

## 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 valves manifold Series 2500 "OPTYMA-F"

### Solenoid - Spring

Coding: 2531.52.00.39.✓

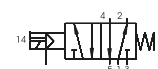
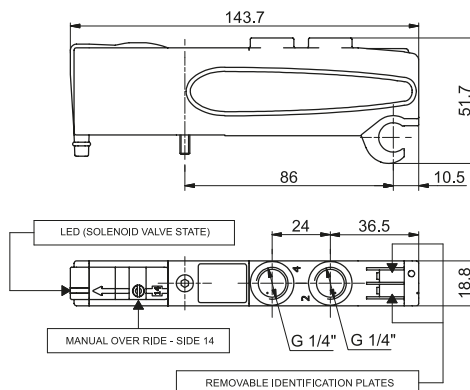
#### Operational characteristics

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

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

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

SHORT FUNCTION CODE "A"  
Weight 123 g



### Solenoid-Differential

Coding: 2531.52.00.36.✓

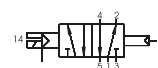
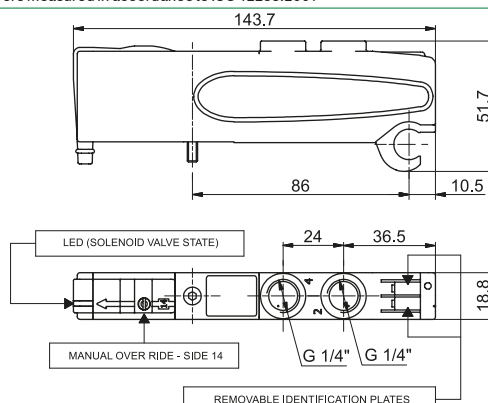
#### Operational characteristics

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

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

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

SHORT FUNCTION CODE "B"  
Weight 120 g



### Solenoid-Solenoid

Coding: 2531.52.00.35.✓

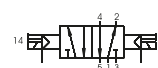
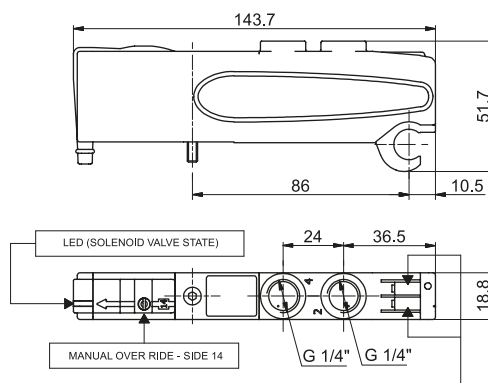
#### Operational characteristics

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

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

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

SHORT FUNCTION CODE "C"  
Weight 128 g



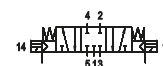
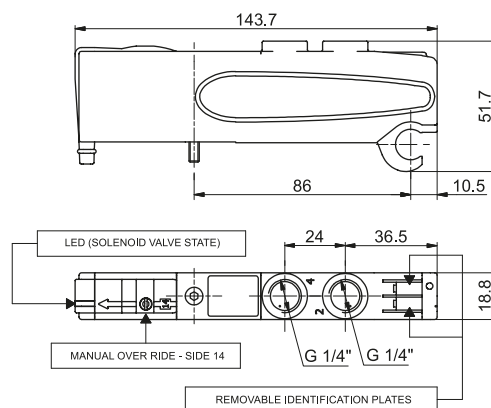
## Solenoid-Solenoid 5/3

Coding: 2531.53.31.35.V

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

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

V	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC
SHORT FUNCTION CODE "E"	
Weight 126 g	



## Solenoid-Solenoid 2x3/2

Coding: 2531.62.F.35.V

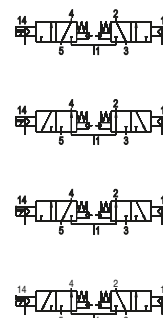
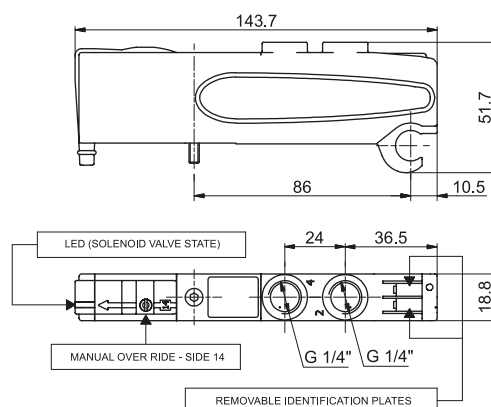
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	$\geq 2,5 + (0,2 \times P_{alim.})$
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	700
Response time according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

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

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

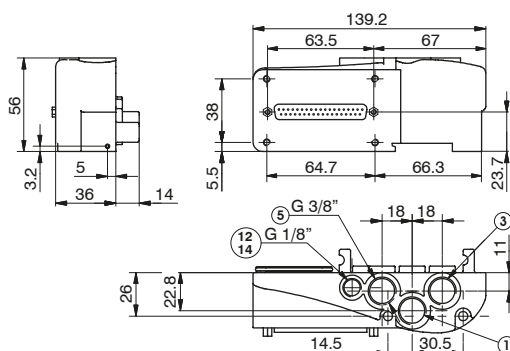
SHORT FUNCTION CODE:  
NC-NC (5/3 Open centres) = "F"  
NO-NO (5/3 Pressured centres) = "G"  
NC-NO = "H"  
NO-NC = "I"

Weight 115,5 g



### Left Endplates

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

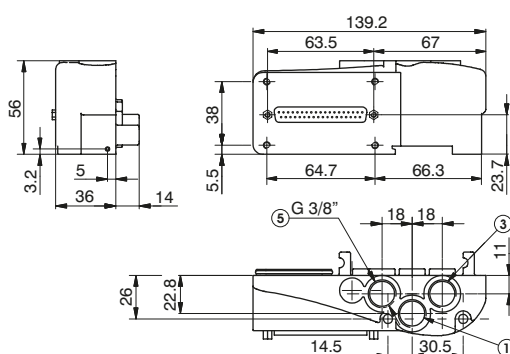


Weight 206 g

2530.02.©

**Coding:** 2530.V.C

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



Weight 206 g

2530.12.©

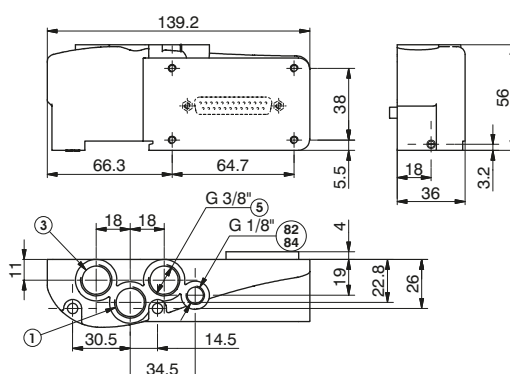
## Right Endplates

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

**Coding:** 2530.03.©

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

Weight 181,5 g



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

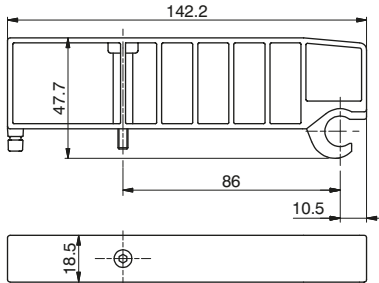


Closing plate

Coding: 2530.00

SHORT FUNCTION CODE "T"  
Weight 53,5 g

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



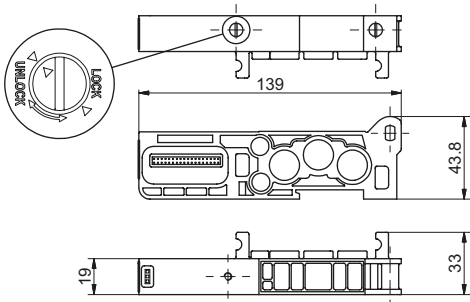
Modular base

Coding: 2530.01

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

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

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

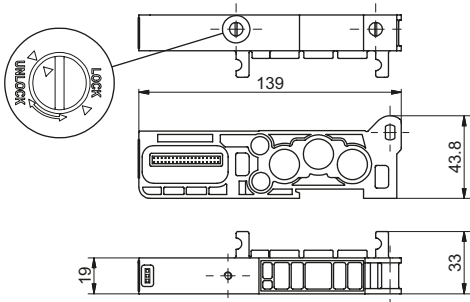


Intermediate Inlet/Exhaust module

Coding: 2530.10

SHORT FUNCTION CODE "W"  
Weight 110 g

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

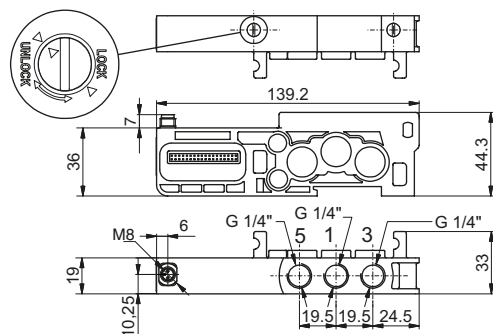


### General :

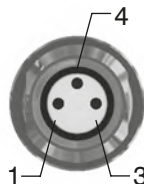
Each Optyma-F manifold lets to manage 32 command signals for the valves. Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve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



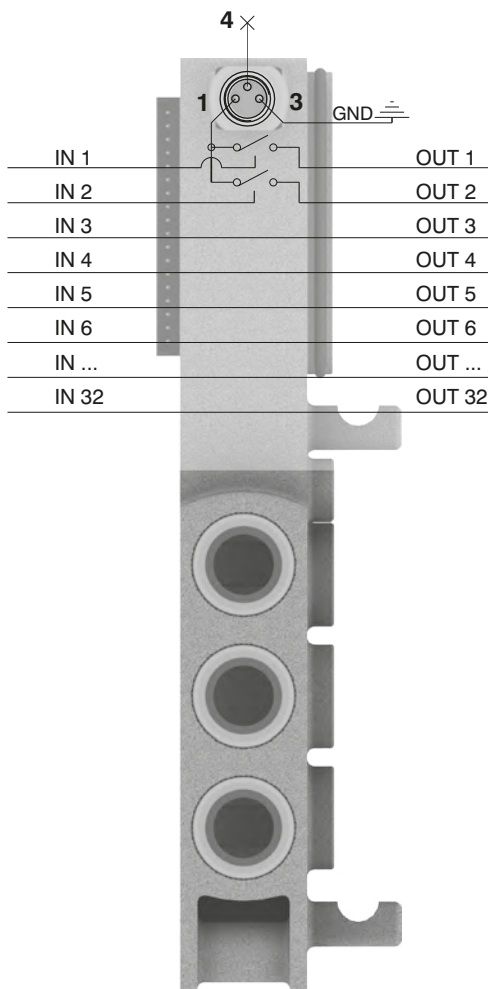
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

### 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.



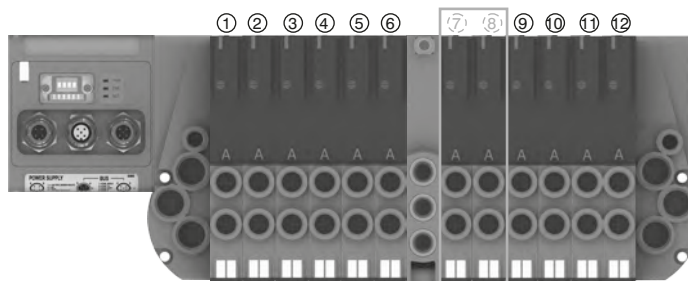
**Please note:** It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

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

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

**Assembly:**

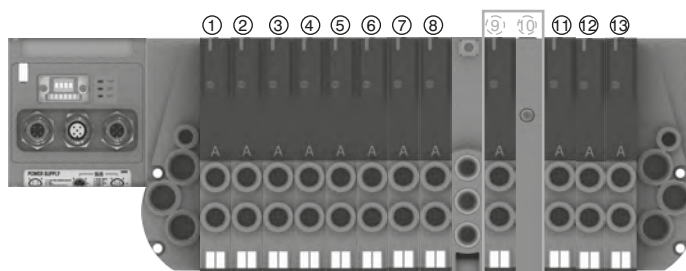
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 2 monostable of these are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

**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.

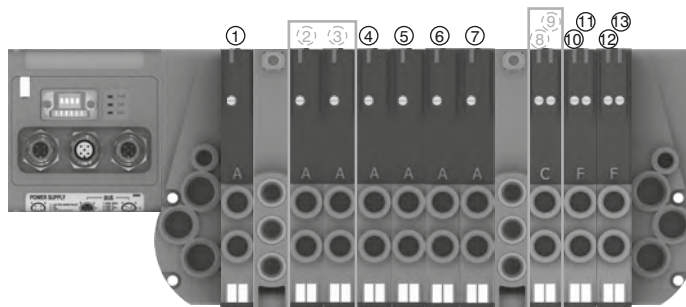
**Assembly:**

- 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.



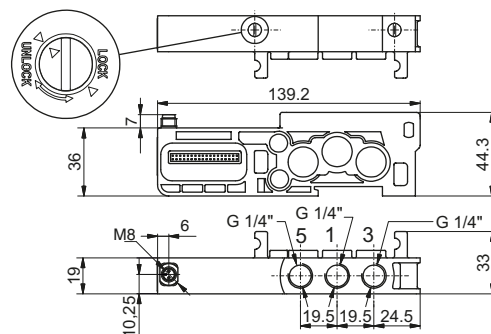


### General :

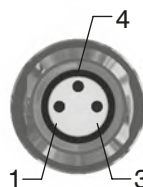
Each Optyma-F manifold lets to manage 32 command signals for the valves. Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve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



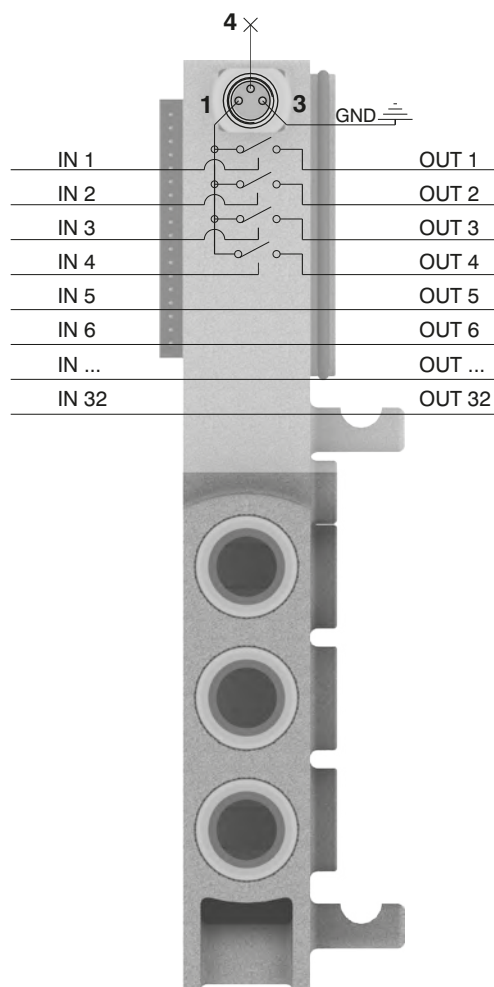
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

### 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.

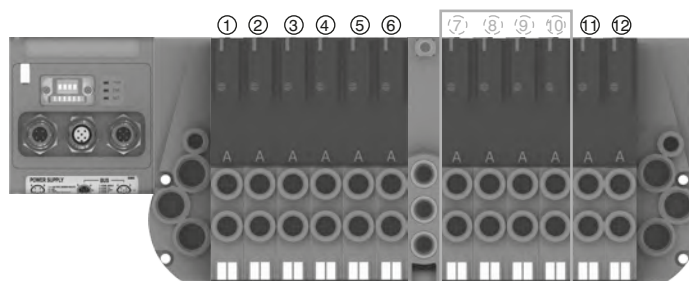


**Usage examples:****EXAMPLE 1:**

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

**Assembly:**

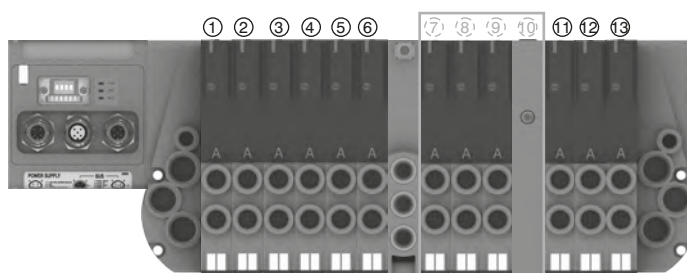
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 4 monostable of these are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

**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.

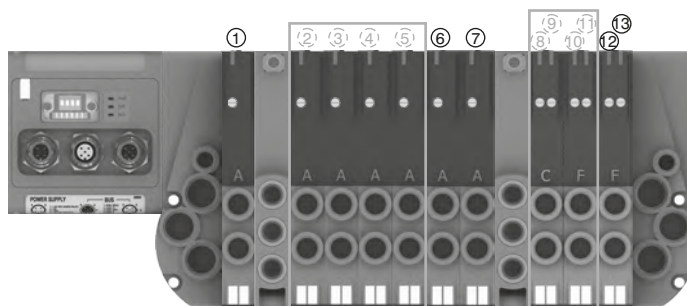
**Assembly:**

- 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.





Polyethylene Silencer Series SPL-P

Coding: SPLP.ⓓ



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

Diaphragm plug

Coding: 2530.17



Cable complete with connector, 25 Poles IP65

Coding: 2300.25.ⓓ.ⓐ



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

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.ⓓ.ⓐ



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

Cable complete with connector, 25 Poles IP65

Coding: 2400.25.ⓓ.25



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

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

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

The management and distribution of the electrical signals between each valve is obtained thanks to an electrical connector which receives the signals from the previous module, uses one, two or none depending on the type, and carries forward to the next module the remaining.

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

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

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

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

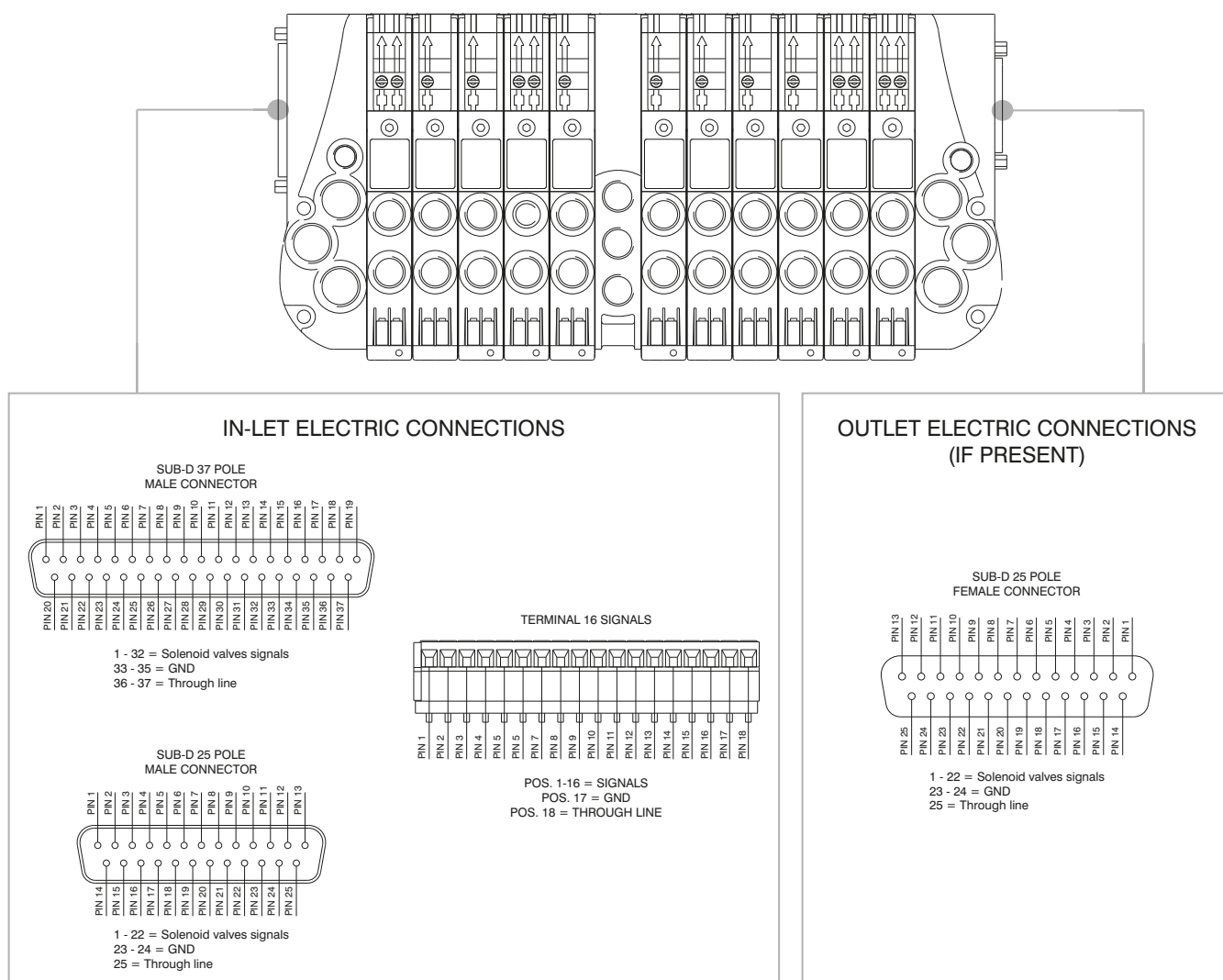
This allows the use of intermediate modules in any position of the manifold.

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

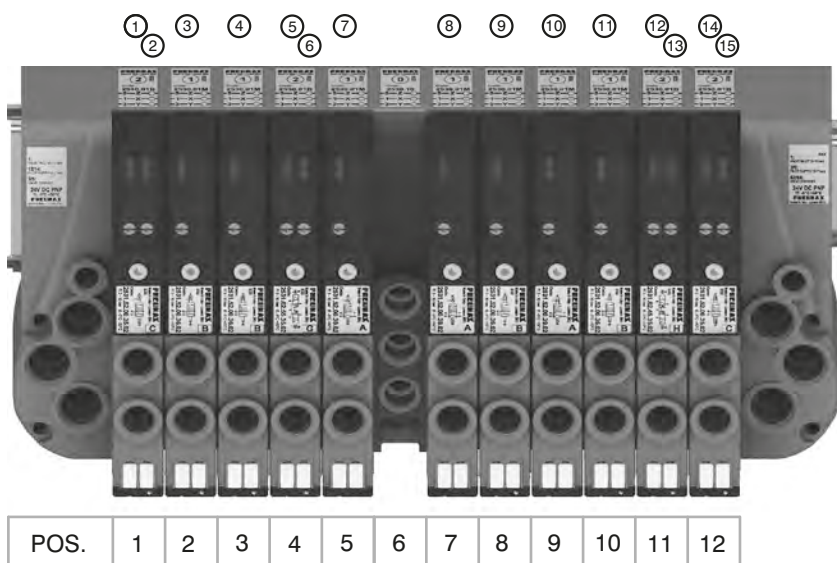
The number of available signals depends of the connector used to the type of the left end plate and by the total signals used along the manifold:

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

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

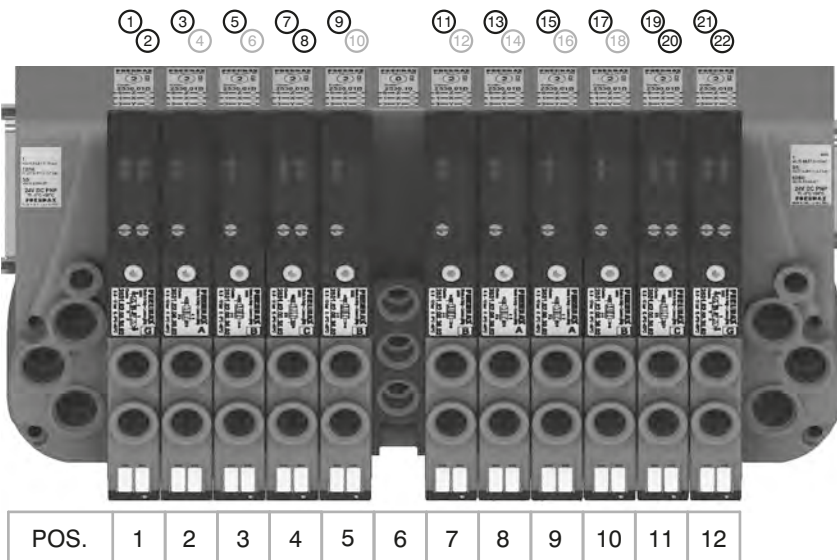


### 37 PIN Connector correspondence for valves assembled on mixed bases



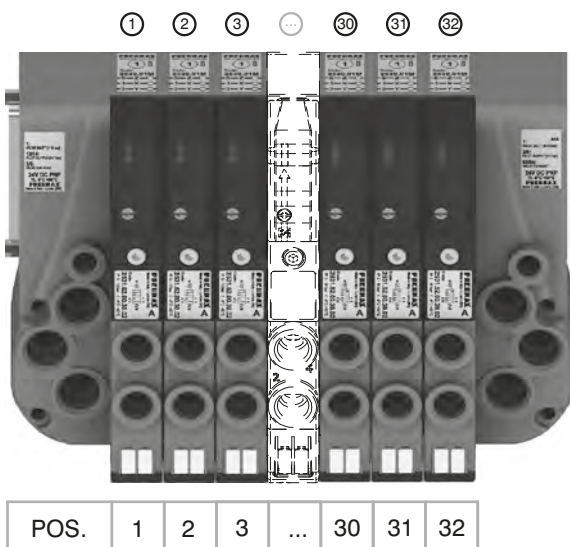
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 14 SV POS.3
- PIN 5 = PILOT 14 SV POS.4
- PIN 6 = PILOT 12 SV POS.4
- PIN 7 = PILOT 14 SV POS.5
- PIN 8 = PILOT 14 SV POS.7
- PIN 9 = PILOT 14 SV POS.8
- PIN 10 = PILOT 14 SV POS.9
- PIN 11 = PILOT 14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

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

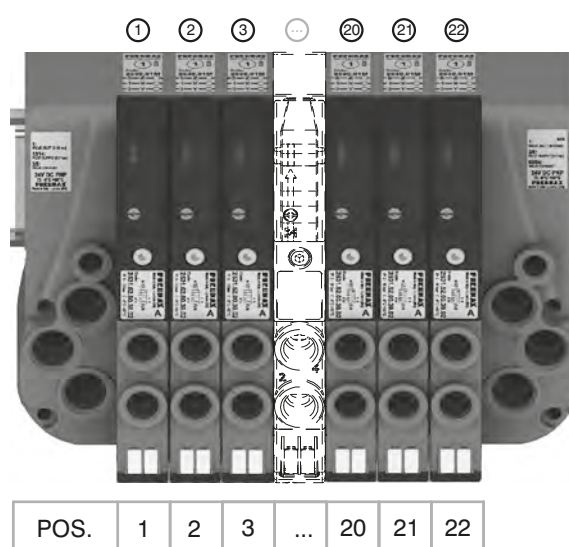


- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = NOT CONNECTED
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = NOT CONNECTED
- PIN 7 = PILOT 14 SV POS.4
- PIN 8 = PILOT 12 SV POS.4
- PIN 9 = PILOT 14 SV POS.5
- PIN 10 = NOT CONNECTED
- PIN 11 = PILOT 14 SV POS.7
- PIN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

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



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





**General :**

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

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

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

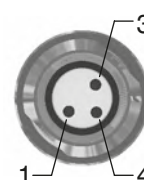
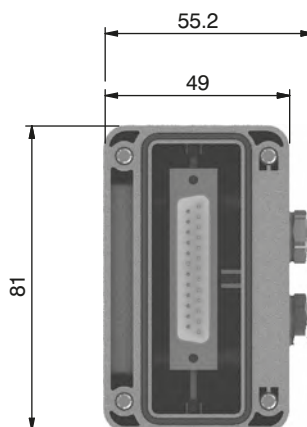
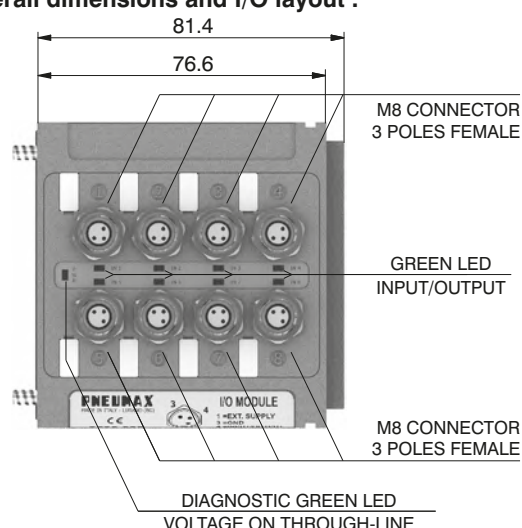
**Ordering code****2530.08F**

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

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

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

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

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

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

**Input features:**

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

I.E :

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

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

**Output features:**

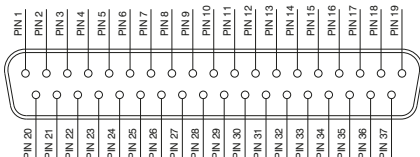
**Attention:** The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

**General characteristics**

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

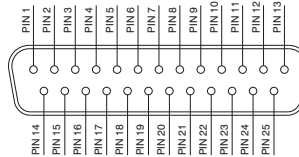
## CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

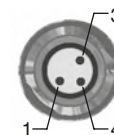


1 - 32 = SIGNALS  
33 - 35 = GND  
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

### Connection modes:

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

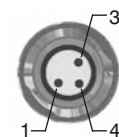
- A) Control via multi-pole connection
- B) Control via fieldbus

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

M8 connector used as Input:



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

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

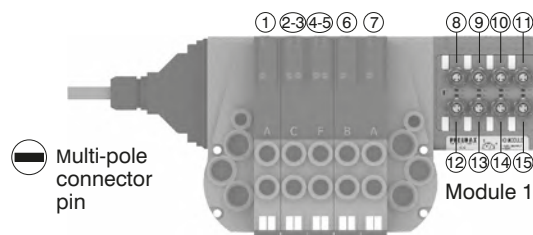


M8 connector used as Output:

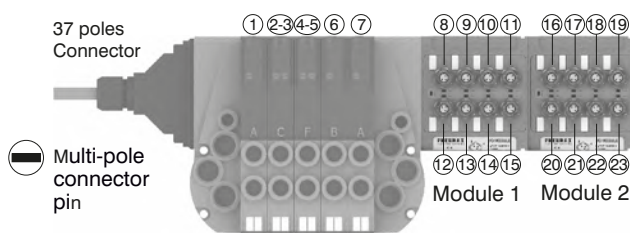
Output voltage will be the same as is applied at the multi-pole connector pin.  
The maximum output current depends upon the power unit used, but we recommend no more than 250mA.



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



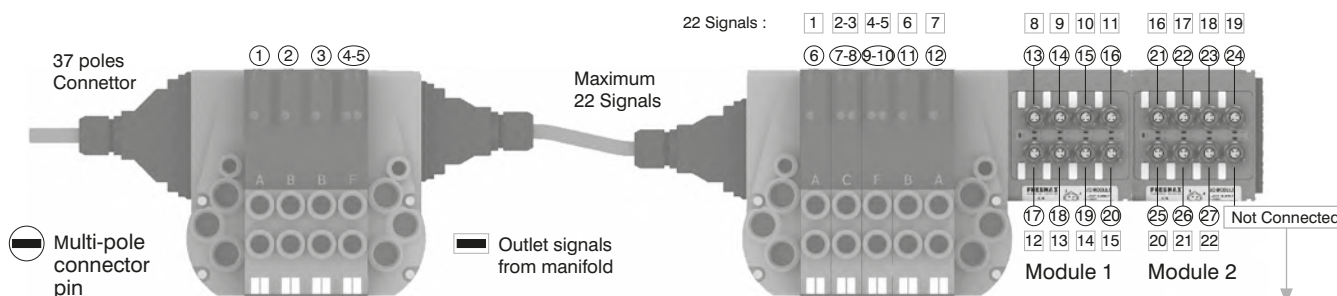
**Attention:**  
Only one more I/O module can be added.



**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.



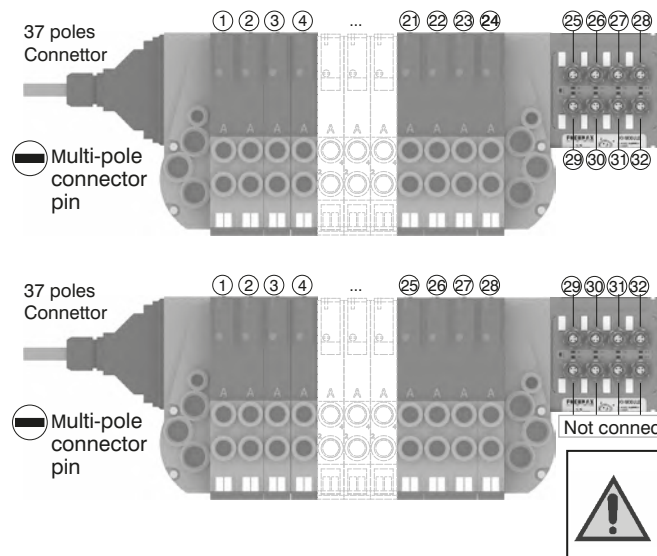
**Please note:** this example considers a 37 pin multi-pole connector.  
The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 17



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



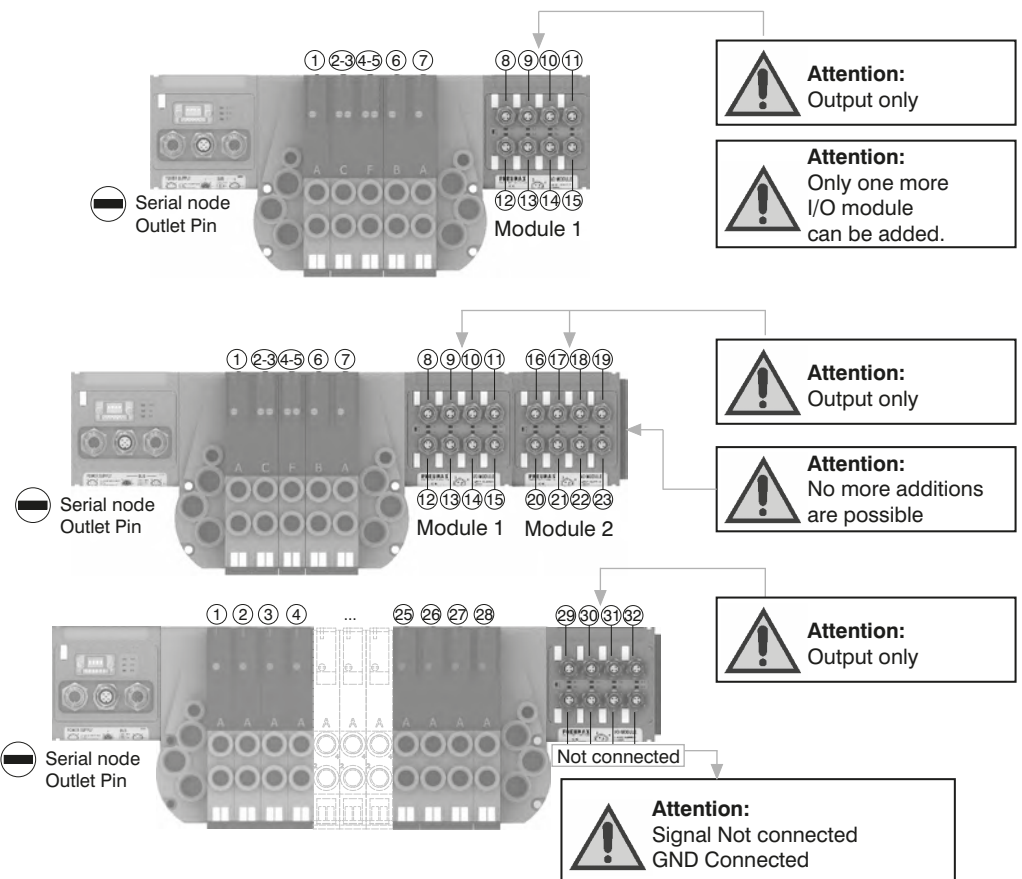
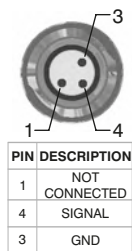
**Please note:** Optyma 32-F solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



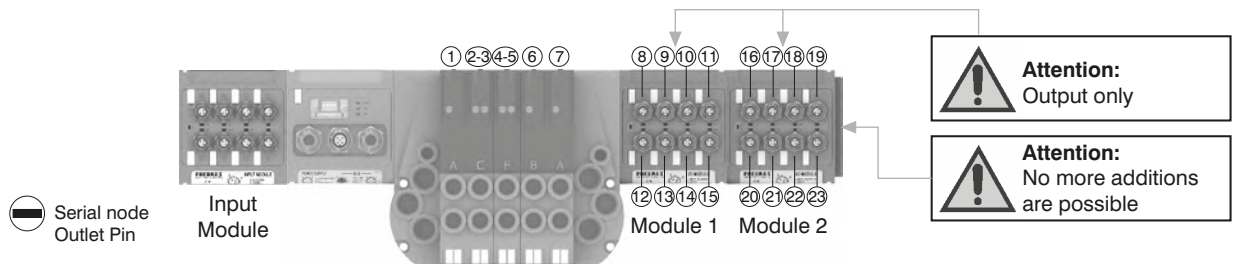
### B) Control via fieldbus:

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

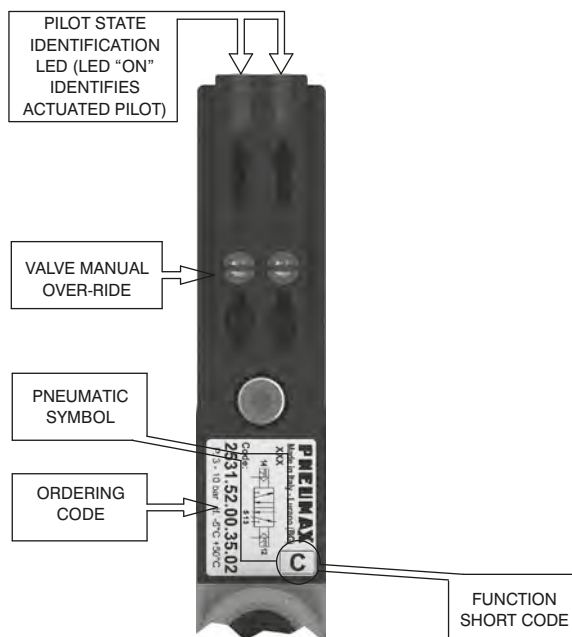
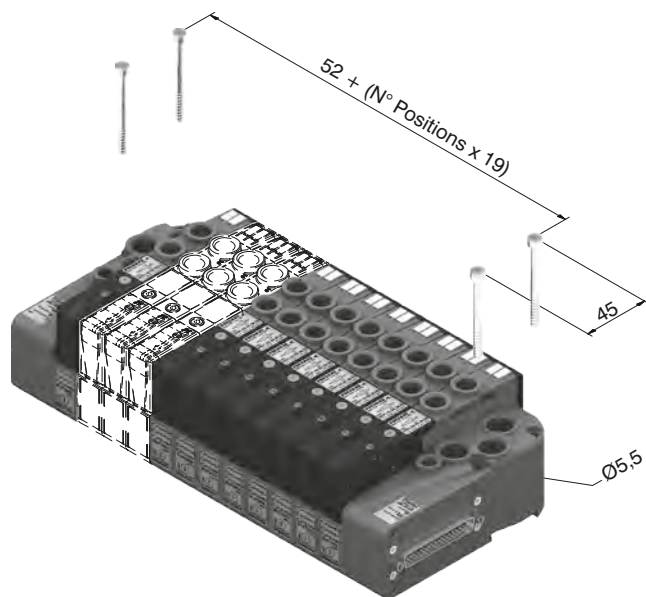
The maximum output current for each output is 100mA. The correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.



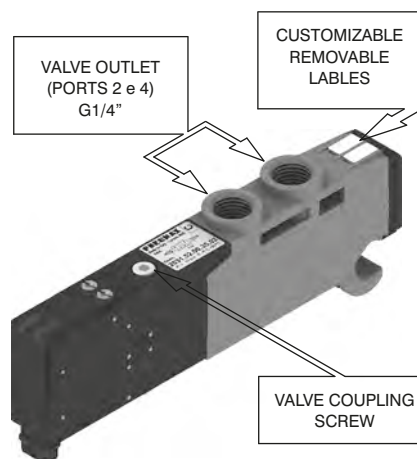
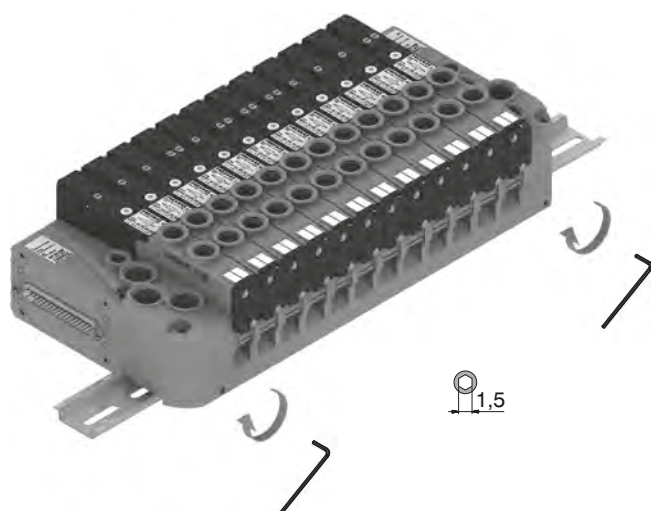
**Please note:** I/O modules don't allow to connect any additional valves manifold after them.



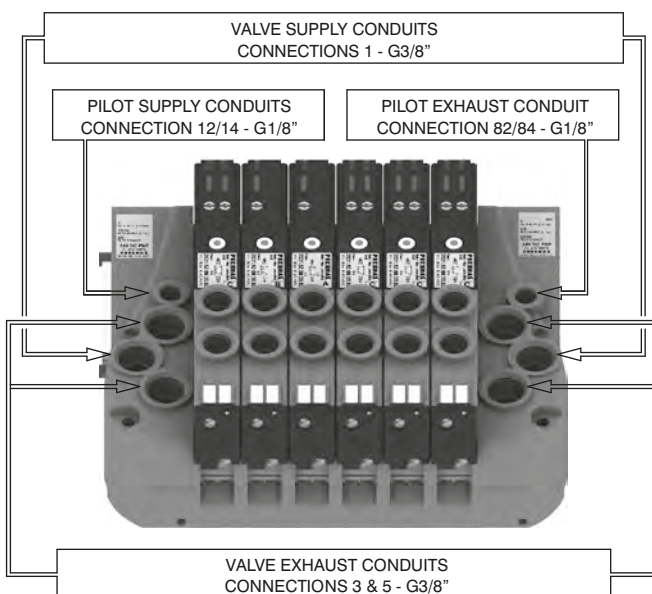
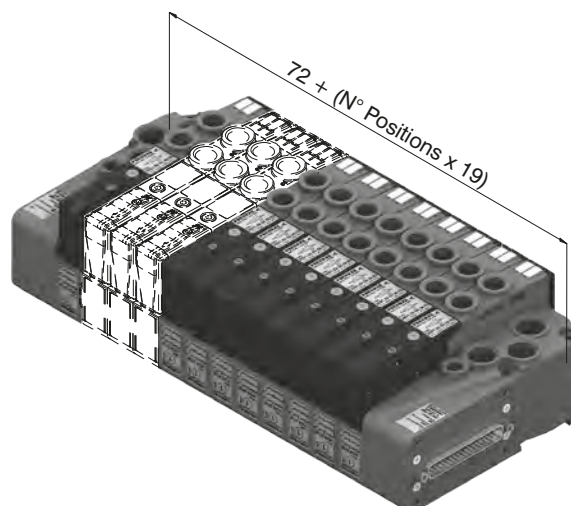
From the top



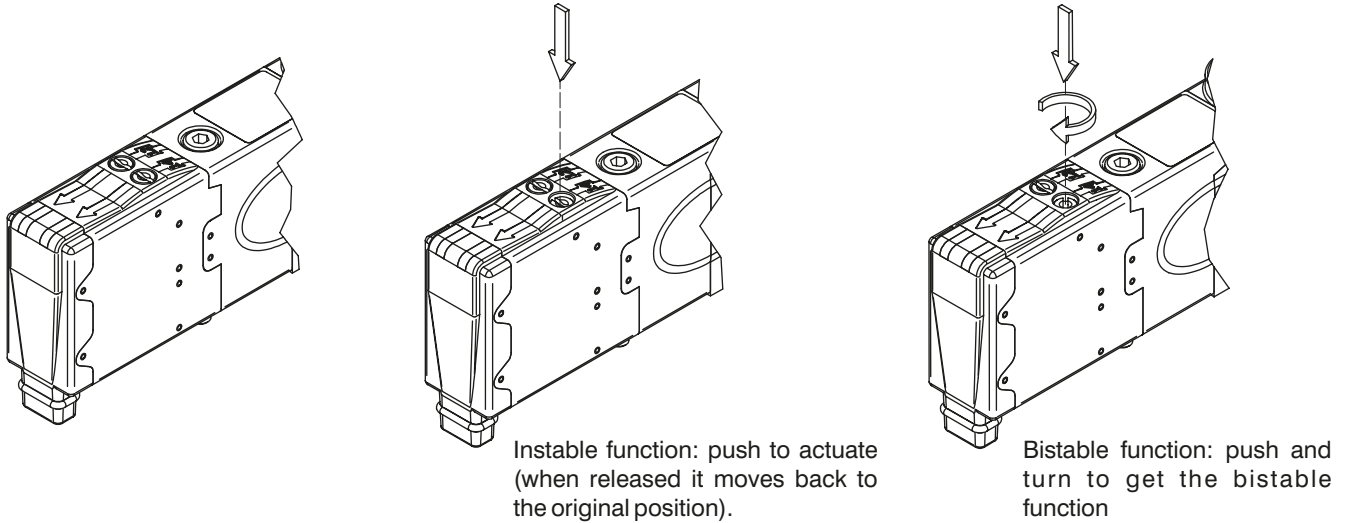
DIN rail fixing



Maximum possible size according to valves seats

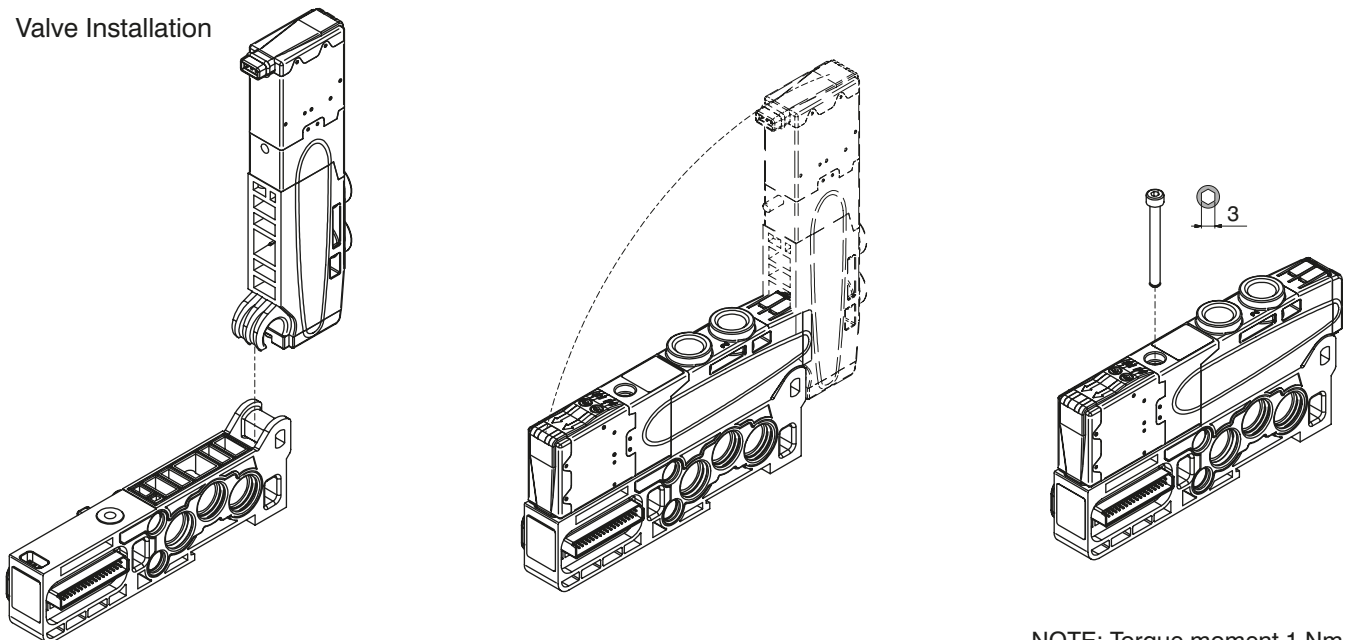


## Manual override actuation



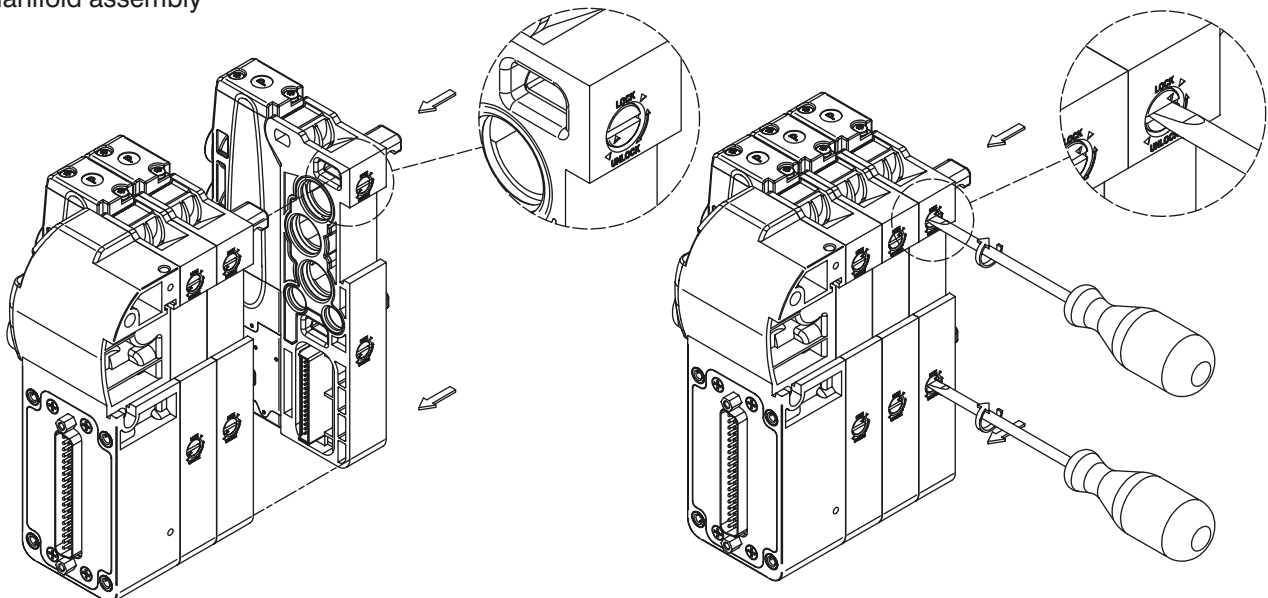
NOTE : It is strongly suggested to replace the original position after using

## Valve Installation



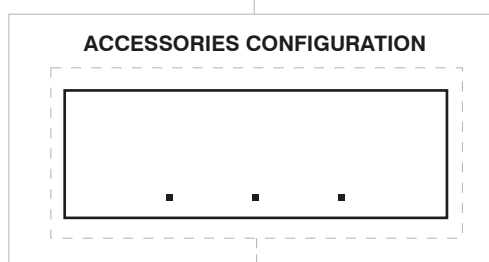
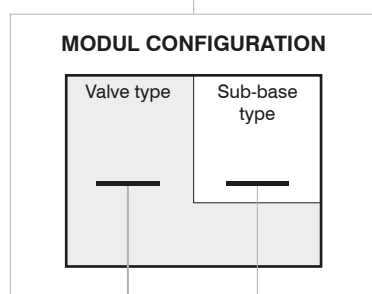
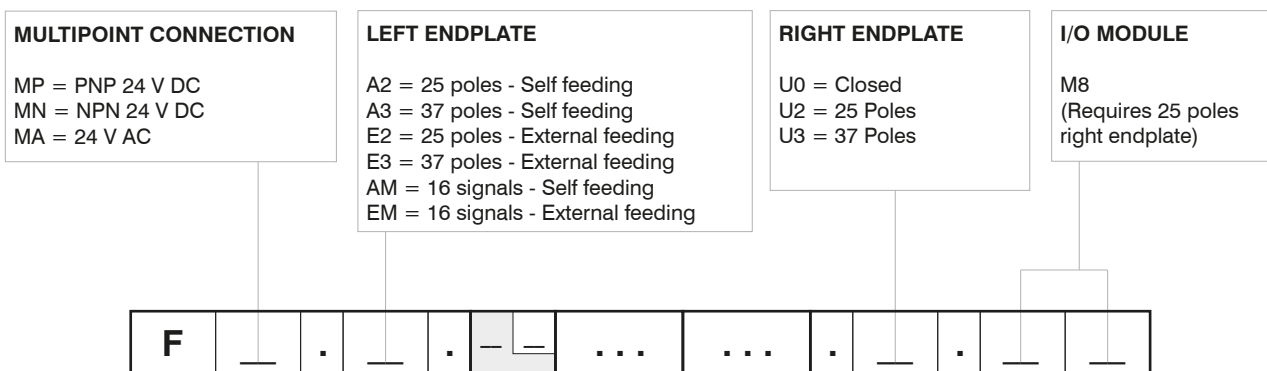
NOTE: Torque moment 1 Nm

## Manifold assembly



## Manifold Layout configuration

1  
AIR DISTRIBUTION



### SHORT CODE FUNCTION / CONNECTION :

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

### NOTE:

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

32 when an input 37 poles endplate is used.

22 when an input 25 poles endplate is used.

The use of monostable valve mounted on a base type 2 ( 2 electrical signals occupied ) causes the loss of one electric signal.

In this case the monostable valve can be replaced by a bistable valve. The diaphragms plugs are used to intercept the conduits 1,3 & 5 of the base. If it is necessary to interrupt more than one conduit in the same time then put in line the letters which identifies the position (for example : regarding the 3 & 5 conduits, put the Y & Z letters).

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

### ACCESSORIES

U2 = 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

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

	<p><b>Well-tried component</b></p>	<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>
<p><b>B<sub>10d</sub></b></p>	<p>50.000.000</p>	