



## 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

1 AIR DISTRIBUTION

**Solenoid - Spring**

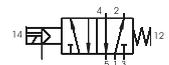
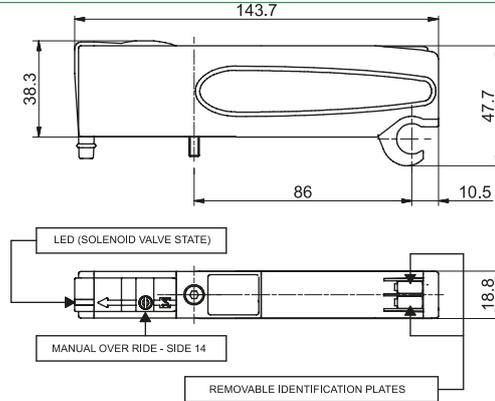
Coding: 2541.52.00.39.

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



**Solenoid-Differential**

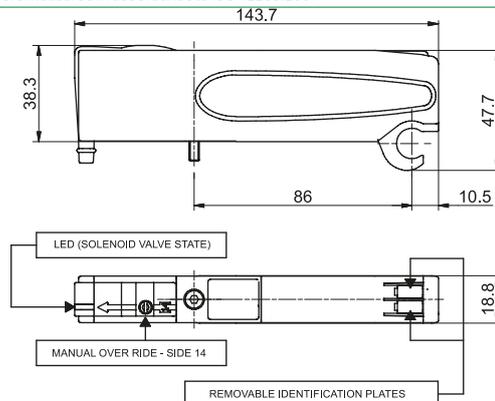
Coding: 2541.52.00.36.

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**

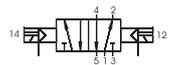
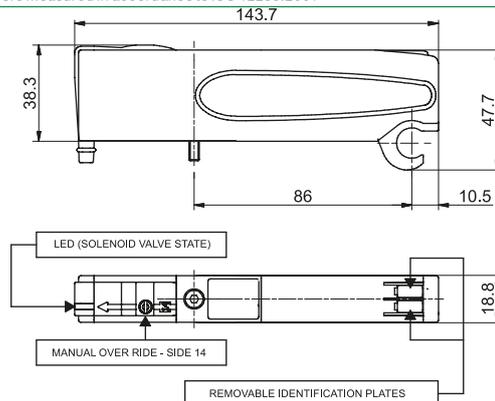
Coding: 2541.52.00.35.

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**

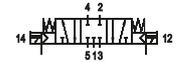
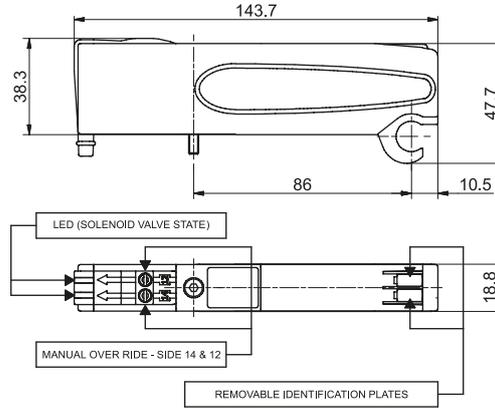
Coding: 2541.53.31.35.

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



**Solenoid-Solenoid 2x3/2**

Coding: 2541.62. .35.

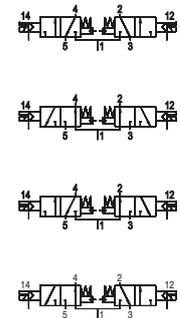
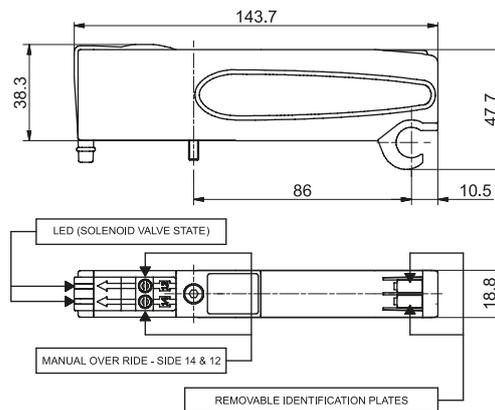
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (NI/min)	700
Response time according to ISO 12238, activation time (ms)	15
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  $P_p = 2,5 + (0.2 * 5) = 3,5 \text{ bar}$

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  $P_p = 2,5 + (0.2 * 5) = 3,5 \text{ bar}$

1 AIR DISTRIBUTION

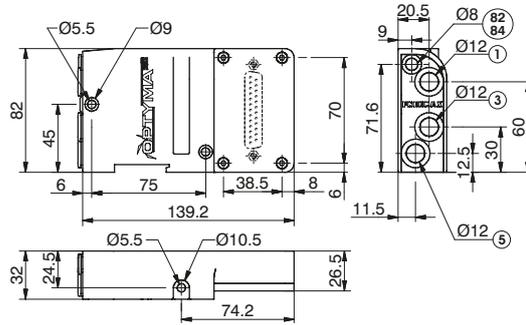
**Right Endplates**

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: 2540.02.Ⓒ

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

VERSION	
Ⓐ 02	= External feeding
12	= Self-feeding

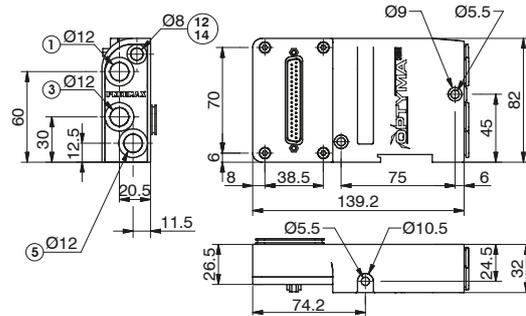
ELECTRICAL CONNECTION	
37P	= Connectors 37 poles PNP
25P	= Connectors 25 poles PNP
37N	= Connectors 37 poles NPN
25N	= Connectors 25 poles NPN
37A	= Connectors 37 poles AC
25A	= Connectors 25 poles AC



Weight 300 g

2540.02.Ⓒ

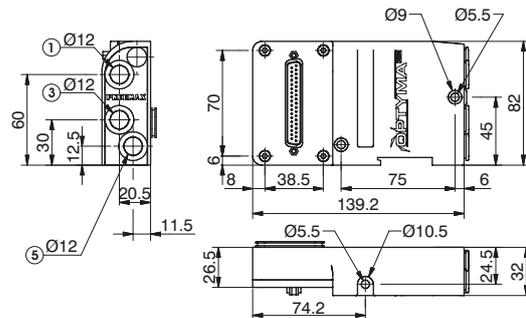
Left Endplates-External feeding base: 12/14 divided from conduct 1



Weight 300 g

2540.12.Ⓒ

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

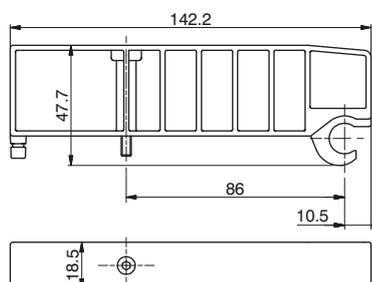


**Closing plate**

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



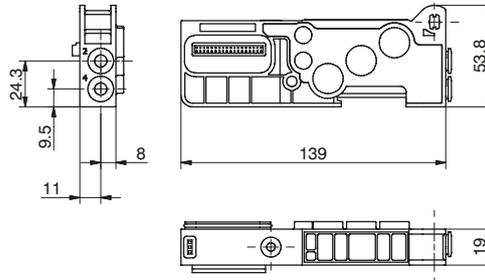
Modular base

Coding: 254C.01V

Operational characteristics

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

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



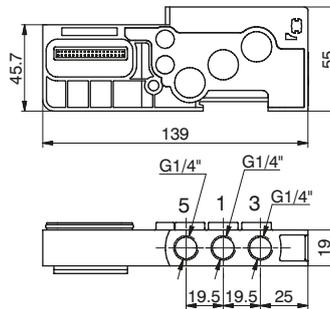
Weight 96,5 g

Intermediate Inlet/Exhaust module

Coding: 2540.10

Operational characteristics

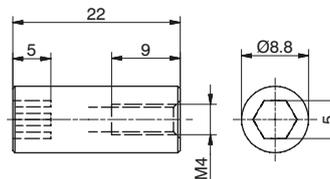
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50



Weight 115 g  
SHORT FUNCTION CODE "W"

Nut

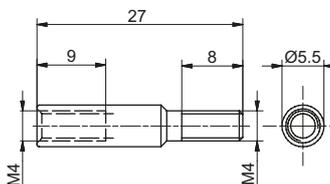
Coding: 2540.KD.00



Weight 10 g  
The Kit includes 4 pieces

Extension (1 Position)

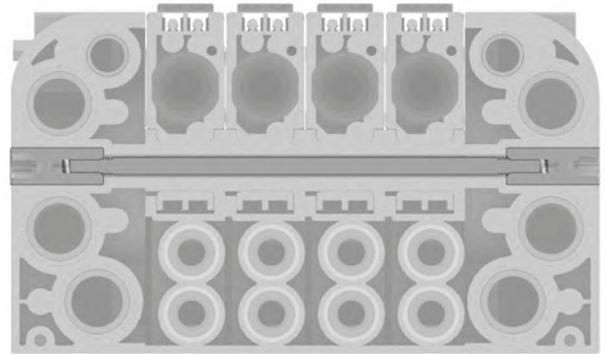
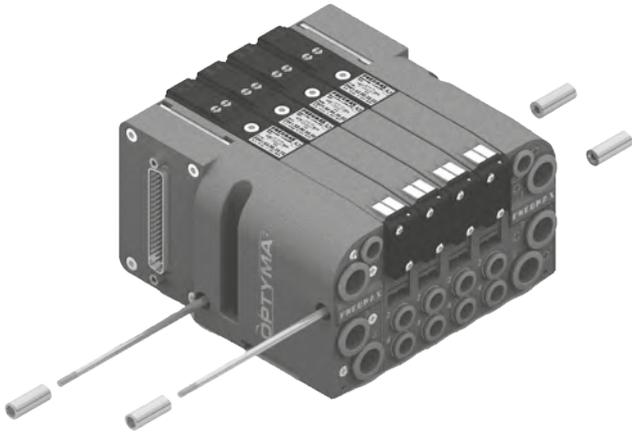
Coding: 2540.KP.01



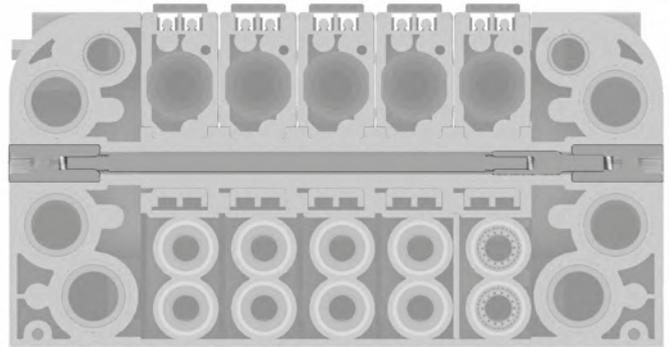
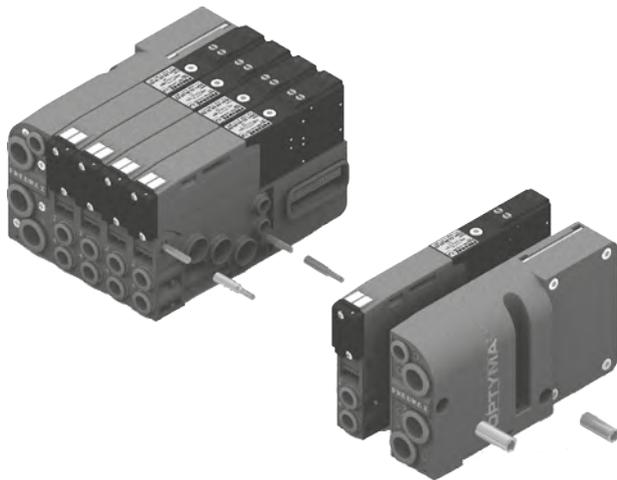
Weight 3,5 g  
The Kit includes 2 pieces

1 AIR DISTRIBUTION

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



Set with tie-rod, more extension adding a valve

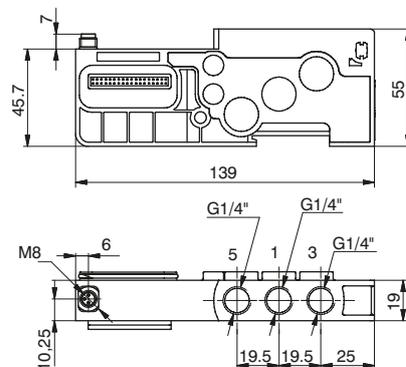
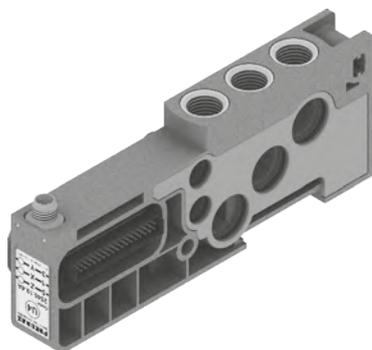


**General :**

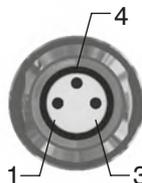
Each Optyma-T manifold lets to manage 32 command signals for the valves. Optyma-T serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET I/O RT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve 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**



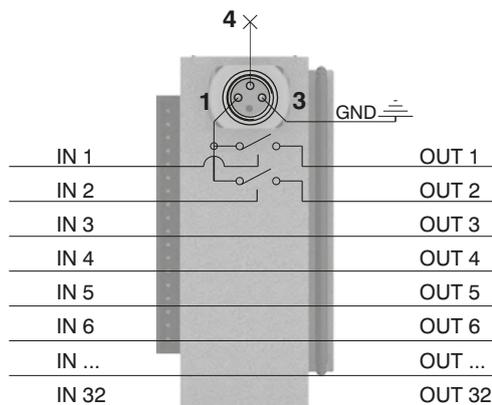
In particular this module is fitted with a M8 3 pins connector: +24V, not connected, GND.



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.

1 AIR DISTRIBUTION

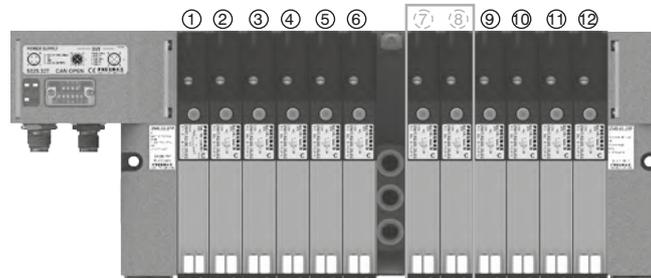
**Usage examples:**

**EXAMPLE 1:**

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

**Assembly:**

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

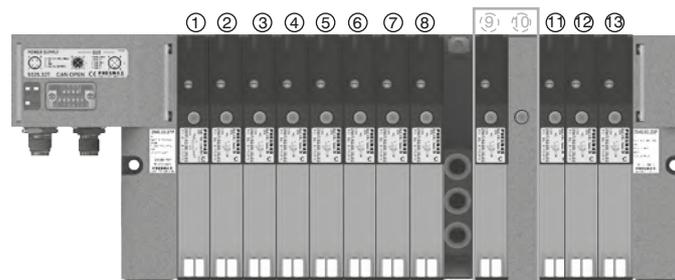


**EXAMPLE 2:**

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

**Assembly:**

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



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



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

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

**EXAMPLE 3:**

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

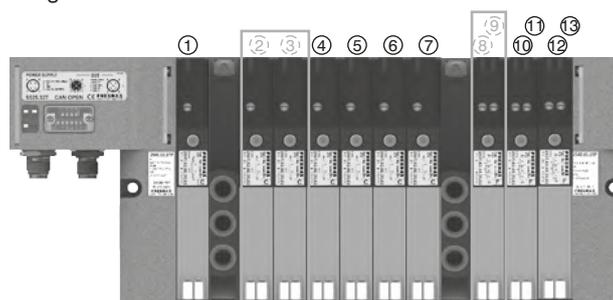
**Assembly:**

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

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

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

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

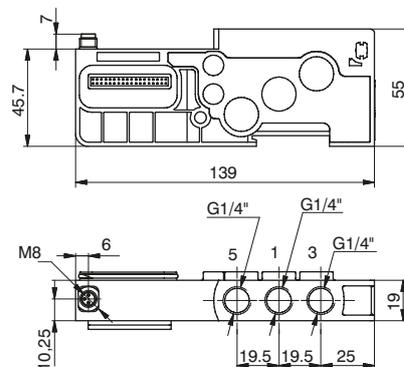
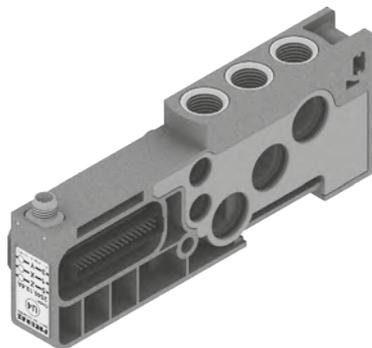


**General :**

Each Optyma-T manifold 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**



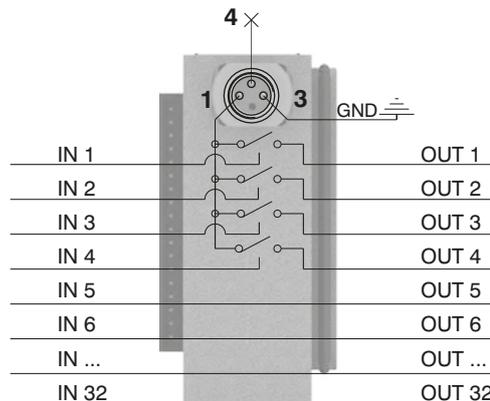
In particular this module is fitted with a M8 3 pins connector: +24V, not connected, GND.



PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

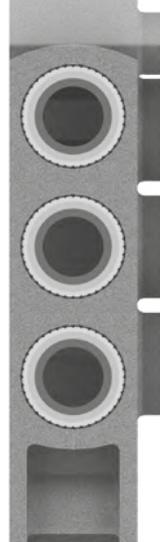
**WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM**

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.

1 AIR DISTRIBUTION

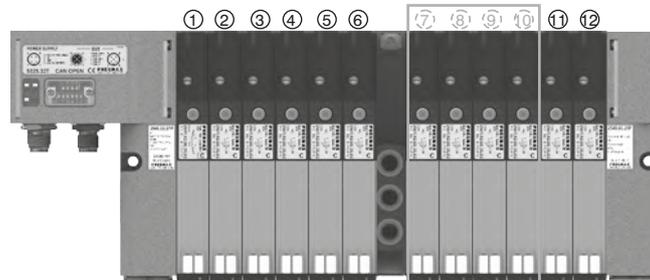
**Usage examples:**

**EXAMPLE 1:**

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

**Assembly:**

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

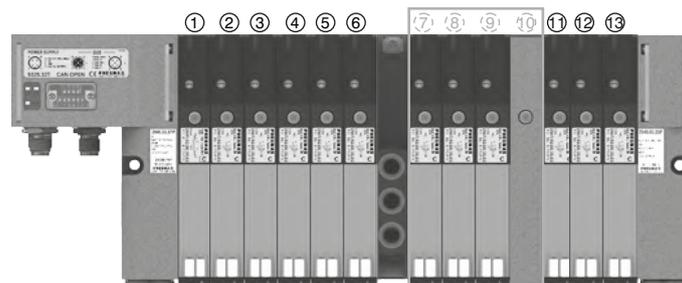


**EXAMPLE 2:**

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

**Assembly:**

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



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



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

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

**EXAMPLE 3:**

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

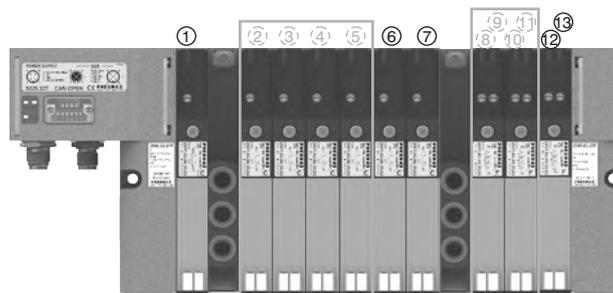
**Assembly:**

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

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

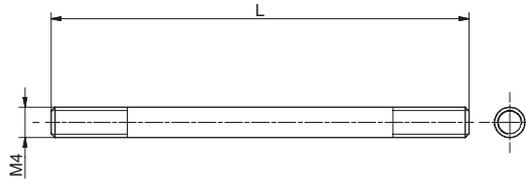
- 1 additional power supply module,
- 3 bistable valves.

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



1  
AIR DISTRIBUTION

Coding: 2540.KT.**P**



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

**Polyethylene Silencer Series SPL-R**

Coding: SPLR.**D**



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

**Diaphragm plug**

Coding: 2530.17



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

Coding: 2300.25.**L.C**



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

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

Coding: 2400.37.**L.C**



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

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

Coding: 2400.25.**L.25**



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



The electrical connection is achieved by a 37 pin connector and can manage up to 32 solenoid pilots. It is also possible use a 25 sub-D pin connector and, in this case, it is possible to manage a maximum of 22 outputs. The management and distribution of the electrical signals between each valve is obtained thanks to an electrical connector which receives the signals from the previous module, uses one, two or none depending on the type, and carries forward to the next module the remaining.

Bistable valves, 5/3 and 2x3/2 valves which have two solenoid pilots built in, use two signals; the first is directed to the pilot side 14 the second to the pilot side 12. Modular bases can be fitted with two type of electrical connector: the monostable version uses only one signal (connected to the pilot side 14) and carries forward the remaining, the bistable version which always uses two signals.

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

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

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

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

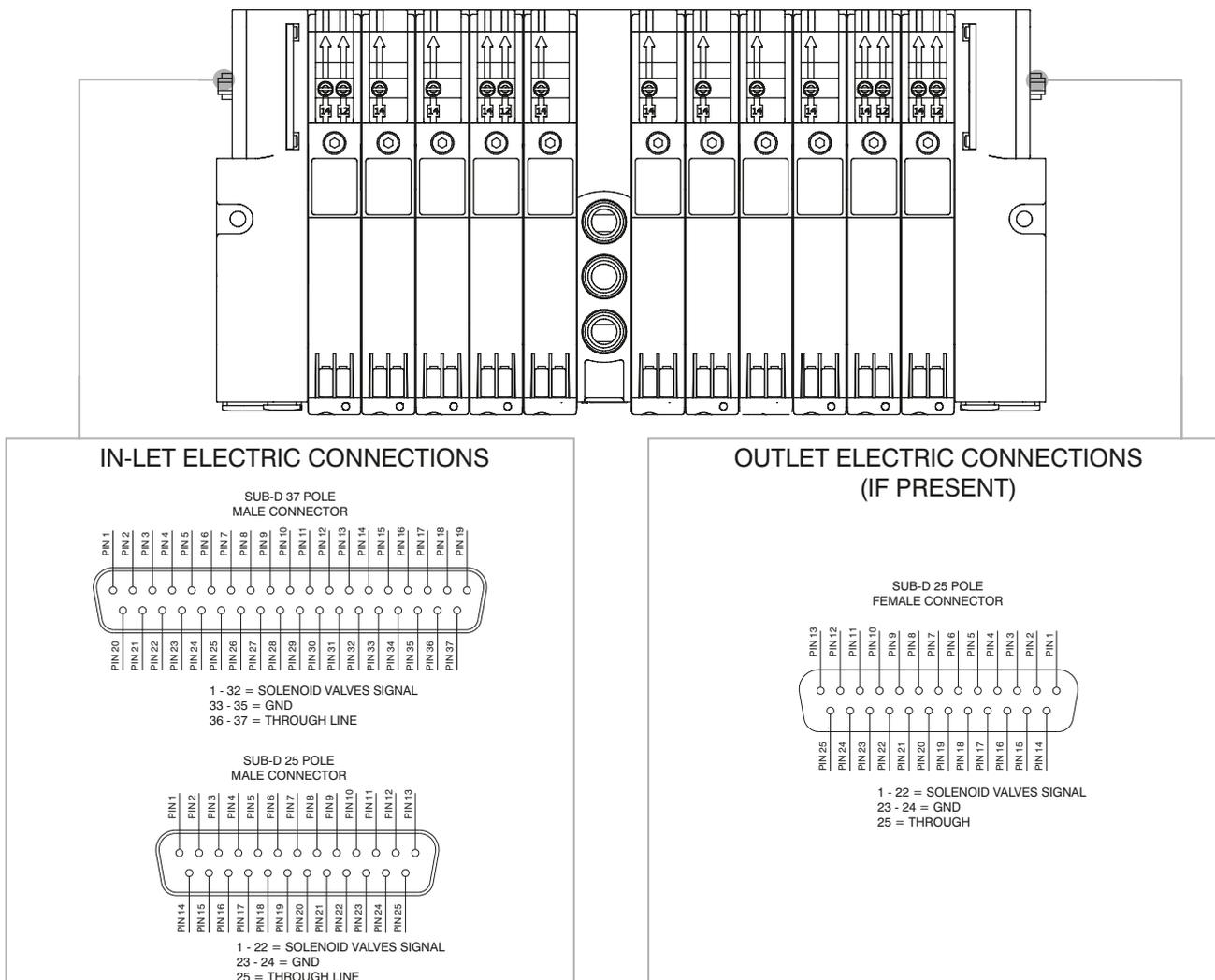
All the electrical signals that have not been used on the manifold can be used placing at the end of the manifold the end plate complete with the 25 sub-D female connector.

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

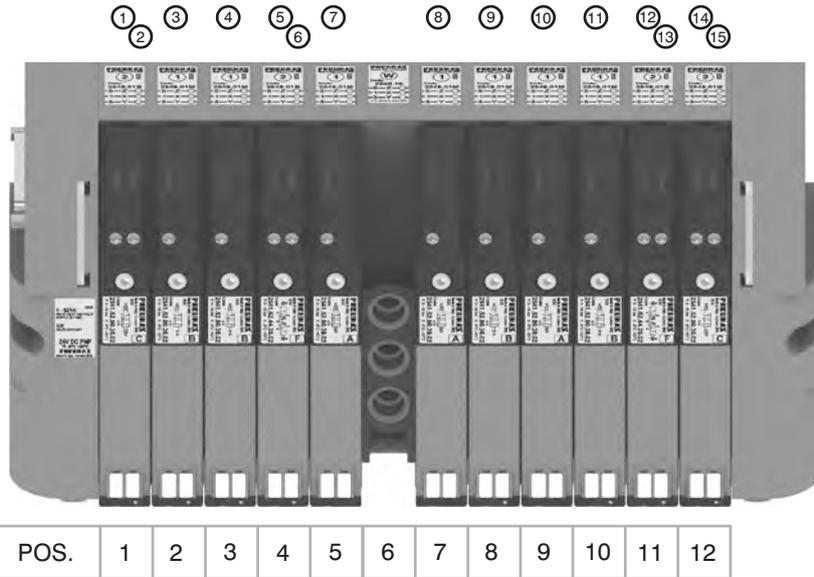
37 pin connector            nr of output = 32 – (total of used signals)

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

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

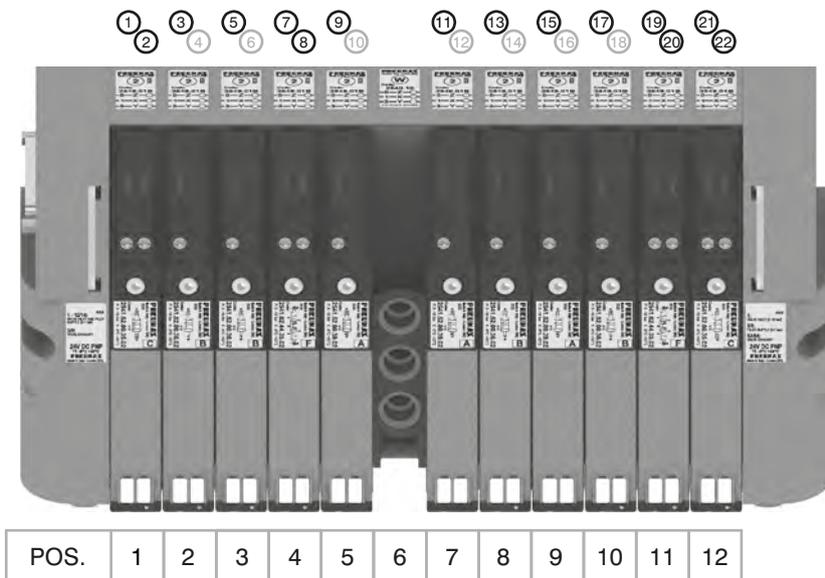


**37 PIN Connector correspondence for valves assembled on mixed bases**



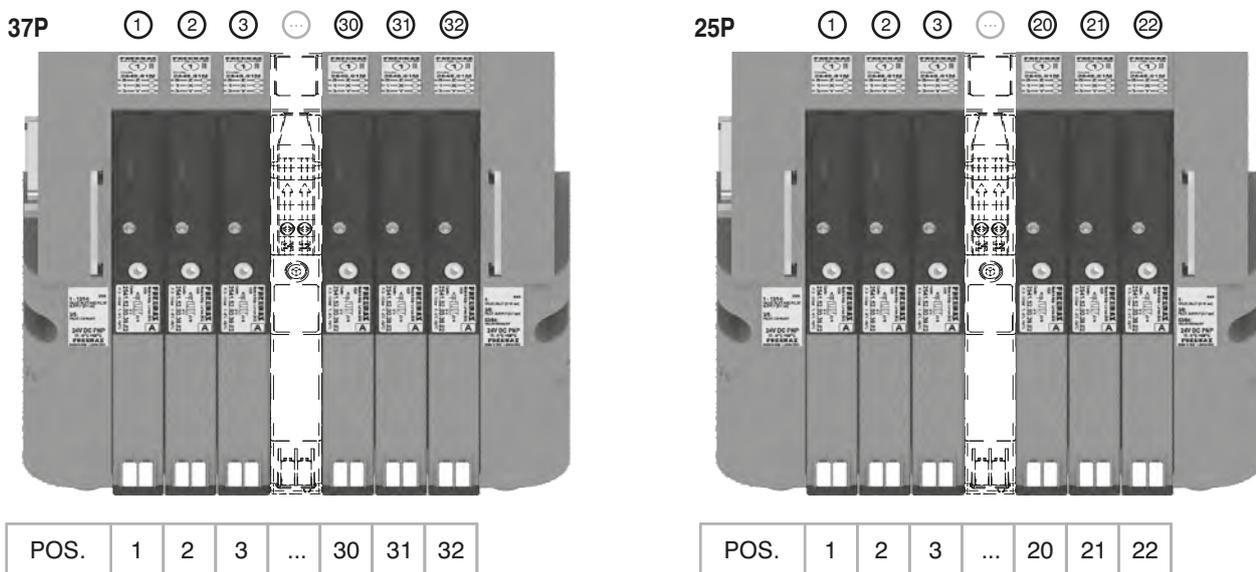
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 14 SV POS.3
- PIN 5 = PILOT 14 SV POS.4
- PIN 6 = PILOT 12 SV POS.4
- PIN 7 = PILOT 14 SV POS.5
- PIN 8 = PILOT 14 SV POS.7
- PIN 9 = PILOT 14 SV POS.8
- PIN 10 = PILOT 14 SV POS.9
- PIN 11 = PILOT 14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

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



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

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



AIR DISTRIBUTION

1



**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**



1  
AIR DISTRIBUTION

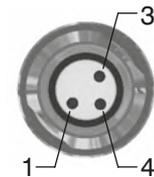
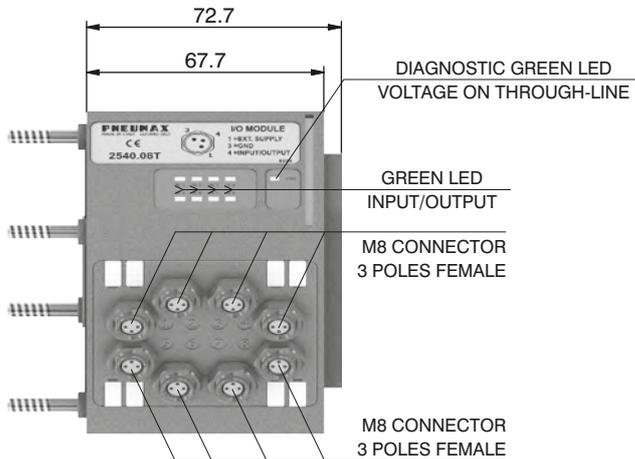
**Please note:** If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

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:**

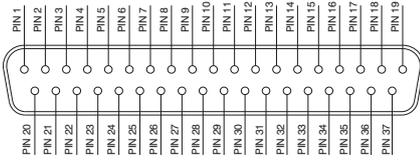


**Attention:** The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

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

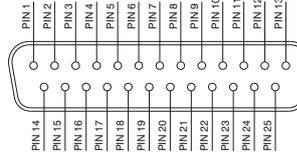
**CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR**

SUB-D TYPE 37 POLE MALE CONNECTOR

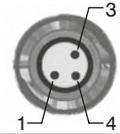


1 - 32 = SIGNALS  
33 - 35 = GND  
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



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



PIN DESCRIPTION	
1	THROUGH LINE
4	SIGNAL
3	GND

**Connection modes:**

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

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

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

M8 connector used as Input:



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

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).

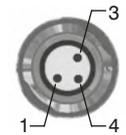


M8 connector used as Output:

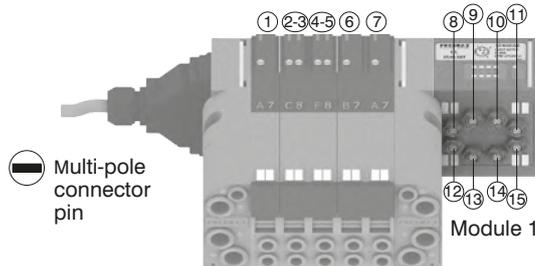
Output voltage will be the same as is applied at the multi-pole connector pin.  
The maximum output current depends upon the power unit used, but we recommend no more than 250mA.



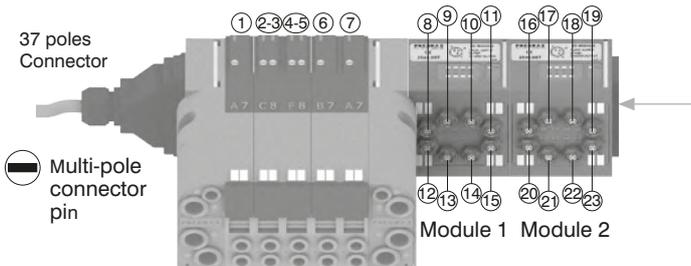
**Attention:** Since every cable has a degree of resistance, there will always be a voltage drop depending on the cable's length, sectional area and the current.



PIN DESCRIPTION	
1	THROUGH LINE
4	SIGNAL
3	GND

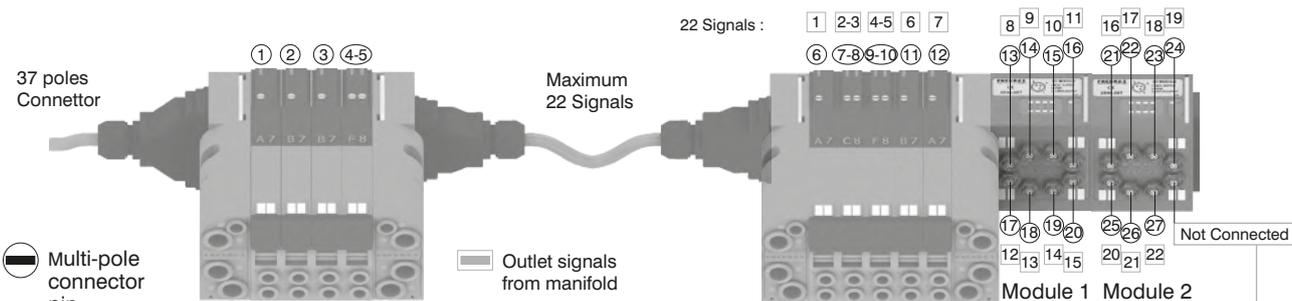


**Attention:** Only one more I/O module can be added.



**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.



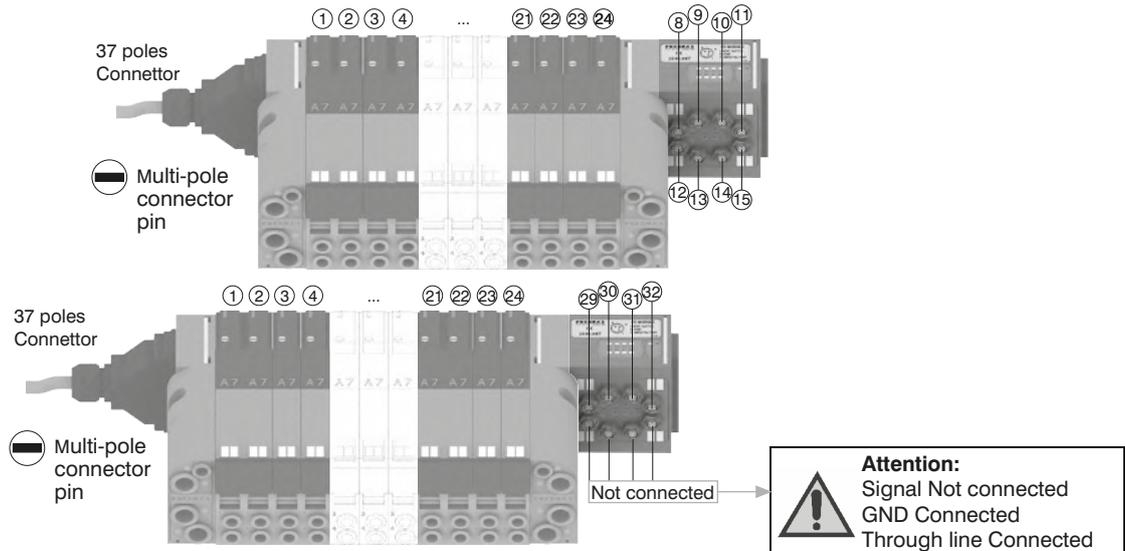
**Attention:** Signal Not connected  
GND Connected  
Through line Connected

**Please note:** this example considers a 37 pin multi-pole connector.  
The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. ②①⑦

1 AIR DISTRIBUTION



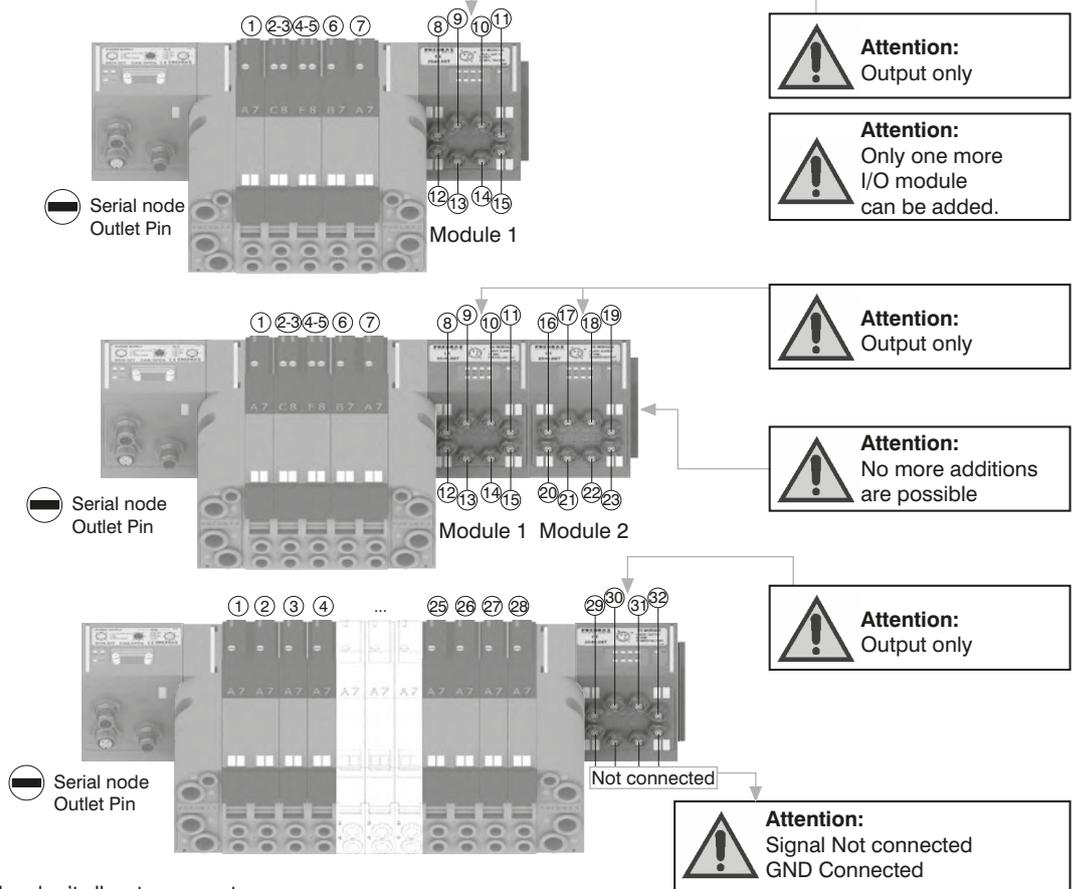
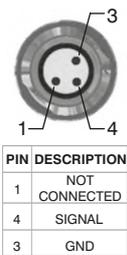
**Please note:** Optyma 32-T solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



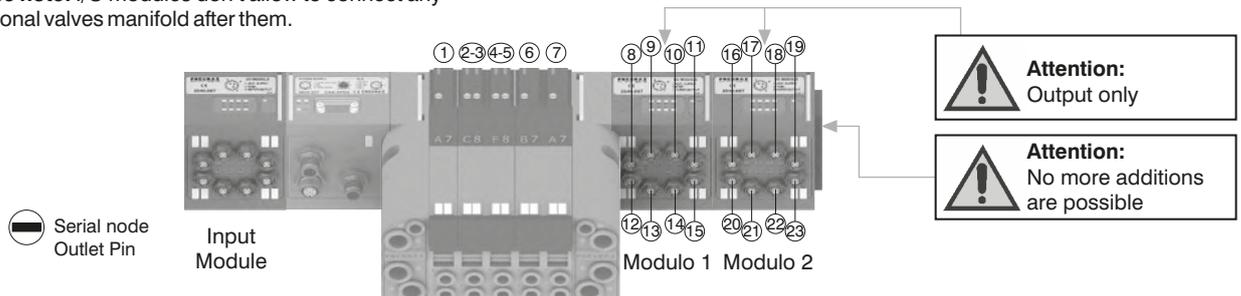
**B) Control via fieldbus:**

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

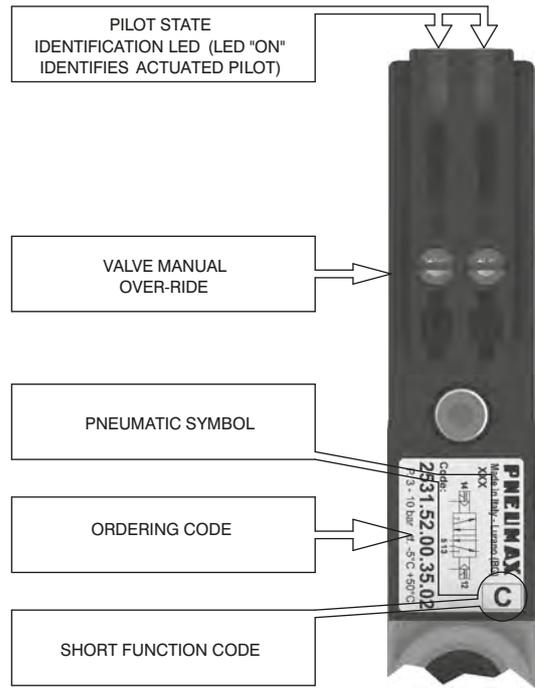
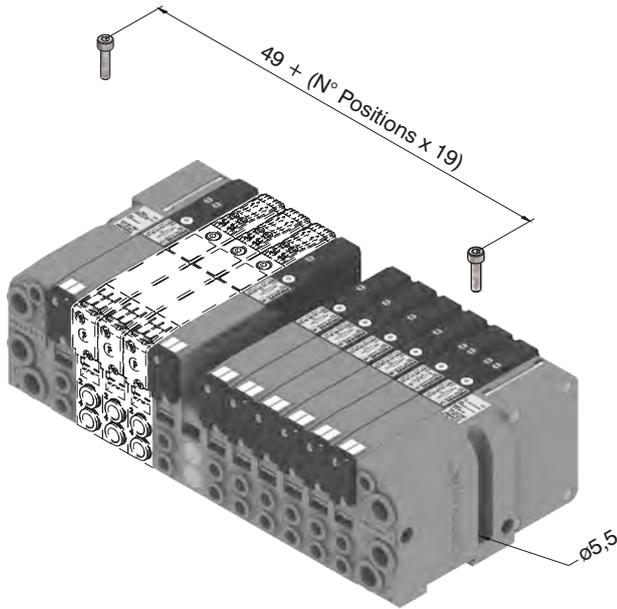
The maximum output current for each output is 100mA. The correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.



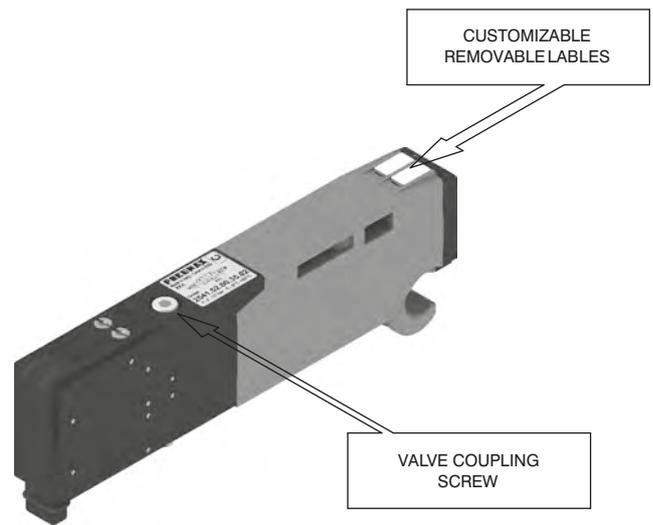
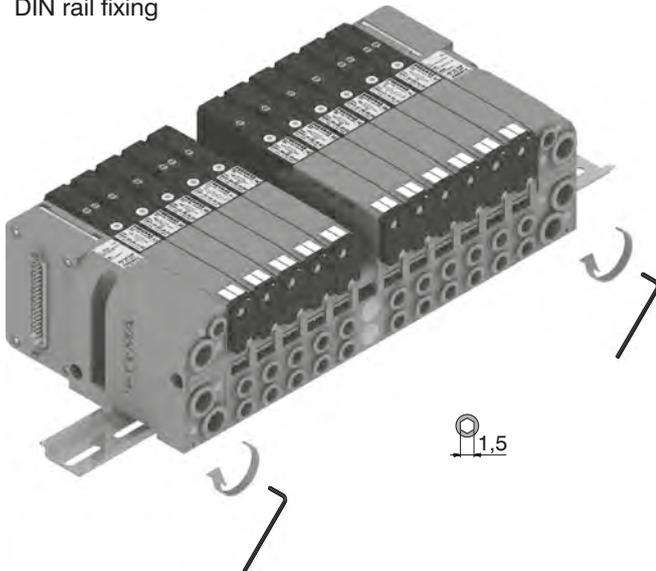
**Please note:** I/O modules don't allow to connect any additional valves manifold after them.



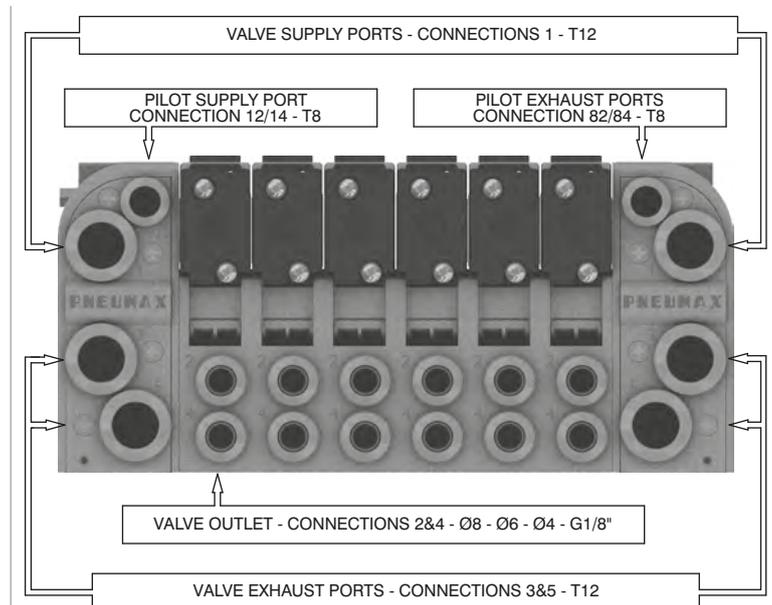
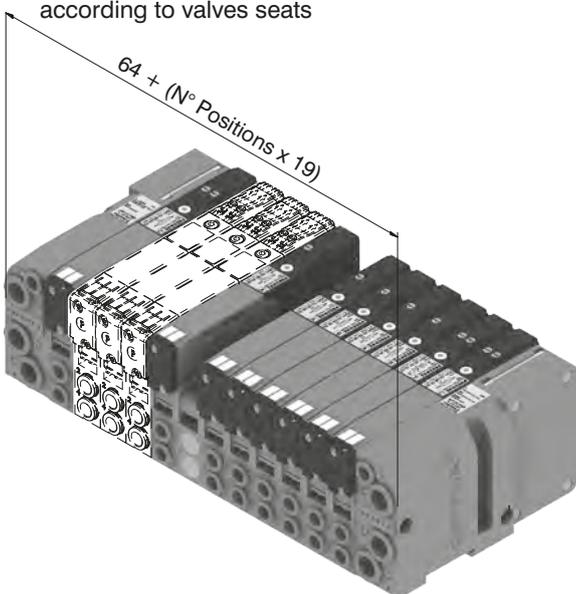
From the top



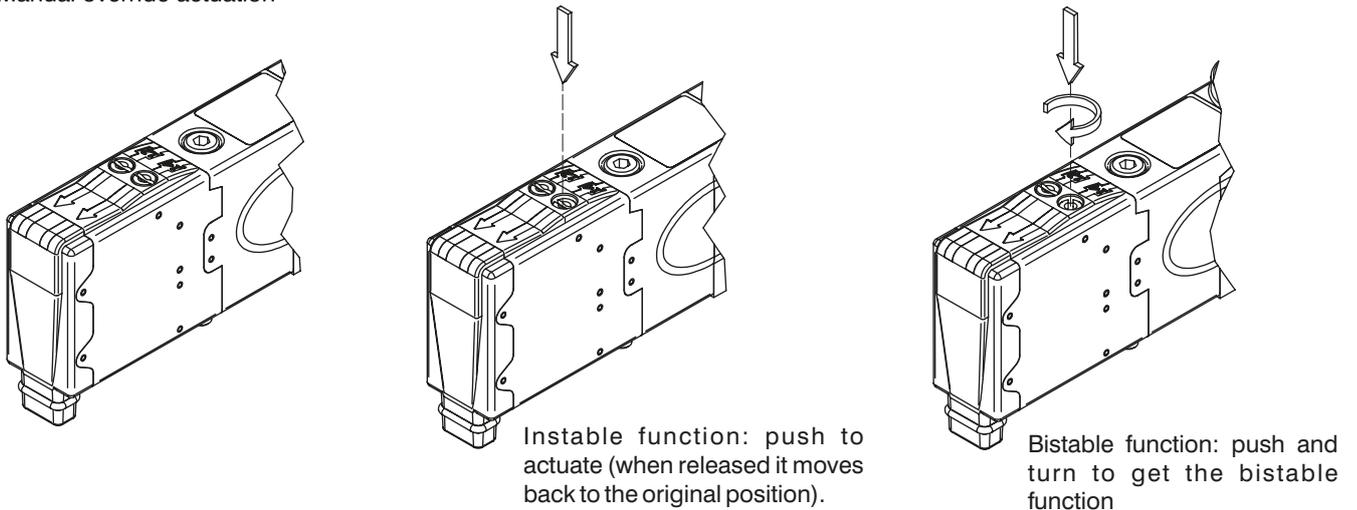
DIN rail fixing



Maximum possible size according to valves seats

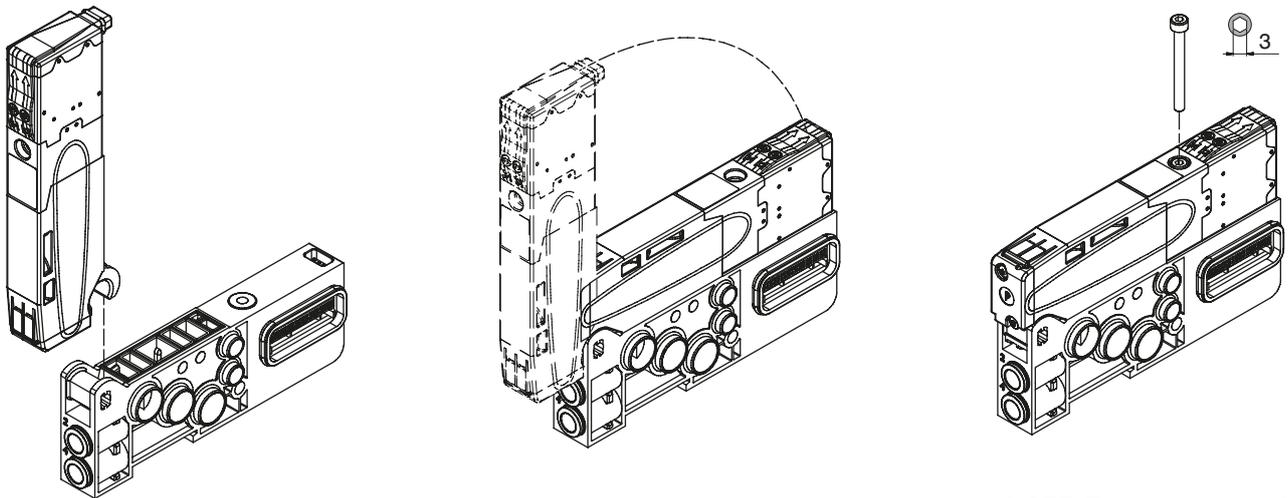


Manual override actuation



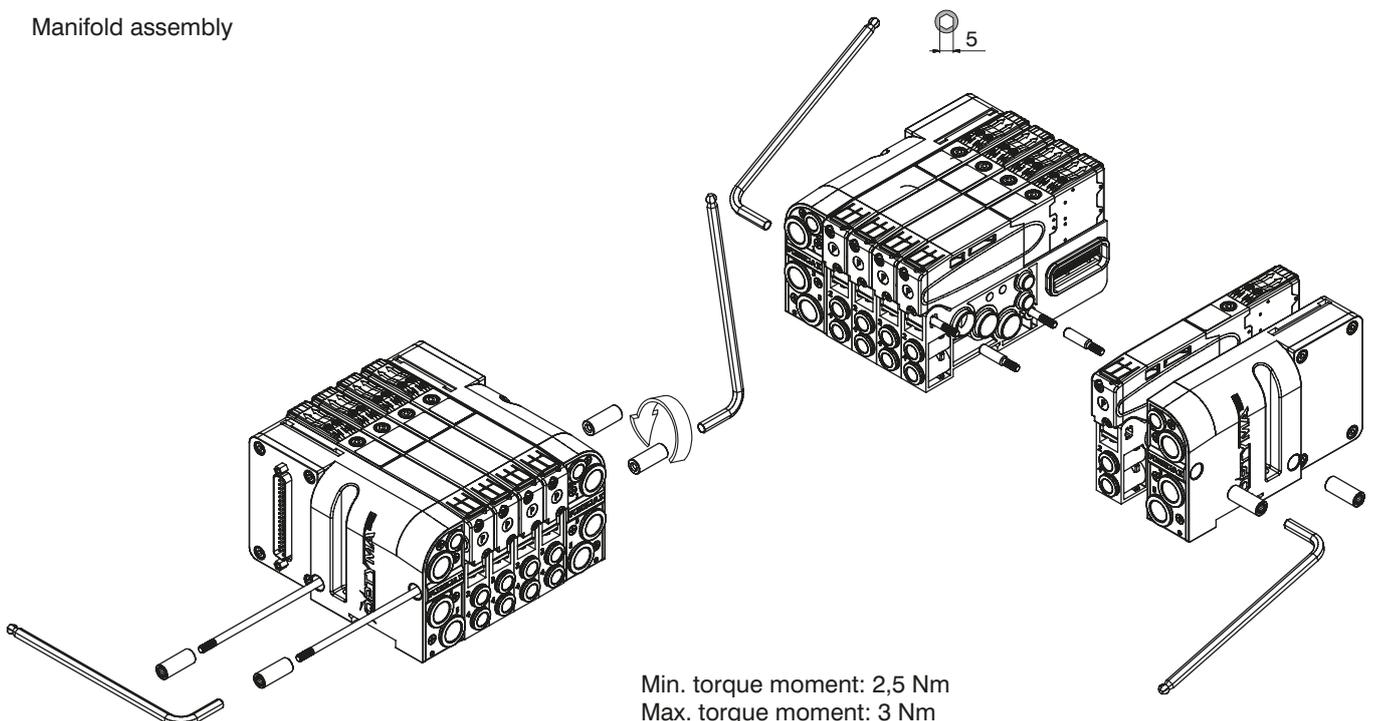
NOTE : It is strongly suggested to replace the original position after using

Valve Installation



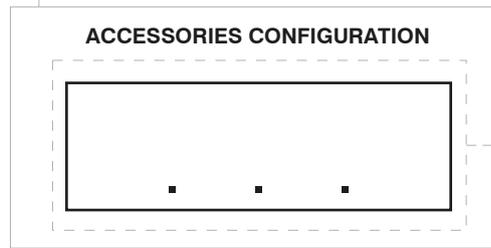
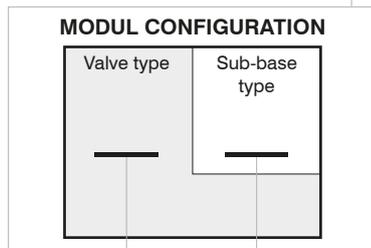
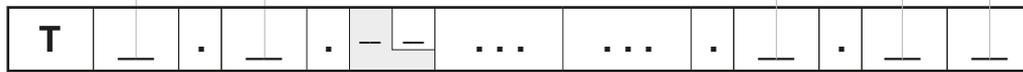
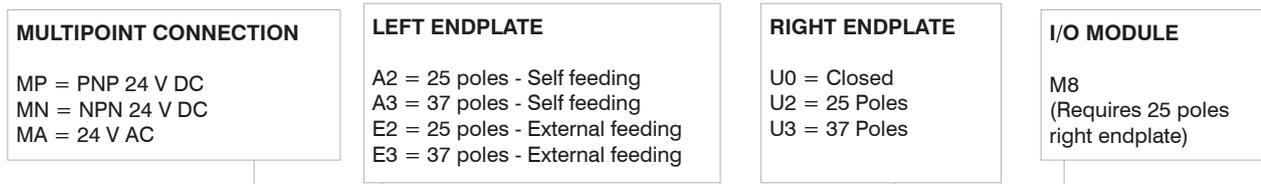
NOTE: Torque moment 1 Nm

Manifold assembly



Manifold Layout configuration

1 AIR DISTRIBUTION



**SHORT CODE FUNCTION / CONNECTION :**

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

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

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

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