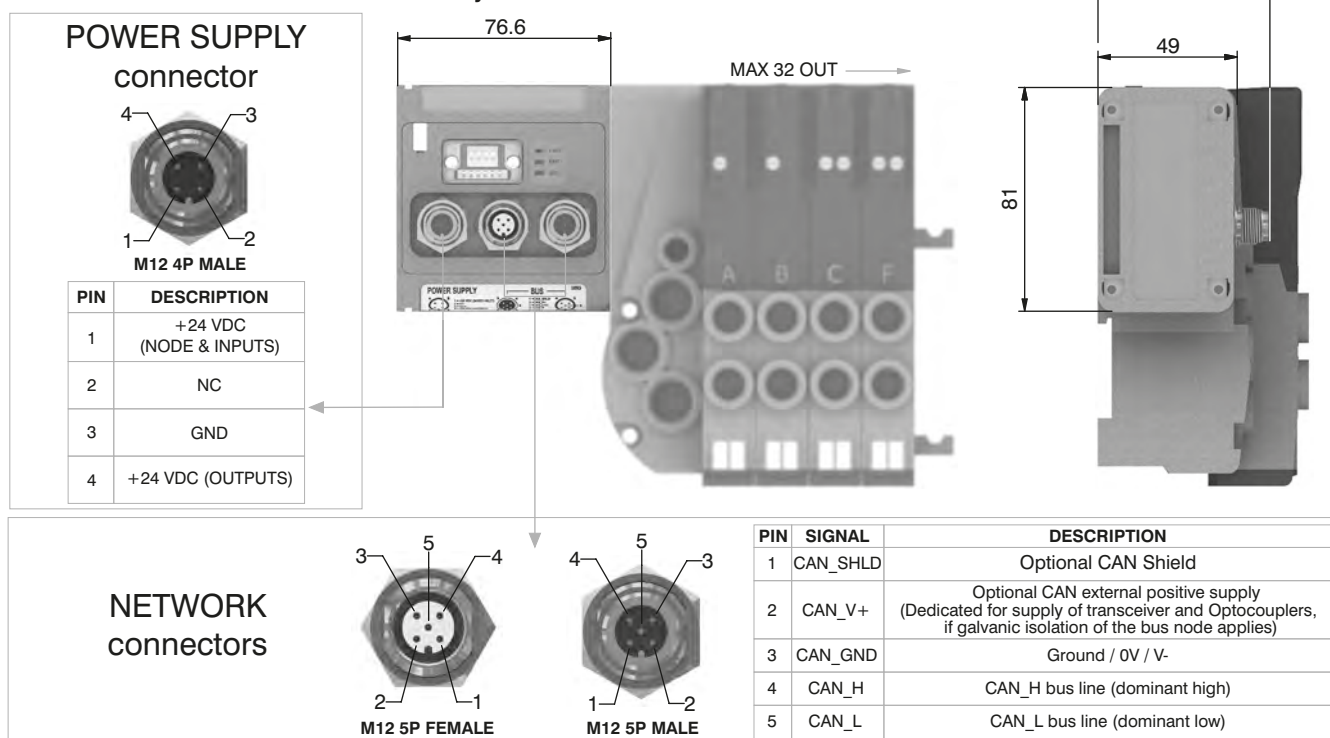
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining powered the node and inputs, if present.

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 Recommendation 303-1 (V. 1.3 : 30 December 2004).

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****5525.32F****Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5525.32F
	Specifications	CiA Draft Standard Proposal 301 V 4.10 (15 August 2006)
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
<b>Outputs</b>	Node consumption (without inputs)	30 mA
	Power supply diagnosis	Green LED PWR
	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for output	100 mA
	Maximum output number	32
<b>Network</b>	Max output simultaneously actuated	32
	Network connectors	2 M12 5P connectors male-female type A (IEC 60947-5-2)
	Baud rate	10 - 20 - 50 - 125 - 250 - 500 - 800 - 1000 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General:

DeviceNet module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-F 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 2 Input modules 5225.25F.

DeviceNet module recognizes automatically the presence of the Input modules on power on.

Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining 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.

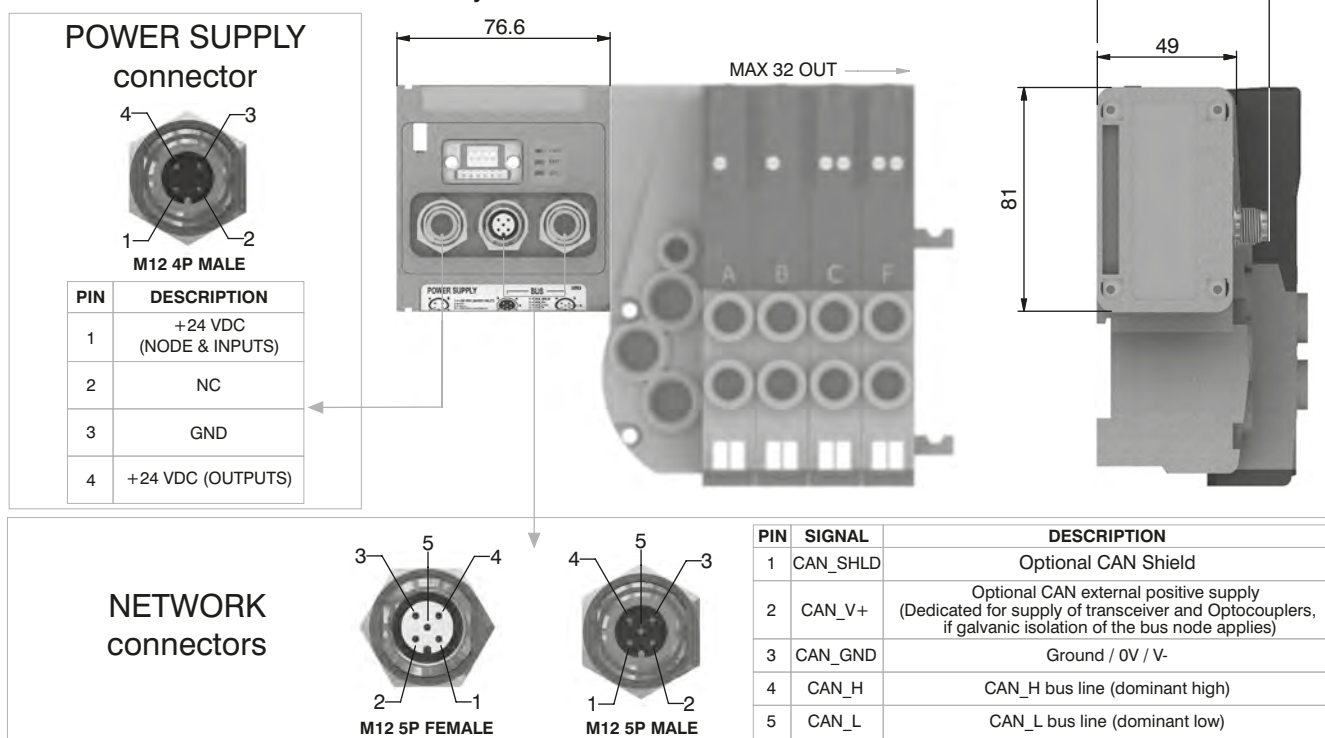
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5425.32F**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5425.32F
	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)	30 mA
	Power supply diagnosis	Green LED PWR
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 5P connectors male-female type A (IEC 60947-5-2)
	Baud rate	125 - 250 - 500 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



**General:**

PROFIBUS DP module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-F 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 4 Input modules 5225.25F.

PROFIBUS DP module recognizes automatically the presence of the Input modules on power on. Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

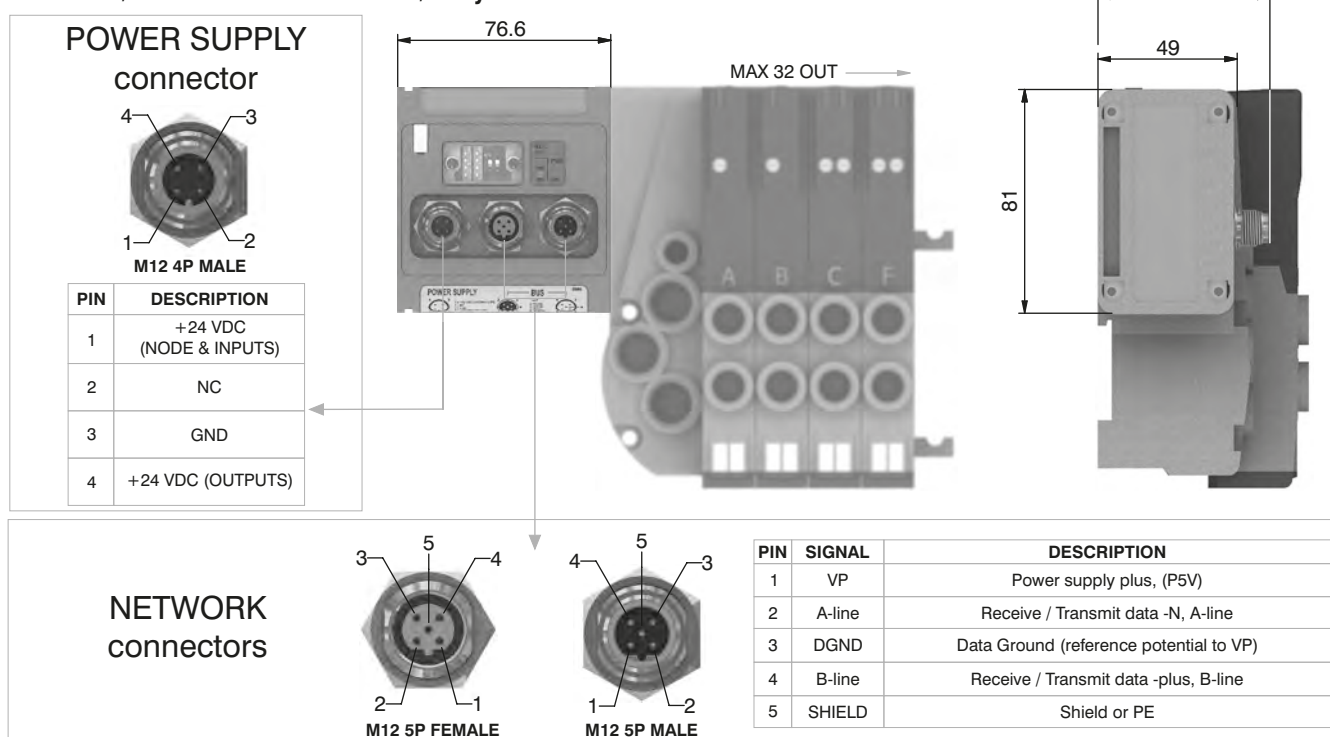
Connection to Bus PROFIBUS DP is possible via 2 M12 type B 5P male - female circular connectors; these two are connected in parallel and according to PROFIBUS Interconnection Technology (Version 1.1 : August 2001).

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 2 dip-switches.

**Ordering code****5325.32F**

AIR DISTRIBUTION

**1****Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5325.32F
	Specifications	PROFIBUS DP
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
<b>Outputs</b>	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	50 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
<b>Network</b>	Maximum current for output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 5P male-female connectors type B
	Baud rate	9,6 - 19,2 - 93,75 - 187,5 - 500 - 1500 - 3000 - 6000 - 12000 Kbit/s
	Addresses, possible numbers	From 1 to 99
	Max nodes in net	100 (slave + master)
	Bus maximum recommended length	100 m at 12 Mbit/s - 1200 m at 9,6 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General:

EtherCAT® module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-F 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 2 Input modules 5225.25F.

The EtherCAT® module, regardless the number of Input module connected, reports to have connected 4 Input modules.

Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

Connection to Bus EtherCAT® is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

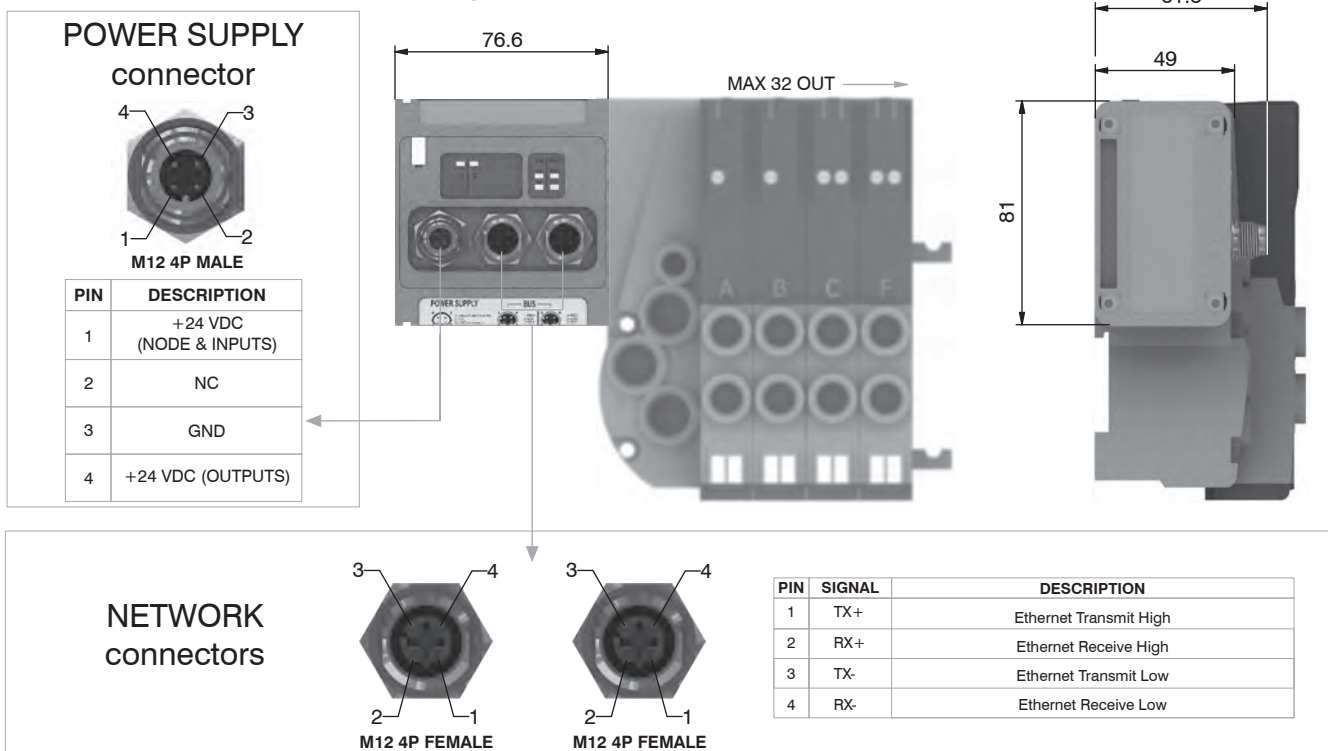
The node address is assigned during configuration.

## Ordering code

**5725.32F.EC.A**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

<b>Power supply</b>	Model	5725.32F.EC.A
	Specifications	EtherCAT® Specifications ETG.1000 series
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	<b>Outputs</b>	PNP equivalent outputs
		+24 VDC +/- 10%
		Maximum current for output
		100 mA
		Maximum output number
		32
		Max output simultaneously actuated
		32
<b>Network</b>	Network connectors	2 M12 4P female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	From 1 to 65535
	Max nodes in net	65536 (slave + master)
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



**General:**

PROFINET IO RT module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-F 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 4 Input modules 5225.25F.

The PROFINET IO RT module, regardless the number of Input module connected, reports to have connected 8 Input modules.

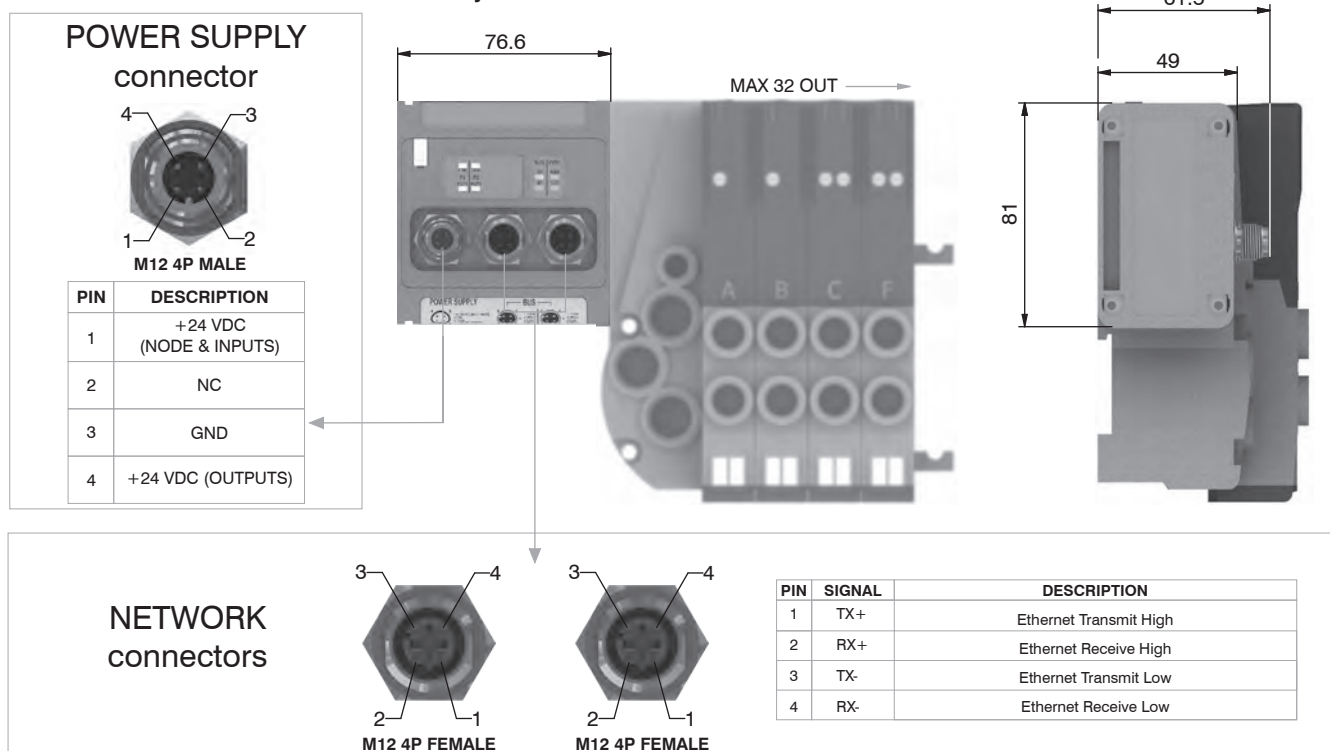
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

Connection to Bus PROFINET IO RT is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

The node address is assigned during configuration.

**Ordering code****5725.32F.PN.A**1  
AIR DISTRIBUTION**Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5725.32F.PN.A
	Specifications	PROFINET IO RT
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
<b>Outputs</b>	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
<b>Network</b>	Maximum current for output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 4P female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	2 red LEDs for status + 4 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General:

EtherNet/IP module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-F 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 4 Input modules 5225.25F.

The EtherNet/IP module, regardless the number of Input module connected, reports to have connected 8 Input modules.

Regardless of the number of Input modules connected, the managable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

Connection to Bus EtherNet/IP is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

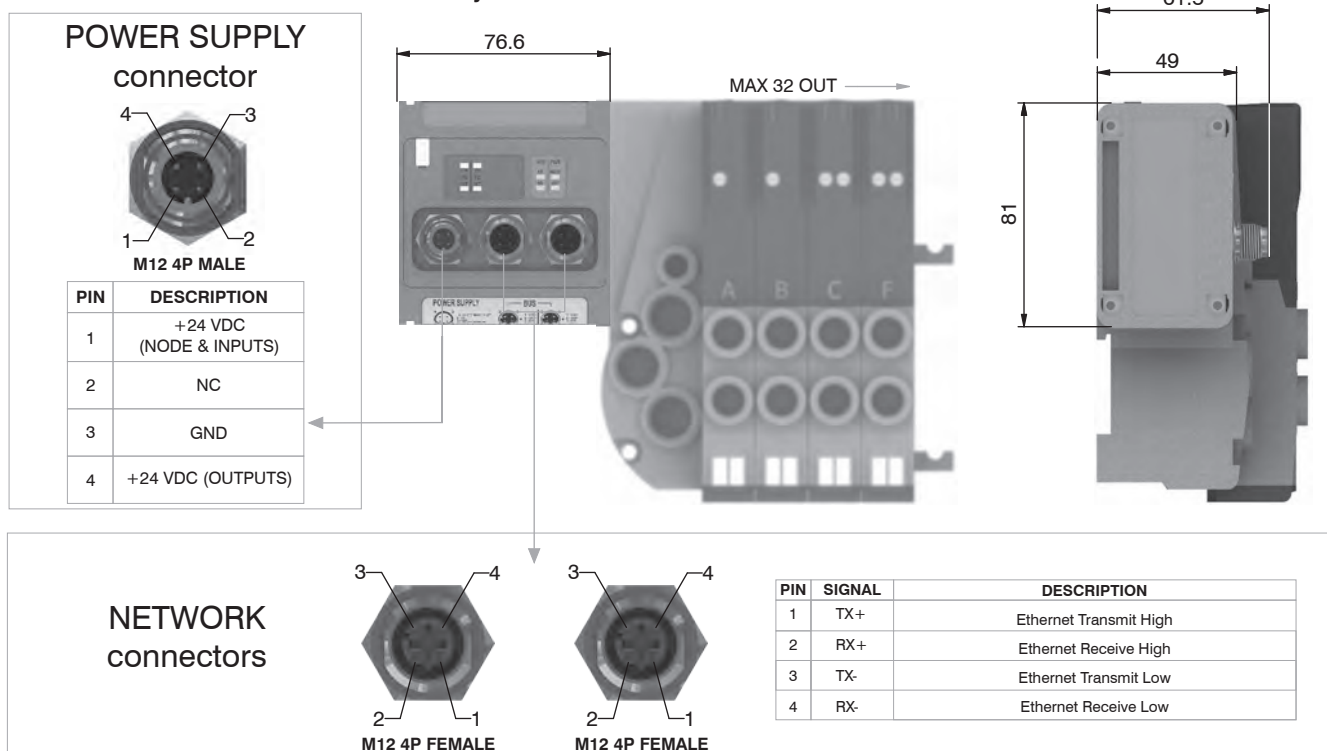
The node address is assigned during configuration.

## Ordering code

**5725.32F.EI.A**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5725.32F.EI.A
	Specifications	The EtherNet/IP Specification
	Case	Reinforced technopolymer
	Power supply	Power supply connection
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	Outputs	PNP equivalent outputs
	Maximum current for output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network	Network connectors
	Baud rate	100 Mbit/s
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	2 bi-colors LEDs green/red for status + 4 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

**General:**

CC-Link IE Field Basic module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection. Optyma-F 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 2 Input modules 5225.25F.

The CC-Link IE Field Basic module, regardless the number of Input module connected, reports to have connected 4 Input modules.

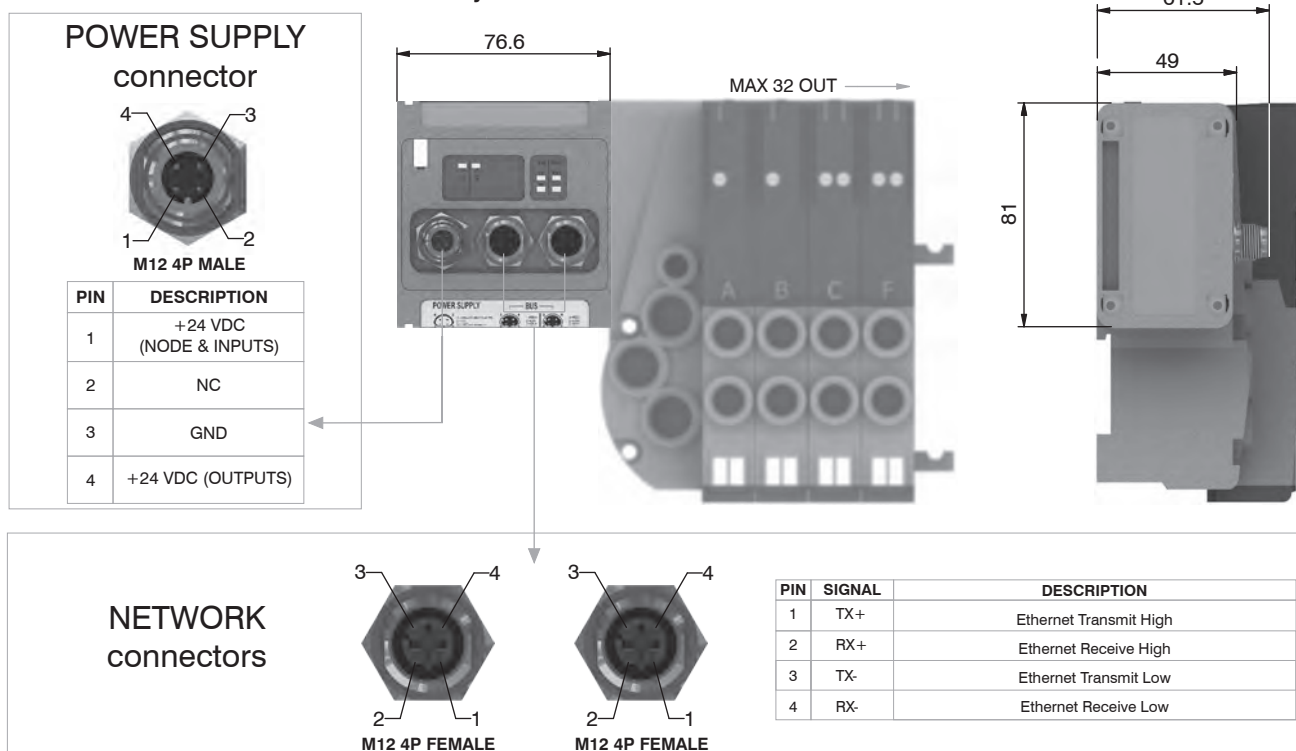
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

Connection to Bus CC-Link IE Field Basic is possible via 2 M12 4P type D female circular two connectors lead the signal to two different communication ports, so they are not connected connectors. These in parallel.

The node address is assigned during configuration.

**Ordering code****5725.32F.CL.A****Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5725.32F.CL.A
	Specifications	CC-Link IE Field Basic Specification
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	<b>Outputs</b>	PNP equivalent outputs
		+24 VDC +/- 10%
		Maximum current for output
		100 mA
		Maximum output number
		32
		Max output simultaneously actuated
		32
<b>Network</b>	Network connectors	2 M12 4P female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	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  $\pm 10\%$ .

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 self-mending fuse. If a short circuit or a overcharge (overall current  $>200\text{mA}$ ) 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 lights up indicating the ON state and the node will re-start to operate.

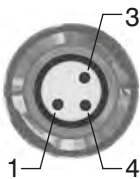
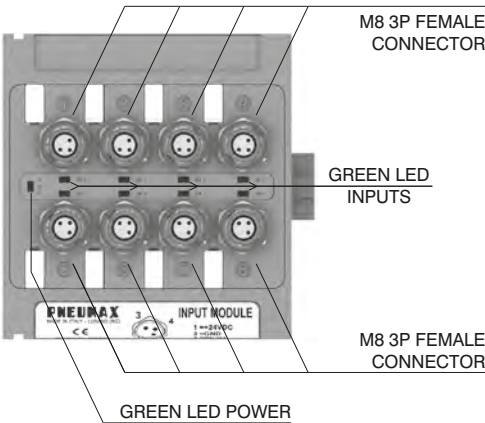
The maximum number of Input modules supported is 4.

Ordering code

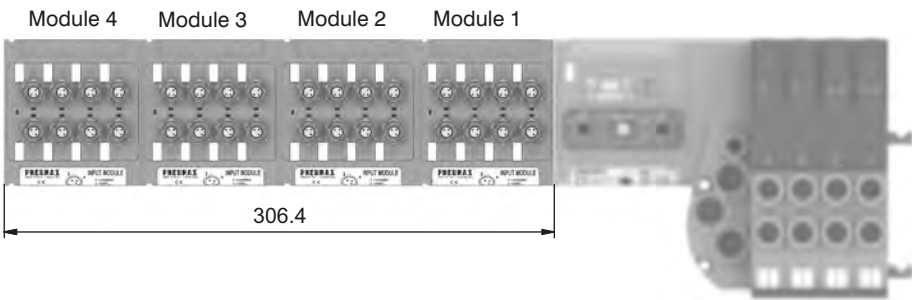
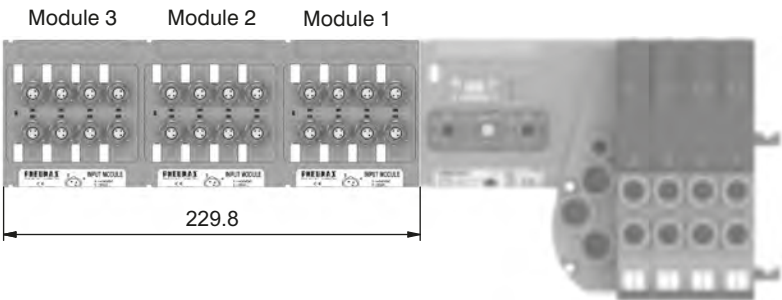
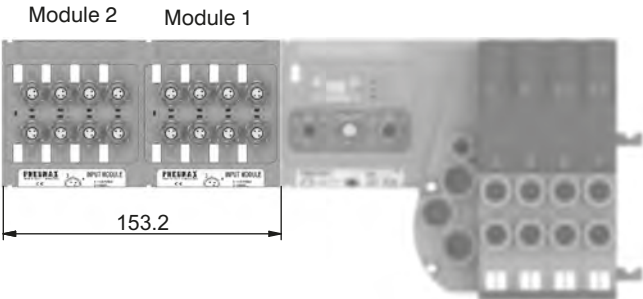
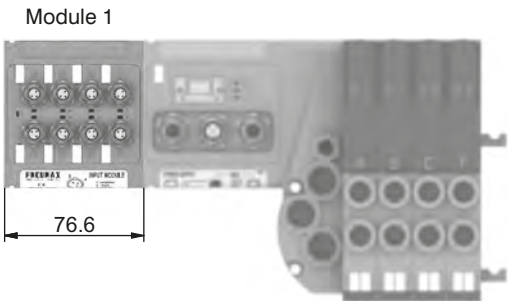
5225.08F



Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND



1  
AIR DISTRIBUTION



## General :

Modules are fitted with SUB-D 25 pin female connector.

The Inputs are PNP equivalent 24VDC  $\pm 10\%$ .

To the connector it is possible to connect both 2 wires Inputs (switches, magnetic switches pressure switches etc.) or 3 wires (proximity, photocells, electronic end of stroke sensors etc).

The maximum current available for all 16 Inputs is 750 mA.

Each module includes a 750 mA self-mending fuse. Should a short circuit or a overcharge (overall current  $> 750\text{mA}$ ) occur the safety device intervenes cutting the 24VDC power supply to all pins 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 is removed the green LED lights up indicating the ON state and the node will re-start to operate. This 16 Inputs module is counted as two 8 Inputs modules.

The Maximum number of 16 Inputs modules supported is 2 for CANopen<sup>®</sup>, DeviceNet and EtherCAT<sup>®</sup>.

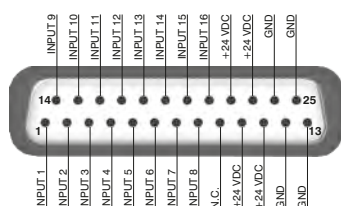
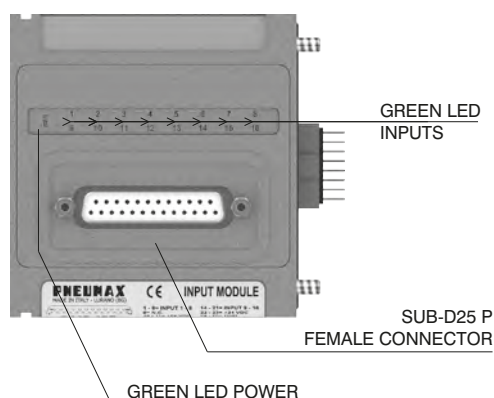
The Maximum number of 16 Inputs modules supported is 4 for PROFIBUS DP, PROFINET IO RT, EtherNet/IP and Powerlink.

## Ordering code

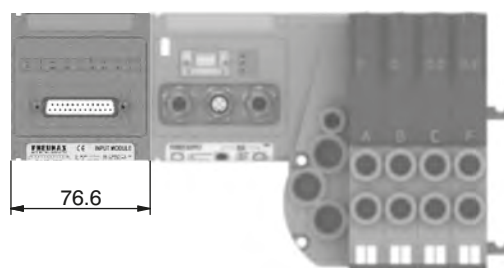
**5225.25F**



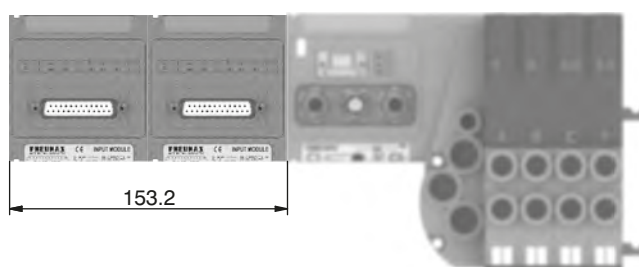
## Scheme / Overall dimensions and I/O layout :



Module 1



Module 2 Module 1





General :

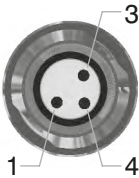
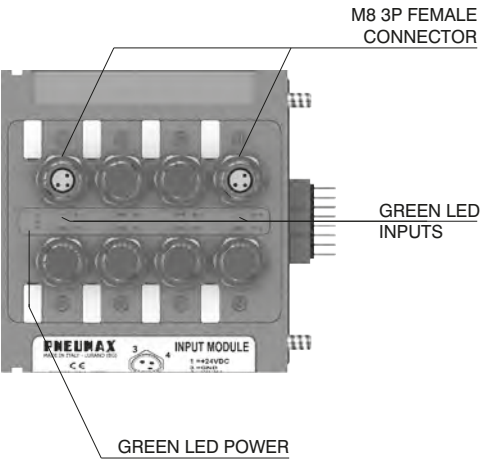
This module is fitted with two M8 3 pin female connectors.  
With this module is possible to read two analogue inputs (voltage or current).  
The inputs are sampled at 12 bit.  
For practicality the sampled value is transmitted with 16 bit, of which the four less significant are fixed at zero.

Available models:  
5225.2T.00F (voltage signal 0 - 10V);  
5225.2T.01F (voltage signal 0 - 5V);  
5225.2C.00F (current signal 4 - 20mA);  
5225.2C.01F (current signal 0 - 20mA).

Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC 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 is removed the green LED lights up indicating the ON state and the node will re-start to operate.

This module is counted as four 8 digital Inputs modules.  
The Maximum number of 2 analogue Inputs modules supported is 1 for CANopen®, DeviceNet, PROFIBUS DP and EtherCAT®.  
The Maximum number of 2 analogue Inputs modules supported is 2 for PROFINET IO RT, EtherNet/IP and Powerlink.

Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

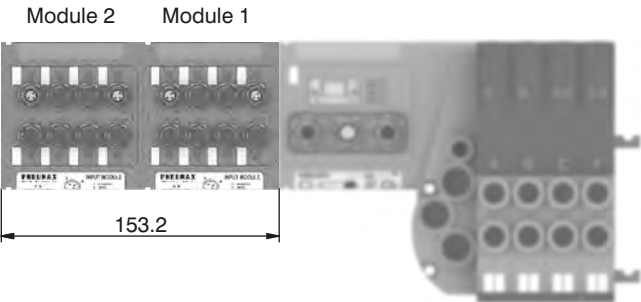
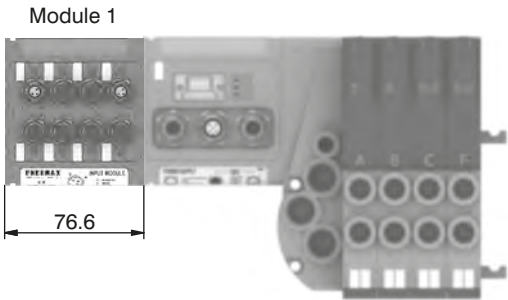
Ordering code

5225.2 \_ . \_ \_ F



1

AIR DISTRIBUTION





Socket for Power Supply  
STRAIGHT CONNECTOR  
M12A 4P FEMALE

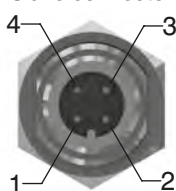
**Ordering code**

**5312A.F04.00**



## POWER SUPPLY connector

Upper view  
Slave connector

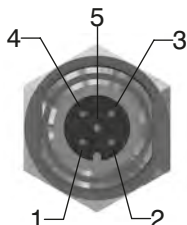


PIN	DESCRIPTION
1	+24 VDC Node
2	
3	0 V
4	+24 VDC Outputs

Socket for Bus CANopen®/DeviceNet  
STRAIGHT CONNECTOR  
M12A 5P FEMALE

**Ordering code**

**5312A.F05.00**



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

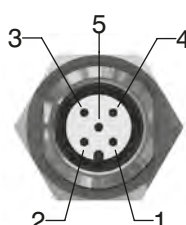
Upper view  
Slave connector

## NETWORK connectors

Plug for Bus CANopen®/DeviceNet  
STRAIGHT CONNECTOR  
M12A 5P MALE

**Ordering code**

**5312A.M05.00**



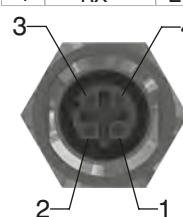
Plug for Bus EtherCAT®,  
PROFINET IO RT  
and EtherNet/IP  
STRAIGHT CONNECTOR M12D 4P MALE

**Ordering code**

**5312D.M04.00**



PIN	SIGNAL	DESCRIPTION
1	TX+	Ethernet Transmit High
2	RX+	Ethernet Receive High
3	TX-	Ethernet Transmit Low
4	RX-	Ethernet Receive Low

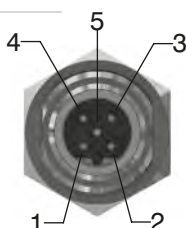


Upper view  
Slave connector

Socket for Bus PROFIBUS DP  
STRAIGHT CONNECTOR  
M12B 5P FEMALE

**Ordering code**

**5312B.F05.00**



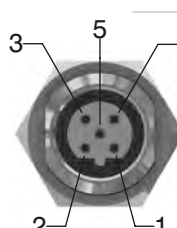
Upper view  
Slave connector

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

Plug for Bus PROFIBUS DP  
STRAIGHT CONNECTOR  
M12B 5P MALE

**Ordering code**

**5312B.M05.00**



Plug for Input module  
STRAIGHT CONNECTOR  
M8 3P MALE

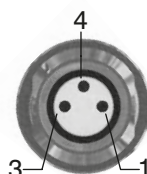
**Ordering code**

**5308A.M03.00**



## INPUT connectors

Upper view  
Slave connector



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

M12 plug

**Ordering code**

**5300.T12**



## Plugs

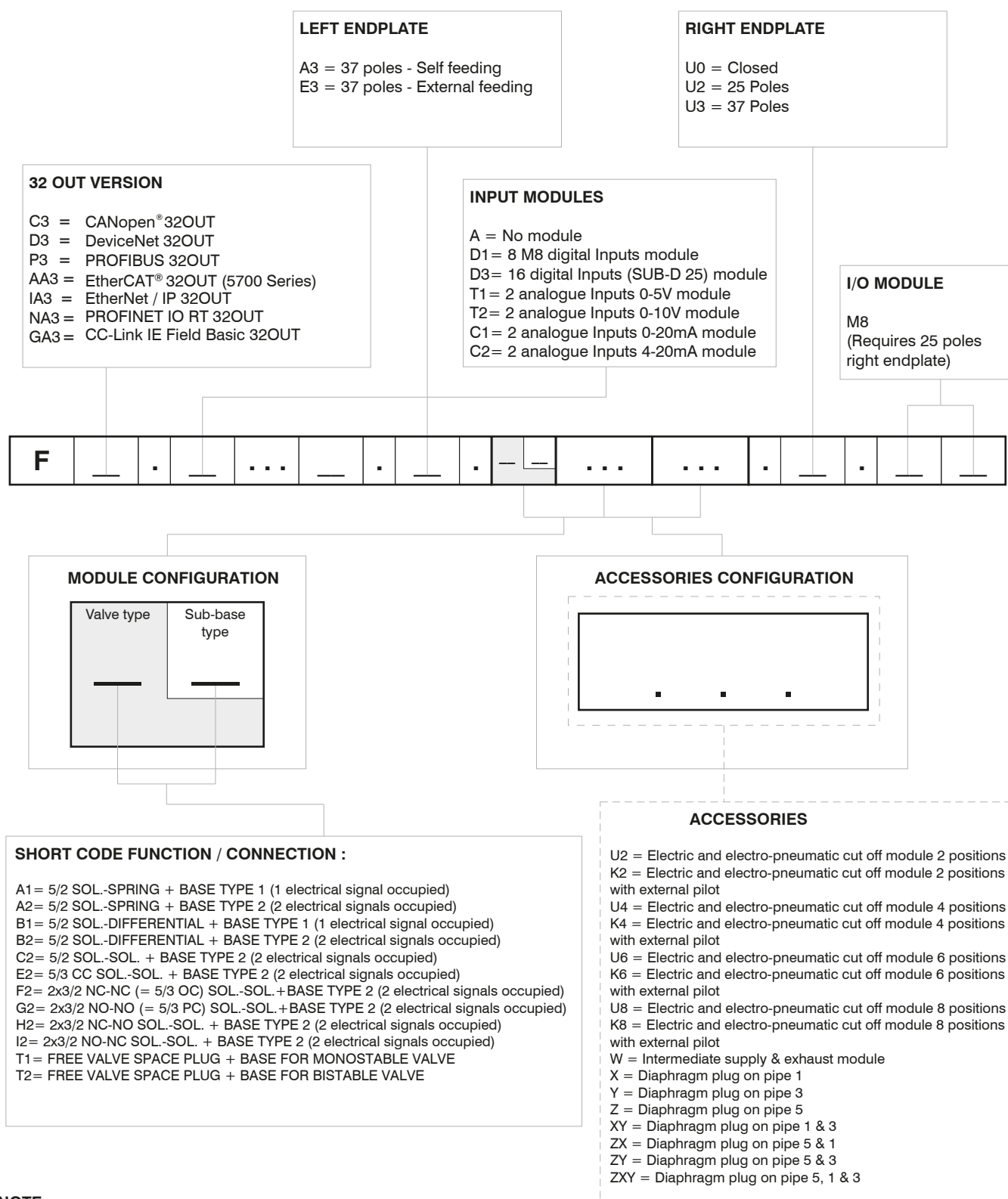
M8 plug

**Ordering code**

**5300.T08**



## Manifold Layout configuration



**NOTE:**

While configuring the manifold always be careful that the maximum number of electrical signals available is 32.

The use of monostable valve mounted on a base type 2 ( 2 electrical signals occupied ) causes the loss of one electric signal. In this case the monostable valve can be replaced by a bistable valve. The diaphragms plugs are used to intercept the conduits 1,3 & 5 of the base. If it is necessary to interrupt more than one conduit in the same time then put in line the letters which identifies the position (for example : regarding the 3 & 5 conduits, put the Y & Z letters). Should one or more conduits be cut more than one time it is necessary to add the relevant intermediate Supply/Exhaust module.



## Series 2500 "OPTYMA-T"

### General

With the introduction of the "T" configuration of solenoid valves with integrated pneumatic connections fitted directly on the sub base the 2500 series (called OPTYMA) is now richer than ever.

Many technical features make the new product interesting:

- Flow rate of 800 NI/min
- Tie rod system to hold the sub bases together
- All pneumatic connections (push-in) on the same side of the manifold
- Quick mounting of the valve to the base using just one screw
- Possibility to replace the valve without the need to disconnect the connections
- Possibility to use different pressures along the manifold (including vacuum)
- IP65 environmental protection
- Electrical connection directly integrated into the base, 32 electrical signals available (can be used to build up a manifold of 32 monostable valves, 16 bistable valves or any combination within that limit).
- The electrical connection is made via 37 pin D-SUB connector.
- It is also available a 25-pole connector that is able to manage a maximum number of 22 electrical signals.

Possibility to integrate with Field Bus modules CANopen®, PROFIBUS DP, DeviceNet, EtherNet/IP, PROFINET I/O RT and EtherCAT®.

Possibility to connect input modules, even on the base that does not have the Field Bus module. Large use of technopolymer material reduces the overall weight of the manifold.

"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

Integrated and optimized electrical connection system.

IP65 protection degree.

Only one 19mm size

Electrical line connections on one side

Monostable and bistable solenoid valves with the same size dimensions.

Easy and fast manifold assembly - tie rod system to hold the sub bases together

Quick coupling connections directly integrated in sub base

Easy and fast manifold assembling.

### Construction characteristics

Body	Technopolymer
Operators	Technopolymer
Spacers	NBR
Spacer	Technopolymer
Spools	Nickel - plated steel / Technopolymer
Springs	AISI 302 stainless steel
Pistons	Technopolymer
Piston seals	NBR

### Functions

SV 5/2 MONOSTABLE SOLENOID-SPRING  
SV 5/2 MONOSTABLE SOLENOID-DIFFERENTIAL  
SV 5/2 BISTABLE SOLENOID-SOLENOID  
SV 5/3 C.C. SOLENOID-SOLENOID  
SV 2x3/2 N.C.-N.C. (=5/3 O.C.) SOLENOID-SOLENOID  
SV 2x3/2 N.O.-N.O. (=5/3 P.C.) SOLENOID-SOLENOID  
SV 2x3/2 N.C.-N.O. SOLENOID-SOLENOID

### Technical characteristics

Voltage	24VDC $\pm$ 10% PNP (NPN and AC on request)
Pilot consumption	1,3 Watt
Pilot working pressure (12-14)	From 3 to 7 bar max.
Valve working pressure [1]	from vacuum up to 10 bar
Operating temperature	-5°C +50°C
Protection degree	IP65
Life (standard operating conditions)	50000000
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous

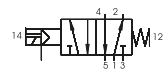
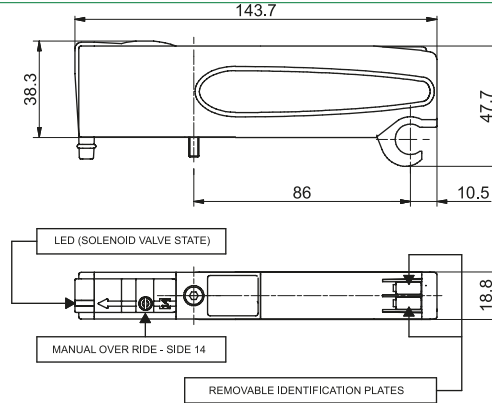
## Solenoid - Spring

Coding: 2541.52.00.39.

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (l/min)	750
Response time according to ISO 12238, activation time (ms)	14
Response time according to ISO 12238, deactivation time (ms)	40

Weight 129 g  
SHORT FUNCTION CODE "A"

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



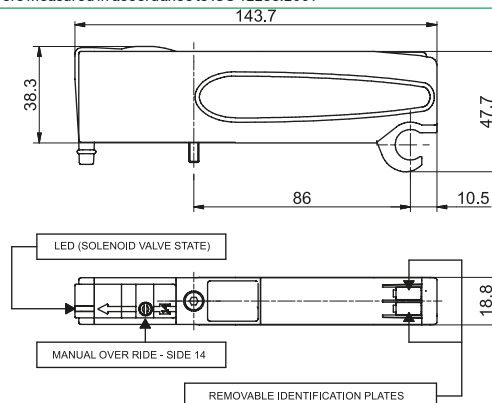
## Solenoid-Differential

Coding: 2541.52.00.36.

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (l/min)	750
Response time according to ISO 12238, activation time (ms)	20
Response time according to ISO 12238, deactivation time (ms)	29

Weight 126 g  
SHORT FUNCTION CODE "B"

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



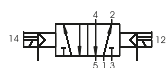
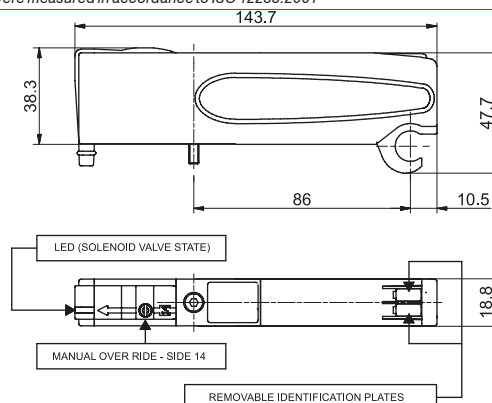
## Solenoid-Solenoid

Coding: 2541.52.00.35.

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (l/min)	750
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	14

Weight 134 g  
SHORT FUNCTION CODE "C"

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





## Solenoid valves manifold Series 2500 "OPTYMA-T"

### Solenoid-Solenoid 5/3

Coding: 2541.53.31.35.

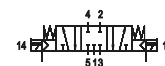
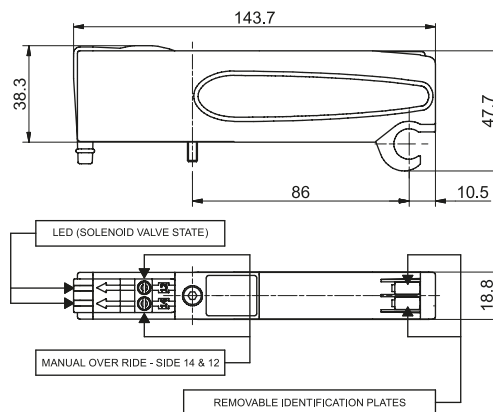
#### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	600
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	20

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

VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

Weight 132 g  
SHORT FUNCTION CODE "E"



### Solenoid-Solenoid 2x3/2

Coding: 2541.62. .35.

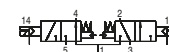
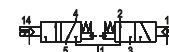
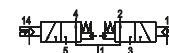
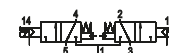
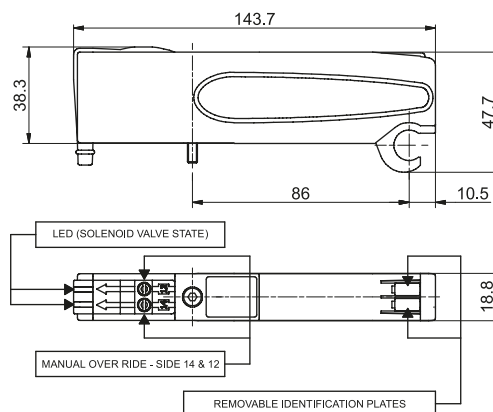
#### Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	25

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

FUNCTION
44 = NC-NC (5/3 Open centres)
55 = NO-NO (5/3 Pressured centres)
45 = NC-NO (normally closed-normally open)
54 = NO-NC (normally open-normally closed)
VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

Weight 122 g  
"Example: If inlet pressure is set at 5bar then pilot pressure must be at least  $P_p=2,5+(0.2*5)=3,5\text{bar}$ "



"Example: If inlet pressure is set at 5bar then pilot pressure must be at least  $P_p=2,5+(0.2*5)=3,5\text{bar}$ "

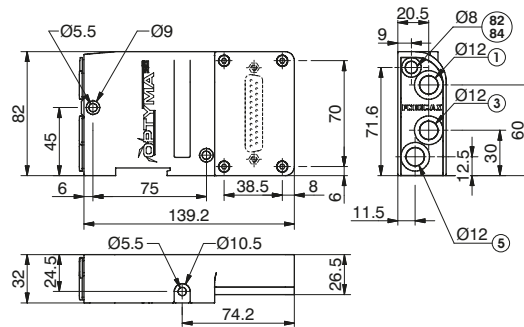
## Right Endplates

Coding: 2540.03.Ⓒ

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

ELECTRICAL CONNECTION	
Ⓒ 00 =	Electrical connection
25P =	Connectors 25 poles

Conduit 82/84=DO NOT PRESSURIZE,  
SOLENOID PILOTS EXHAUST



Weight 274 g

## Left Endplates

Coding: 2540.Ⓥ.Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50

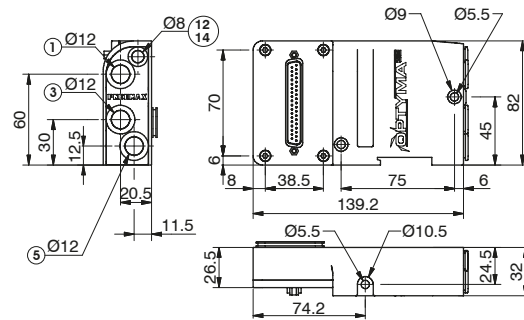
VERSION	
Ⓥ 02 =	External feeding
12 =	Self-feeding
ELECTRICAL CONNECTION	
37P =	Connectors 37 poles
PNP	
25P =	Connectors 25 poles
PNP	
37N =	Connectors 37 poles
NPN	
25N =	Connectors 25 poles
NPN	
37A =	Connectors 37 poles
AC	
25A =	Connectors 25 poles
AC	



Weight 300 g

2540.02.Ⓒ

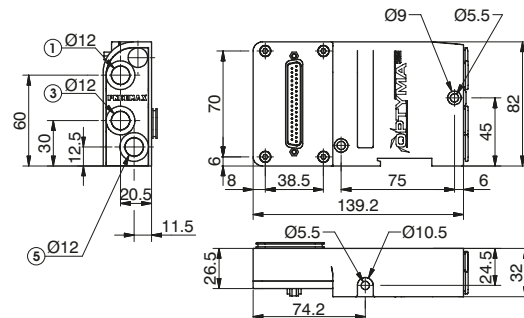
Left Endplates-External feeding base: 12/14 divided from conduit 1



Weight 300 g

2540.12.Ⓒ

Left Endplates - Self-feeding Base: 12/14 connected with conduit 1

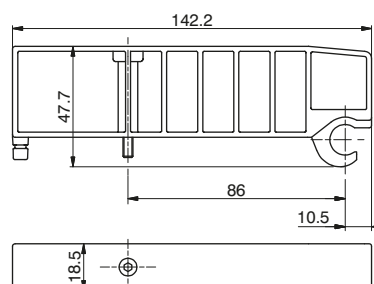


## Closing plate

Coding: 2530.00

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

SHORT FUNCTION CODE "T"



Weight 53,5 g





## Solenoid valves manifold Series 2500 "OPTYMA-T" - Accessories

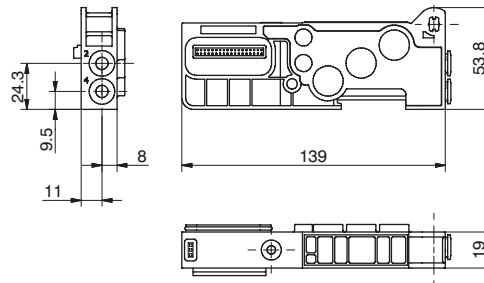
### Modular base

Coding: 254C.01V

#### Operational characteristics

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

WORKING PORTS SIZE
1 = G1/8" female straight cartridge
4 = Cartridge Ø4
6 = Quick fitting tube Ø6
8 = Quick fitting tube Ø8
VERSION
M = for Monostable SV
B = for Bistable SV



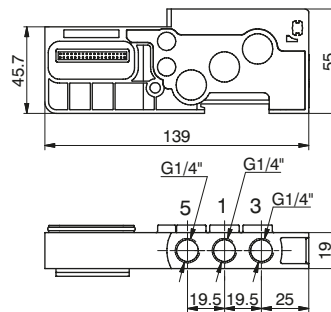
Weight 96,5 g

### Intermediate Inlet/Exhaust module

Coding: 2540.10

#### Operational characteristics

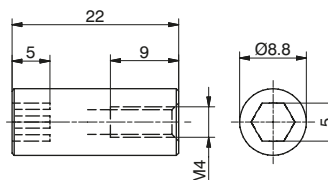
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50



Weight 115 g  
SHORT FUNCTION CODE "W"

### Nut

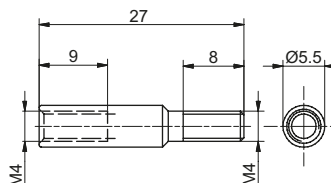
Coding: 2540.KD.00



Weight 10 g  
The Kit includes 4 pieces

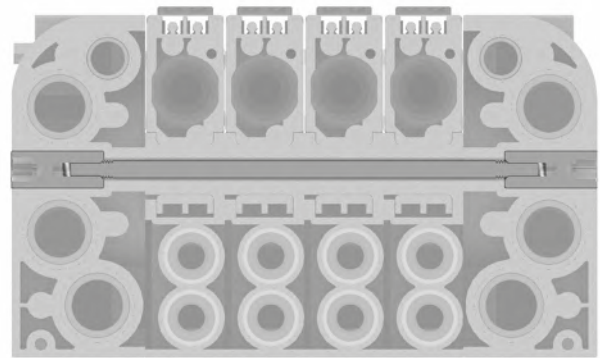
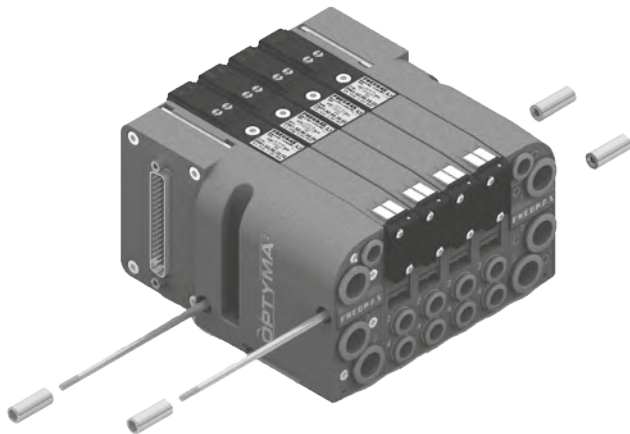
### Extension (1 Position)

Coding: 2540.KP.01

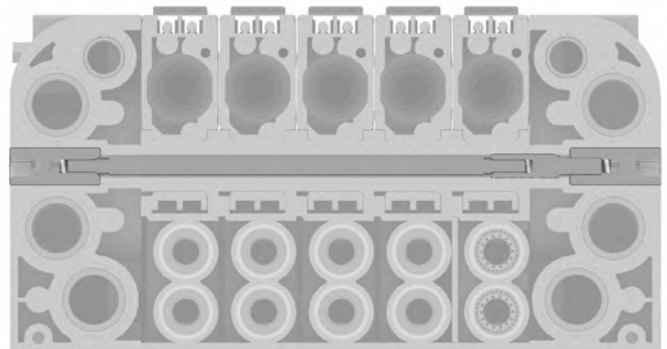
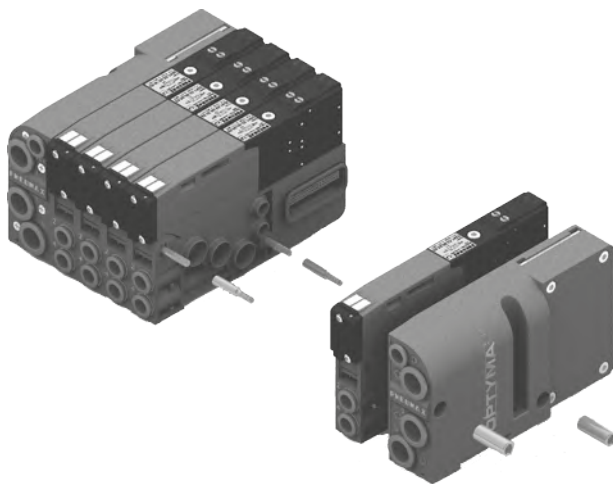


Weight 3,5 g  
The Kit includes 2 pieces

Set with single tie-rod (max. 32 Solenoid valves)



Set with tie-rod, more extension adding a valve



1

AIR DISTRIBUTION

## General :

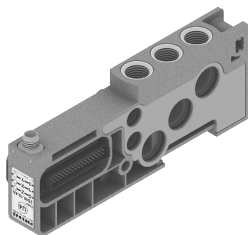
Each Optyma-T manifold allows you to manage 32 command signals for the solenoid valves. Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP) have a single pin for the power supply of the solenoid valves.

So if you want to interrupt the power supply of one valve it is necessary to interrupt all the valves. The additional power supply module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself according to the selected device version. The additional power supply module is particularly useful also when you use control signals that block the valves. This application is effective both with serial management and multi-pole connection of the manifolds.

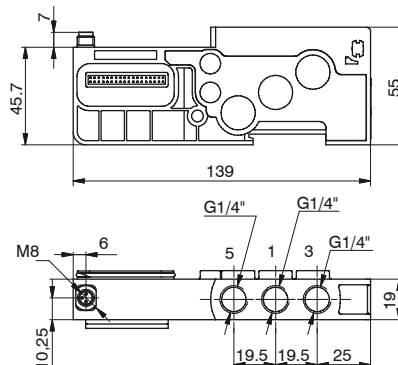
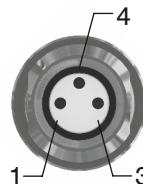
Furthermore, the electro-pneumatic cut off module allows you to interrupt the air flow that feeds the 12/14 pilots coming from upstream.

A threaded connection port incorporated in the module allows to pneumatically feed each pilot of a limited number of solenoid valves downstream.

This module has the same characteristics of an intermediate supply and exhaust module and fits directly into the Optyma-F series solenoid valve manifolds.



In particular this module is fitted with a M8 3 pins connector:  
+24V, not connected, GND.



## Ordering code

**2540.10.2A = 2 positions**  
**2540.10.4A = 4 positions**  
**2540.10.6A = 6 positions**  
**2540.10.8A = 8 positions**

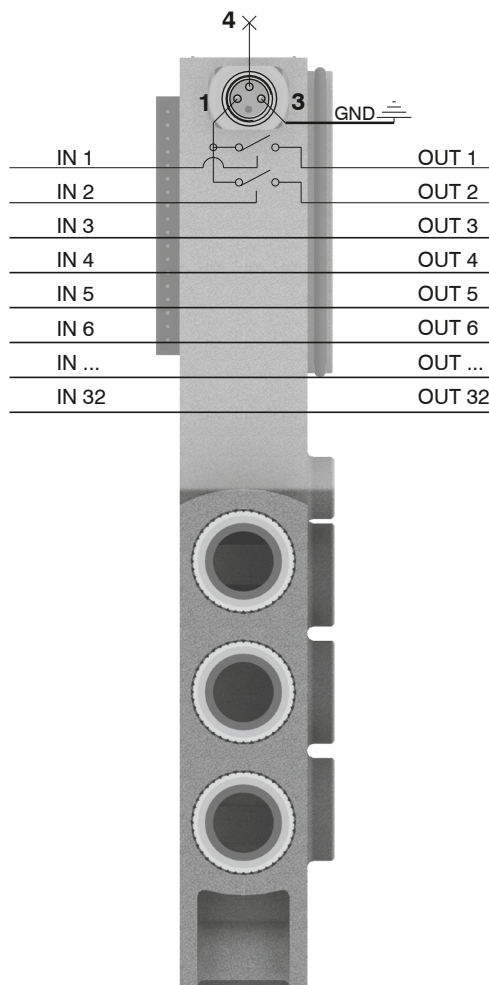
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

## WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

This module uses an external power supply (+24VDC) to manage the solenoid valves.

The output signal from serial node / multi-pole connection is used as command signal: when it is high the +24VDC will be present at the module output.

If you want to cut off the power supply to a group of 2 valves it is sufficient to take away the +24VDC provided to the module by the M8 connector.



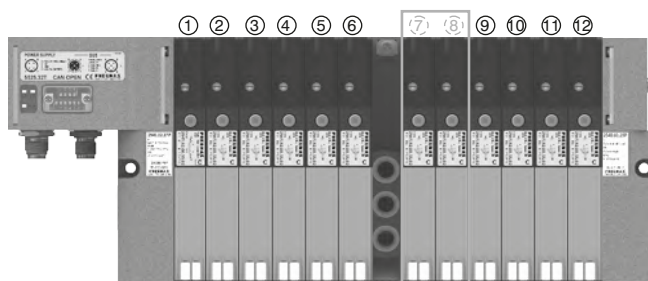
**Please note:** It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

**Usage examples:****EXAMPLE 1:**

Manifold of 12 monostable valves on which you want to interrupt signals 7-8

**Assembly:**

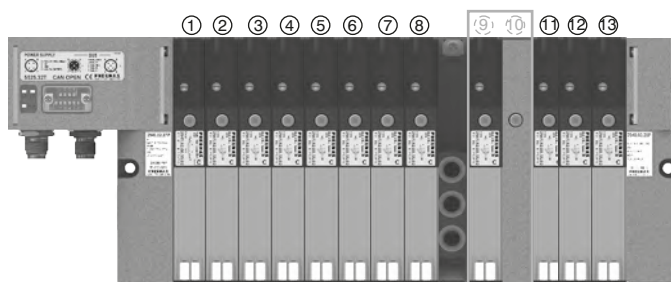
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 2 monostable of these are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

**EXAMPLE 2:**

Manifold of 12 monostable valves on which you want to interrupt signal 9

**Assembly:**

- 8 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 1 monostable valve (interruptible),
- 1 closing plate mounted on a monostable base,
- 3 monostable valves (work correctly managed directly by the corresponding command signals).



**Please note:** Each additional power supply module interrupts always 2 electrical signals.



If you need to interrupt less than 2 signals you can:

- assemble the valves to interrupt in the last positions of the manifold, so you don't need to worry about the interrupted exceeding signals;
- use a bistable base and mount a monostable valve (for each signal less than the 2 standard);
- use a monostable base and mount a closing plate (for each signal less than the 2 standard).

**EXAMPLE 3:**

Manifold of 7 monostable e 3 bistable valves on which you want to interrupt signals 2-3 and 8-9.

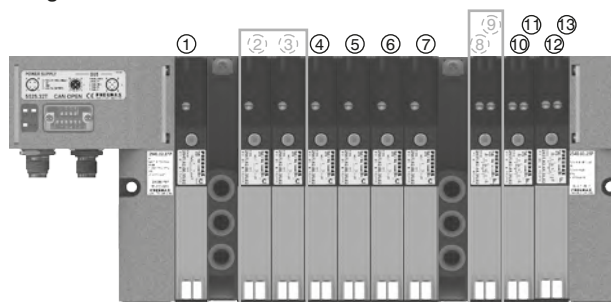
**Assembly:**

- 1 monostable valve (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves.

Please note: the first 2 monostable of these are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

- 1 additional power supply module,
- 3 bistable valves.

**Please note:** the first bistable of these valves is interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.



## General :

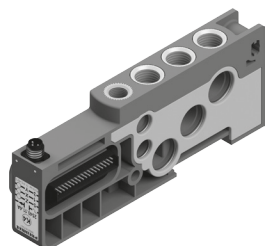
Each Optyma-T manifold allows you to manage 32 command signals for the solenoid valves. Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP) have a single pin for the power supply of the solenoid valves.

So if you want to interrupt the power supply of one valve it is necessary to interrupt all the valves. The additional power supply module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself according to the selected device version. The additional power supply module is particularly useful also when you use control signals that block the valves. This application is effective both with serial management and multi-pole connection of the manifolds.

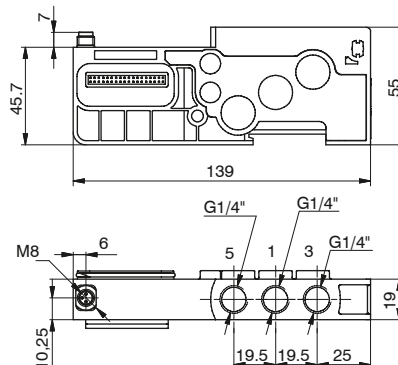
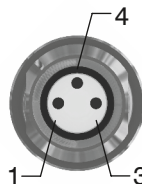
Furthermore, the electro-pneumatic cut off module allows you to interrupt the air flow that feeds the 12/14 pilots coming from upstream.

A threaded connection port incorporated in the module allows to pneumatically feed each pilots of a limited number of solenoid valves downstream.

This module has the same characteristics of an intermediate supply and exhaust module and fits directly into the Optyma-T series solenoid valve manifolds.



In particular this module is fitted with a M8 3 pins connector:  
+24V, not connected, GND.



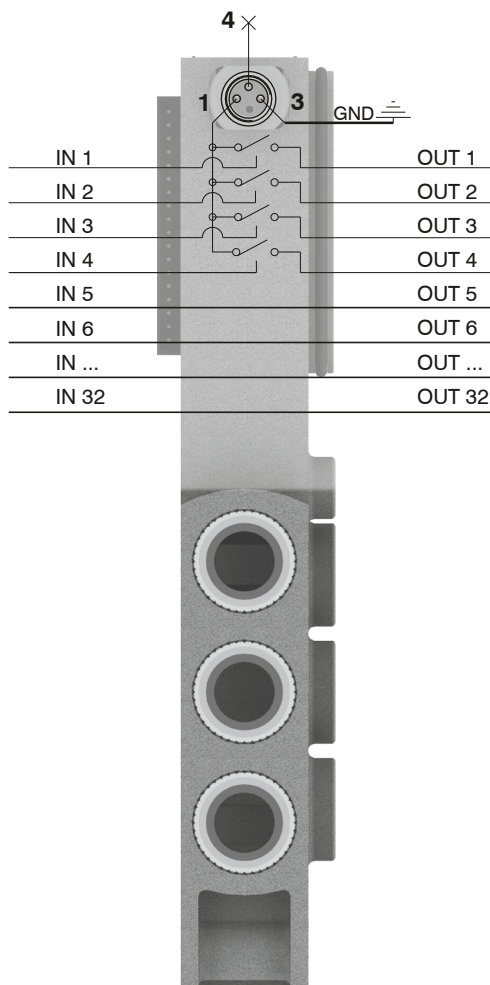
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

## WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

This module uses an external power supply (+24VDC) to manage the solenoid valves.

The output signal from serial node / multi-pole connection is used as command signal: when it is high the +24VDC will be present at the module output.

If you want to cut off the power supply to a group of 4 valves it is sufficient to take away the +24VDC provided to the module by the M8 connector.



**Please note:** It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

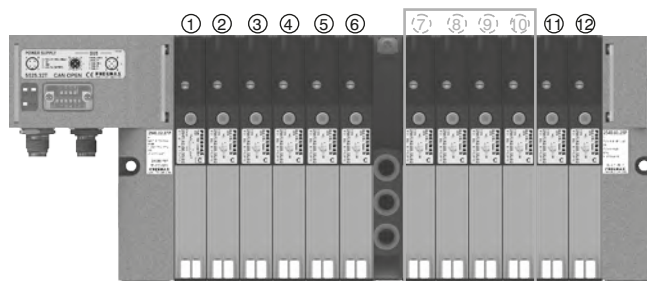


**Usage examples:****EXAMPLE 1:**

Manifold of 12 monostable valves on which you want to interrupt signals 7-8-9-10

**Assembly:**

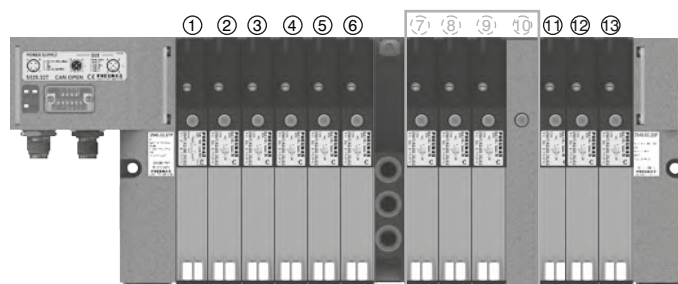
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 4 monostable of these are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

**EXAMPLE 2:**

Manifold of 12 monostable valves on which you want to interrupt signals 7-8-9

**Assembly:**

- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 3 monostable valves (interruptible),
- 1 closing plate mounted on a monostable base,
- 3 monostable valves (work correctly managed directly by the corresponding command signals).



**Please note:** Each additional power supply module interrupts always 4 electrical signals.

If you need to interrupt less than 4 signals you can:

- assemble the valves to interrupt in the last positions of the manifold, so you don't need to worry about the interrupted exceeding signals;
- use a bistable base and mount a monostable valve (for each signal less than the 4 standard);
- use a monostable base and mount a closing plate (for each signal less than the 4 standard).

**EXAMPLE 3:**

Manifold of 7 monostable e 3 bistable valves on which you want to interrupt signals 2-3-4-5 and 8-9-10-11.

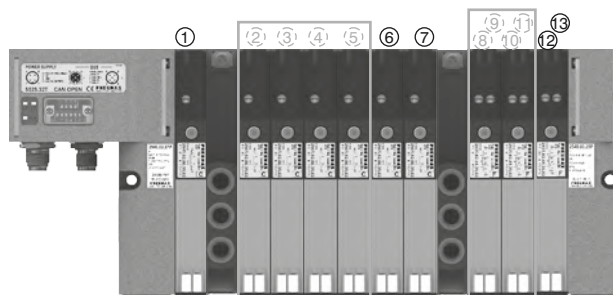
**Assembly:**

- 1 monostable valve (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves.

Please note: the first 4 monostable of these are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

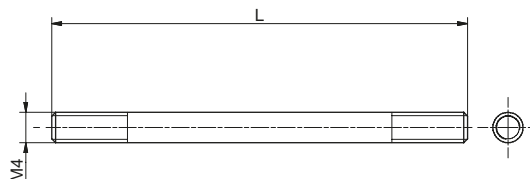
- 1 additional power supply module,
- 3 bistable valves.

**Please note:** the first 2 bistable of these valves are interruptible by the module, while the following will work correctly managed directly by the corresponding command signals.



1

AIR DISTRIBUTION



Coding: 2540.KT.**P**

N. POSITIONS
01 = Nr. 1 Position
02 = Nr. 2 Positions
03 = Nr. 3 positions
04 = Nr. 4 Positions
05 = Nr. 5 positions
06 = Nr. 6 Positions
07 = Nr. 7 positions
<b>P</b> 08 = Nr. 8 Positions
09 = Nr. 9 positions
10 = Nr. 10 Positions
11 = Nr. 11 positions
12 = Nr. 12 Positions
13 = Nr. 13 positions
14 = Nr. 14 Positions
...
32 = Nr. 32 Positions

**Polyethylene Silencer Series SPL-R**

Coding: SPLR.**D**



TUBE DIAMETER
<b>D</b> 8 = 8 mm
12 = 12 mm

**Diaphragm plug**

Coding: 2530.17



**Cable complete with connector, 25 Poles IP65**

Coding: 2300.25.**L.C**



CABLE LENGTH
<b>L</b> 03 = 3 meters
05 = 5 meters
10 = 10 meters
FUNCTION
<b>F</b> 31 = Closed centres
32 = Open centres
33 = Pressured centres

**Cable complete with connector, 37 Poles IP65**

Coding: 2400.37.**L.C**



CABLE LENGTH
<b>L</b> 03 = 3 meters
05 = 5 meters
10 = 10 meters
FUNCTION
<b>F</b> 31 = Closed centres
32 = Open centres
33 = Pressured centres

**Cable complete with connector, 25 Poles IP65**

Coding: 2400.25.**L.25**



CABLE LENGTH
<b>L</b> 03 = 3 meters
05 = 5 meters
10 = 10 meters

The electrical connection is achieved by a 37 pin connector and can manage up to 32 solenoid pilots. It is also possible use a 25 sub-D pin connector and, in this case, it is possible to manage a maximum of 22 outputs. The management and distribution of the electrical signals between each valve is obtained thanks to an 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 and 2x3/2 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. Modular bases can be fitted with two type of electrical connector: the monostable version uses only one signal (connected to the pilot side 14) and carries forward the remaining, the bistable version which always uses two signals.

This solution allows the modification of the manifold (replacement of monostable valves without bistable for example) without having to reset the PLC output layout.

On other hand this solution limits the maximum number of valves to 16 when it is used a 37 pin connector or 11 when it is used a 25 pin connector.

Intermediate supply/exhaust module uses an electrical connector directly forwarding signals to the next one without any kind of modification.

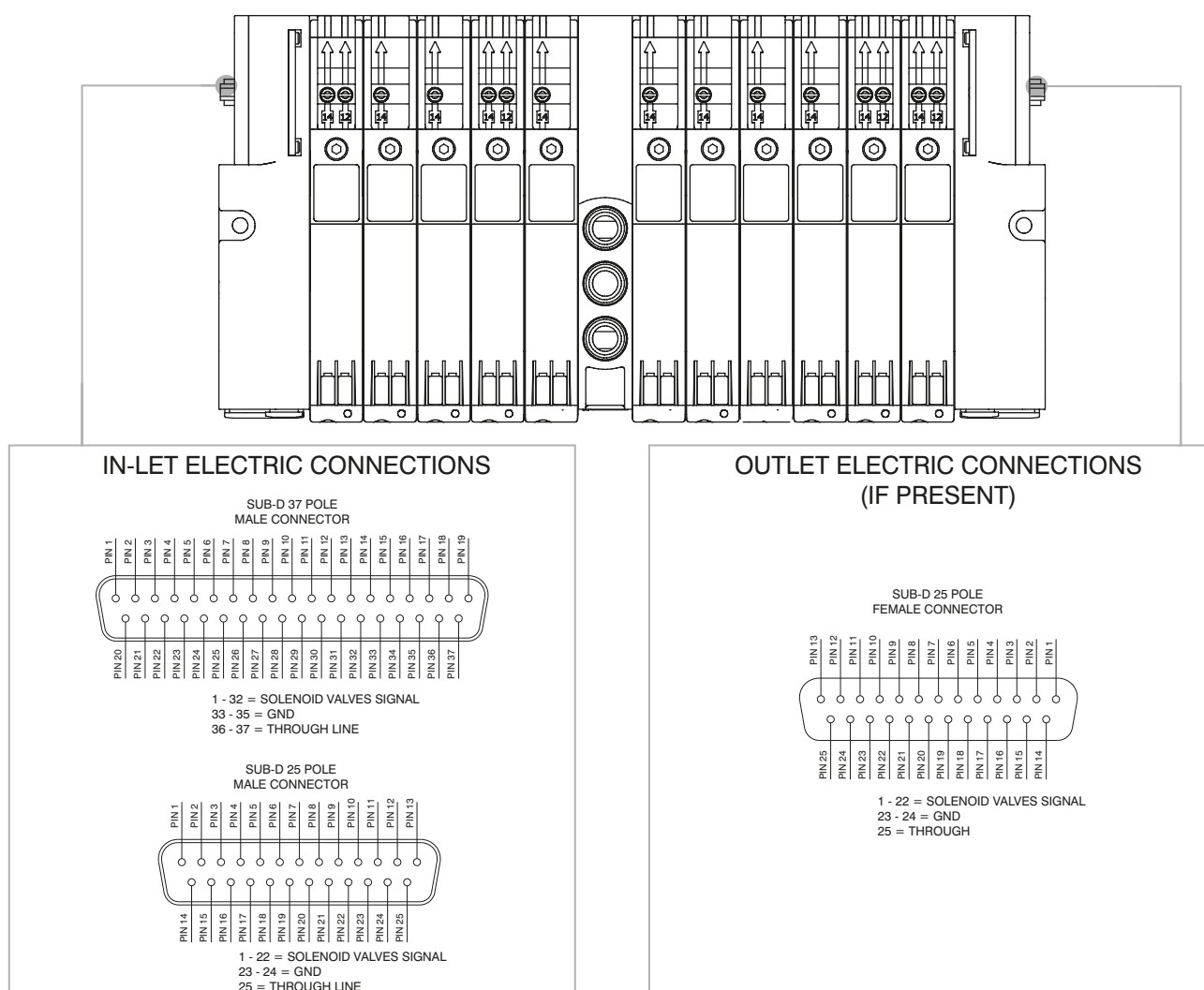
This allows the use of intermediate modules in any position of the manifold.

All the electrical signals that have not been used on the manifold can be used placing at the end of the manifold the end plate complete with the 25 sub-D female connector.

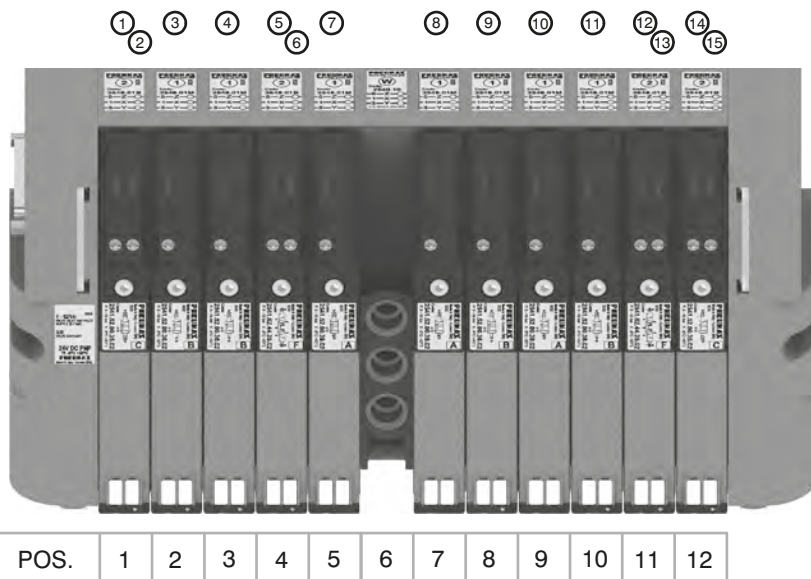
The number of available signals depends of the connector used to the type of the left end plate and by the total signals used along the manifold:

37 pin connector      nr of output = 32 – (total of used signals)  
25 pin connector      nr of output = 22 – (total of used signals)

Following we show some examples of possible combination and the relative pin assignment.

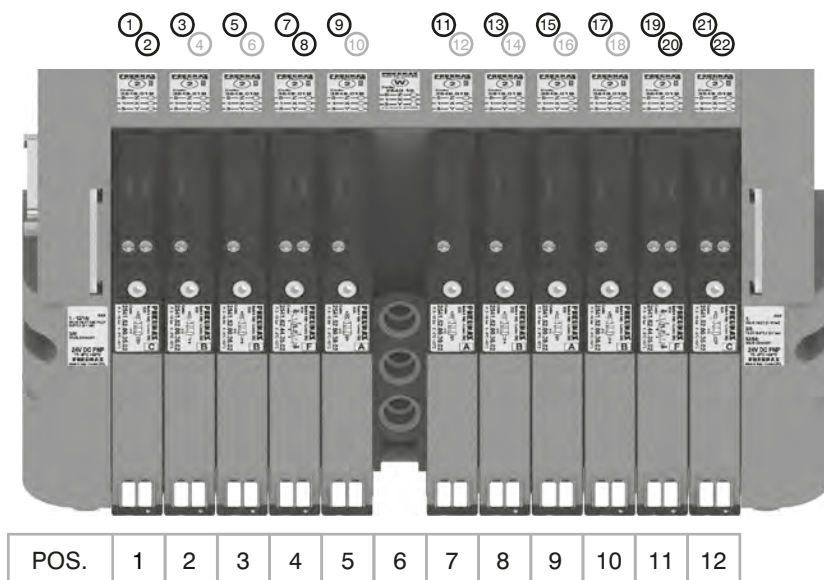


### 37 PIN Connector correspondence for valves assembled on mixed bases



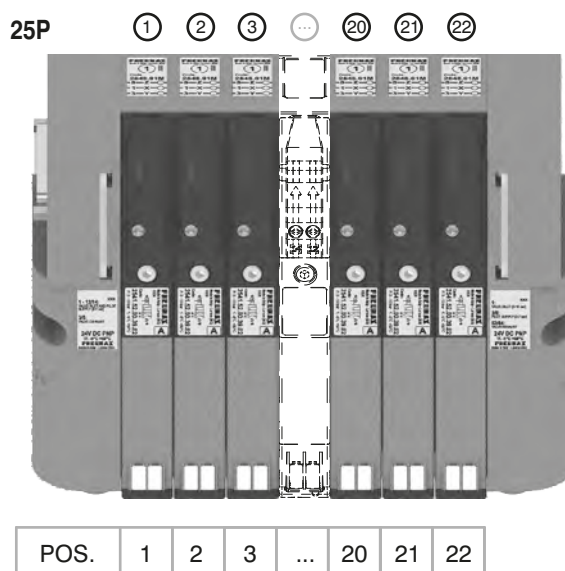
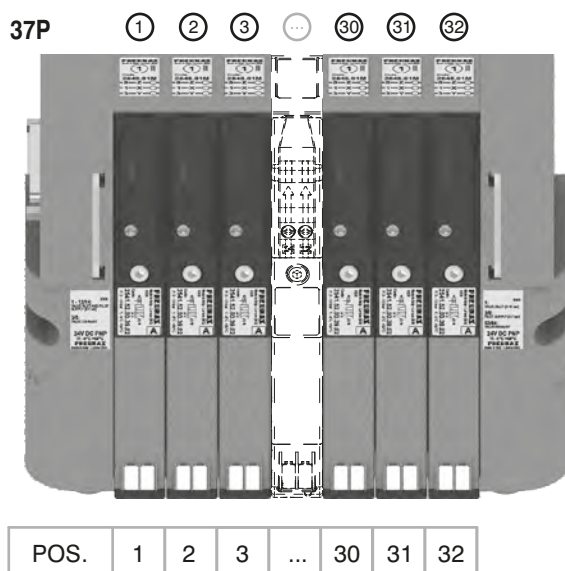
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 14 SV POS.3
- PIN 5 = PILOT 14 SV POS.4
- PIN 6 = PILOT 12 SV POS.4
- PIN 7 = PILOT 14 SV POS.5
- PIN 8 = PILOT 14 SV POS.7
- PIN 9 = PILOT 14 SV POS.8
- PIN 10 = PILOT 14 SV POS.9
- PIN 11 = PILOT 14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

### 37 PIN Connector correspondence for manifold mounted on bases for bistable valves



- PIN 1 = PILOT 14 S 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

### 37 PIN Connector correspondence for manifold for 32 position manifold with monostable valves on base





General :

Using the 2540.03.25P output terminal it is possible to make any electrical signals not used by valves available on a 25 sub-D female connector at the right end of the manifold.  
It is possible to then join a multi-core cable to link to the next manifold, or connect directly to one or two I/O modules.  
The I/O modules can accept input or output signals, depending upon what is connected.

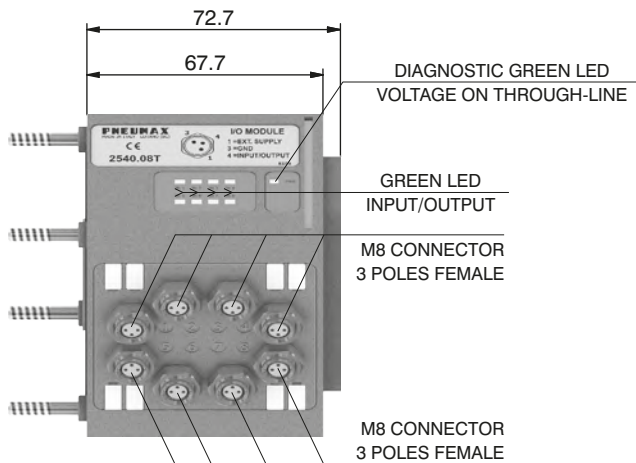
**Please note:** If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

It is possible to connect the manifold to up to two I/O modules.

Each I/O module includes 8 diagnostic LEDs which indicate the presence of an Input / Output signal for each connector.

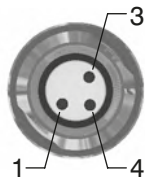
**Please note:** For an LED to function, a signal of at least +15VDC must be present on pin 4 of the connector. If this signal is lower, the LED will not light, this does not compromise the normal Input / Output function of the unit.

Overall dimensions and I/O layout :



Ordering code

2540.08T



PIN	DESCRIPTION
1	+24 VDC
4	INPUT/OUTPUT
3	GND

Input features:

Each connection can accept either two wire (switches, magnetic switches, pressure switches, etc.) or three wire connections (photocells, electronic end of stroke sensors, etc.) If +24VDC is required on at Pin 1 of each connector, it is possible to provide this via the through-line pin of the multi-pole connector.

I.E :

Pin 25 of the 25 pin multi-pole connector (code 2540.02.25P or 2540.12.25P)

Pin 36-37 of the 37 pin multi-pole connector (code 2540.02.37P or 2540.12.37P)

Output features:



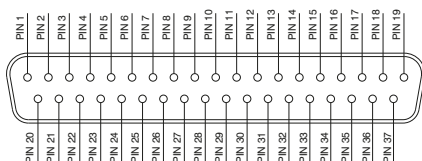
**Attention:** The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

General characteristics	Model	2540.08T
	Case	Reinforced technopolymer
	I/O Connector	M8 connector 3 poles female (IEC 60947-5-2)
	PIN 1 voltage (connector used as Input)	By the user
	PIN 4 voltage diagnosis	Green LED
	Node consumption (Outlets excluded)	7mA per each LED with 24 VDC signal
	Outlets voltage	+23,3 VDC (serial) /by the user (multipolar)
	Input voltage	Depend by the using
	Maximum outlet current	100 mA (serial) / 400 mA (multipolar)
	Maximum Input/Output	8 per module
	Multiconnector max. Current	100 mA
	Connections to manifold	Direct connection to 25 poles connector
	Maximum n. of moduls	2
	Protection degree	IP65 when assembled
	Ambient temperature	from -0° to +50° C



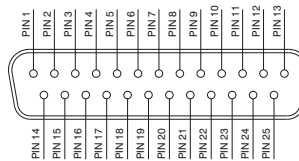
## CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

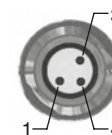


1 - 32 = SIGNALS  
33 - 35 = GND  
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



1 - 22 = SIGNALS  
23 - 24 = GND  
25 = THROUGH LINE



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

### Connection modes:

The I/O module changes its operation depending on the way the manifold is controlled. There are two possible modes:

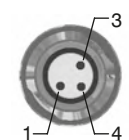
- A) Control via multi-pole connection
- B) Control via fieldbus

#### A) Control via multi-pole :

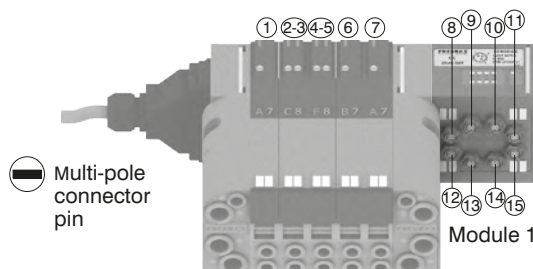
M8 connector used as Input:



**Attention:** Voltage applied to each connector is passed to multi-pole connector pin.



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND



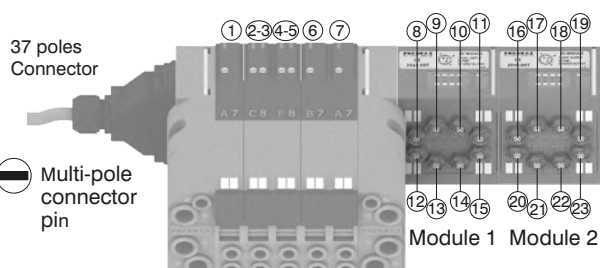
Multi-pole connector pin



**Attention:** Since every cable has a degree of resistance, there will always be a voltage drop depending on the cable's length, sectional area and the current.



**Attention:** Only one more I/O module can be added.



37 poles Connector

Multi-pole connector pin

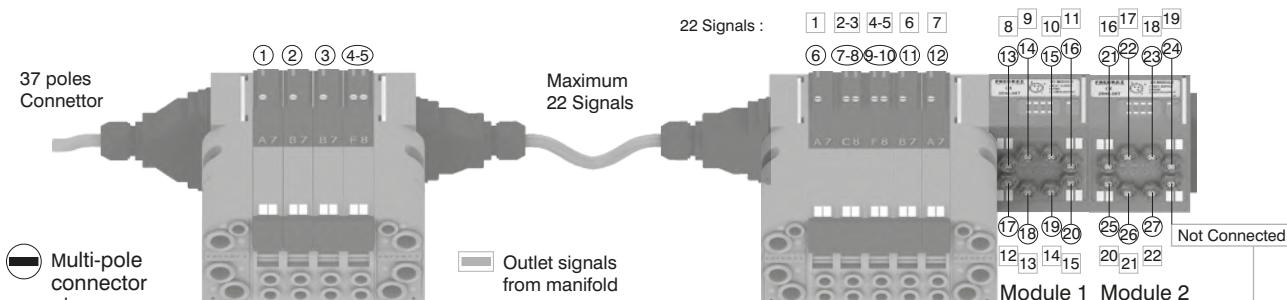
Module 1 Module 2



**Attention:** No more additions are possible

**Attention :** Optyma 32-T solenoid valve manifolds permit up to 22 electrical signals that are not used by manifolds to be made available: these signals can be managed by another manifold and / or by I/O modules.

The I/O module will manage these unused signals. Connections that are not managing useful signals will remain unconnected.



37 poles Connector

Maximum 22 Signals

22 Signals :

Multi-pole connector pin

Outlet signals from manifold

Module 1 Module 2

Not Connected

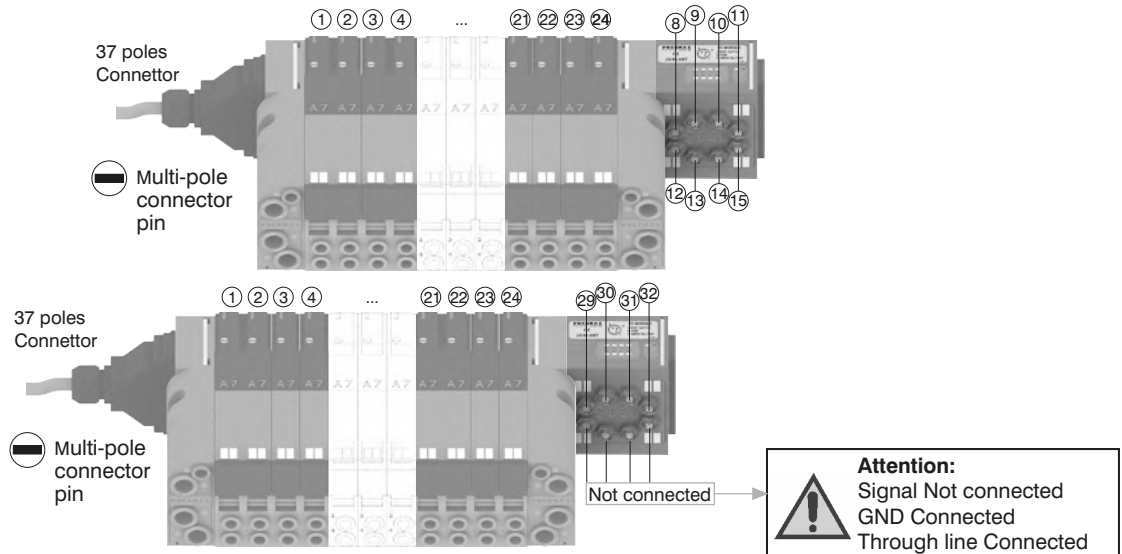
**Please note:** this example considers a 37 pin multi-pole connector.

The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 17



**Attention:** Signal Not connected  
GND Connected  
Through line Connected

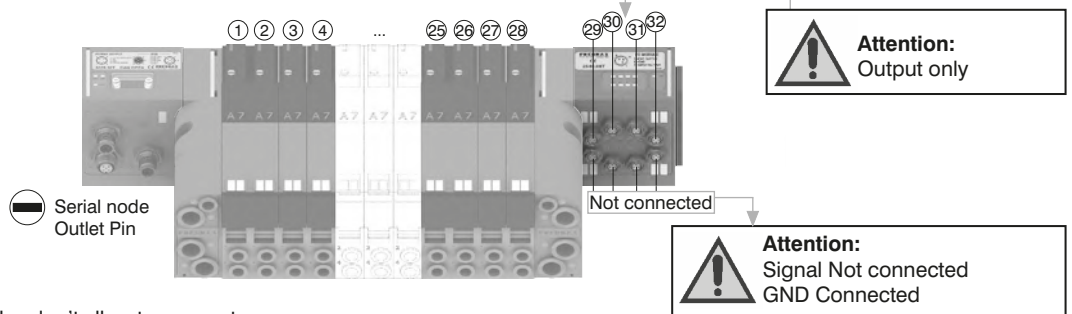
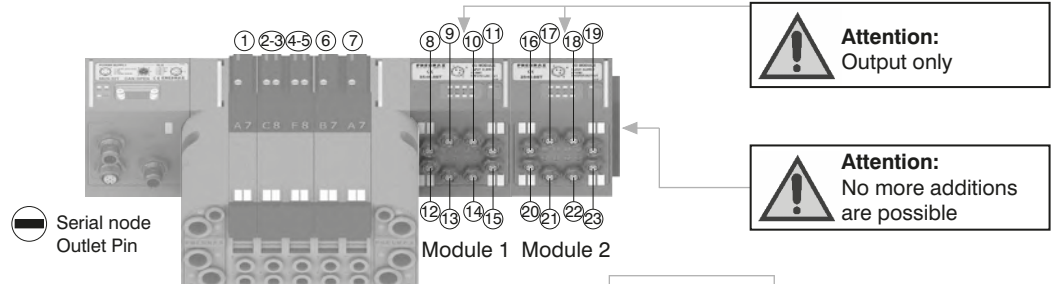
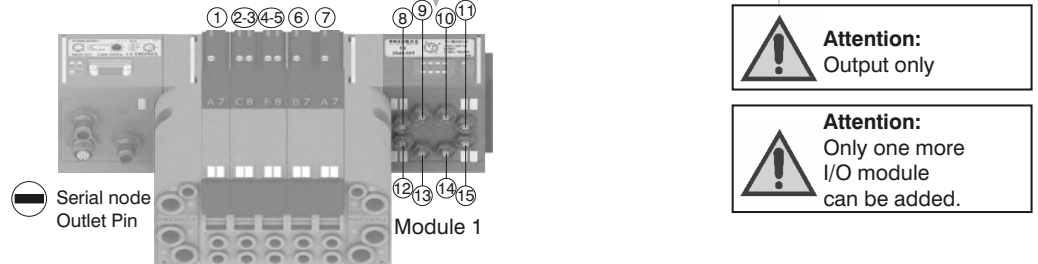
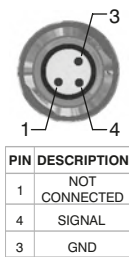
**Please note:** Optyma 32-T solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



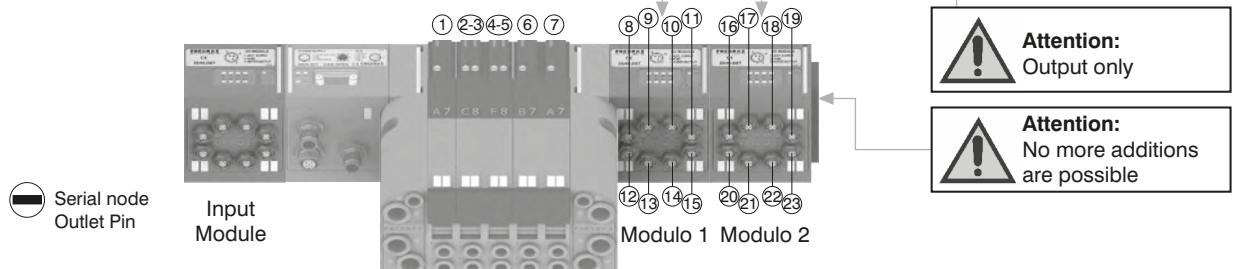
### B) Control via fieldbus:

With this kind of control the I/O module can only be used as an output. Pin 1 of each connector is not connected. The output voltage will be 0.7V lower than that applied to Pin 4 of the connector.

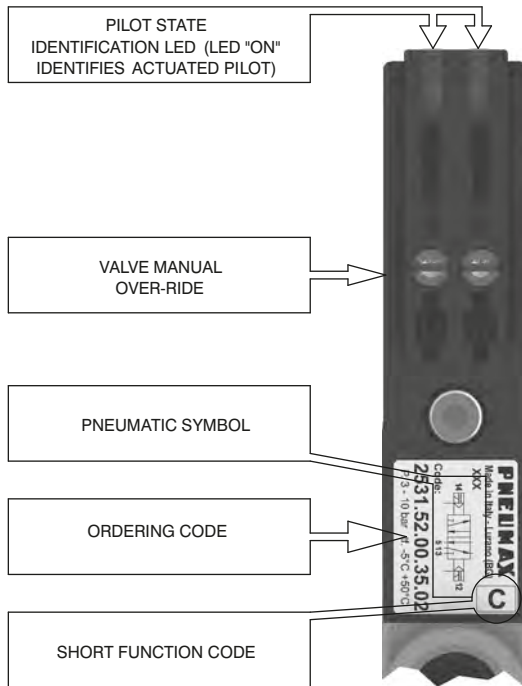
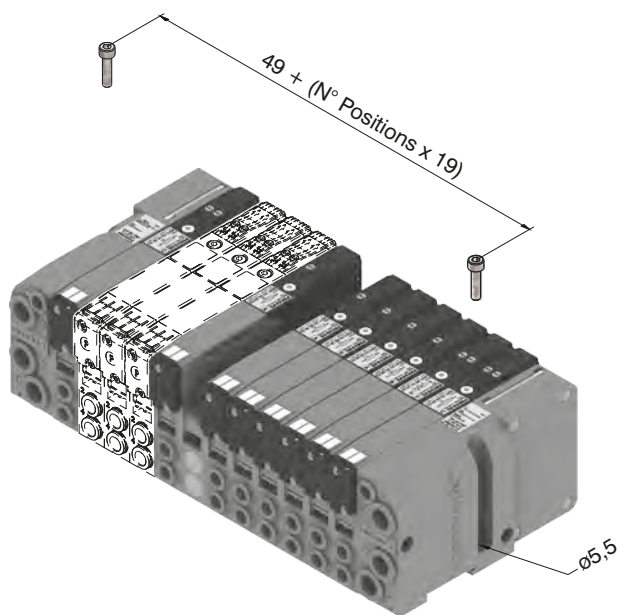
The maximum output current for each output is 100mA. The correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.



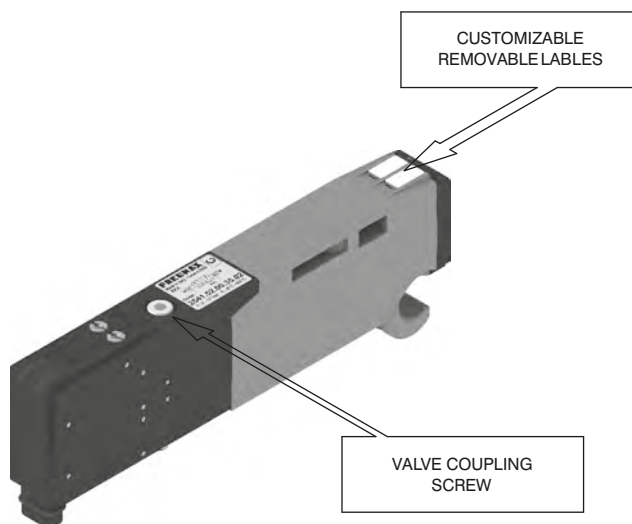
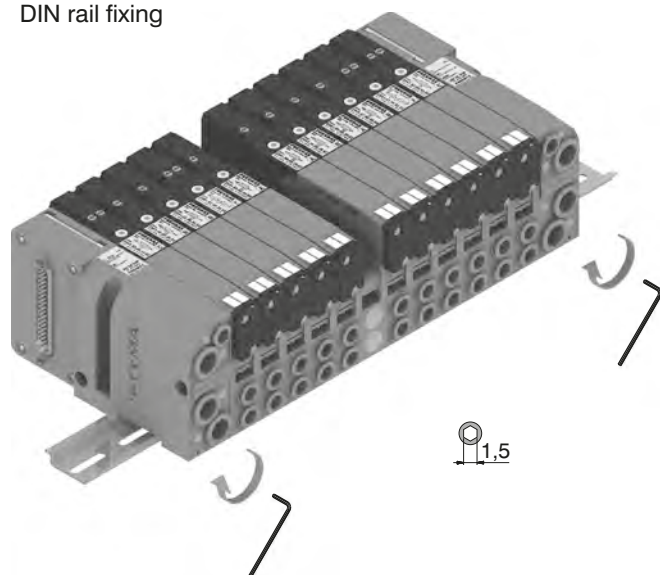
**Please note:** I/O modules don't allow to connect any additional valves manifold after them.



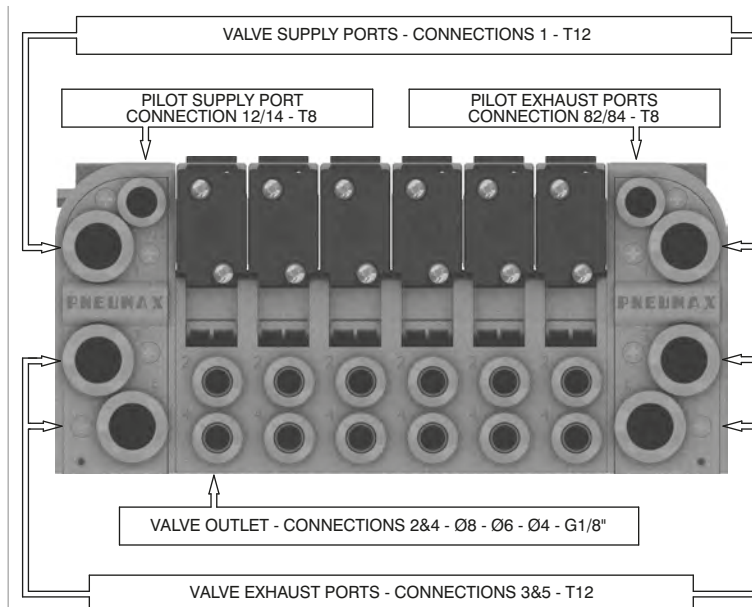
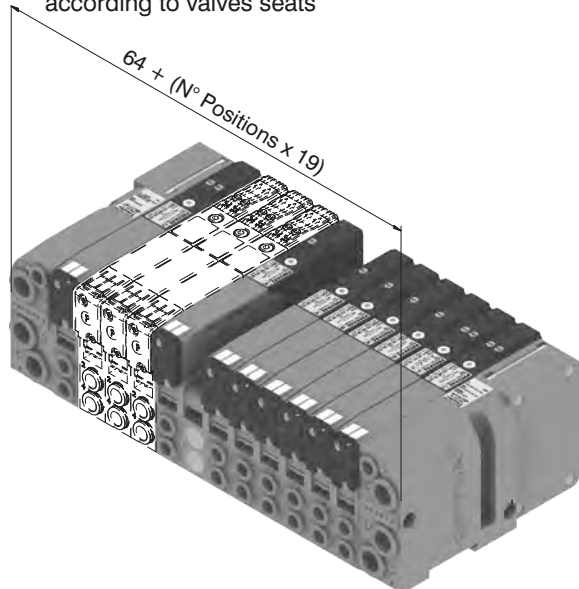
From the top



DIN rail fixing

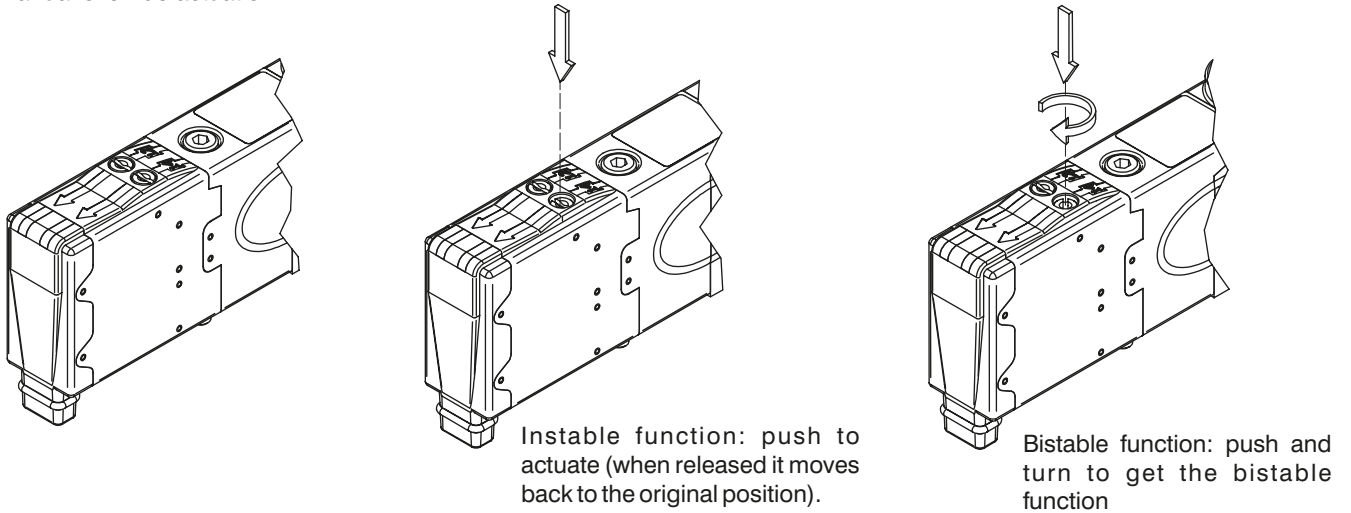


Maximum possible size according to valves seats



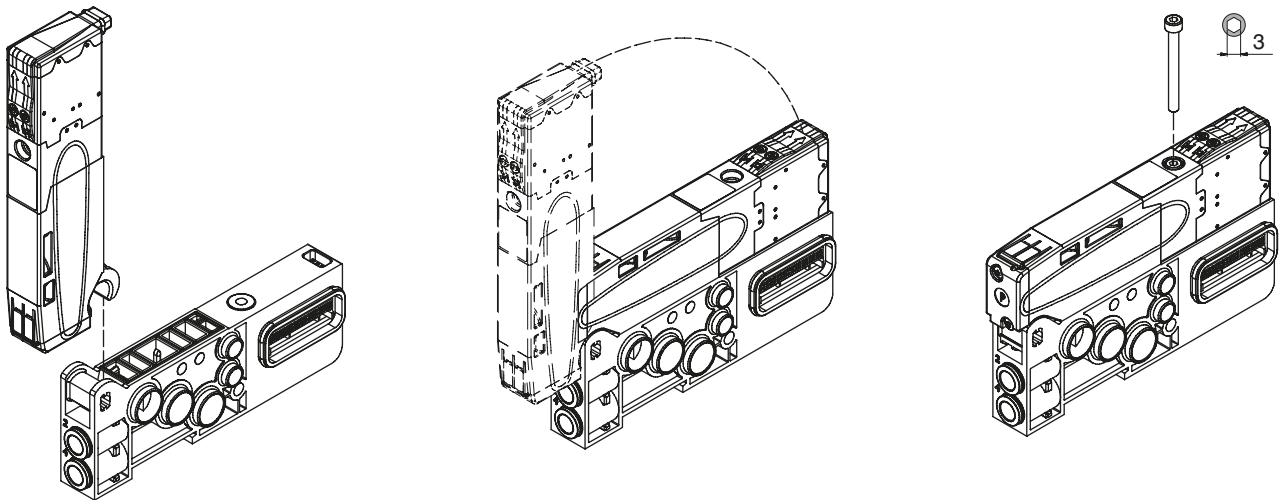


## Manual override actuation



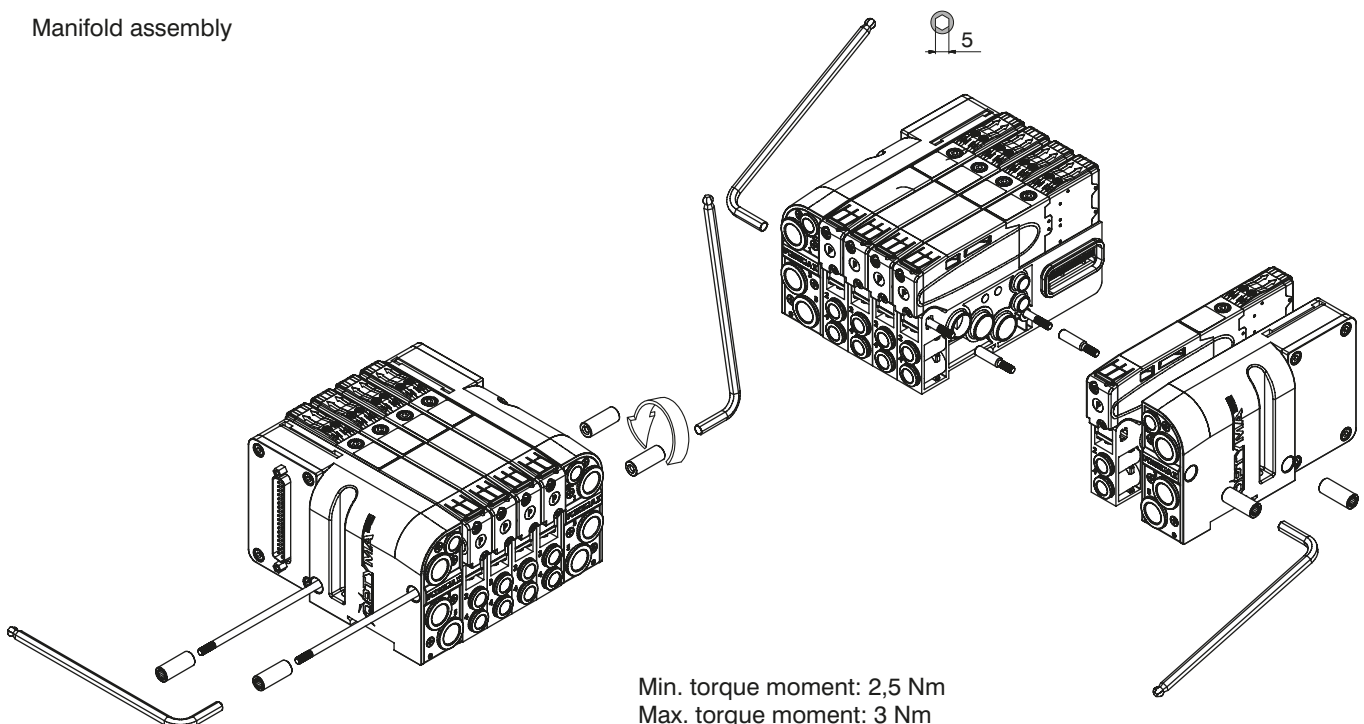
NOTE : It is strongly suggested to replace the original position after using

## Valve Installation



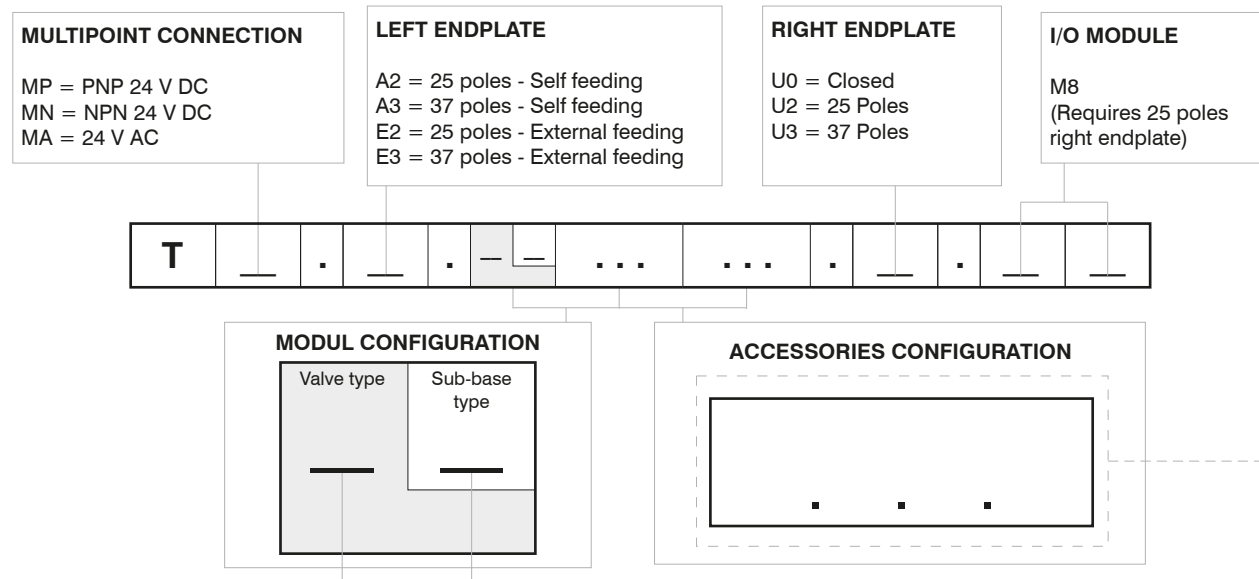
NOTE: Torque moment 1 Nm

## Manifold assembly



## Manifold Layout configuration

1  
AIR DISTRIBUTION



### SHORT CODE FUNCTION / CONNECTION :

- |  |  |
|--|--|
| A1= 5/2 Sol.-Spring + BASE 1 - CARTR. G1/8" GAS  | F2= 2x3/2 NC-NC (= 5/3 OC) Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS |
| A2= 5/2 Sol.-Spring + BASE 2 - CARTR. G1/8" GAS  | F4= 2x3/2 NC-NC (= 5/3 OC) Sol.-Sol. + BASE 2 - CARTR. Ø4        |
| A3= 5/2 Sol.-Spring + BASE 1 - CARTR. Ø4         | F6= 2x3/2 NC-NC (= 5/3 OC) Sol.-Sol. + BASE 2 - CARTR. Ø6        |
| A4= 5/2 Sol.-Spring + BASE 2 - CARTR. Ø4         | F8= 2x3/2 NC-NC (= 5/3 OC) Sol.-Sol. + BASE 2 - CARTR. Ø8        |
| A5= 5/2 Sol.-Spring + BASE 1 - CARTR. Ø6         | G2= 2x3/2 NO-NO (= 5/3 PC) Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS |
| A6= 5/2 Sol.-Spring + BASE 2 - CARTR. Ø6         | G4= 2x3/2 NO-NO (= 5/3 PC) Sol.-Sol. + BASE 2 - CARTR. Ø4        |
| A7= 5/2 Sol.-Spring + BASE 1 - CARTR. Ø8         | G6= 2x3/2 NO-NO (= 5/3 PC) Sol.-Sol. + BASE 2 - CARTR. Ø6        |
| A8= 5/2 Sol.-Spring + BASE 2 - CARTR. Ø8         | G8= 2x3/2 NO-NO (= 5/3 PC) Sol.-Sol. + BASE 2 - CARTR. Ø8        |
| B1= 5/2 Sol.-Diff. + BASE 1 - CARTR. G1/8" GAS   | H2= 2x3/2 NC-NO Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS            |
| B2= 5/2 Sol.-Diff. + BASE 2 - CARTR. G1/8" GAS   | H4= 2x3/2 NC-NO Sol.-Sol. + BASE 2 - CARTR. Ø4                   |
| B3= 5/2 Sol.-Diff. + BASE 1 - CARTR. Ø4          | H6= 2x3/2 NC-NO Sol.-Sol. + BASE 2 - CARTR. Ø6                   |
| B4= 5/2 Sol.-Diff. + BASE 2 - CARTR. Ø4          | H8= 2x3/2 NC-NO Sol.-Sol. + BASE 2 - CARTR. Ø8                   |
| B5= 5/2 Sol.-Diff. + BASE 1 - CARTR. Ø6          | I2= 2x3/2 NO-NC Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS            |
| B6= 5/2 Sol.-Diff. + BASE 2 - CARTR. Ø6          | I4= 2x3/2 NO-NC Sol.-Sol. + BASE 2 - CARTR. Ø4                   |
| B7= 5/2 Sol.-Diff. + BASE 1 - CARTR. Ø8          | I6= 2x3/2 NO-NC Sol.-Sol. + BASE 2 - CARTR. Ø6                   |
| B8= 5/2 Sol.-Diff. + BASE 2 - CARTR. Ø8          | I8= 2x3/2 NO-NC Sol.-Sol. + BASE 2 - CARTR. Ø8                   |
| C2= 5/2 Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS    | T1= Free valve space plug + BASE 1 - CARTR. G1/8" GAS            |
| C4= 5/2 Sol.-Sol. + BASE 2 - CARTR. Ø4           | T2= Free valve space plug + BASE 2 - CARTR. G1/8" GAS            |
| C6= 5/2 Sol.-Sol. + BASE 2 - CARTR. Ø6           | T3= Free valve space plug + BASE 1 - CARTR. Ø4                   |
| C8= 5/2 Sol.-Sol. + BASE 2 - CARTR. Ø8           | T4= Free valve space plug + BASE 2 - CARTR. Ø4                   |
| E2= 5/3 CC Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS | T5= Free valve space plug + BASE 1 - CARTR. Ø6                   |
| E4= 5/3 CC Sol.-Sol. + BASE 2 - CARTR. Ø4        | T6= Free valve space plug + BASE 2 - CARTR. Ø6                   |
| E6= 5/3 CC Sol.-Sol. + BASE 2 - CARTR. Ø6        | T7= Free valve space plug + BASE 1 - CARTR. Ø8                   |
| E8= 5/3 CC Sol.-Sol. + BASE 2 - CARTR. Ø8        | T8= Free valve space plug + BASE 2 - CARTR. Ø8                   |

### NOTE:

While configuring the manifold always be careful that the maximum number of electrical signals available is 32. The use of monostable valve mounted on a base type 2 ( 2 electrical signals occupied ) causes the loss of one electric signal. In this case the monostable valve can be replaced by a bistable valve. The diaphragms plugs are used to intercept the conduits 1,3 & 5 of the base. If it is necessary to interrupt more than one conduit in the same time then put in line the letters which identifies the position (for exemple : regarding the 3 & 5 conduits, put the Y & Z letters). Should one or more conduits be cut more than one time it is necessary to add the relevant intermediate Supply/Exhaust module.

### ACCESSORIES

- U2 = Electric and electro-pneumatic cut off module 2 positions
- K2 = Electric and electro-pneumatic cut off module 2 positions with external pilot
- U4 = Electric and electro-pneumatic cut off module 4 positions
- K4 = Electric and electro-pneumatic cut off module 4 positions with external pilot
- U6 = Electric and electro-pneumatic cut off module 6 positions
- K6 = Electric and electro-pneumatic cut off module 6 positions with external pilot
- U8 = Electric and electro-pneumatic cut off module 8 positions
- K8 = Electric and electro-pneumatic cut off module 8 positions with external pilot
- W = Intermediate supply & exhaust module
- X = Diaphragm plug on pipe 1
- Y = Diaphragm plug on pipe 33
- Z = Diaphragm plug on pipe 5
- XY = Diaphragm plug on pipe 1 & 3
- ZX = Diaphragm plug on pipe 5 & 1
- ZY = Diaphragm plug on pipe 5 & 3
- ZXY = Diaphragm plug on pipe 5, 1 & 3

**Series 2500 OPTYMA-T solenoid valve manifolds managed by multipoint connection are "well tried components"**

	<b>Well-tried component</b>	- The product is a well-tried product for a safety-related application according to ISO 13849-1.
<b>B<sub>10d</sub></b>	50.000.000	- The relevant basic and well-tried safety principles according ISO 13849-2 for this product are fulfilled.
		- The suitability of the product for a precise application must be verified and confirmed by the user.



**General:**

CANopen® module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-T 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08T or a max number of 4 Input modules 5225.12T.

CANopen® module recognizes automatically the presence of the Input modules on power on.

Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining 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 Recommendation 303-1 (V. 1.3 : 30 December 2004).

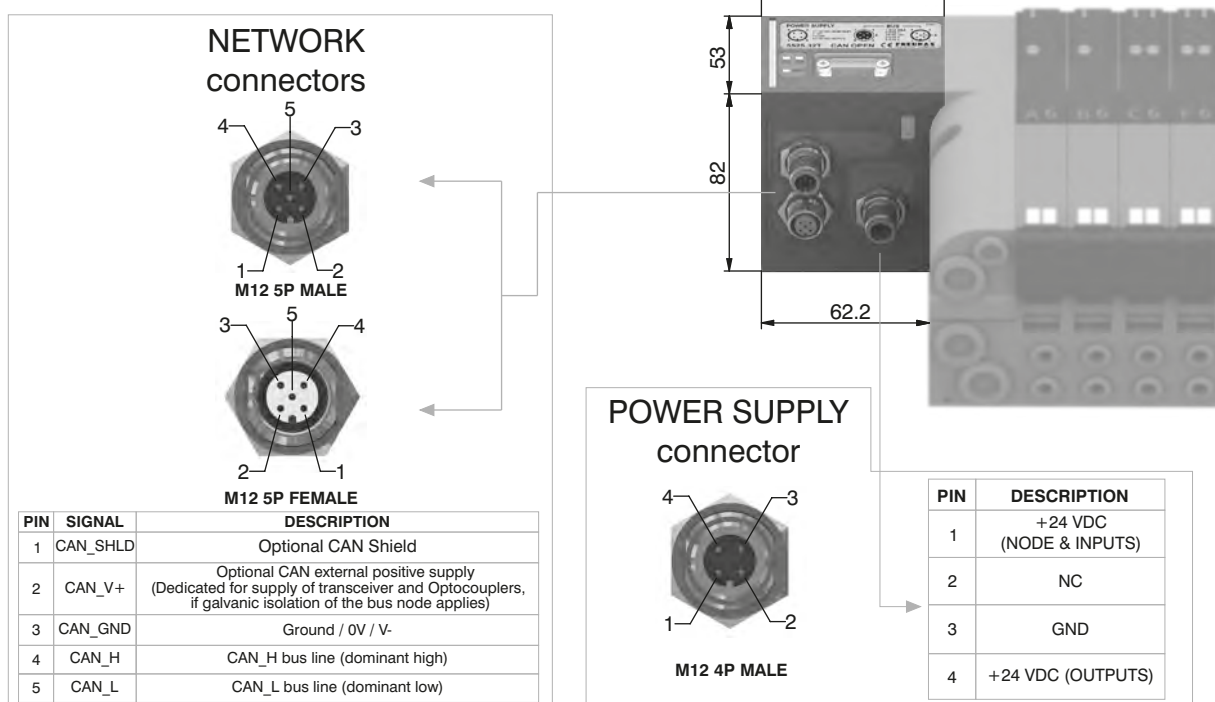
Transmission speed can be set by 3 dip-switches.

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****5525.32T****1**

AIR DISTRIBUTION

**Scheme / Overall dimensions and I/O layout :****Technical characteristics**

	Model	5525.32T
	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)	30 mA
	Power supply diagnosis	Green LED PWR
	PNP equivalent outputs	+24 VDC +/- 10%
Outputs	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 5P connectors male-female Type A (IEC 60947-5-2)
	Baud rate	10 - 20 - 50 - 125 - 250 - 500 - 800 - 1000 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General:

DeviceNet module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-T 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08T or a max number of 4 Input modules 5225.12T.

DeviceNet module recognizes automatically the presence of the Input modules on power on.

Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining 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.

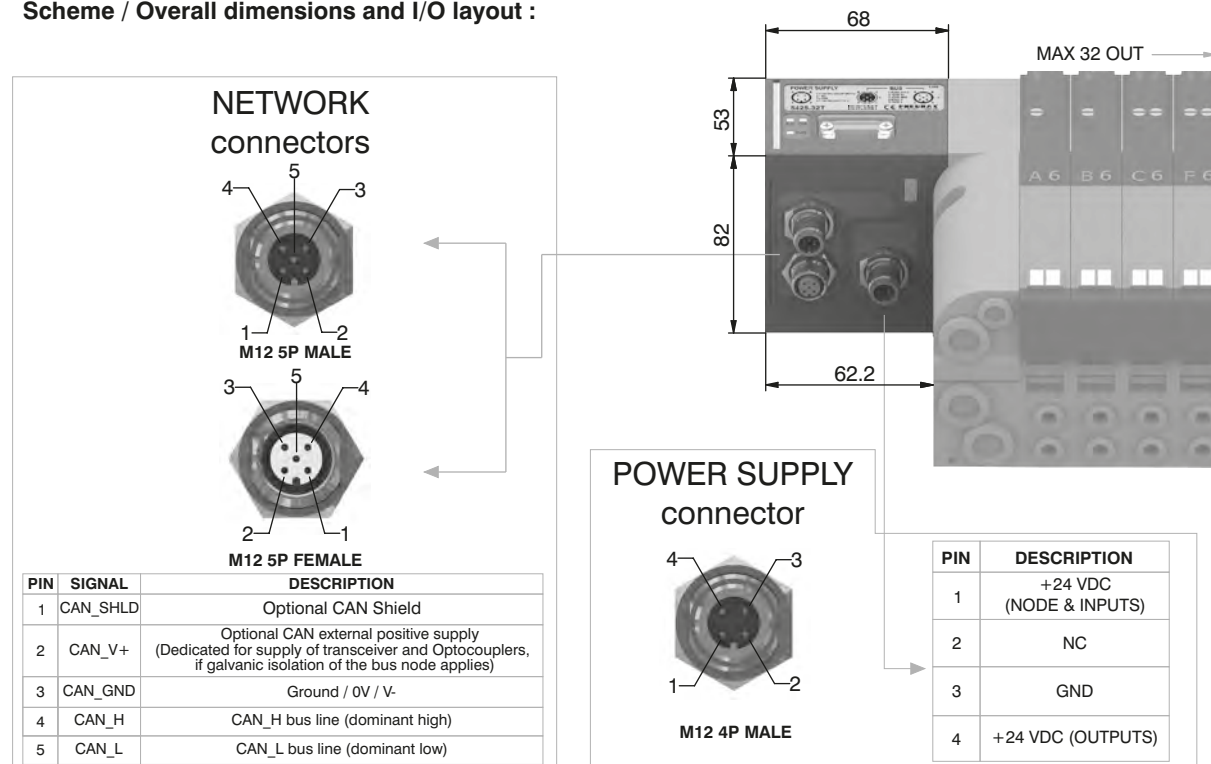
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5425.32T**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5425.32T
	Specifications	DeviceNet Specifications Volume I, release 2.0.
Power supply	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	30 mA
	Power supply diagnosis	Green LED PWR
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 5P connectors male-female Type A (IEC 60947-5-2)
	Baud rate	125 - 250 - 500 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

**General:**

PROFIBUS DP module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-T 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 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

PROFIBUS DP module recognizes automatically the presence of the Input modules on power on. Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

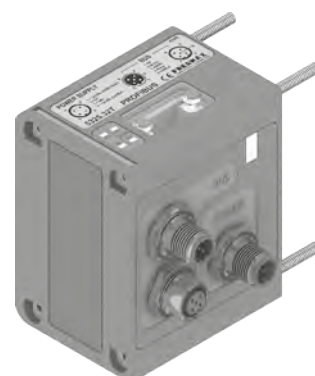
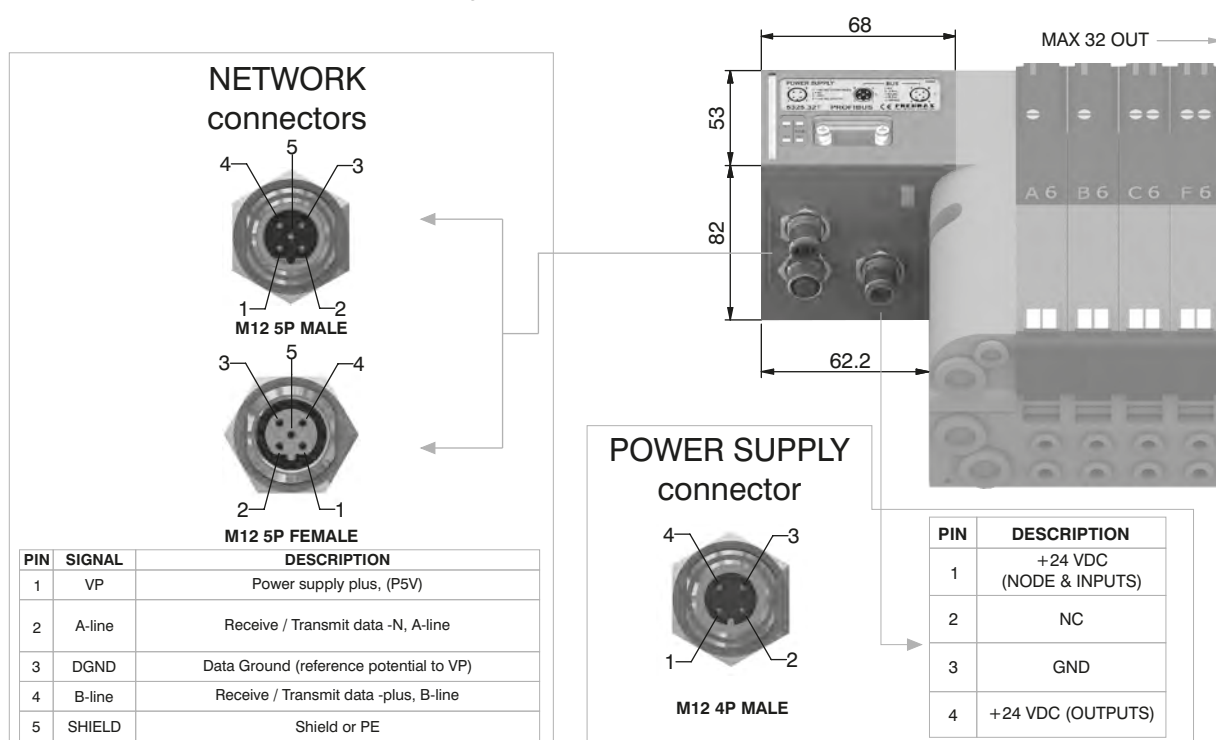
Node power supply is made by a M12 4P male circular connector.

The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining 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 2 dip-switches.

**Ordering code****5325.32T****Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5325.32T
	Specifications	PROFIBUS DP
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
<b>Outputs</b>	Node consumption (without inputs)	50 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
<b>Network</b>	Max output simultaneously actuated	32
	Network connectors	2 M12 5P male-female connectors Type B
	Baud rate	9,6 - 19,2 - 93,75 - 187,5 - 500 - 1500 - 3000 - 6000 - 12000 Kbit/s
	Addresses, possible numbers	From 1 to 99
	Max nodes in net	100 (slave + master)
	Bus maximum recommended length	100 m at 12 Mbit/s - 1200 m at 9,6 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General:

EtherCAT® module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-T 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 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08T or a max number of 4 Input modules 5225.12T.

The EtherCAT® module, regardless the number of Input module connected, reports to have connected 4 Input modules.

Regardless of the number of Input modules connected, the managable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

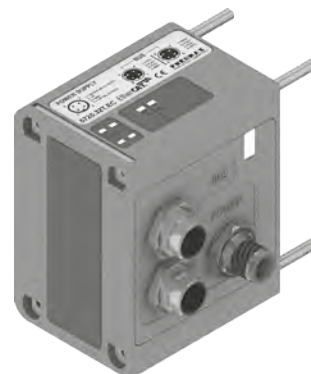
Connection to Bus EtherCAT® is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

The node address is assigned during configuration.

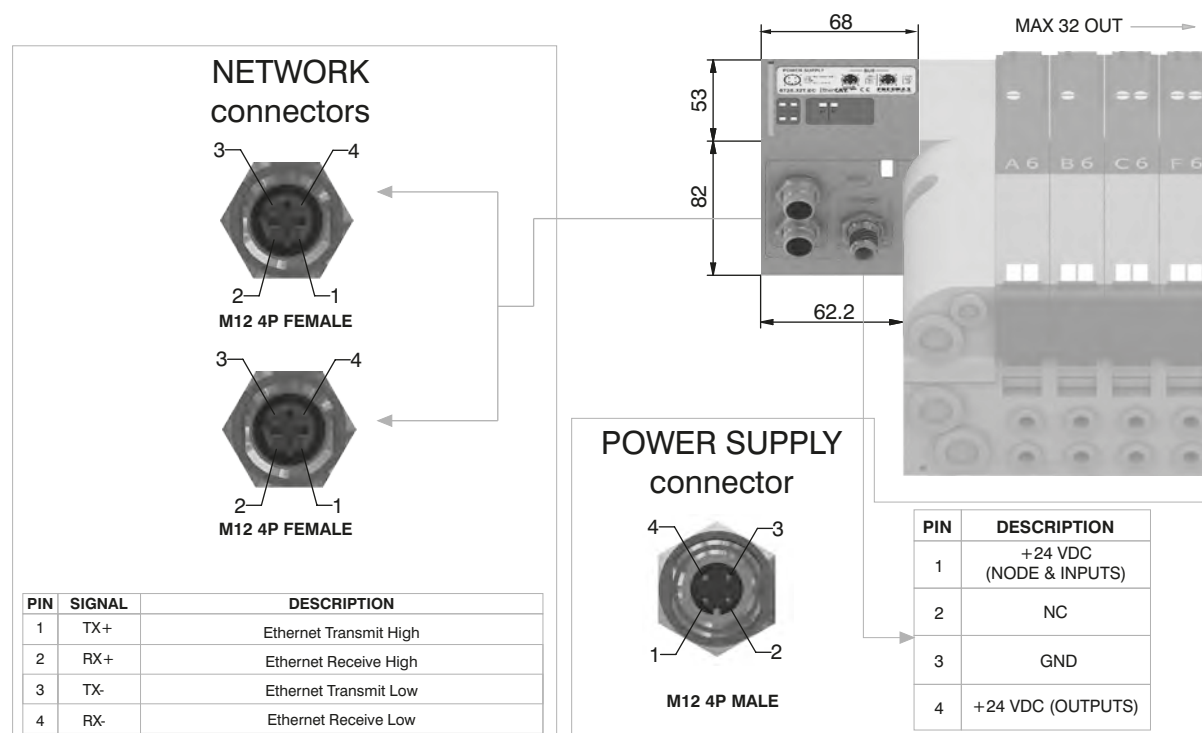
**Note: 5700 series has a different configuration file from series 5600.**

## Ordering code

**5725.32T.EC.A**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5725.32T.EC.A
	Specifications	EtherCAT® Specifications ETG.1000 series
Power supply	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	400 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
Network	Max output simultaneously actuated	32
	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	From 1 to 65535
	Max nodes in net	65536 (Master + Slave)
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

**General :**

PROFINET IO RT module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-T 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 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

The PROFINET IO RT module, regardless the number of Input module connected, reports to have connected 8 Input modules.

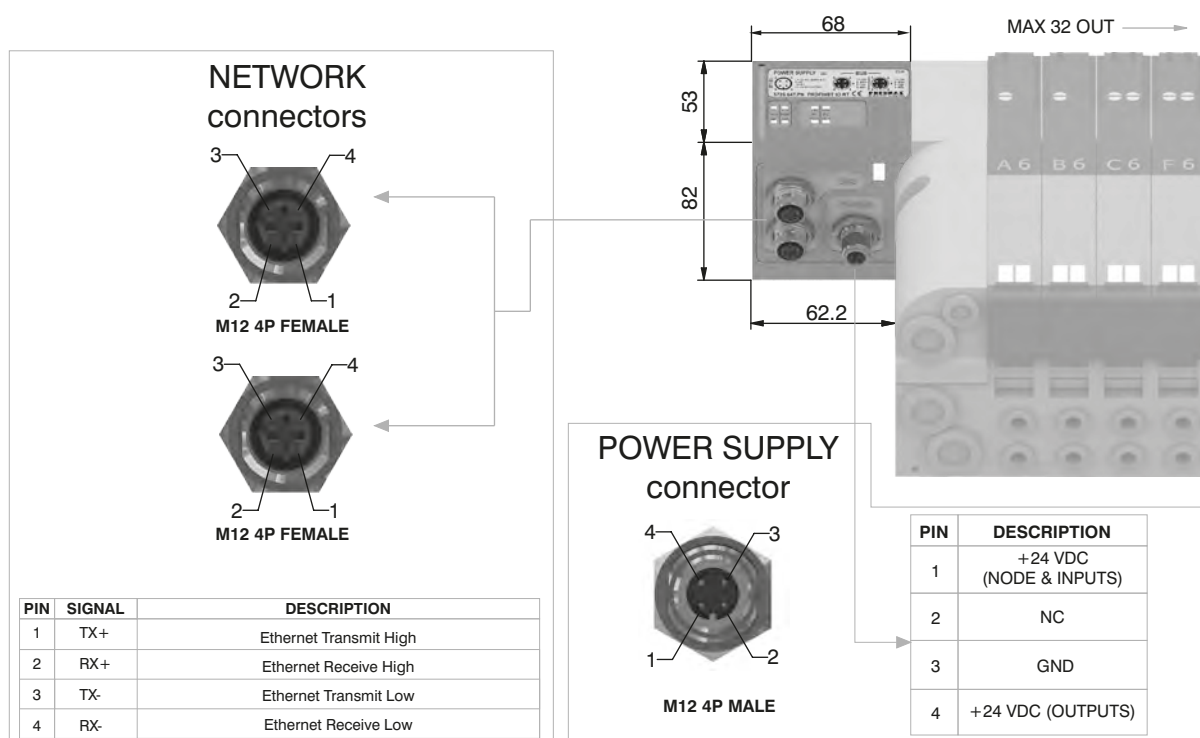
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

Connection to Bus PROFINET IO RT is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

The node address is assigned during configuration.

**Ordering code****5725.32T.PN.A****1****AIR DISTRIBUTION****Scheme / Overall dimensions and I/O layout :****Technical characteristics**

<b>Power supply</b>	Model	5725.32T.PN.A
	Specifications	PROFINET IO RT
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
<b>Outputs</b>	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	400 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
<b>Network</b>	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	As an IP address
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 4 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



## General :

EtherNet/IP module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.  
Optyma-T 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 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

The EtherNet/IP module, regardless the number of Input module connected, reports to have connected 8 Input modules.

Regardless of the number of Input modules connected, the managable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

Connection to Bus EtherNet/IP is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

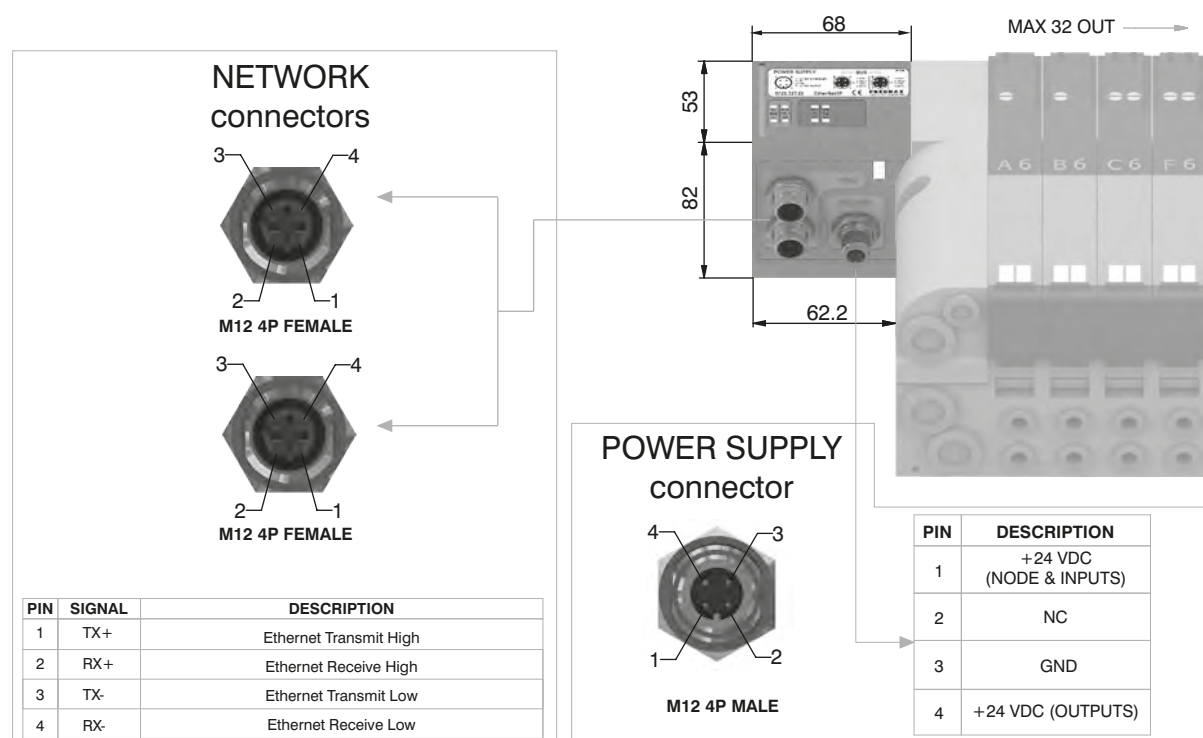
The node address is assigned during configuration.

## Ordering code

**5725.32T.EI.A**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5725.32T.EI.A
	Specifications	The EtherNet/IP Specification
Power supply	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	400 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	As an IP address
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	2 bicolor red/green LEDs for status + 4 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

## General :

CC-Link IE Field Basic module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-T 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 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

The CC-Link IE Field Basic module, regardless the number of Input module connected, reports to have connected 8 Input modules.

Regardless of the number of Input modules connected, the managable solenoid valves are 32.

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 maintaining powered the node and inputs, if present.

Connection to Bus CC-Link IE Field Basic is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

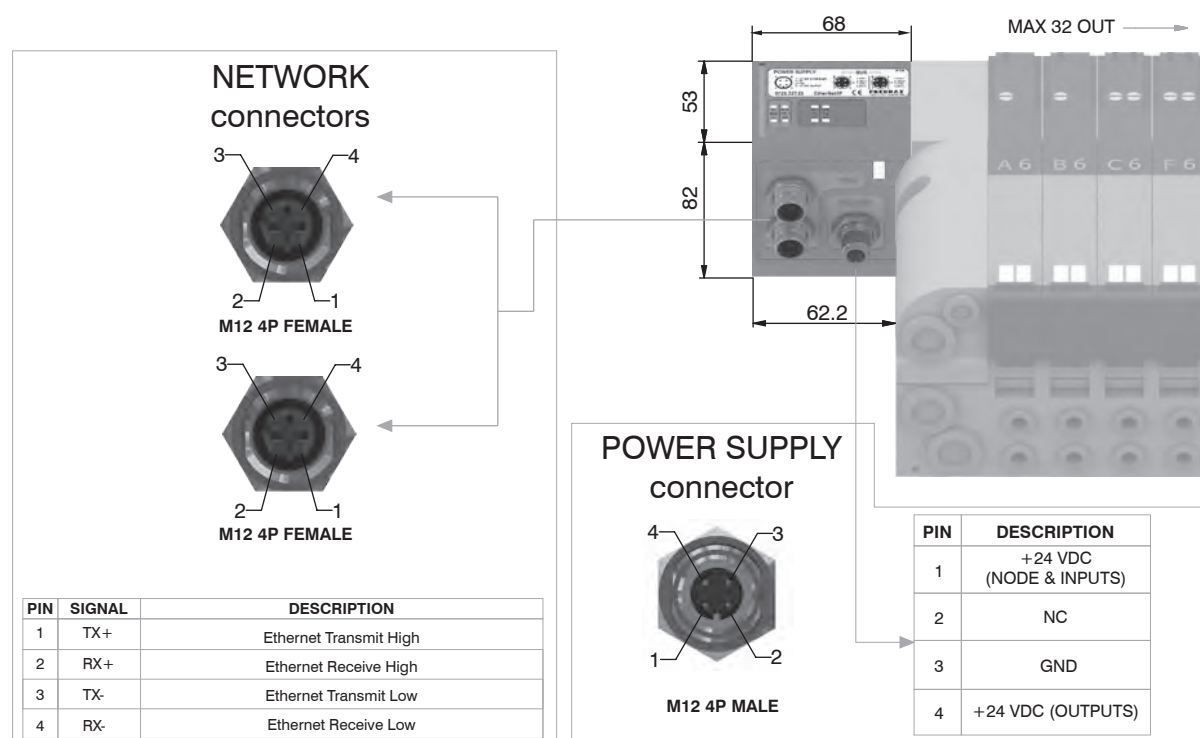
The node address is assigned during configuration.

## Ordering code

**5725.32T.CL.A**



## Scheme / Overall dimensions and I/O layout :



## Technical characteristics

	Model	5725.32T.EI.A
	Specifications	CC-Link IE Field Basic Specification
Power supply	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	400 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	As an IP address
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Available from our web site: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	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  $\pm 10\%$ .

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 300 mA.

Each module includes a 300 mA self-mending fuse. If a short circuit or a overcharge (overall current  $>300\text{mA}$ ) 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 lights up indicating the ON state and the node will re-start to operate.

The maximum number of Input modules supported is 4 for CANopen<sup>®</sup>, DeviceNet and EtherCAT<sup>®</sup>.

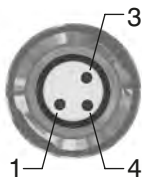
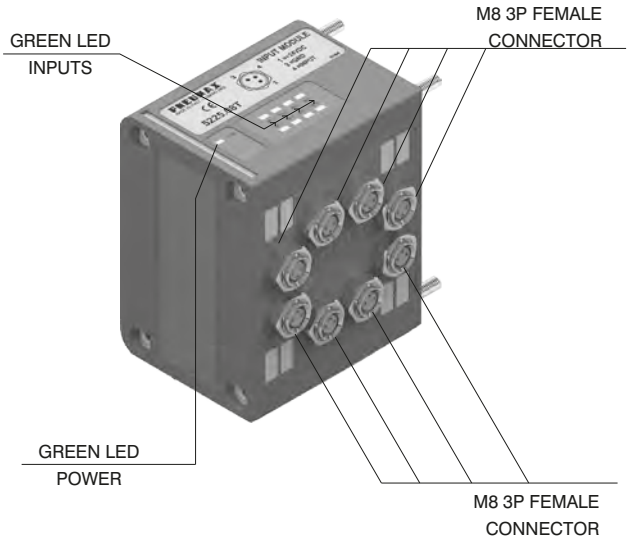
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT EtherNet/IP and Powerlink.

Ordering code

5225.08T



Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

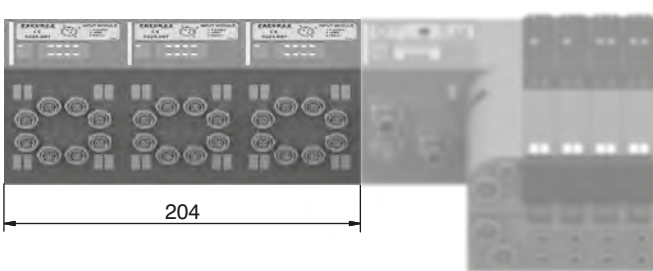
Module 1



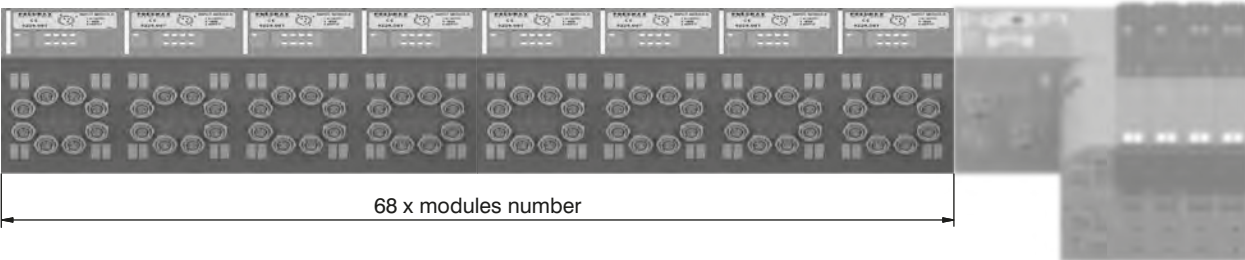
Module 2 Module 1



Module 3 Module 2 Module 1



Module 8 ... Module 4 Module 3 Module 2 Module 1



## General :

Modules have 4 connectors M12 5P female.

The Inputs are PNP equivalent 24 VDC  $\pm 10\%$ .

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 300 mA.

Each module includes a 300 mA self-mending fuse. If a short circuit or a overcharge (overall current  $>300\text{mA}$ ) 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 lights up indicating the ON state and the node will re-start to operate.

The maximum number of Input modules supported is 4 for CANopen<sup>®</sup>, DeviceNet and EtherCAT<sup>®</sup>.

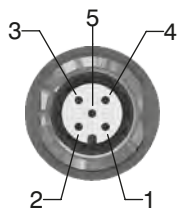
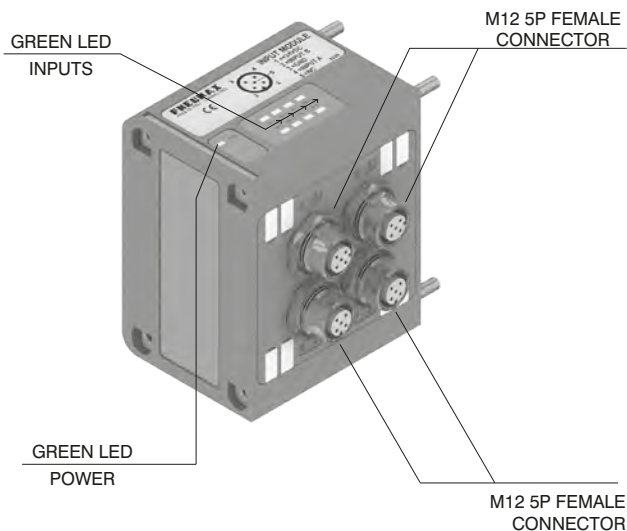
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT EtherNet/IP and Powerlink.

## Ordering code

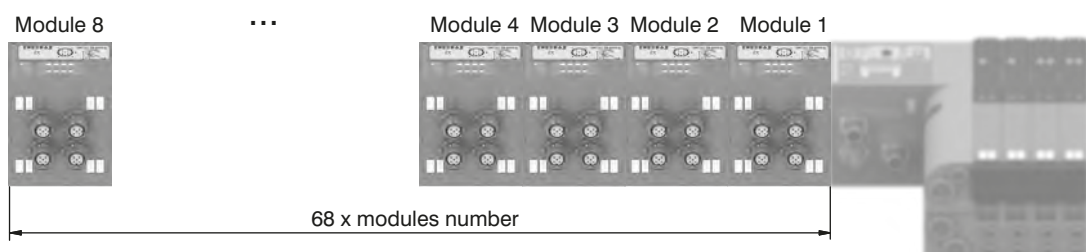
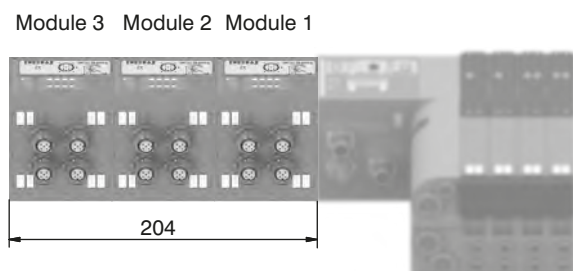
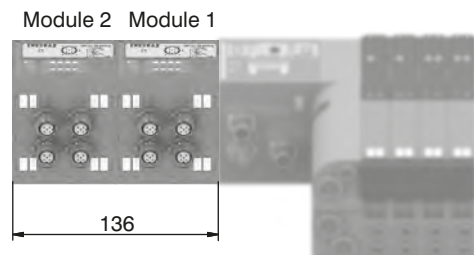
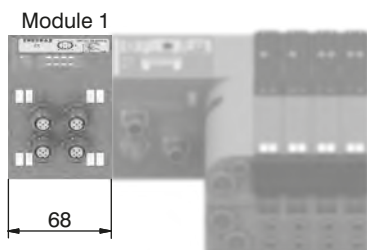
**5225.12T**



## Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
2	INPUT B
3	GND
4	INPUT A
5	NC





General :

This module is fitted with two M8 3 pin female connectors.  
With this module is possible to read two analogue inputs (voltage or current).  
The inputs are sampled at 12 bit.  
For practicality the sampled value is transmitted with 16 bit, of which the four less significant are fixed at zero.

Available models:  
5225.2T.00T (voltage signal 0 - 10V);  
5225.2T.01T (voltage signal 0 - 5V);  
5225.2C.00T (current signal 4 - 20mA);  
5225.2C.01T (current signal 0 - 20mA).

Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC 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 is removed the green LED lights up indicating the ON state and the node will re-start to operate.

This module is counted as four 8 digital Inputs modules.

The Maximum number of 2 analogue Inputs modules supported is 1 for CANopen®, DeviceNet, PROFIBUS DP and EtherCAT®.  
The Maximum number of 2 analogue Inputs modules supported is 2 for PROFINET IO RT, EtherNet/IP and Powerlink.

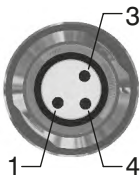
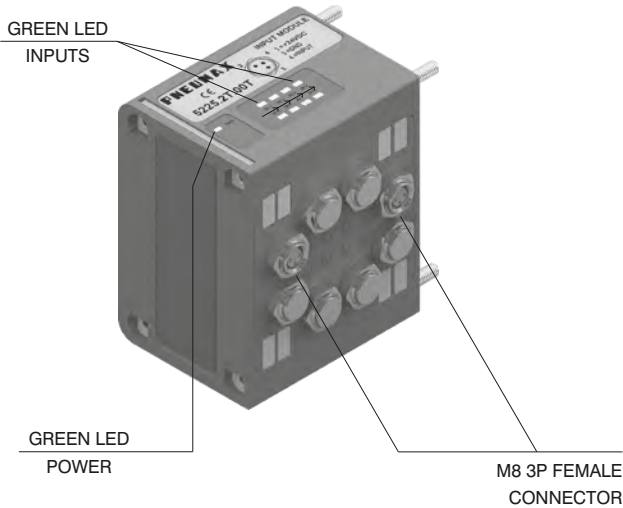
Ordering code

5225.2 \_ . \_T



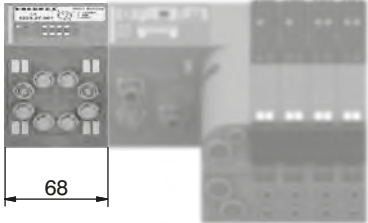
1  
AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :

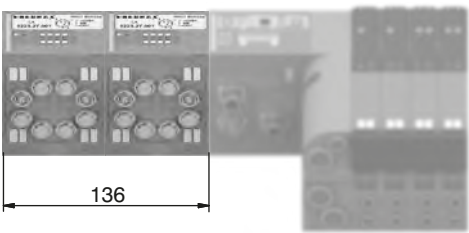


PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

Module 1



Module 2 Module 1





## General :

This module is fitted with two M8 3 pin female connectors.

With this module is possible to read two Pt100 probes.

The inputs are sampled at 12 bit.

For practicality the sampled value is transmitted with 16 bit, of which the four less significant are fixed at zero.

It is possible to plug 3-wires probes or 2-wires probes.

The temperature is expressed in tenths of degree.

The temperature range is 0 – 250°C, beyond which the green LED for probe presence doesn't light on.

The module returns a value correspondent to 250°C when the probe is not connected.

Available models:

5225.2P00T (2-wires probes);

5225.2P01T (3-wires probes).

Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC 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 is removed the green LED lights up indicating the ON state and the node will re-start to operate.

This module is counted as four 8 digital Inputs modules.

The Maximum number of 2 Pt100 Inputs modules supported is 1 for CANopen®, DeviceNet, PROFIBUS DP and EtherCAT®.

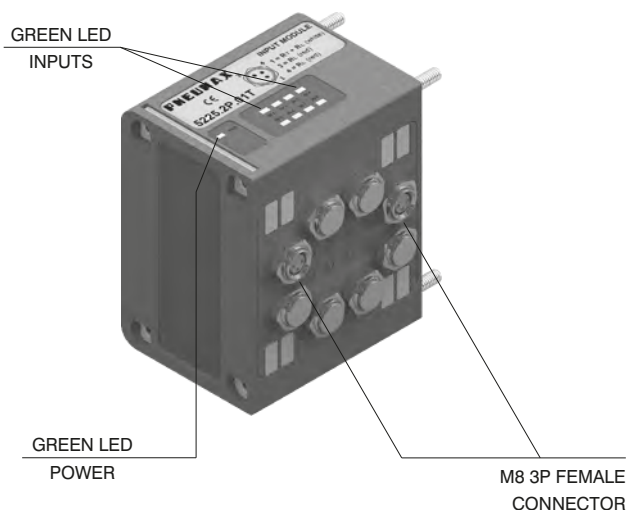
The Maximum number of 2 Pt100 Inputs modules supported is 2 for PROFINET IO RT, EtherNet/IP and Powerlink.

## Ordering code

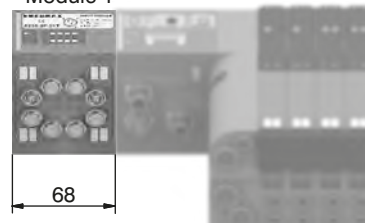
**5225.2P . 0\_T**



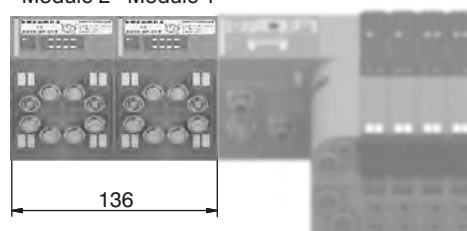
## Scheme / Overall dimensions and I/O layout :



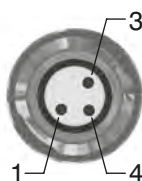
Module 1



Module 2 Module 1

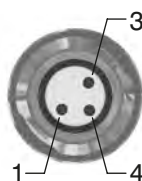


### 3 WIRES



PIN	DESCRIPTION
1	RT (white)
4	RL (red)
3	RL (red)

### 2 WIRES



PIN	DESCRIPTION
1	RT (white)
4	NC
3	RL (red)



**General :**

This module is fitted with two M8 3 pin female connectors.  
With this module is possible to read two Pt100 probes.  
The inputs are sampled at 12 bit.  
For practicality the sampled value is transmitted with 16 bit, of which the four less significant are fixed at zero.

It is possible to plug 3-wires probes or 2-wires probes.  
The temperature is expressed in points according to the formula

$$\text{Temperature} = \left( \frac{\text{Points}}{4095} \times 600 \right) - 200$$

The temperature range is -200 to +400°C, beyond which the green LED for probe presence doesn't light on.  
The module returns a value correspondent to 400°C when the probe is not connected.

Available models:  
5225.2P.10T (2-wires probes);  
5225.2P.11T (3-wires probes).

Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC 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 is removed the green LED lights up indicating the ON state and the node will re-start to operate.  
This module is counted as four 8 digital Inputs modules.

The Maximum number of 2 Pt100 Inputs modules supported is 1 for CANopen®, DeviceNet, PROFIBUS DP and EtherCAT®.  
The Maximum number of 2 Pt100 Inputs modules supported is 2 for PROFINET IO RT, EtherNet/IP and Powerlink.

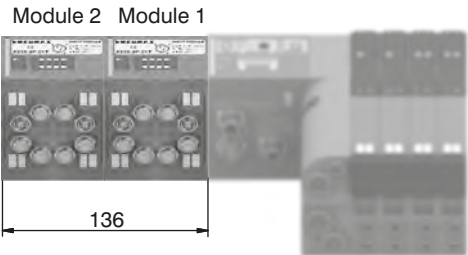
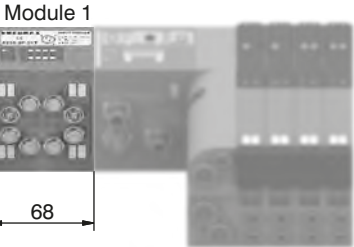
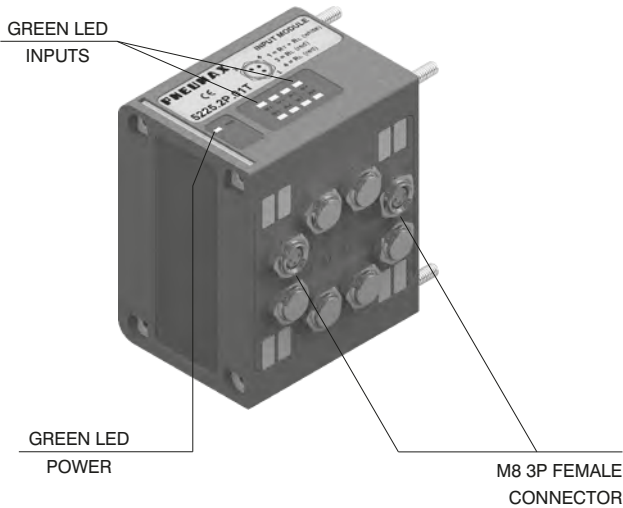
**Ordering code**

5225.2P . 1\_T



1  
AIR DISTRIBUTION

**Scheme / Overall dimensions and I/O layout :**



**3 WIRES**

PIN	DESCRIPTION
1	RT (white)
4	RL (red)
3	RL (red)

**2 WIRES**

PIN	DESCRIPTION
1	RT (white)
4	NC
3	RL (red)

Socket for Power Supply  
STRAIGHT CONNECTOR  
M12A 4P FEMALE

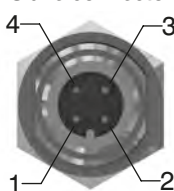
**Ordering code**

**5312A.F04.00**



## POWER SUPPLY connector

Upper view  
Slave connector

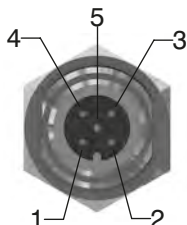


PIN	DESCRIPTION
1	+24 VDC Node
2	
3	0 V
4	+24 VDC Outputs

Socket for Bus CANopen®/DeviceNet  
STRAIGHT CONNECTOR  
M12A 5P FEMALE

**Ordering code**

**5312A.F05.00**



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

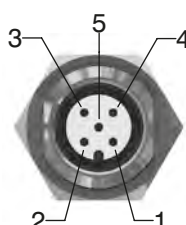
Upper view  
Slave connector

## NETWORK connectors

Plug for Bus CANopen®/DeviceNet  
STRAIGHT CONNECTOR  
M12A 5P MALE

**Ordering code**

**5312A.M05.00**



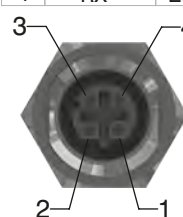
Plug for Bus EtherCAT®,  
PROFINET IO RT  
and EtherNet/IP  
STRAIGHT CONNECTOR M12D 4P MALE

**Ordering code**

**5312D.M04.00**



PIN	SIGNAL	DESCRIPTION
1	TX+	Ethernet Transmit High
2	RX+	Ethernet Receive High
3	TX-	Ethernet Transmit Low
4	RX-	Ethernet Receive Low

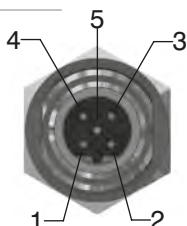


Upper view  
Slave connector

Socket for Bus PROFIBUS DP  
STRAIGHT CONNECTOR  
M12B 5P FEMALE

**Ordering code**

**5312B.F05.00**



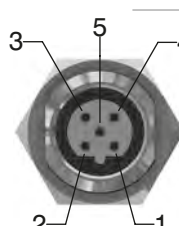
PIN	DESCRIPTION
1	Power Supply
2	A-line
3	DGND
4	B-line
5	SHIELD

Upper view  
Slave connector

Plug for Bus PROFIBUS DP  
STRAIGHT CONNECTOR  
M12B 5P MALE

**Ordering code**

**5312B.M05.00**



Plug for Input module  
STRAIGHT CONNECTOR  
M8 3P MALE

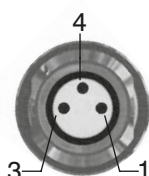
**Ordering code**

**5308A.M03.00**



## INPUT connectors

Upper view  
Slave connector



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

Plug for Input module  
STRAIGHT CONNECTOR  
M12A 5P MALE

**Ordering code**

**5312A.M05.00**



M12 plug

**Ordering code**

**5300.T12**

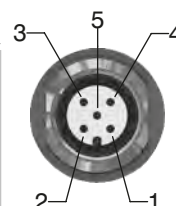


## Plugs

M8 plug

**Ordering code**

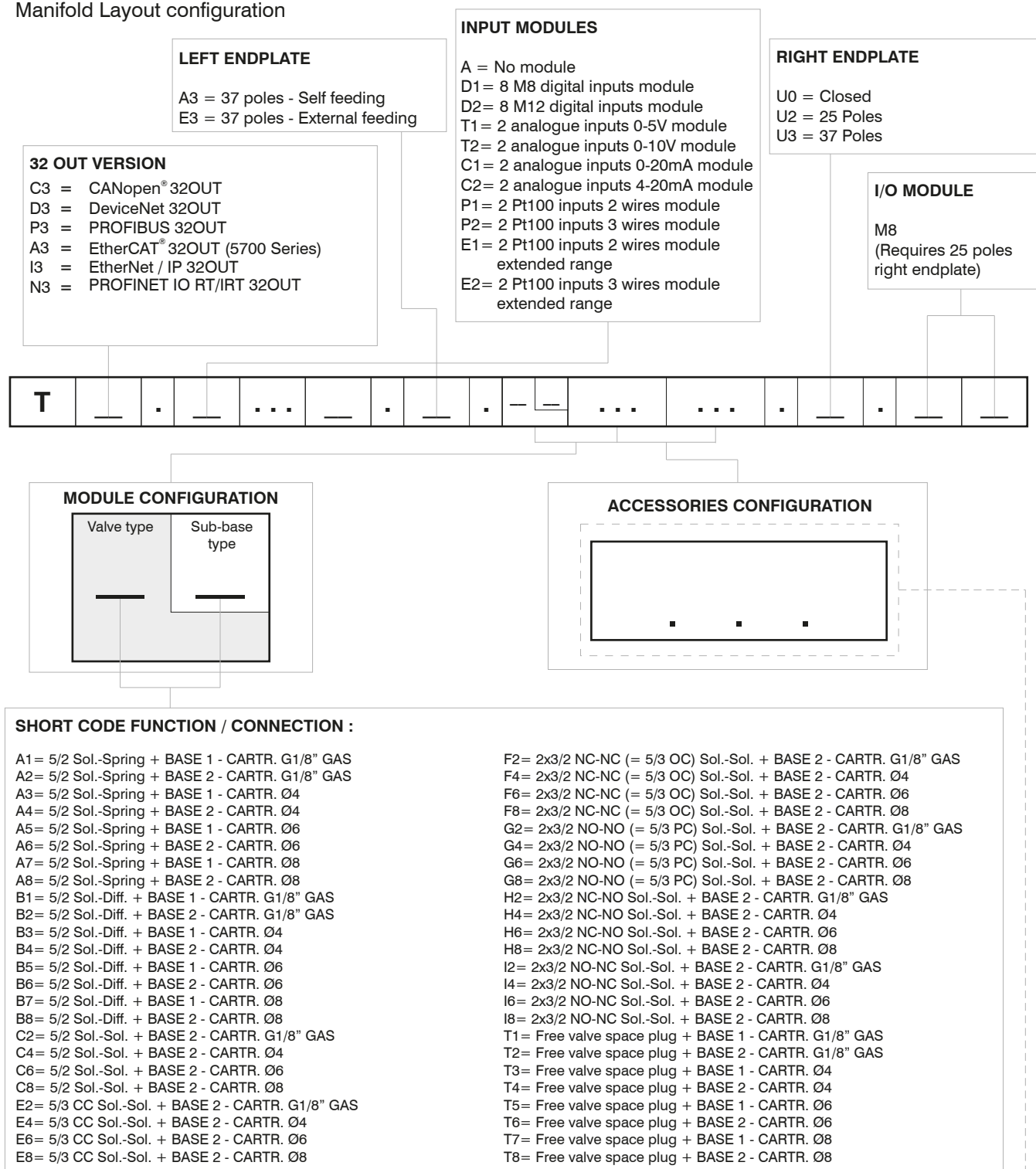
**5300.T08**



PIN	DESCRIPTION
1	+24 VDC
2	INPUT B
3	GND
4	INPUT A
5	NC

Trademarks: EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

## Manifold Layout configuration



While configuring the manifold always be careful that the maximum number of electrical signals available is 32. The use of monostable valve mounted on a base type 2 ( 2 electrical signals occupied ) causes the loss of one electric signal. In this case the monostable valve can be replaced by a bistable valve. The diaphragms plugs are used to intercept the conduits 1,3 & 5 of the base. If it is necessary to interrupt more than one conduit in the same time then put in line the letters which identifies the position (for example : regarding the 3 & 5 conduits, put the Y & Z letters). Should one or more conduits be cut more than one time it is necessary to add the relevant intermediate Supply/Exhaust module.

## ACCESSORIES

U2 = Electric and electro-pneumatic cut off module 2 positions  
K2 = Electric and electro-pneumatic cut off module 2 positions with external pilot  
U4 = Electric and electro-pneumatic cut off module 4 positions  
K4 = Electric and electro-pneumatic cut off module 4 positions with external pilot  
U6 = Electric and electro-pneumatic cut off module 6 positions  
K6 = Electric and electro-pneumatic cut off module 6 positions with external pilot  
U8 = Electric and electro-pneumatic cut off module 8 positions  
K8 = Electric and electro-pneumatic cut off module 8 positions with external pilot  
W = Intermediate supply & exhaust module  
X = Diaphragm plug on pipe 1  
Y = Diaphragm plug on pipe 33  
Z = Diaphragm plug on pipe 5  
XY = Diaphragm plug on pipe 1 & 3  
ZX = Diaphragm plug on pipe 5 & 1  
ZY = Diaphragm plug on pipe 5 & 3  
ZXY = Diaphragm plug on pipe 5, 1 & 3



## 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 $\pm$ 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)

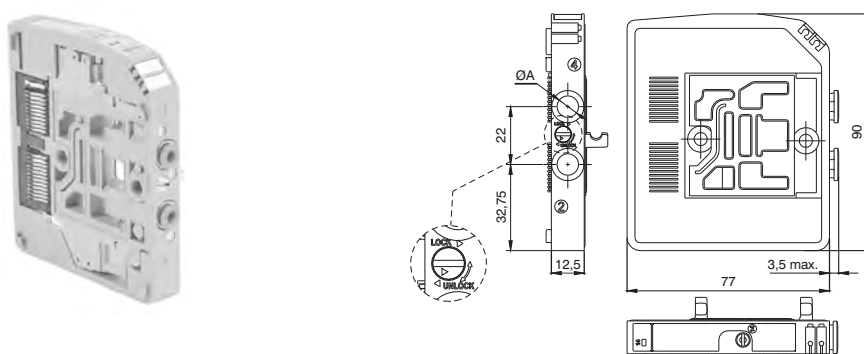
Coding: 23E C 52.00.36.V

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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	12
Response 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)

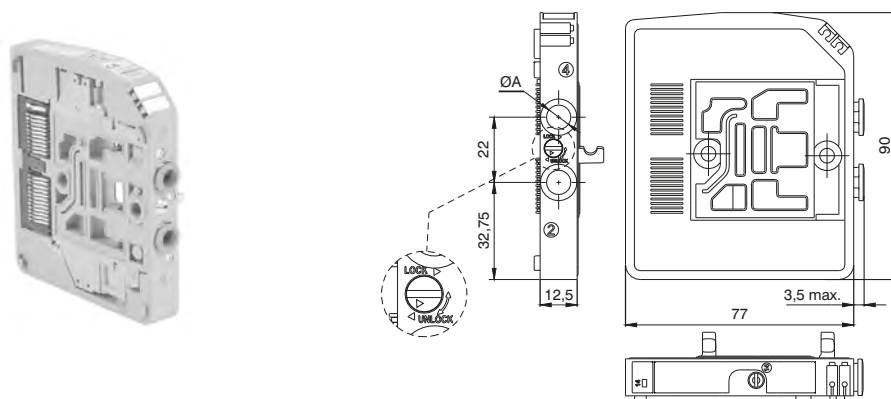
Coding: 23E C 52.00.39.V

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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	9
Response time according to ISO 12238, deactivation time (ms)	30

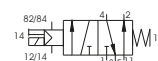
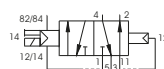
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

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<sup>Ⓒ</sup>.52.00.35<sup>Ⓥ</sup>

### 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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	7
Response 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

- <sup>Ⓒ</sup> 4 = Quick connection for tube Ø4
- 6 = Quick connection for tube Ø6
- 8 = Quick connection for tube Ø8

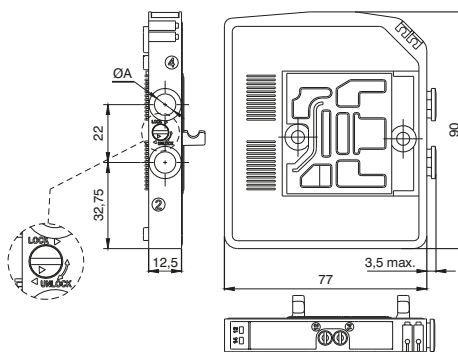
### VOLTAGE

- <sup>Ⓥ</sup> 02 = 24 VDC PNP
- 12 = 24 VDC NPN

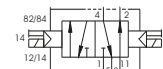
SHORT CODE C4

SHORT CODE C6

SHORT CODE C8



Weight 115 g



## Solenoid - Solenoid (Bistable-Closed centres)

Coding: 230<sup>Ⓒ</sup>.53.31.35<sup>Ⓥ</sup>

### 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 $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	15
Response 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

- <sup>Ⓒ</sup> 4 = Quick connection for tube Ø4
- 6 = Quick connection for tube Ø6
- 8 = Quick connection for tube Ø8

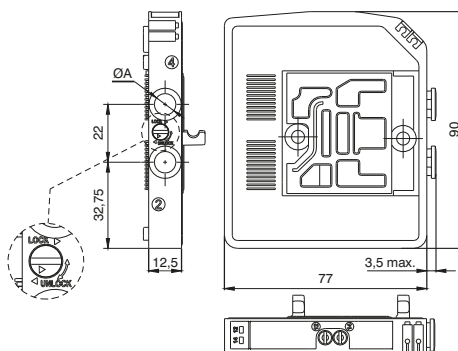
### VOLTAGE

- <sup>Ⓥ</sup> 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)

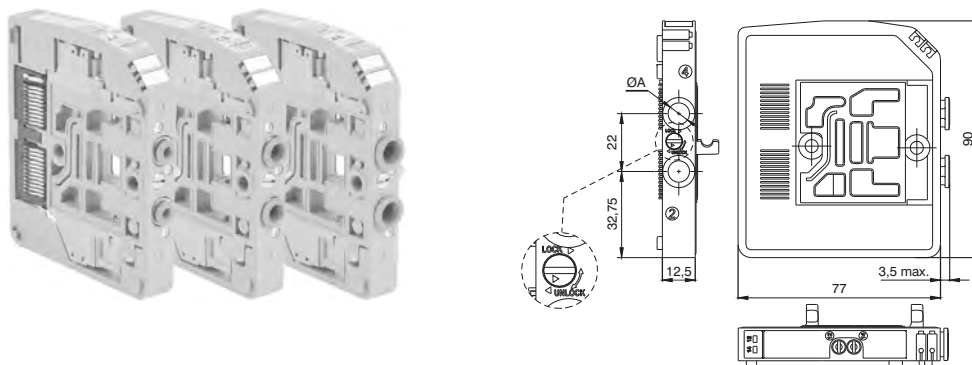
Coding: 230 62.44.35. V

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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	9
Response 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

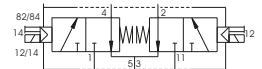
ELECTRICAL CONTACTS	
4	= Quick connection for tube Ø4
6	= Quick connection for tube Ø6
8	= Quick connection for tube Ø8
VOLTAGE	
02	= 24 VDC PNP
12	= 24 VDC NPN

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.

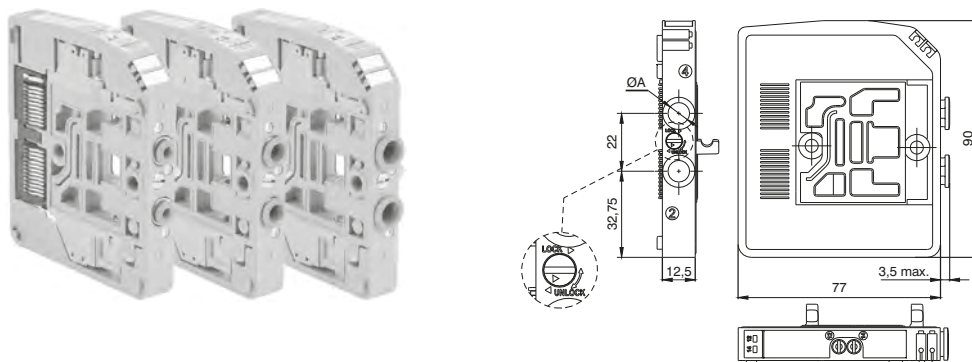
Coding: 230 62.45.35. V

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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	9
Response 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

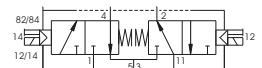
ELECTRICAL CONTACTS	
4	= Quick connection for tube Ø4
6	= Quick connection for tube Ø6
8	= Quick connection for tube Ø8
VOLTAGE	
02	= 24 VDC PNP
12	= 24 VDC NPN

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. V

### 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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	9
Response 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

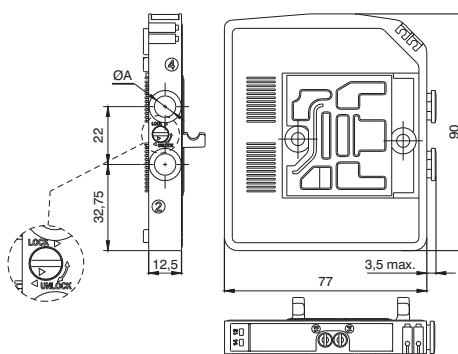
### ELECTRICAL CONTACTS

- 4 = Quick connection for tube Ø4
- 6 = Quick connection for tube Ø6
- 8 = Quick connection for tube Ø8

### VOLTAGE

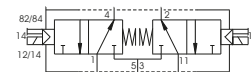
- 02 = 24 VDC PNP
- 12 = 24 VDC NPN

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. V

### 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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	9
Response 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

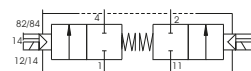
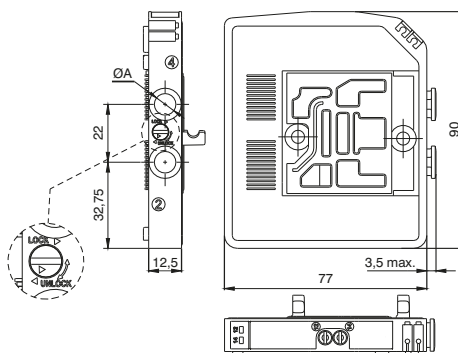
### ELECTRICAL CONTACTS

- 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.

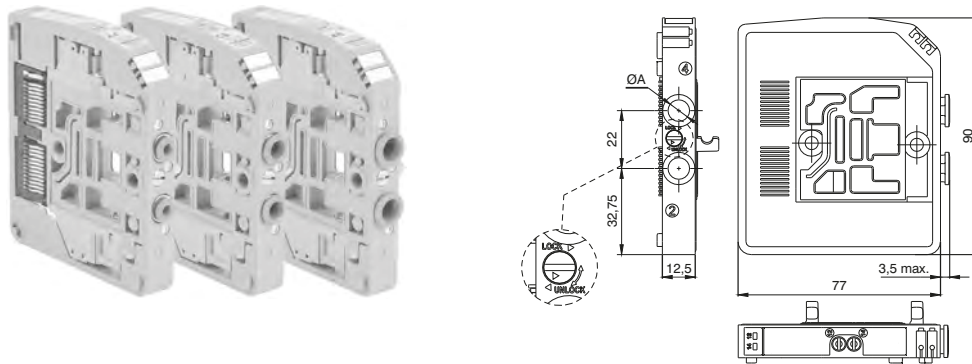
Coding: 230 42.45.35. V

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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	9
Response time according to ISO 12238, deactivation time (ms)	30

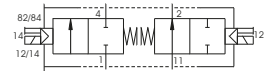
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

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.

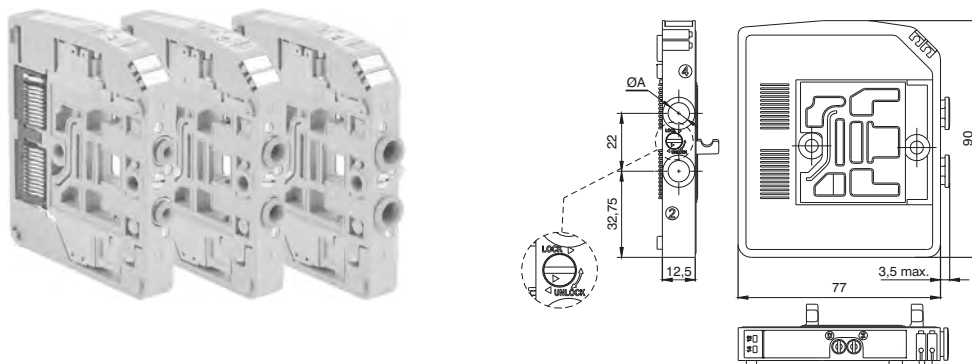
Coding: 230 42.55.35. V

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 $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	9
Response time according to ISO 12238, deactivation time (ms)	30

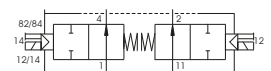
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

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: 2311.05

### Operational characteristics

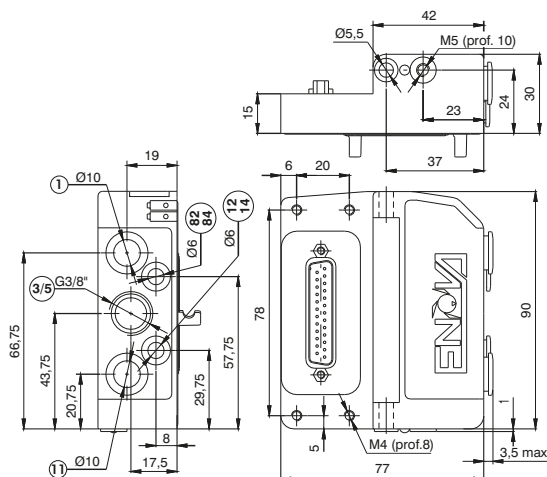
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50

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



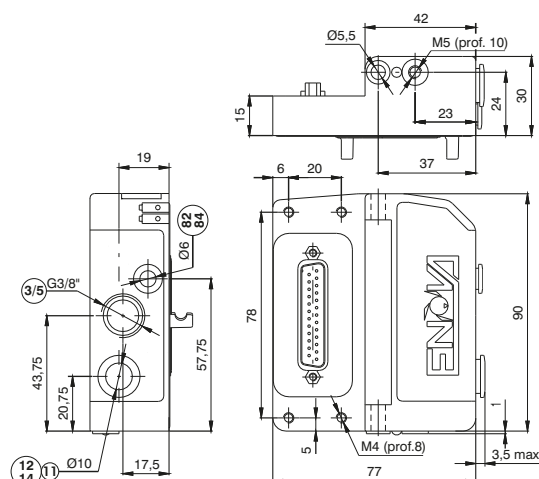
Weight 190 g  
1/11 Conduit (tube Ø10): Main Solenoid valve feeding (pressure from vacuum to 10 bar maximum)  
3/5 Conduit (G 3/8"): Main Solenoid valve exhaust

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

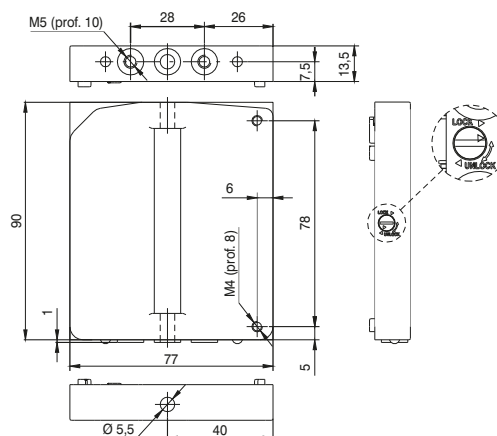


## Right Endplates closed

Coding: 2312.00



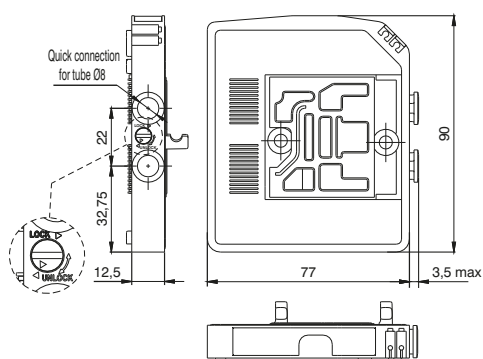
Weight 100 g



## Intermediate Inlet/Exhaust module



Weight 5 g



Coding: 2308.F

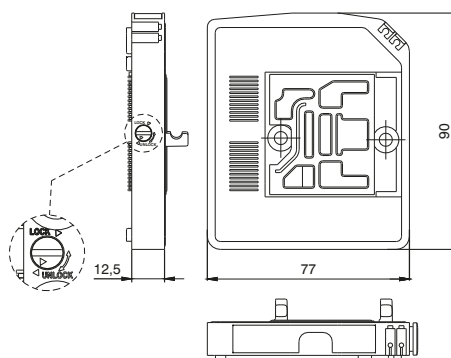
FUNCTION
08 = Exhaust module
12 = Inlet module
20 = Inlet-Exhaust module

SHORT CODE J  
SHORT CODE K  
SHORT CODE W

## Through module



Weight 90 g



Coding: 2300.F

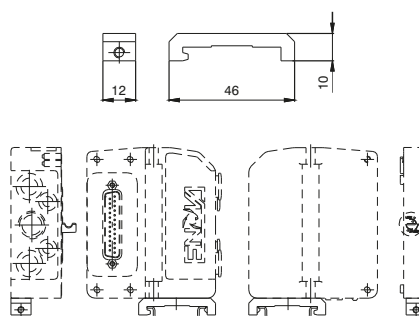
FUNCTION
01 = 1 electric signal module
02 = 2 electric signals module

SHORT CODE T1  
SHORT CODE T2

## DIN rail adapter



Weight 12 g

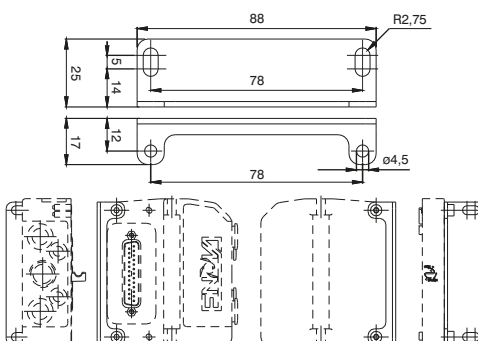


Coding: 2300.16

## Fixing brackets



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



Coding: 2300.50



1

AIR DISTRIBUTION

► 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.**L**.**C**

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



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

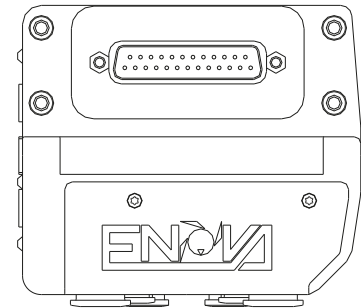
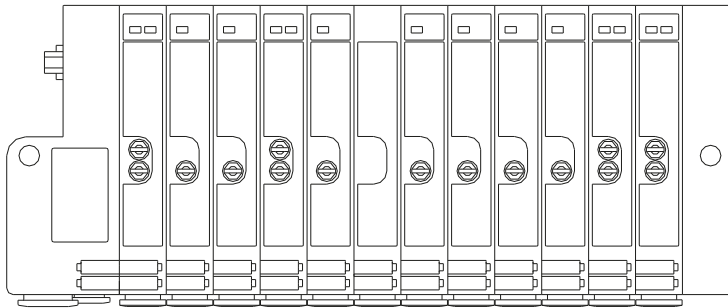
The management and distribution of the electrical signals between each valve is obtained thanks to a patented electrical connector which receives the signals from the previous module, uses one, two or none depending on the type, and carries forward to the next module the remaining. Bistable valves, 5/3 ; 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.

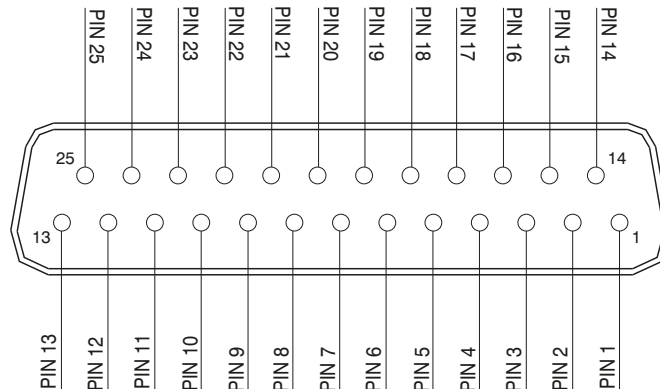
This second solution (CEB) allows the modification of the manifold ( replacement of monostable valves with bistable for example) without the need of reconfiguring the PLC outputs layout. On the other hand this solution limits the maximum number of valves to 11 (two signals for each position).

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.

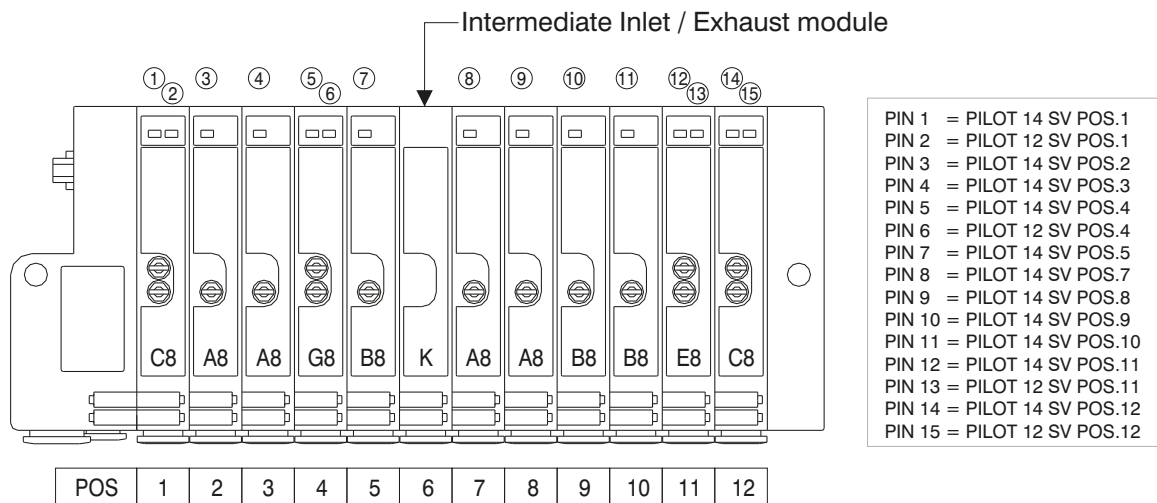


### ELECTRIC CONNECTOR SUB-D TYPE - 25 POLES

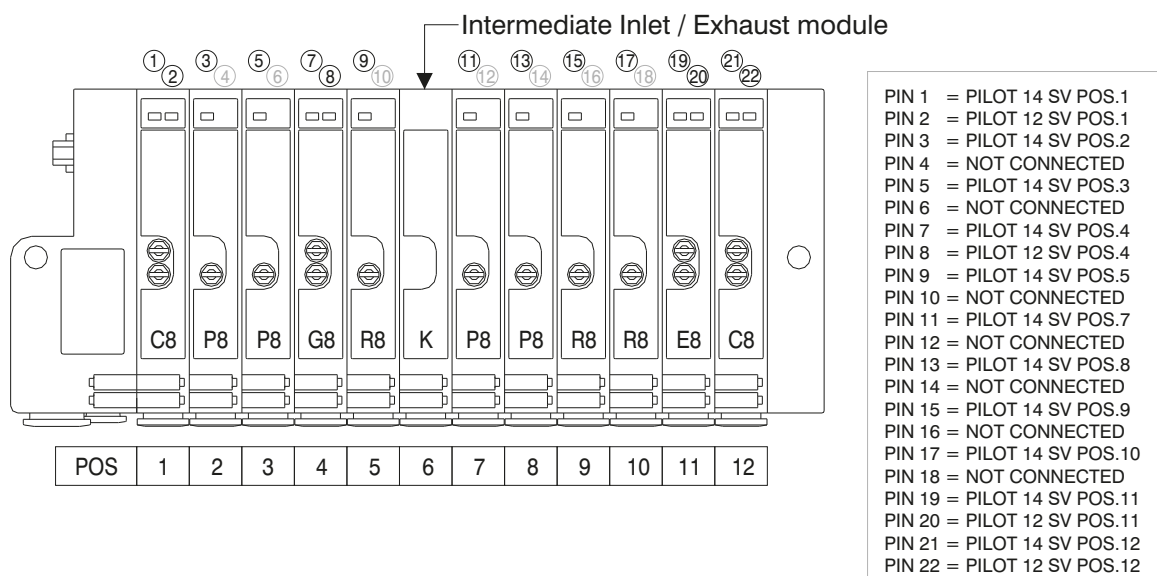


1 - 22 = Solenoid valves signals  
23 - 24 - 25 = Common

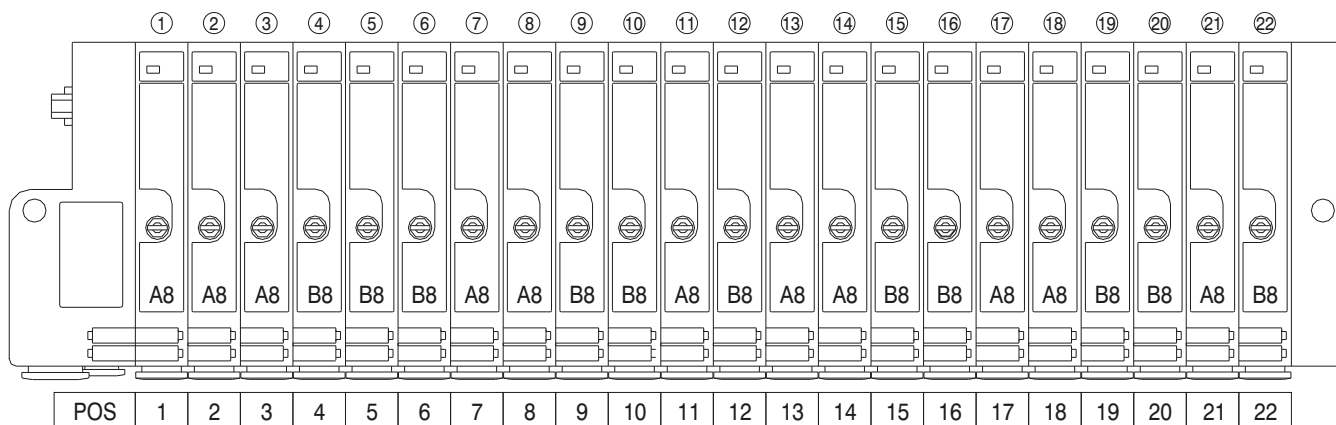
**25 PIN Connector correspondence for bistable, 2x3/2, 5/3 and standard monostable valves manifold**



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



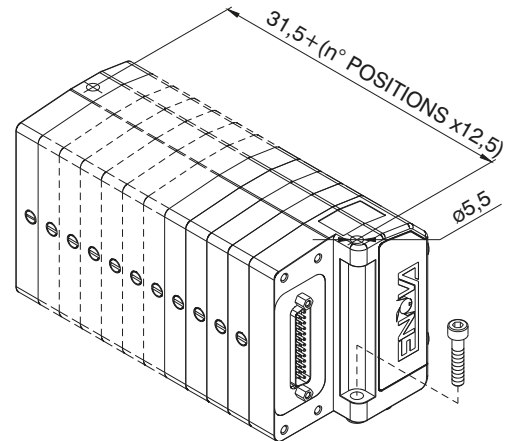
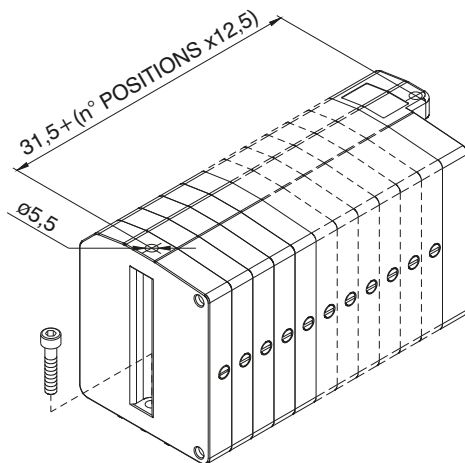
**25 PIN Connector correspondence for manifold for 22 position manifold with standard monostable valves**



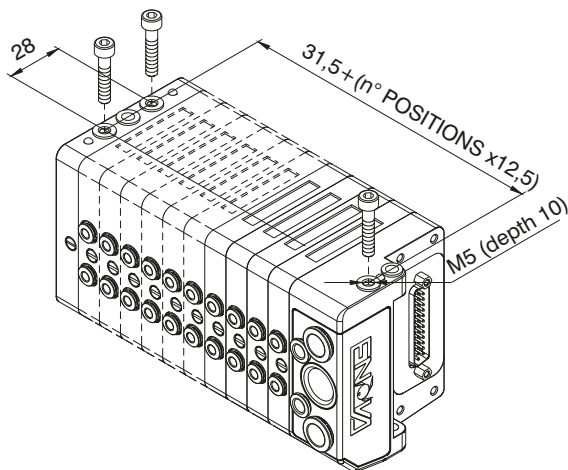


## Mounting

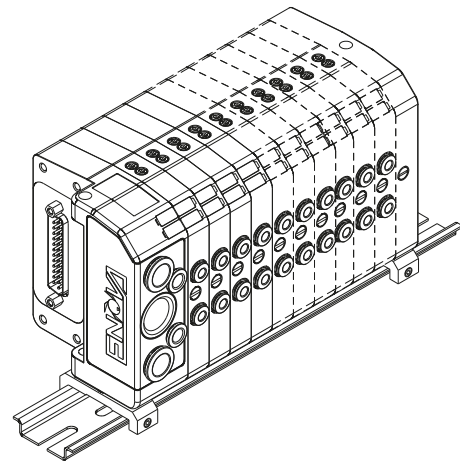
From the top



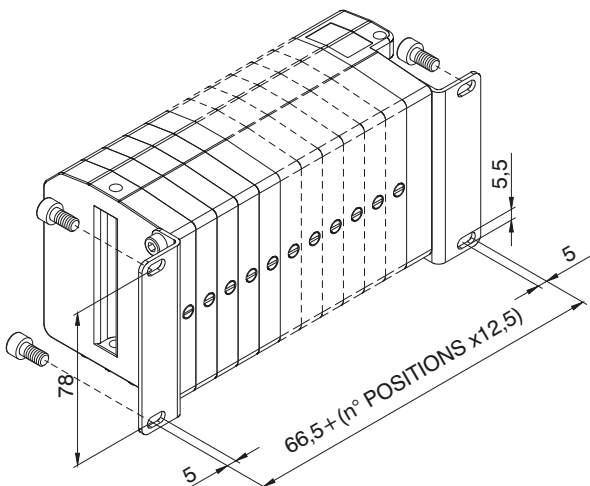
From the bottom



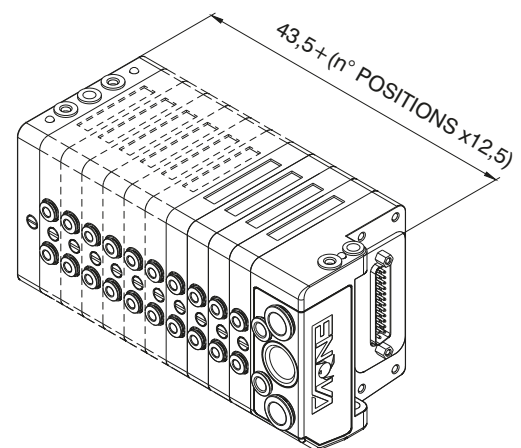
On DIN rail

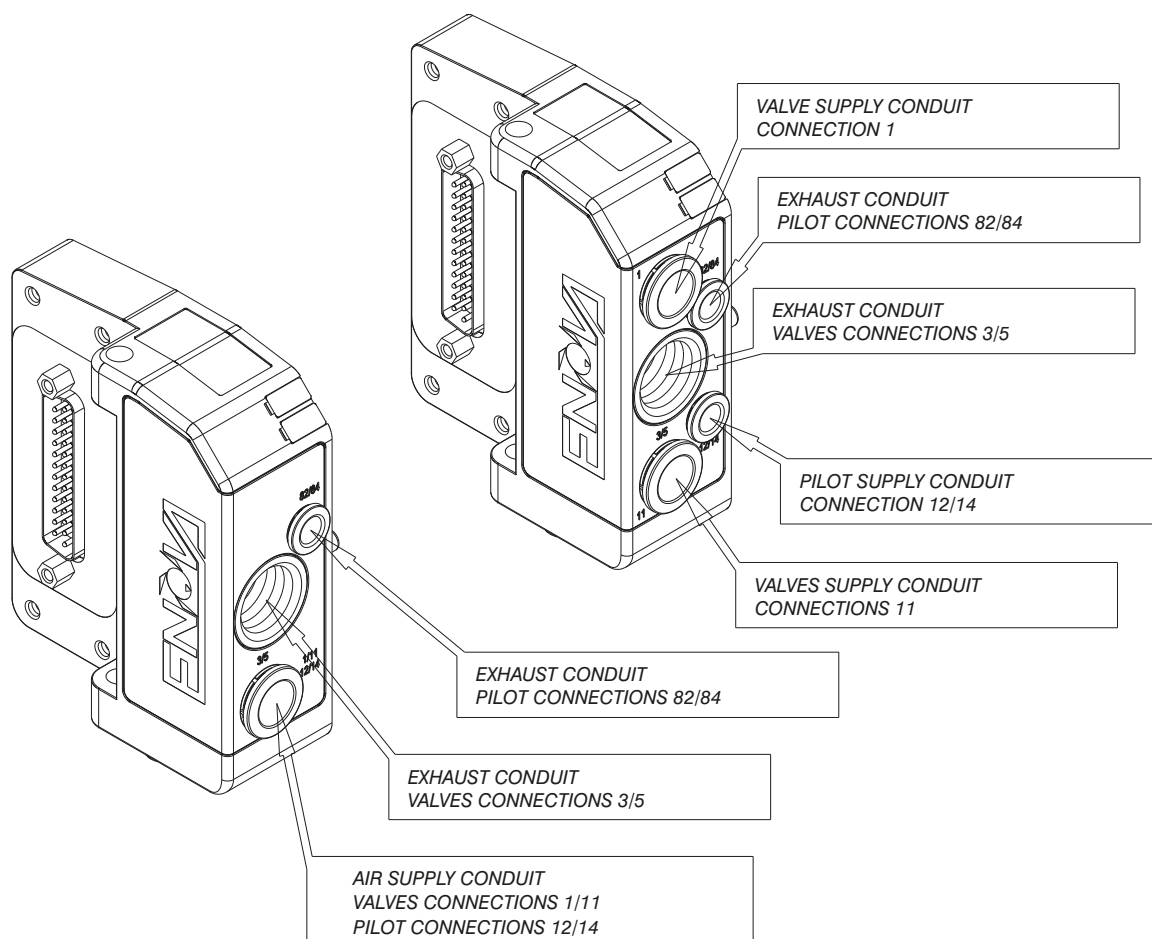
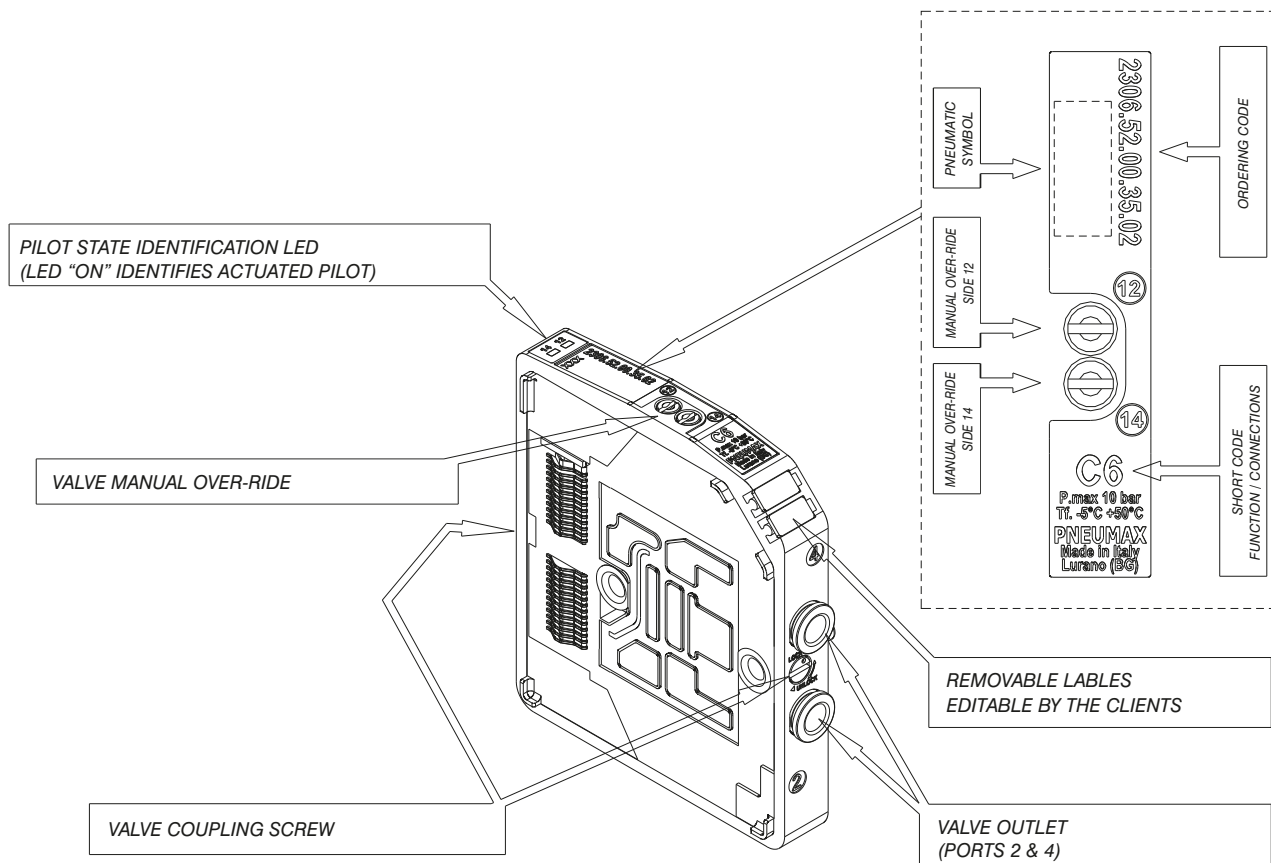


90° Bracket



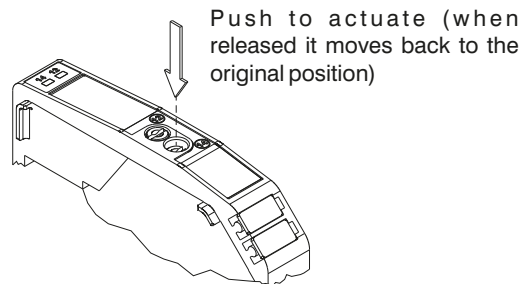
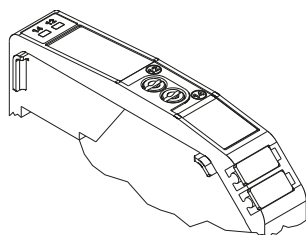
Maximum envelop size based  
on the number of positions



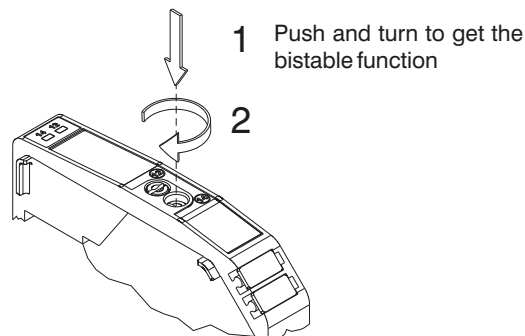
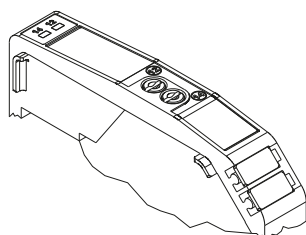


## Manual over-ride function

### Unstable function



### Bistable function



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

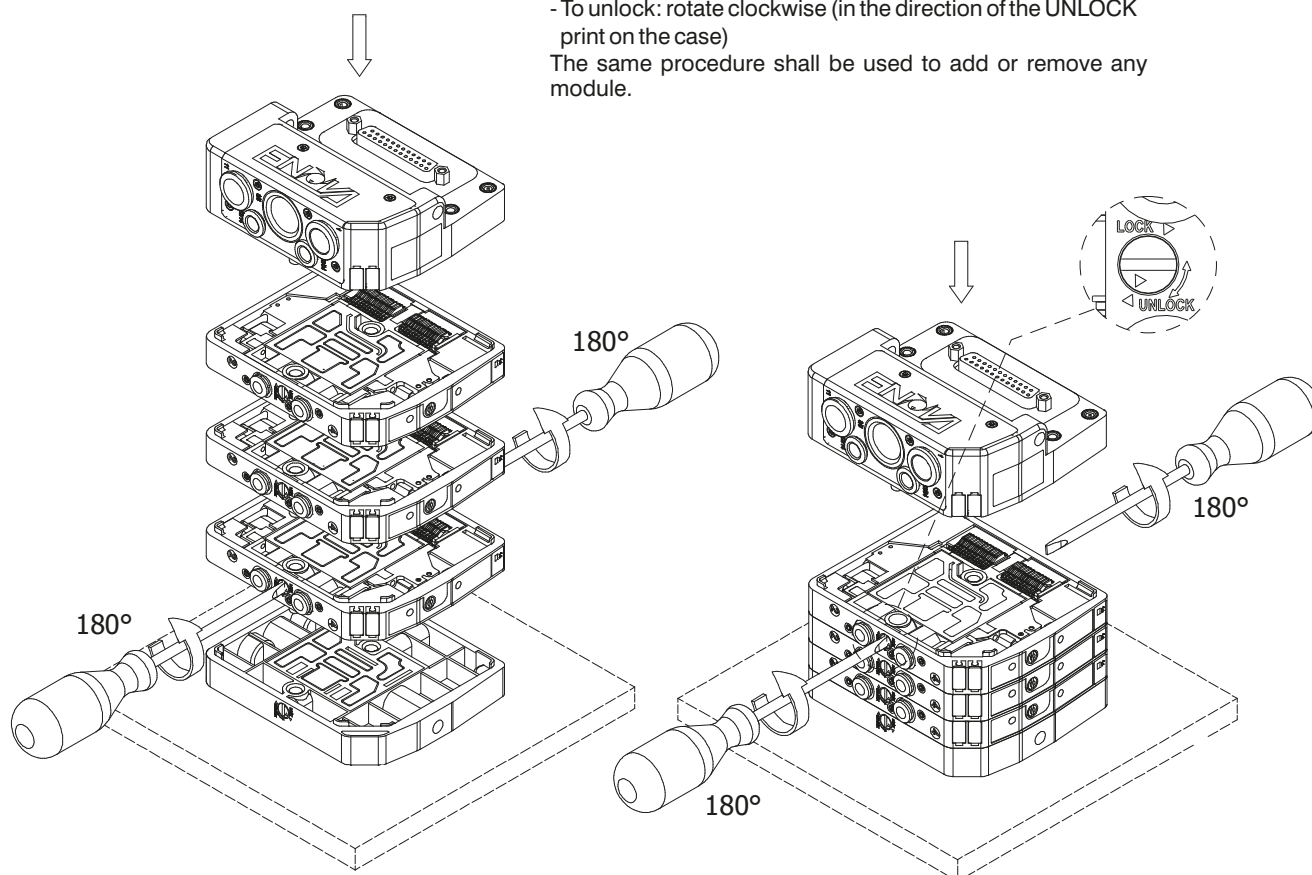
## Manifold assembly

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 assembled shall be the inlet module

Fastening pins rotation direction:

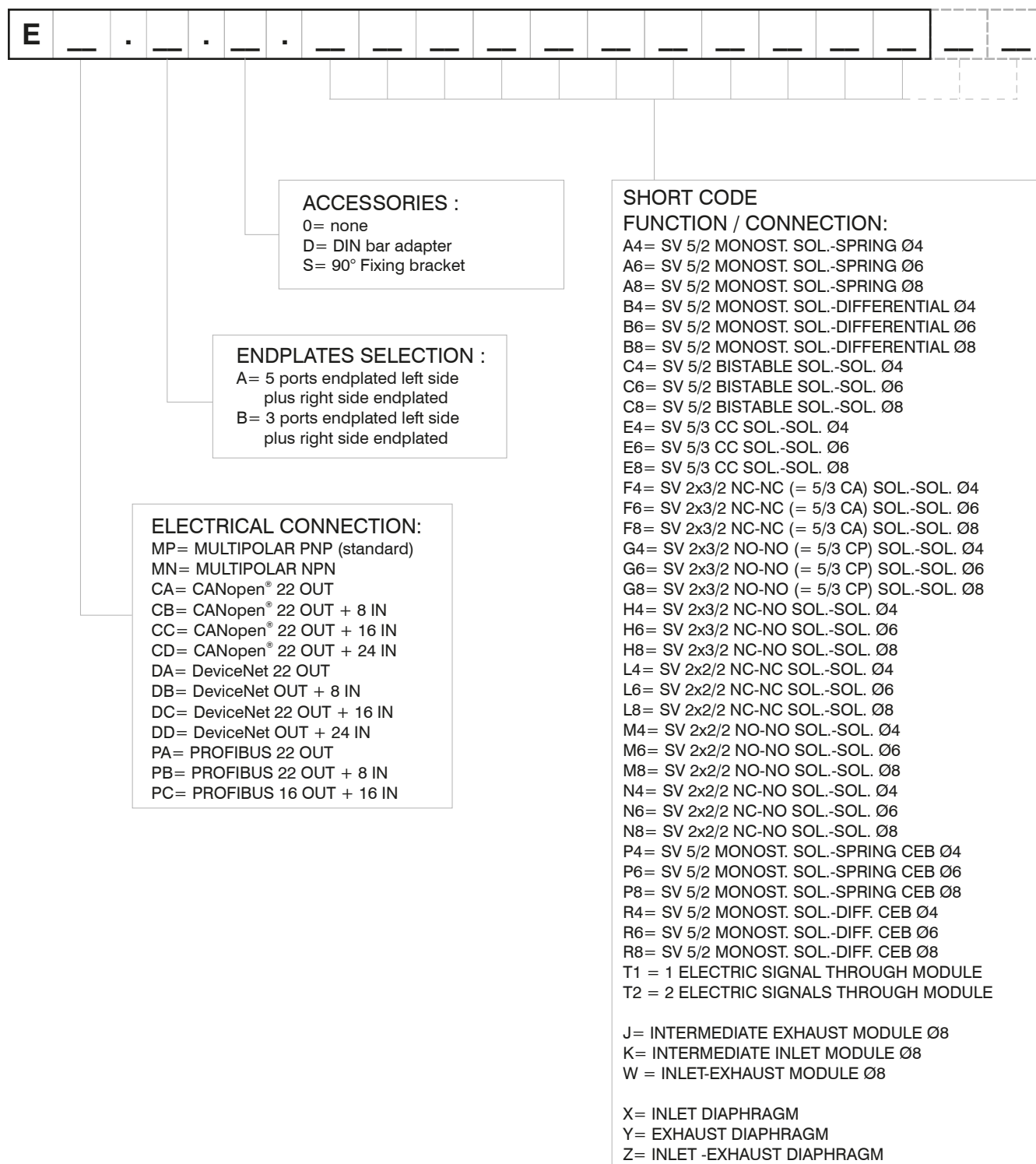
- To lock: rotate anticlockwise (in the direction of the LOCK print on the case)
- To unlock: rotate clockwise (in the direction of the UNLOCK print on the case)

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



## Manifold Lay-Out configuration

## AIR DISTRIBUTION



**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 manageable solenoid valves are 22.

Node power supply is made by a M12 4P male circular connector.

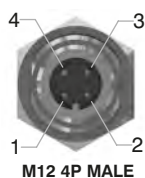
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining powered the node and inputs, if present.

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).

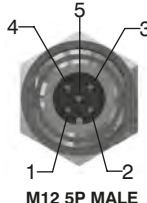
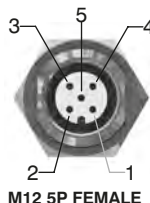
Transmission speed can be set by 3 dip-switches.

The node address can be set by 6 dip-switches using BCD numeration.

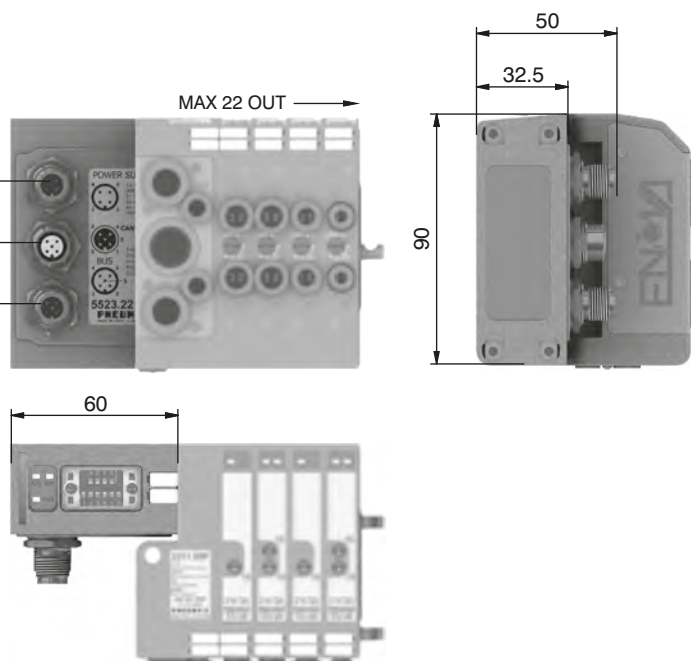
The module includes an internal terminating resistance that can be activated by a dip-switch.

**Ordering code****5523.22****Scheme / Overall dimensions and I/O layout :****POWER SUPPLY connector**

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

**NETWORK connectors**

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
<b>Power supply</b>	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
	PNP equivalent outputs	+24 VDC +/- 10%
<b>Outputs</b>	Maximum current for output	100 mA
	Maximum output number	22
	Max output simultaneously actuated	22
<b>Network</b>	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, possible 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: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	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 manageable 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 maintaining 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.

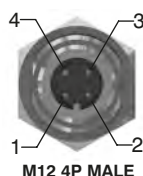
## Ordering code

**5423.22**



## Scheme / Overall dimensions and I/O layout :

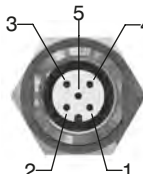
### POWER SUPPLY connector



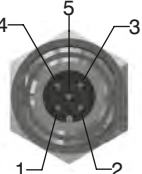
M12 4P MALE

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

### NETWORK connectors

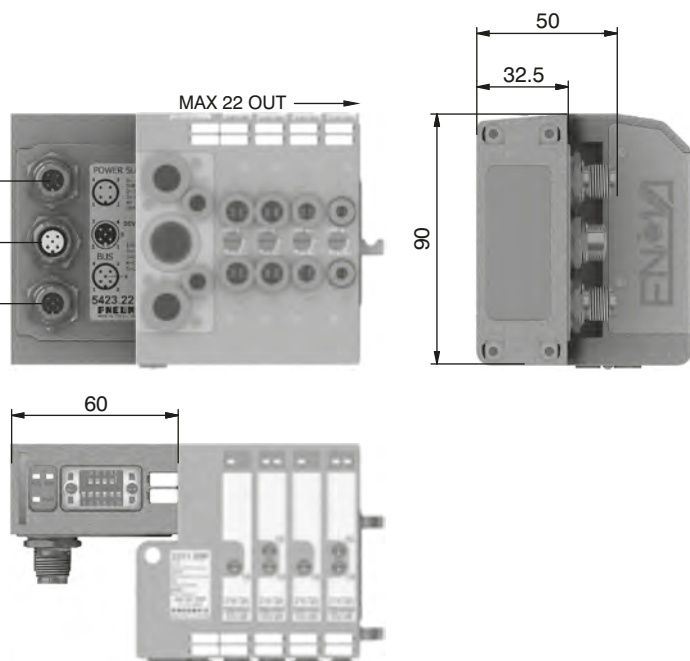


M12 5P FEMALE



M12 5P MALE

PIN	SIGNAL	DESCRIPTION
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		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, possible 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: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
		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.

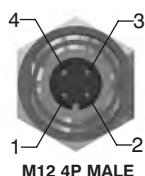
Node power supply is made by a M12 4P male circular connector.

The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining powered the node and inputs, if present.

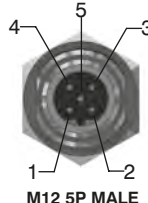
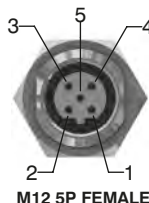
Connection to Bus PROFIBUS DP is possible via 2 M12 type B 5P male - female circular connectors; these two are connected in parallel and according to PROFIBUS Interconnection Technology (Version 1.1 : August 2001).

The node address can be set using BCD numeration: 4 dip-switches for the units and 4 dip-switches for the tens.

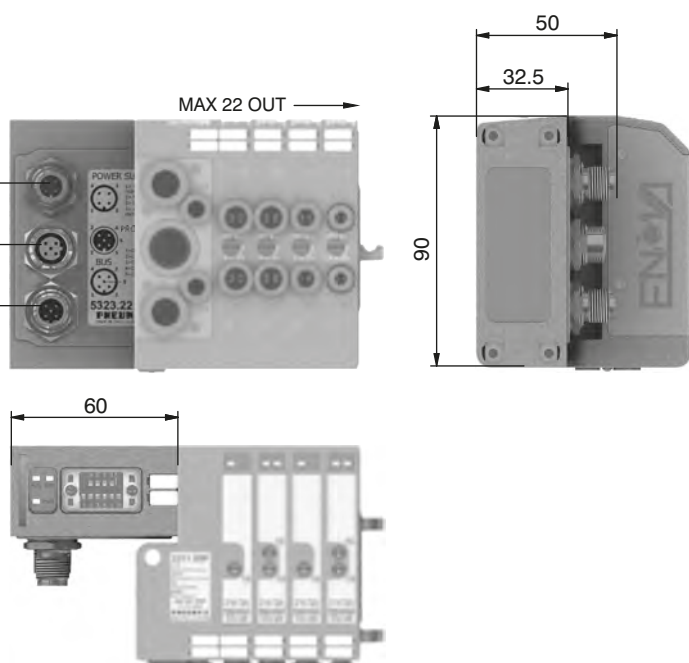
The module includes an internal terminating resistance that can be activated by a dip-switch.

**Ordering code****5323.22****Scheme / Overall dimensions and I/O layout :****POWER SUPPLY connector**

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

**NETWORK connectors**

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
<b>Power supply</b>	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
	PNP equivalent outputs	+24 VDC +/- 10%
<b>Outputs</b>	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 connectors	2 M12 5P connectors male-female (IEC 60947-5-2)
<b>Network</b>	Baud rate	125 - 250 - 500 Kbit/s
	Addresses, possible 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: <a href="http://www.pneumaxspa.com">http://www.pneumaxspa.com</a>
	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  $\pm 10\%$ .

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.

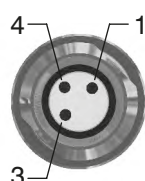
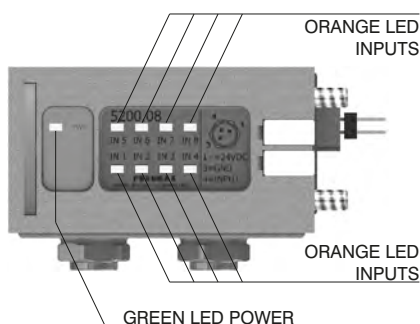
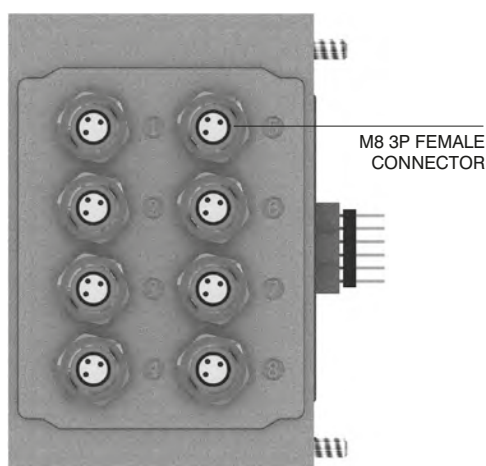
The Maximum number of Input modules supported is 3 for CANopen and DeviceNet, 2 for PROFIBUS DP.

## Ordering code

**5200.08**

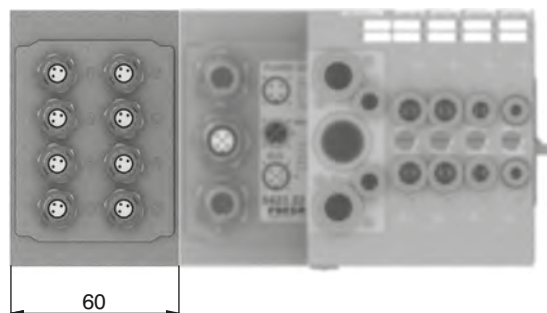


## Scheme / Overall dimensions and I/O layout :



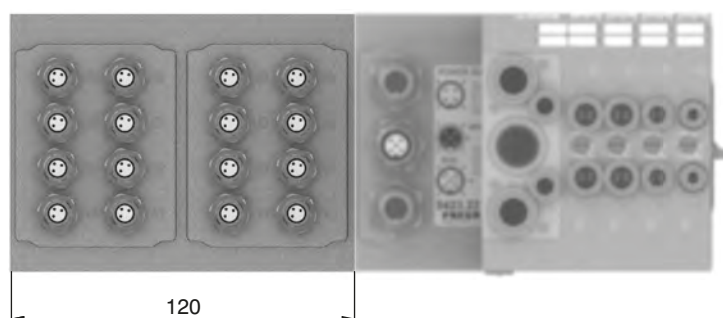
PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

Module 1



Module 2

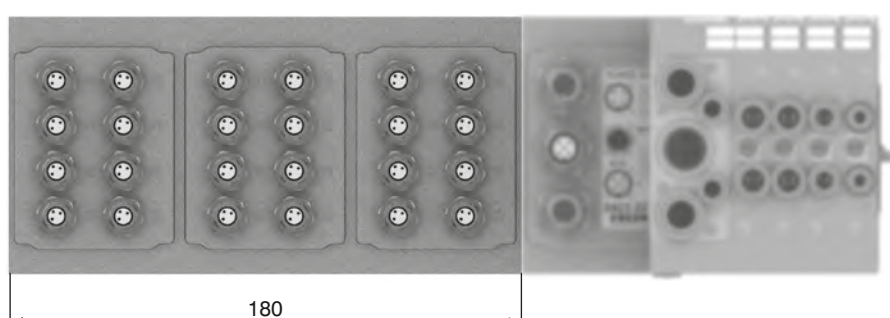
Module 1



Module 3

Module 2

Module 1



Socket for Power Supply  
STRAIGHT CONNECTOR  
M12A 4P FEMALE

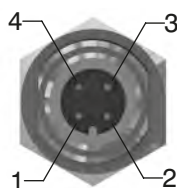
**Ordering code**

**5312A.F04.00**



## POWER SUPPLY connector

Upper view  
Slave connector

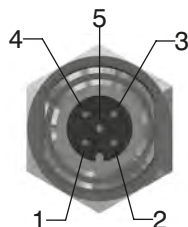


PIN	DESCRIPTION
1	+24 VDC Node
2	
3	0 V
4	+24 VDC Outputs

Socket for Bus CANopen®  
STRAIGHT CONNECTOR  
M12B 5P FEMALE

**Ordering code**

**5312A.F05.00**



## NETWORK connectors

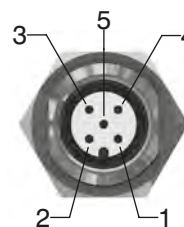
PIN	DESCRIPTION
1	(CAN_SHIELD)
2	(CAN_V+)
3	CAN_GND
4	CAN_H
5	CAN_L

Upper view  
Slave connector

Plug for Bus CANopen®  
STRAIGHT CONNECTOR  
M12A 5P MALE

**Ordering code**

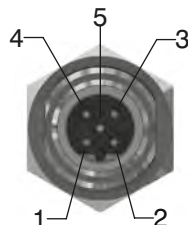
**5312A.M05.00**



Socket for Bus PROFIBUS  
STRAIGHT CONNECTOR  
M12B 5P FEMALE

**Ordering code**

**5312B.F05.00**

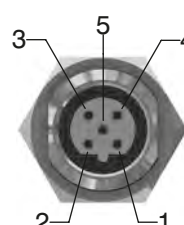


Upper view  
Slave connector

Plug for Bus PROFIBUS  
STRAIGHT CONNECTOR  
M12B 5P MALE

**Ordering code**

**5312B.M05.00**



Plug for Input module  
STRAIGHT CONNECTOR  
M8 3P MALE

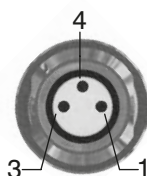
**Ordering code**

**5308A.M03.00**



## INPUT connectors

Upper view  
Slave connector



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

M12 plug

**Ordering code**

**5300.T12**



## Plugs

M8 plug

**Ordering code**

**5300.T08**

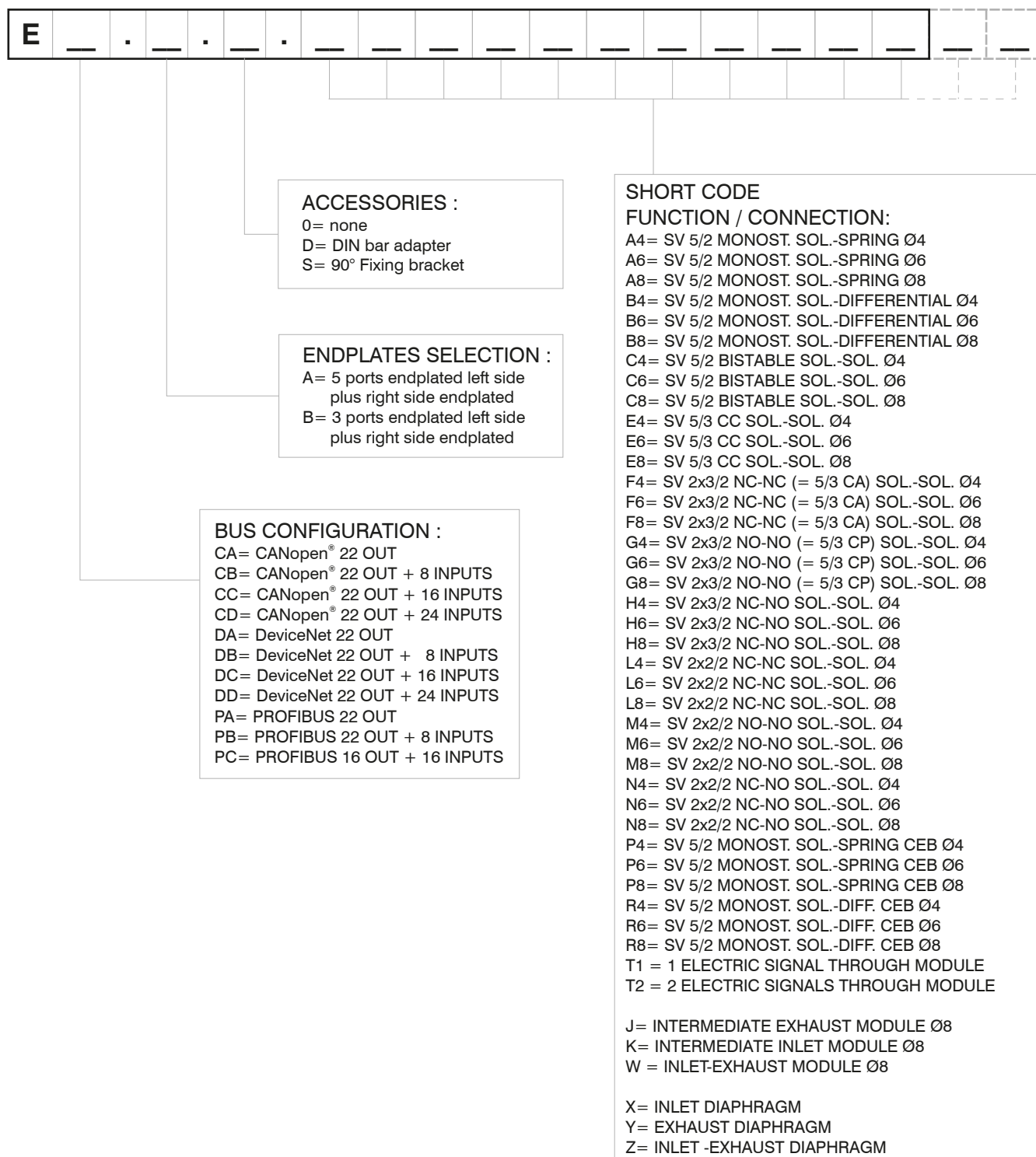






Manifold layout configuration complete with Serial systems

1  
AIR DISTRIBUTION



**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.