# OPTYMA32-S

## General characteristics

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

- Flow rate: up to 550[Nl/min], using the modular base with Ø8 quick fitting tube
- Modular base available with Ø4, Ø6, Ø8 quick fitting tube
- The solenoid pilots are low consumption and fitted on the same side of the valve
- Mono and bi-stable valves have the same dimension
- Easy and fast assembly on the sub base thanks to the “one screw” mounting solution
- Possibility to replace a valve without the need of disconnecting the pneumatic pipes
- Electrical and pneumatic connections positioned on the same side
- Possibility to operate with different pressures and vacuum
- Quick coupling connections for consumption, exhaust and air supply all on the same side
- Management of 32electrical signals,(16 bi-stable or any combination off mono and bi-stable vales up to max 32 signals).
- The electrical connection is achieved thanks to a 37 pole connector, as an alternative it is possible to use a 25 pole connector which can handle a maximum of 22 electrical signals.
- The protection grade is IP65 directly integrated in the manifold components.
- Manifolds can be directly integrated with the most common field bus systems.

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

## Main characteristics

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

## Construction characteristics

| | |
|---|---|
| Body | Technopolymer |
| Operators | Technopolymer |
| Spools | AISI 303 stainless steel |
| Spacers | Technopolymer |
| Seals | NBR |
| Piston seals | NBR |
| Springs | AISI 302 stainless steel |
| Pistons | Technopolymer |

## Functions

| |
|---|
| EV 5/2 MONOST. SOL. SPRING |
| EV 5/2 MONOST. SOL. DIFFERENTIAL |
| EV 5/2 BISTABLE SOL. SOL. |
| EV 5/3 CC SOL. SOL. |
| EV 2x3/2 NC-NC (= 5/3 OC) SOL. SOL. |
| EV 2x3/2 NO-NO (= 5/3 PC) SOL. SOL. |
| EV 2x3/2 NC-NO SOL. SOL. |
| EV 2x3/2 NO-NC SOL. SOL. |

## Technical characteristics

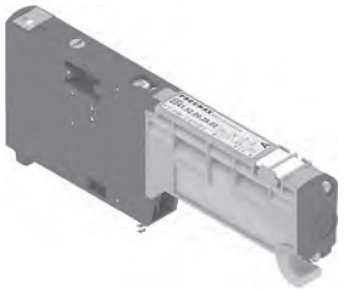
| | |
|---|---|
| Voltage | 24 VDC ±10% PNP (NPN and AC on request) |
| Pilot consumption | 0,5 Watt |
| Valve working pressure [1] | from vacuum to 10 bar max. |
| Pilot working pressure [12-14] | from 2,5 to 7 bar max. |
| Operating temperature | from -5°C to +50°C |
| Protection degree | IP65 |
| Life (standard operating conditions) | 50.000.000 |
| Fluid | Filtered and lubricated air or not<br>(if lubricated air, the lubrication must be continuous) |

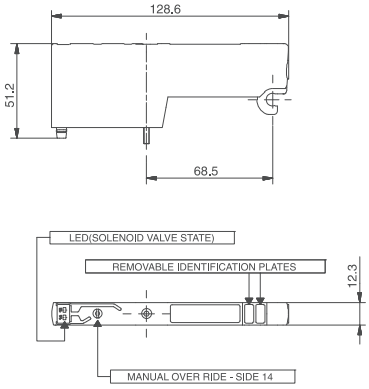
## Solenoid - Spring

Ordering code

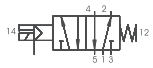
**2241.52.00.39.Ⓥ**

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






Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2244.01Ⓥ tube Ø4= 140
Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2246.01Ⓥ tube Ø6= 400
*Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2248.01Ⓥ tube Ø8= 550




SHORT FUNCTION CODE "A"
"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."

**Operational characteristic**

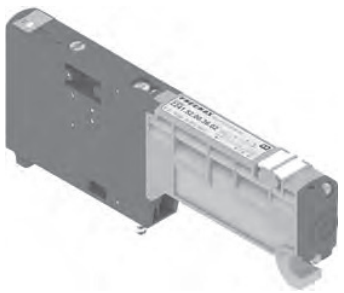
| Fluid | *Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 550 | 12 | 20 | From vacuum to 10 | 2,5 - 7 | -5° / +50° | 67 |

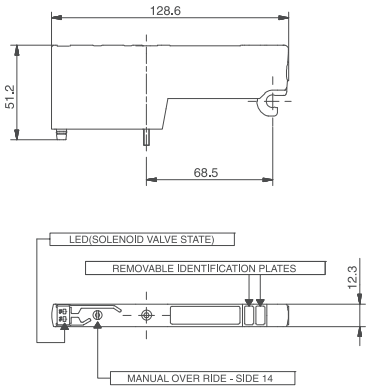
## Solenoid - Differential

Ordering code

**2241.52.00.36.Ⓥ**

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






Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2244.01Ⓥ tube Ø4= 140
Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2246.01Ⓥ tube Ø6= 400
*Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2248.01Ⓥ tube Ø8= 550


SHORT FUNCTION CODE "B"
"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."

**Operational characteristic**

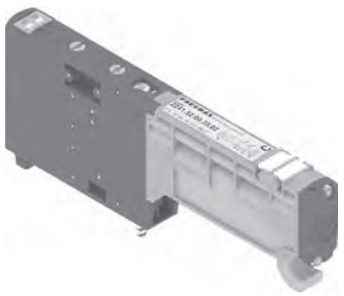
| Fluid | *Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 550 | 20 | 25 | From vacuum to 10 | 2,5 - 7 | -5° / +50° | 67 |

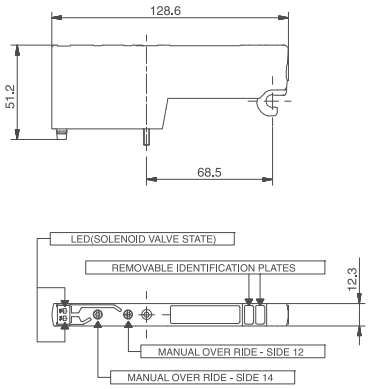
## Solenoid - Solenoid

Ordering code

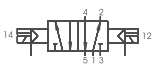
**2241.52.00.35.Ⓥ**

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






Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2244.01Ⓥ tube Ø4= 140
Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2246.01Ⓥ tube Ø6= 400
*Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2248.01Ⓥ tube Ø8= 550




SHORT FUNCTION CODE "C"
"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."

**Operational characteristic**

| Fluid | *Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 550 | 10 | 10 | From vacuum to 10 | 2,5 - 7 | -5° / +50° | 67 |

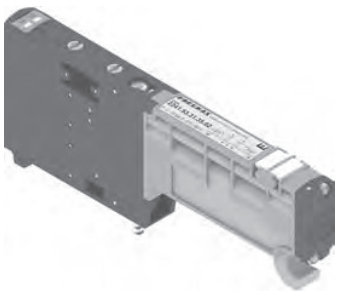
2

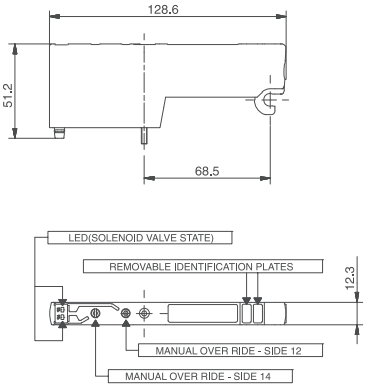
## Solenoid - Solenoid - (5/3 Closed centres)

Ordering code

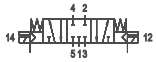
**2241.53.31.35.Ⓥ**

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






Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2244.01Ⓥ tube Ø4= 140
Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2246.01Ⓥ tube Ø6= 300
*Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2248.01Ⓥ tube Ø8= 400




SHORT FUNCTION CODE "E"
"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."

**Operational characteristic**

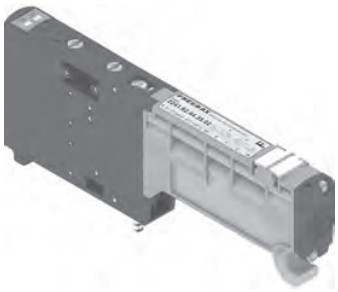
| Fluid | *Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 400 | 15 | 20 | From vacuum to 10 | 2,5 - 7 | -5° / +50° | 83 |

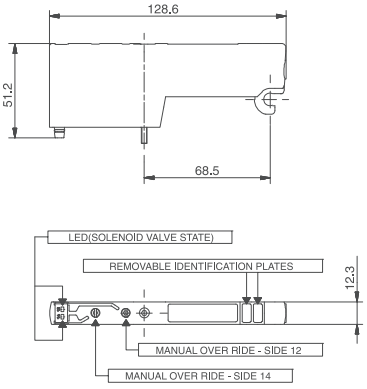
## Solenoid - Solenoid 2x3/2

Ordering code

**2241.62.Ⓕ.35.Ⓥ**

| | |
|---|---|
| Ⓕ | FUNCTION |
| | 44 = NC - NC (5/3 Open centres) |
| | 55 = NO - NO (5/3 Pressured centres) |
| Ⓥ | VOLTAGE |
| | 02 = 24 VDC PNP |
| | 12 = 24 VDC NPN |
| | 05 = 24 VAC |






Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2244.01Ⓥ tube Ø4= 140
Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2246.01Ⓥ tube Ø6= 360
*Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2248.01Ⓥ tube Ø8= 420


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

**Operational characteristic** "Example: If inlet pressure is set at 5bar then pilot pressure must be at least Pp=3+0.2*5)= 4bar"

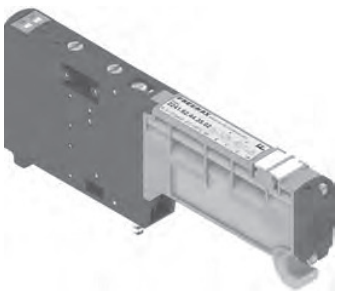
| Fluid | *Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 420 | 15 | 25 | From vacuum to 10 | ≥3+(0,2xP.alim.) | -5° / +50° | 75 |

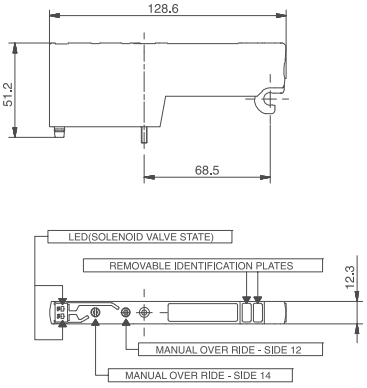
## Solenoid - Solenoid 2x3/2

Ordering code

**2241.62.Ⓕ.35.Ⓥ**

| | |
|---|---|
| Ⓕ | FUNCTION |
| | 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 |






Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2244.01Ⓥ tube Ø4= 140
Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2246.01Ⓥ tube Ø6= 360
*Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2248.01Ⓥ tube Ø8= 420


SHORT FUNCTION CODE:
NC-NA="H"
NA-NC="I"
"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."

**Operational characteristic** "Example: If inlet pressure is set at 5bar then pilot pressure must be at least Pp=3+0.2*5)= 4bar"

| Fluid | *Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 420 | 15 | 25 | From vacuum to 10 | ≥3+(0,2xP.alim.) | -5° / +50° | 75 |

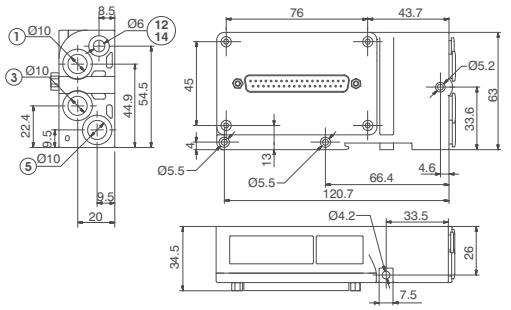
## Left Endplates - External pilot base

Ordering code

**2240.02.C**

| C | CONNECTIONS |
|---|---|
| | 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 |

12/14 separated from port 1




| Operational characteristic | Fluid | Pressure range (bar) | Pilot working pressure (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|
| | Filtered air, with or without lubrication | From vacuum to 10 | 2,5 - 7 | -5 - +50 | 174 |

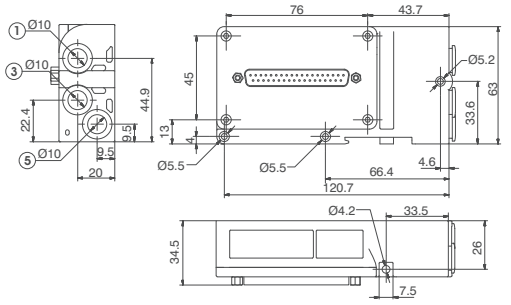
## Left Endplates - Self-feeding base

Ordering code

**2240.12.C**

| C | CONNECTIONS |
|---|---|
| | 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 |

12/14 connected to port 1



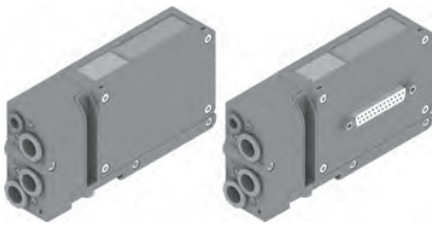

| Operational characteristic | Fluid | Pressure range and pilot working pressure (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|
| | Filtered air, with or without lubrication | 2,5 - 7 | -5 - +50 | 174 |

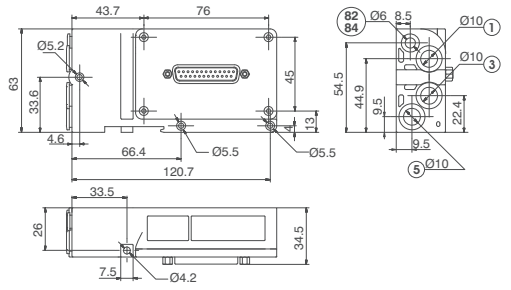
## Right Endplates

Ordering code

**2240.03.C**

| C | CONNECTIONS |
|---|---|
| | 00 = Exhaust electrical connection closed |
| | 25P = Connectors 25 poles PNP |






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

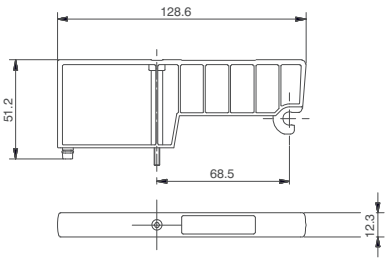
| Operational characteristic | Fluid | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|
| | Filtered air, with or without lubrication | From vacuum to 10 | -5 - +50 | 174 |

## Closing plate

Ordering code

**2240.00**

SHORT FUNCTION CODE "T"



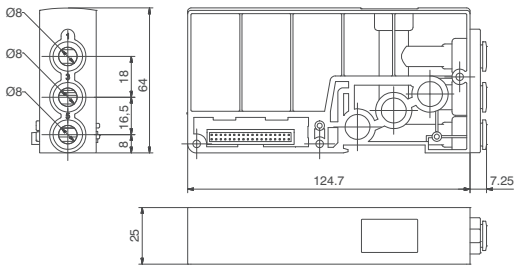

| Operational characteristic | Fluid | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|
| | Filtered air, with or without lubrication | From vacuum to 10 | -5 - +50 | 30 |

2

2

## Intermediate Inlet/Exhaust module

| Ordering code |
|---|
| **2240.10** |



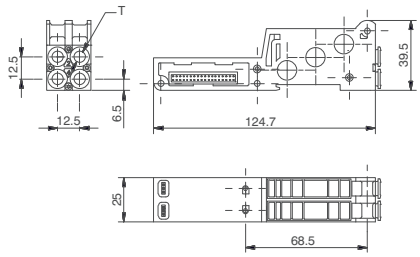

SHORT FUNCTION CODE "W"

| Operational characteristic | Fluid | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|
| | Filtered air, with or without lubrication | From vacuum to 10 | -5 - +50 | 105 |

## Modular base (2 places) Quick fitting tube Ø4

| Ordering code |
|---|
| **2244.FV** |

| | |
|---|---|
| | FUNCTION |
| F | 01=Opened port |
| F | 06=Closed port |
| F | 07=Port 1 closed |
| F | 08=Ports 3 and 5 closed |
| | VERSION |
| V | M=Monostable |
| V | B=Bistable |




SHORT FUNCTION CODE "3" (Monostable) Opened ports
SHORT FUNCTION CODE "36" (Monostable) Separated ports
SHORT FUNCTION CODE "37" (Monostable) port 1 separated
SHORT FUNCTION CODE "38" (Monostable) Ports 3-5 separated

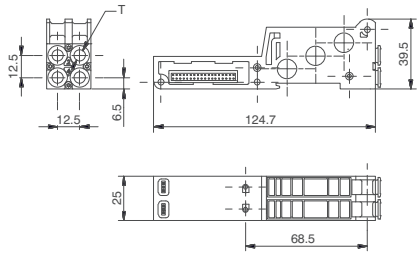
SHORT FUNCTION CODE "4" (Bistable) Opened ports
SHORT FUNCTION CODE "46" (Bistable) Separated ports
SHORT FUNCTION CODE "47" (Bistable) Port 1 separated
SHORT FUNCTION CODE "48" (Bistable) Ports 3-5 separated

| Operational characteristic | Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|
| | Filtered air, with or without lubrication | 140 | From vacuum to 10 | -5 - +50 | 75 |

## Modular base (2 places) Quick fitting tube Ø6

| Ordering code |
|---|
| **2246.FV** |

| | |
|---|---|
| | FUNCTION |
| F | 01=Opened port |
| F | 06=Closed port |
| F | 07=Port 1 closed |
| F | 08=Ports 3 and 5 closed |
| | VERSION |
| V | M=Monostable |
| V | B=Bistable |




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

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

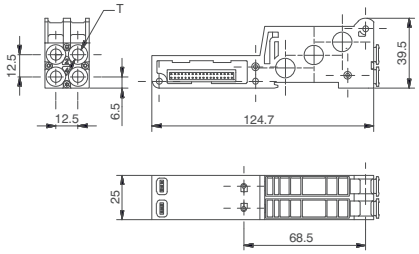
| Operational characteristic | Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|
| | Filtered air, with or without lubrication | 400 | From vacuum to 10 | -5 - +50 | 75 |

## Modular base (2 places) Quick fitting tube Ø8

Ordering code

**2248.F.V**

| | |
|---|---|
| | FUNCTION |
| F | 01=Opened port |
| | 06=Ports |
| | 07=Port 1 |
| | 08=Ports 3 e 5 |
| | VERSION |
| V | M=Monostable |
| | B=Bistable |




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

SHORT FUNCTION CODE "8" (Bistable) Opened ports
SHORT FUNCTION CODE "86" (Bistable) Sepatared ports
SHORT FUNCTION CODE "87" (Bistable) Port 1 separated
SHORT FUNCTION CODE "88" (Bistable) Ports 3-5 separated

| Operational characteristic | Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Pressure range (bar) | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|
| | Filtered air, with or without lubrication | 550 | From vacuum to 10 | -5 - +50 | 75 |

## Cable complete with connector, 25 Poles IP65

Ordering code

**2300.25.L.P**

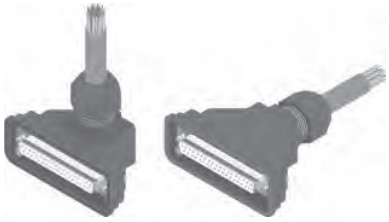
| | |
|---|---|
| | CABLE LENGTH |
| L | 03 = 3 meters |
| | 05 = 5 meters |
| | 10 = 10 meters |
| | CONNECTORS |
| P | 10 = In line |
| | 90 = 90° Angle |

## Cable complete with connector, 37 Poles IP65

Ordering code

**2400.37.L.P**

| | |
|---|---|
| | CABLE LENGTH |
| L | 03 = 3 meters |
| | 05 = 5 meters |
| | 10 = 10 meters |
| | CONNECTORS |
| P | 10 = In line |
| | 90 = 90° Angle |



## Cable complete with connector, 25 Poles IP65

Ordering code

**2400.25.L.25**

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

## Polyethylene Silencer Series SPL-R

Ordering code

**SPLR.F**

| | |
|---|---|
| | TUBE DIAMETER |
| F | 6 = 6 mm |
| | 10 = 10 mm |

2

2

## Diaphragm plug

Ordering code

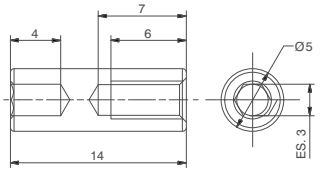
**2230.17**

Weight gr. 6,5

## Nut

Ordering code

**2240.KD.00**




The Kit includes 6 pieces

## Tie-rod M3

Ordering code

**2240.KT.Ⓟ**

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


CODE LIST

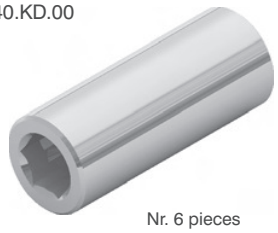
| Description | "L" Dimension |
|---|---|
| 2240.KT.02 | 68 mm |
| 2240.KT.04 | 93mm |
| 2240.KT.06 | 118mm |
| 2240.KT.08 | 143mm |
| 2240.KT.10 | 168mm |
| 2240.KT.12 | 193mm |
| 2240.KT.14 | 218mm |
| 2240.KT.16 | 243mm |
| 2240.KT.18 | 268mm |
| 2240.KT.20 | 293mm |
| 2240.KT.22 | 318mm |
| 2240.KT.24 | 343mm |
| 2240.KT.26 | 368mm |
| 2240.KT.28 | 393mm |
| 2240.KT.30 | 418mm |
| 2240.KT.32 | 443mm |

The Kit includes 3 pieces

**Accessorieses table for manifolds**

| Pos. | Set of N° positions | Ordering Code |
|---|---|---|
| | **2** | 2240.KD.00 + 2240.KT.02 |
| | **4** | 2240.KD.00 + 2240.KT.04 |
| | **6** | 2240.KD.00 + 2240.KT.06 |
| | **8** | 2240.KD.00 + 2240.KT.08 |
| | **10** | 2240.KD.00 + 2240.KT.10 |
| | **12** | 2240.KD.00 + 2240.KT.12 |
| | **14** | 2240.KD.00 + 2240.KT.14 |
| | **16** | 2240.KD.00 + 2240.KT.16 |
| | **18** | 2240.KD.00 + 2240.KT.18 |
| | **20** | 2240.KD.00 + 2240.KT.20 |
| | **22** | 2240.KD.00 + 2240.KT.22 |
| | **24** | 2240.KD.00 + 2240.KT.24 |
| | **26** | 2240.KD.00 + 2240.KT.26 |
| | **28** | 2240.KD.00 + 2240.KT.28 |
| | **30** | 2240.KD.00 + 2240.KT.30 |
| | **32** | 2240.KD.00 + 2240.KT.32 |

2240.KD.00



Nr. 6 pieces

2240.KT.XX

Nr. 3 pieces

2

2

**General :**

Using the 2240.03.25P output terminal it is possible to make any electrical signals not used by valves available on a 25 sub-D female connector at the right end of the manifold.
It is possible to then join a multi-core cable to link to the next manifold, or connect directly to one or two I/O modules.
The I/O modules can accept input or output signals, depending upon what is connected.

**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.

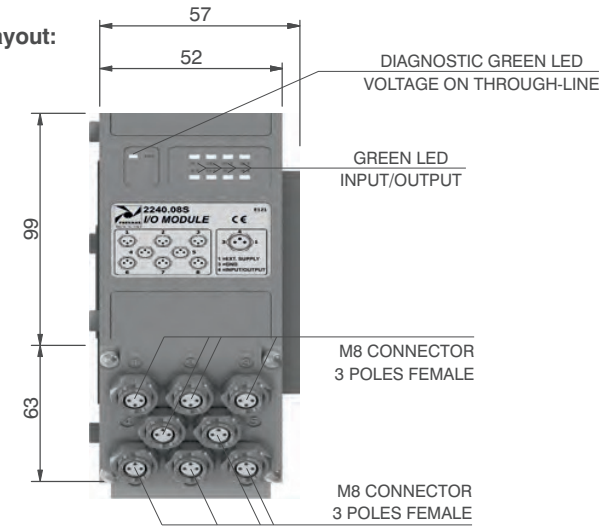
Each I/O module includes 8 diagnostic LEDs which indicate the presence of an Input / Output signal for each connector.

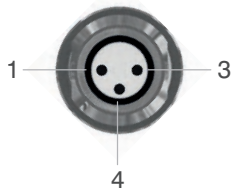
**Please note:** For an LED to function, a signal of at least +15VDC must be present on pin 4 of the connector. If this signal is lower, the LED will not light, this does not compromise the normal Input / Output function of the unit.

## Ordering code

**2240.08S**

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




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

**Input features:**

Each connection can accept either two wire (switches, magnetic switches, pressure switches, etc.) or three wire connections (photocells, electronic end of stroke sensors, etc.) if +24VDC is required on at Pin 1 of each connector, it is possible to provide this via the through-line pin of the multi-pole connector.
I.E :
Pin 25 of the 25 pin multi-pole connector (code 2240.02.25P or 2240.12.25P)
Pin 36-37 of the 37 pin multi-pole connector (code 2240.02.37P or 2240.12.37P)

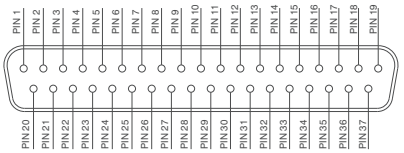
**Output features:**

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

| | | |
|---|---|---|
| | Model | 2240.08S |
| | Case | Reinforced technopolymer |
| General characteristics | 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 |

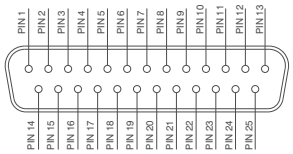
## CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

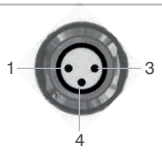



1 - 32 = SIGNALS
33 - 35 = GND
36 - 37 = THROUGH LINE

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 it is operation depending on the way the manifold is controlled. There are two possible modes:

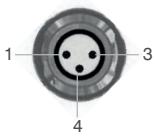
A) Control via multi-pole connection
B) Control via fieldbus

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

### A) Control via multi-pole :

*M8 connector used as Input:*

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

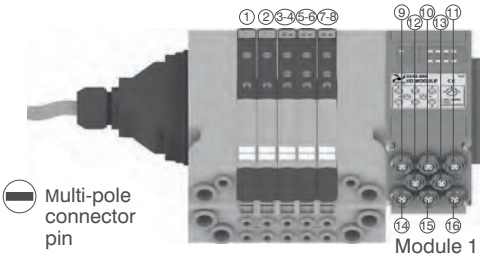



| PIN | DESCRIPTION |
|---|---|
| 1 | THROUGH LINE |
| 4 | SIGNAL |
| 3 | GND |

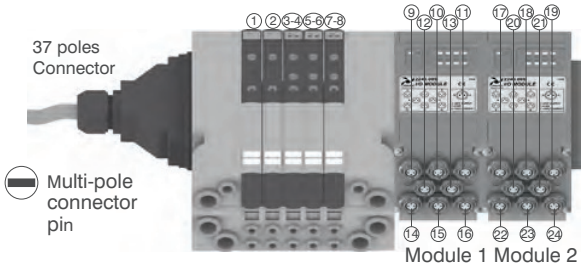
*M8 connector used as Output:*

Output voltage will 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.

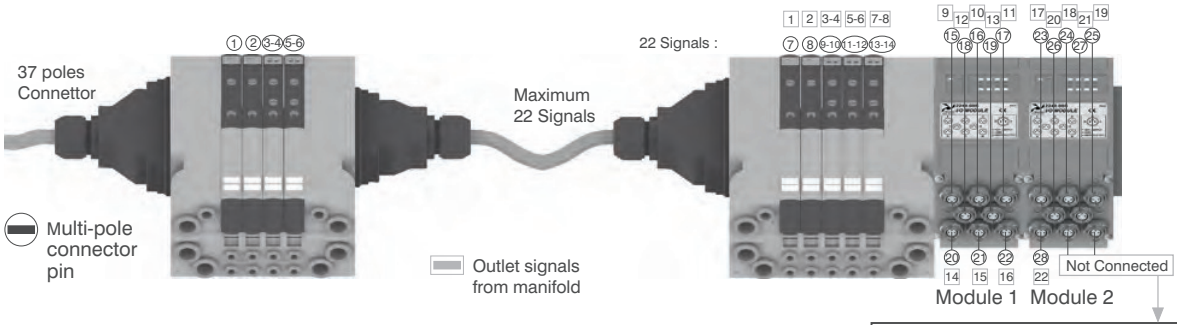



**Attention:** Only one more I/O module can be added.




**Attention:** No more additions are possible

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

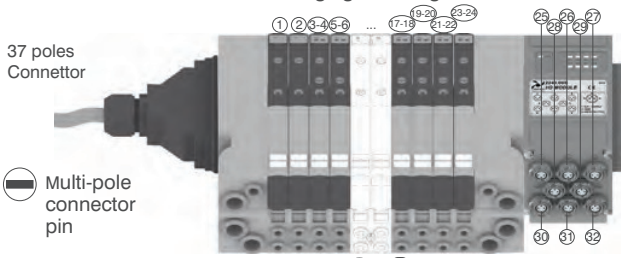


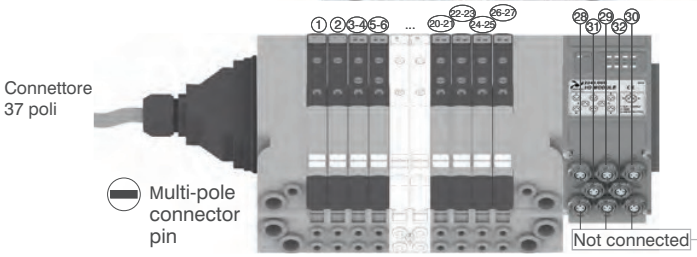

**Please note:** this example considers a 37 pin multi-pole connector.
The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 16

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

2

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

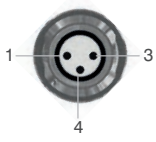


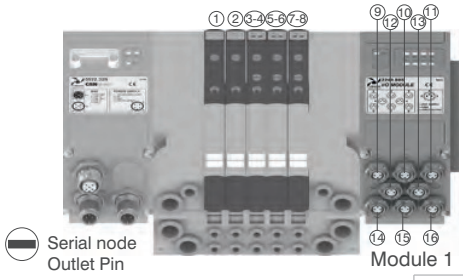

**Attention:**
Signal Not connected
GND Connected
Through line Connected

## 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. Te correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.

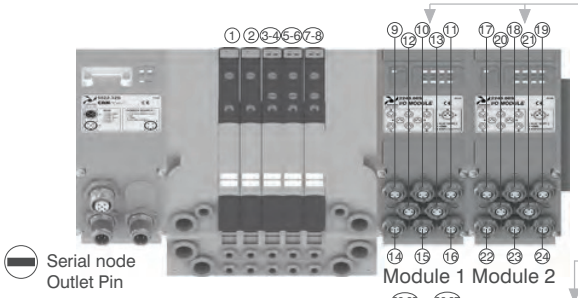



| PIN | DESCRIPTION |
|---|---|
| 1 | NOT CONNECTED |
| 4 | SIGNAL |
| 3 | GND |



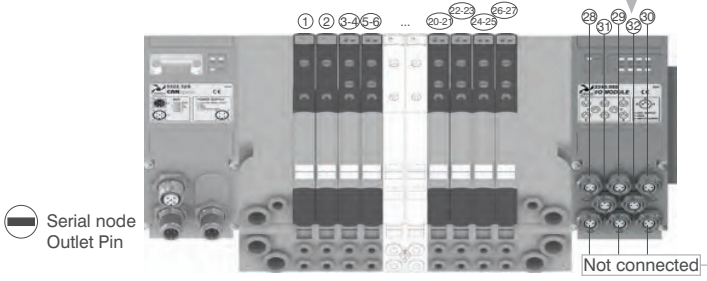

**Attention:**
Output only

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




**Attention:**
Output only

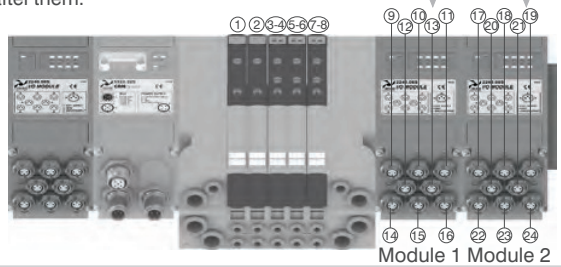
**Attention:**
No more additions
are possible




**Attention:**
Output only

**Attention:**
Signal Not connected
GND Connected

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




**Attention:**
Output only

**Attention:**
No more additions
are possible

**Electrical connection**

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

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

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



**Sub-base for 2 bistable valves**

On the sub base for 2 bistable valves the first electrical signal is used to actuate the solenoid pilot on side 14 of the first position, the second signal is used to actuate the solenoid pilot on side 12 of the first position. Each sub base uses 4 electric signals. The same layout applies to the following position therefore the third signal is used to actuate the solenoid pilot on side 14 of the second position and the fourth signal is used to actuate the solenoid pilot on side 12 of the second position.
The remaining signals are transferred downstream.
On a bistable sub base it is possible to mount both bistable or monostable valves (in the second case 1 electrical signal for each valve is wasted). This solutions enables the user to change the manifold layout without the need to re-configure the output correspondence on the PLC. The use of bistable sub-bases reduces the maximum number of valves that can be mounted on the manifold: If the 37 pole connector is used the maximum number of valves is 16 If the 25 pole connector is used the maximum number of valves is 10.

**Sub-base for 2 monostable valves**

On the sub base for 2 monostable valves the first electrical signal is used to actuate the solenoid pilot on side 14 of the first position, the second signal is used to actuate the solenoid pilot on side 12 of the second position. Each sub base uses 2 electric signals.
The remaining signals are transferred downstream. On a monostable sub base it is possible to mount only monostable valves (shoud a bistable valve be mounted on a monostable sub base it will not be possible to actuate the solenoid pilot on side 12). This solutions enables the user to maximise the manifold lay out using all the electrical signals available.

If the 37 pole connector is used the maximum number of valves is 32
If the 25 pole connector is used the maximum number of valves is 22

*Note:*
Monostable valves, which are fitted with only one solenoid pilot can be mounted on both monostable or bistable sub bases.
Bistable valves ,5/3; 2x3/2;2x2/2, which are fitted with 2 solenoid pilots and therefore always use two electrical signals must always be mounted on bistable subbases.

**Additional exhaust and air supply modules:**

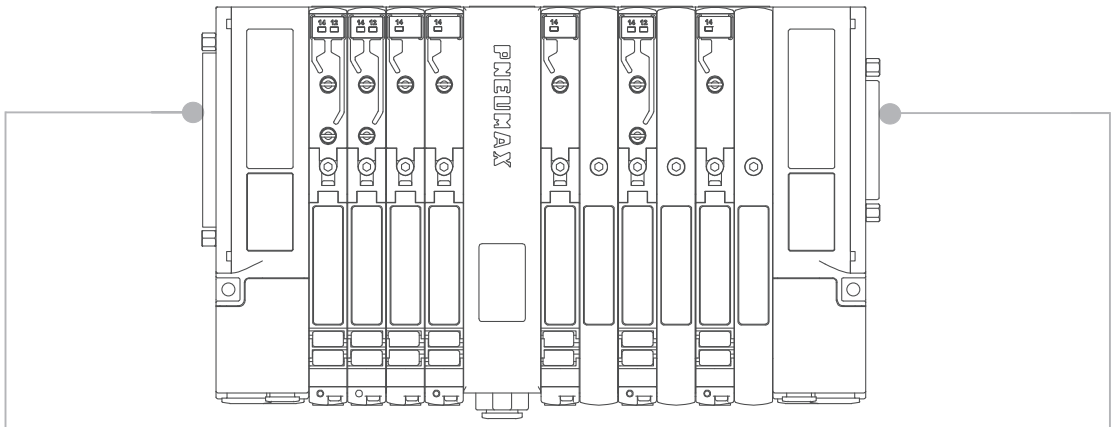
The Additional exhaust and air supply module is fitted with a dedicated electrical connector which does not use any electric signal but simply carries forward all signals which have not been used by the valves mounted before it.
This enables its use in any position of the manifold.

**Unused electrical signals**

The electrical signals which have not been used in the manifold can be made available by using the end plate fitted with the 25 pole connector.
The number of electric signals available depends on the type of connector mounted on the inlet plate and on the number of signals used in the manifold:

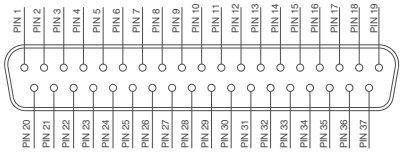
37 pole Inlet connector : N. of outputs= 32 – used signals (max 22)
25 pole Inlet connector : N. of outputs= 22 – used signals

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



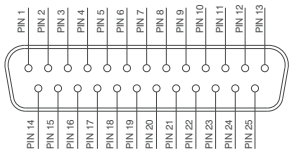

## INLET ELECTRIC CONNECTIONS

SUB-D 37 POLE MALE CONNECTOR




1 - 32 = Solenoid valves signals
33 - 35 = GND
36 - 37 = Through line

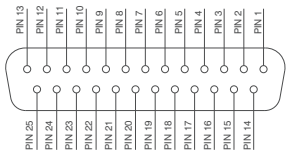
SUB-D 25 POLE MALE CONNECTOR




1 - 22 = Solenoid valves signals
23 - 24 = GND
25 = Through line

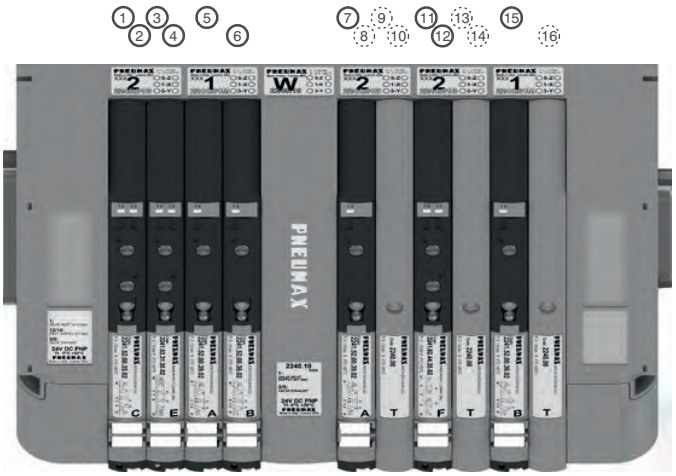
## OUTLET ELECTRIC CONNECTIONS (IF PRESENT)

SUB-D 25 POLE FEMALE CONNECTOR




1 - 22 = Solenoid valves signals
23 - 24 = GND
25 = Through line

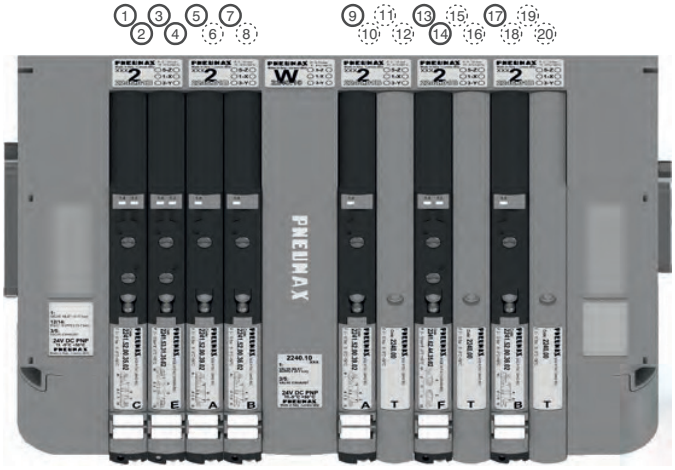
## 37 PIN Connector correspondence for valves assembled on mixed bases



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

| POS. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|

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

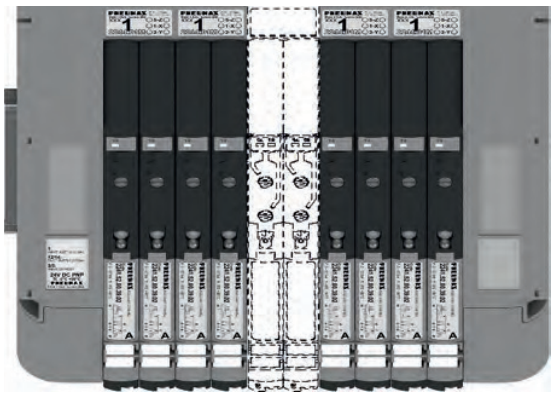


PIN 1 = PILOT 14 EV POS.1
PIN 2 = PILOT 12 EV POS.1
PIN 3 = PILOT 14 EV POS.2
PIN 4 = PILOT 12 EV POS.2
PIN 5 = PILOT 14 EV POS.3
PIN 6 = NOT CONNECTED
PIN 7 = PILOT 14 EV POS.4
PIN 8 = NOT CONNECTED
PIN 9 = PILOT 14 EV POS.6
PIN 10 = NOT CONNECTED
PIN 11 = NOT CONNECTED
PIN 12 = NOT CONNECTED
PIN 13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

| POS. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|

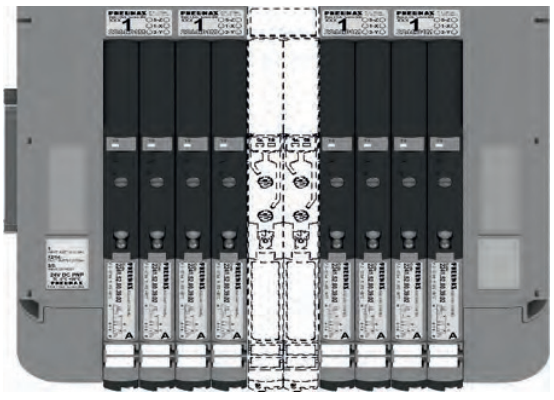
## 37 PIN Connector correspondence for manifold for 32 position manifold with monostable valves on double bases

37P



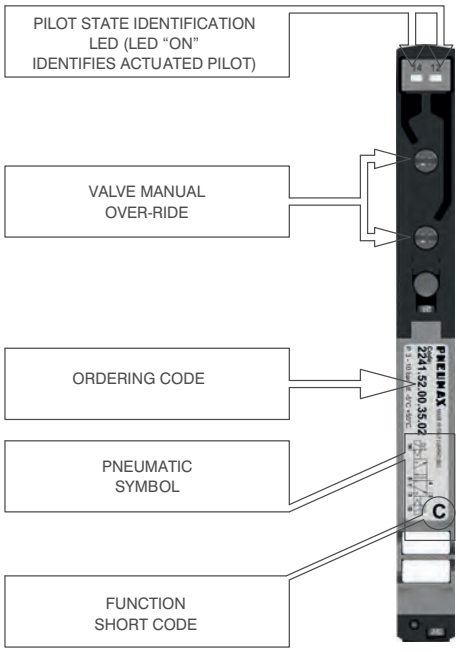
| POS. | 1 | 2 | 3 | 4 | ... | 29 | 30 | 31 | 32 |
|---|---|---|---|---|---|---|---|---|---|

25P

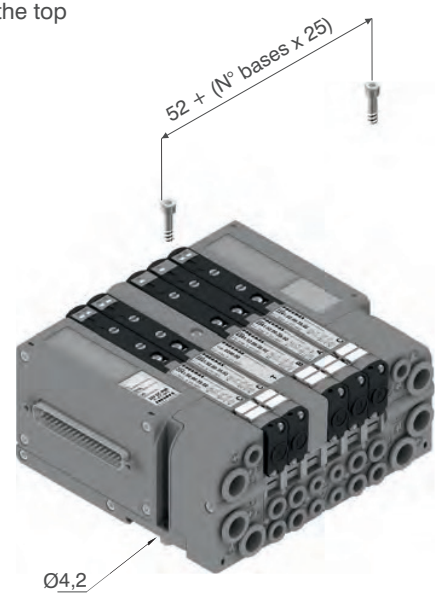


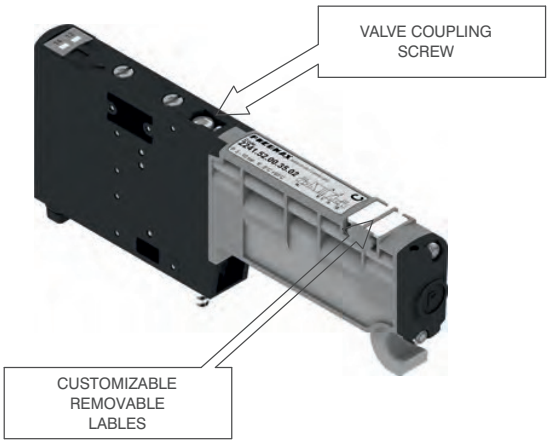
| POS. | 1 | 2 | 3 | 4 | ... | 19 | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|---|---|

2

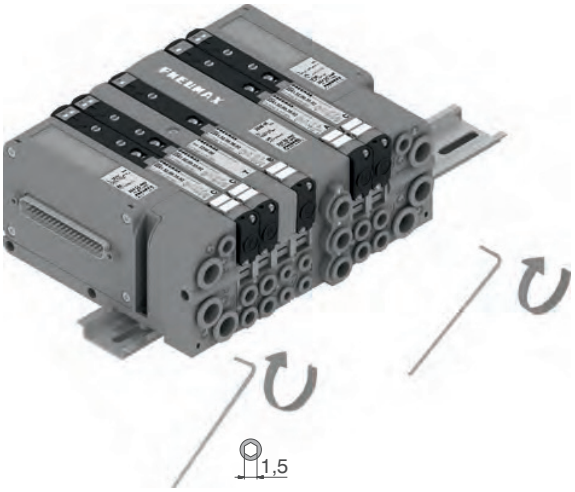


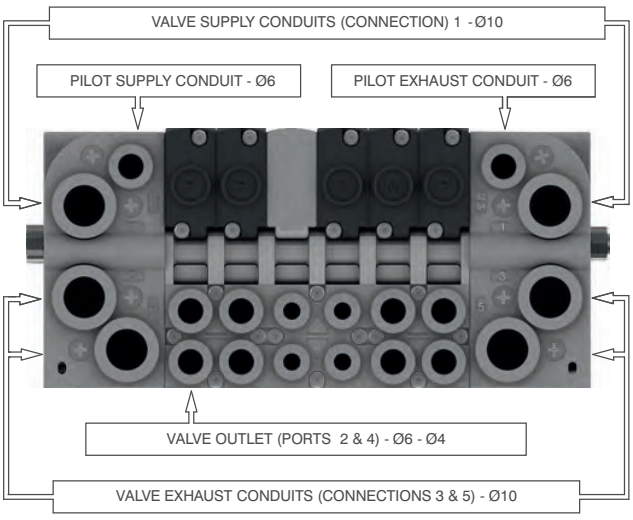

From the top



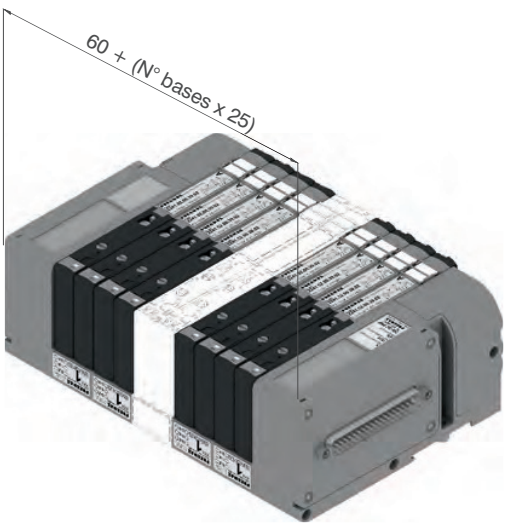




DIN rail fixing

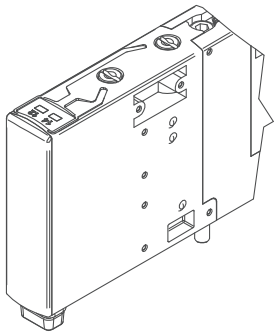


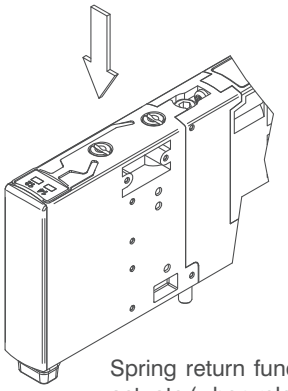




Maximum possible size
According to valves used

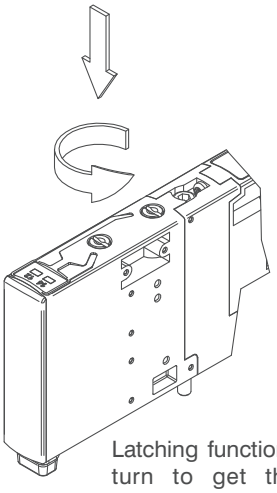


Manual override actuation





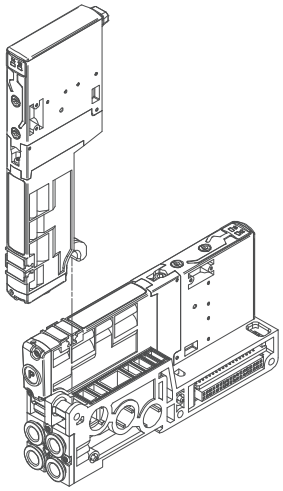
Spring return function: push to actuate (when released it moves back to the original position).

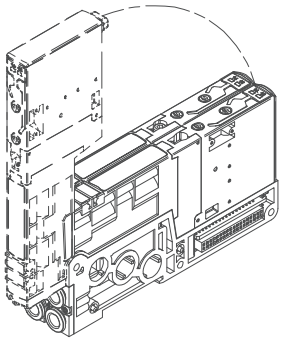


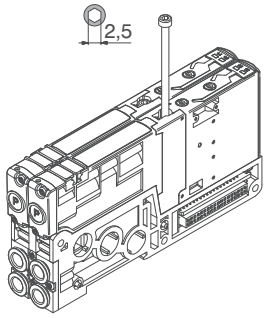
Latching function: push and turn to get the latching function

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

Valve Installation

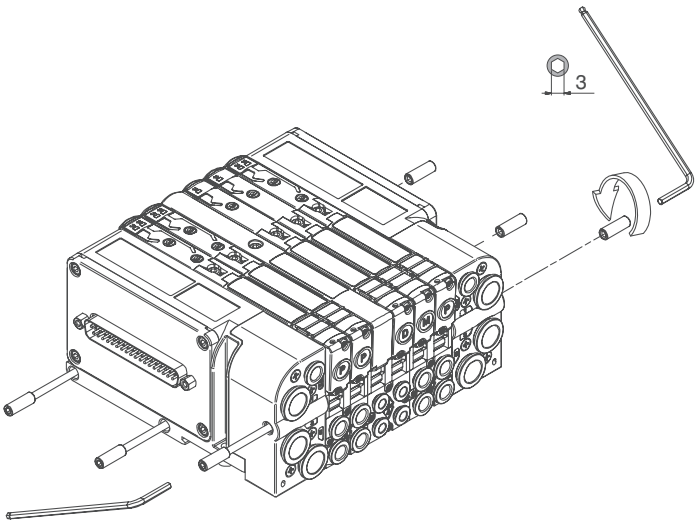







Torque moment (Nm) : 0,8

Manifold assembly

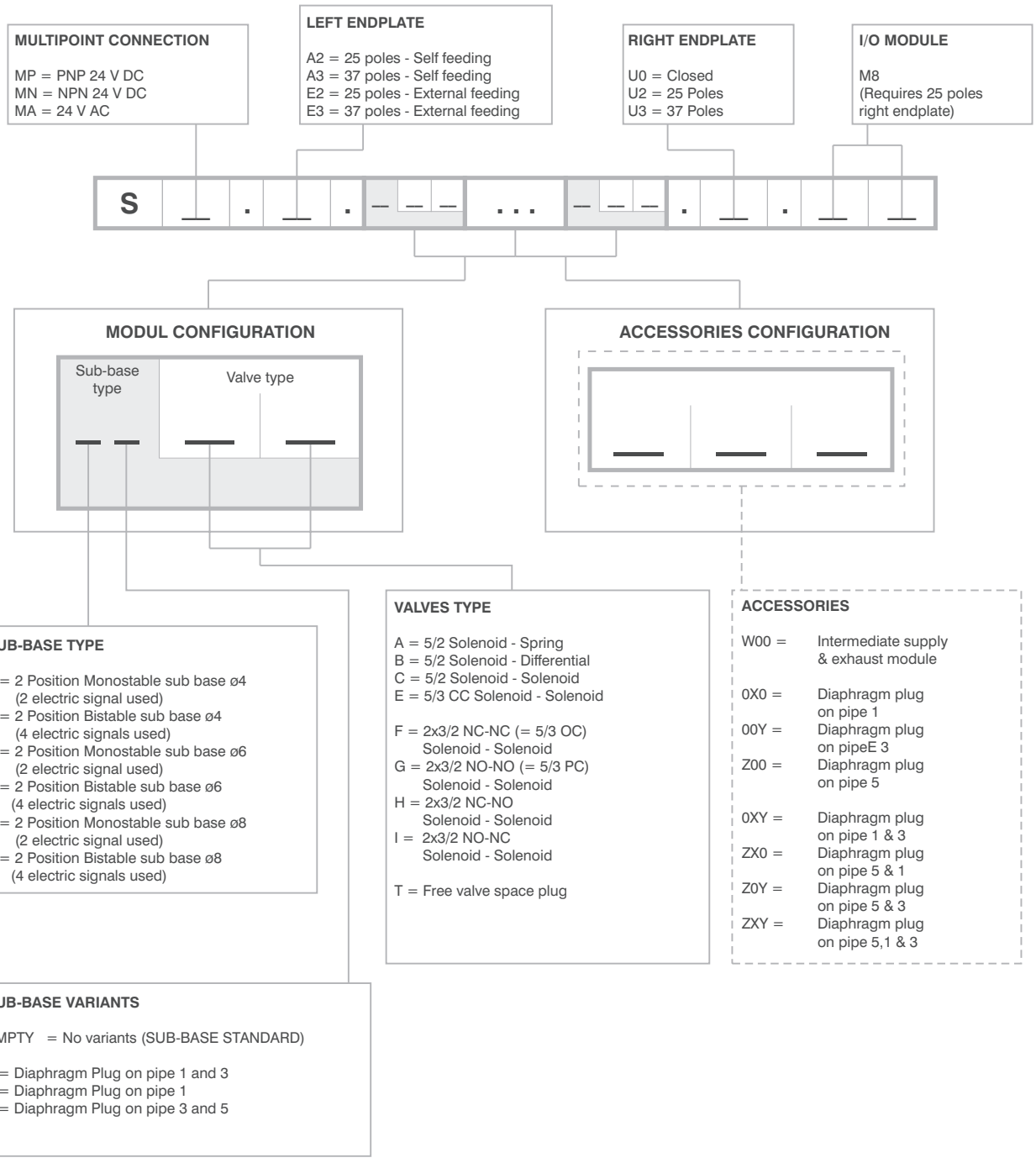



Min. torque moment : 2 Nm
Max. torque moment: 2,5 Nm

2

2

## Manifold Layout configuration




**NOTE:**
While configuring the manifold always be careful that the maximum number of electrical signals available is 32
The use of monostable valve mounted on a bistable base ( 2 electrical signals occupied for each position) causes the loss of one electric signal.
In this case the monostable valve can be replaced by a bistable valve without reconfiguring the PLC.
The diaphragms plugs are used to intercept the conduits 1,3 & 5 of the base.
Should one or more conduits be cut more than one time it is necessary to add the relevant intermediate Supply/Exhaust module.

**General:**

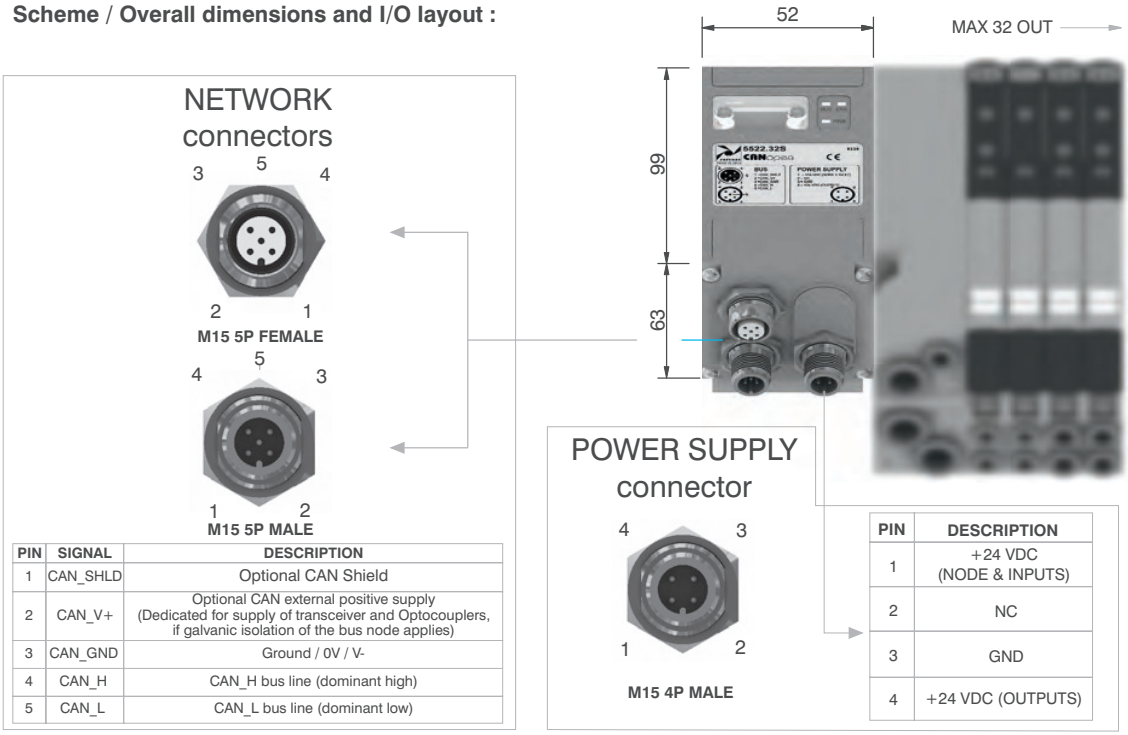
CANopen® module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.
CANopen® module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus CANopen® is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to CiA Draft Recommendation 303-1 (V. 1.3 : 30 December 2004).
Transmission speed can be set by 3 dip-switches.
The node address can be set by 6 dip-switches using BCD numeration.
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5522.32S**

2

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




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

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

## Technical characteristics

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

2

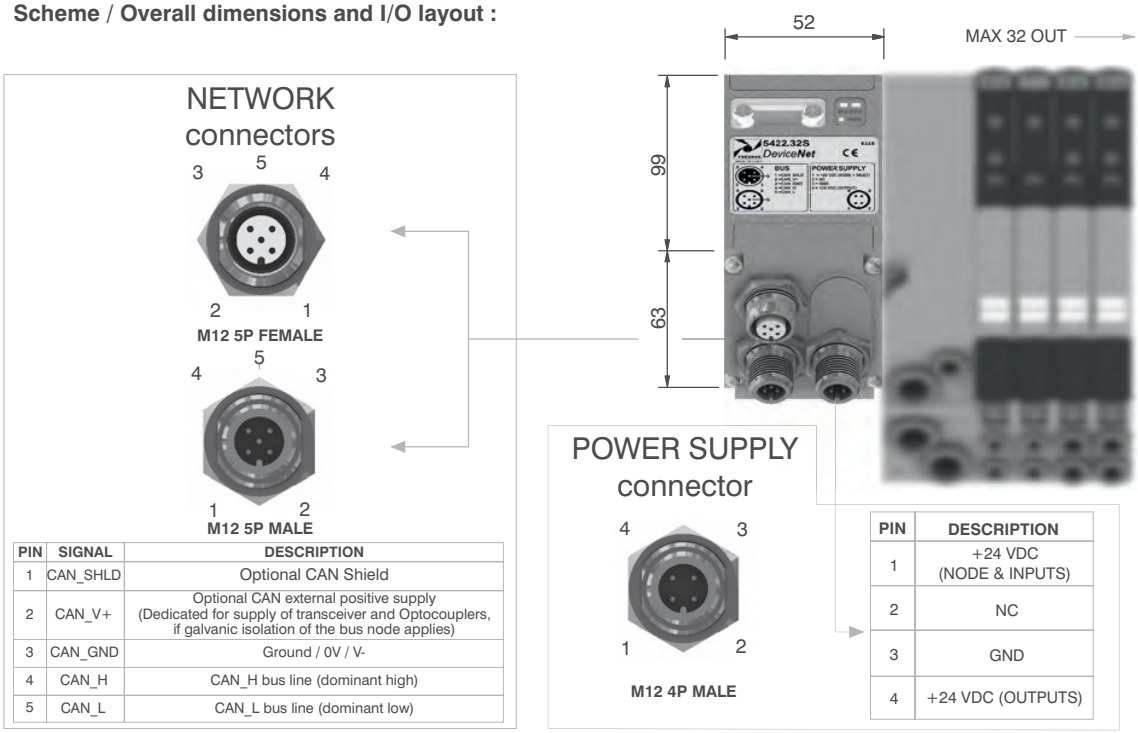
**General:**

DeviceNet module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.
DeviceNet module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus DeviceNet is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to DeviceNet Specifications Volume I, release 2.0.
Transmission speed can be set by 3 dip-switches.
The node address can be set by 6 dip-switches using BCD numeration.
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5422.32S**

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




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

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

## Technical characteristics

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

**General:**

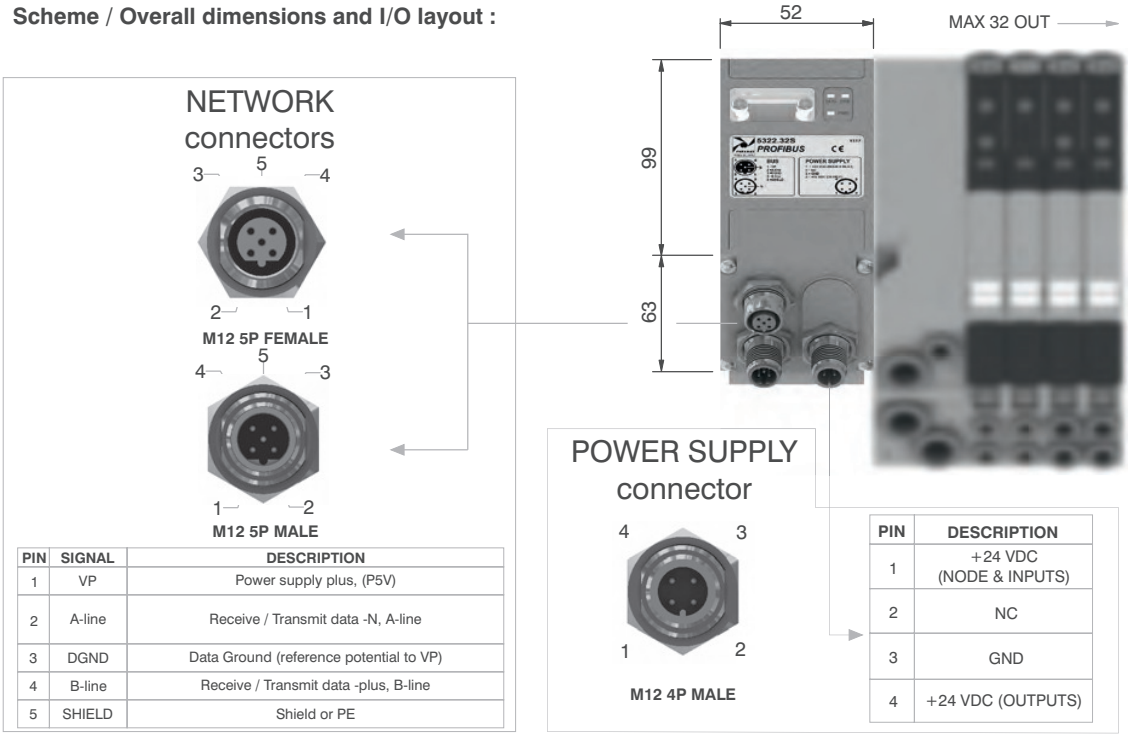
PROFIBUS DP module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.
PROFIBUS DP module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus PROFIBUS DP is possible via 2 M12 type B 5P male - female circular connectors; these two are connected in parallel and according to PROFIBUS Interconnection Technology (Version 1.1 : August 2001).
The node address can be set using BCD numeration: 4 dip-switches for the units and 4 dip-switches for the tens.
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5322.32S**



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




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

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

## Technical characteristics

| | | |
|---|---|---|
| | Model | 5322.32S |
| | Specifications | PROFIBUS DP |
| | Case | Reinforced technopolymer |
| **Power supply** | Power supply connection | M12 4P male connector (IEC 60947-5-2) |
| | Power supply voltage | +24 VDC +/- 10% |
| | Node consumption (without inputs) | 50 mA |
| | Power supply diagnosis | Green led PWR |
| **Outputs** | PNP equivalent outputs | +24 VDC +/- 10% |
| | Maximum current for output | 100 mA |
| | Maximum output number | 32 |
| | Max output simultaneously actuated | 32 |
| **Network** | Network connectors | 2 M12 5P male-female connectors Type B |
| | Baud rate | 9,6-19,2-93,75-187,5-500-1500-3000-6000-12000 Kbit/s |
| | Addresses, possible numbers | From 1 to 99 |
| | Max nodes in net | 100 (slave + master) |
| | Bus maximum recommended length | 100 m at 12 Mbit/s - 1200 m at 9,6 Kbit/s |
| | Bus diagnosis | Green led + Red led |
| | Configuration file | Available from our web site: http://www.pneumaxspa.com |
| | IP protection grade | IP65 when assembled |
| | Temperature range | From 0° to +50° C |

2

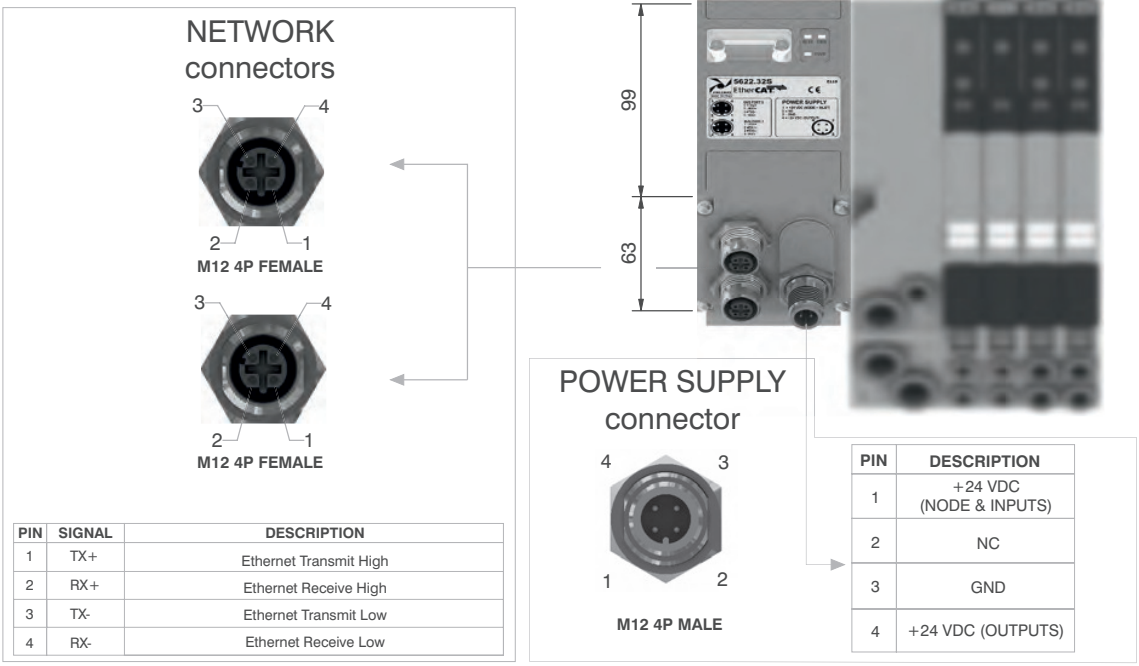
**General:**

EtherCAT® module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.
EtherCAT® module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus EtherCAT® is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel. They are according to EtherCAT® Specifications ETG.1000 series.
By specifications, node ID should be automatically set during network configuration.

## Ordering code

**5622.32S**

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




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

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

## Technical characteristics

| | | |
|---|---|---|
| | Model | 5622.32S |
| | Specifications | EtherCAT® Specifications ETG.1000 series |
| | Case | Reinforced technopolymer |
| **Power supply** | Power supply connection | M12 4P male connector (IEC 60947-5-2) |
| | Power supply voltage | +24 VDC +/- 10% |
| | Node consumption (without inputs) | 310 mA |
| | Power supply diagnosis | Green led PWR |
| **Outputs** | PNP equivalent outputs | +24 VDC +/- 10% |
| | Maximum current for output | 100 mA |
| | Maximum output number | 32 |
| | Max output simultaneously actuated | 32 |
| **Network** | Network connectors | 2 M12 4P female connectors Type D (IEC 61076-2-101) |
| | Baud rate | 100 Mbit/s |
| | Addresses, possible numbers | From 0 to 65535 (from 1 to 63 with dip-switches) |
| | Max nodes in net | 65536 (master + slaves) |
| | Bus maximum recommended length | 100 m |
| | Bus diagnosis | 1 status green led + 2 activity green led |
| | Configuration file | Available from our web site: http://www.pneumaxspa.com |
| | IP protection grade | IP65 when assembled |
| | Temperature range | From 0° to +50° C |

**General:**

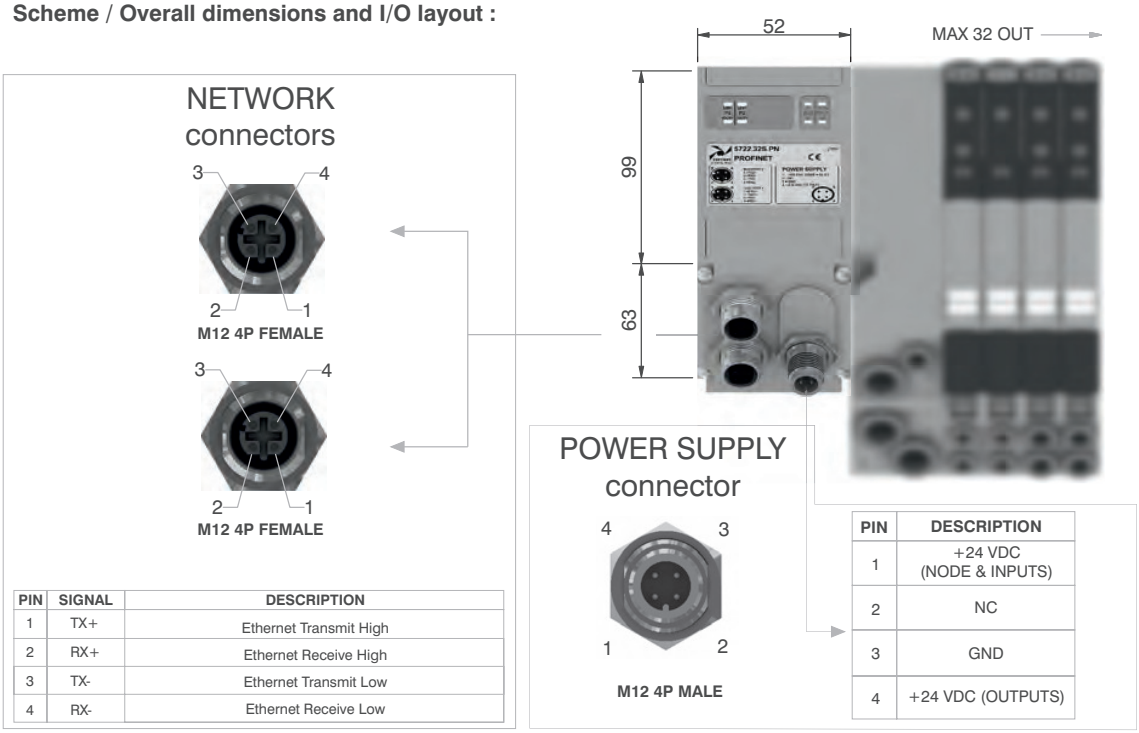
PROFINET IO RT/IRT module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.
The PROFINET IO RT/IRT module, regardless the number of Input module connected, reports to have connected 8 Input modules.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus PROFINET IO RT/IRT is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.
The node address is assigned during configuration.

## Ordering code

**5722.32S.PN**



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




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

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

## Technical characteristics

| | | |
|---|---|---|
| | Model | 5722.32S.PN |
| | Specifications | PROFINET IO RT/IRT |
| | Case | Reinforced technopolymer |
| **Power supply** | Power supply connection | M12 4P male connector (IEC 60947-5-2) |
| | Power supply voltage | +24 VDC +/- 10% |
| | Node consumption (without outputs) | 400 mA |
| | Power supply diagnosis | Green led PWR / Green led OUT |
| **Outputs** | PNP equivalent outputs | +24 VDC +/- 10% |
| | Maximum current for each output | 100 mA |
| | Maximum output number | 32 |
| | Max output simultaneously actuated | 32 |
| **Network** | Network connectors | 2 M12 4P female connectors Type D (IEC 61076-2-101) |
| | Baud rate | 100 Mbit/s |
| | Addresses, possible numbers | As an IP address |
| | Max nodes in net | As an Ethernet Network |
| | Maximum distance between 2 nodes | 100 m |
| | Bus diagnosis | 1 green and 1 red LED for status + 4 LEDs for link & activity |
| | Configuration file | Available from our web site: http://www.pneumaxspa.com |
| | IP protection grade | IP65 when assembled |
| | Temperature range | From 0° to +50° C |

2

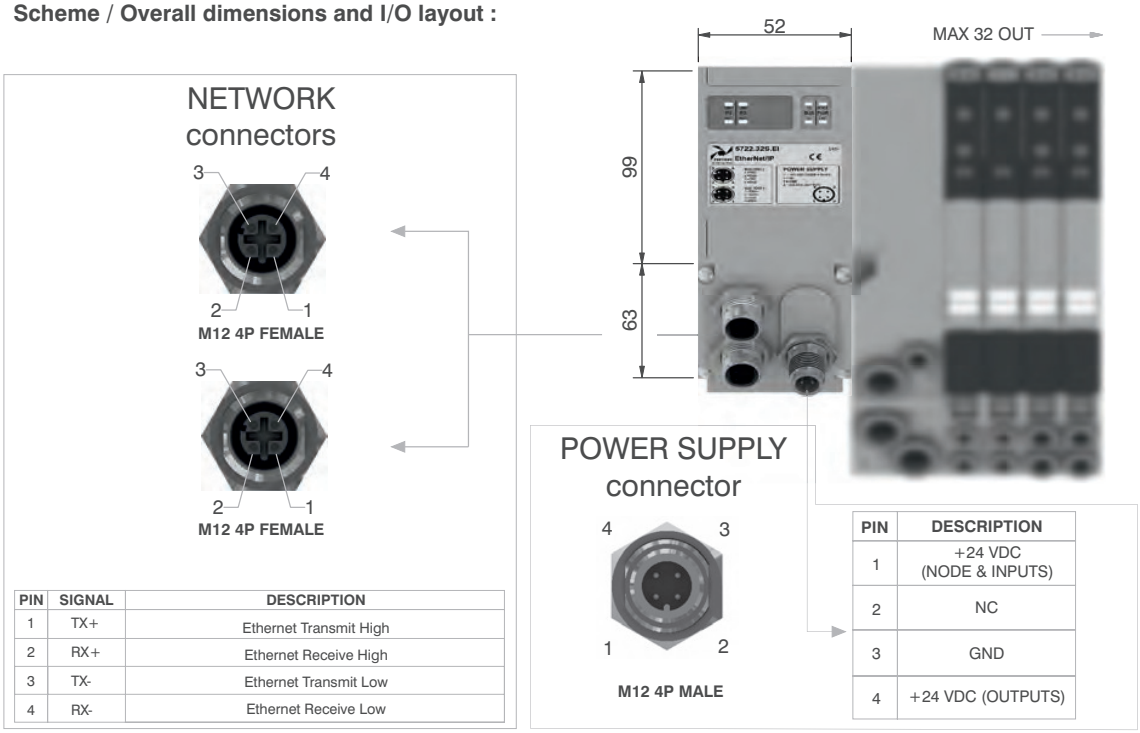
**General:**

EtherNet/IP module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.
The EtherNet/IP module, regardless the number of Input module connected, reports to have connected 8 Input modules.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus EtherNet/IP is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.
The node address is assigned during configuration.

## Ordering code

**5722.32S.EI**

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




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

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

## Technical characteristics

| | | |
|---|---|---|
| | Model | 5722.32S.EI |
| | Specifications | The EtherNet/IP Specification |
| | Case | Reinforced technopolymer |
| **Power supply** | Power supply connection | M12 4P male connector (IEC 60947-5-2) |
| | Power supply voltage | +24 VDC +/- 10% |
| | Node consumption (without outputs) | 400 mA |
| | Power supply diagnosis | Green led PWR / Green led OUT |
| **Outputs** | PNP equivalent outputs | +24 VDC +/- 10% |
| | Maximum current for each output | 100 mA |
| | Maximum output number | 32 |
| | Max output simultaneously actuated | 32 |
| **Network** | Network connectors | 2 M12 4P female connectors Type D (IEC 61076-2-101) |
| | Baud rate | 100 Mbit/s |
| | Addresses, possibile numbers | As an IP address |
| | Max nodes in net | As an Ethernet Network |
| | Maximum distance between 2 nodes | 100 m |
| | Bus diagnosis | 1 green and 1 red LED for status + 4 LEDs for link & activity |
| | Configuration file | Available from our web site: http://www.pneumaxspa.com |
| | IP protection grade | IP65 when assembled |
| | Temperature range | From 0° to +50° C |

**General:**

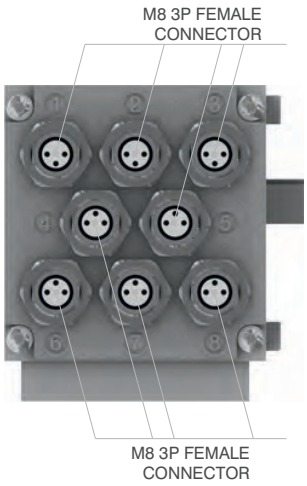
Modules have 8 connectors M8 3P female.

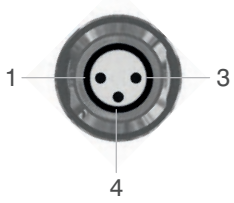
The Inputs are PNP equivalent 24 VDC ±10%.
To each connector it is possible to plug both 2 wires Inputs (switches, magnetic switches pressure switches, etc) or 3 wires Inputs (proximity, photocells, electronic sensors, etc).
The maximum current available for all 8 Inputs is 300 mA.
Each module includes a 300 mA resettable fuse. If a short circuit or a overcharge (overall current >300mA) occur the safety device acts cutting the 24 VDC power supply to all M8 connectors on the module and switching off the green led PWR. Any other Input module connected to the node will remain powered and will function correctly.
Once the cause of the fault disappears the green led PWR light up indicating the ON state and the node will re-start to operate.
The maximum number of Input modules supported is 4.

## Ordering code

**5222.08S**

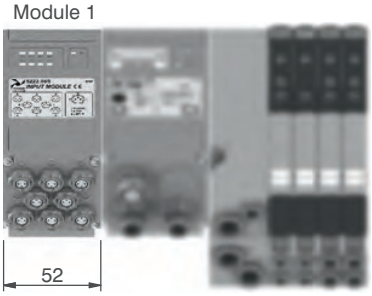
**Scheme / Overall dimensions and I/O layout :**



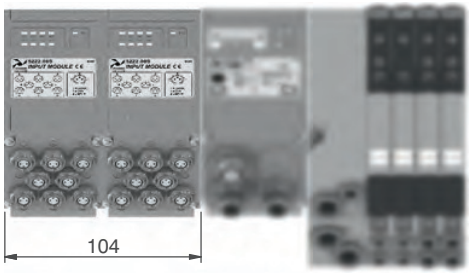




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | INPUT |
| 3 | GND |

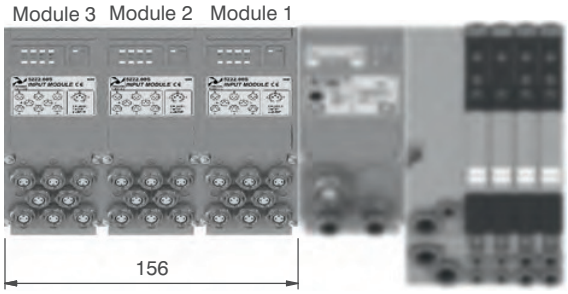
Module 1



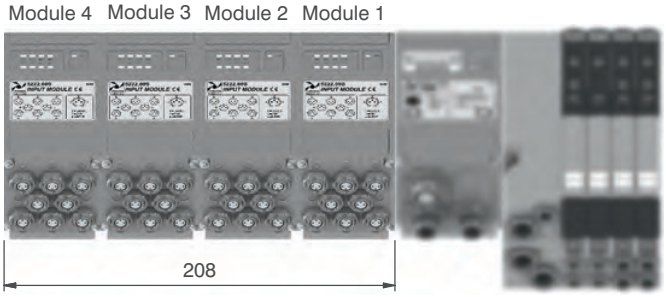

Module 2 Module 1




Module 3 Module 2 Module 1




Module 4 Module 3 Module 2 Module 1



2

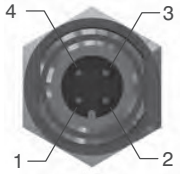
## M12A 4P female Socket

Ordering code

**5312A.F04.00**

Power supply straight connector.

Upper view Slave connector




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC Node |
| 2 | |
| 3 | 0 V |
| 4 | +24 VDC Output |

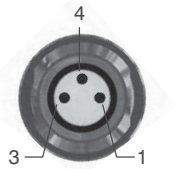
## M8 3P male Plug

Ordering code

**5308A.M03.00**

Input straight connector.

Upper view Slave connector




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | INPUT |
| 3 | GND |

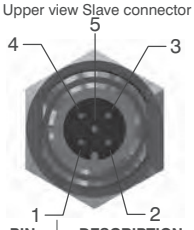
## M12A 5P female Socket

Ordering code

**5312A.F05.00**

Network straight connector: for Bus CANOpen®, DeviceNet.

Upper view Slave connector




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

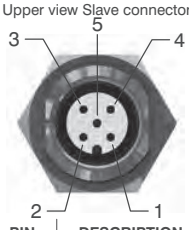
## M12A 5P male Plug

Ordering code

**5312A.M05.00**

Network straight connector: for BUS CANOpen®, DeviceNet.

Upper view Slave connector




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

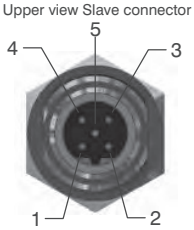
## M12B 5P female Plug

Ordering code

**5312B.F05.00**

Network straight connector: for Bus PROFIBUS DP.

Upper view Slave connector




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

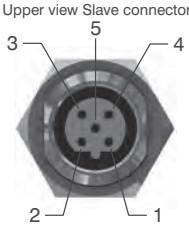
## M12B 5P male Plug

Ordering code

**5312B.M05.00**

Network straight connector: for BUS PROFIBUS DP.

Upper view Slave connector




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

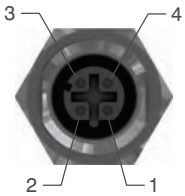
## M12D 4P male Plug

Ordering code

**5312D.M04.00**

Network straight connector: for EtherCAT®, PROFINET IO RT/IRT, EtherNet/Ip.

Upper view Slave connector




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

## M12 Plug

Ordering code

**5300.T12**

## M8 Plug

Ordering code

**5300.T08**

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

## Manifold Layout configuration with serial systems

**32 OUT VERSION**

C3=CANopen® 32OUT - 32IN
D3=DeviceNet 32OUT - 32IN
P3=PROFIBUS 32OUT - 32IN
E3=EtherCAT® 32OUT - 32IN
I3=EtherNet / IP 32OUT - 32IN
N3=PROFINET IO RT/IRT 32OUT - 32IN

**INPUT MODULES**

A = No module
D1= 8 M8 digital inputs module

**RIGHT ENDPLATE**

U0 = Closed
U2 = 25 Poles
U3 = 37 Poles

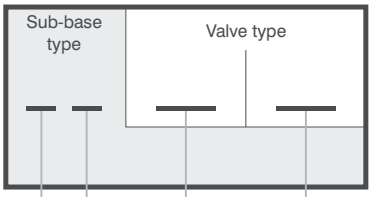
**LEFT ENDPLATE**

A3 = 37 poles - Self feeding
E3 = 37 poles - External feeding

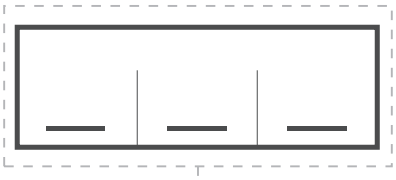
**I/O MODULE**

M8
(Requires 25 poles right endplate)


**MODUL CONFIGURATION**




**ACCESSORIES CONFIGURATION**



**SUB-BASE TYPE**

3 = 2 Position Monostable sub base ø4 (2 electric signal used)
4 = 2 Position Bistable sub base ø4 (4 electric signals used)
5 = 2 Position Monostable sub base ø6 (2 electric signal used)
6 = 2 Position Bistable sub base ø6 (4 electric signals used)
7 = 2 Position Monostable sub base ø8 (2 electric signal used)
8 = 2 Position Bistable sub base ø8 (4 electric signals used)

**VALVES TYPE**

A = 5/2 Solenoid - Spring
B = 5/2 Solenoid - Differential
C = 5/2 Solenoid - Solenoid
E = 5/3 CC Solenoid - Solenoid

F = 2x3/2 NC-NC (= 5/3 OC) Solenoid - Solenoid
G = 2x3/2 NO-NO (= 5/3 PC) Solenoid - Solenoid
H = 2x3/2 NC-NO Solenoid - Solenoid
I = 2x3/2 NO-NC Solenoid - Solenoid

T = Free valve space plug

**ACCESSORIES**

| | |
|---|---|
| W00 = | Intermediate supply & exhaust module |
| 0X0 = | Diaphragm plug on pipe 1 |
| 00Y = | Diaphragm plug on pipeE 3 |
| Z00 = | Diaphragm plug on pipe 5 |
| 0XY = | Diaphragm plug on pipe 1 & 3 |
| ZX0 = | Diaphragm plug on pipe 5 & 1 |
| Z0Y = | Diaphragm plug on pipe 5 & 3 |
| ZXY = | Diaphragm plug on pipe 5,1 & 3 |

**SUB-BASE VARIANTS**

EMPTY = No variants (SUB-BASE STANDARD)

6 = Diaphragm Plug on pipe 1 and 3
7 = Diaphragm Plug on pipe 1
8 = Diaphragm Plug on pipe 3 and 5

**NOTE:**
While configuring the manifold always be careful that the maximum number of electrical signals available is 32
The use of monostable valve mounted on a bistable base ( 2 electrical signals occupied for each position) causes the loss of one electric signal.
In this case the monostable valve can be replaced by a bistable valve without reconfiguring the PLC.
The diaphragms plugs are used to intercept the conduits 1,3 & 5 of the base.
Should one or more conduits be cut more than one time it is necessary to add the relevant intermediate Supply/Exhaust module.

# OPTYMA 32-F

## General characteristics

Pneumax is introducing the latest evolution of the 2400 series, new base mounted line including electrical connection into the manifold.
Many technical features make the new product interesting:
- Flow rate of 1000 Nl/min
- Low consumption coils placed all in one side of the valve
- Quick mounting of the valve to the base using just one screw
- Quick connection of the bases thanks to 180 degree rotating pins
- Possibility to use different pressures along the manifold (including vacuum)
- IP65 environmental protection
- Electrical connection directly integrated into the base, 32 electrical signals available (can be used to build up a manifold of 32 monostable valves, 16 bistable valves or any combination within that limit).

The electrical connection is made via 37 pin SUB-D connector.
Possibility to integrate with Field Bus modules (all the most common protocols will be available).
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 |
| Spools | Nikel plated steel / Technopolymer |
| Spacers | Technopolymer |
| Seals | NBR |
| Piston seals | NBR |
| Springs | AISI 302 stainless steel |
| Pistons | Technopolymer |

## Functions

| |
|---|
| 5/2 MONOST. SOL. SPRING |
| 5/2 MONOST. SOL. DIFFERENTIAL |
| 5/2 BISTABLE SOL. SOL. |
| 5/3 CC SOL. SOL. |
| 2x3/2 NC-NC (= 5/3 OC) SOL. SOL. |
| 2x3/2 NO-NO (= 5/3 PC) SOL. SOL. |
| 2x3/2 NC-NO SOL. SOL. |

## Technical characteristics

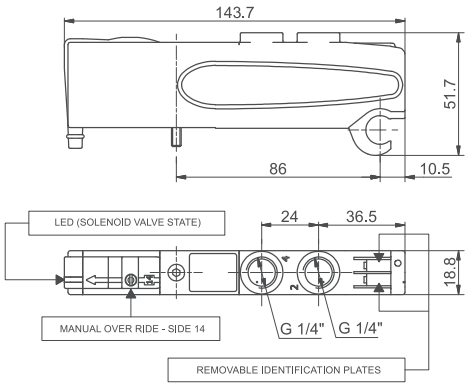
| | |
|---|---|
| Voltage | 24 VDC ±10% PNP (NPN and AC on request) |
| Pilot consuption | 1,2 Watt |
| Valve working pressure [1] | from vacuum to 10 bar max. |
| Pilot working pressure [12-14] | From 3 to 7 bar max. |
| Operating temperature | -5°C+50°C |
| Protection degree | IP65 |
| Life (standard operating conditions) | 50.000.000 |
| Fluid | Filtered and lubricated air or not<br>(if lubricated air, the lubrication must be continuous) |

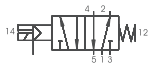
## Solenoid - Spring

Ordering code

**2531.52.00.39.Ⓥ**

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




SHORT FUNCTION CODE "A"
"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."

**Operational characteristic**

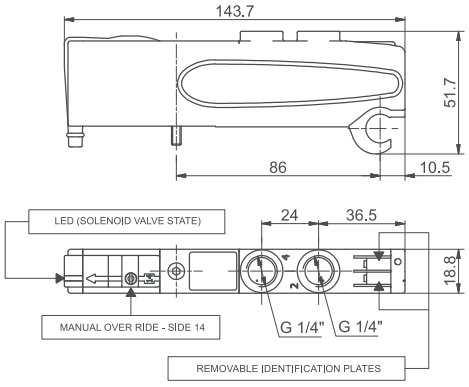
| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 1000 | 14 | 40 | From vacuum to 10 | 3 - 7 bar | -5° / +50° | 123 |

## Solenoid - Differential

Ordering code

**2531.52.00.36.Ⓥ**

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





SHORT FUNCTION CODE "B"
"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."

**Operational characteristic**

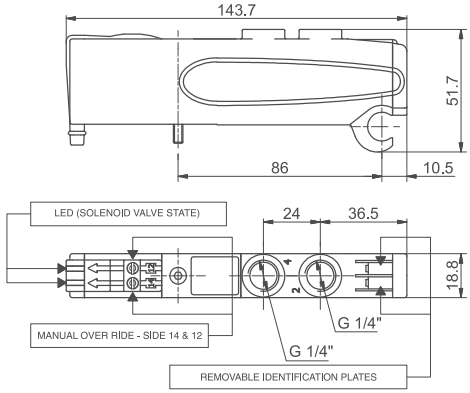
| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 1000 | 20 | 29 | From vacuum to 10 | 3 - 7 bar | -5° / +50° | 120 |

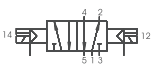
## Solenoid - Solenoid

Ordering code

**2531.52.00.35.Ⓥ**

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




SHORT FUNCTION CODE "C"
"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."

**Operational characteristic**

| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 1000 | 10 | 14 | From vacuum to 10 | 3 - 7 bar | -5° / +50° | 128 |

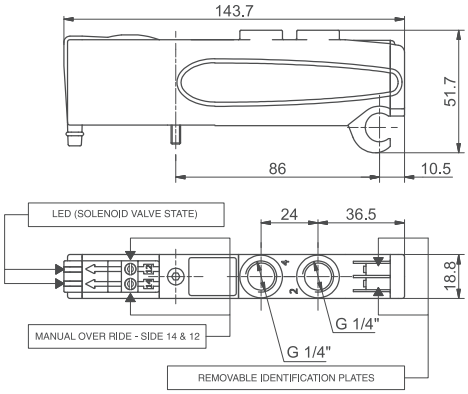
2

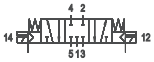
2

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

| Ordering code |
|---|
| **2531.53.31.35.Ⓥ** |

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



SHORT FUNCTION CODE "E"
"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."

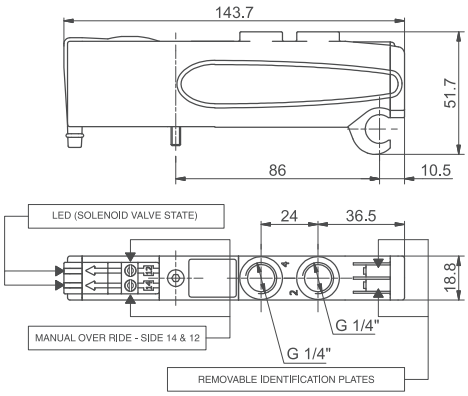
**Operational characteristic**

| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 600 | 15 | 20 | From vacuum to 10 | 3 - 7 bar | -5° / +50° | 126 |

## Solenoid - Solenoid 2x3/2

| Ordering code |
|---|
| **2531.62.Ⓕ.35.Ⓥ** |

| | |
|---|---|
| Ⓕ | 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 |




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

"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."

**Operational characteristic**

"Example: If inlet pressure is set at 5bar then pilot pressure must be at least Pp=3+0.2*5)= 4bar"

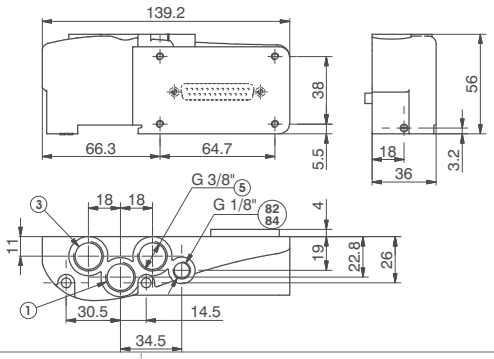
| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 700 | 15 | 25 | From vacuum to 10 | ≥2,5+(0,2xP.alim.) | -5° / +50° | 115,5 |

## Right Endplates

Ordering code

**2530.03.C**

| C | CONNECTOR TYPE |
|---|---|
| | 00 = Exhaust electrical connection closed |
| | 25P=Connector 25 poles |




Weight gr. 181,.5

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

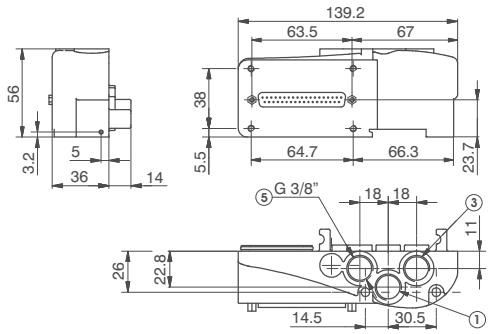
| Operating Characteristics | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 - +50 |

## Left Endplates - External feeding base

Ordering code

**2530.02.C**

| C | CONNECTOR TYPE |
|---|---|
| | 37P=Connector 37 poles PNP |
| | 25P=Connector 25 poles PNP |
| | 37N=Connector 37 poles NPN |
| | 25N=Connector 25 poles NPN |
| | 37A=Connector 37 poles AC |
| | 25A=Connector 25 poles AC |




Weight gr. 206

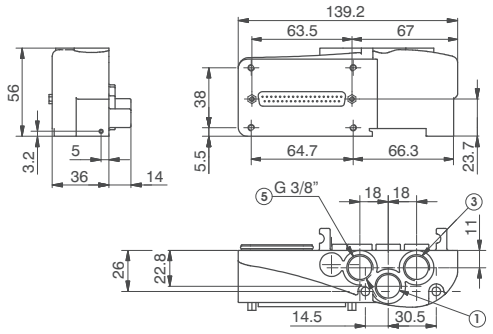
| Operating Characteristics | Fluid | Pressure range (bar) | Pilot working pressure (bar) | Temperature °C |
|---|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | 3 - 7 | -5 ÷ +50 |

## Left Endplates - Self-feeding base

Ordering code

**2530.12.C**

| C | CONNECTOR TYPE |
|---|---|
| | 37P=Connector 37 poles PNP |
| | 25P=Connector 25 poles PNP |
| | 37N=Connector 37 poles NPN |
| | 25N=Connector 25 poles NPN |
| | 37A=Connector 37 poles AC |
| | 25A=Connector 25 poles AC |



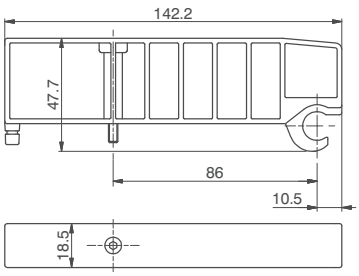

Weight gr. 206

| Operating Characteristics | Fluid | Pilot working pressure (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | 3 - 7 | -5 - +50 |

## Closing plate

Ordering code

**2530.00**




Weight gr. 53,5
SHORT FUNCTION CODE "T"

| Operating Characteristics | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 - +50 |

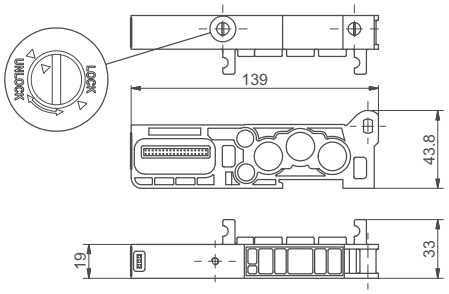
2

2

## Modular base

| Ordering code |
|---|
| **2530.01Ⓥ** |

| Ⓥ | VERSION |
|---|---|
| | M=Monostable |
| | B=Bistable |



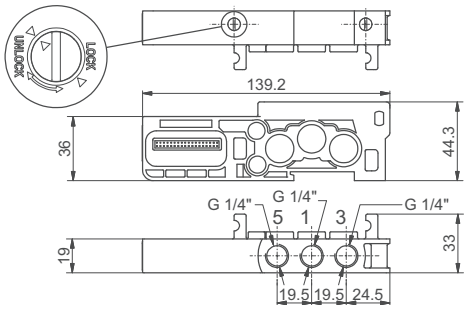

Weight gr. 91,5

SHORT FUNCTION CODE "1" (Monostable)
SHORT FUNCTION CODE "2" (Bistable)

| **Operating Characteristics** | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 - +50 |

## Intermediate Inlet/Exhaust module

| Ordering code |
|---|
| **2530.10** |




Weight gr. 110
SHORT FUNCTION CODE "W"

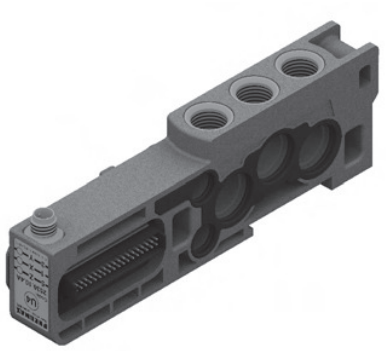
| **Operating Characteristics** | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 - +50 |

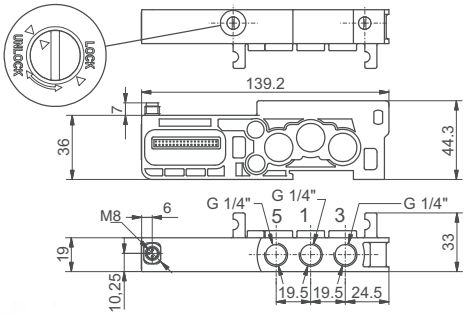
**General :**

Each Optyma-F manifold lets to manage 32 command signals for the valves.
Optyma-F serial nodes (CANOpen, DeviceNet and PROFIBUS DP) 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-TF solenoid valves manifold.

## Ordering code

**2530.10.2A**






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

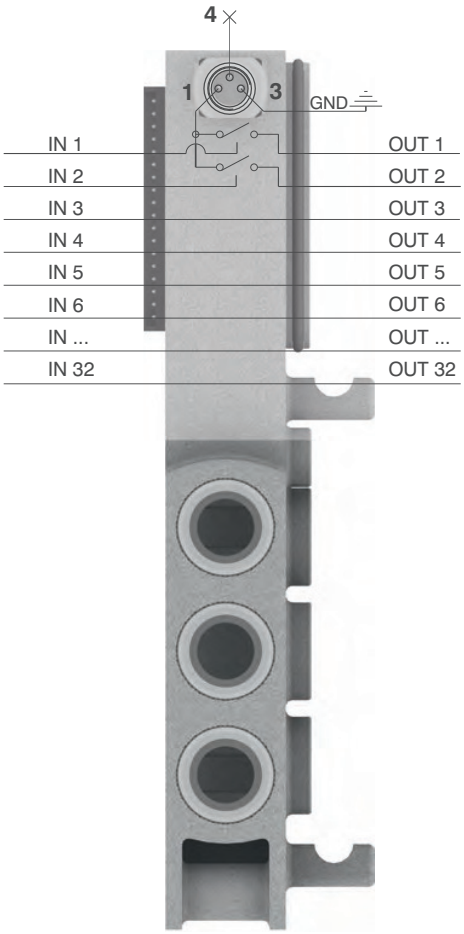

| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | NOT CONNECTED |
| 3 | GND |

## 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.



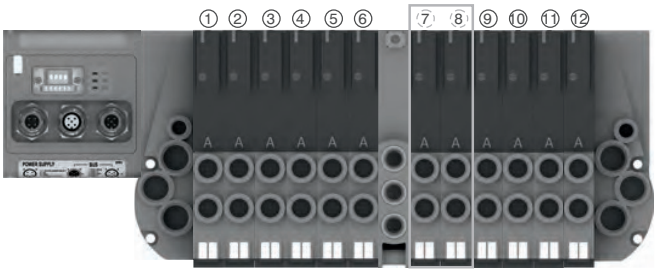

**Please note:** It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

2

**Usage examples:**

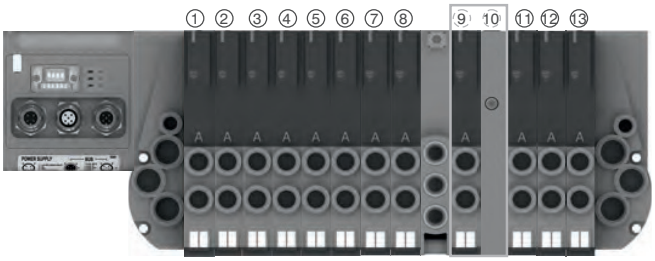
EXAMPLE 1:
Manifold of 12 monostable valves on which you want to interrupt signals 7-8

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

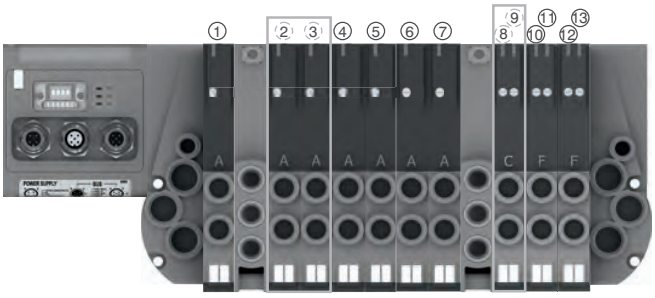
Assembly:
- 8 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 1 monostable valve (interruptible),
- 1 closing plate mounted on a monostable base,
- 3 monostable valves (work correctly managed directly by the corresponding command signals).




**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.

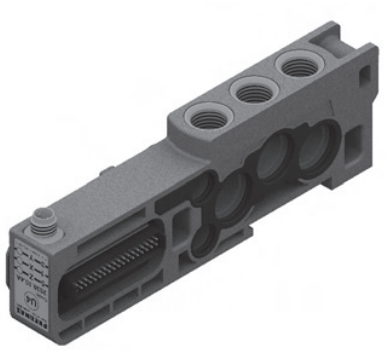


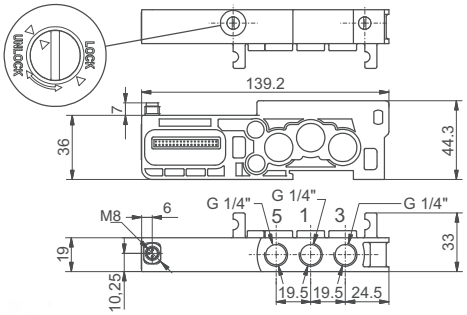
**General :**

Each Optyma-F manifold lets to manage 32 command signals for the valves.
Optyma-F serial nodes (CANOpen, DeviceNet and PROFIBUS DP) 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.

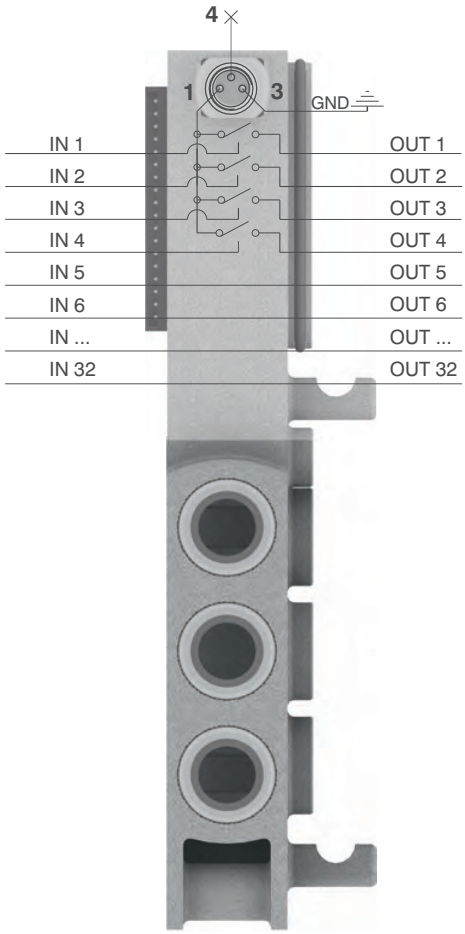

| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | NOT CONNECTED |
| 3 | GND |

## 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.



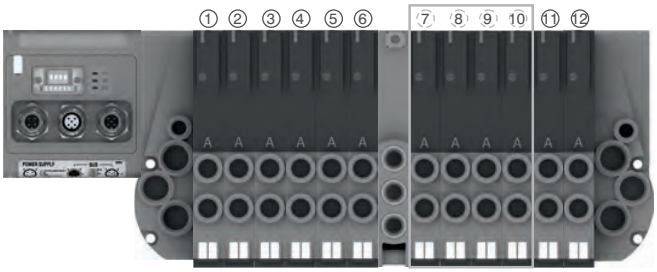

**Please note:** It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

2

**Usage examples:**

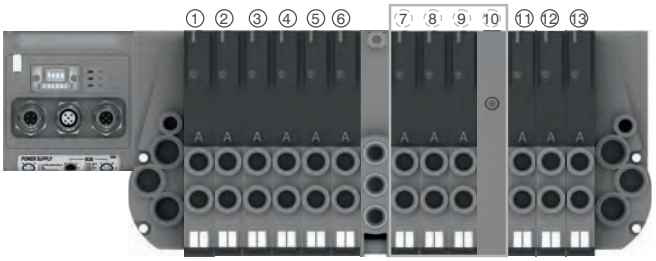
EXAMPLE 1:
Manifold of 12 monostable valves on which you want to interrupt signals 7-8-9-10

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

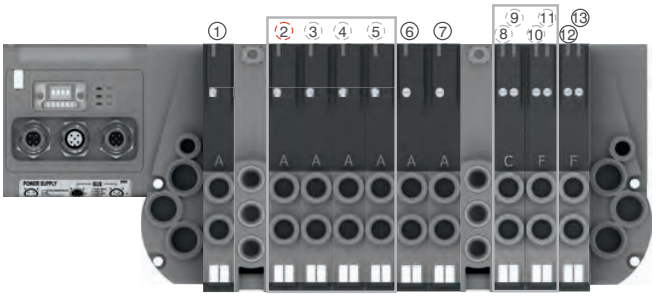
Assembly:
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 3 monostable valves (interruptible),
- 1 closing plate mounted on a monostable base,
- 3 monostable valves (work correctly managed directly by the corresponding command signals).




**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

Ordering code

**SPLP.Ⓕ**

| | |
|---|---|
| Ⓕ | TUBE DIAMETER |
| | 18=1/8" |
| | 14=1/4" |
| | 38=3/8" |

## Diaphragm plug

Ordering code

**2530.17**

Weight gr. 6,5

## Cable complete with connector, 25 Poles IP65

Ordering code

**2300.25.Ⓛ.Ⓟ**

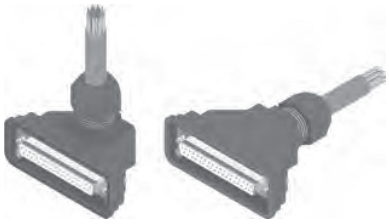
| | |
|---|---|
| Ⓛ | CABLE LENGHT |
| | 03 = 3 metres |
| | 05 = 5 metres |
| | 10 = 10 metres |
| Ⓟ | CONNECTOR TYPE |
| | 10 = In line |
| | 90 = 90° Angle |

## Cable complete with connector, 37 Poles IP65

Ordering code

**2400.37.Ⓛ.Ⓟ**

| | |
|---|---|
| Ⓛ | CABLE LENGHT |
| | 03 = 3 metres |
| | 05 = 5 metres |
| | 10 = 10 metres |
| Ⓟ | CONNECTOR TYPE |
| | 10 = In line |
| | 90 = 90° Angle |



## Cable complete with connector, 25 Poles IP65

Ordering code

**2400.25.Ⓛ.25**

| | |
|---|---|
| Ⓛ | CABLE LENGHT |
| | 03 = 3 metres |
| | 05 = 5 metres |
| | 10 = 10 metres |

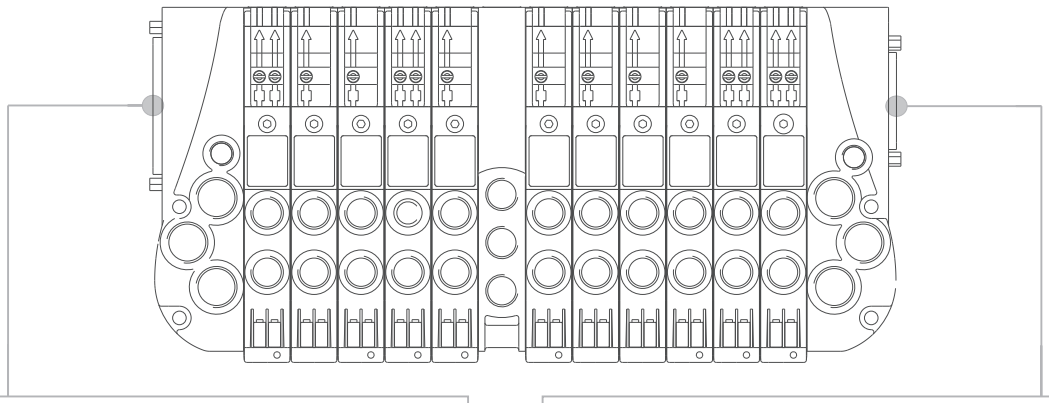
2

2

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:

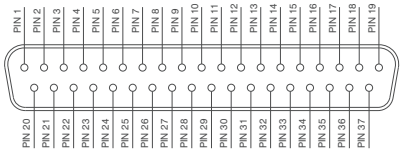
37 pin connector nr of output = 32 – (total of used signals)
25 pin connector nr of output = 22 – (total of used signals)

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



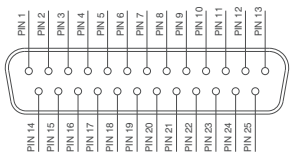
## IN-LET ELECTRIC CONNECTIONS

SUB-D 37 POLE
MALE CONNECTOR




1 - 32 = Solenoid valves signals
33 - 35 = GND
36 - 37 = Through line

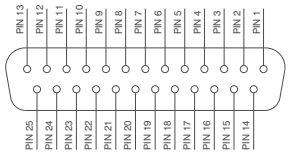
SUB-D 25 POLE
MALE CONNECTOR




1 - 22 = Solenoid valves signals
23 - 24 = GND
25 = Through line

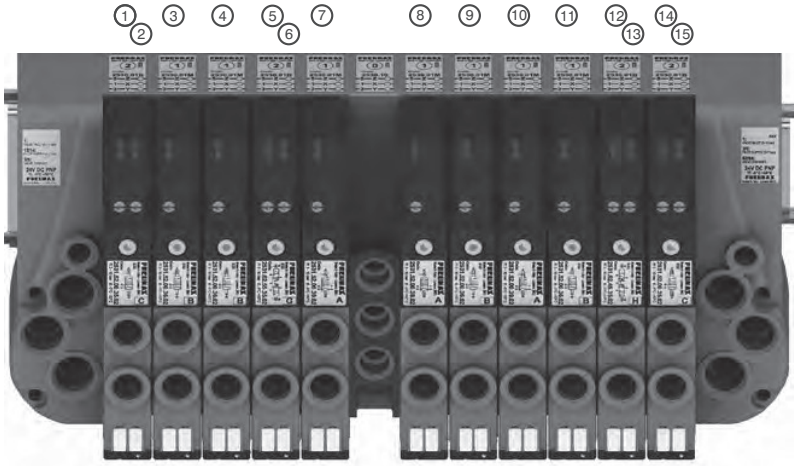
## OUTLET ELECTRIC CONNECTIONS (IF PRESENT)

SUB-D 25 POLE
FEMALE CONNECTOR




1 - 22 = Solenoid valves signals
23 - 24 = GND
25 = Through line

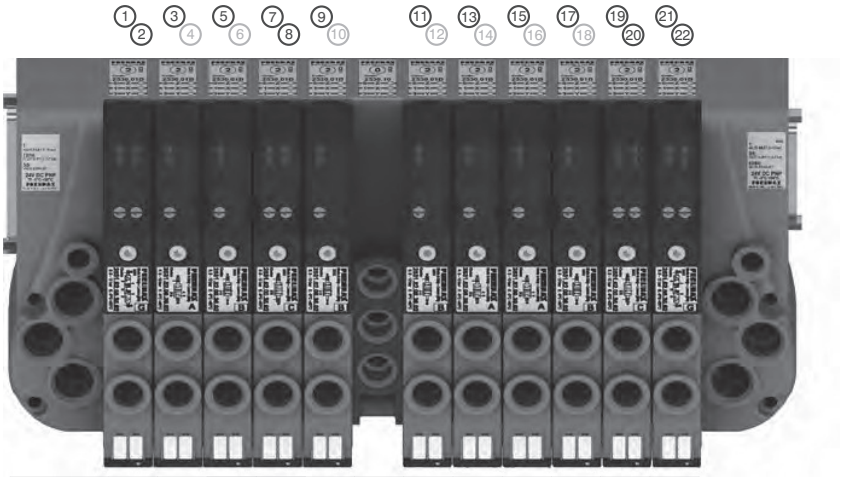
### 37 PIN Connector correspondence for valves assembled on mixed bases



| POS. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

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

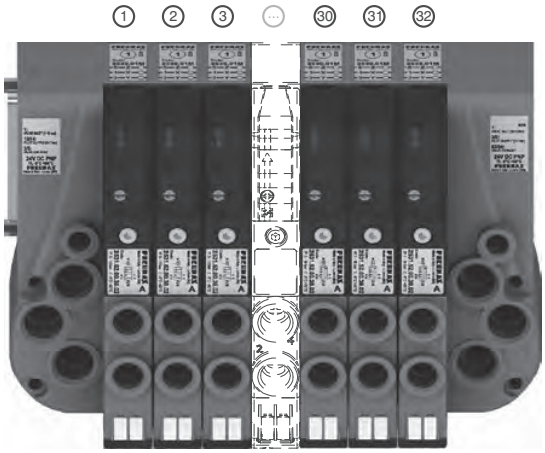
### 37 PIN Connector correspondence for manifold mounted on bases for bistable valves



| POS. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

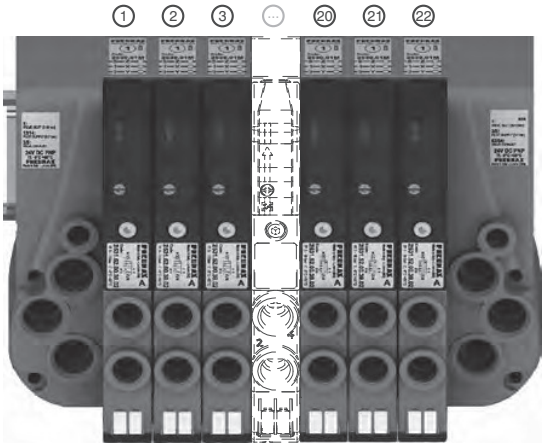
PIN 1 = PILOT 14 EV POS.1
PIN 2 = PILOT 12 EV POS.1
PIN 3 = PILOT 14 EV POS.2
PIN 4 = NOT CONNECTED
PIN 5 = PILOT 14 EV POS.3
PIN 6 = NOT CONNECTED
PIN 7 = PILOT 14 EV POS.4
PIN 8 = PILOT 12 EV POS.4
PIN 9 = PILOT 14 EV POS.5
PIN 10 = NOT CONNECTED
PIN 11 = PILOT 14 EV POS.7
PIN 12 = NOT CONNECTED
PIN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

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



| POS. | 1 | 2 | 3 | ... | 30 | 31 | 32 |
|---|---|---|---|---|---|---|---|

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



| POS. | 1 | 2 | 3 | ... | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|

2

**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.

**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.

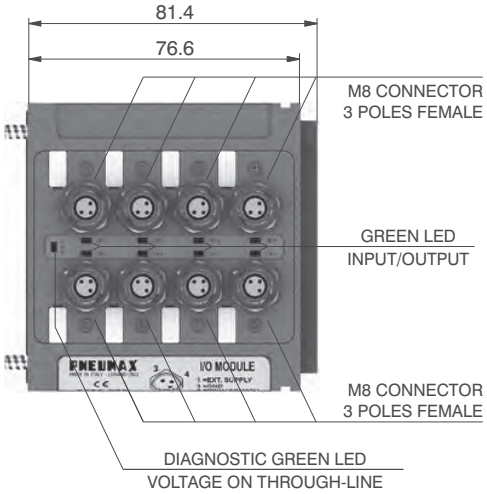
Each I/O module includes 8 diagnostic LEDs which indicate the presence of an Input / Output signal for each connector.

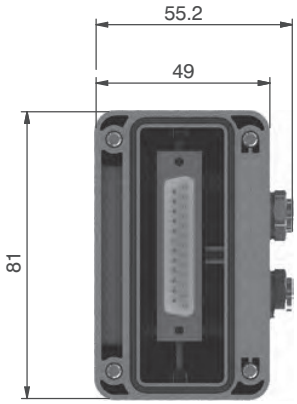
**Please note:** For an LED to function, a signal of at least +15VDC must be present on pin 4 of the connector. If this signal is lower, the LED will not light, this does not compromise the normal Input / Output function of the unit.

## Ordering code

**2530.08F**

**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)

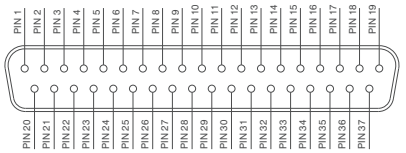
**Output features:**

**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).

| | | |
|---|---|---|
| | Model | 2530.08F |
| | Case | Reinforced technopolymer |
| General characteristics | 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 |

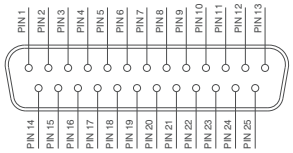
## CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

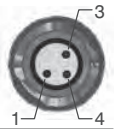



1 - 32 = SIGNALS
33 - 35 = GND
36 - 37 = THROUGH LINE

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 it is operation depending on the way the manifold is controlled. There are two possible modes:

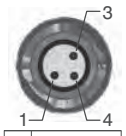
A) Control via multi-pole connection
B) Control via fieldbus

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).

### A) Control via multi-pole :

*M8 connector used as Input:*

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

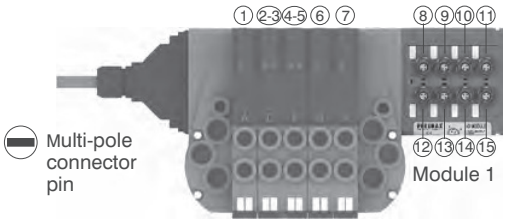



| PIN | DESCRIPTION |
|---|---|
| 1 | THROUGH LINE |
| 4 | SIGNAL |
| 3 | GND |

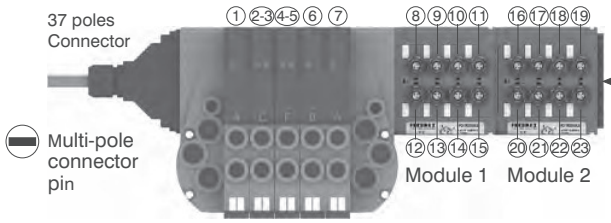
*M8 connector used as Output:*

Output voltage will 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.

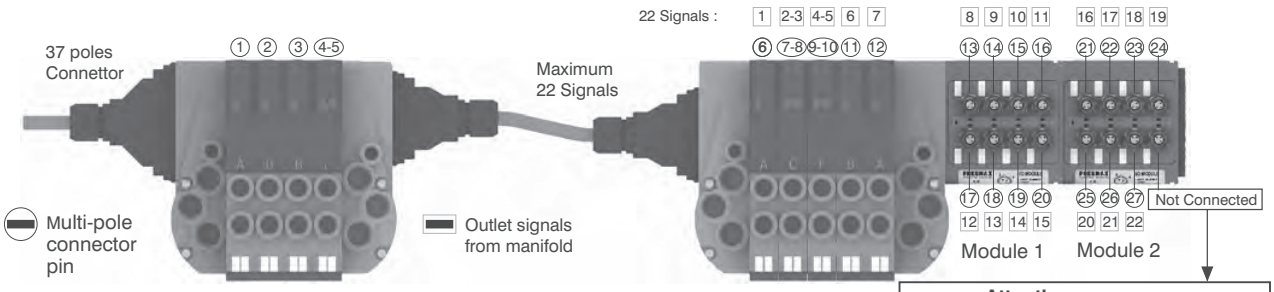



**Attention:**
Only one more I/O module can be added.




**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.

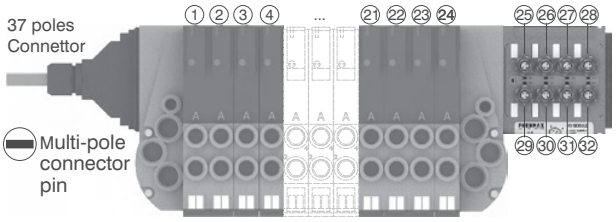


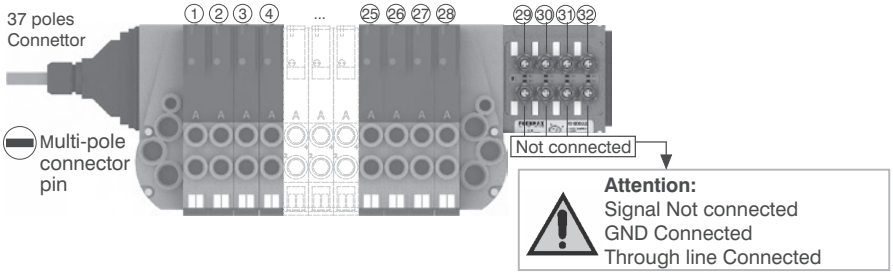

**Please note:** this example considers a 37 pin multi-pole connector.
The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 17

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

2

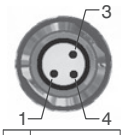
**Please note:** Optyma 32-F solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



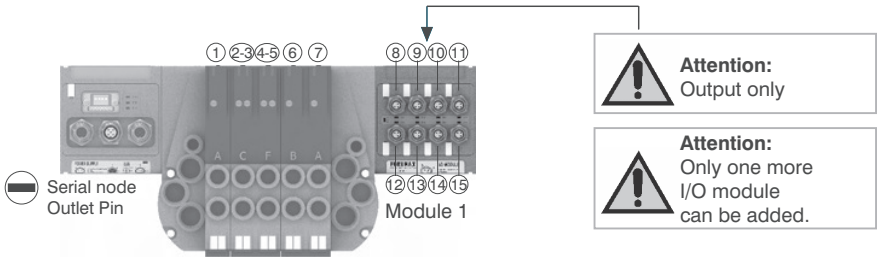



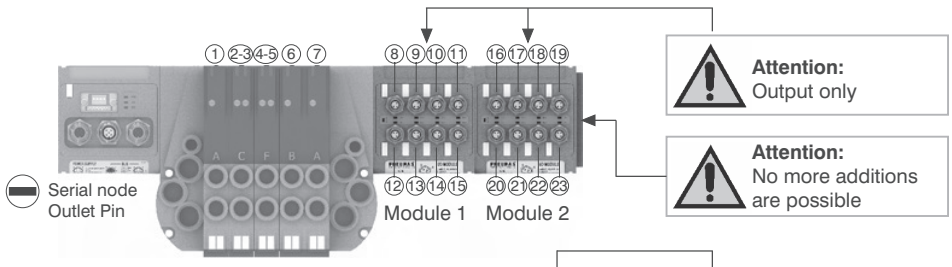

**B) Control via fieldbus:**

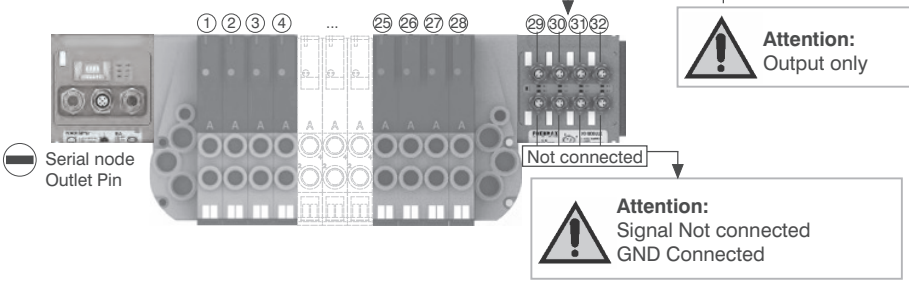
With this kind of control the I/O module can only be used as an output. Pin 1 of each connector is not connected. The output voltage will be 0.7V lower than that applied to Pin 4 of the connector.
The maximum output current for each output is 100mA. Te correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.



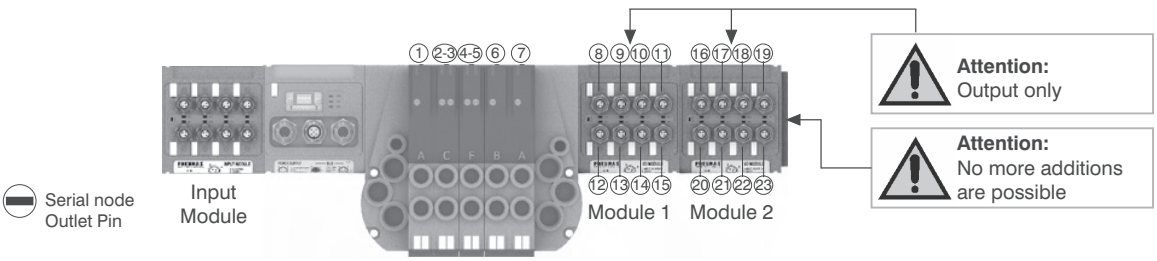

| PIN | DESCRIPTION |
|---|---|
| 1 | NOT CONNECTED |
| 4 | SIGNAL |
| 3 | GND |



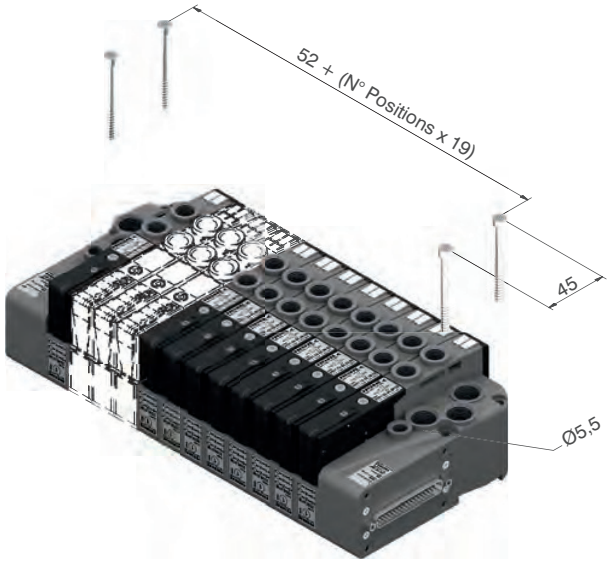



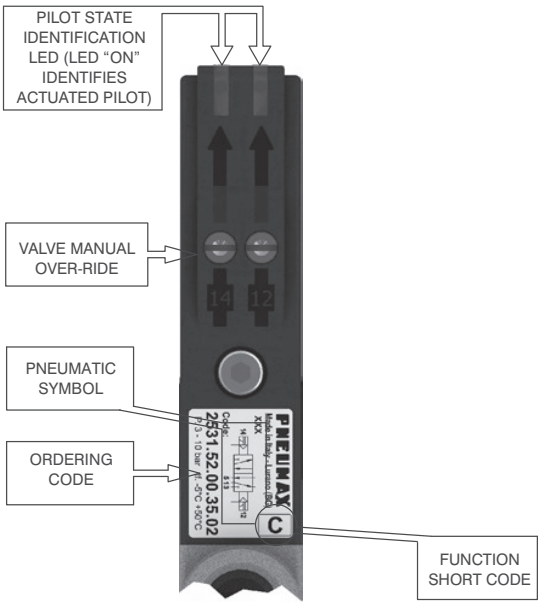




**Please note:** I/O modules don't allow to connect any additional valves manifold after them.

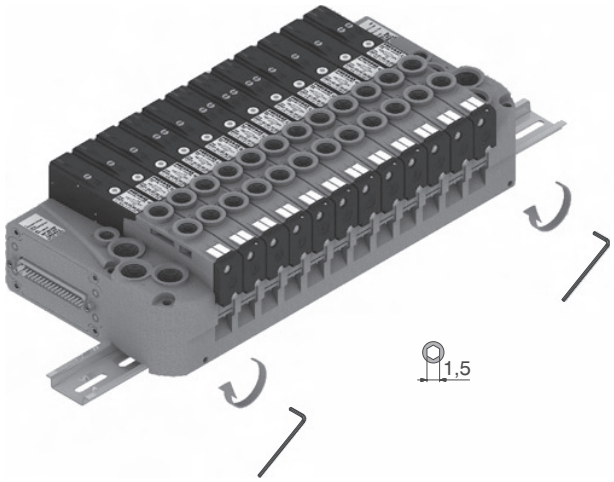


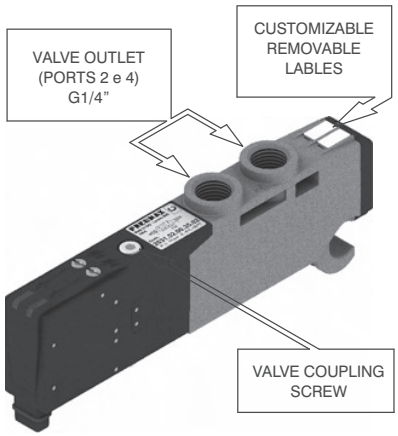
## From the top



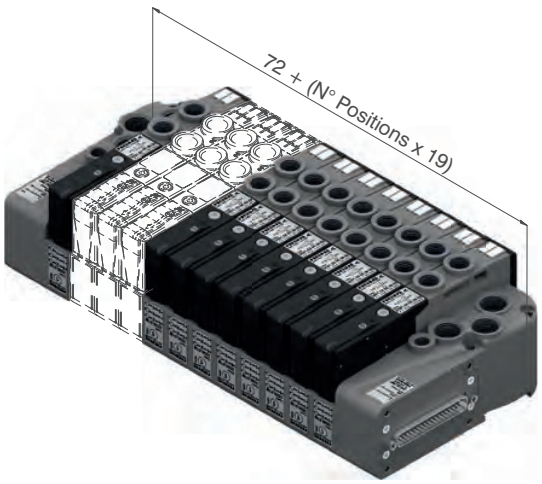



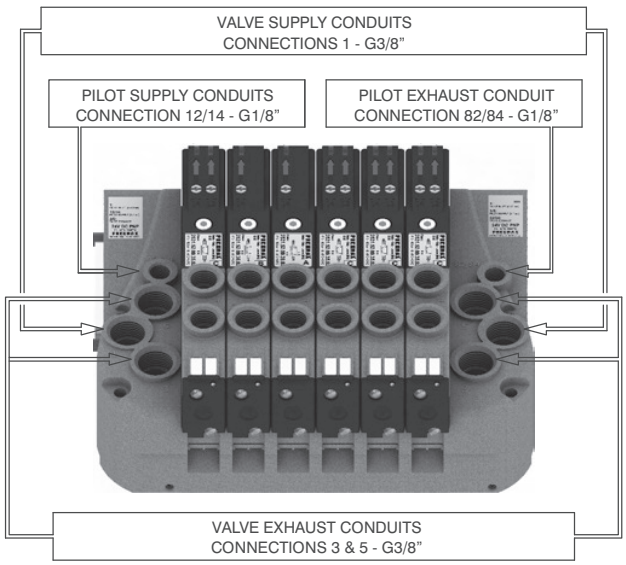

## DIN rail fixing



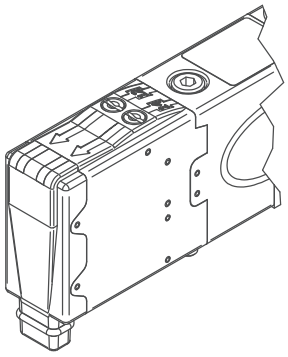

## Maximum possible size according to valves seats

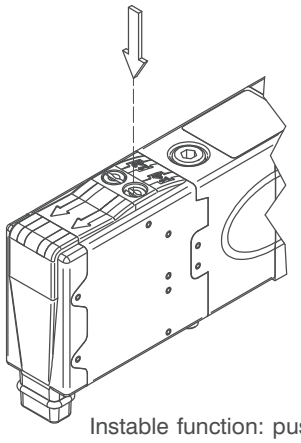


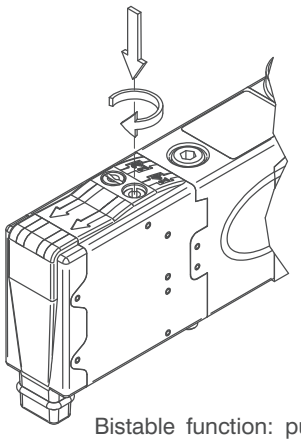
2

## Manual override actuation





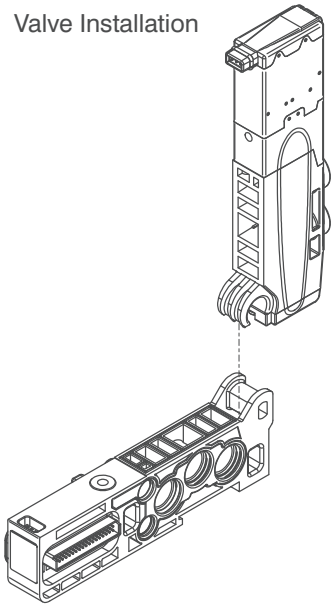
Instable function: push to actuate (when released it moves back to the original position).

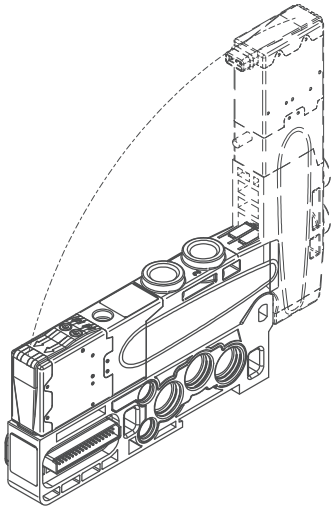


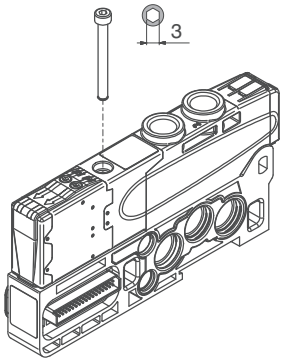
Bistable function: push and turn to get the bistable function

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

## Valve Installation

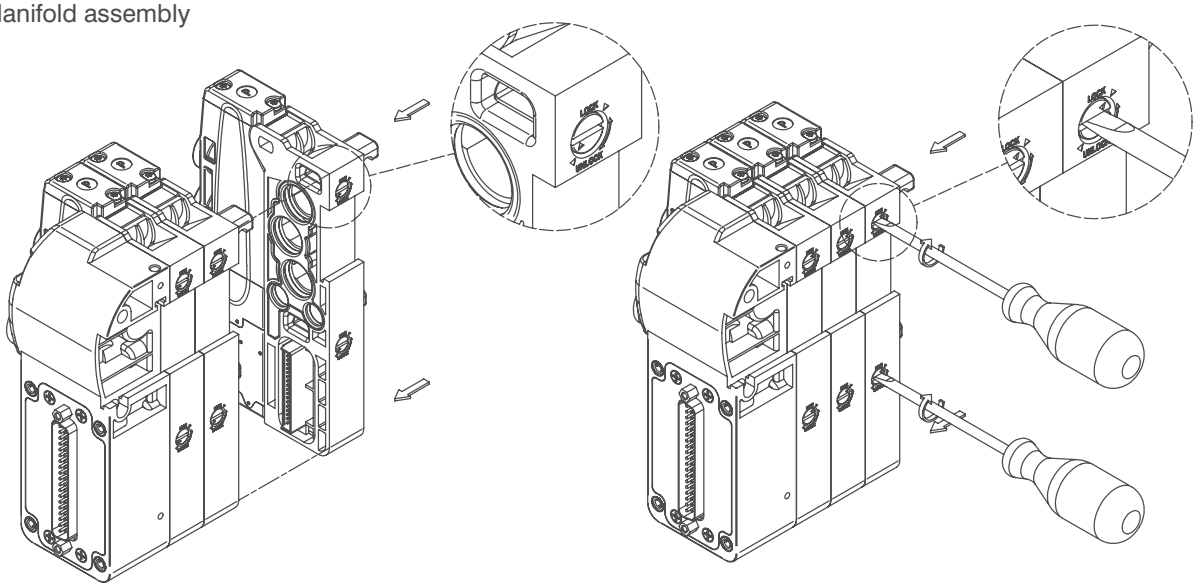




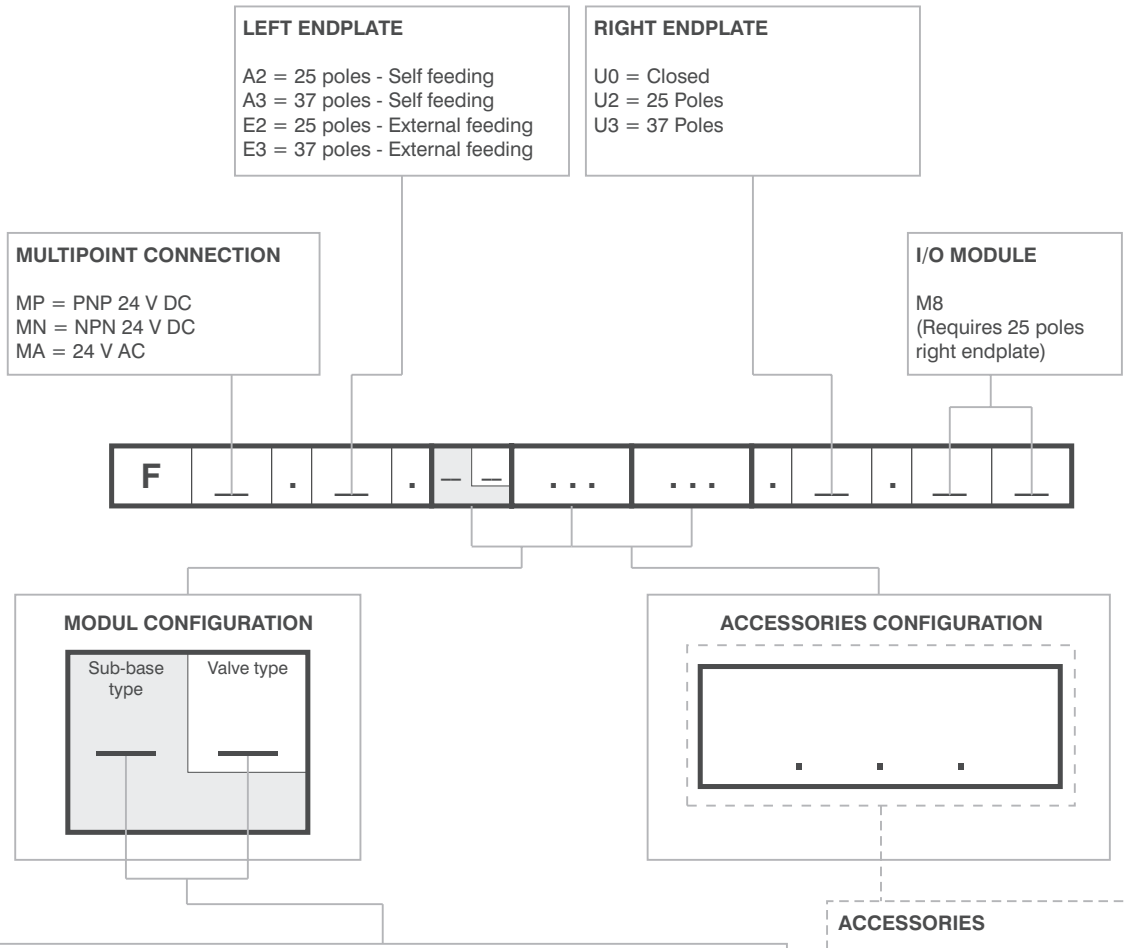



NOTE: Torque moment 1 Nm

## Manifold assembly



## Manifold Layout configuration




**SHORT CODE FUNCTION / CONNECTION :**

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

**ACCESSORIES**

U2 = Power supply 2 positions module
U4 = Power supply 4 positions module
W = Intermediate supply & exhaust module
X = Diaphragm plug on pipe 1
Y = Diaphragm plug on pipe 3
Z = Diaphragm plug on pipe 5
XY = Diaphragm plug on pipe 1 & 3
ZX = Diaphragm plug on pipe 5 & 1
ZY = Diaphragm plug on pipe 5 & 3
ZXY = Diaphragm plug on pipe 5, 1 & 3

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

2

**General:**

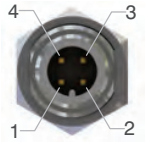
CANopen® module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F.
CANopen® module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus CANopen® is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to CiA Draft Recommendation 303-1 (V. 1.3 : 30 December 2004).
Transmission speed can be set by 3 dip-switches.
The node address can be set by 6 dip-switches using BCD numeration.
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5525.32F**

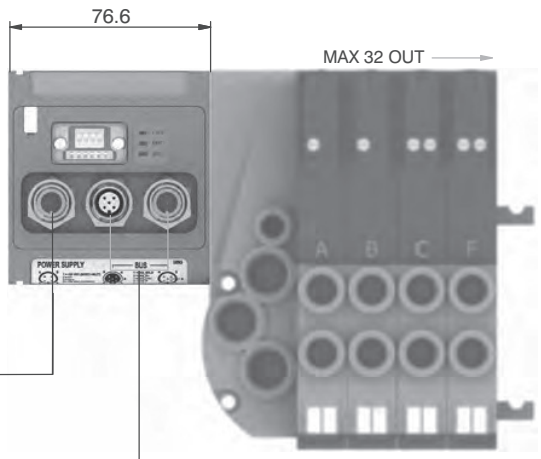
**Scheme / Overall dimensions and I/O layout :**

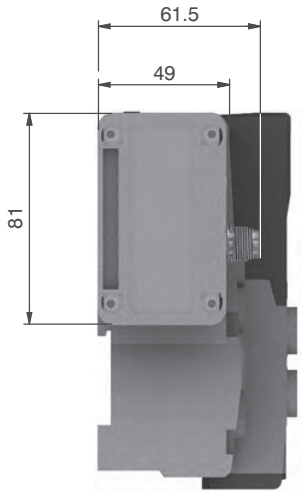
POWER SUPPLY connector



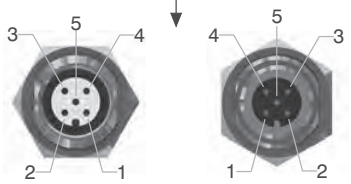

**M12 4P MALE**

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




NETWORK connectors




**M12 5P FEMALE** **M12 5P MALE**

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

**Technical characteristics**

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

**General:**

DeviceNet module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F.
DeviceNet module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus DeviceNet is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to DeviceNet Specifications Volume I, release 2.0.
Transmission speed can be set by 3 dip-switches.
The node address can be set by 6 dip-switches using BCD numeration.
The module includes an internal terminating resistance that can be activated by a dip-switch.

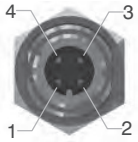
## Ordering code

**5425.32F**

2

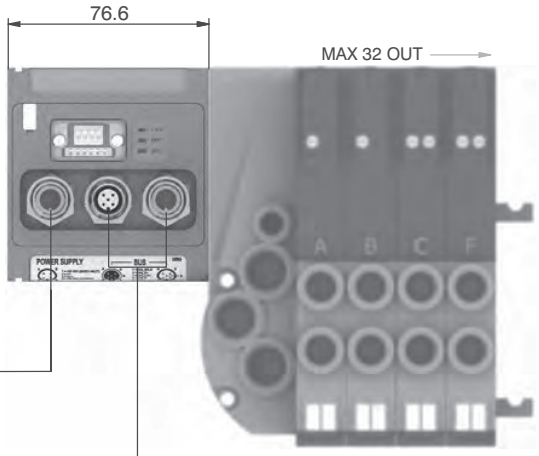
**Scheme / Overall dimensions and I/O layout :**

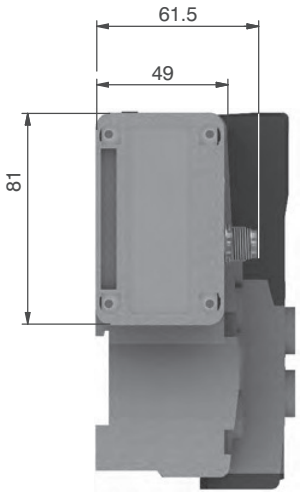
POWER SUPPLY connector



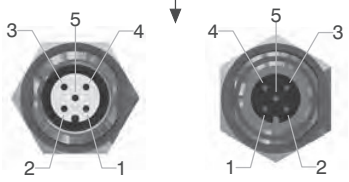

M12 4P MALE

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




NETWORK connectors




M12 5P FEMALE — M12 5P MALE

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

## Technical characteristics

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

2

**General:**

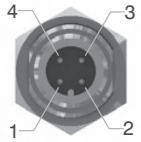
PROFIBUS DP module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F.
PROFIBUS DP module recognizes automatically the presence of the Input modules on power on. Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus PROFIBUS DP is possible via 2 M12 type B 5P male - female circular connectors; these two are connected in parallel and according to PROFIBUS Interconnection Technology (Version 1.1 : August 2001).
The node address can be set using BCD numeration: 4 dip-switches for the units and 4 dip-switches for the tens.
The module includes an internal terminating resistance that can be activated by 2 dip-switch.

## Ordering code

**5325.32F**

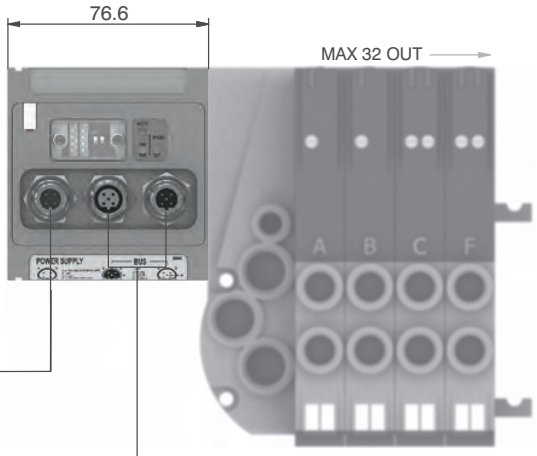
**Scheme / Overall dimensions and I/O layout :**

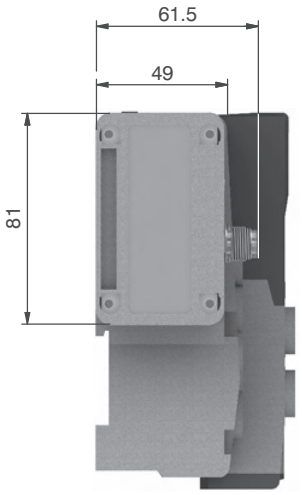
POWER SUPPLY connector



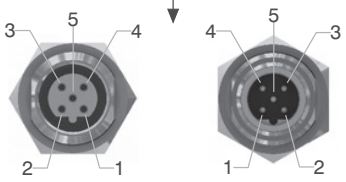

**M12 4P MALE**

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




NETWORK connectors




**M12 5P FEMALE** **M12 5P MALE**

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

## Technical characteristics

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

**General:**

EtherCAT® module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F.
EtherCAT® module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus EtherCAT® is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel. They are according to EtherCAT® Specifications ETG.1000 series.
By specifications, node ID should be automatically set during network configuration, but it is also possible to set the address via 6 dip-switches on the module, using BCD numeration.

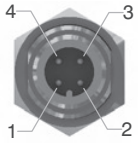
## Ordering code

**5625.32F**

2

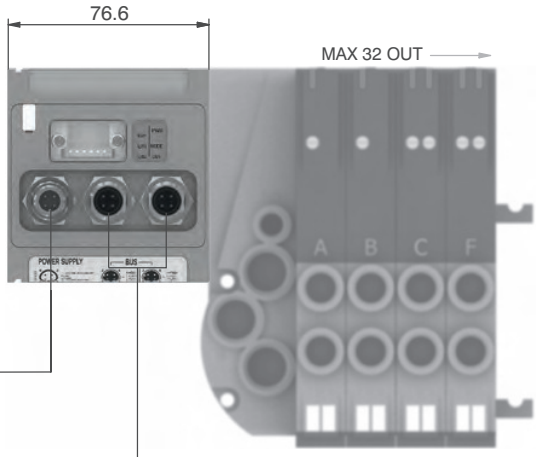
**Scheme / Overall dimensions and I/O layout :**

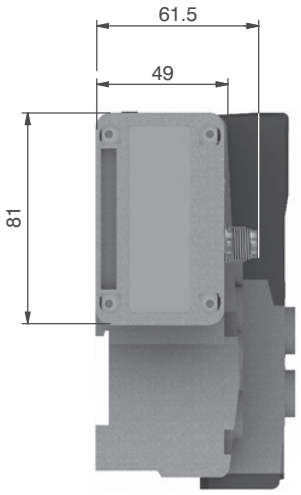
POWER SUPPLY connector



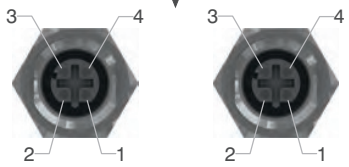

**M12 4P MALE**

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




NETWORK connectors




**M12 4P FEMALE** **M12 4P FEMALE**

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

## Technical characteristics

| | | |
|---|---|---|
| | Model | 5625.32F |
| | Specifications | EtherCAT® Specifications ETG.1000 series |
| | Case | Reinforced technopolymer |
| **Power supply** | Power supply connection | M12 4P male connector (IEC 60947-5-2) |
| | Power supply voltage | +24 VDC +/- 10% |
| | Node consumption (without inputs) | 310 mA |
| | Power supply diagnosis | Green led PWR / Green led OUT |
| **Outputs** | PNP equivalent outputs | +24 VDC +/- 10% |
| | Maximum current for output | 100 mA |
| | Max output simultaneously actuated | 32 |
| | N.max. uscite azionabili contemp. | 32 |
| **Network** | Network connectors | 2 M12 4P female connectors type D (IEC 61076-2-101) |
| | Baud rate | 100 Mbit/s |
| | Addresses, possibile numbers | From 0 to 65535 (from 1 to 63 with dip-switches) |
| | Max nodes in net | 65536 (master + slaves) |
| | Maximum distance between 2 nodes | 100 m |
| | Bus diagnosis | 1 status green led + 2 activity green led |
| | Configuration file | Available from our web site: http://www.pneumaxspa.com |
| | IP protection grade | IP65 when assembled |
| | Temperature range | From 0° to +50° C |

2

**General:**

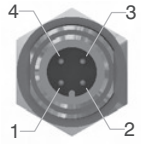
PROFINET IO RT/IRT module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F.
The PROFINET IO RT/IRT module, regardless the number of Input module connected, reports to have connected 8 Input modules.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus PROFINET IO RT/IRT is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.
The node address is assigned during configuration.

## Ordering code

**5725.32F.PN**

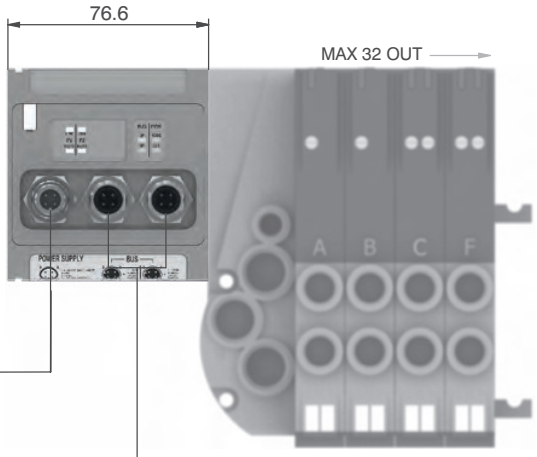
**Scheme / Overall dimensions and I/O layout :**

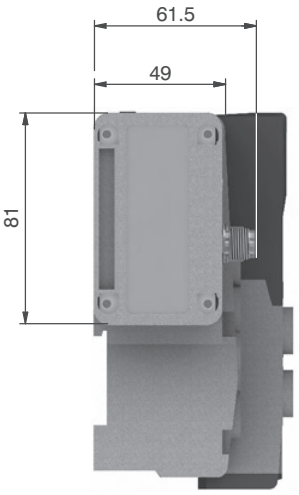
POWER SUPPLY connector



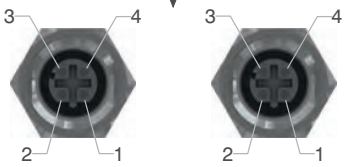

**M12 4P MALE**

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




NETWORK connectors




**M12 4P FEMALE** **M12 4P FEMALE**

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

## Technical characteristics

| | | |
|---|---|---|
| | Model | 5725.32F.PN |
| | Specifications | PROFINET IO RT/IRT |
| | Case | Reinforced technopolymer |
| **Power supply** | Power supply connection | M12 4P male connector (IEC 60947-5-2) |
| | Power supply voltage | +24 VDC +/- 10% |
| | Node consumption (without outputs) | 400 mA |
| | Power supply diagnosis | Green led PWR / Green led OUT |
| **Outputs** | PNP equivalent outputs | +24 VDC +/- 10% |
| | Maximum current for each output | 100 mA |
| | Maximum output number | 32 |
| | Max output simultaneously actuated | 32 |
| **Network** | Network connectors | 2 M12 4P female connectors type D (IEC 61076-2-101) |
| | Baud rate | 100 Mbit/s |
| | Addresses, possibile numbers | As an IP address |
| | Max nodes in net | As an Ethernet Network |
| | Maximum distance between 2 nodes | 100 m |
| | Bus diagnosis | 1 green and 1 red LED for status + 4 LEDs for link & activity |
| | Configuration file | Available from our web site: http://www.pneumaxspa.com |
| | IP protection grade | IP40 when assembled |
| | Temperature range | From 0° to +50° C |

**General:**

EtherNet/IP module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F.
The EtherNet/IP module, regardless the number of Input module connected, reports to have connected 8 Input modules.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus EtherNet/IP is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.
The node address is assigned during configuration.

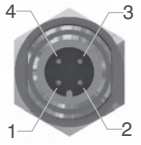
## Ordering code

**5725.32F.EI**

2

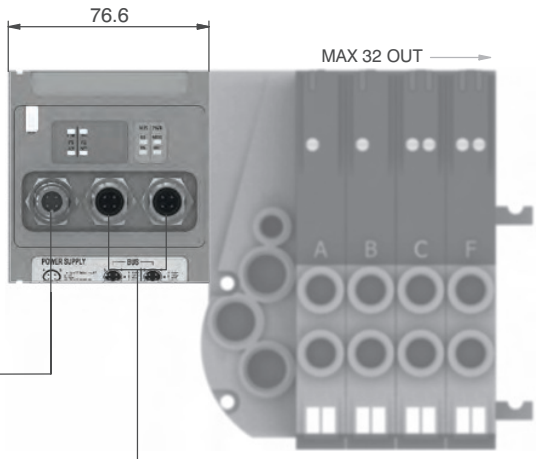
**Scheme / Overall dimensions and I/O layout :**

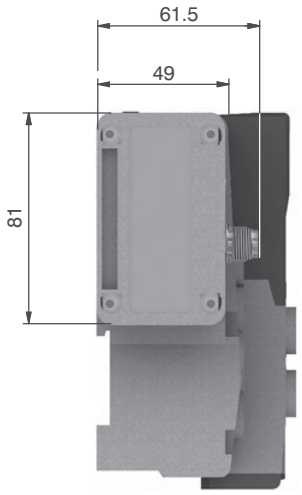
POWER SUPPLY connector



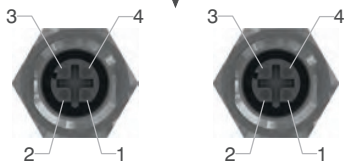

**M12 4P MALE**

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




NETWORK connectors




**M12 4P FEMALE** **M12 4P FEMALE**

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

## Technical characteristics

| | | |
|---|---|---|
| | Model | 5725.32F.EI |
| | Specifications | The EtherNet/IP Specification |
| | Case | Reinforced technopolymer |
| **Power supply** | Power supply connection | M12 4P male connector (IEC 60947-5-2) |
| | Power supply voltage | +24 VDC +/- 10% |
| | Node consumption (without outputs) | 400 mA |
| | Power supply diagnosis | Green led PWR / Green led OUT |
| **Outputs** | PNP equivalent outputs | +24 VDC +/- 10% |
| | Maximum current for each output | 100 mA |
| | Maximum output number | 32 |
| | Max output simultaneously actuated | 32 |
| **Network** | Network connectors | 2 M12 4P female connectors type D (IEC 61076-2-101) |
| | Baud rate | 100 Mbit/s |
| | Addresses, possibile numbers | As an IP address |
| | Max nodes in net | As an Ethernet Network |
| | Maximum distance between 2 nodes | 100 m |
| | Bus diagnosis | 1 green and 1 red LED for status + 4 LEDs for link & activity |
| | Configuration file | Available from our web site: http://www.pneumaxspa.com |
| | IP protection grade | IP40 when assembled |
| | Temperature range | From 0° to +50° C |

2

**General:**

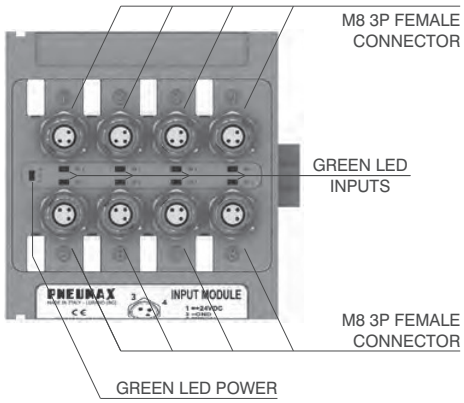
Modules have 8 connectors M8 3P female.

The Inputs are PNP equivalent 24 VDC ±10%.
To each connector it is possible to plug both 2 wires Inputs (switches, magnetic switches pressure switches, etc) or 3 wires Inputs (proximity, photocells, electronic sensors, etc).
The maximum current available for all 8 Inputs is 200 mA.
Each module includes a 200 mA resettable fuse. If a short circuit or a overcharge (overall current >200mA) occur the safety device acts cutting the 24 VDC power supply to all M8 connectors on the module and switching off the green led PWR. Any other Input module connected to the node will remain powered and will function correctly.
Once the cause of the fault disappears the green led PWR light up indicating the ON state and the node will re-start to operate.
The maximum number of Input modules supported is 4.

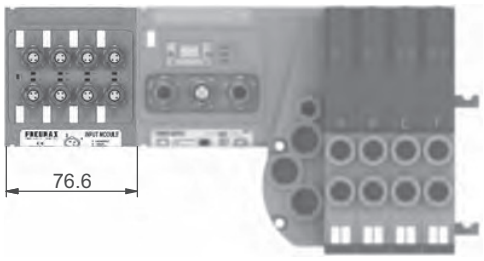
## Ordering code

**5225.08F**

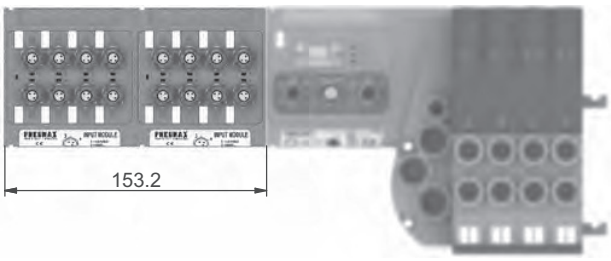
**Scheme / Overall dimensions and I/O layout :**

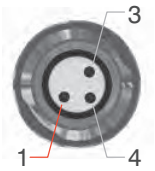



Module 1



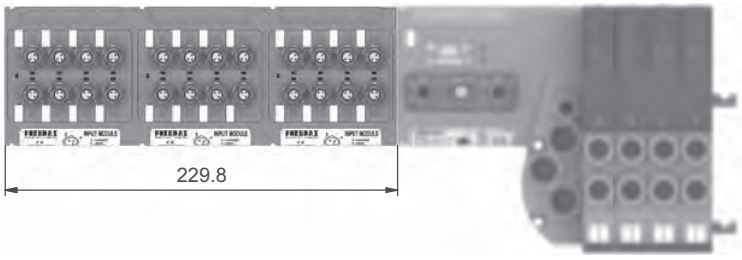

Module 2 Module 1



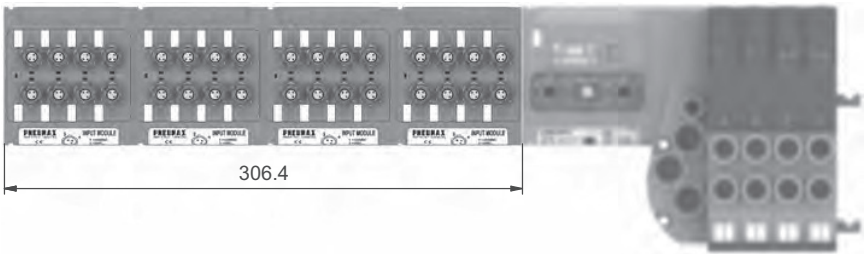




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | INPUT |
| 3 | GND |

Module 3 Module 2 Module 1




Module 4 Module 3 Module 2 Module 1



**General :**

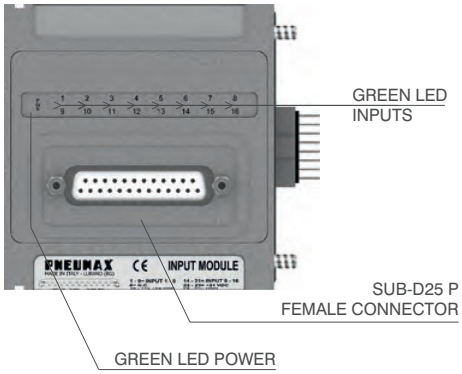
Modules are fitted with SUB-D 25 pin female connector.

The INPUTS are PNP equivalent 24VDC ±10%.
To the connector it is possible to connect both 2 wires INPUTS (switches, magnetic switches pressure switches etc) or 3 wires (proximity, fotocellule, electronic end of stroke sensors etc).
The maximum current available for all 16 INPUTS is 750 mA.
Each module includes a 750 mA self-mending fuse. Should a short circuit or a overcharge (overall current >750mA) occur the safety device intervenes cutting the 24VDC power supply to all pins and switching off the green led PWR. Any other INPUTS module connected to the node will remain powered and will function correctly.
Once the cause of the fault is removed the green led light up indicating the ON state and the node will re-start to operate. This 16 INPUTS module is counted as 2 8 INPUTS modules.
The Maximum number of 8 INPUTS modules supported is 4.

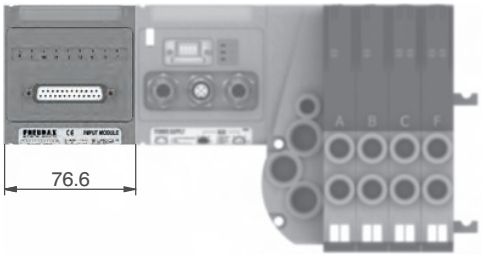
## Ordering code

**5225.25F**

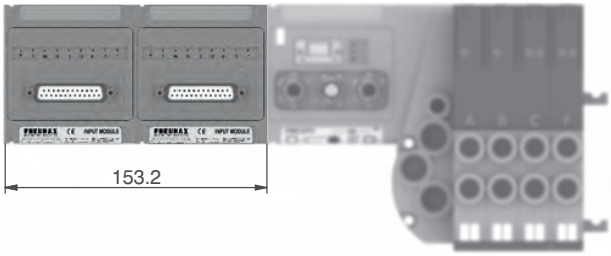
**Scheme / Overall dimensions and I/O layout :**

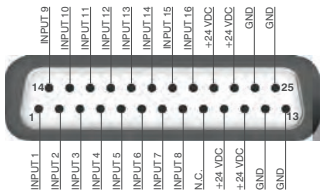



Module 1




Module 2 Module 1



2

**General :**

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

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

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

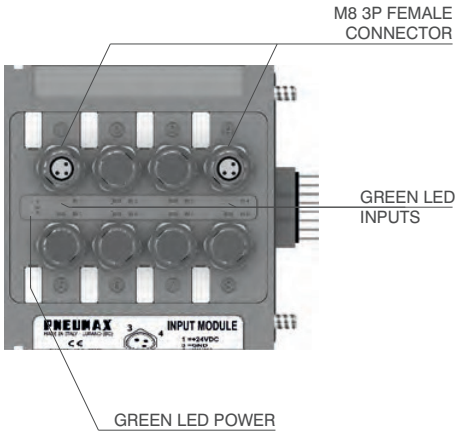
Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC power supply to all M8 connectors on the module and switching off the green LED PWR. Any other Input module connected to the
node will remain powered and will function correctly.
Once the cause of the fault is removed the green LED lights up indicating the ON state and the node will re-start to operate.

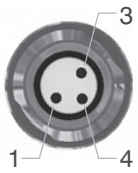
This module is counted as four 8 digital INPUT modules.

## Ordering code

**5225.2 _ . _ _F**

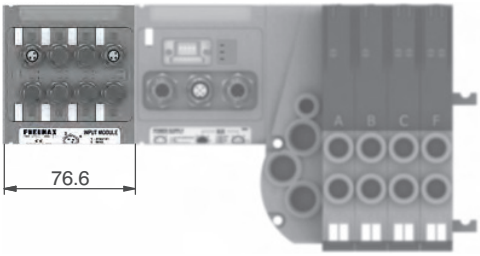
**Scheme / Overall dimensions and I/O layout :**



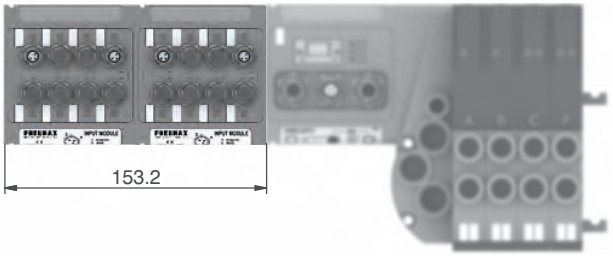




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | INPUT |
| 3 | GND |

Module 1




Module 2 Module 1



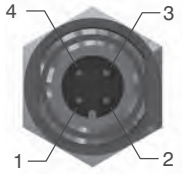
## M12A 4P female Socket

Ordering code

**5312A.F04.00**

Power supply straight connector.

Upper view Slave connector




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC Node |
| 2 | |
| 3 | 0 V |
| 4 | +24 VDC Output |

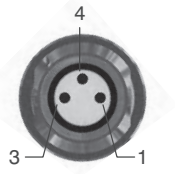
## M8 3P male Plug

Ordering code

**5308A.M03.00**

Input straight connector.

Upper view Slave connector




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | INPUT |
| 3 | GND |

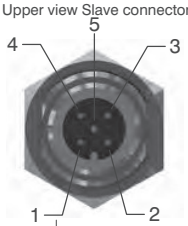
## M12A 5P female Socket

Ordering code

**5312A.F05.00**

Network straight connector: for Bus CANOpen®, DeviceNet.

Upper view Slave connector




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

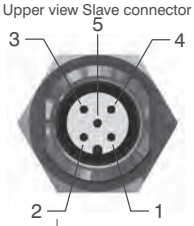
## M12A 5P male Plug

Ordering code

**5312A.M05.00**

Network straight connector: for BUS CANOpen®, DeviceNet.

Upper view Slave connector




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

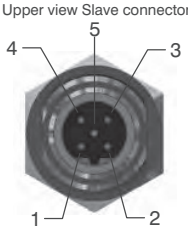
## M12B 5P female Plug

Ordering code

**5312B.F05.00**

Network straight connector: for Bus PROFIBUS DP.

Upper view Slave connector




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

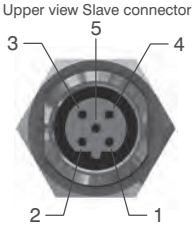
## M12B 5P male Plug

Ordering code

**5312B.M05.00**

Network straight connector: for BUS PROFIBUS DP.

Upper view Slave connector




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

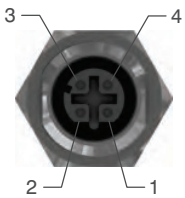
## M12D 4P male Plug

Ordering code

**5312D.M04.00**

Network straight connector: for Ether-CAT®, PROFINET IO RT/IRT, Ether-Net/Ip.

Upper view Slave connector




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

## M12 Plug

Ordering code

**5300.T12**

## M8 Plug

Ordering code

**5300.T08**

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

2

## Manifold Layout configuration

**LEFT ENDPLATE**

A3 = 37 poles - Self feeding
E3 = 37 poles - External feeding

**RIGHT ENDPLATE**

U0 = Closed
U2 = 25 Poles
U3 = 37 Poles

**32 OUT VERSION**

C3 = CANopen® 32OUT - 32IN
D3 = DeviceNet 32OUT - 32IN
P3 = PROFIBUS 32OUT - 32IN
E3 = EtherCAT® 32OUT - 32IN
I3 = EtherNet / IP 32OUT - 32IN
N3 = PROFINET IO RT/IRT 32OUT - 32IN

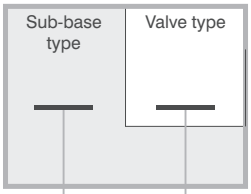
**INPUT MODULES**

A = No module
D1= 8 M8 digital inputs module
D3= 16 digital inputs (SUB-D 25) module
T1= 2 analog inputs 0-5V module
T2= 2 analog inputs 0-10V module
C1= 2 analog inputs 0-20mA module
C2= 2 analog inputs 4-20mA module

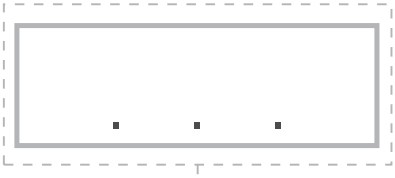
**I/O MODULE**

M8
(Requires 25 poles right endplate)


**MODUL CONFIGURATION**




**ACCESSORIES CONFIGURATION**



**SHORT CODE FUNCTION / CONNECTION :**

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

**ACCESSORIES**

U2 = Power supply 2 positions module
U4 = Power supply 4 positions module
W = Intermediate supply & exhaust module
X = Diaphragm plug on pipe 1
Y = Diaphragm plug on pipe 3
Z = Diaphragm plug on pipe 5
XY = Diaphragm plug on pipe 1 & 3
ZX = Diaphragm plug on pipe 5 & 1
ZY = Diaphragm plug on pipe 5 & 3
ZXY = Diaphragm plug on pipe 5, 1 & 3

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

# OPTYMA 32 -T

## General characteristics

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 Nl/min
- Low consumption coils placed all in one side of the valve
- Quick mounting of the valve to the base using just one screw
- Possibility to use different pressures along the manifold (including vacuum)
- Possibility to replace the valve without the need to disconnect the connections
- 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 SUB-D connector.
Possibility to integrate with Field Bus modules (all the most common protocols will be available).
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
All pneumatic connections (push-in) on the same side of the manifold

## Construction characteristics

| | |
|---|---|
| Body | Technopolymer |
| Operators | Technopolymer |
| Spools | Nikel plated steel / Technopolymer |
| Spacers | Technopolymer |
| Seals | NBR |
| Piston seals | NBR |
| Springs | AISI 302 stainless steel |
| Pistons | Technopolymer |

## Functions

| |
|---|
| 5/2 MONOST. SOL. SPRING |
| 5/2 MONOST. SOL. DIFFERENTIAL |
| 5/2 BISTABLE SOL. SOL. |
| 5/3 CC SOL. SOL. |
| 2x3/2 NC-NC (= 5/3 OC) SOL. SOL. |
| 2x3/2 NO-NO (= 5/3 PC) SOL. SOL. |
| 2x3/2 NC-NO SOL. SOL. |

## Technical characteristics

| | |
|---|---|
| Voltage | 24 VDC ±10% PNP (NPN and AC on request) |
| Pilot consuption | 1,2 Watt |
| Valve working pressure [1] | from vacuum to 10 bar max. |
| Pilot working pressure [12-14] | From 3 to 7 bar max. |
| Operating temperature | -5°C+50°C |
| Protection degree | IP65 |
| Life (standard operating conditions) | 50.000.000 |
| Fluid | Filtered and lubricated air or not<br>(if lubricated air, the lubrication must be continuous) |

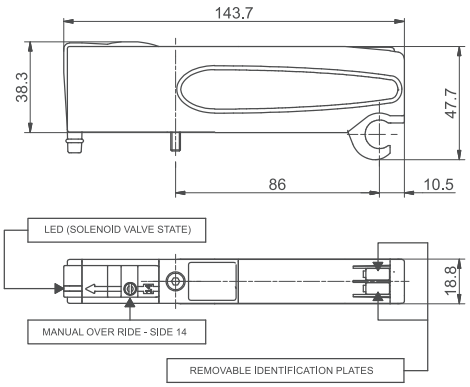
2

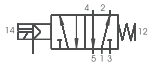
## Solenoid - Spring

Ordering code

**2541.52.00.39.Ⓥ**

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




SHORT FUNCTION CODE "A"
"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."

**Operational characteristic**

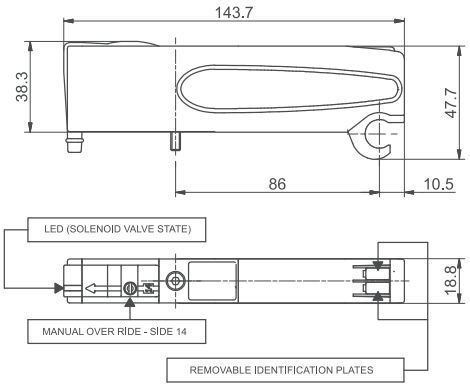
| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 750 | 14 | 40 | From vacuum to 10 | 3 - 7 bar | -5° / +50° | 129 |

## Solenoid - Differential

Ordering code

**2541.52.00.36.Ⓥ**

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





SHORT FUNCTION CODE "B"
"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."

**Operational characteristic**

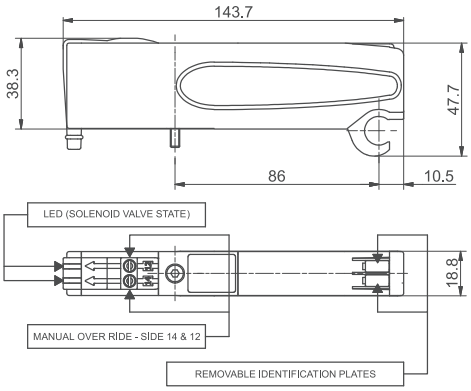
| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 750 | 20 | 29 | From vacuum to 10 | 3 - 7 bar | -5° / +50° | 126 |

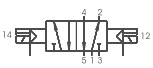
## Solenoid - Solenoid

Ordering code

**2541.52.00.35.Ⓥ**

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




SHORT FUNCTION CODE "C"
"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."

**Operational characteristic**

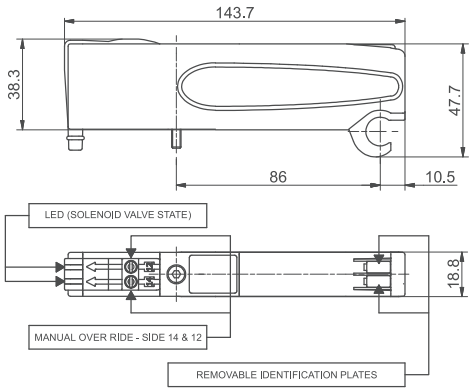
| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 750 | 10 | 14 | From vacuum to 10 | 3 - 7 bar | -5° / +50° | 134 |

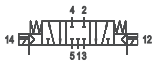
## Solenoid - Solenoid - (5/3 Closed centres)

Ordering code

**2541.53.31.35.Ⓥ**

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




SHORT FUNCTION CODE "E"
"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."

**Operational characteristic**

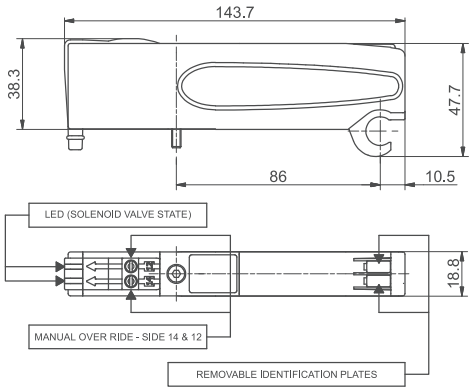
| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 600 | 15 | 20 | From vacuum to 10 | 3 - 7 bar | -5° / +50° | 132 |

## Solenoid - Solenoid 2x3/2

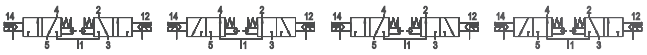
Ordering code

**2541.62.Ⓕ.35.Ⓥ**

| | |
|---|---|
| | 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 |




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




"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."

**Operational characteristic**

"Example: If inlet pressure is set at 5bar then pilot pressure must be at least Pp=3+0.2*5)= 4bar"

| Fluid | Flow rate at 6 bar with Δp=1 (Nl/min) | Responce time according to ISO 12238, activation time (ms) | Responce time according to ISO 12238, deactivation time (ms) | Working pressure (bar) | Pressure range (bar) pilots 12-14 | Temperature °C | Weight (gr.) |
|---|---|---|---|---|---|---|---|
| Filtered air, with or without lubrication | 700 | 15 | 25 | From vacuum to 10 | ≥2,5+(0,2xP.alim.) | -5° / +50° | 122 |

2

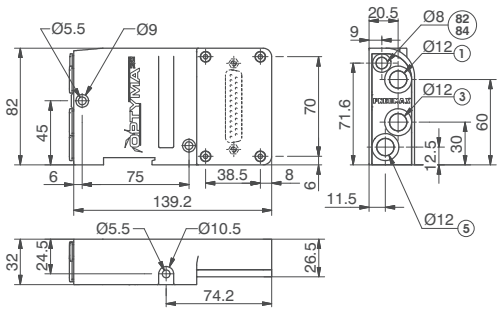
## Right Endplates

Ordering code

**2540.03.C**

| C | CONNECTOR TYPE |
|---|---|
| | 00 = Exhaust electrical connection closed |
| | 25P = Connectors 25 poles |

Weight gr. 274




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

| Operating Characteristics | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 - +50 |

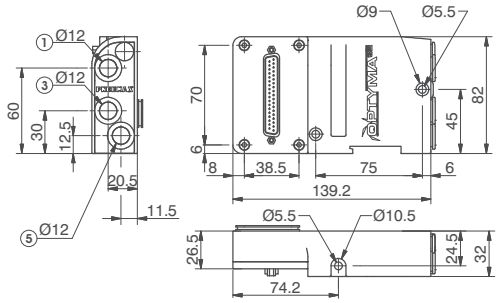
## Left Endplates - External feeding base

Ordering code

**2540.02.C**

| C | CONNECTOR TYPE |
|---|---|
| | 37P = Connector 37 poles PNP |
| | 25P = Connector 25 poles PNP |
| | 37N = Connector 37 poles NPN |
| | 25N = Connector 25 poles NPN |
| | 37A = Connector 37 poles AC |
| | 25A = Connector 25 poles AC |

Weight gr. 300




12/14 divided from conduct 1

| Operating Characteristics | Fluid | Pressure range (bar) | Pilot working pressure (bar) | Temperature °C |
|---|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | 3 - 7 | -5 - +50 |

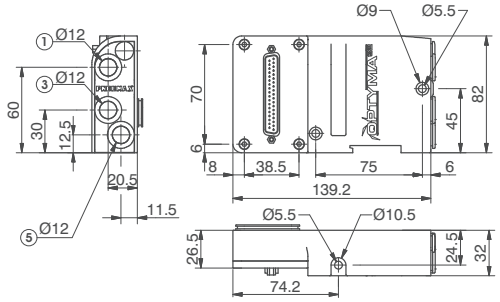
## Left Endplates - Self-feeding Base

Ordering code

**2540.12.C**

| C | CONNECTOR TYPE |
|---|---|
| | 37P = Connector 37 poles PNP |
| | 25P = Connector 25 poles PNP |
| | 37N = Connector 37 poles NPN |
| | 25N = Connector 25 poles NPN |
| | 37A = Connector 37 poles AC |
| | 25A = Connector 25 poles AC |

Weight gr. 300




12/14 connected with conduct 1

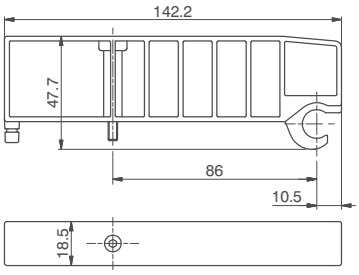
| Operating Characteristics | Fluid | Pilot working pressure (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | 3 - 7 | -5 - +50 |

## Closing plate

Ordering code

**2530.00**

Weight gr. 53,5
SHORT FUNCTION CODE "T"



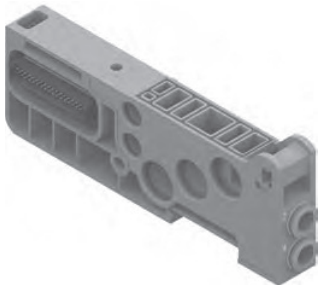

| Operating Characteristics | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 - +50 |

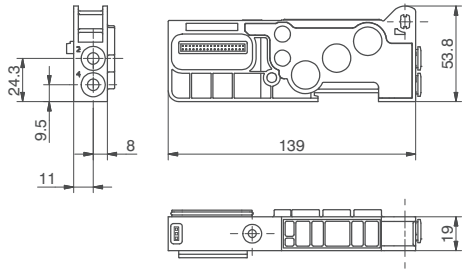
## Modular base

Ordering code

**254Ⓒ.01Ⓥ**

| | |
|---|---|
| Ⓣ | CONNECTIONS |
| | 1 = G1/8" Female |
| | 4 = Cartridge Ø 4 |
| | 6 = Quick fitting tube Ø 6 |
| | 8 = Quick fitting tube Ø 8 |
| Ⓥ | VERSION |
| | M= Monostable |
| | B= Bistable |





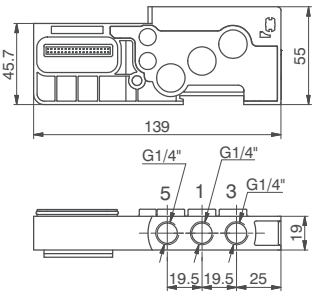

Weight gr. 96,5

| Operating Characteristics | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 - +50 |

## Intermediate Inlet/Exhaust module

Ordering code

**2540.10**




Weight gr. 115
SHORT FUNCTION CODE "W"

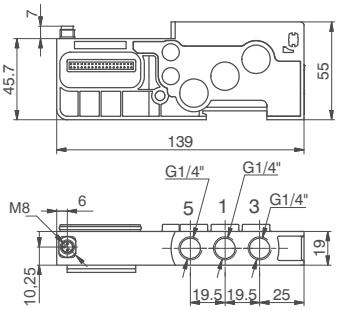
| Operating Characteristics | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 - +50 |

## Additional power supply module

Ordering code

**2540.10.Ⓥ**

| | |
|---|---|
| Ⓥ | VERSION |
| | 2A = 2 signals |
| | 4A = 4 signals |



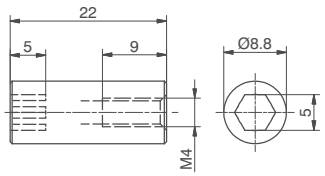

Weight gr. 115
SHORT FUNCTION CODE "U"
Working principle / simplified functional diagram / Usage examples, see the OPTYMA-F pages.

| Operating Characteristics | Fluid | Pressure range (bar) | Temperature °C |
|---|---|---|---|
| | Filtered and lubricated air or not | From vacuum to 10 | -5 ÷ +50 |

2

**Nut**

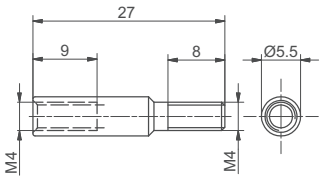
| Ordering code |
| --- |
| **2540.KD.00** |




Weight gr. 10
The Kit includes 4 pieces

**Extension (1 Position)**

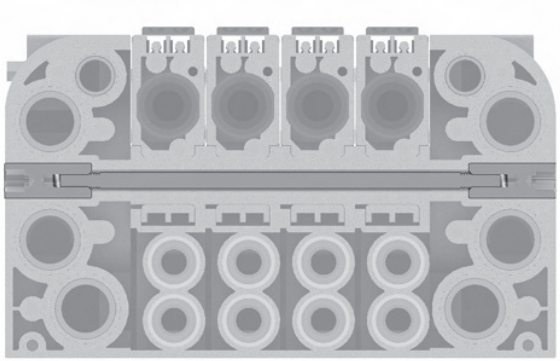
| Ordering code |
| --- |
| **2540.KP.01** |



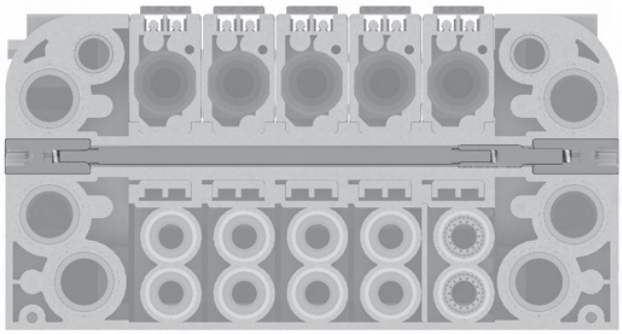

Weight gr. 3,5
The Kit includes 2 pieces

2

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



**Set with tie-rod, more extension adding a valve**

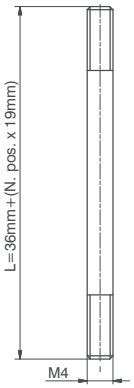


2

## Tie-rod M4

| Ordering code |
|---|
| **2540.KT.Ⓟ** |

| | N. POSITIONS |
|---|---|
| | 01=Nr. 1 Position |
| | 02=Nr. 2 Positions |
| | 03=Nr. 3 Positions |
| | 04=Nr. 4 Positions |
| | 05=Nr. 5 Positions |
| | 06=Nr. 6 Positions |
| | 07=Nr. 7 Positions |
| Ⓟ | 08=Nr. 8 Positions |
| | 09=Nr. 9 Positions |
| | 10=Nr. 10 Positions |
| | 11=Nr. 11 Positions |
| | 12=Nr. 12 Positions |
| | 13=Nr. 13 Positions |
| | 14=Nr. 14 Positions |
| | 15=Nr. 15 Positions |
| | 16=Nr. 16 Positions |




| CODE LIST | CODE | "L" DIMENSION |
|---|---|---|
| | 2540.KT.01 | 55 |
| | 2540.KT.02 | 74 |
| | 2540.KT.03 | 93 |
| | 2540.KT.04 | 112 |
| | 2540.KT.05 | 131 |
| | 2540.KT.06 | 150 |
| | 2540.KT.07 | 169 |
| | 2540.KT.08 | 188 |
| | 2540.KT.09 | 207 |
| | 2540.KT.10 | 226 |
| | 2540.KT.11 | 245 |
| | 2540.KT.12 | 264 |
| | 2540.KT.13 | 283 |
| | 2540.KT.14 | 302 |
| | 2540.KT. ... | ... |
| | 2540.KT.32 | 644 |

## Accessories table for manifolds

| . | Set of N° positions | Ordering code |
|---|---|---|
| | **2** | 2540.KD.00 + 2540.KT.02 |
| | **3** | 2540.KD.00 + 2540.KT.03 |
| | **4** | 2540.KD.00 + 2540.KT.04 |
| | **5** | 2540.KD.00 + 2540.KT.05 |
| | **6** | 2540.KD.00 + 2540.KT.06 |
| | **7** | 2540.KD.00 + 2540.KT.07 |
| | **8** | 2540.KD.00 + 2540.KT.08 |
| | **9** | 2540.KD.00 + 2540.KT.09 |
| | **10** | 2540.KD.00 + 2540.KT.10 |
| | **11** | 2540.KD.00 + 2540.KT.11 |
| | **12** | 2540.KD.00 + 2540.KT.12 |
| | **13** | 2540.KD.00 + 2540.KT.13 |
| | **14** | 2540.KD.00 + 2540.KT.14 |
| | **15** | 2540.KD.00 + 2540.KT.15 |
| | **16** | 2540.KD.00 + 2540.KT.... |
| | **32** | 2540.KD.00 + 2540.KT.32 |

2540.KD.00

N° 4 pieces

2540.KT.XX

N° 2 pieces

## Polyethylene Silencer Series SPL-R

| Ordering code |
|---|
| **SPLR.Ⓕ** |

| | TUBE DIAMETER |
|---|---|
| Ⓕ | 8=8 mm |
| | 12=12 mm |

**Diaphragm plug**

| Ordering code |
|---|
| **2530.17** |

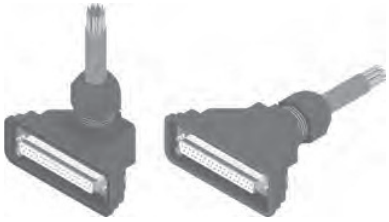
Weight gr. 6,5

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

| Ordering code | |
|---|---|
| **2300.25.Ⓛ.Ⓒ** | |
| Ⓛ | CABLE LENGHT |
| | 03 = 3 meters |
| | 05 = 5 meters |
| | 10 = 10 meters |
| Ⓟ | CONNECTORS |
| | 10 = In line |
| | 90 = 90° Angle |

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

| Ordering code | |
|---|---|
| **2400.37.Ⓛ.Ⓒ** | |
| Ⓛ | CABLE LENGHT |
| | 03 = 3 meters |
| | 05 = 5 meters |
| | 10 = 10 meters |
| Ⓟ | CONNECTORS |
| | 10 = In line |
| | 90 = 90° Angle |



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

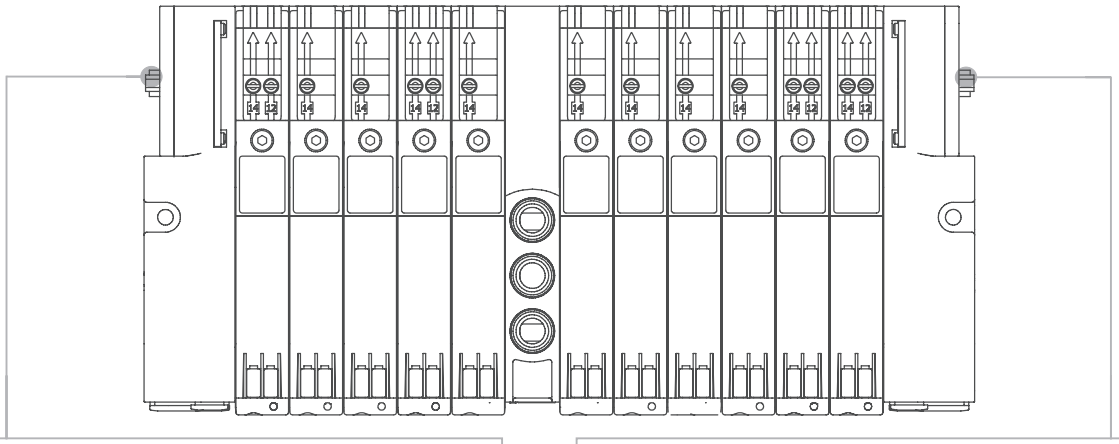
| Ordering code | |
|---|---|
| **2400.25.Ⓛ.25** | |
| Ⓛ | CABLE LENGHT |
| | 03 = 3 meters |
| | 05 = 5 meters |
| | 10 = 10 meters |

2

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:

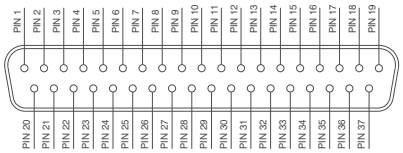
37 pin connector nr of output = 32 – (total of used signals)
25 pin connector nr of output = 22 – (total of used signals)

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



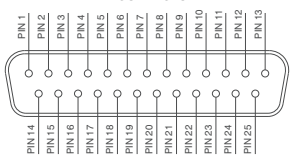
## IN-LET ELECTRIC CONNECTIONS

SUB-D 37 POLE
MALE CONNECTOR




1 - 32 = SOLENOID VALVES SIGNAL
33 - 35 = GND
36 - 37 = THROUGH LINE

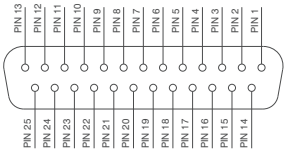
SUB-D 25 POLE
MALE CONNECTOR




1 - 22 = SOLENOID VALVES SIGNAL
23 - 24 = GND
25 = THROUGH LINE

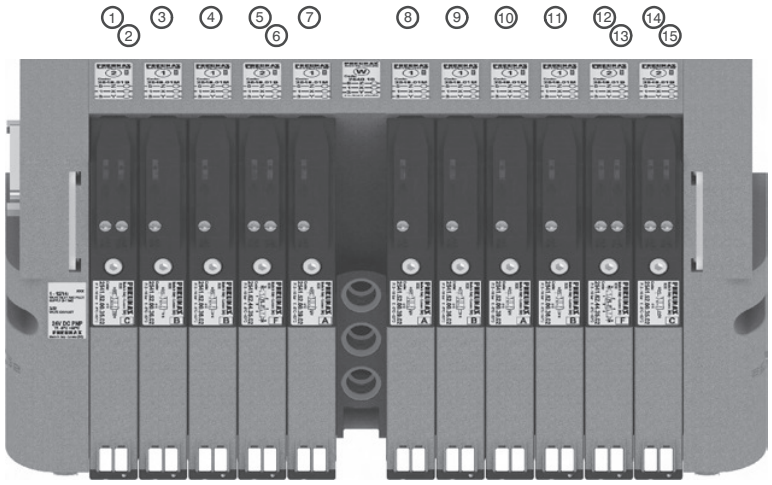
## OUTLET ELECTRIC CONNECTIONS (IF PRESENT)

SUB-D 25 POLE
FEMALE CONNECTOR




1 - 22 = SOLENOID VALVES SIGNAL
23 - 24 = GND
25 = THROUGH

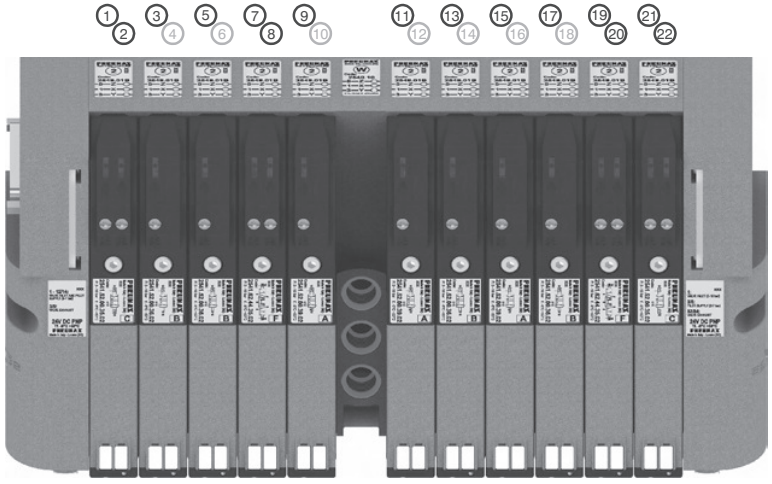
### 37 PIN Connector correspondence for valves assembled on mixed bases



| POS. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

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

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

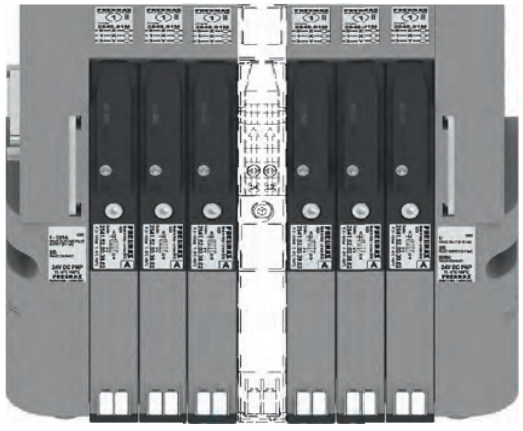


| POS. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

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

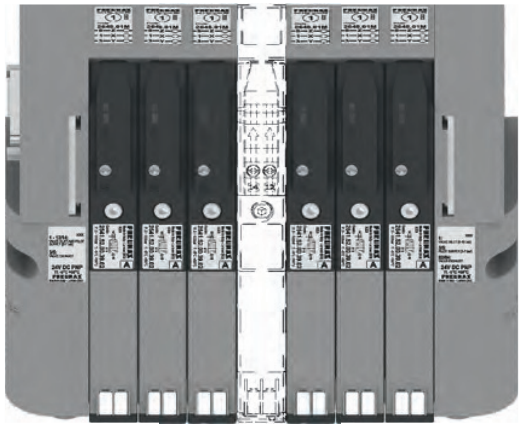
### 37 PIN Connector correspondence for manifold for 32 position manifold with monostable valves on base

37P



| POS. | 1 | 2 | 3 | ... | 30 | 31 | 32 |
|---|---|---|---|---|---|---|---|

25P



| POS. | 1 | 2 | 3 | ... | 20 | 21 | 22 |
|---|---|---|---|---|---|---|---|

2

**General :**

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

## Ordering code

**2540.08T**

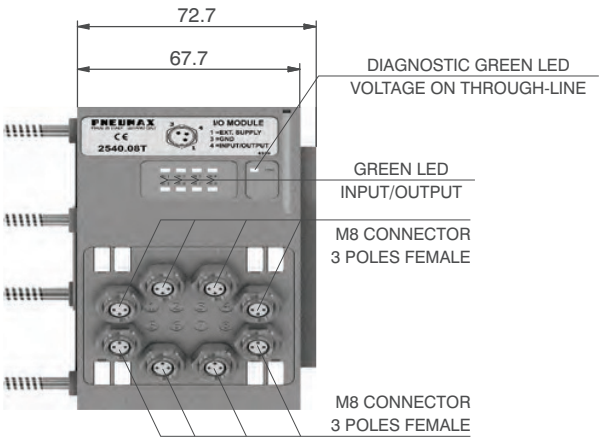
**Please note:** If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

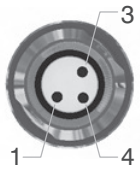
It is possible to connect the manifold to up to two I/O modules.

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

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

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




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

**Input features:**

Each connection can accept either two wire (switches, magnetic switches, pressure switches, etc.) or three wire connections (photocells, electronic end of stroke sensors, etc.) If +24VDC is required on at Pin 1 of each connector, it is possible to provide this via the through-line pin of the multi-pole connector.
I.E :
Pin 25 of the 25 pin multi-pole connector (code 2540.02.25P or 2540.12.25P)
Pin 36-37 of the 37 pin multi-pole connector (code 2540.02.37P or 2540.12.37P)

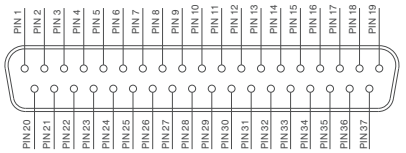
**Output features:**

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

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

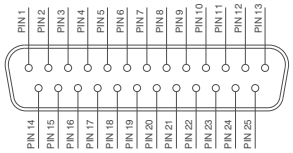
## CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

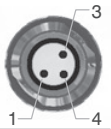



1 - 32 = SIGNALS
33 - 35 = GND
36 - 37 = THROUGH LINE

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 it is operation depending on the way the manifold is controlled. There are two possible modes:

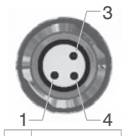
A) Control via multi-pole connection
B) Control via fieldbus

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).

### A) Control via multi-pole :

*M8 connector used as Input:*

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

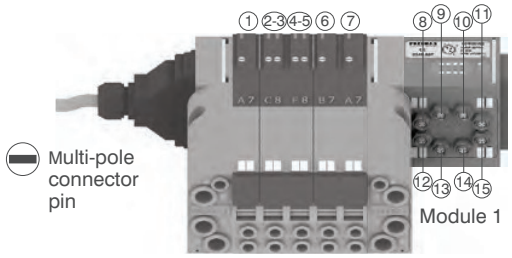



| PIN | DESCRIPTION |
|---|---|
| 1 | THROUGH LINE |
| 4 | SIGNAL |
| 3 | GND |

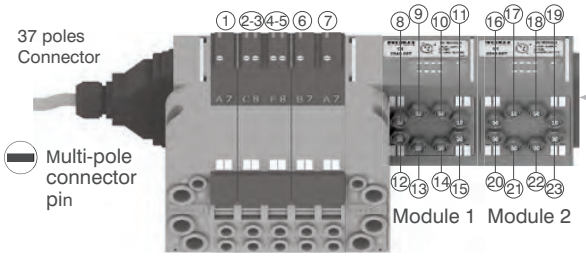
*M8 connector used as Output:*

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

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

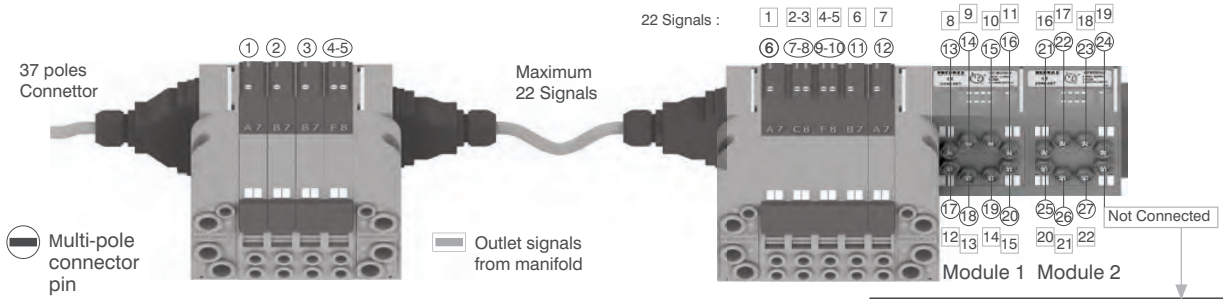



**Attention:** Only one more I/O module can be added.




**Attention:** No more additions are possible

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

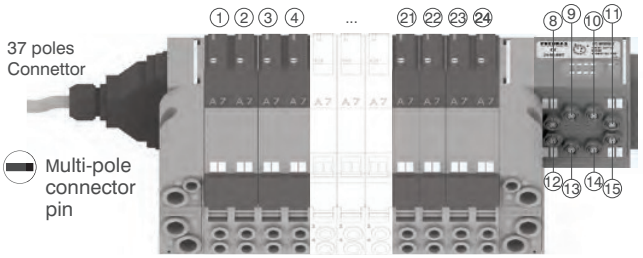


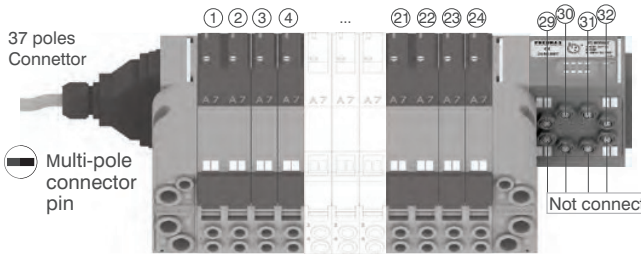

**Please note:** this example considers a 37 pin multi-pole connector.
The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 17

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

2

**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.

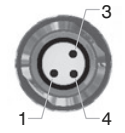


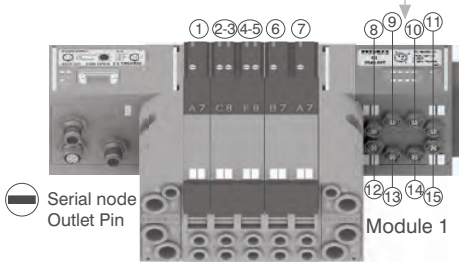

**Attention:**
Signal Not connected
GND Connected
Through line Connected

### B) Control via fieldbus:

With this kind of control the I/O module can only be used as an output. Pin 1 of each connector is not connected. The output voltage will be 0.7V lower than that applied to Pin 4 of the connector.
The maximum output current for each output is 100mA. The correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.

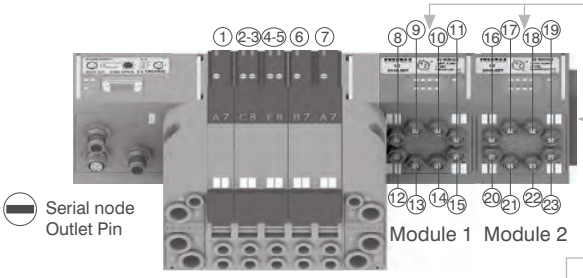



| PIN | DESCRIPTION |
|---|---|
| 1 | NOT CONNECTED |
| 4 | SIGNAL |
| 3 | GND |



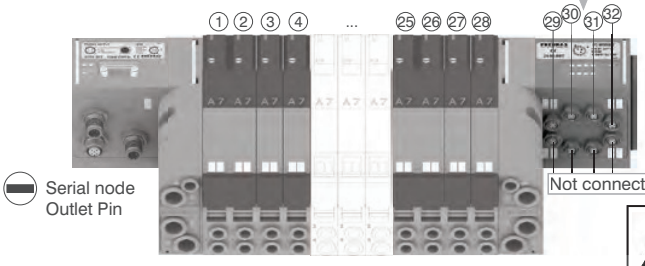

**Attention:**
Output only

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




**Attention:**
Output only

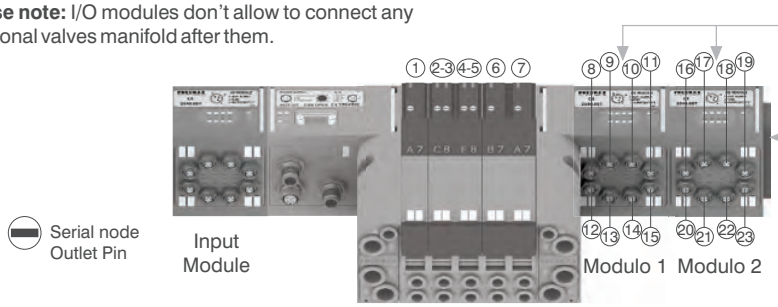
**Attention:**
No more additions
are possible




**Attention:**
Output only

**Attention:**
Signal Not connected
GND Connected

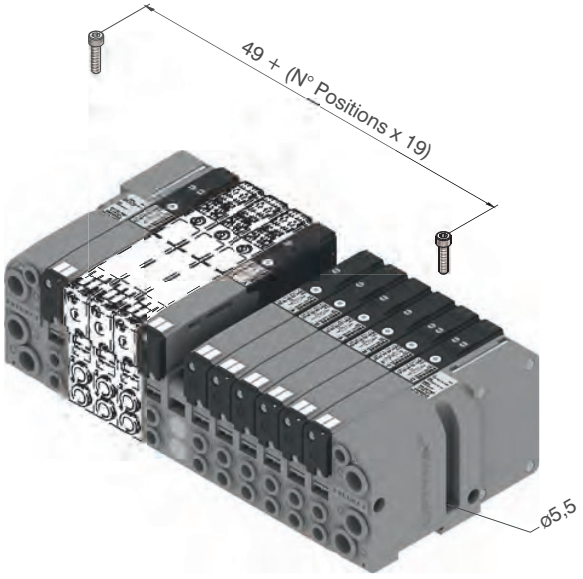
**Please note:** I/O modules don't allow to connect any additional valves manifold after them.

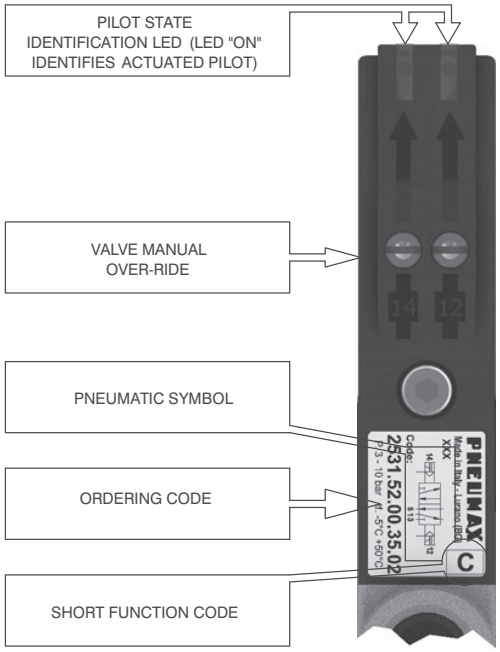



**Attention:**
Output only

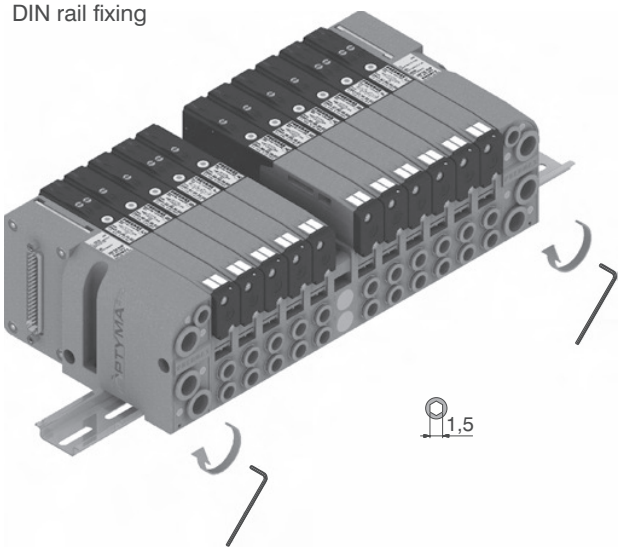
**Attention:**
No more additions
are possible

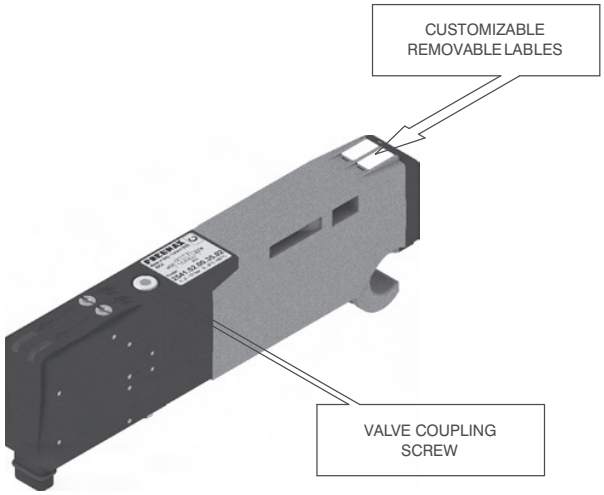
From the top



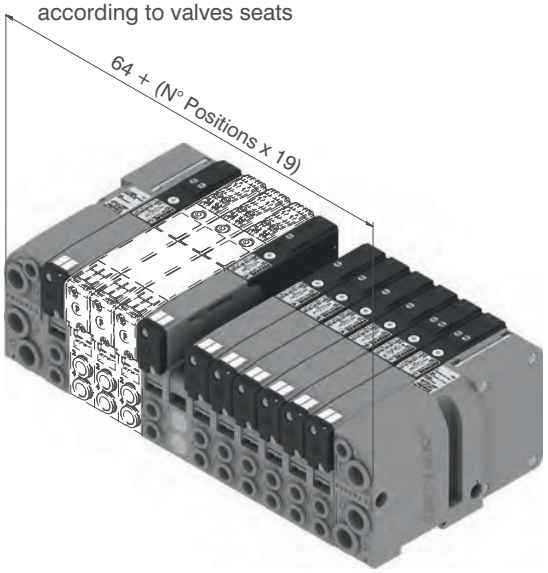



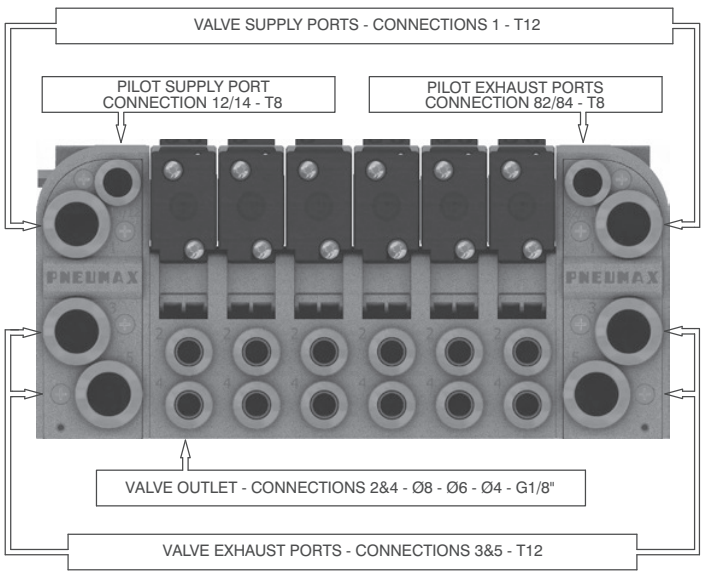

DIN rail fixing




Maximum possible size
according to valves seats

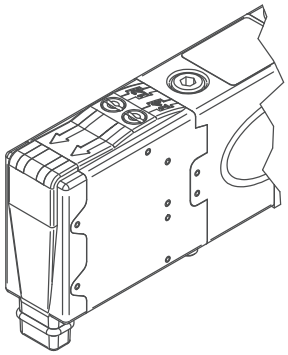


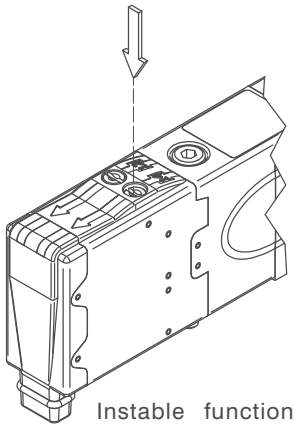




2

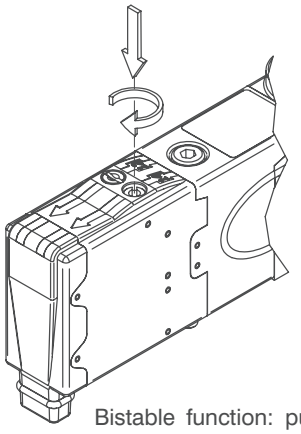
2

Manual override actuation





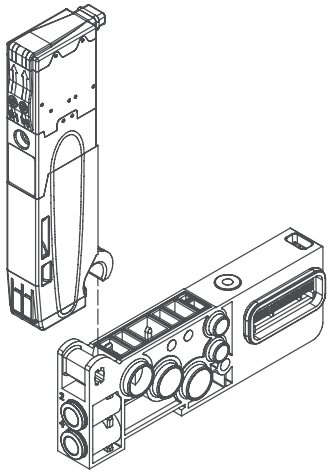
Instable function: push to actuate (when released it moves back to the original position).

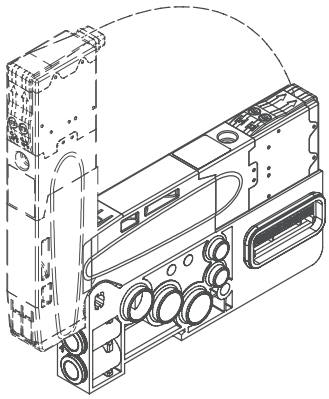


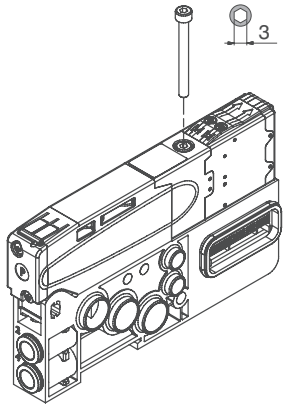
Bistable function: push and turn to get the bistable function

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

Valve Installation

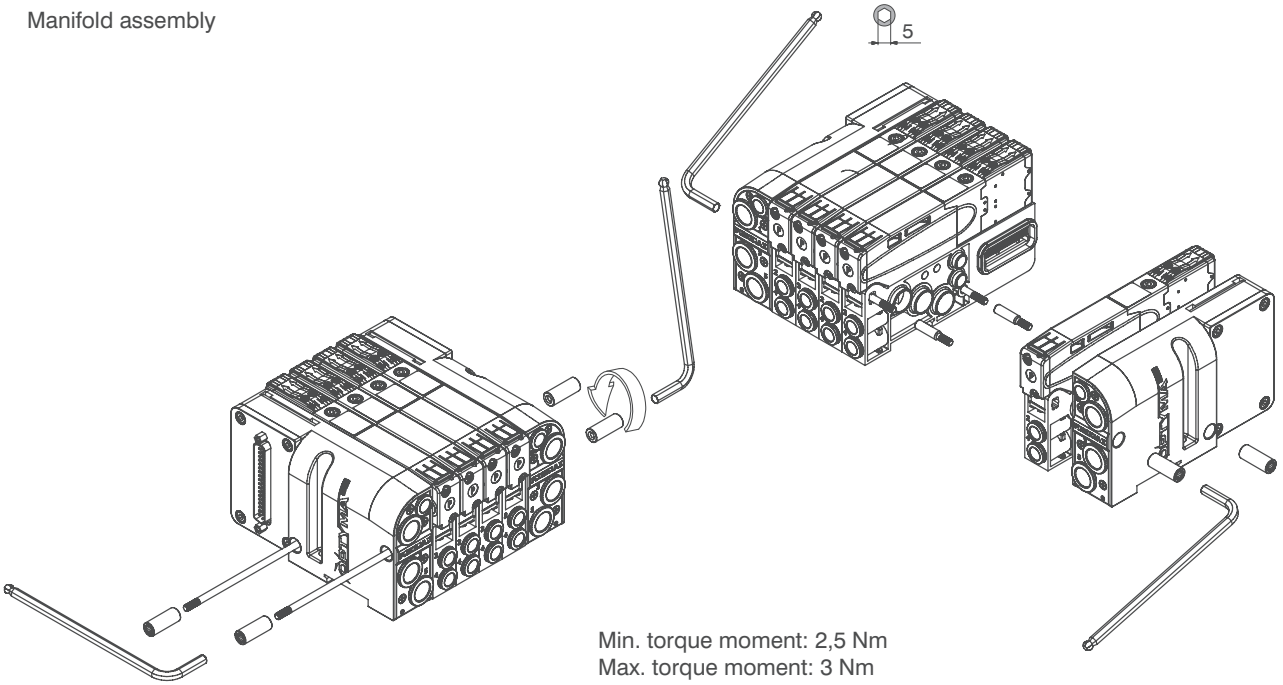






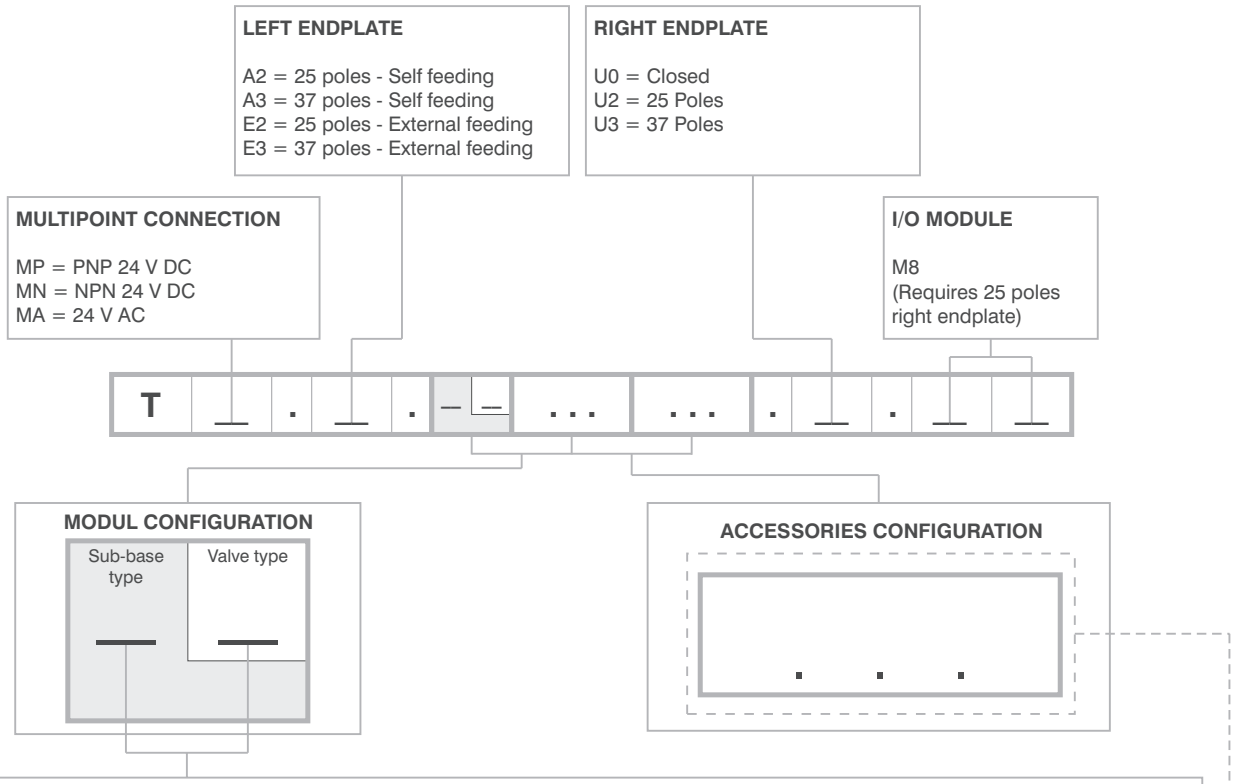

NOTE: Torque moment 1 Nm

Manifold assembly




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

## Manifold Layout configuration




**SHORT CODE FUNCTION / CONNECTION :**

A1= 5/2 Sol.-Spring + BASE 1 - CARTR. G1/8" GAS
A2= 5/2 Sol.-Spring + BASE 2 - CARTR. G1/8" GAS
A3= 5/2 Sol.-Spring + BASE 1 - CARTR. Ø4
A4= 5/2 Sol.-Spring + BASE 2 - CARTR. Ø4
A5= 5/2 Sol.-Spring + BASE 1 - CARTR. Ø6
A6= 5/2 Sol.-Spring + BASE 2 - CARTR. Ø6
A7= 5/2 Sol.-Spring + BASE 1 - CARTR. Ø8
A8= 5/2 Sol.-Spring + BASE 2 - CARTR. Ø8
B1= 5/2 Sol.-Diff. + BASE 1 - CARTR. G1/8" GAS
B2= 5/2 Sol.-Diff. + BASE 2 - CARTR. G1/8" GAS
B3= 5/2 Sol.-Diff. + BASE 1 - CARTR. Ø4
B4= 5/2 Sol.-Diff. + BASE 2 - CARTR. Ø4
B5= 5/2 Sol.-Diff. + BASE 1 - CARTR. Ø6
B6= 5/2 Sol.-Diff. + BASE 2 - CARTR. Ø6
B7= 5/2 Sol.-Diff. + BASE 1 - CARTR. Ø8
B8= 5/2 Sol.-Diff. + BASE 2 - CARTR. Ø8
C2= 5/2 Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS
C4= 5/2 Sol.-Sol. + BASE 2 - CARTR. Ø4
C6= 5/2 Sol.-Sol. + BASE 2 - CARTR. Ø6
C8= 5/2 Sol.-Sol. + BASE 2 - CARTR. Ø8
E2= 5/3 CC Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS
E4= 5/3 CC Sol.-Sol. + BASE 2 - CARTR. Ø4
E6= 5/3 CC Sol.-Sol. + BASE 2 - CARTR. Ø6
E8= 5/3 CC Sol.-Sol. + BASE 2 - CARTR. Ø8

F2= 2x3/2 NC-NC (= 5/3 OC) Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS
F4= 2x3/2 NC-NC (= 5/3 OC) Sol.-Sol. + BASE 2 - CARTR. Ø4
F6= 2x3/2 NC-NC (= 5/3 OC) Sol.-Sol. + BASE 2 - CARTR. Ø6
F8= 2x3/2 NC-NC (= 5/3 OC) Sol.-Sol. + BASE 2 - CARTR. Ø8
G2= 2x3/2 NO-NO (= 5/3 PC) Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS
G4= 2x3/2 NO-NO (= 5/3 PC) Sol.-Sol. + BASE 2 - CARTR. Ø4
G6= 2x3/2 NO-NO (= 5/3 PC) Sol.-Sol. + BASE 2 - CARTR. Ø6
G8= 2x3/2 NO-NO (= 5/3 PC) Sol.-Sol. + BASE 2 - CARTR. Ø8
H2= 2x3/2 NC-NO Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS
H4= 2x3/2 NC-NO Sol.-Sol. + BASE 2 - CARTR. Ø4
H6= 2x3/2 NC-NO Sol.-Sol. + BASE 2 - CARTR. Ø6
H8= 2x3/2 NC-NO Sol.-Sol. + BASE 2 - CARTR. Ø8
I2= 2x3/2 NO-NC Sol.-Sol. + BASE 2 - CARTR. G1/8" GAS
I4= 2x3/2 NO-NC Sol.-Sol.+ BASE 2 - CARTR. Ø4
I6= 2x3/2 NO-NC Sol.-Sol. + BASE 2 - CARTR. Ø6
I8= 2x3/2 NO-NC Sol.-Sol. + BASE 2 - CARTR. Ø8
T1= Free valve space plug + BASE 1 - CARTR. G1/8" GAS
T2= Free valve space plug + BASE 2 - CARTR. G1/8" GAS
T3= Free valve space plug + BASE 1 - CARTR. Ø4
T4= Free valve space plug + BASE 2 - CARTR. Ø4
T5= Free valve space plug + BASE 1 - CARTR. Ø6
T6= Free valve space plug + BASE 2 - CARTR. Ø6
T7= Free valve space plug + BASE 1 - CARTR. Ø8
T8= Free valve space plug + BASE 2 - CARTR. Ø8

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

**ACCESSORIES**

U2 = Power supply 2 positions module
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

2

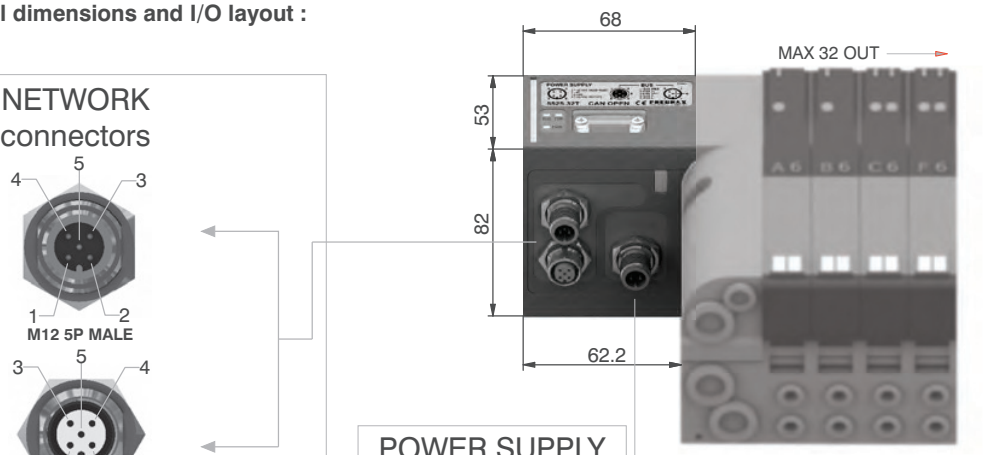
**General:**

CANopen® module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08T.
CANopen® module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus CANopen® is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to CiA Draft Recommendation 303-1 (V. 1.3 : 30 December 2004).
Transmission speed can be set by 3 dip-switches.
The node address can be set by 6 dip-switches using BCD numeration.
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5525.32T**

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




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

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

## Technical characteristics

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

**General:**

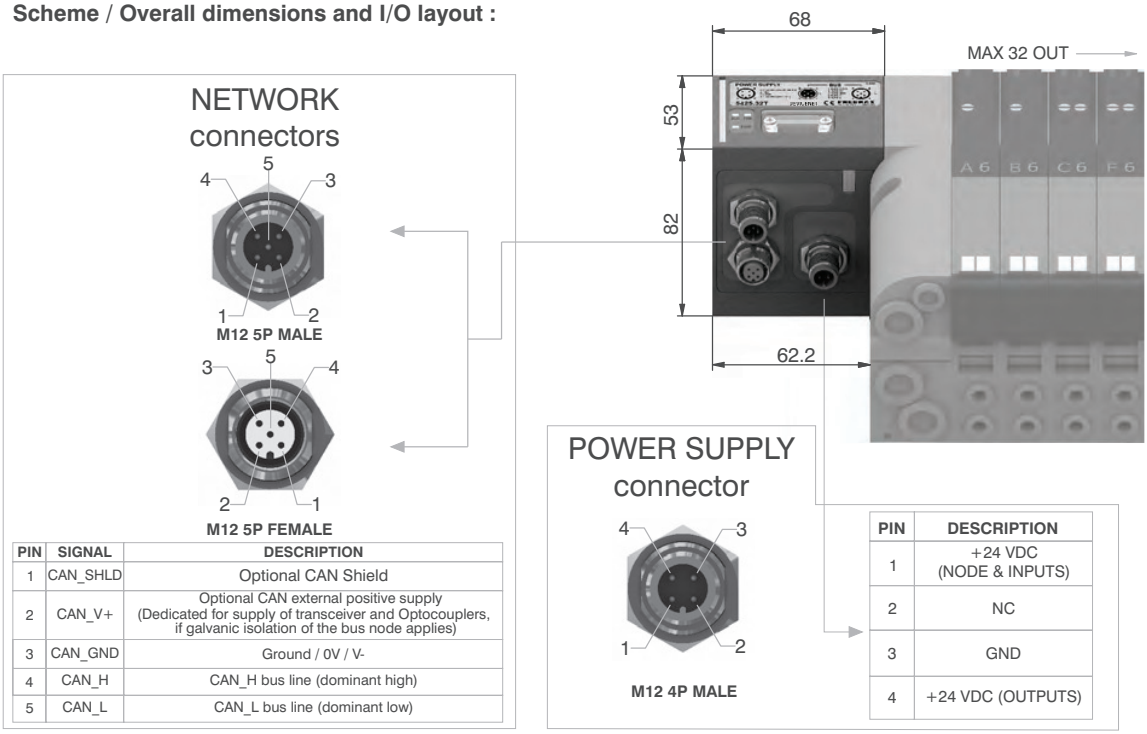
DeviceNet module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08T.
DeviceNet module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus DeviceNet is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to DeviceNet Specifications Volume I, release 2.0.
Transmission speed can be set by 3 dip-switches.
The node address can be set by 6 dip-switches using BCD numeration.
The module includes an internal terminating resistance that can be activated by a dip-switch.

## Ordering code

**5425.32T**

2

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




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

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

## Technical characteristics

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

2

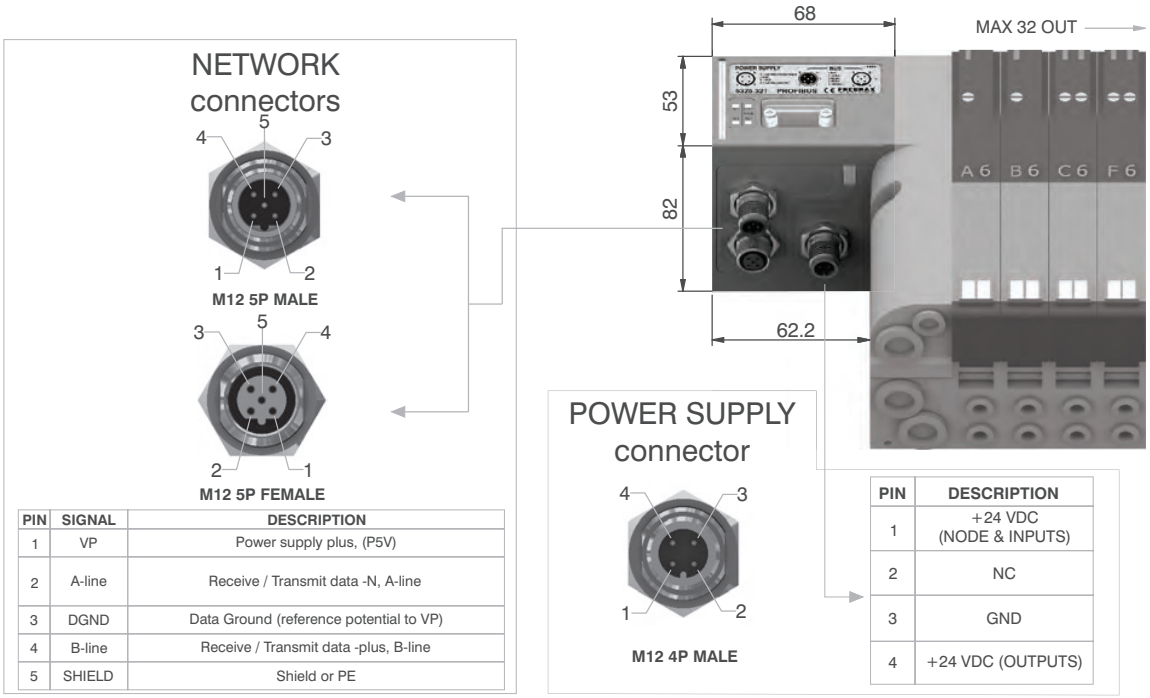
**General:**

PROFIBUS DP module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and,in the same time, a max number of 8 Input modules 5225.12T, and a max number of 4 Input modules 5225.08T.
PROFIBUS DP module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus PROFIBUS DP is possible via 2 M12 type B 5P male - female circular connectors; these two are connected in parallel and according to PROFIBUS Interconnection Technology (Version 1.1 : August 2001).
The node address can be set using BCD numeration: 4 dip-switches for the units and 4 dip-switches for the tens.
The module includes an internal terminating resistance that can be activated by 2 dip-switch.

## Ordering code

**5325.32T**

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




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

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

## Technical characteristics

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

**General:**

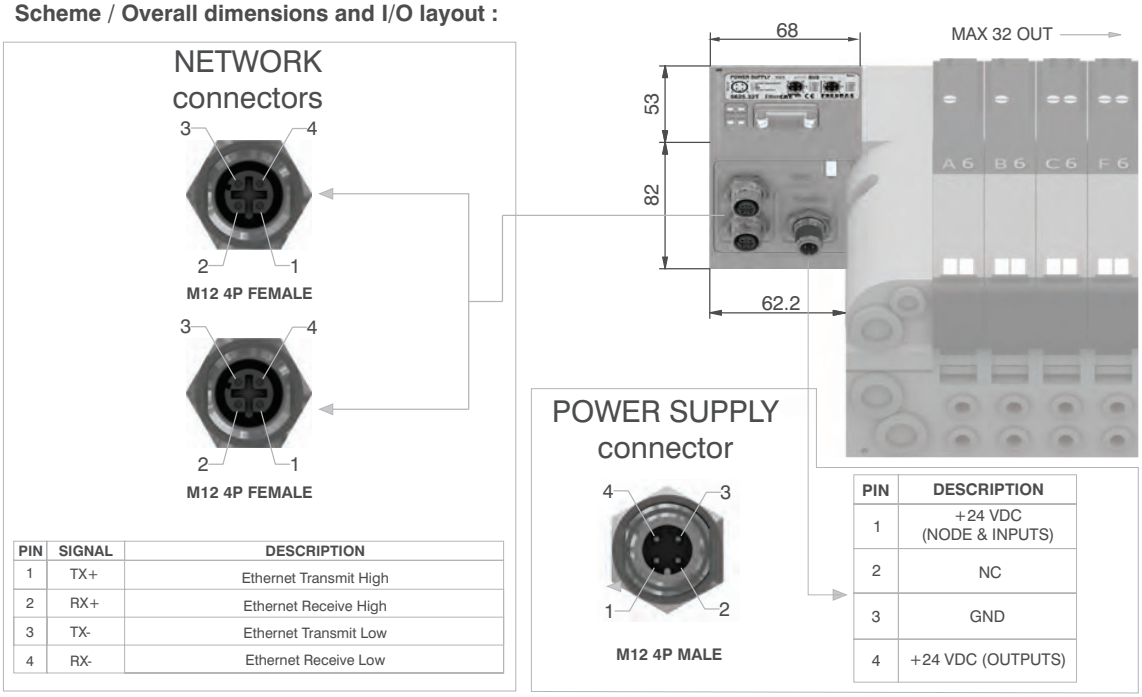
EtherCAT® module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08T.
EtherCAT® module recognizes automatically the presence of the Input modules on power on.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus EtherCAT® is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel. They are according to EtherCAT® Specifications ETG.1000 series.
By specifications, node ID should be automatically set during network configuration, but it is also possible to set the address via 6 dip-switches on the module, using BCD numeration.

## Ordering code

**5625.32T**

2

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




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

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

## Technical characteristics

| | | |
|---|---|---|
| | Model | 5625.32T |
| | Specifications | EtherCAT® Specifications ETG.1000 series |
| | Case | Reinforced technopolymer |
| **Power supply** | Power supply connection | M12 4P male connector (IEC 60947-5-2) |
| | Power supply voltage | +24 VDC +/- 10% |
| | Node consumption (without inputs) | 310 mA |
| | Power supply diagnosis | Green led PWR |
| **Outputs** | PNP equivalent outputs | +24 VDC +/- 10% |
| | Maximum current for output | 100 mA |
| | Max output simultaneously actuated | 32 |
| | N.max. uscite azionabili contemp. | 32 |
| **Network** | Network connectors | 2 M12 4P female connectors type D (IEC 61076-2-101) |
| | Baud rate | 100 Mbit/s |
| | Addresses, possibile numbers | From 0 to 65535 (from 1 to 63 with dip-switches) |
| | Max nodes in net | 65536 (master + slaves) |
| | Maximum distance between 2 nodes | 100 m |
| | Bus diagnosis | 1 status green led + 2 activity green led |
| | Configuration file | Available from our web site: http://www.pneumaxspa.com |
| | IP protection grade | IP65 when assembled |
| | Temperature range | From 0° to +50° C |

2

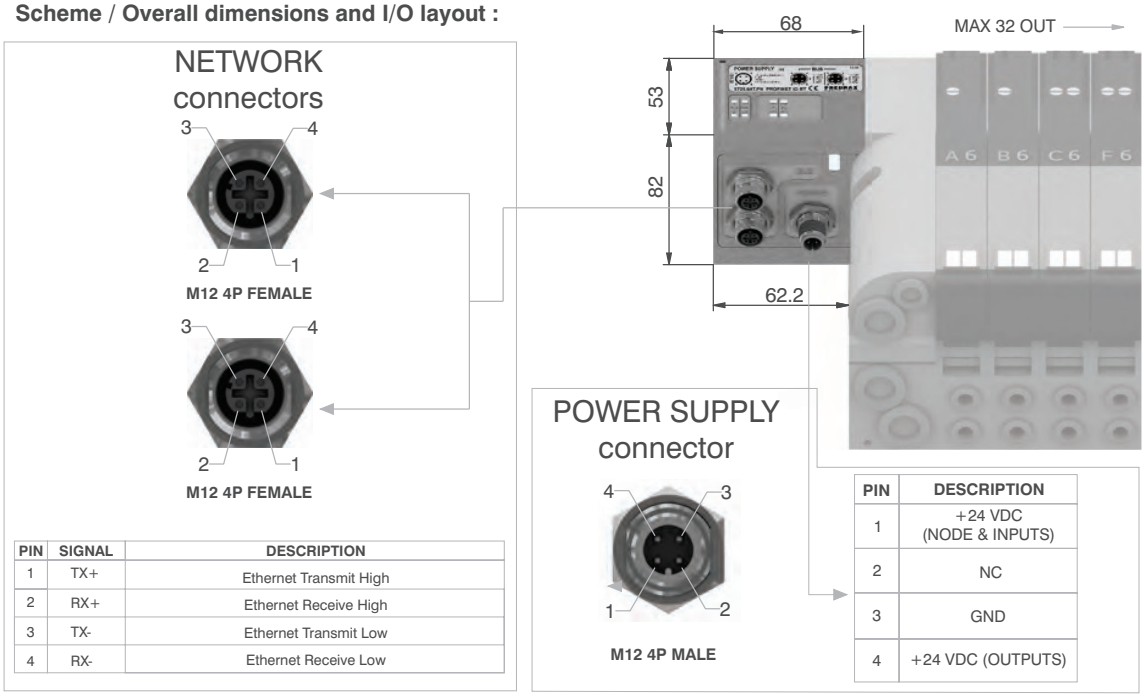
**General :**

PROFINET IO RT/IRT module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.12T, and a max number of 4 Input modules 5225.08T.
The PROFINET IO RT/IRT module, regardless the number of Input module connected, reports to have connected 8 Input modules.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus PROFINET IO RT/IRT is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.
The node address is assigned during configuration.

## Ordering code

**5725.32T.PN**

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




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

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

## Technical characteristics

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

**General :**

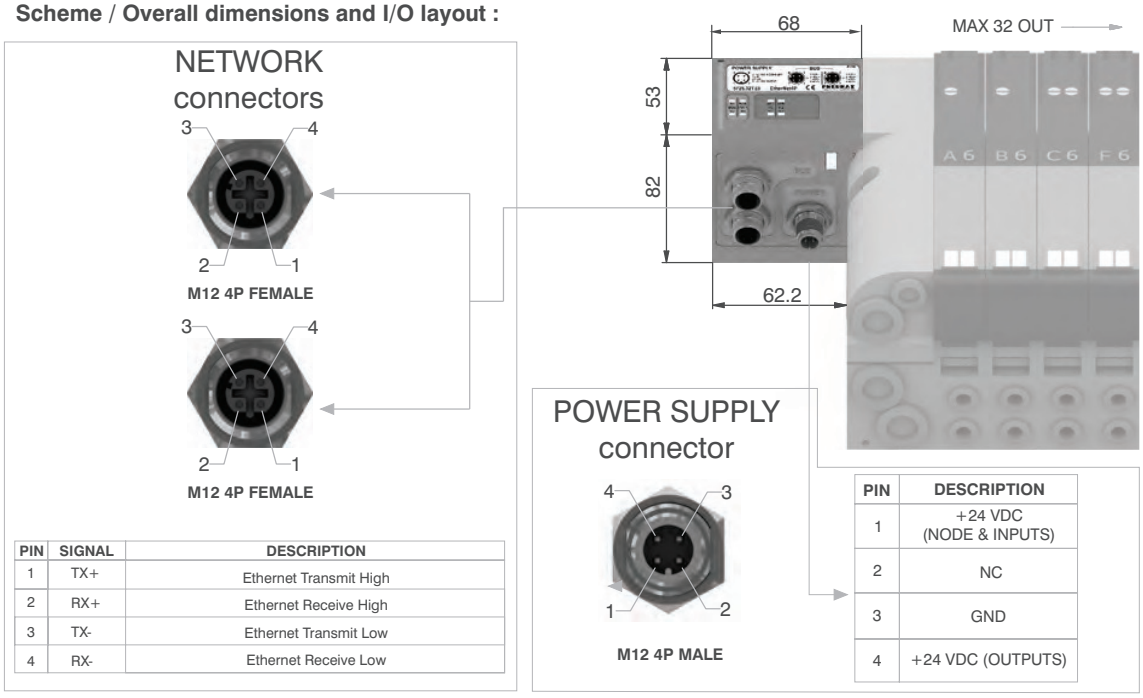
EtherNet/IP module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.12T, and a max number of 4 Input modules 5225.08T.
The EtherNet/IP module, regardless the number of Input module connected, reports to have connected 8 Input modules.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Node power supply is made by a M12 4P male circular connector.
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaning powered the node and inputs, if present.
Connection to Bus EtherNet/IP is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.
The node address is assigned during configuration.

## Ordering code

**5725.32T.EI**



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




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

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

## Technical characteristics

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

2

**General :**

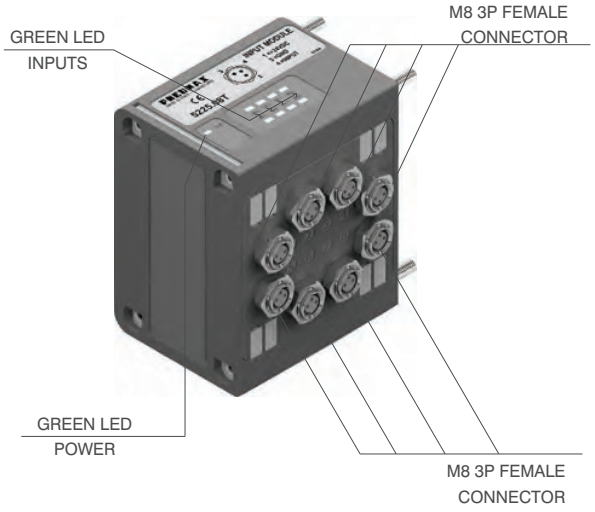
Modules have 8 connectors M8 3P female.

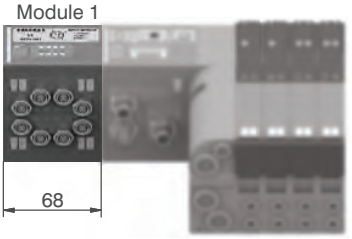
The Inputs are PNP equivalent 24 VDC ±10%.
To each connector it is possible to plug both 2 wires Inputs (switches, magnetic switches pressure switches, etc) or 3 wires Inputs (proximity, photocells, electronic sensors, etc).
The maximum current available for all 8 Inputs is 200 mA.
Each module includes a 200 mA resettable fuse. If a short circuit or a overcharge (overall current >200mA) occur the safety device acts cutting the 24 VDC power supply to all M8 connectors on the module and switching off the green led PWR. Any other Input module connected to the node will remain powered and will function correctly.
Once the cause of the fault disappears the green led PWR light up indicating the ON state and the node will re-start to operate.
The maximum number of Input modules supported is 4 for CANopen®, DeviceNet and EtherCAT®.
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT/IRT and EtherNet/IP.

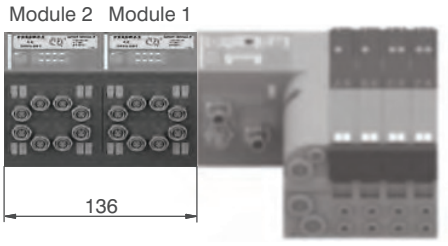
## Ordering code

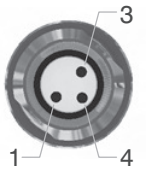
**5225.08T**

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

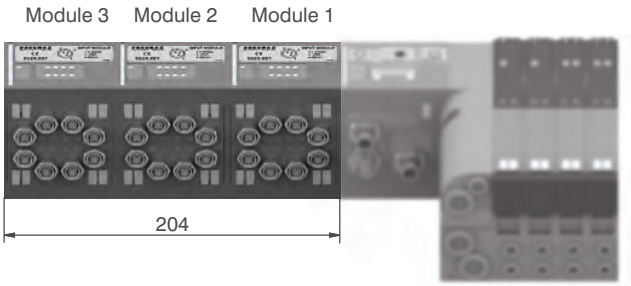


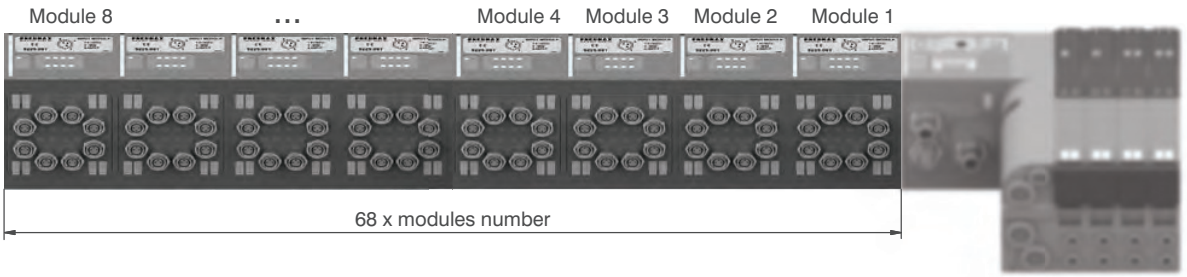




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | INPUT |
| 3 | GND |



**General :**

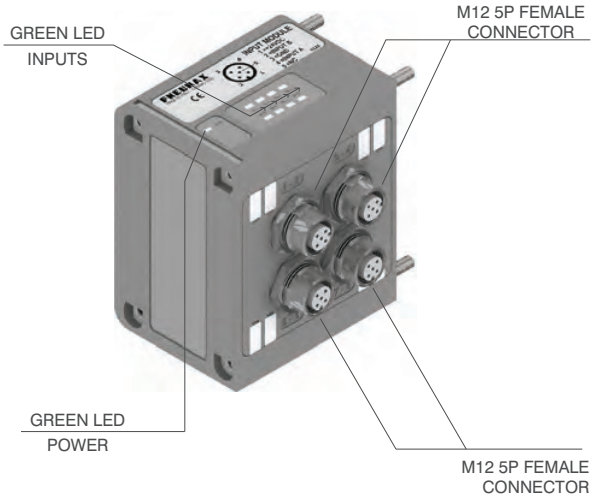
Modules have 4 connectors M12 5P female.

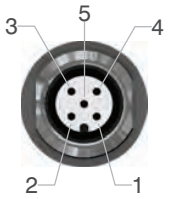
The Inputs are PNP equivalent 24 VDC ±10%.
To each connector it is possible to plug both 2 wires Inputs (switches, magnetic switches pressure switches, etc) or 3 wires Inputs (proximity, photocells, electronic sensors, etc).
The maximum current available for all 8 Inputs is 200 mA.
Each module includes a 200 mA resettable fuse. If a short circuit or a overcharge (overall current >200mA) occur the safety device acts cutting the 24 VDC power supply to all M12 connectors on the module and switching off the green led PWR. Any other Input module connected to the node will remain powered and will function correctly.
Once the cause of the fault disappears the green led PWR light up indicating the ON state and the node will re-start to operate.
The maximum number of Input modules supported is 4 for CANopen®, DeviceNet and EtherCAT®.
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT/IRT and EtherNet/IP.

## Ordering code

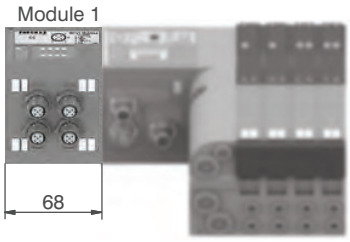
**5225.12T**

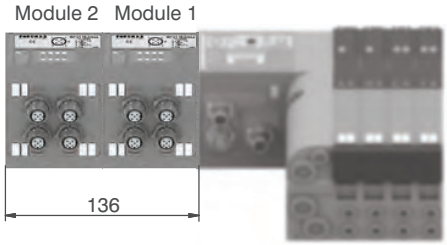
**Scheme / Overall dimensions and I/O layout :**

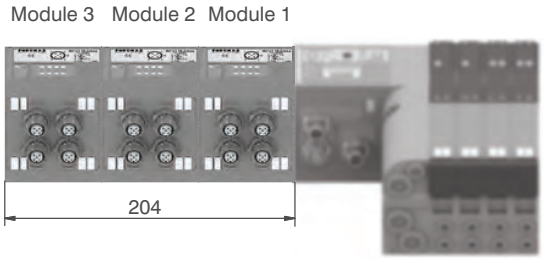


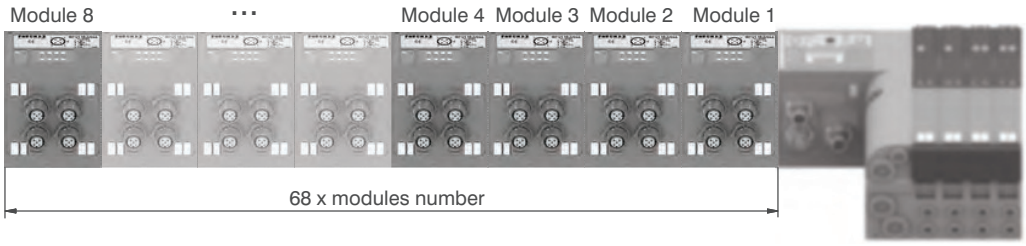




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 2 | INPUT B |
| 3 | GND |
| 4 | INPUT A |
| 5 | NC |



2

**General :**

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

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

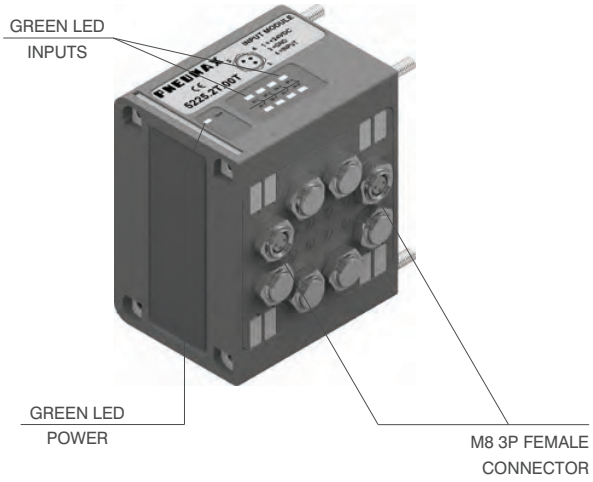
Available models:
5225.2T.00T (voltage signal 0 - 10V);
5225.2T.01T (voltage signal 0 - 5V);
5225.2C.00T (current signal 4 - 20mA);
5225.2C.01T (current signal 0 - 20mA).

Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC power supply to all M8 connectors on the module and switching off the green LED PWR. Any other Input module connected to the node will remain powered and will function correctly. Once the cause of the fault is removed the green LED lights up indicating the ON state and the node will re-start to operate.
This module is counted as four 8 digital INPUT modules.
The maximum number of Input modules supported is 4 for CANopen®, DeviceNet and EtherCAT®.
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT/IRT and EtherNet/IP.

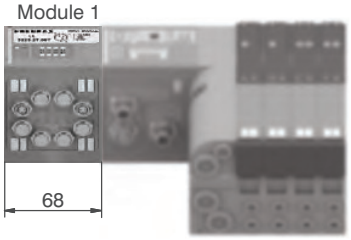
## Ordering code

**5225.2 _ . _ _T**

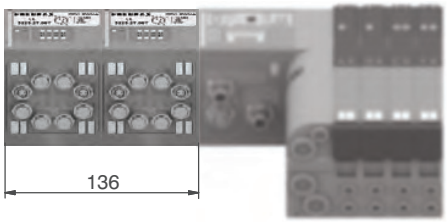
**Scheme / Overall dimensions and I/O layout :**

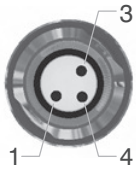



Module 1




Module 2 Module 1




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | INPUT |
| 3 | GND |

**General :**

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

With this module is possible to read two PT100 probes.
The inputs are sampled at 12 bit.
For practicality the sampled value is transmitted with 16 bit, of which the four less significant are fixed at zero.

It is possible to plug 3-wires probes or 2-wires probes.
The temperature is expressed in tenths of degree.
The temperature range is 0 – 250°C, beyond which the green LED for probe presence doesn't light on.
The module returns a value correspondent to 250°C when the probe is not connected.

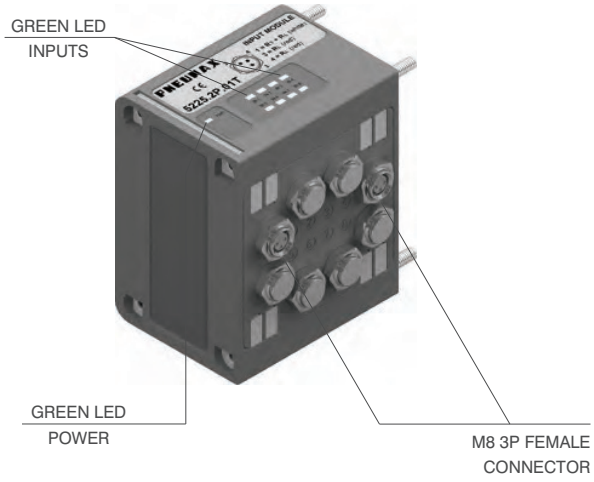
Available models:
5225.2P.00T (2-wires probes);
5225.2P.01T (3-wires probes).

Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC power supply to all M8 connectors on the module and switching off the green LED PWR. Any other INPUT module connected to the node will remain powered and will function correctly.
Once the cause of the fault is removed the green LED lights up
indicating the ON state and the node will re-start to operate.
This module is counted as four 8 digital INPUT modules.
The maximum number of Input modules supported is 4 for CANopen®, DeviceNet and EtherCAT®.
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT/IRT and EtherNet/IP.

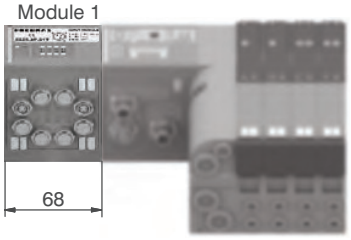
## Ordering code

**5225.2P . _ _T**

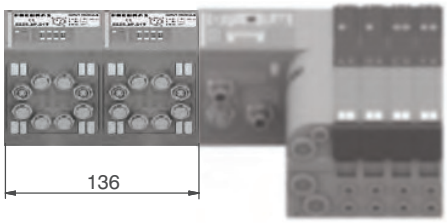
**Scheme / Overall dimensions and I/O layout :**



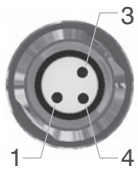

Module 1




Module 2 Module 1

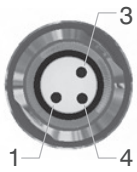



**3 WIRES**




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

**2 WIRES**




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

2

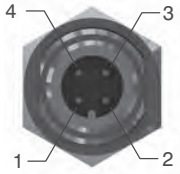
## M12A 4P female Socket

Ordering code

**5312A.F04.00**

Power supply straight connector.

Upper view Slave connector




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC Node |
| 2 | |
| 3 | 0 V |
| 4 | +24 VDC Output |

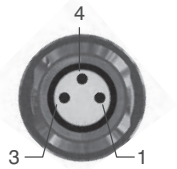
## M8 3P male Plug

Ordering code

**5308A.M03.00**

Input straight connector.

Upper view Slave connector




| PIN | DESCRIPTION |
|---|---|
| 1 | +24 VDC |
| 4 | INPUT |
| 3 | GND |

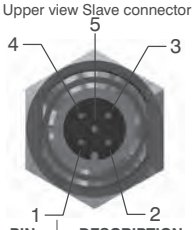
## M12A 5P female Socket

Ordering code

**5312A.F05.00**

Network straight connector: for Bus CANOpen®, DeviceNet.

Upper view Slave connector




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

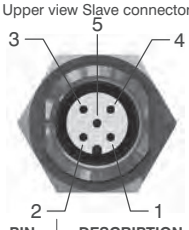
## M12A 5P male Plug

Ordering code

**5312A.M05.00**

Network straight connector: for BUS CANOpen®, DeviceNet.

Upper view Slave connector




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

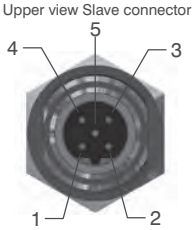
## M12B 5P female Plug

Ordering code

**5312B.F05.00**

Network straight connector: for Bus PROFIBUS DP.

Upper view Slave connector




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

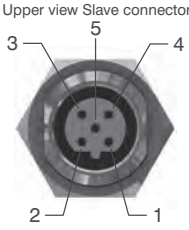
## M12B 5P male Plug

Ordering code

**5312B.M05.00**

Network straight connector: for BUS PROFIBUS DP.

Upper view Slave connector




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

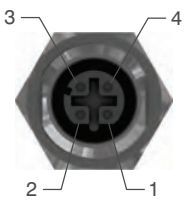
## M12D 4P male Plug

Ordering code

**5312D.M04.00**

Network straight connector: for Ether-CAT®, PROFINET IO RT/IRT, Ether-Net/Ip.

Upper view Slave connector




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

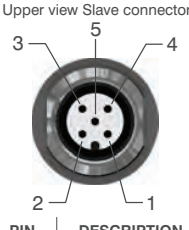
## M12 5P male Plug

Ordering code

**5312A.M05.00**

Input straight connector.

Upper view Slave connector




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

## M12 Plug

Ordering code

**5300.T12**

## M8 Plug

Ordering code

**5300.T08**

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