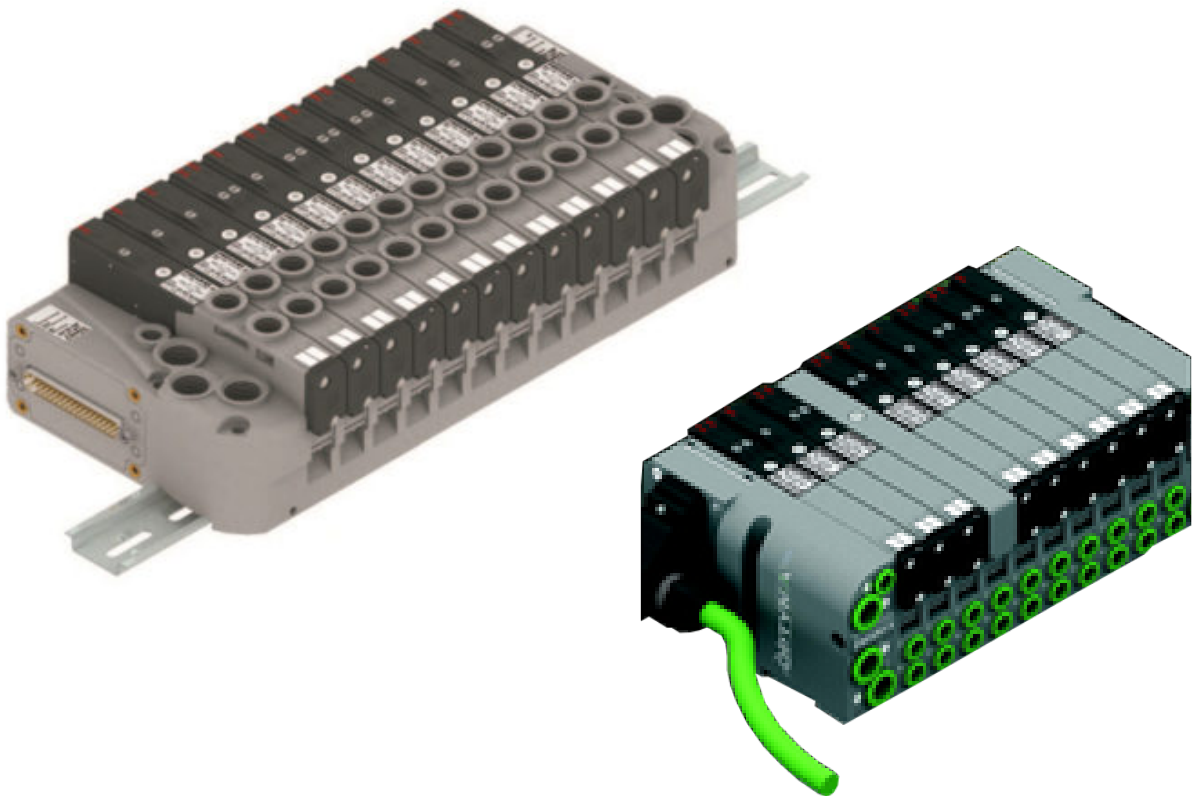




PNEUMAX

2500 Series **OPTYMA** Valves



800.909.4988
info@rankinusa.com

RANKIN 
COMPONENTS THAT AUTOMATE



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 NI/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 IO RT/IRT, EtherCAT®, Powerlink and Modbus/TCP.

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 - Spring

Coding: 2531.52.00.39.

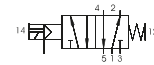
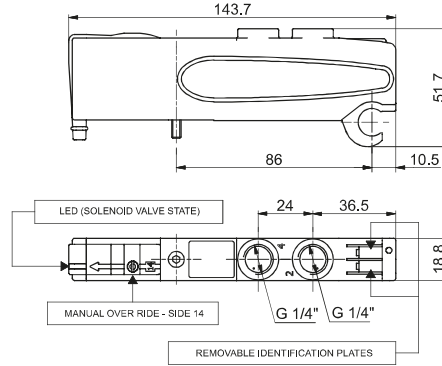
Operational characteristics

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 Δp=1 (NI/min)	1000
Response time according to ISO 12238, activation time (ms)	14
Response time according to ISO 12238, deactivation time (ms)	40

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

SHORT FUNCTION CODE "A"
Weight 123 g

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



Solenoid-Differential

Coding: 2531.52.00.36.

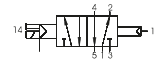
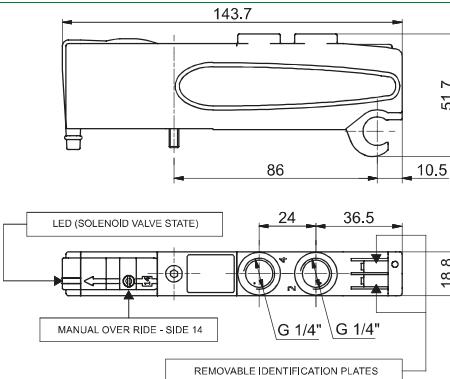
Operational characteristics

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 Δp=1 (NI/min)	1000
Response time according to ISO 12238, activation time (ms)	20
Response time according to ISO 12238, deactivation time (ms)	29

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

SHORT FUNCTION CODE "B"
Weight 120 g

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



Solenoid-Solenoid

Coding: 2531.52.00.35.

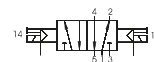
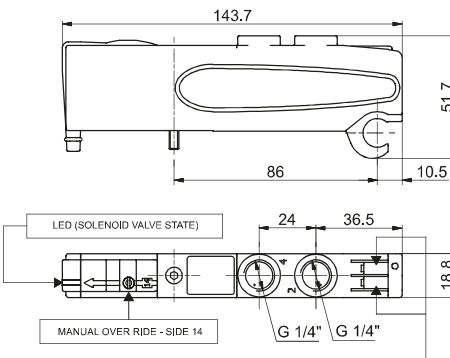
Operational characteristics

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 Δp=1 (NI/min)	1000
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	14

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

SHORT FUNCTION CODE "C"
Weight 128 g

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





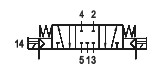
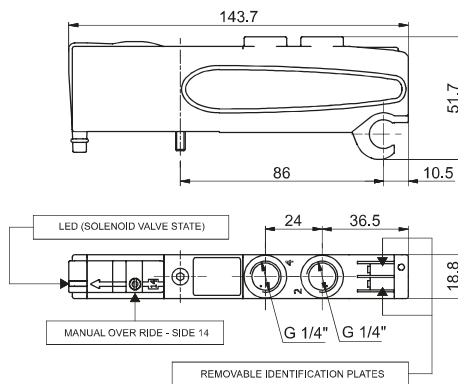
Solenoid-Solenoid 5/3

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

V	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



AIR DISTRIBUTION

Solenoid-Solenoid 2x3/2

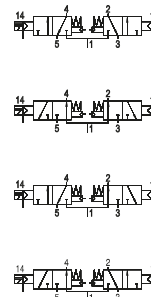
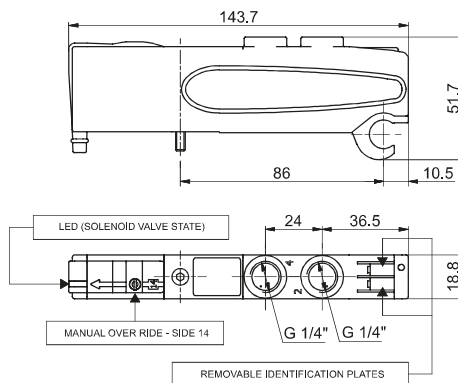
Coding: 2531.62. **F**.35. **V**

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	$\geq 2,5 + (0,2 \times P_{atm.})$
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

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

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

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





Left Endplates

Coding: 2530.V.C

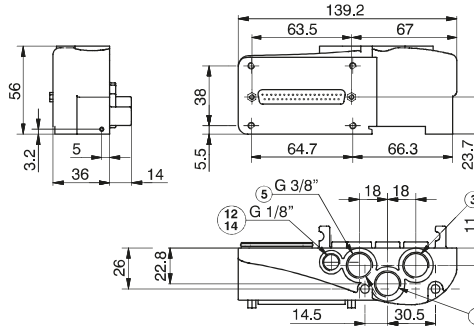
Operational characteristics

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

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
25N	= Connectors 25 poles NPN
37A	= Connectors 37 poles AC
25A	= Connectors 25 poles AC
C16	= Terminal 16 signals PNP

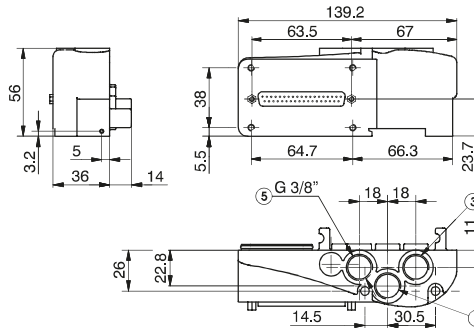
1

AIR DISTRIBUTION



Weight 206 g

2530.02.C



Weight 206 g

2530.12.C

Right Endplates

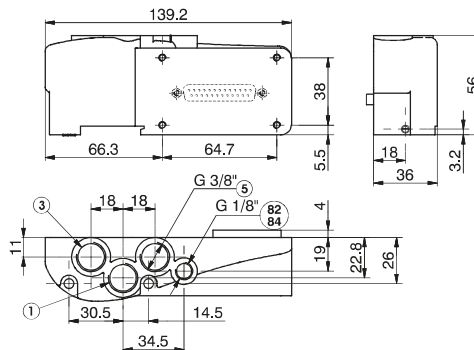
Coding: 2530.03.C

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	
C	00 = Electrical connection
	25P = Connectors 25 poles

Weight 181,5 g



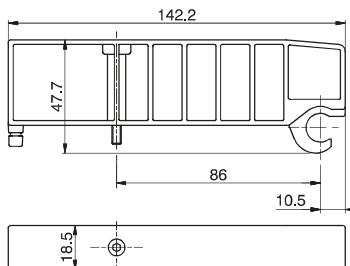
PORT 82/84= DO NOT PRESSURIZE, SOLENOID PILOTS EXHAUST

Closing plate

Coding: 2530.00

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



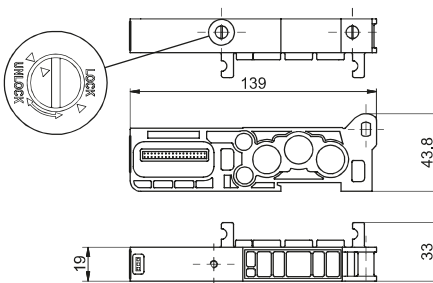
Modular base

Coding: 2530.01[✓]

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

VERSION	
✓	M = for Monostable SV
	B = for Bistable SV

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

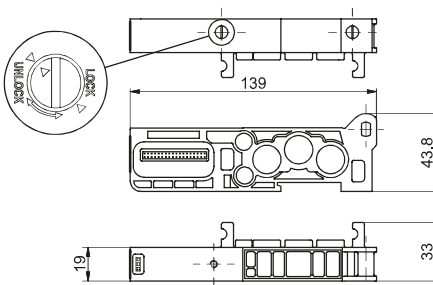


Intermediate Inlet/Exhaust module

Coding: 2530.10

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

SHORT FUNCTION CODE "W"
Weight 110 g



AIR DISTRIBUTION

1

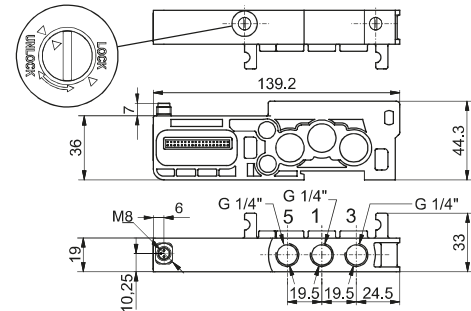
AIR DISTRIBUTION

General :

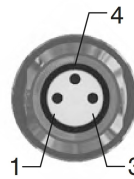
Each Optyma-F manifold lets to manage 32 command signals for the valves. Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve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

Ordering code

2530.10.2A



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



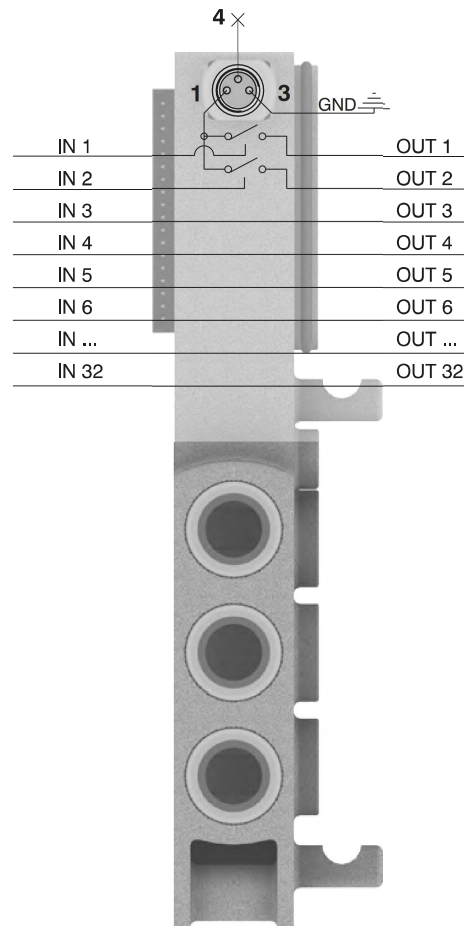
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

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.



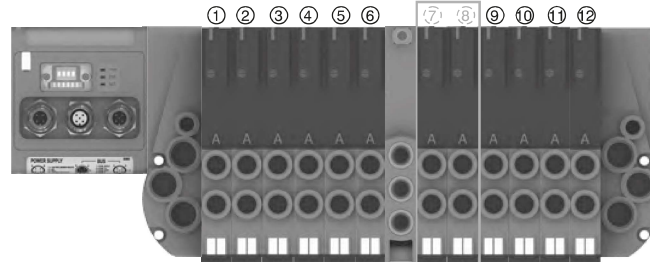
Please note: It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.



Usage examples:

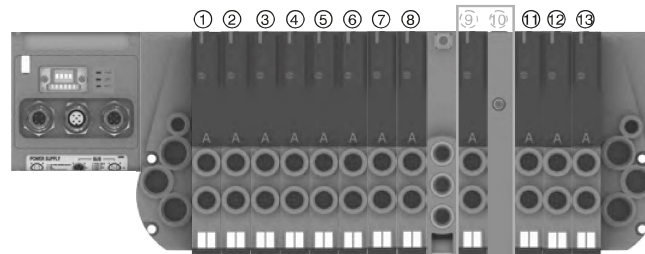
EXAMPLE 1:
Manifold of 12 monostable valves on which you want to interrupt signals 7-8

- 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).



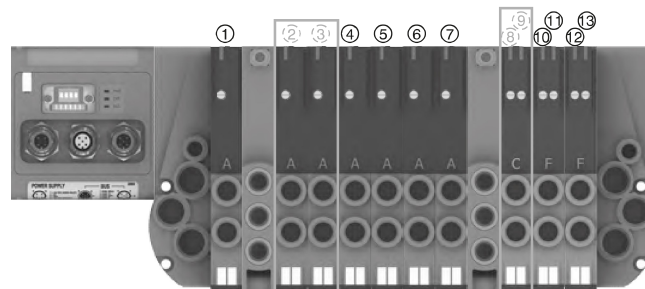
Please note: Each additional power supply module interrupts always 2 electrical signals.

- ☛** 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.



AIR DISTRIBUTION

1

AIR DISTRIBUTION

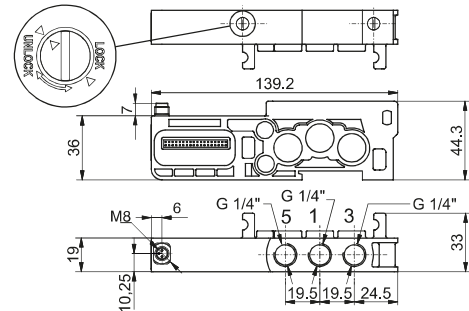
General :

Each Optyima-F manifold lets to manage 32 command signals for the valves. Optyima-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and Powerlink) 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 4 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 is inserted directly into the Optyima-F solenoid valves manifold.

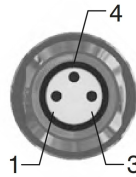


Ordering code

2530.10.4A



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



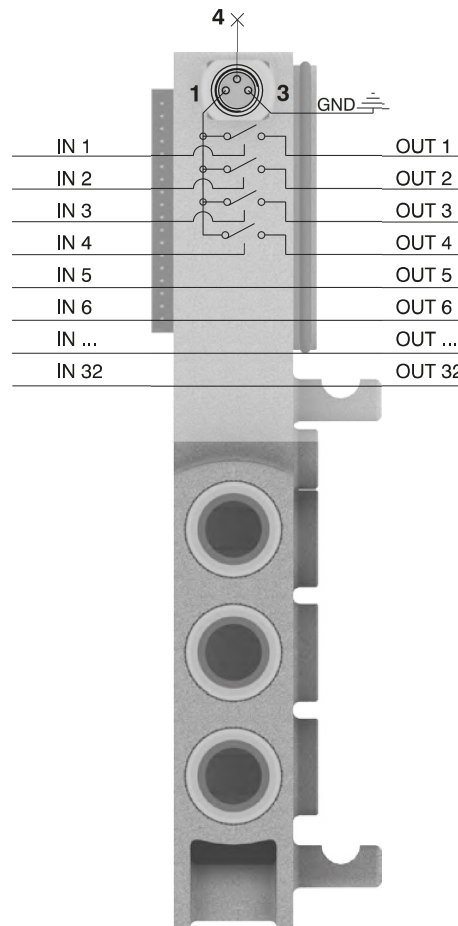
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

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.



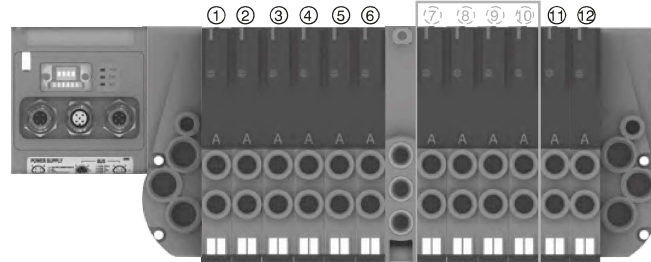
Usage examples:

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.

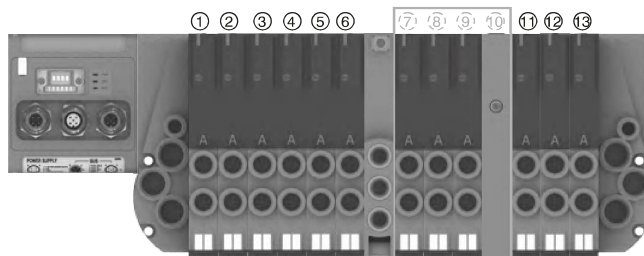


EXAMPLE 2:

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.

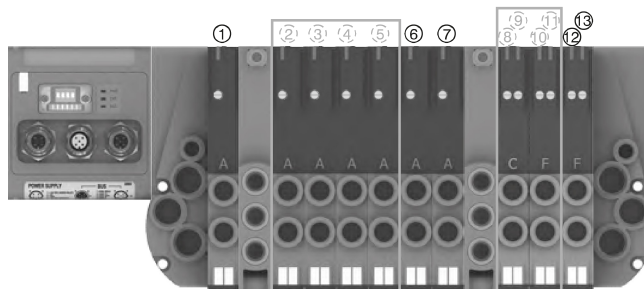
Assembly:

- 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.



AIR DISTRIBUTION



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
CONNECTOR
10 = In line
90 = 90° Angle

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.Ⓛ.Ⓒ



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

Cable complete with connector, 25 Poles IP65

Coding: 2400.25.Ⓛ.25



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



AIR DISTRIBUTION

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.

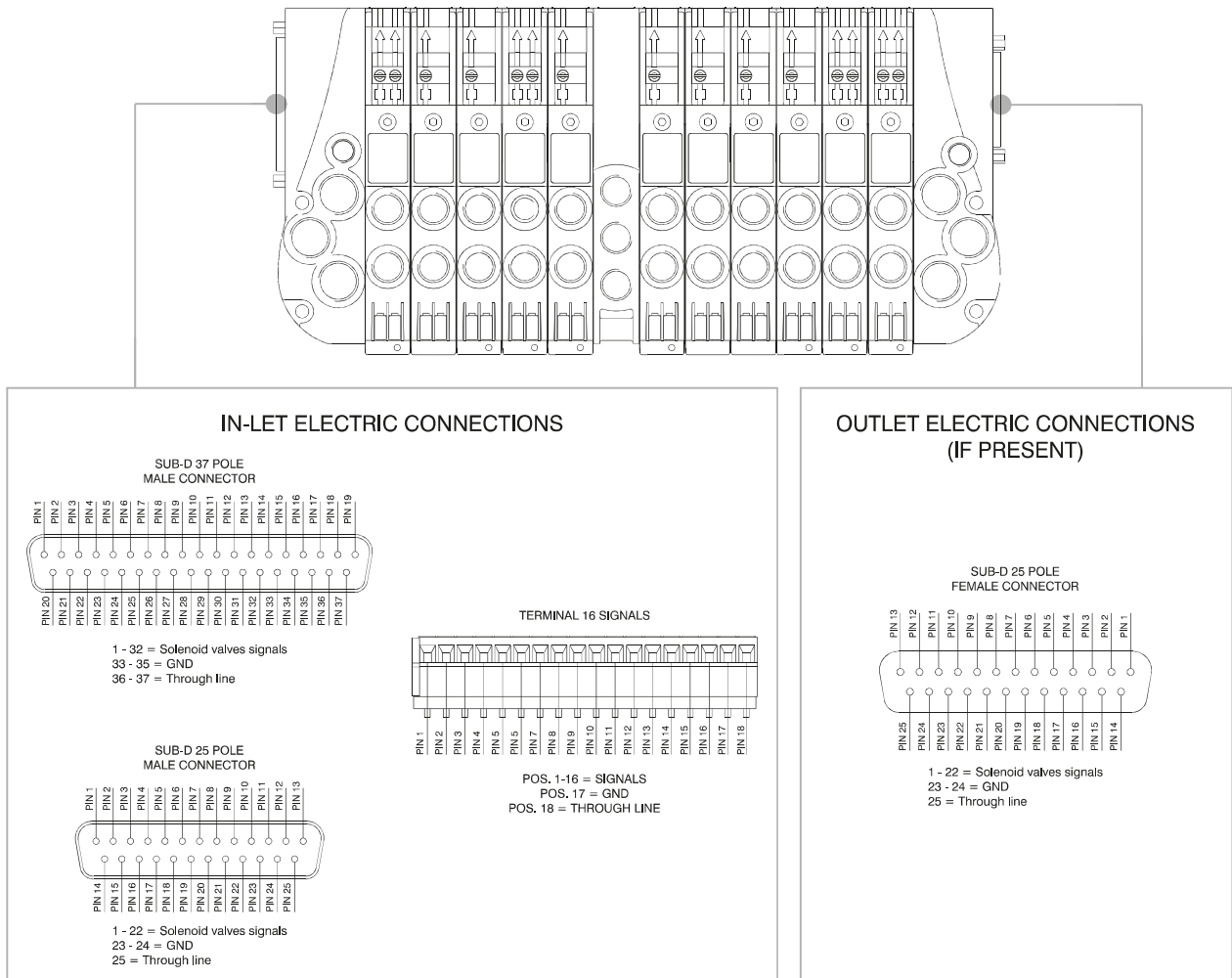
This allows the use of intermediate modules in any position of the manifold.

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)

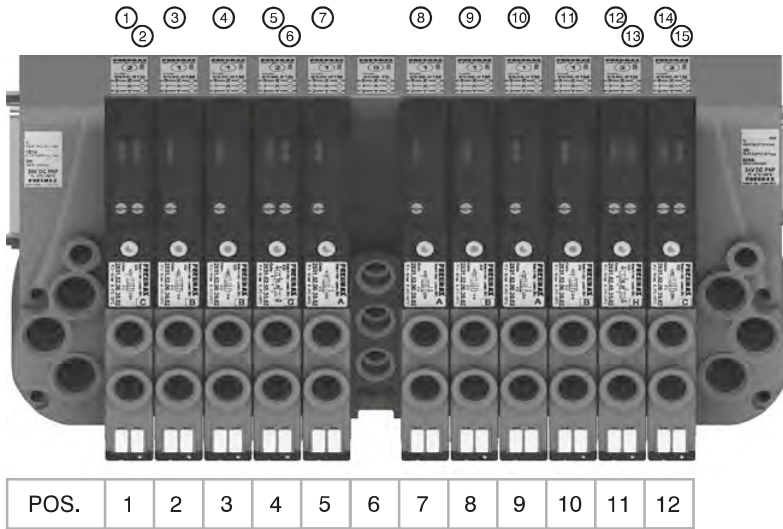
Following we show some examples of possible combination and the relative pin assignment.



37 PIN Connector correspondence for valves assembled on mixed bases

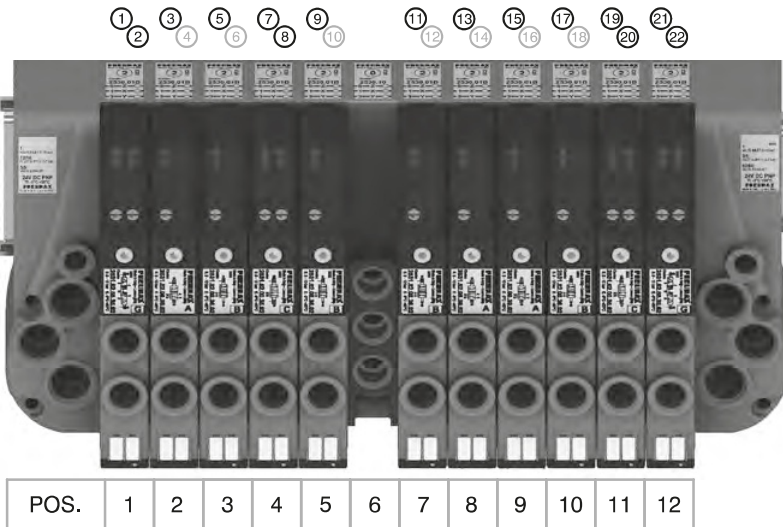
1

AIR DISTRIBUTION



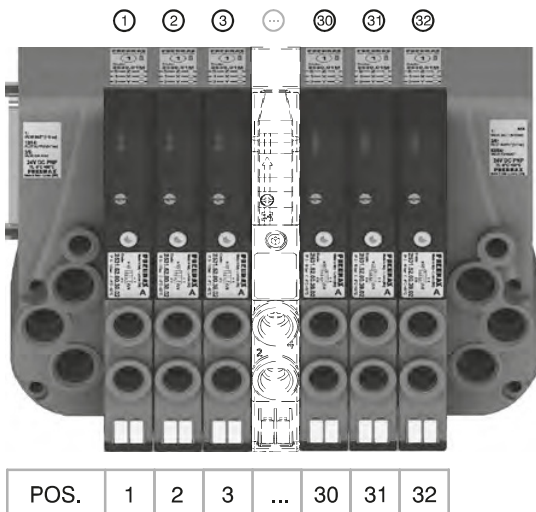
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 14 SV POS.3
- PIN 5 = PILOT 14 SV POS.4
- PIN 6 = PILOT 12 SV POS.4
- PIN 7 = PILOT 14 SV POS.5
- PIN 8 = PILOT 14 SV POS.7
- PIN 9 = PILOT 14 SV POS.8
- PIN 10 = PILOT 14 SV POS.9
- PIN 11 = PILOT 14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

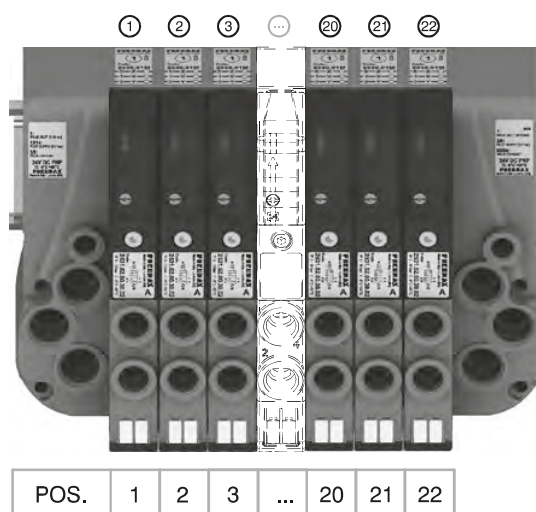


- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = NOT CONNECTED
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = NOT CONNECTED
- PIN 7 = PILOT 14 SV POS.4
- PIN 8 = PILOT 12 SV POS.4
- PIN 9 = PILOT 14 SV POS.5
- PIN 10 = NOT CONNECTED
- PIN 11 = PILOT 14 SV POS.7
- PIN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



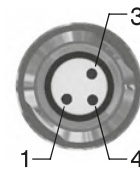
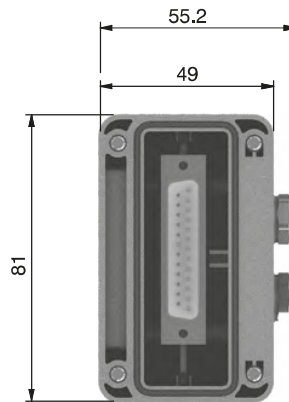
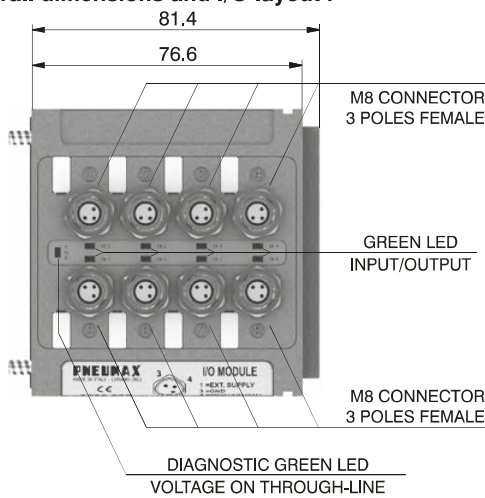
Please note: If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

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).

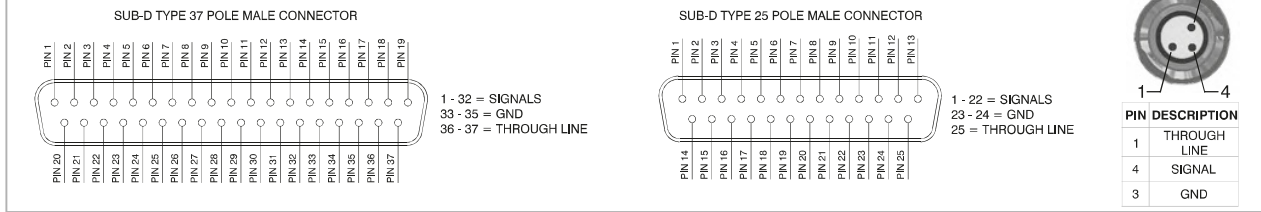
General characteristics	Model	2530.08F
	Case	Reinforced technopolymer
	I/O Connector	M8 connector 3 poles female (IEC 60947-5-2)
	PIN1 voltage (connector used as Input)	By the user
	PIN 4 voltage diagnosis	Green LED
	Node consumption (Outlets excluded)	7mA per each LED with 24 VDC signal
	Outlets voltage	+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

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CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR



Connection modes:

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

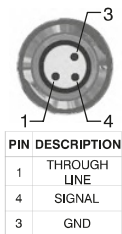
- A) Control via multi-pole connection
- B) Control via fieldbus

A) Control via multi-pole :

M8 connector used as Input:



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



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).

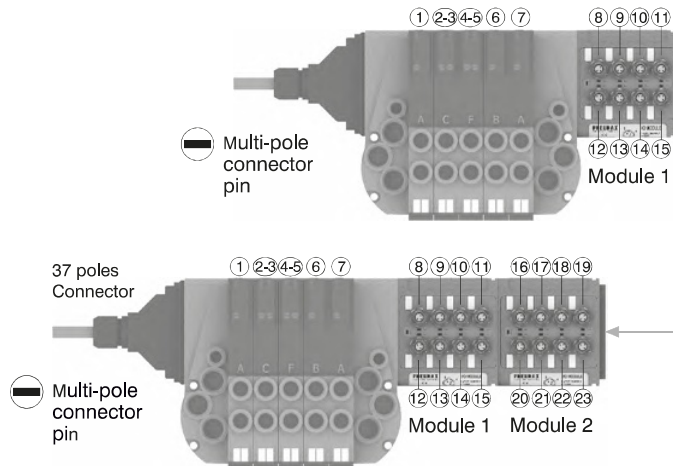


M8 connector used as Output:

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.



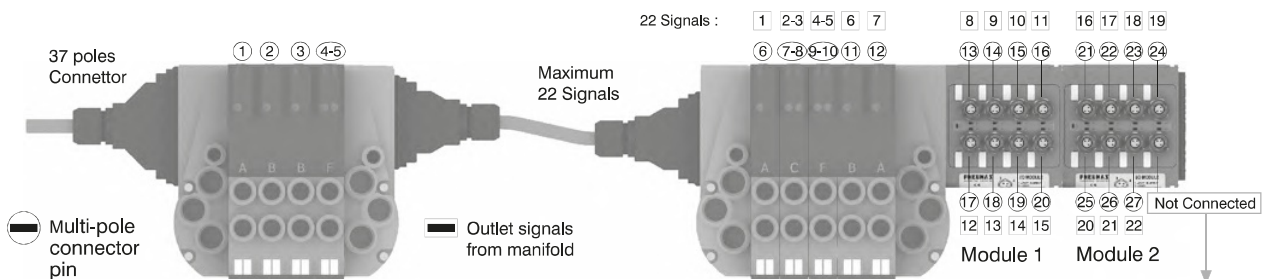
Attention: Since every cable has a degree of resistance, there will always be a voltage drop depending on the cable's length, sectional area and the current.



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

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.

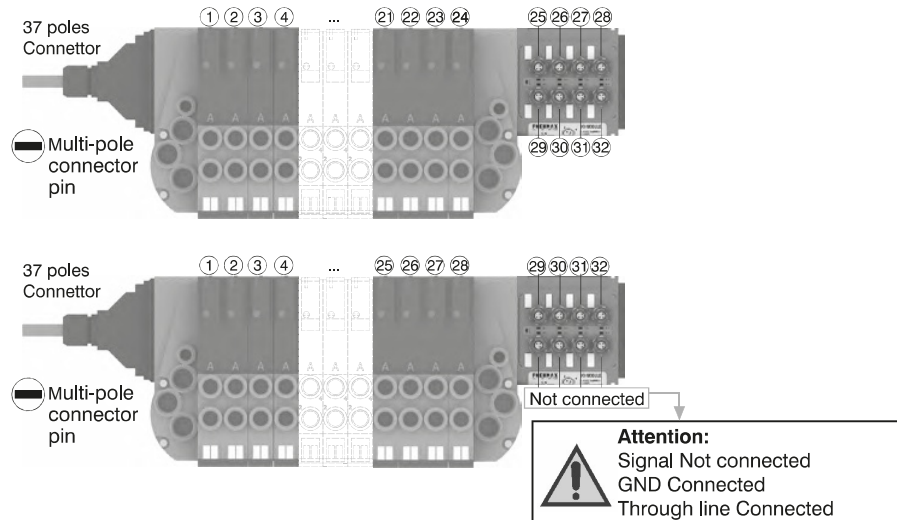


Please note: this example considers a 37 pin multi-pole connector. The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 17

Attention: Signal Not connected
 GND Connected
 Through line Connected



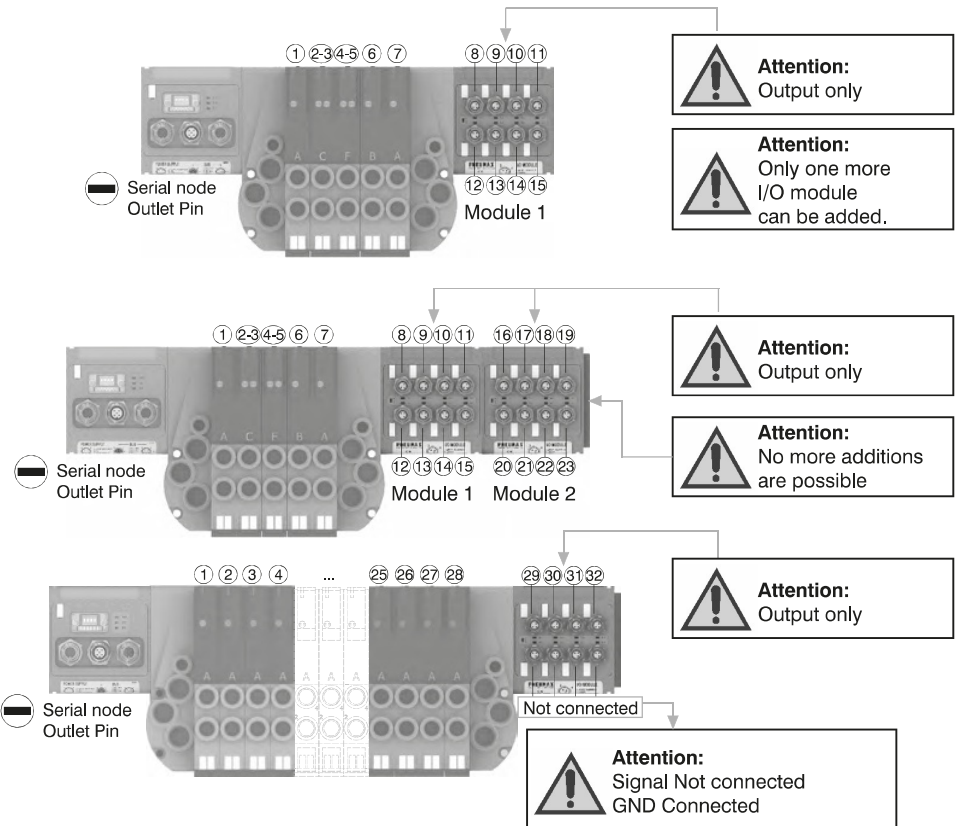
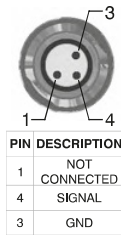
Please note: Optyma 32-F solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



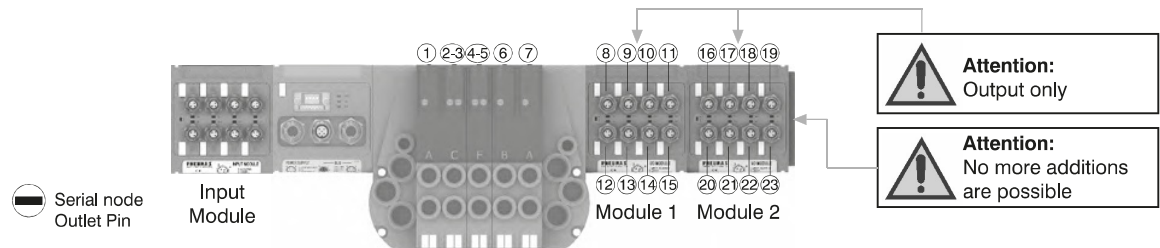
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B) Control via fieldbus:

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.



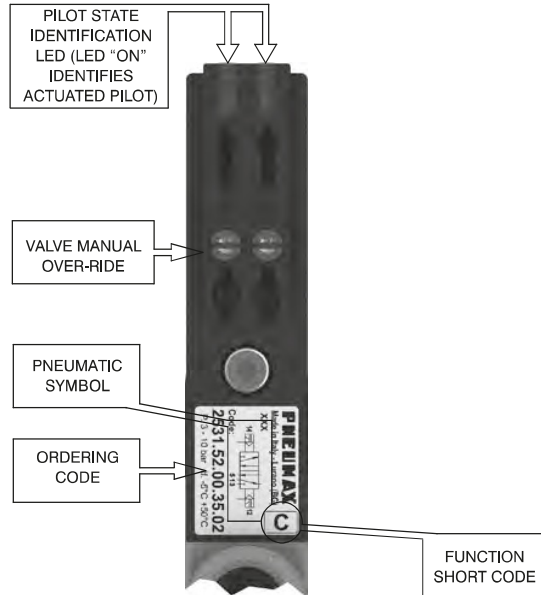
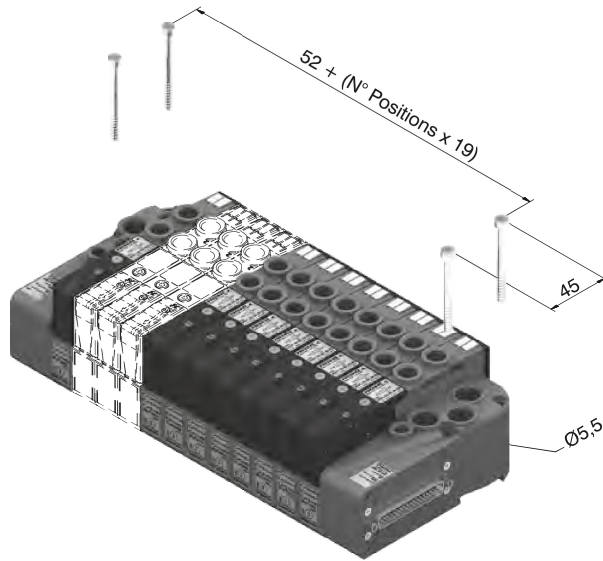
Please note: I/O modules don't allow to connect any additional valves manifold after them.



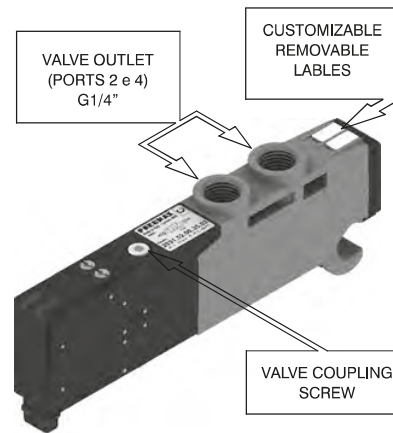
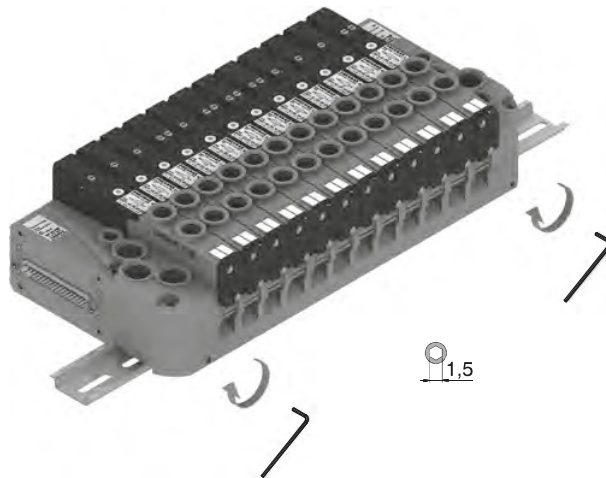


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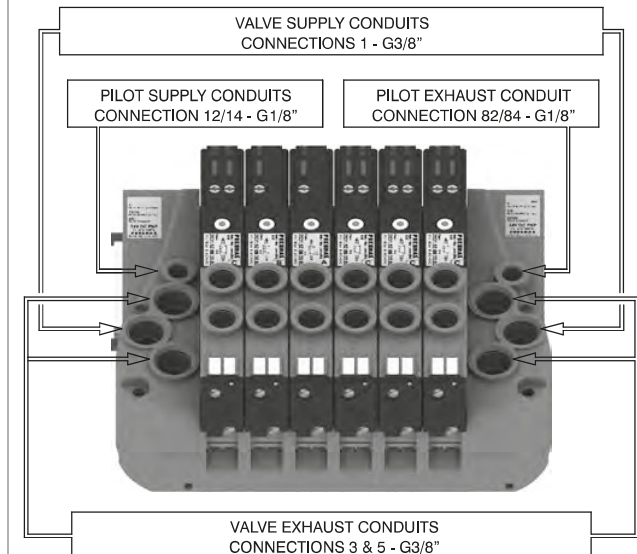
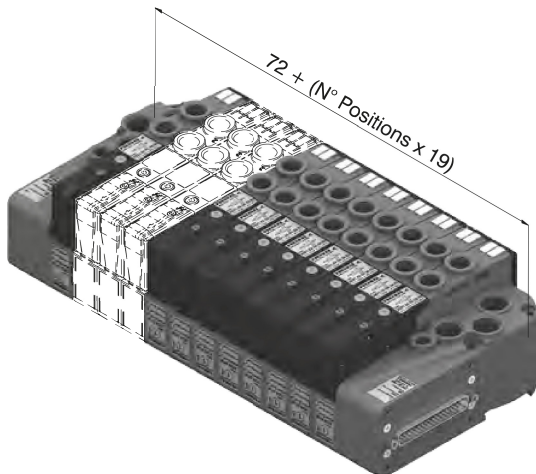
From the top



DIN rail fixing

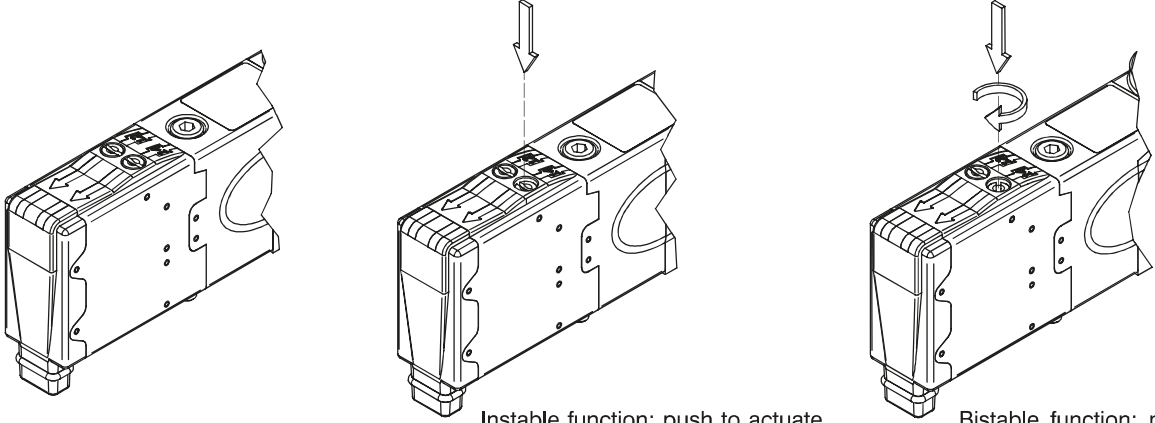


Maximum possible size according to valves seats





Manual override actuation



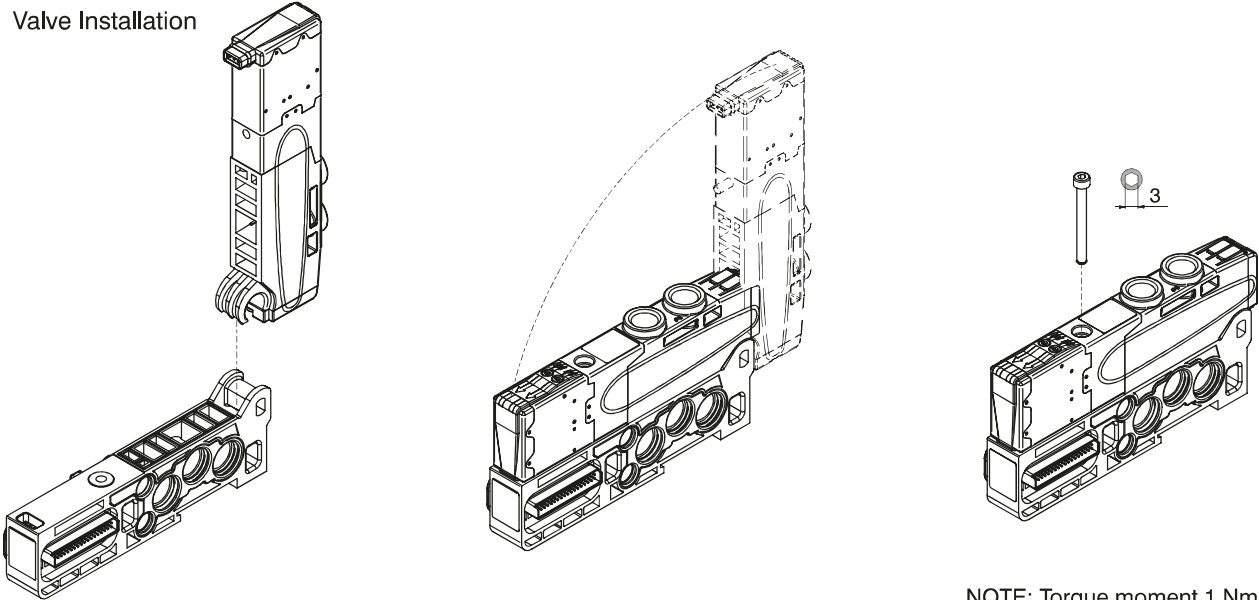
Instable function: push to actuate
(when released it moves back to
the original position).

Bistable function: push and
turn to get the bistable
function

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

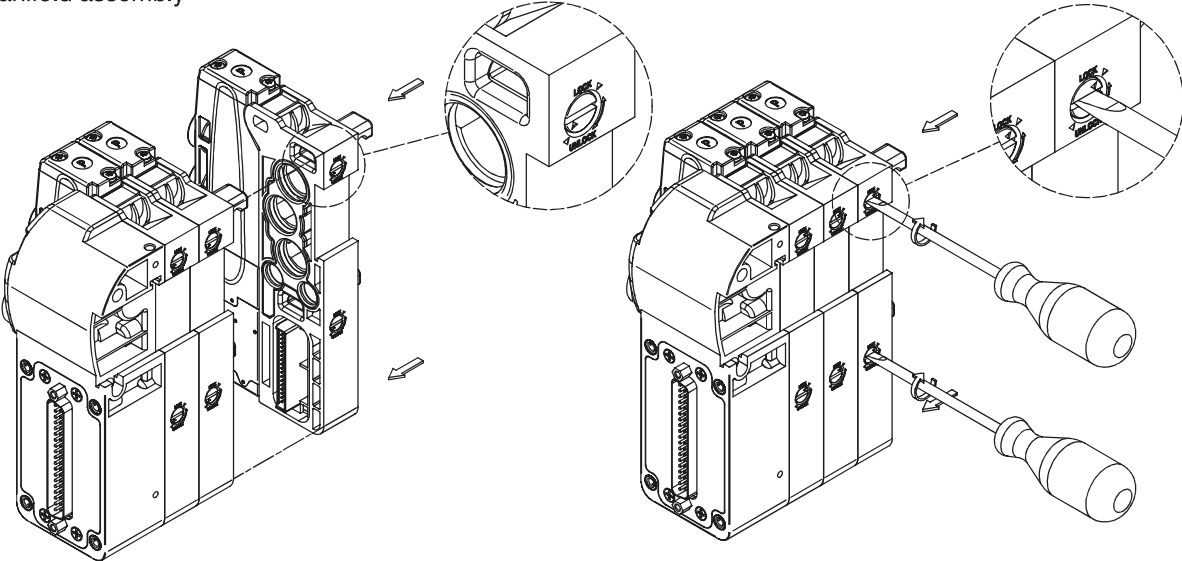
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Valve Installation



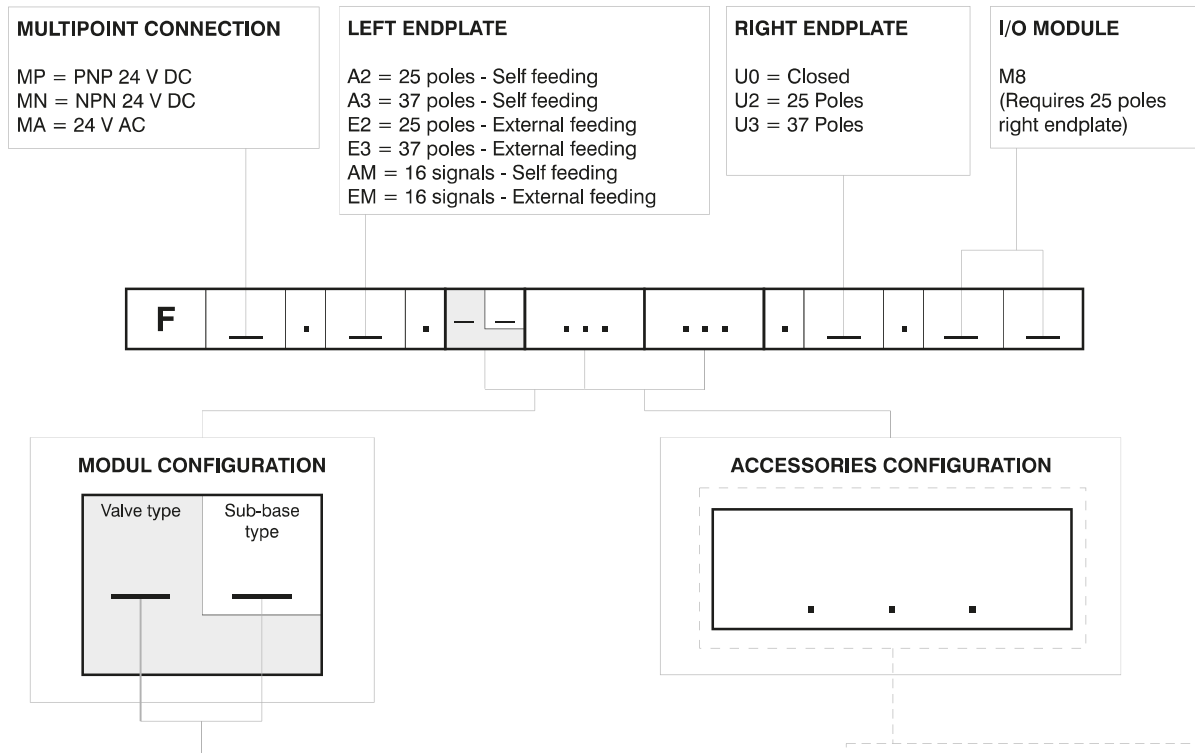
NOTE: Torque moment 1 Nm

Manifold assembly



Manifold Layout configuration

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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

ACCESSORIES

U2 = Power supply 2 positions module
U4 = Power supply 4 positions module
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

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 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.

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

	Well-tried component	- The product is a well-tried product for a safety-related application according to ISO 13849-1. - The relevant basic and well-tried safety principles according ISO 13849-2 for this product are fulfilled.
B_{10d}	50.000.000	- 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-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 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 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.

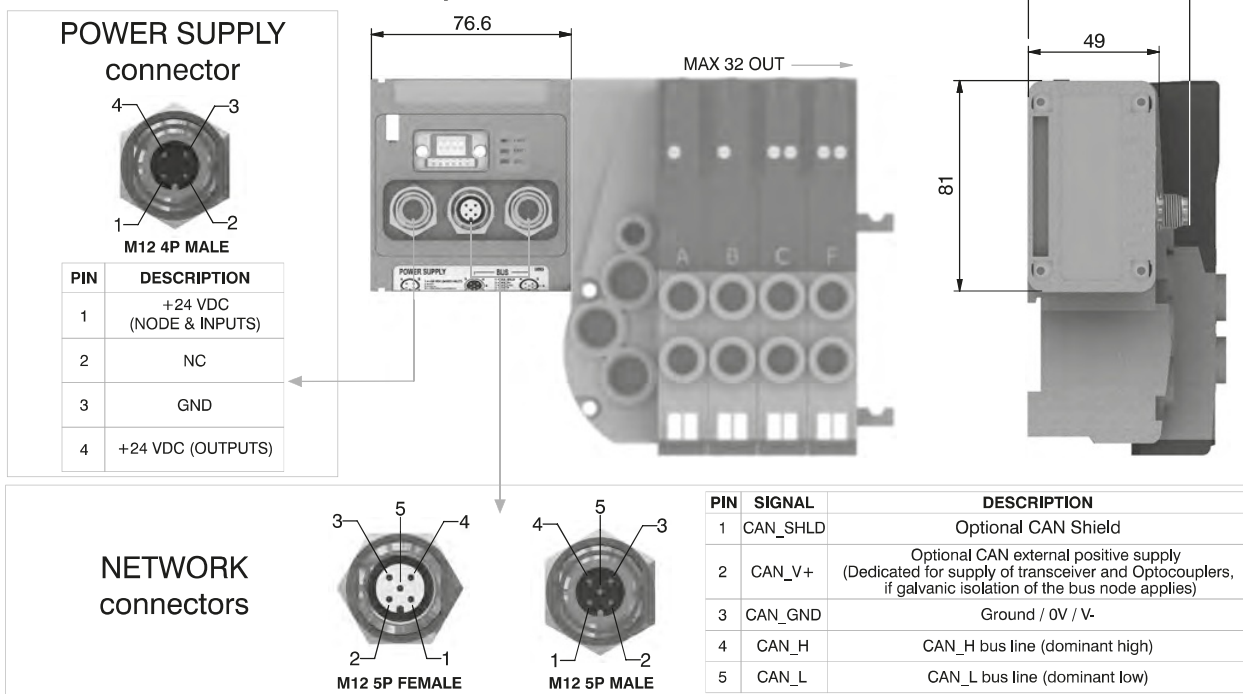
Ordering code

5525.32F



AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5525.32F
	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
Outputs	Power supply diagnosis	Green LED PWR
	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for output	100 mA
	Maximum output number	32
Network	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: http://www.pneumaxspa.com
	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.

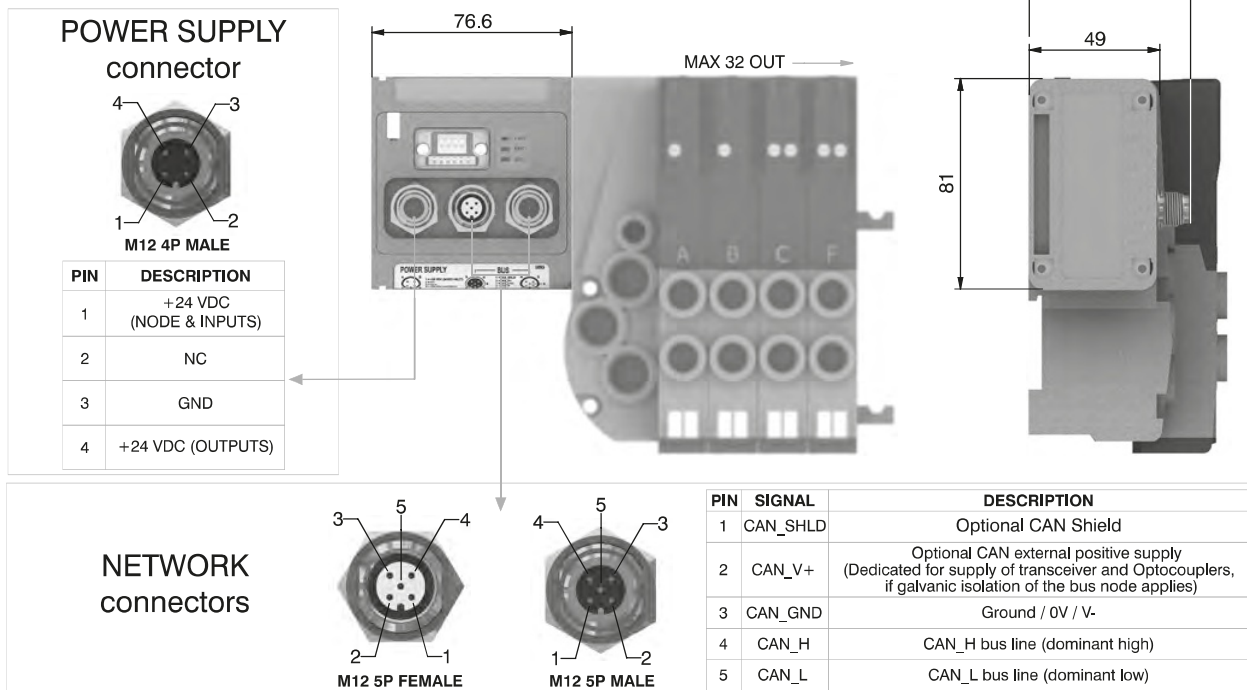
Ordering code

5425.32F



AIR DISTRIBUTION

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: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



General:

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

Optyima-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.

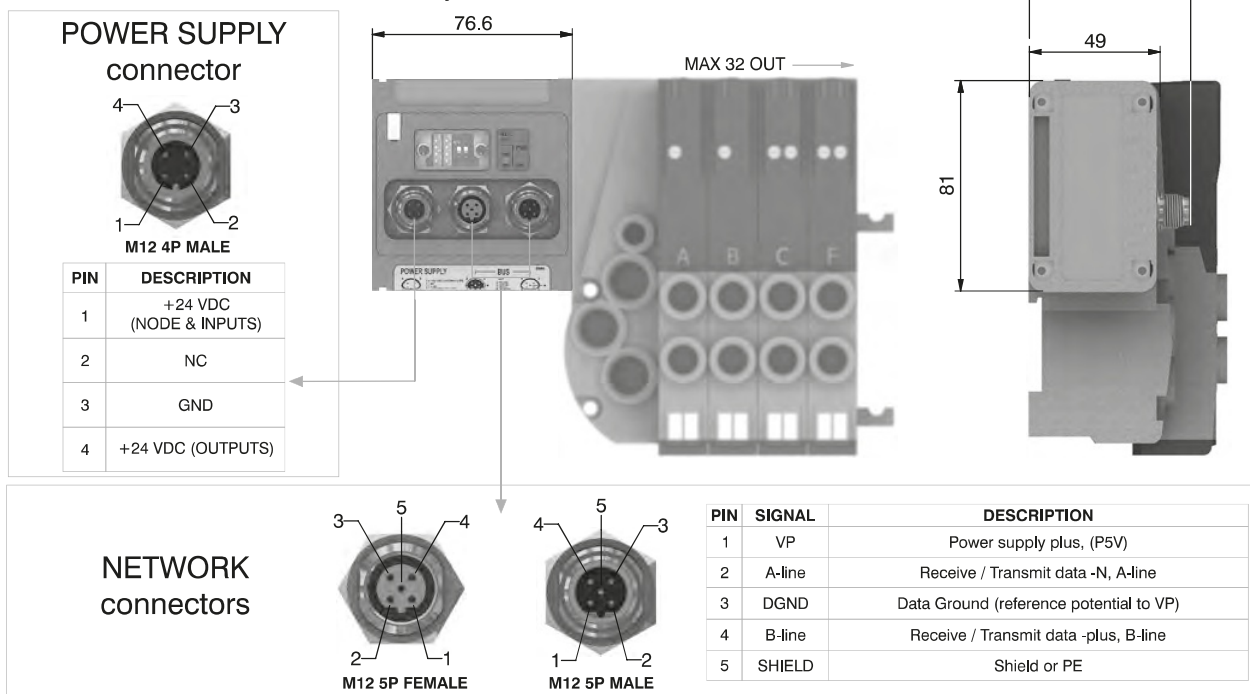
Ordering code

5325.32F

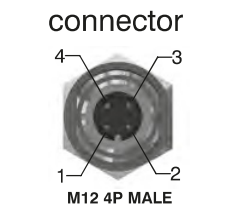


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Scheme / Overall dimensions and I/O layout :

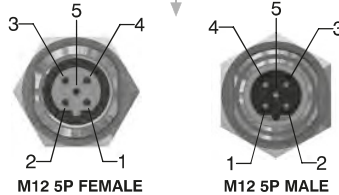


POWER SUPPLY connector



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	5325.32F
	Specifications	PROFIBUS DP
	Case	Reinforced technopolymer
Power supply	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	50 mA
Outputs	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for output	100 mA
	Maximum output number	32
Network	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: http://www.pneumaxspa.com
	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.

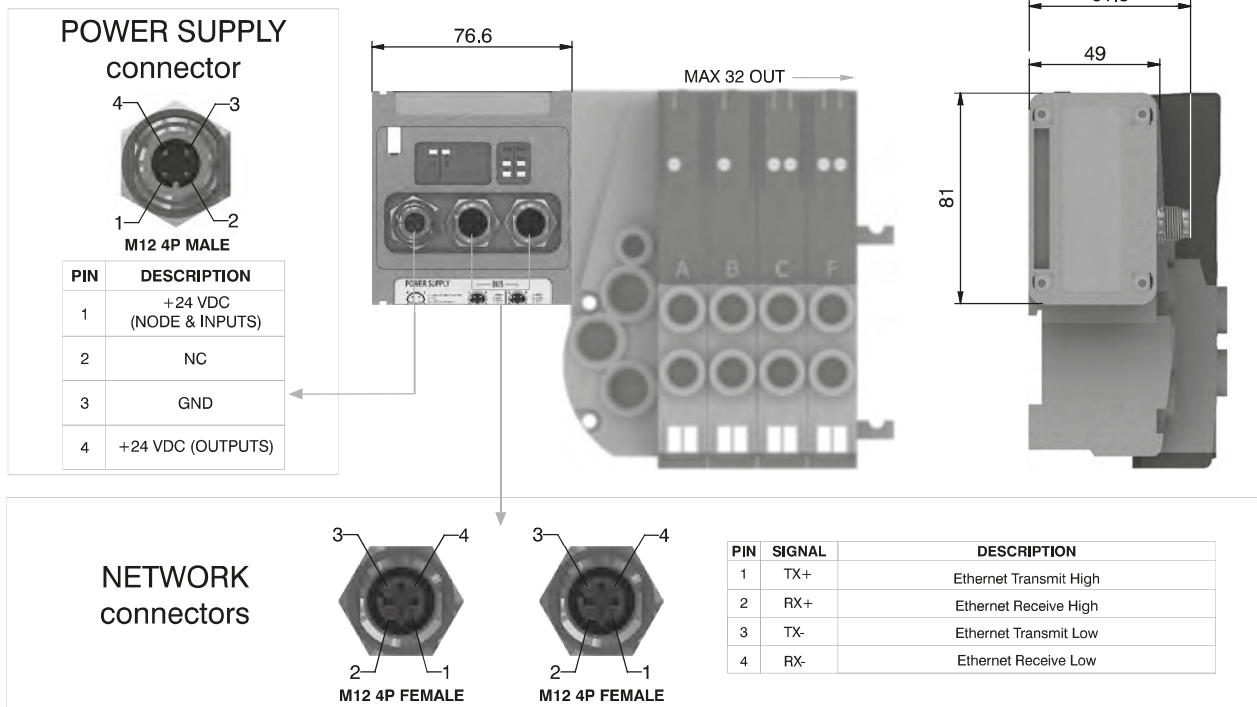
Note: 5700 series has a different configuration file from series 5600.

Ordering code

5725.32FEC



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32FEC
	Specifications	EtherCAT® Specifications ETG.1000 series
	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)	400 mA
Outputs	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for 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 (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: http://www.pneumaxspa.com
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 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.

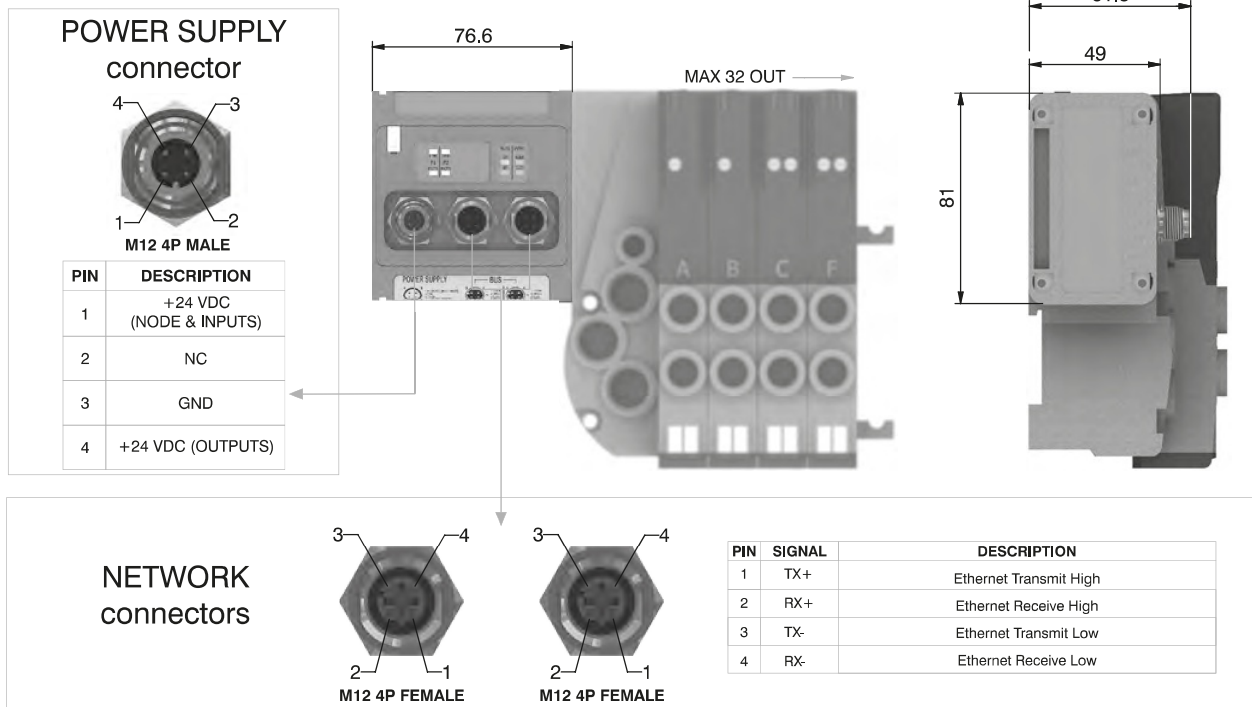
Ordering code

5725.32F.PN



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Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32F.PN
	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)	400 mA
Outputs	Power supply diagnosis	Green LED PWR / Green LED OUT
	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 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: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

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AIR DISTRIBUTION

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 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.

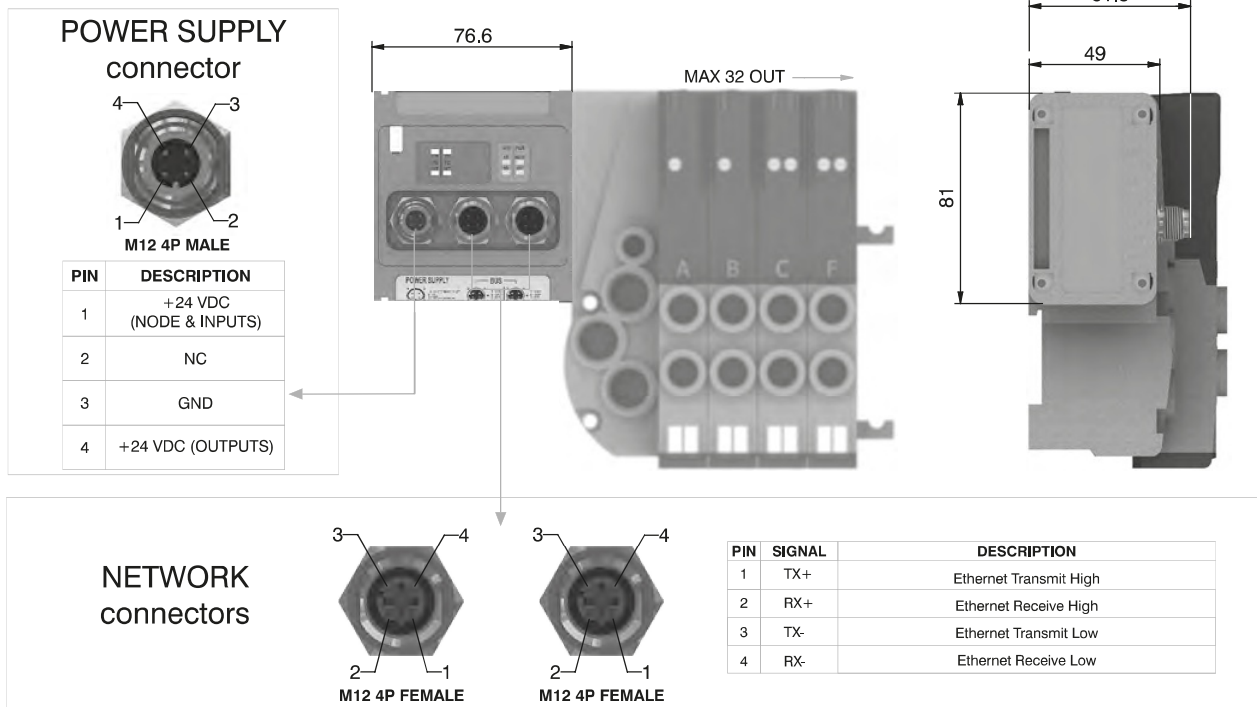
The node address is assigned during configuration.

Ordering code

5725.32FEI



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32FEI
	Specifications	The EtherNet/IP Specification
	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)	400 mA
Outputs	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for 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	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: http://www.pneumaxspa.com
IP protection grade	IP65 when assembled	
Temperature range	From 0° to +50° C	



General:

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

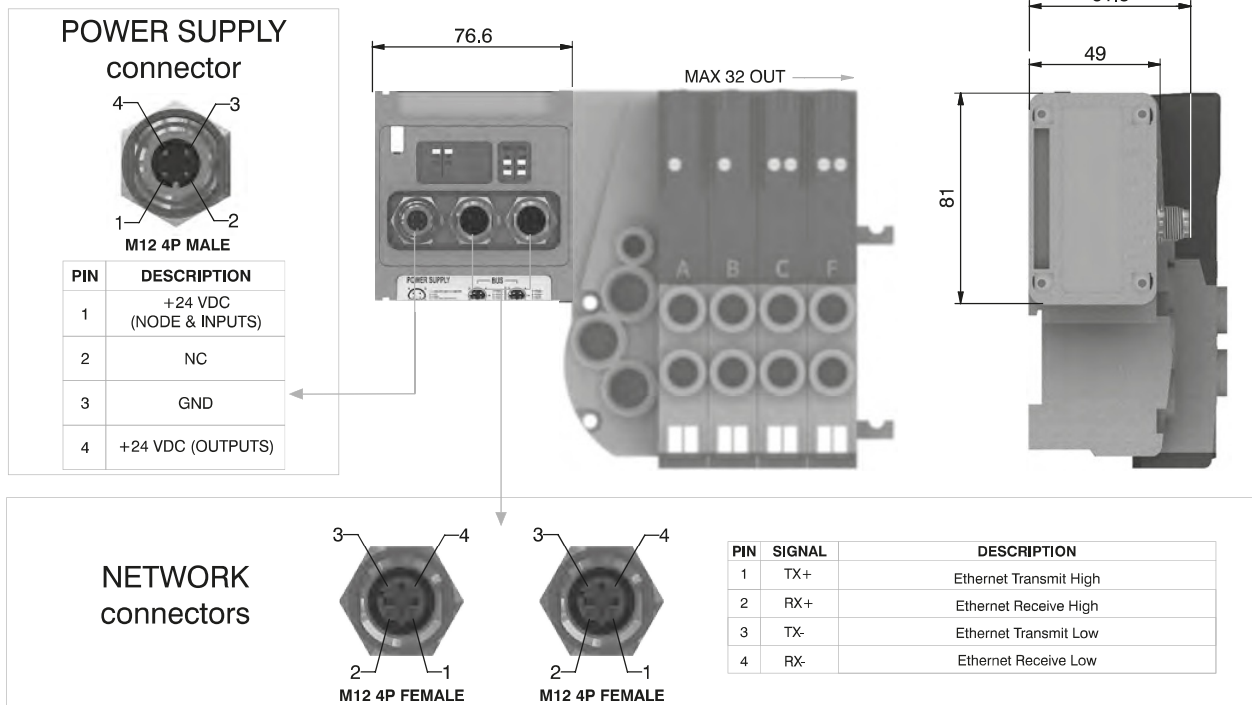
Ordering code

5725.32F.PL



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AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32F.PL
	Specifications	Ethernet POWERLINK Communication Profile Specifications
	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)	400 mA
Outputs	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for 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	239
	Max nodes in net	240
	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: http://www.pneumaxspa.com
IP protection grade	IP65 when assembled	
	Temperature range	From 0° to +50° C

General:

Modbus/TCP 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 Modbus/TCP 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 Modbus/TCP 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.

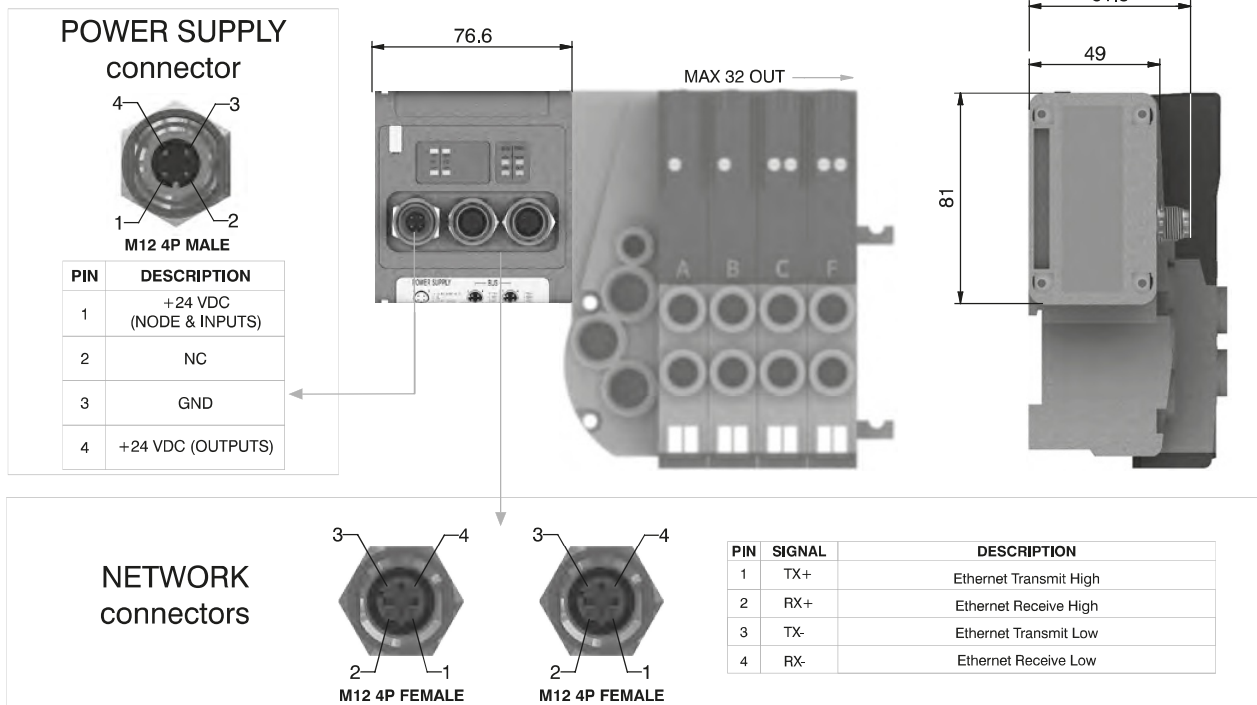
The node address is assigned during configuration.

Ordering code

5725.32F.MT



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32F.MT
	Specifications	MODBUS Application Protocol Specification V1.1a, June 4, 2004
	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)	400 mA
Outputs	Power supply diagnosis	Green LED PWR / Green LED OUT
	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 4P female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	248
	Max nodes in net	248
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Modbus/TCP nodes don't require configuration file
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



General:

Modules have 8 connectors M8 3P female.

The Inputs are PNP equivalent 24 VDC ± 10%.

To each connector it is possible to plug both 2 wires Inputs (switches, magnetic switches pressure switches, etc.) or 3 wires Inputs (proximity, photocells, electronic sensors, etc).

The maximum current available for all 8 Inputs is 200 mA.

Each module includes a 200 mA self-mending 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 lights up indicating the ON state and the node will re-start to operate.

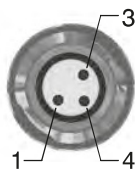
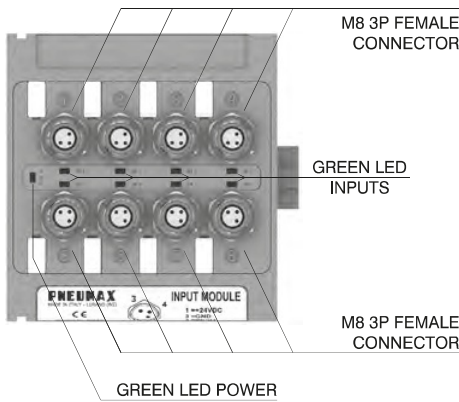
The maximum number of Input modules supported is 4.

Ordering code

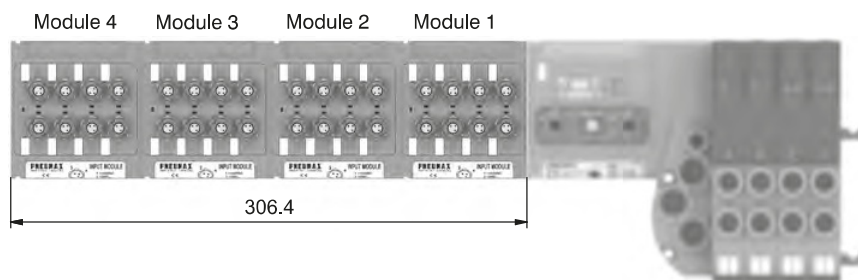
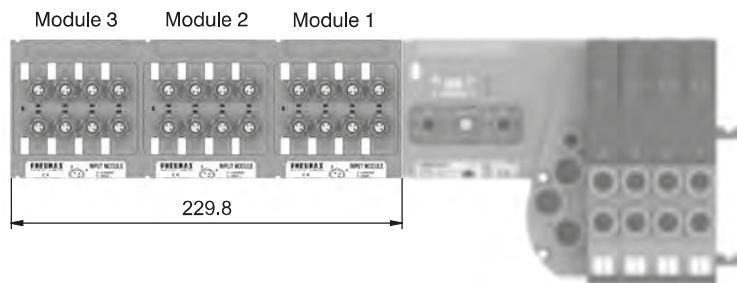
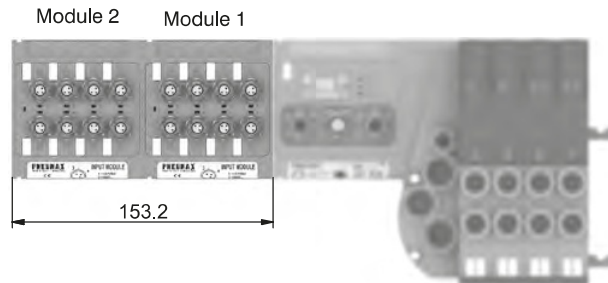
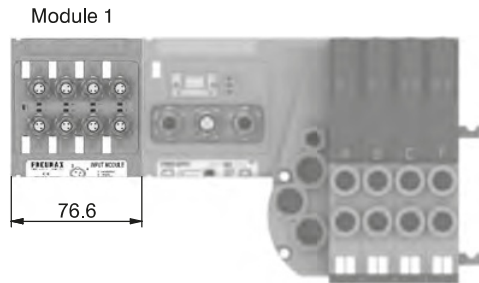
5225.08F



Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND



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 >750mA) 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®, DeviceNet and EtherCAT®.

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

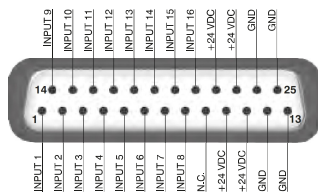
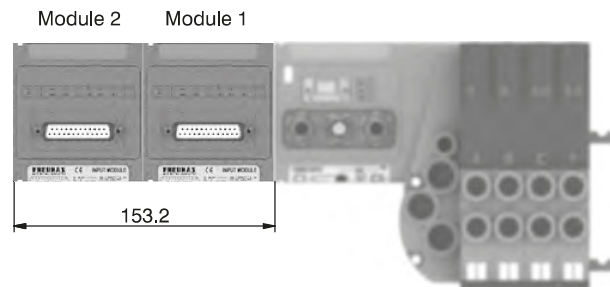
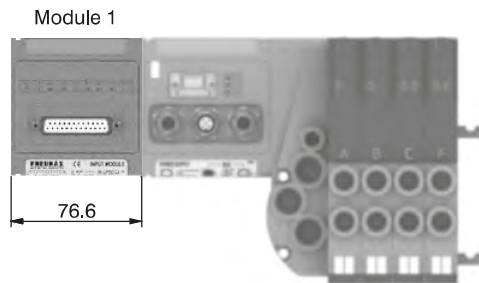
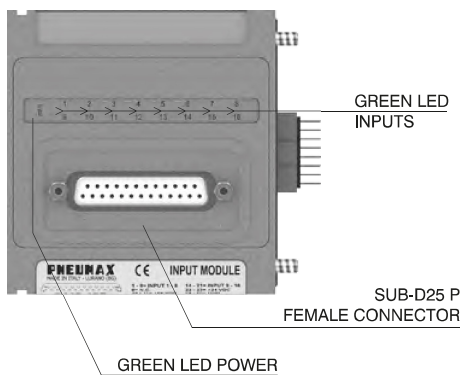
Ordering code

5225.25F



AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :





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.

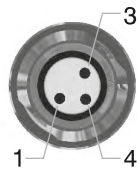
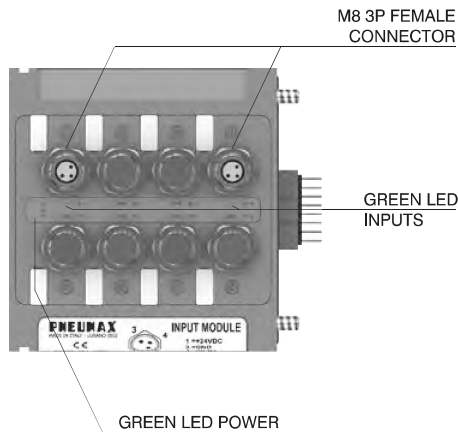
Once the cause of the fault is removed the green LED lights up indicating the ON state and the node will re-start to operate.

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 :



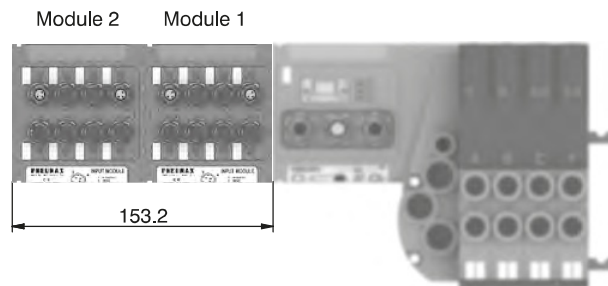
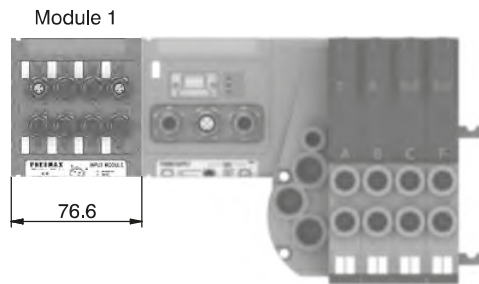
PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

Ordering code

5225.2 . . . _F



AIR DISTRIBUTION



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Socket for Power Supply
STRAIGHT CONNECTOR
M12A 4P FEMALE

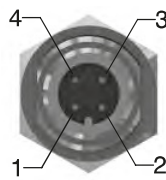
Ordering code

5312A.F04.00



POWER SUPPLY connector

Upper view
Slave connector

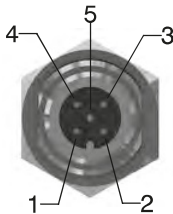


PIN	DESCRIPTION
1	+24 VDC Node
2	
3	0 V
4	+24 VDC Outputs

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

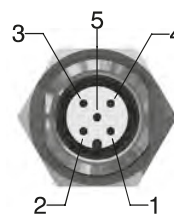
Upper view
Slave connector

NETWORK connectors

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

Ordering code

5312A.M05.00



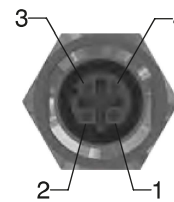
Plug for Bus EtherCAT®,
PROFINET IO RT,
EtherNet/IP and Powerlink
STRAIGHT CONNECTOR M12D 4P MALE

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

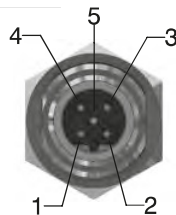


Upper view
Slave connector

Socket for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P FEMALE

Ordering code

5312B.F05.00



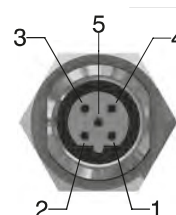
PIN	DESCRIPTION
1	Power Supply
2	A-line
3	DGND
4	B-line
5	SHIELD

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

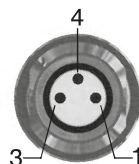
Ordering code

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

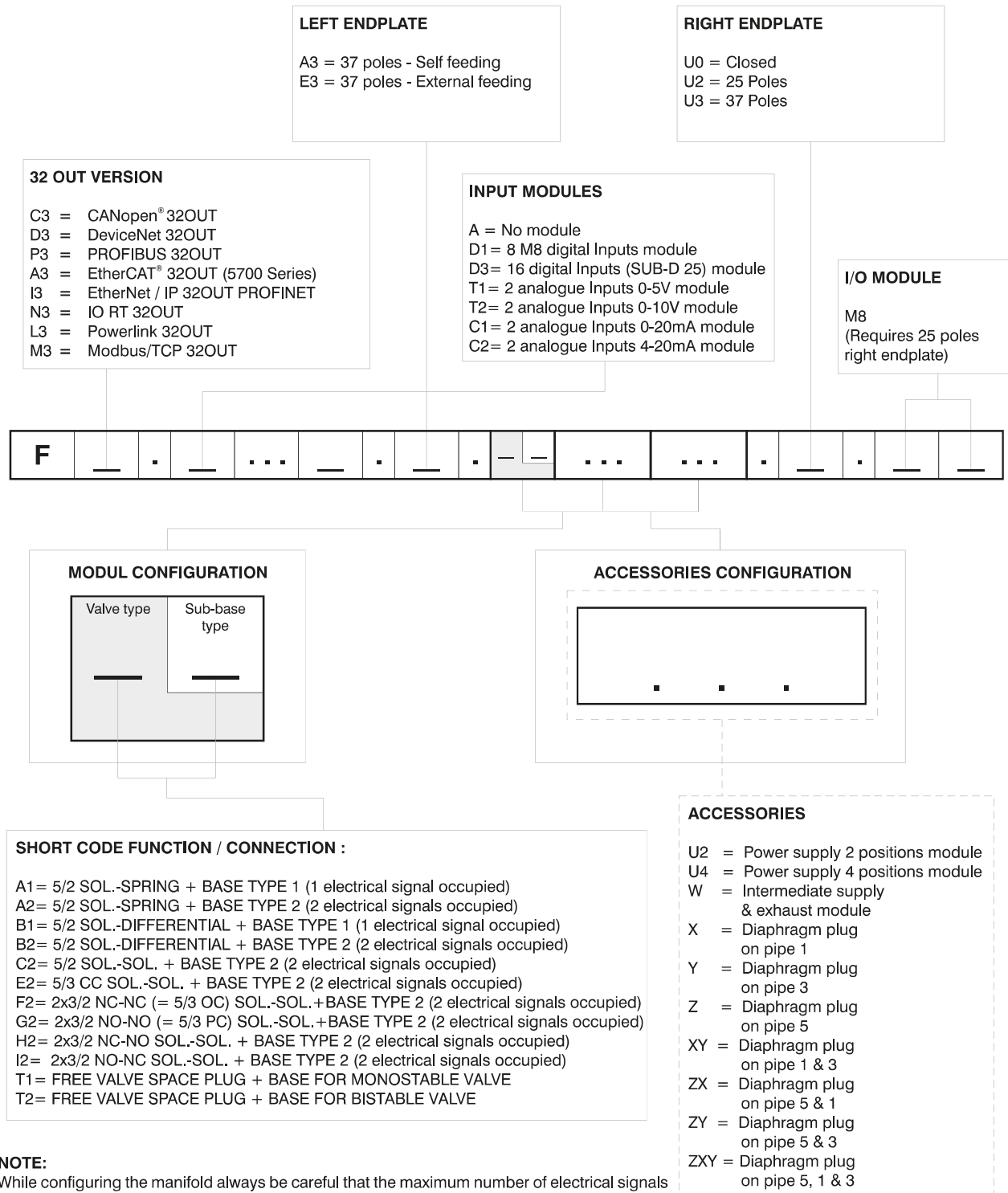
Ordering code

5300.T08





Manifold Layout configuration



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 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 IO RT/IRT, EtherCAT®, Powerlink and Modbus/TCP.

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 ±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



AIR DISTRIBUTION



Solenoid - Spring

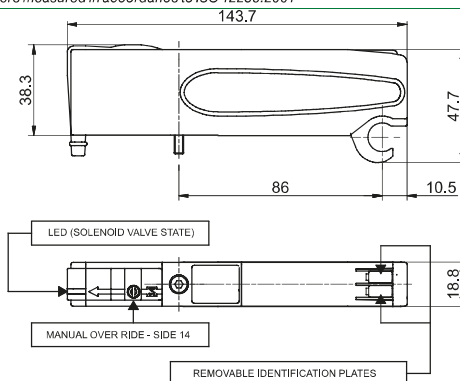
Coding: 2541.52.00.39.▼

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 Δp=1 (NI/min)	750
Response time according to ISO 12238, activation time (ms)	14
Response time according to ISO 12238, deactivation time (ms)	40

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

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



AIR DISTRIBUTION

Solenoid-Differential

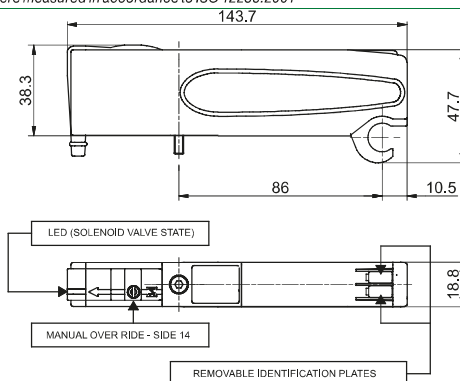
Coding: 2541.52.00.36.▼

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 Δp=1 (NI/min)	750
Response time according to ISO 12238, activation time (ms)	20
Response time according to ISO 12238, deactivation time (ms)	29

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

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

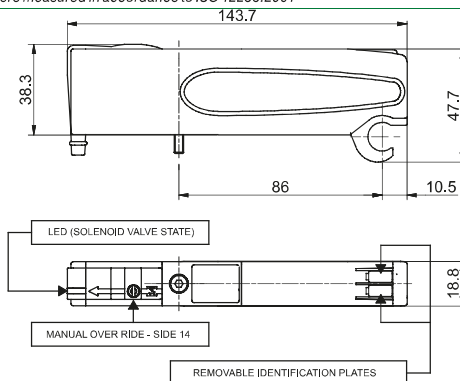
Coding: 2541.52.00.35.▼

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 Δp=1 (NI/min)	750
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	14

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

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-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 Δp=1 (NI/min)	600
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	20

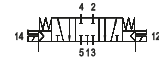
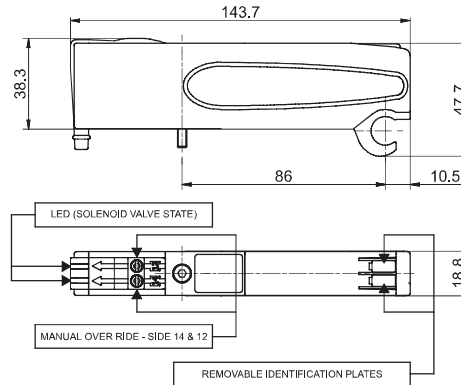
VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

Weight 132 g
SHORT FUNCTION CODE "E"

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

1

AIR DISTRIBUTION



Solenoid-Solenoid 2x3/2

Coding: 2541.62. 35.

Operational characteristics

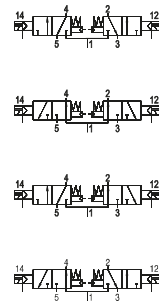
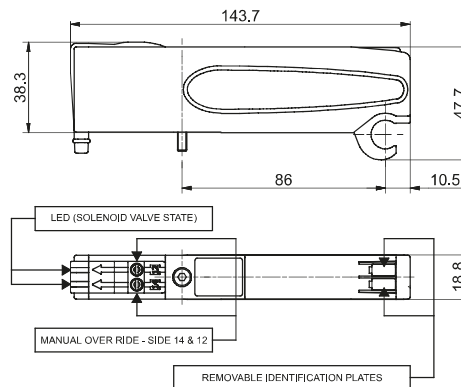
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (NI/min)	700
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO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

FUNCTION
44 = NC-NC (5/3 Open centres)
55 = NO-NO (5/3 Pressured centres)
45 = 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 $P_p=2,5+(0,2*5)=3,5bar$ "

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



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



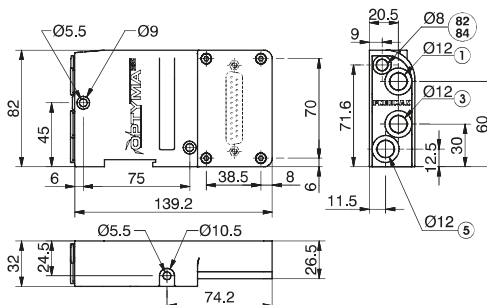
Right Endplates

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

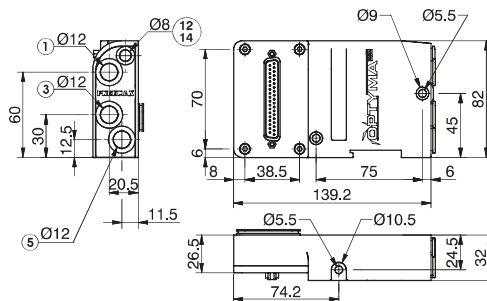
Left Endplates

Coding: 2540.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

VERSION	
V	02 = External feeding
	12 = Self-feeding

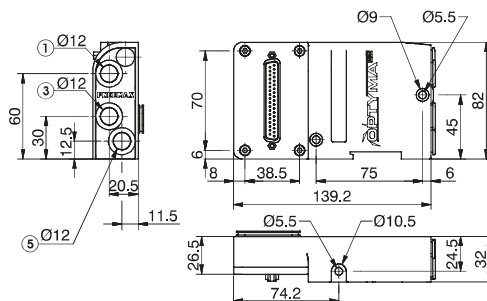
ELECTRICAL CONNECTION	
Ⓢ	37P = Connectors 37 poles PNP
	25P = Connectors 25 poles PNP
	37N = Connectors 37 poles NPN
Ⓢ	25N = Connectors 25 poles NPN
	37A = Connectors 37 poles AC
	25A = Connectors 25 poles AC



Weight 300 g

2540.02.Ⓢ

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



Weight 300 g

2540.12.Ⓢ

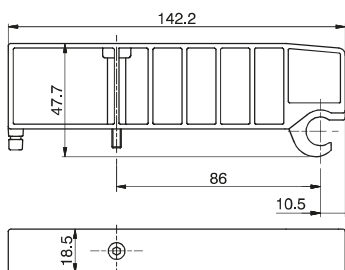
Left Endplates - Self-feeding Base: 12/14 connected with conduct 1

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

AIR DISTRIBUTION





Modular base

Coding: 254[Ⓢ]01[Ⓜ]

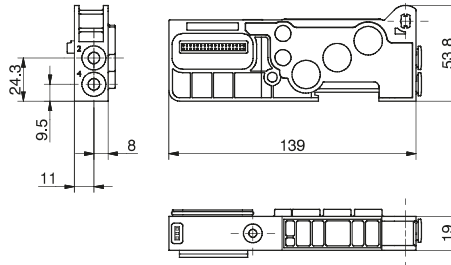
Operational characteristics

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	
Ⓜ	= for Monostable SV
Ⓟ	= for Bistable SV

1

AIR DISTRIBUTION



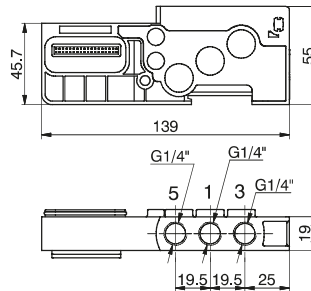
Weight 96,5 g

Intermediate Inlet/Exhaust module

Coding: 2540.10

Operational characteristics

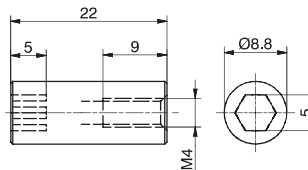
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50



Weight 115 g
SHORT FUNCTION CODE "W"

Nut

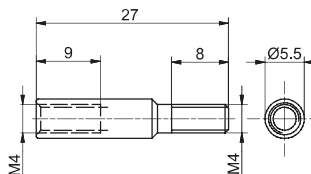
Coding: 2540.KD.00



Weight 10 g
The Kit includes 4 pieces

Extension (1 Position)

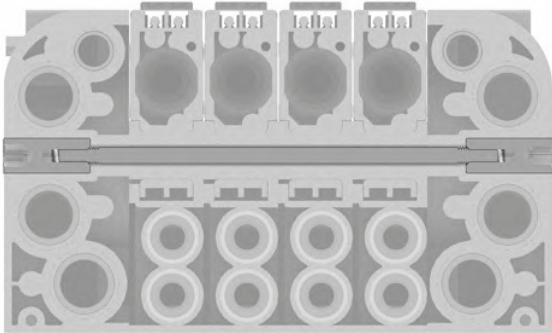
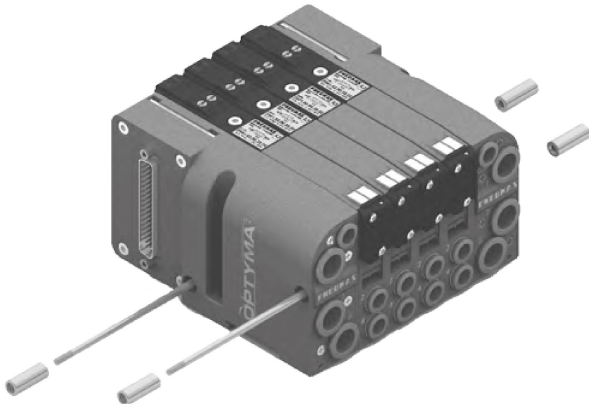
Coding: 2540.KP.01



Weight 3,5 g
The Kit includes 2 pieces

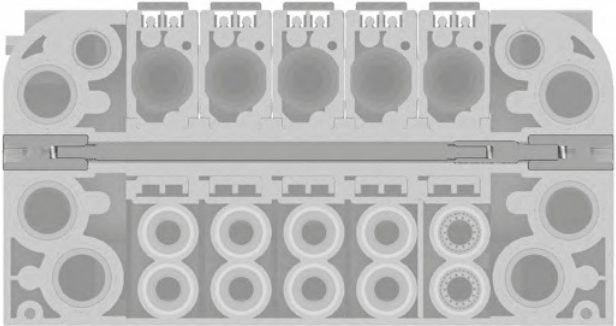
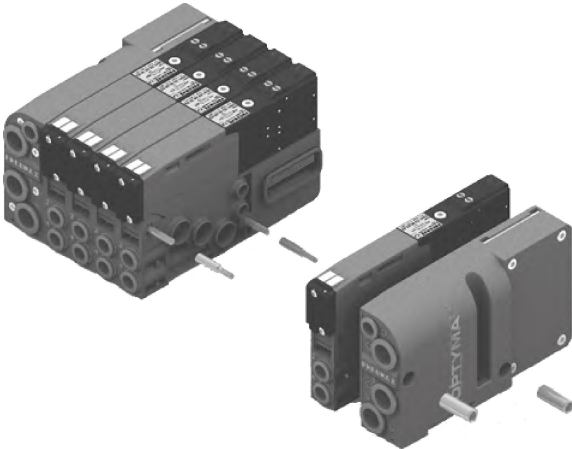


Set with single tie-rod (max. 32 Solenoid valves)



AIR DISTRIBUTION

Set with tie-rod, more extension adding a valve



1

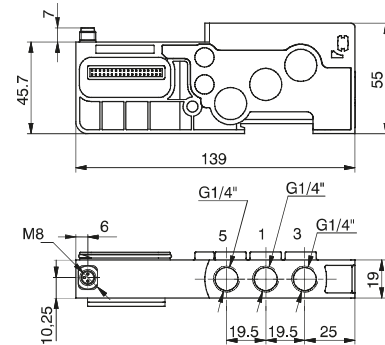
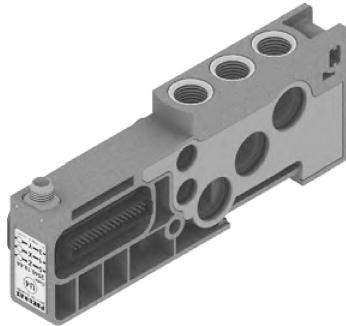
AIR DISTRIBUTION

General :

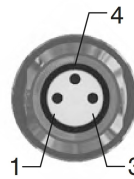
Each Optyma-T manifold lets to manage 32 command signals for the valves. Optyma-T serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve it is necessary to interrupt all the valves. The additional power supply module lets to interrupt at the same time the first 2 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 is inserted directly into the Optyma-T solenoid valves manifold.

Ordering code

2540.10.2A



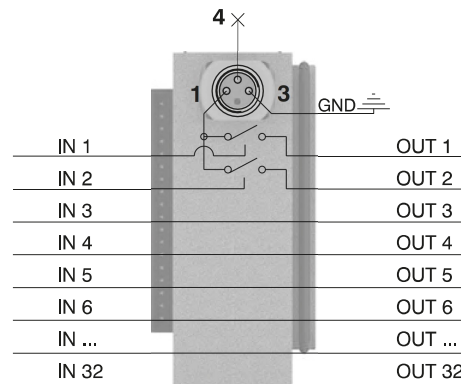
In particular this module is fitted with a M8 3 pins connector: +24V, not connected, GND.



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.

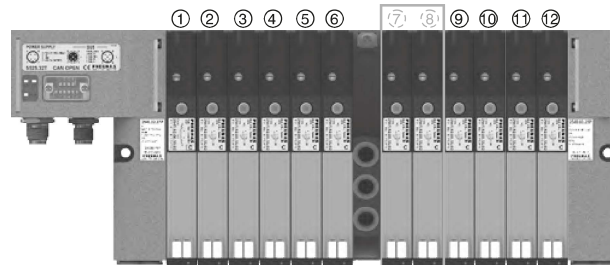


Usage examples:

EXAMPLE 1:
Manifold of 12 monostable valves on which you want to interrupt signals 7-8

Assembly:

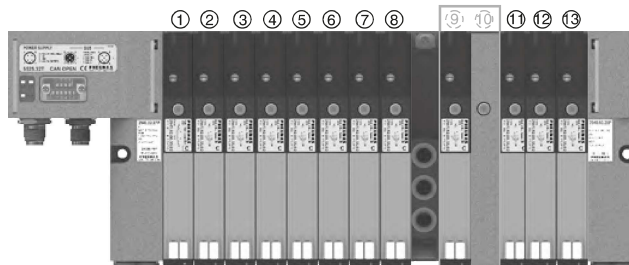
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 2 monostable of these are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.



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.

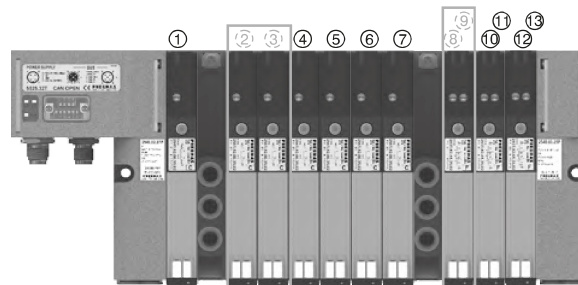
Assembly:

- 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.



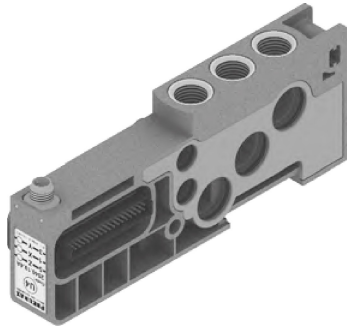
AIR DISTRIBUTION

1

AIR DISTRIBUTION

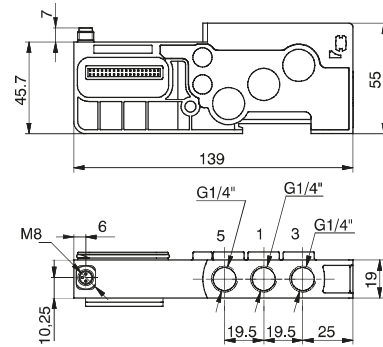
General :

Each Optyma-T manifold lets to manage 32 command signals for the valves. Optyma-T serial nodes (CANopen®, DeviceNet®, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and Powerlink) 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 4 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 is inserted directly into the Optyma-T solenoid valves manifold.

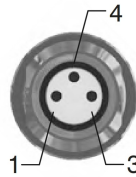


Ordering code

2540.10.4A



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



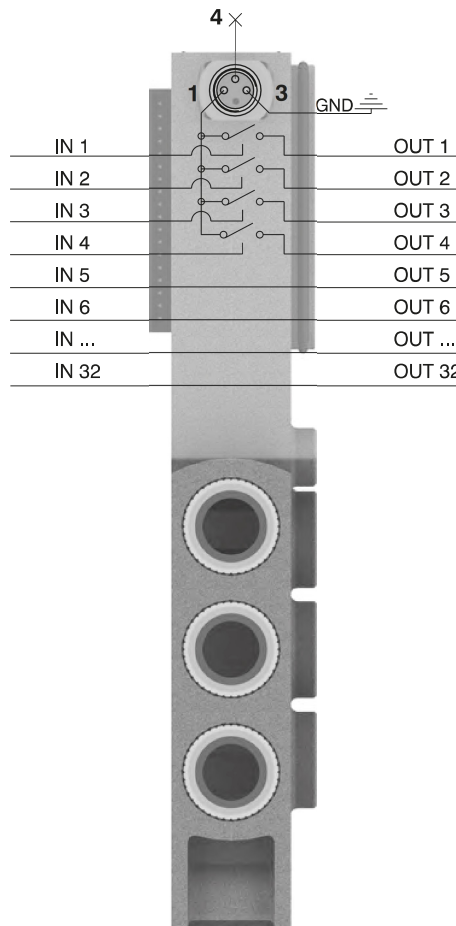
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

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.



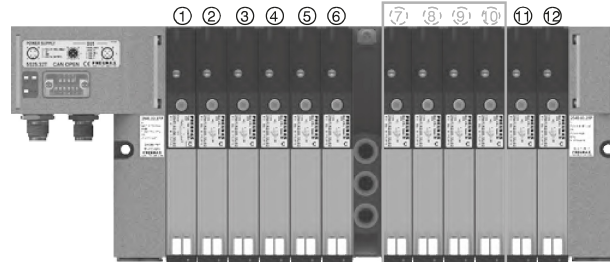
Usage examples:

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.

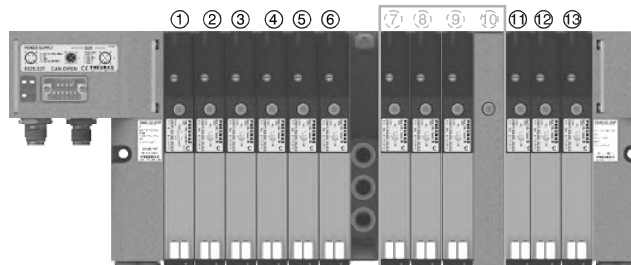


EXAMPLE 2:

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.

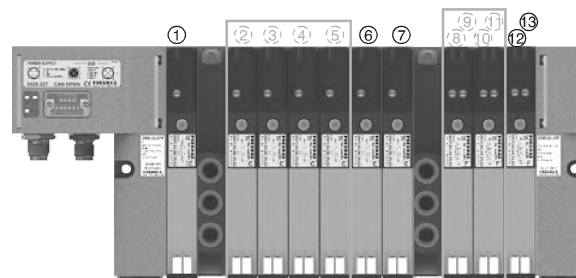
Assembly:

- 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.

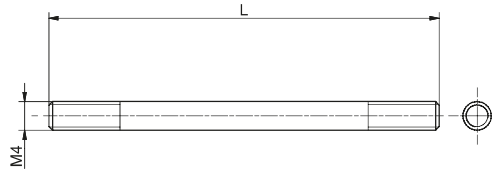
Please note: the first 2 bistable of these valves are interruptible by the module, while the following will work correctly managed directly by the corresponding command signals.



AIR DISTRIBUTION

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
P	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.⓪



TUBE DIAMETER	
⓪	8 = 8 mm
	12 = 12 mm

Diaphragm plug

Coding: 2530.17



Cable complete with connector, 25 Poles IP65

Coding: 2300.25.L.ⓐ



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

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.L.ⓐ



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

Cable complete with connector, 25 Poles IP65

Coding: 2400.25.L.25



CABLE LENGTH	
L	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.

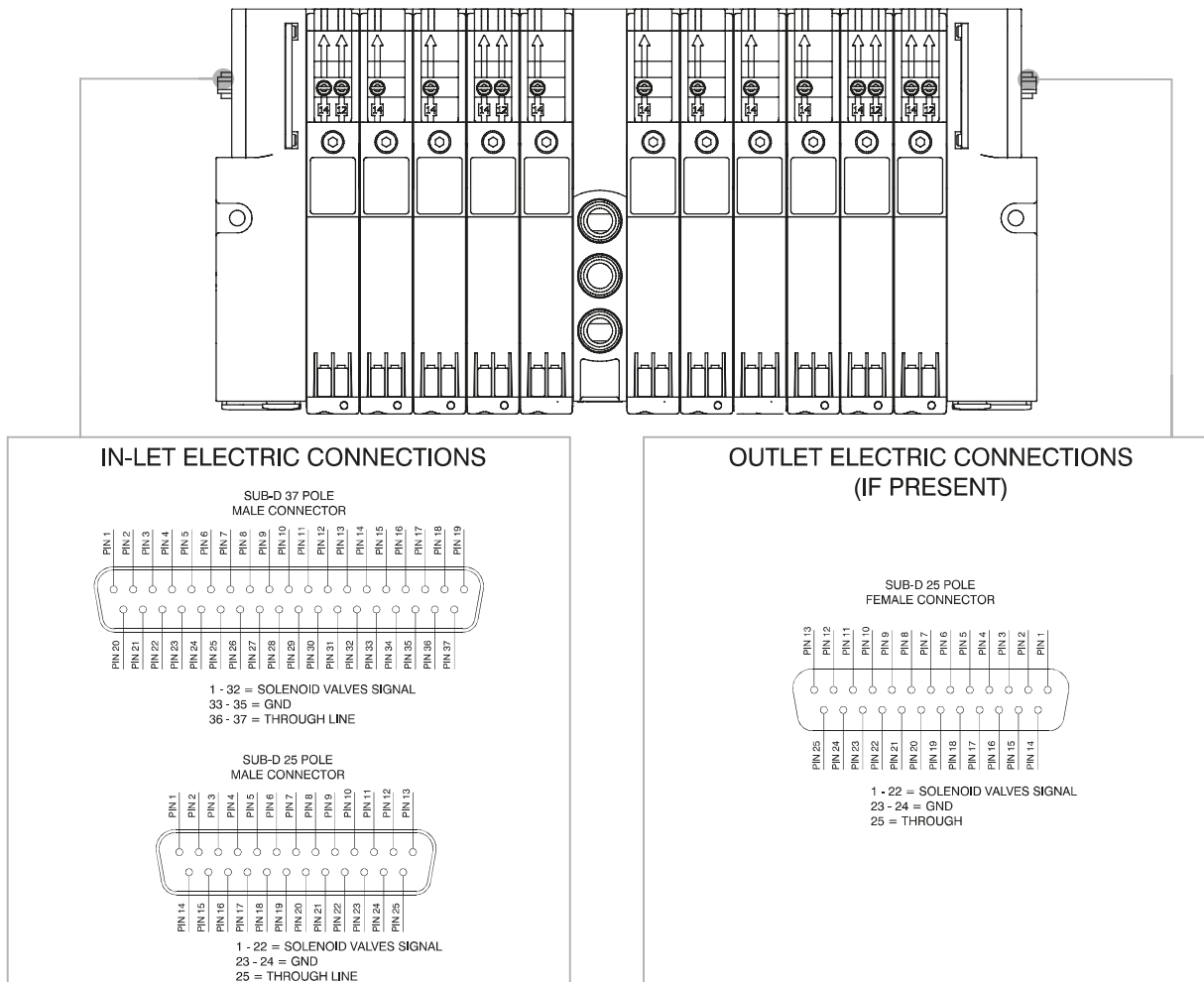
This allows the use of intermediate modules in any position of the manifold.

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:

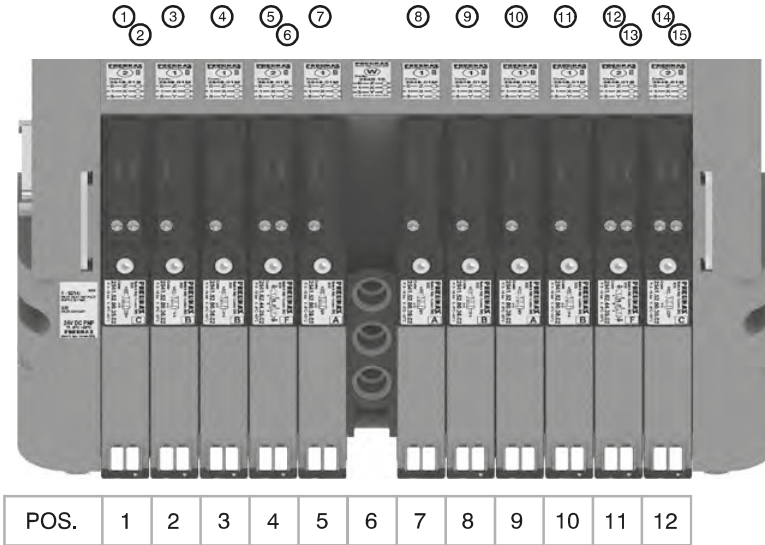
- 37 pin connector nr of output = 32 – (total of used signals)
- 25 pin connector nr of output = 22 – (total of used signals)

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



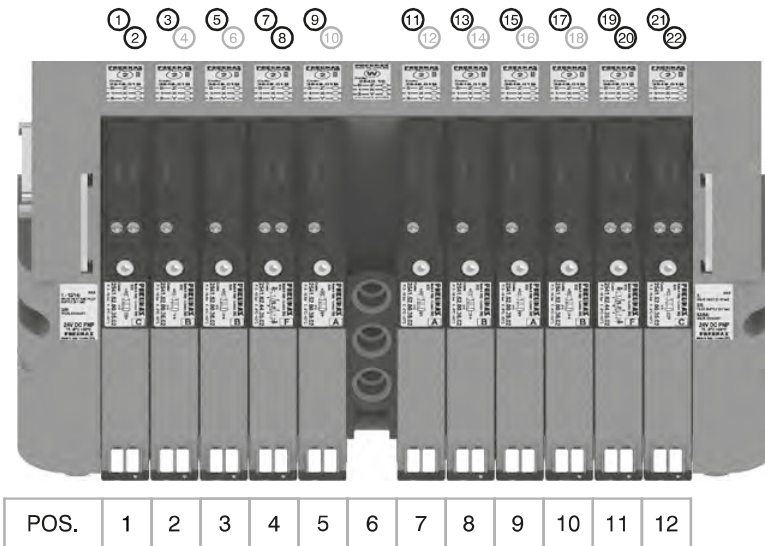
37 PIN Connector correspondence for valves assembled on mixed bases

1
AIR DISTRIBUTION



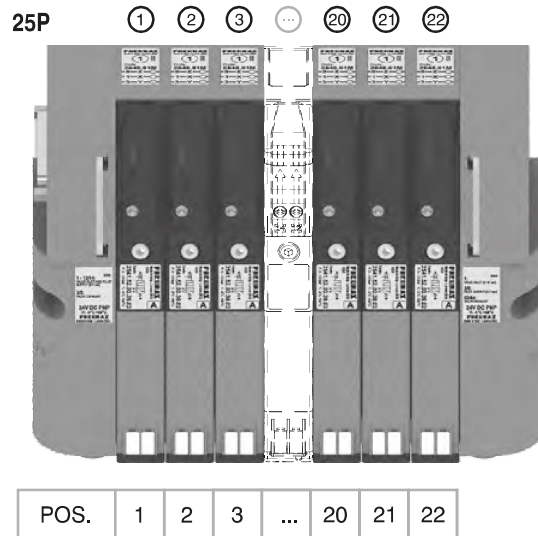
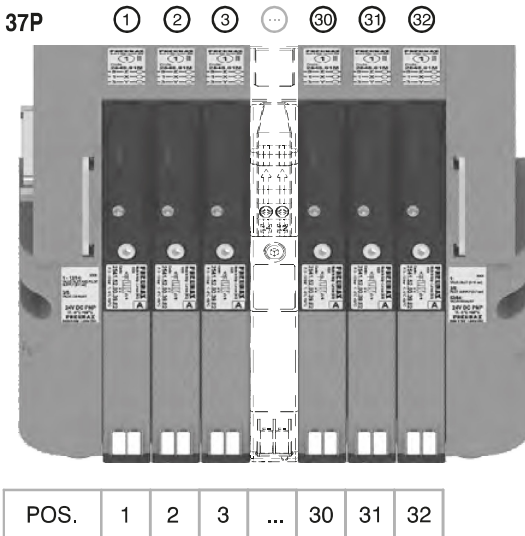
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 14 SV POS.3
- PIN 5 = PILOT 14 SV POS.4
- PIN 6 = PILOT 12 SV POS.4
- PIN 7 = PILOT 14 SV POS.5
- PIN 8 = PILOT 14 SV POS.7
- PIN 9 = PILOT 14 SV POS.8
- PIN 10 = PILOT 14 SV POS.9
- PIN 11 = PILOT 14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

Ordering code

2540.08T

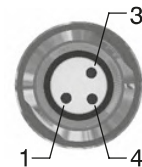
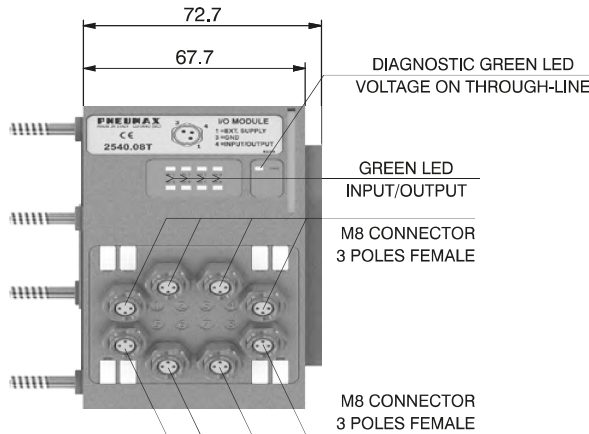
Please note: If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

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 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:

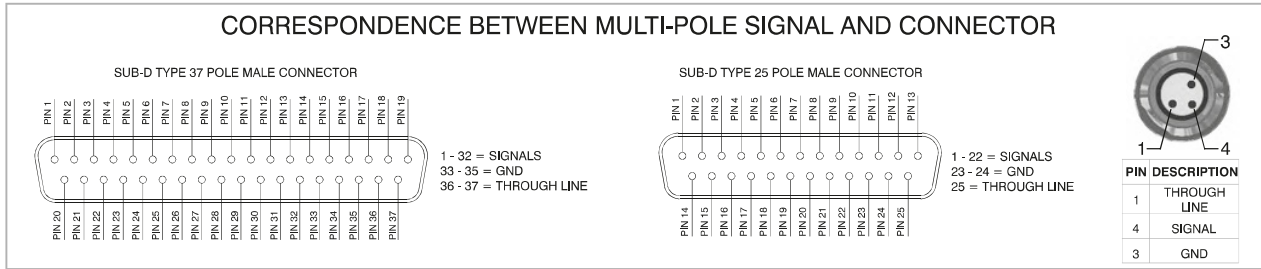


Attention: The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

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

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CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR



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 :

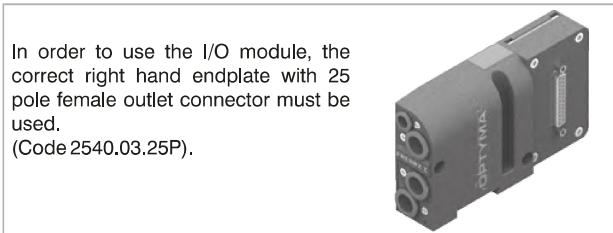
M8 connector used as Input:



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND



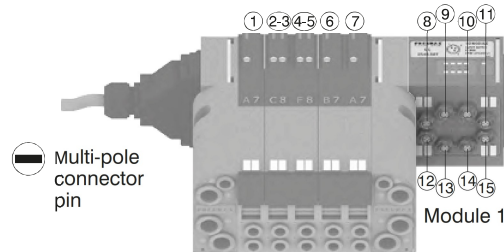
In order to use the I/O module, the correct right hand endplate with 25 pole female outlet connector must be used. (Code 2540.03.25P).

M8 connector used as Output:

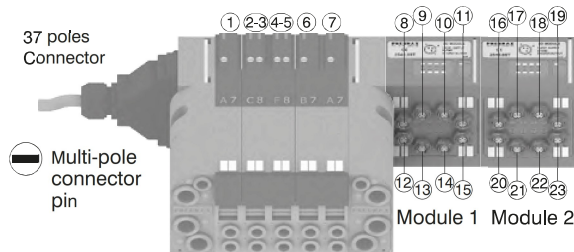
Output voltage will be the same as is applied at the multi-pole connector pin. The maximum output current depends upon the power unit used, but we recommend no more than 250mA.



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.

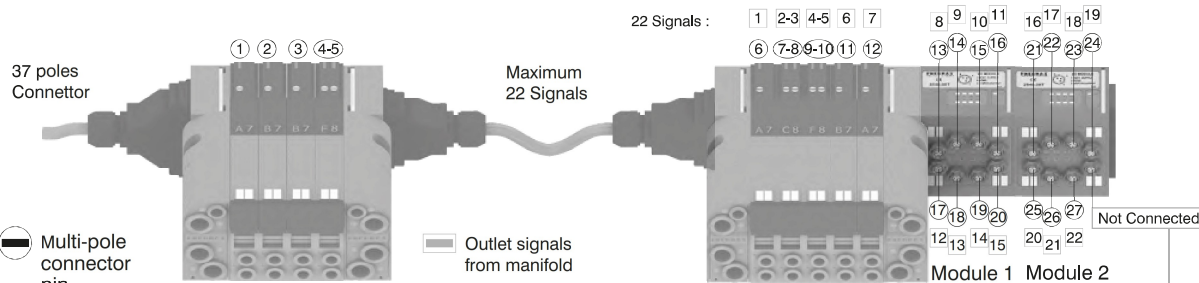


Attention: Only one more I/O module can be added.



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.

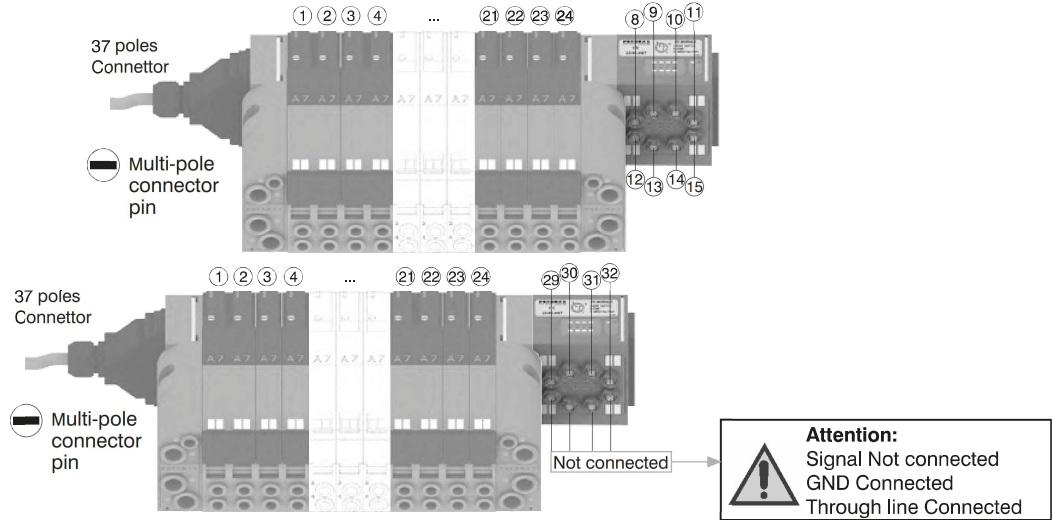


Please note: this example considers a 37 pin multi-pole connector. The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 17

Attention: Signal Not connected
GND Connected
Through line Connected

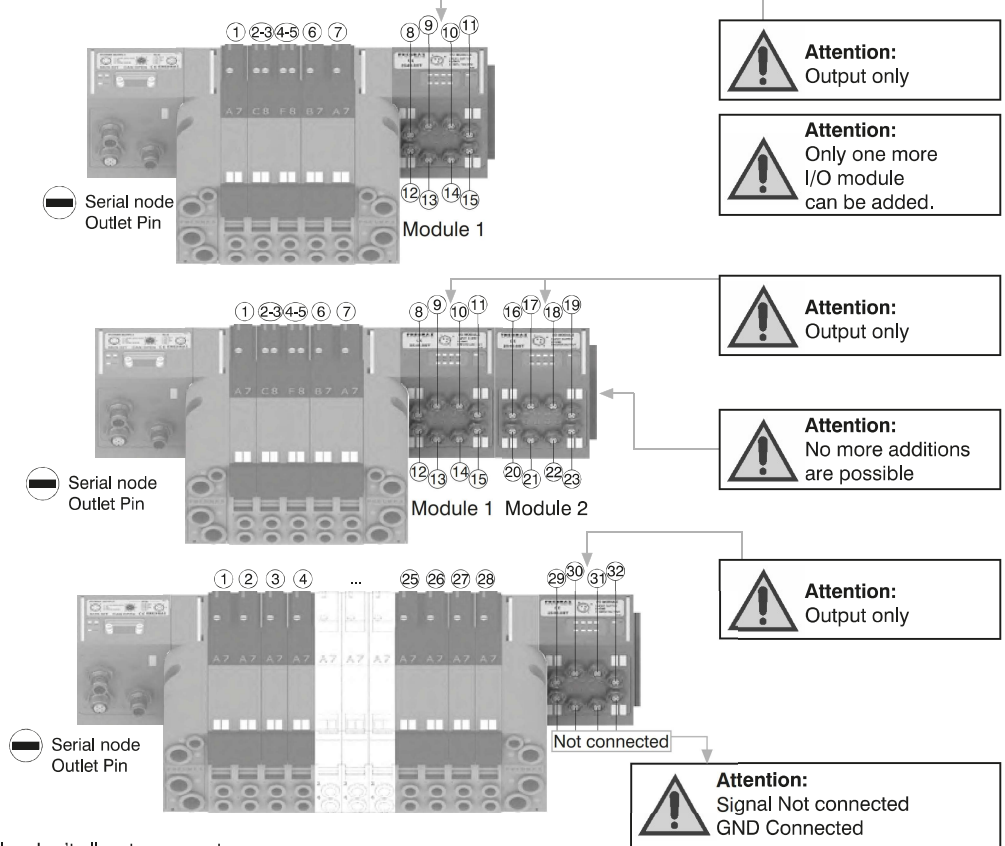
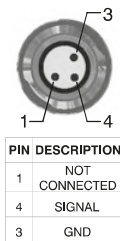


Please note: Optyima 32-T solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.

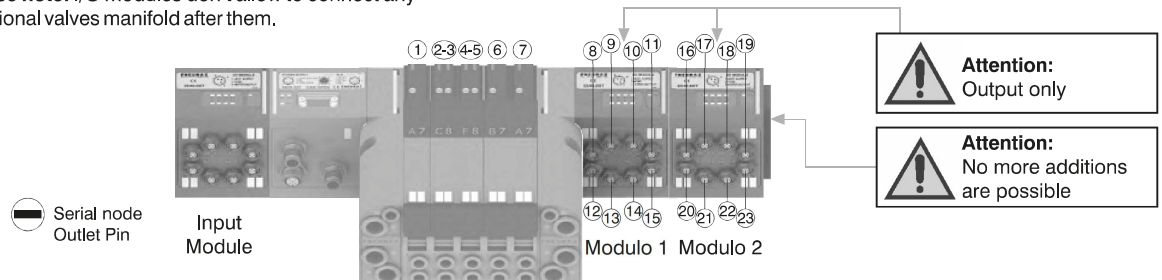


B) Control via fieldbus:

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.



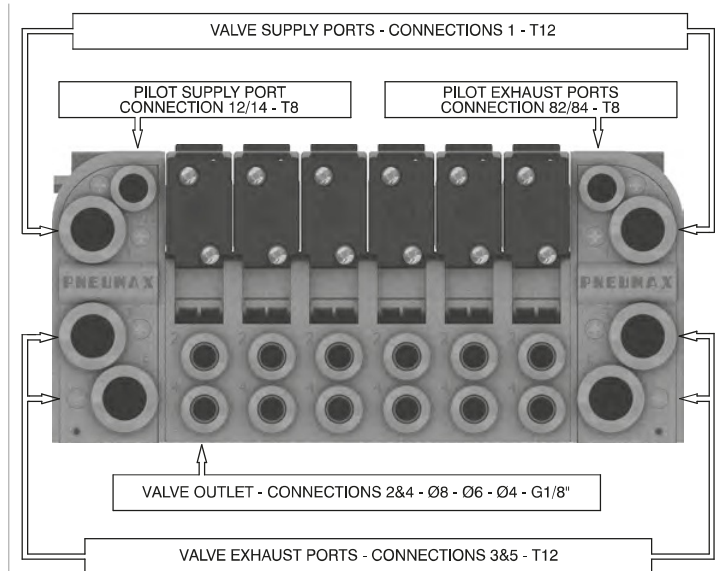
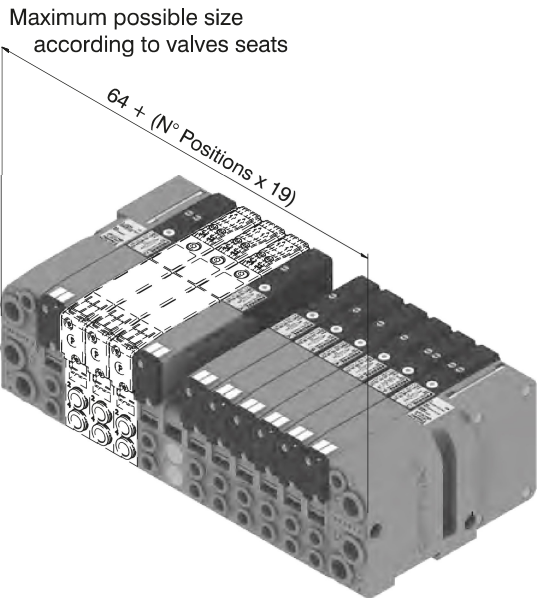
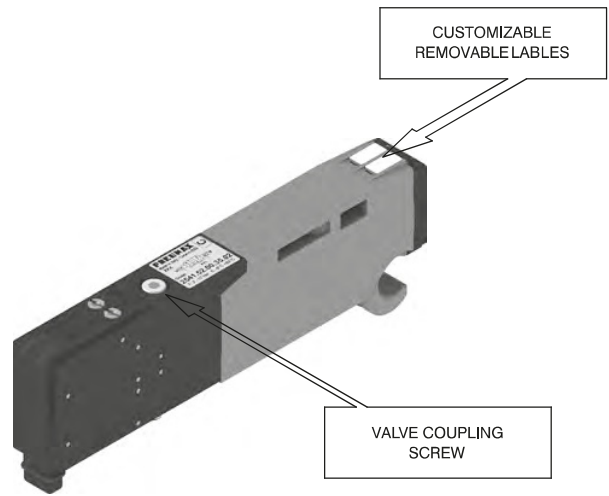
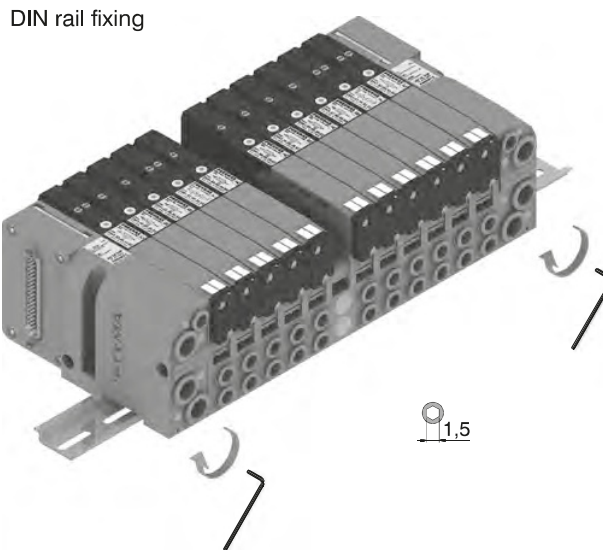
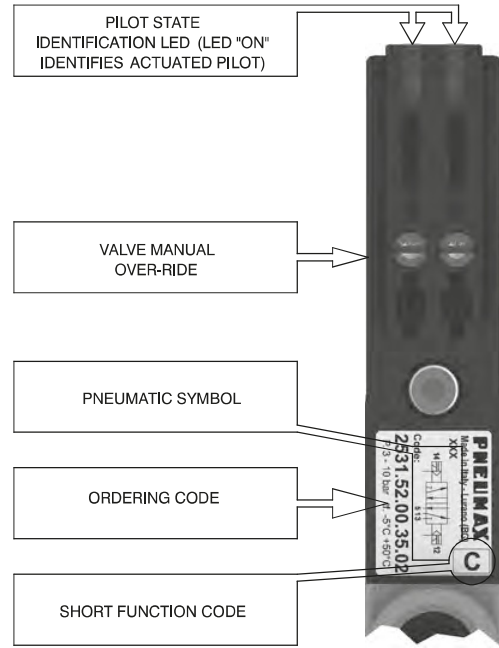
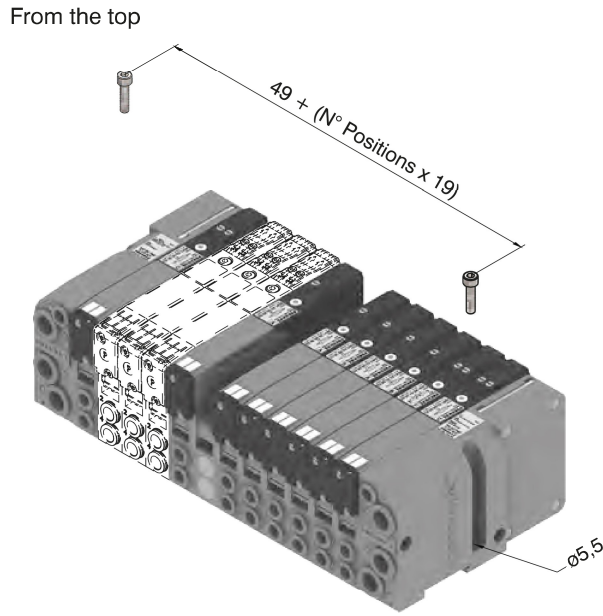
Please note: I/O modules don't allow to connect any additional valves manifold after them.



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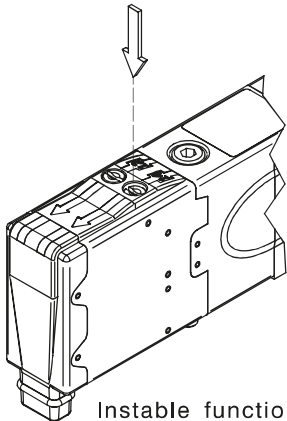
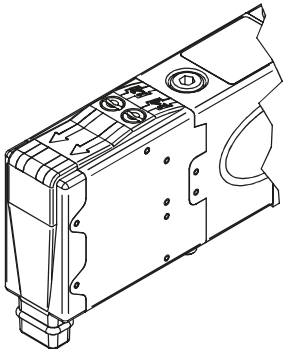
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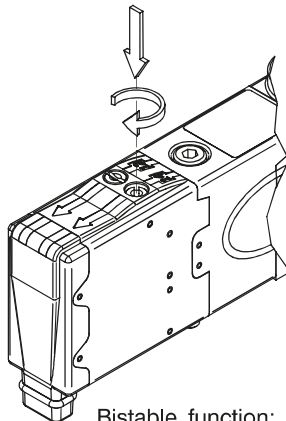




Manual override actuation



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

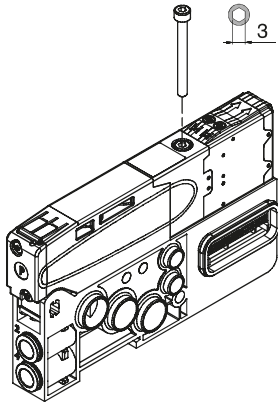
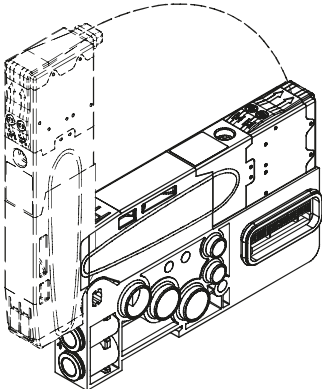
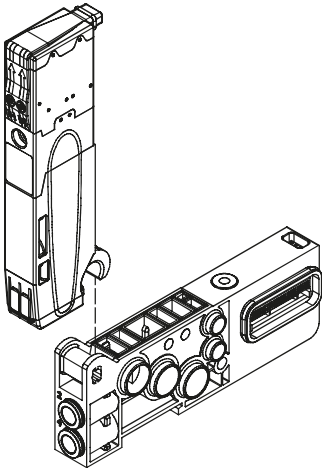


Bistable function: push and turn to get the bistable function

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

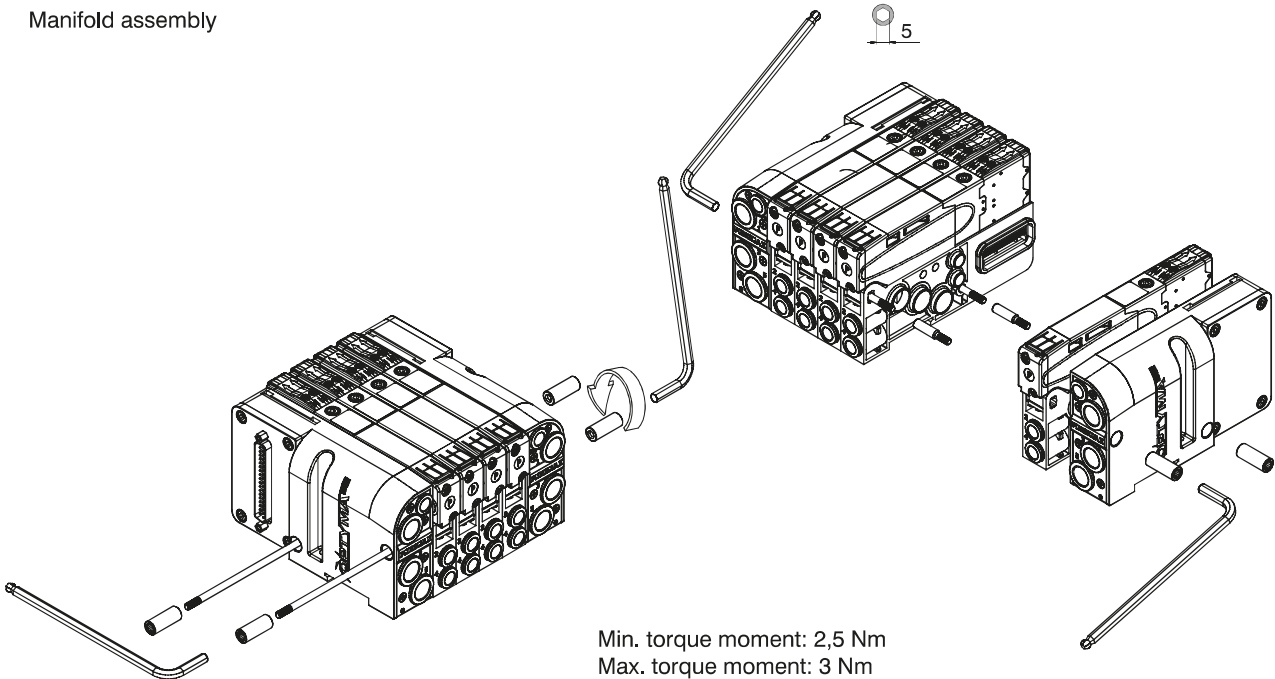
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Valve Installation



NOTE: Torque moment 1 Nm

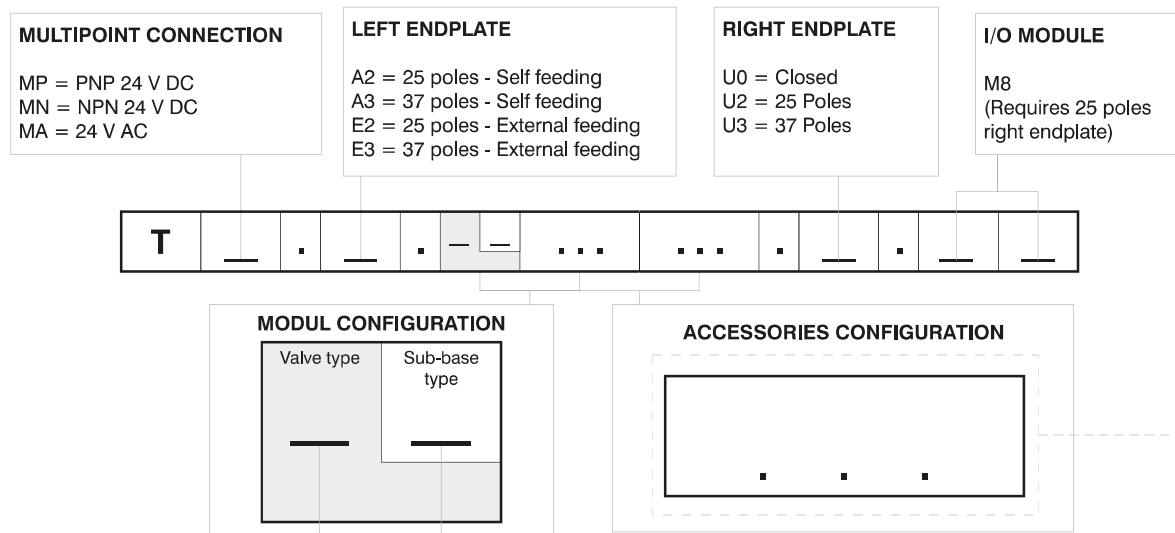
Manifold assembly



Min. torque moment: 2,5 Nm
Max. torque moment: 3 Nm

Manifold Layout configuration

1
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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 = Power supply 2 positions module | Z = Diaphragm plug on pipe 5 |
| U4 = Power supply 4 positions module | XY = Diaphragm plug on pipe 1 & 3 |
| W = Intermediate supply & exhaust module | ZX = Diaphragm plug on pipe 5 & 1 |
| X = Diaphragm plug on pipe 1 | ZY = Diaphragm plug on pipe 5 & 3 |
| Y = Diaphragm plug on pipe 3 | ZXY = Diaphragm plug on pipe 5, 1 & 3 |

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

	Well-tried component	- The product is a well-tried product for a safety-related application according to ISO 13849-1.
B_{10d}	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 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 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.

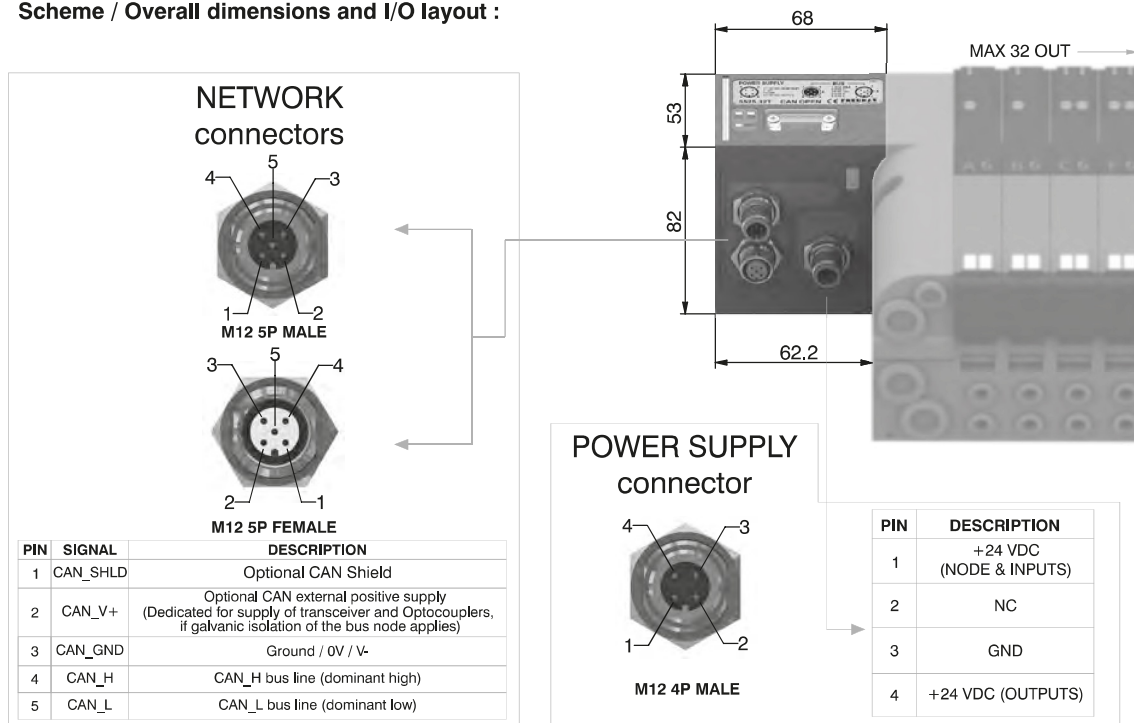
Ordering code

5525.32T



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
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	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: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
Temperature range	From 0° to +50° C	

General:

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

Optyima-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.

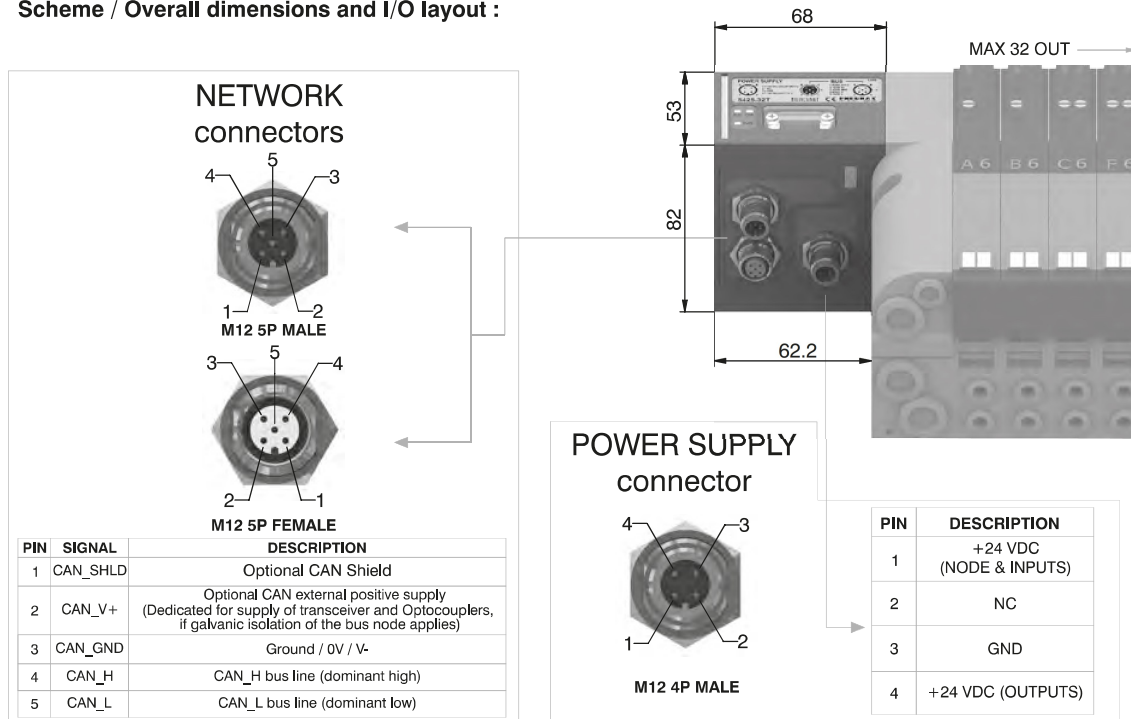
Ordering code

5425.32T



AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :



Technical characteristics

Model	5425.32T
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 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: http://www.pneumaxspa.com
	IP protection grade IP65 when assembled
	Temperature range From 0° to +50° C



General:

PROFIBUS DP module is directly integrated on 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 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 2 dip-switches.

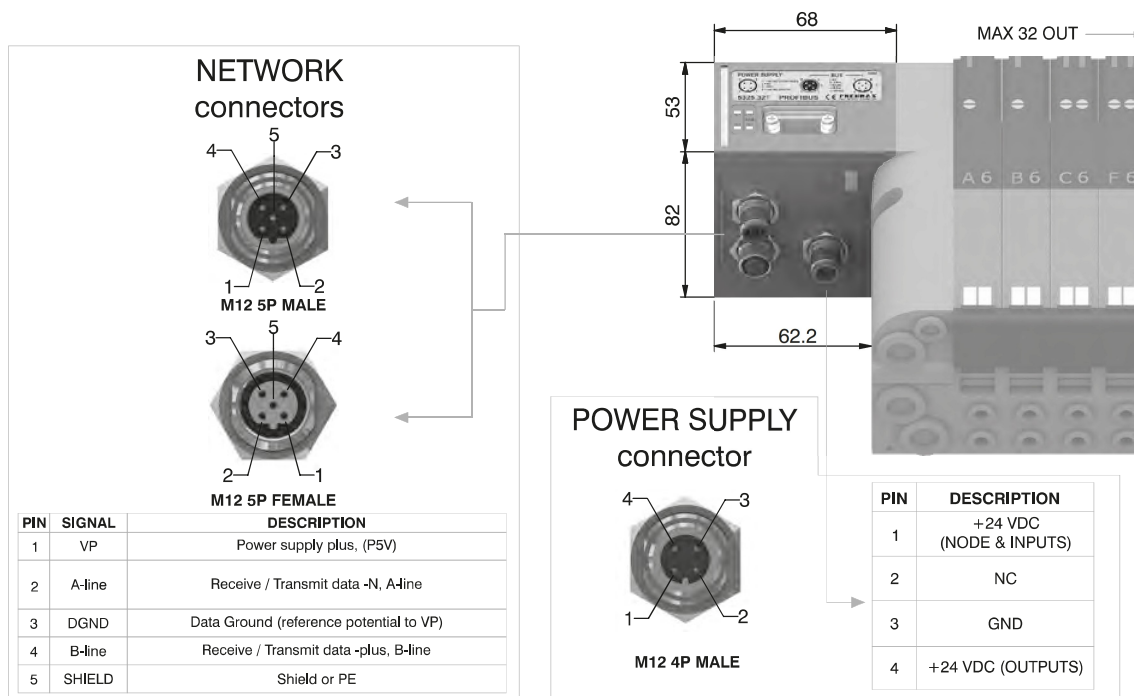
Ordering code

5325.32T



AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5325.32T
	Specifications	PROFIBUS DP
	Case	Reinforced technopolymer
Power supply	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	50 mA
Outputs	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
Network	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: http://www.pneumaxspa.com
	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 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.

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

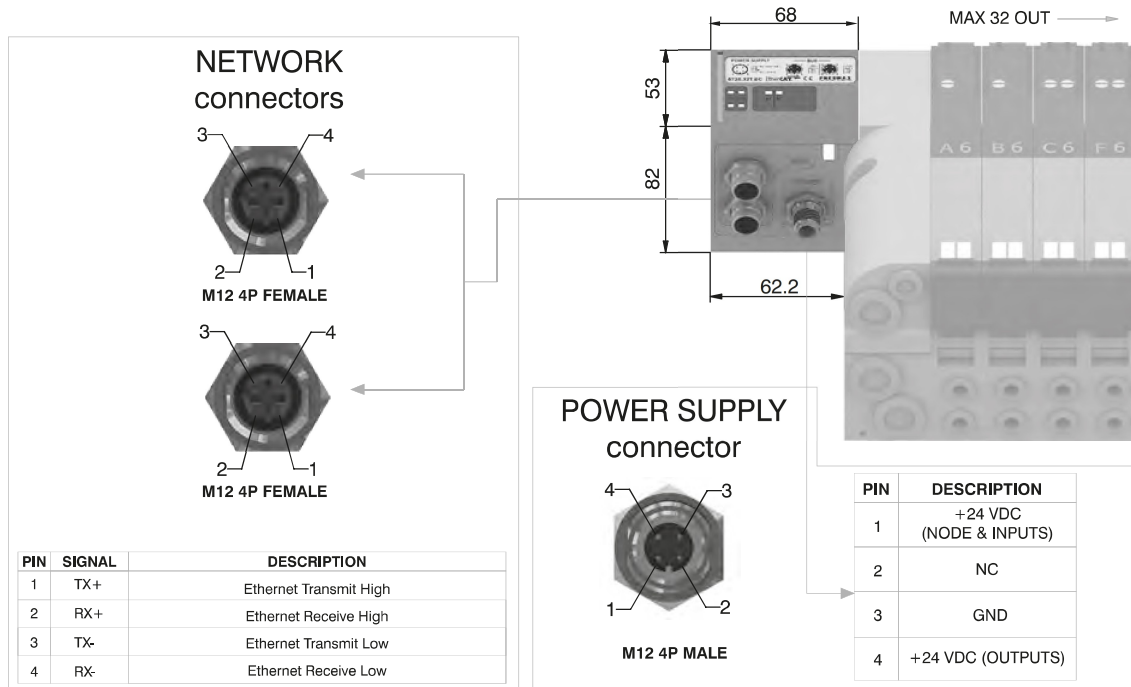
Ordering code

5725.32T.EC



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AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32T.EC
	Specifications	EtherCAT® Specifications ETG.1000 series
	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)	400 mA
	Power supply diagnosis	Green LEDPWR / 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	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: http://www.pneumaxspa.com
	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 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.

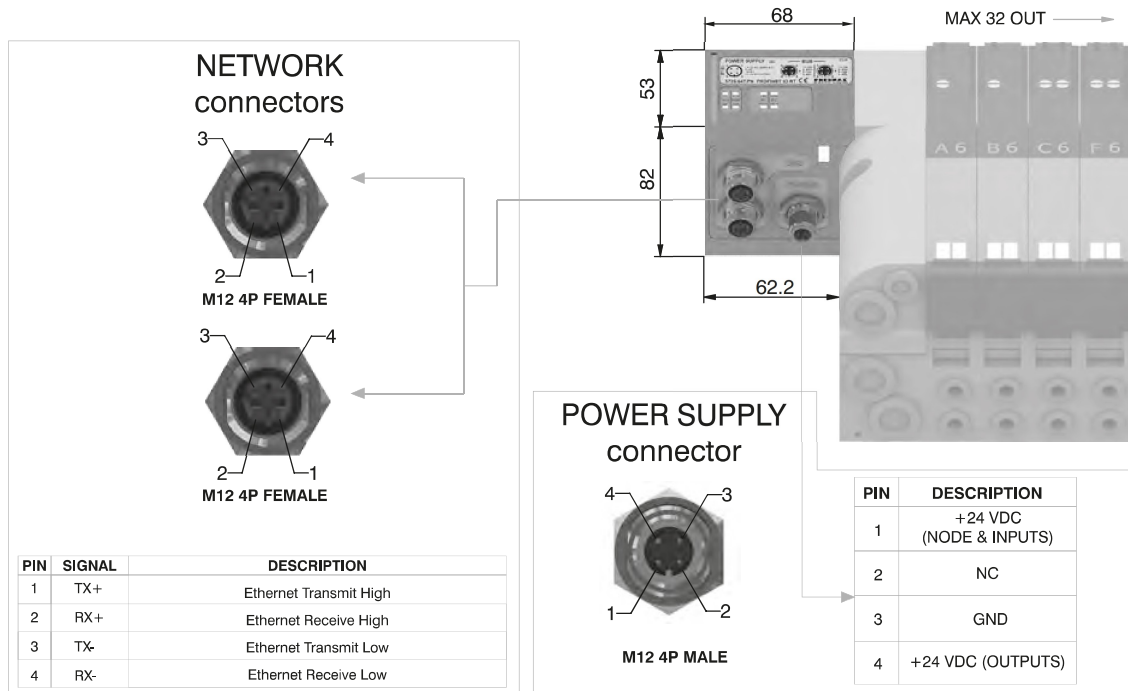
Ordering code

5725.32T.PN



AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32T.PN
	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)	400 mA
Outputs	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
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	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: http://www.pneumaxspa.com
IP protection grade	IP65 when assembled	
Temperature range	From 0° to +50° C	

General :

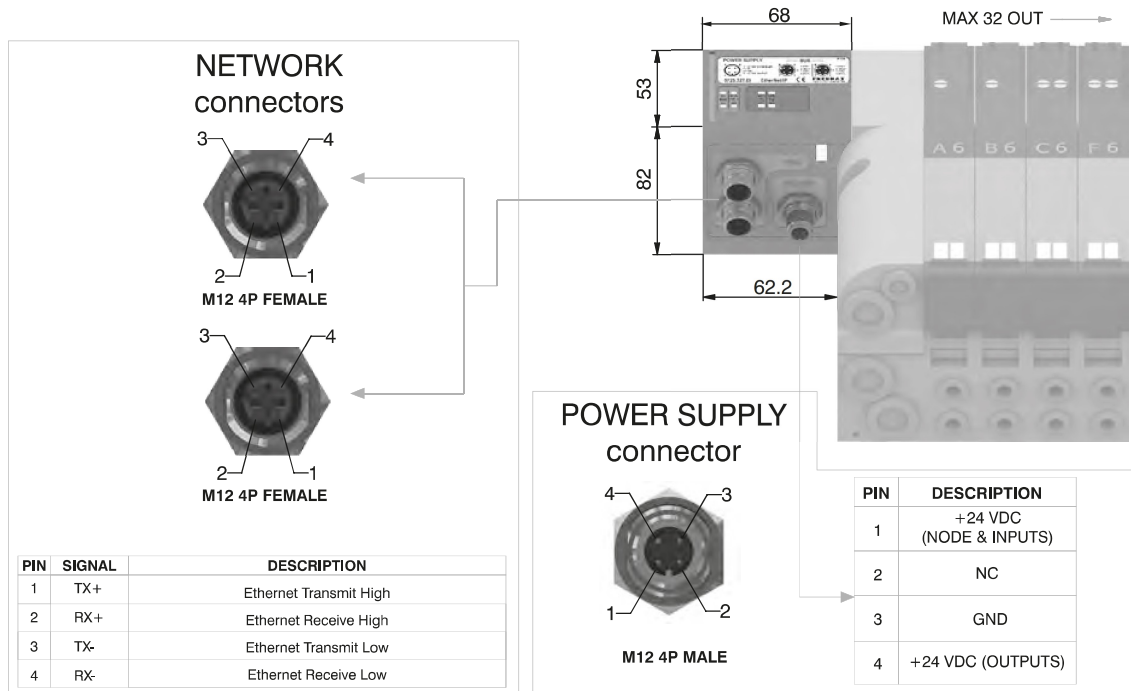
EtherNet/IP module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
 Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
 The node can be easily installed also on solenoid valves 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 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

5725.32T.EI



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32T.EI
	Specifications	The EtherNet/IP Specification
	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)	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 + 4 LEDs for link & activity
	Configuration file	Available from our web site: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
Temperature range	From 0° to +50° C	



General :

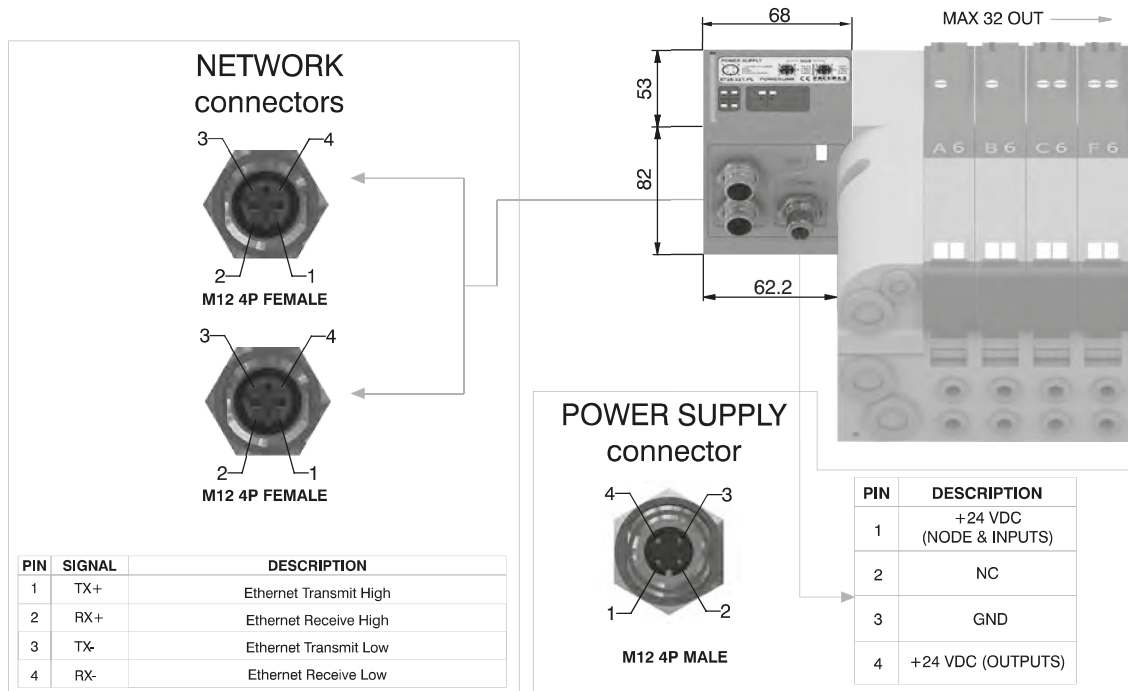
Powerlink module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
 Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
 The node can be easily installed also on solenoid valves 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 Powerlink 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 Powerlink 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.PL



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32T.PL
	Specifications	Ethernet POWERLINK Communication Profile Specifications
	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)	400 mA
Outputs	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
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	239
	Max nodes in net	240
	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: http://www.pneumaxspa.com
IP protection grade	IP65 when assembled	
Temperature range	From 0° to +50° C	

General :

Modbus/TCP 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 Modbus/TCP 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 Modbus/TCP 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.

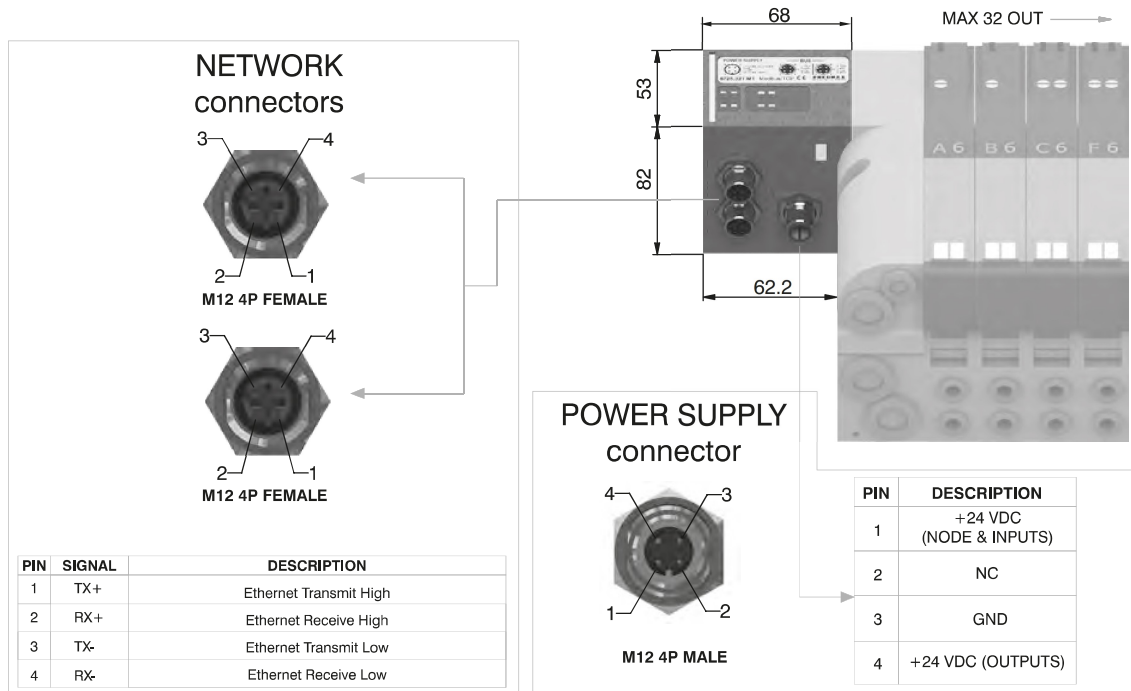
The node address is assigned during configuration.

Ordering code

5725.32T.MT



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32T.MT
	Specifications	MODBUS Application Protocol Specification V1.1a, June 4, 2004
	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)	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	248
	Max nodes in net	248
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Modbus/TCP nodes don't require configuration file
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



General :

Modules have 8 connectors M8 3P female.

The Inputs are PNP equivalent 24 VDC ± 10%.

To each connector it is possible to plug both 2 wires Inputs (switches, magnetic switches pressure switches, etc) or 3 wires Inputs (proximity, photocells, electronic sensors, etc).

The maximum current available for all 8 Inputs is 300 mA.

Each module includes a 300 mA self-mending fuse. If a short circuit or a overcharge (overall current >300mA) 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®, DeviceNet and EtherCAT®.

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

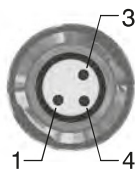
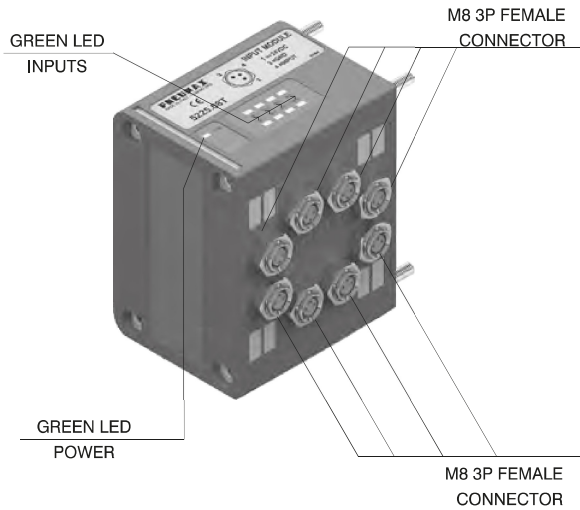
Ordering code

5225.08T

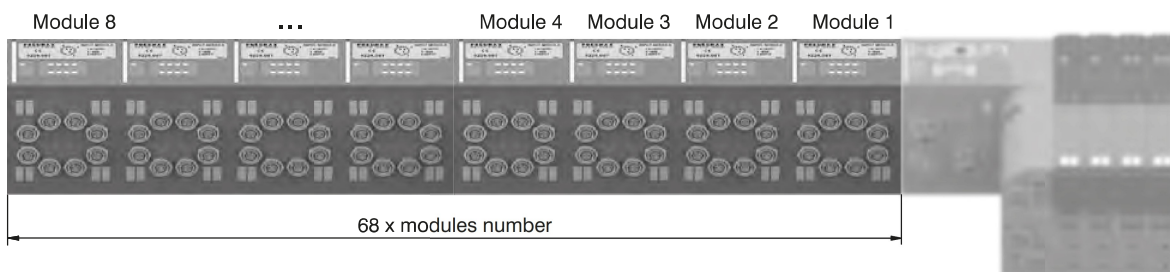
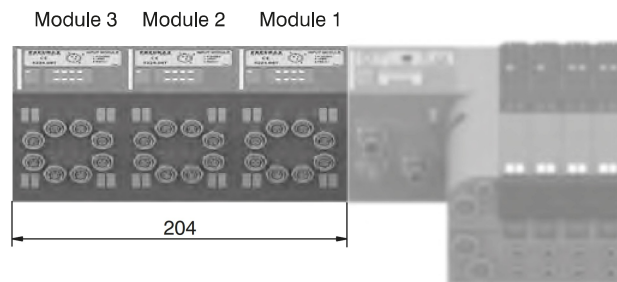
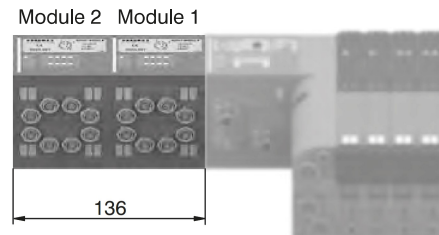
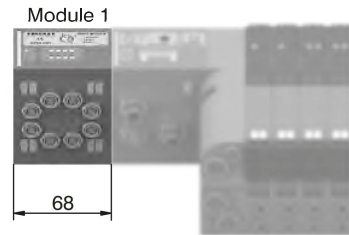


AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND



1

AIR DISTRIBUTION

General :

Modules have 4 connectors M12 5P female.

The Inputs are PNP equivalent 24 VDC ±10%.

To each connector it is possible to plug both 2 wires Inputs (switches, magnetic switches pressure switches, etc) or 3 wires Inputs (proximity, photocells, electronic sensors, etc).

The maximum current available for all 8 Inputs is 300 mA.

Each module includes a 300 mA self-mending fuse. If a short circuit or a overcharge (overall current >300mA) 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®, DeviceNet and EtherCAT®.

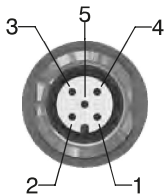
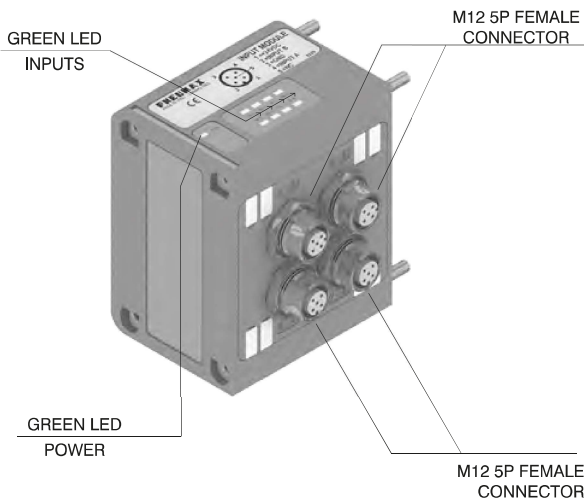
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT EtherNet/IP and Powerlink.

Ordering code

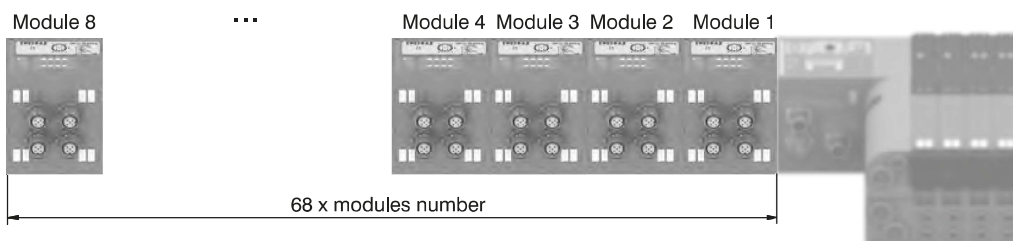
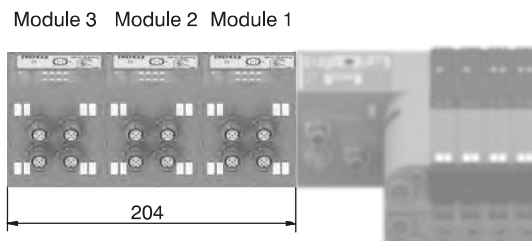
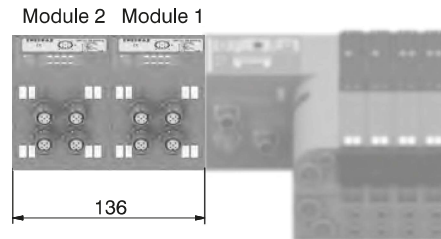
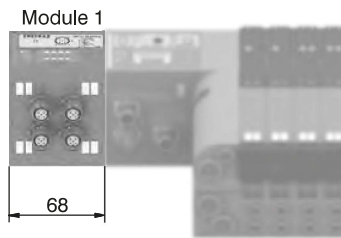
5225.12T



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.

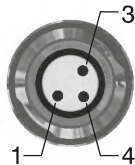
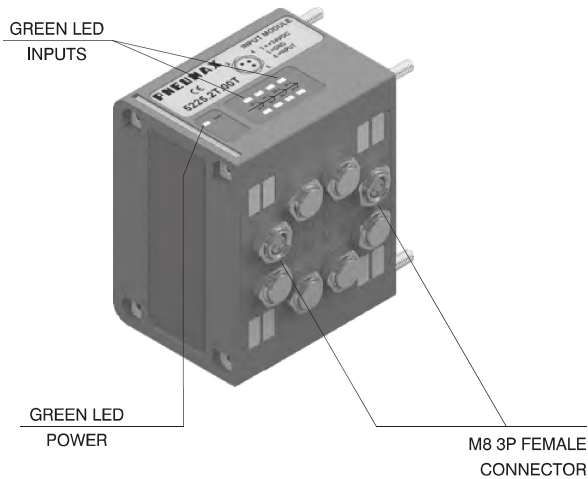
Ordering code

5225.2 _ . _ T



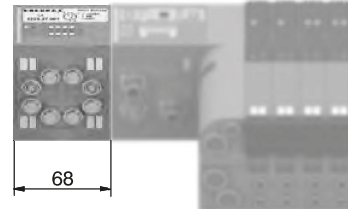
AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :

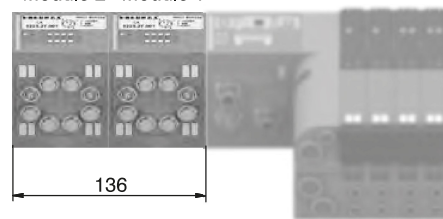


PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

Module 1



Module 2 Module 1



1

AIR DISTRIBUTION

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:

5225.2P.00T (2-wires probes);

5225.2P.01T (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®.

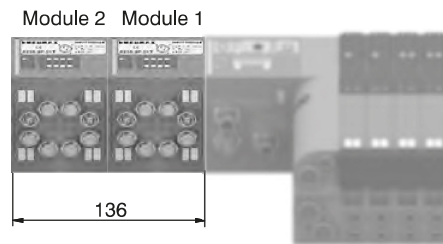
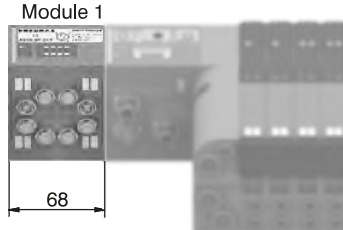
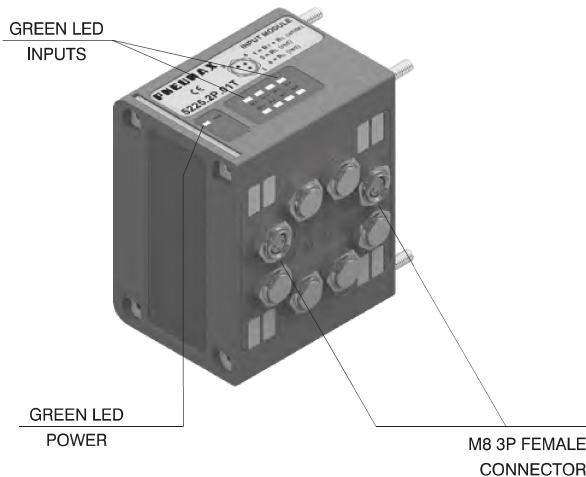
The Maximum number of 2 Pt100 Inputs modules supported is 2 for PROFINET IO RT, EtherNet/IP and Powerlink.

Ordering code

5225.2P . 0_T



Scheme / Overall dimensions and I/O layout :



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.

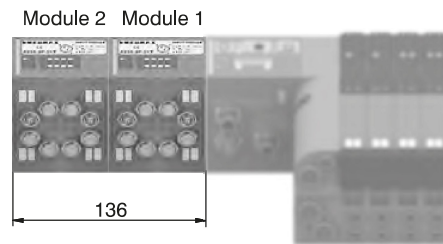
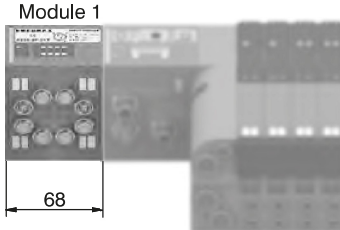
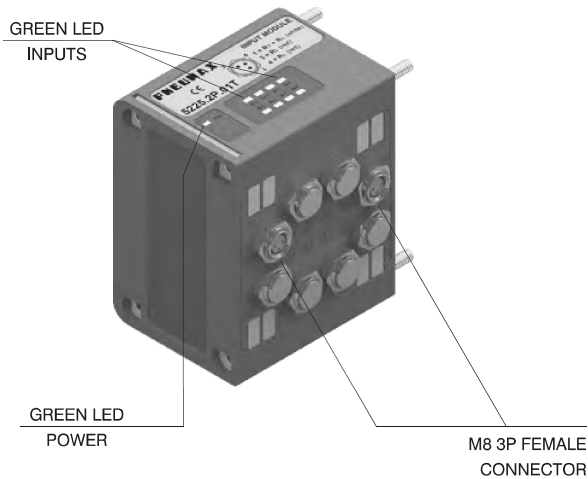
Ordering code

5225.2P . 1_T



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)

1

AIR DISTRIBUTION

Socket for Power Supply
STRAIGHT CONNECTOR
M12A 4P FEMALE

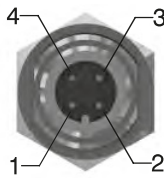
Ordering code

5312A.F04.00



POWER SUPPLY connector

Upper view
Slave connector

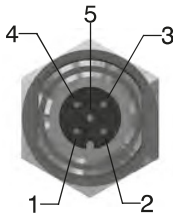


PIN	DESCRIPTION
1	+24 VDC Node
2	
3	0 V
4	+24 VDC Outputs

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

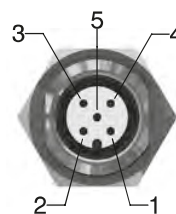
Upper view
Slave connector

NETWORK connectors

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

Ordering code

5312A.M05.00



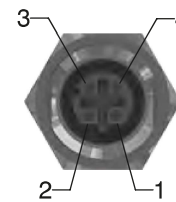
Plug for Bus EtherCAT®,
PROFINET IO RT,
EtherNet/IP and Powerlink
STRAIGHT CONNECTOR M12D 4P MALE

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

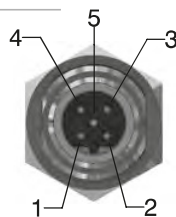


Upper view
Slave connector

Socket for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P FEMALE

Ordering code

5312B.F05.00



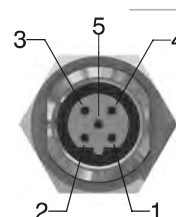
PIN	DESCRIPTION
1	Power Supply
2	A-line
3	DGND
4	B-line
5	SHIELD

Upper view
Slave connector

Plug for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P MALE

Ordering code

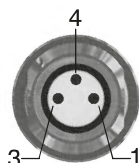
5312B.M05.00



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

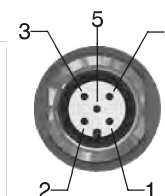


Plugs

M8 plug

Ordering code

5300.T08

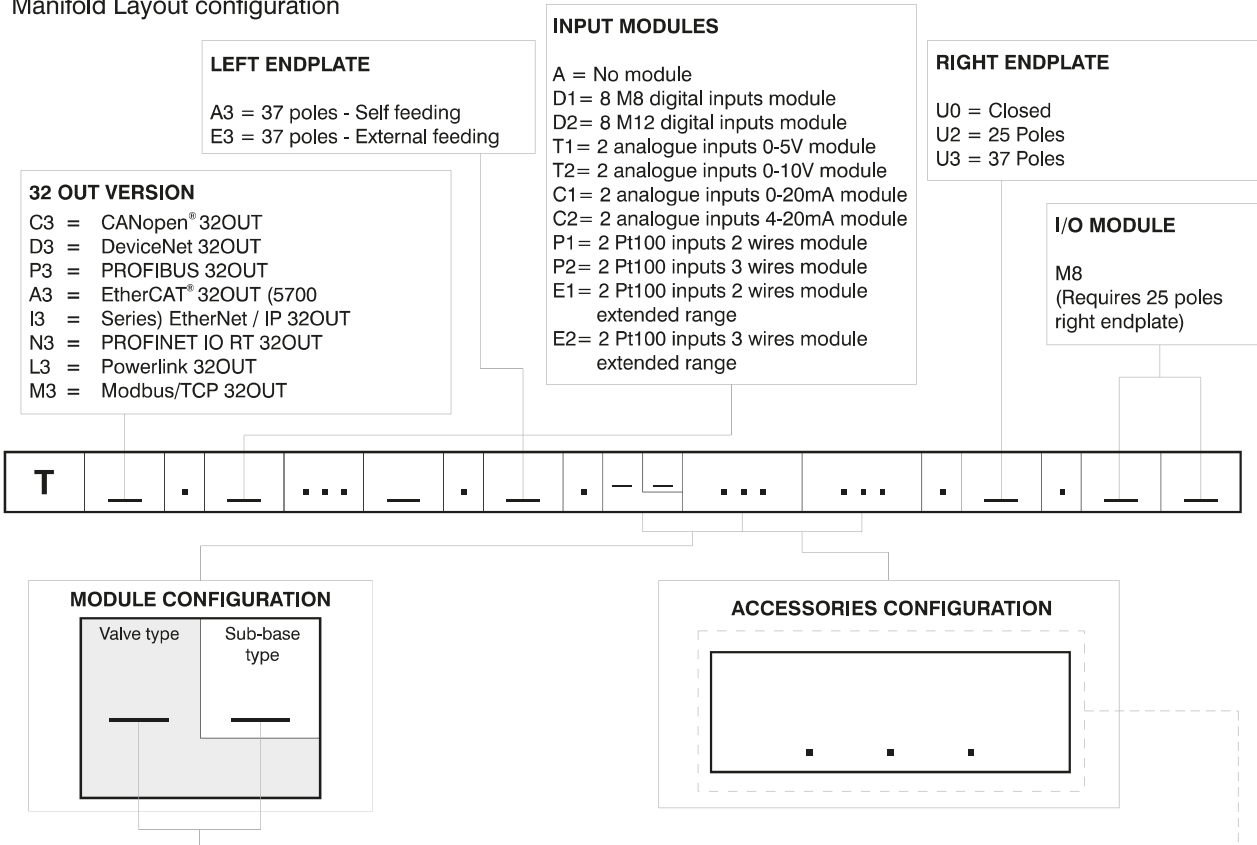


PIN	DESCRIPTION
1	+24 VDC
2	INPUT B
3	GND
4	INPUT A
5	NC

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



Manifold Layout configuration



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 = Power supply
2 positions module | Z = Diaphragm plug
on pipe 5 |
| U4 = Power supply
4 positions module | XY = Diaphragm plug
on pipe 1 & 3 |
| W = Intermediate supply
& exhaust module | ZX = Diaphragm plug
on pipe 5 & 1 |
| X = Diaphragm plug
on pipe 1 | ZY = Diaphragm plug
on pipe 5 & 3 |
| Y = Diaphragm plug
on pipe 3 | ZXY = Diaphragm plug
on pipe 5, 1 & 3 |