OPTYMA³²-S

2

General characteristics

Optyma32-S has been designed in order to complete the Optyma series of valves.
Optyma −S ,12.5mm size, integrates all the technical features already developed and implemented on the Optima T & F such as the integrated electrical connection. Further technical specifications are:
- Flow rate: up to 550[Nl/min], using the modular base with Ø8 quick fitting tube
- Modular base available with Ø4, Ø6, Ø8 quick fitting tube
- The solenoid pilots are low consumption and fitted on the same side of the valve
- Mono and bi-stable valves have the same dimension
- Easy and fast assembly on the sub base thanks to the "one screw" mounting solution
- Possibility to replace a valve without the need of disconnecting the pneumatic pipes
- Electrical and pneumatic connections positioned on the same side
- Possibility to operate with different pressures and vacuum
- Quick coupling connections for consumption, exhaust and air supply all on the same side
- Management of 32electrical signals,(16 bi-stable or any combination off mono and bi-stable vales up to max 32 signals).
- The electrical connection is achieved thanks to a 37 pole connector, as an alternative it is possible to use a 25 pole connector which can handle a maximum of 22 electrical signals.
- The protection grade is IP65 directly integrated in the manifold components.
- Manifolds can be directly integrated with the most common field bus systems.

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

Main characteristics

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

Construction characteristics

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

Functions

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

Technical characteristics

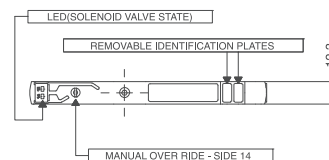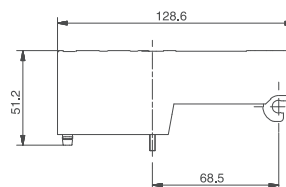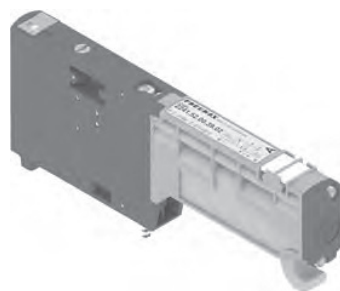|	
Voltage	24 VDC ±10% PNP (NPN and AC on request)
Pilot consumption	0,5 Watt
Valve working pressure [1]	from vacuum to 10 bar max.
Pilot working pressure [12-14]	from 2,5 to 7 bar max.
Operating temperature	from -5°C to +50°C
Protection degree	IP65
Life (standard operating conditions)	50.000.000
Fluid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

Solenoid - Spring

Ordering code

2241.52.00.39.Ⓥ

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

128.6

51.2

68.5

LED(SOLENOID VALVE STATE)

REMOVABLE IDENTIFICATION PLATES

12.3

MANUAL OVER RIDE - SIDE 14

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

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

Operational characteristic

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

Solenoid - Differential

Ordering code

2241.52.00.36.Ⓥ

Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC
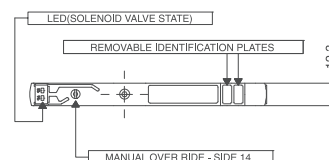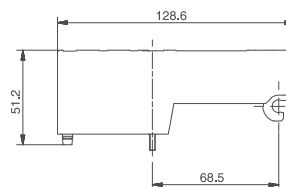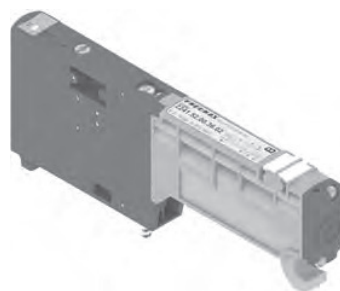
128.6

51.2

68.5

LED(SOLENOID VALVE STATE)

REMOVABLE IDENTIFICATION PLATES

12.3

MANUAL OVER RIDE - SIDE 14

Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2244.01Ⓥ tube Ø4= 140
Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2246.01Ⓥ tube Ø6= 400
*Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2248.01Ⓥ tube Ø8= 550
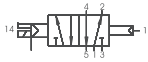
SHORT FUNCTION CODE "B"
"Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001, Pneumatic fluid power - Directional control valves - Measurement of shifting time."

Operational characteristic

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

Solenoid - Solenoid

Ordering code

2241.52.00.35.Ⓥ

Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC
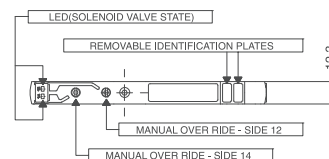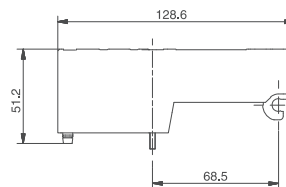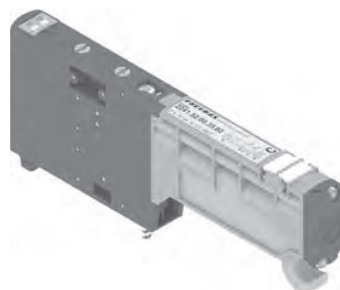
128.6

51.2

68.5

LED(SOLENOID VALVE STATE)

REMOVABLE IDENTIFICATION PLATES

12.3

MANUAL OVER RIDE - SIDE 12

MANUAL OVER RIDE - SIDE 14

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

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

Operational characteristic

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

2

Solenoid - Solenoid - (5/3 Closed centres)

Ordering code
2241.53.31.35.Ⓥ

	VOLTAGE
Ⓥ	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC
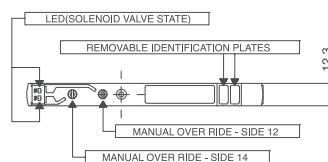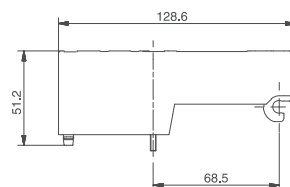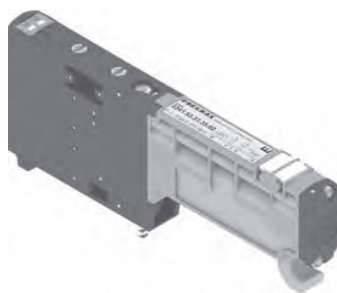
128.6

51.2

68.5

LED(SOLENOID VALVE STATE)
REMOVABLE IDENTIFICATION PLATES
12.3
MANUAL OVER RIDE - SIDE 12
MANUAL OVER RIDE - SIDE 14

Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2244.01Ⓥ tube Ø4= 140
Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2246.01Ⓥ tube Ø6= 300
*Flow rate at 6 bar with Δp=1 (Nl/min) with Base cod. 2248.01Ⓥ tube Ø8= 400
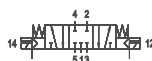
SHORT FUNCTION CODE "E"
"Shifting time of pneumatic directional control valves or moving
parts, logic devices were measured in accordance to ISO
12238:2001, Pneumatic fluid power - Directional control valves -
Measurement of shifting time."

Operational characteristic

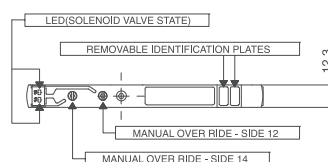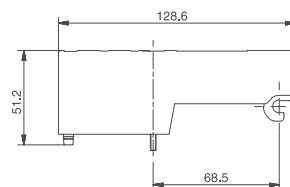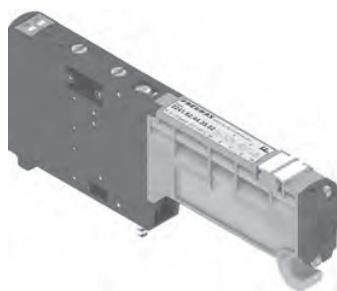| Fluid	*Flow rate at 6 bar with Δp=1 (Nl/min)	Responce time according to ISO 12238, activation time (ms)	Responce time according to ISO 12238, deactivation time (ms)	Working pressure (bar)	Pressure range (bar)	Temperature °C	Weight (gr.)
Filtered air, with or without lubrication	400	15	20	From vacuum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

Solenoid - Solenoid 2x3/2

Ordering code
2241.62.Ⓕ.35.Ⓥ

	FUNCTION
Ⓕ	44 = NC - NC (5/3 Open centres)
	55 = NO - NO (5/3 Pressured centres)

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

128.6

51.2

68.5

LED(SOLENOID VALVE STATE)
REMOVABLE IDENTIFICATION PLATES
12.3
MANUAL OVER RIDE - SIDE 12
MANUAL OVER RIDE - SIDE 14

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

SHORT FUNCTION CODE:
NC-NC (5/3 Open centres)="F"
NO-NO (5/3 Pressured centres)="G"
"Shifting time of pneumatic directional control valves or moving parts, logic de-
vices were measured in accordance to ISO 12238:2001, Pneumatic fluid power
- Directional control valves - Measurement of shifting time."

Operational characteristic

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

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

Solenoid - Solenoid 2x3/2

Ordering code
2241.62.Ⓕ.35.Ⓥ

	FUNCTION
Ⓕ	45 = NC - NO (Normally Closed - Normally Open)
	54 = NO - NC (Normally Open - Normally Closed)

	VOLTAGE
Ⓥ	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC
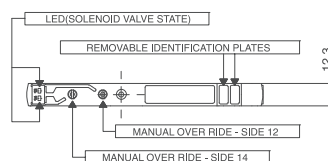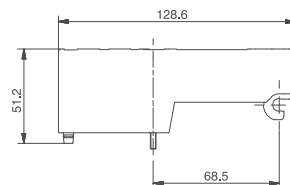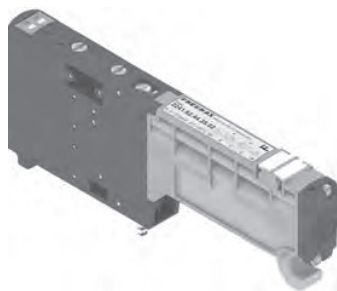
128.6

51.2

68.5

LED(SOLENOID VALVE STATE)
REMOVABLE IDENTIFICATION PLATES
12.3
MANUAL OVER RIDE - SIDE 12
MANUAL OVER RIDE - SIDE 14

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

SHORT FUNCTION CODE:
NC-NA="H"
NA-NC="I"
"Shifting time of pneumatic directional control valves or moving parts, logic de-
vices were measured in accordance to ISO 12238:2001, Pneumatic fluid power
- Directional control valves - Measurement of shifting time."

Operational characteristic

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

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

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice.

Left Endplates - External pilot base

Ordering code
2240.02.ⓒ

CONNECTIONS	
37P = Connectors 37 poles PNP	
25P = Connectors 25 poles PNP	
37N = Connectors 37 poles NPN	
25N = Connectors 25 poles NPN	
ⓒ 37A = Connectors 37 poles AC	
25A = Connectors 25 poles AC	

12/14 separated from port 1

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

Left Endplates - Self-feeding base

Ordering code
2240.12.ⓒ

CONNECTIONS	
37P = Connectors 37 poles PNP	
25P = Connectors 25 poles PNP	
37N = Connectors 37 poles NPN	
25N = Connectors 25 poles NPN	
ⓒ 37A = Connectors 37 poles AC	
25A = Connectors 25 poles AC	

12/14 connected to port 1

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

Right Endplates

Ordering code
2240.03.ⓒ

CONNECTIONS	
ⓒ 00 = Exhaust electrical connection closed	
25P = Connectors 25 poles PNP	

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

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

Closing plate

Ordering code
2240.00

SHORT FUNCTION CODE "T"

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

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice.
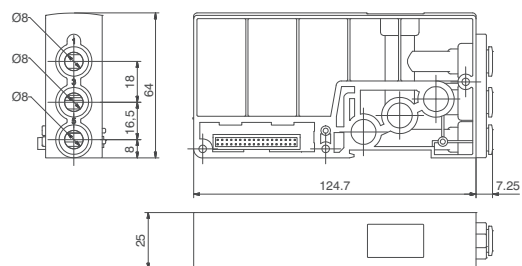
2.226

2

Intermediate Inlet/Exhaust module

Ordering code

2240.10

SHORT FUNCTION CODE "W"

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

Modular base (2 places) Quick fitting tube Ø4

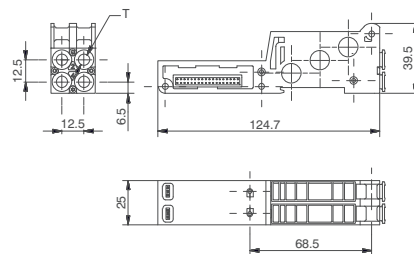Ordering code

2244.ⒻⓋ

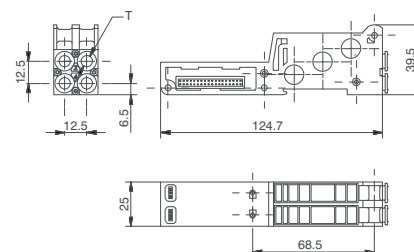Ⓕ FUNCTION
01=Opened port
06=Separated ports
07=Port 1 separated
08=Ports 3-5 separated

Ⓥ VERSION
M=Monostable
B=Bistable

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

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

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

Modular base (2 places) Quick fitting tube Ø6

Ordering code

**2246.ⒻⓋ**

Ⓕ FUNCTION
01=Opened port
06=Separated ports
07=Port 1 separated
08=Ports 3-5 separated

Ⓥ VERSION
M=Monostable
B=Bistable

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

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

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

Modular base (2 places) Quick fitting tube Ø8

Ordering code

2248.ⒻⓋ

Ⓕ FUNCTION
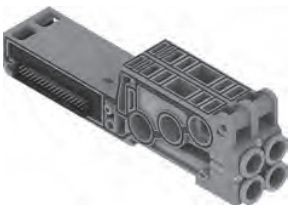01=Opened port
06=Separated ports
07=Port 1 separated
08=Ports 3-5 separated

Ⓥ VERSION
M=Monostable
B=Bistable
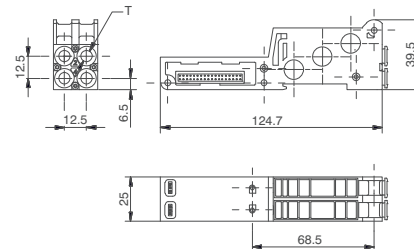
SHORT FUNCTION CODE "7" (Monostable) Opened ports
SHORT FUNCTION CODE "76" (Monostable) separated ports
SHORT FUNCTION CODE "77" (Monostable) Port 1 separated
SHORT FUNCTION CODE "78" (Monostable) Ports 3-5 separated

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

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

Cable complete with connector, 25 Poles IP65

Ordering code

2300.25.Ⓛ.Ⓟ

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

Ⓟ CONNECTORS
10 = In line
90 = 90° Angle

Cable complete with connector, 37 Poles IP65

Ordering code

2400.37.Ⓛ.Ⓟ

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

Ⓟ CONNECTORS
10 = In line
90 = 90° Angle

Cable complete with connector, 25 Poles IP65

Ordering code

2400.25.Ⓛ.25

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

Polyethylene Silencer Series SPL-R

Ordering code

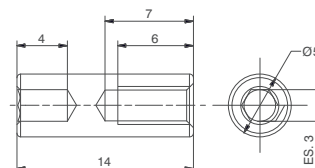**SPLR.Ⓕ**

Ⓕ TUBE DIAMETER
6 = 6 mm
10 = 10 mm

Diaphragm plug

Ordering code

2230.17

Weight gr. 6,5

Nut

Ordering code

2240.KD.00

The Kit includes 6 pieces

Tie-rod M3

Ordering code

2240.KT.Ⓟ

N. POSITIONS
02=Nr. 2 Position
04=Nr. 4 Positions
06=Nr. 6 Positions
08=Nr. 8 Positions
10=Nr. 10 Positions
12=Nr. 12 Positions
14=Nr. 14 Positions
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

Ⓟ

The Kit includes 3 pieces

L=43mm+(N. pos. x 12,5mm)

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

M3

Accessories table for manifolds

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

2240.KD.00

Nr. 6 pieces

2240.KT.XX

Nr. 3 pieces

2

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice.

2.228

2

General :

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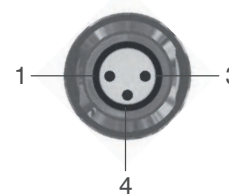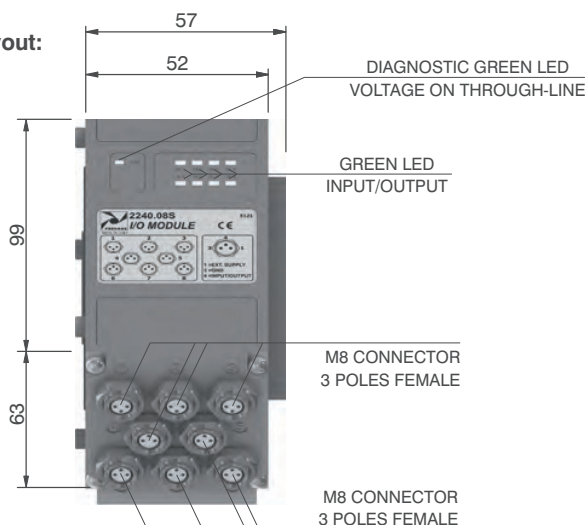The I/O modules can accept input or output signals, depending upon what is connected.

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

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

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

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

Ordering code

2240.08S

Overall dimensions and I/O layout:

DIAGNOSTIC GREEN LED
VOLTAGE ON THROUGH-LINE

GREEN LED
INPUT/OUTPUT

M8 CONNECTOR
3 POLES FEMALE

M8 CONNECTOR
3 POLES FEMALE

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)
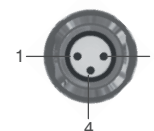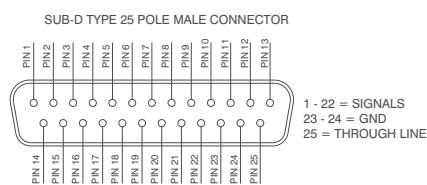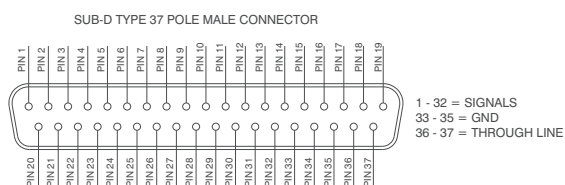
Output features:

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

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice.

CORRESPONDENCE BETWEEN MULTI-POLE SIGNAL AND CONNECTOR

SUB-D TYPE 37 POLE MALE CONNECTOR

PIN 1 PIN 2 PIN 3 PIN 4 PIN 5 PIN 6 PIN 7 PIN 8 PIN 9 PIN 10 PIN 11 PIN 12 PIN 13 PIN 14 PIN 15 PIN 16 PIN 17 PIN 18 PIN 19

PIN 20 PIN 21 PIN 22 PIN 23 PIN 24 PIN 25 PIN 26 PIN 27 PIN 28 PIN 29 PIN 30 PIN 31 PIN 32 PIN 33 PIN 34 PIN 35 PIN 36 PIN 37

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

SUB-D TYPE 25 POLE MALE CONNECTOR

PIN 1 PIN 2 PIN 3 PIN 4 PIN 5 PIN 6 PIN 7 PIN 8 PIN 9 PIN 10 PIN 11 PIN 12 PIN 13

PIN 14 PIN 15 PIN 16 PIN 17 PIN 18 PIN 19 PIN 20 PIN 21 PIN 22 PIN 23 PIN 24 PIN 25

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

1 — 3

4

PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

Connection modes:

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

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

A) Control via multi-pole :

M8 connector used as Input:

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

1 — 3

4
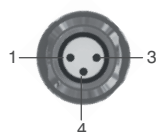
PIN	DESCRIPTION
1	THROUGH LINE
4	SIGNAL
3	GND

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).
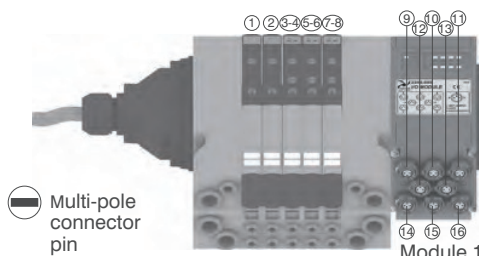
M8 connector used as Output:

Output voltage will 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.
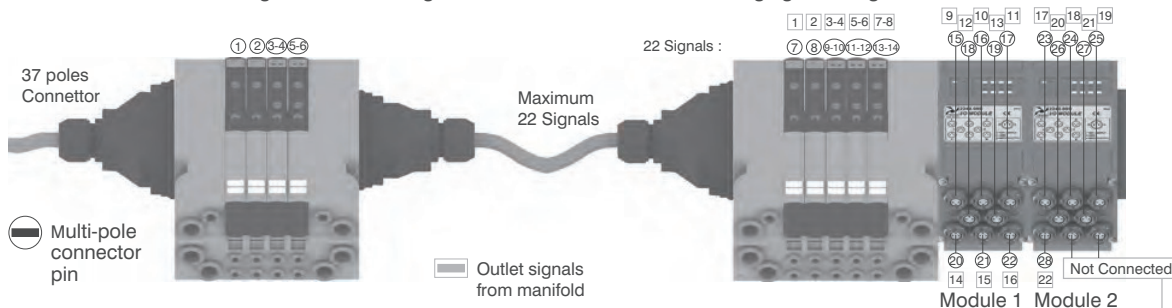
Multi-pole connector pin

Module 1

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

37 poles Connector

Multi-pole connector pin

Module 1 Module 2
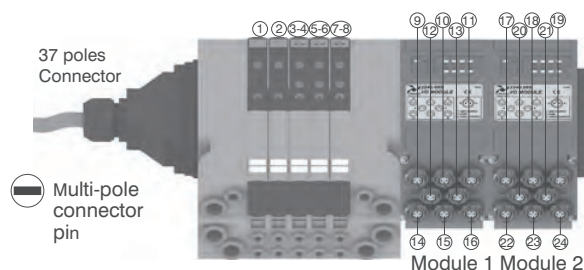
Attention: No more additions are possible

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.

37 poles Connettor

Multi-pole connector pin

Maximum 22 Signals

22 Signals :

Outlet signals from manifold

Not Connected

Module 1 Module 2

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

Attention: Signal Not connected
GND Connected
Through line Connected

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice.
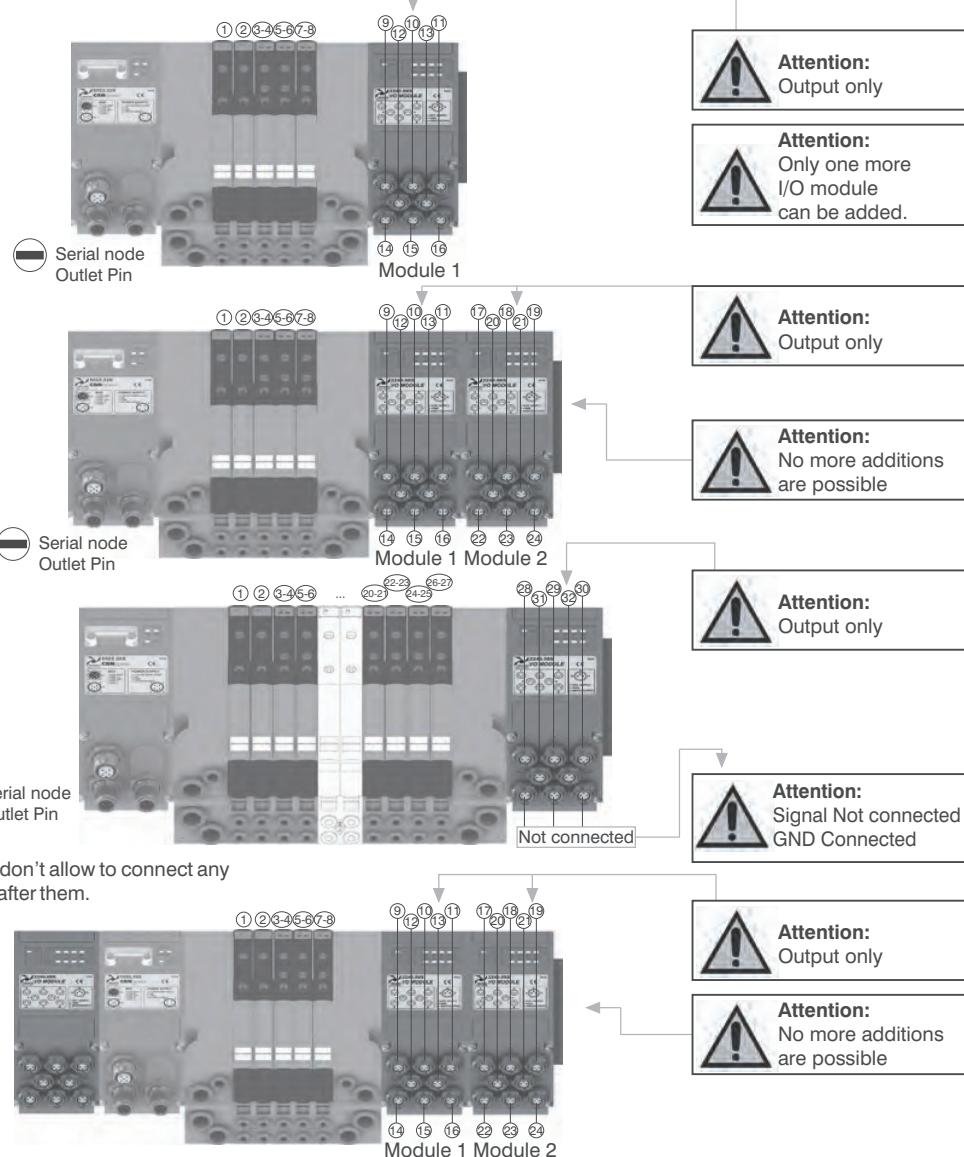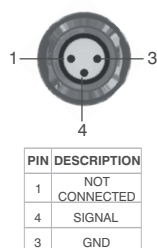
2.230

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.

37 poles
Connettor

Multi-pole
connector
pin

Connettore
37 poli

Multi-pole
connector
pin

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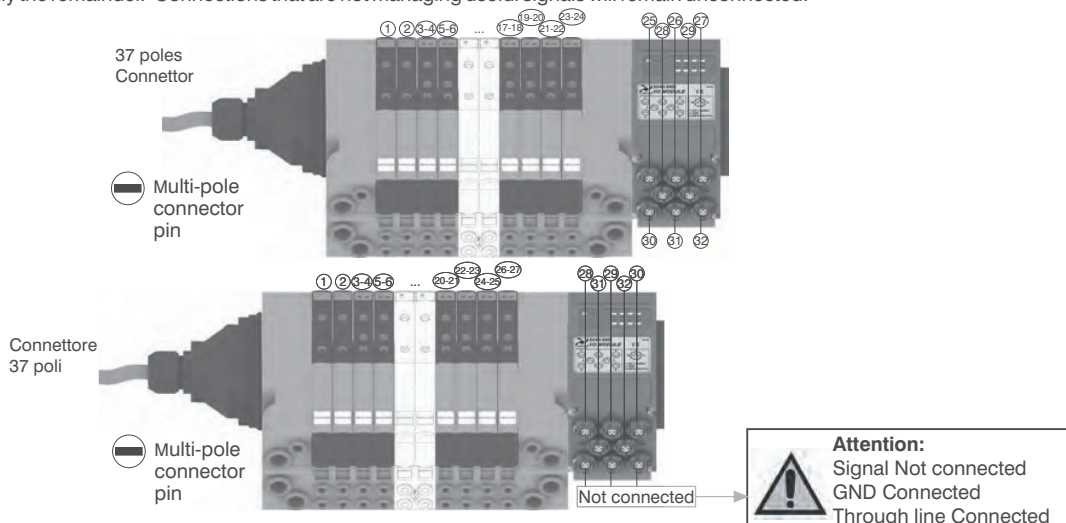
Not connected

B) Control via fieldbus:

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

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

PIN	DESCRIPTION
1	NOT CONNECTED
4	SIGNAL
3	GND

Serial node
Outlet Pin

Module 1

Attention:
Output only

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

Serial node
Outlet Pin

Module 1 Module 2

Attention:
Output only

Attention:
No more additions
are possible

Serial node
Outlet Pin

Attention:
Output only

Not connected

Attention:
Signal Not connected
GND Connected

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

Serial node
Outlet Pin

Input
Module

Module 1 Module 2

Attention:
Output only

Attention:
No more additions
are possible

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice.

Electrical connection

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

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

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

Sub-base for 2 bistable valves

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

Sub-base for 2 monostable valves

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

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

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

Additional exhaust and air supply modules:

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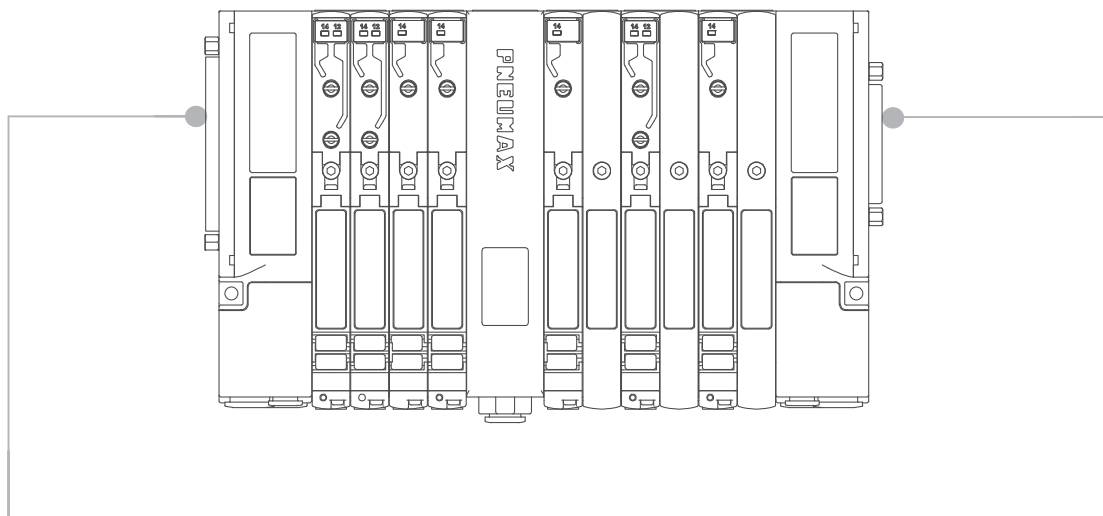
Unused electrical signals

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

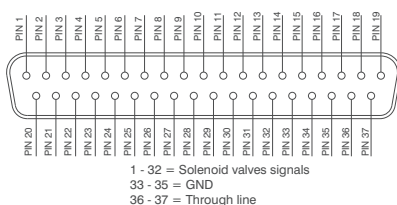   37 pole Inlet connector : N. of outputs= 32 – used signals (max 22)
                    25 pole Inlet connector : N. of outputs= 22 – used signals

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

2

INLET ELECTRIC CONNECTIONS

SUB-D 37 POLE MALE CONNECTOR

PIN 1 ... PIN 19
PIN 20 ... PIN 37

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

SUB-D 25 POLE MALE CONNECTOR

PIN 1 ... PIN 13
PIN 14 ... PIN 25

1 - 22 = Solenoid valves signals
23 - 24 = GND
25 = Through line
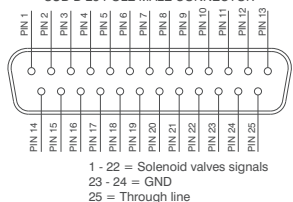
OUTLET ELECTRIC CONNECTIONS
(IF PRESENT)

SUB-D 25 POLE
FEMALE CONNECTOR

PIN 13 ... PIN 1
PIN 25 ... PIN 14

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

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice.
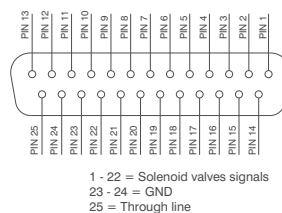
37 PIN Connector correspondence for valves assembled on mixed bases
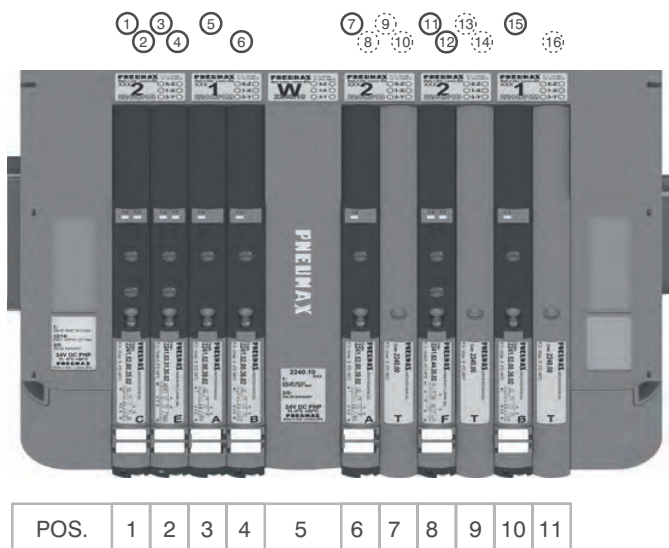
PIN 1 = PILOT 14 EV POS.1
PIN 2 = PILOT 12 EV POS.1
PIN 3 = PILOT 14 EV POS.2
PIN 4 = PILOT 12 EV POS.2
PIN 5 = PILOT 14 EV POS.3
PIN 6 = PILOT 14 EV POS.4
PIN 7 = PILOT 14 EV POS.6
PIN 8 = NOT CONNECTED
PIN 9 = NOT CONNECTED
PIN 10 = NOT CONNECTED
PIN 11 = PILOT 14 EV POS.8
PIN 12 = PILOT 12 EV POS.8
PIN 13 = NOT CONNECTED
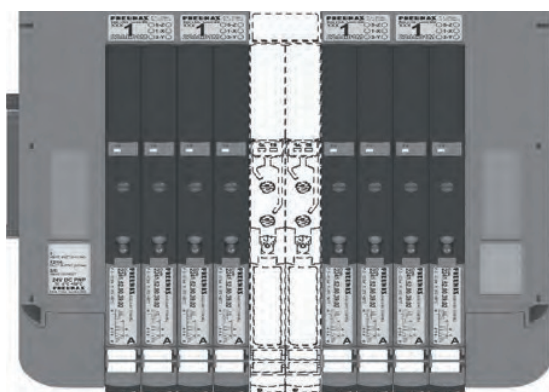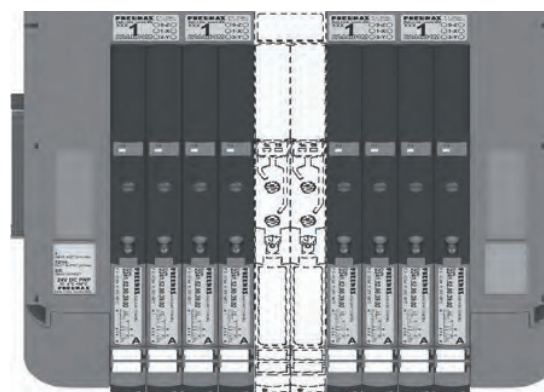PIN 14 = NOT CONNECTED
PIN 15 = PILOT 14 EV POS.10
PIN 16 = NOT CONNECTED

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

37 PIN Connector correspondence for manifold mounted on bases for bistable valves
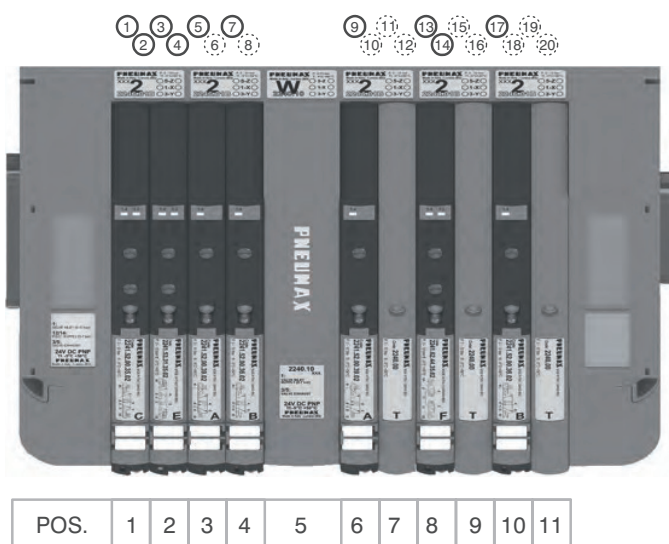
PIN 1 = PILOT 14 EV POS.1
PIN 2 = PILOT 12 EV POS.1
PIN 3 = PILOT 14 EV POS.2
PIN 4 = PILOT 12 EV POS.2
PIN 5 = PILOT 14 EV POS.3
PIN 6 = NOT CONNECTED
PIN 7 = PILOT 14 EV POS.4
PIN 8 = NOT CONNECTED
PIN 9 = PILOT 14 EV POS.6
PIN 10 = NOT CONNECTED
PIN 11 = NOT CONNECTED
PIN 12 = NOT CONNECTED
PIN 13 = PILOT 14 EV POS.8
PIN 14 = PILOT 12 EV POS.8
PIN 15 = NOT CONNECTED
PIN 16 = NOT CONNECTED
PIN 17 = PILOT 14 EV POS.10
PIN 18 = NOT CONNECTED
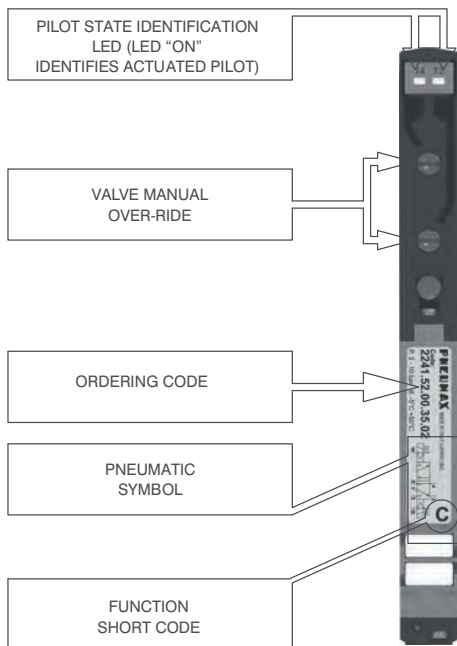PIN 19 = NOT CONNECTED
PIN 20 = NOT CONNECTED

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

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

37P

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

25P

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

2

2

PILOT STATE IDENTIFICATION
LED (LED "ON"
IDENTIFIES ACTUATED PILOT)

VALVE MANUAL
OVER-RIDE

ORDERING CODE

PNEUMATIC
SYMBOL

FUNCTION
SHORT CODE

From the top

52 + (N° bases x 25)

Ø4,2

VALVE COUPLING
SCREW

CUSTOMIZABLE
REMOVABLE
LABLES

DIN rail fixing

1,5

VALVE SUPPLY CONDUITS (CONNECTION) 1 - Ø10

PILOT SUPPLY CONDUIT - Ø6   PILOT EXHAUST CONDUIT - Ø6

VALVE OUTLET (PORTS 2 & 4) - Ø6 - Ø4

VALVE EXHAUST CONDUITS (CONNECTIONS 3 & 5) - Ø10
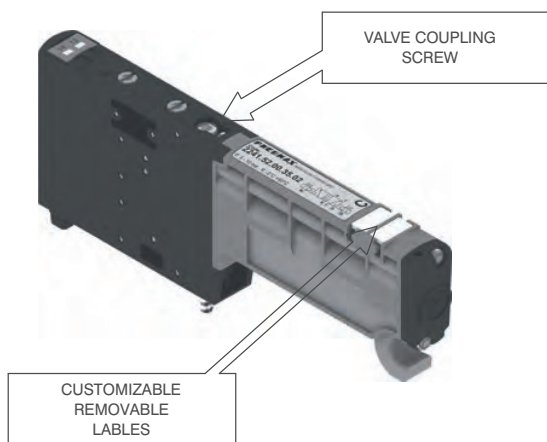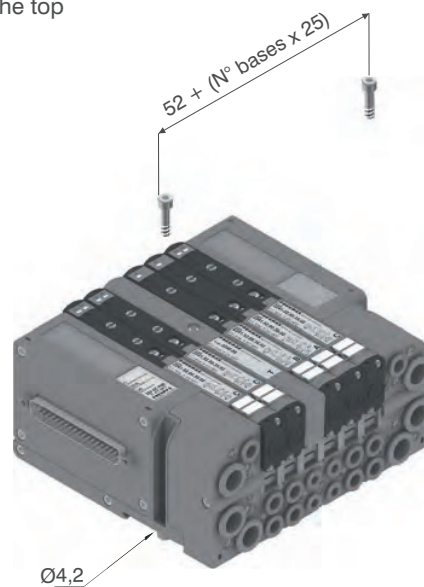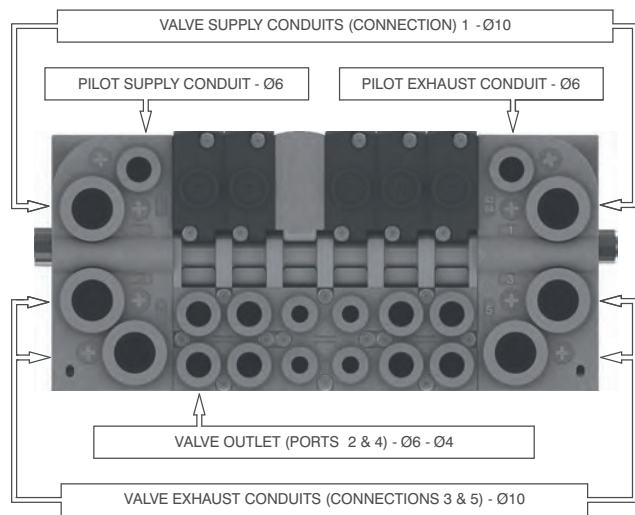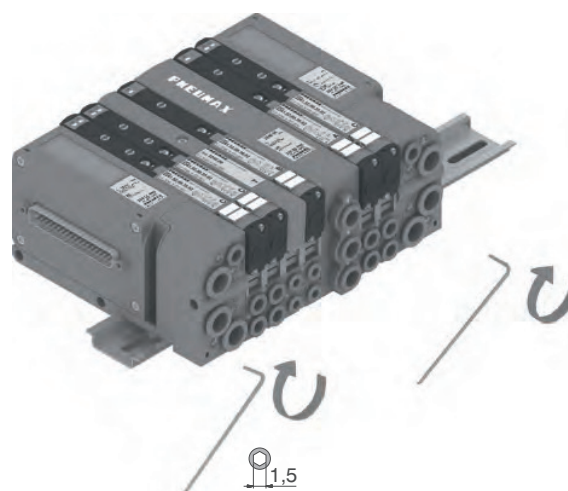
Maximum possible size
According to valves used

60 + (N° bases x 25)

Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice.
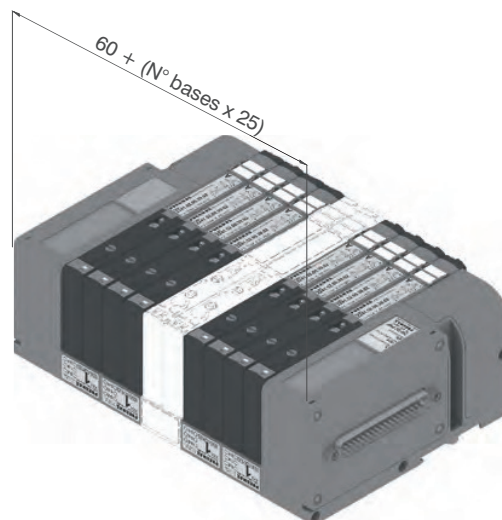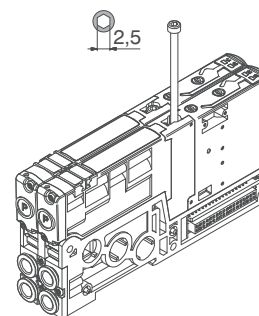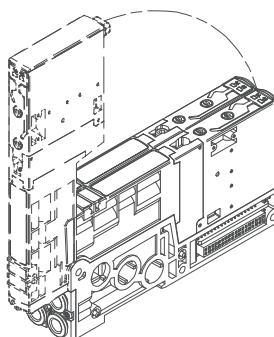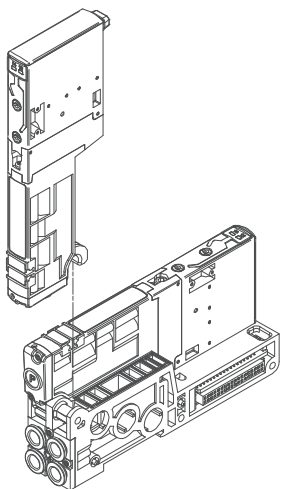
Manual override actuation
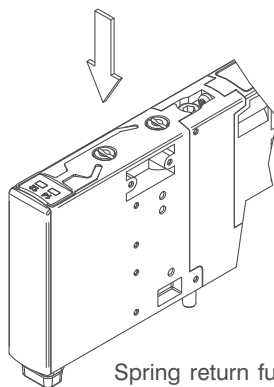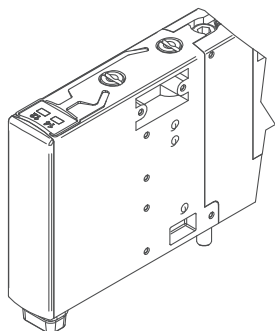
Spring return function: push to actuate (when released it moves back to the original position).
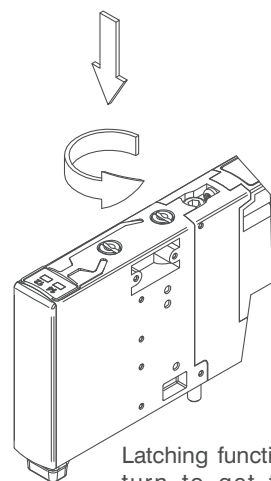
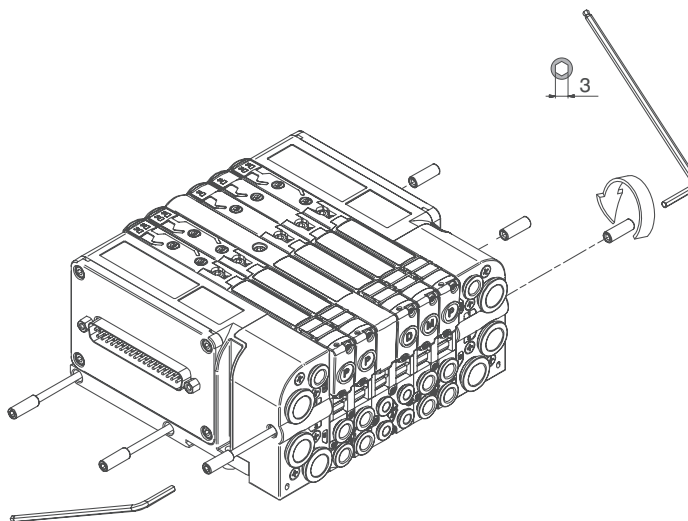Latching function: push and turn to get the latching function

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

Valve Installation

2,5

Torque moment (Nm) : 0,8

Manifold assembly

3

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