

Series 2200 "OPTYMA-S"

General

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

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

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

Main characteristics

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

Construction characteristics

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

Functions

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

Technical characteristics

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



Solenoid valves manifold Series 2200 "OPTYMA-S"

Solenoid - Spring

Coding: 2241.52.00.39.✓

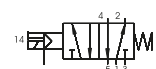
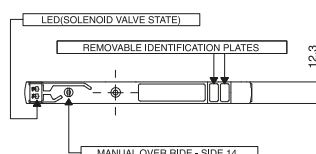
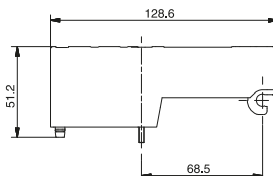
Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	12
Response time according to ISO 12238, deactivation time (ms)	20

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

SHORT FUNCTION CODE "A"
Weight 67 g

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



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

Solenoid-Differential

Coding: 2241.52.00.36.✓

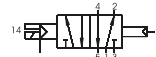
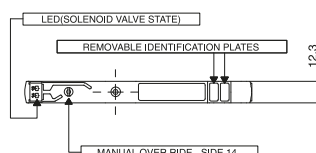
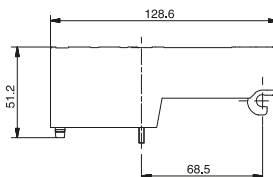
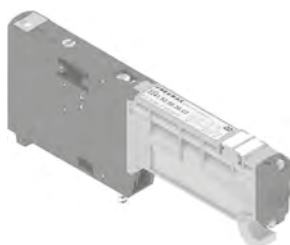
Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	20
Response time according to ISO 12238, deactivation time (ms)	25

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

SHORT FUNCTION CODE "B"
Weight 67 g

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



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

Solenoid-Solenoid

Coding: 2241.52.00.35.✓

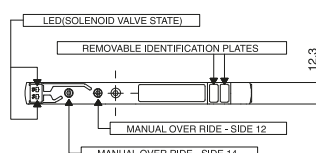
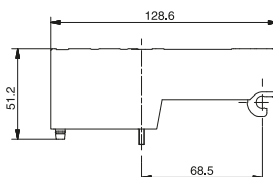
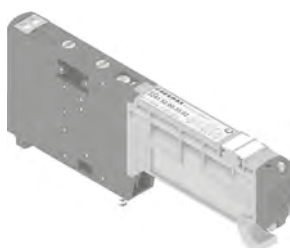
Operational characteristics

Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	10

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

SHORT FUNCTION CODE "C"
Weight 67 g

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



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

Solenoid-Solenoid 5/3 (Closed centres)

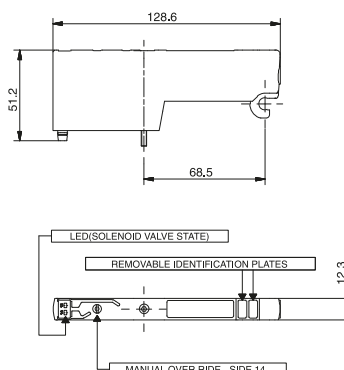
Coding: 2241.53.31.35.V

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

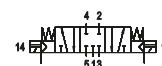
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

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

SHORT FUNCTION CODE "E"
Weight 83 g



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



Solenoid-Solenoid 2x3/2

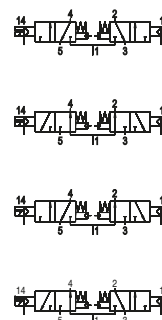
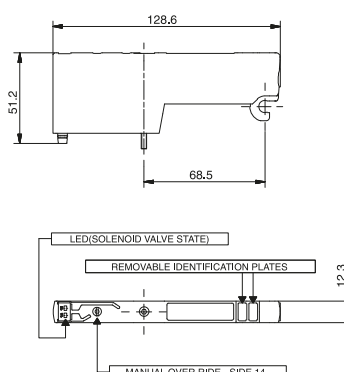
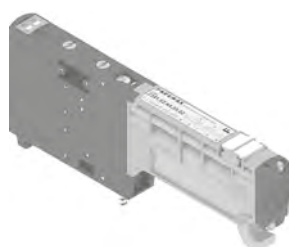
Coding: 2241.62.F.35.V

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

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

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

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



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



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

Left Endplates

Coding: 2240.V.C

Operational characteristics

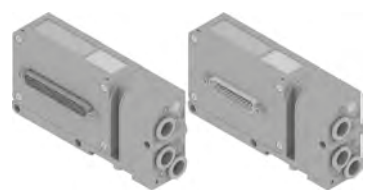
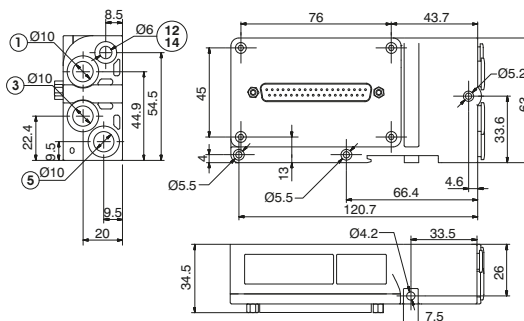
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (External pilot base) 2,5-7 (Self-feeding base)
Pressure range (bar)	2,5 ÷ 7 (External pilot base)
Temperature °C	-5 ÷ +50

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



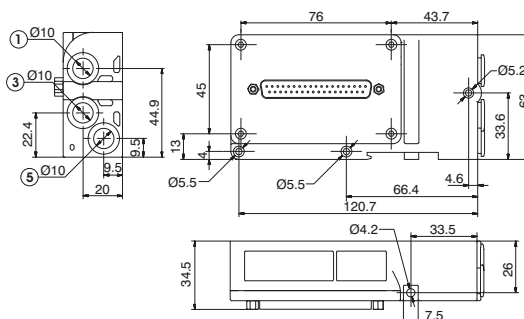
Weight 174 g
12/14 separated from port 1

2240.02.C



Weight 174 g
12/14 connected to port 1

2240.12.C



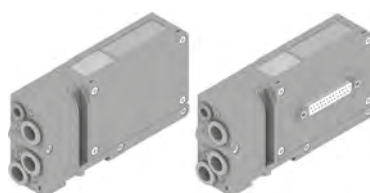
Right Endplates

Coding: 2240.03.C

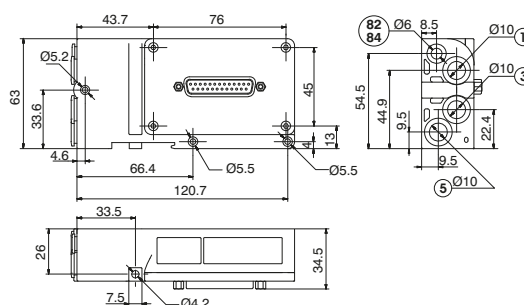
Operational characteristics

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

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



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

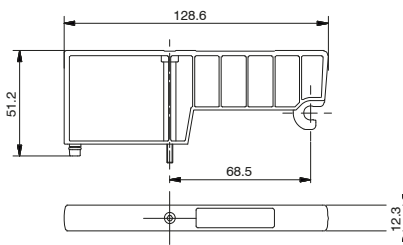


Closing plate

Coding: 2240.00

Operational characteristics

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

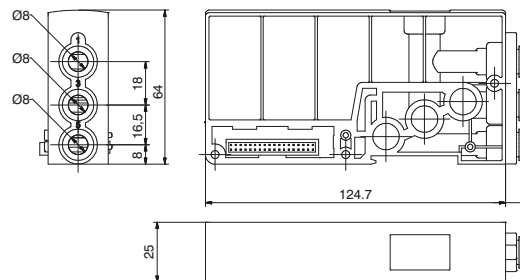


Weight 30 g
SHORT FUNCTION CODE "T"

Intermediate Inlet/Exhaust module

Coding: 2240.10

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



Weight 105 g
SHORT FUNCTION CODE "W"

Modular base (2 places)

Coding: 224C.F.V

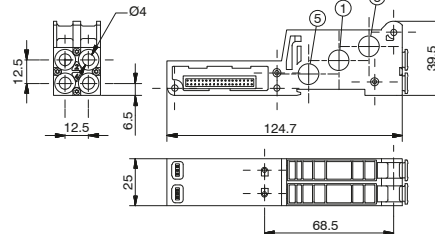
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50



2244.F.V

Weight 75 g

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



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

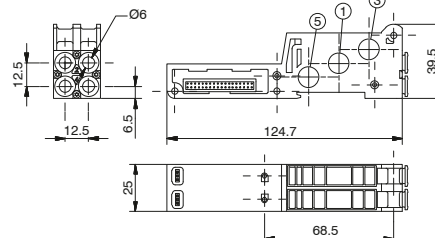
TUBE DIAMETER	
4 = Ø4	
6 = Ø6	
8 = Ø8	
FUNCTION	
01 = Opened ports	
03 = Ports 1-5 separated	
04 = Ports 1-3 separated	
05 = Ports 5 separated	
06 = Separated ports	
07 = Ports 1 separated	
08 = Ports 3-5 separated	
09 = Ports 3 separated	
VERSION	
M = for Monostable SV	
B = for Bistable SV	



2246.F.V

Weight 75 g

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



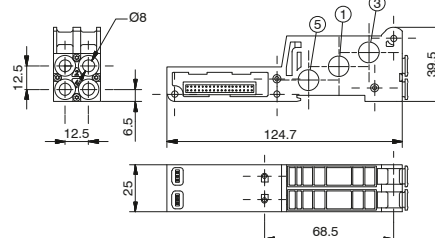
SHORT FUNCTION CODE "6" (Bistable) Opened ports
SHORT FUNCTION CODE "63" (Bistable) Ports 1-5 separated
SHORT FUNCTION CODE "64" (Bistable) Ports 1-3 separated
SHORT FUNCTION CODE "65" (Bistable) Port 5 separated
SHORT FUNCTION CODE "66" (Bistable) Separated ports
SHORT FUNCTION CODE "67" (Bistable)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



2248.F.V

Weight 75 g

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



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



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

1
AIR DISTRIBUTION

Polyethylene Silencer Series SPL-R

Coding: SPLR.**D**



TUBE DIAMETER
D 6 = 6 mm
10 = 10 mm

Diaphragm plug

Coding: 2230.17



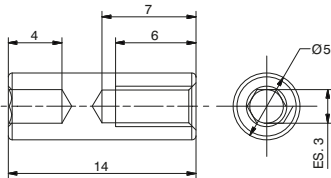
Weight 6,5 g

Tie-rod M3

Coding: 2240.KD.00



The Kit includes 6 pieces

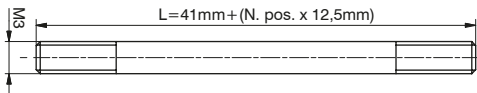


Tie-rod M3

Coding: 2240.KT.**P**



The Kit includes 3 pieces



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

Cable complete with connector, 25 Poles IP65

Coding: 2300.25.**L.C**



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

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.**L.C**



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

Cable complete with connector, 25 Poles IP65

Coding: 2400.25.**L.25**



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

General :

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

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

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

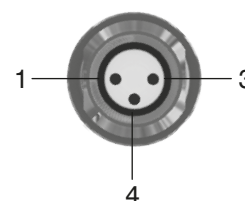
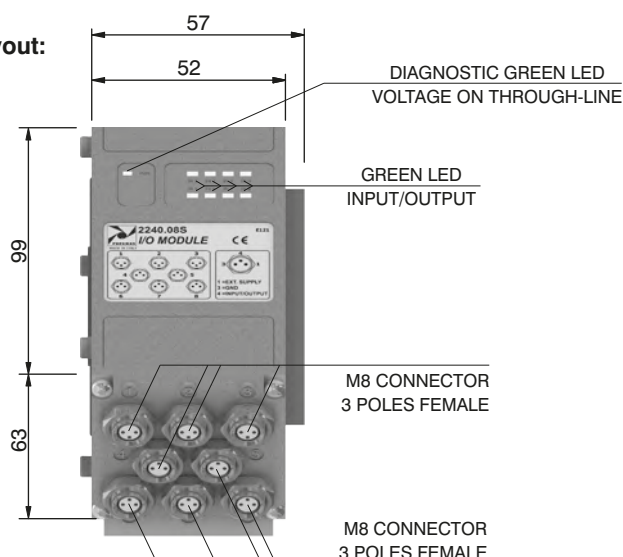
Ordering code**2240.08S**

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

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

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

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

Overall dimensions and I/O layout:

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

Input features:

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

I.E :

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

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

Output features:

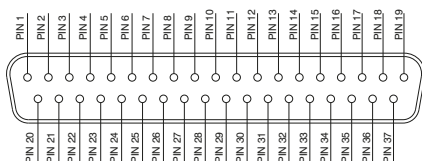
Attention: The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

General characteristics

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

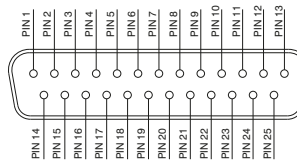
CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

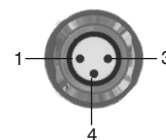


1 - 32 = SIGNALS
33 - 35 = GND
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

Connection modes:

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

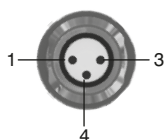
- A) Control via multi-pole connection
- B) Control via fieldbus

A) Control via multi-pole :

M8 connector used as Input:



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

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



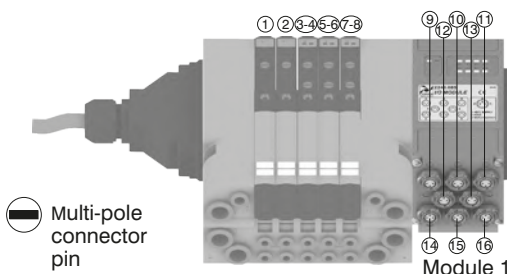
M8 connector used as Output:

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

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



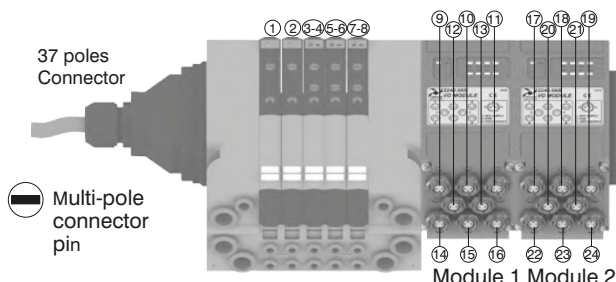
Attention: Since every cable has a degree of resistance, there will always be a voltage drop depending on the cable's length, sectional area and the current.



Multi-pole connector pin



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



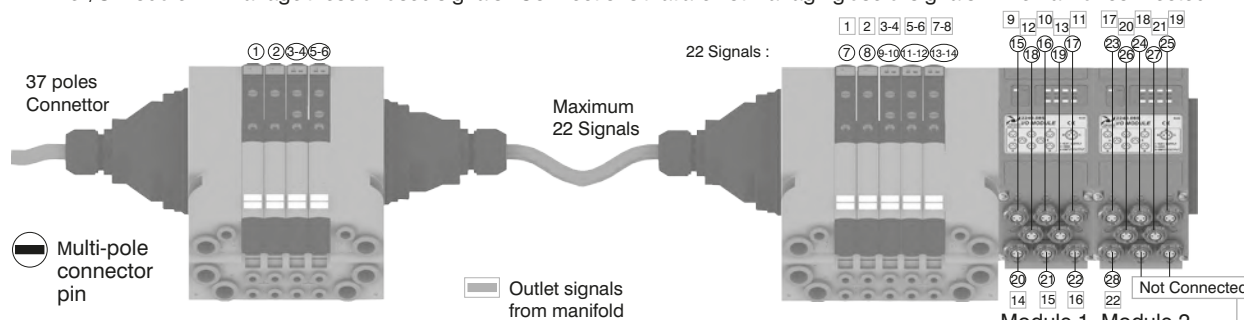
Multi-pole connector pin



Attention: No more additions are possible

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

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



Outlet signals from manifold

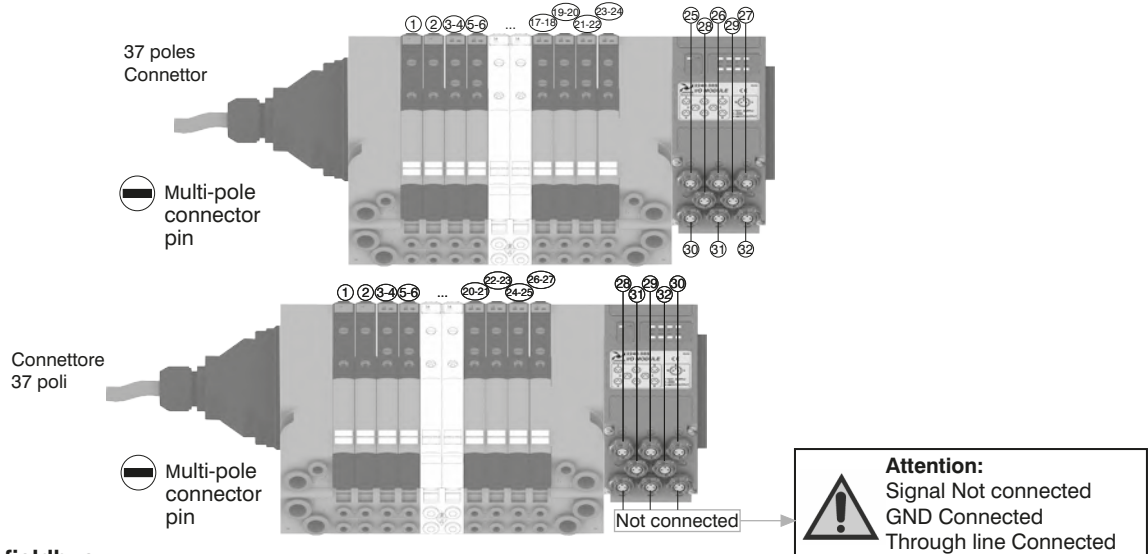


Attention: Signal Not connected
GND Connected
Through line Connected

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

The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 16

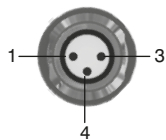
Please note: Optyma 32-S solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



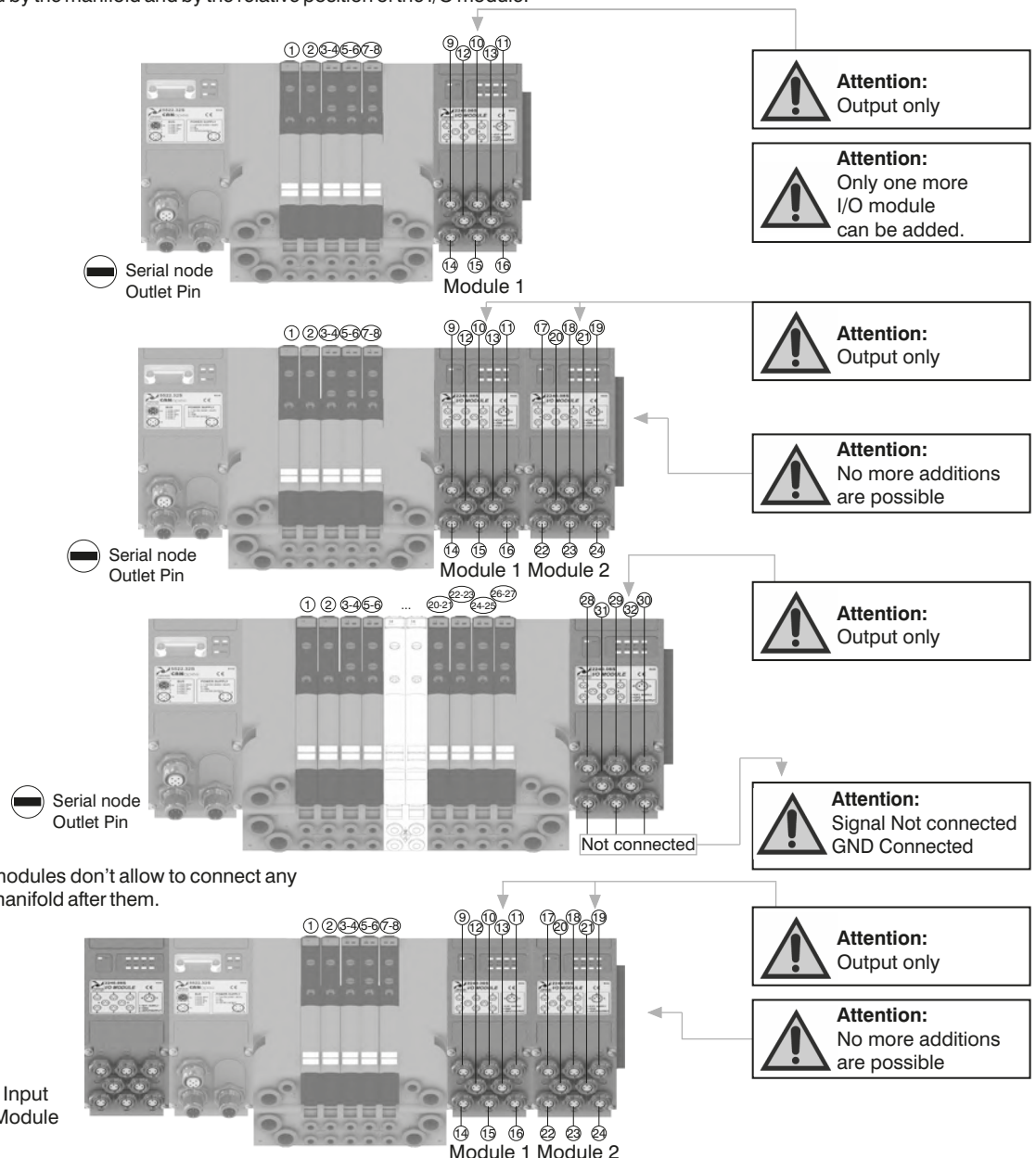
B) Control via fieldbus:

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

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



PIN	DESCRIPTION
1	NOT CONNECTED
4	SIGNAL
3	GND



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

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 (should a bistable valve be mounted on a monostable sub base it will not be possible to actuate the solenoid pilot on side 12). This solutions enables the user to maximise the manifold lay out using all the electrical signals available.

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

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



Note:

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

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

Additional exhaust and air supply modules:

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

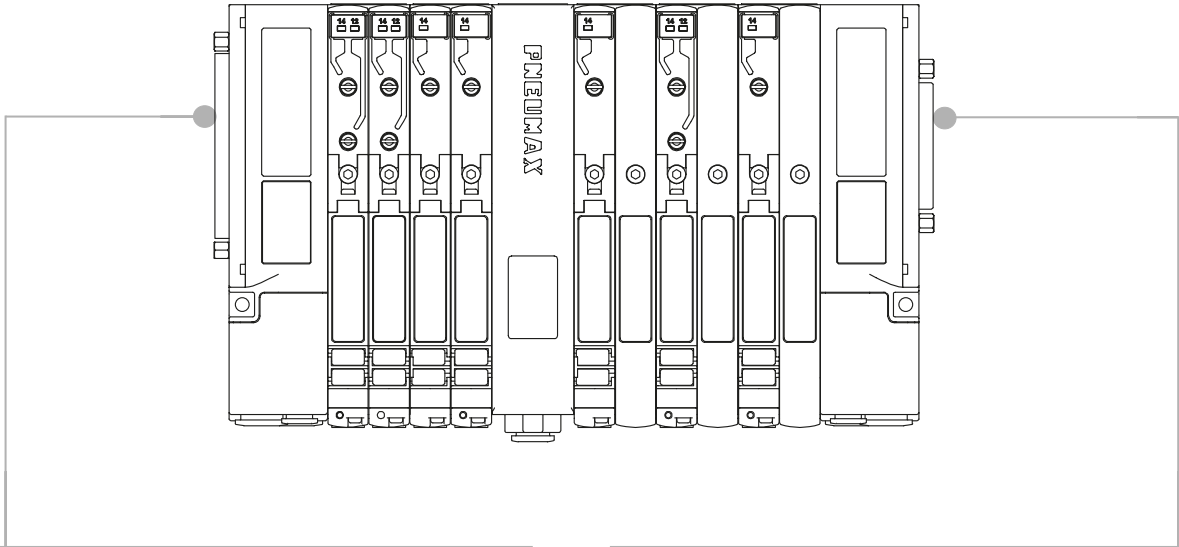
This enables its use in any position of the manifold.

Unused electrical signals

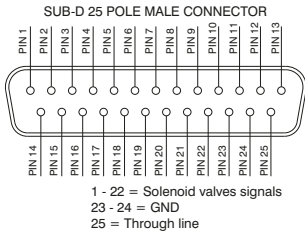
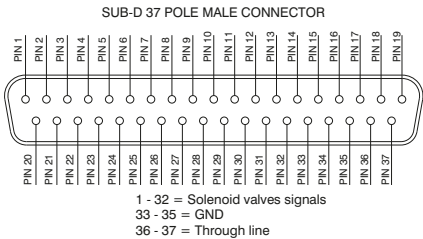
The electrical signals which have not been used in the manifold can be made available by using the end plate fitted with the 25 pole connector.
The number of electric signals available depends on the type of connector mounted on the inlet plate and on the number of signals used in the manifold:

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

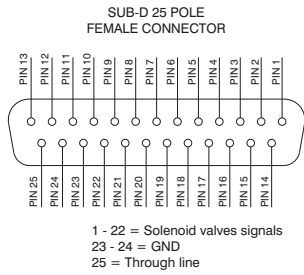
Here are some examples of possible configurations and the corresponding pin layout both on the inlet and end plate :



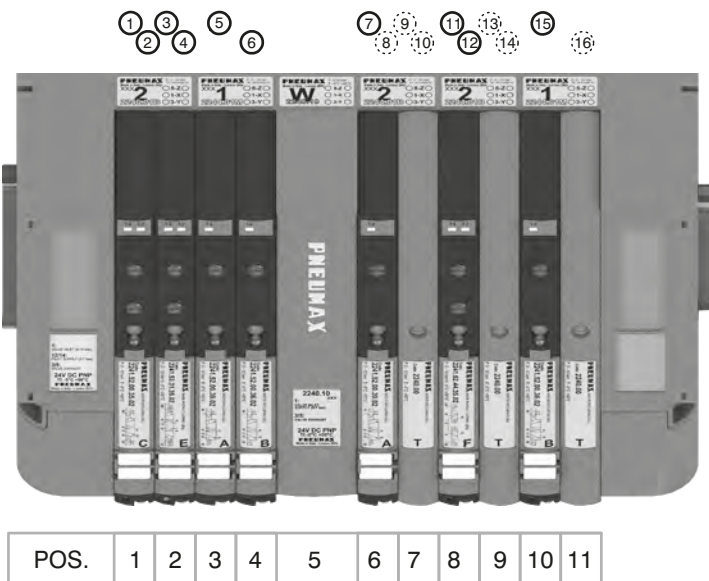
INLET ELECTRIC CONNECTIONS



OUTLET ELECTRIC CONNECTIONS (IF PRESENT)

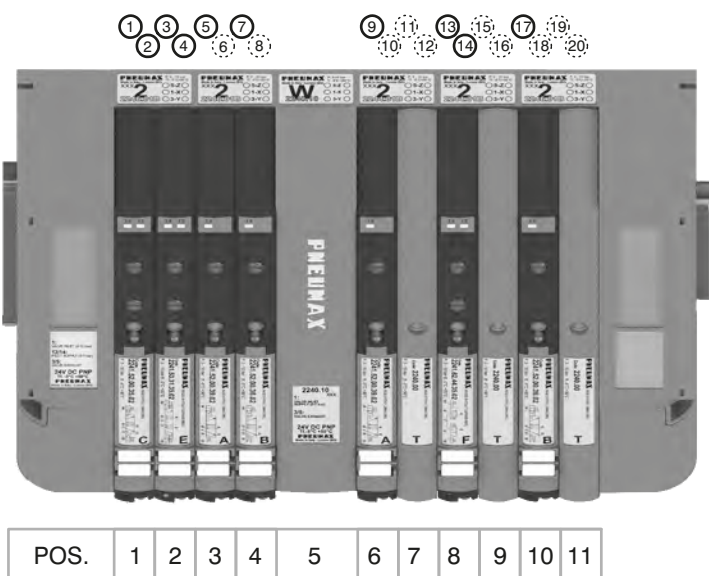


37 PIN Connector correspondence for valves assembled on mixed bases



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

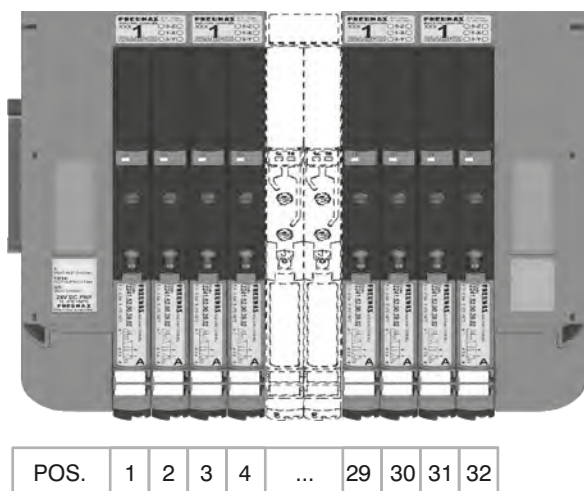
37 PIN Connector correspondence for manifold mounted on bases for bistable valves



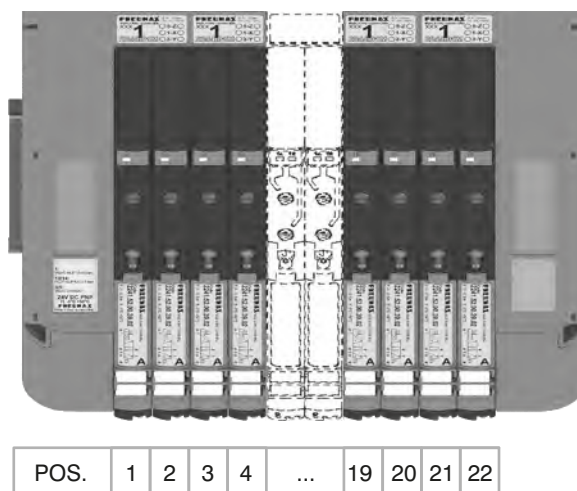
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 12 SV POS.2
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = NOT CONNECTED
- PIN 7 = PILOT 14 SV POS.4
- PIN 8 = NOT CONNECTED
- PIN 9 = PILOT 14 SV POS.6
- PIN 10 = NOT CONNECTED
- PIN 11 = NOT CONNECTED
- PIN 12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

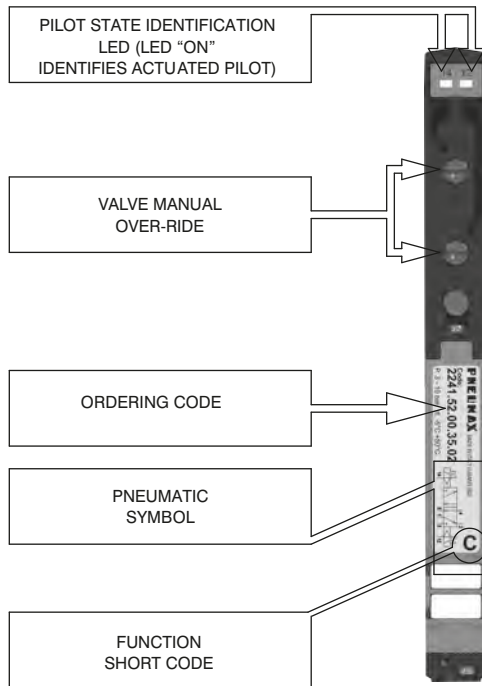
37 PIN Connector correspondence for manifold for 32 position manifold with monostable valves on double bases

37P ① ② ③ ④ ... ②⑨ ③① ③②

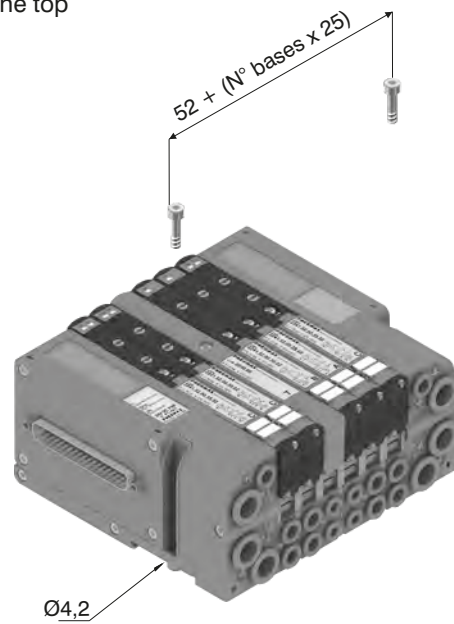


25P ① ② ③ ④ ... ①⑨ ②① ②②



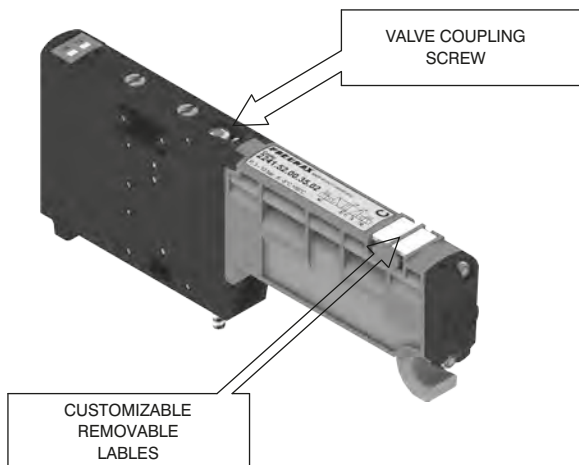


From the top

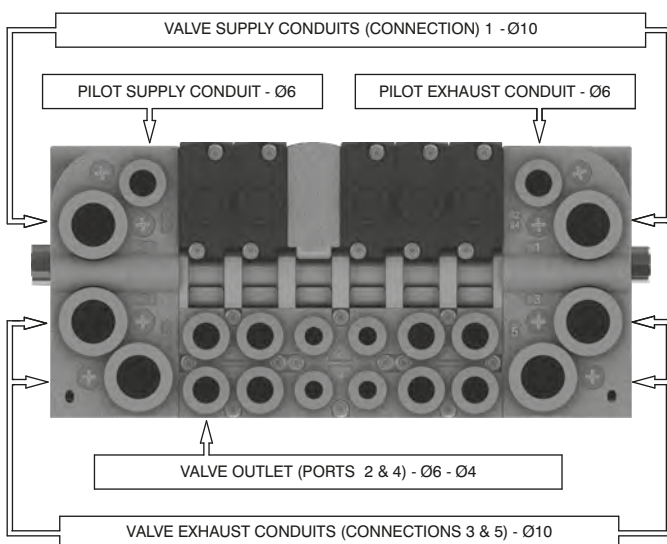
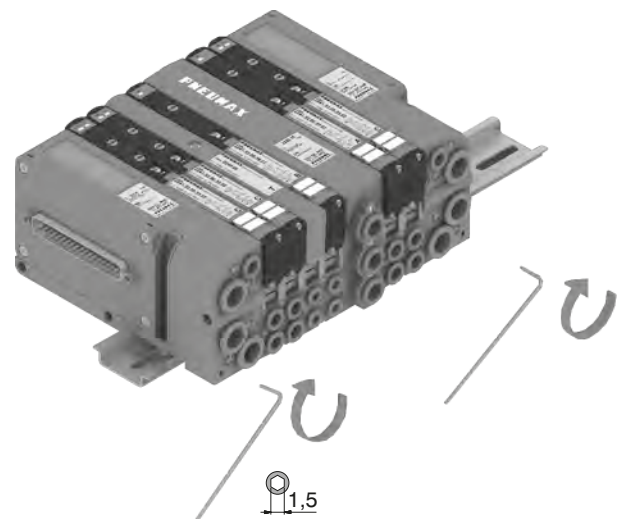


1

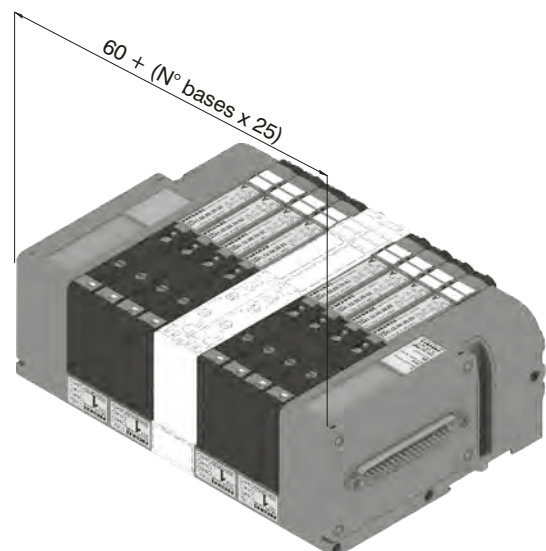
AIR DISTRIBUTION



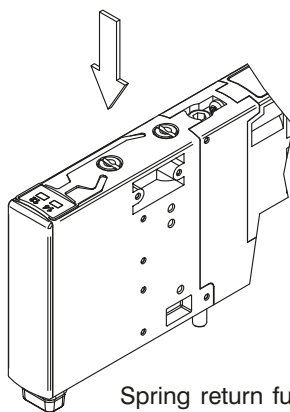
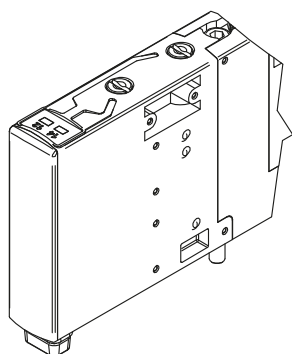
DIN rail fixing



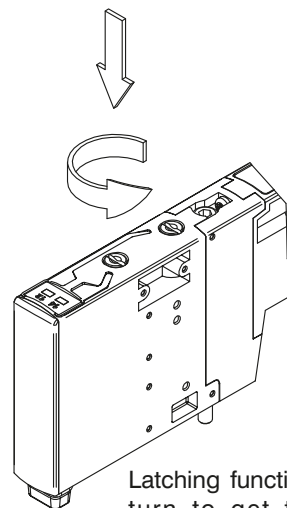
Maximum possible size
According to valves used



Manual override actuation



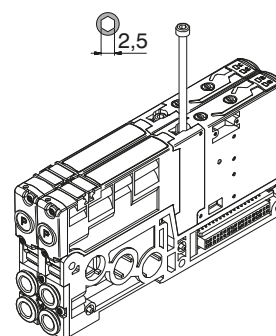
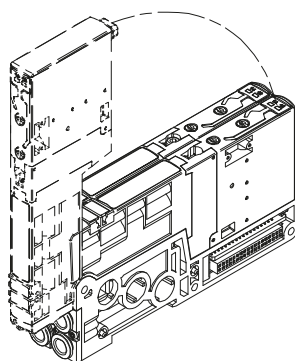
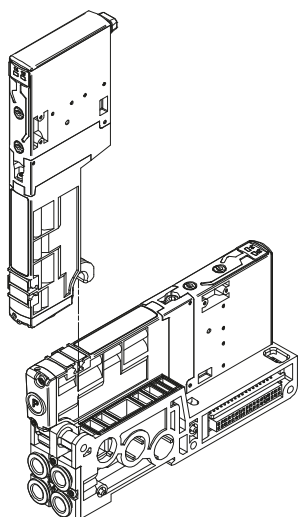
Spring return function: push to actuate (when released it moves back to the original position).



Latching function: push and turn to get the latching function

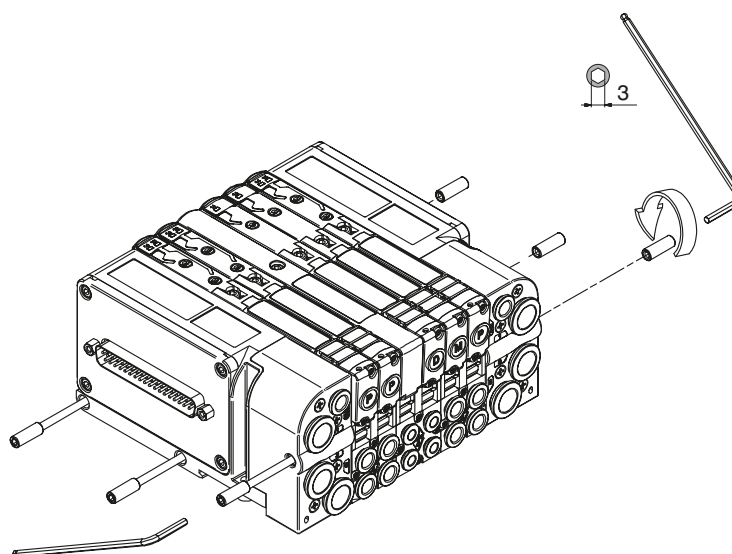
NOTE : It is strongly suggested to replace the original position after using

Valve Installation



Torque moment (Nm) : 0,8

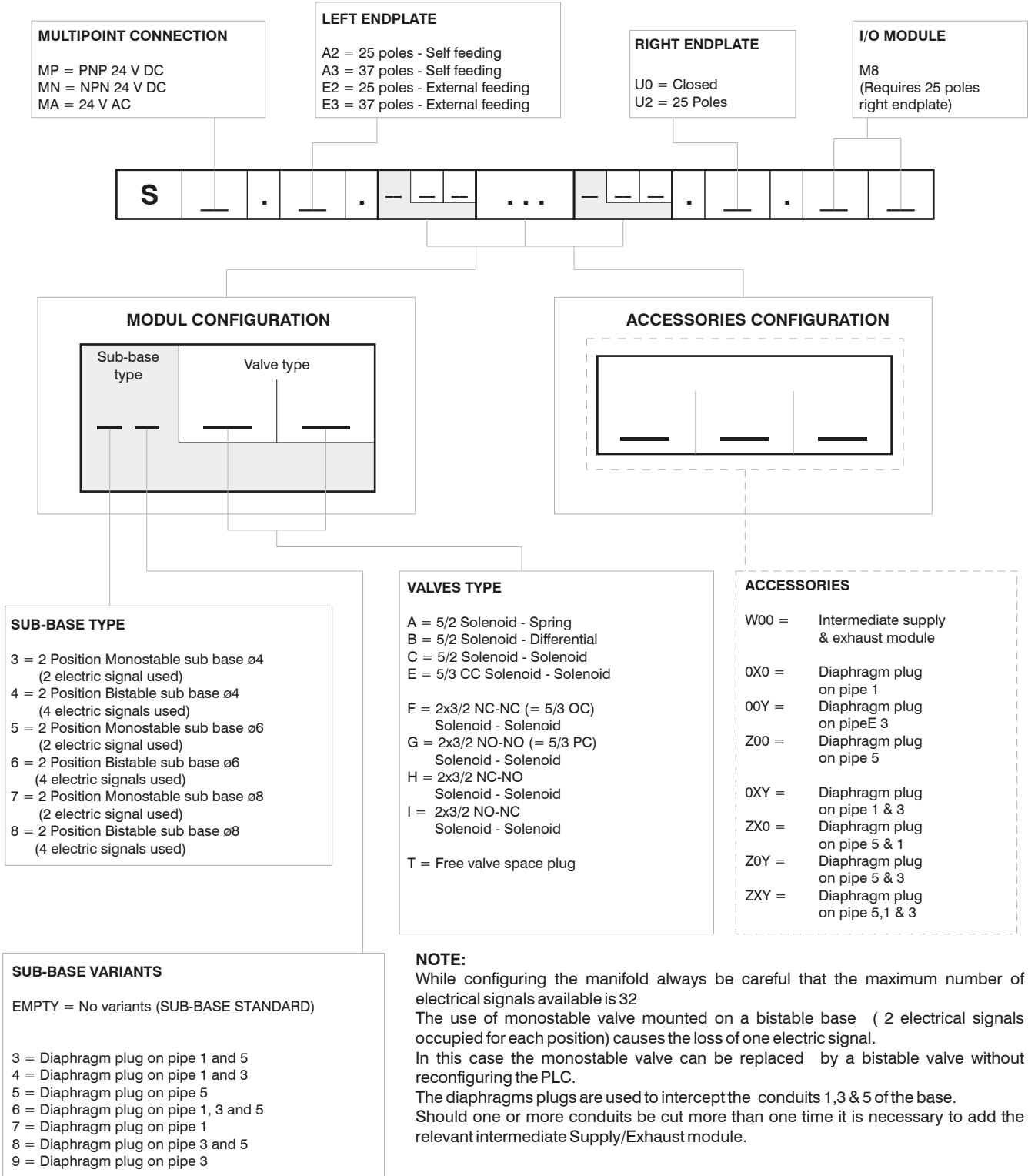
Manifold assembly




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



Manifold Layout configuration



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

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

General:

CANopen® module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

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

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

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

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

Connection to Bus CANopen® is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to CiA Draft Recommendation 303-1 (V. 1.3 : 30 December 2004).

Transmission speed can be set by 3 dip-switches.

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

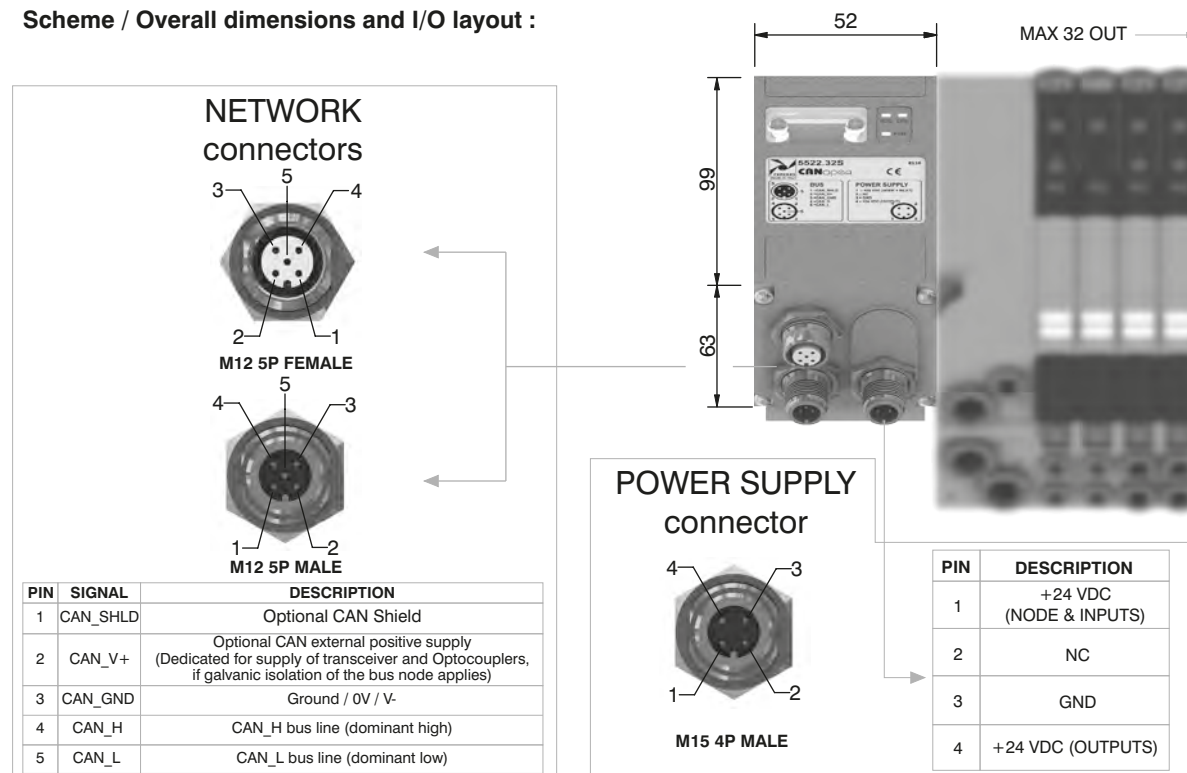
The module includes an internal terminating resistance that can be activated by a dip-switch.

Ordering code

5522.32S



Scheme / Overall dimensions and I/O layout :



Technical characteristics

Power supply	Model	5522.32S
	Specifications	CiA Draft Standard Proposal 301 V 4.10 (15 August 2006)
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
Outputs	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	30 mA
	Power supply diagnosis	Green LED PWR
	PNP equivalent outputs	+24 VDC +/- 10%
Network	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 5P connectors male-female Type A (IEC 60947-5-2)
	Baud rate	10 - 20 - 50 - 125 - 250 - 500 - 800 - 1000 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: 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-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

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

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

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

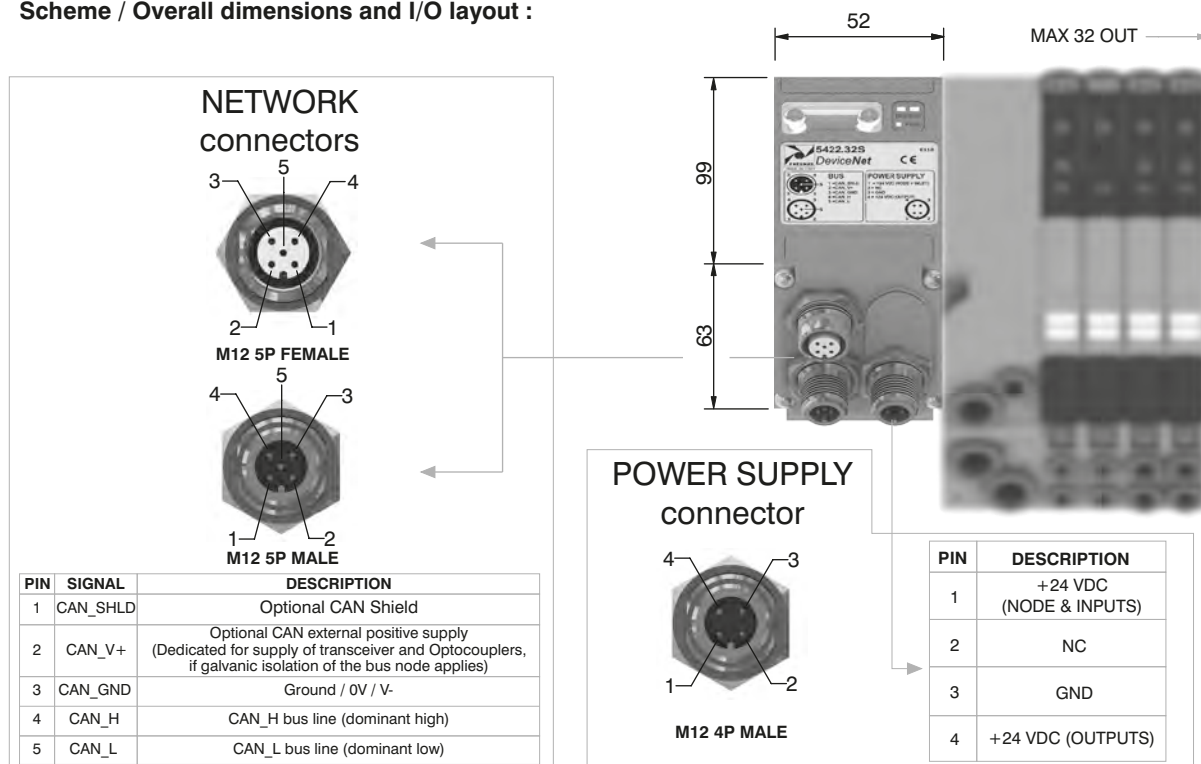
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining powered the node and inputs, if present.

Connection to Bus DeviceNet is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to DeviceNet Specifications Volume I, release 2.0.

Transmission speed can be set by 3 dip-switches.

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

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

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

	Model	5422.32S
	Specifications	DeviceNet Specifications Volume I, release 2.0.
Power supply	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	30 mA
	Power supply diagnosis	Green LED PWR
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 5P connectors male-female Type A (IEC 60947-5-2)
	Baud rate	125 - 250 - 500 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: 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 maintaining powered the node and inputs, if present.

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

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

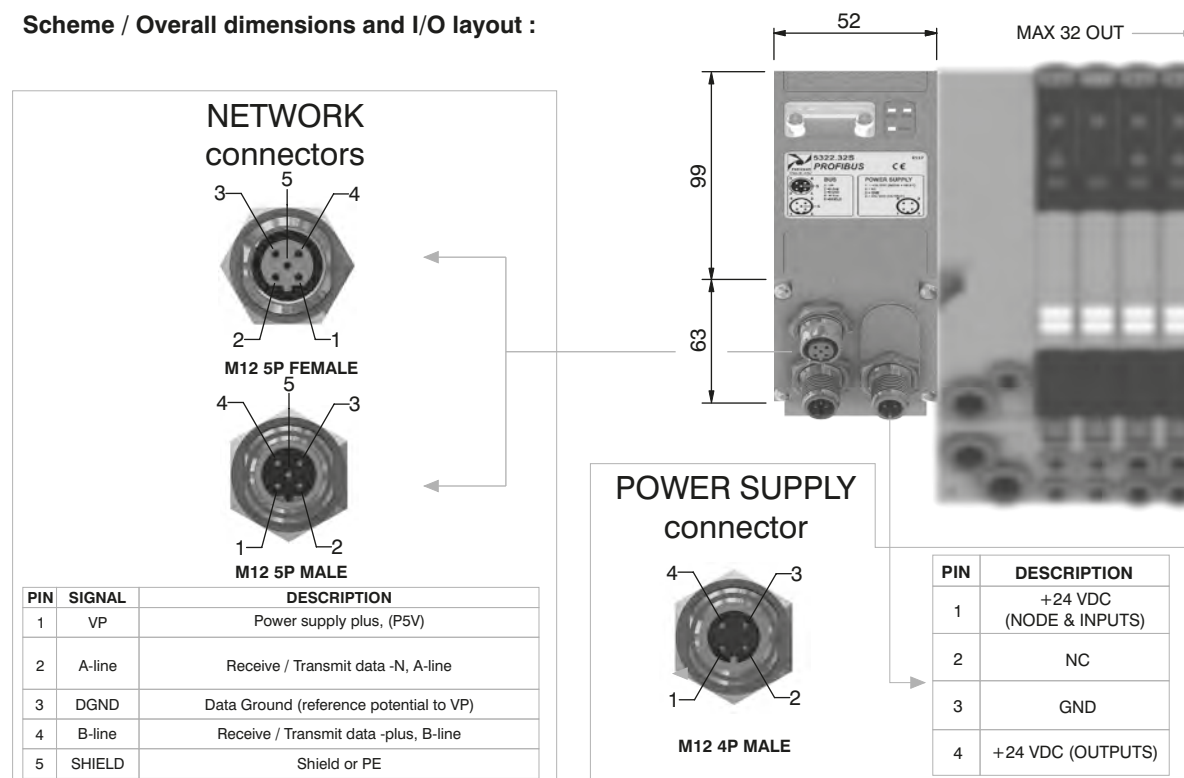
The module includes an internal terminating resistance that can be activated by a dip-switch.

Ordering code

5322.32S



Scheme / Overall dimensions and I/O layout :



Technical characteristics

Power supply	Model	5322.32S
	Specifications	PROFIBUS DP
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
Outputs	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	50 mA
	Power supply diagnosis	Green LED PWR
	PNP equivalent outputs	+24 VDC +/- 10%
Network	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 5P 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-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

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

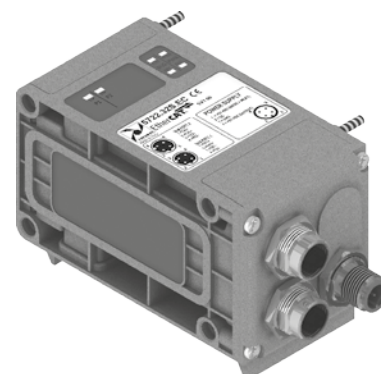
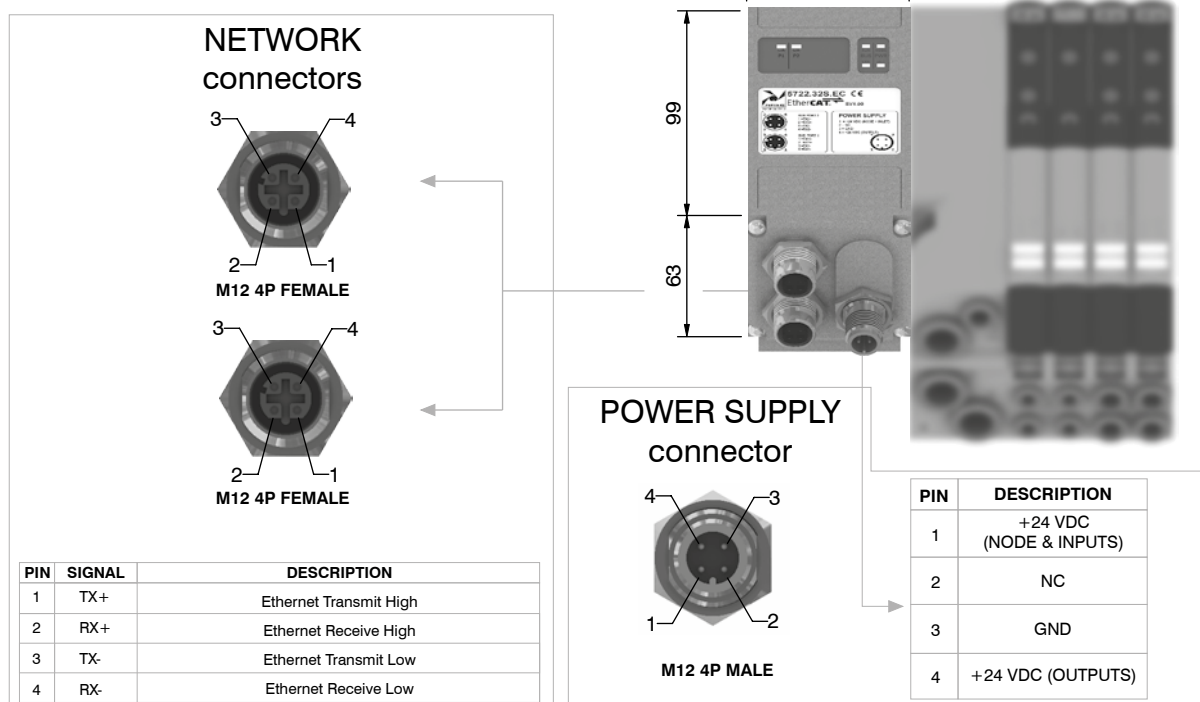
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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

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

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

The node address is assigned during configuration.

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

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

General:

PROFINET IO RT module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

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

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

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

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

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

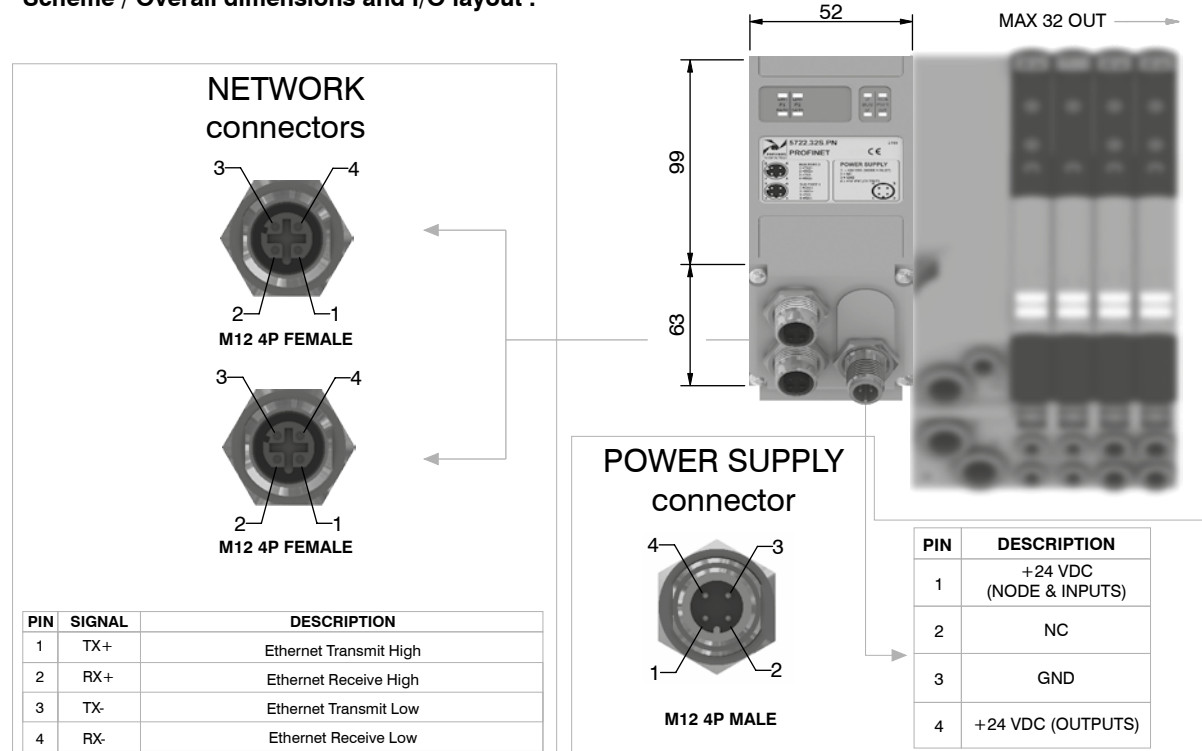
The node address is assigned during configuration.

Ordering code

5722.32S.PN.A



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5722.32S.PN.A
	Specifications	PROFINET IO RT
	Case	Reinforced technopolymer
	Power supply	Power supply connection Power supply voltage Node consumption (without inputs) Power supply diagnosis
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	Outputs	PNP equivalent outputs Maximum current for each output Maximum output number Max output simultaneously actuated
	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 Baud rate Max nodes in net Maximum distance between 2 nodes Bus diagnosis
	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	2 red 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-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 maintaining powered the node and inputs, if present.

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

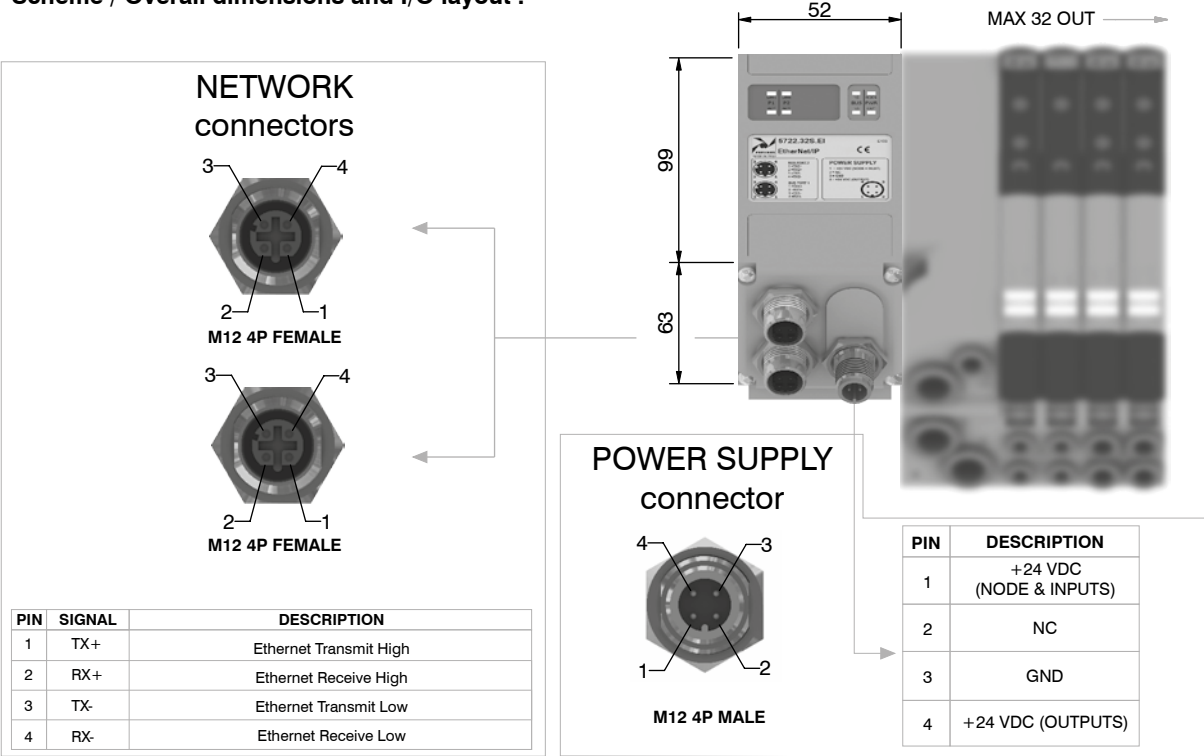
The node address is assigned during configuration.

Ordering code

5722.32S.EI.A



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5722.32S.EI.A
	Specifications	The EtherNet/IP Specification
	Case	Reinforced technopolymer
Power supply	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	2 bi-colors LED green/red 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:

CC-Link IE Field Basic module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.

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

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

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

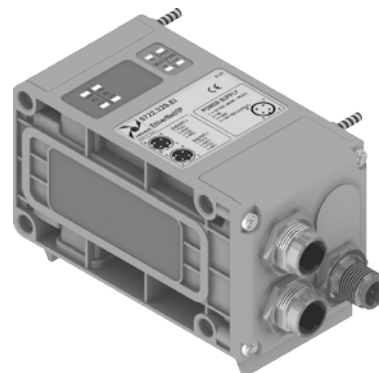
The separation between node 24 VDC Power supply and outputs 24 VDC allows to switch off the outputs maintaining powered the node and inputs, if present.

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

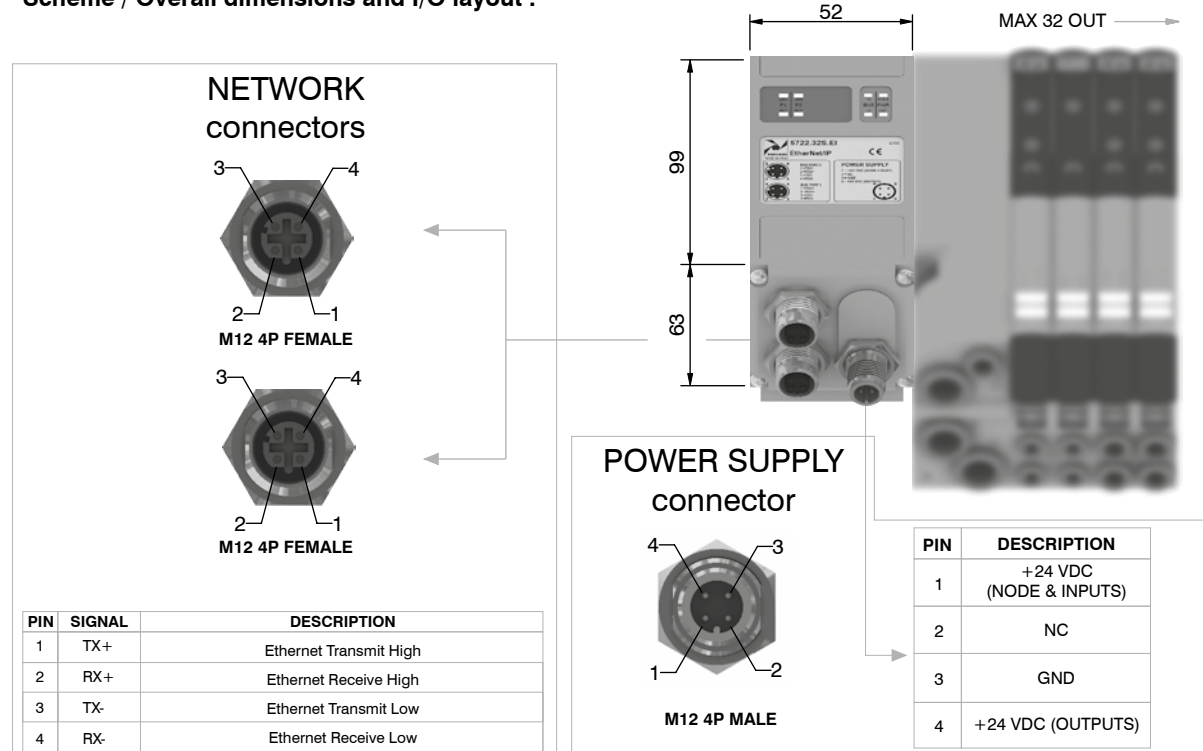
The node address is assigned during configuration.

Ordering code

5722.32S.CL.A



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5722.32S.CL.A
	Specifications	CC-Link IE Field Basic Specification
Power supply	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	60 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Max nodes in net	As an Ethernet Network
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Available from our web site: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



General:

IO-Link module is directly integrated on Optyma-S solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-S solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).
The node can be easily installed also on solenoid valves manifold already mounted on equipment.
Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5222.08S.
Regardless of the number of Input modules connected, the managable solenoid valves are 32.
Valve power supply will be provided through an external M12, 5 poles, A type connector, directly through the communication connector for Class B port option.
IO-Link module support the IO-Link communications speed COM2.
IODD configuration files will be provided by Pneumax.

Ordering code

5822.32S



1

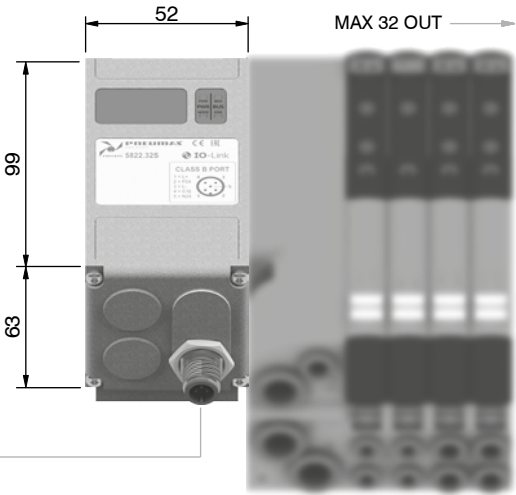
AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :

CLASS B connectors

M12 5P MASCHIO

PIN	SIGNAL
1	L+
2	P24 (+24 VDC)
3	L-
4	C/Q
5	N24 (GND)



Technical characteristics

Outputs	Specifications	IO-Link Specification v1.1
	Case	Reinforced technopolymer
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	Class B ports
	Communication speed	COM 2
	Maximum distance from Master	20 m
	Vendor ID/Device ID	1257 (hex 0x04E9) / 5800 (hex 0x16A8)
	Bus diagnosis	1 green and 1 red LED for status
	Configuration file IODD	Available from our web site: 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 $\pm 10\%$.

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

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

Each module includes a 300 mA self-mending fuse. If a short circuit or a overcharge (overall current $>300\text{mA}$) occur the safety device acts cutting the 24 VDC power supply to all M8 connectors on the module and switching off the green LED PWR. Any other Input module connected to the node will remain powered and will function correctly.

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

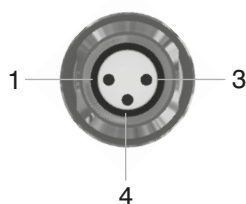
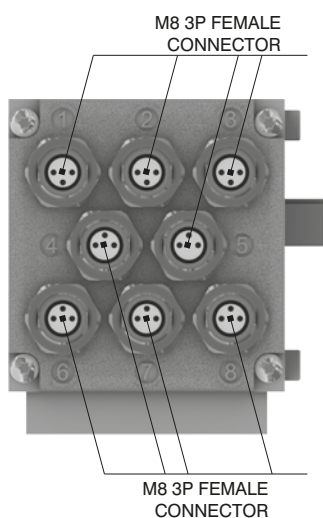
The maximum number of Input modules supported is 4.

Ordering code

5222.08S

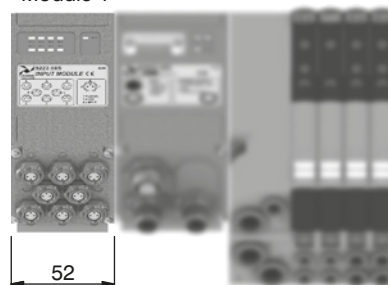


Scheme / Overall dimensions and I/O layout :

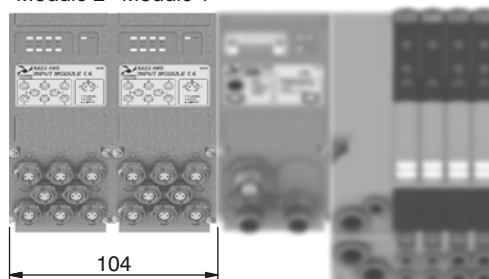


PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

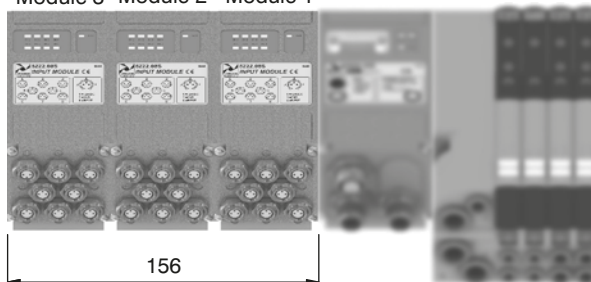
Module 1



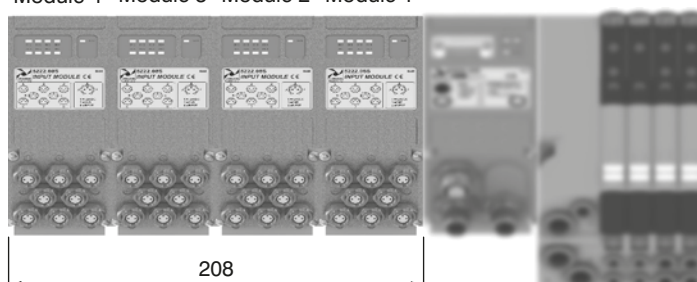
Module 2 Module 1



Module 3 Module 2 Module 1



Module 4 Module 3 Module 2 Module 1



Socket for Power Supply
STRAIGHT CONNECTOR
M12A 4P FEMALE

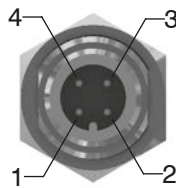
Ordering code

5312A.F04.00



POWER SUPPLY connector

Upper view
Slave connector

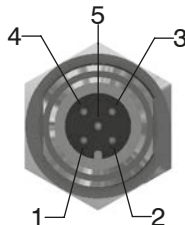


PIN	DESCRIPTION
1	+24 VDC Node
2	NC
3	GND
4	+24 VDC Outputs

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

Ordering code

5312A.F05.00



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

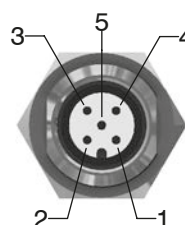
Upper view
Slave connector

NETWORK connectors

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

Ordering code

5312A.M05.00



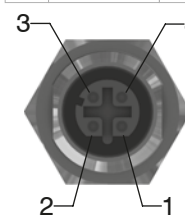
Plug for Bus EtherCAT®,
PROFINET IO RT,
EtherNet/IP and Powerlink
STRAIGHT CONNECTOR M12D 4P MALE

Ordering code

5312D.M04.00



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

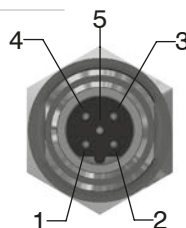


Upper view
Slave connector

Socket for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P FEMALE

Ordering code

5312B.F05.00



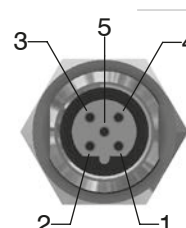
PIN	DESCRIPTION
1	Power Supply
2	A-line
3	DGND
4	B-line
5	SHIELD

Upper view
Slave connector

Plug for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P MALE

Ordering code

5312B.M05.00



Plug for Input module
STRAIGHT CONNECTOR
M8 3P MALE

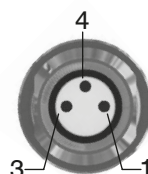
Ordering code

5308A.M03.00



INPUT connectors

Upper view
Slave connector



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

M12 plug

Ordering code

5300.T12



Plugs

M8 plug

Ordering code

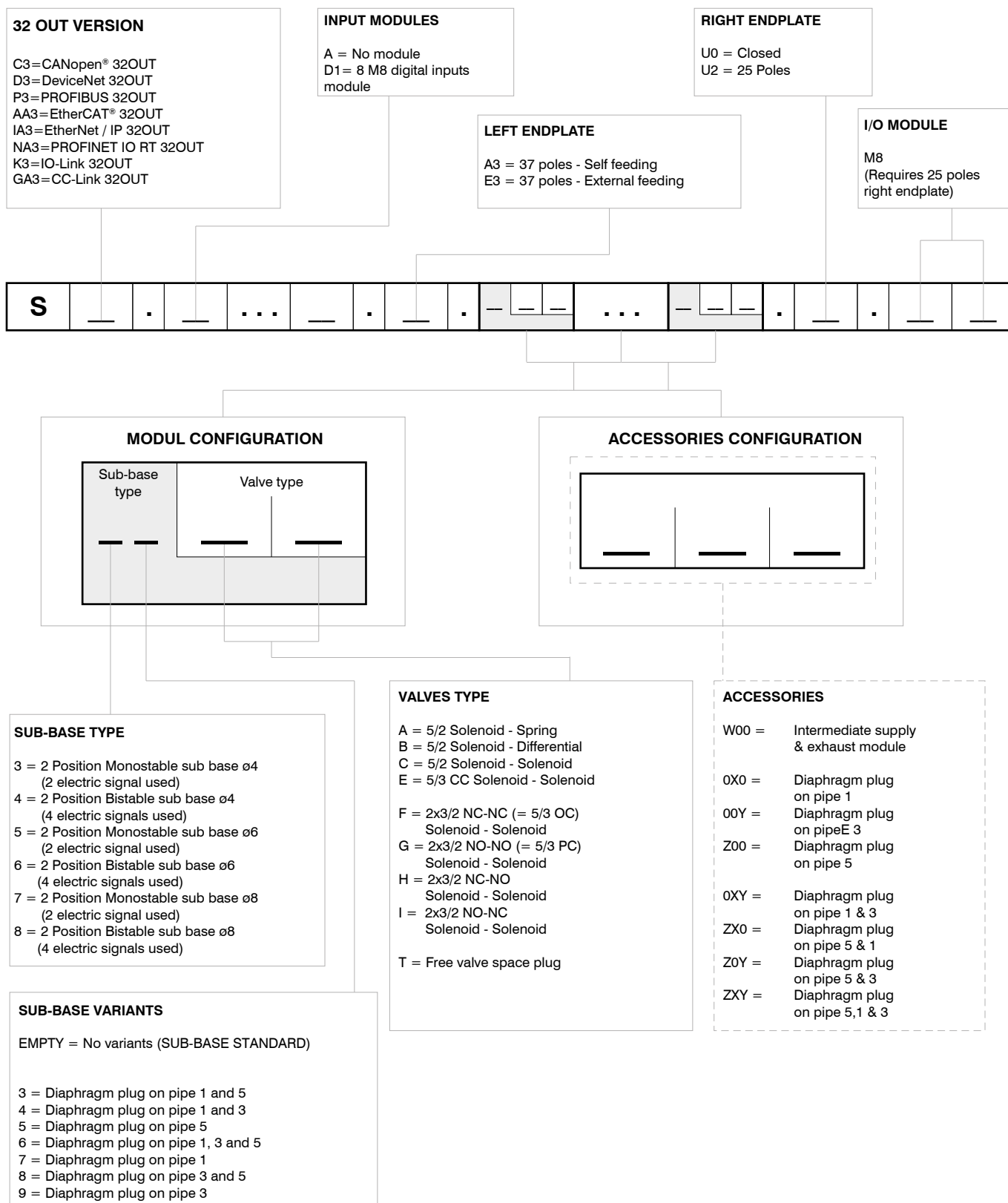
5300.T08



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

Manifold Layout configuration with serial systems

1
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NOTE:

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

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

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

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

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





Series 2200 "OPTYMA-Sc"

General

Optyma solenoid valves series it's completed by "Compact" version. It is useful in case a limited number of solenoid valves is needed without managing input and output signals. Standard base blocks provide 4 or 6 solenoid valves positions. Standard base blocks can be individually sold even without solenoid valves to allow maximum configuration flexibility.

Solenoid valves can be chosen from whole Optyma-S range.

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

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

"Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001, 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
Quick coupling connections directly integrated in sub base
Integrated and optimized electrical connection system.
IP65 protection grade as standard

Construction characteristics

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

Functions

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

Technical characteristics

Voltage	24VDC \pm 10% PNP (NPN and AC on request)
Pilot consumption	0,5 Watt
Pilot working pressure (12-14)	from 2,5 to 7 bar max.
Valve working pressure [1]	from vacuum to 10 bar max.
Operating temperature	from -5°C to +50°C
Protection degree	IP40
Life (standard operating conditions)	50000000
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous

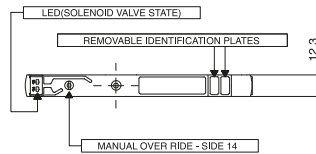
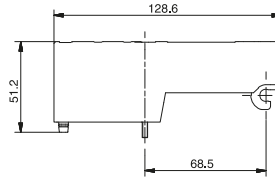
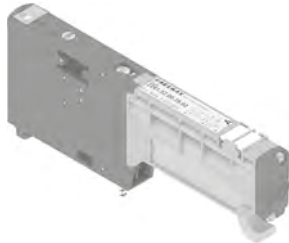
Solenoid - Spring

Coding: 2241.52.00.39.

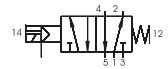
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	12
Response time according to ISO 12238, deactivation time (ms)	20

V	VOLTAGE
02	= 24 VDC PNP
SHORT FUNCTION CODE "A"	
Weight 67 g	

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



Flow rate at 6 bar with $\Delta p=1$ (NI/min) with Base cod. 2248.01 tube Ø8= 550



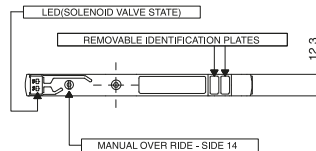
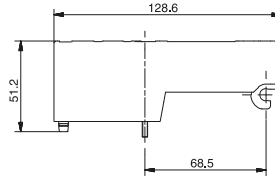
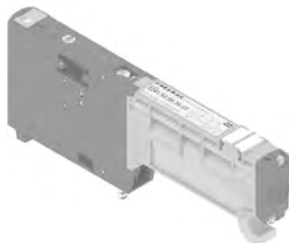
Solenoid-Differential

Coding: 2241.52.00.36.

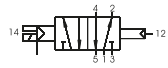
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	20
Response time according to ISO 12238, deactivation time (ms)	25

V	VOLTAGE
02	= 24 VDC PNP
SHORT FUNCTION CODE "B"	
Weight 67 g	

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



Flow rate at 6 bar with $\Delta p=1$ (NI/min) with Base cod. 2248.01 tube Ø8= 550



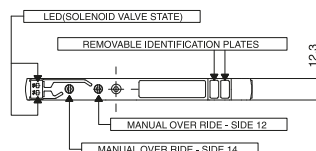
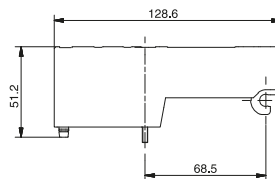
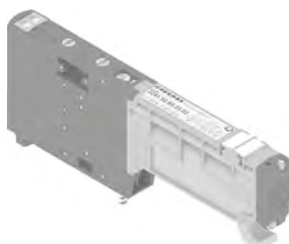
Solenoid-Solenoid

Coding: 2241.52.00.35.

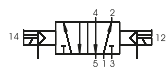
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	550
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	10

V	VOLTAGE
02	= 24 VDC PNP
SHORT FUNCTION CODE "C"	
Weight 67 g	

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



Flow rate at 6 bar with $\Delta p=1$ (NI/min) with Base cod. 2248.01 tube Ø8= 550





Solenoid valves manifold
Series 2200 "OPTYMA-Sc"

1

AIR DISTRIBUTION

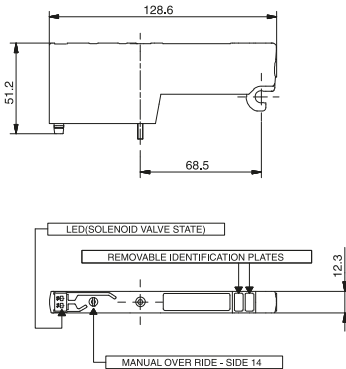
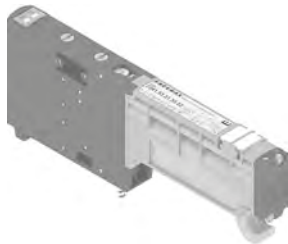
Solenoid-Solenoid 5/3 (Closed centres)

Coding: 2241.53.31.35. V

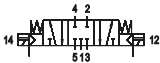
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	2,5 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	400
Response time according to ISO 12238, activation time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

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

V	VOLTAGE
02	= 24 VDC PNP
SHORT FUNCTION CODE "E"	
Weight 83 g	



Flow rate at 6 bar with $\Delta p=1$ (NI/min) with Base cod. 2248.01. V tube $\varnothing 8=400$



Solenoid-Solenoid 2x3/2

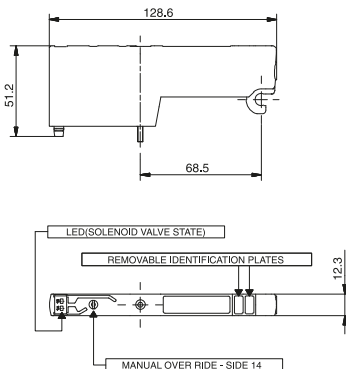
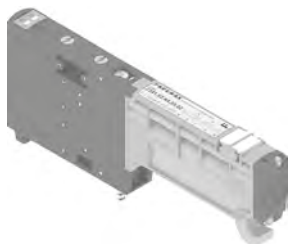
Coding: 2241.62. F.35. V

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

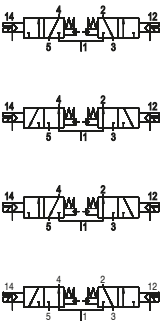
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

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

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

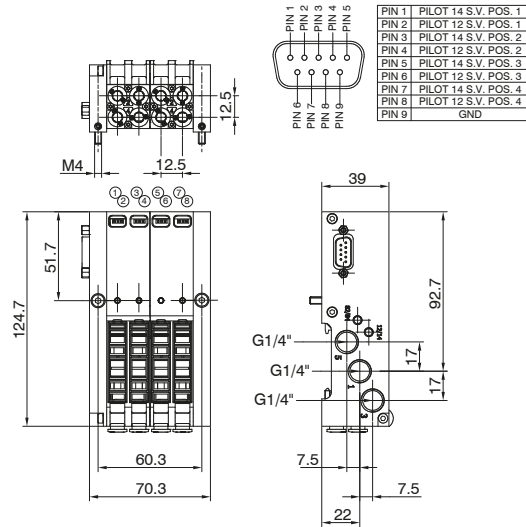


Flow rate at 6 bar with $\Delta p=1$ (NI/min) with Base cod. 2244.01. tube $\varnothing 4=140$
Flow rate at 6 bar with $\Delta p=1$ (NI/min) with Base cod. 2246.01. tube $\varnothing 6=360$
Flow rate at 6 bar with $\Delta p=1$ (NI/min) with Base cod. 2248.01. tube $\varnothing 8=420$



Bases only kit

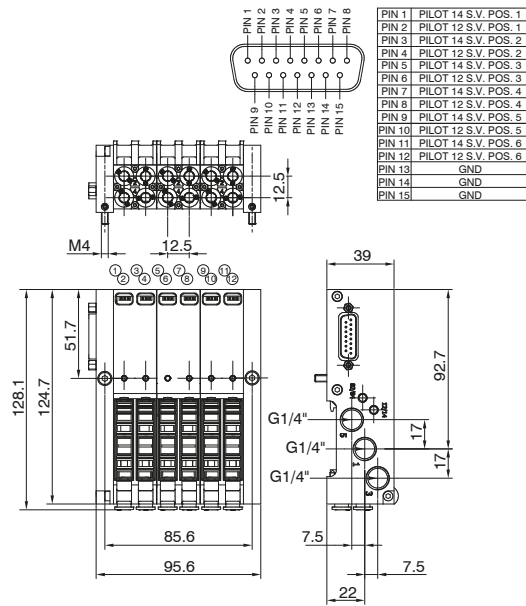
Coding: CMPVCP0



VERSION	
V	9E = 9 poles kit
	1E = 15 poles kit
TUBE DIAMETER	
44	= Ø4-4 (9 poles)
66	= Ø6-6 (9 poles)
C	88 = Ø8-8 (9 poles)
444	= Ø4-4-4 (15 poles)
666	= Ø6-6-6 (15 poles)
888	= Ø8-8-8 (15 poles)

Weight 400 g

CMP9ECP0



Weight 500 g

CMP1ECP0

Available bases

Tube Ø4

Tube Ø6

Tube Ø8

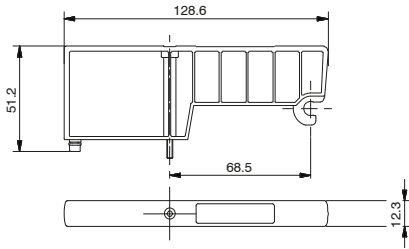




Closing plate

Coding: 2240.00

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



Weight 30 g
SHORT FUNCTION CODE "T"

Cable complete with connector, 9 Poles, IP40

Coding: 2400.09.L.00



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

Cable complete with connector, 15 Poles, IP40

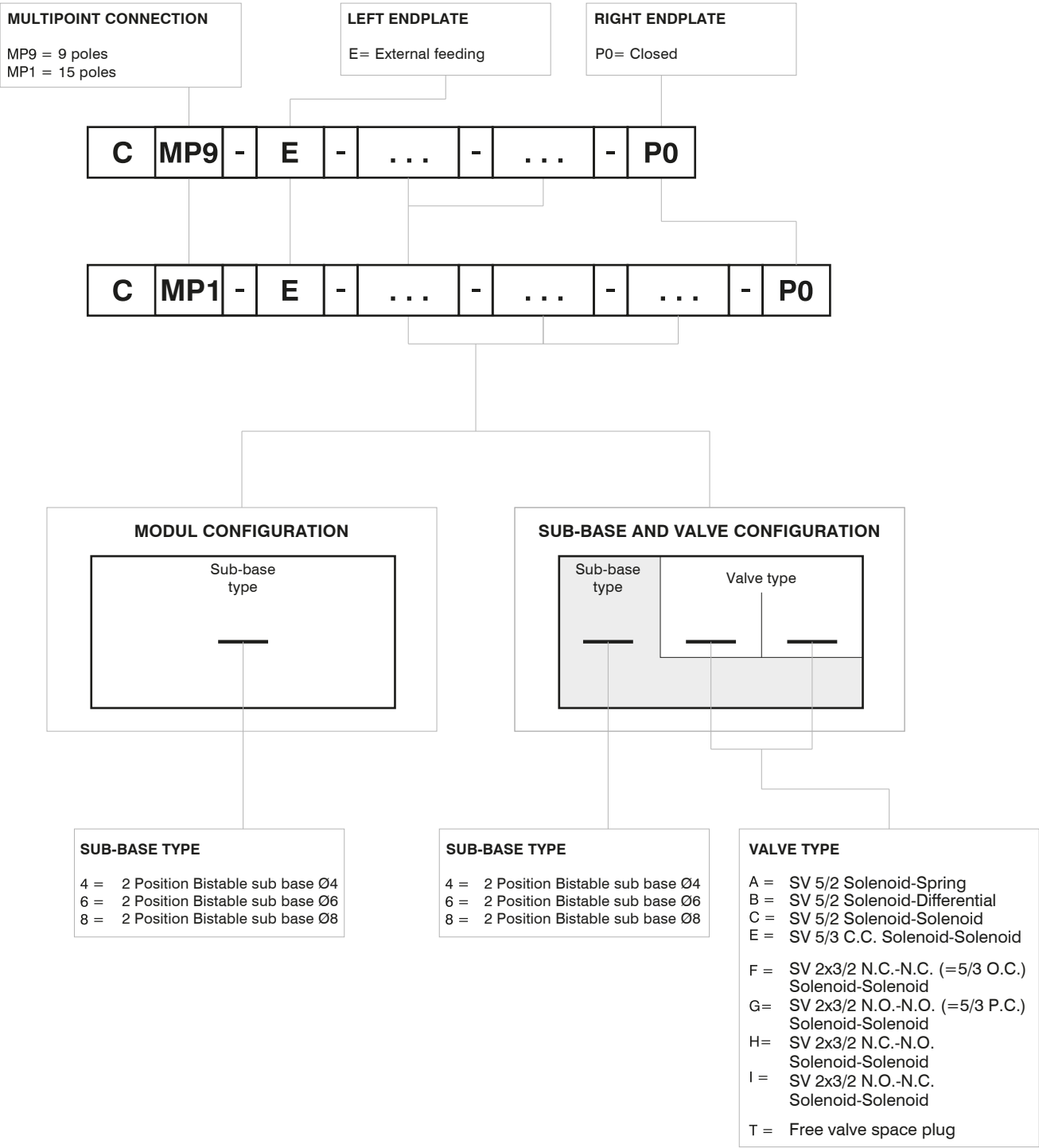
Coding: 2400.15.L.00



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



Manifold layout configuration

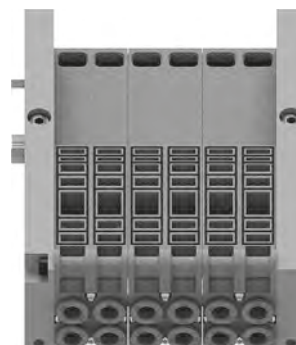




Example shown : CMP9E68P0
Manifold with external supply, 9 poles multipolar, base Ø6, base Ø8



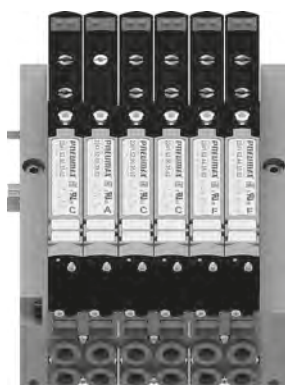
To be completed with solenoid valves before use



Example shown : CMP1E666P0
Manifold with external supply, 15 poles multipolar, base Ø6, base Ø6, base Ø6



To be completed with solenoid valves before use



Example shown : CMP1E6CA6CC6FFP0
Manifold with external supply, 15 poles multipolar, base Ø6 with solenoid valves, base Ø6 with solenoid valves, base Ø6 with solenoid valves



Two signals per position, independently of the mounted solenoid valve

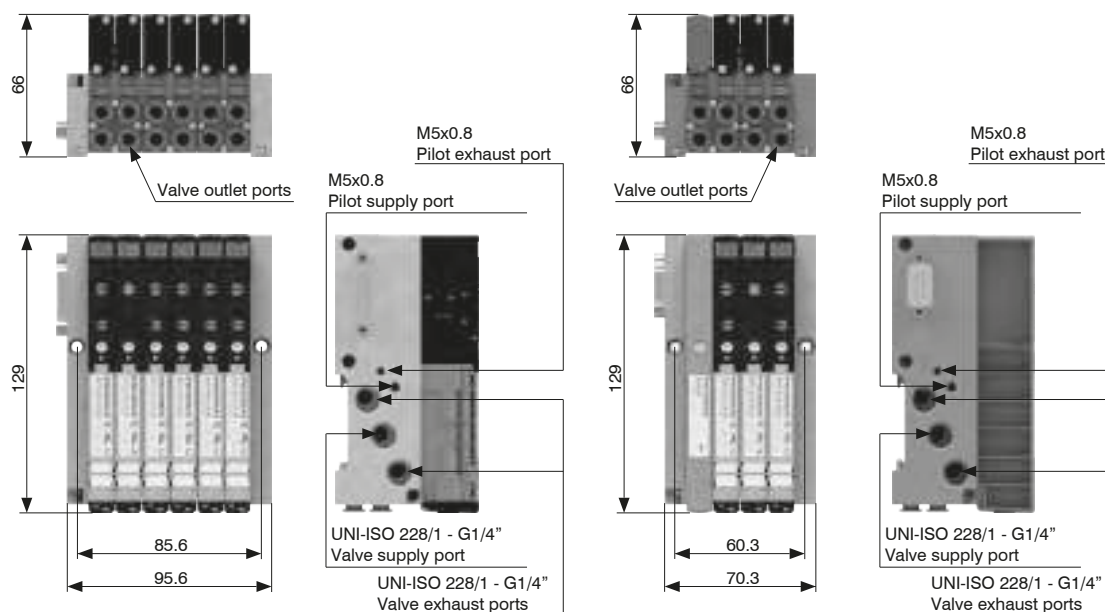


Example shown : CMP9E6TF6ACP0
Manifold with external supply, 9 poles multipolar, base Ø6 with solenoid valves, base Ø6 with solenoid valves



Two signals per position, independently of the mounted solenoid valve

Supply ports and maximum possible size according to valves used



Series 2500 "OPTYMA-F"

General

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

Many technical features make the new product interesting:

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

Possibility to integrate with Field Bus modules CANopen®, PROFIBUS DP, DeviceNet, EtherNet/IP, PROFINET IO RT/IRT, EtherCAT®, Powerlink and Modbus/TCP.

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

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

Main characteristics

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

Construction characteristics

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

Functions

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

Technical characteristics

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



Solenoid valves manifold Series 2500 "OPTYMA-F"

Solenoid - Spring

Coding: 2531.52.00.39.✓

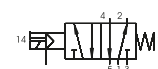
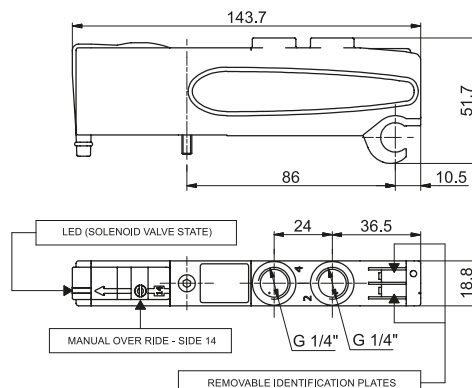
Operational characteristics

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

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

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

SHORT FUNCTION CODE "A"
Weight 123 g



Solenoid-Differential

Coding: 2531.52.00.36.✓

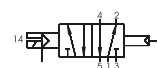
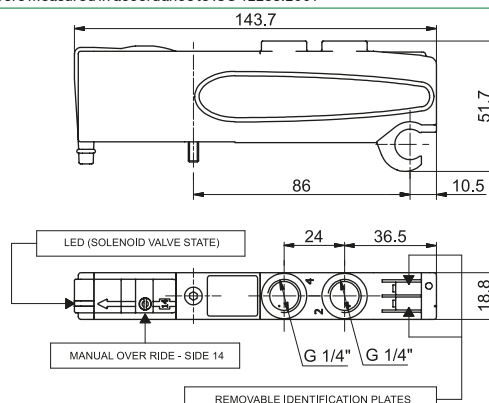
Operational characteristics

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

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

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

SHORT FUNCTION CODE "B"
Weight 120 g



Solenoid-Solenoid

Coding: 2531.52.00.35.✓

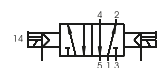
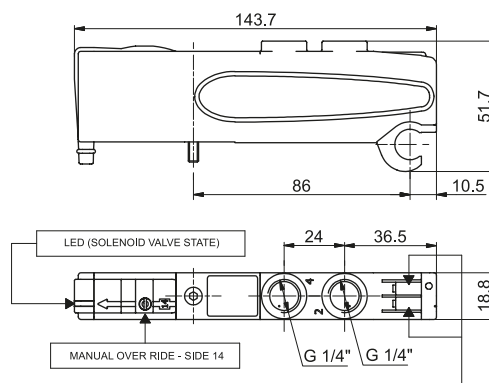
Operational characteristics

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

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

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

SHORT FUNCTION CODE "C"
Weight 128 g



Solenoid-Solenoid 5/3

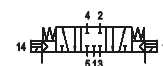
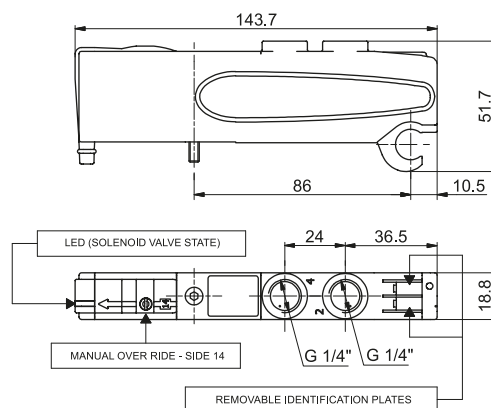
Coding: 2531.53.31.35.V

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

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

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

SHORT FUNCTION CODE "E"
Weight 126 g



Solenoid-Solenoid 2x3/2

Coding: 2531.62.F.35.V

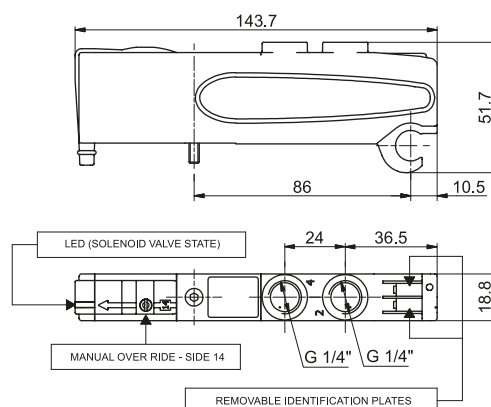
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	$\geq 2,5 + (0,2 \times P_{alim.})$
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	700
Response time according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

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

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

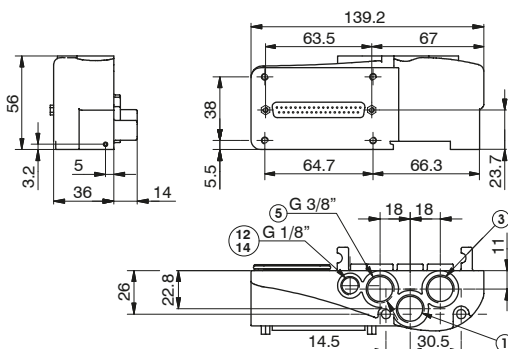
SHORT FUNCTION CODE:
NC-NC (5/3 Open centres) = "F"
NO-NO (5/3 Pressured centres) = "G"
NC-NO = "H"
NO-NC = "I"

Weight 115,5 g



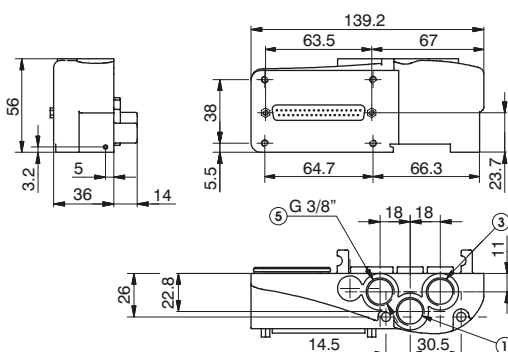
Coding: 2530.V.C

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



Weight 206 g

2530.02.©



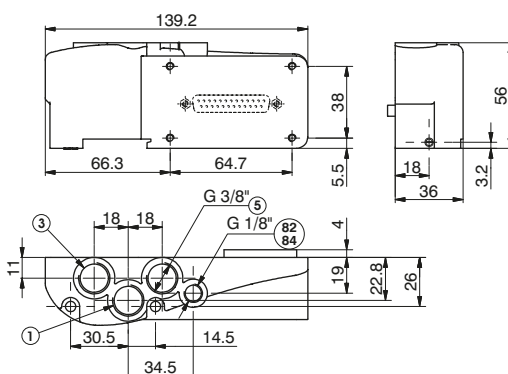
Weight 206 g

2530.12.©

Coding: 2530.03.©

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

Weight 181,5 g



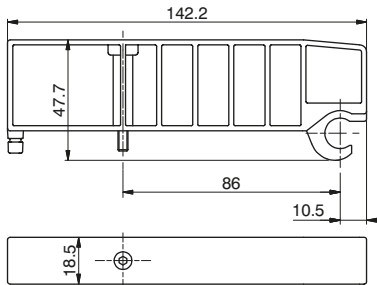
PORT 82/84= DO NOT PRESSURIZE. SOLENOID PILOTS EXHAUST

Closing plate

Coding: 2530.00

SHORT FUNCTION CODE "T"
Weight 53,5 g

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



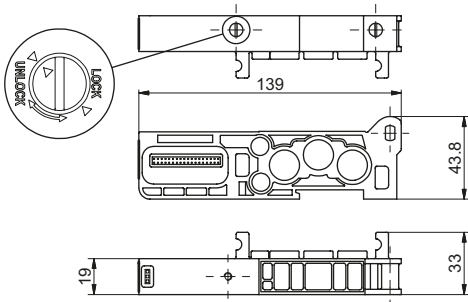
Modular base

Coding: 2530.01

VERSION
M = for Monostable SV
B = for Bistable SV

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

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

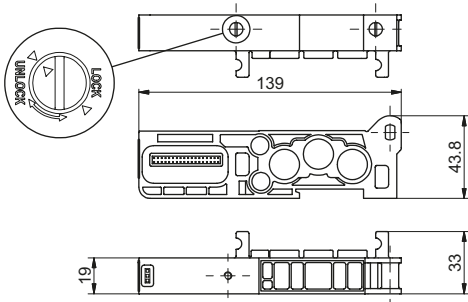


Intermediate Inlet/Exhaust module

Coding: 2530.10

SHORT FUNCTION CODE "W"
Weight 110 g

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

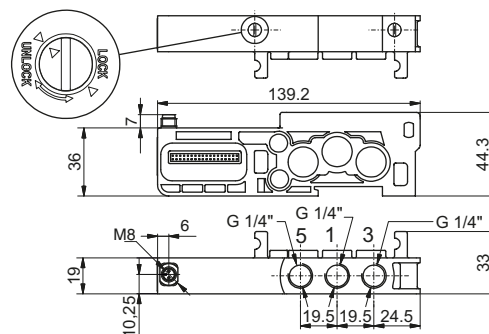


General :

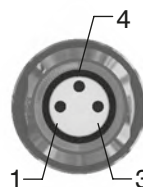
Each Optyma-F manifold lets to manage 32 command signals for the valves. Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve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

Ordering code

2530.10.2A



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



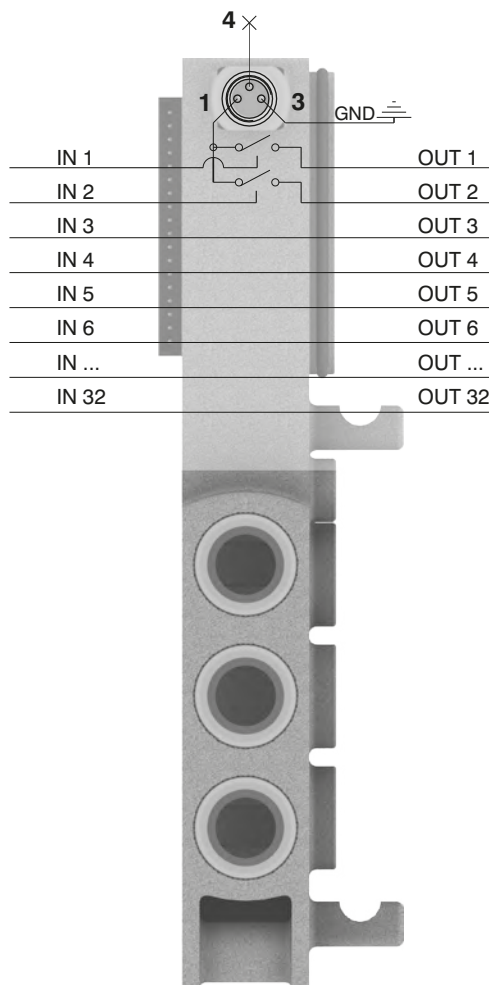
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

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

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

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



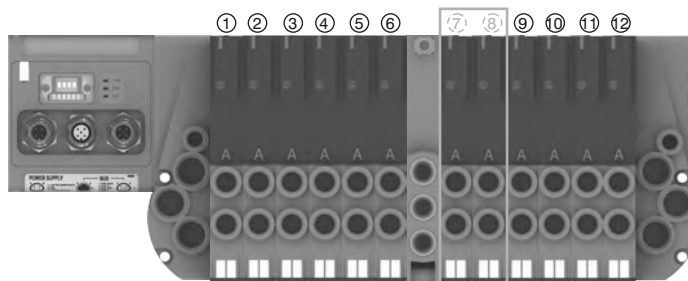
Please note: It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

Usage examples:**EXAMPLE 1:**

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

Assembly:

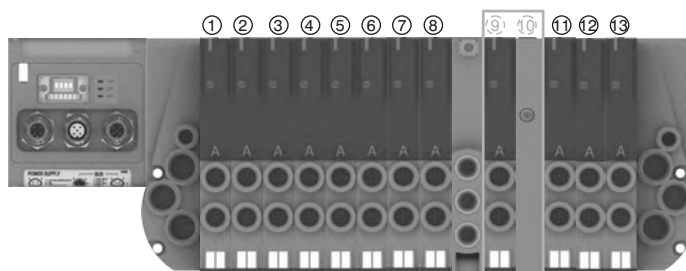
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 2 monostable of these are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

**EXAMPLE 2:**

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

Assembly:

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



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



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

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

EXAMPLE 3:

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

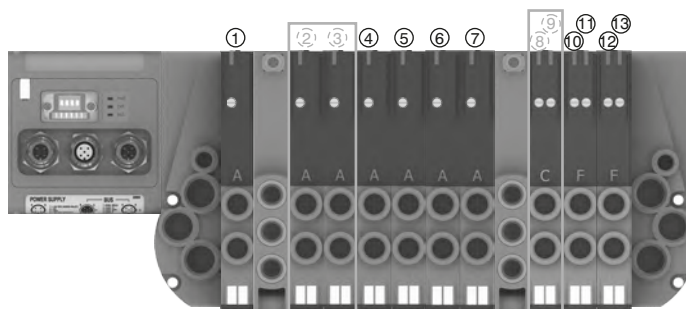
Assembly:

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

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

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

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

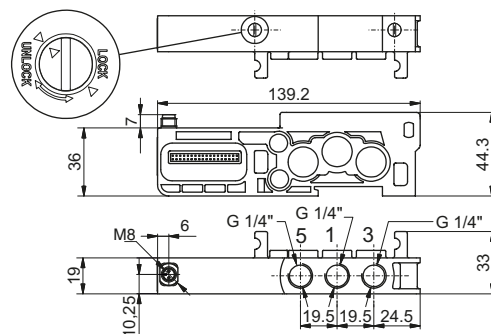


General :

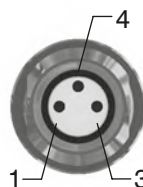
Each Optyma-F manifold lets to manage 32 command signals for the valves. Optyma-F serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IO RT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve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

Ordering code

2530.10.4A



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



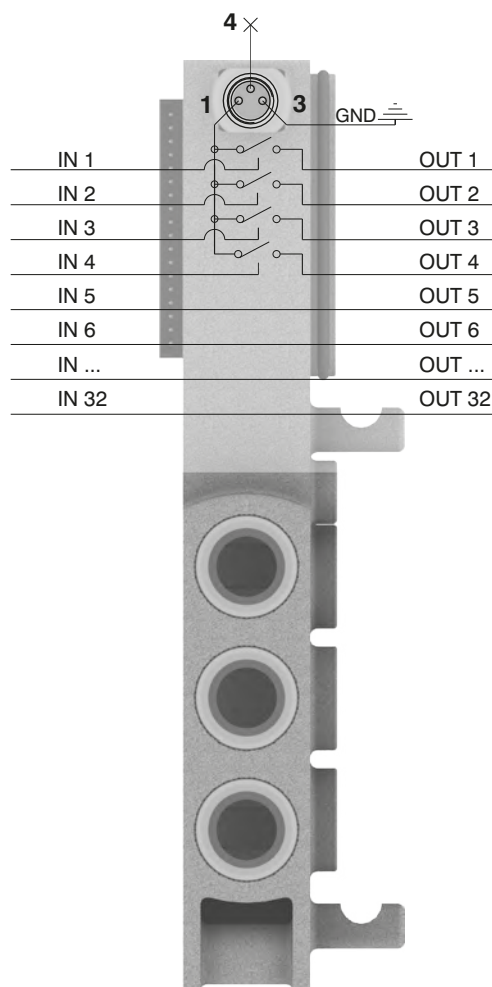
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

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

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

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



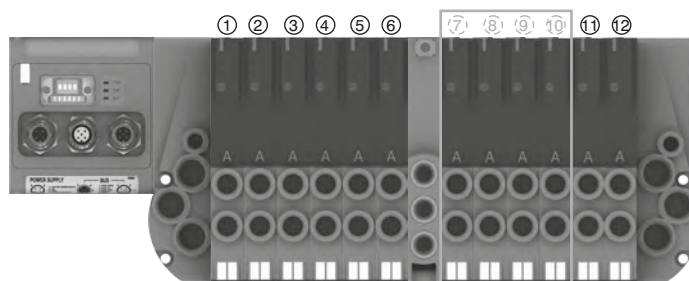
Please note: It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

Usage examples:**EXAMPLE 1:**

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

Assembly:

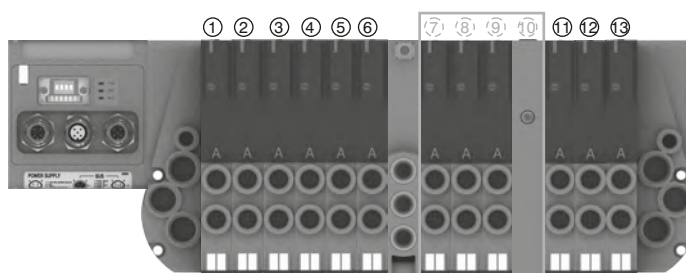
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 4 monostable of these are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

**EXAMPLE 2:**

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

Assembly:

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



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



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

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

EXAMPLE 3:

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

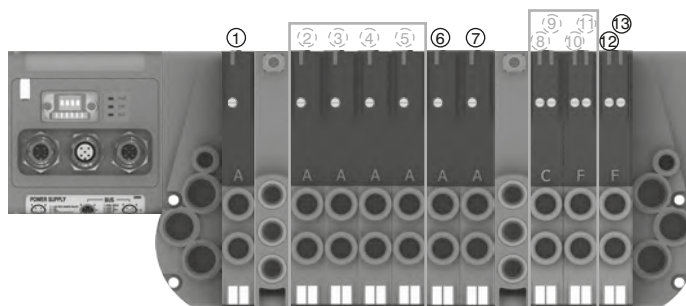
Assembly:

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

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

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

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





Polyethylene Silencer Series SPL-P

Coding: SPLP.ⓓ



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

Diaphragm plug

Coding: 2530.17



Cable complete with connector, 25 Poles IP65

Coding: 2300.25.ⓓ.ⓐ



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

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.ⓓ.ⓐ



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

Cable complete with connector, 25 Poles IP65

Coding: 2400.25.ⓓ.25



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

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

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

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

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

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

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

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

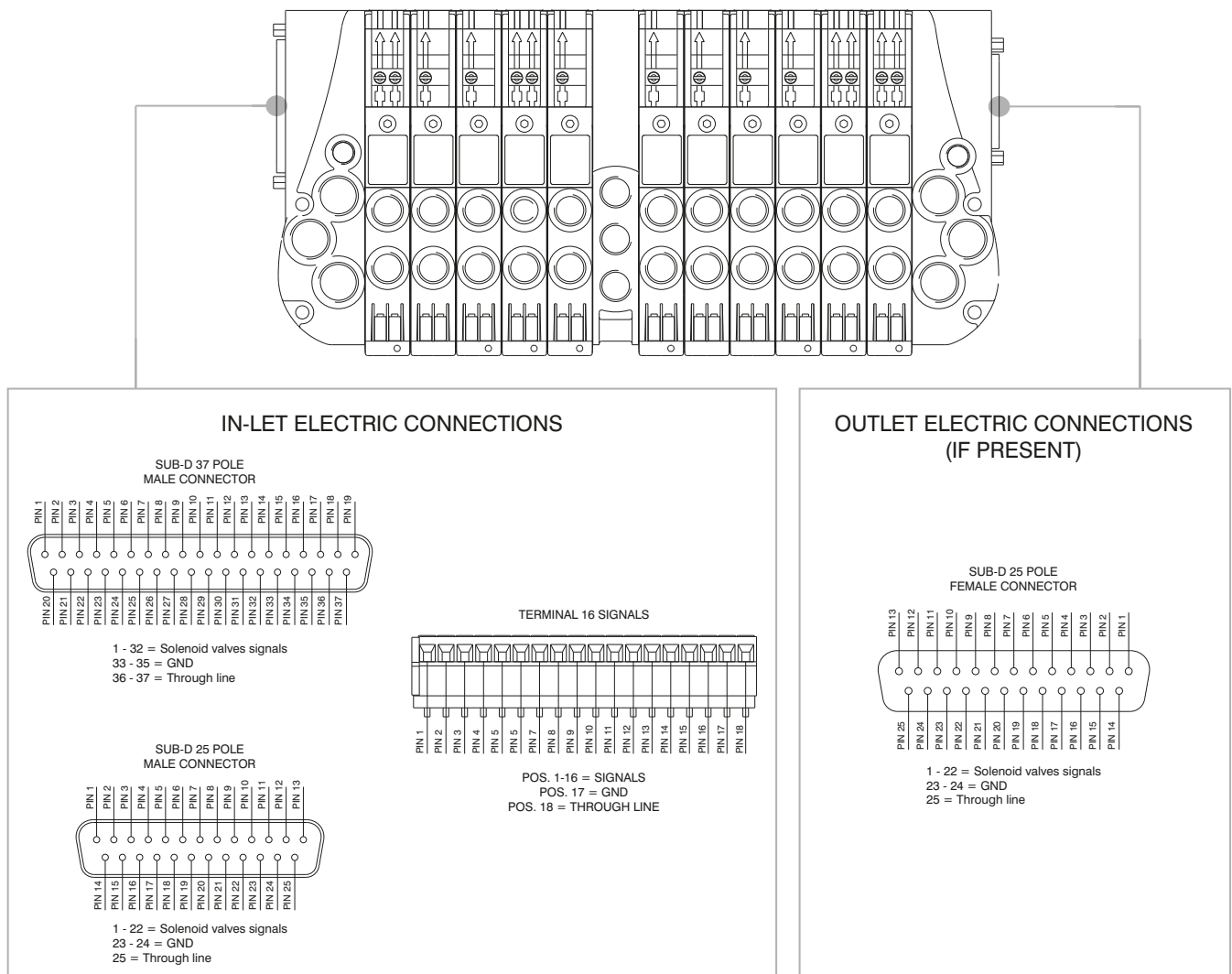
This allows the use of intermediate modules in any position of the manifold.

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

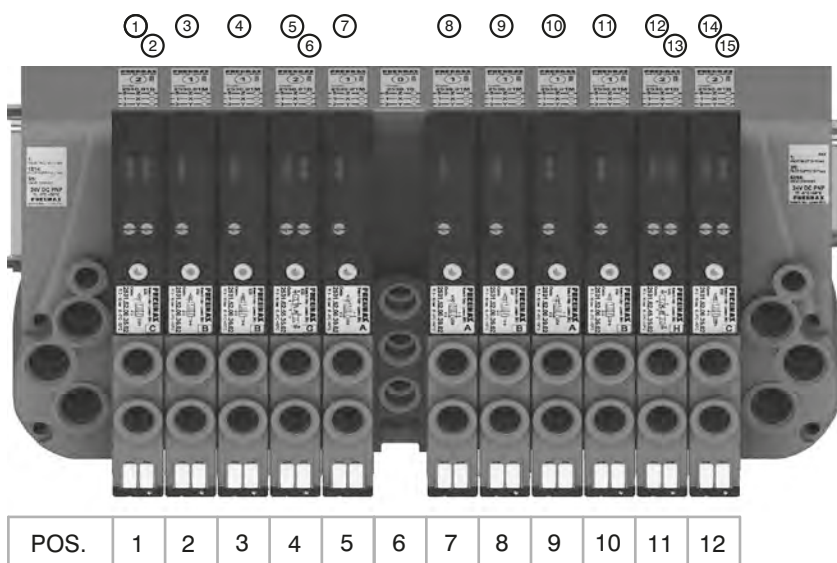
The number of available signals depends of the connector used to the type of the left end plate and by the total signals used along the manifold:

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

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

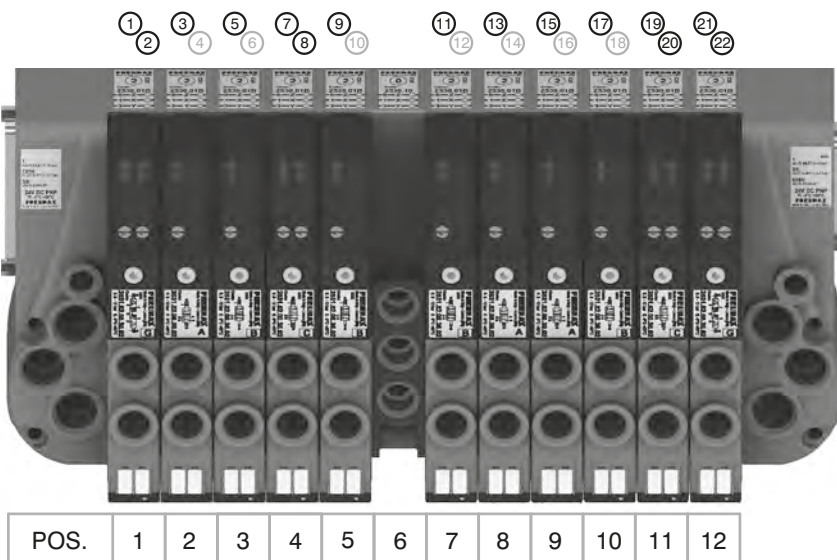


37 PIN Connector correspondence for valves assembled on mixed bases



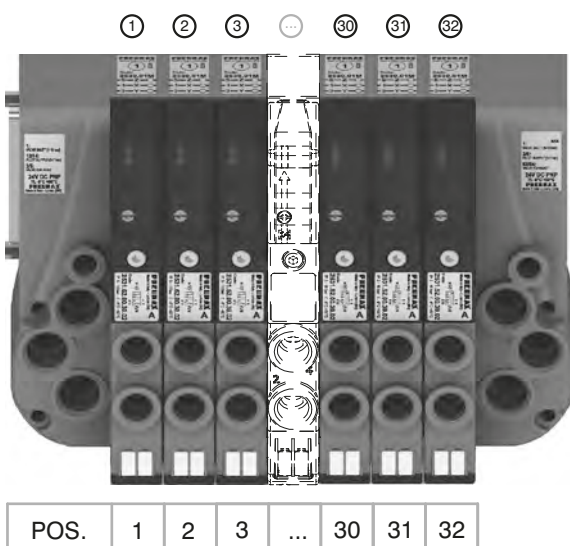
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 14 SV POS.3
- PIN 5 = PILOT 14 SV POS.4
- PIN 6 = PILOT 12 SV POS.4
- PIN 7 = PILOT 14 SV POS.5
- PIN 8 = PILOT 14 SV POS.7
- PIN 9 = PILOT 14 SV POS.8
- PIN 10 = PILOT 14 SV POS.9
- PIN 11 = PILOT 14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

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

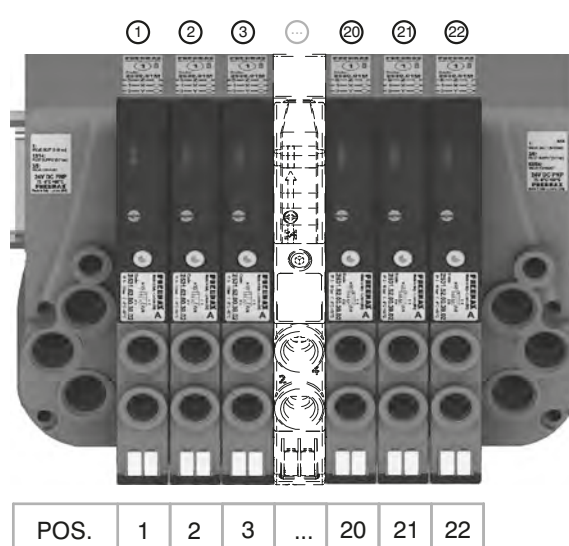


- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = NOT CONNECTED
- PIN 5 = PILOT 14 SV POS.3
- PIN 6 = NOT CONNECTED
- PIN 7 = PILOT 14 SV POS.4
- PIN 8 = PILOT 12 SV POS.4
- PIN 9 = PILOT 14 SV POS.5
- PIN 10 = NOT CONNECTED
- PIN 11 = PILOT 14 SV POS.7
- PIN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

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



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



General :

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

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

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

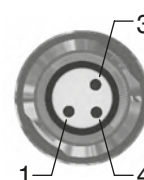
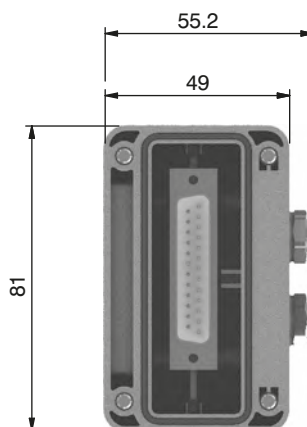
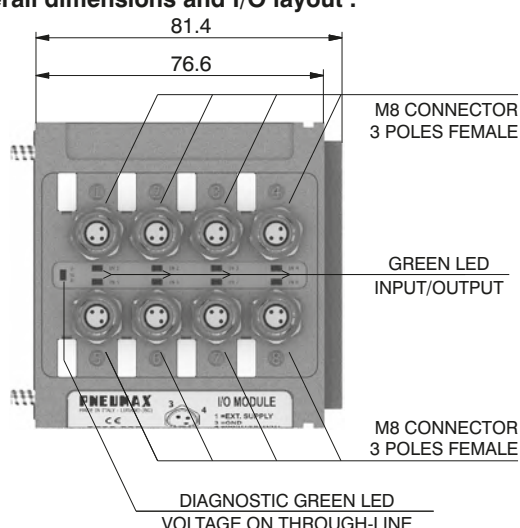
Ordering code**2530.08F**

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

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

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

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

Overall dimensions and I/O layout :

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

Input features:

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

I.E :

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

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

Output features:

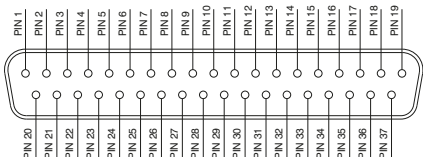
Attention: The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

General characteristics

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

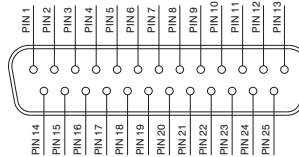
CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

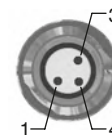


1 - 32 = SIGNALS
33 - 35 = GND
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

Connection modes:

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

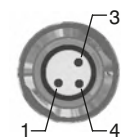
- A) Control via multi-pole connection
- B) Control via fieldbus

A) Control via multi-pole :

M8 connector used as Input:



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

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

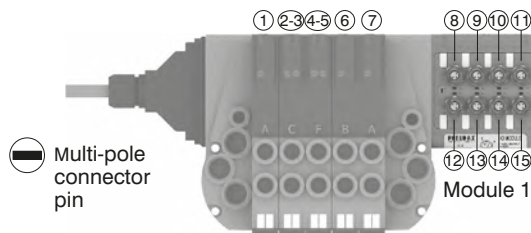


M8 connector used as Output:

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



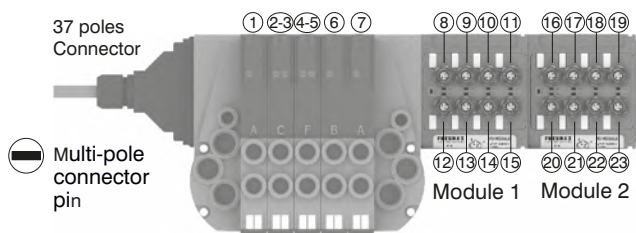
Attention: Since every cable has a degree of resistance, there will always be a voltage drop depending on the cable's length, sectional area and the current.



Multi-pole connector pin



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



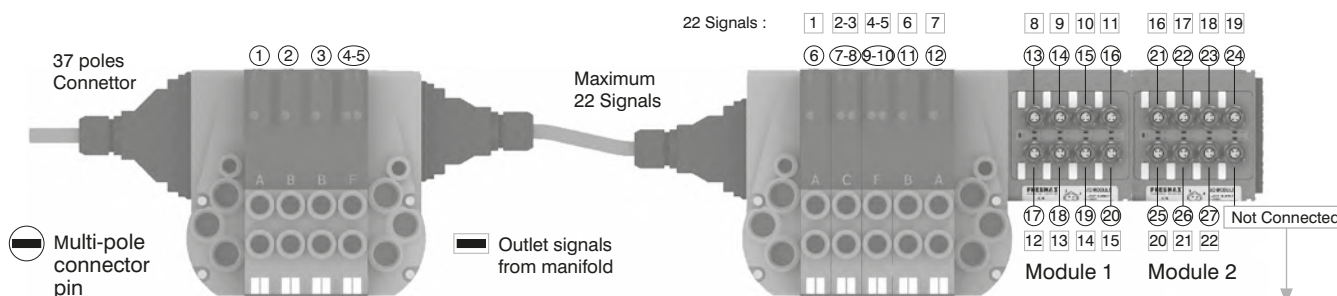
Multi-pole connector pin



Attention:
No more additions are possible

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

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



Multi-pole connector pin

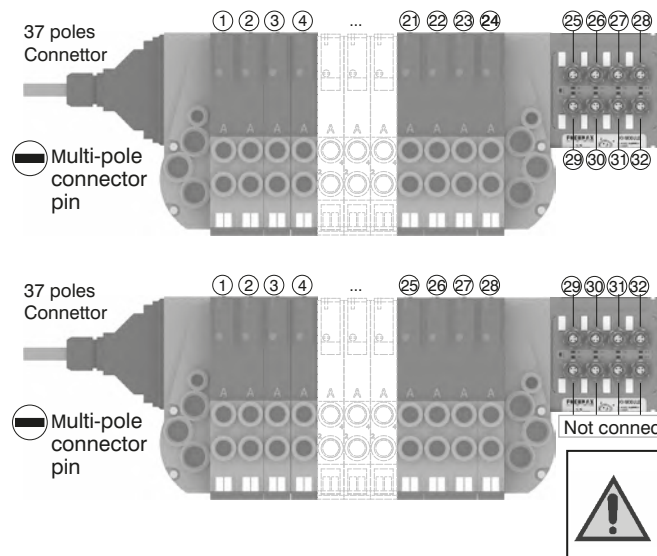
Outlet signals from manifold



Attention:
Signal Not connected
GND Connected
Through line Connected

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

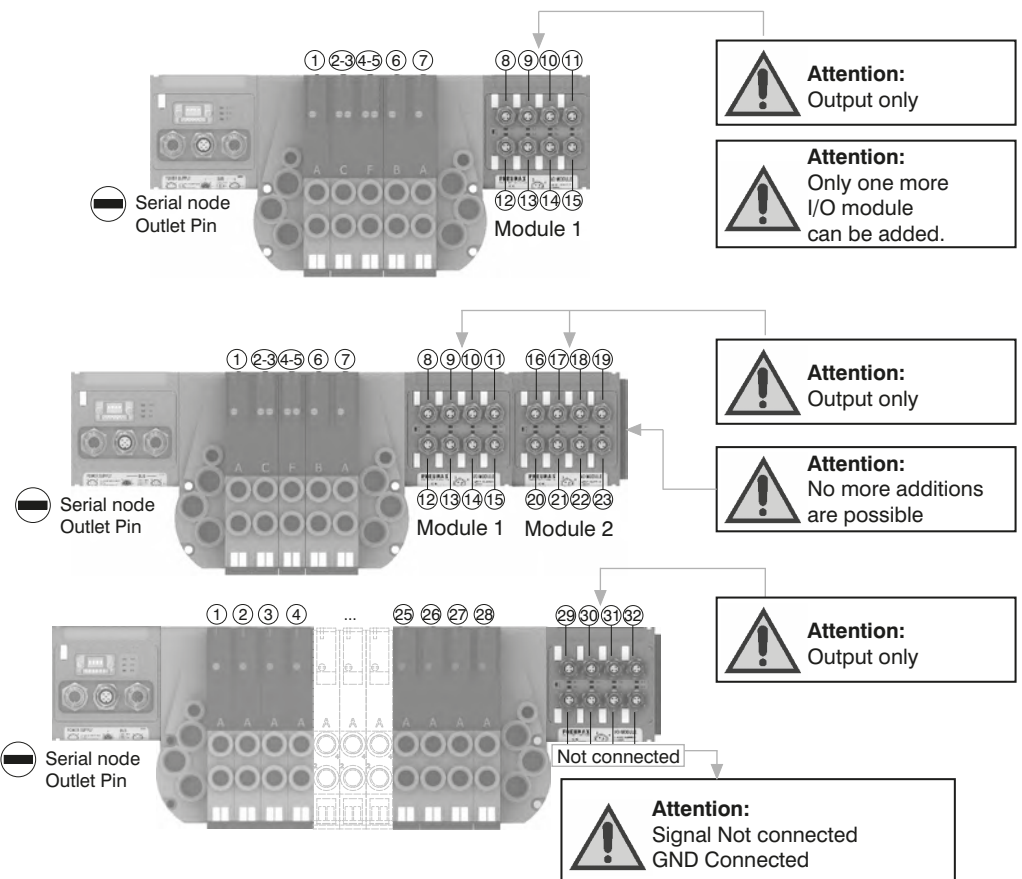
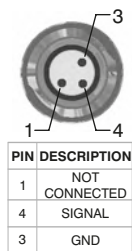
Please note: Optyma 32-F solenoid valve manifolds manage up to 32 signals. If the manifold uses more than 24 signals the I/O module will manage only the remainder. Connections that are not managing useful signals will remain unconnected.



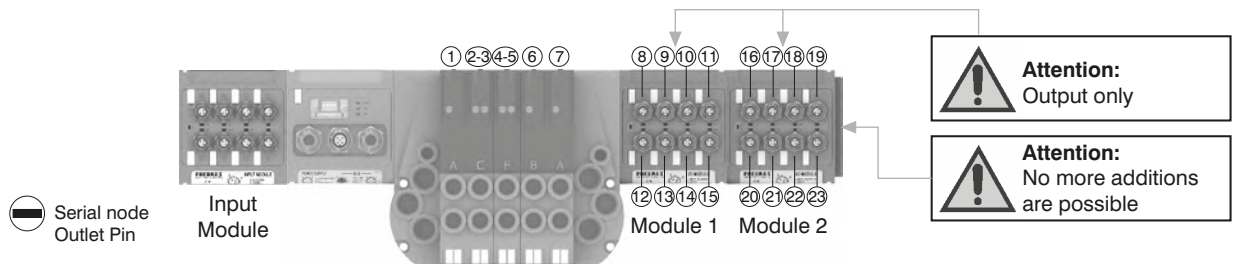
B) Control via fieldbus:

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

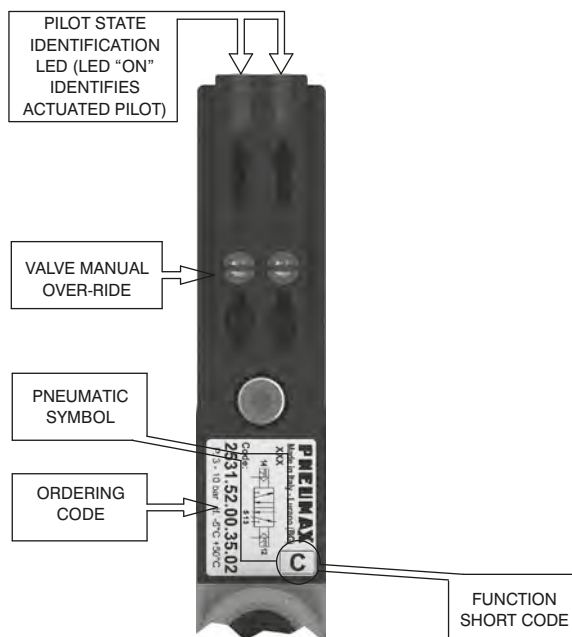
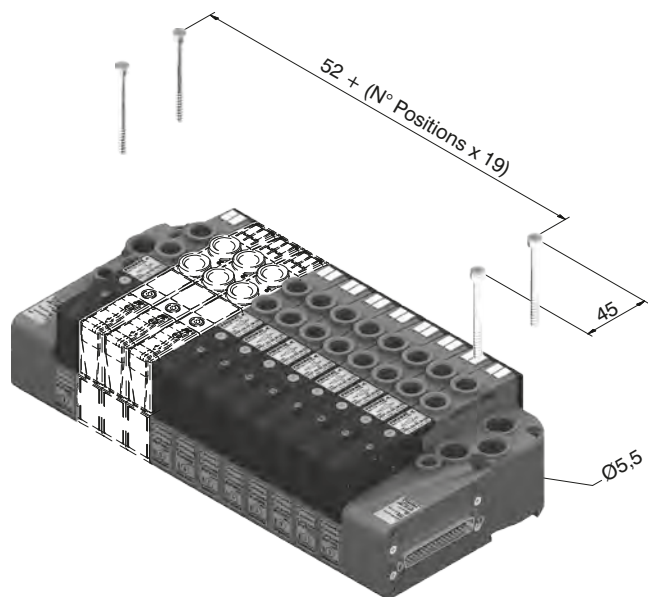
The maximum output current for each output is 100mA. The correspondence between control byte and each single output depends on how many electrical signals are used by the manifold and by the relative position of the I/O module.



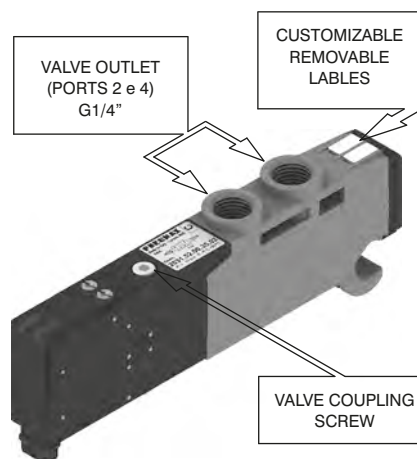
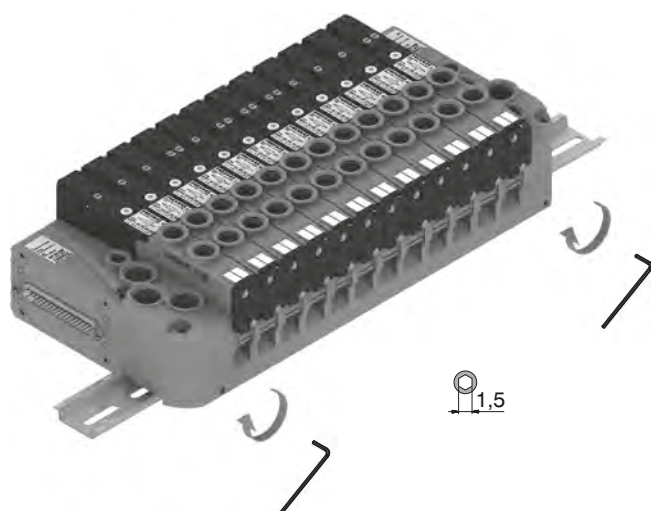
Please note: I/O modules don't allow to connect any additional valves manifold after them.



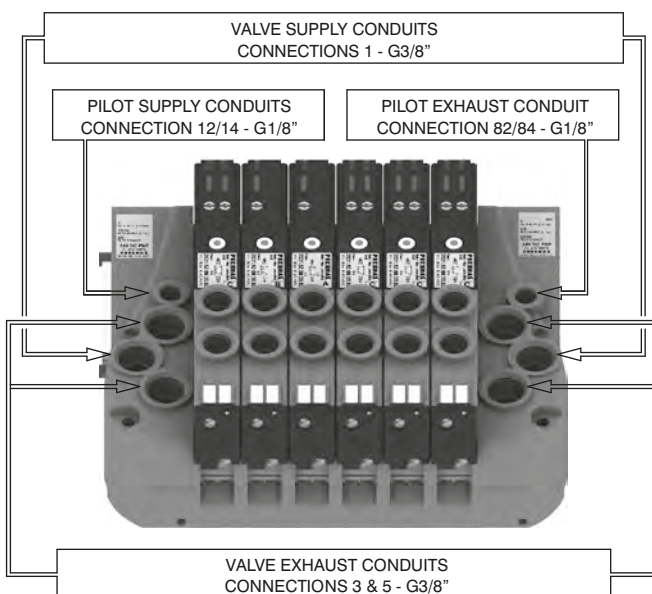
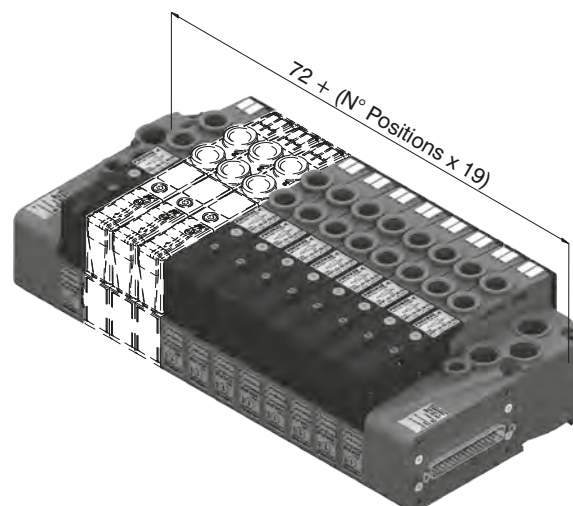
From the top



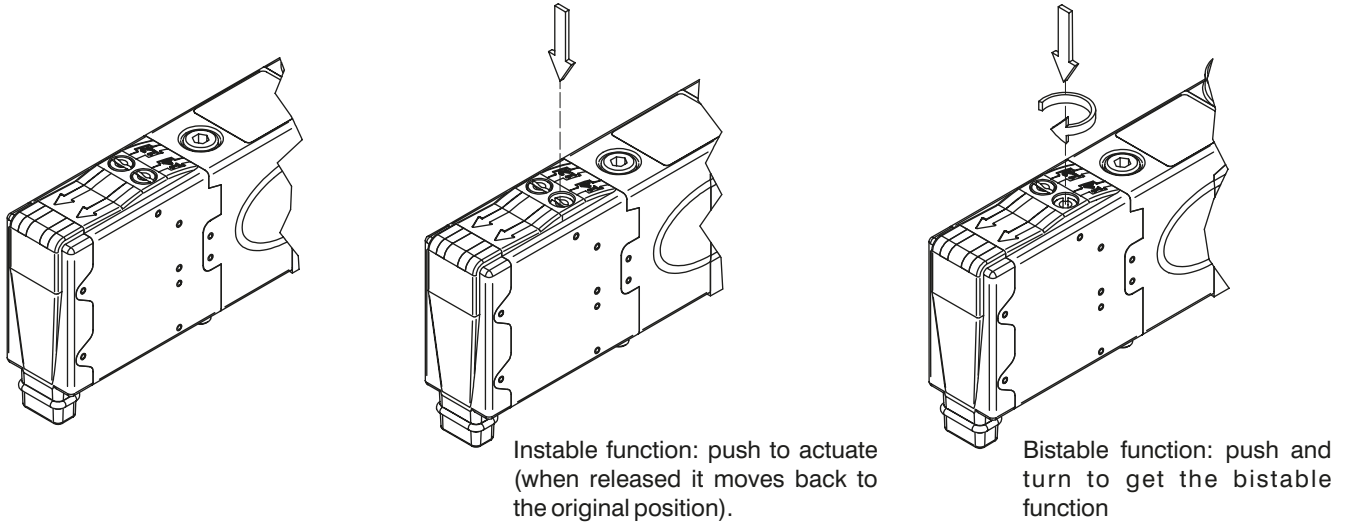
DIN rail fixing



Maximum possible size according to valves seats

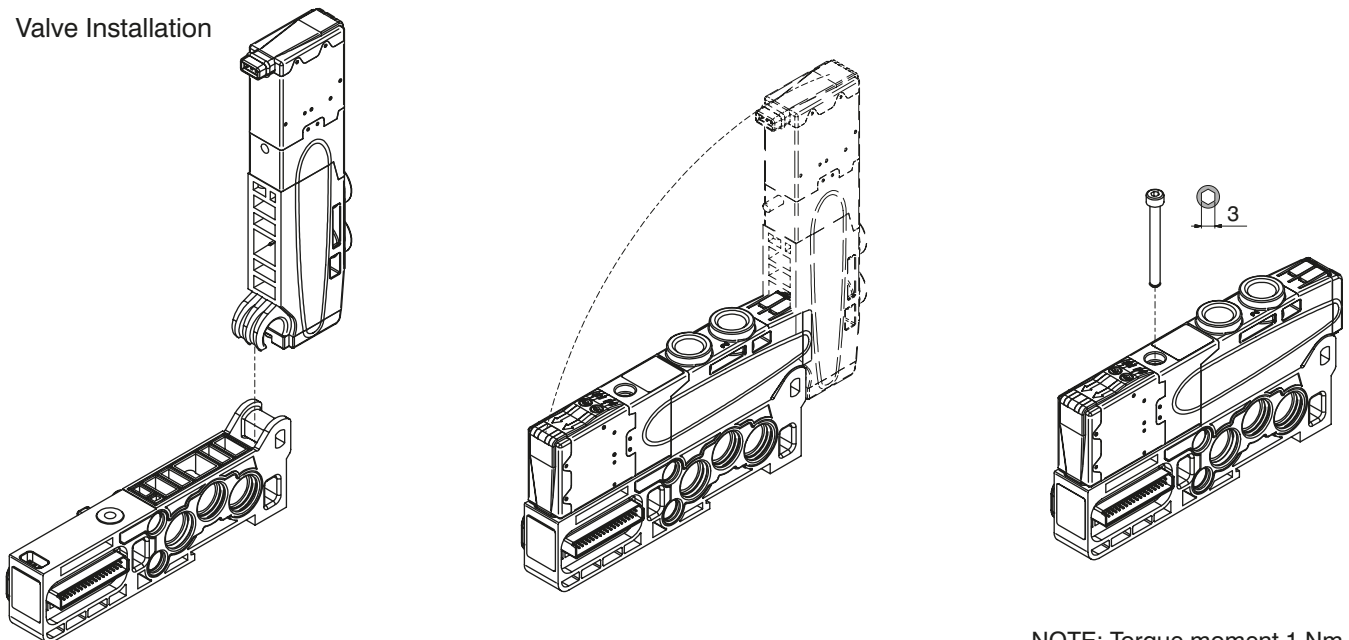


Manual override actuation



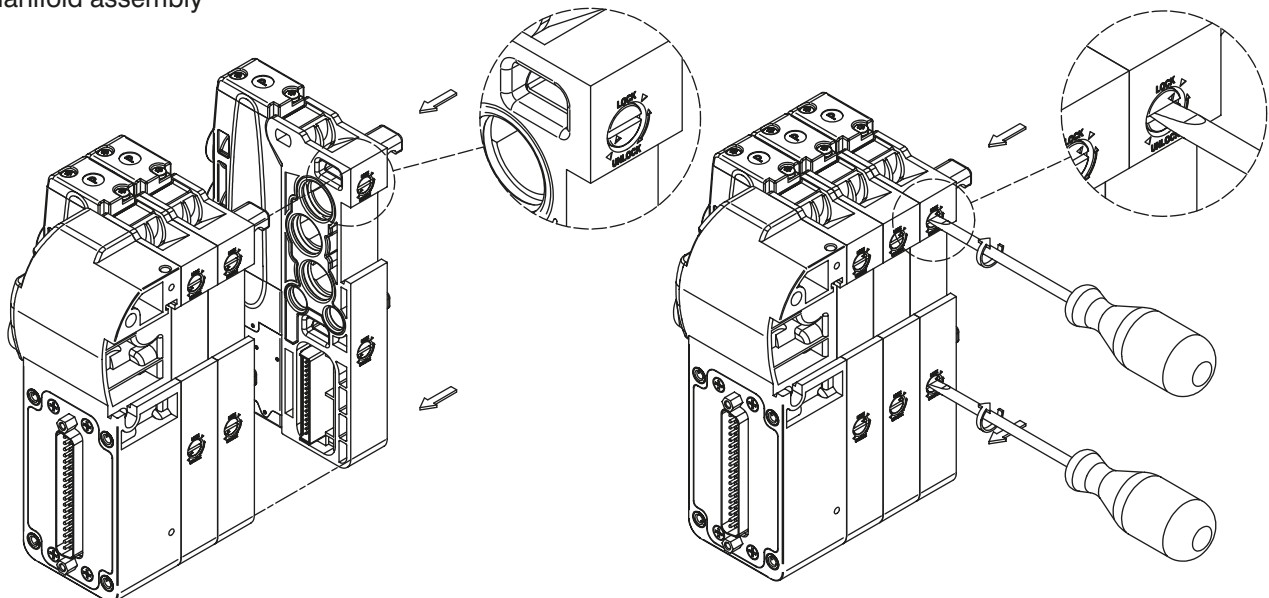
NOTE : It is strongly suggested to replace the original position after using

Valve Installation



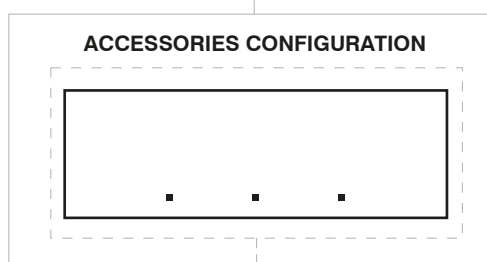
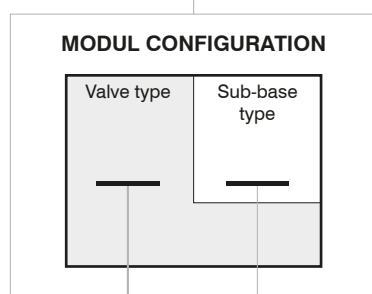
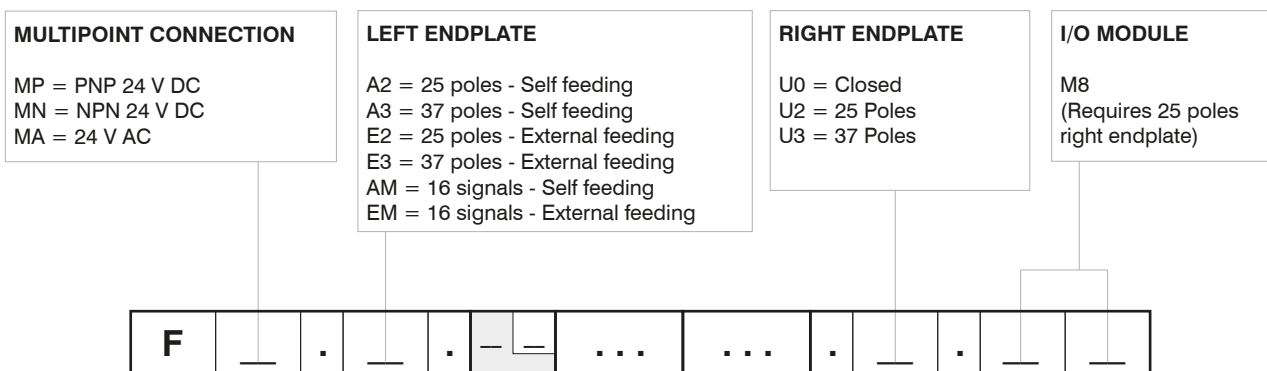
NOTE: Torque moment 1 Nm

Manifold assembly



Manifold Layout configuration

1
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SHORT CODE FUNCTION / CONNECTION :

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

NOTE:

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

32 when an input 37 poles endplate is used.

22 when an input 25 poles endplate is used.

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

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

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

ACCESSORIES

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

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

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

General:

CANopen® module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 2 Input modules 5225.25F.

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

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

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

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

Connection to Bus CANopen® is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to CiA Draft Recommendation 303-1 (V. 1.3 : 30 December 2004).

Transmission speed can be set by 3 dip-switches.

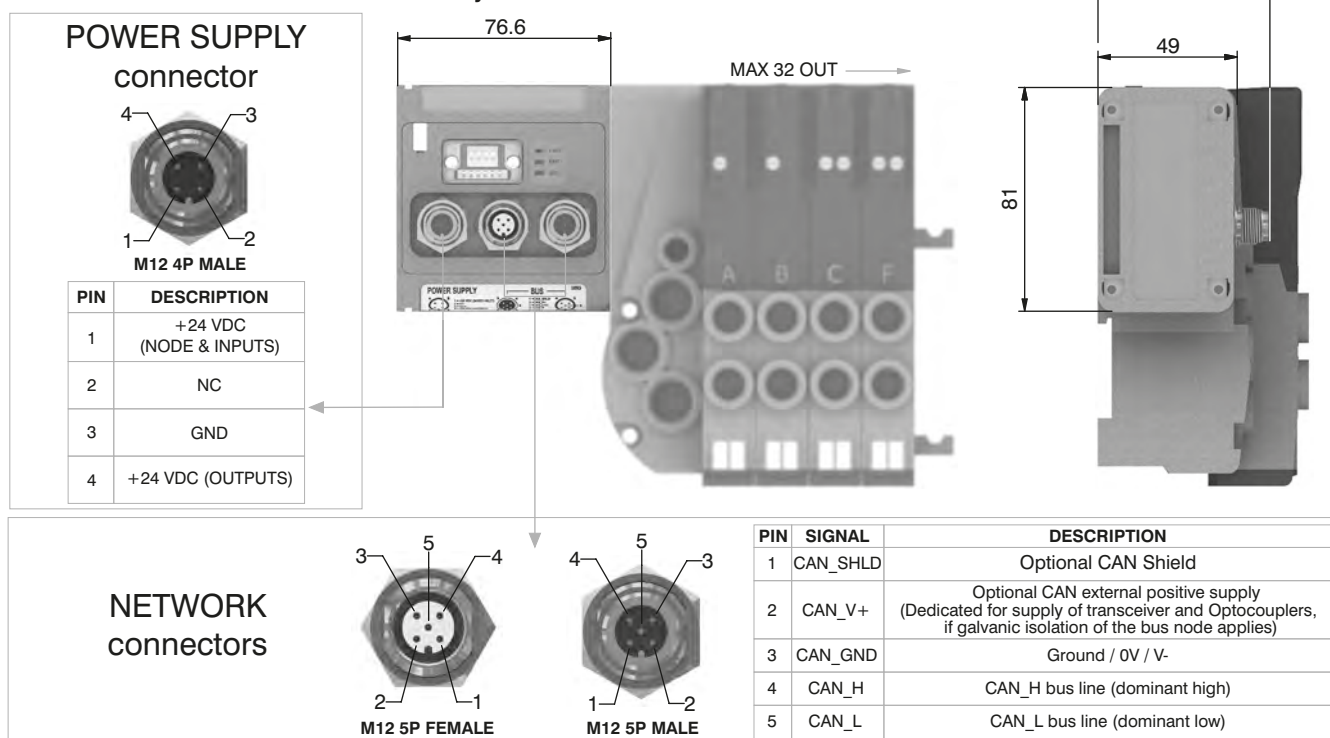
The node address can be set by 6 dip-switches using BCD numeration.

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

Ordering code**5525.32F**

AIR DISTRIBUTION

1

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

	Model	5525.32F
	Specifications	CiA Draft Standard Proposal 301 V 4.10 (15 August 2006)
	Case	Reinforced technopolymer
Power supply	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	30 mA
	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-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 2 Input modules 5225.25F.

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

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

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

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

Connection to Bus DeviceNet is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to DeviceNet Specifications Volume I, release 2.0.

Transmission speed can be set by 3 dip-switches.

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

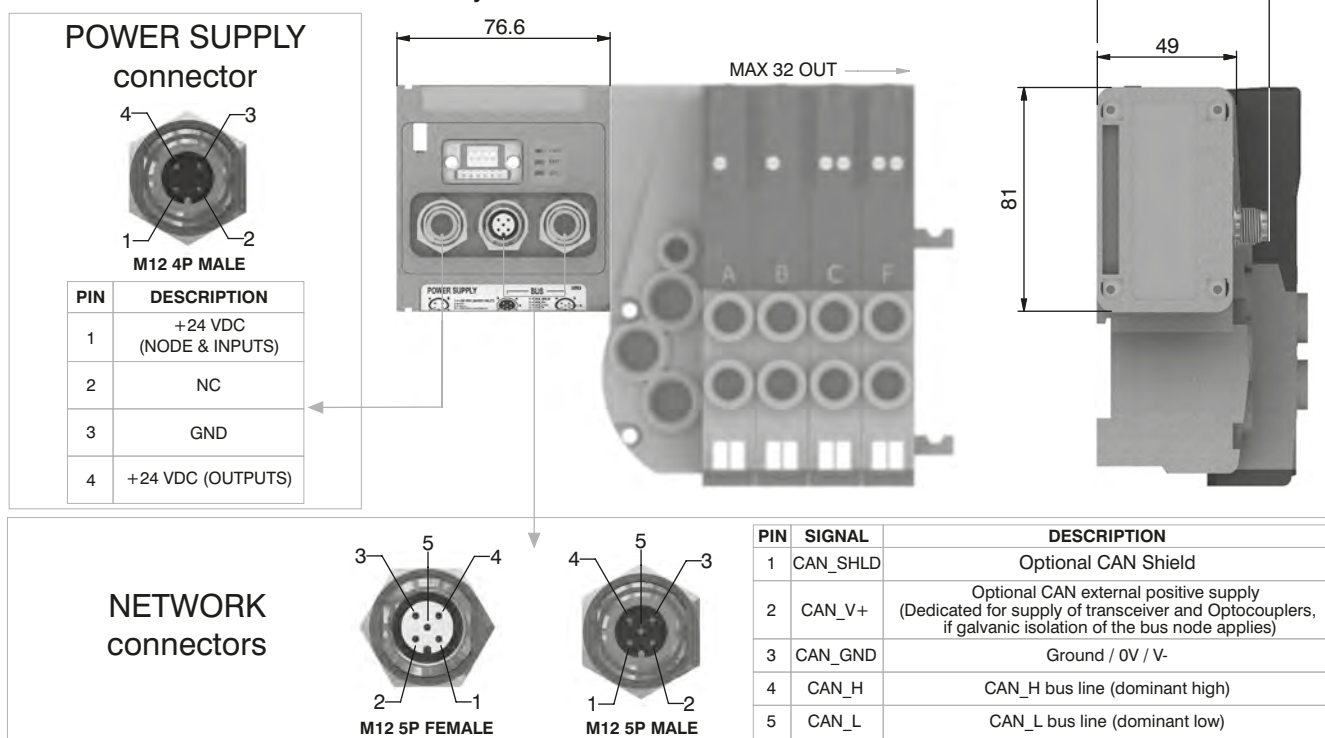
The module includes an internal terminating resistance that can be activated by a dip-switch.

Ordering code

5425.32F



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5425.32F
	Specifications	DeviceNet Specifications Volume I, release 2.0.
	Case	Reinforced technopolymer
Power supply	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	30 mA
	Power supply diagnosis	Green LED PWR
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 5P connectors male-female type A (IEC 60947-5-2)
	Baud rate	125 - 250 - 500 Kbit/s
	Addresses, possible numbers	From 1 to 63
	Max nodes in net	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green LED + Red LED
	Configuration file	Available from our web site: 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-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.

Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code). The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 4 Input modules 5225.25F.

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

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

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

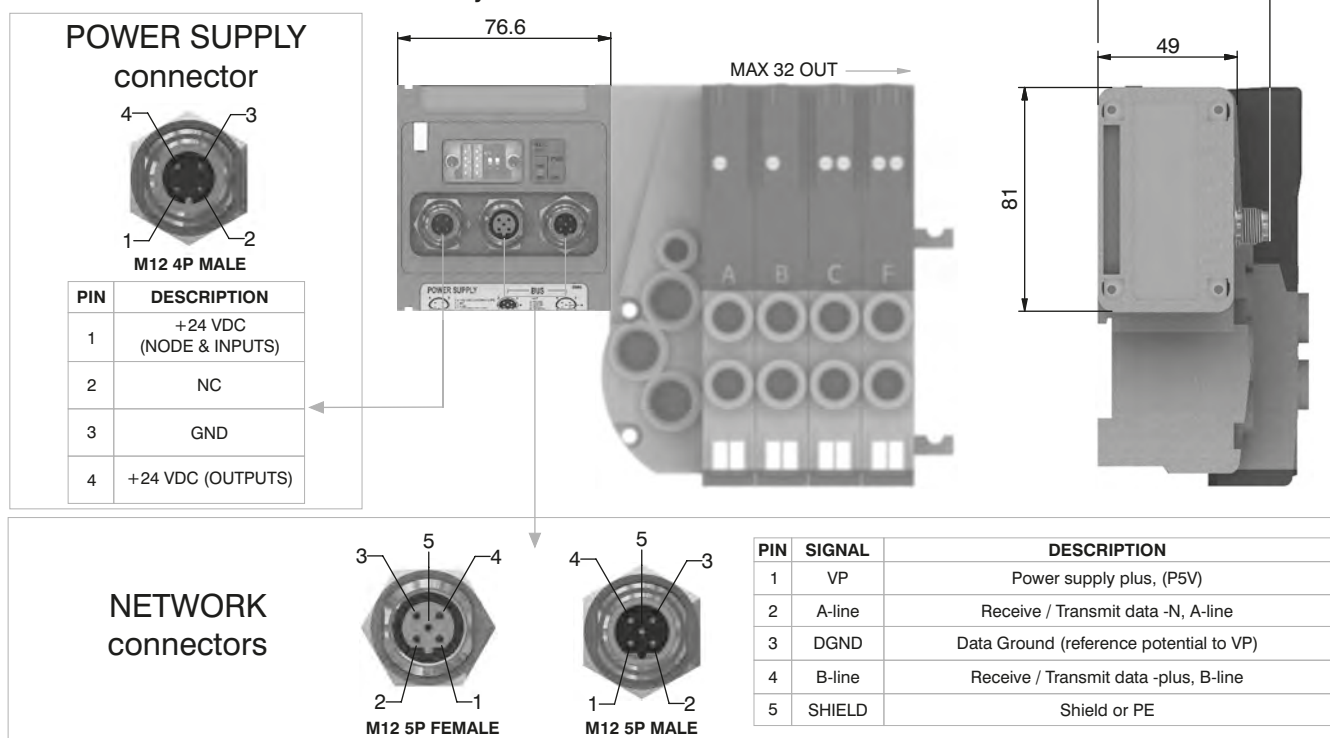
Connection to Bus PROFIBUS DP is possible via 2 M12 type B 5P male - female circular connectors; these two are connected in parallel and according to PROFIBUS Interconnection Technology (Version 1.1 : August 2001).

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

The module includes an internal terminating resistance that can be activated by 2 dip-switches.

Ordering code**5325.32F**

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

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

General:

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

Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code). The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 2 Input modules 5225.25F.

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

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

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

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

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

The node address is assigned during configuration.

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

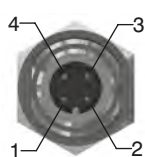
Ordering code

5725.32F.EC



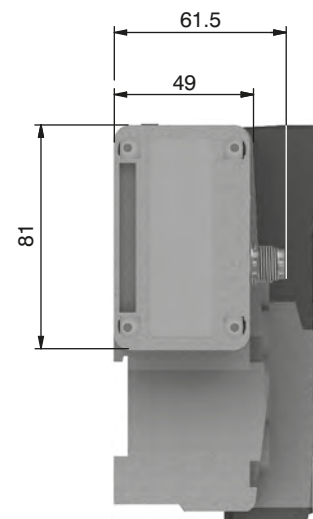
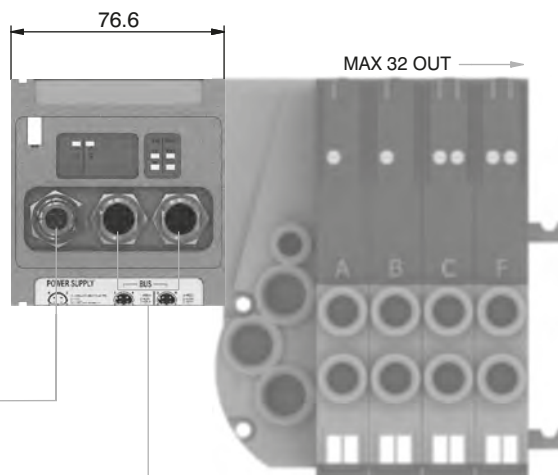
Scheme / Overall dimensions and I/O layout :

POWER SUPPLY connector

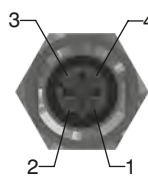


M12 4P MALE

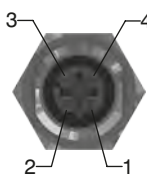
PIN	DESCRIPTION
1	+24 VDC (NODE & INPUTS)
2	NC
3	GND
4	+24 VDC (OUTPUTS)



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

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

General:

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

Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 4 Input modules 5225.25F.

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

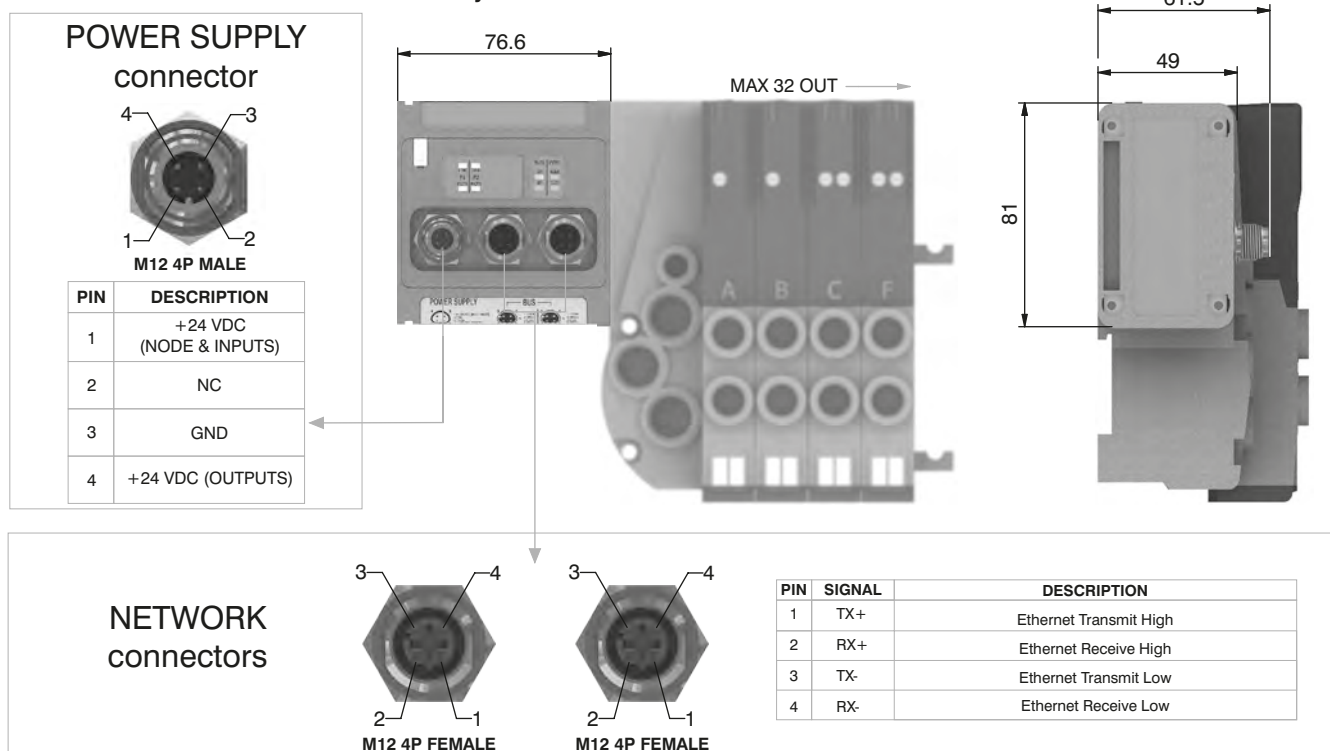
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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

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

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

The node address is assigned during configuration.

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

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

General:

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

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 4 Input modules 5225.25F.

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

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

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

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

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

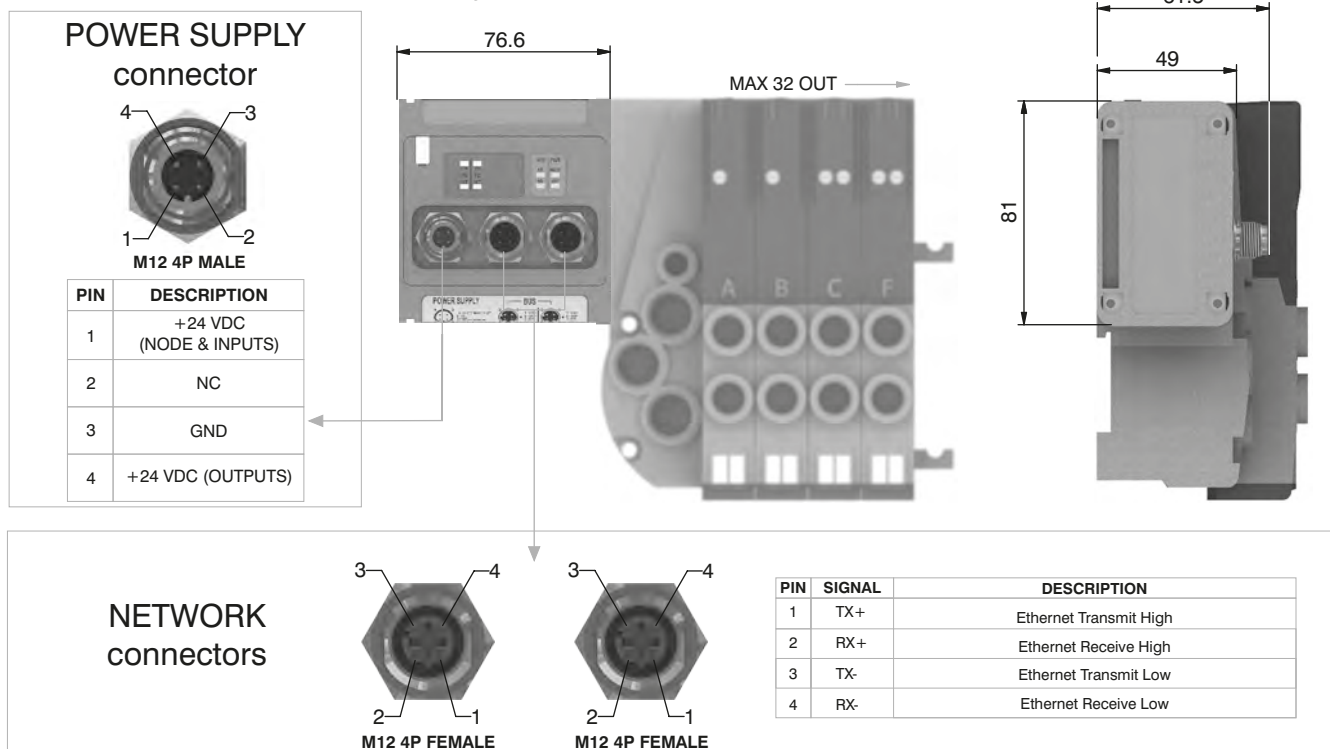
The node address is assigned during configuration.

Ordering code

5725.32F.EI



Scheme / Overall dimensions and I/O layout :



Technical characteristics

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

General:

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

Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 4 Input modules 5225.25F.

The Powerlink module, regardless the number of Input module connected, reports to have connected 8 Input modules.

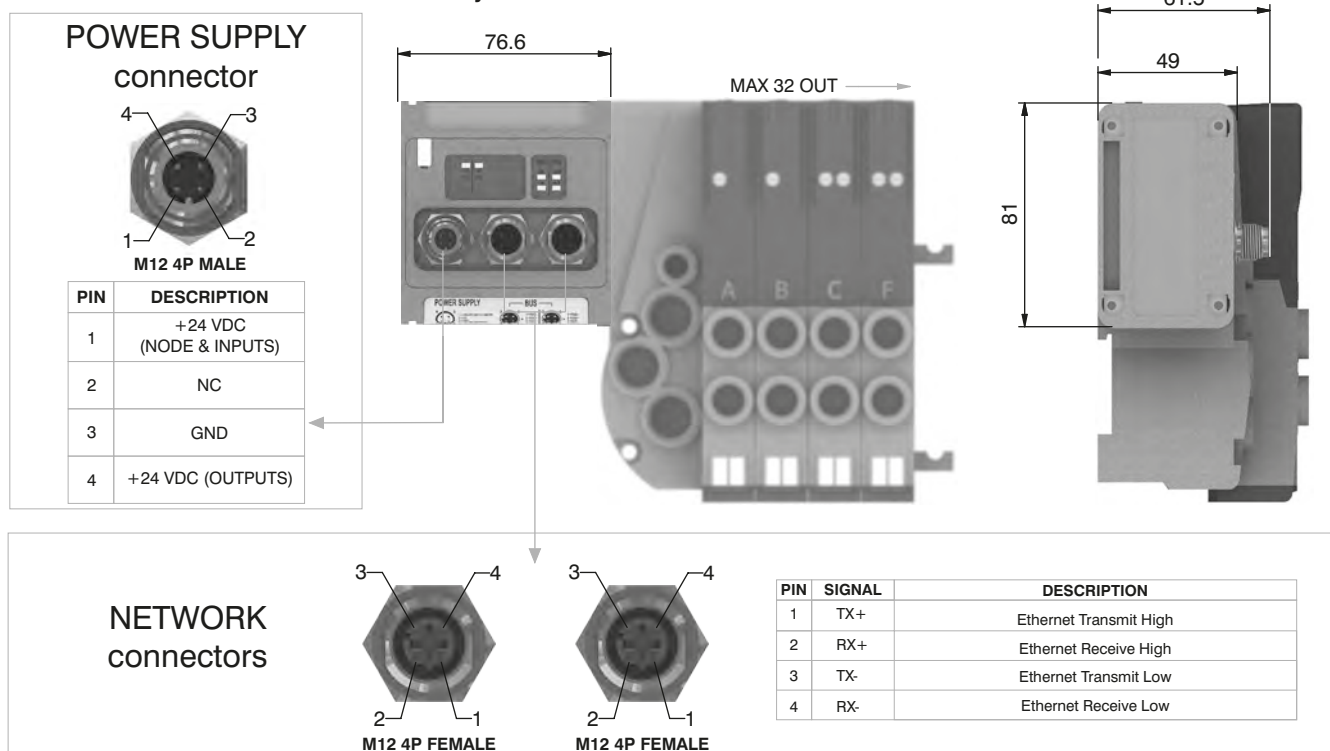
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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

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

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

The node address is assigned during configuration.

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

Power supply	Model	5725.32F.PL
	Specifications	Ethernet POWERLINK Communication Profile Specifications
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
Outputs	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	400 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	PNP equivalent outputs	+24 VDC +/- 10%
Network	Maximum current for output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
	Network connectors	2 M12 4P female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	239
	Max nodes in net	240
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Available from our web site: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

General:

Modbus/TCP module is directly integrated on Optyma-F solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-F solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08F or a max number of 4 Input modules 5225.25F.

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

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

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

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

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

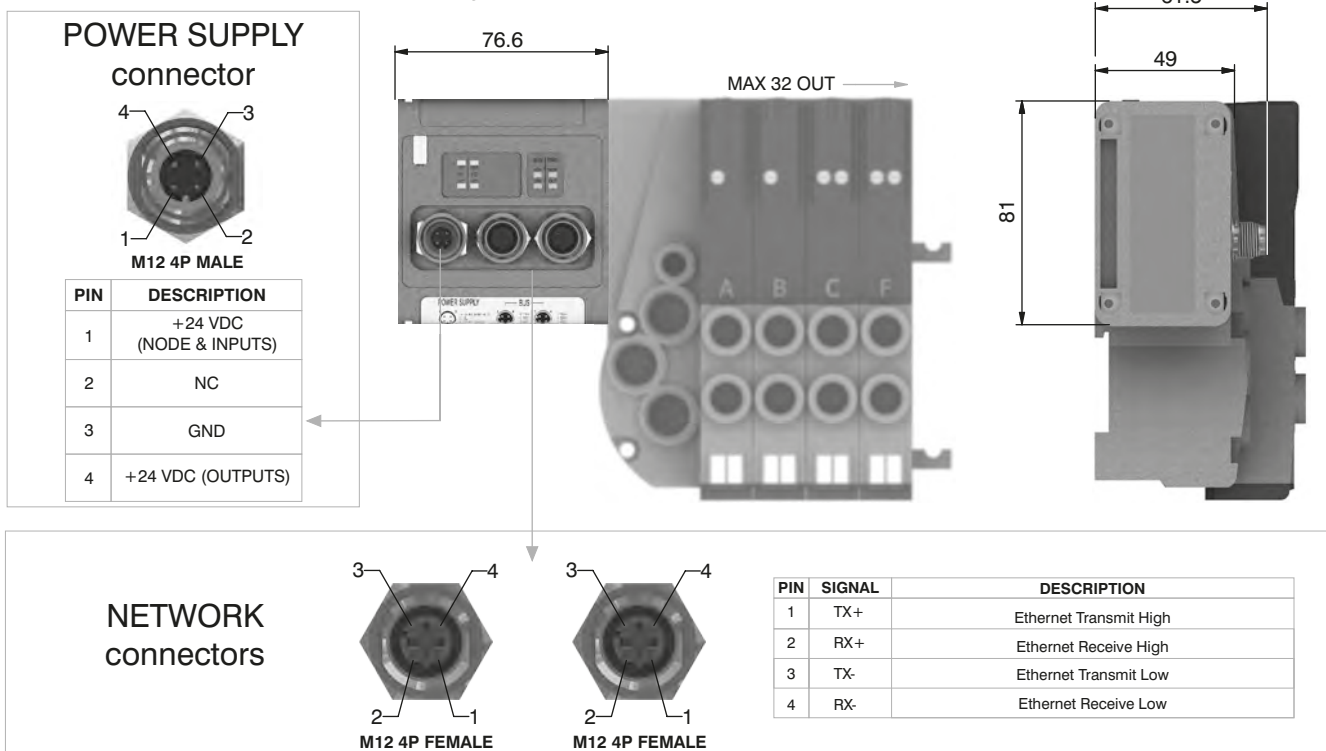
The node address is assigned during configuration.

Ordering code

5725.32F.MT



Scheme / Overall dimensions and I/O layout :



Technical characteristics

Power supply	Model	5725.32F.MT
	Specifications	MODBUS Application Protocol Specification V1.1a, June 4, 2004
	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	400 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
	Outputs	PNP equivalent outputs
		+24 VDC +/- 10%
		Maximum current for output
		100 mA
	Network	Maximum output number
		32
		Max output simultaneously actuated
		32
Network	Network connectors	2 M12 4P female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	248
	Max nodes in net	248
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Modbus/TCP nodes don't require configuration file
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



General:

Modules have 8 connectors M8 3P female.

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

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

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

Each module includes a 200 mA self-mending fuse. If a short circuit or a overcharge (overall current $>200\text{mA}$) occur the safety device acts cutting the 24 VDC power supply to all M8 connectors on the module and switching off the green LED PWR. Any other Input module connected to the node will remain powered and will function correctly.

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

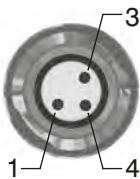
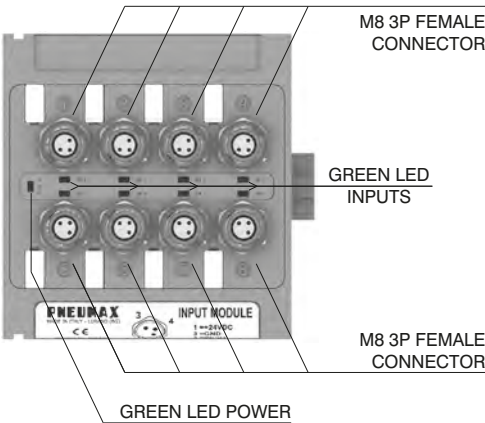
The maximum number of Input modules supported is 4.

Ordering code

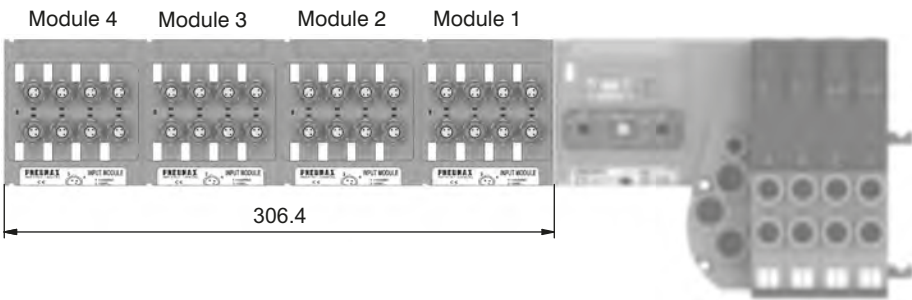
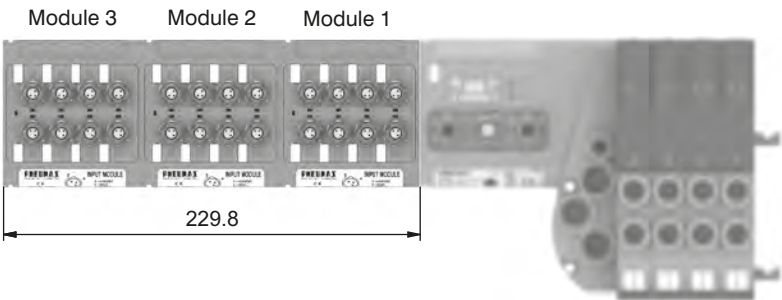
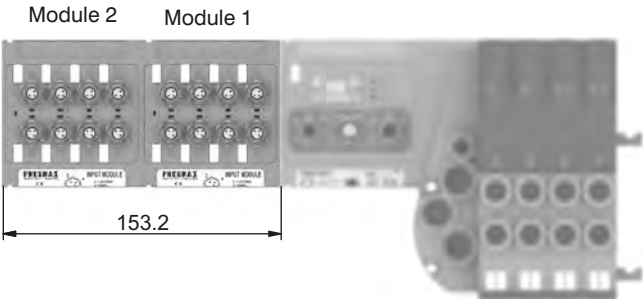
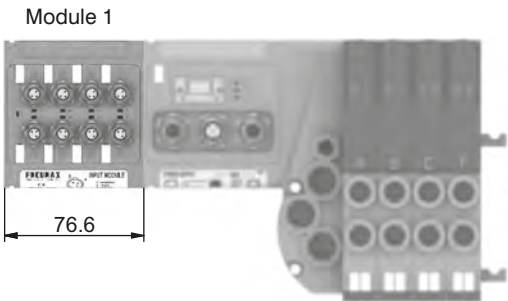
5225.08F



Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND



1
AIR DISTRIBUTION

General :

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

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

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

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

Each module includes a 750 mA self-mending fuse. Should a short circuit or a overcharge (overall current $> 750\text{mA}$) occur the safety device intervenes cutting the 24VDC power supply to all pins and switching off the green LED PWR. Any other Input module connected to the node will remain powered and will function correctly.

Once the cause of the fault is removed the green LED lights up indicating the ON state and the node will re-start to operate. This 16 Inputs module is counted as two 8 Inputs modules.

The Maximum number of 16 Inputs modules supported is 2 for CANopen[®], DeviceNet and EtherCAT[®].

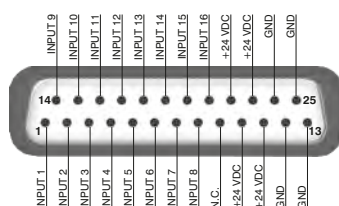
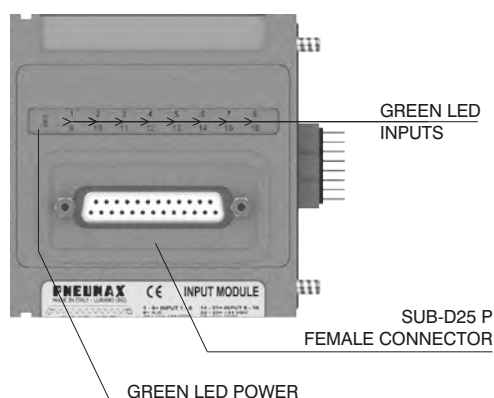
The Maximum number of 16 Inputs modules supported is 4 for PROFIBUS DP, PROFINET IO RT, EtherNet/IP and Powerlink.

Ordering code

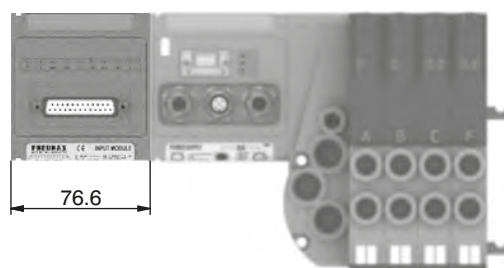
5225.25F



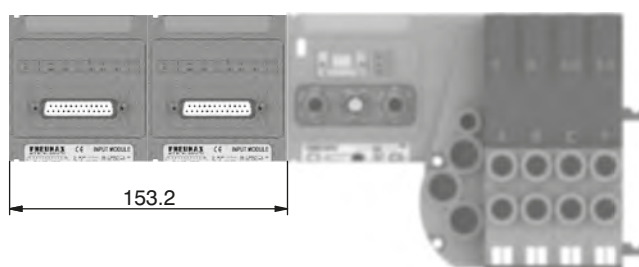
Scheme / Overall dimensions and I/O layout :



Module 1



Module 2 Module 1





General :

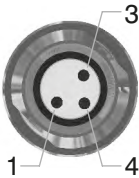
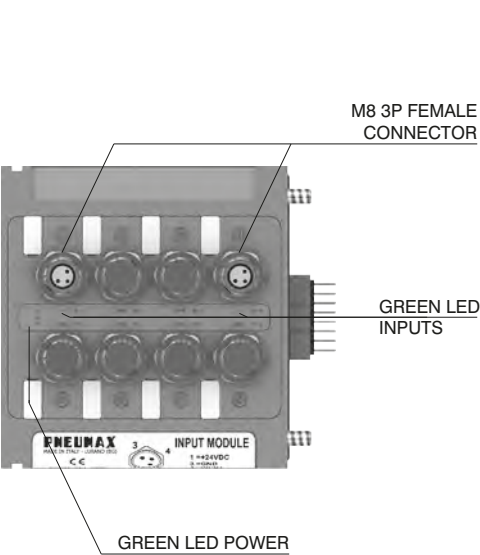
This module is fitted with two M8 3 pin female connectors.
With this module is possible to read two analogue inputs (voltage or current).
The inputs are sampled at 12 bit.
For practicality the sampled value is transmitted with 16 bit, of which the four less significant are fixed at zero.

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

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

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

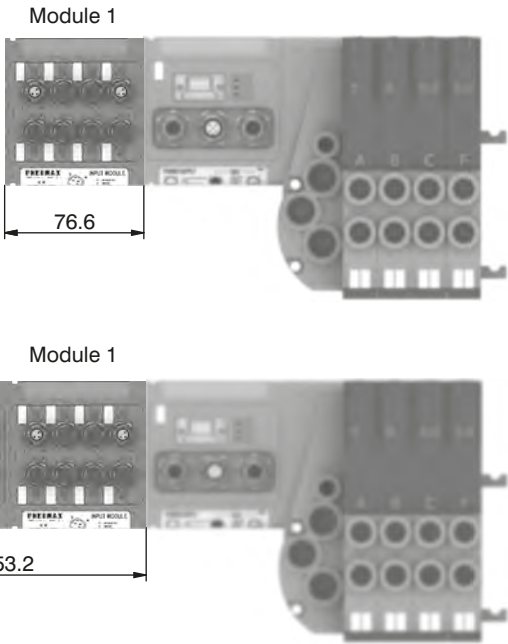
Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

Ordering code

5225.2 _ . _ _ F



1
AIR DISTRIBUTION

Socket for Power Supply
STRAIGHT CONNECTOR
M12A 4P FEMALE

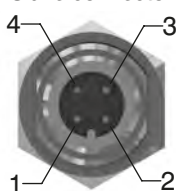
Ordering code

5312A.F04.00



POWER SUPPLY connector

Upper view
Slave connector

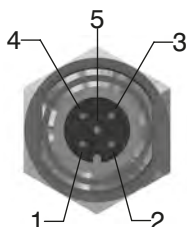


PIN	DESCRIPTION
1	+24 VDC Node
2	
3	0 V
4	+24 VDC Outputs

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

Ordering code

5312A.F05.00



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

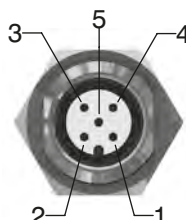
Upper view
Slave connector

NETWORK connectors

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

Ordering code

5312A.M05.00



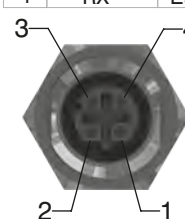
Plug for Bus EtherCAT®,
PROFINET IO RT,
EtherNet/IP and Powerlink
STRAIGHT CONNECTOR M12D 4P MALE

Ordering code

5312D.M04.00



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

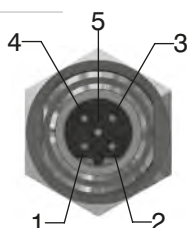


Upper view
Slave connector

Socket for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P FEMALE

Ordering code

5312B.F05.00



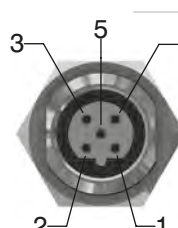
PIN	DESCRIPTION
1	Power Supply
2	A-line
3	DGND
4	B-line
5	SHIELD

Upper view
Slave connector

Plug for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P MALE

Ordering code

5312B.M05.00



Plug for Input module
STRAIGHT CONNECTOR
M8 3P MALE

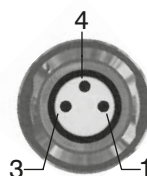
Ordering code

5308A.M03.00



INPUT connectors

Upper view
Slave connector



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

M12 plug

Ordering code

5300.T12



Plugs

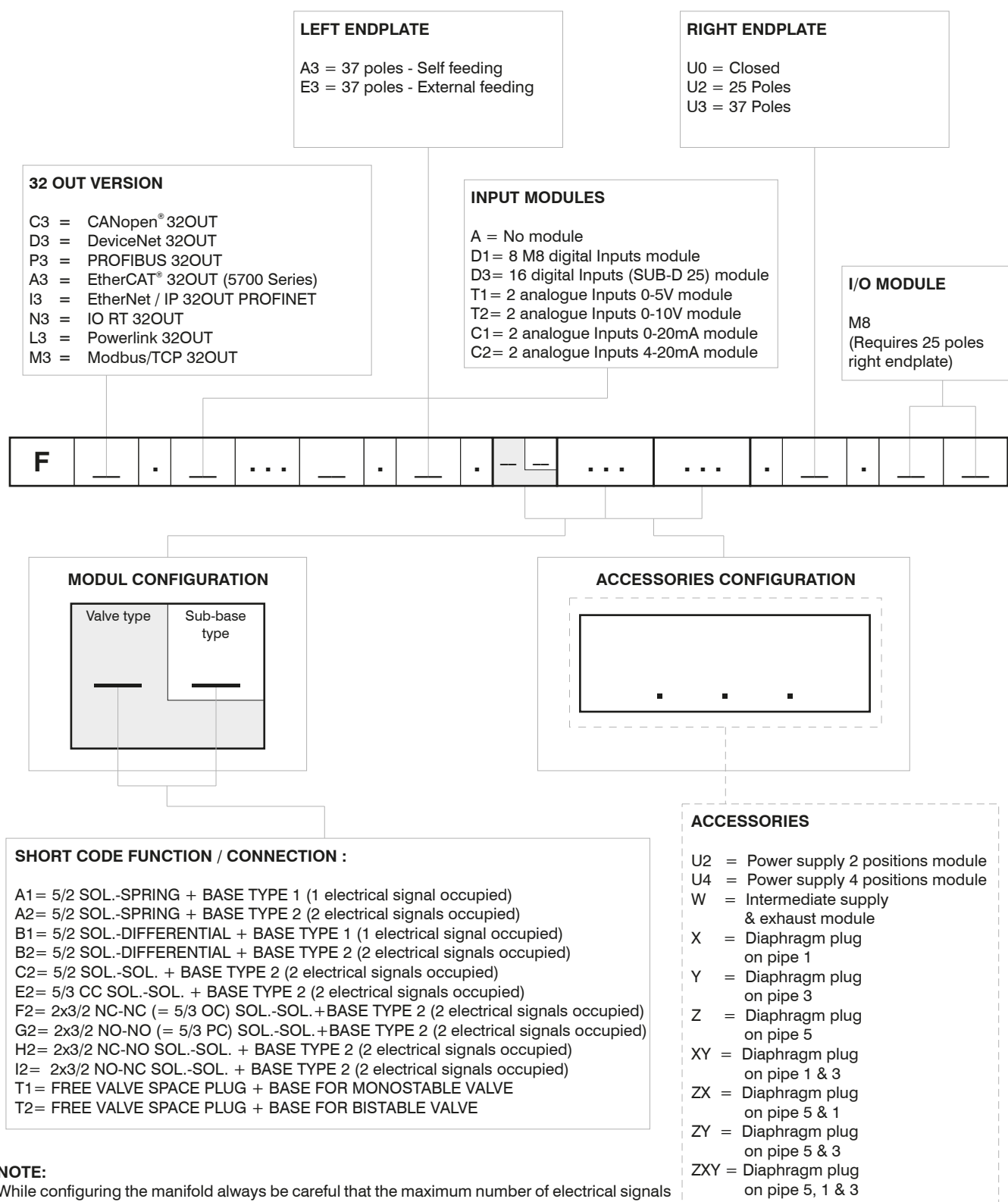
M8 plug

Ordering code

5300.T08



Manifold Layout configuration



AIR DISTRIBUTION



Series 2500 "OPTYMA-T"

General

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

Many technical features make the new product interesting:

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

Possibility to integrate with Field Bus modules CANopen®, PROFIBUS DP, DeviceNet, EtherNet/IP, PROFINET IO RT/IRT, EtherCAT®, Powerlink and Modbus/TCP.

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

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

Main characteristics

Integrated and optimized electrical connection system.

IP65 protection degree.

Only one 19mm size

Electrical line connections on one side

Monostable and bistable solenoid valves with the same size dimensions.

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

Quick coupling connections directly integrated in sub base

Easy and fast manifold assembling.

Construction characteristics

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

Functions

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

Technical characteristics

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

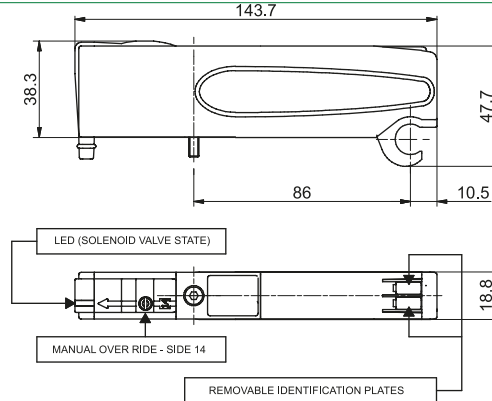
Solenoid - Spring

Coding: 2541.52.00.39.

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

Weight 129 g
SHORT FUNCTION CODE "A"

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



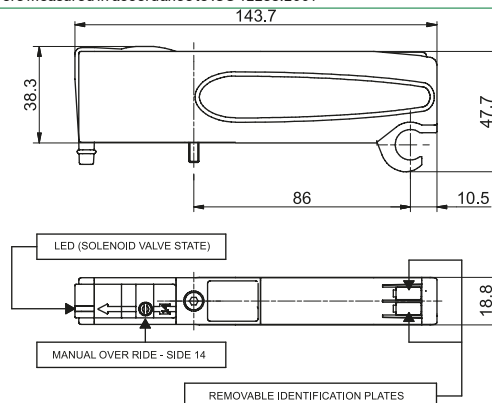
Solenoid-Differential

Coding: 2541.52.00.36.

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

Weight 126 g
SHORT FUNCTION CODE "B"

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



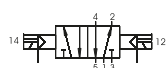
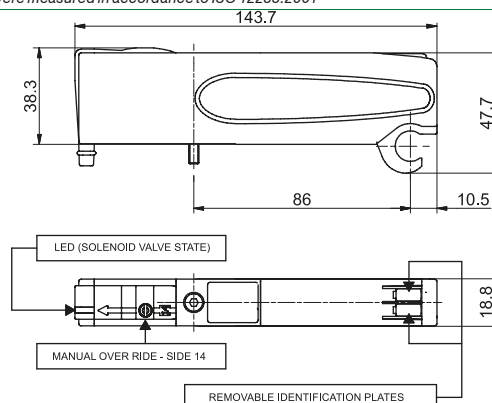
Solenoid-Solenoid

Coding: 2541.52.00.35.

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

Weight 134 g
SHORT FUNCTION CODE "C"

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



Solenoid-Solenoid 5/3

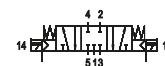
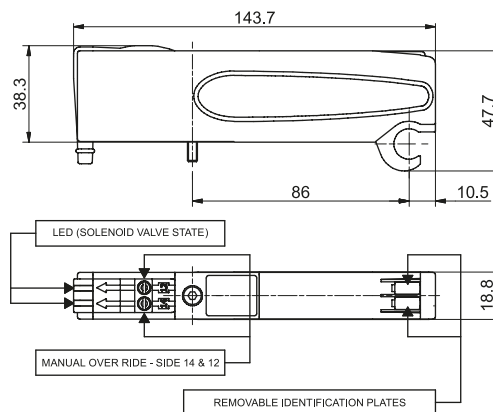
Coding: 2541.53.31.35.

Operational characteristics

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

Weight 132 g
SHORT FUNCTION CODE "E"

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



Solenoid-Solenoid 2x3/2

Coding: 2541.62. .35.

Operational characteristics

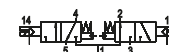
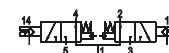
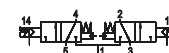
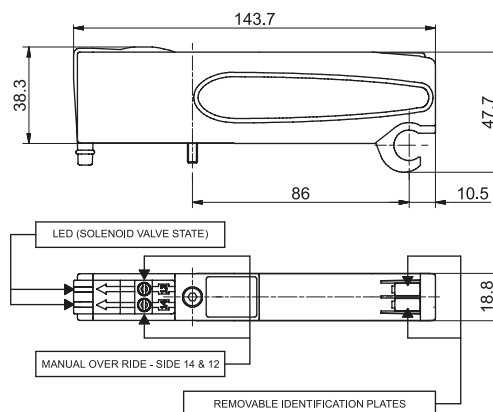
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pressure range (bar)	3 ÷ 7
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	15
Response time according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

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

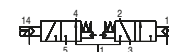
VOLTAGE
02 = 24 VDC PNP
12 = 24 VDC NPN
05 = 24 VAC

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

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



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



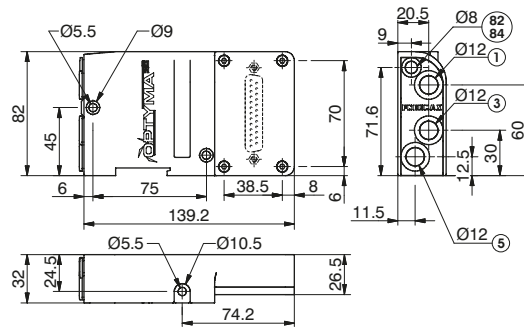
Right Endplates

Coding: 2540.03.Ⓒ

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

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

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



Weight 274 g

Left Endplates

Coding: 2540.Ⓥ.Ⓒ

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

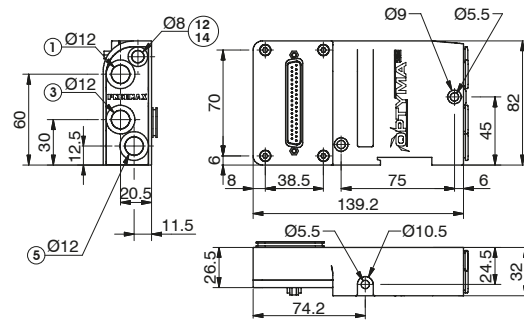
VERSION	
Ⓥ 02 =	External feeding
12 =	Self-feeding
ELECTRICAL CONNECTION	
37P =	Connectors 37 poles
PNP	
25P =	Connectors 25 poles
PNP	
37N =	Connectors 37 poles
NPN	
25N =	Connectors 25 poles
NPN	
37A =	Connectors 37 poles
AC	
25A =	Connectors 25 poles
AC	



Weight 300 g

2540.02.Ⓒ

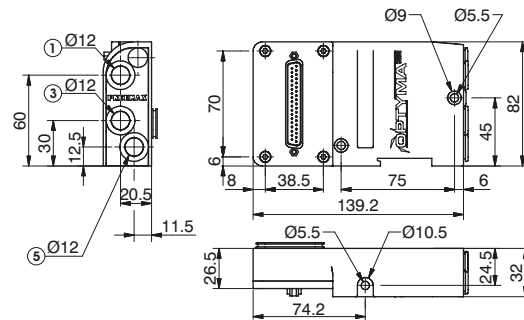
Left Endplates-External feeding base: 12/14 divided from conduit 1



Weight 300 g

2540.12.Ⓒ

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

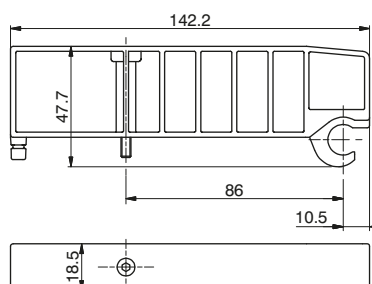


Closing plate

Coding: 2530.00

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

SHORT FUNCTION CODE "T"



Weight 53,5 g



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

AIR DISTRIBUTION

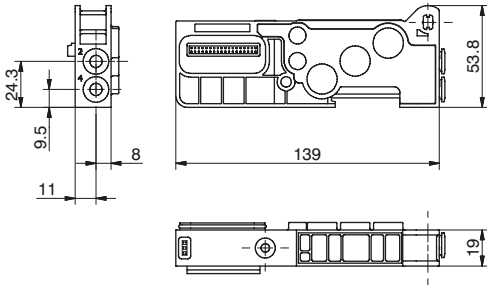
1

Modular base

Coding: 254C.01V

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

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

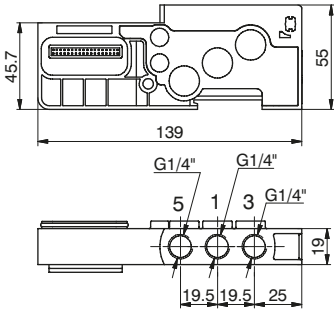


Weight 96,5 g

Intermediate Inlet/Exhaust module

Coding: 2540.10

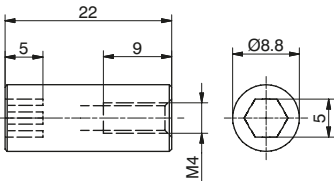
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ÷ +50



Weight 115 g
SHORT FUNCTION CODE "W"

Nut

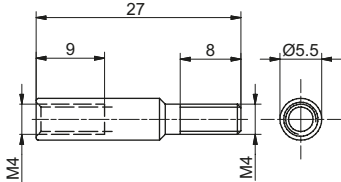
Coding: 2540.KD.00



Weight 10 g
The Kit includes 4 pieces

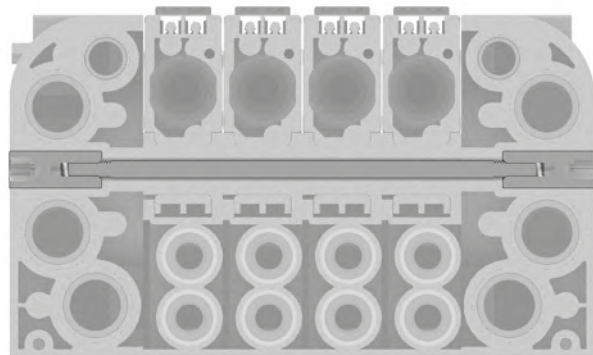
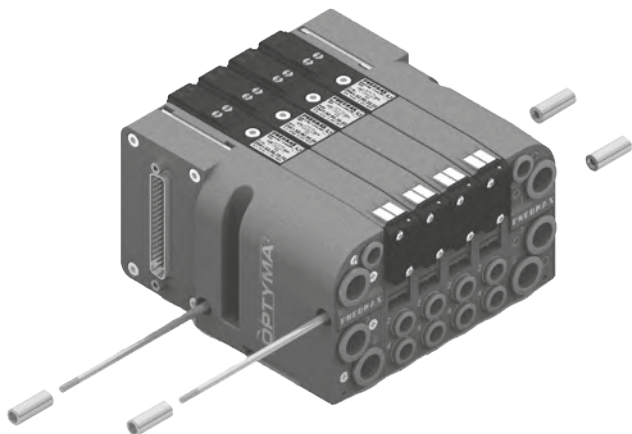
Extension (1 Position)

Coding: 2540.KP.01

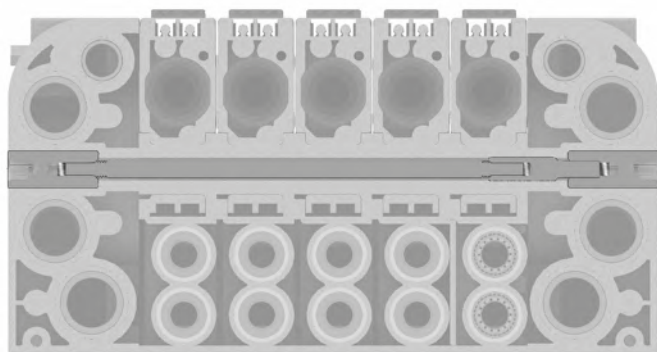
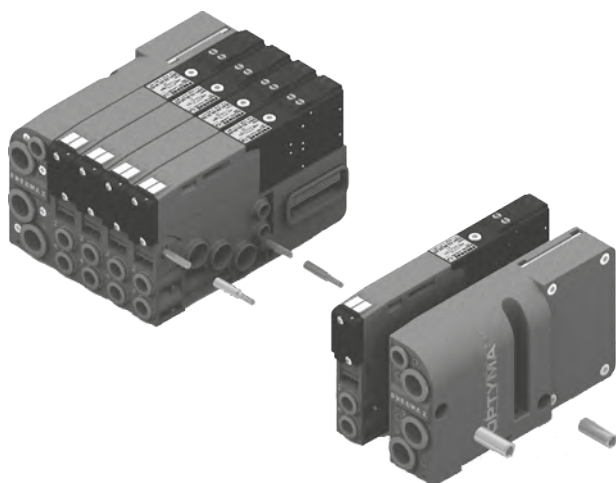


Weight 3,5 g
The Kit includes 2 pieces

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



Set with tie-rod, more extension adding a valve



1

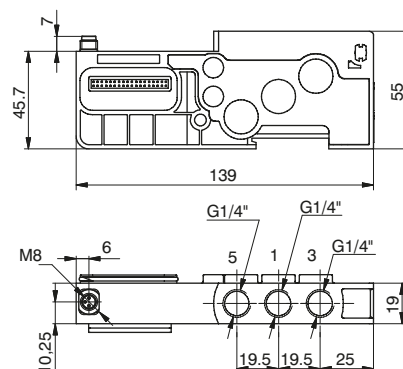
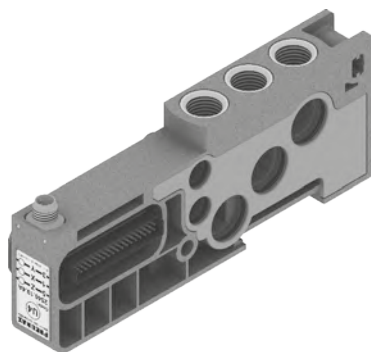
AIR DISTRIBUTION

General :

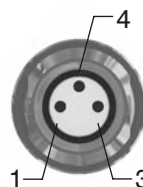
Each Optyma-T manifold lets to manage 32 command signals for the valves. Optyma-T serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET I/RT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve it is necessary to interrupt all the valves. The additional power supply module lets to interrupt at the same time the first 2 available command signals for the valves after the module itself. The additional power supply module is particularly useful also when you use control signals that block the valves. This application is effective both with serial management and multi-pole connection of the manifolds. This module is inserted directly into the Optyma-T solenoid valves manifold.

Ordering code

2540.10.2A



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



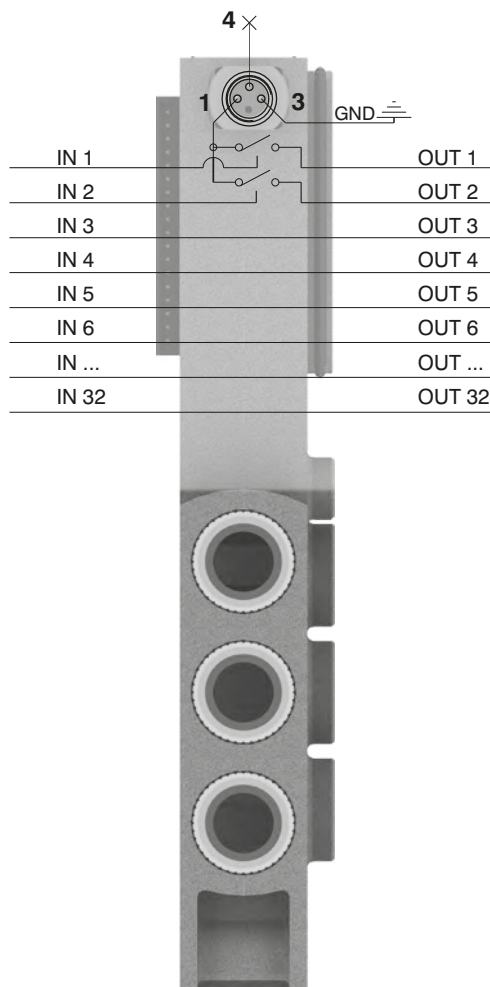
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

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

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

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



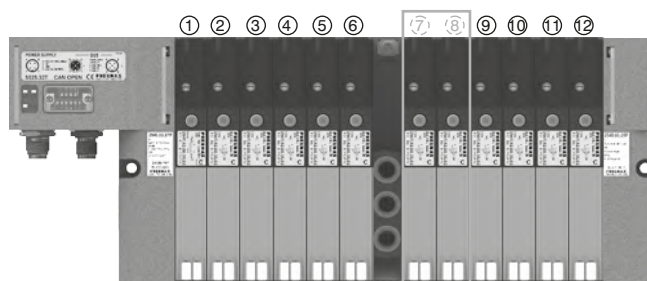
Please note: It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

Usage examples:**EXAMPLE 1:**

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

Assembly:

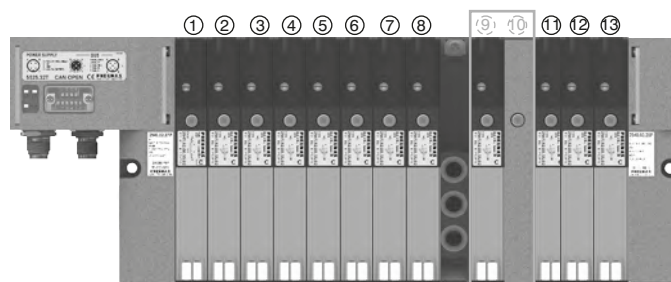
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 2 monostable of these are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

**EXAMPLE 2:**

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

Assembly:

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



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



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

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

EXAMPLE 3:

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

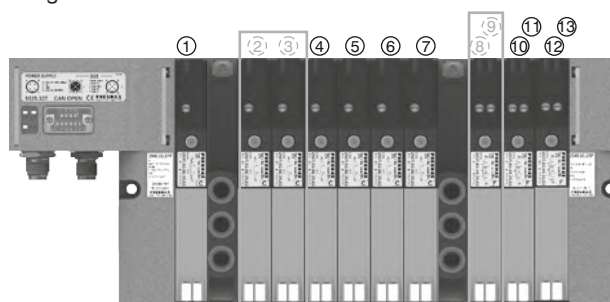
Assembly:

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

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

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

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

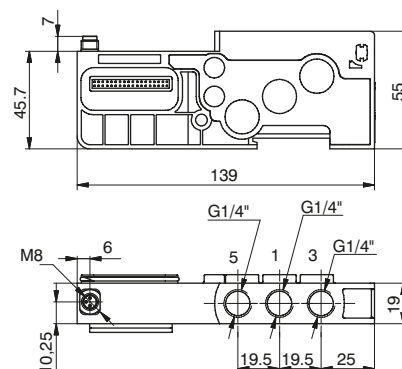
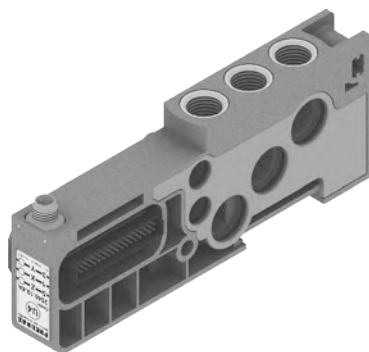


General :

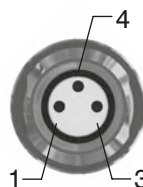
Each Optyma-T manifold lets to manage 32 command signals for the valves. Optyma-T serial nodes (CANopen®, DeviceNet, PROFIBUS DP, EtherCAT®, PROFINET IORT, EtherNet/IP and Powerlink) have a single pin for the power supply of the solenoid valves. So if you want to interrupt the power supply of one valve it is necessary to interrupt all the valves. The additional power supply module lets to interrupt at the same time the first 4 available command signals for the valves after the module itself. The additional power supply module is particularly useful also when you use control signals that block the valves. This application is effective both with serial management and multi-pole connection of the manifolds. This module is inserted directly into the Optyma-T solenoid valves manifold.

Ordering code

2540.10.4A



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



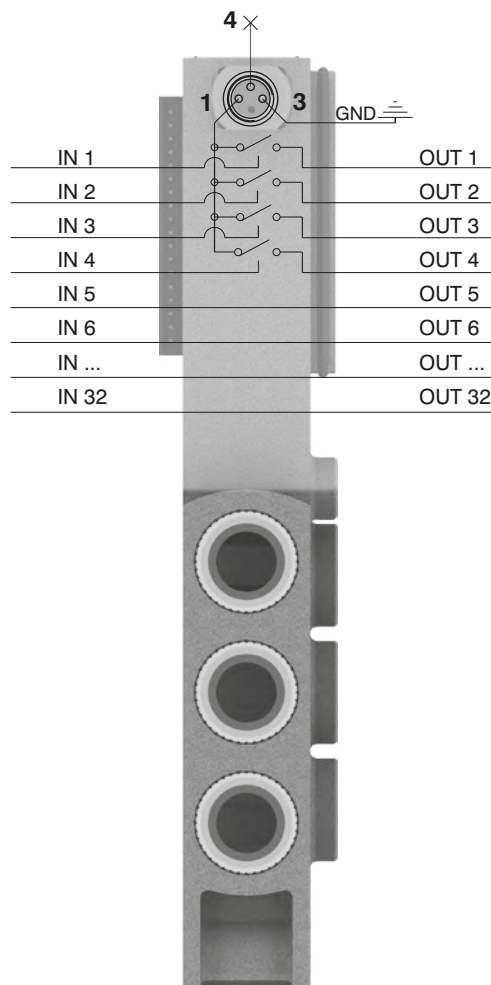
PIN	DESCRIPTION
1	+24 VDC
4	NOT CONNECTED
3	GND

WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

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

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

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



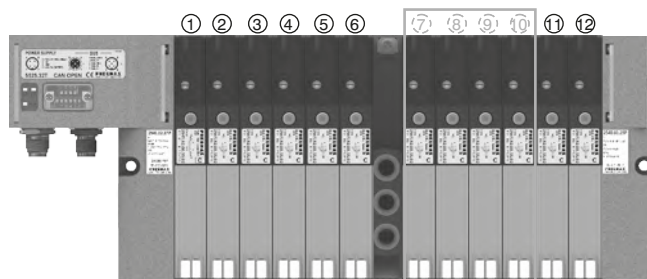
Please note: It is possible to use more modules to interrupt all the command signals, simply by inserting them before the signals to interrupt and after the signals already interrupted.

Usage examples:**EXAMPLE 1:**

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

Assembly:

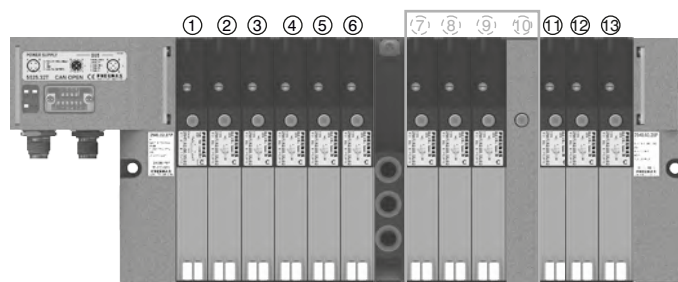
- 6 monostable valves (not interruptible because before the module),
- 1 additional power supply module,
- 6 monostable valves. Please note: the first 4 monostable of these are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

**EXAMPLE 2:**

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

Assembly:

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



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

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

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

EXAMPLE 3:

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

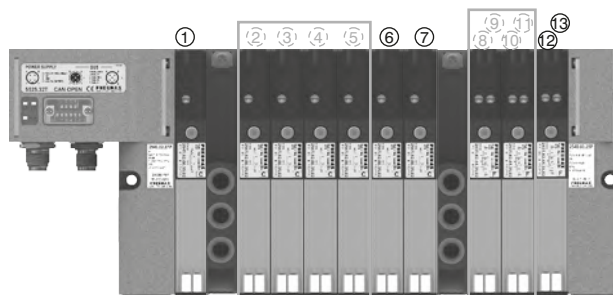
Assembly:

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

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

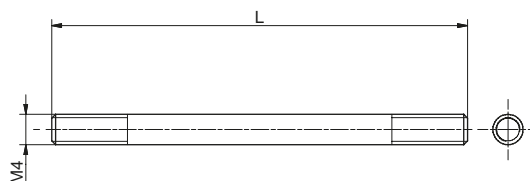
- 1 additional power supply module,
- 3 bistable valves.

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



1

AIR DISTRIBUTION



Coding: 2540.KT.**P**

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

Polyethylene Silencer Series SPL-R

Coding: SPLR.**D**



TUBE DIAMETER
D 8 = 8 mm
12 = 12 mm

Diaphragm plug

Coding: 2530.17



Cable complete with connector, 25 Poles IP65

Coding: 2300.25.**L.C**



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

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.**L.C**



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

Cable complete with connector, 25 Poles IP65

Coding: 2400.25.**L.25**



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

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

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

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

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

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

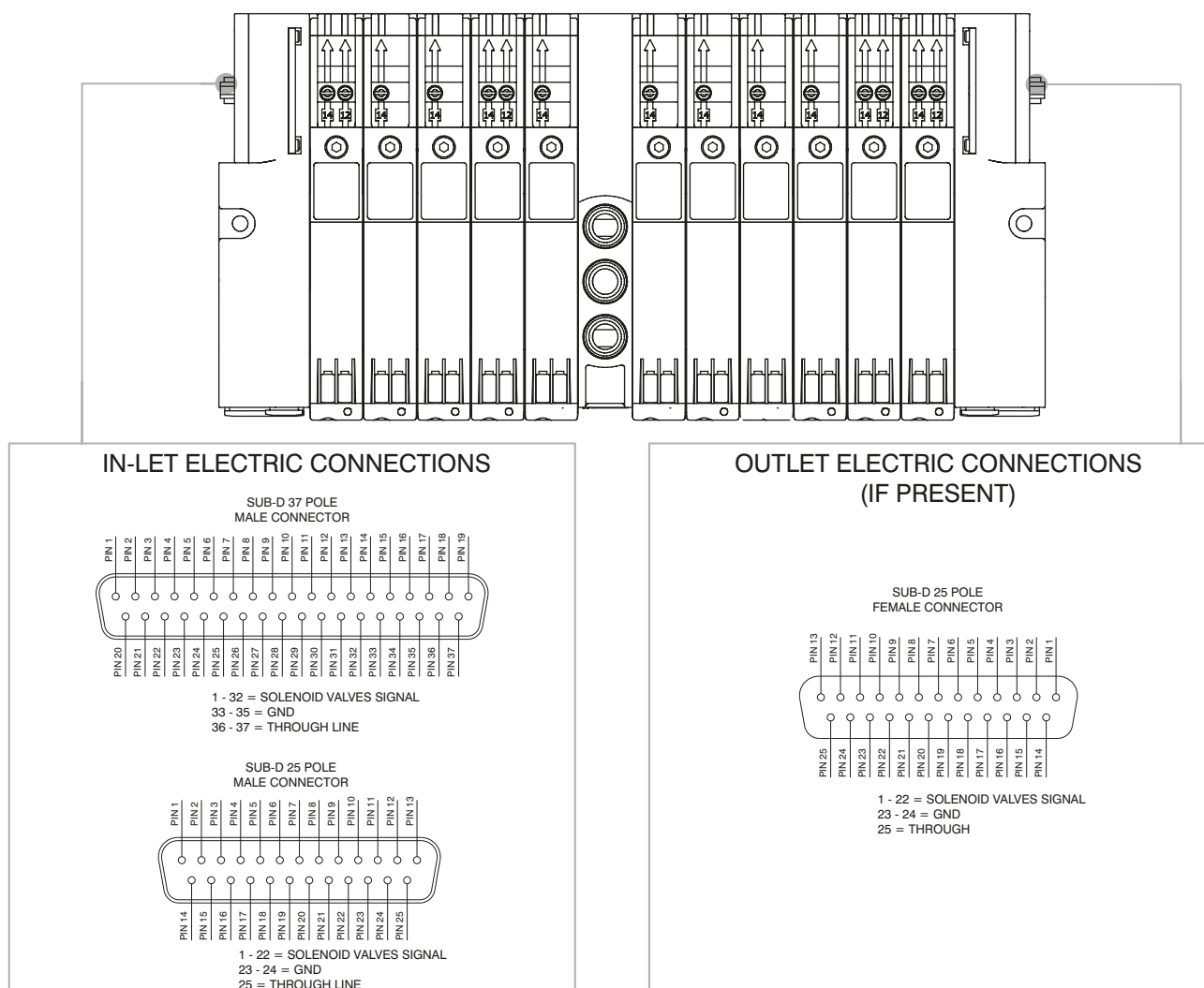
This allows the use of intermediate modules in any position of the manifold.

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

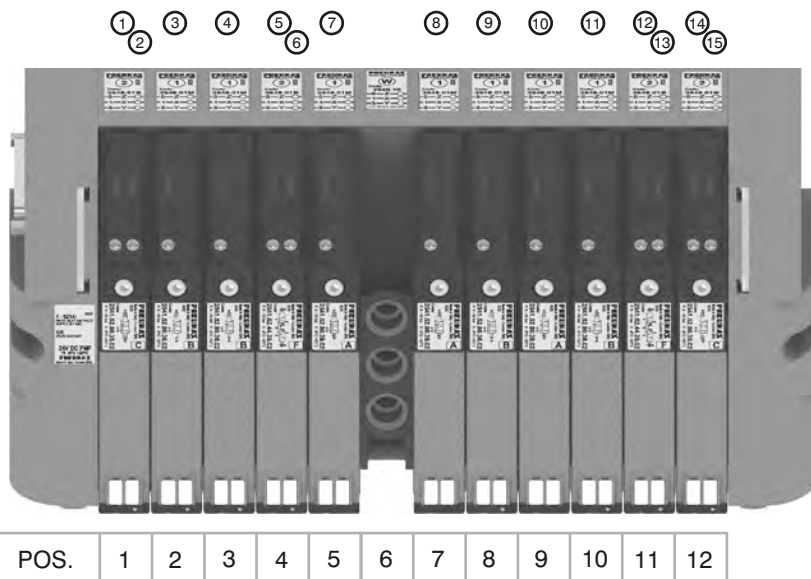
The number of available signals depends of the connector used to the type of the left end plate and by the total signals used along the manifold:

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

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

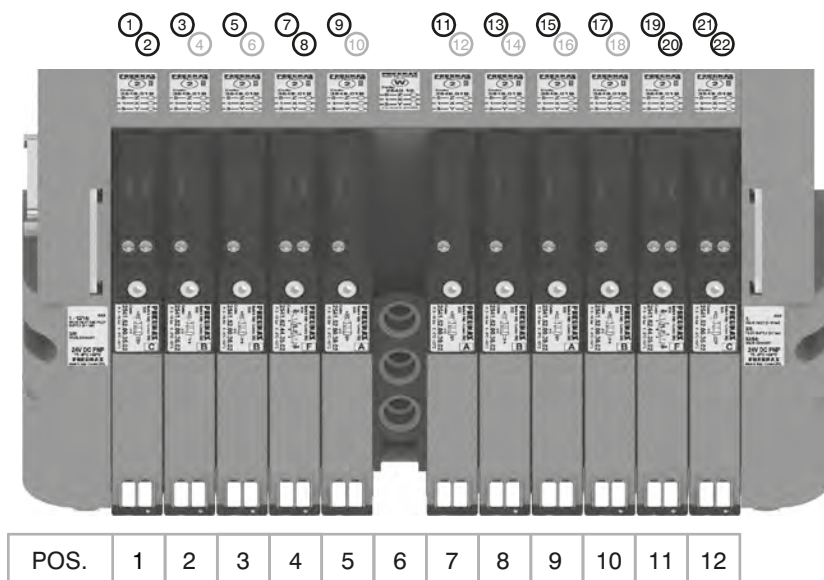


37 PIN Connector correspondence for valves assembled on mixed bases



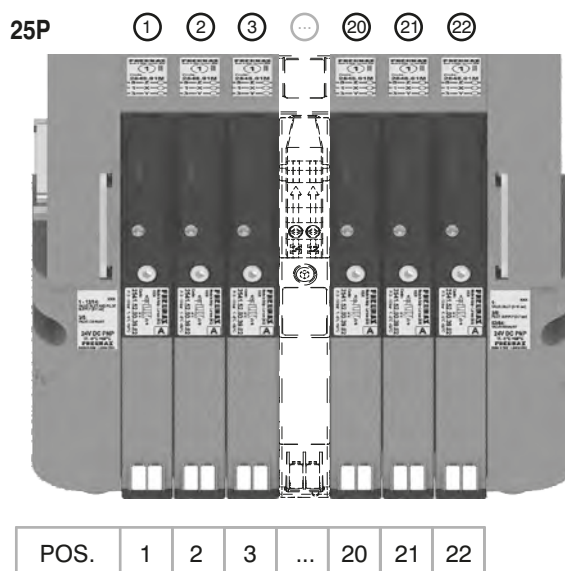
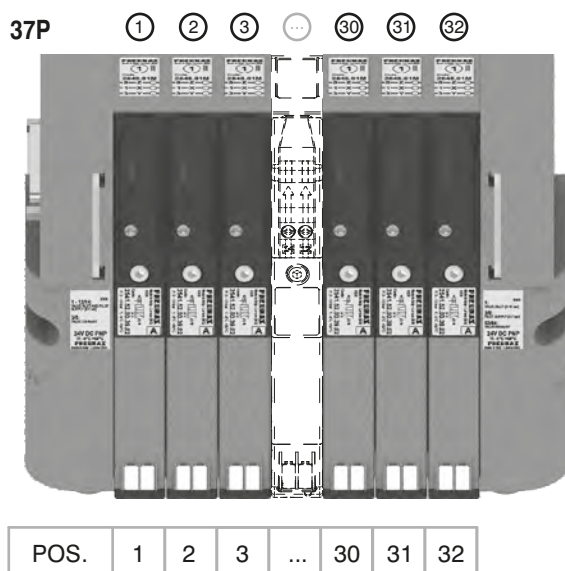
- PIN 1 = PILOT 14 SV POS.1
- PIN 2 = PILOT 12 SV POS.1
- PIN 3 = PILOT 14 SV POS.2
- PIN 4 = PILOT 14 SV POS.3
- PIN 5 = PILOT 14 SV POS.4
- PIN 6 = PILOT 12 SV POS.4
- PIN 7 = PILOT 14 SV POS.5
- PIN 8 = PILOT 14 SV POS.7
- PIN 9 = PILOT 14 SV POS.8
- PIN 10 = PILOT 14 SV POS.9
- PIN 11 = PILOT 14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

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



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

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





General :

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

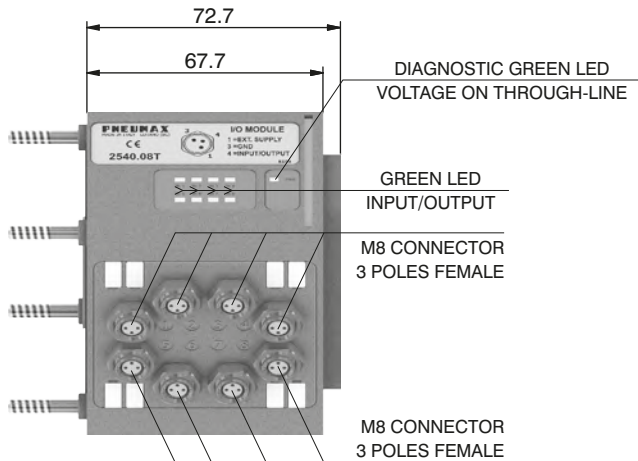
Please note: If the manifold is connected by a multi-core connection, each connection can be used as either an input or an output, while if the manifold is connected to a serial node the connections can only be used as an output.

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

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

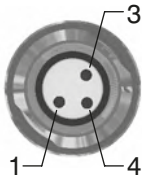
Please note: For an LED to function, a signal of at least +15VDC must be present on pin 4 of the connector. If this signal is lower, the LED will not light, this does not compromise the normal Input / Output function of the unit.

Overall dimensions and I/O layout :



Ordering code

2540.08T



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

Input features:

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

I.E :

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

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

Output features:

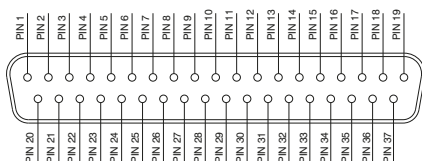


Attention: The output connections are not protected against short-circuit. Please pay attention when wiring (avoid Pin 4 being connected to Pin 3 or Pin 1).

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

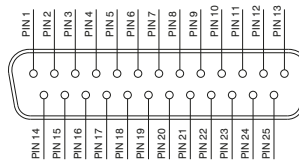
CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

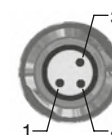


1 - 32 = SIGNALS
33 - 35 = GND
36 - 37 = THROUGH LINE

SUB-D TYPE 25 POLE MALE CONNECTOR



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

Connection modes:

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

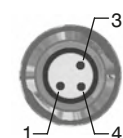
- A) Control via multi-pole connection
- B) Control via fieldbus

A) Control via multi-pole :

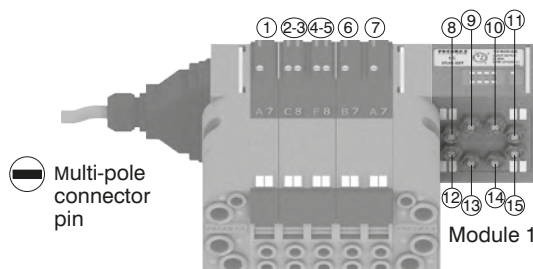
M8 connector used as Input:



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



PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND



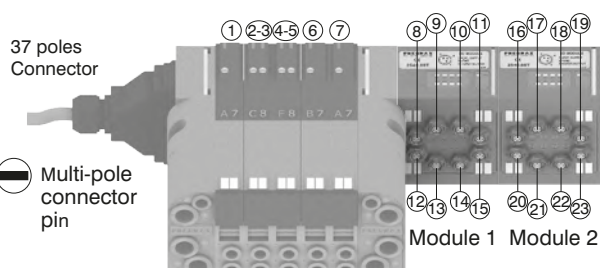
Multi-pole connector pin



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



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



37 poles Connector

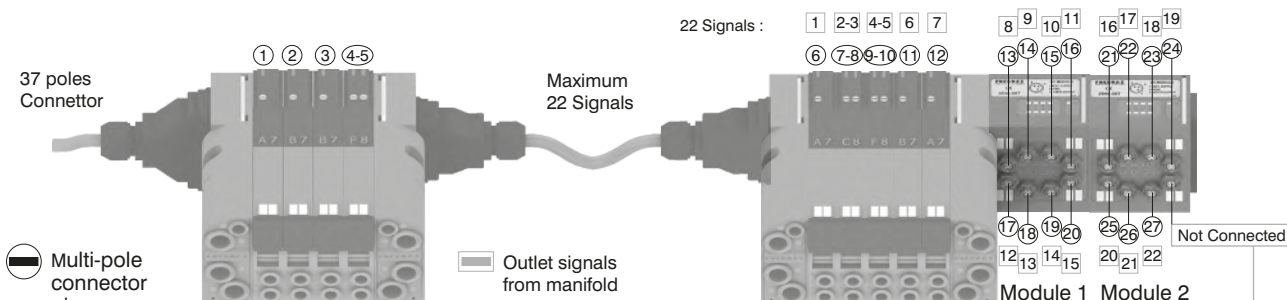
Multi-pole connector pin



Attention:
No more additions are possible

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

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



37 poles Connector

Maximum 22 Signals

Multi-pole connector pin

Outlet signals from manifold

Not Connected

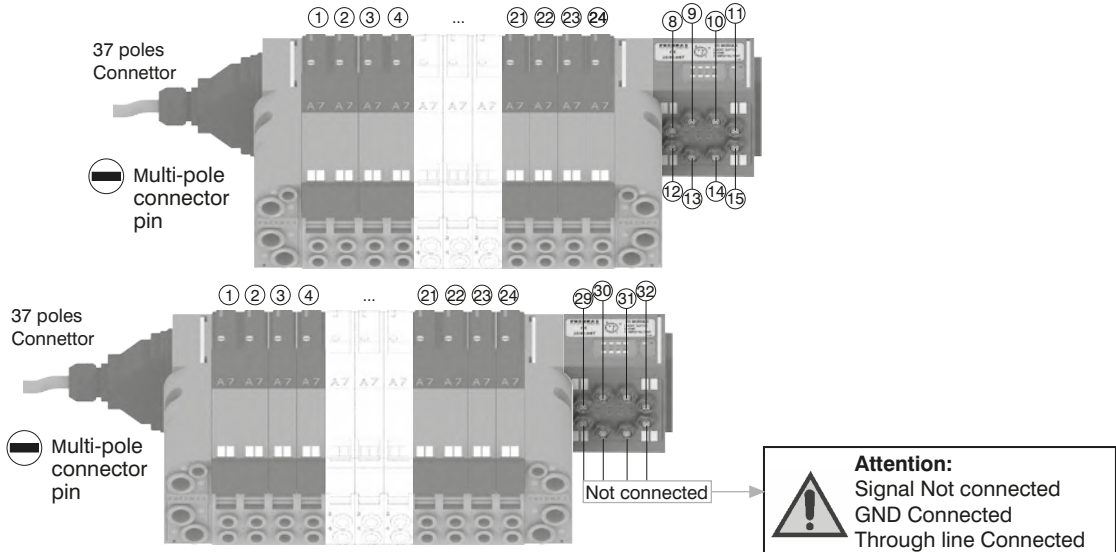


Attention:
Signal Not connected
GND Connected
Through line Connected

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

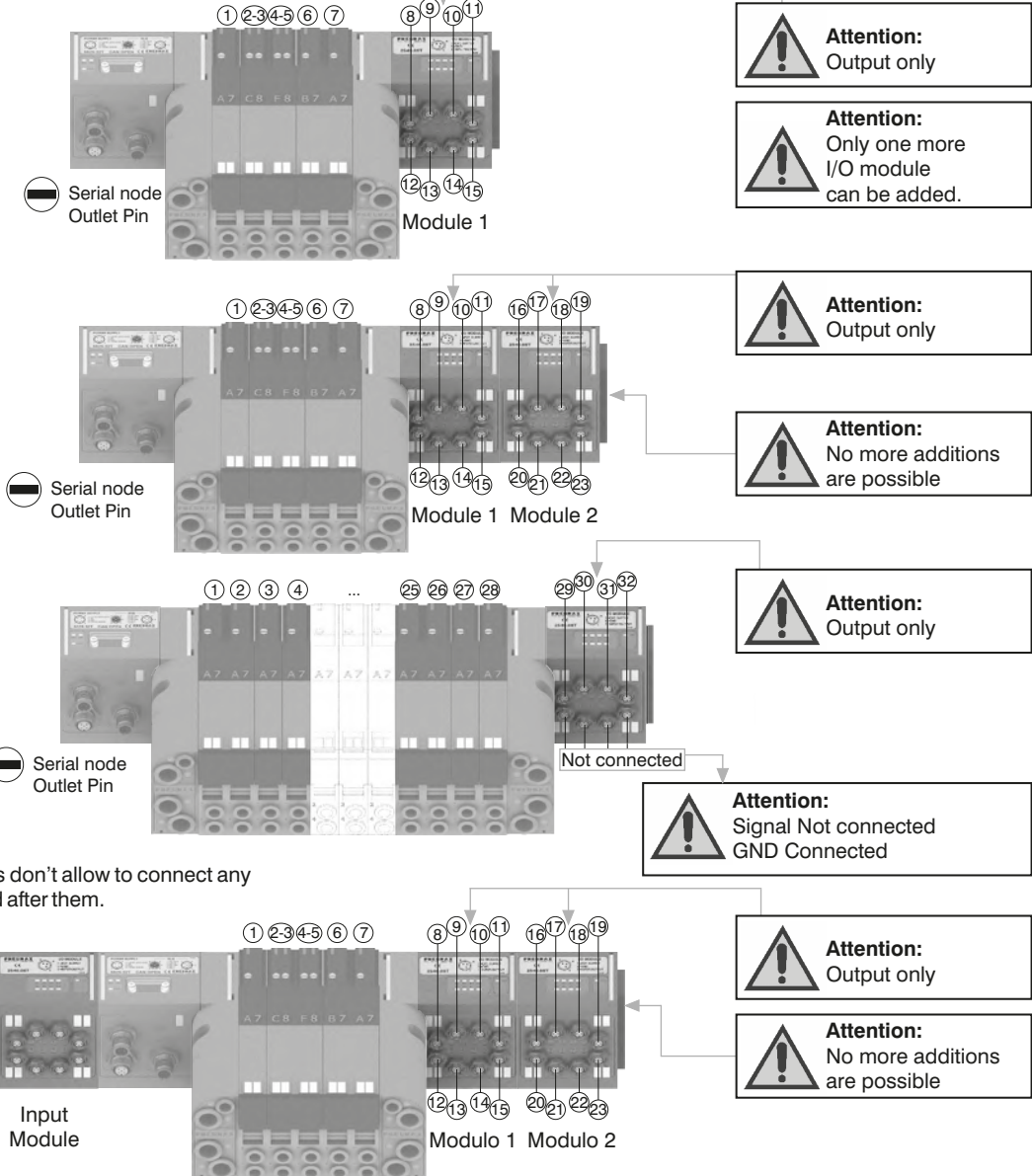
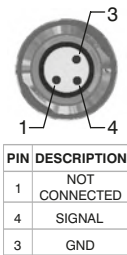
The same configuration managed by a 25 pin multi-pole connector will stop at number 22 of multi-pole connector and at number 17 of the manifold. 22 17

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



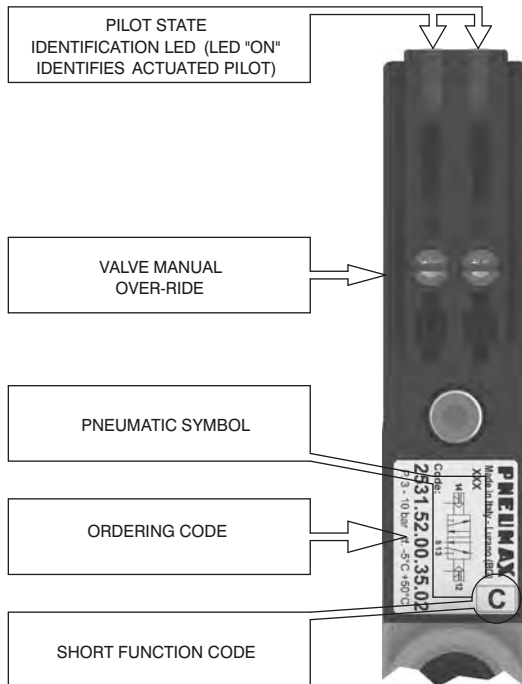
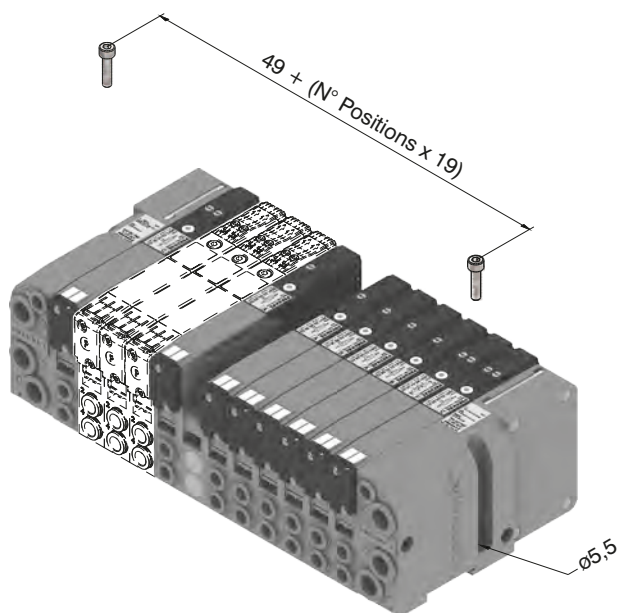
B) Control via fieldbus:

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

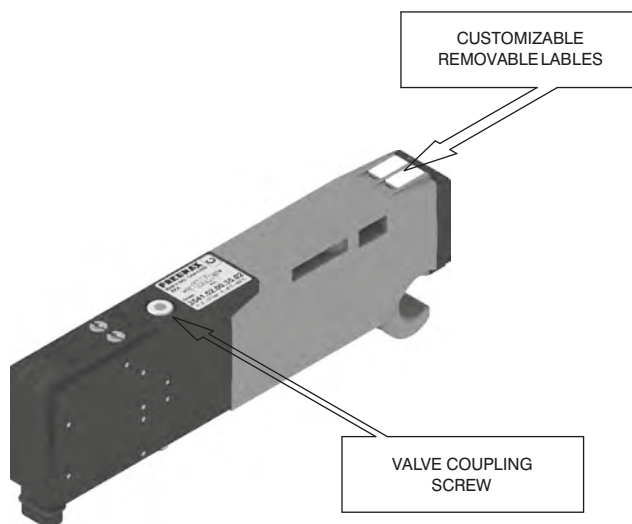
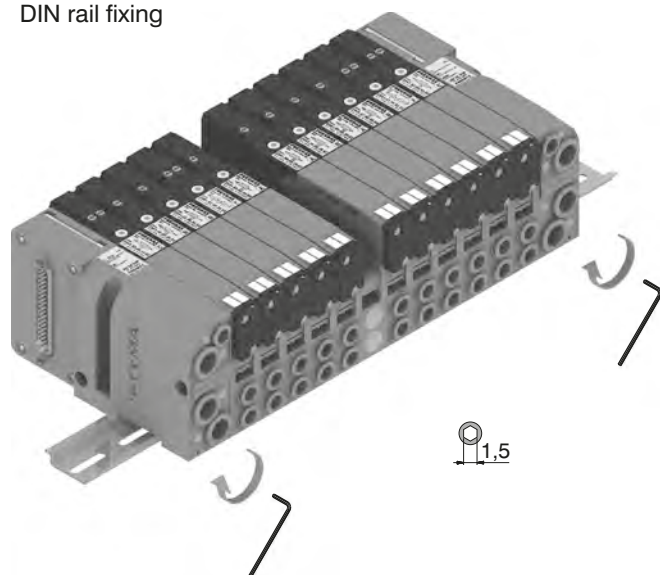


Please note: I/O modules don't allow to connect any additional valves manifold after them.

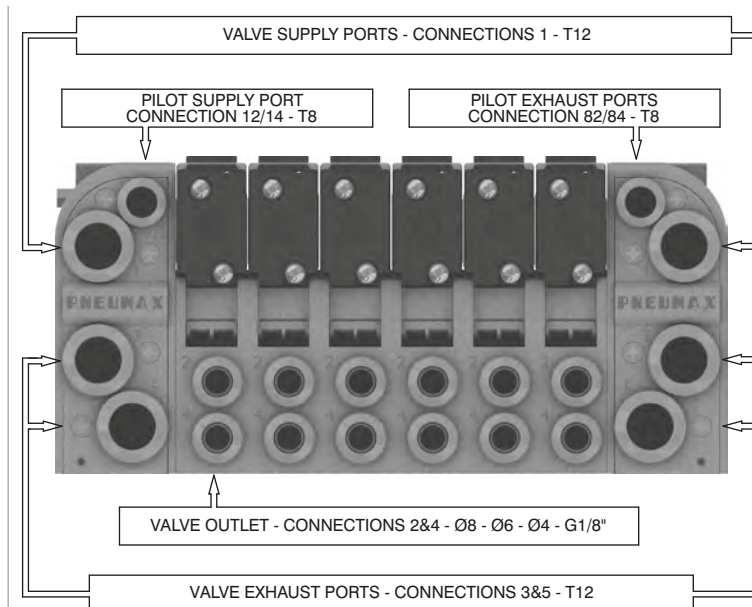
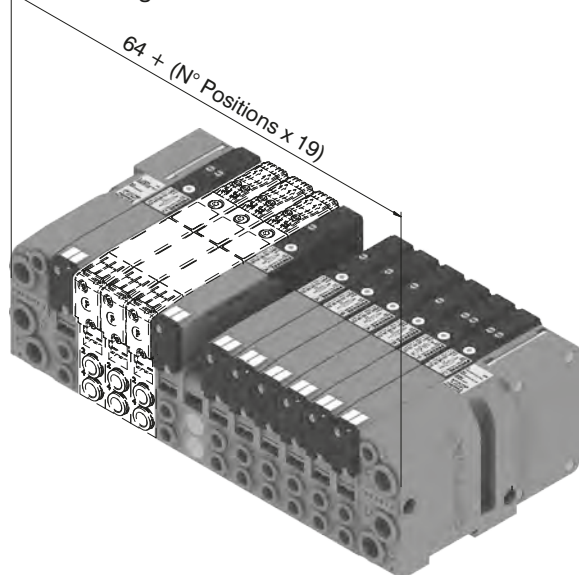
From the top



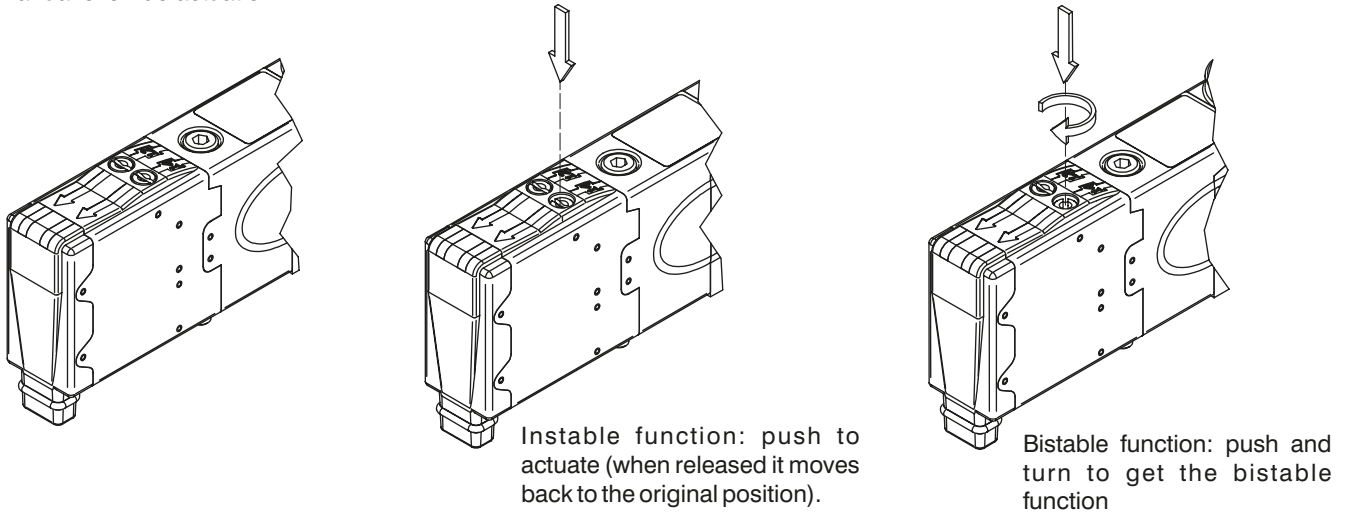
DIN rail fixing



Maximum possible size according to valves seats

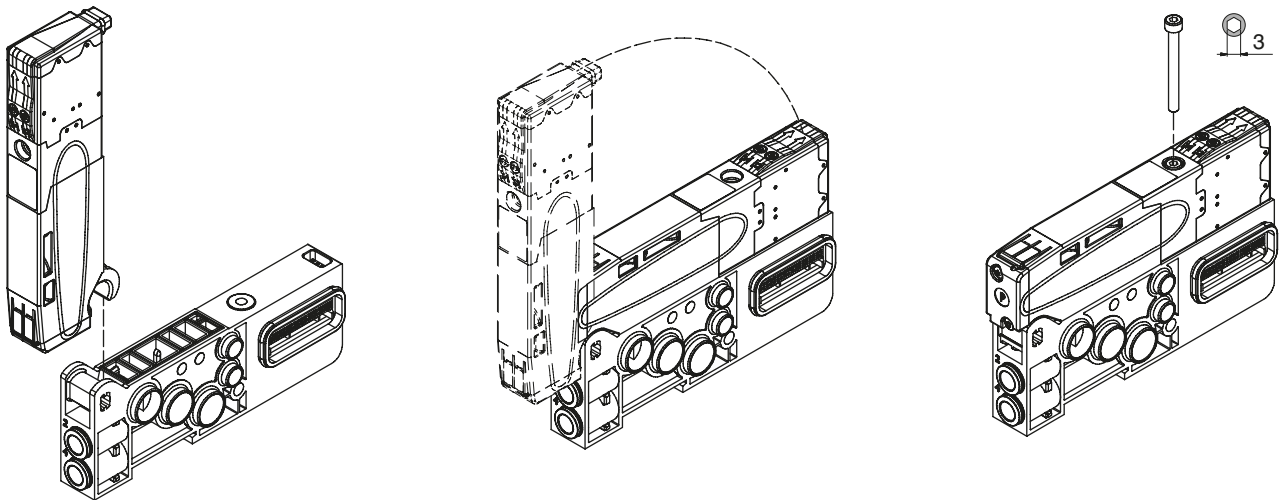


Manual override actuation



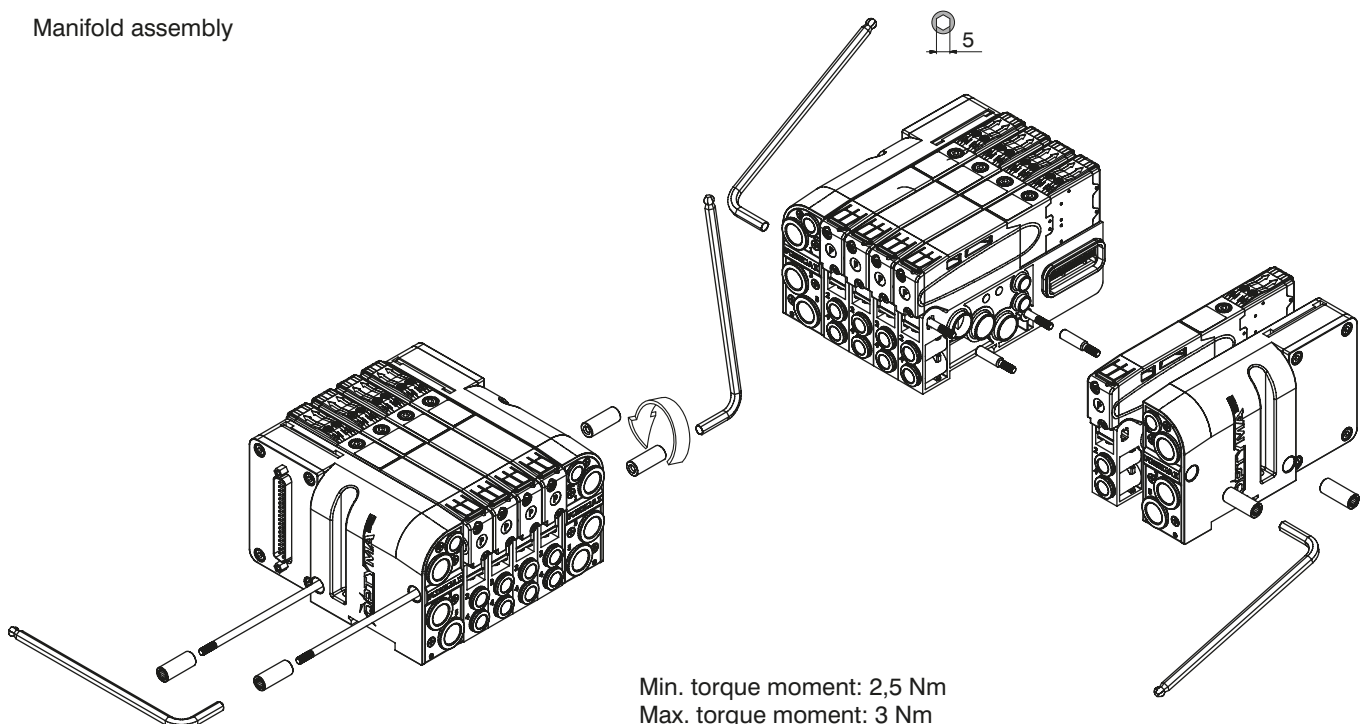
NOTE : It is strongly suggested to replace the original position after using

Valve Installation



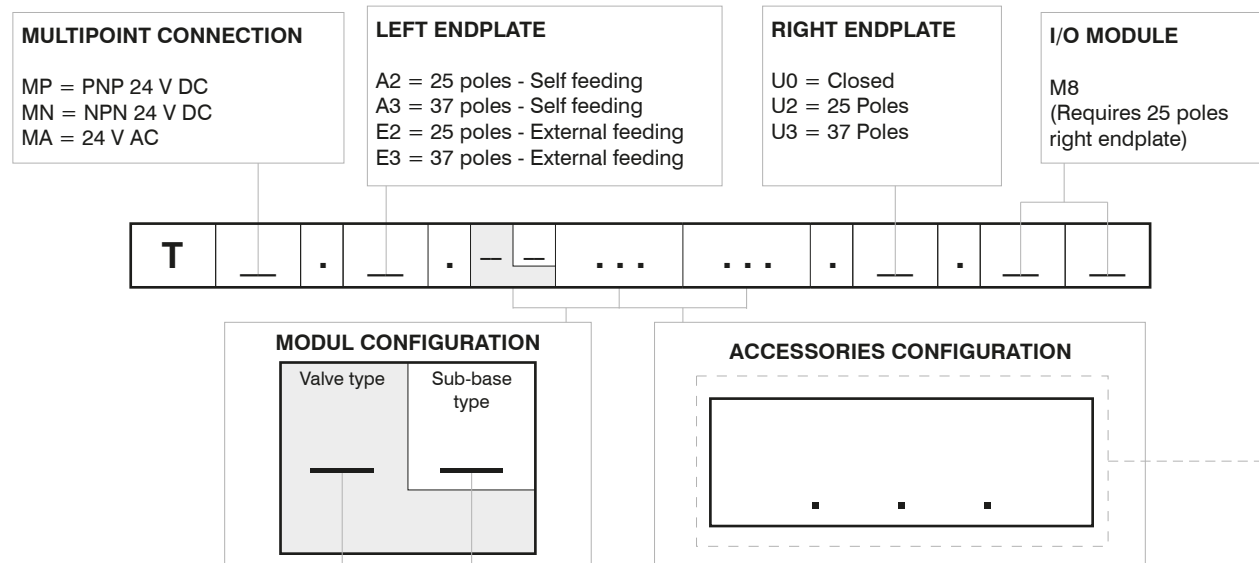
NOTE: Torque moment 1 Nm

Manifold assembly



Manifold Layout configuration

1
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SHORT CODE FUNCTION / CONNECTION :

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

NOTE:

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

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

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

ACCESSORIES

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

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

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

General:

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

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08T or a max number of 4 Input modules 5225.12T.

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

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

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

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

Connection to Bus CANopen® is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to CiA Draft Recommendation 303-1 (V. 1.3 : 30 December 2004).

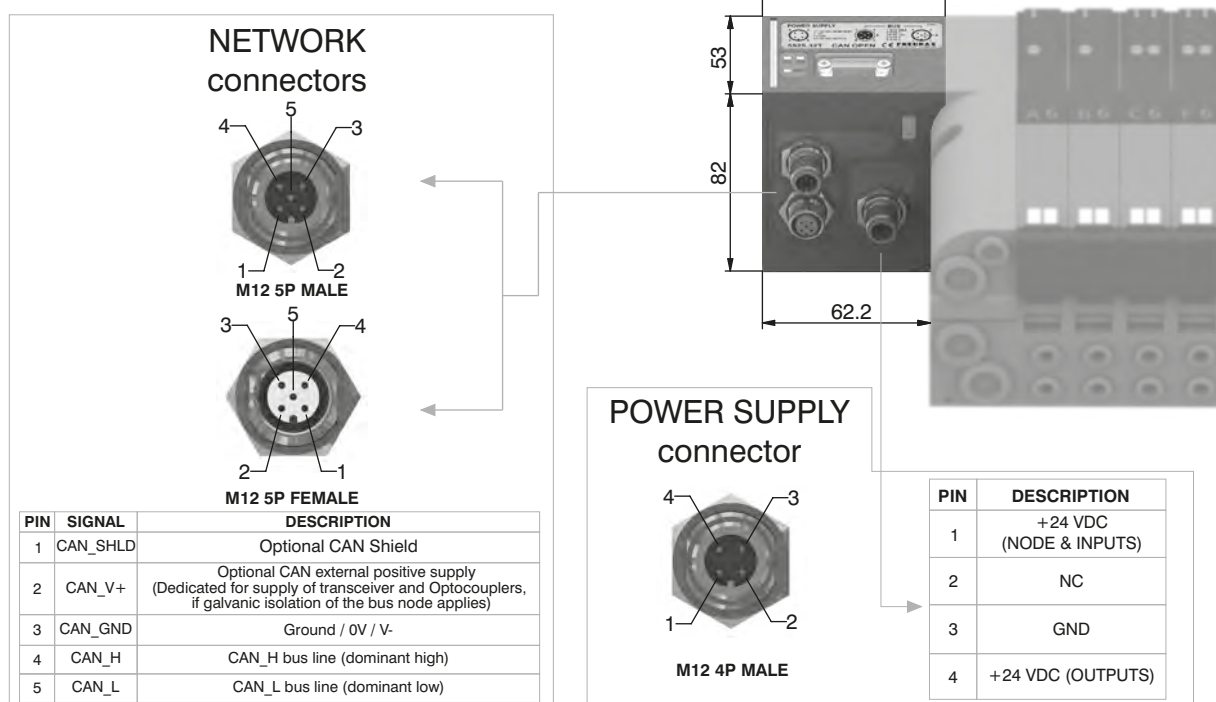
Transmission speed can be set by 3 dip-switches.

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

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

Ordering code**5525.32T****1**

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

	Model	5525.32T
	Specifications	CiA Draft Standard Proposal 301 V 4.10 (15 August 2006)
Power supply	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	30 mA
	Power supply diagnosis	Green LED PWR
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 5P connectors male-female Type A (IEC 60947-5-2)
	Baud rate	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 or a max number of 4 Input modules 5225.12T.

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

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

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

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

Connection to Bus DeviceNet is possible via 2 M12 5P male - female circular connectors; these two are connected in parallel and according to DeviceNet Specifications Volume I, release 2.0.

Transmission speed can be set by 3 dip-switches.

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

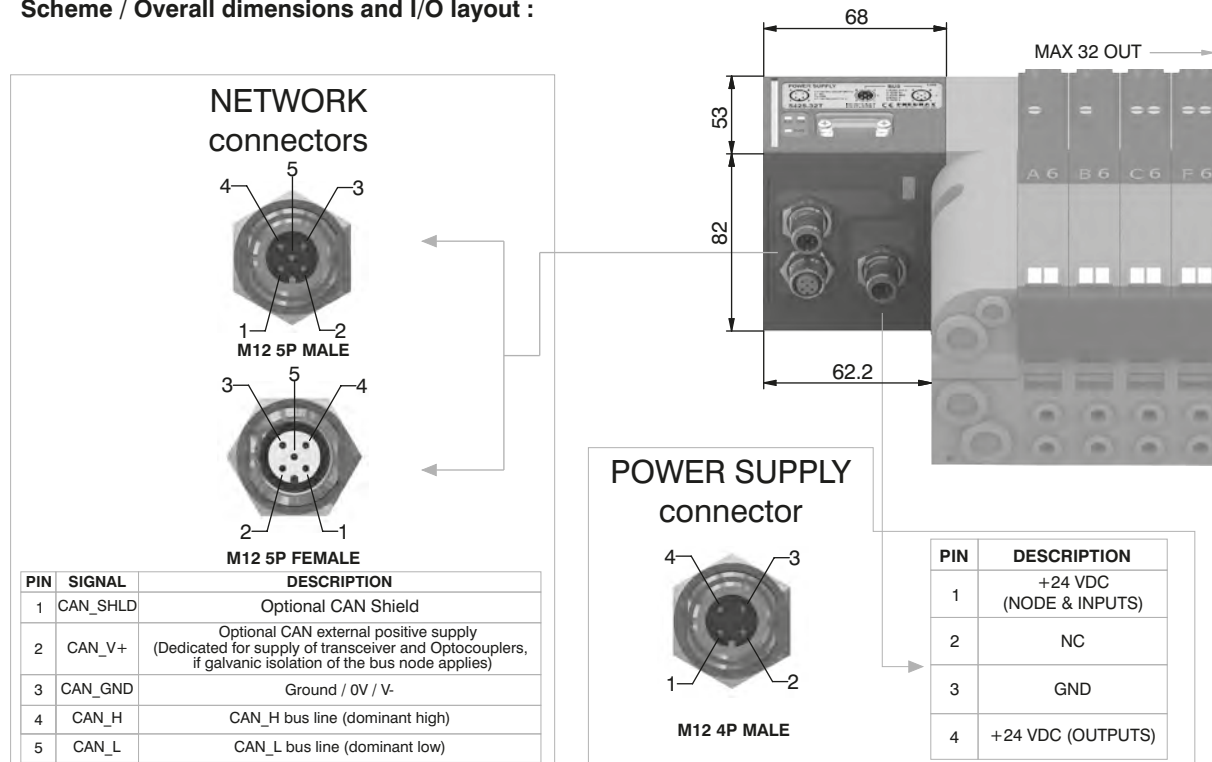
The module includes an internal terminating resistance that can be activated by a dip-switch.

Ordering code

5425.32T



Scheme / Overall dimensions and I/O layout :



Technical characteristics

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

General:

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

Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code). The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

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

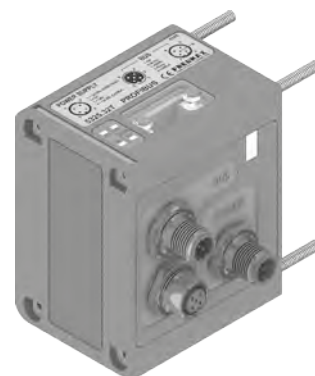
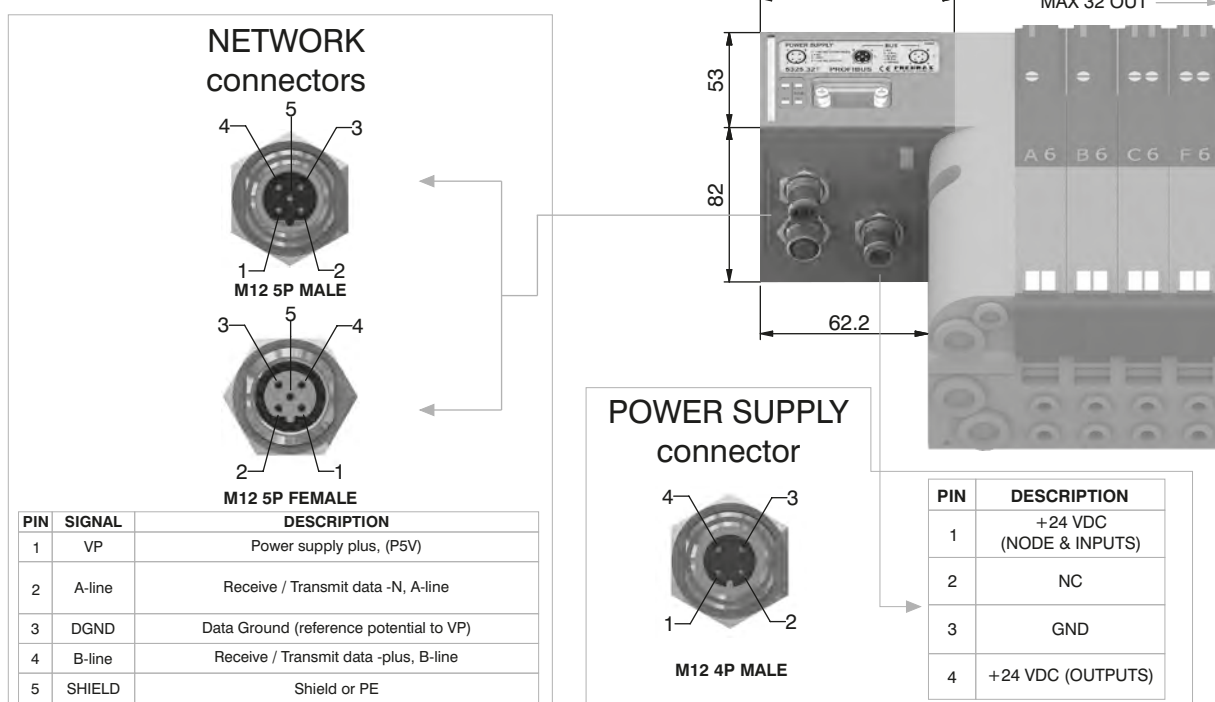
Node power supply is made by a M12 4P male circular connector.

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

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

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

The module includes an internal terminating resistance that can be activated by 2 dip-switches.

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

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

General:

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

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 4 Input modules 5225.08T or a max number of 4 Input modules 5225.12T.

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

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

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

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

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

The node address is assigned during configuration.

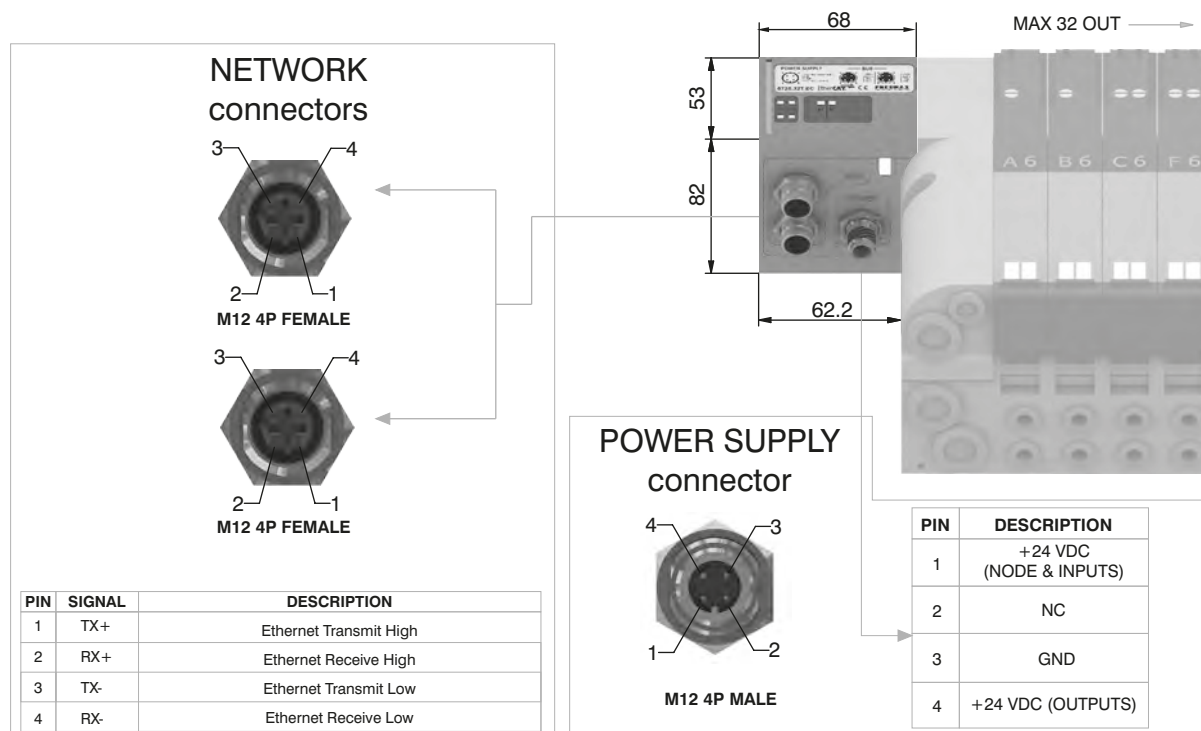
Note: 5700 series has a different configuration file from series 5600.

Ordering code

5725.32T.EC



Scheme / Overall dimensions and I/O layout :



Technical characteristics

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

General :

PROFINET IO RT module is directly integrated on Optyma-T solenoid valves manifold via a 37 poles connector, normally used for multipolar cable connection.
Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

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

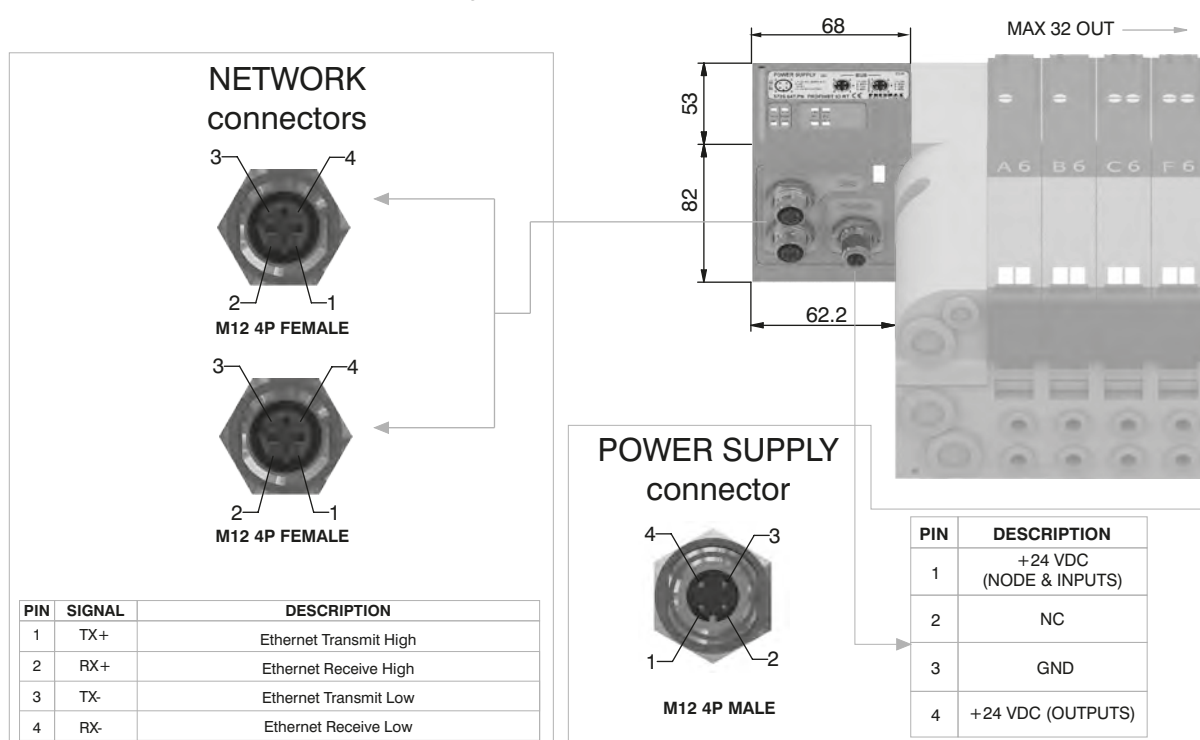
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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

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

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

The node address is assigned during configuration.

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

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

General :

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

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

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

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

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

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

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

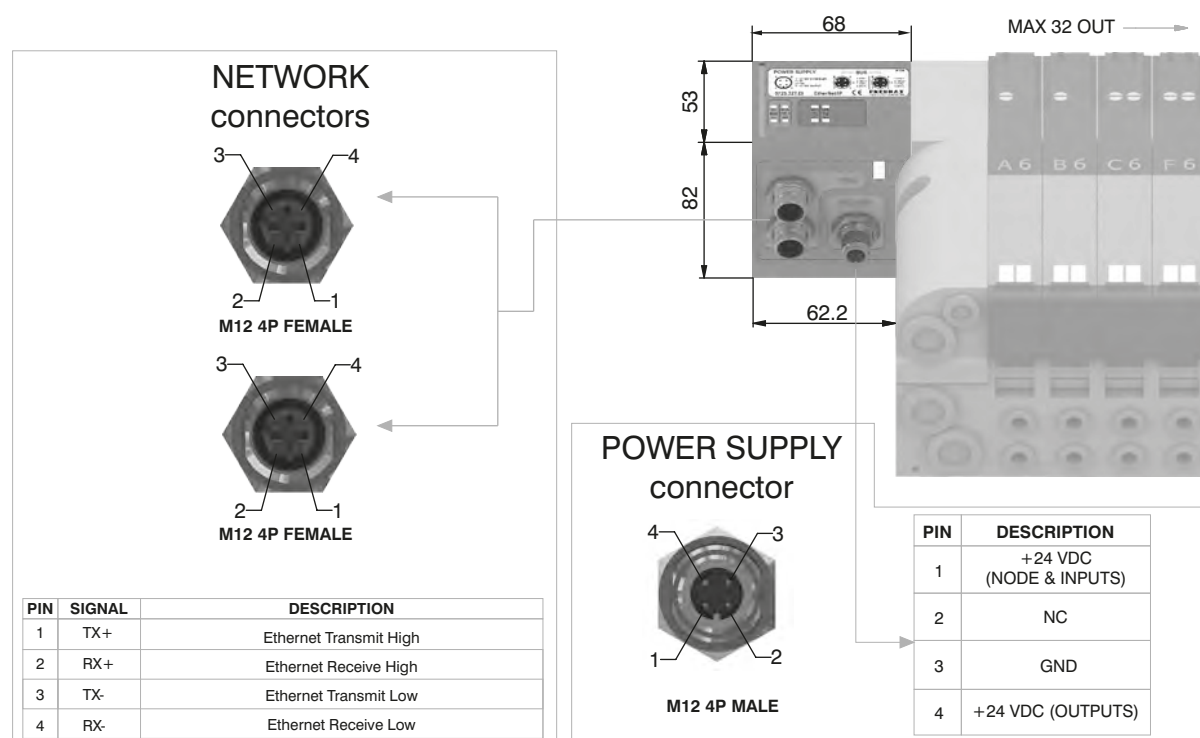
The node address is assigned during configuration.

Ordering code

5725.32T.EI



Scheme / Overall dimensions and I/O layout :



Technical characteristics

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

General :

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

Optyma-T solenoid valves connected to node must be PNP equivalent (final 02 in ordering code).

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

The Powerlink module, regardless the number of Input module connected, reports to have connected 8 Input modules.

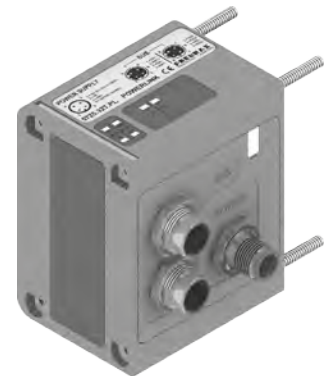
Regardless of the number of Input modules connected, the manageable solenoid valves are 32.

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

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

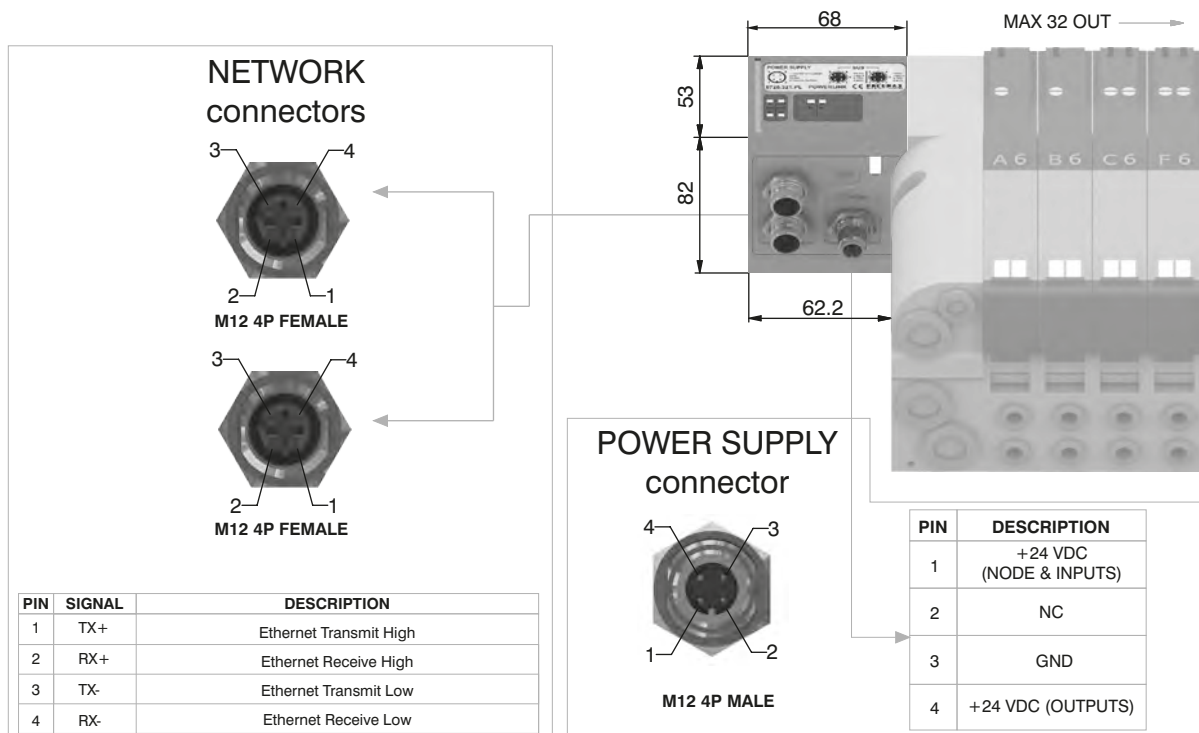
Connection to Bus Powerlink is possible via 2 M12 4P type D female circular connectors. These two connectors lead the signal to two different communication ports, so they are not connected in parallel.

The node address is assigned during configuration.

Ordering code**5725.32T.PL**

1

AIR DISTRIBUTION

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

	Model	5725.32T.PL
	Specifications	Ethernet POWERLINK Communication Profile Specifications
Power supply	Case	Reinforced technopolymer
	Power supply connection	M12 4P male connector (IEC 60947-5-2)
	Power supply voltage	+24 VDC +/- 10%
	Node consumption (without inputs)	400 mA
	Power supply diagnosis	Green LED PWR / Green LED OUT
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	239
	Max nodes in net	240
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Available from our web site: http://www.pneumaxspa.com
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C

General :

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

The node can be easily installed also on solenoid valves manifold already mounted on equipment.

Module can manage up to 32 solenoid valves, and, in the same time, a max number of 8 Input modules 5225.08T or a max number of 8 Input modules 5225.12T.

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

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

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

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

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

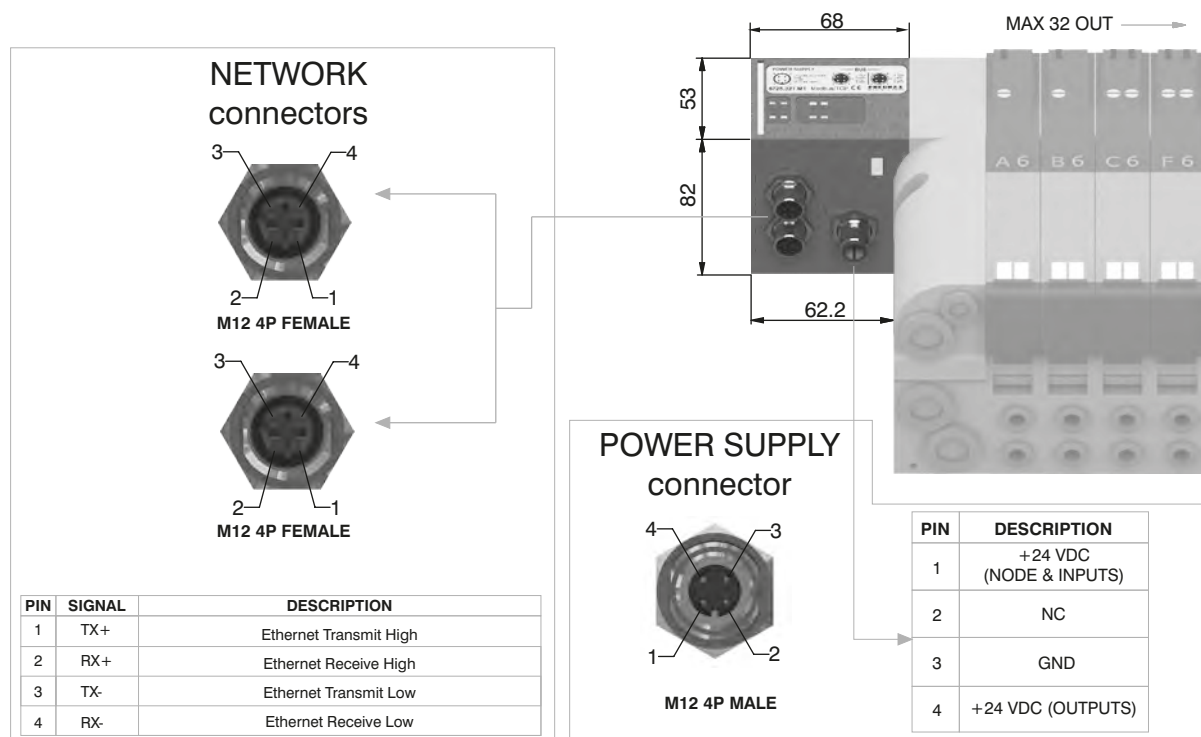
The node address is assigned during configuration.

Ordering code

5725.32T.MT



Scheme / Overall dimensions and I/O layout :



Technical characteristics

	Model	5725.32T.MT
	Specifications	MODBUS Application Protocol Specification V1.1a, June 4, 2004
	Case	Reinforced technopolymer
	Power supply	Power supply connection Power supply voltage Node consumption (without inputs) Power supply diagnosis
Outputs	PNP equivalent outputs	+24 VDC +/- 10%
	Maximum current for each output	100 mA
	Maximum output number	32
	Max output simultaneously actuated	32
Network	Network connectors	2 M12 4P female connectors Type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Addresses, possible numbers	248
	Max nodes in net	248
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 green and 1 red LED for status + 2 LEDs for link & activity
	Configuration file	Modbus/TCP nodes don't require configuration file
	IP protection grade	IP65 when assembled
	Temperature range	From 0° to +50° C



General :

Modules have 8 connectors M8 3P female.

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

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

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

Each module includes a 300 mA self-mending fuse. If a short circuit or a overcharge (overall current $>300\text{mA}$) occur the safety device acts cutting the 24 VDC power supply to all M8 connectors on the module and switching off the green led PWR. Any other Input module connected to the node will remain powered and will function correctly.

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

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

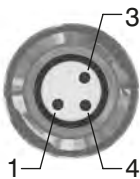
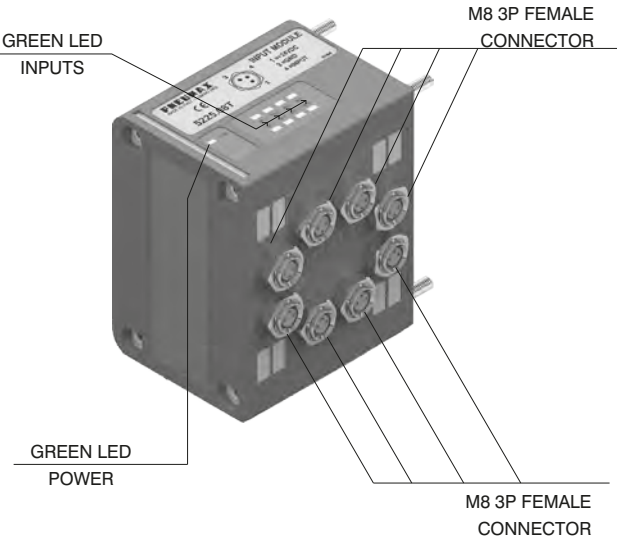
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT EtherNet/IP and Powerlink.

Ordering code

5225.08T



Scheme / Overall dimensions and I/O layout :



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

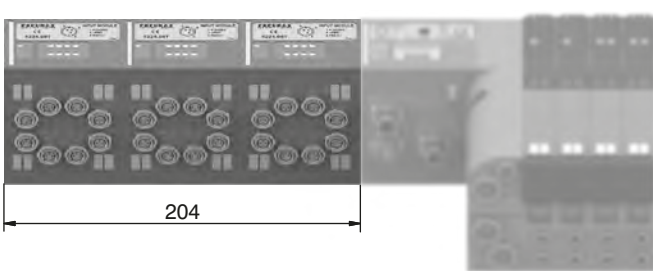
Module 1



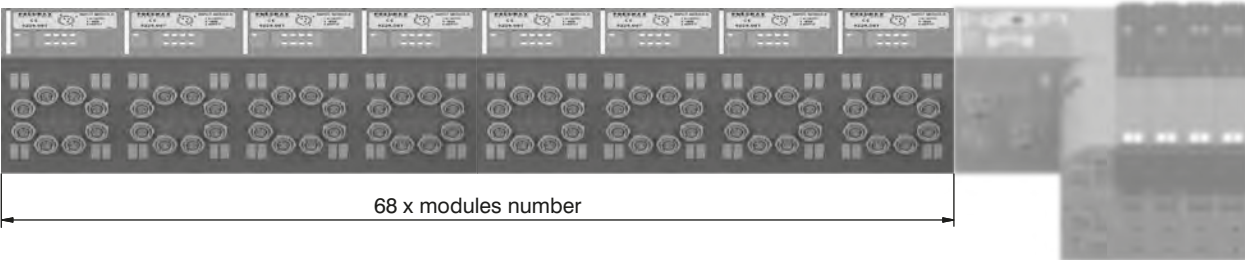
Module 2 Module 1



Module 3 Module 2 Module 1



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



General :

Modules have 4 connectors M12 5P female.

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

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

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

Each module includes a 300 mA self-mending fuse. If a short circuit or a overcharge (overall current $>300\text{mA}$) occur the safety device acts cutting the 24 VDC power supply to all M8 connectors on the module and switching off the green led PWR. Any other Input module connected to the node will remain powered and will function correctly.

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

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

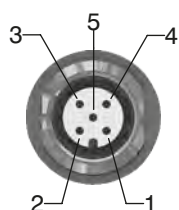
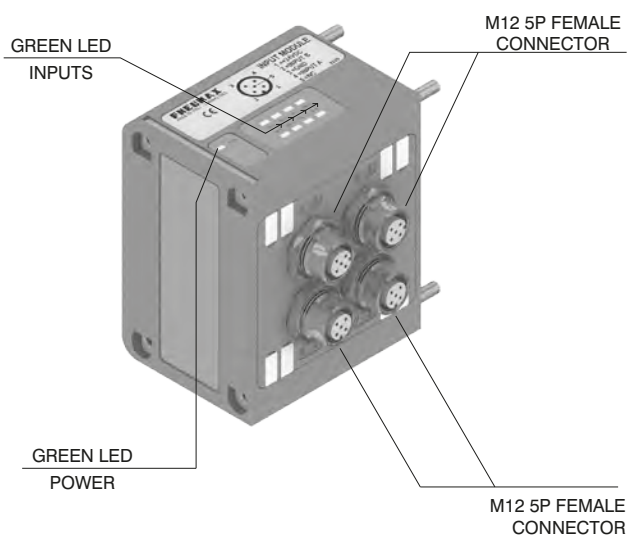
The maximum number of Input modules supported is 8 for PROFIBUS DP, PROFINET IO RT EtherNet/IP and Powerlink.

Ordering code

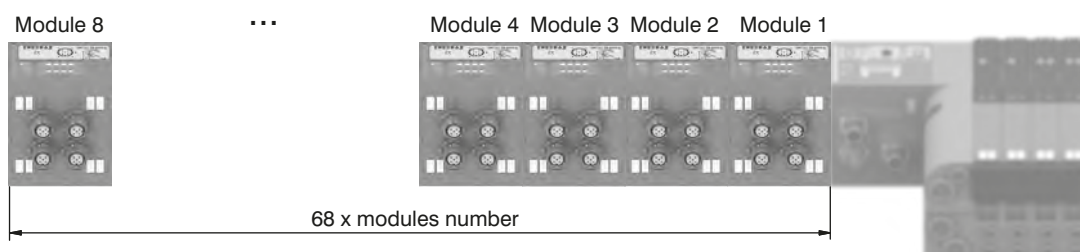
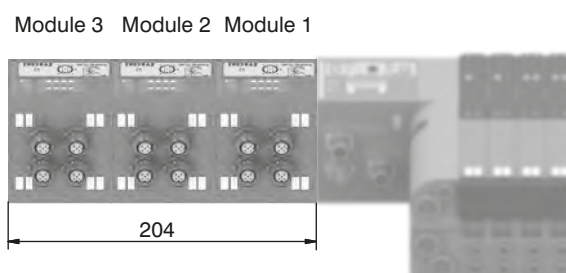
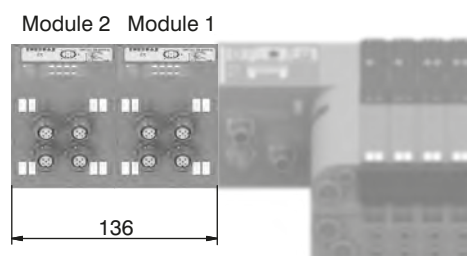
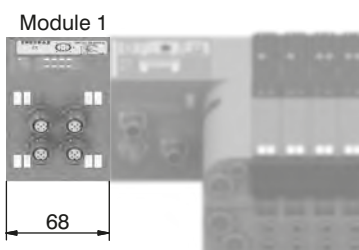
5225.12T



Scheme / Overall dimensions and I/O layout :



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





General :

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

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

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

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

This module is counted as four 8 digital Inputs modules.

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

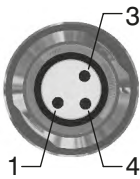
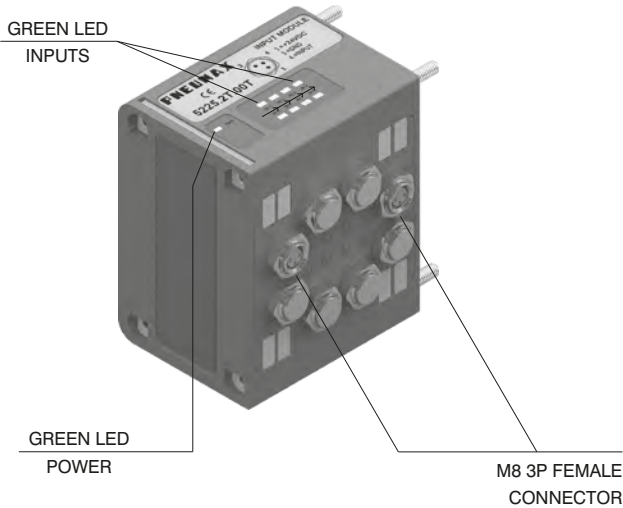
Ordering code

5225.2 _ . _ T

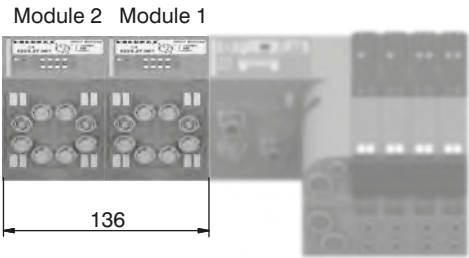
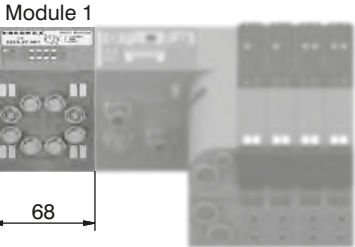


1
AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout :



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:

5225.2P00T (2-wires probes);

5225.2P01T (3-wires probes).

Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC power supply to all M8 connectors on the module and switching off the green LED PWR. Any other Input module connected to the node will remain powered and will function correctly.

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

This module is counted as four 8 digital Inputs modules.

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

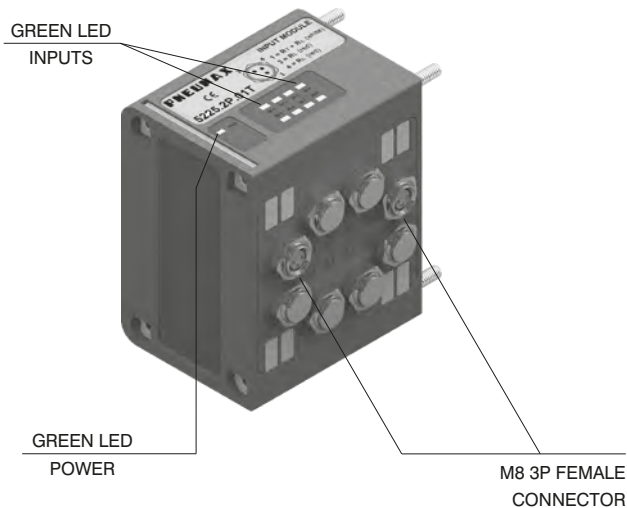
The Maximum number of 2 Pt100 Inputs modules supported is 2 for PROFINET IO RT, EtherNet/IP and Powerlink.

Ordering code

5225.2P . 0_T



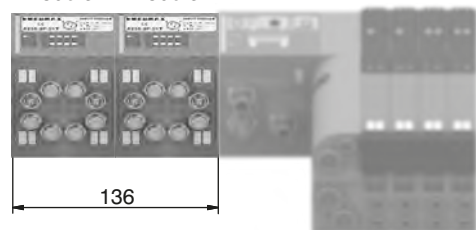
Scheme / Overall dimensions and I/O layout :



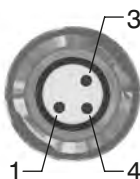
Module 1



Module 2 Module 1

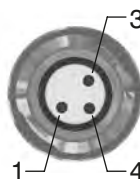


3 WIRES



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

2 WIRES



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



General :

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

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

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

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

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

Each module includes a 300 mA self-mending fuse. Should a short circuit or a overcharge (overall current >300mA) occur the safety device intervenes cutting the 24VDC power supply to all M8 connectors on the module and switching off the green LED PWR. Any other INPUT module connected to the node will remain powered and will function correctly.
Once the cause of the fault is removed the green LED lights up indicating the ON state and the node will re-start to operate.
This module is counted as four 8 digital Inputs modules.

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

Ordering code

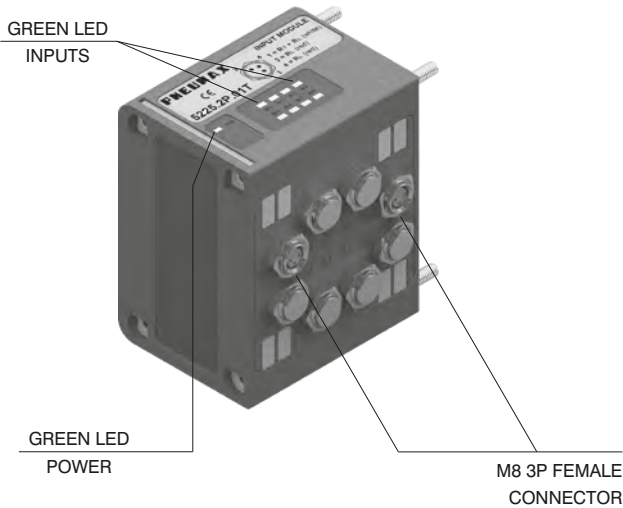
5225.2P . 1_T



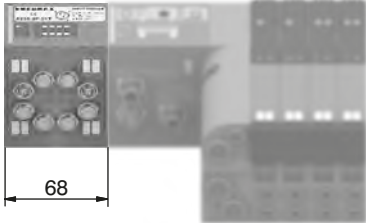
1

AIR DISTRIBUTION

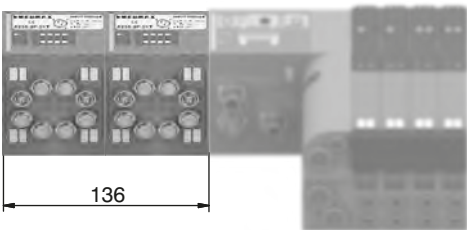
Scheme / Overall dimensions and I/O layout :



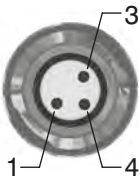
Module 1



Module 2 Module 1

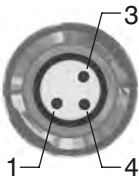


3 WIRES



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

2 WIRES



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

Socket for Power Supply
STRAIGHT CONNECTOR
M12A 4P FEMALE

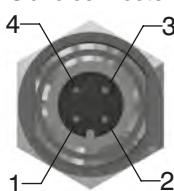
Ordering code

5312A.F04.00



POWER SUPPLY connector

Upper view
Slave connector

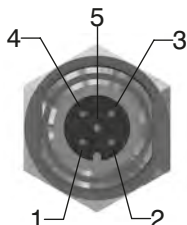


PIN	DESCRIPTION
1	+24 VDC Node
2	
3	0 V
4	+24 VDC Outputs

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

Ordering code

5312A.F05.00



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

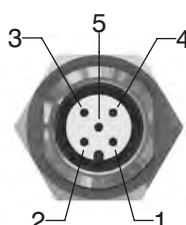
Upper view
Slave connector

NETWORK connectors

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

Ordering code

5312A.M05.00



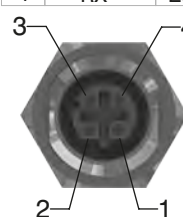
Plug for Bus EtherCAT®,
PROFINET IO RT,
EtherNet/IP and Powerlink
STRAIGHT CONNECTOR M12D 4P MALE

Ordering code

5312D.M04.00



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

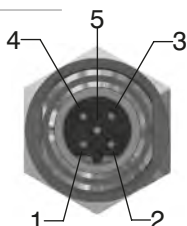


Upper view
Slave connector

Socket for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P FEMALE

Ordering code

5312B.F05.00



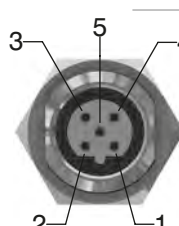
PIN	DESCRIPTION
1	Power Supply
2	A-line
3	DGND
4	B-line
5	SHIELD

Upper view
Slave connector

Plug for Bus PROFIBUS DP
STRAIGHT CONNECTOR
M12B 5P MALE

Ordering code

5312B.M05.00



Plug for Input module
STRAIGHT CONNECTOR
M8 3P MALE

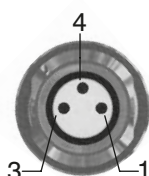
Ordering code

5308A.M03.00



INPUT connectors

Upper view
Slave connector



PIN	DESCRIPTION
1	+24 VDC
4	INPUT
3	GND

Plug for Input module
STRAIGHT CONNECTOR
M12A 5P MALE

Ordering code

5312A.M05.00



M12 plug

Ordering code

5300.T12

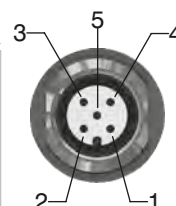


Plugs

M8 plug

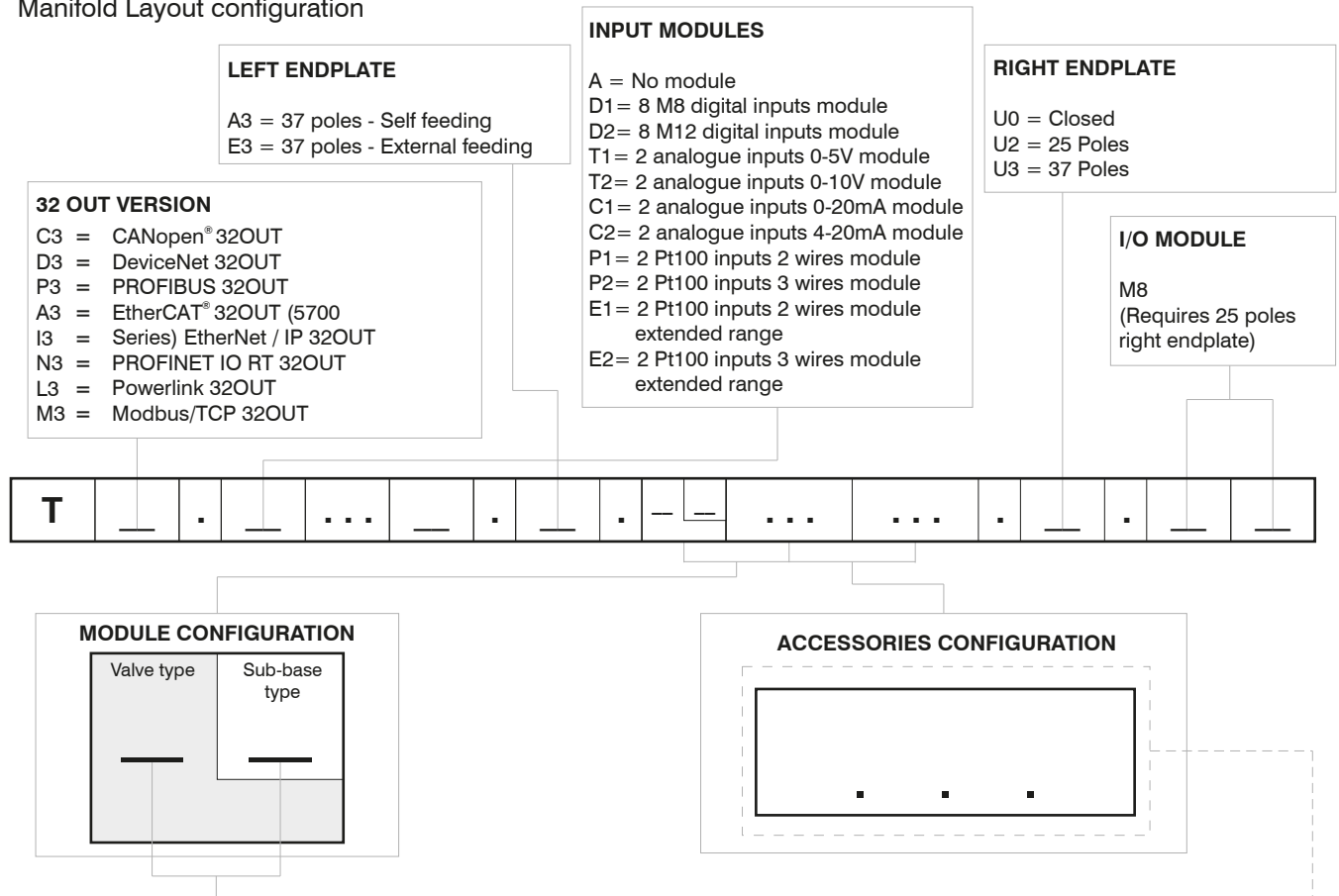
Ordering code

5300.T08



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

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 example : regarding the 3 & 5 conduits, put the Y & Z letters).

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

ACCESSORIES

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



SERIES PX MODULAR ELECTRONIC SYSTEM

- **Maximum flexibility**
- **Digital and analogue I/O modules**
- **Stand alone solution connectable via SUB-D cable to all manifolds**
- **Manufactured in technopolymer**
- **Wide range of communication protocols**

CANopen

PROFIBUS

PROFINET

EtherCAT

EtherNet/IP

IO-Link

CC-Link IE Basic

FLEXIBILITY IN A COMPACT SPACE

Series PX modular electronic system has been designed to offer control and acquisition hardware for pneumatic and electric devices; it supports the most diffused communication protocols and can be configured with I/O modules, both digital and analog.

Series PX in stand alone version can be connected to every solenoid valves battery by using SUB-D connector, on the other hand Series PX can be directly connected to the following Pneumax solenoid valves series:

- Optyma S
- Optyma F
- Optyma T
- 2700
- 3000

Technopolymer bodies and sub-base and compact design has been studied to optimise room taken by the whole system, they make Series PX extremely light and guarantee maximum flexibility.

The ability to quickly and easily configure the system, the range of modules and accessories available meet at the best the specific application needs of many industrial sectors.

Configurable on Cadenas platform

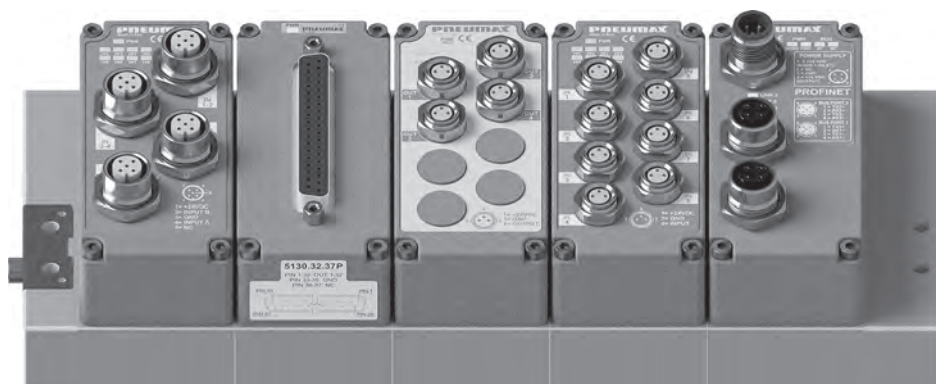


CADENAS

AIR DISTRIBUTION

Refer to the current limits indicated in the pages relating to the nodes / IO-Link interface

Configuration examples



Example shown: PX3-P-N4-D8-V4-M3-D12

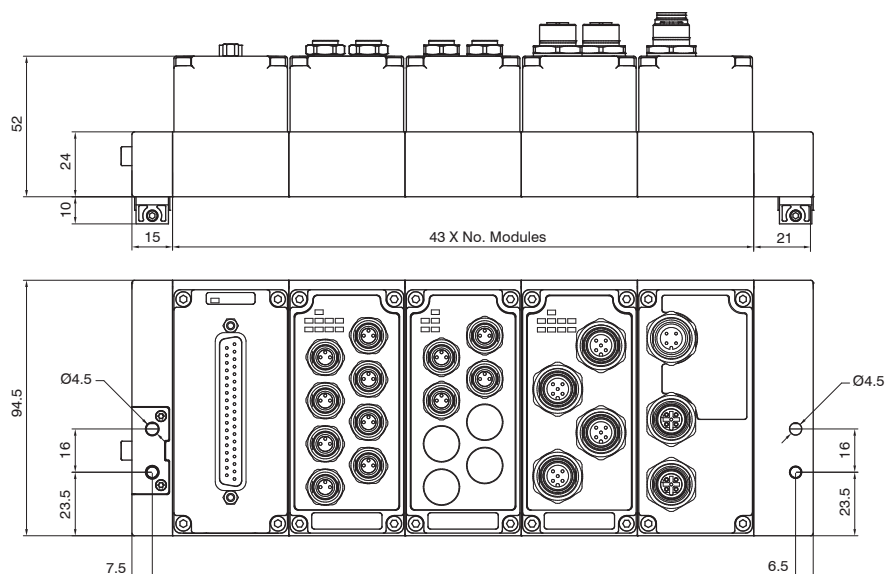
Multiprotocol module with PROFINET IO RT protocol node, M8 digital input module, M8 analogue output module, 37 pin (SUB-D) digital output module and M12 digital input module.



Example shown: PX3-P-G-A4-3D8-2M12

Multiprotocol module with EtherCAT® protocol node, 3 M8 digital input modules and 2 M12 digital output modules; also includes DIN rail adaptors.

Overall dimensions



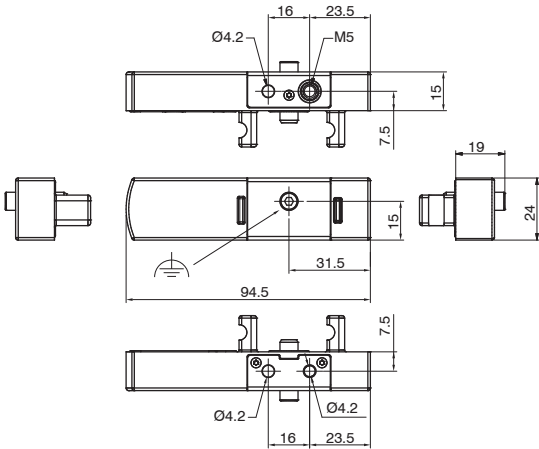


Left endplate kit

Coding: 3100.KT.00



Weight 52 g

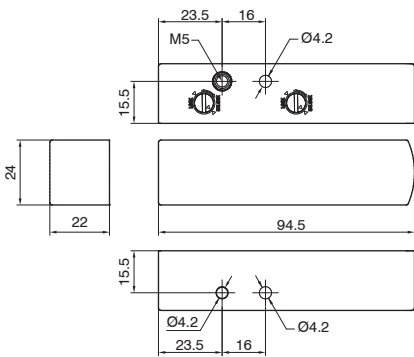


Right endplate kit

Coding: 3100.KT.03



Weight 51 g

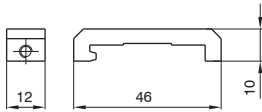


DIN rail adapter

Coding: 3100.16



Weight 12 g



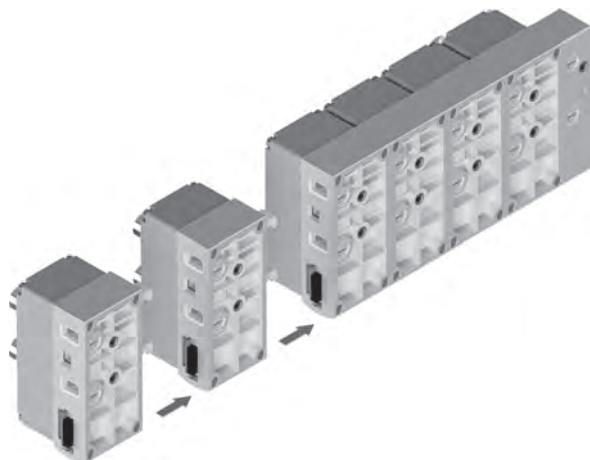
Cable complete with connector, male 37 poles, IP65

Coding: 2400.37.M.L.C

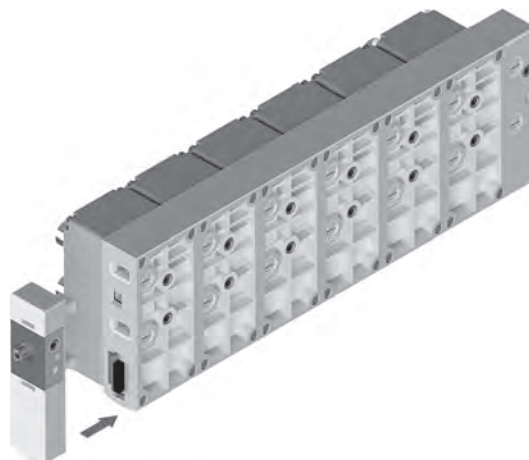


	CABLE LENGTH
L	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
	CONNECTOR
C	10 = Stand alone
	90 = 90° Angle

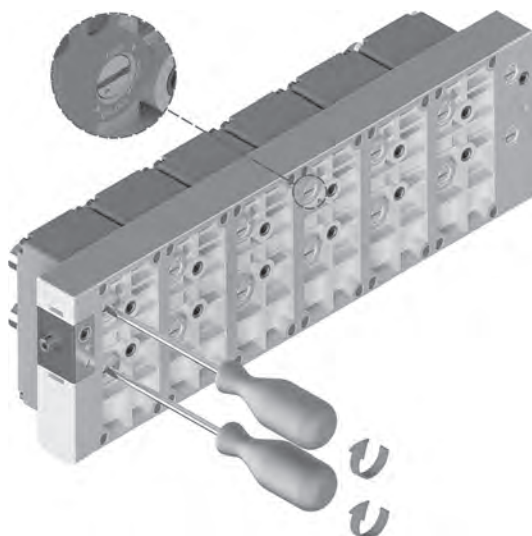
1. Assemble the required modules starting with 3100.KT.03 right endplate kit.



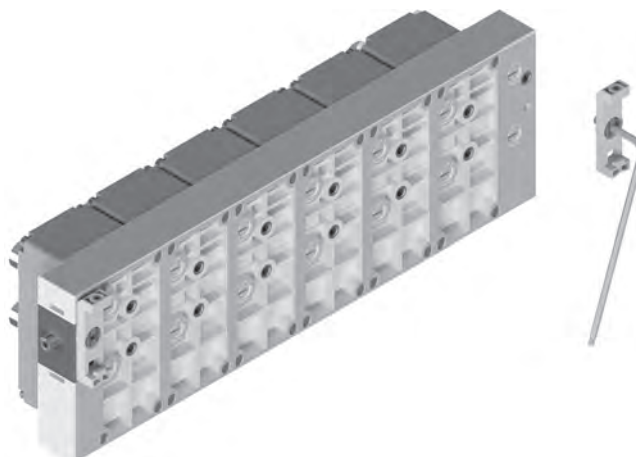
2. Complete the assembly with the 3100.KT.00 left endplate kit.



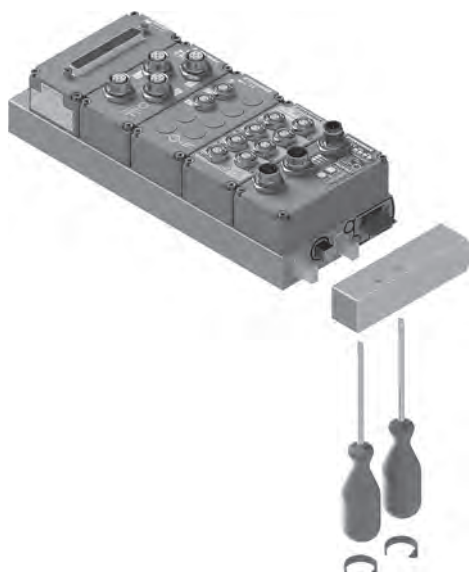
3. To lock: rotate anticlockwise (in the direction of the LOCK print on the case).
To unlock: rotate clockwise (in the direction of the UNLOCK print on the case).
The same procedure shall be used to add or remove any module.



4. If required, assemble the DIN rail adapter using an 3 mm allen key.

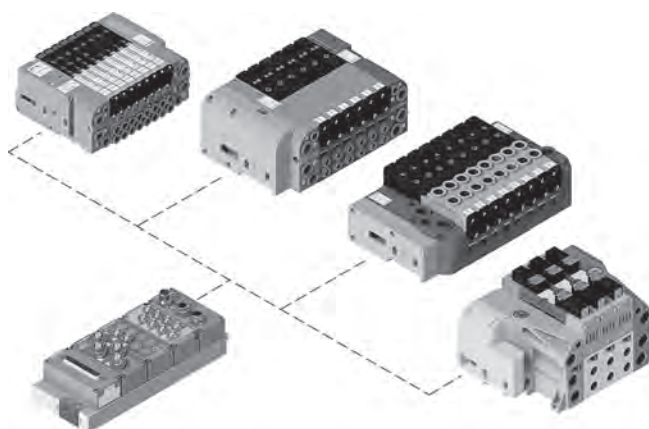


A. For integration with a manifold it is necessary to remove the 3100.KT.03 right endplate kit.



B. Series PX modular electronic system can be integrated with the following valve manifold series:

- Optyma S
- Optyma F
- Optyma T
- 2700



The Series 3000 manifolds already integrates with the PX Series modules with dedicated fixing options.
Please refer to www.pneumaxspa.com for more details.

CANopen® protocol node kit

CANopen® node manages 64 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Connection to CANopen® fieldbus is made via two M12, male and female, 5 pins, type A circular connectors, in parallel between them; connectors pinout is compliant to CiA Draft recommendation 303-1 (V. 1.3 : 30 December 2004).

Transmission speed and address, as well as termination resistor activation are set via DIP-switches.

CANopen® node is available in two versions with 32 or 48 outputs allocated to solenoid valves on the manifold directly connected to the node.

Such outputs correspond to least significant bytes and their allocation is independent of how many solenoid valves are installed.

Remaining outputs can be used to control the modules.

Byte allocation to additional modules is fully automatic.

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24VDCout} = \sum_{i=1}^n I_{out,i} + m i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optima S"	36 mA
2500 "Optima F"	54 mA
2500 "Optima T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

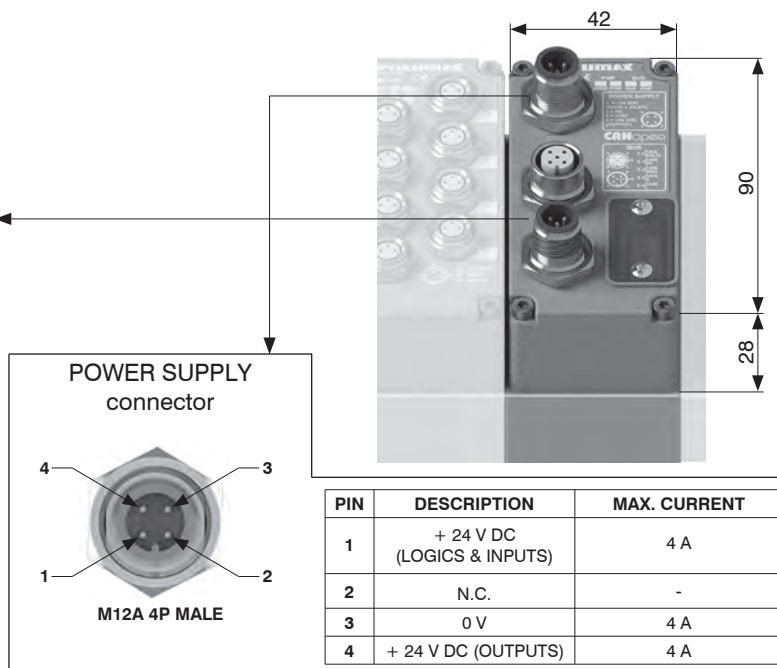
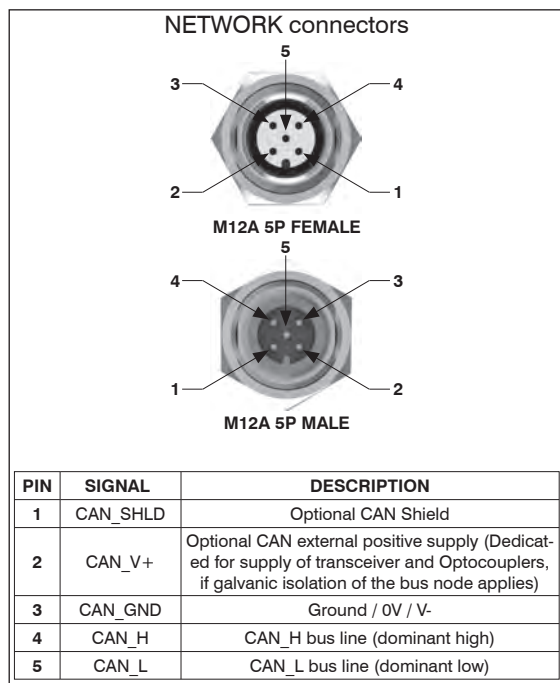
$$I_{24VDCout} + I_{24VDCin} < 4A$$

Where:

$$I_{24VDCin} = \sum_{i=1}^n I_{in,i}$$

n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

Scheme / Overall dimensions and I/O layout



Coding: K5530.64.VCO

VERSION
32 = 32 output bits available for valve connections
48 = 48 output bits available for valve connections



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.



Technical characteristics

Specifications	CiA Draft Standard Proposal 301 V 4.10 (15 August 2006)
Case	Reinforced technopolymer
Power supply	+ 24 V DC ± 10%
	Node only current consumption on + 24 VDC inputs
	40 mA
	Power supply diagnosis
	Green LED PWR NODE / Green LED PWR OUT
Communication	2 M12 5 pins male-female connectors 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
	Maximum nodes number in network
	64 (slave + master)
	Bus maximum recommended length
	100 m at 500 Kbit/s
	Bus diagnosis
	Green / red status LED
Configuration file	Available from our web site http://www.pneumaxspa.com
Protection degree	IP65 when assembled
Temperature °C	-5 ... +50



PROFIBUS DP protocol node kit

PROFIBUS DP node manages 64 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Connection to PROFIBUS DP fieldbus is made via two M12, male and female, 5 pins, type B circular connectors, in parallel between them; connectors pinout is PROFIBUS Interconnection Technology specifications compliant (Version 1.1, August 2001).

Address as well as termination resistor activation are set via DIP-switches.

PROFIBUS DP node is available in two versions with 32 or 48 outputs allocated to solenoid valves on the manifold directly connected to the node.

Such outputs correspond to least significant bytes and their allocation is independent of how many solenoid valves are installed.

Remaining outputs can be used to control the modules.

Byte allocation to additional modules is fully automatic.

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200°Optyma S°	36 mA
2500°Optyma F°	54 mA
2500°Optyma T°	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

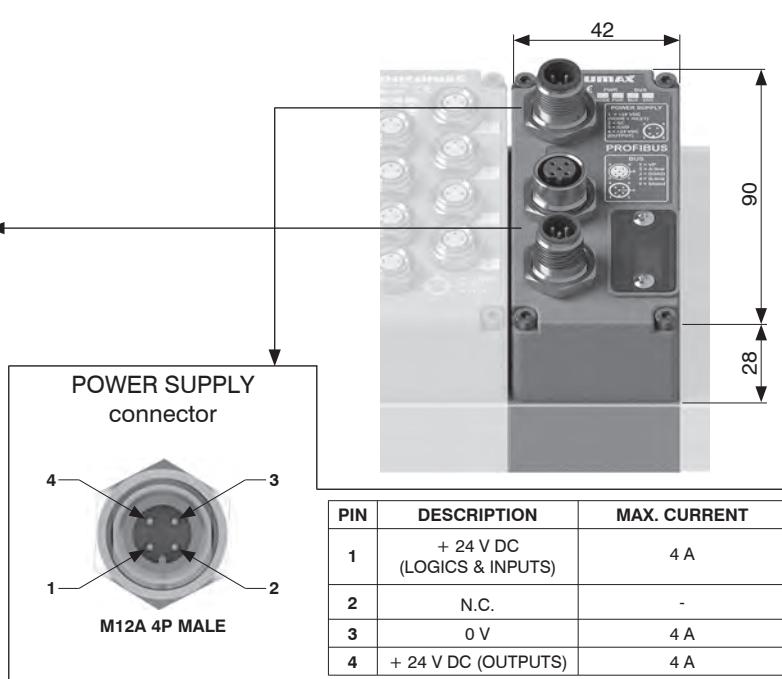
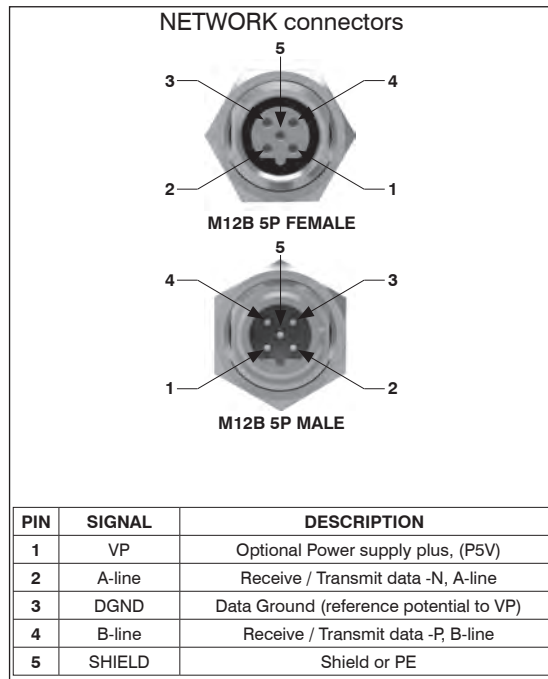
Coding: K5330.64.VPB

VERSION
32 = 32 output bits available for valve connections
48 = 48 output bits available for valve connections



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout



Technical characteristics		
Specifications		PROFIBUS DP
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC \pm 10%
	Node only current consumption on + 24 VDC inputs	70 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 5 pins 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
	Maximum nodes number in network	100 (slave + master)
	Bus maximum recommended length	100 m at 12 Mbit/s - 1200 m at 9,6 Kbit/s
	Bus diagnosis	Green / red status LED
Configuration file		Available from our web site http://www.pneumaxspa.com
Protection degree		IP65 when assembled
Temperature °C		-5 ... +50

EtherNet/IP protocol node kit

EtherNet/IP node manages 128 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Network connection is made via 2 M12 female, type D, 4 pins, circular connectors.

Code K5730.128.48EI provides first 48 outputs, corresponding to least significant 6 bytes, are allocated to the solenoid valve positions, regardless how many they are and how many valves are installed on the manifold directly connected to the node.

Remaining 80 outputs can be used to manage output modules; bytes allocation to additional modules is fully automatic.

Coding: K5730.128.48EI

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

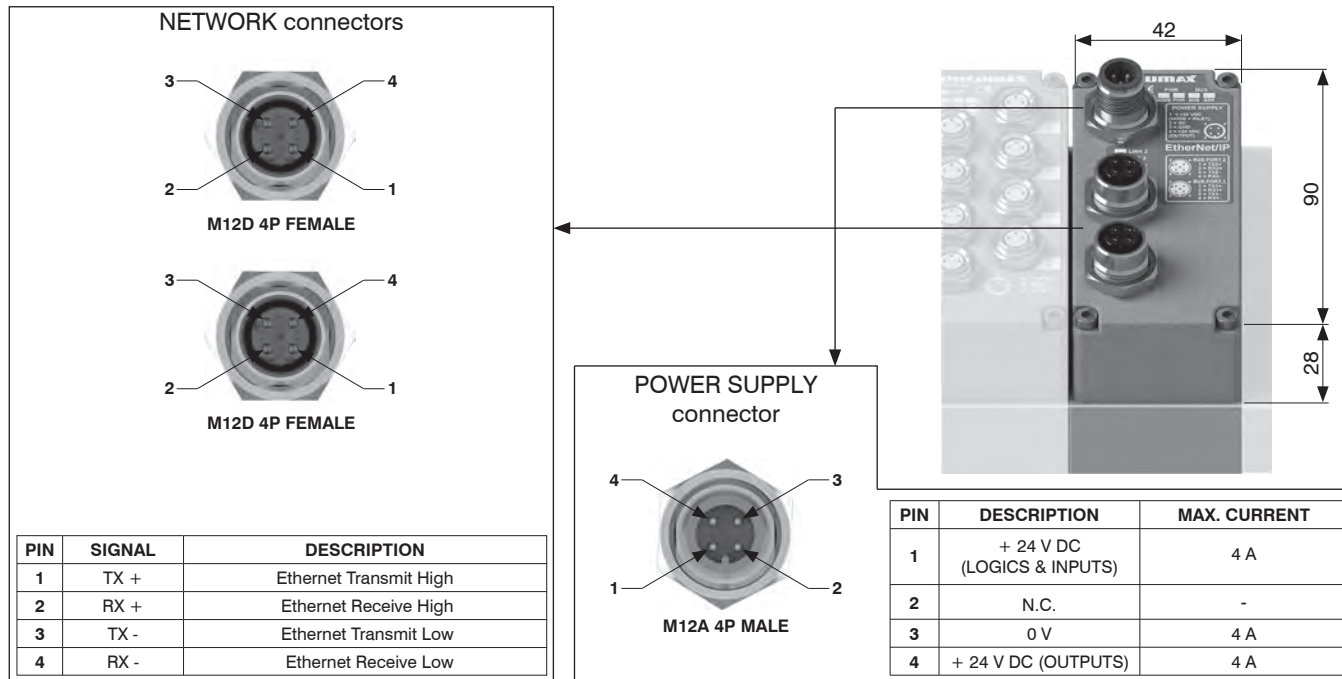
$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

Scheme / Overall dimensions and I/O layout



Technical characteristics		
Case	Reinforced technopolymer	
Power supply	Voltage	+ 24 V DC \pm 10%
	Node only current consumption on + 24 V DC inputs	65 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 4 pins male-female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	Green / red status LED
Configuration file	Available from our web site http://www.pneumaxspa.com	
Protection degree	IP65 when assembled	
Temperature °C	-5 ... +50	



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.



EtherCAT® protocol node kit

EtherCAT® node manages 128 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Network connection is made via 2 M12 female, type D, 4 pins, circular connectors.

Code K5730.128.48EC provides first 48 outputs, corresponding to least significant 6 bytes, are allocated to the solenoid valve positions, regardless how many they are and how many valves are installed on the manifold directly connected to the node.

Remaining 80 outputs can be used to manage output modules; bytes allocation to additional modules is fully automatic.

Coding: K5730.128.48EC

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_EV
2200°Optyma S°	36 mA
2500°Optyma F°	54 mA
2500°Optyma T°	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

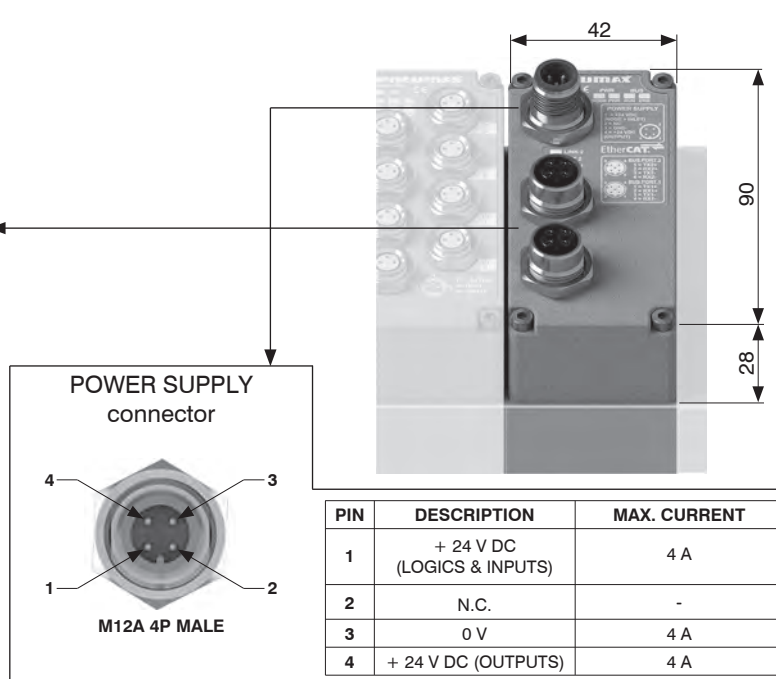
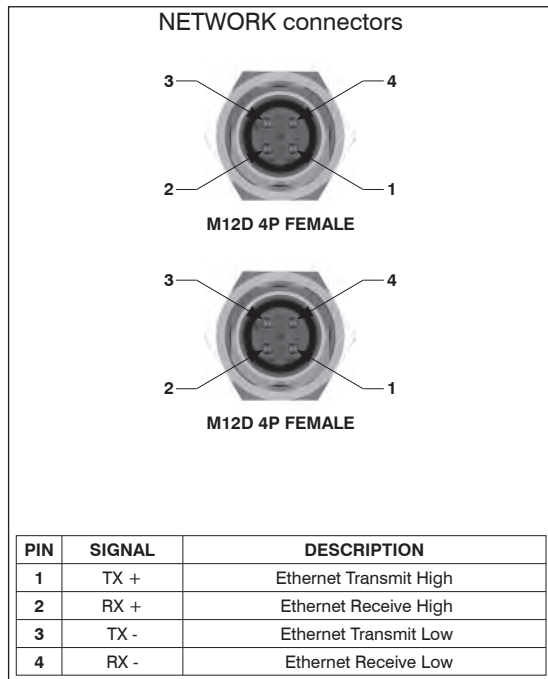
n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.



Scheme / Overall dimensions and I/O layout



Technical characteristics		
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC ± 10%
	Node only current consumption on + 24 V DC inputs	65 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 4 pins male-female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	Green / red status LED
Configuration file		Available from our web site http://www.pneumaxspa.com
Protection degree		IP65 when assembled
Temperature °C		-5 ... +50

PROFINET IO RT protocol node kit

PROFINET IO RT node manages 128 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Network connection is made via 2 M12 female, type D, 4 pins, circular connectors.

Code K5730.128.48PN provides first 48 outputs, corresponding to least significant 6 bytes, are allocated to the solenoid valve positions, regardless how many they are and how many valves are installed on the manifold directly connected to the node.

Remaining 80 outputs can be used to manage output modules; bytes allocation to additional modules is fully automatic.

Coding: K5730.128.48PN

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

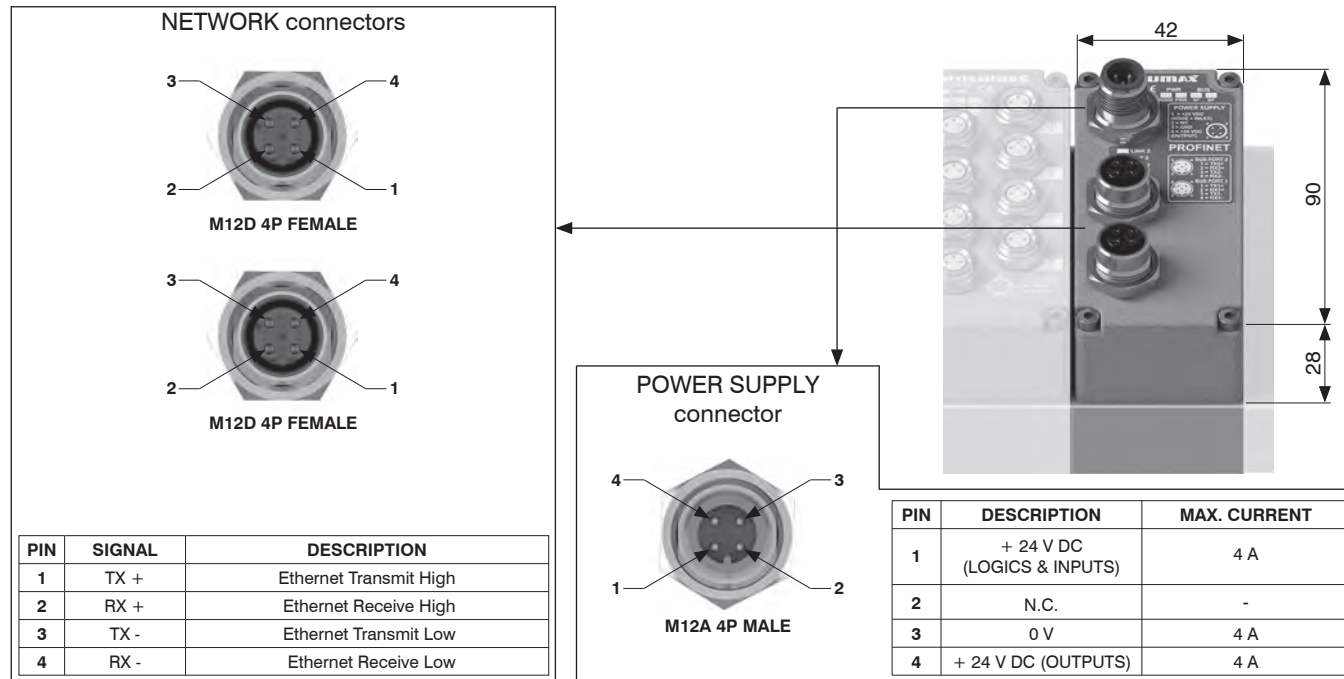
$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

Scheme / Overall dimensions and I/O layout



Technical characteristics		
Case	Reinforced technopolymer	
Power supply	Voltage	+ 24 V DC \pm 10%
	Node only current consumption on + 24 V DC inputs	65 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 4 pins male-female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	Green / red status LED
Configuration file	Available from our web site http://www.pneumaxspa.com	
Protection degree	IP65 when assembled	
Temperature °C	-5 ... +50	



CC-Link IE Field Basic protocol node kit

CC-Link IE Field Basic node manages 128 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Network connection is made via 2 M12 female, type D, 4 pins, circular connectors.

Code K5730.128.48CL provides first 48 outputs, corresponding to least significant 6 bytes, are allocated to the solenoid valve positions, regardless how many they are and how many valves are installed on the manifold directly connected to the node.

Remaining 80 outputs can be used to manage output modules; bytes allocation to additional modules is fully automatic.

Coding: K5730.128.48CL

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_EV
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

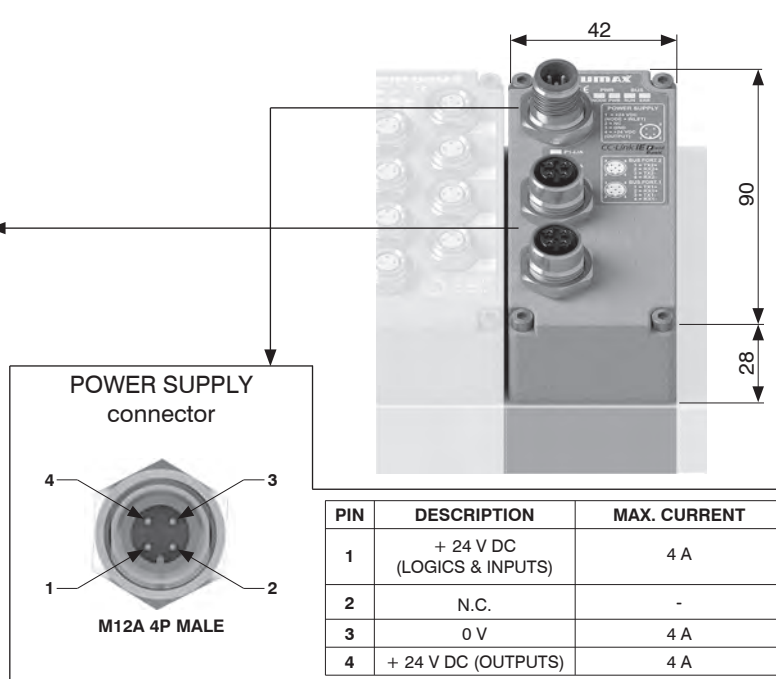
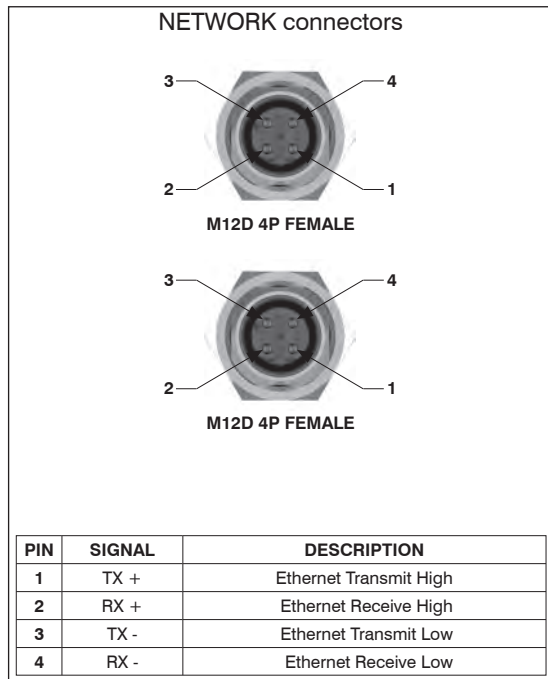
n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.



Scheme / Overall dimensions and I/O layout



Technical characteristics		
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC \pm 10%
	Node only current consumption on + 24 V DC inputs	65 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 4 pins male-female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 Green LED and 1 red status LED + 2 link and activity LEDs*
Configuration file		Available from our web site http://www.pneumaxspa.com
Protection degree		IP65 when assembled
Temperature °C		-5 ... +50

IO-Link protocol interface kit

IO-Link interface manages 64 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Electric power supply and IO-Link connection to the Master are made via M12, male, 5 pins, type A, circular connector, "CLASS B", according to IO-Link specifications.

Electric rails L+/L- supply interface only, while P24/N24 rails supply additional modules and solenoid valves.

Either power supplies are galvanically isolated in the IO-Link interfaces.

IO-Link interface is available in two versions with 32 or 48 outputs allocated to solenoid valves on the manifold directly connected to the node.

Such outputs correspond to least significant bytes and their allocation is independent of how many solenoid valves are installed.

Remaining outputs can be used to control the modules.

Byte allocation to additional modules is fully automatic.

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by pin 2 and pin 5 (P24 / N24).

To compute the maximum current on the P24 / N24 supply, please use the following formula::

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

= maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Coding: K5830.64.VIK

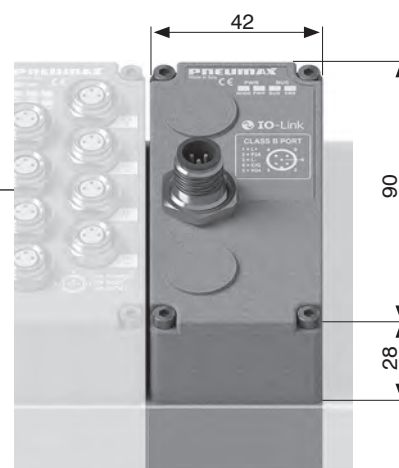
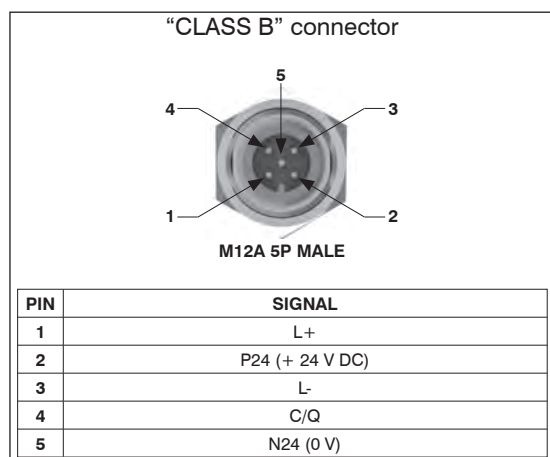
VERSION
V 32 = 32 output bits available for valve connections
48 = 48 output bits available for valve connections



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AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout



Technical characteristics		
Specifications		IO-Link Specification v1.1
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC +/- 10%
	Interface current consumption on + 24 V DC (L+ / L-)	25 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	"Class B" port
	Communication speed	38.4 kbaud/s
	Maximum distance from Master	20 m
	Bus diagnosis	Green / red status LED
	Vendor ID / Device ID	1257 (hex 0x04E9) / 3000 (hex 0xBB8)
Configurations file IODD		Available from our web site http://www.pneumaxspa.com
Protection degree		IP65 when assembled
Temperature °C		-5 ... +50

8 digital inputs module kit M8

M8 digital inputs module provides 8 M8, 3 pins, female connectors.

Inputs have PNP logic, + 24 V DC \pm 10%.

It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit switches, etc.).

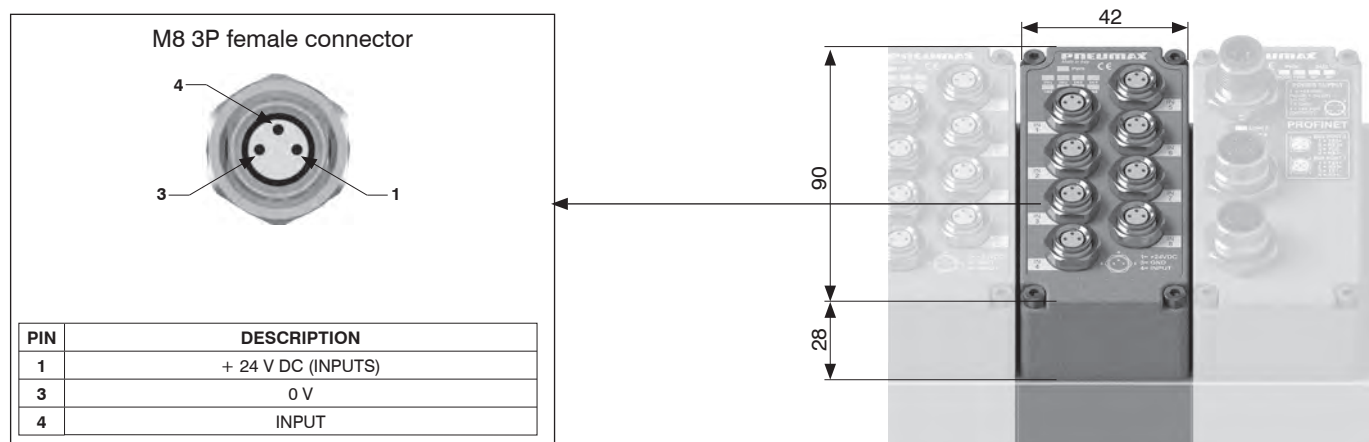
Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

Coding: K5230.08.M8



Technical characteristics	
Maximum current per module	300 mA
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedance	3 k Ω
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

Scheme / Overall dimensions and I/O layout



8 digital inputs module kit M12

M12 digital inputs module provides 4 M12, 5 pins, female connectors.

Inputs have PNP logic, + 24 V DC \pm 10%.

Every connector takes two input channels.

It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit switches, etc.).

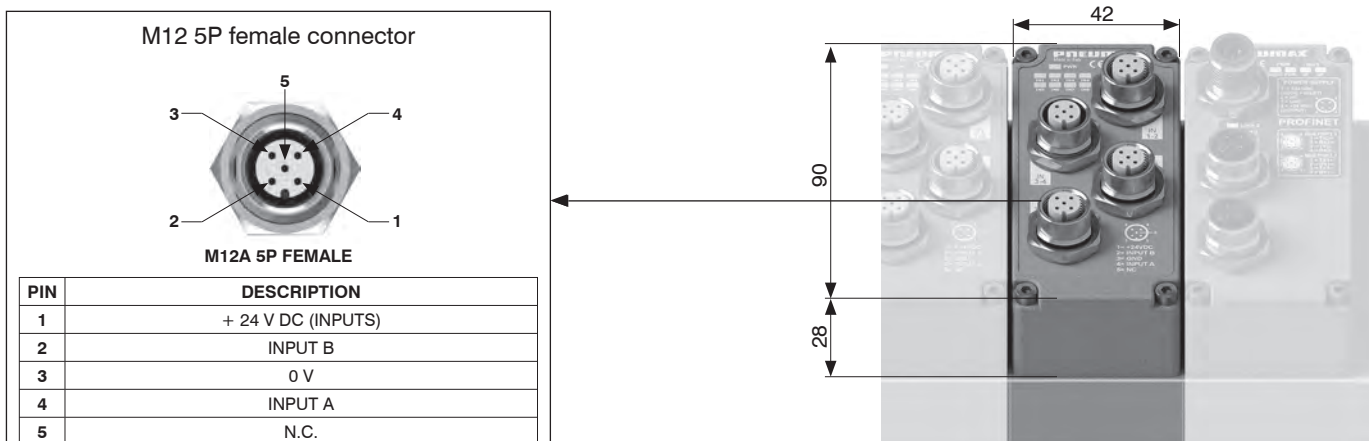
Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

Coding: K5230.08.M12



Technical characteristics	
Maximum current per module	300 mA
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedance	3k Ω
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

Scheme / Overall dimensions and I/O layout



8 digital outputs module kit M8

M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Outputs have PNP logic, + 24 V DC \pm 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4)
or by K5030.M12 additional power supply module, in case it were installed upstream of the outputs module.
Power supply presence is displayed by "PWR OUT" green LED light-on.
Each output has a LED indicator associated which lights up when output's signal status is high.

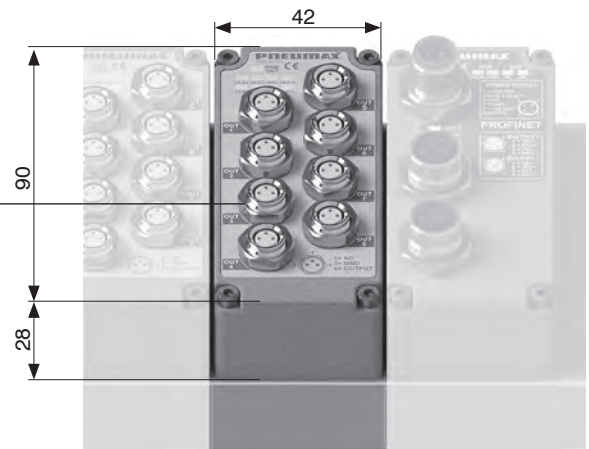
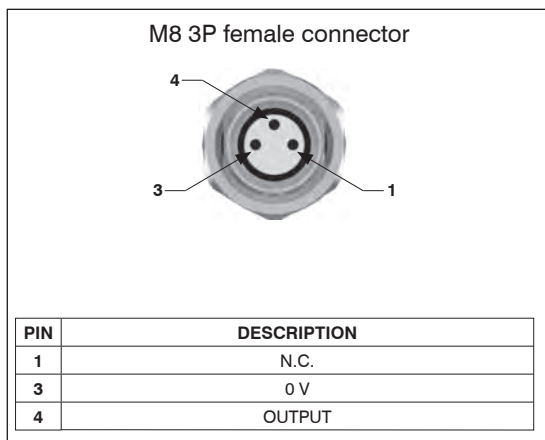
Coding: K5130.08.M8



Technical characteristics

Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	8 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA

Scheme / Overall dimensions and I/O layout



8 digital outputs module kit M12

M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Outputs have PNP logic, + 24 V DC \pm 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4)
or by K5030.M12 additional power supply module, in case it were installed upstream of the outputs module.
Power supply presence is displayed by "PWR OUT" green LED light-on.
Each output has a LED indicator associated which lights up when output's signal status is high.

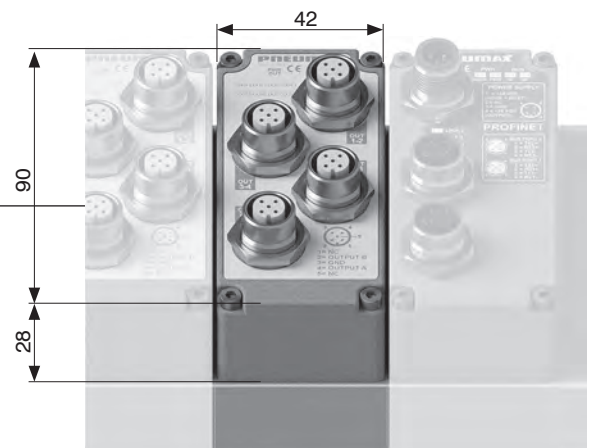
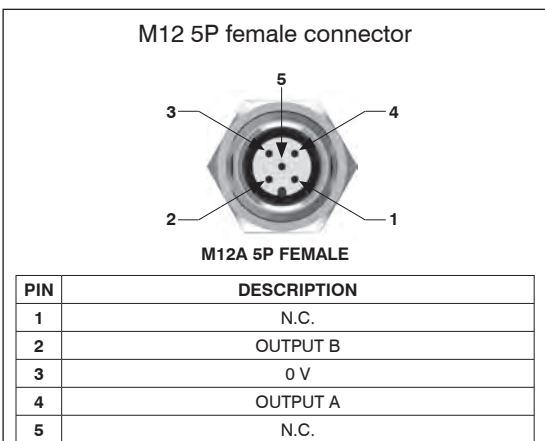
Coding: K5130.08.M12



Technical characteristics

Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	8 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA

Scheme / Overall dimensions and I/O layout



32 digital inputs module kit (37 pins SUB-D connector)

The module provides a SUB-D 37 pins female connector.

Inputs have PNP logic, + 24 V DC \pm 10%.

It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit switches, etc.).

Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

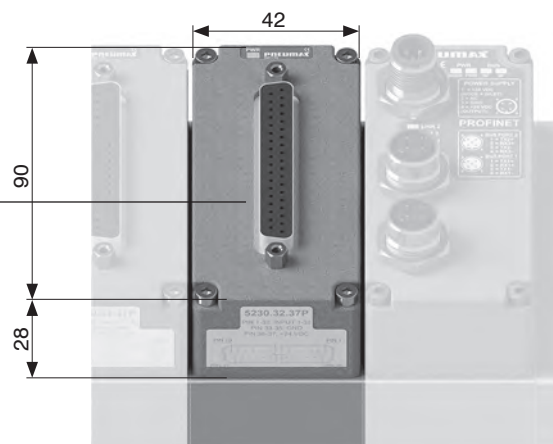
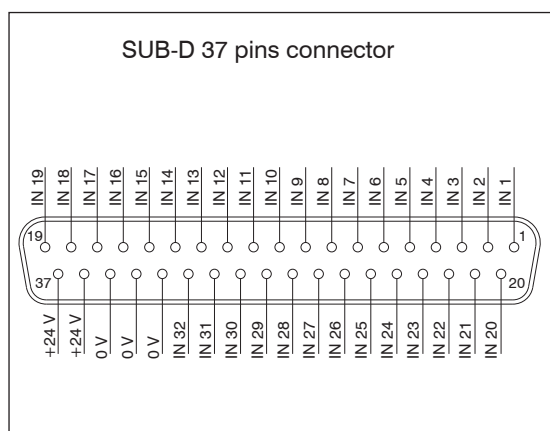
Coding: K5230.32.37P



Technical characteristics

Maximum current per module	1 A
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedance	3 k Ω
Maximum cable length	< 30 m
Input data allocation	32 bit
INPUTS + 24 V DC current consumption of the module only	10 mA

Scheme / Overall dimensions and I/O layout



32 digital outputs module kit (37 pins SUB-D connector)

The module provides a SUB-D 37 pins female connector.

Outputs have PNP logic, + 24 V DC \pm 10%.

Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were installed upstream of the outputs module.

Power supply presence is displayed by "PWR OUT" green LED light-on.

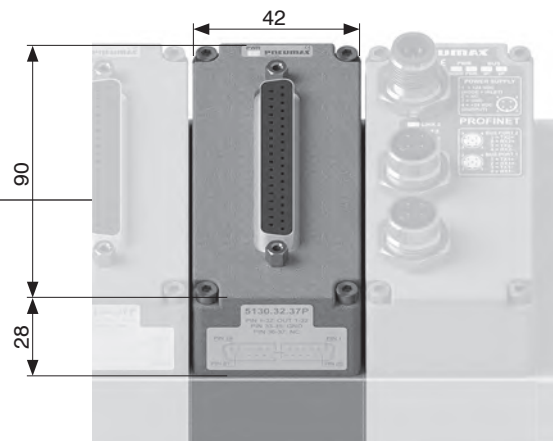
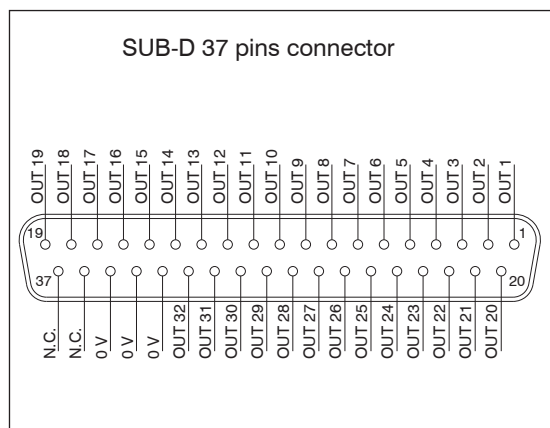
Coding: K5130.32.37P



Technical characteristics

Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	32 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA

Scheme / Overall dimensions and I/O layout



Analogue inputs module kit M8

M8 analogue inputs module converts analogue signals into digital signals and transfers acquired data to field bus, via network node.

Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

Coding: K5230.CS

	CHANNELS
C	2 = 2 channels
	4 = 4 channels
	SIGNAL
	T.00 = VOLTAGE (0-10 V)
S	T.01 = VOLTAGE (0-5 V)
	C.00 = CURRENT (4-20 mA)
	C.01 = CURRENT (0-20 mA)

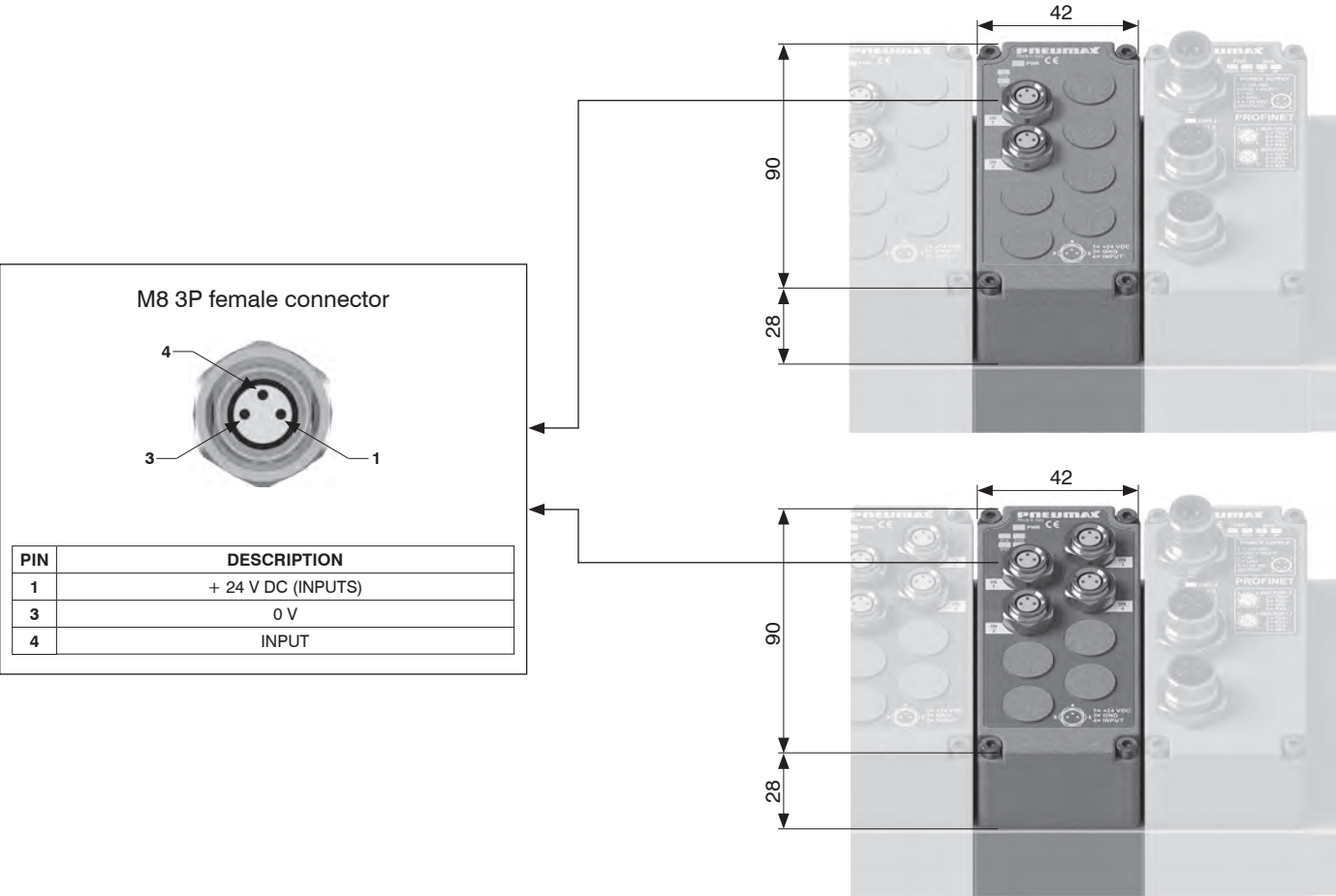
Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Input impedance (voltage inputs)	33 kΩ
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Input data allocation	16 bit per channel
Diagnostic LED	Input signal overcurrent or overvoltage
Accuracy	0,3% F.S.
Overall maximum current 2 channels (pin 1)	300 mA
Overall maximum current 4 channels (pin 1)	750 mA (375 mA for each pair of channels)
INPUTS + 24 V DC current consumption of the module only	15 mA



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Scheme / Overall dimensions and I/O layout





► Analogue outputs module kit M8

M8 analogue outputs module converts output data, received from field bus via network node, into analogue signal. Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were installed upstream of the outputs module.

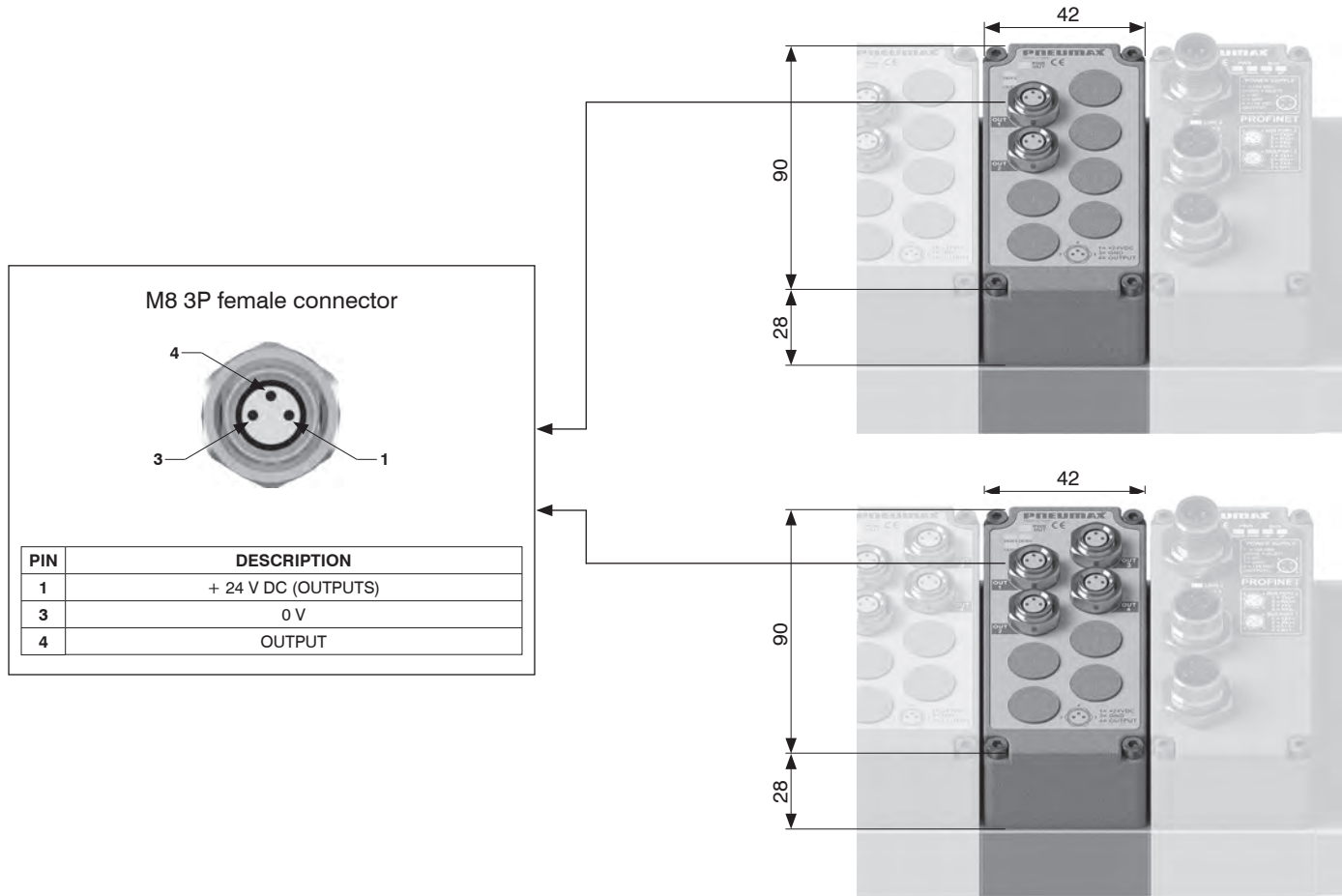
Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Protection (pin 4)	Overcurrent (auto-resettable fuse)
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Output data allocation	16 bit per channel
Diagnostic LED	Output signal overcurrent
Accuracy	0,3% F.S.
Overall maximum current 2 channels (pin 1)	300 mA
Overall maximum current 4 channels (pin 1)	750 mA (375 mA for each pair of channels)
INPUTS + 24 V DC current consumption of the module only	15 mA
OUTPUTS + 24 V DC current consumption of the module only (2 channels)	35 mA
OUTPUTS + 24 V DC current consumption of the module only (4 channels)	70 mA

Coding: K5130.CS

CHANNELS	
C	2 = 2 channels 4 = 4 channels
SIGNAL	
S	T.00 = VOLTAGE (0-10 V) T.01 = VOLTAGE (0-5 V) C.00 = CURRENT (4-20 mA) C.01 = CURRENT (0-20 mA)



Scheme / Overall dimensions and I/O layout



Pt100 inputs module kit

Pt100 inputs module digitizes signals from Pt100 probes and transfers acquired data to field bus, via network node.
It is possible to connect two, three or four wires probes.
Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

Coding: K5230.CP.0T

CHANNELS	
C	2 = 2 channels
	4 = 4 channels
TYPE	
T	0 = Pt100 2 wires
	1 = Pt100 3 wires
	2 = Pt100 4 wires

Technical characteristics	
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Input data allocation	16 bit per channel
Diagnostic LED	Probe presence Temperature out of range
Accuracy	±0,2°C
Probe temperature range	-100°C ... +300°C
INPUTS + 24 V DC current consumption of the module only (2 channels)	25 mA
INPUTS + 24 V DC current consumption of the module only (4 channels)	35 mA

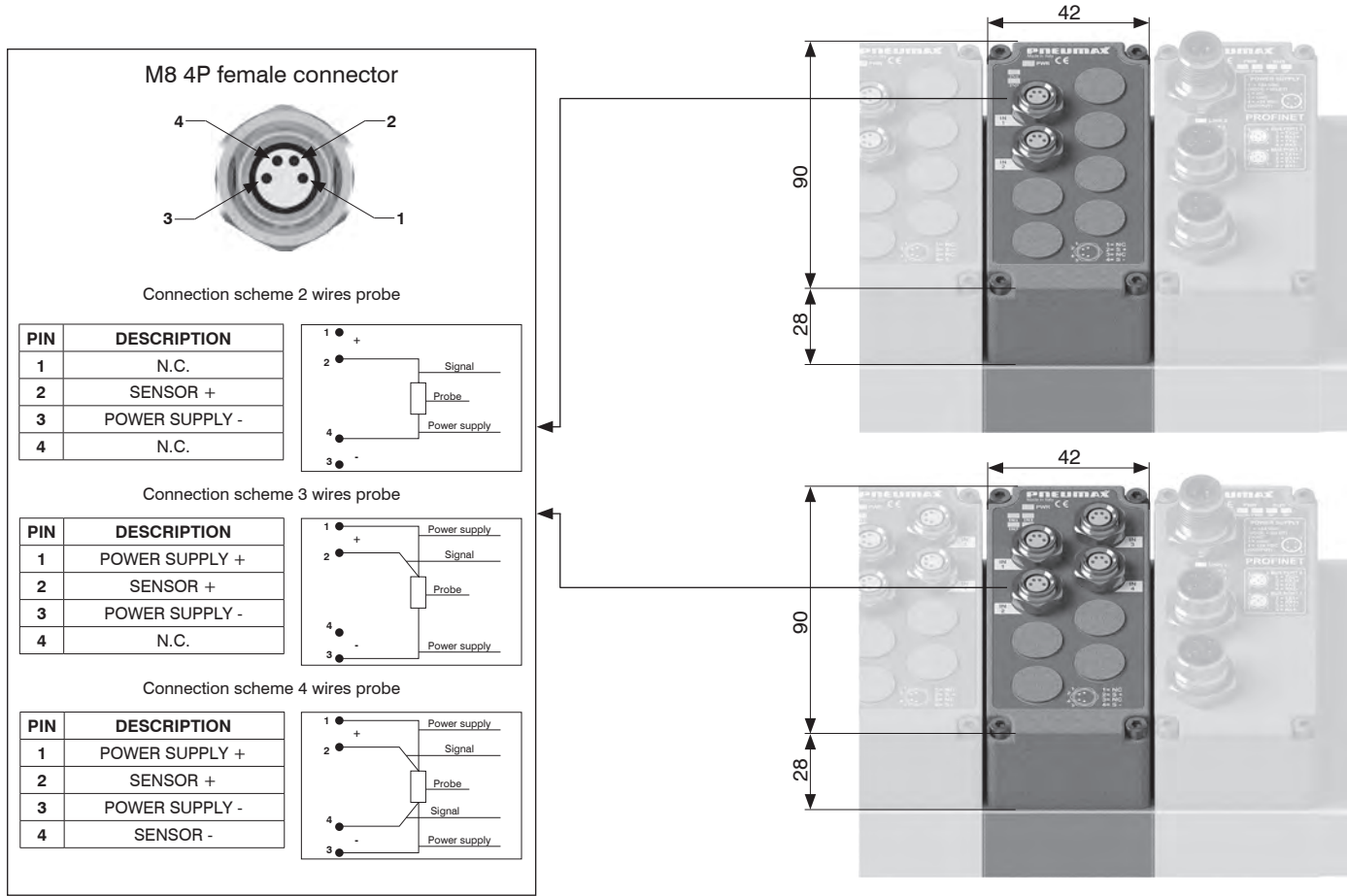
Conversion formula (°C)

Temperature (°C) = $\left(\frac{\text{Points}}{4095} \times 400\right) - 100$



AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout



Additional power supply module kit

Additional power supply module supplies additional electric power for downstream optional modules, where "downstream" means farther from serial node, **resetting the current limits of the network node / IO-Link interface.**

Electric connection of the module to external power supply unit occurs via an M12 4 pins type A male connector.

M12 connector has two different pins to power up logics and inputs (Pin 1) and outputs (Pin 4).

Presence of each power supply rail is indicated by corresponding green LED.

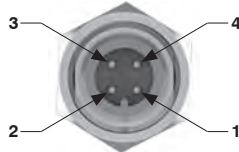
When using IO-Link interface, the additional power supply module is useful for separating the module power supplies of input from the output modules placed downstream.

Coding: K5030.M12



Scheme / Overall dimensions and I/O layout

M12 4P male connector



M12A 4P MALE

PIN	DESCRIPTION	MAX. CURRENT
1	+ 24 V DC (LOGICS & INPUTS)	4 A
2	N.C.	-
3	0 V	4 A
4	+ 24 V DC (OUTPUTS)	4 A

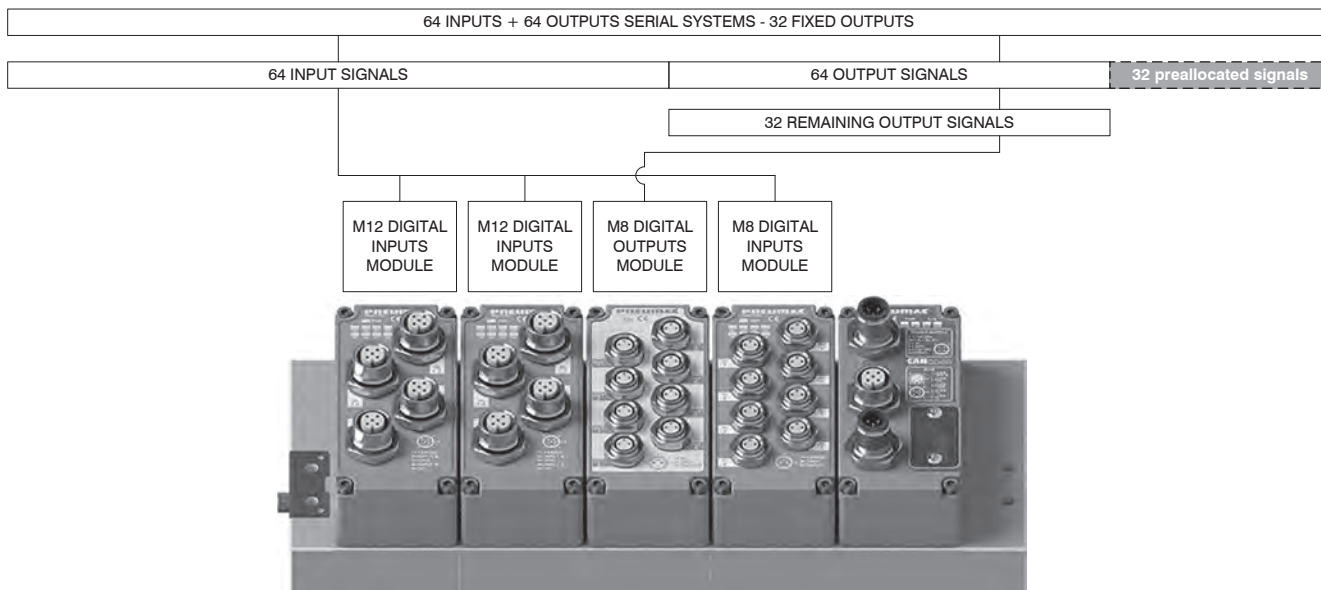
Electric power supply provided by additional power supply module

Electric power supply provided by serial system

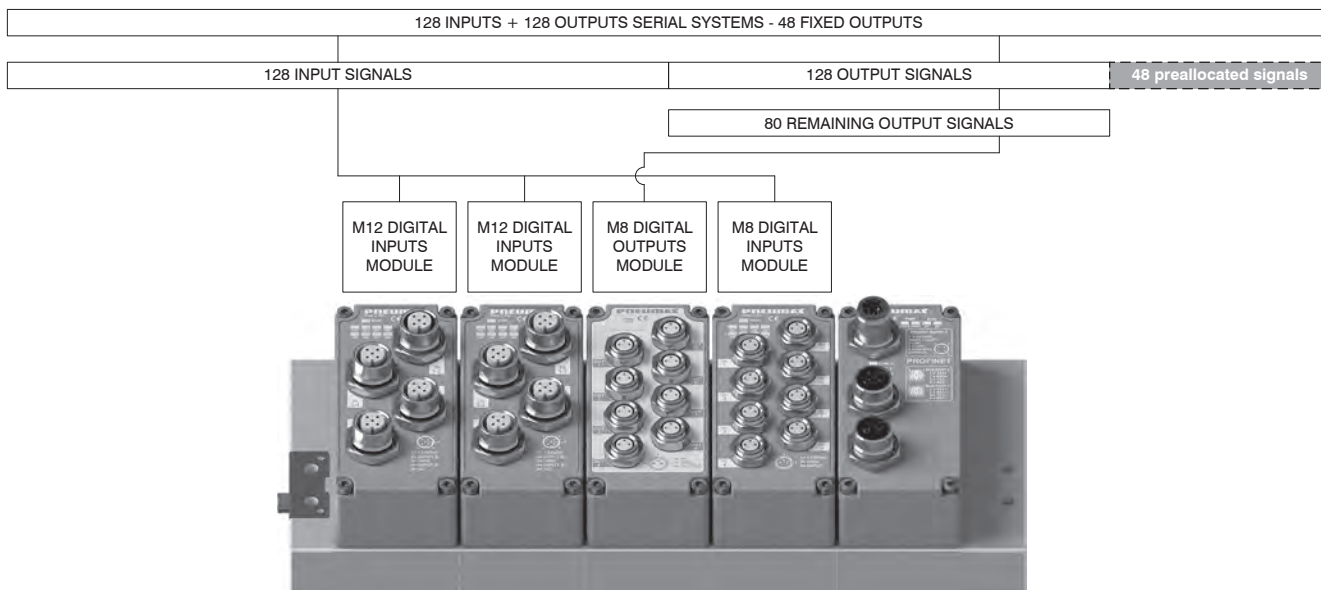


Signal management

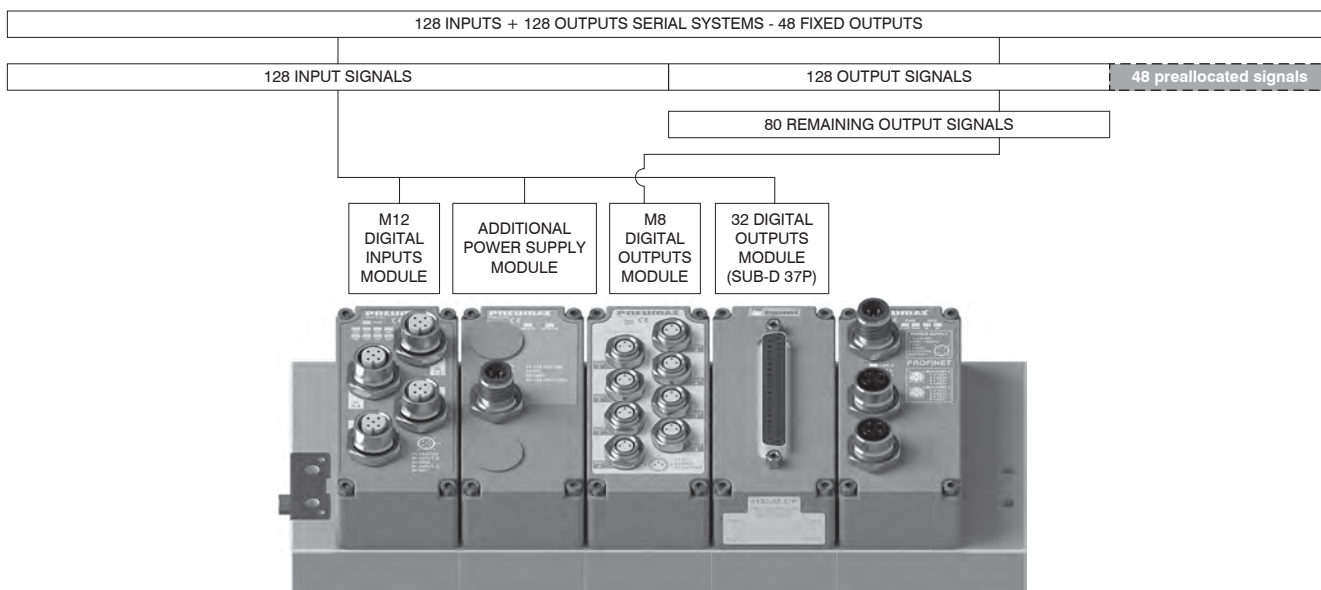
64 INPUT + 64 OUTPUT serial systems - 32 fixed OUTPUT (Ex. PROFIBUS DP and CANopen®)



128 INPUT + 128 OUTPUT serial systems - 48 fixed OUTPUT (Ex. EtherNet/IP - EtherCAT® - PROFINET IO RT)



128 INPUT + 128 OUTPUT serial systems - 48 fixed OUTPUT (Ex. EtherNet/IP - EtherCAT® - PROFINET IO RT)



POWER SUPPLY connectors

Straight connector M12A 4P female

Coding: 5312A.F04.00



Upper view slave connector

PIN	DESCRIPTION
1	+ 24 V DC (LOGICS AND INPUTS)
2	N.C.
3	0 V
4	+ 24 V DC (OUTPUTS)

Power supply socket

NETWORK connectors

Straight connector M12A 5P female

Coding: 5312A.F05.00



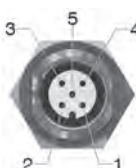
Upper view slave connector

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

Socket for bus CANopen® and IO-Link

Straight connector M12A 5P male

Coding: 5312A.M05.00



Upper view slave connector

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

Plug for bus CANopen®

Straight connector M12D 4P male

Coding: 5312D.M04.00



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

Plug for bus EtherCAT®, PROFINET IO RT and EtherNet/IP

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

Straight connector M12B 5P female

Coding: 5312B.F05.00



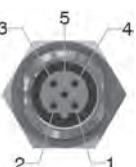
Upper view slave connector

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

Socket for bus PROFIBUS DP

Straight connector M12B 5P male

Coding: 5312B.M05.00



Upper view slave connector

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

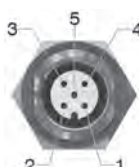
Socket for bus PROFIBUS DP

INPUTS connectors

Straight connector M12A 5P male

Coding: 5312A.M05.00

Plug for inputs modules



PIN	DESCRIPTION
1	+ 24 V DC
2	INPUT B
3	0 V
4	INPUT A
5	N.C.

Upper view slave connector

Plugs

M12 plug

Coding: 5300.T12



Straight connector M8 3P male

Coding: 5308A.M03.00

Plug for inputs modules



PIN	DESCRIPTION
1	+ 24 V DC
4	INPUT
3	0 V

Upper view slave connector

M8 plug

Coding: 5300.T08



Series 2200 Optyma-S EVO



2200 SERIES Optyma-S EVO SOLENOID VALVES MANIFOLD

- Increased flexibility
- Digital and analogue I/O modules
- Manufactured in technopolymer
- Wide range of communication protocols

CANopen

PROFIBUS

PROFIBUS

EtherCAT

EtherNet/IP

IO-Link

CC-Link IE Basic

WE SPEAK EVO

The Optyma-S series becomes EVO and interfaces with the new PX series modular electronic system while still retaining all of its technical advantages. This is enriched with new features that further extend the flexibility of the product:

- Controls up to 48 electrical signals
- Manifold mounted proportional regulators
- Electro-pneumatic shut-off module

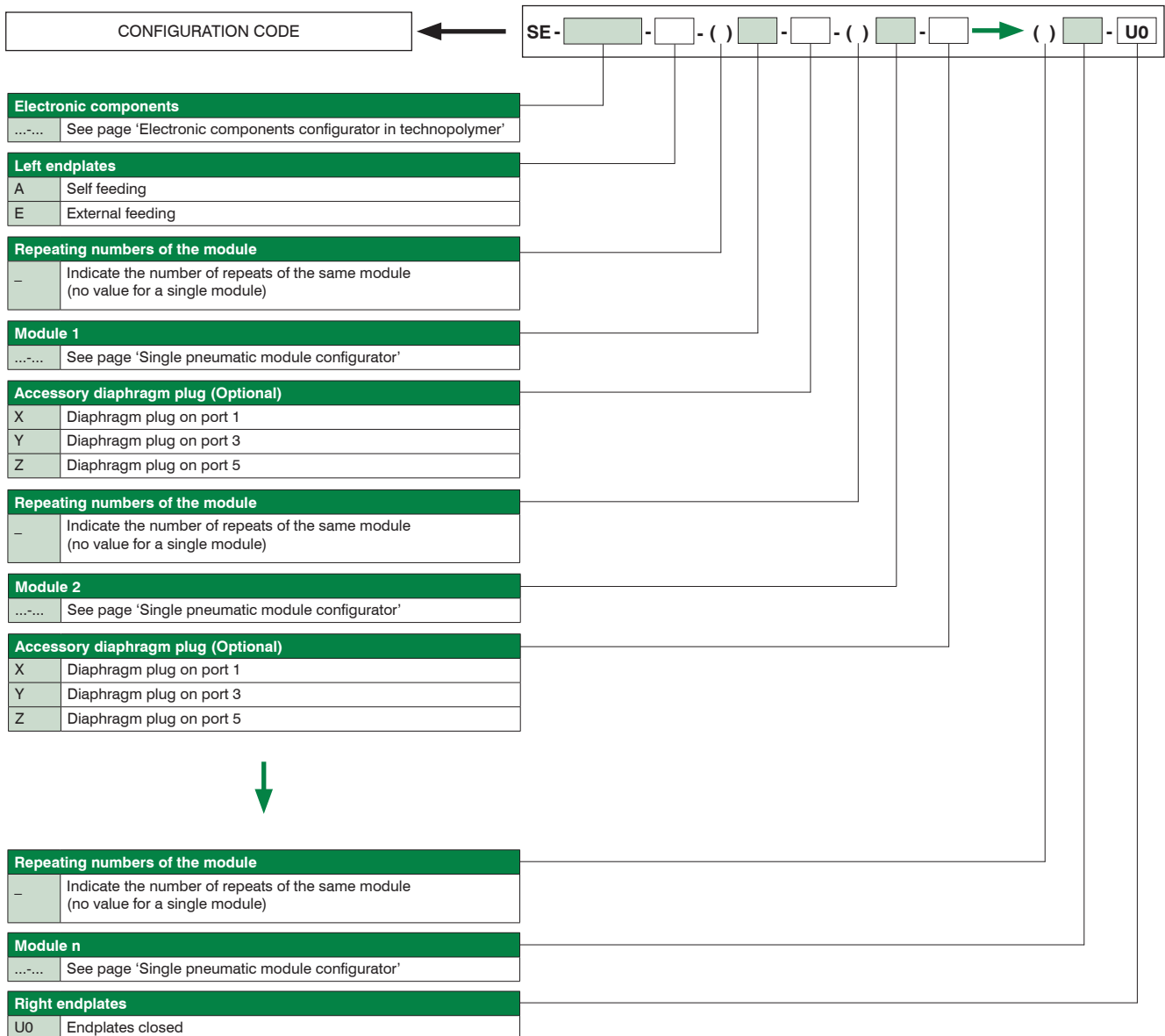
Construction characteristics

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

Operational characteristics

Supply voltage	+ 24 V DC $\pm 10\%$
Pilot consumption	1,3W nominal in energy saving mode
Pilot working pressure (12-14)	from 2,5 to 7 bar max.
Valve working pressure [1]	from vacuum to 10 bar max.
Operating temperature	from -5°C to +50°C
Protection degree	IP65
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous

Rules and configuration scheme



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Configurable on Cadenas platform



Note:

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

- 48 if a serial node or IO-Link interface is used.
- 40 if a 44-pole multi-pin is used.
- 32 if a 37-pole multi-pin module is used.
- 24 if a 25-pole multi-pin module is used.

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

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

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

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

If one or more ports must be interrupted more than once, the addition of the intermediate supply/discharge module is necessary.



Electronic components configurator in technopolymer

1
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Type	
P	Technopolymer

Multi-pin electrical connection	
MP	2 Multi-pin, PNP 24 V DC 25 poles
	3 Multi-pin, PNP 24 V DC 37 poles
	4 Multi-pin, PNP 24 V DC 44 poles
MN	2 Multi-pin, NPN 24 V DC 25 poles
	3 Multi-pin, NPN 24 V DC 37 poles
	4 Multi-pin, NPN 24 V DC 44 poles
MA	2 Multi-pin, 24 V AC 25 poles
	3 Multi-pin, 24 V AC 37 poles
	4 Multi-pin, 24 V AC 44 poles

Electrical connection	
C3	CANopen® node 64 IN - 64 OUT (32 fixed)
C4	CANopen® node 64 IN - 64 OUT (48 fixed)
P3	PROFIBUS DP node 64 IN - 64 OUT (32 fixed)
P4	PROFIBUS DP node 64 IN - 64 OUT (48 fixed)
I4	EtherNet/IP node 128 IN - 128 OUT (48 fixed)
A4	EtherCAT® node 128 IN - 128 OUT (48 fixed)
N4	PROFINET IO RT node 128 IN - 128 OUT (48 fixed)
G4	CC-Link IE Field Basic node 128 IN - 128 OUT (48 fixed)
K3	IO-Link interface 64 IN - 64 OUT (32 fixed)
K4	IO-Link interface 64 IN - 64 OUT (48 fixed)

Electrical connection accessories	
	Without DIN rail fixing
G	With DIN rail fixing

Repeating numbers of the module	
	Indicate the number of repeats of the same module (no value for a single module)

Inputs module - Analog / Digital (EXCLUDED WITH MP)	
D8	8 M8 digital inputs module
D12	8 M12 digital inputs module
D3	32 digital inputs SUB-D 37 poles
T1	2 analogue inputs 0-5V module (voltage signal)
T2	2 analogue inputs 0-10V module (voltage signal)
T3	4 analogue inputs 0-5V module (voltage signal)
T4	4 analogue inputs 0-10V module (voltage signal)
C1	2 analogue inputs 0-20mA module (current signal)
C2	2 analogue inputs 4-20mA module (current signal)
C3	4 analogue inputs 0-20mA module (current signal)
C4	4 analogue inputs 4-20mA module (current signal)
P1	2 Pt100 2 wires inputs module
P2	2 Pt100 3 wires inputs module
P3	2 Pt100 4 wires inputs module
P4	4 Pt100 2 wires inputs module
P5	4 Pt100 3 wires inputs module
P6	4 Pt100 4 wires inputs module

Outputs module - Analog / Digital	
M8	8 M8 digital outputs module
M12	8 M12 digital outputs module
M3	32 digital outputs SUB-D 37 poles
V1	2 analogue outputs 0-5V module (voltage signal)
V2	2 analogue outputs 0-10V module (voltage signal)
V3	4 analogue outputs 0-5V module (voltage signal)
V4	4 analogue outputs 0-10V module (voltage signal)
L1	2 analogue outputs 0-20mA module (current signal)
L2	2 analogue outputs 4-20mA module (current signal)
L3	4 analogue outputs 0-20mA module (current signal)
L4	4 analogue outputs 4-20mA module (current signal)

Additional modules (Optional)	
P12	M12 additional power supply module

Module accessories	
	Without DIN rail fixing
G	With DIN rail fixing



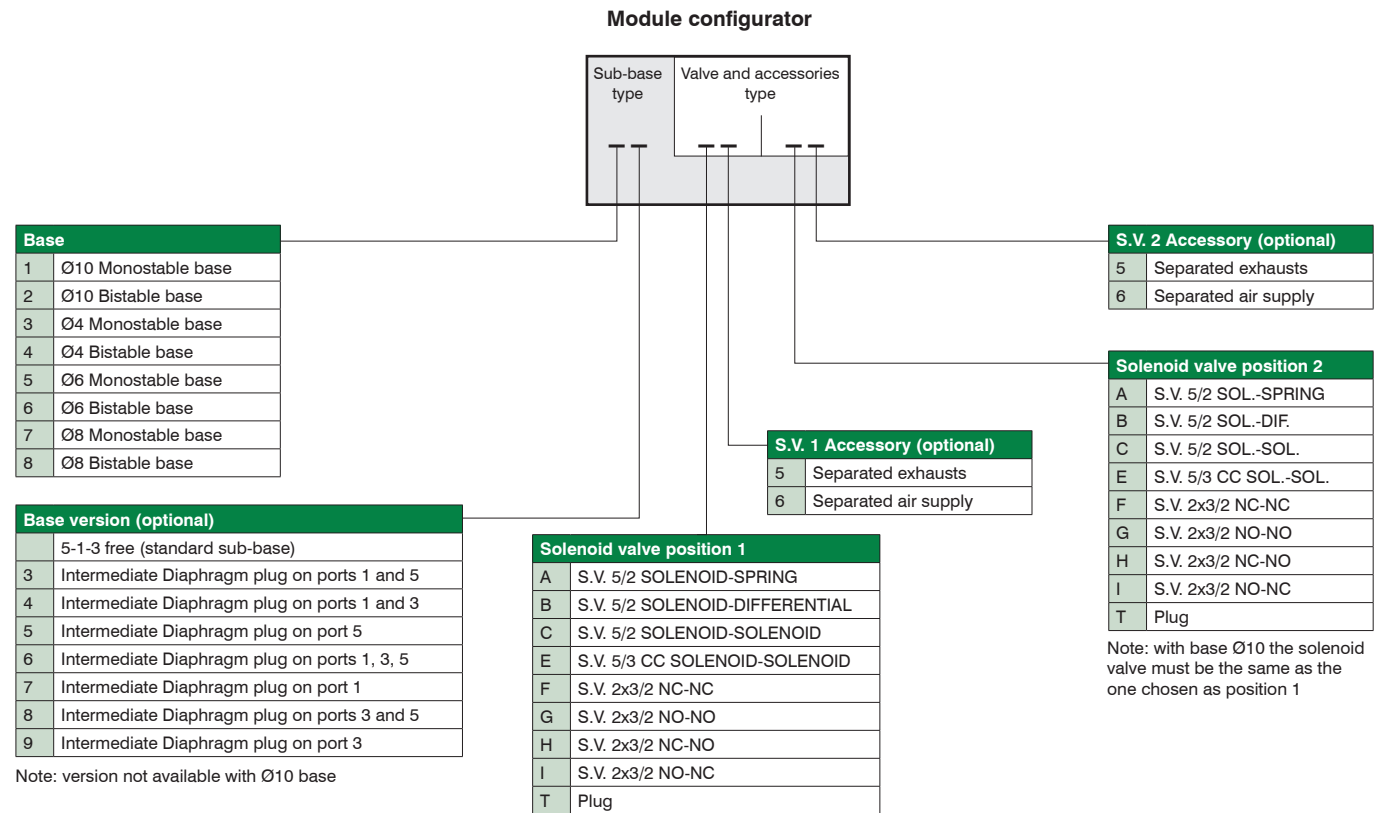
SINGLE
ELECTRIC MODULE
CONFIGURATION

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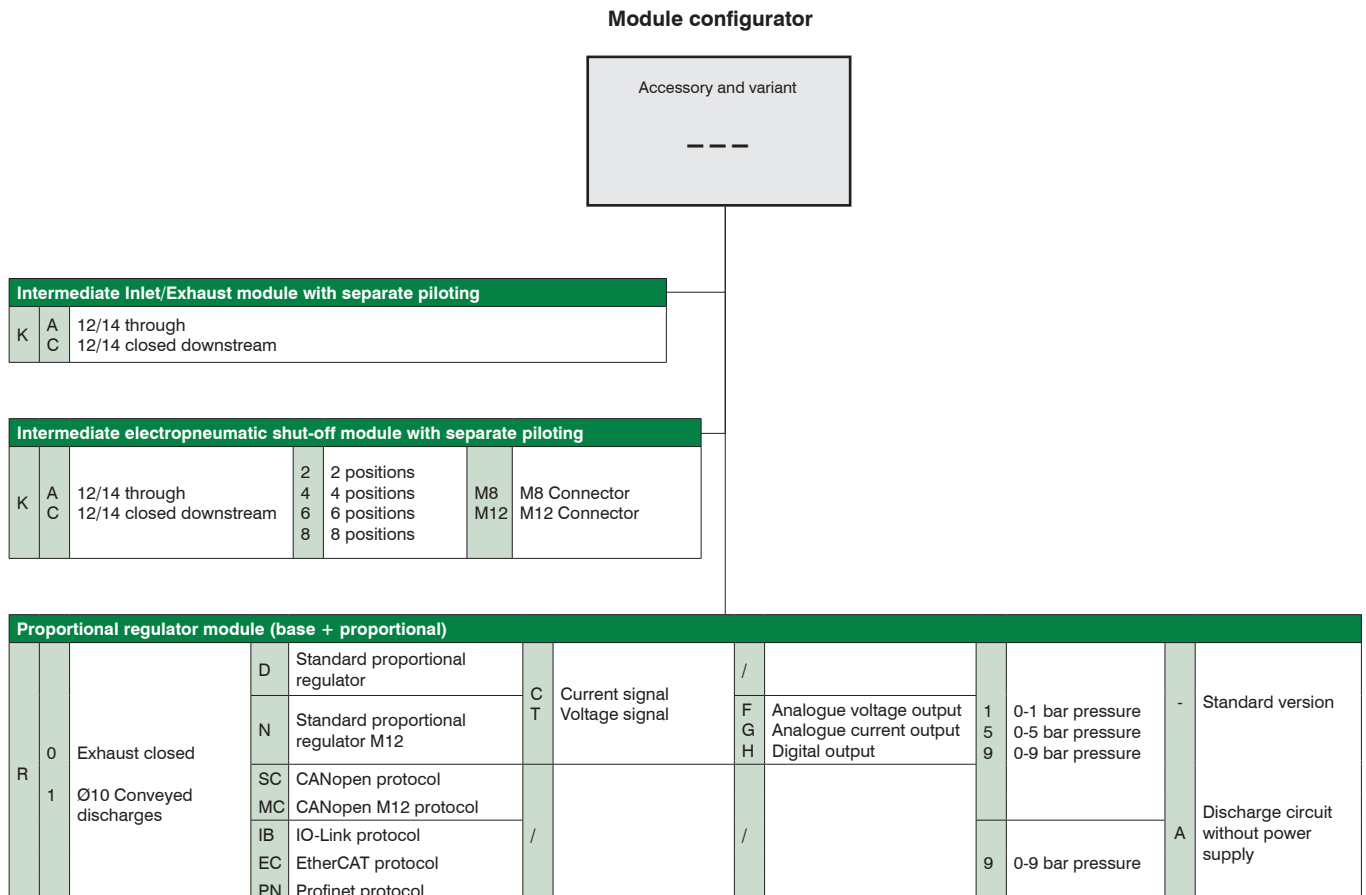
Refer to the current limits indicated in the pages relating to the nodes / IO-Link interface

2 positions base module configurator



1
AIR DISTRIBUTION

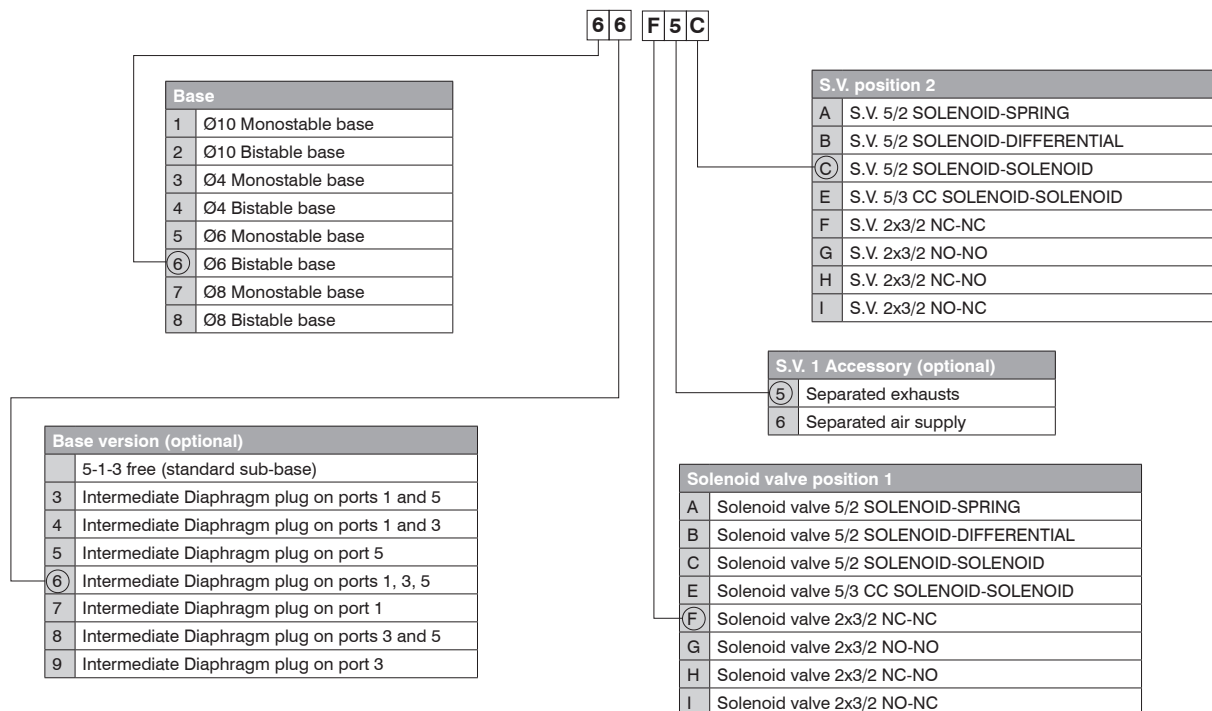
Accessory module configurator



Configuration example of single pneumatic module:

Ø6 Bistable base, intermediate diaphragm on ports 1,3 and 5, 2x3/2 NC-NC Solenoid valve with individual exhaust accessory, 5/2 Solenoid-Solenoid valve

1
AIR DISTRIBUTION

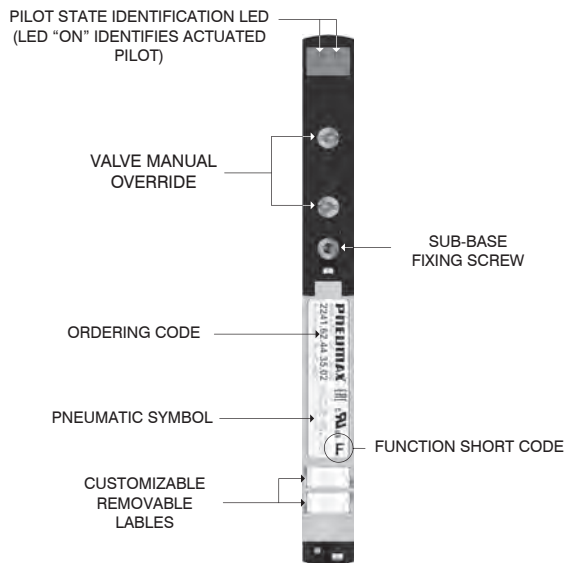


Configuration example of complete group:

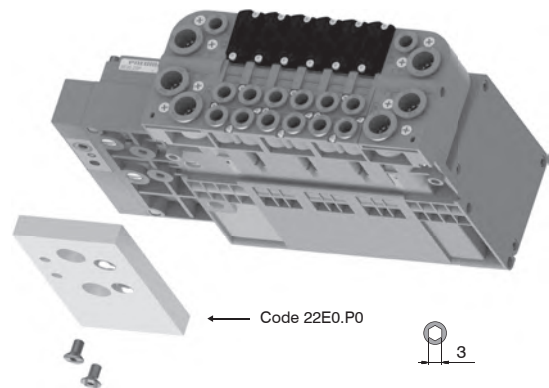
- Technopolymer PX3 serial system (P-I4-D12-M12-D8G)
- Left endplates - External feeding (E)
- Ø6 Bistable base with (6HF) Solenoid valve
- Ø6 Bistable base with (6IE) Solenoid valve
- Ø4 Monostable base with (3AA) Solenoid valve
- Ø4 Monostable base with (3BB) Solenoid valve
- Ø8 Bistable base with (8FI) Solenoid valve
- Ø8 Bistable base with (8HE) Solenoid valve
- Right endplate closed (U0)



SE-P-I4-D12-M12-D8G-E-6HF-6IE-3AA-3BB-8FI-8HE-U0

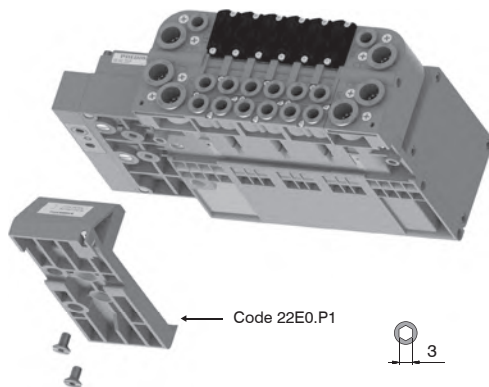


Offset compensation plate



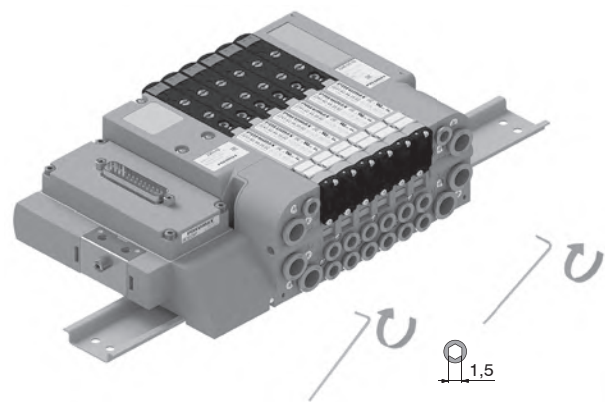
Attention: This accessory is supplied on the manifold unless otherwise stated. This is not compatible for DIN rail mounting.

DIN rail mounting support plate

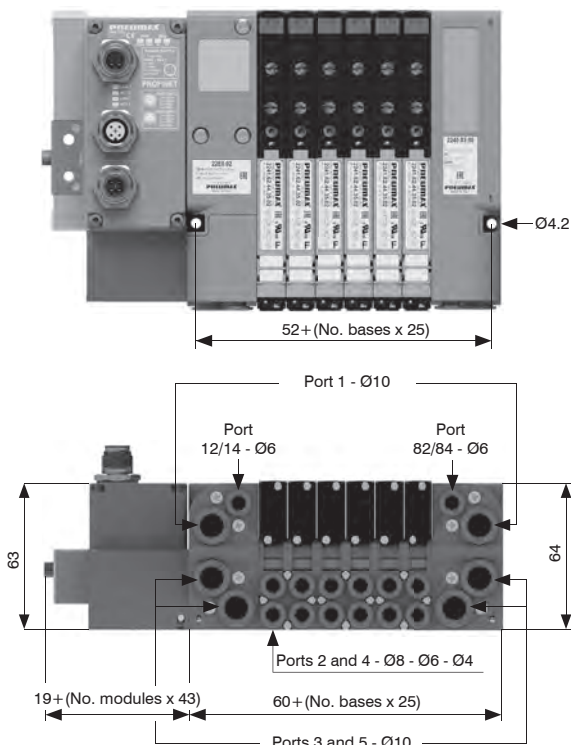


Attention: This must be included when creating the manifold configuration. Exclude the offset compensation plate.

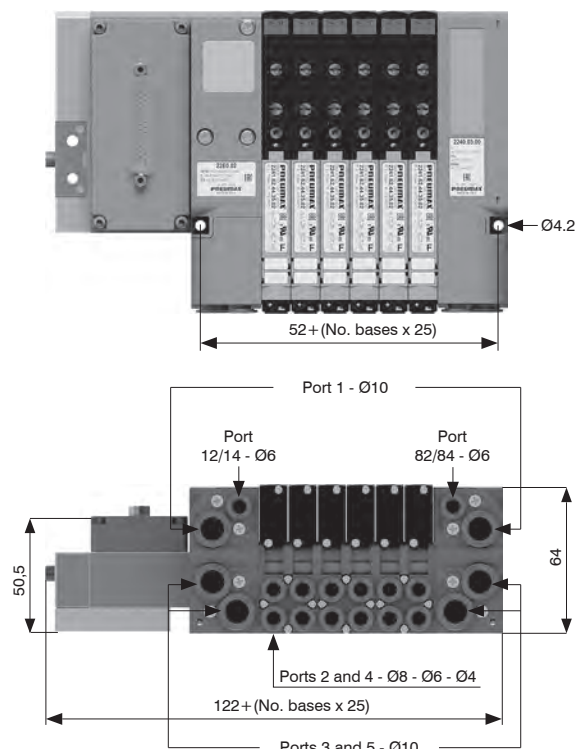
DIN rail fixing



Supply ports and maximum possible size according to valves used Serial system node version



Multi-pin version



Manual override actuation

Instable function:

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



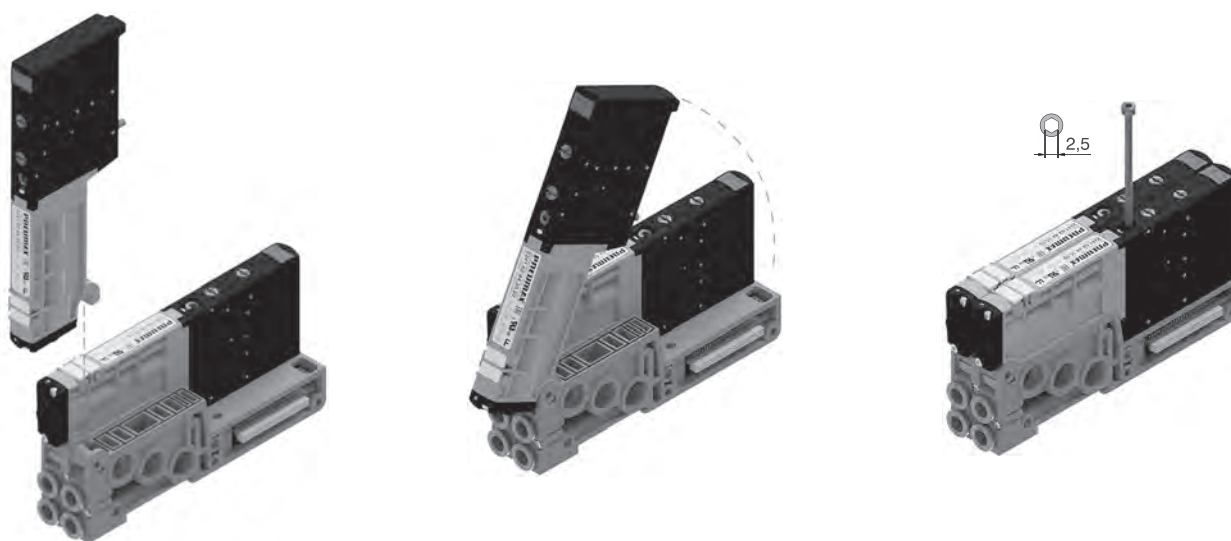
Bistable function:

Push and turn to get the bistable function



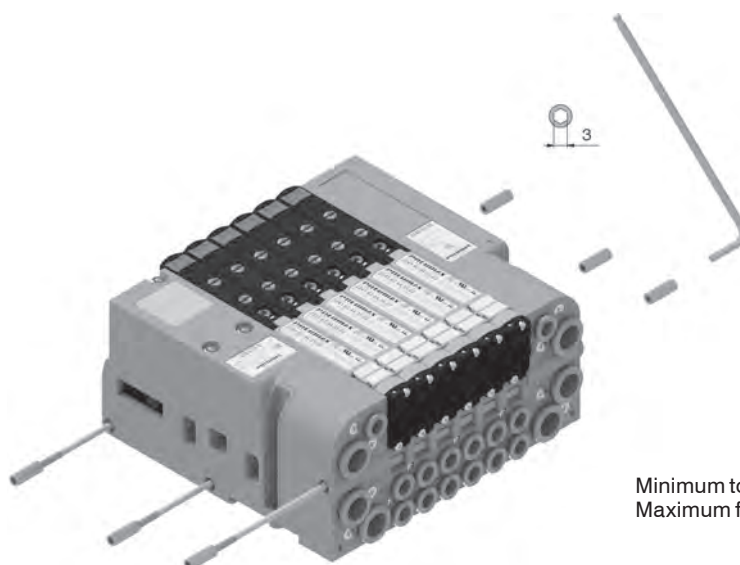
Note: we recommend the manual override is returned to it's original position when not in use

Solenoid valves installation



Note: Torque moment 0,8 Nm

Sub-base assembly



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

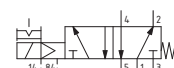
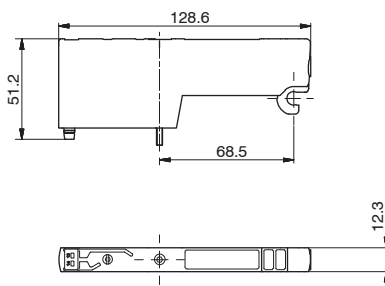
Solenoid-Spring

Coding: 2241.52.00.39.

Technical characteristics		
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous	
Working pressure (bar)	From vacuum to 10	
Pilot pressure (bar)	2,5 ... 7	
Temperature °C	-5 ... +50	
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	with modular base, tube $\varnothing 4$	140
	with modular base, tube $\varnothing 6$	400
	with modular base, tube $\varnothing 8$	550
	with high flow rate modular base (2 places) $\varnothing 10$	900
Response time according to ISO 12238, activation time (ms)		15
Response time according to ISO 12238, deactivation time (ms)		20

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

SHORT FUNCTION CODE "A"
Weight 67 g



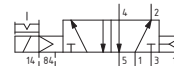
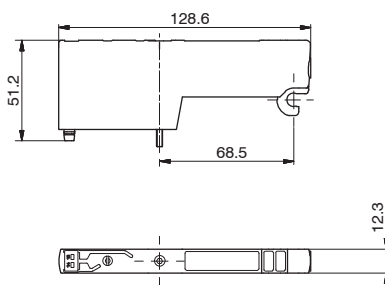
Solenoid-Differential

Coding: 2241.52.00.36.

Technical characteristics		
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous	
Working pressure (bar)	From vacuum to 10	
Pilot pressure (bar)	2,5 ... 7	
Temperature °C	-5 ... +50	
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	with modular base, tube $\varnothing 4$	140
	with modular base, tube $\varnothing 6$	400
	with modular base, tube $\varnothing 8$	550
	with high flow rate modular base (2 places) $\varnothing 10$	850
Response time according to ISO 12238, activation time (ms)		20
Response time according to ISO 12238, deactivation time (ms)		25

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

SHORT FUNCTION CODE "B"
Weight 67 g



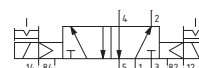
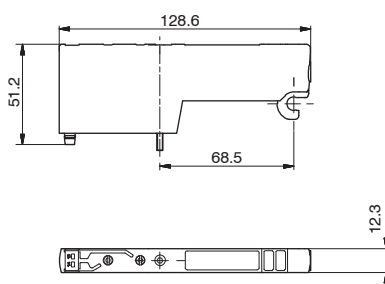
Solenoid-Solenoid

Coding: 2241.52.00.35.

Technical characteristics		
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous	
Working pressure (bar)	From vacuum to 10	
Pilot pressure (bar)	2,5 ... 7	
Temperature °C	-5 ... +50	
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	with modular base, tube $\varnothing 4$	140
	with modular base, tube $\varnothing 6$	400
	with modular base, tube $\varnothing 8$	550
	with high flow rate modular base (2 places) $\varnothing 10$	900
Response time according to ISO 12238, activation time (ms)		10
Response time according to ISO 12238, deactivation time (ms)		10

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

SHORT FUNCTION CODE "C"
Weight 67 g



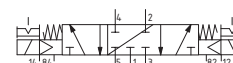
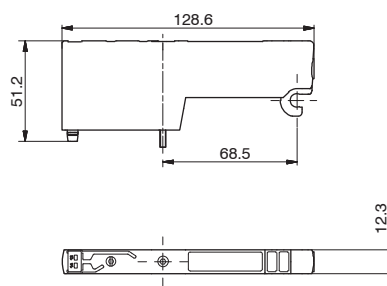
Solenoid-Solenoid 5/3 (Closed centres)

Coding: 2241.53.31.35.

Technical characteristics		
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous	
Working pressure (bar)	From vacuum to 10	
Pilot pressure (bar)	2,5 ... 7	
Temperature °C	-5 ... +50	
Flow rate at 6 bar with $\Delta p=1$ (l/min)	with modular base, tube $\varnothing 4$	140
	with modular base, tube $\varnothing 6$	300
	with modular base, tube $\varnothing 8$	400
	with high flow rate modular base (2 places) $\varnothing 10$	600
Response time according to ISO 12238, activation time (ms)		15
Response time according to ISO 12238, deactivation time (ms)		20

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

SHORT FUNCTION CODE "E"
Weight 83 g



Solenoid-Solenoid 2x3/2

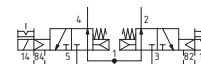
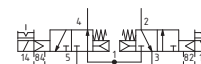
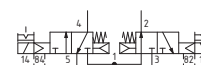
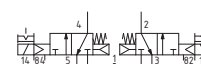
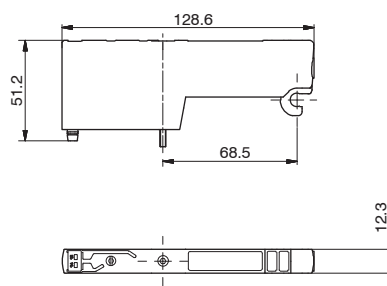
Coding: 2241.62. 35.

Technical characteristics		
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous	
Working pressure (bar)	From vacuum to 10	
Pilot pressure (bar)	$\geq 3 + (0,2 \times \text{inlet pressure})$	
Temperature °C	-5 ... +50	
Flow rate at 6 bar with $\Delta p=1$ (l/min)	with modular base, tube $\varnothing 4$	140
	with modular base, tube $\varnothing 6$	360
	with modular base, tube $\varnothing 8$	420
	with high flow rate modular base (2 places) $\varnothing 10$	650
Response time according to ISO 12238, activation time (ms)		15
Response time according to ISO 12238, deactivation time (ms)		25

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

SHORT FUNCTION CODE:
NC-NC (5/3 Open centres) = "F"
N.O. - N.O. (5/3 Pressured centres) = "G"
N.C. - N.O. = "H"
N.O. - N.C. = "I"
Weight 75 g

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



Coding: 22E0.ⓧ.S

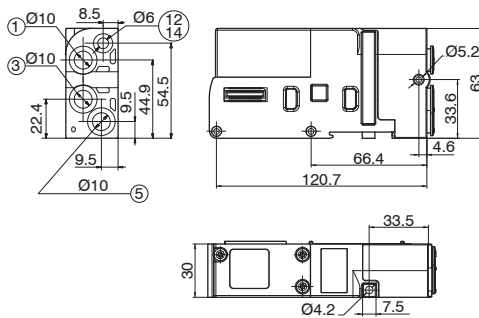
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (External pilot base) 2,5-7 (Self-feeding base)
Pilot pressure (bar)	2,5 ... 7 (External pilot base)
Temperature °C	-5 ... +50

V	VERSION
	02 = External feeding
	12 = Self-feeding



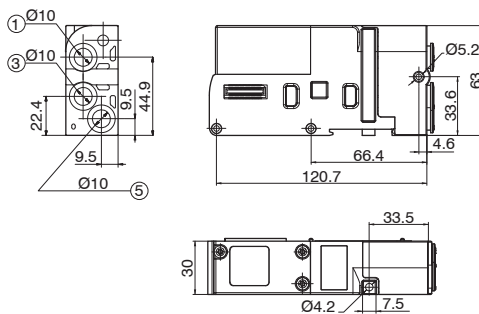
12/14 SEPARATED FROM PORT 1
Weight 199 g

22E0.02.S



12/14 CONNECTED TO PORT 1
Weight 199 g

22E0.12.S



Right Endplate

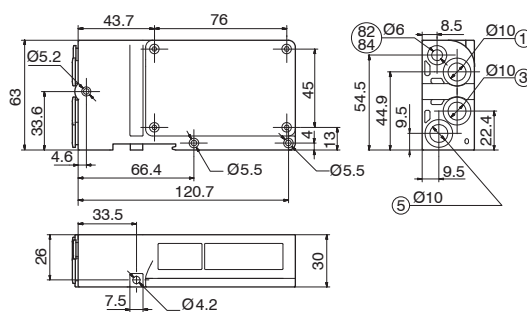
Coding: 2240.03.00

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



PORT 82/84= DO NOT PRESSURIZE, SOLENOID PILOTS
EXHAUST
Weight 148 g

2240.03.00



Modular base (2 places)

Coding: 22E^{C.F.V}

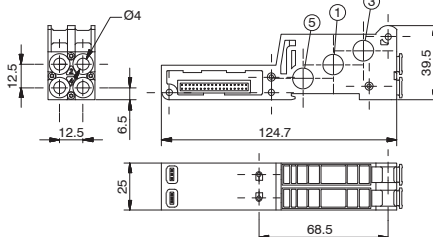
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ... +50

C	TUBE DIAMETER
	4 = Ø4
	6 = Ø6
	8 = Ø8
F	FUNCTION
	01 = Opened ports
	03 = Ports 1-5 separated
	04 = Ports 1-3 separated
	05 = Port 5 separated
	06 = Separated ports
	07 = Port 1 separated
V	VERSION
	M = for monostable S.V.
	B = for bistable S.V.



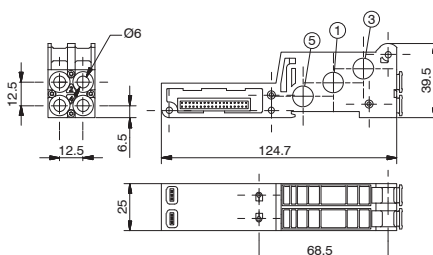
Weight 75 g

22E4.^{C.V}



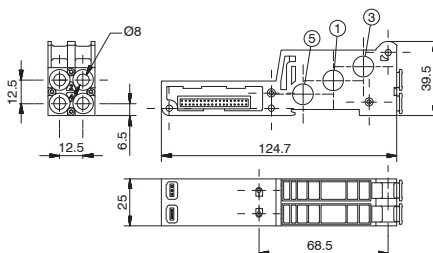
Weight 75 g

22E6.^{C.V}



Weight 75 g

22E8.^{C.V}



High flow rate modular base (2 places)

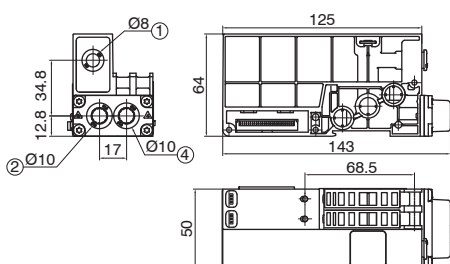
Coding: 22E1.01^V

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

V	VERSION
	M = for monostable S.V.
	B = for bistable S.V.



Weight 200 g

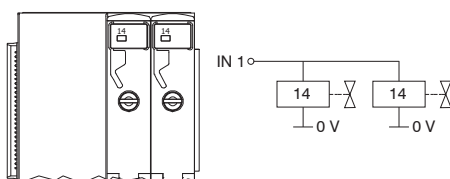


the two solenoid valves mounted on the high-flow base are pneumatically and electrically in parallel.

Attention: the mounted solenoid valves must always be two and of the same type.

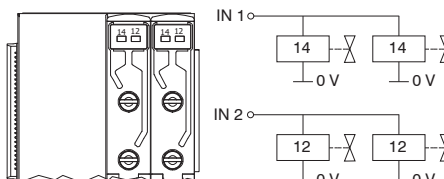
Attention: the additional supply is necessary to guarantee the declared flow values, the port (1), if not supplied, it must be plugged.

Monostable configuration



the monostable base consumes only one electrical signal and can only mount monostable solenoid valves.

Bistable configuration

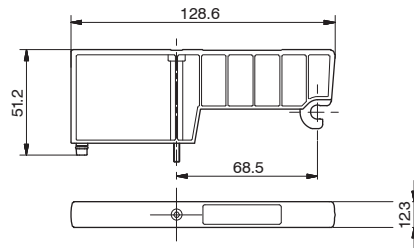


the bistable base consumes two electrical signals and can mount both bistable and monostable solenoid valves; in the latter case one electrical signal will be lost.

Closing plate

Coding: 2240.00

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



SHORT FUNCTION CODE "T"
Weight 30 g

Individual supply or exhaust module

Coding: 22E0.00.06

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

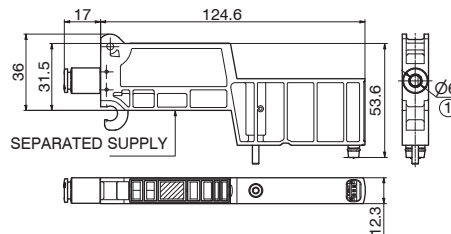
The flow rate of the solenoid valve will be reduced compared to that shown in the general catalogue

VERSION	
01	Port 1 separated
35	Ports 3-5 separated



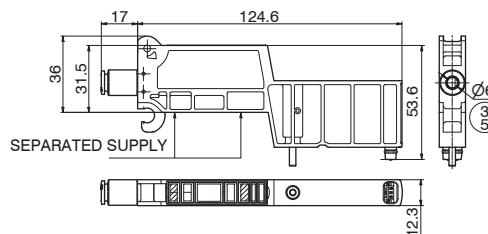
Weight 44 g

22E0.01.06



Weight 44 g

22E0.35.06



Proportional regulator base

Coding: 22E0.00.RP

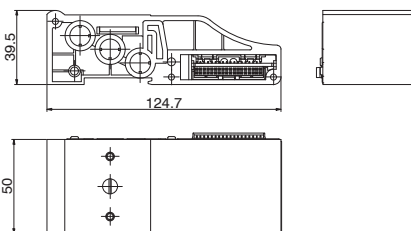
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ... +50

CONNECTION	
00	Closed
10	Ø10



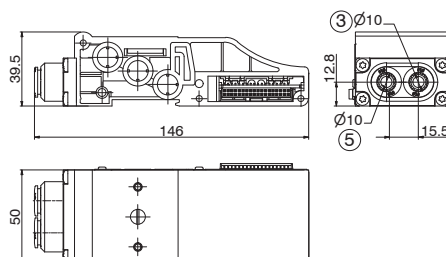
Weight 120 g

22E0.00.RP



Weight 120 g
3/5 = Exhaust connections

22E0.10.RP



3D PRINTING

Proportional regulator installation on its base

1

AIR DISTRIBUTION



Proportional pressure regulators can be integrated into an Optyma-S EVO solenoid valve manifold, allowing the assembly to be fully or partially supplied. The regulator electronic control is independent of the node.

Technical characteristics

Pneumatic characteristics	
Fluid	Air filtered at 5 micron and dehumidified
Minimum inlet pressure	Desired outlet pressure + 1 bar
Maximum inlet pressure	10 bar
Outlet pressure	0 ... 9 bar
Nominal flow rate from 1 to 2 (6 bar ΔP 1 bar)	1100 NI/min
Discharge flow rate (6 bar with 1 bar overpressure)	1300 NI/min
Air consumption	< 1 NI/min
Supply connection	G 1/4"
Operating connection	G 1/4"
Exhaust connection	G 1/8"
Maximum fitting tightening	15 Nm

Electrical characteristics		
Supply voltage		24VDC ± 10% (stabilized with ripple<1%)
Standby current consumption		70mA
Current consumption with solenoid valves on		400mA
**Reference Signal	Voltage	*0 ... 10 V *0 ... 5 V *1 ... 5 V
	Current	*4 ... 20 mA *0 ... 20 mA
**Input Impedance	Voltage	10 kΩ
	Current	250 Ω
**Digital inputs		24 VDC ± 10%
**Digital output		24 VDC PNP (max current 50 mA)

Functional characteristics	
Linearity	± Insensitivity
Hysteresis	± Insensitivity
Repeatability	± Insensitivity
Sensitivity	0,01 bar
Assembly position	Indifferent
Protection grade	IP65 (with casing fitted)
Ambient temperature	-5°... 50° / 23°F... 122°F

Construction characteristics	
Body	Anodized aluminum
Shutters	Brass with vulcanized NBR
Diaphragm	Cloth-covered rubber
Seals	NBR
Cover for electrical part	Technopolymer
Springs	AISI 302
Weight	360 g

* Selectable by keyboard or by RS-232

** Valid only for devices with analog input

Installation/Operation

PNEUMATIC CONNECTION



The compressed air is connected by G 1/4" threaded holes on the body. Before making the connections, eliminate any impurities in the connecting pipes to prevent chippings or dust entering the unit. Do not supply the circuit with more than 10 bar pressure and make sure that the compressed air is dried (excessive condensate could cause the appliance to malfunction) and filtered at 5 micron. The supply pressure to the regulator must always be at least 1 bar greater than the desired outlet pressure. If a silencer is applied to the discharge path the unit response time may change; periodically check that the silencer is not blocked and replace it if necessary.

ELECTRICAL CONNECTION



For the electrical connection a SUB-D 15-pole female or a M12 connector is used (accordingly to the model, to be ordered separately). Wire in accordance with the wiring diagram shown below. **Warning: INCORRECT CONNECTIONS MAY DAMAGE THE DEVICE**

NOTES ON OPERATION

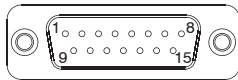


If the electric supply is interrupted, the outlet pressure is maintained at the set value. However, maintaining the exact value cannot be ensured as it is impossible to operate the solenoid valves. In order to discharge the circuit downstream, zero the reference, make sure that the display shows a pressure value equal to zero and then disconnect the electric power supply. A version of the device is available that exhausts the downstream circuit when the power supply is removed (Option "A" at the end of the ordering code). If the compressed-air supply is suspended and the electric power supply is maintained a whirring will be heard that is due to the solenoid valves; an operating parameter can be activated (P18) that triggers the regulator protection whenever the requested pressure is not reached within 4 seconds of the reference signal being sent. In this case the system will intervene to interrupt the control of the solenoid valves. Every twenty seconds, the unit will start the reset procedure until standard operating conditions have been restored.

Proportional regulator, standard version with D-SUB connector



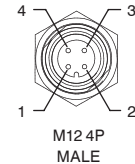
TOP VIEW OF THE
REGULATOR CONNECTOR



CONNECTOR PINOUT:

- 1 = DIGITAL INPUT 1
- 2 = DIGITAL INPUT 2
- 3 = DIGITAL INPUT 3
- 4 = DIGITAL INPUT 4
- 5 = DIGITAL INPUT 5
- 6 = DIGITAL INPUT 6
- 7 = DIGITAL INPUT 7
- 8 = ANALOG INPUT / DIGITAL INPUT 8
- 9 = SUPPLY (24 VDC)
- 10 = DIGITAL OUTPUT (24 VDC PNP)
- 11 = ANALOG OUTPUT (CURRENT)
- 12 = ANALOG OUTPUT (VOLTAGE)
- 13 = Rx RS-232
- 14 = Tx RS-232
- 15 = GND

Proportional regulator, M12 standard version



M12 Standard version

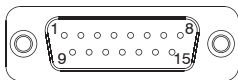
CONNECTOR PINOUT:

- 1 = POWER SUPPLY (24 VDC)
- 2 = ANALOG OUTPUT (depending on the model)
- 3 = GND
- 4 = ANALOG INPUT

Proportional regulator, CANopen® version with D-SUB connector



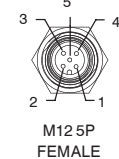
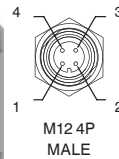
TOP VIEW OF THE
REGULATOR CONNECTOR



CONNECTOR PINOUT:

- 1 = CAN_SHIELD
- 2 = CAN_V+
- 3 = CAN_GND
- 4 = CAN_H
- 5 = CAN_L
- 6 = NC
- 7 = NC
- 8 = NC
- 9 = SUPPLY (+24 VDC)
- 10 = CAN_SHIELD
- 11 = CAN_V+
- 12 = CAN_GND
- 13 = CAN_H
- 14 = CAN_L
- 15 = GND

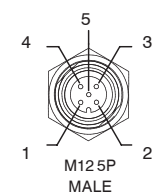
Proportional regulator, CANopen® version with M12 connector



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

PIN	SIGNAL	DESCRIPTION
1	CAN_SHIELD	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)

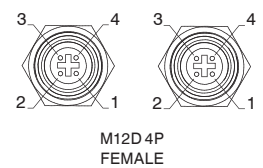
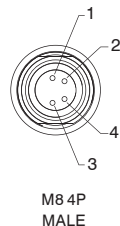
Proportional regulator, IO-Link version



CONNECTOR PINOUT:

- 1 = L+
- 2 = +24 VDC (P24)
- 3 = L-
- 4 = C/Q
- 5 = GND (N24)

Proportional regulator, EtherCAT®, PROFINET IO RT and EtherNet/IP version



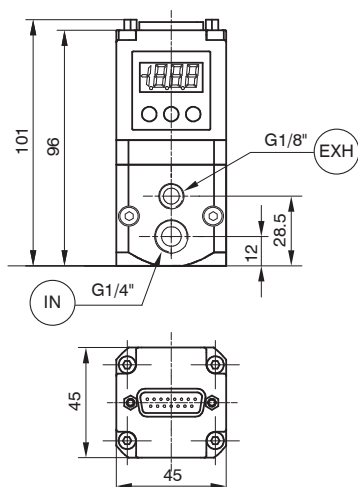
CONNECTOR PINOUT:

- 1 = Device logic power supply
- 2 = NC
- 3 = GND
- 4 = Solenoid valves power supply

CONNECTOR PINOUT:

- 1 = TX Signal + (Ethernet Transmit High)
- 2 = RX Signal + (Ethernet Receive High)
- 3 = TX Signal - (Ethernet Transmit Low)
- 4 = RX Signal - (Ethernet Receive Low)

Proportional regulator, standard version with D-SUB connector



Coding: 221E2N.①.D.②.③

	TYPE
①	C = Current signal (4-20 mA / 0-20 mA) T = Voltage signal (0-10 V / 0-5 V / 1-5 V)
	PRESSURE RANGE
②	0001 = from 0 to 1 bar 0005 = from 0 to 5 bar 0009 = from 0 to 9 bar
	VARIANT
③	= Standard version A = Exhaust downstream pressure when power supply is removed

Accessories

Model with SUB-D 15 poles connector

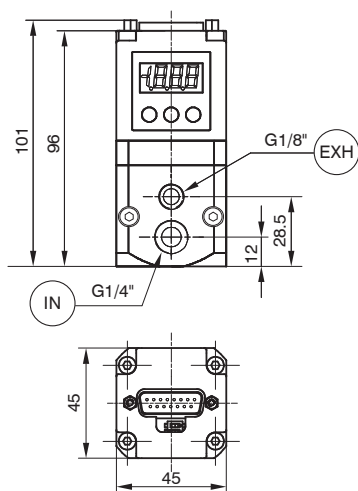


Coding: 5300.F15.④.⑤

	CONNECTOR
④	00 = straight connector 90 = 90° connector
	VARIANT
⑤	00 = casing IP65* 03 = cable 3 meters 05 = cable 5 meters

*without cable

Proportional regulator, CANopen® version with D-SUB connector



Coding: 221E2N.S.C.②.③

	PRESSURE RANGE
②	0001 = from 0 to 1 bar 0005 = from 0 to 5 bar 0009 = from 0 to 9 bar
	VARIANT
③	= Standard version A = Exhaust downstream pressure when power supply is removed

Accessories

Model with SUB-D 15 poles connector

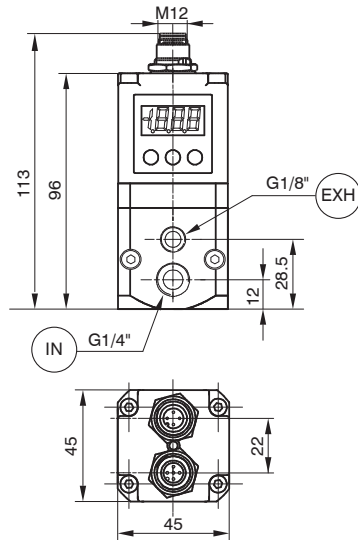


Coding: 5300.F15.④.⑤

	CONNECTOR
④	00 = straight connector 90 = 90° connector
	VARIANT
⑤	00 = casing IP65* 03 = cable 3 meters 05 = cable 5 meters

*without cable

► Proportional regulator, CANopen® version with M12 connector



Coding: 221E2N.M.C.P.V

P	PRESSURE RANGE
	0001 = from 0 to 1 bar
	0005 = from 0 to 5 bar
	0009 = from 0 to 9 bar
V	VARIANT
	= Standard Version
	A = Exhaust downstream pressure when power supply is removed

Note: This model doesn't include the terminating resistor

Accessories

Power supply connector

► Female straight connector M12A 4P



Network connector

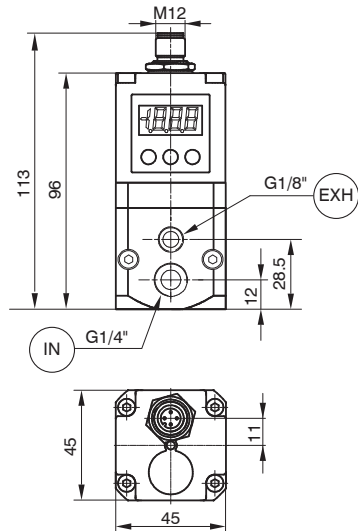
► Male straight connector M12A 5P



Coding: 5312A.F04.00

Coding: 5312A.M05.00

► Proportional regulator, M12 standard version



Coding: 221E2N.T.U.P.V

T	TYPE
	C = Current signal (4-20 mA) T = Voltage signal (0-10 V)
U	OUTPUT
	F = Voltage analogue output G = Current analogue output H = Digital output
	PRESSURE RANGE
P	0001 = from 0 to 1 bar
	0005 = from 0 to 5 bar
	0009 = from 0 to 9 bar
V	VARIANT
	= Standard Version
	A = Exhaust downstream pressure when power supply is removed

Accessories

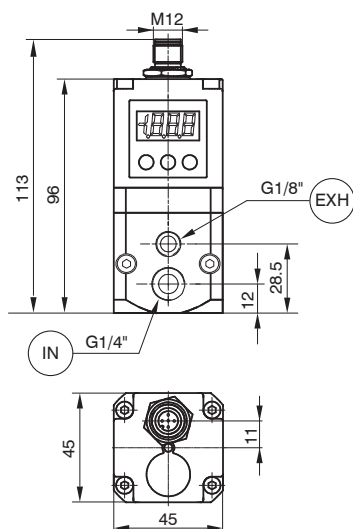
Power supply connector

► Female straight connector M12A 4P



Coding: 5312A.F04.00

► Proportional regulator, IO-Link version



Coding: 221E2N.I.B.009.❶

	VARIANT
❶	= Standard Version
	A = Exhaust downstream pressure when power supply is removed

Accessories

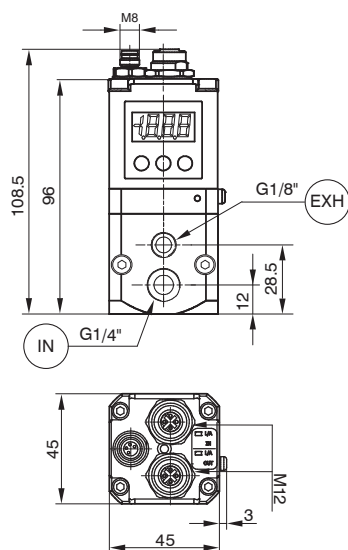
Power supply connector

► Female straight connector M12A 4P



Coding: 5312A.F05.00

► Proportional regulator, EtherCAT®, PROFINET IORT and EtherNet/IP version



Coding: 221E2N.❶.0009.❶

	TYPE
❶	EC = EtherCAT
	PN = PROFINET IORT
	EI = EtherNet/IP
	VARIANT
❶	= Standard Version
	A = Exhaust downstream pressure when power supply is removed

Accessories

Power supply connector

► Male straight connector M12D 4P



Coding: 5312D.M04.00

Intermediate electro-pneumatic shut-off module 2/4/6/8 positions

Coding: 22E0.**M.T.C**

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 3 ... 7 (piloting 12/14)
Temperature °C	-5 ... +50
Feeding	+ 24 V DC $\pm 10\%$
Protection	Inverted polarity protection
Maximum load	100 mA
Indicators	+ 24 V DC presence LED
Series modules maximum number	3

MODULE	
M	10 = 12-14 open 11 = 12-14 closed
SHUT-OFF	
T	2A = 2 Signals 4A = 4 Signals 6A = 6 Signals 8A = 8 Signals
CONNECTION	
C	M8 = M8 M12 = M12



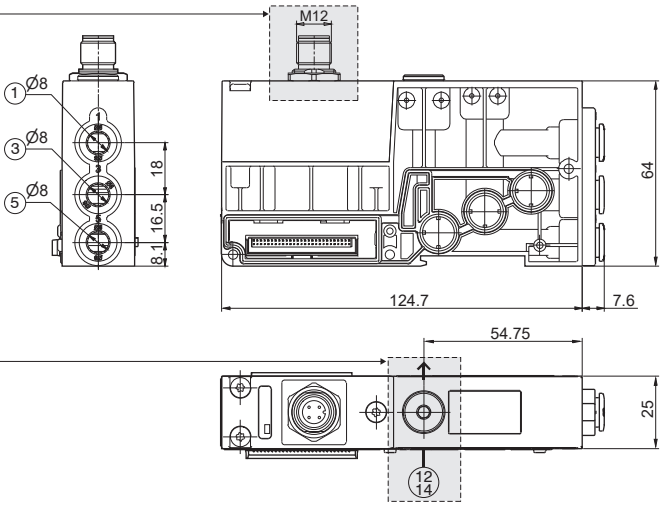
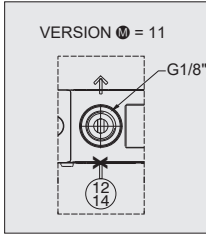
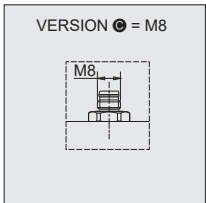
Weight 120 g

22E0.**M.T.M12**



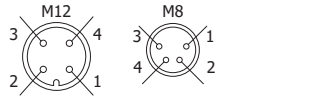
Weight 120 g

22E0.**M.T.M8**

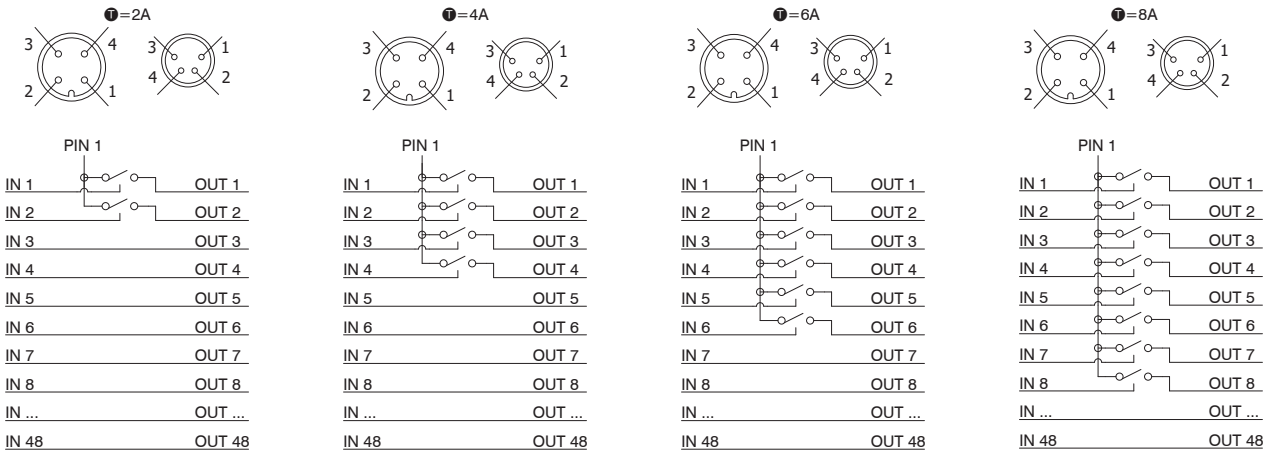


WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

Intermediate electro-pneumatic shut-off module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself.
When the shut-off module is present, the controlled output logic signal values are equal to the input logic signal values which came from the serial node or the multi-pin module.
If the supply input signal is absent, the controlled output logic signal values are all equal to zero.
This module is particularly useful when control signals are used to block the valves; it is also effective both with serial management and multi-pin connection of the manifolds.
It is possible to use more modules to interrupt every command signals simply by inserting them before the signals to be interrupted.



PIN	DESCRIPTION
1	+ 24 V DC
2	NOT CONNECTED
3	GND
4	NOT CONNECTED



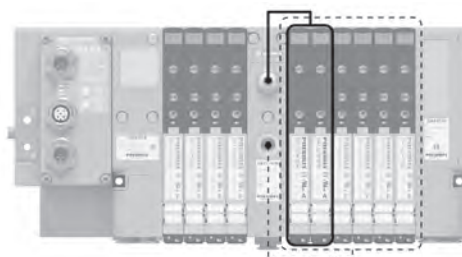
Usage examples

EXAMPLE 1

Manifold of 10 solenoid valves on which you want to interrupt signals 9 and 10.

Assembly:

- 4 bistable solenoid valves (not interruptible because before the module)
- 1 intermediate electro-pneumatic shut-off module, 2 signals M8 with conduit 12/14 closed
- 2 monostable solenoid valves (interruptible)
- 4 bistable solenoid valves (managed directly by the corresponding command signal)



EXAMPLE 2

Manifold of 10 solenoid valves on which you want to interrupt signals 9 and 12.

Assembly:

- 4 bistable solenoid valves (not interruptible because before the module)
- 1 intermediate electro-pneumatic shut-off module, 4 signals M8 with conduit 12/14 closed
- 2 monostable solenoid valves (interruptible)
- 4 bistable solenoid valves (the first one is interruptible, the others are managed directly by the corresponding command signal)

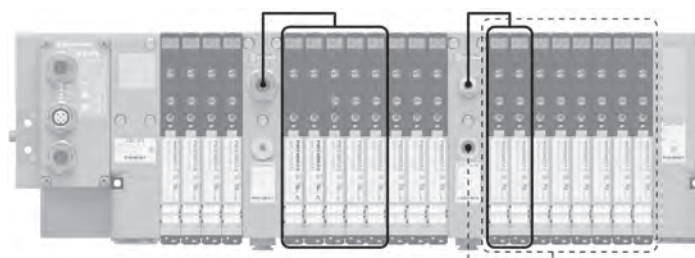


EXAMPLE 3

Manifold of 20 solenoid valves on which you want to interrupt signals from 9 to 16 and 23 to 26.

Assembly:

- 4 bistable solenoid valves (not interruptible because before the module)
- 1 intermediate electro-pneumatic shut-off module, 8 signals M12 with conduit 12/14 open
- 2 monostable solenoid valves (interruptible)
- 6 bistable solenoid valves (the first three are interruptible, the others are managed directly by the corresponding command signal)
- 1 intermediate electro-pneumatic shut-off module, 4 signals M8 with conduit 12/14 closed
- 8 bistable solenoid valves (the first two are interruptible, the others are managed directly by the corresponding command signal)



Key

S.V. electrically managed by the shut-off module: —

S.V. pneumatically managed (12/14) by the shut-off module: - - - - -

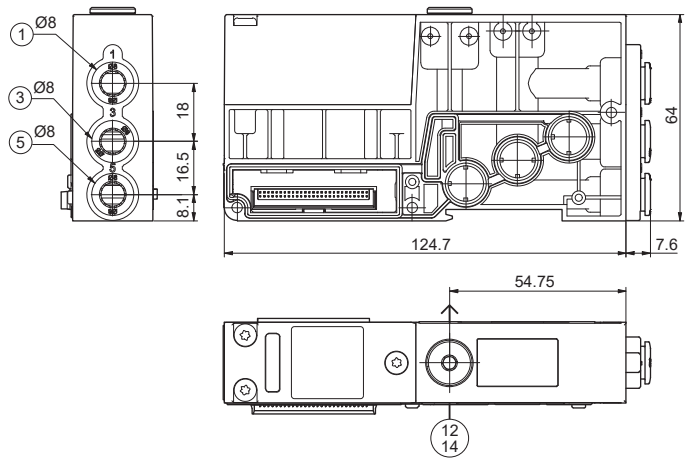


► Intermediate inlet/Exhaust module with external pilot

Coding: 22E0.M

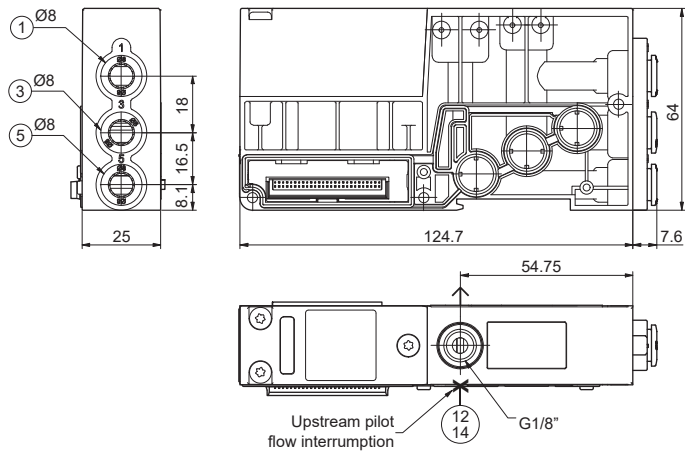
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 3 ... 7 (piloting 12/14)
Temperature °C	-5 ... +50

MODULE	
M	10 = 12-14 open 11 = 12-14 closed



Weight 111 g

22E0.10



Weight 111 g

22E0.11

Polyethylene Silencer Series SPL-R

Coding: SPLR.**D**



TUBE DIAMETER
D 6 = 6 mm
10 = 10 mm

Diaphragm plug

Coding: 2230.17



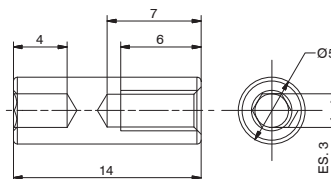
Weight 1,3 g

M3 nuts kit

Coding: 2240.KD.00



The Kit includes 6 pieces

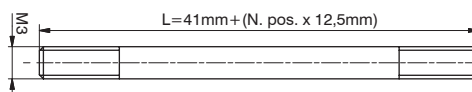


Tie-rod M3

Coding: 2240.KT.**P**



The Kit includes 3 pieces



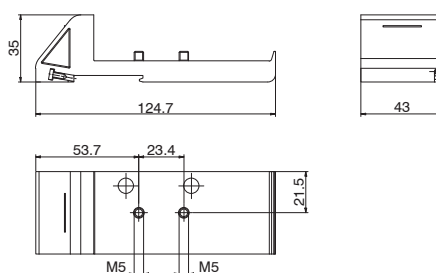
NO. POSITIONS
02 = Nr. 2 Positions
04 = Nr. 4 Positions
06 = Nr. 6 Positions
08 = Nr. 8 Positions
10 = Nr. 10 Positions
12 = Nr. 12 Positions
14 = Nr. 14 Positions
P 16 = Nr. 16 Positions
18 = Nr. 18 Positions
20 = Nr. 20 Positions
22 = Nr. 22 Positions
24 = Nr. 24 Positions
26 = Nr. 26 Positions
28 = Nr. 28 Positions
...
48 = Nr. 48 Positions

DIN rail adapter

Coding: 22E0.P1



Weight 55 g

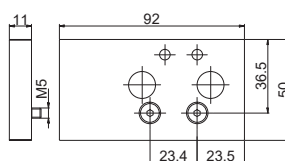


Offset compensation plate

Coding: 22E0.P0



Weight 116 g



Series 2200 "Optyma-Sc"



1

AIR DISTRIBUTION

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

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

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

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

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

Construction characteristics

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

Operational characteristics

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



Rules and configuration scheme

1

AIR DISTRIBUTION

CONFIGURATION CODE

C - - E - - - - - -

Electrical connection

MP	9	Multi-pin 9 poles PNP connector
	1	Multi-pin 15 poles PNP connector
MN	9	Multi-pin 9 poles NPN connector
	1	Multi-pin 15 poles NPN connector
MA	9	Multi-pin 9 poles AC connector
	1	Multi-pin 15 poles AC connector

Left endplates

E	External feeding
---	------------------

Module 1

...-...	See "single pneumatic module configurator"
---------	--

Diaphragm plug (optional)

X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

Module 2

...-...	See "single pneumatic module configurator"
---------	--

Diaphragm plug (optional) only for 15 poles connector

X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

Module 3 only for 15 poles connector

...-...	See "single pneumatic module configurator"
---------	--

Right endplates

P0	Endplate closed
P1	Endplate with connection ports

Single pneumatic module configurator

Module configurator

- -

Base type

4	Bistable two-position base Ø4
6	Bistable two-position base Ø6
8	Bistable two-position base Ø8

Base version

	5-1-3 free (standard sub-base)
3	Intermediate diaphragm plug on ports 1 and 5
4	Intermediate diaphragm plug on ports 1 and 3
5	Intermediate diaphragm plug on port 5
6	Intermediate diaphragm plug on ports 1, 3, 5
7	Intermediate diaphragm plug on port 1
8	Intermediate diaphragm plug on ports 3 and 5
9	Intermediate diaphragm plug on port 3

Solenoid valve version

A	S.V. 5/2 solenoid-spring
B	S.V. 5/2 solenoid-differential
C	S.V. 5/2 solenoid-solenoid
E	S.V. 5/3 solenoid-solenoid
F	S.V. 2x3/2 NC-NC
G	S.V. 2x3/2 NO-NO
H	S.V. 2x3/2 NO-NC
I	S.V. 2x3/2 NC-NO
T	Plug

Only bases manifold version

V	No valve
---	----------

S.V. accessories (optional)

5	Separated exhaust
6	Separated air supply

⚠ Accessories not available for only bases manifold



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

Configurable on Cadenas platform



CADENAS

Note:

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

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

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

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

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

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

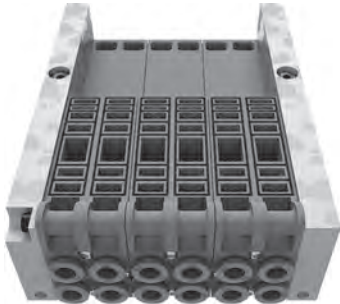
If it is necessary to interrupt more than one port at the same time, put the letters that identify their position in sequence (e.g.: if it is necessary to intercept the ports 3 and 5 you must put the letters YZ).

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

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



Attention: Complete with solenoid valves before use.



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

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



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



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

VALVE MANUAL
OVERRIDE

SUB-BASE
FIXING SCREW

ORDERING CODE

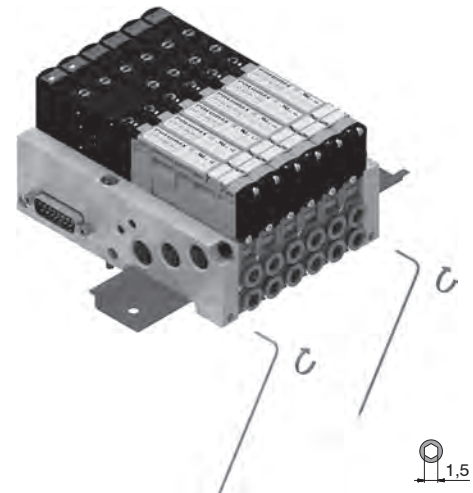
PNEUMATIC SYMBOL

CUSTOMIZABLE
REMOVABLE
LABELS

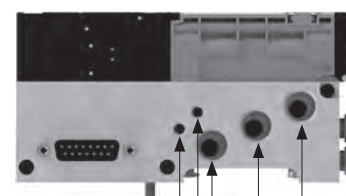
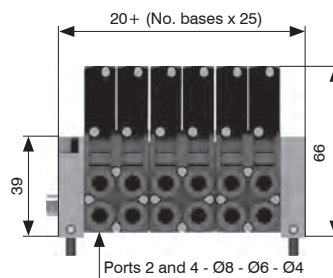
FUNCTION SHORT CODE



DIN rail fixing



Supply ports and maximum possible size according to valves used



Port 82/84 - M5

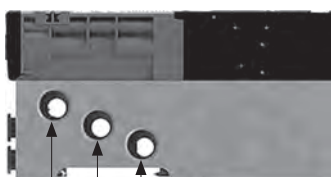
Port 12/14 - M5

Port 3 - G1/4"

Port 1 - G1/4"

Port 5 - G1/4"

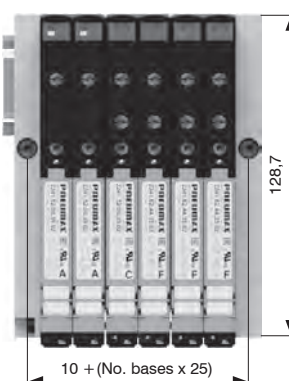
Right endplate with supply
and exhaust ports (P1)



Port 5 - G1/4"

Port 1 - G1/4"

Port 3 - G1/4"



Manual override actuation

Instable function:

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

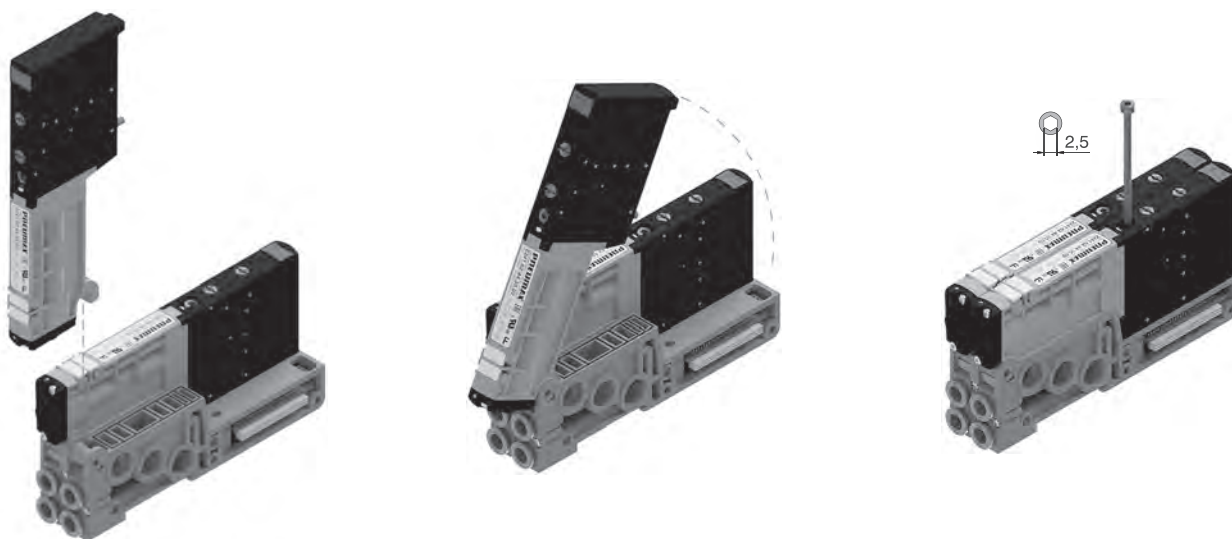
Bistable function:

Push and turn to get the bistable function



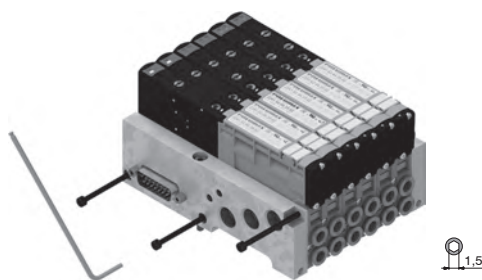
Note: we recommend the manual override is returned to its original position when not in use

Solenoid valves installation



Note: Torque moment 0,8 Nm

Sub-base assembly



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

Solenoid-Spring

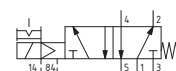
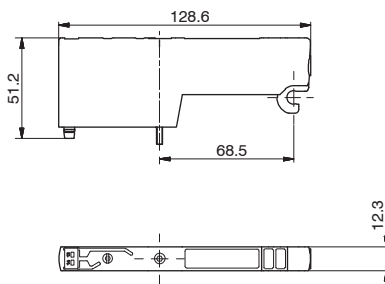
Coding: 2241.52.00.39.

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

	VOLTAGE
	02 = 24 VDC PNP
SHORT FUNCTION CODE "A"	



Weight 67 g

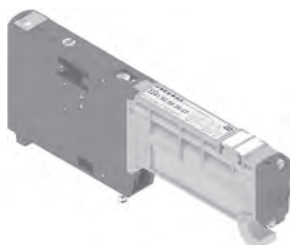


Solenoid-Differential

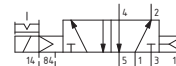
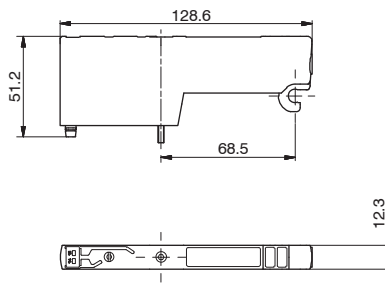
Coding: 2241.52.00.36.

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

	VOLTAGE
	02 = 24 VDC PNP
SHORT FUNCTION CODE "B"	



Weight 67 g



Solenoid-Solenoid

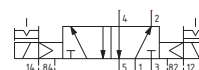
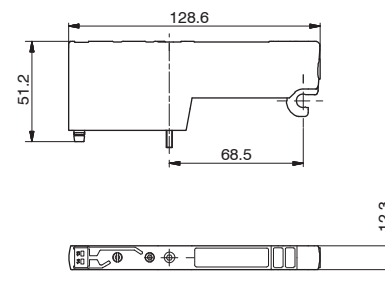
Coding: 2241.52.00.35.

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

	VOLTAGE
	02 = 24 VDC PNP
SHORT FUNCTION CODE "C"	



Weight 67 g





Solenoid-Solenoid 5/3 (Closed centres)

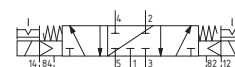
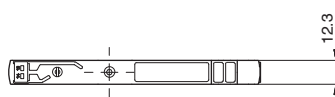
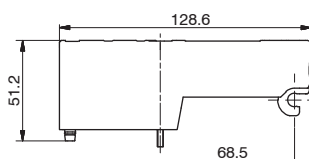
Coding: 2241.53.31.35. **V**

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

V	VOLTAGE
02	= 24 VDC PNP
SHORT FUNCTION CODE "E"	



Weight 83 g



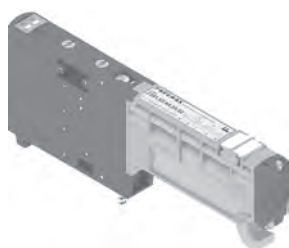
Solenoid-Solenoid 2x3/2

Coding: 2241.62. **F**.35. **V**

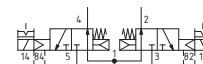
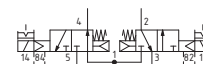
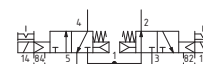
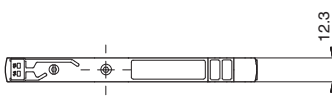
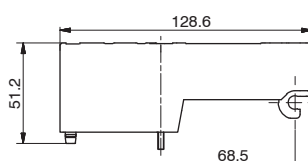
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		≥3+ (0,2xInlet pressure)
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (NI/min)	with modular base, tube ø4	140
	with modular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

F	FUNCTION
44	= NC-NC (5/3 Open centres)
45	= NC-NO (normally closed-normally open)
54	= NO-NC (normally open-normally closed)
55	= NO-NO (5/3 Pressured centres)
V	VOLTAGE
02	= 24 VDC PNP
SHORT FUNCTION CODE: NC-NC (5/3 Open centres) = "F" N.O. - N.O. (5/3 Pressured centres) = "G" N.C. - N.O. = "H" N.O. - N.C. = "I"	

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



Weight 75 g



Closing plate

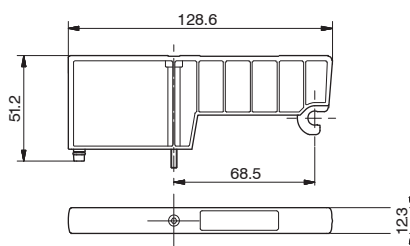
Coding: 2240.00

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

SHORT FUNCTION CODE "T"



Weight 30 g



Left Endplate

Coding: 22C0.V.S

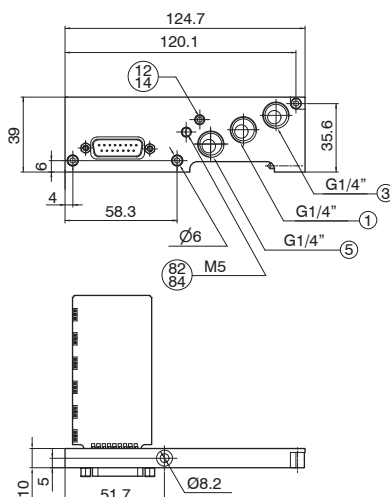
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

VERSION
V 15 = 15 poles multi-pin connection
09 = 9 poles multi-pin connection



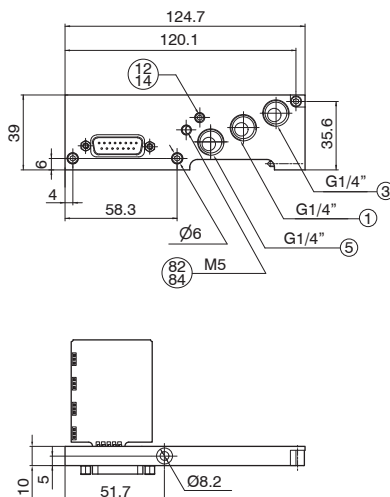
PORT 12/14 SEPARATED FROM PORT 1.
DO NOT PRESSURIZE PORT 82/84.
PILOTS EXHAUST.
Weight 199 g

22C0.15.S



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

22C0.09.S



Right Endplate

Coding: 22C0.V

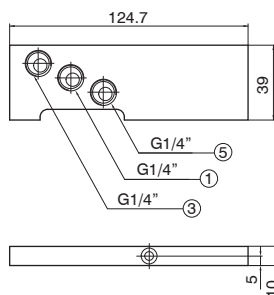
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

VERSION
V 00 = Blind plate
03 = With alimention/exhaust ports



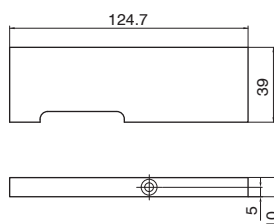
PORT 12/14 SEPARATED FROM PORT 1.
DO NOT PRESSURIZE PORT 82/84.
PILOTS EXHAUST.
Weight 148g

22C0.03



Weight 148g

22C0.00





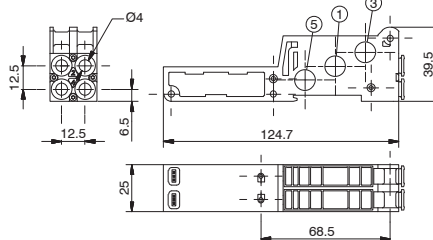
Solenoid valves manifold Series 2200 "Optyma-Sc"

Modular base (2 places)

Coding: 224[●].[●]C

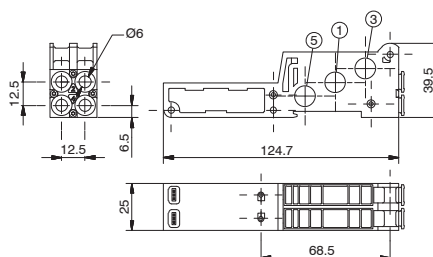
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ... +50

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



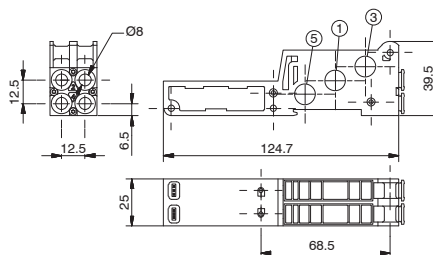
Weight 75 g

2244.0C



Weight 75 g

2246.0C



Weight 75 g

2248.0C

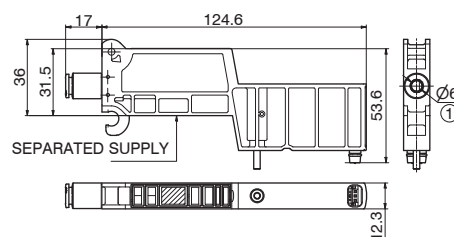
Individual supply or exhaust module

Coding: 22E0.[●].06

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

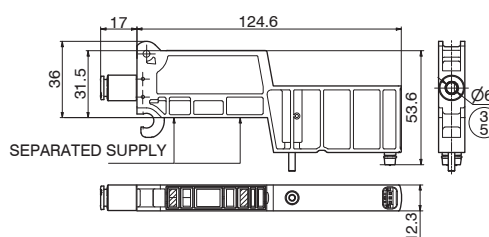
The flow rate of the solenoid valve will be reduced compared to that shown in the general catalogue

V	VERSION
	01 = Port 1 separated
	35 = Ports 3-5 separated



Weight 44 g

22E0.01.06



Weight 44 g

22E0.35.06



SEP type silencer

Coding: SEP14



Weight 2 g

Diaphragm plug

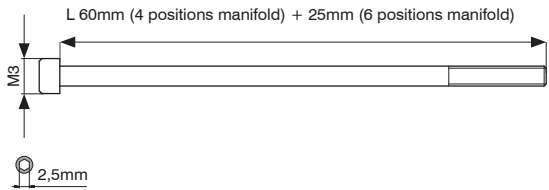
Coding: 2230.17



Weight 1,3 g

TCEI M3 screw kit

Coding: 22C0.KV.V



The Kit includes 3 pieces

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

Cable complete with connector, 9 Poles, IP40

Coding: 2400.09.L.00



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

Cable complete with connector, 15 Poles, IP40

Coding: 2400.15.L.00

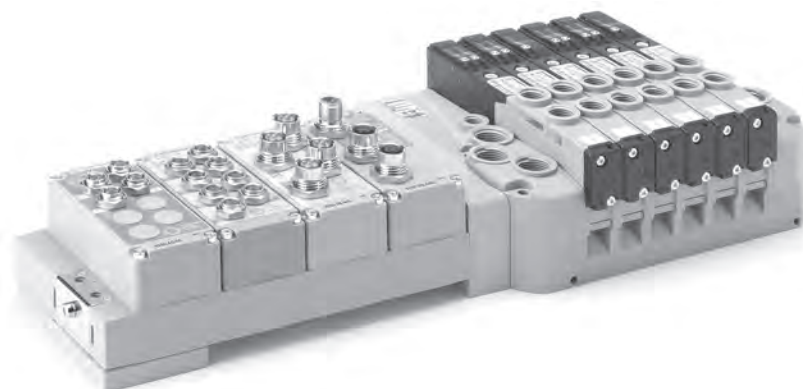


CABLE LENGTH
L 03 = 3 meters
05 = 5 meters
10 = 10 meters

1

AIR DISTRIBUTION

Series 2500 Optyma-F EVO



2500 SERIES Optyma-F EVO SOLENOID VALVES MANIFOLD

- Increased flexibility
- Digital and analogue I/O modules
- Manufactured in technopolymer
- Wide range of communication protocols

CANopen

PROFIBUS

PROFINET

EtherCAT

EtherNet/IP

IO-Link

CC-Link **IE** Field Basic

WE SPEAK EVO

The Optyma-F series becomes EVO and interfaces with the new PX series modular electronic system while still retaining all of its technical advantages. This is enriched with new features that further extend the flexibility of the product:

- Flow rate of 1000 NI/min
- Quick assembly using rotating pins
- Operating using different pressures and vacuum

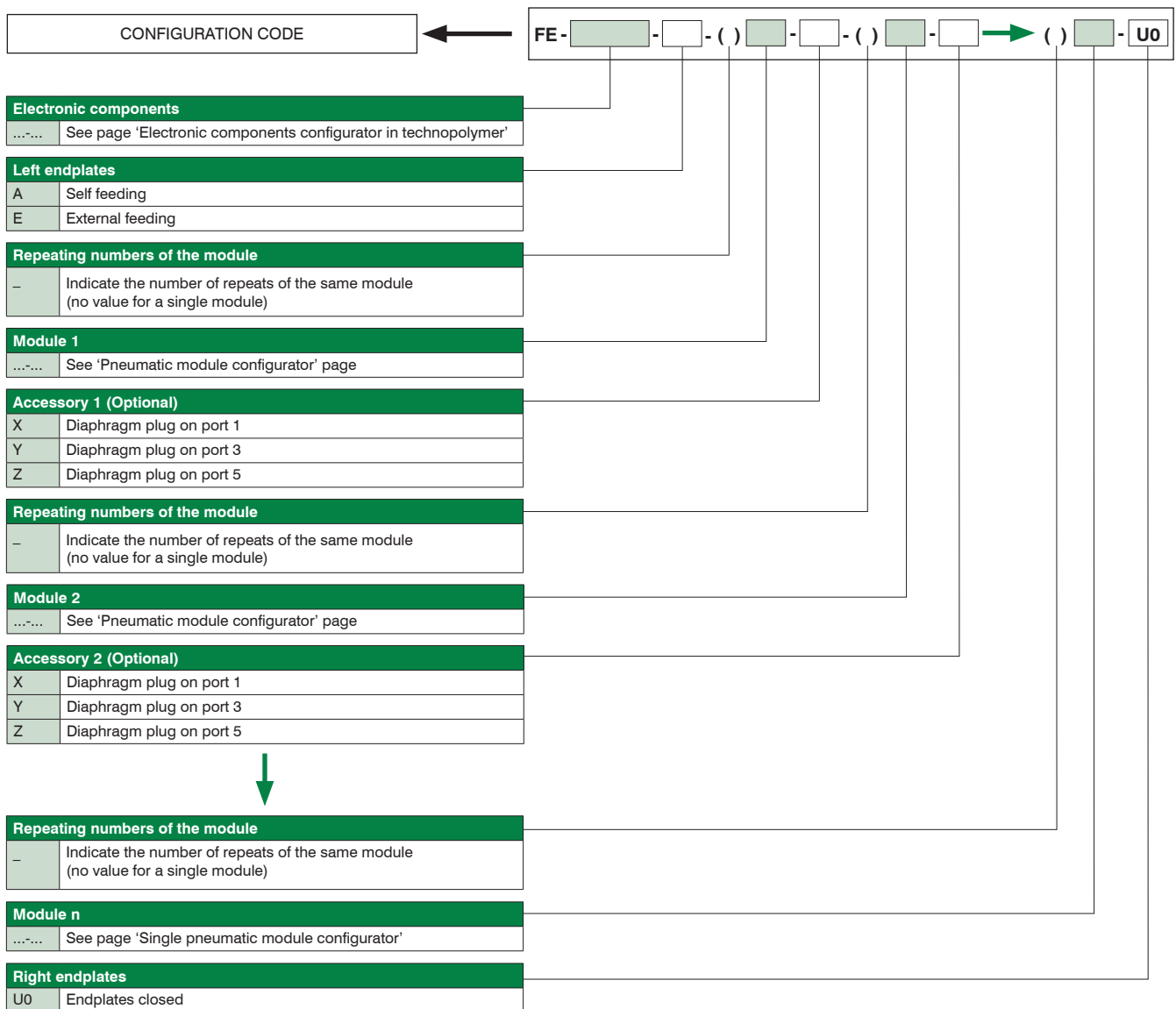
Construction characteristics

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

Operational characteristics

Supply voltage	+ 24 V DC $\pm 10\%$
Pilot consumption	1,3W
Pilot working pressure (12-14)	from 3 up to 7 bar max.
Valve working pressure [1]	from vacuum to 10 bar max.
Operating temperature	from -5°C to +50°C
Protection degree	IP65
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous

Rules and configuration scheme



Configurable on Cadenas platform



CADENAS

Note:

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

- 32 if a 37-pole multi-pin module, a serial node or IO-Link interface are used.
- 24 if a 25-pole multi-pin module is used.

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

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

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

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

If one or more ports must be interrupted more than once, the addition of the intermediate supply/discharge module is necessary.



Electronic components configurator in technopolymer

1
AIR DISTRIBUTION

Type	
P	Technopolymer

Multi-pin electrical connection	
MP	2 Multi-pin, PNP 24 V DC 25 poles
	3 Multi-pin, PNP 24 V DC 37 poles
MN	2 Multi-pin, NPN 24 V DC 25 poles
	3 Multi-pin, NPN 24 V DC 37 poles
MA	2 Multi-pin, 24 V AC 25 poles
	3 Multi-pin, 24 V AC 37 poles

Electrical connection	
C3	CANopen® node 64 IN - 64 OUT (32 fixed)
P3	PROFIBUS DP node 64 IN - 64 OUT (32 fixed)
I4	EtherNet/IP node 128 IN - 128 OUT (48 fixed)
A4	EtherCAT® node 128 IN - 128 OUT (48 fixed)
N4	PROFINET IO RT node 128 IN - 128 OUT (48 fixed)
G4	CC-Link IE Field Basic node 128 IN - 128 OUT (48 fixed)
K3	IO-Link interface 64 IN - 64 OUT (32 fixed)

Electrical connection accessories	
	Without DIN rail fixing
G	With DIN rail fixing

Repeating numbers of the module	
	Indicate the number of repeats of the same module (no value for a single module)

Inputs module - Analog / Digital (EXCLUDED WITH MP)	
D8	8 M8 digital inputs module
D12	8 M12 digital inputs module
D3	32 digital inputs SUB-D 37 poles
T1	2 analogue inputs 0-5V module (voltage signal)
T2	2 analogue inputs 0-10V module (voltage signal)
T3	4 analogue inputs 0-5V module (voltage signal)
T4	4 analogue inputs 0-10V module (voltage signal)
C1	2 analogue inputs 0-20mA module (current signal)
C2	2 analogue inputs 4-20mA module (current signal)
C3	4 analogue inputs 0-20mA module (current signal)
C4	4 analogue inputs 4-20mA module (current signal)
P1	2 Pt100 2 wires inputs module
P2	2 Pt100 3 wires inputs module
P3	2 Pt100 4 wires inputs module
P4	4 Pt100 2 wires inputs module
P5	4 Pt100 3 wires inputs module
P6	4 Pt100 4 wires inputs module

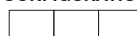
Outputs module - Analog / Digital	
M8	8 M8 digital outputs module
M12	8 M12 digital outputs module
M3	32 digital outputs SUB-D 37 poles
V1	2 analogue outputs 0-5V module (voltage signal)
V2	2 analogue outputs 0-10V module (voltage signal)
V3	4 analogue outputs 0-5V module (voltage signal)
V4	4 analogue outputs 0-10V module (voltage signal)
L1	2 analogue outputs 0-20mA module (current signal)
L2	2 analogue outputs 4-20mA module (current signal)
L3	4 analogue outputs 0-20mA module (current signal)
L4	4 analogue outputs 4-20mA module (current signal)

Additional modules (Optional)	
P12	M12 additional power supply module

Module accessories	
	Without DIN rail fixing
G	With DIN rail fixing



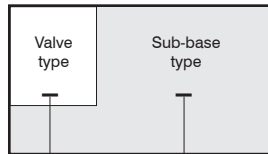
SINGLE
ELECTRIC MODULE
CONFIGURATION



Refer to the current limits indicated in the pages relating to the nodes / IO-Link interface

Modules configurator

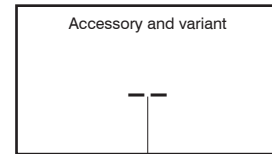
Base module configurator with Solenoid valve



Solenoid valve position	
A	S.V. 5/2 SOL.-SPRING
B	S.V. 5/2 SOL.-DIF.
C	S.V. 5/2 SOL.-SOL.
E	S.V. 5/3 CC SOL.-SOL.
F	S.V. 2x3/2 NC-NC
G	S.V. 2x3/2 NO-NO
H	S.V. 2x3/2 NC-NO
I	S.V. 2x3/2 NO-NC
T	PLUG

Base	
1	Monostable base
2	Bistable base

Accessory module configurator

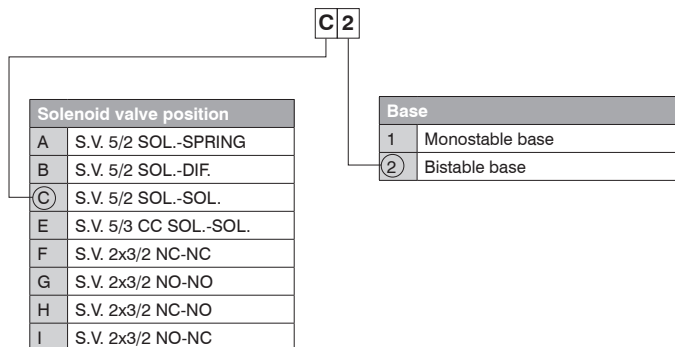


Intermediate inlet/Exhaust module	
W	Separated air supply and exhaust

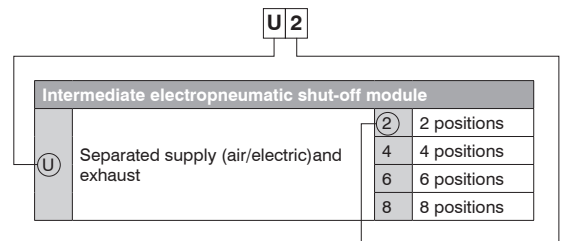
Intermediate electropneumatic shut-off module			
U	Separated supply (air/electric) and exhaust	2	2 positions
		4	4 positions
		6	6 positions
K	Separated supply (air/electric), exhaust and 12/14 piloting	8	8 positions
		2	2 positions
		4	4 positions
		6	6 positions
		8	8 positions

Configuration example of single module:

Bistable base, 5/2 Solenoid-Solenoid valve



Intermediate electropneumatic shut-off module 2 positions

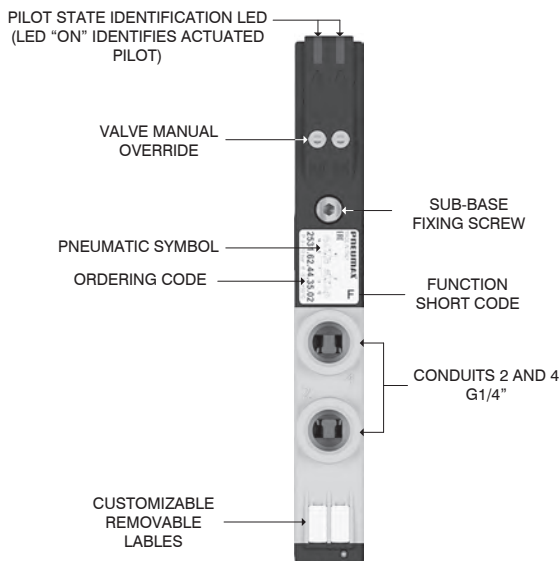


Configuration example of complete group:

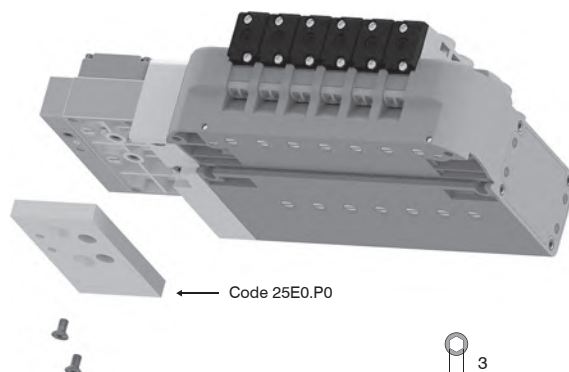
- Technopolymer PX3 serial system (P-A4-M12-M8-P4)
- Left endplates - External feeding (E)
- Bistable base with (F2) Solenoid valve
- Bistable base with (C2) Solenoid valve
- Monostable base with (A1) Solenoid valve
- Bistable base with (E2) Solenoid valve
- Bistable base with (C2) Solenoid valve
- Monostable base with (B1) Solenoid valve
- Right endplates closed (U0)



FE-P-A4-M12-M8-P4-E-F2-C2-A1-E2-C2-B1-U0

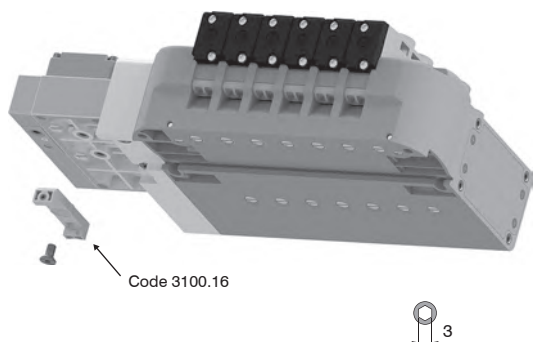


Offset compensation plate



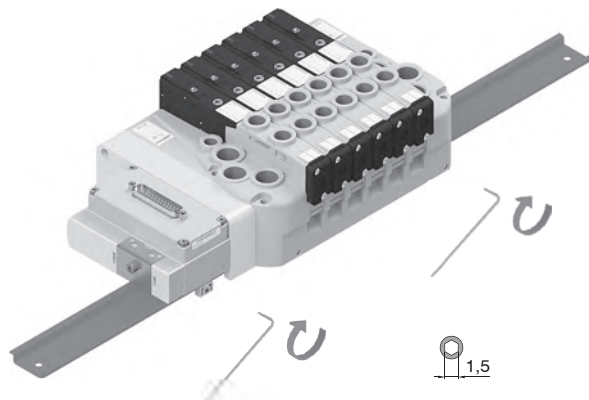
Attention: This accessory is supplied on the manifold unless otherwise stated. This is not compatible for DIN rail mounting.

DIN rail mounting support plate



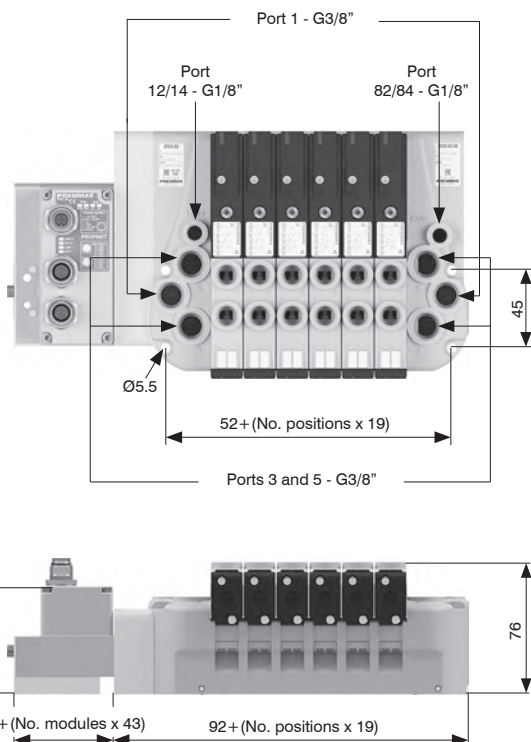
Attention: This must be included when creating the manifold configuration. Exclude the offset compensation plate.

DIN rail fixing

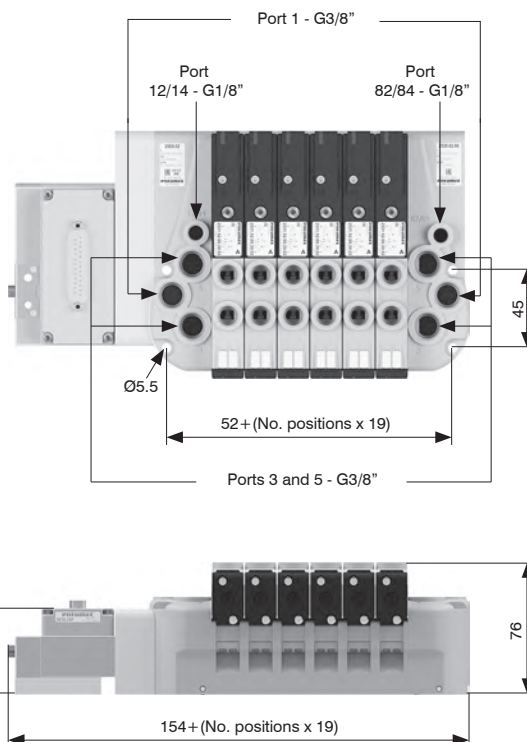


Supply ports and maximum possible size according to valves used

Serial system node version



Multi-pin version



Manual override actuation

Instable function:

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



Bistable function:

Push and turn to get the bistable function



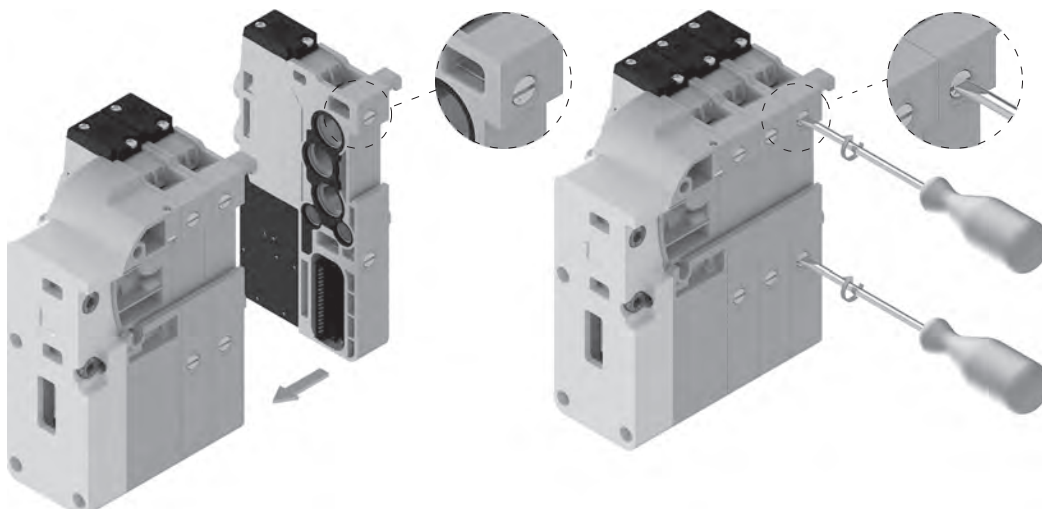
Note: we recommend the manual override is returned to it's original position when not in use

Solenoid valves installation



Note: Torque moment 1 Nm

Sub-base assembly



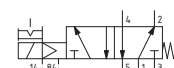
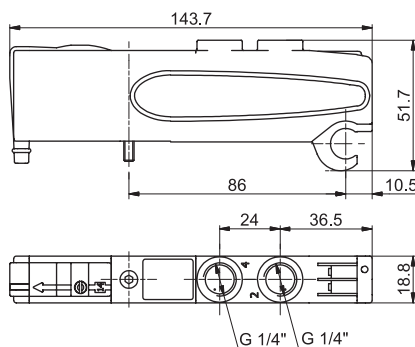
Solenoid-Spring

Coding: 2531.52.00.39.

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

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

SHORT FUNCTION CODE "A"
Weight 123 g



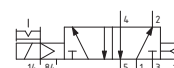
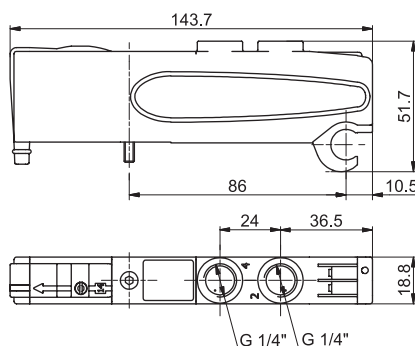
Solenoid-Differential

Coding: 2531.52.00.36.

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

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

SHORT FUNCTION CODE "B"
Weight 120 g



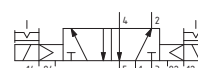
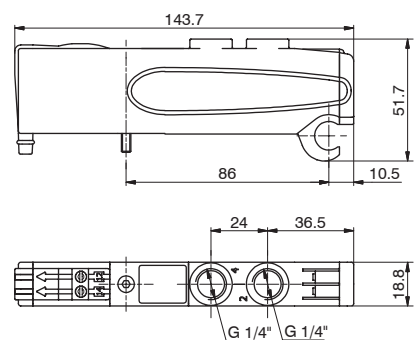
Solenoid-Solenoid

Coding: 2531.52.00.35.

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

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

SHORT FUNCTION CODE "C"
Weight 128 g

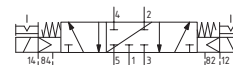
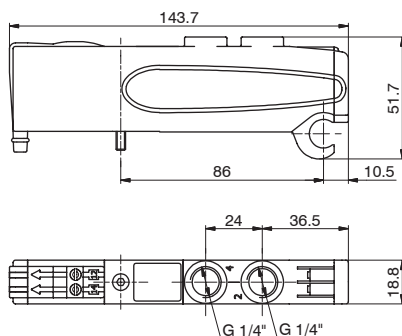


Solenoid-Solenoid 5/3

Coding: 2531.53.31.35. **V**

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50
Flow rate at 6 bar with $\Delta p=1$ (l/min)	600
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	20

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



Solenoid-Solenoid 2x3/2

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

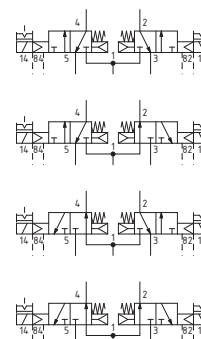
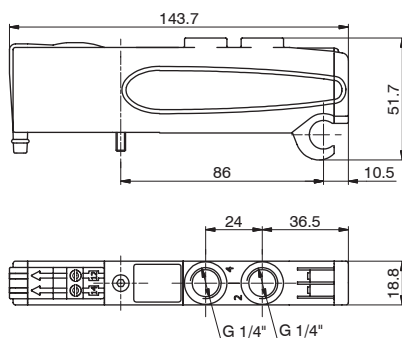
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	$\geq 3 + (0,2 \times \text{Inlet pressure})$
Temperature °C	-5 ... +50
Flow rate at 6 bar with $\Delta p=1$ (l/min)	700
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	25

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

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

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

Weight 115,5 g



Left Endplate

Coding: 25E0.02.F

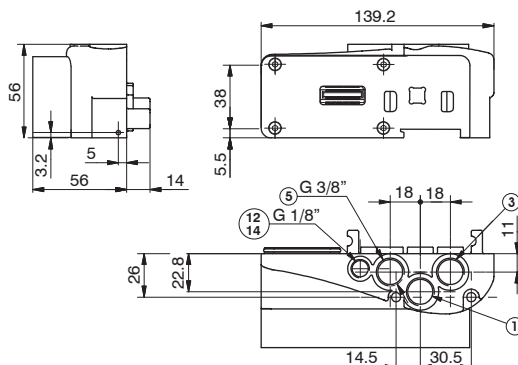
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (external feeding) 3 ... 7 (self feeding)
Pilot pressure (bar)	3 ... 7 (external feeding)
Temperature °C	-5 ... +50

VERSION
02 = External feeding
12 = Self-feeding



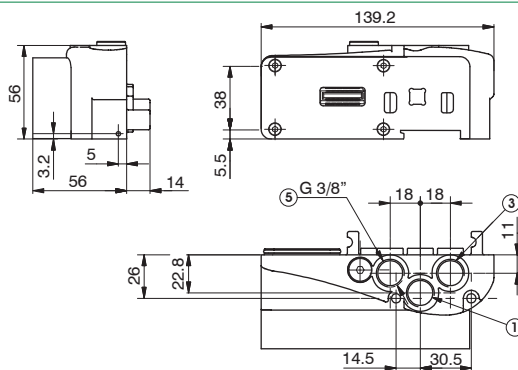
12/14 SEPARATED FROM PORT 1
Weight 206 g

25E0.02.F



12/14 CONNECTED TO PORT 1
Weight 206 g

25E0.12.F



Right Endplate

Coding: 2530.03.C

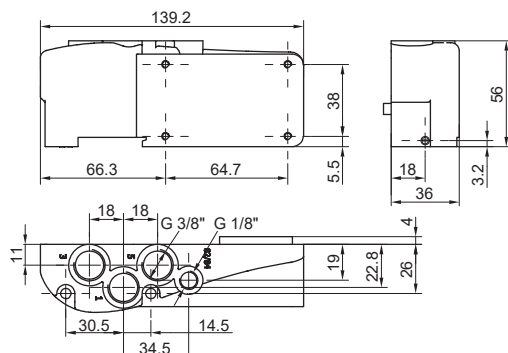
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ... +50

ELECTRICAL CONNECTION
00 = Electrical connection



PORT 82/84 = DO NOT PRESSURIZE, SOLENOID PILOTS
EXHAUST
Weight 181,5 g

2530.03.00



Modular base

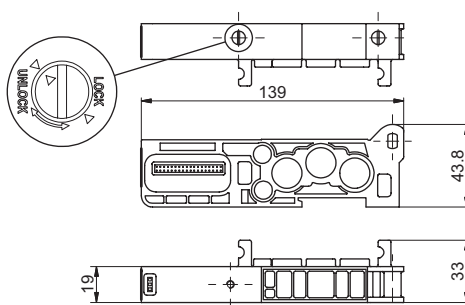
Coding: 2530.01.V

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

VERSION
M = for monostable S.V.
B = for bistable S.V.



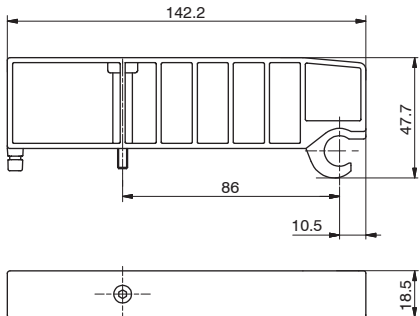
SHORT CODE "1" (for monostable S.V.)
SHORT CODE "2" (for bistable S.V.)
Weight 91,5 g



Closing plate

Coding: 2530.00

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

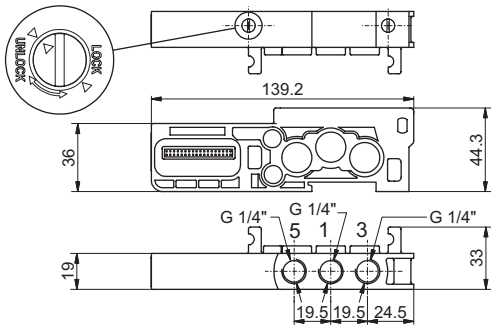


SHORT FUNCTION CODE "T"
Weight 53.5 g

Intermediate Inlet/Exhaust module

Coding: 2530.10

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

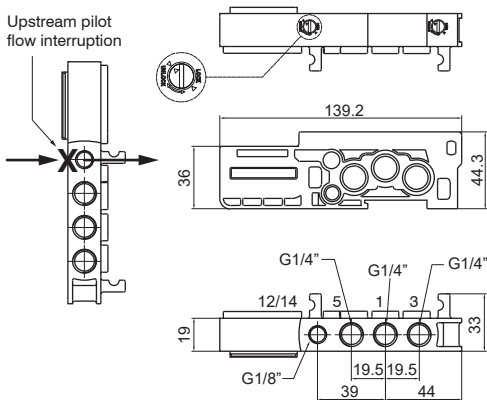


SHORT FUNCTION CODE "W"
Weight 110 g

Intermediate inlet/Exhaust module with external pilot

Coding: 2530.11

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



SHORT CODE "K"
Weight 162 g

Intermediate electro-pneumatic shut-off module 2/4/6/8 positions

Coding: 2530.M.T

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 3 ... 7 (piloting 12/14)
Temperature °C	-5 ... +50
Feeding	+ 24 V DC ±10%
Protection	Inverted polarity protection
Maximum load	100 mA
Indicators	+ 24 V DC presence LED
Series modules maximum number	3

MODULE	
M	10 = Supply and exhaust 11 = Supply and exhaust with separate pilot
SHUT-OFF	
T	2A = 2 Signals 4A = 4 Signals 6A = 6 Signals 8A = 8 Signals



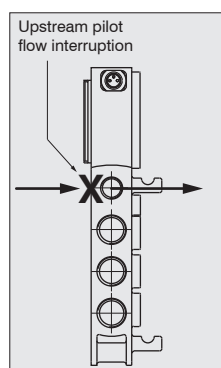
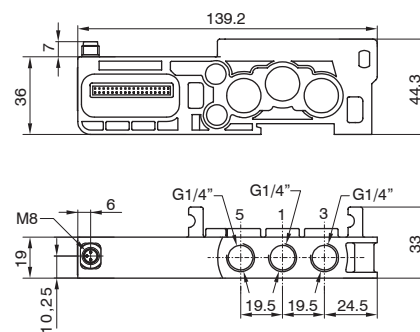
Weight 157 g

2530.10.T

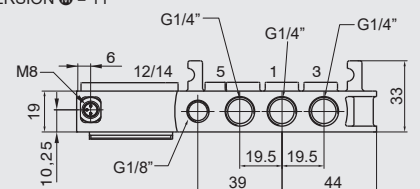


Weight 163 g

2530.11.T

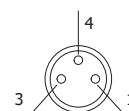


VERSION M = 11

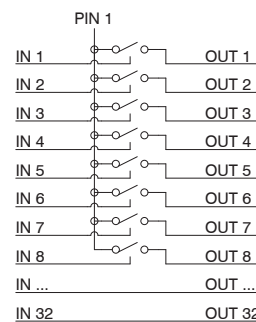
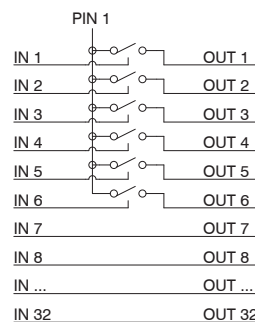
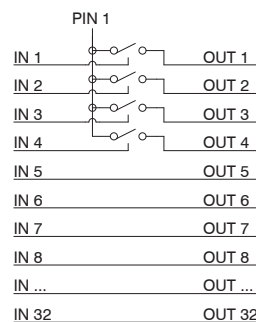
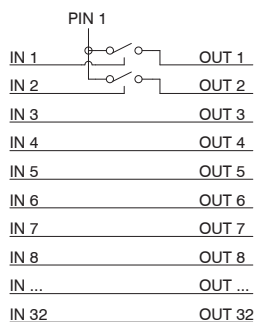
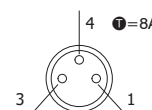
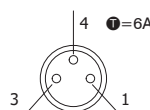
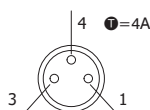
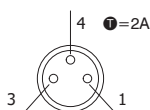


WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

Intermediate electro-pneumatic shut-off module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself.
When the shut-off module is present, the controlled output logic signal values are equal to the input logic signal values which came from the serial node or the multi-pin module.
If the supply input signal is absent, the controlled output logic signal values are all equal to zero.
This module is particularly useful when control signals are used to block the valves; it is also effective both with serial management and multi-pin connection of the manifolds.
It is possible to use more modules to interrupt every command signals simply by inserting them before the signals to be interrupted.



PIN	DESCRIPTION
1	+ 24 V DC
4	NOT CONNECTED
3	GND



Usage examples

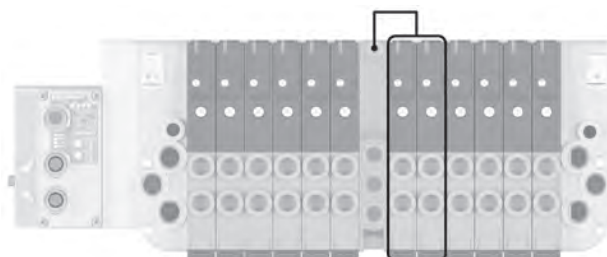
EXAMPLE 1

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

Assembly:

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

Note: the first 2 of these 6 monostable solenoid valves are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

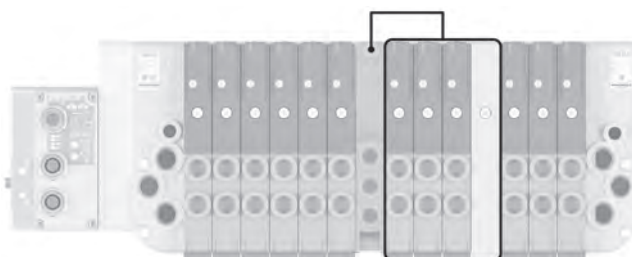


EXAMPLE 2

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

Assembly:

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



EXAMPLE 3

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

Assembly:

- 1 monostable solenoid valve (not interruptible because before the module)
- 1 additional electro-pneumatic shut-off module
- 6 monostable solenoid valves

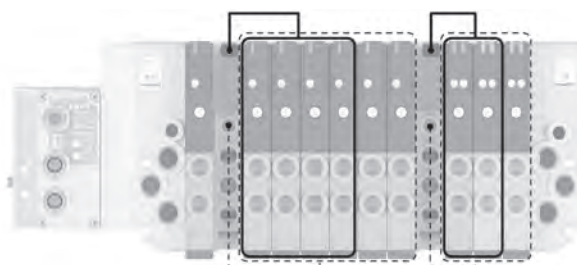
Note: the first 4 of these 6 monostable solenoid valves are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

Note no. 2: The pilots of the 6 solenoid valves downstream of the intermediate electro-pneumatic shut-off module are pneumatically powered by the module itself.

- 1 additional electro-pneumatic shut-off module
- 3 bistable solenoid valves

Note no. 3: the first 2 of these 3 bistable solenoid valves are interruptible by the module, while the following will work correctly and are managed directly by the corresponding command signals.

Note no. 4: The pilots of the 3 solenoid valves downstream of the intermediate electro-pneumatic shut-off module are pneumatically powered by the module itself.



Key

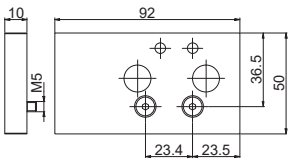
S.V. electrically managed by the shut-off module: ————

S.V. pneumatically managed (12/14) by the shut-off module: - - - - -



Offset compensation plate

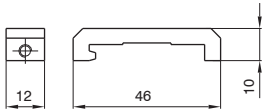
Coding: 25E0.P0



Weight 116 g

DIN rail adapter

Coding: 3100.16



Weight 12 g

Polyethylene Silencer Series SPL-P

Coding: SPLP.D



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

Diaphragm plug

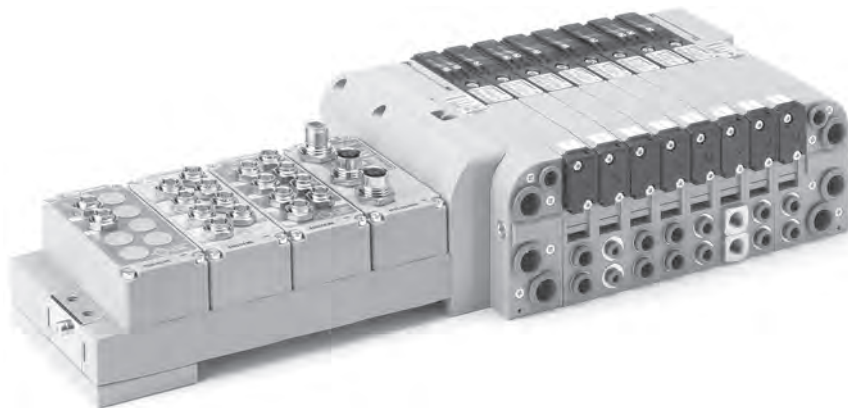
Coding: 2530.17



Weight 2,3 g



Series 2500 Optyma-T EVO



1

AIR DISTRIBUTION

2500 SERIES Optyma-T EVO SOLENOID VALVES MANIFOLD

- Increased flexibility
- Digital and analogue I/O modules
- Manufactured in technopolymer
- Wide range of communication protocols



CC-Link **IE** field Basic

WE SPEAK EVO

The Optyma-T series becomes EVO and interfaces with the new PX series modular electronic system while still retaining all of its technical advantages. This is enriched with new features that further extend the flexibility of the product:

- Flow rate of 750 NI/min
- Assembly with tie rods kit
- Operating using different pressures and vacuum
- Electro-pneumatic shut-off module

Construction characteristics

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

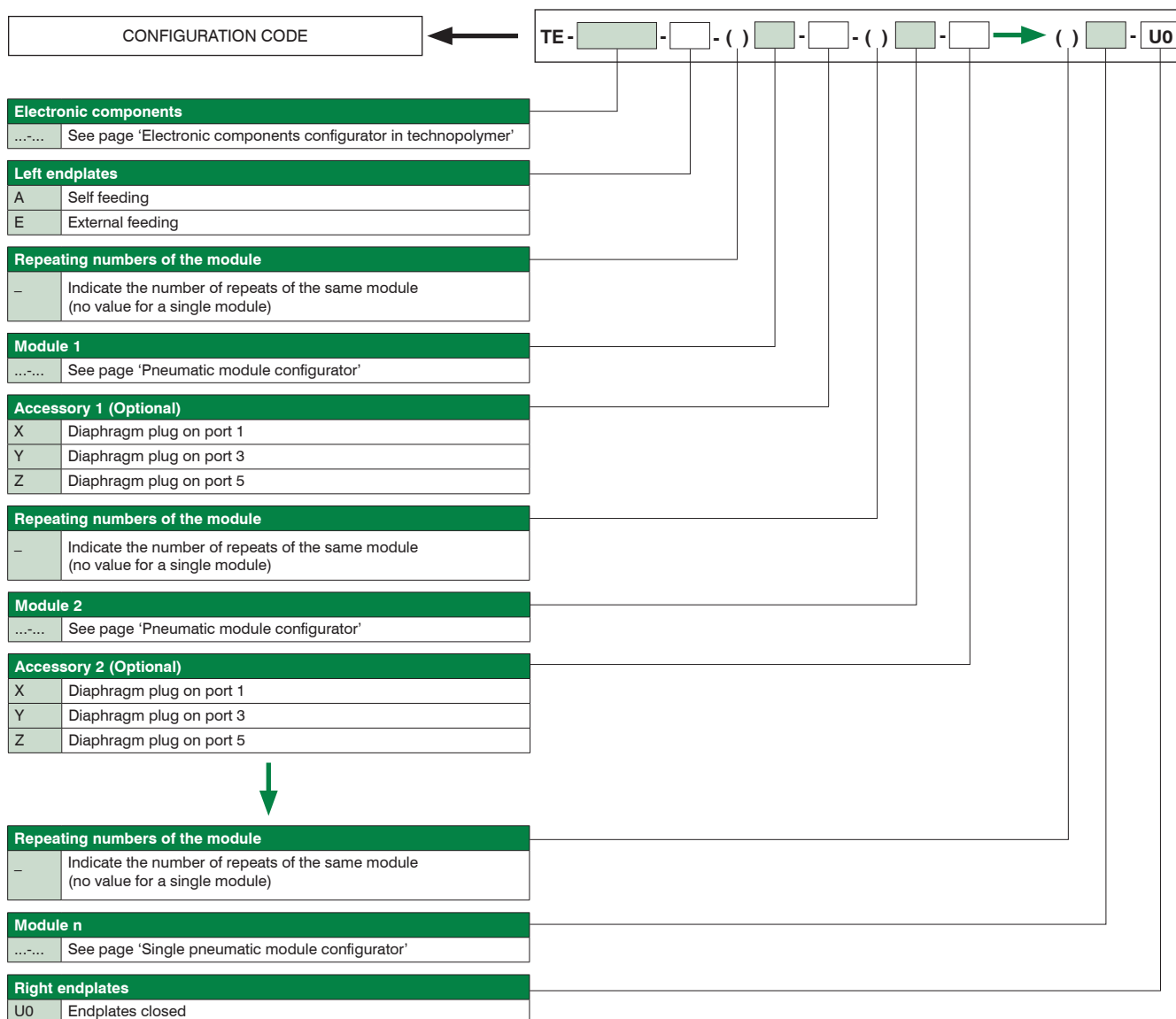
Operational characteristics

Supply voltage	+ 24 V DC $\pm 10\%$
Pilot consumption	1,3W
Pilot working pressure (12-14)	from 3 up to 7 bar max.
Valve working pressure [1]	from vacuum to 10 bar max.
Operating temperature	from -5°C to +50°C
Protection degree	IP65
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous



Rules and configuration scheme

1
AIR DISTRIBUTION



Configurable on Cadenas platform



Note:

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

- 32 if a 37-pole multi-pin module, a serial node or IO-Link interface are used.
- 24 if a 25-pole multi-pin module is used.

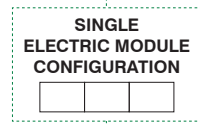
If a monostable valve is used on a bistable type base (2 electrical signals occupied), an electrical signal is lost.

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

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

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

If one or more ports must be interrupted more than once, the addition of the intermediate supply/discharge module is necessary.

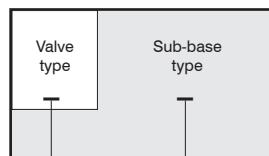


1 AIR DISTRIBUTION



Modules configurator

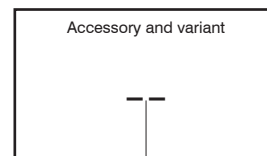
Base module configurator with Solenoid valve



Solenoid valve position	
A	S.V. 5/2 SOL.-SPRING
B	S.V. 5/2 SOL.-DIF.
C	S.V. 5/2 SOL.-SOL.
E	S.V. 5/3 CC SOL.-SOL.
F	S.V. 2x3/2 NC-NC
G	S.V. 2x3/2 NO-NO
H	S.V. 2x3/2 NC-NO
I	S.V. 2x3/2 NO-NC
T	Plug

Base	
1	Monostable base G1/8 GAS
2	Bistable base G1/8 GAS
3	Monostable base Ø4
4	Bistable base Ø4
5	Monostable base Ø6
6	Bistable base Ø6
7	Monostable base Ø8
8	Bistable base Ø8

Accessory module configurator

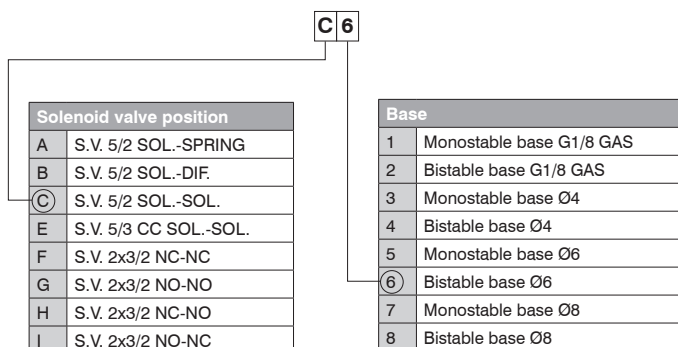


Intermediate inlet/Exhaust module	
W	Separated air supply and exhaust

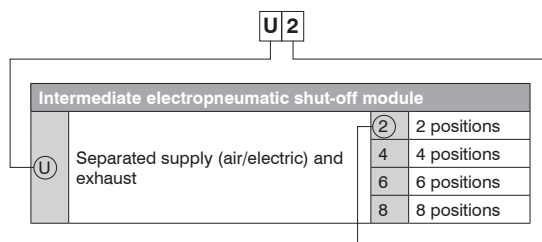
Intermediate electropneumatic shut-off module		
U	Separated supply (air/electric) and exhaust	2 2 positions
		4 4 positions
		6 6 positions
		8 8 positions
K	Separated supply (air/electric), exhaust and 12/14 piloting	2 2 positions
		4 4 positions
		6 6 positions
		8 8 positions

Configuration example of single module:

Bistable base, 5/2 Solenoid-Solenoid valve

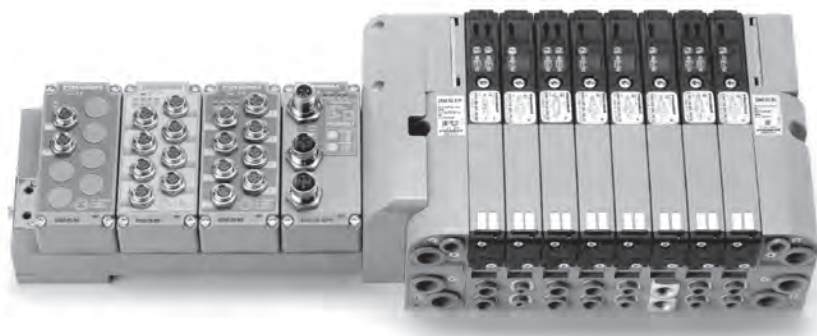


Intermediate electropneumatic shut-off module 2 positions

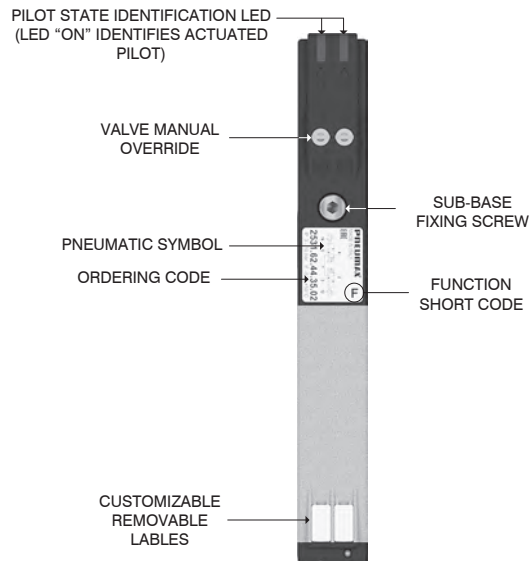


Configuration example of complete group:

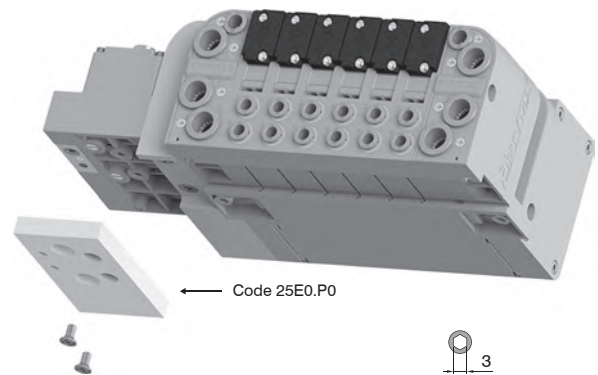
- Technopolymer PX3 serial system (P-N4-D8-M8-C1)
- Left endplates - External feeding (E)
- Bistable base with (F6) Solenoid valve
- Monostable base with (B3) Solenoid valve
- Bistable base with (E6) Solenoid valve
- Monostable base with (A5) Solenoid valve
- Monostable base with (A3) Solenoid valve
- Monostable base with (B1) Solenoid valve
- Bistable base with (C4) Solenoid valve
- Monostable base with (B3) Solenoid valve
- Right endplates closed (U0)



TE-P-N4-D8-M8-C1-E-F6-B3-E6-A5-A3-B1-C4-B3-U0

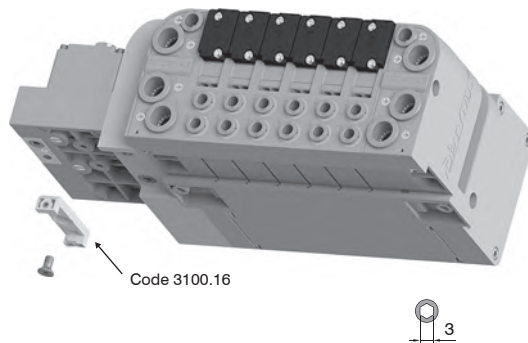


Offset compensation plate



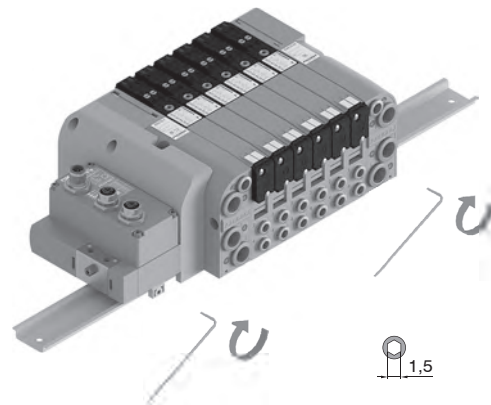
Attention: This accessory is supplied on the manifold unless otherwise stated. This is not compatible for DIN rail mounting.

DIN rail mounting support plate



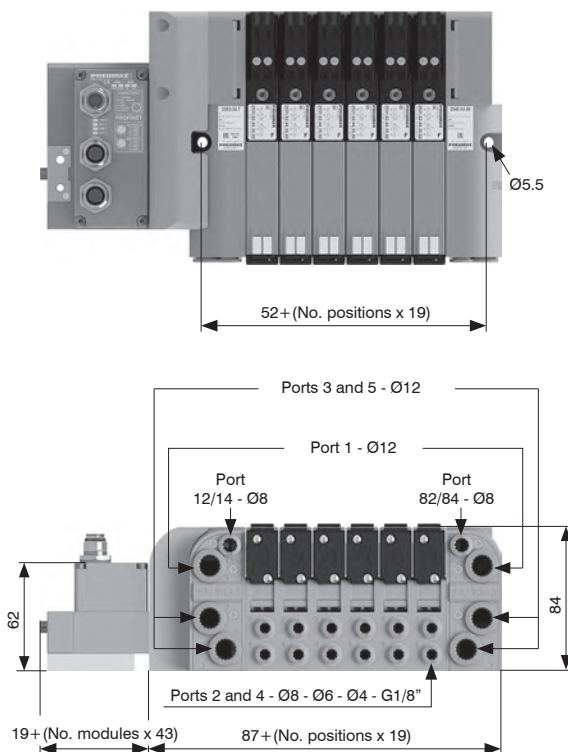
Attention: This must be included when creating the manifold configuration. Exclude the offset compensation plate.

DIN rail fixing

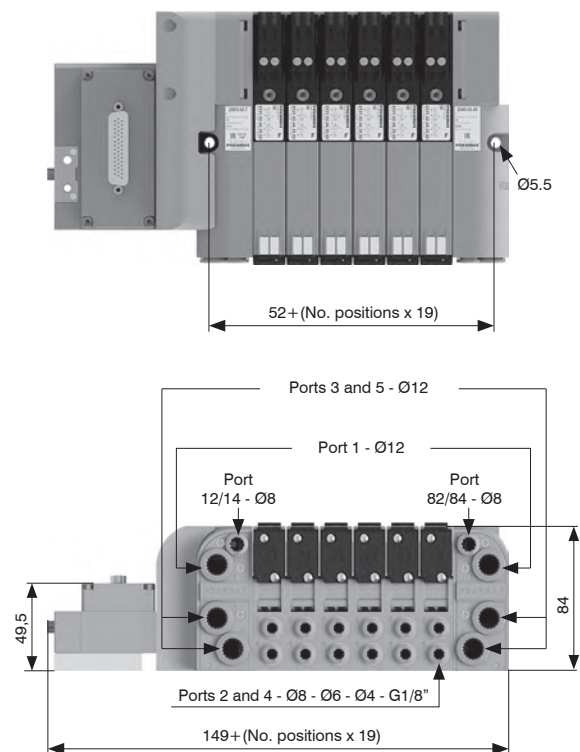


Supply ports and maximum possible size according to valves used

Serial system node version



Multi-pin version



Manual override actuation

Instable function:

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



Bistable function:

Push and turn to get the bistable function



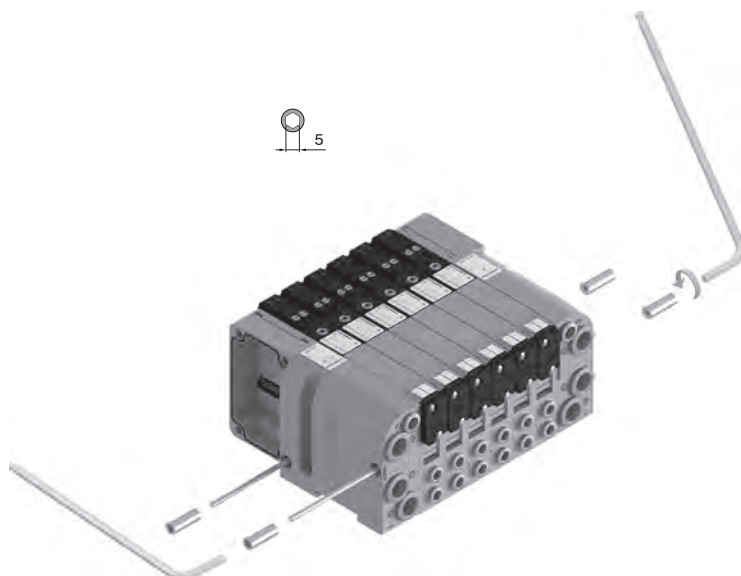
Note: we recommend the manual override is returned to it's original position when not in use

Solenoid valves installation



Note: Torque moment 1 Nm

Sub-base assembly



Minimum torque moment: 2,5 Nm
Maximum fixing torque for fittings: 3 Nm

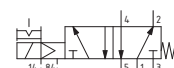
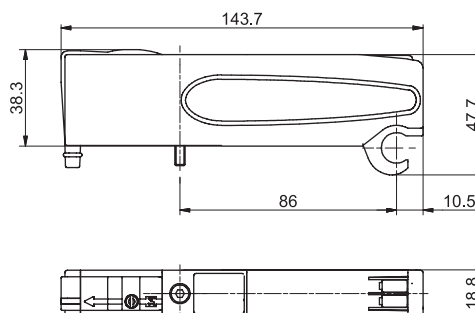
Solenoid-Spring

Coding: 2541.52.00.39.

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

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

SHORT FUNCTION CODE "A"
Weight 129 g



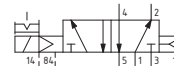
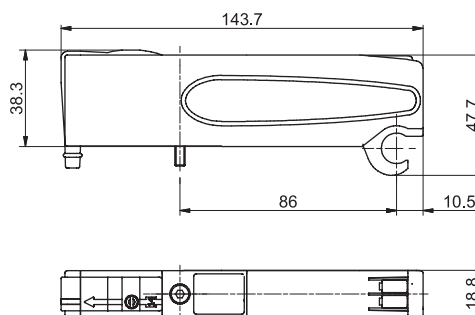
Solenoid-Differential

Coding: 2541.52.00.36.

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

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

SHORT FUNCTION CODE "B"
Weight 126 g



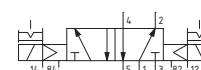
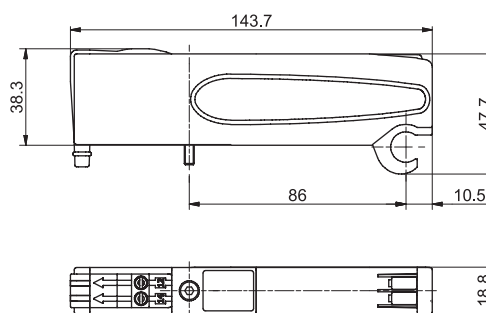
Solenoid-Solenoid

Coding: 2541.52.00.35.

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

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

SHORT FUNCTION CODE "C"
Weight 134 g



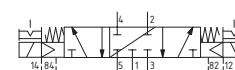
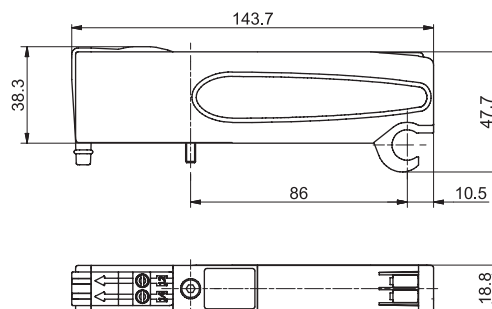
Solenoid-Solenoid 5/3

Coding: 2541.53.31.35. **V**

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	600
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	20

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

SHORT FUNCTION CODE "E"
Weight 132 g



Solenoid-Solenoid 2x3/2

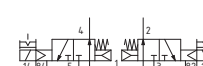
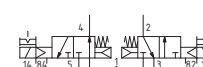
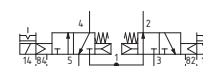
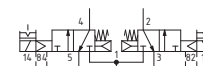
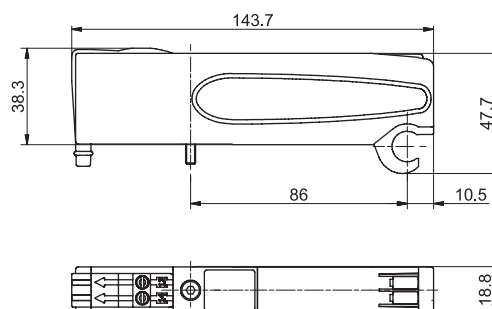
Coding: 2541.62. **F**.35. **V**

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	$\geq 3 + (0,2 \times \text{inlet pressure})$
Temperature °C	-5 ... +50
Flow rate at 6 bar with $\Delta p=1$ (NI/min)	700
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	25

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

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

Weight 122 g



Left Endplate

Coding: 25E0.●.T

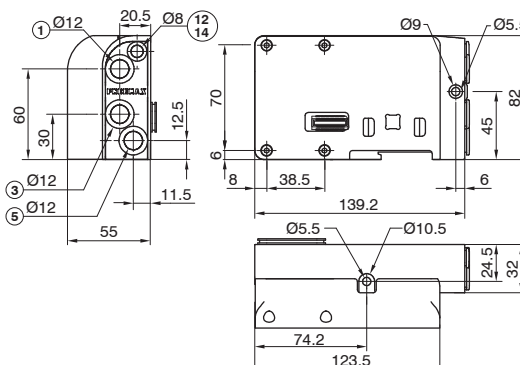
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (external feeding) 3 ... 7 (self feeding)
Pilot pressure (bar)	3 ... 7 (external feeding)
Temperature °C	-5 ... +50

VERSION
● 02 = External feeding
12 = Self-feeding



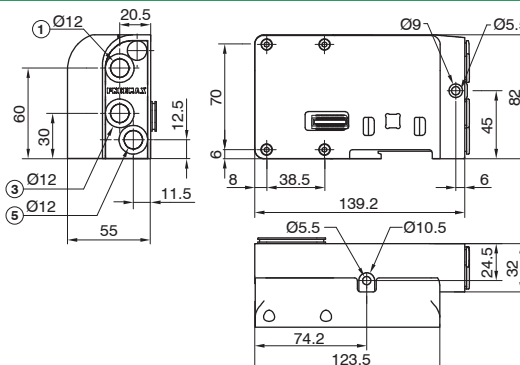
12/14 SEPARATED FROM PORT 1
Weight 300 g

25E0.02.T



12/14 CONNECTED TO PORT 1
Weight 300 g

25E0.12.T



Right Endplate

Coding: 2540.03.●

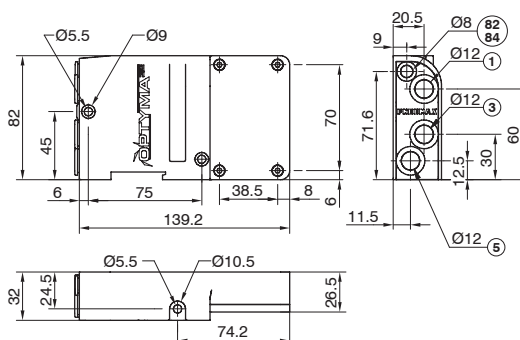
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ... +50

ELECTRICAL CONNECTION
● 00 = Electrical connection



PORT 82/84 = DO NOT PRESSURIZE, SOLENOID PILOTS
EXHAUST
Weight 274 g

2540.03.●



Modular base

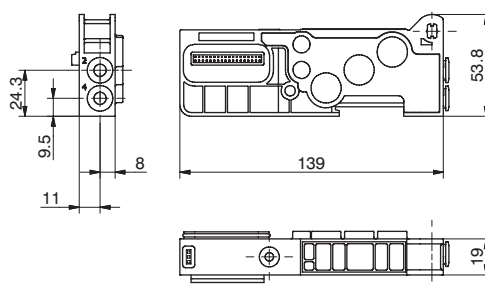
Coding: 254●.01●

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

WORKING PORTS SIZE
1 = G1/8" female straight cartridge
● 4 = Cartridge Ø4
6 = Quick fitting tube Ø6
8 = Quick fitting tube Ø8
VERSION
● M = for monostable S.V.
B = for bistable S.V.



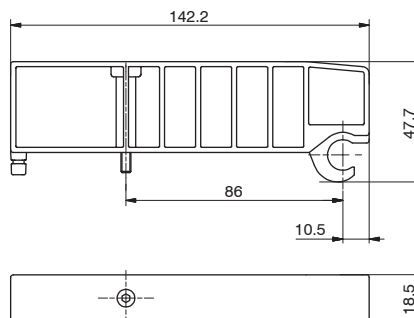
Weight 96,5 g



Closing plate

Coding: 2530.00

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

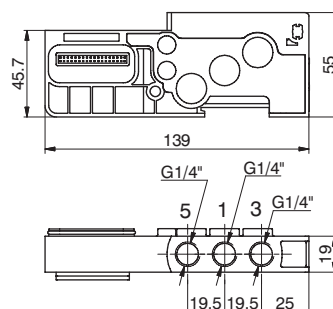


SHORT FUNCTION CODE "T"
Weight 53.5 g

Intermediate Inlet/Exhaust module

Coding: 2540.10

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

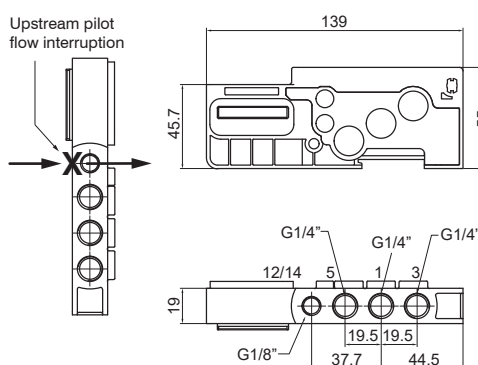


SHORT FUNCTION CODE "W"
Weight 115 g

Intermediate inlet/Exhaust module with external pilot

Coding: 2540.11

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



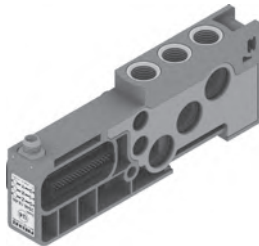
SHORT CODE "K"
Weight 173 g

Intermediate electro-pneumatic shut-off module 2/4/6/8 positions

Coding: 2540. **M**. **T**

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 3 ... 7 (piloting 12/14)
Temperature °C	-5 ... +50
Feeding	+ 24 V DC $\pm 10\%$
Protection	Inverted polarity protection
Maximum load	100 mA
Indicators	+ 24 V DC presence LED
Series modules maximum number	3

MODULE	
M	10 = Supply and exhaust 11 = Supply and exhaust with separate pilot
SHUT-OFF	
2A	2 Signals
4A	4 Signals
6A	6 Signals
8A	8 Signals



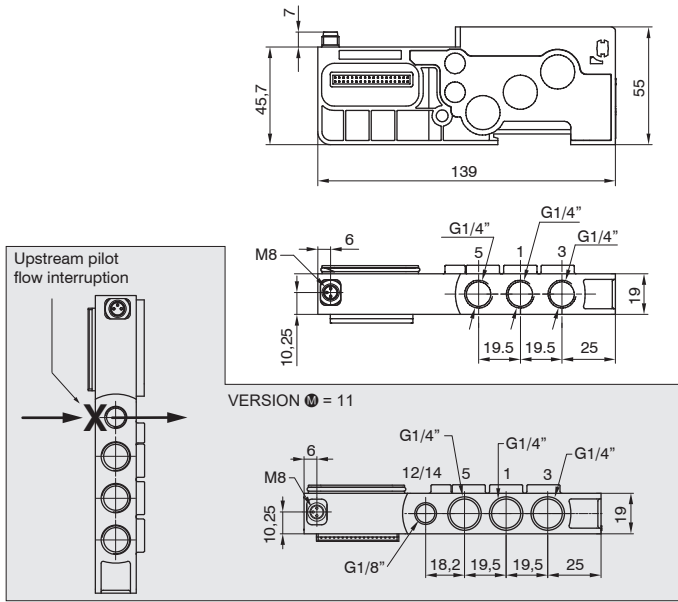
Weight 168 g

2540.10. **M**



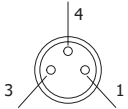
Weight 174 g

2540.11. **M**

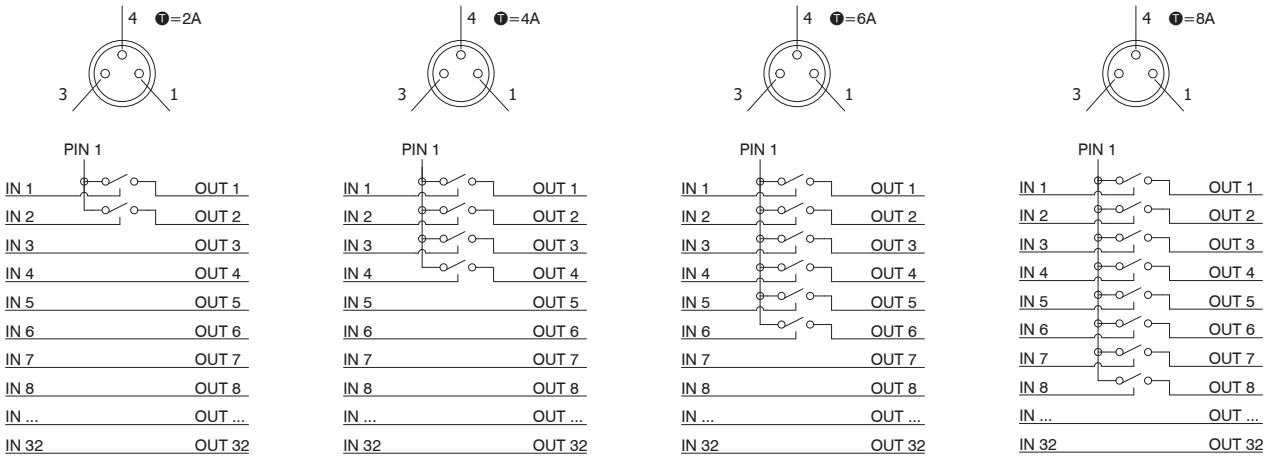


WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

Intermediate electro-pneumatic shut-off module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself.
When the shut-off module is present, the controlled output logic signal values are equal to the input logic signal values which came from the serial node or the multi-pin module.
If the supply input signal is absent, the controlled output logic signal values are all equal to zero.
This module is particularly useful when control signals are used to block the valves; it is also effective both with serial management and multi-pin connection of the manifolds.
It is possible to use more modules to interrupt every command signals simply by inserting them before the signals to be interrupted.



PIN	DESCRIPTION
1	+ 24 V DC
4	NOT CONNECTED
3	GND



Usage examples

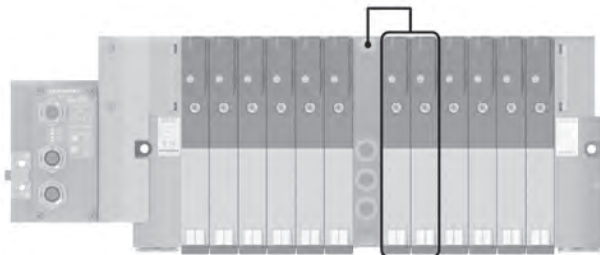
EXAMPLE 1

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

Assembly:

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

Note: the first 2 of these 6 monostable solenoid valves are interruptible by the module, while the following 4 will work correctly managed directly by the corresponding command signals.

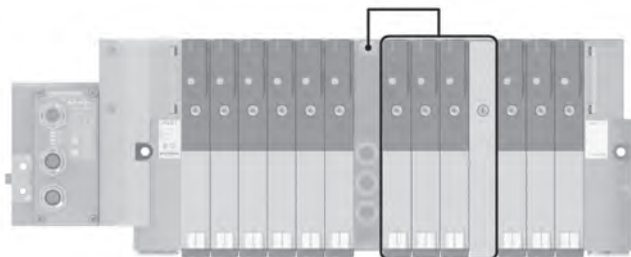


EXAMPLE 2

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

Assembly:

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



EXAMPLE 3

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

Assembly:

- 1 monostable solenoid valve (not interruptible because before the module)
- 1 additional electro-pneumatic shut-off module
- 6 monostable solenoid valves

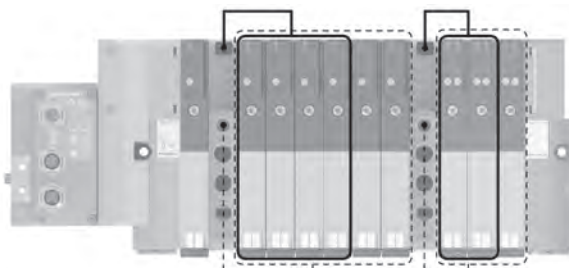
Note: the first 4 of these 6 monostable solenoid valves are interruptible by the module, while the following 2 will work correctly managed directly by the corresponding command signals.

Note no. 2: The pilots of the 6 solenoid valves downstream of the intermediate electro-pneumatic shut-off module are pneumatically powered by the module itself.

- 1 additional electro-pneumatic shut-off module
- 3 bistable solenoid valves

Note no. 3: the first 2 of these 3 bistable solenoid valves are interruptible by the module, while the following will work correctly and are managed directly by the corresponding command signals.

Note no. 4: The pilots of the 3 solenoid valves downstream of the intermediate electro-pneumatic shut-off module are pneumatically powered by the module itself.



Key

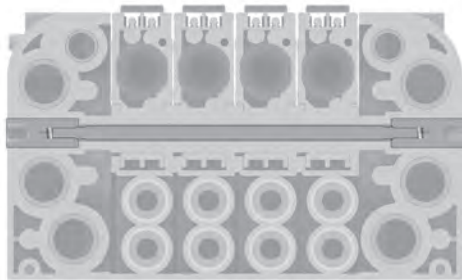
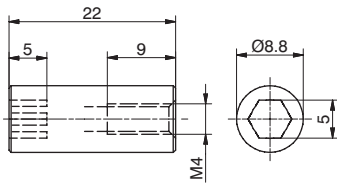
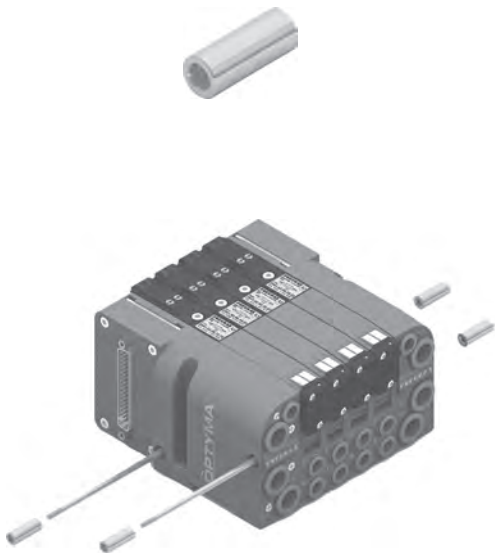
S.V. electrically managed by the shut-off module: ————

S.V. pneumatically managed (12/14) by the shut-off module: - - - - -

► Nut

Coding: 2540.KD.00

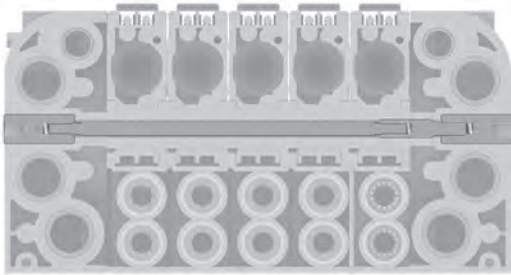
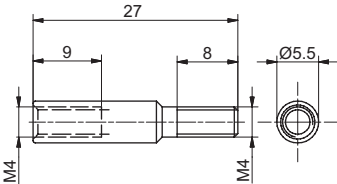
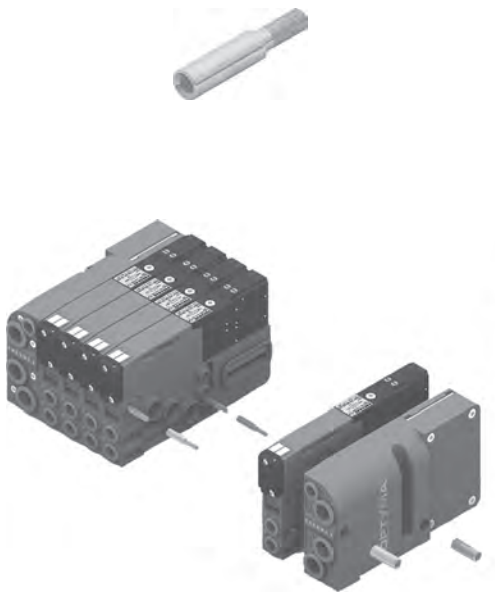
The Kit includes 4 pieces
Weight 10 g



► Extension (1 Position)

Coding: 2540.KP.01

The Kit includes 2 pieces
Weight 3,5 g



► Tie-rod M4

Coding: 2540.KT.^P

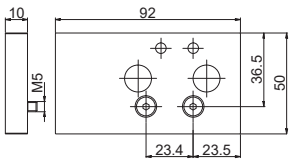


NO. POSITIONS
01 = Nr. 1 Position
02 = Nr. 2 Positions
03 = Nr. 3 positions
04 = Nr. 4 Positions
05 = Nr. 5 positions
06 = Nr. 6 Positions
07 = Nr. 7 positions
^P 08 = Nr. 8 Positions
09 = Nr. 9 positions
10 = Nr. 10 Positions
11 = Nr. 11 positions
12 = Nr. 12 Positions
13 = Nr. 13 positions
14 = Nr. 14 Positions
...
32 = Nr. 32 Positions



Offset compensation plate

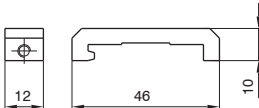
Coding: 25E0.P0



Weight 116 g

DIN rail adapter

Coding: 3100.16



Weight 12 g

Polyethylene Silencer Series SPL-R

Coding: SPLR.ⓓ



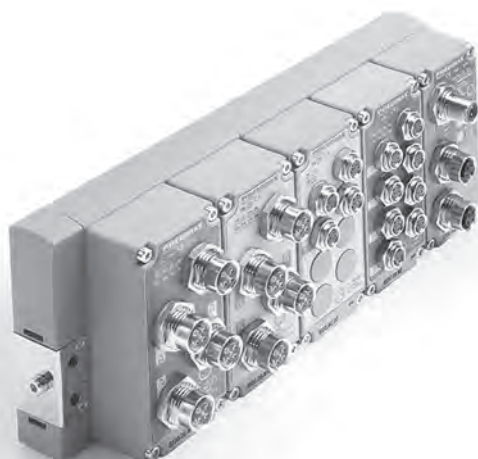
ⓓ	TUBE DIAMETER
	8 = 8 mm
	12 = 12 mm

Diaphragm plug

Coding: 2530.17



Weight 2,3 g



A UNIQUE CONTROL SYSTEM, A WIDE RANGE OF SOLUTIONS

The PX Series multiseriial module can be integrated into all Optyma S-F-T and 2700 series solenoid valves manifolds in EVO versions. The solenoid valves manifolds can be configured by implementing all major communication protocols on the same electronics, ensuring maximum flexibility and reliability in any application context.

MULTI-PIN MODULE				
	Optyma-S	Optyma-F	Optyma-T	Series 2700
25 poles	•	•	•	•
37 poles	•	•	•	•
44 poles	•			
SERIAL SYSTEMS				
	Optyma-S	Optyma-F	Optyma-T	Series 2700
CANopen® 32 bit protocol node kit	•	•	•	•
CANopen® 48 bit protocol node kit	•			
PROFIBUS DP 32 bit protocol node kit	•	•	•	•
PROFIBUS DP 48 bit protocol node kit	•			
EtherNet/IP protocol node kit	•	•	•	•
EtherCAT® protocol node kit	•	•	•	•
PROFINET IO RT protocol node kit	•	•	•	•
CC-Link IE Field Basic protocol node kit	•	•	•	•
IO-Link 32 bit protocol interface kit	•	•	•	•
IO-Link 48 bit protocol interface kit	•			
INPUTS AND OUTPUTS MODULES				
	Optyma-S	Optyma-F	Optyma-T	Series 2700
8 M8 & M12 digital inputs module kits	•	•	•	•
8 M8 & M12 digital outputs module kits	•	•	•	•
32 digital inputs & outputs module kits (37 pin SUB-D connector)	•	•	•	•
Analogue inputs module kit M8	•	•	•	•
Analogue outputs module kit M8	•	•	•	•
Pt100 inputs module kit	•	•	•	•
ADDITIONAL MODULES				
	Optyma-S	Optyma-F	Optyma-T	Series 2700
Additional power supply module kit	•	•	•	•

CANopen

PROFIBUS

PROFIBUS

EtherCAT

EtherNet/IP

IO-Link

CC-Link IE Field Basic

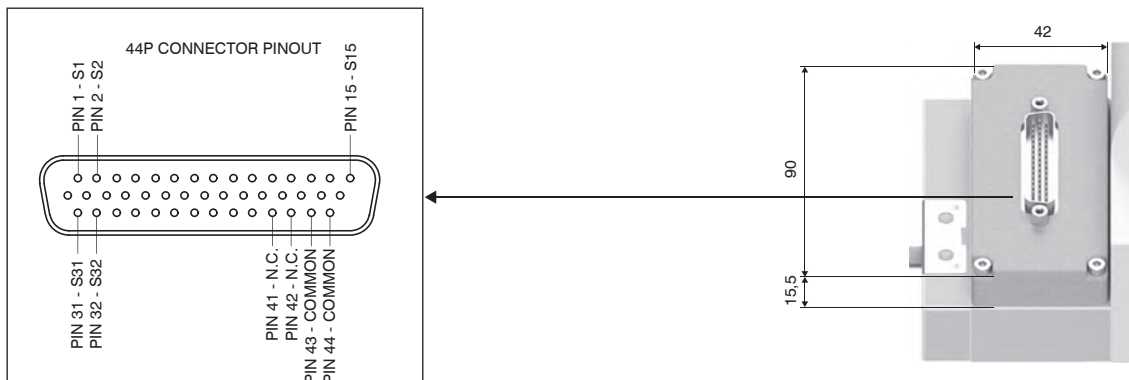
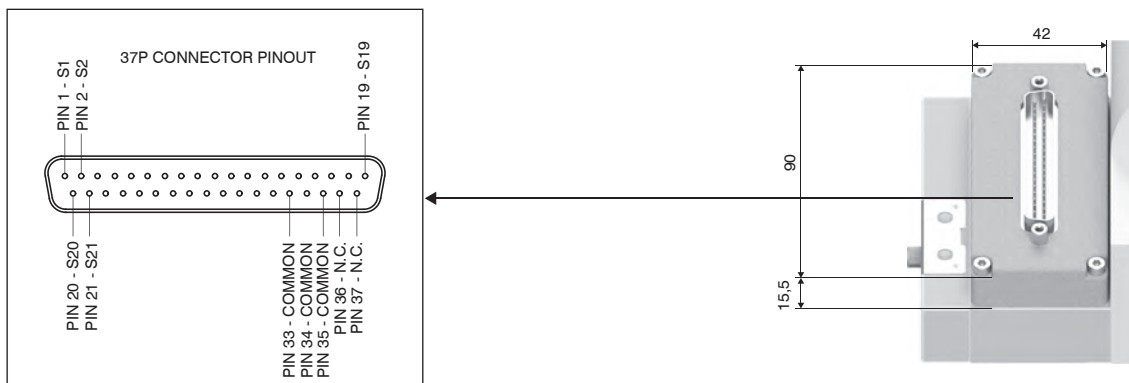
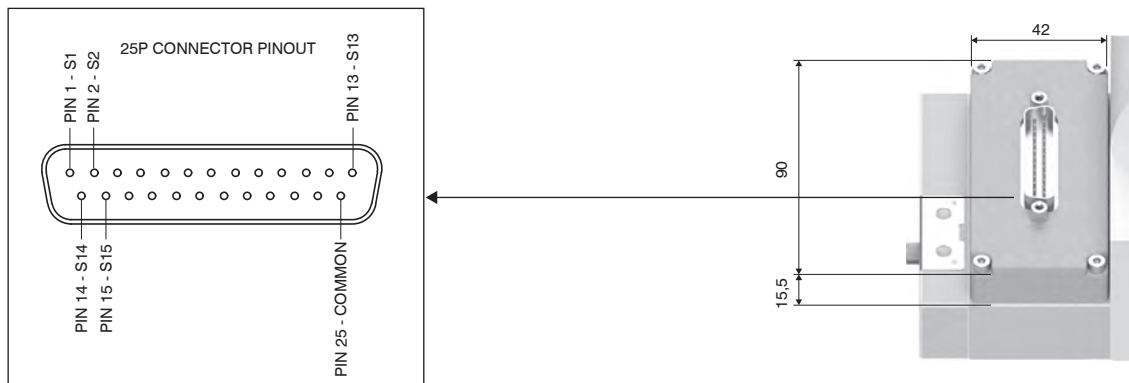
Multi-pin module

Coding: 5E30.©

Technical characteristics		
Maximum current per module		300mA
Protection		Overcurrent (auto-resettable fuse) Reverse polarity
Input impedance		3kΩ
Maximum cable length		< 30 m
Input data allocation		8 bit
INPUTS + 24 V DC current consumption of the module only		5mA
Maximum number of handled signals	25 Poles	24
	37 poles	32
	44 Poles	40

ELECTRICAL CONNECTION	
25P	= Connector 25 poles PNP
37P	= Connector 37 poles PNP
44P	= Connector 44 poles PNP
25N	= Connector 25 poles NPN
37N	= Connector 37 poles NPN
44N	= Connector 44 poles NPN
25A	= Connector 25 poles AC
37A	= Connector 37 poles AC
44A	= Connector 44 poles PNP

Scheme / Overall dimensions and I/O layout



CANopen® protocol node kit

CANopen® node manages 64 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Connection to CANopen® fieldbus is made via two M12, male and female, 5 pins, type A circular connectors, in parallel between them; connectors pinout is compliant to CiA Draft recommendation 303-1 (V. 1.3 : 30 December 2004).

Transmission speed and address, as well as termination resistor activation are set via DIP-switches.

CANopen® node is available in two versions with 32 or 48 outputs allocated to solenoid valves on the manifold directly connected to the node.

Such outputs correspond to least significant bytes and their allocation is independent of how many solenoid valves are installed.

Remaining outputs can be used to control the modules.

Byte allocation to additional modules is fully automatic.

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200°Optyma S°	36 mA
2500°Optyma F°	54 mA
2500°Optyma T°	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

Coding: K5530.64.VCO

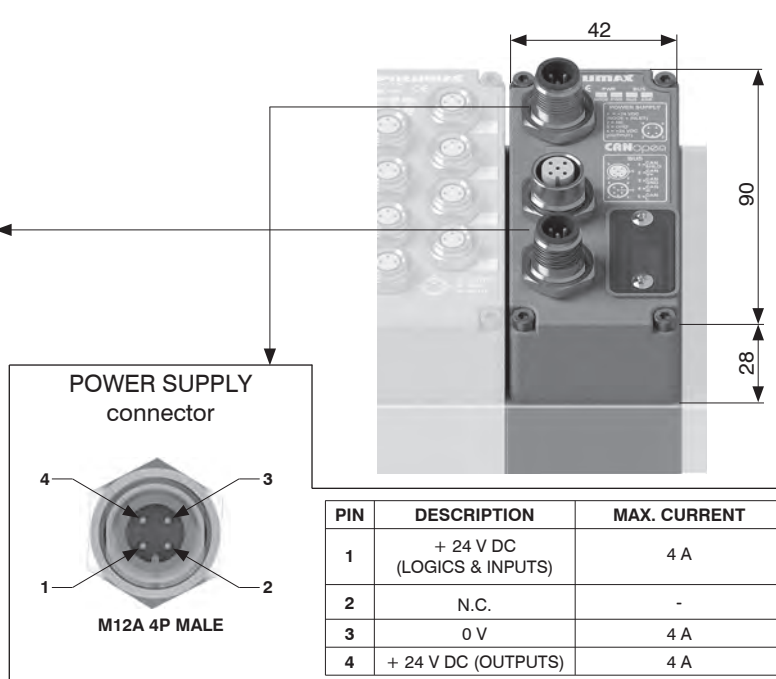
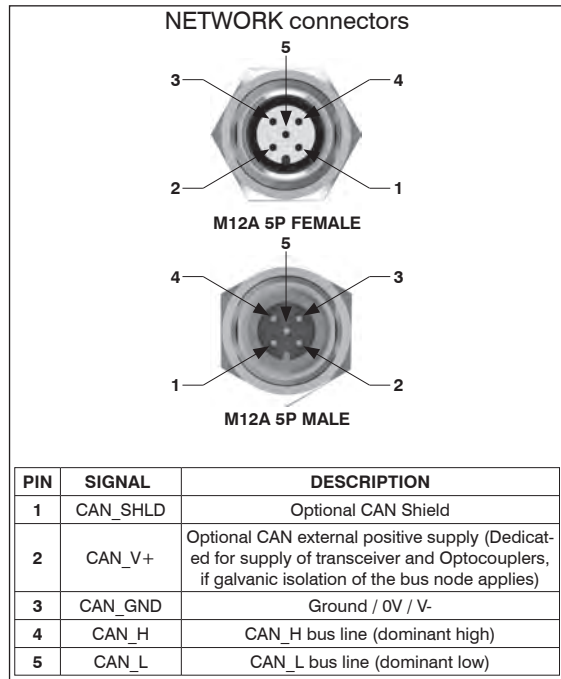
VERSION
32 = 32 output bits available for valve connections
48 = 48 output bits available for valve connections



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.



Scheme / Overall dimensions and I/O layout



Technical characteristics		
Specifications	CiA Draft Standard Proposal 301 V 4.10 (15 August 2006)	
Case	Reinforced technopolymer	
Power supply	Voltage	+ 24 V DC ± 10%
	Node only current consumption on + 24 VDC inputs	40 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 5 pins male-female connectors 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
	Maximum nodes number in network	64 (slave + master)
	Bus maximum recommended length	100 m at 500 Kbit/s
	Bus diagnosis	Green / red status LED
Configuration file	Available from our web site http://www.pneumaxspa.com	
Protection degree	IP65 when assembled	
Temperature °C	-5 ... +50	

PROFIBUS DP protocol node kit

PROFIBUS DP node manages 64 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Connection to PROFIBUS DP fieldbus is made via two M12, male and female, 5 pins, type B circular connectors, in parallel between them; connectors pinout is PROFIBUS Interconnection Technology specifications compliant (Version 1.1, August 2001).

Address as well as termination resistor activation are set via DIP-switches.

PROFIBUS DP node is available in two versions with 32 or 48 outputs allocated to solenoid valves on the manifold directly connected to the node.

Such outputs correspond to least significant bytes and their allocation is independent of how many solenoid valves are installed.

Remaining outputs can be used to control the modules.

Byte allocation to additional modules is fully automatic.

Coding: K5330.64.VPB

VERSION
32 = 32 output bits available for valve connections
48 = 48 output bits available for valve connections



Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

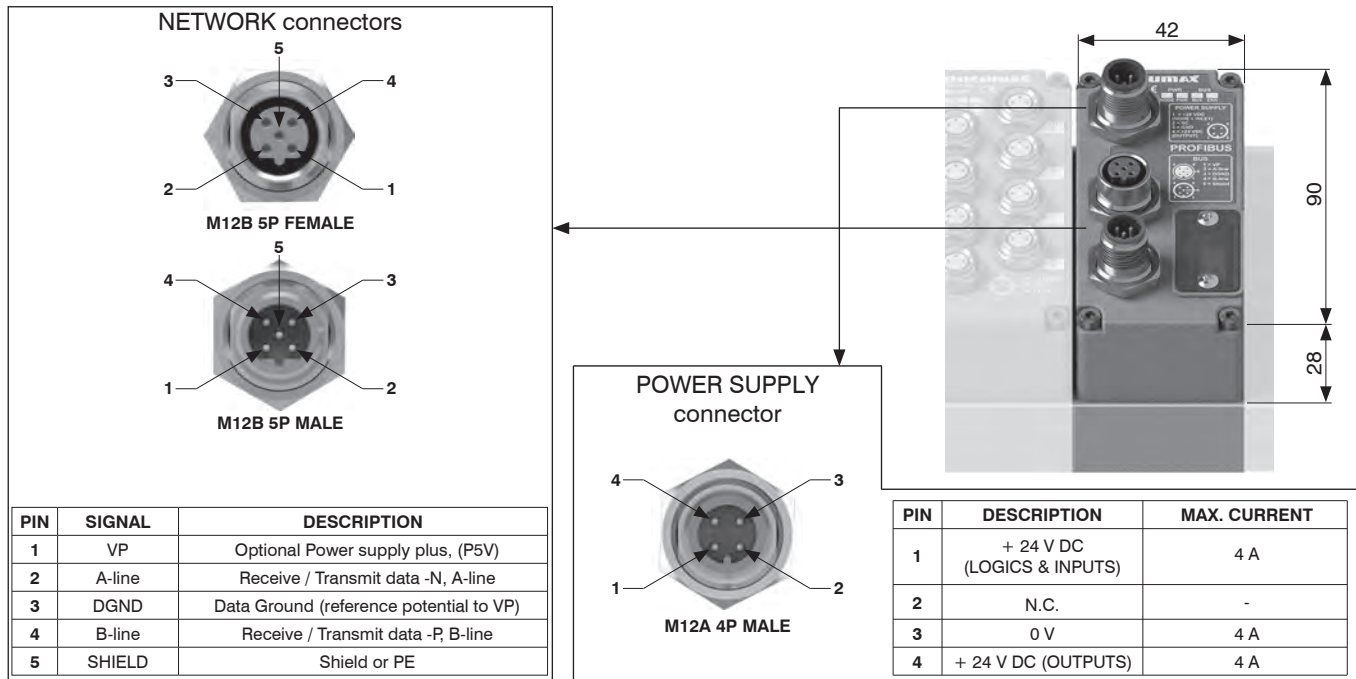
$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout



Technical characteristics		
Specifications	PROFIBUS DP	
Case	Reinforced technopolymer	
Power supply	Voltage	+ 24 VDC ± 10%
	Node only current consumption on + 24 VDC inputs	70 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 5 pins 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
	Maximum nodes number in network	100 (slave + master)
	Bus maximum recommended length	100 m at 12 Mbit/s - 1200 m at 9,6 Kbit/s
	Bus diagnosis	Green / red status LED
Configuration file	Available from our web site http://www.pneumaxspa.com	
Protection degree	IP65 when assembled	
Temperature °C	-5 ... +50	

EtherNet/IP protocol node kit

EtherNet/IP node manages 128 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Network connection is made via 2 M12 female, type D, 4 pins, circular connectors.

Code K5730.128.48EI provides first 48 outputs, corresponding to least significant 6 bytes, are allocated to the solenoid valve positions, regardless how many they are and how many valves are installed on the manifold directly connected to the node.

Remaining 80 outputs can be used to manage output modules; bytes allocation to additional modules is fully automatic.

Coding: K5730.128.48EI

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

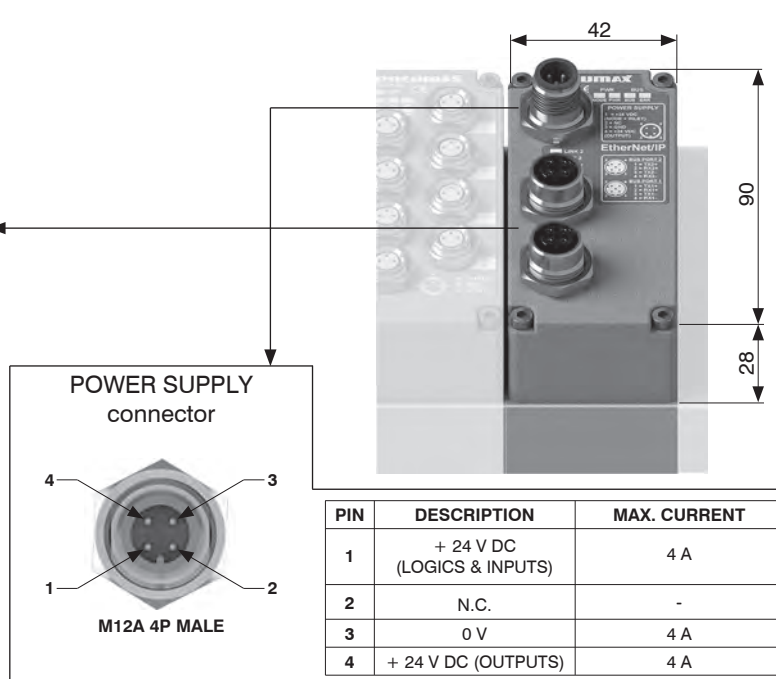
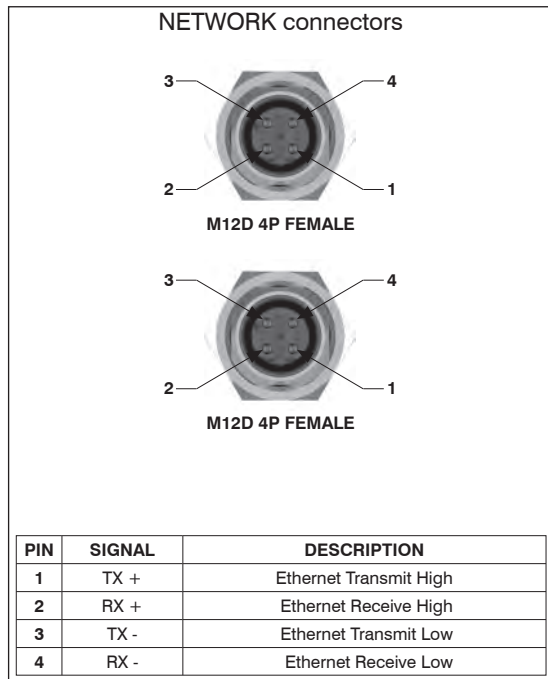
n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.



Scheme / Overall dimensions and I/O layout



Technical characteristics		
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC \pm 10%
	Node only current consumption on + 24 V DC inputs	65 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 4 pins male-female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	Green / red status LED
Configuration file		Available from our web site http://www.pneumaxspa.com
Protection degree		IP65 when assembled
Temperature °C		-5 ... +50

EtherCAT® protocol node kit

EtherCAT® node manages 128 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Network connection is made via 2 M12 female, type D, 4 pins, circular connectors.

Code K5730.128.48EC provides first 48 outputs, corresponding to least significant 6 bytes, are allocated to the solenoid valve positions, regardless how many they are and how many valves are installed on the manifold directly connected to the node.

Remaining 80 outputs can be used to manage output modules; bytes allocation to additional modules is fully automatic.

Coding: K5730.128.48EC

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

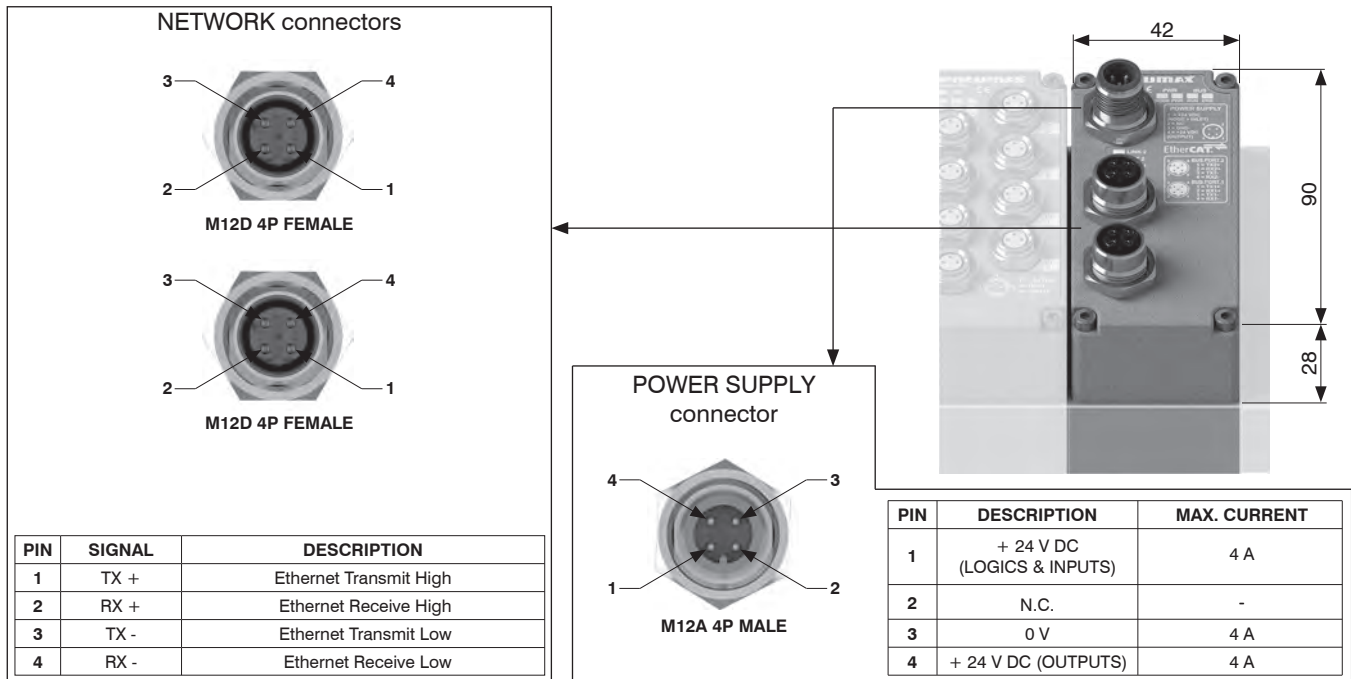
$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

Scheme / Overall dimensions and I/O layout



Technical characteristics		
Case	Reinforced technopolymer	
Power supply	Voltage	+ 24 V DC \pm 10%
	Node only current consumption on + 24 V DC inputs	65 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 4 pins male-female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	Green / red status LED
Configuration file	Available from our web site http://www.pneumaxspa.com	
Protection degree	IP65 when assembled	
Temperature °C	-5 ... +50	

PROFINET IO RT protocol node kit

PROFINET IO RT node manages 128 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Network connection is made via 2 M12 female, type D, 4 pins, circular connectors.

Code K5730.128.48PN provides first 48 outputs, corresponding to least significant 6 bytes, are allocated to the solenoid valve positions, regardless how many they are and how many valves are installed on the manifold directly connected to the node.

Remaining 80 outputs can be used to manage output modules; bytes allocation to additional modules is fully automatic.

Coding: K5730.128.48PN

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

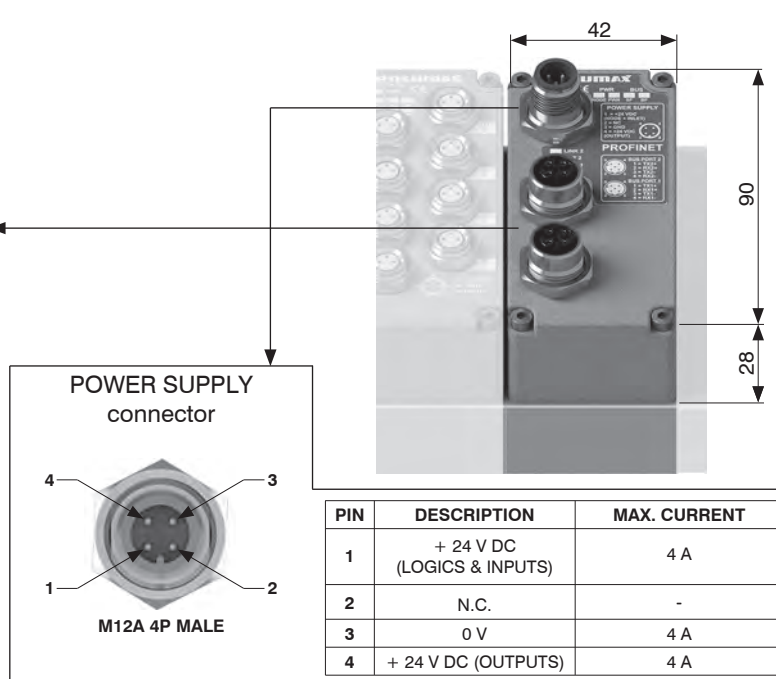
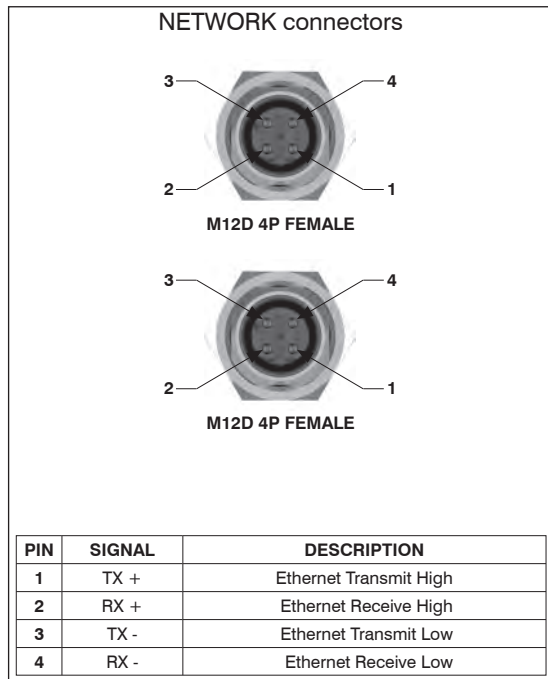
n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)



In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.



Scheme / Overall dimensions and I/O layout



Technical characteristics		
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC \pm 10%
	Node only current consumption on + 24 V DC inputs	65 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 4 pins male-female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	Green / red status LED
Configuration file		Available from our web site http://www.pneumaxspa.com
Protection degree		IP65 when assembled
Temperature °C		-5 ... +50

CC-Link IE Field Basic protocol node kit

CC-Link IE Field Basic node manages 128 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Network connection is made via 2 M12 female, type D, 4 pins, circular connectors.

Code K5730.128.48CL provides first 48 outputs, corresponding to least significant 6 bytes, are allocated to the solenoid valve positions, regardless how many they are and how many valves are installed on the manifold directly connected to the node.

Remaining 80 outputs can be used to manage output modules; bytes allocation to additional modules is fully automatic.

Coding: K5730.128.48CL

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by OUTPUTS + 24 V DC (pin 4).

To compute the maximum current on the OUTPUTS + 24 V DC, please use the following formula:

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

n = number of installed modules
 $I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)
 m = number of installed solenoid pilots
 i_{EV} = mean absorbed current per solenoid pilot (please see table below)

Series	i_{EV}
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

For each fieldbus node, maximum deliverable current by OUTPUTS + 24 V DC supply is 4 A, moreover the sum of the currents on OUTPUTS + 24 V DC and INPUTS + 24 V DC must not exceed 4 A.

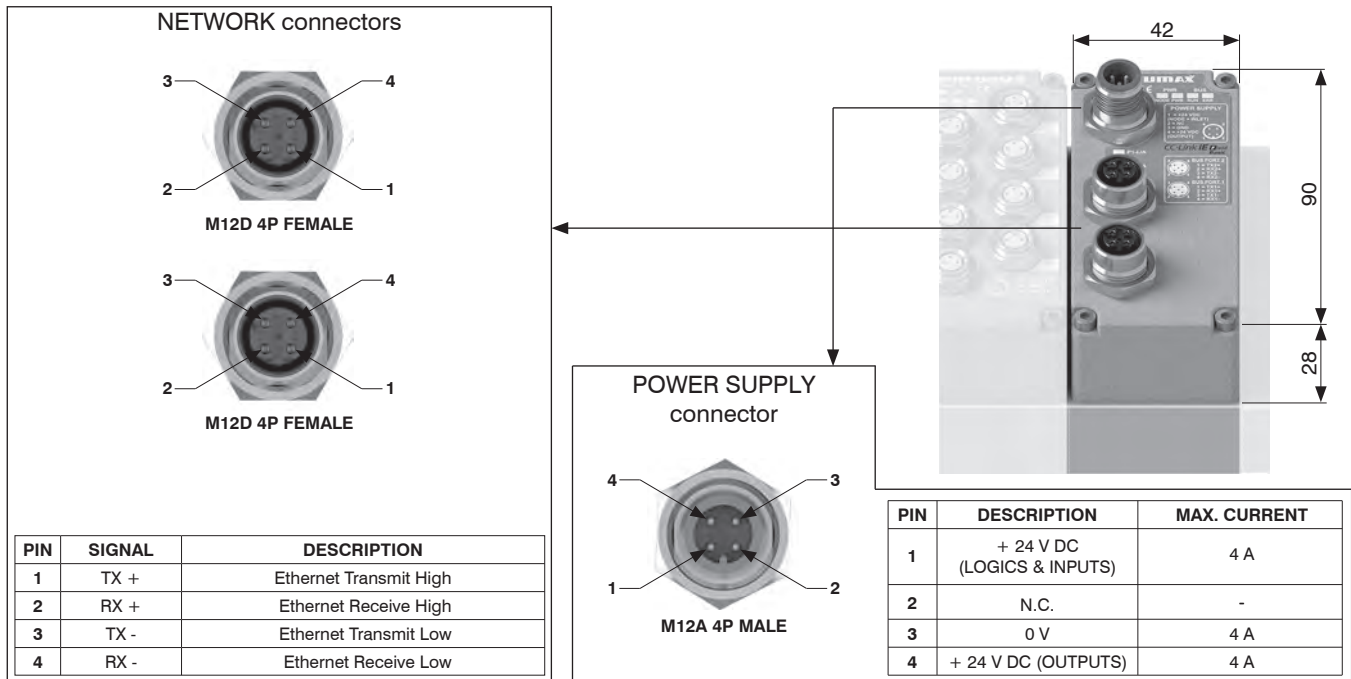
$$I_{24V\ DC\ out} + I_{24V\ DC\ in} < 4A$$

Where:

$$I_{24V\ DC\ in} = \sum_{i=1}^n I_{in,i}$$

n = number of installed modules
 $I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

Scheme / Overall dimensions and I/O layout



Technical characteristics		
Case	Reinforced technopolymer	
Power supply	Voltage	+ 24 V DC \pm 10%
	Node only current consumption on + 24 V DC inputs	65 mA
	Power supply diagnosis	Green LED PWR NODE / Green LED PWR OUT
Communication	Connection	2 M12 4 pins male-female connectors type D (IEC 61076-2-101)
	Baud rate	100 Mbit/s
	Maximum distance between 2 nodes	100 m
	Bus diagnosis	1 Green LED and 1 red status LED + 2 link and activity LEDs'
Configuration file	Available from our web site http://www.pneumaxspa.com	
Protection degree	IP65 when assembled	
Temperature °C	-5 ... +50	

IO-Link protocol interface kit

IO-Link interface manages 64 inputs and outputs.

Accessory modules can be connected in whatever order and configuration.

Electric power supply and IO-Link connection to the Master are made via M12, male, 5 pins, type A, circular connector, "CLASS B", according to IO-Link specifications.

Electric rails L+/L- supply interface only, while P24/N24 rails supply additional modules and solenoid valves.

Either power supplies are galvanically isolated in the IO-Link interfaces.

IO-Link interface is available in two versions with 32 or 48 outputs allocated to solenoid valves on the manifold directly connected to the node.

Such outputs correspond to least significant bytes and their allocation is independent of how many solenoid valves are installed.

Remaining outputs can be used to control the modules.

Byte allocation to additional modules is fully automatic.

Current limitations

Both stand alone and integrated components must operate within the current limits of the fieldbus node; please note: the solenoid valves are supplied by pin 2 and pin 5 (P24 / N24).

To compute the maximum current on the P24 / N24 supply, please use the following formula::

n = number of installed modules

$I_{out,i}$ = maximum total current absorbed by the i-th module on the OUTPUTS + 24 V DC supply rail (please see specifications of the single module)

$I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

m = number of installed solenoid pilots

i_{EV} = mean absorbed current per solenoid pilot (please see table below)

$$I_{24V\ DC\ out} = \sum_{i=1}^n I_{out,i} + m \cdot i_{EV}$$

Series	i_EV
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

= maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

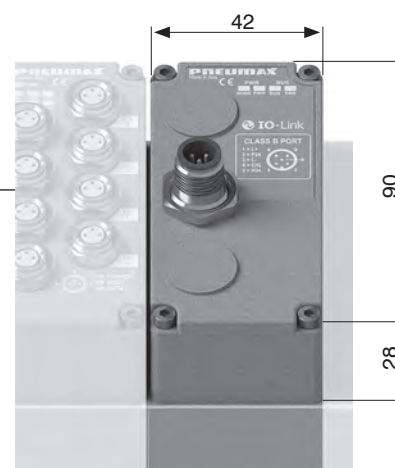
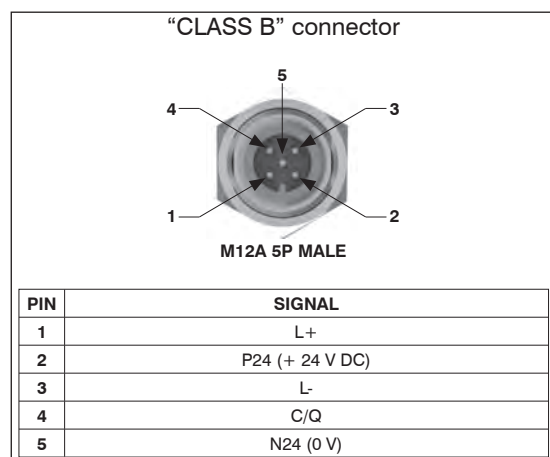
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Coding: K5830.64. IK

VERSION
32 = 32 output bits available for valve connections
48 = 48 output bits available for valve connections



Scheme / Overall dimensions and I/O layout



Technical characteristics			
Specifications		IO-Link Specification v1.1	
Case		Reinforced technopolymer	
Power supply		+ 24 V DC +/- 10%	
Communication	Voltage	25 mA	
	Interface current consumption on + 24 V DC (L+ / L-)	Green LED PWR NODE / Green LED PWR OUT	
	Power supply diagnosis	"Class B" port	
	Connection	38.4 kbaud/s	
	Communication speed	20 m	
Configurations file IODD	Maximum distance from Master	Green / red status LED	
	Bus diagnosis	1257 (hex 0x04E9) / 3000 (hex 0x0BB8)	
	Vendor ID / Device ID	Available from our web site http://www.pneumaxspa.com	
Protection degree		IP65 when assembled	
Temperature °C		-5 ... +50	

8 digital inputs module kit M8

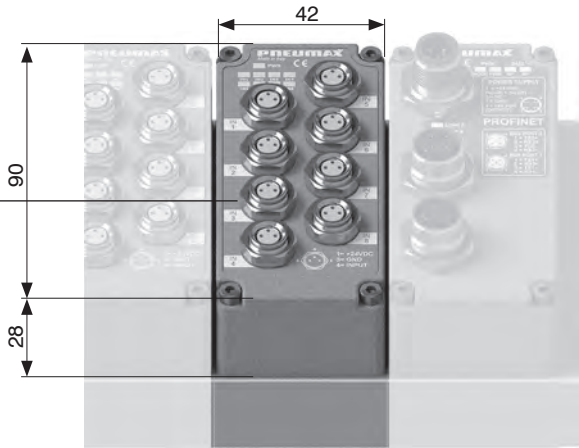
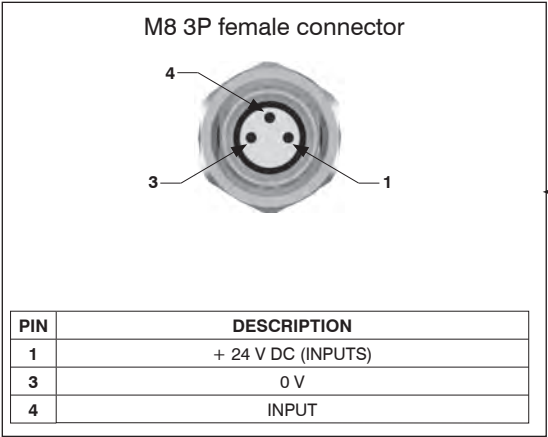
M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Inputs have PNP logic, + 24 V DC \pm 10%.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit switches, etc.).
Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

Coding: K5230.08.M8



Technical characteristics	
Maximum current per module	300 mA
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedance	3 k Ω
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

Scheme / Overall dimensions and I/O layout



AIR DISTRIBUTION

8 digital inputs module kit M12

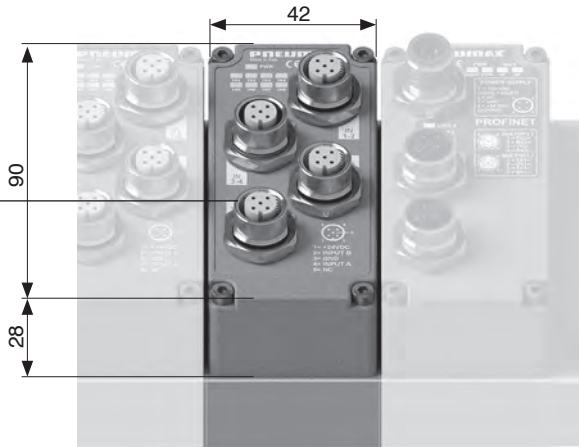
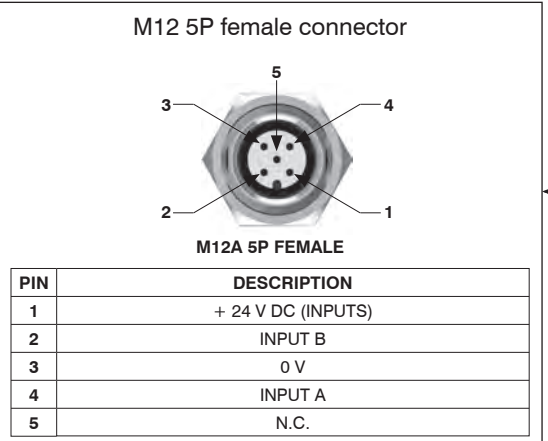
M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Inputs have PNP logic, + 24 V DC \pm 10%.
Every connector takes two input channels.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit switches, etc.).
Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

Coding: K5230.08.M12



Technical characteristics	
Maximum current per module	300 mA
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedance	3k Ω
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

Scheme / Overall dimensions and I/O layout



8 digital outputs module kit M8

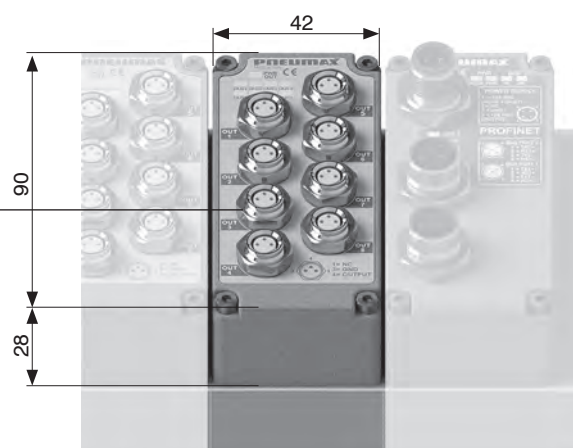
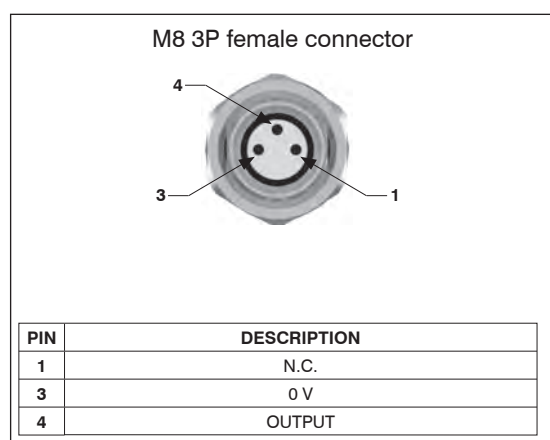
M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Outputs have PNP logic, + 24 V DC \pm 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were installed upstream of the outputs module.
Power supply presence is displayed by "PWR OUT" green LED light-on.
Each output has a LED indicator associated which lights up when output's signal status is high.

Coding: K5130.08.M8



Technical characteristics	
Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	8 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA

Scheme / Overall dimensions and I/O layout



8 digital outputs module kit M12

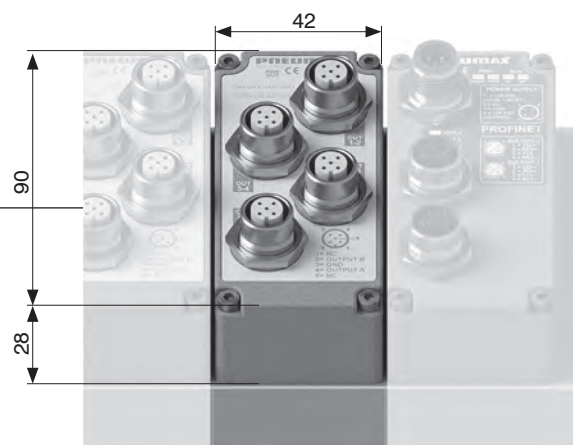
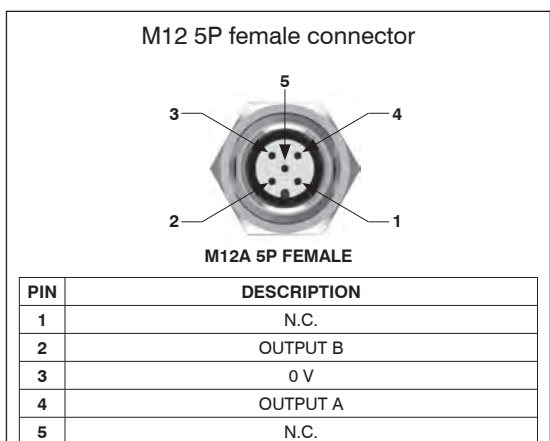
M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Outputs have PNP logic, + 24 V DC \pm 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were installed upstream of the outputs module.
Power supply presence is displayed by "PWR OUT" green LED light-on.
Each output has a LED indicator associated which lights up when output's signal status is high.

Coding: K5130.08.M12



Technical characteristics	
Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	8 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA

Scheme / Overall dimensions and I/O layout



32 digital inputs module kit (37 pins SUB-D connector)

The module provides a SUB-D 37 pins female connector.

Inputs have PNP logic, + 24 V DC \pm 10%.

It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit switches, etc.).

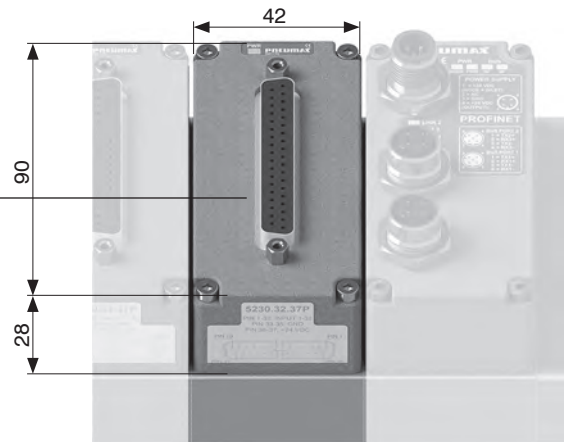
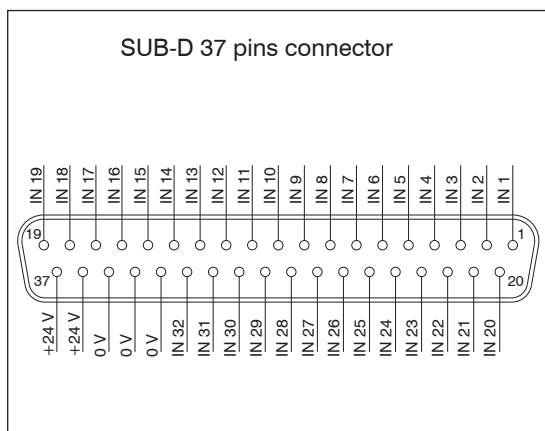
Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

Coding: K5230.32.37P

Technical characteristics	
Maximum current per module	1 A
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedance	3 k Ω
Maximum cable length	< 30 m
Input data allocation	32 bit
INPUTS + 24 V DC current consumption of the module only	10 mA



Scheme / Overall dimensions and I/O layout



AIR DISTRIBUTION

32 digital outputs module kit (37 pins SUB-D connector)

The module provides a SUB-D 37 pins female connector.

Outputs have PNP logic, + 24 V DC \pm 10%.

Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were installed upstream of the outputs module.

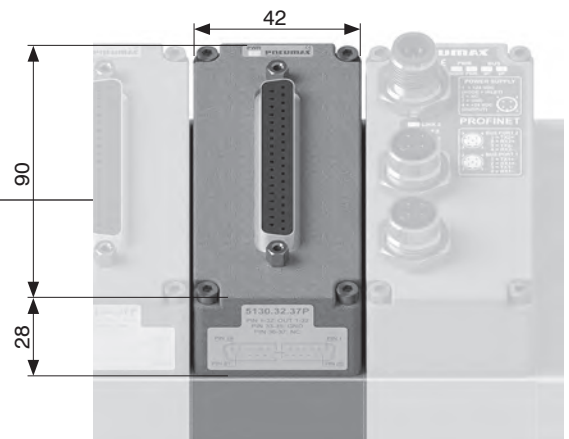
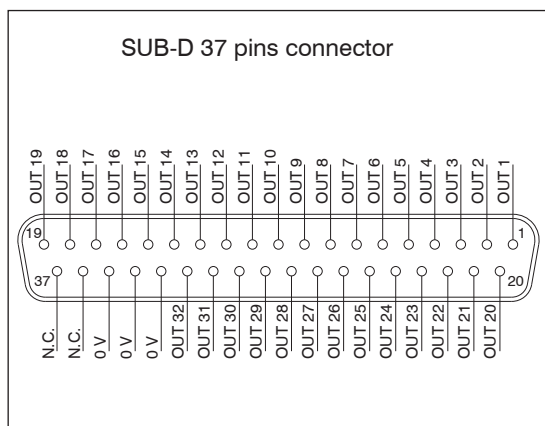
Power supply presence is displayed by "PWR OUT" green LED light-on.

Coding: K5130.32.37P

Technical characteristics	
Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	32 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA



Scheme / Overall dimensions and I/O layout



► Analogue inputs module kit M8

M8 analogue inputs module converts analogue signals into digital signals and transfers acquired data to field bus, via network node.

Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

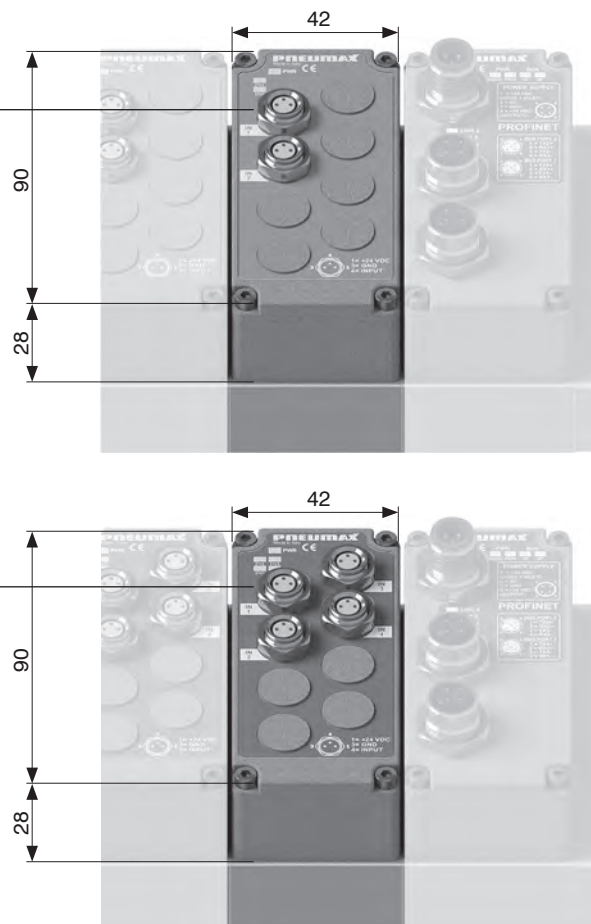
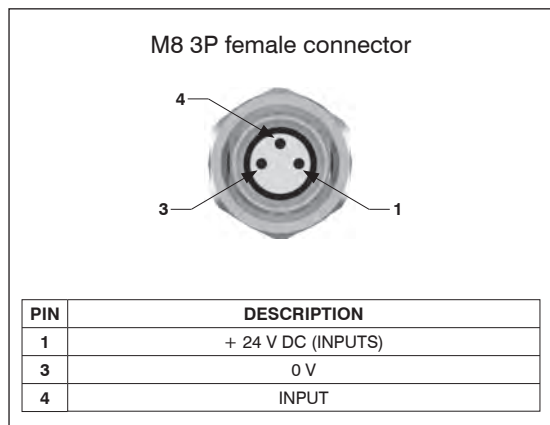
Coding: K5230.

	CHANNELS
	2 = 2 channels 4 = 4 channels
	SIGNAL
	T.00 = VOLTAGE (0-10 V) T.01 = VOLTAGE (0-5 V) C.00 = CURRENT (4-20 mA) C.01 = CURRENT (0-20 mA)

Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Input impedance (voltage inputs)	33 kΩ
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Input data allocation	16 bit per channel
Diagnostic LED	Input signal overcurrent or overvoltage
Accuracy	0,3% F.S.
Overall maximum current 2 channels (pin 1)	300 mA
Overall maximum current 4 channels (pin 1)	750 mA (375 mA for each pair of channels)
INPUTS + 24 V DC current consumption of the module only	15 mA



Scheme / Overall dimensions and I/O layout





► **Analogue outputs module kit M8**

M8 analogue outputs module converts output data, received from field bus via network node, into analogue signal. Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were installed upstream of the outputs module.

Coding: K5130.CS

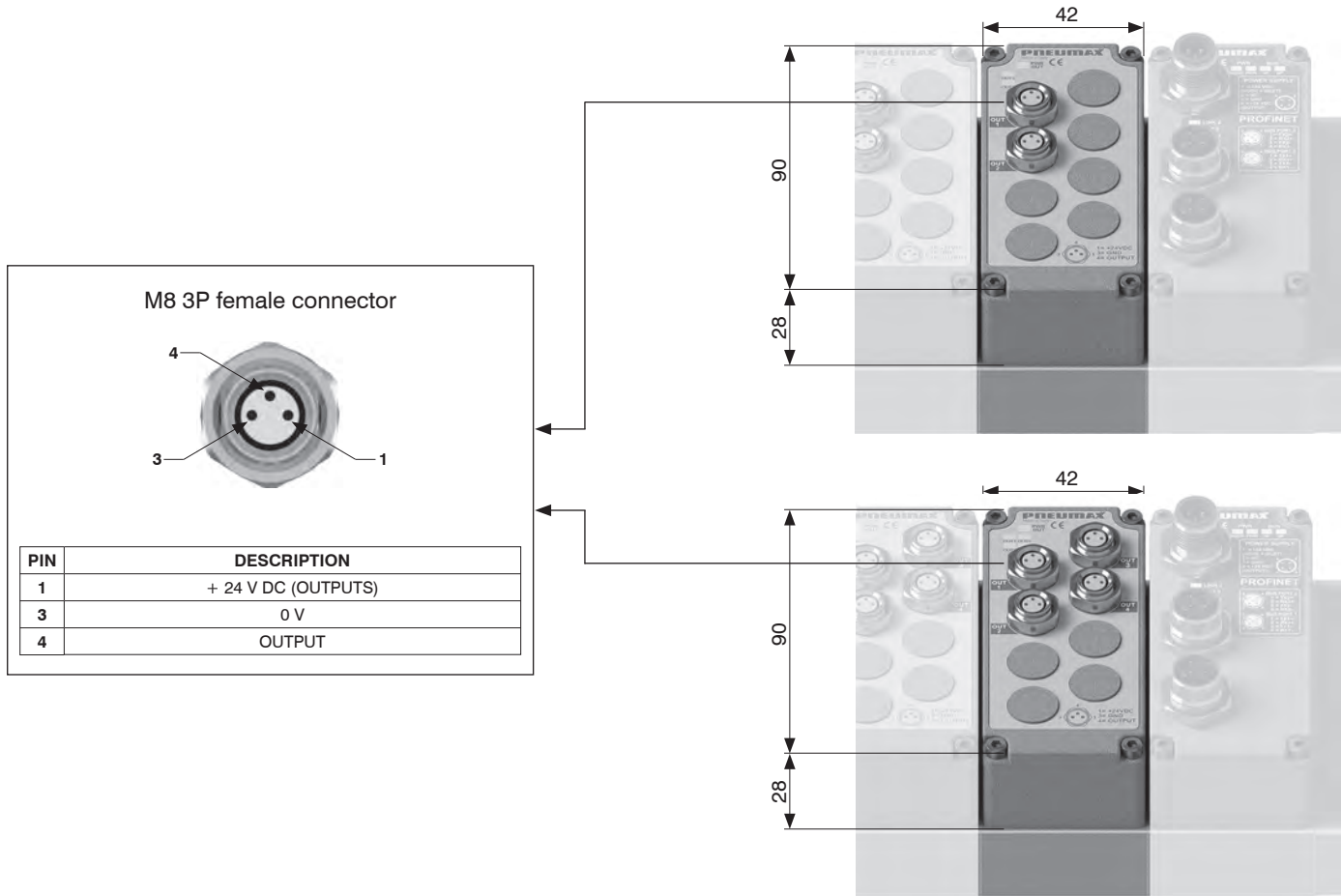
	CHANNELS
C	2 = 2 channels
	4 = 4 channels
	SIGNAL
S	T.00 = VOLTAGE (0-10 V)
	T.01 = VOLTAGE (0-5 V)
	C.00 = CURRENT (4-20 mA)
	C.01 = CURRENT (0-20 mA)

Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Protection (pin 4)	Overcurrent (auto-resettable fuse)
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Output data allocation	16 bit per channel
Diagnostic LED	Output signal overcurrent
Accuracy	0,3% F.S.
Overall maximum current 2 channels (pin 1)	300 mA
Overall maximum current 4 channels (pin 1)	750 mA (375 mA for each pair of channels)
INPUTS + 24 V DC current consumption of the module only	15 mA
OUTPUTS + 24 V DC current consumption of the module only (2 channels)	35 mA
OUTPUTS + 24 V DC current consumption of the module only (4 channels)	70 mA



1
AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout





Pt100 inputs module kit

Pt100 inputs module digitizes signals from Pt100 probes and transfers acquired data to field bus, via network node.
It is possible to connect two, three or four wires probes.
Inputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pin M12 power connector, pin 1) or by K5030.M12 additional power supply module, in case it were installed upstream of the inputs module.

Technical characteristics	
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Input data allocation	16 bit per channel
Diagnostic LED	Probe presence Temperature out of range
Accuracy	±0,2°C
Probe temperature range	-100°C ... +300°C
INPUTS + 24 V DC current consumption of the module only (2 channels)	25 mA
INPUTS + 24 V DC current consumption of the module only (4 channels)	35 mA

Conversion formula (°C)

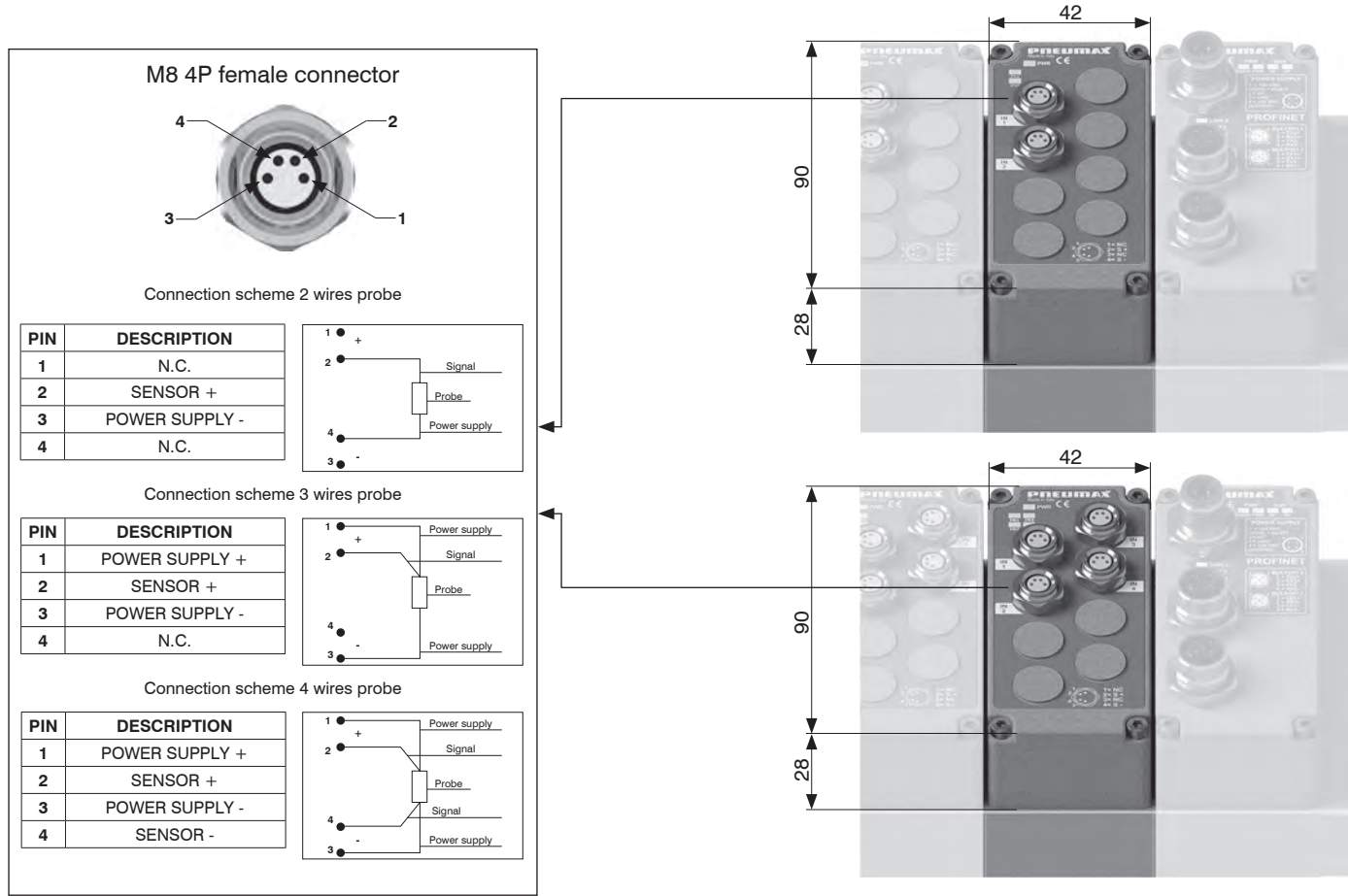
Temperature (°C) = $\left(\frac{\text{Points}}{4095} \times 400\right) - 100$

Coding: K5230.0P.01

CHANNELS	
2	2 = 2 channels
4	4 = 4 channels
TYPE	
0	0 = Pt100 2 wires
1	1 = Pt100 3 wires
2	2 = Pt100 4 wires



Scheme / Overall dimensions and I/O layout



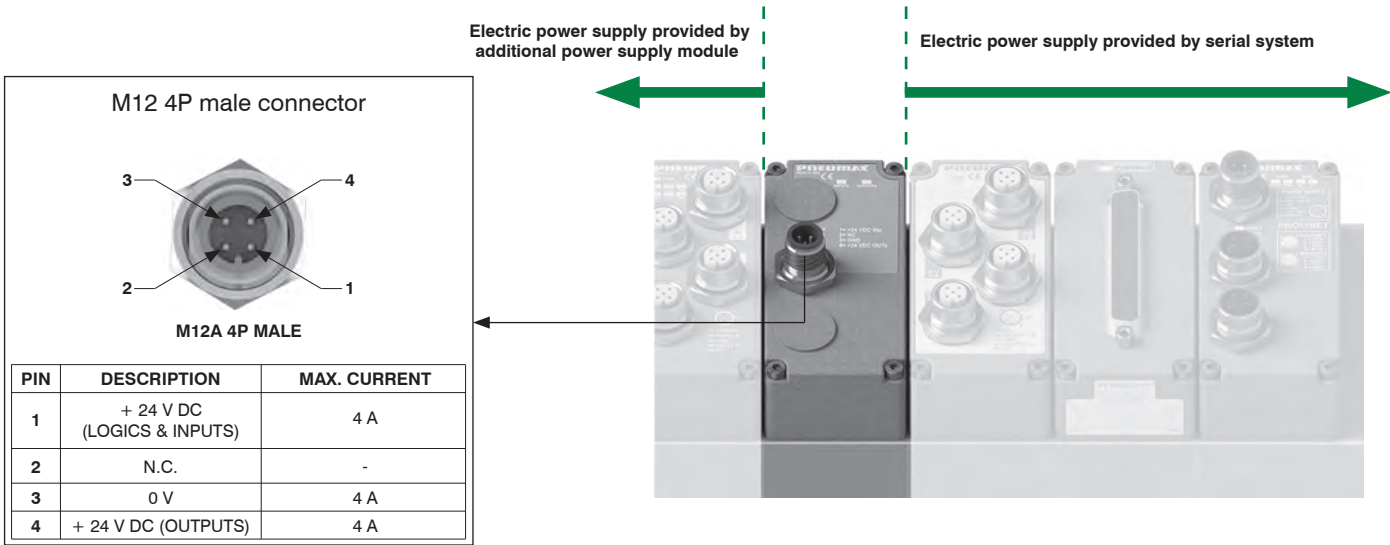
Additional power supply module kit

Additional power supply module supplies additional electric power for downstream optional modules, where “downstream” means farther from serial node, **resetting the current limits of the network node / IO-Link interface**.
Electric connection of the module to external power supply unit occurs via an M12 4 pins type A male connector.
M12 connector has two different pins to power up logics and inputs (Pin 1) and outputs (Pin 4).
Presence of each power supply rail is indicated by corresponding green LED.
When using IO-Link interface, the additional power supply module is useful for separating the module power supplies of input from the output modules placed downstream.

Coding: K5030.M12



Scheme / Overall dimensions and I/O layout



POWER SUPPLY connectors

Straight connector M12A 4P female

Coding: 5312A.F04.00



Upper view slave connector

PIN	DESCRIPTION
1	+ 24 V DC (LOGICS AND INPUTS)
2	N.C.
3	0 V
4	+ 24 V DC (OUTPUTS)

Power supply socket

NETWORK connectors

Straight connector M12A 5P female

Coding: 5312A.F05.00



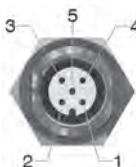
Upper view slave connector

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

Socket for bus CANopen® and IO-Link

Straight connector M12A 5P male

Coding: 5312A.M05.00



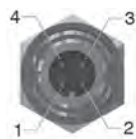
Upper view slave connector

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

Plug for bus CANopen®

Straight connector M12D 4P male

Coding: 5312D.M04.00



Upper view slave connector

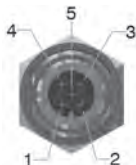
PIN	SIGNAL	DESCRIPTION
1	TX+	EtherNet Transmit High
2	RX+	EtherNet Receive High
3	TX-	EtherNet Transmit Low
4	RX-	EtherNet Receive Low

Plug for bus EtherCAT®, PROFINET IO RT and EtherNet/IP

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

Straight connector M12B 5P female

Coding: 5312B.F05.00



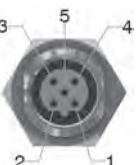
Upper view slave connector

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

Socket for bus PROFIBUS DP

Straight connector M12B 5P male

Coding: 5312B.M05.00



Upper view slave connector

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

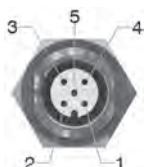
Socket for bus PROFIBUS DP

INPUTS connectors

Straight connector M12A 5P male

Coding: 5312A.M05.00

Plug for inputs modules



Upper view slave connector

PIN	DESCRIPTION
1	+ 24 V DC
2	INPUT B
3	0 V
4	INPUT A
5	N.C.

Plugs

M12 plug

Coding: 5300.T12



Straight connector M8 3P male

Coding: 5308A.M03.00

Plug for inputs modules



Upper view slave connector

PIN	DESCRIPTION
1	+ 24 V DC
4	INPUT
3	0 V

M8 plug

Coding: 5300.T08





Cable complete with connector, 25 Poles, IP65



Coding: 2300.25.L.C

L	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
C	CONNECTOR
	10 = Stand alone
	90 = 90° Angle

Cable complete with connector, 37 Poles, IP65



Coding: 2400.37.L.C

L	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
C	CONNECTOR
	10 = Stand alone
	90 = 90° Angle

Cable complete with connector, 44 Poles, IP65



Coding: 2300.44.L.C

L	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
C	CONNECTOR
	10 = Stand alone
	90 = 90° Angle

Cable complete with connector, 25 Poles, IP65



Coding: 2400.25.L.25

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

Cable complete with connector, 37 Poles, IP65



Coding: 2400.37.L.37

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