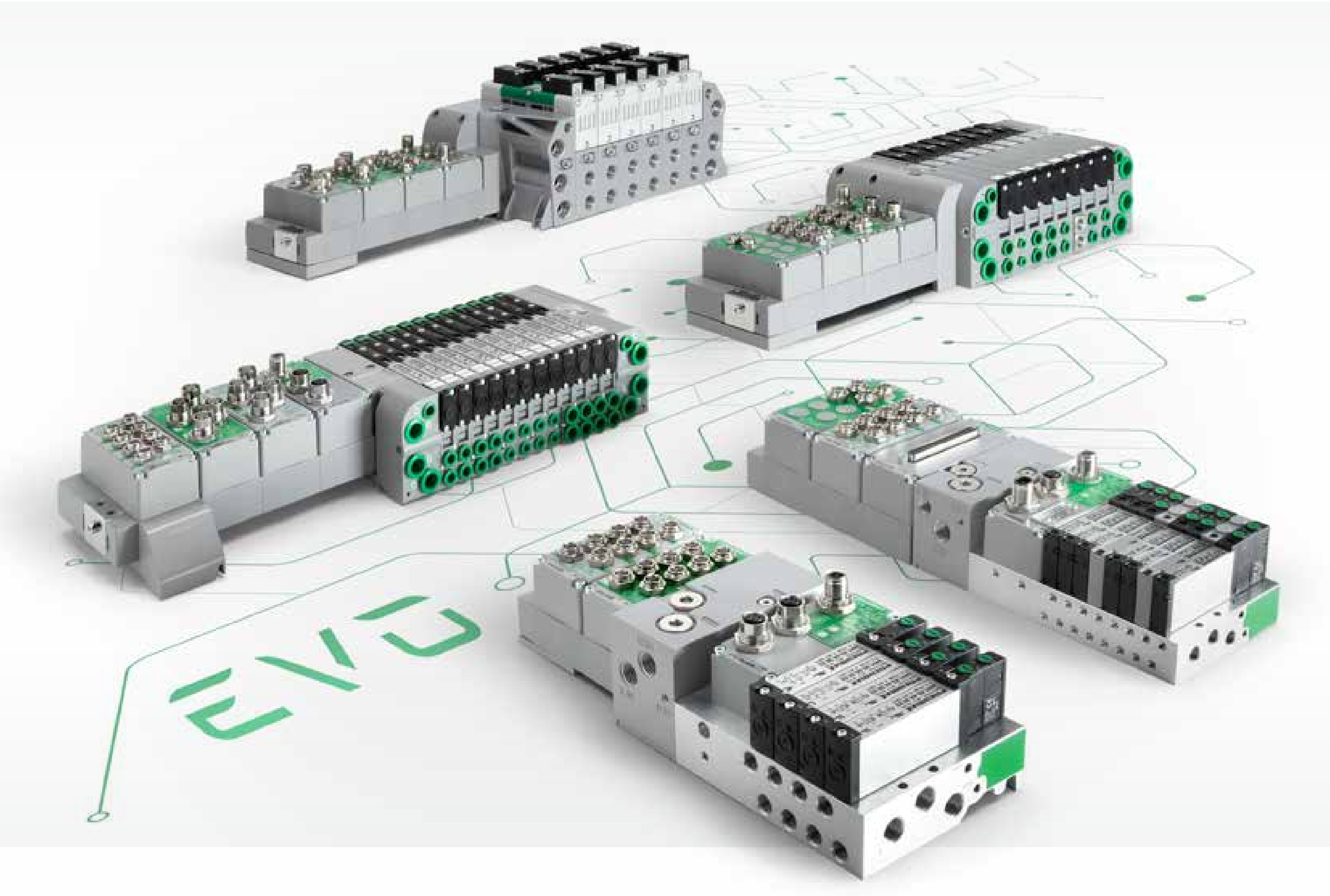


PNEUMAX SOLUTIONS FOR AUTOMATION CONTROL

EVO CATALOGUE

Pneumax solutions for automation control EVO Catalogue

Pneumax solenoid valves are available as the EVO version, coupled with multiprotocol modules/electronics from the PX range.

Pneumax Group
Smart Technologies and Human Competence

Founded in 1976, **Pneumax S.p.A.** is today one of the leading international manufacturers of components and systems for industrial automation. It is at the forefront of a Group comprised of **27 companies,** with **over 800 employees worldwide**.
Ongoing investment in research and development has allowed **Pneumax** to continually expand its range of standard products and customized solutions. The use of the most advanced production technologies guarantees maximum flexibility and certified quality according to international standards in different sectors.
The desire to provide the service and application skills has in turn led to the creation of 3 specific business units, dedicated to Industrial automation, process automation and the automotive sector.

3 TECHNOLOGIES

- **Pneumatic technology**
- **Electric actuation**
- **Fluid control**

International network

Through a network of subsidiaries and exclusive distributors, Pneumax is present in more than **50 countries** around the world, supporting customers in all phases of the supply process, from pre-sales application analysis to after-sales service.

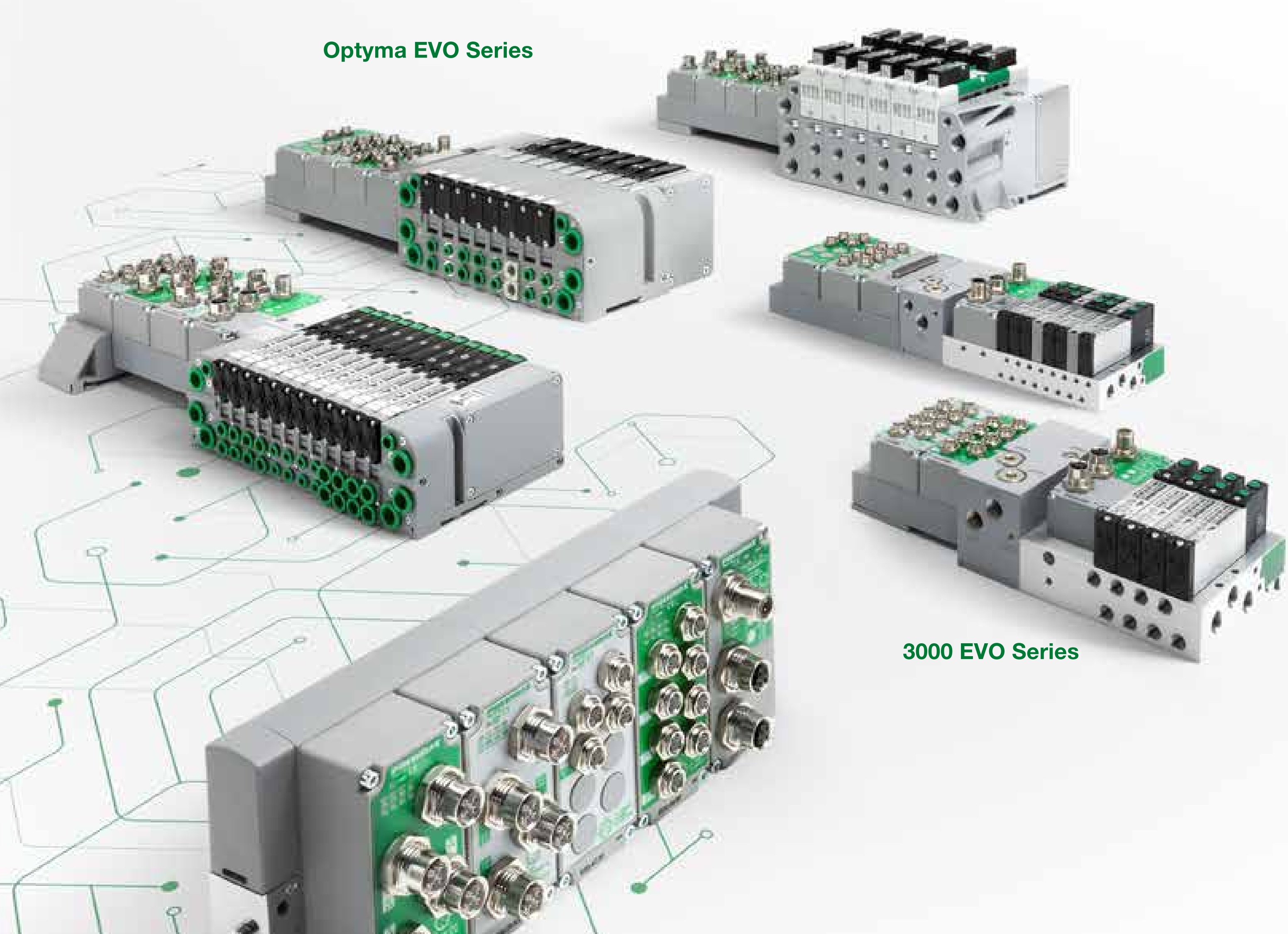
WE SPEAK EVO

A unique control system, a wide range of solutions

All the Pneumax solenoid valves manifold are now available in the EVO version, integrating the **new multiprotocol module PX Series**, designed to manage and command pneumatic and electropneumatic components and to offer extreme flexibility by interfacing with the most common communication protocols.

2700 EVO Series

Optyma EVO Series



3000 EVO Series

PX Series

The PX Series synthesizes the ‘control’ concept Pneumax is offering: a unique solution that can be used as stand alone or integrated onto valves manifold

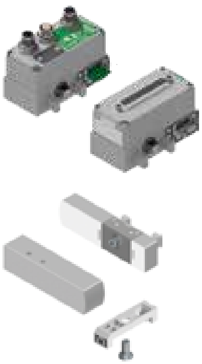
- **Modular system**
- **Easy to configure**
- **Multiprotocol**

Wide range of fieldbus protocols

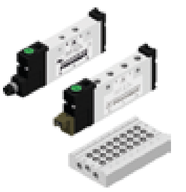
CANopen · PROFIBUS · PROFINET · EtherCAT · EtherNet/IP · IO-Link · CC-Link IE Field Basic

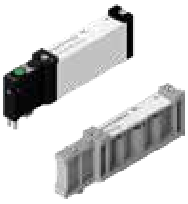
Index
Series EVO

Series PX 1



Series 3000 EVO 22





Series PX

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 Field 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

Configurator

Configurator

PX 3 - P - [ ] - [ ][ ] - [ ][ ][ ] - [ ][ ][ ] ... [ ][ ][ ]

SINGLE MODULE CONFIGURATION

[ ][ ][ ]

Version	
3	Series 3000 version

Type	
P	Technopolymer

Endplates accessories	
	Without DIN rail adapter
G	With DIN rail adapter

Electric 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 protocol interface 64 IN - 64 OUT (32 fixed)
K4	IO-Link protocol interface 64 IN - 64 OUT (48 fixed)

Electric connection accessories	
	Without DIN rail adapter
G	With DIN rail adapter

Number of repetitions per module	
	Indicate the number of repetitions of the same module (no value for a single module)

Inputs module - Analogue / Digital	
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 - Analogue / 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 adapter
G	With DIN rail adapter

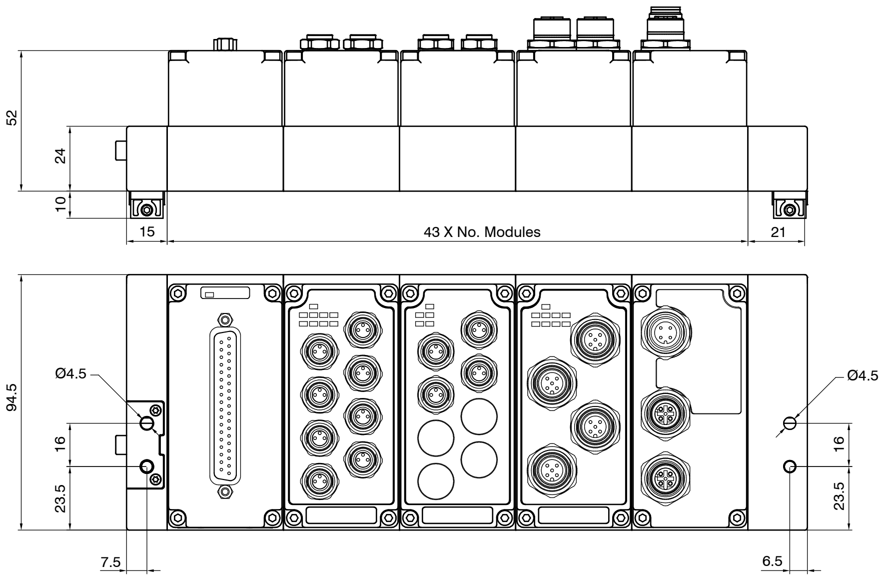
Refer to the current limits indicated in the pages relating to the nodes / IO-Link interface

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.

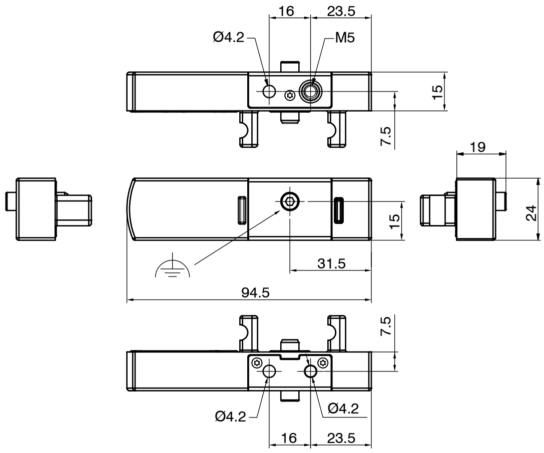
Example shown: PX3-P-G-A4-3D8-2M12
Multiprotocol module with EtherCAT® protocol node, 3 M8 digital input modules and 2 M12 digital output modules; also includes DIN rail adaptors.

Overall dimensions



Left endplate kit

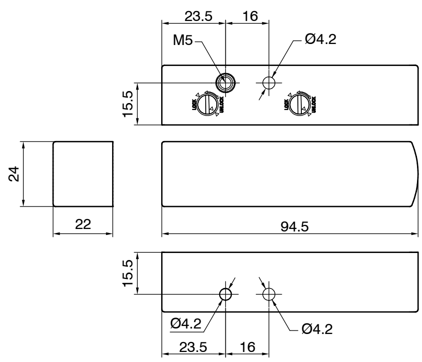
Coding: 3100.KT.00



Weight 52 g

Right endplate kit

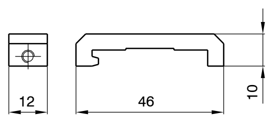
Coding: 3100.KT.03



Weight 51 g

DIN rail adapter

Coding: 3100.16



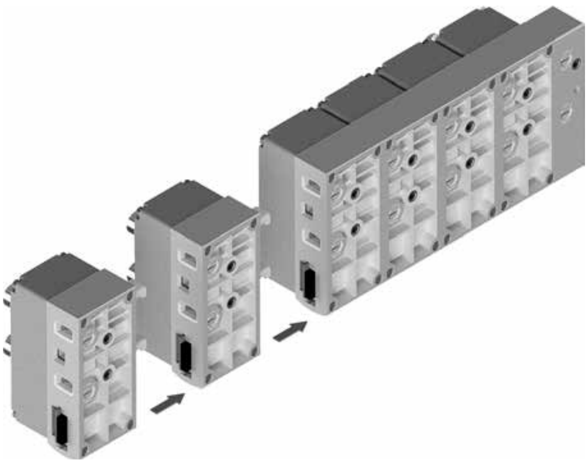
Weight 12 g

Cable complete with connector, male 37 poles, IP65

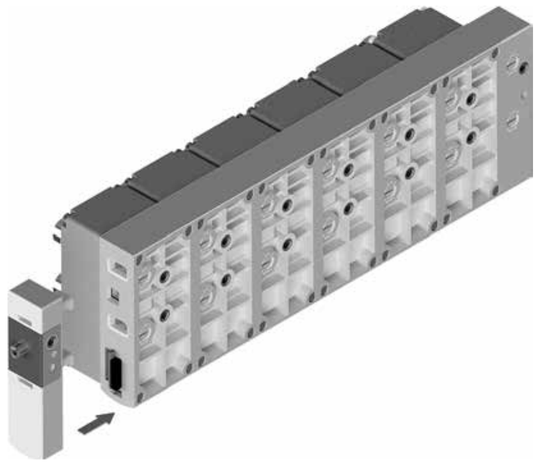
Coding: 2400.37.M.L.C

L	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
C	CONNECTOR
	10 = In line
	90 = 90° Angle

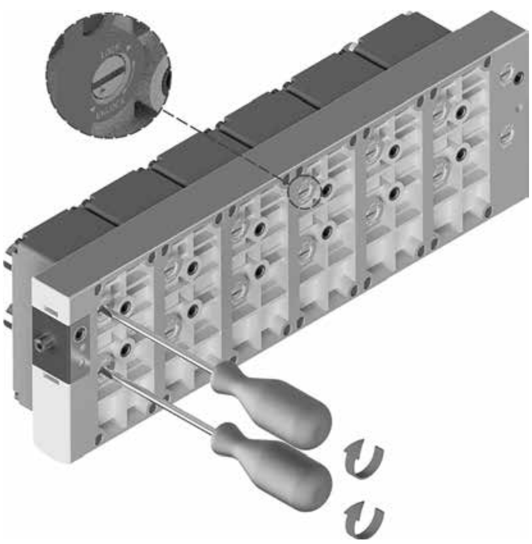
1. Assemble the required modules starting with 3100.KT.03 right endplate kit.



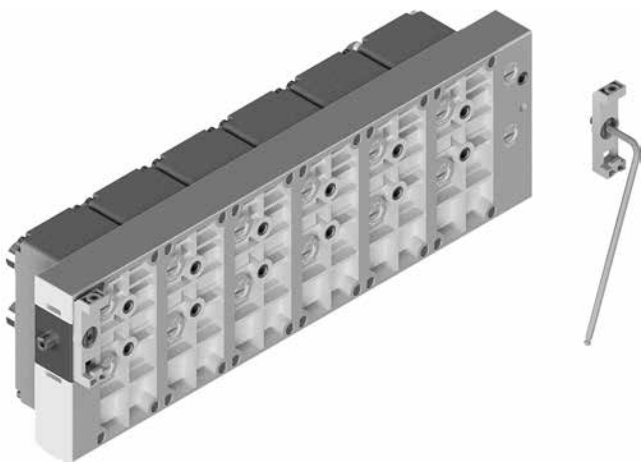
2. Complete the assembly with the 3100.KT.00 left endplate kit.



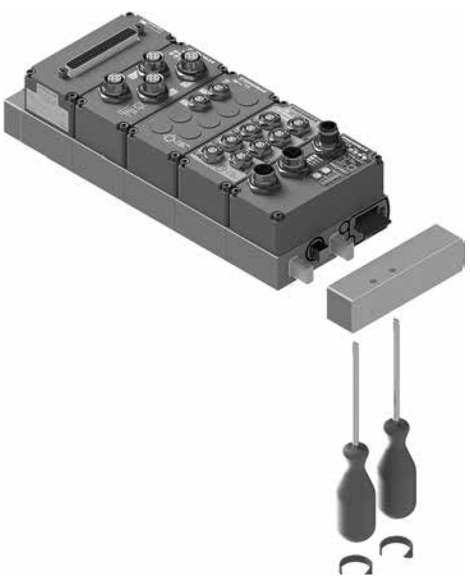
3. To lock: rotate anticlockwise (in the direction of the LOCK print on the case).
To unlock: rotate clockwise (in the direction of the UNLOCK print on the case).
The same procedure shall be used to add or remove any module.



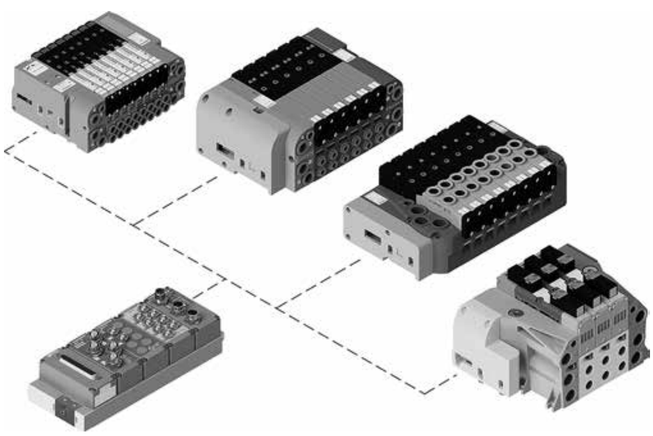
4. If required, assemble the DIN rail adapter using an 3 mm allen key.



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.

Coding: K5530.64.VCO

	VERSION
V	**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:

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

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 "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.

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

Where:

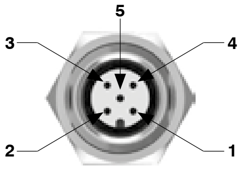
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

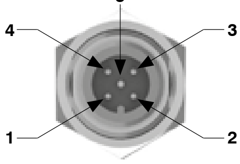
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

NETWORK connectors

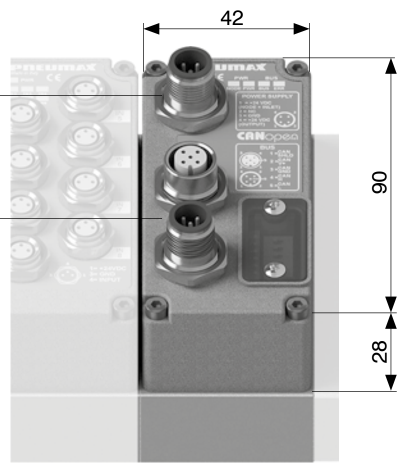


M12A 5P FEMALE

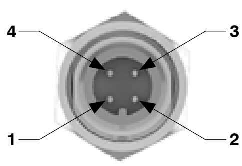


M12A 5P MALE

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



POWER SUPPLY 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

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 V DC 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.ⓥPB

	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:

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

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 "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.

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

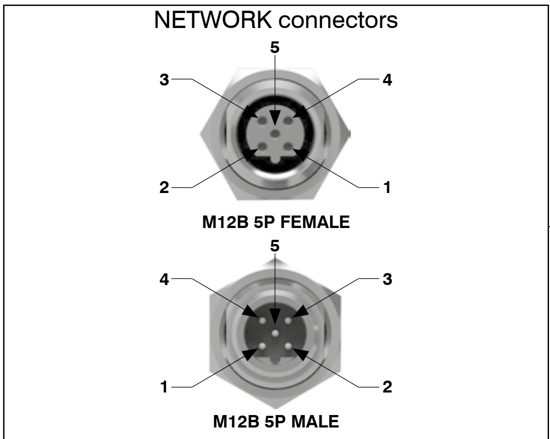
Where:

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

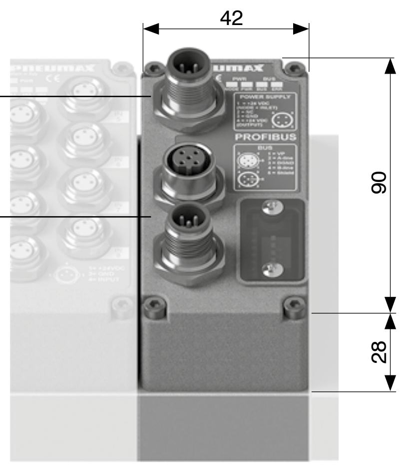
n = number of installed modules
$I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

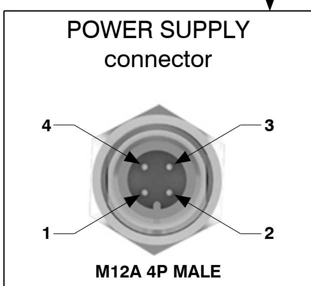
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout



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





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

Technical characteristics		
Specifications		PROFIBUS DP
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC ± 10%
	Node only current consumption on + 24 V DC 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:

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

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 "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.

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

Where:

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

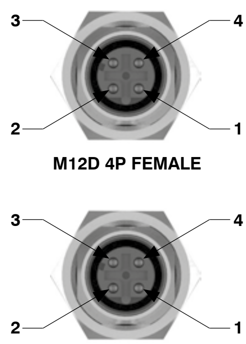
n = number of installed modules

$I_{in,i}$ = 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

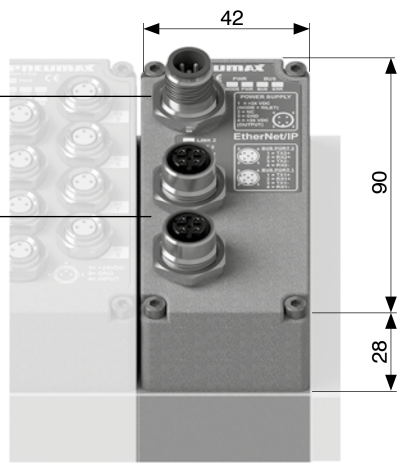
NETWORK connectors



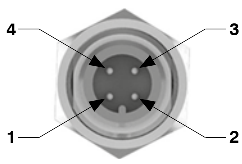
M12D 4P FEMALE

M12D 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



POWER SUPPLY 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

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

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:

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

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 "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.

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

Where:

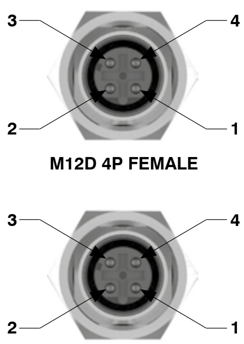
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

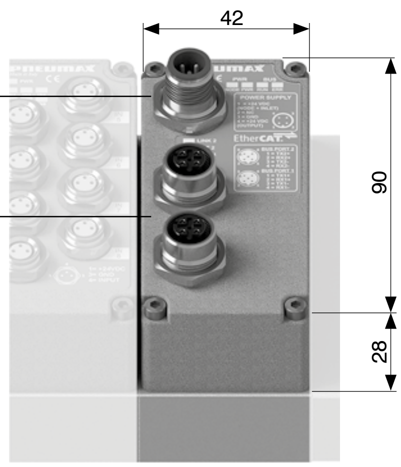
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

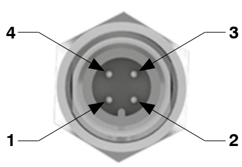
NETWORK connectors



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



POWER SUPPLY connector



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

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:

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

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 "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.

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

Where:

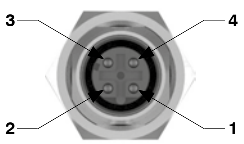
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

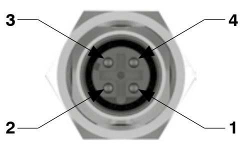
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

NETWORK connectors

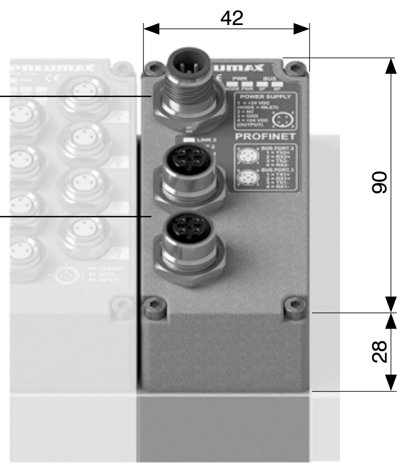


M12D 4P FEMALE

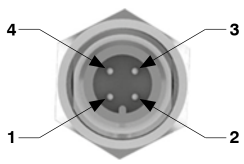


M12D 4P FEMALE

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



POWER SUPPLY 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

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

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:

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

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 "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.

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

Where:

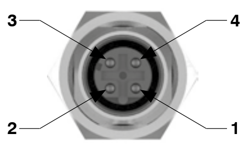
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

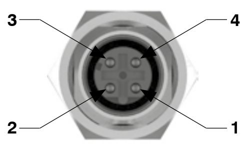
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

NETWORK connectors

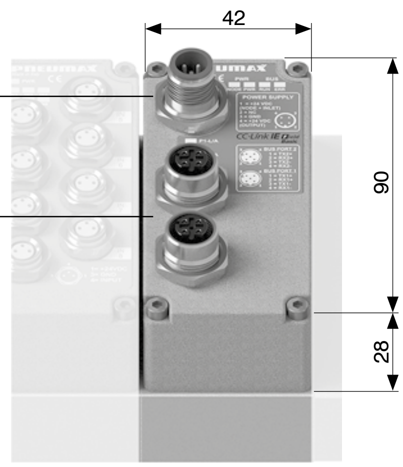


M12D 4P FEMALE

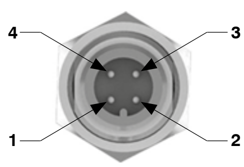


M12D 4P FEMALE

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



POWER SUPPLY 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

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	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.

Coding: K5830.64.ⓥIK

	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 pin 2 and pin 5 (P24 / N24).

To compute the maximum current on the P24 / N24 supply, please use the following formula::

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

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)

$I_{in,i}$ = 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)

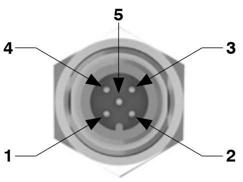
Series	i_EV
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

= 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.

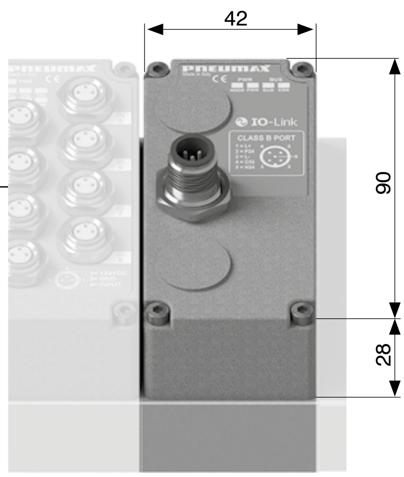
Scheme / Overall dimensions and I/O layout

“CLASS B” connector



M12A 5P MALE

PIN	SIGNAL
1	L+
2	P24 (+ 24 V DC)
3	L-
4	C/Q
5	N24 (0 V)



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 0x0BB8)
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

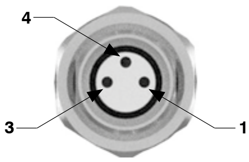
M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Inputs have PNP logic, + 24 V DC ± 10%.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit 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

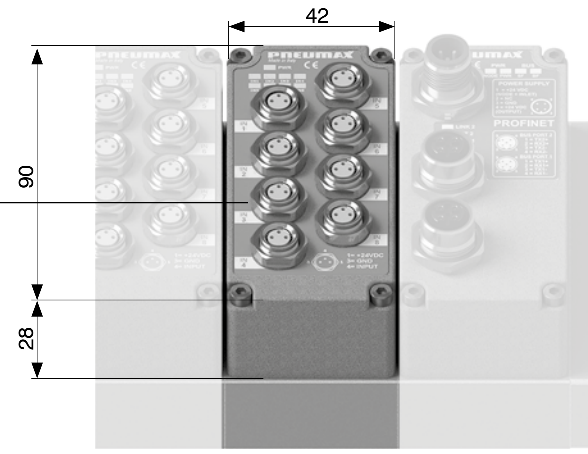
Technical characteristics	
Maximum current per module	300 mA
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedence	3 kΩ
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
3	0 V
4	INPUT



8 digital inputs module kit M12

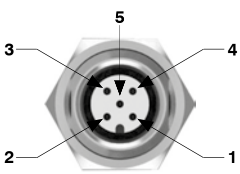
M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Inputs have PNP logic, + 24 V DC ± 10%.
Every connector takes two input channels.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity 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 impedence	3kΩ
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

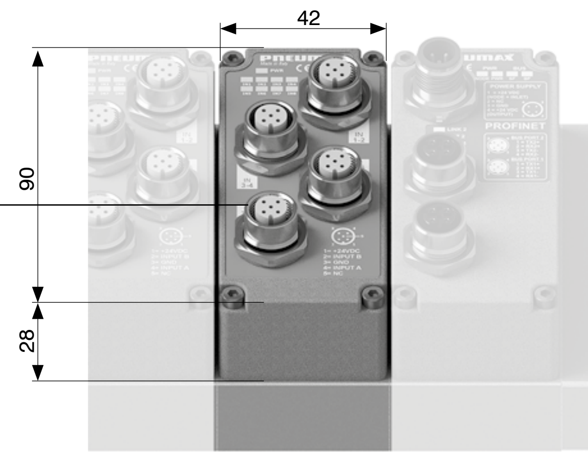
Scheme / Overall dimensions and I/O layout

M12 5P female connector



M12A 5P FEMALE

PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
2	INPUT B
3	0 V
4	INPUT A
5	N.C.



8 digital outputs module kit M8

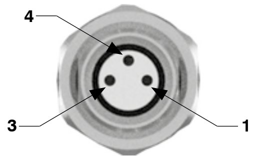
M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Outputs have PNP logic, + 24 V DC ± 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were 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

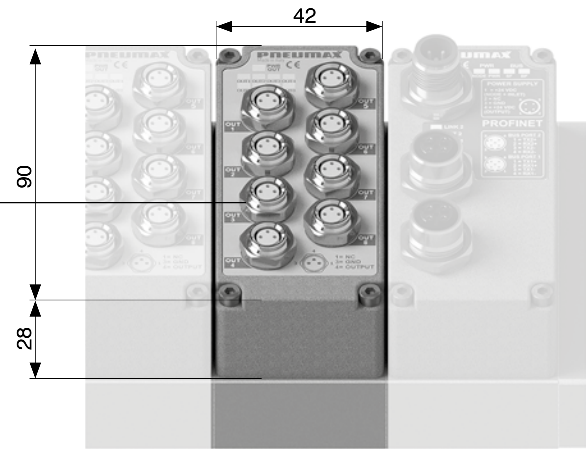
Technical characteristics	
Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	8 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA

Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	N.C.
3	0 V
4	OUTPUT



8 digital outputs module kit M12

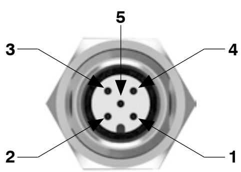
M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Outputs have PNP logic, + 24 V DC ± 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were 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

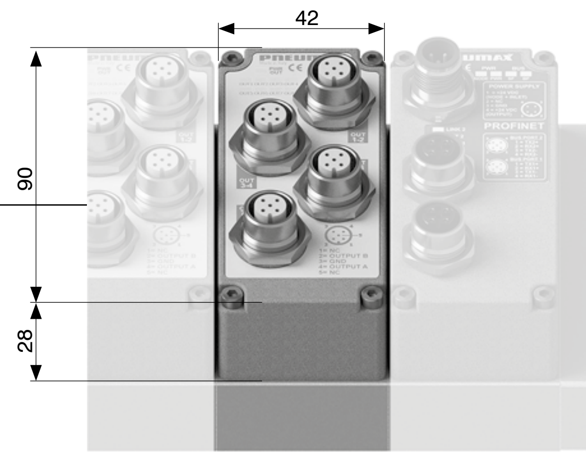
Scheme / Overall dimensions and I/O layout

M12 5P female connector



M12A 5P FEMALE

PIN	DESCRIPTION
1	N.C.
2	OUTPUT B
3	0 V
4	OUTPUT A
5	N.C.



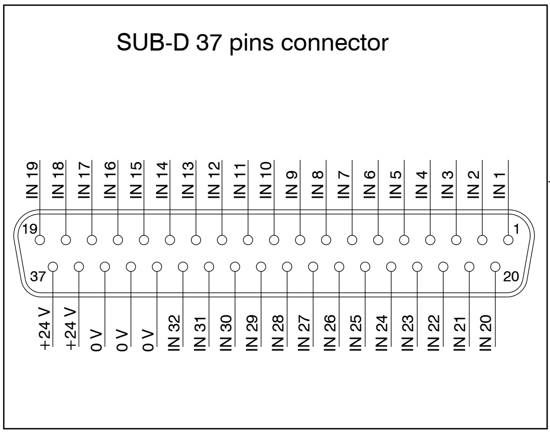
32 digital inputs module kit (37 pins SUB-D connector)

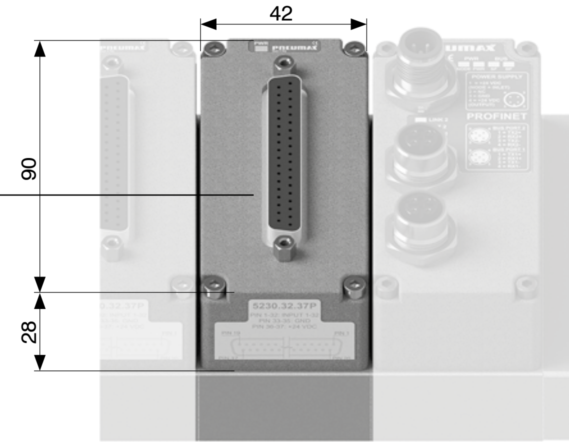
The module provides a SUB-D 37 pins female connector.
Inputs have PNP logic, + 24 V DC ± 10%.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit switches, 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 impedence	3 kΩ
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





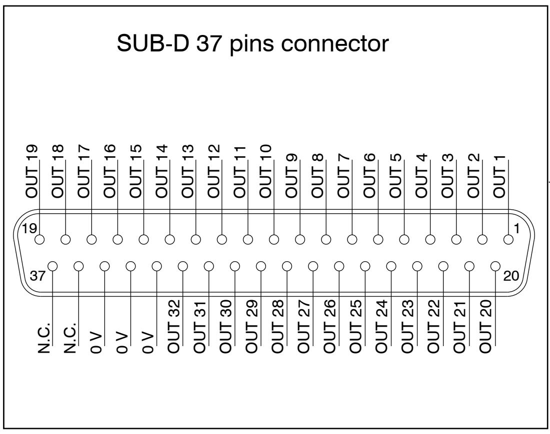
32 digital outputs module kit (37 pins SUB-D connector)

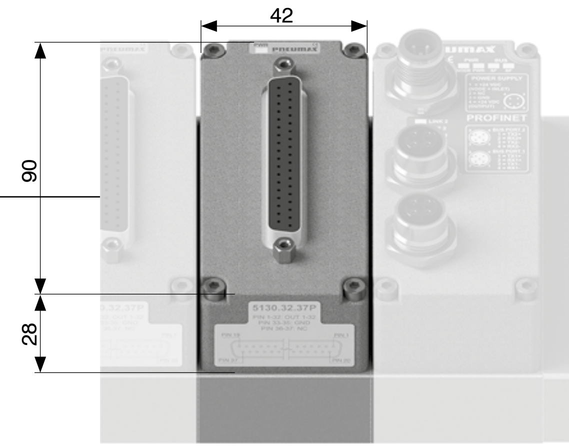
The module provides a SUB-D 37 pins female connector.
Outputs have PNP logic, + 24 V DC ± 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were installed upstream 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.

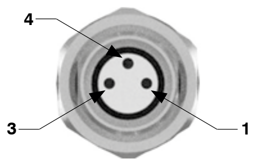
Coding: K5230.ⒸⓈ

	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)

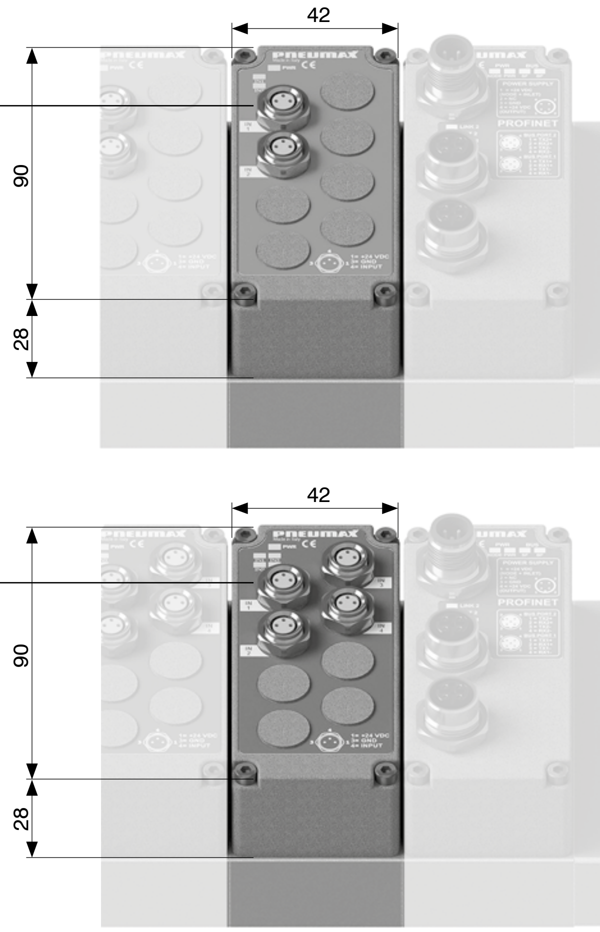
Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Input impedance (voltage inputs)	33 kΩ
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Input data allocation	16 bit per channel
Diagnostic LED	Input signal overcurrent or overvoltage
Accuracy	0,3% F.S.
Overall 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

M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
3	0 V
4	INPUT



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.

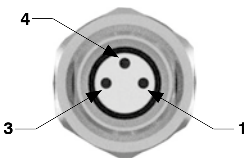
Coding: K5130.ⒸⓈ

Ⓒ	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)

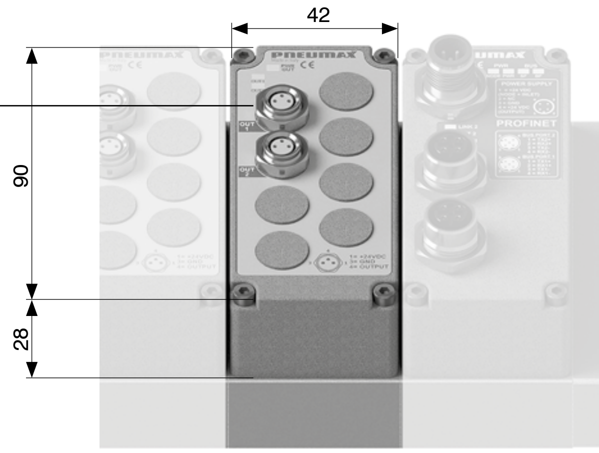
Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Protection (pin 4)	Overcurrent (auto-resettable fuse)
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Output data allocation	16 bit per channel
Diagnostic LED	Output signal overcurrent
Accuracy	0,3% F.S.
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

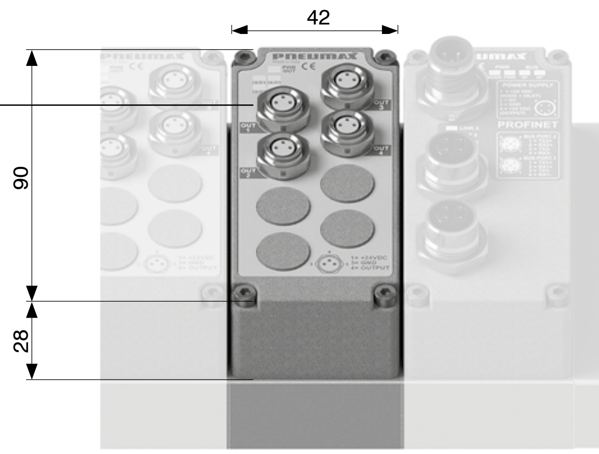
Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (OUTPUTS)
3	0 V
4	OUTPUT





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.ⒸP.0Ⓣ

Ⓒ	CHANNELS
	2 = 2 channels
	4 = 4 channels
Ⓣ	TYPE
	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)

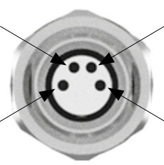
$$\text{Temperature (°C)} = \left(\frac{\text{Points}}{4095} \times 400\right) - 100$$

1

AIR DISTRIBUTION

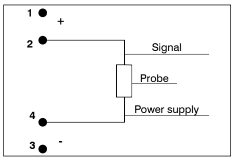
Scheme / Overall dimensions and I/O layout

M8 4P female connector



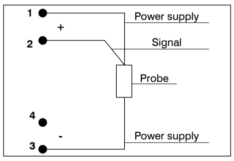
Connection scheme 2 wires probe

PIN	DESCRIPTION
1	N.C.
2	SENSOR +
3	POWER SUPPLY -
4	N.C.



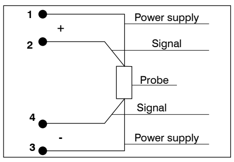
Connection scheme 3 wires probe

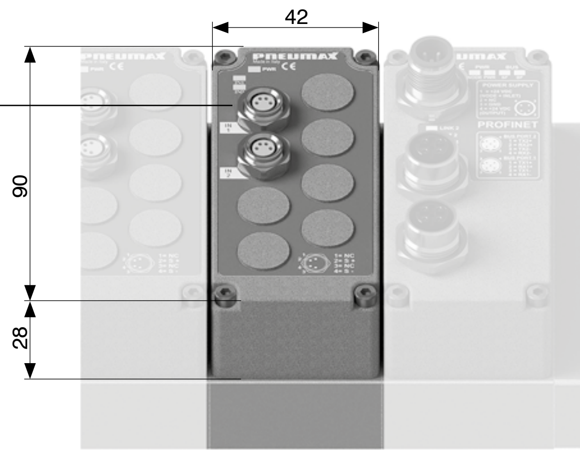
PIN	DESCRIPTION
1	POWER SUPPLY +
2	SENSOR +
3	POWER SUPPLY -
4	N.C.

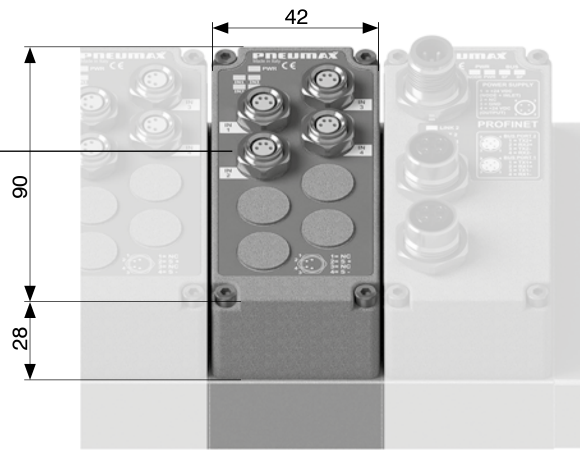


Connection scheme 4 wires probe

PIN	DESCRIPTION
1	POWER SUPPLY +
2	SENSOR +
3	POWER SUPPLY -
4	SENSOR -





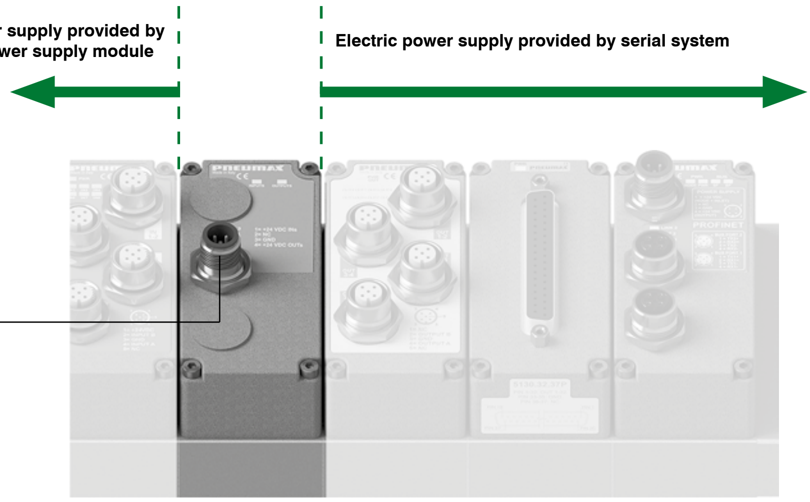


Additional power supply module kit

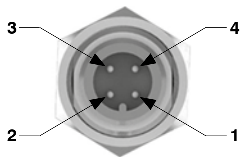
Additional power supply module supplies additional electric power for downstream optional modules, where “downstream” means farther from serial node, **resetting the current limits of the network node / IO-Link interface**.
Electric connection of the module to external power supply unit occurs via an 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

Signal management
64 INPUT + 64 OUTPUT serial systems - 32 fixed OUTPUT (Ex. PROFIBUS DP and CANopen®)

64 INPUTS + 64 OUTPUTS SERIAL SYSTEMS - 32 FIXED OUTPUTS

64 INPUT SIGNALS

64 OUTPUT SIGNALS

32 preallocated signals

32 REMAINING OUTPUT SIGNALS

M12 DIGITAL INPUTS MODULE

M12 DIGITAL INPUTS MODULE

M8 DIGITAL OUTPUTS MODULE

M8 DIGITAL INPUTS MODULE

128 INPUT + 128 OUTPUT serial systems - 48 fixed OUTPUT (Ex. EtherNet/IP - EtherCAT® - PROFINET IO RT)

128 INPUTS + 128 OUTPUTS SERIAL SYSTEMS - 48 FIXED OUTPUTS

128 INPUT SIGNALS

128 OUTPUT SIGNALS

48 preallocated signals

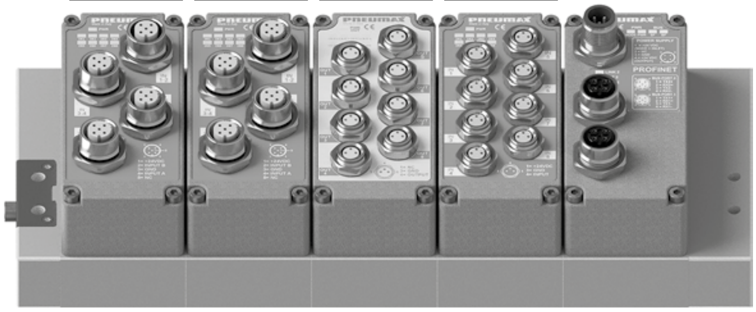
80 REMAINING OUTPUT SIGNALS

M12 DIGITAL INPUTS MODULE

M12 DIGITAL INPUTS MODULE

M8 DIGITAL OUTPUTS MODULE

M8 DIGITAL INPUTS MODULE



128 INPUT + 128 OUTPUT serial systems - 48 fixed OUTPUT (Ex. EtherNet/IP - EtherCAT® - PROFINET IO RT)

128 INPUTS + 128 OUTPUTS SERIAL SYSTEMS - 48 FIXED OUTPUTS

128 INPUT SIGNALS

128 OUTPUT SIGNALS

48 preallocated signals

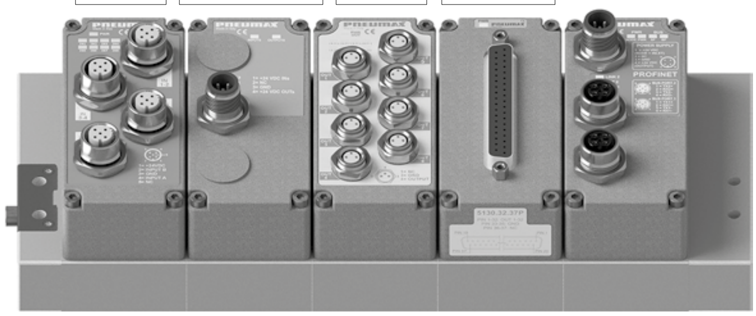
80 REMAINING OUTPUT SIGNALS

M12 DIGITAL INPUTS MODULE

ADDITIONAL POWER SUPPLY MODULE

M8 DIGITAL OUTPUTS MODULE

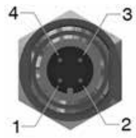
32 DIGITAL OUTPUTS MODULE (SUB-D 37P)



POWER SUPPLY connectors

Straight connector M12A 4P female

Coding: 5312A.F04.00

Upper view slave connector

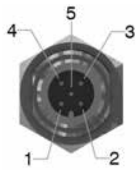
PIN	DESCRIPTION
1	+ 24 V DC (LOGICS AND INPUTS)
2	N.C.
3	0 V
4	+ 24 V DC (OUTPUTS)

Power supply socket

NETWORK connectors

Straight connector M12A 5P female

Coding: 5312A.F05.00

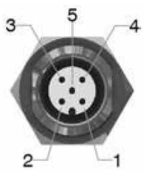
Upper view slave connector

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

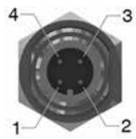
Upper view slave connector

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

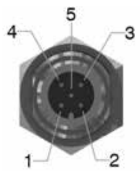
PIN	SIGNAL	DESCRIPTION
1	TX+	EtherNet Transmit High
2	RX+	EtherNet Receive High
3	TX-	EtherNet Transmit Low
4	RX-	EtherNet Receive Low

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

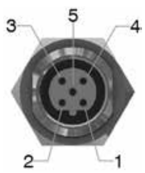
Upper view slave connector

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

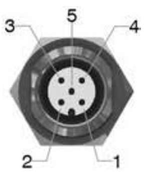
PIN	DESCRIPTION
1	Power Supply
2	A-Line
3	DGND
4	B-Line
5	SHIELD

Socket for bus PROFIBUS DP

INPUTS connectors

Straight connector M12A 5P male

Coding: 5312A.M05.00

PIN	DESCRIPTION
1	+ 24 V DC
2	INPUT B
3	0 V
4	INPUT A
5	N.C.

Upper view slave connector

Plug for inputs modules

Straight connector M8 3P male

Coding: 5308A.M03.00


PIN	DESCRIPTION
1	+ 24 V DC
4	INPUT
3	0 V

Upper view slave connector

Plug for inputs modules

Plugs

M12 plug

Coding: 5300.T12

M8 plug

Coding: 5300.T08

Series 3000 EVO

- **Version 3100 (10 mm) and 3400 (15,5 mm)**
- **Nominal flow rate up to 200 Nl/min (Version 3100)**
- **Nominal flow rate up to 600 Nl/min (Version 3400)**
- **Stand alone or manifold mounted versions**
- **Valve replacement without disconnecting the tubes**
- **Available with a wide range of serial system protocols**
- **Wide range of accessories**
- **Available sub-base mounted or with M5 threaded ports (Version 3100) and G1/8" (Version 3400)**
- **Possibility to use different pressures along the manifold (including vacuum)**
- **Certified cULus**

Pneumax valves and solenoid valves are designed to guarantee versatility and maximum reliability in the control of integrated pneumatic circuits.
The Pneumax 3000 EVO series of solenoid valves is a very flexible solution that can be easily configured to optimize the efficiency of the whole system through a constant interface and communication with the machine.
The Pneumax 3000 EVO series is available in stand alone and manifold mounted versions.
Both versions include a wide range of functions, capable of working with positive pressures up to 10 bar or vacuum.
The valves have aluminum bodies with integrated electrical connections, manual override and a LED that indicates when the valve is actuated.
3000 EVO series is another addition to the extensive range of solenoid valve systems designed for applications in very demanding industrial sectors such as assembly and robotics, packaging or automotive.

Construction characteristics

Body	Aluminium
Seals	NBR
Hydraulic piston seals	NBR
Springs	AISI 302 stainless steel
Operators	Technopolymer
Pistons	Aluminium / Technopolymer
Spools	Aluminium

Technical characteristics

Voltage	+ 24 V DC ±10%
Pilot consumption	1,3W nominal in energy saving mode 0,25W
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

CANopen PROFIBUS PROFINET EtherCAT EtherNet/IP IO-Link CC-Link IE Field Basic

Series 3000 EVO - STAND ALONE

The range of series 3000 EVO solenoid valves version 3100 (10mm) and 3400 (15,5mm), are available in STAND ALONE self feeding or external feeding versions and realised with M8 point to point and 90° H connection with an integrated snap-on fitting.

Main characteristics

10 and 15,5 mm size.
Multi-position sub-bases in different lengths.

Functions

S.V. 5/2 Monostable Solenoid-Spring
S.V. 5/2 Monostable Solenoid-Differential (only self feeding)
S.V. 5/2 Bistable Solenoid-Solenoid
S.V. 5/3 C.C. Solenoid-Solenoid
S.V. 2x3/2 N.C.-N.C. (= 5/3 O.C.) Solenoid-Solenoid
S.V. 2x3/2 N.O.-N.O. (= 5/3 P.C.) Solenoid-Solenoid
S.V. 2x3/2 N.C.-N.O. Solenoid-Solenoid
S.V. 2x3/2 N.O.-N.C. Solenoid-Solenoid

Solenoid valve ordering code

3 1 15. 52.00 . 39 . 82

Size	
1	Version 3100 (10mm)
4	Version 3400 (15,5mm)

Function	
52.00	S.V. 5/2
53.31	S.V. 5/3
62.44	2x3/2 N.C.-N.C.
62.55	2x3/2 N.O.-N.O.
62.45	2x3/2 N.C.-N.O.
62.54	2x3/2 N.O.-N.C.

Valves type	
36	Solenoid-Differential self feeding
39	Solenoid-Spring self feeding
35	Solenoid-Solenoid self feeding
29	Solenoid-Spring external feeding
25	Solenoid-Solenoid external feeding

Connection	
02	H 90° SPEED-UP connector
82	M8 SPEED-UP connector

Example in the table: 3115.52.00.39.82: Solenoid valve size 10mm 5/2 solenoid-spring self feeding with M8 SPEED-UP connector

Configurator

Solenoid valve configuration

3 ☐ ☐ - ☐ ☐ ☐ ☐ ☐ - ☐ - ... ... - ...

Size	
1	Version 3100 (10mm)
4	Version 3400 (15,5mm)

Number of collector positions	
02	2 positions collector
03	3 positions collector
04	4 positions collector
05	5 positions collector
06	6 positions collector
07	7 positions collector
08	8 positions collector
09	9 positions collector
10	10 positions collector

Valve type	
A	S.V. 5/2 Solenoid-Spring
B	S.V. 5/2 Solenoid-Differential (only self feeding)
C	S.V. 5/2 Solenoid-Solenoid
E	S.V. 5/3 C.C. Solenoid-Solenoid
F	S.V. 2x3/2 N.C.-N.C. (=5/3 O.C.) Solenoid-Solenoid
G	S.V. 2x3/2 N.O.-N.O. (=5/3 P.C.) Solenoid-Solenoid
H	S.V. 2x3/2 N.C.-N.O. Solenoid-Solenoid
I	S.V. 2x3/2 N.O.-N.C. Solenoid-Solenoid

Power supply	
2	External feeding
3	Self feeding

Connector type	
H	H 90° SPEED-UP connector
M	M8 SPEED-UP connector

Voltage	
1	+ 24 V DC

Connections	
5	M5 - only for version 3100 (10 mm)
8	G1/8" - only for version 3400 (15,5 mm)

Accessories (optional)	
T	Free valve space plug

Accessories (optional)	no valve position occupied on the manifold
0X0	Diaphragm plug on conduit 1
00Y	Diaphragm plug on conduit 3
Z00	Diaphragm plug on conduit 5
0XY	Diaphragm plugs on conduits 1 and 3
ZX0	Diaphragm plugs on conduits 5 and 1
Z0Y	Diaphragm plugs on conduits 5 and 3
ZXY	Diaphragm plugs on conduits 5, 1 and 3

Example in the table : 3104-C2M15-T-0X0-A3M15-F3M15
Four position manifold Version 3100 (10mm) composed of:
- Solenoid valve 5/2 solenoid-solenoid external feeding, + 24 V DC
- Free valve space plug
- Diaphragm plug on pipe 1
- Solenoid valve 5/2 solenoid-spring self feeding, + 24 V DC
- Solenoid valve 2x3/2 N.C.-N.C. (=5/3 O.C.) solenoid-solenoid, + 24 V DC

1

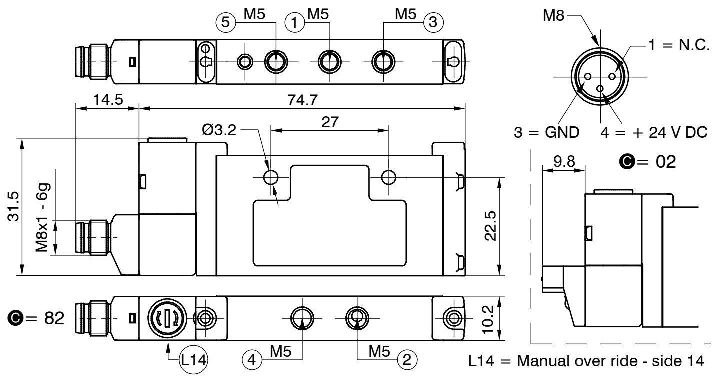
AIR DISTRIBUTION

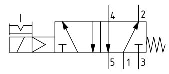
Solenoid-Spring (Self feeding)

Coding: 3115.52.00.39.Ⓒ

	ELECTRICAL CONNECTION
Ⓒ	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 49 g
SHORT FUNCTION CODE "A"





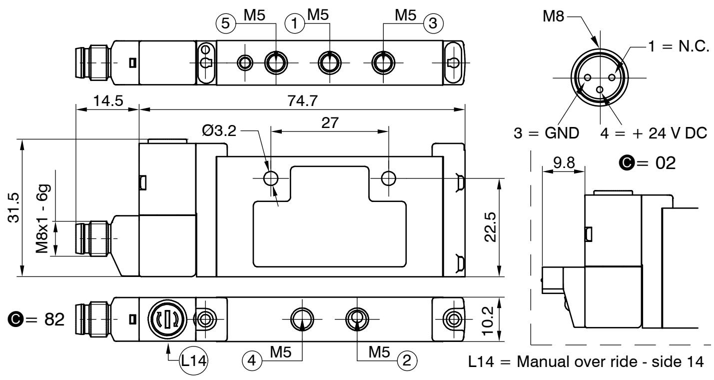
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

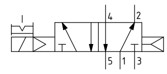
Solenoid-Differential (Self feeding)

Coding: 3115.52.00.36.Ⓒ

	ELECTRICAL CONNECTION
Ⓒ	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 49 g
SHORT FUNCTION CODE "B"





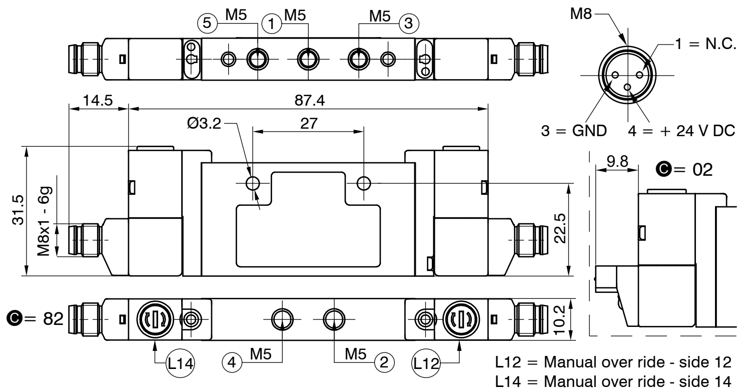
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	15
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

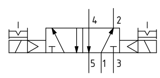
Solenoid-Solenoid (Self feeding)

Coding: 3115.52.00.35.Ⓒ

	ELECTRICAL CONNECTION
Ⓒ	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 59 g
SHORT FUNCTION CODE "C"





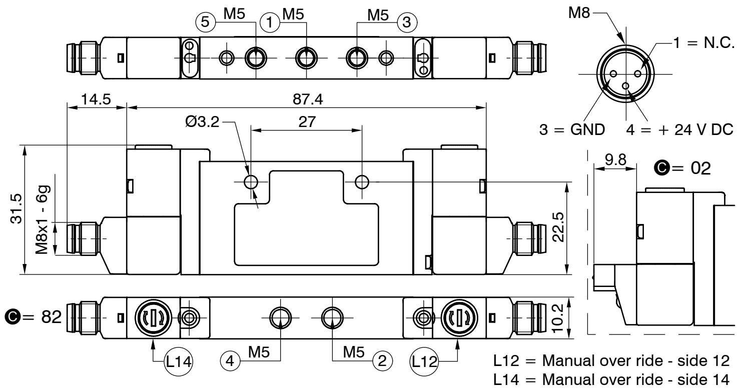
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

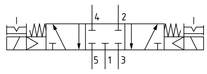
Solenoid-Solenoid 5/3 (Closed centres) (Self feeding)

Coding: 3115.53.31.35.C

	ELECTRICAL CONNECTION
C	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 59 g
SHORT FUNCTION CODE "E"





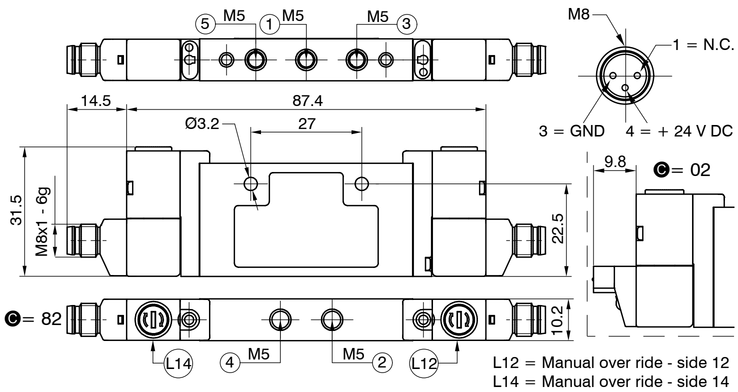
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

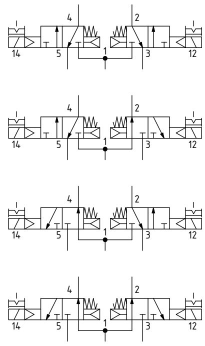
Solenoid-Solenoid 2x3/2 (Self feeding)

Coding: 3115.62.F.35.C

	FUNCTION
F	**44** = N.C.-N.C. (5/3 Open centres)
	45 = N.C.-N.O.
	54 = N.O.-N.C.
	55 = N.O.-N.O. (5/3 Pressured centres)
	ELECTRICAL CONNECTION
C	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 59,4 g
SHORT FUNCTION CODE:
N.C.-N.C. (5/3 Open centres) = "F"
N.O.-N.O. (5/3 Pressured centres) = "G"
N.C.-N.O. = "H"
N.O.-N.C. = "I"

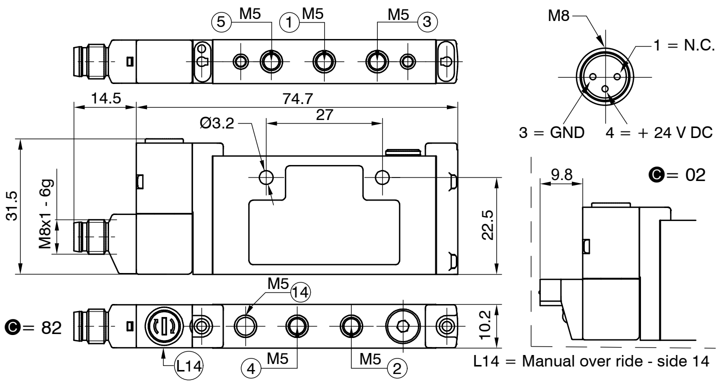




Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	15
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

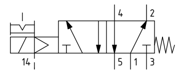
Solenoid-Spring (External feeding)

Coding: 3115.52.00.29.Ⓒ



Ⓒ	ELECTRICAL CONNECTION
	02 = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

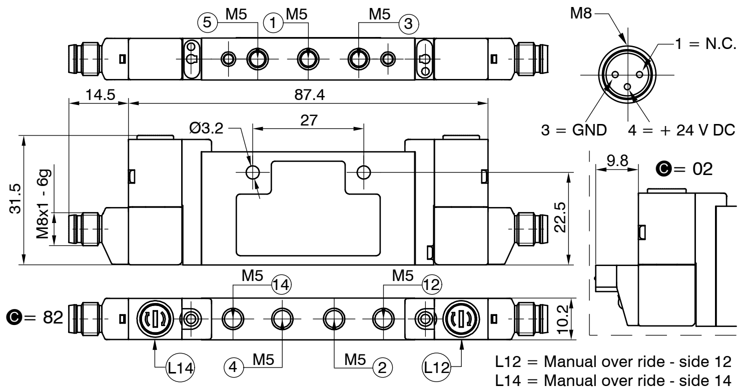
Weight 49 g
SHORT FUNCTION CODE "A"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

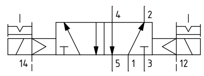
Solenoid-Solenoid (External feeding)

Coding: 3115.52.00.25.Ⓒ



Ⓒ	ELECTRICAL CONNECTION
	02 = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

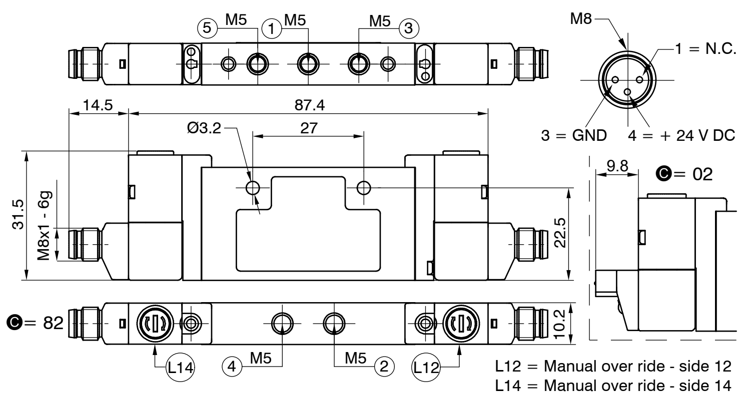
Weight 59 g
SHORT FUNCTION CODE "C"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	10
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

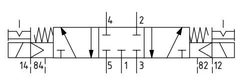
Solenoid-Solenoid 5/3 (Closed centres) (External feeding)

Coding: 3115.53.31.25.Ⓒ



Ⓒ	ELECTRICAL CONNECTION
	02 = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 59 g
SHORT FUNCTION CODE "E"



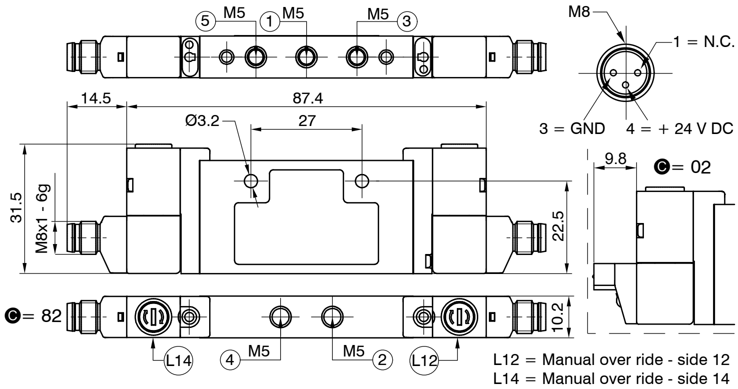
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

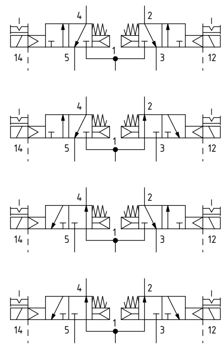
Solenoid-Solenoid 2x3/2 (External feeding)

Coding: 3115.62.F.25.C

F	FUNCTION
	44 = N.C.-N.C. (5/3 Open centres)
	45 = N.C.-N.O.
	54 = N.O.-N.C.
	55 = N.O.-N.O. (5/3 Pressured centres)
C	ELECTRICAL CONNECTION
	02 = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 59,4 g
SHORT FUNCTION CODE:
N.C.-N.C. (5/3 Open centres) = "F"
N.O.-N.O. (5/3 Pressured centres) = "G"
N.C.-N.O. = "H"
N.O.-N.C. = "I"

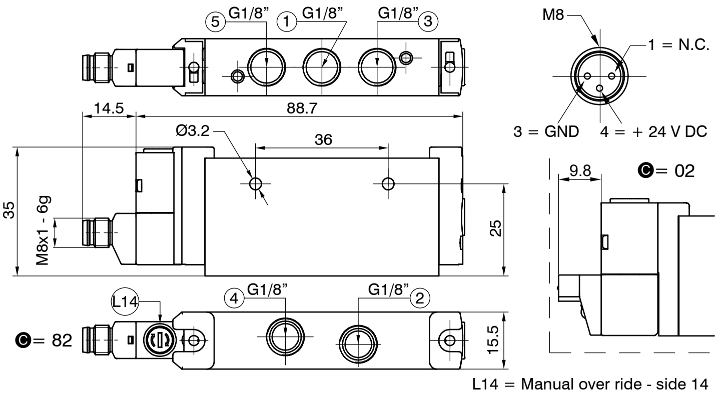




Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	15
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	≥3+(02 x Inlet pressure)
Temperature °C	-5 ... +50

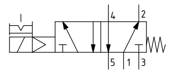
Solenoid-Spring (Self feeding)

Coding: 3415.52.00.39.Ⓒ



Ⓒ	ELECTRICAL CONNECTION
	02 = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

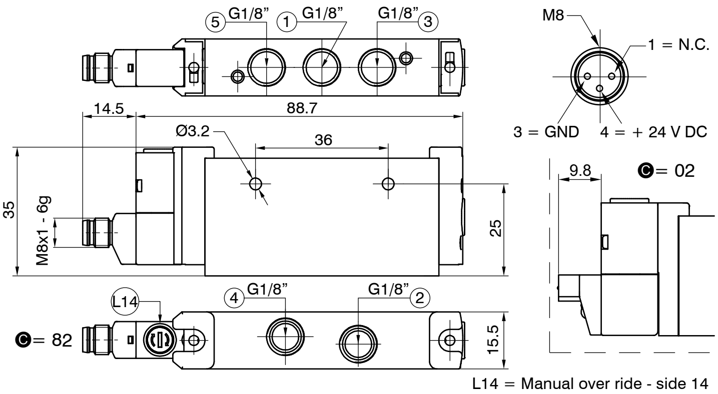
Weight 90 g
SHORT FUNCTION CODE "A"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

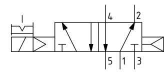
Solenoid-Differential (Self feeding)

Coding: 3415.52.00.36.Ⓒ



Ⓒ	ELECTRICAL CONNECTION
	02 = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

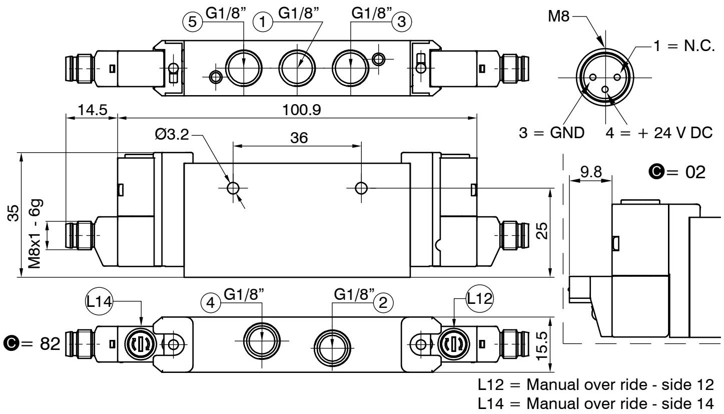
Weight 90 g
SHORT FUNCTION CODE "B"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	15
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

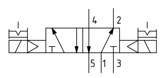
Solenoid-Solenoid (Self feeding)

Coding: 3415.52.00.35.Ⓒ



Ⓒ	ELECTRICAL CONNECTION
	02 = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

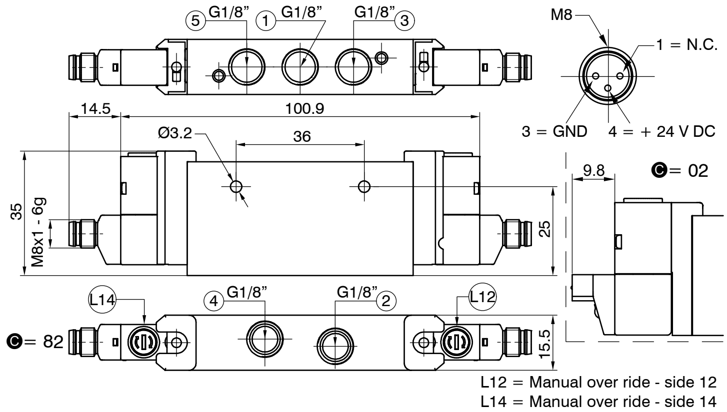
Weight 100 g
SHORT FUNCTION CODE "C"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	10
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

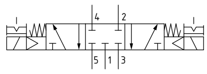
Solenoid-Solenoid 5/3 (Closed centres) (Self feeding)

Coding: 3415.53.31.35.Ⓒ



	ELECTRICAL CONNECTION
Ⓒ	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 100 g
SHORT FUNCTION CODE "E"



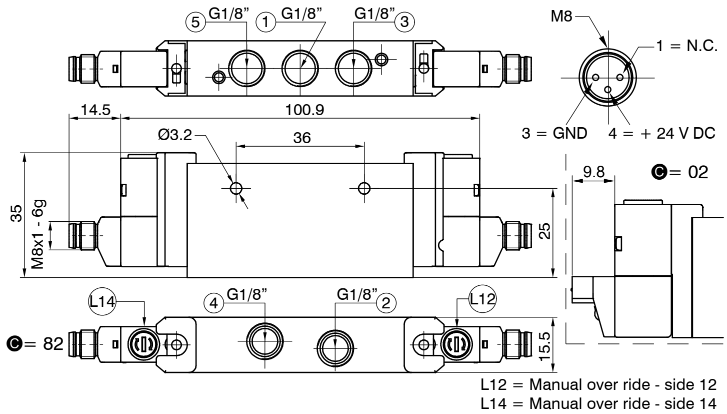
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	500
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

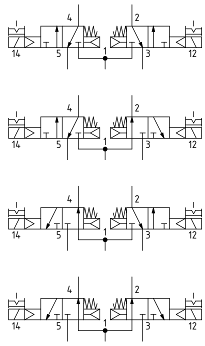
Solenoid-Solenoid 2x3/2 (Self feeding)

Coding: 3415.62.Ⓕ.35.Ⓒ

	FUNCTION
Ⓕ	**44** = N.C.-N.C. (5/3 Open centres)
	45 = N.C.-N.O.
	54 = N.O.-N.C.
	55 = N.O.-N.O. (5/3 Pressured centres)
	ELECTRICAL CONNECTION
Ⓒ	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 100 g
SHORT FUNCTION CODE:
N.C.-N.C. (5/3 Open centres) = "F"
N.O.-N.O. (5/3 Pressured centres) = "G"
N.C.-N.O. = "H"
N.O.-N.C. = "I"

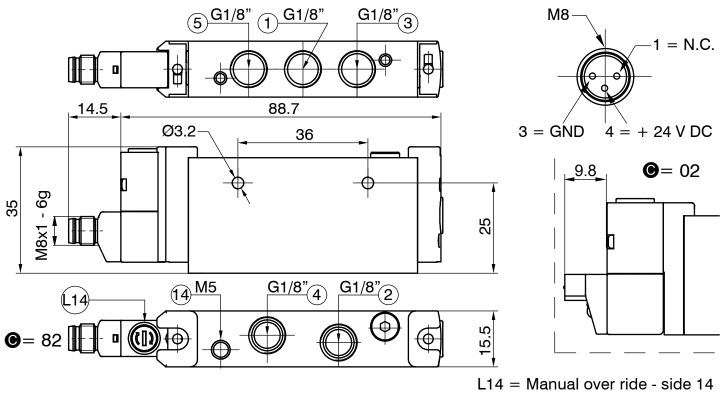




Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	500
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	15
Working pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

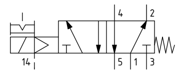
Solenoid-Spring (External feeding)

Coding: 3415.52.00.29.Ⓒ



	ELECTRICAL CONNECTION
Ⓒ	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

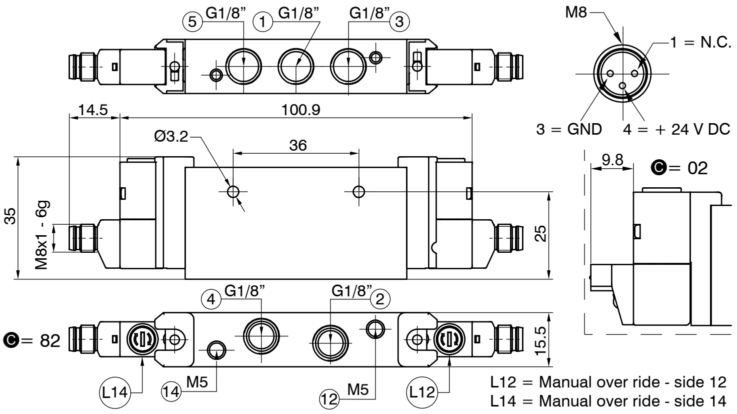
Weight 90 g
SHORT FUNCTION CODE "A"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

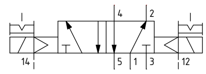
Solenoid-Solenoid (External feeding)

Coding: 3415.52.00.25.Ⓒ



	ELECTRICAL CONNECTION
Ⓒ	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

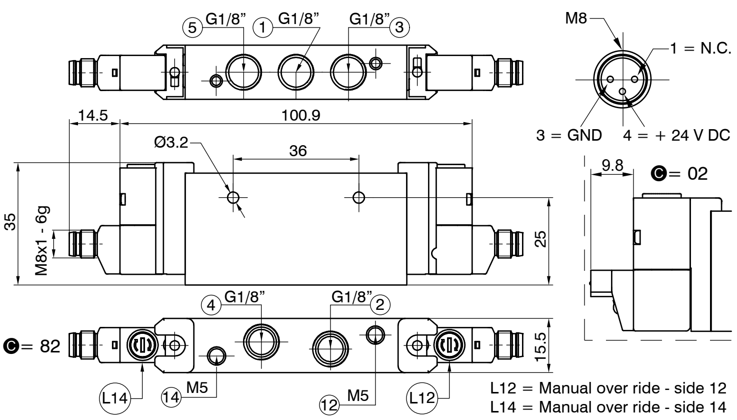
Weight 100 g
SHORT FUNCTION CODE "C"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	10
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

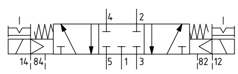
Solenoid-Solenoid 5/3 (Closed centres) (External feeding)

Coding: 3415.53.31.25.Ⓒ



	ELECTRICAL CONNECTION
Ⓒ	**02** = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

Weight 100 g
SHORT FUNCTION CODE "E"



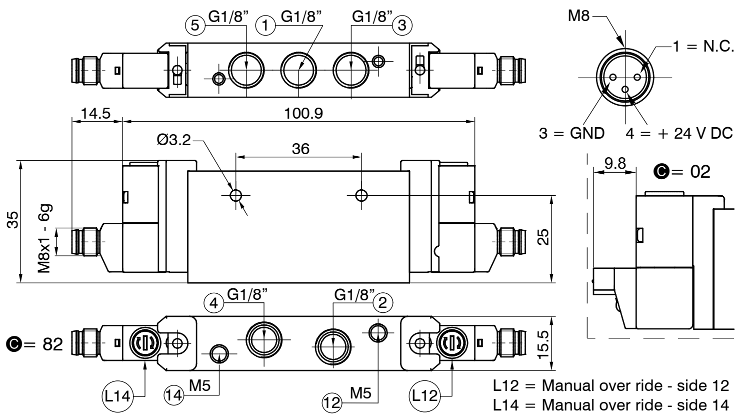
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	500
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

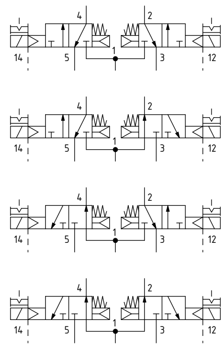
Solenoid-Solenoid 2x3/2 (External feeding)

Coding: 3415.62.F.25.C

F	FUNCTION
	44 = N.C.-N.C. (5/3 Open centres)
	45 = N.C.-N.O.
	54 = N.O.-N.C.
	55 = N.O.-N.O. (5/3 Pressured centres)
C	ELECTRICAL CONNECTION
	02 = H 90° SPEED-UP connector + 24 V DC
	82 = M8 SPEED-UP connector + 24 V DC

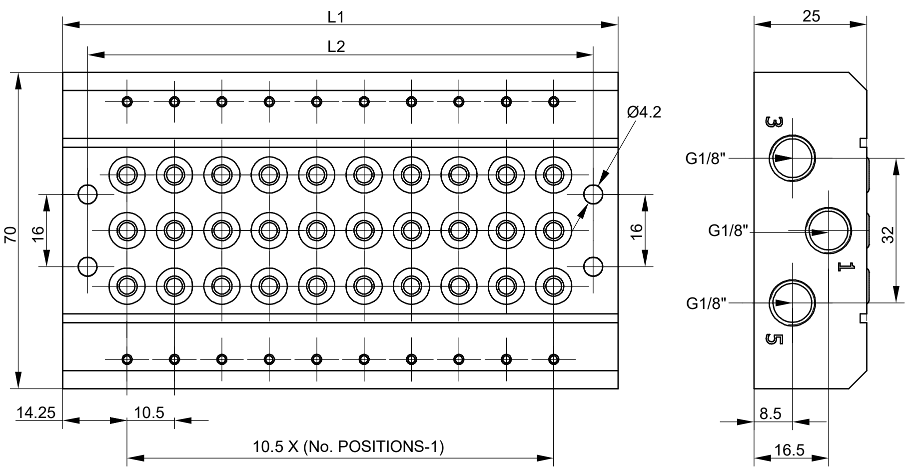
Weight 100 g
SHORT FUNCTION CODE:
N.C.-N.C. (5/3 Open centres) = "F"
N.O.-N.O. (5/3 Pressured centres) = "G"
N.C.-N.O. = "H"
N.O.-N.C. = "I"





Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	500
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	15
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	≥3+(02 x Inlet pressure)
Temperature °C	-5 ... +50

Manifold



	No. POSITIONS								
	2	3	4	5	6	7	8	9	10
L1	39	49,5	60	70,5	81	91,5	102	112,5	123
L2	29	39,5	50	60,5	71	81,5	92	102,5	113
Weight (g)	150	200	250	300	350	400	450	500	550

Coding: 3115.N

	NO. POSITIONS
N	**02** = No. 2 positions
	03 = No. 3 positions
	04 = No. 4 positions
	05 = No. 5 positions
	06 = No. 6 positions
	07 = No. 7 positions
	08 = No. 8 positions
	09 = No. 9 positions
	10 = No. 10 positions

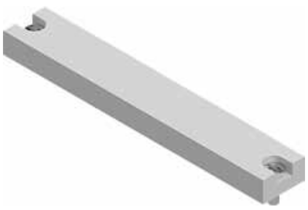
Weight "see table"

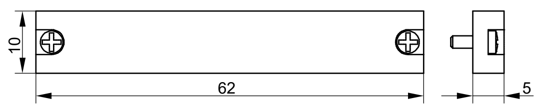
Assembling kit

Coding: 3115.KV

Weight 2 g

Closing plate





Coding: 3115.00

Weight 10 g

Diaphragm plug

Coding: 3130.17

Weight 1,5 g

1

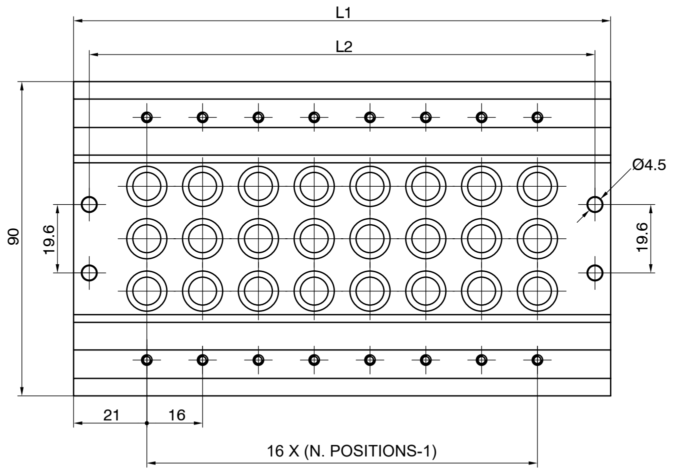
AIR DISTRIBUTION

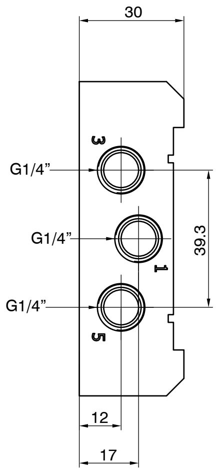
Manifold

Coding: 3415.Ⓝ

	NO. POSITIONS
Ⓝ	**02** = No. 2 positions
	03 = No. 3 positions
	04 = No. 4 positions
	05 = No. 5 positions
	06 = No. 6 positions
	07 = No. 7 positions
	08 = No. 8 positions
	09 = No. 9 positions
	10 = No. 10 positions

Weight "see table"





	N. POSITIONS								
	2	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
L1	58	74	90	106	122	138	154	170	186
L2	49	65	81	97	113	129	145	161	177
Weight (g)	350	440	530	620	710	800	890	980	1070

Assembling kit

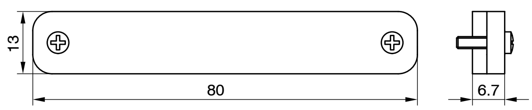
Coding: 3415.KV

Weight 3 g

Closing plate

Coding: 3415.00

Weight 25 g



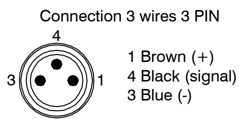
Diaphragm plug

Coding: 3430.17

Weight 3 g

M8 connector with 3 wires cable

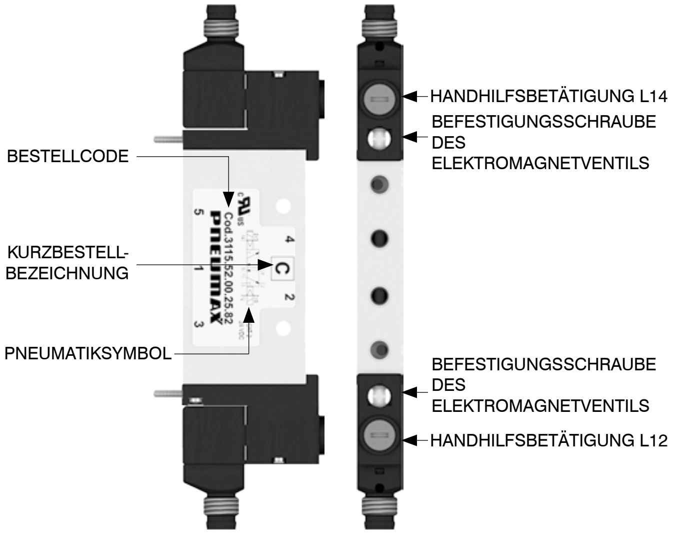
Coding: MCHⓁ



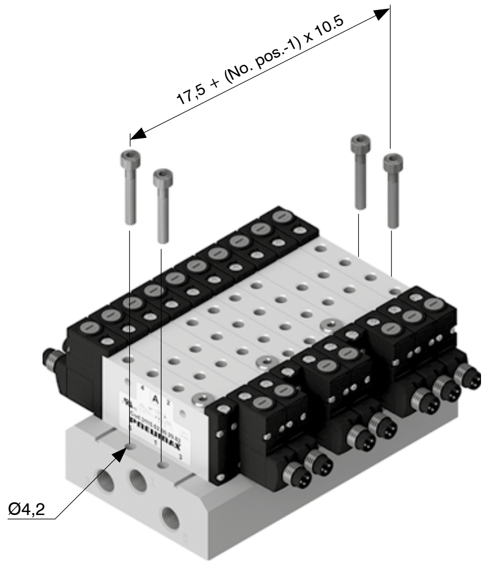
	CABLE LENGTH
Ⓛ	**1** = 2,5 meters
	2 = 5 meters
	3 = 10 meters

PUR Ø2,6 mm 3x0,15 mm²

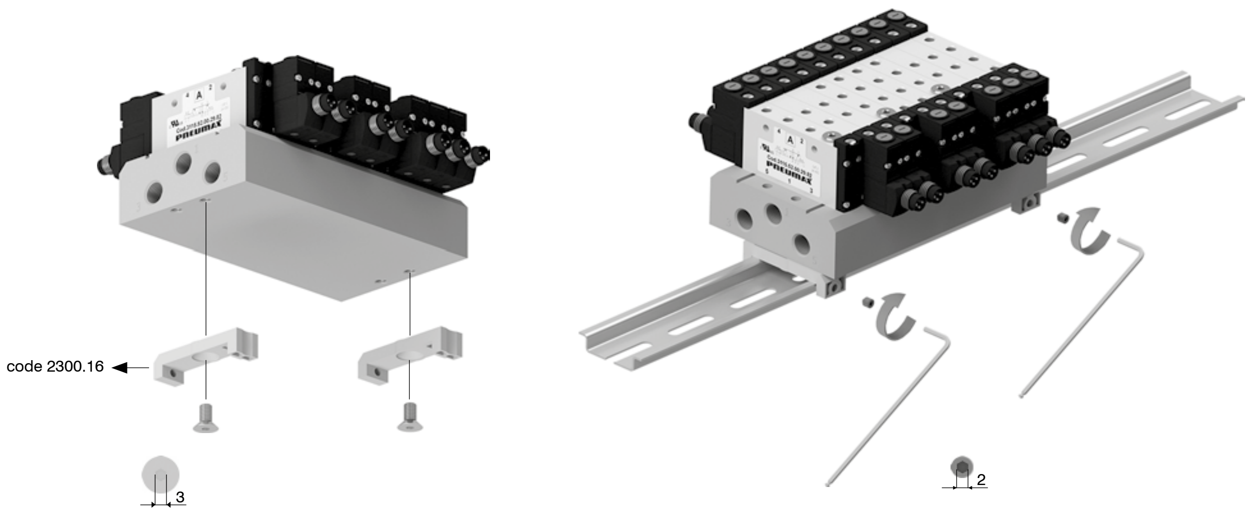
Solenoid valve description



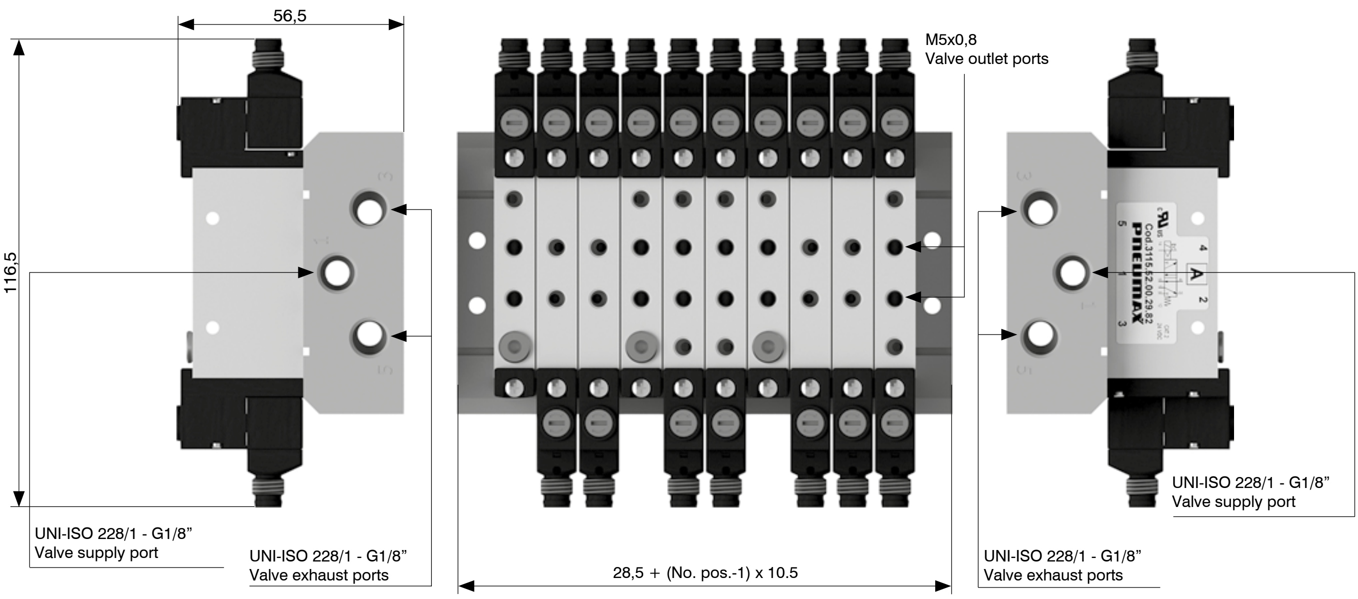
From the top



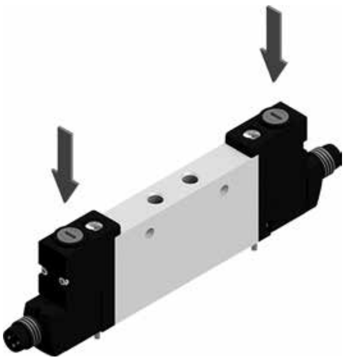
DIN rail fixing



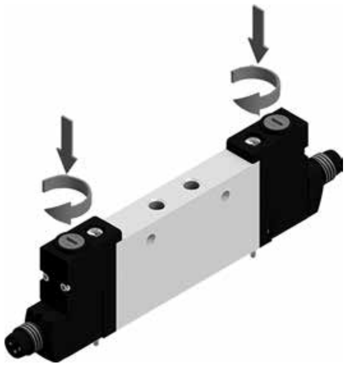
Supply ports and maximum possible size according to valves used



Manual override actuation



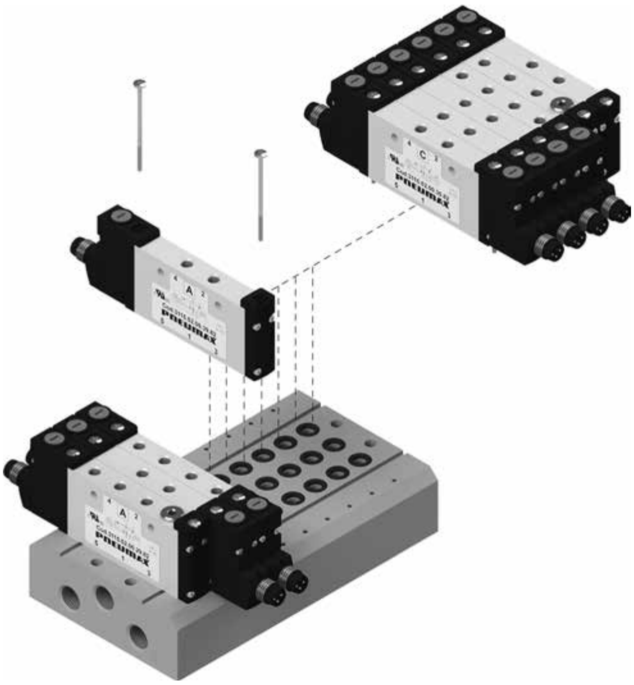
Instable function:
Push to actuate
(when released it moves back to the original position)



Bistable function:
Push and turn to get the bistable function

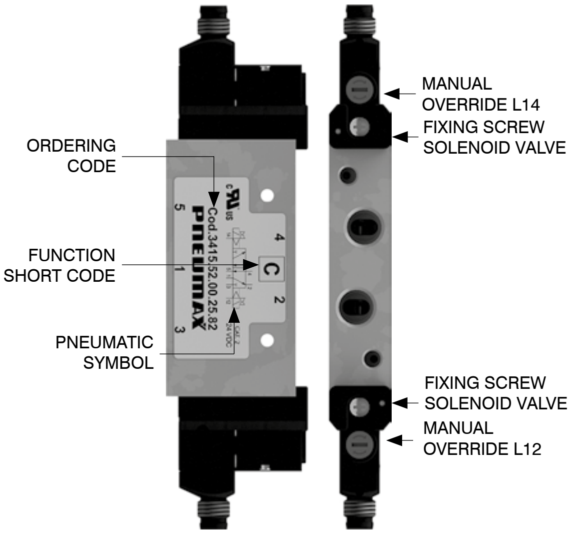
Note: we recommend the manual override is returned to it's original position when not in use

Solenoid valves installation

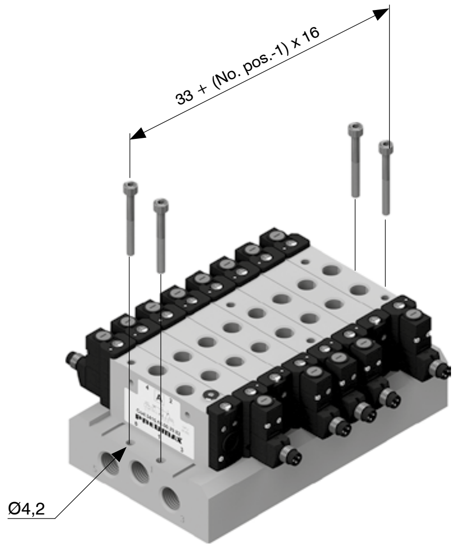


Maximum fixing torque for fittings: 0,2 Nm

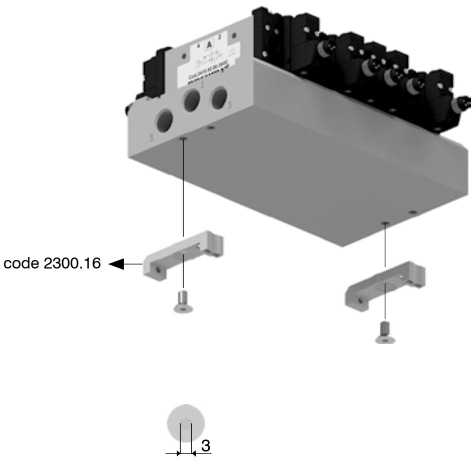
Solenoid valve description

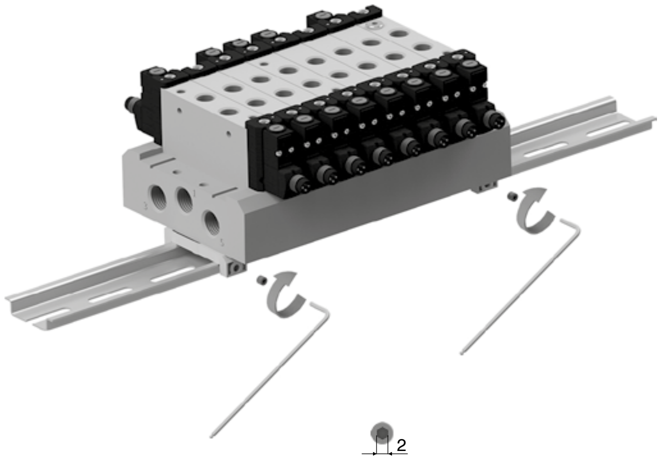


From the top

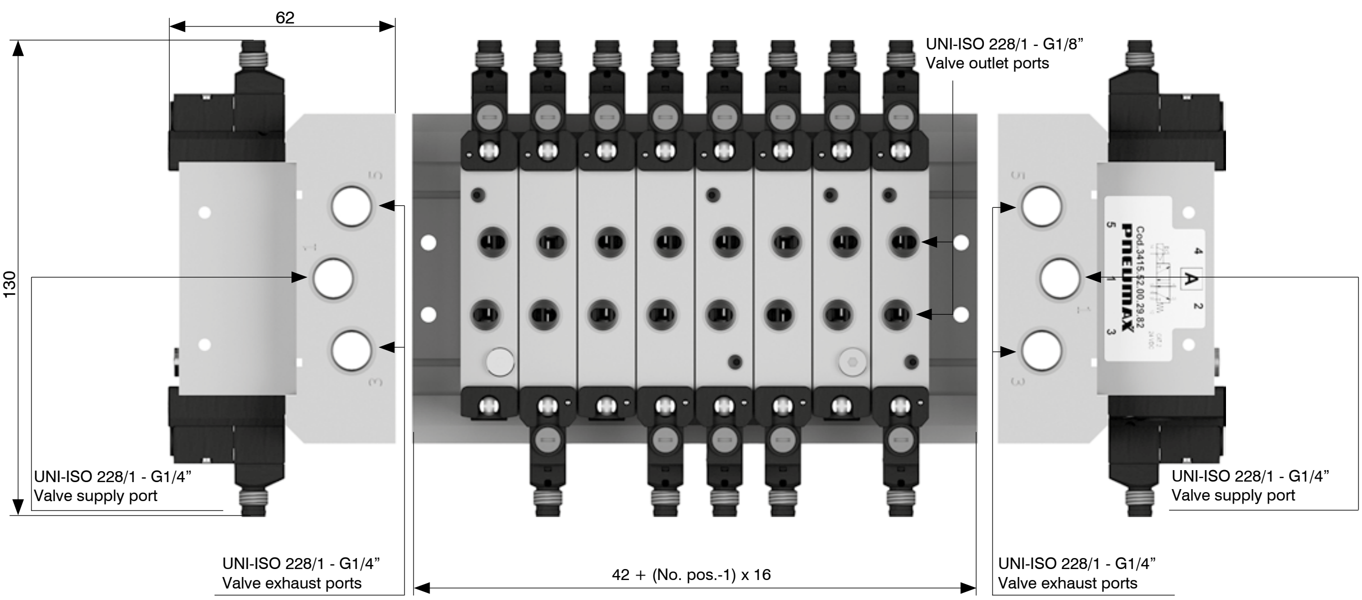


DIN rail fixing

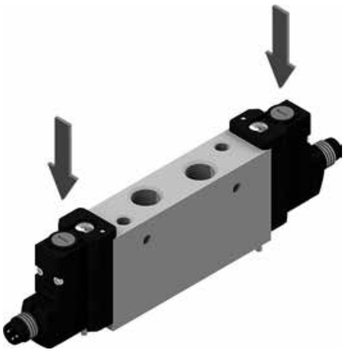


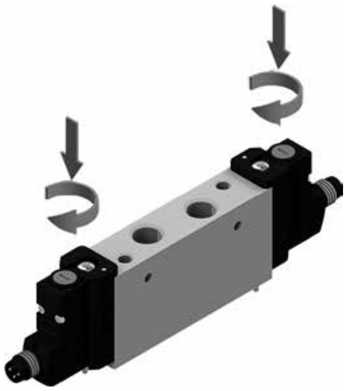


Supply ports and maximum possible size according to valves used



Manual override actuation



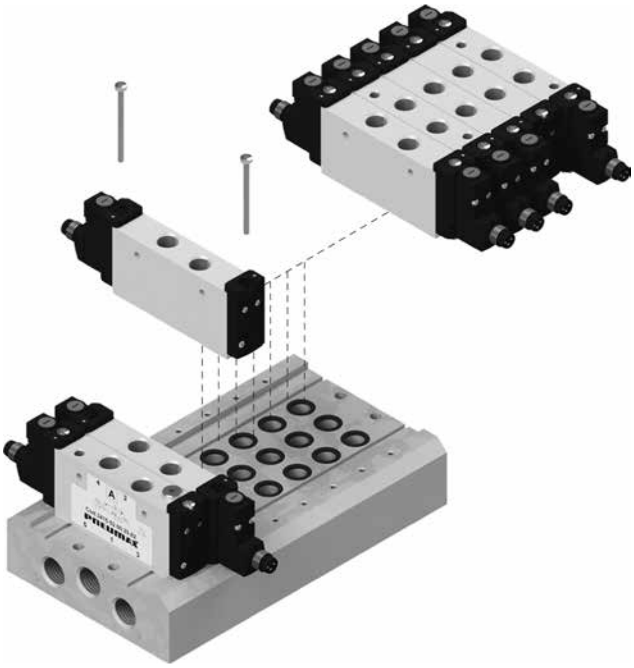


Instable function:
Push to actuate
(when released it moves back to the original position)

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



Maximum fixing torque for fittings: 0,2 Nm

Series 3000 EVO - MANIFOLD

The range of solenoid valves to be assembled in pre-configured manifold, is available in multi-pin and serial versions, with a vast choice of connectors and analogue and digital input and output accessories.
The compact and clean design of both the valve body and the manifold, each one produced in aluminum, allows their use in applications requiring space optimization and weight reduction without sacrificing reliability and the prerogatives of aluminum.
The multi-pin connection version is available in three different types of connections:

- SUB-D 25 poles equipped with 24 outputs and configurable in different lengths up to 12 bistable valve positions on the manifold
- SUB-D 37 poles equipped with 32 outputs and configurable in different lengths up to 16 bistable valve positions on the manifold
- SUB-D 44 poles HD equipped with 40 outputs and configurable in different lengths up 20 bistable valve positions on the manifold

Every one of these options covers the wide range of application requirements and provides electronic management by default capable of energy saving on individual coils and managing PNP and NPN connections automatically without any difference in installation for the end user.
Precisely in order to guarantee maximum integration versatility in different machines and applications, the 3000 EVO series valves in the serial version are designed to interface with all main communication protocols: CANopen®, PROFIBUS DP, EtherNet/IP, EtherCAT®, PROFINET IO RT, CC-Link IE Field Basic and IO-Link.
Each implemented protocol has been provided to guarantee the best expandibility and inputs/outputs management.
In particular it has been provided protocols to manage up to 64 inputs and 64 outputs (PROFIBUS DP, CANopen® and IO-Link) and other protocols to manage up to 128 inputs and 128 outputs (EtherCAT®, EtherNet/IP, CC-Link IE Field Basic and PROFINET IO RT).
Taking advantage of the output signals it is possible to connect components to manage, for example, proportional pressure regulator or to control other solenoid valves.
The 3000 EVO series allows the use of modules dedicated to managing input signals up to the maximum number of inputs manageable by the specific serial node used.
Input modules with different interfaces and different technologies have been provided: modules with eight digital inputs with M8 or M12 connection, analogue or voltage input modules with M8 connection interface and others.
One of the strengths of this system is the possibility to freely configure the series of input and output modules, giving the advantage of installation flexibility.

Main characteristics

10 and 15,5 mm size.
Multi-position sub-bases in different lengths.
Integrated and optimized electrical connection system.

Functions

S.V. 5/2 Monostable Solenoid-Spring
S.V. 5/2 Monostable Solenoid-Differential
S.V. 5/2 Bistable Solenoid-Solenoid
S.V. 5/3 C.C. Solenoid-Solenoid
S.V. 2x3/2 N.C.-N.C. (= 5/3 O.C.) Solenoid-Solenoid
S.V. 2x3/2 N.O.-N.O. (= 5/3 P.C.) Solenoid-Solenoid
S.V. 2x3/2 N.C.-N.O. Solenoid-Solenoid
S.V. 2x3/2 N.O.-N.C. Solenoid-Solenoid

Rules and configuration scheme

CONFIGURATION CODE ← ☐ - ☐ - ☐ - ( ) ☐ - ☐ - ( ) ☐ - ☐ → ( ) ☐

Version	
31	3100 version
34	3400 version

Electric parts	
...-...	See page "Electronic components configurator in technopolymer"

Manifold version	
A	Self feeding
E	External feeding

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module 1	
...-...	See page 'Pneumatic module configurator'

Accessory diaphragm plug (Optional)	
X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module 2	
...-...	See page 'Pneumatic module configurator'

Accessory diaphragm plug (Optional)	
X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

↓

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module n	
...-...	See page 'Single pneumatic module configurator'

⚠ **Check the number of available solenoid valve positions**

Number of available solenoid valve positions (standard)							
4	6	8	10	12	16	20	24

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.

Each position on the manifold occupies two electrical signals; if a monostable valve is used, 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

SINGLE ELECTRIC MODULE CONFIGURATION

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

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)

Manifold accessories (2 pieces)	
	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

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

Modules configuration

Module configurator

S.V.

—

Valve type	
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 CC SOLENOID-SOLENOID
F	S.V. 2x3/2 NC-NC (5/3 O.C.) SOLENOID-SOLENOID
G	S.V. 2x3/2 NO-NO (5/3 P.C.) SOLENOID-SOLENOID
H	S.V. 2x3/2 NC-NO SOLENOID-SOLENOID
I	S.V. 2x3/2 NO-NC SOLENOID-SOLENOID
T	Plug

Module configurator

Accessories

—

Module type	
W	Intermediate Inlet/Exhaust module

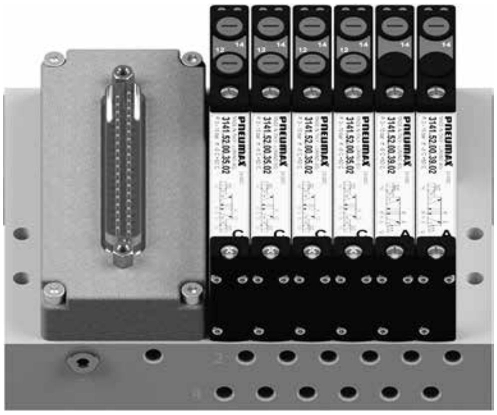
N°2 valve seats occupied in the 3100 version

Configuration example of complete group:

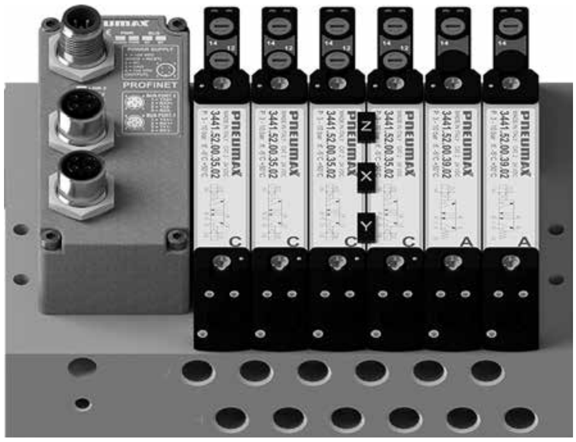
- Version 3400 (34)
- Technopolymer PX3 serial system (P-N4-D8-M8)
- Manifold in external supply version (E)
- Solenoid valves 5/2 Solenoid-Spring (A)
- Solenoid valves 5/2 Solenoid-Solenoid (C)
- Solenoid valves 2X3/2 NC-NC Solenoid-Solenoid (F)
- Solenoid valves 2X3/2 NC-NC Solenoid-Solenoid (F)

34-P-N4-D8-M8-E-A-C-(2)F

Configuration examples



Example shown: **31-P-MP3-E-(4)C-(2)A**
Manifold with external feeding, multi-pin 37 poles connection and solenoid valves.

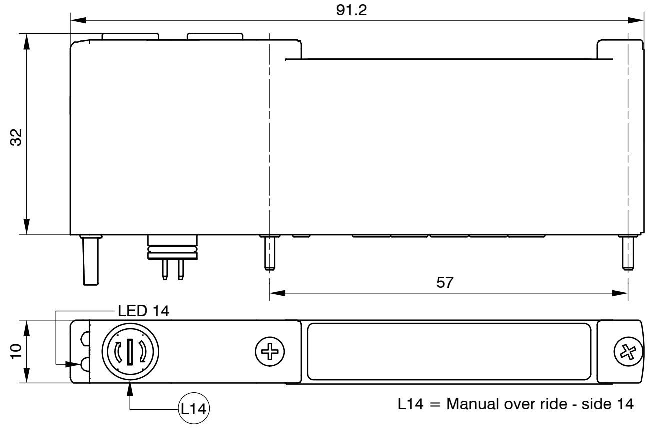


Example shown: **34-P-N4-E-(3)C-XYZ-C-(2)A**
Manifold with external feeding, serial node, solenoid valves and diaphragm plugs.

Example shown: **31-P-C4-D8-M12-E-C-B-T-XYZ-A-I-W-(2)C-XYZ-(6)C-T**
Manifold with external feeding, serial node, M8 input module, M12 output module; solenoid valves, multi-position diaphragm plugs, additional power supply module.

Example shown: **31-P-C4-(2)D8-M12-A-C-B-(2)I-(2)T**
Self feeding manifold with serial node, M8 input module, M12 output module, solenoid valves.

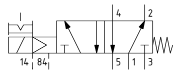
Solenoid-Spring



Coding: 3141.52.00.39.Ⓒ

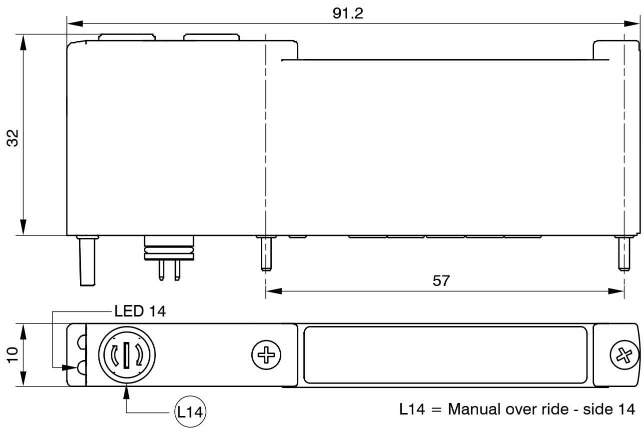
Ⓒ	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 55,7 g
SHORT FUNCTION CODE "A"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	200
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

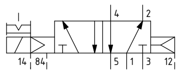
Solenoid-Differential



Coding: 3141.52.00.36.Ⓒ

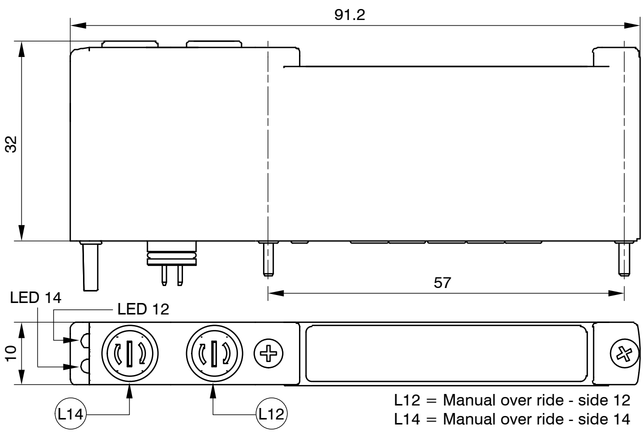
Ⓒ	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 55,7 g
SHORT FUNCTION CODE "B"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	200
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

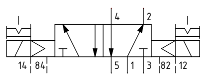
Solenoid-Solenoid



Coding: 3141.52.00.35.Ⓒ

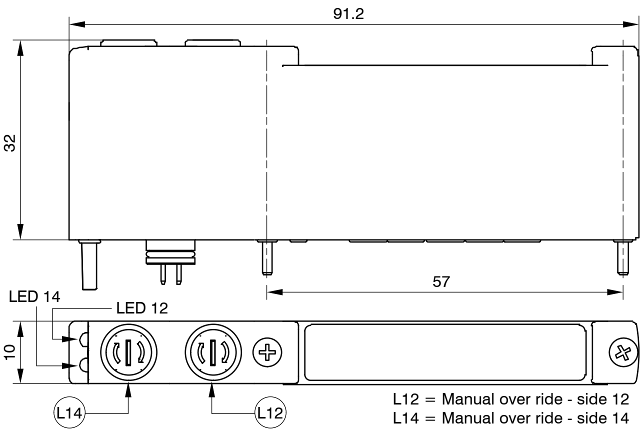
Ⓒ	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 55,7 g
SHORT FUNCTION CODE "C"



Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	200
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	10
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

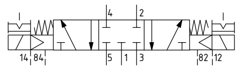
Solenoid-Solenoid 5/3 (Closed centres)



Coding: 3141.53.31.35.Ⓒ

Ⓒ	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 60,3 g
SHORT FUNCTION CODE "E"



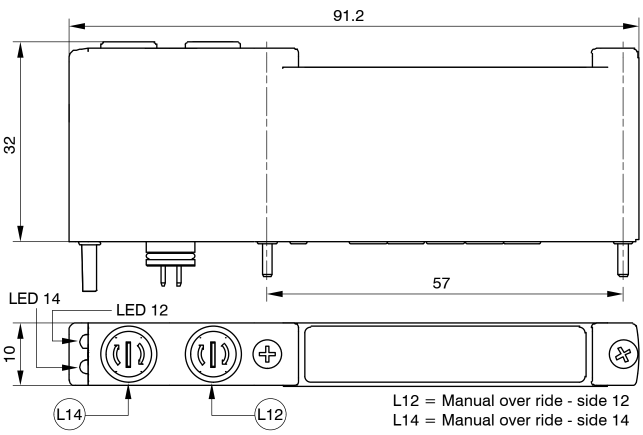
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	170
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

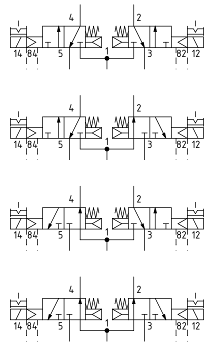
Solenoid-Solenoid 2x3/2

Coding: 3141.62.Ⓕ.35.Ⓒ

Ⓕ	FUNCTION
	44 = N.C.-N.C. (5/3 Open centres)
	45 = N.C.-N.O.
	54 = N.O.-N.C.
	55 = N.O.-N.O. (5/3 Pressured centres)
Ⓒ	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 60,7 g
SHORT FUNCTION CODE:
N.C.-N.C. (5/3 Open centres) = "F"
N.O.-N.O. (5/3 Pressured centres) = "G"
N.C.-N.O. = "H"
N.O.-N.C. = "I"





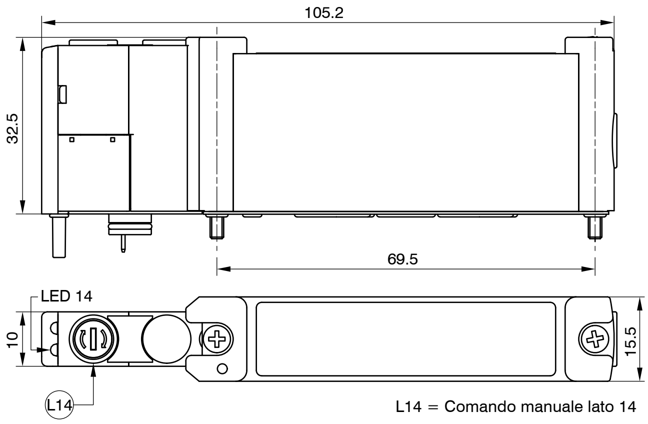
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	170
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	15
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	≥3+(02 x Inlet pressure)
Temperature °C	-5 ... +50

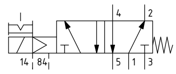
Solenoid-Spring

Coding: 3441.52.00.39.Ⓒ

Ⓒ	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 92 g
SHORT FUNCTION CODE "A"





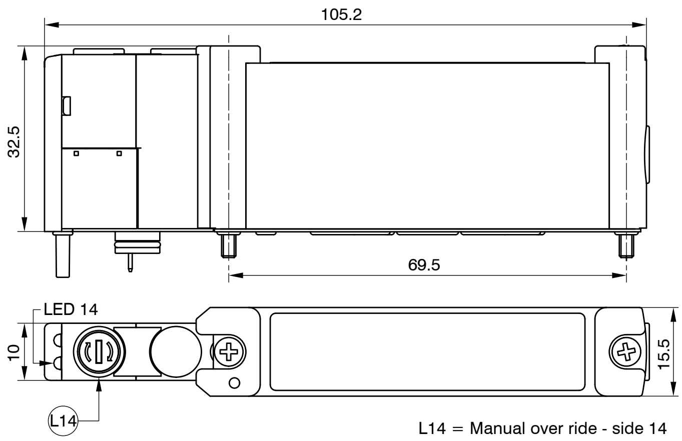
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

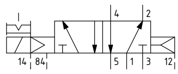
Solenoid-Differential

Coding: 3441.52.00.36.Ⓒ

Ⓒ	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 92 g
SHORT FUNCTION CODE "B"





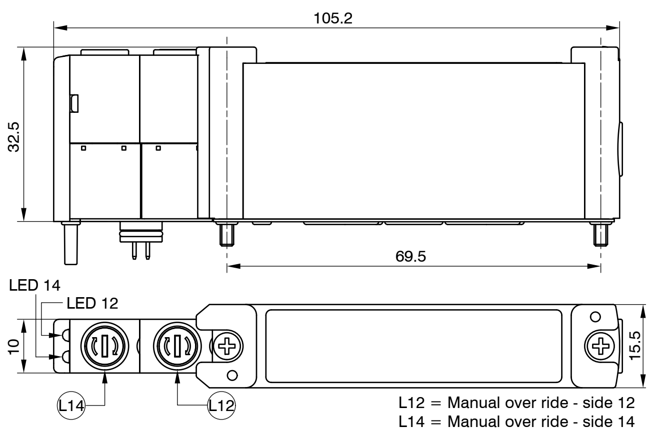
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

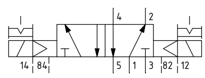
Solenoid-Solenoid

Coding: 3441.52.00.35.Ⓒ

Ⓒ	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 99 g
SHORT FUNCTION CODE "C"





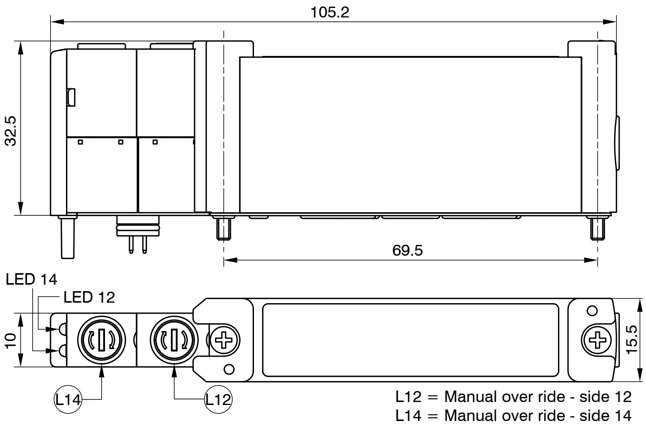
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	10
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

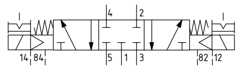
Solenoid-Solenoid 5/3 (Closed centres)

Coding: 3441.53.31.35.**C**

C	ELECTRICAL CONNECTION
	02 = + 24 V DC

Weight 99 g
SHORT FUNCTION CODE "E"





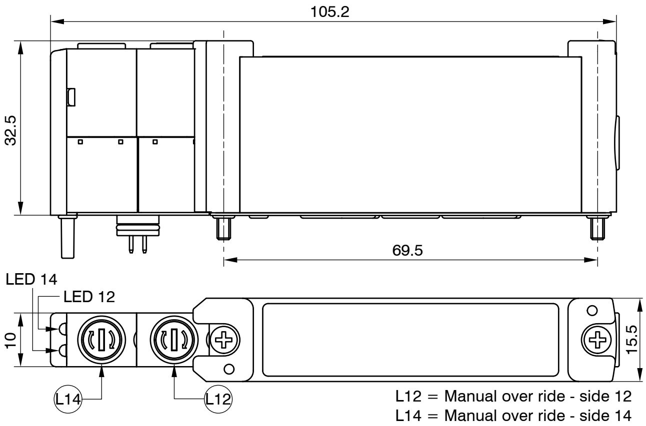
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	500
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	2,5 ... 7
Temperature °C	-5 ... +50

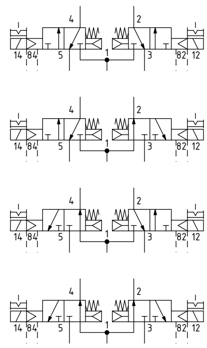
Solenoid-Solenoid 2x3/2

Coding: 3441.62.**F**.35.**C**

F	FUNCTION
	44 = N.C.-N.C. (5/3 Open centres)
	45 = N.C.-N.O.
	54 = N.O.-N.C.
	55 = N.O.-N.O. (5/3 Pressured centres)
C	ELECTRICAL CONNECTION
	02 = + 24 V DC

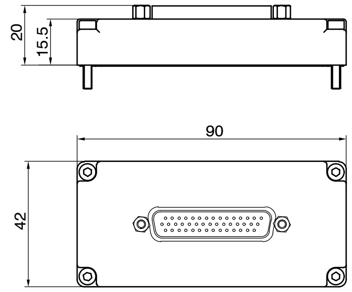
Weight 99 g
SHORT FUNCTION CODE:
N.C.-N.C. (5/3 Open centres)= "F"
N.O.-N.O. (5/3 Pressured centres)= "G"
N.C.-N.O.= "H"
N.O.-N.C.= "I"





Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Flow rate at 6 bar with Δp=1 (Nl/min)	500
Responce time according to ISO 12238, activation time (ms)	10
Responce time according to ISO 12238, deactivation time (ms)	20
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	≥3+(02 x Inlet pressure)
Temperature °C	-5 ... +50

Multi-pin module

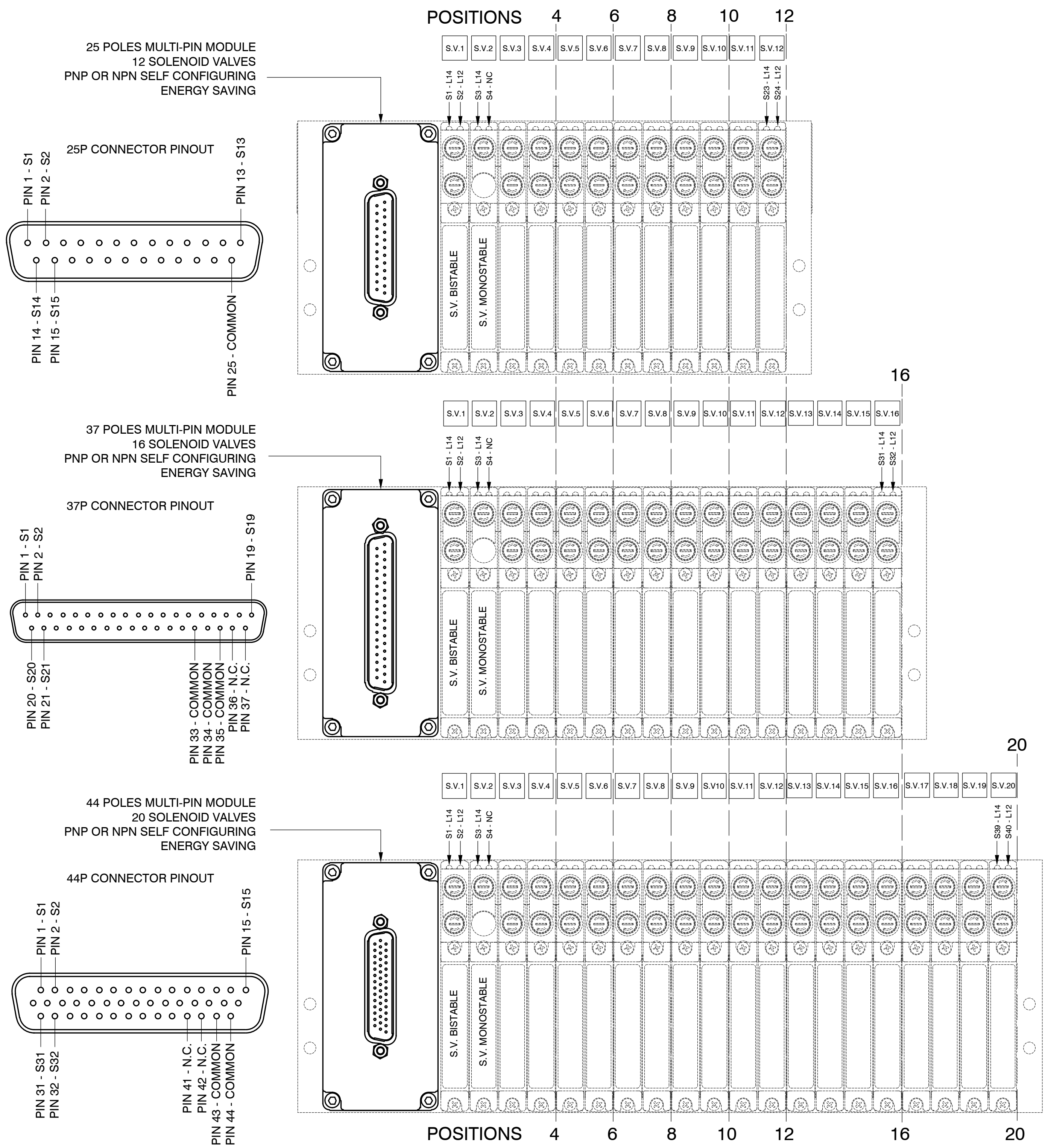


Coding: 3140.00.Ⓒ

	ELECTRICAL CONNECTION
Ⓒ	**25P** = Connectors 25 poles
	37P = Connector 37 poles
	44P = Connector 44 poles

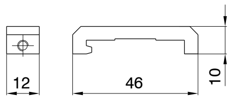
Technical characteristics			
Coding example	3140.00.25P (25 poles)	3140.00.37P (37 poles)	3140.00.44P (44 poles)
Weight (g)	47,4	51,3	49,1
Temperature °C	-5 ... +50		

Multi-pin connections linking scheme



DIN rail adapter

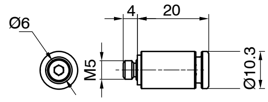
Coding: 3100.16



Weight 12 g

Fitting M5 Ø6

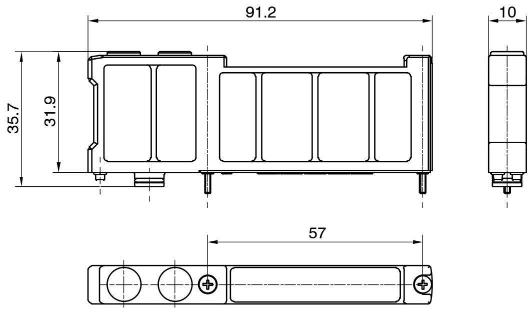
Coding: RDR560



Weight 7 g

Free valve space plug

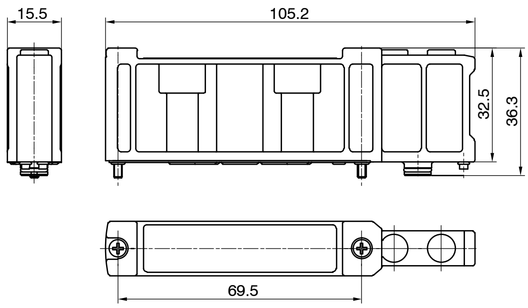
Coding: 3140.00



Weight 21 g

Free valve space plug

Coding: 3440.00

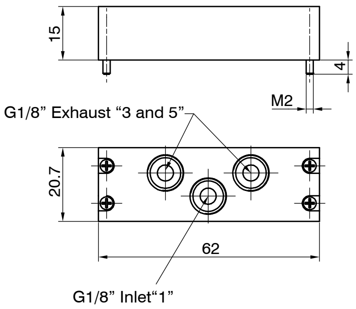


Weight 38 g

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

Inlet/Exhaust module

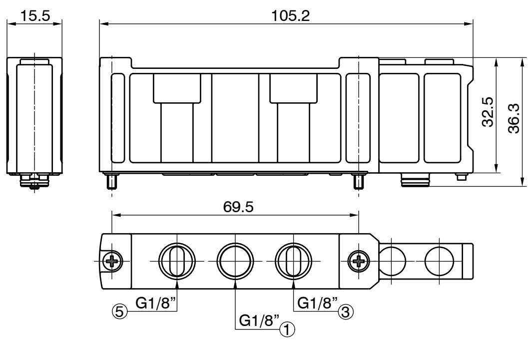
Coding: 3140.10



Weight 50 g

Inlet/Exhaust module

Coding: 3440.10



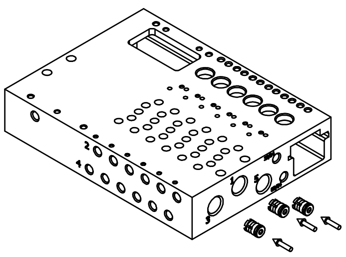
Weight 37 g

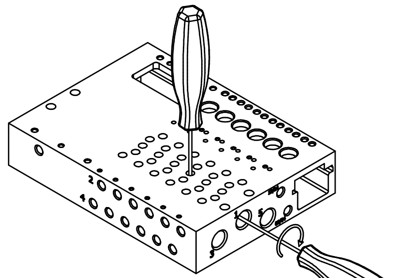
Diaphragm plug

Coding: 3130.17

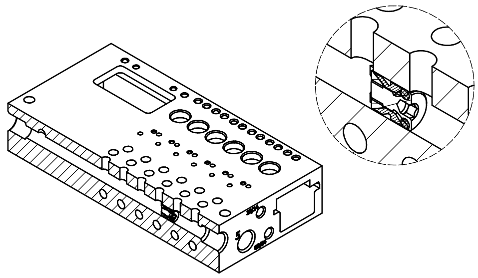
Weight 1,5 g

Diaphragm plug instalation





Diaphragm plug fixing
Maximum torque moment: 0,7 Nm

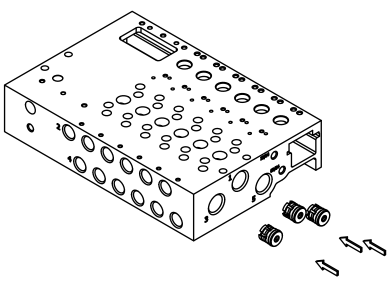


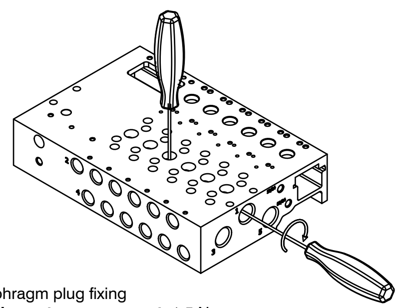
Diaphragm plug

Coding: 3430.17

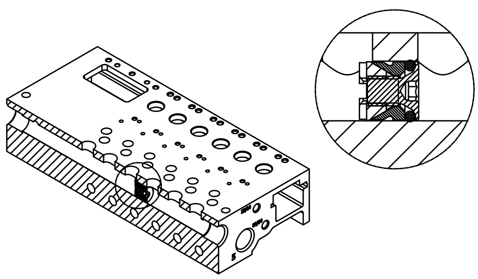
Weight 3 g

Diaphragm plug instalation





Diaphragm plug fixing
Maximum torque moment: 1,5 Nm

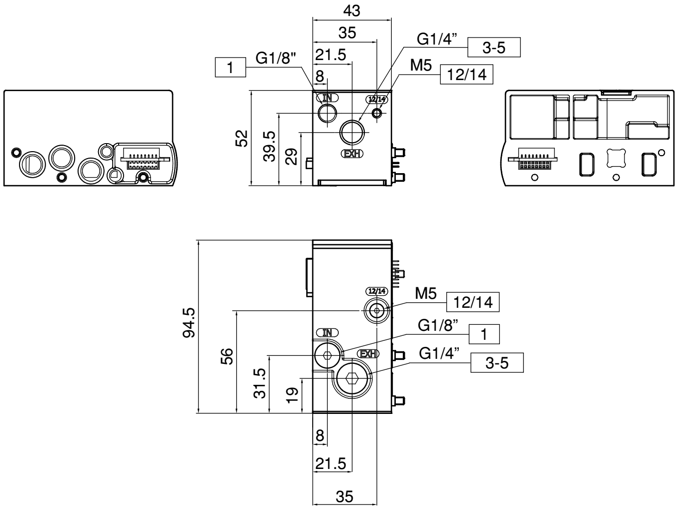


Module adapter kit

Coding: 3100.KA.Ⓥ

	VERSION
Ⓥ	**02** = External feeding
	12 = Self feeding

Weight 354 g

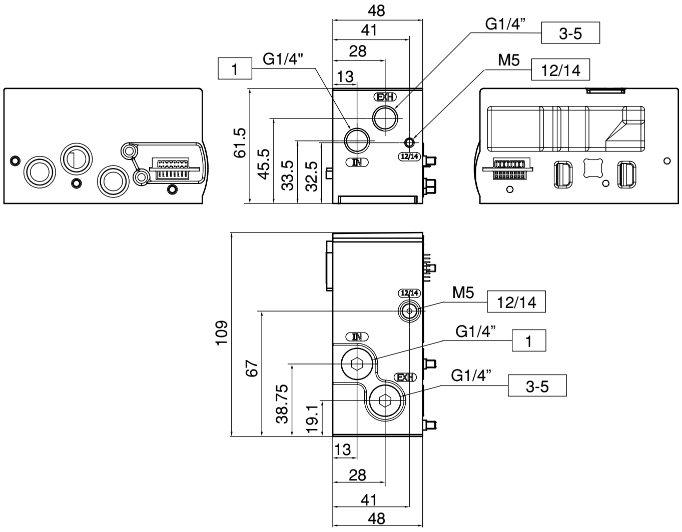


Module adapter kit

Coding: 3400.KA.Ⓥ

	VERSION
Ⓥ	**02** = External feeding
	12 = Self feeding

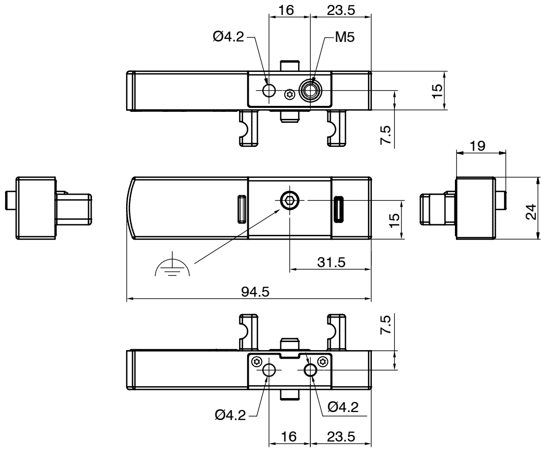
Weight 566 g



Left endplate kit

Coding: 3100.KT.00

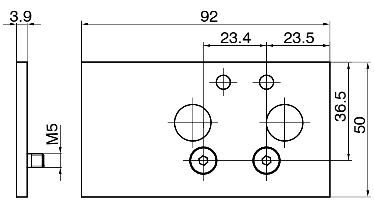
Weight 52 g



Offset compensation plate

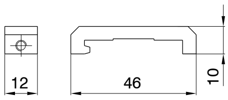
Coding: 3400.P0

Weight 46 g



DIN rail adapter

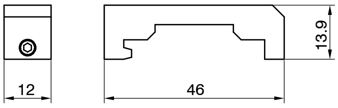
Coding: 3400.16



Weight 12 g

DIN rail extension adapter

Coding: 3400.16P



Weight 15 g

Note: For use if an additional DIN rail mount is required, assembled on a single I/O module.

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 = In line
	90 = 90° Angle

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.L.C

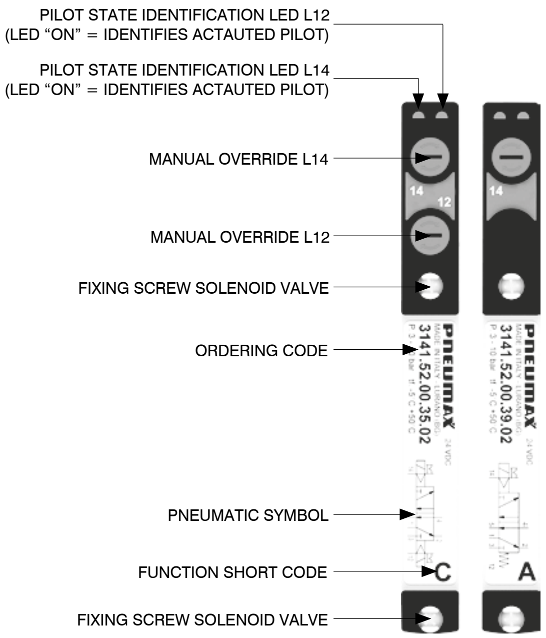
L	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
C	CONNECTOR
	10 = In line
	90 = 90° Angle

Cable complete with connector, 44 Poles IP65

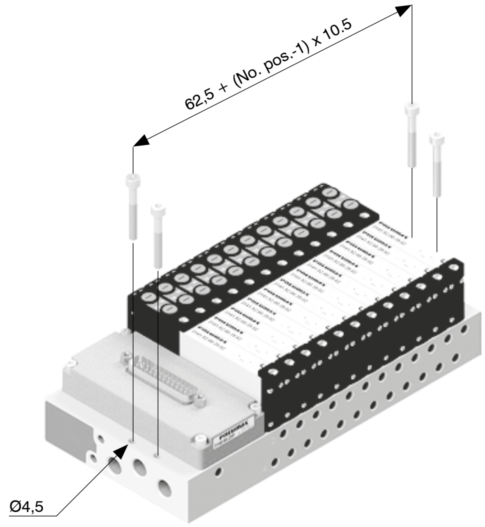
Coding: 2300.44.L.C

L	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
C	CONNECTOR
	10 = In line
	90 = 90° Angle

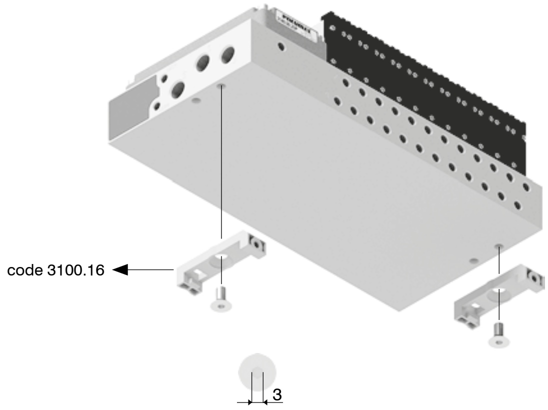
Solenoid valve description

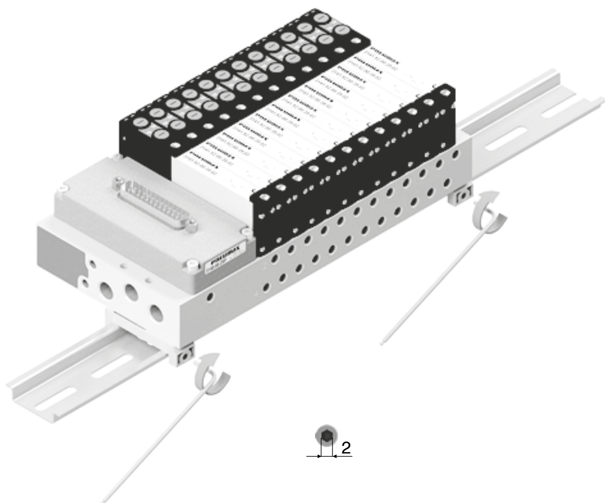


From the top

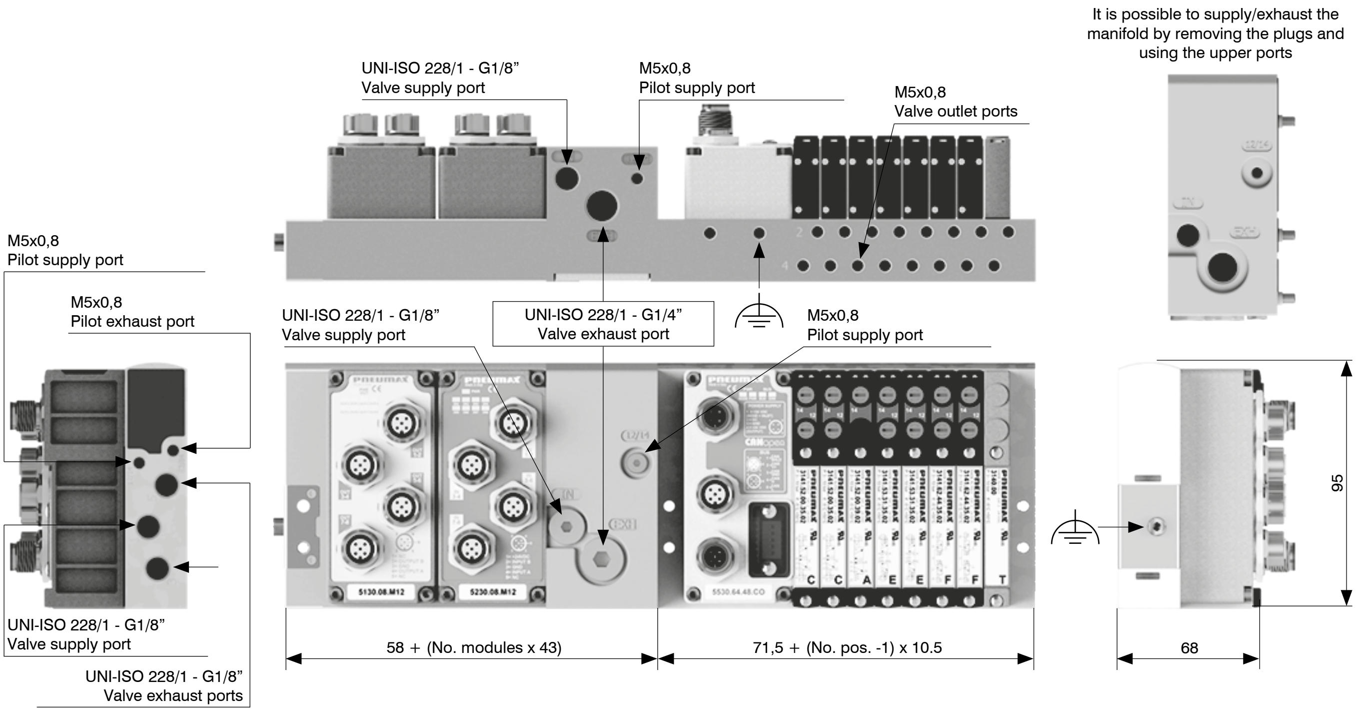


DIN rail fixing





Supply ports and maximum possible size according to valves used



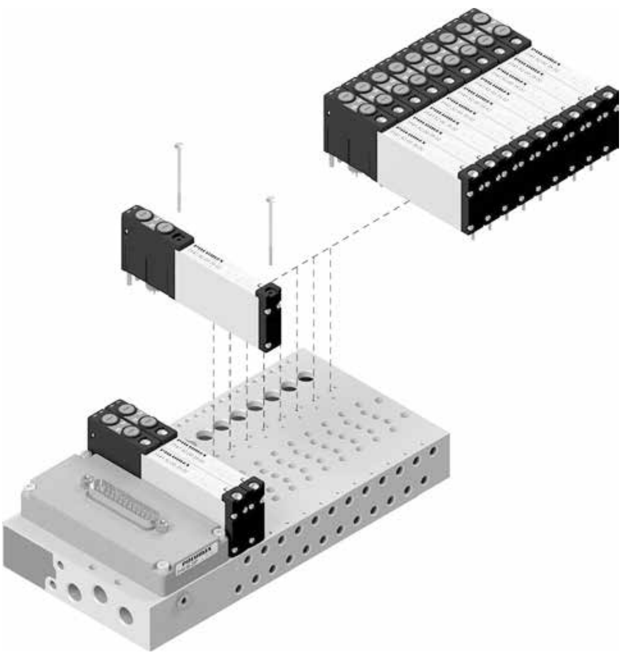
Manual override actuation

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

Bistable function:
Push and turn to get the bistable function

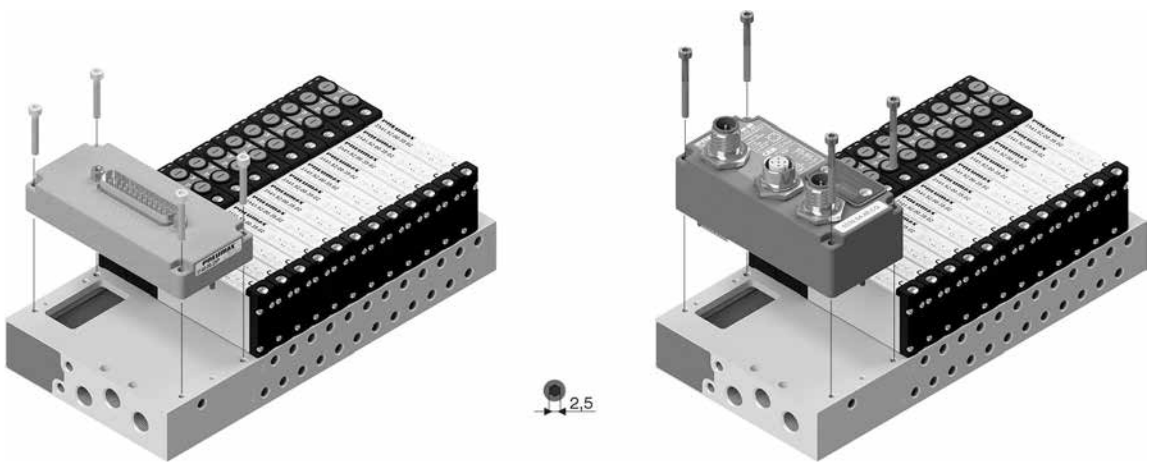
Note: we recommend the manual override is returned to it's original position when not in use

Solenoid valves installation

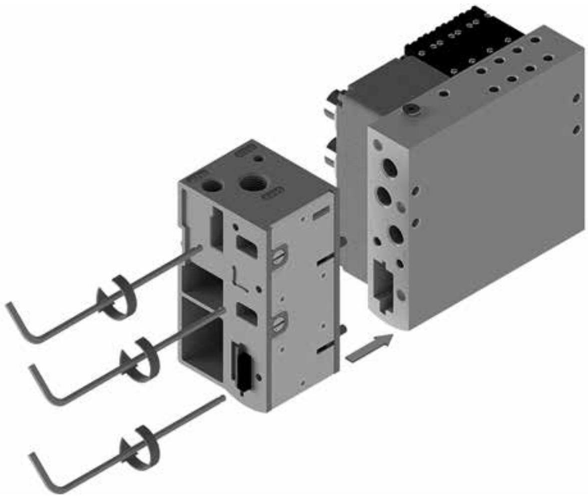


Maximum fixing torque for fittings: 0,2 Nm

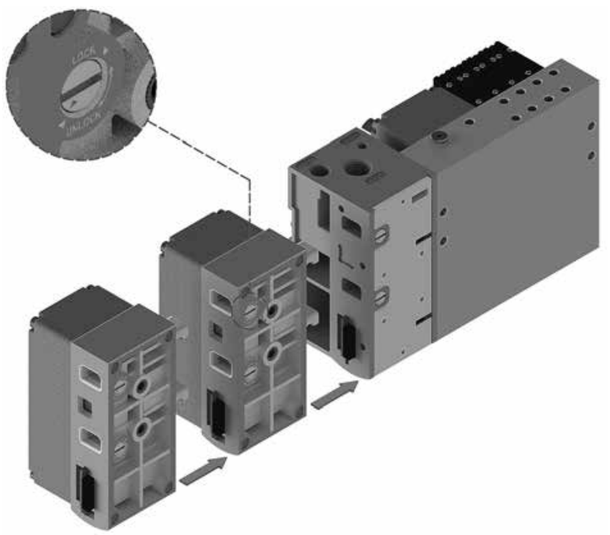
Serial systems and multi-pin modules installation



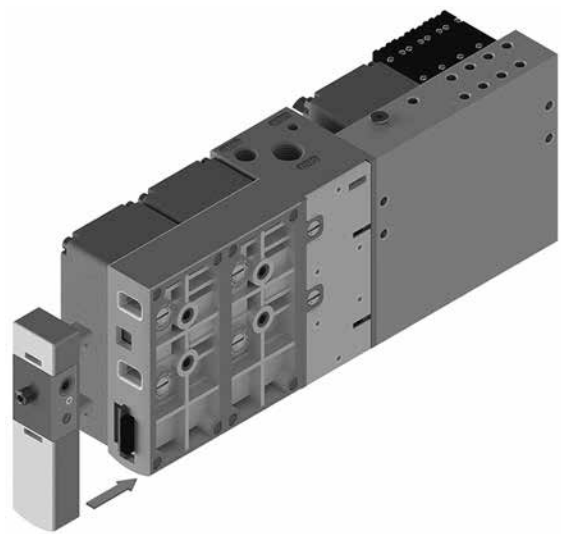
1. Fix the dedicated adapter (code 3100.KA.00) to the manifold.



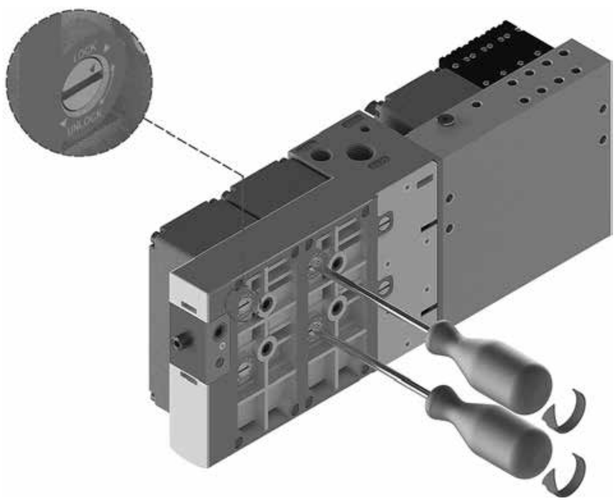
2. Assemble the required modules.



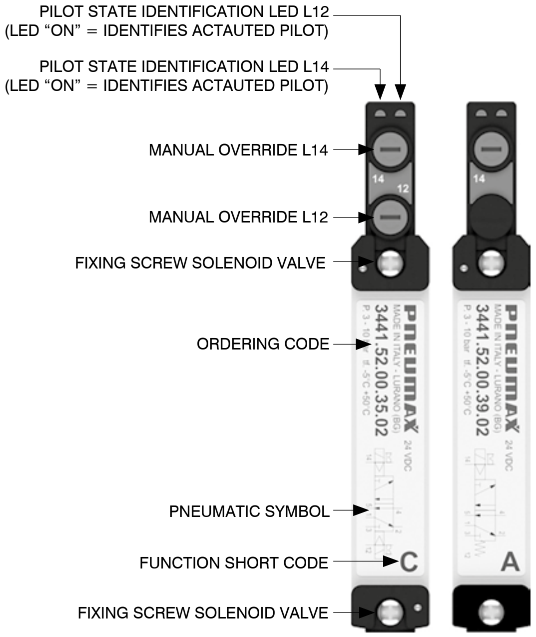
3. Complete the assembly with the 3100.KT.00 left endplate kit.



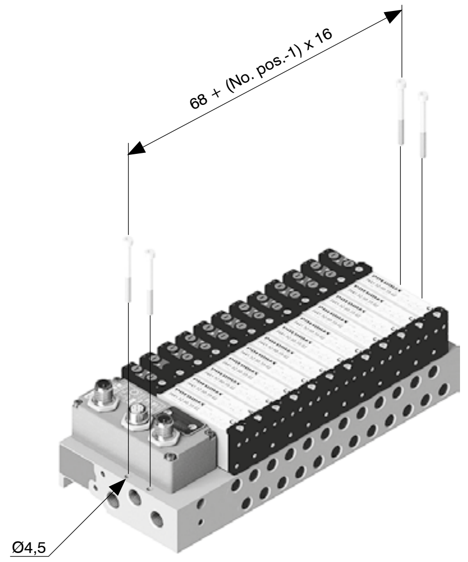
4. To lock: rotate anticlockwise (in the direction of the LOCK print on the case).
To unlock: rotate clockwise (in the direction of the UNLOCK print on the case).
The same procedure shall be used to add or remove any module.



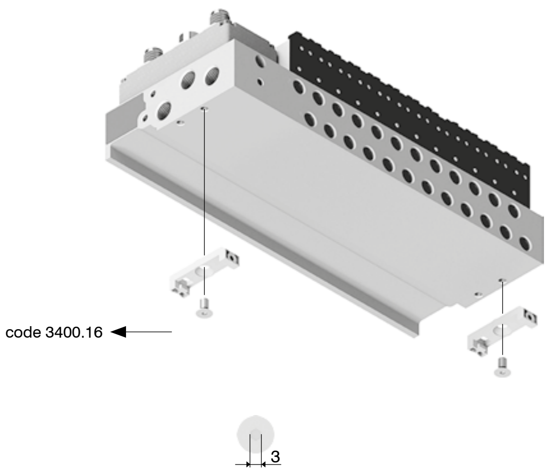
Solenoid valve description

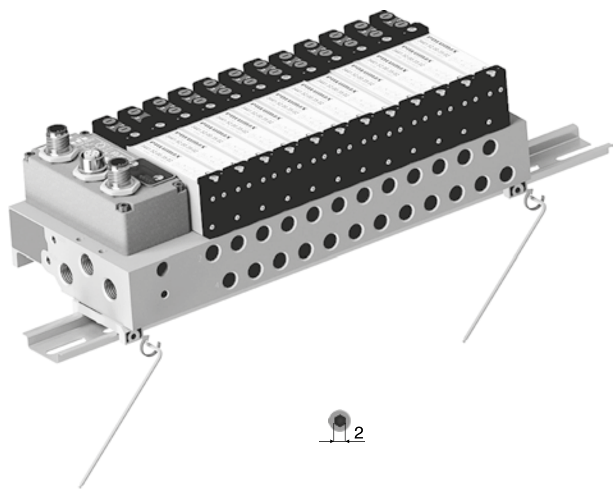


From the top

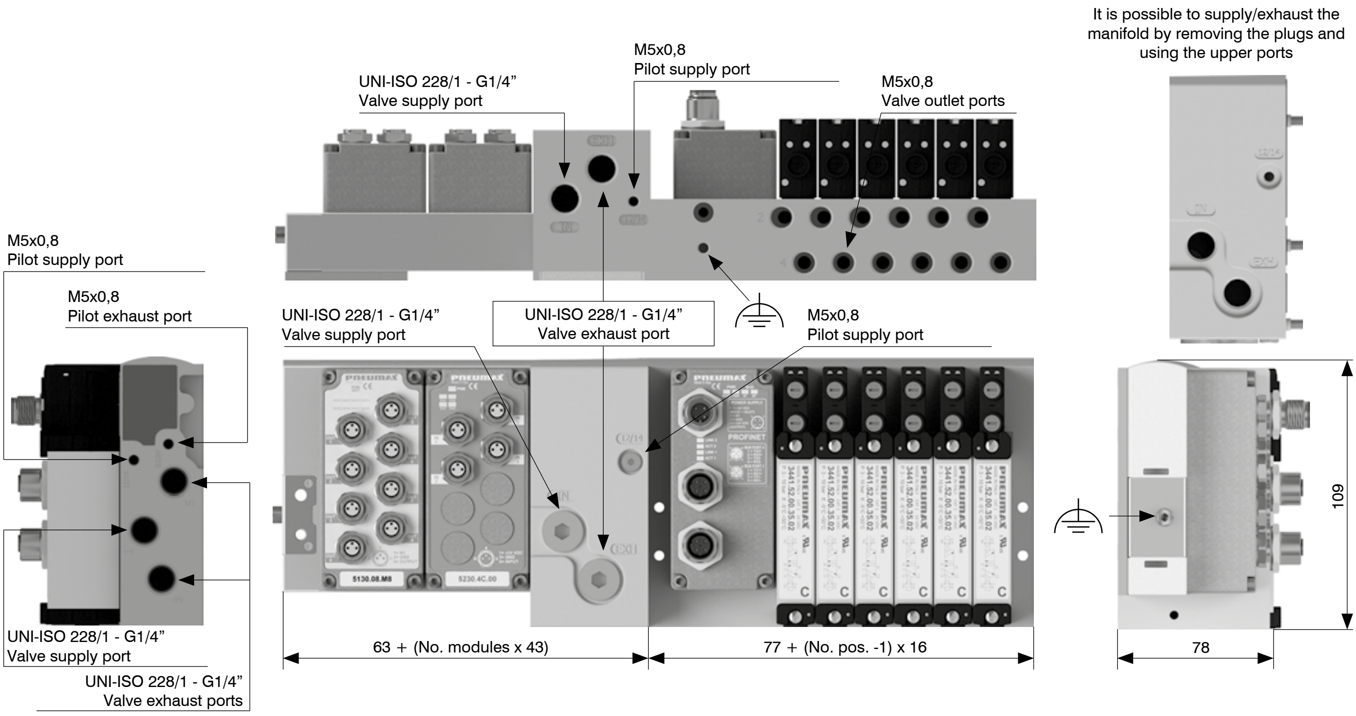


DIN rail fixing

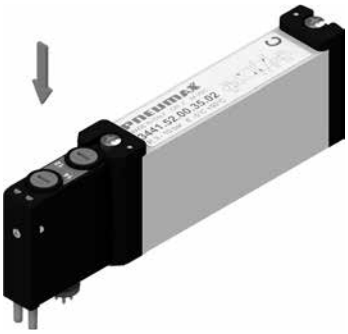




Supply ports and maximum possible size according to valves used



Manual override actuation

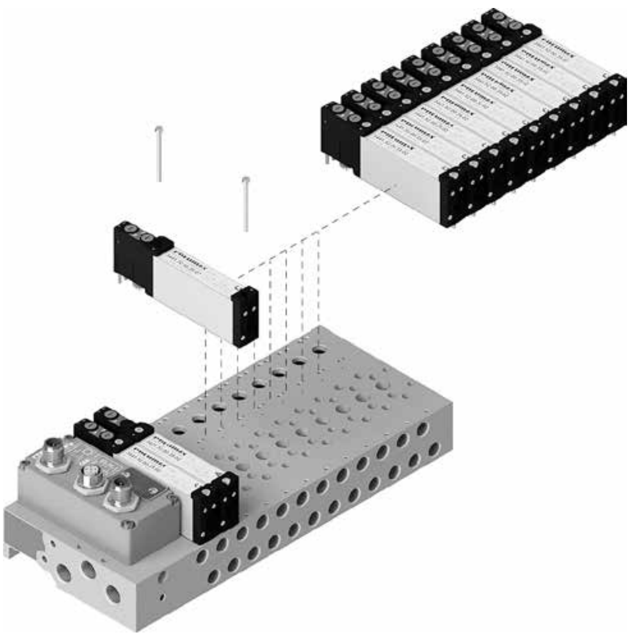


Instable function:
Push to actuate
(when released it moves back to the original position)

Bistable function:
Push and turn to get the bistable function

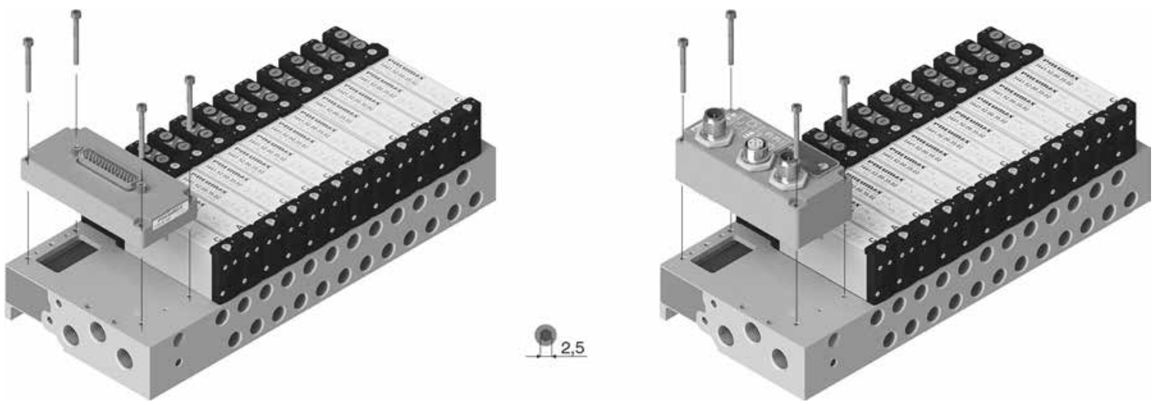
Note: we recommend the manual override is returned to it's original position when not in use

Solenoid valves installation

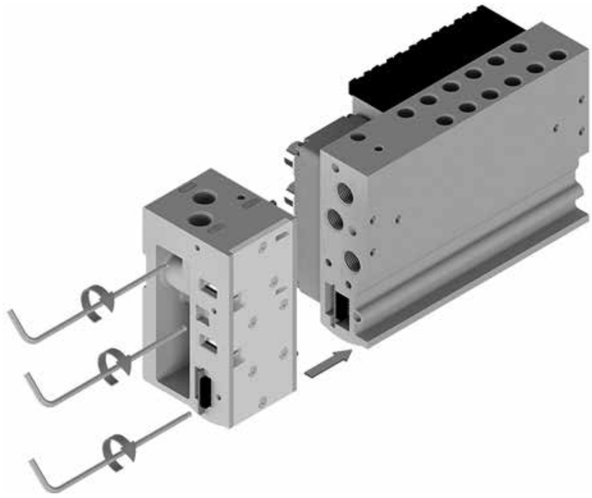


Maximum fixing torque for fittings: 0,2 Nm

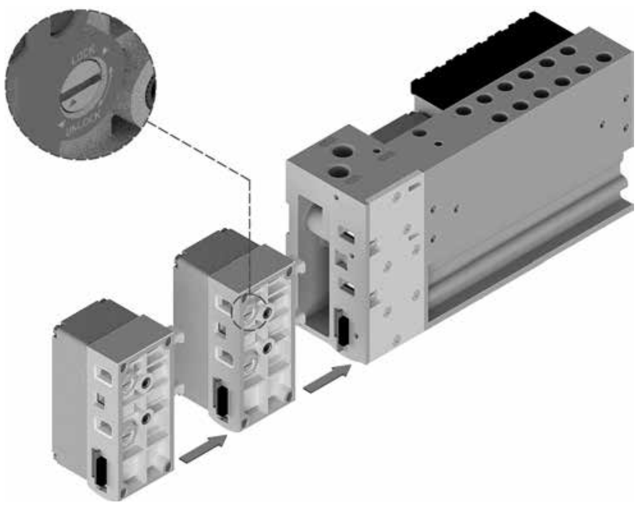
Serial systems and multi-pin modules installation



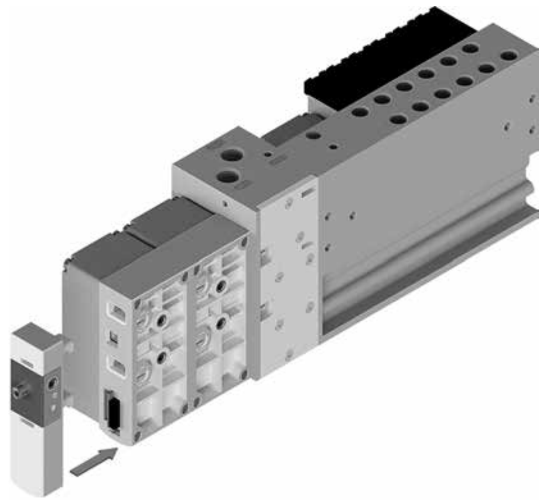
1. Fix the dedicated adapter (code 3100.KA.00) to the manifold.



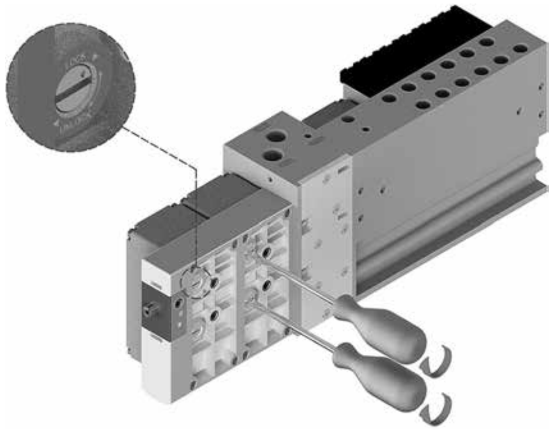
2. Assemble the required modules.



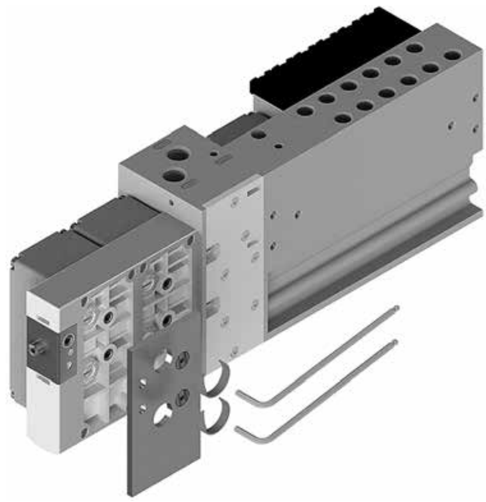
3. Complete the assembly with the 3100.KT.00 left endplate kit.



4. 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.



5. Fix the offset compensation plate 3400.P0 to the last single module.



CANopen® protocol node

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.

Coding: 5530.64.ⓥCO

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

1

AIR DISTRIBUTION

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:

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

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
3000	36 mA

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.

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

Where:

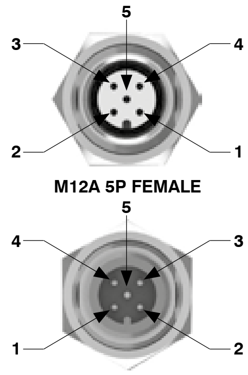
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

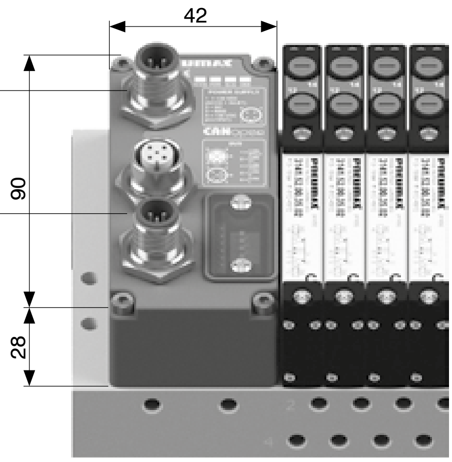
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

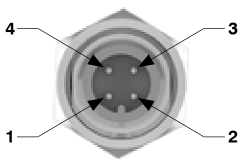
NETWORK connectors



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



POWER SUPPLY connector



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

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 V DC 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

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: 5330.64.ⓥPB

	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:

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

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
3000	36 mA

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.

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

Where:

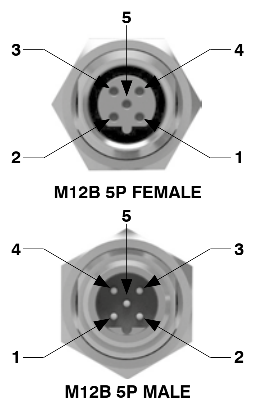
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

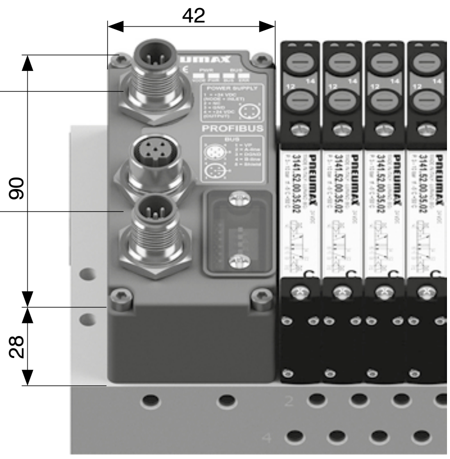
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

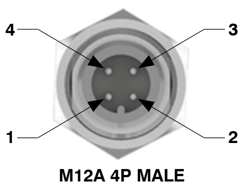
NETWORK connectors



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



POWER SUPPLY connector



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

Technical characteristics		
Specifications		PROFIBUS DP
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC ± 10%
	Node only current consumption on + 24 V DC 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

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 5730.128.48EI 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: 5730.128.48EI

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:

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

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
3000	36 mA

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.

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

Where:

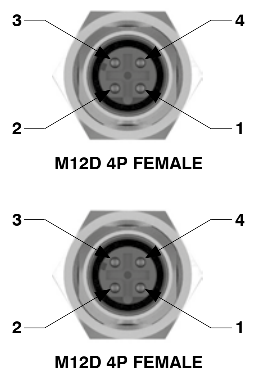
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

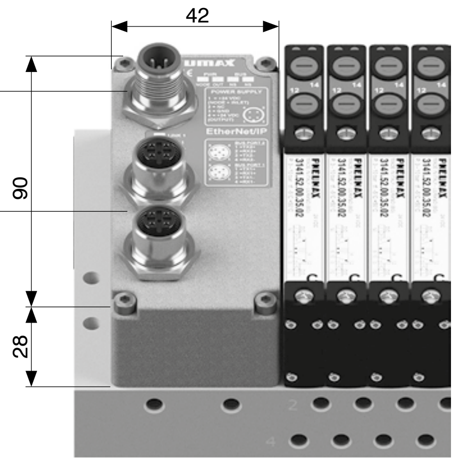
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

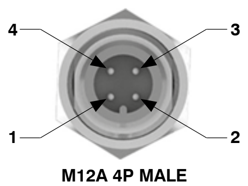
NETWORK connectors



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



POWER SUPPLY connector



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

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

EtherCAT® protocol node

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 5730.128.48EC 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: 5730.128.48EC

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:

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

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
3000	36 mA

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.

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

Where:

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

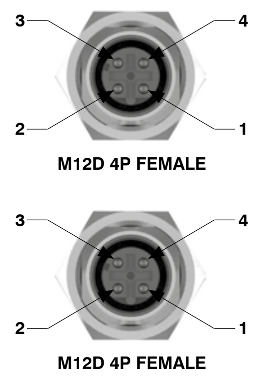
n = number of installed modules
$I_{in,i}$ = maximum total current absorbed by the i-th module on the INPUTS + 24 V DC supply rail (please see specifications of the single module)

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

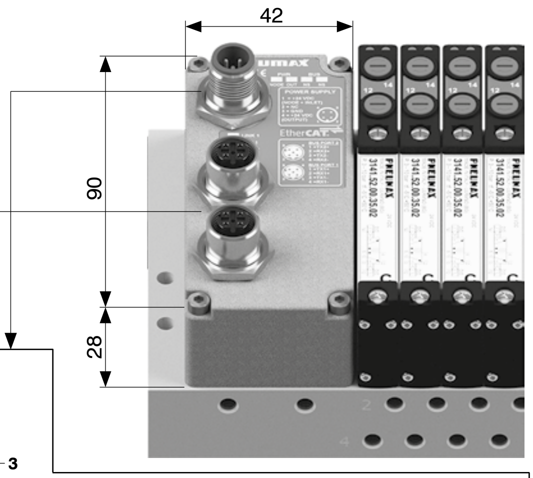
1 AIR DISTRIBUTION

Scheme / Overall dimensions and I/O layout

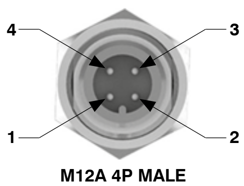
NETWORK connectors



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



POWER SUPPLY connector



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

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

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 5730.128.48PN 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: 5730.128.48PN

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:

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

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
3000	36 mA

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.

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

Where:

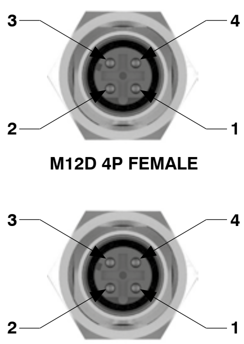
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

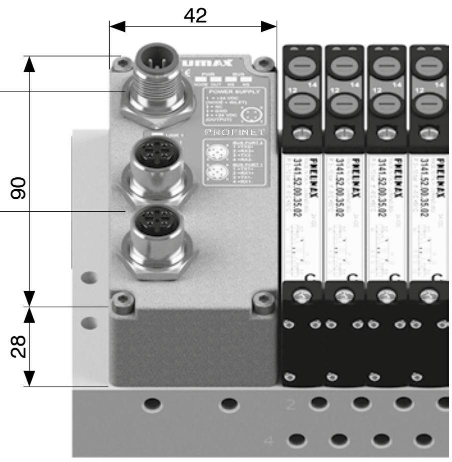
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

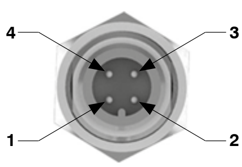
NETWORK connectors



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



POWER SUPPLY connector



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

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

CC-Link IE Field Basic protocol node

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 5730.128.48CL 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: 5730.128.48CL

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:

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

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
3000	36 mA

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.

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

Where:

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

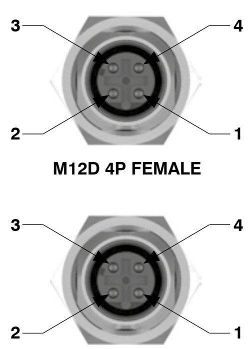
n = number of installed modules

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

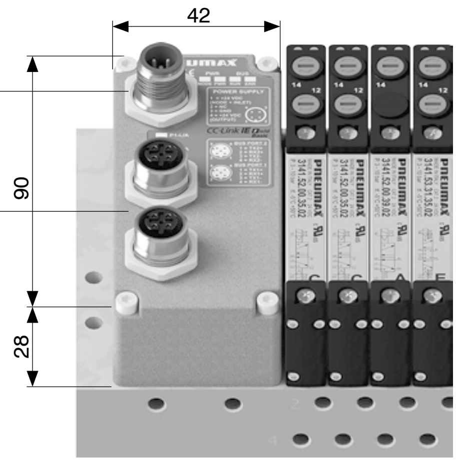
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

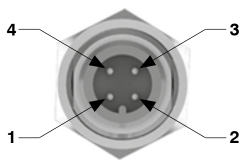
NETWORK connectors



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



POWER SUPPLY connector



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

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	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

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.

Coding: 5830.64.ⓋIK

	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 pin 2 and pin 5 (P24 / N24).

To compute the maximum current on the P24 / N24 supply, please use the following formula::

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

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)

$I_{in,i}$ = 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)

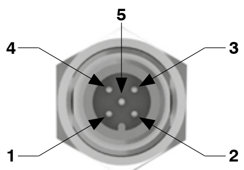
Series	i_EV
3000	36 mA

= 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.

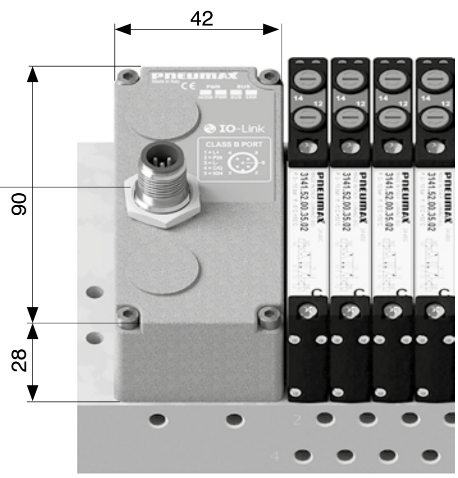
Scheme / Overall dimensions and I/O layout

“CLASS B” connector



M12A 5P MALE

PIN	SIGNAL
1	L+
2	P24 (+ 24 V DC)
3	L-
4	C/Q
5	N24 (0 V)



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 0x0BB8)
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

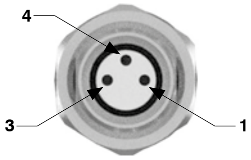
M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Inputs have PNP logic, + 24 V DC ± 10%.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit 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

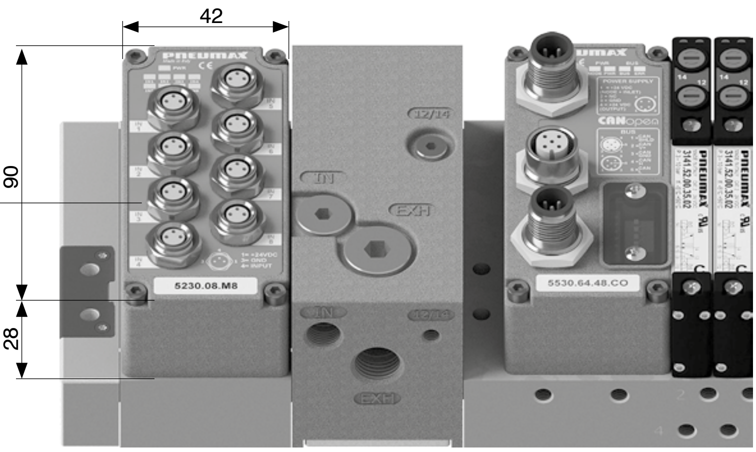
Technical characteristics	
Maximum current per module	300 mA
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedence	3 kΩ
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
3	0 V
4	INPUT



8 digital inputs module kit M12

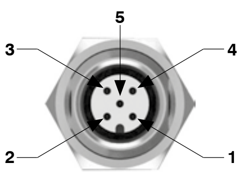
M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Inputs have PNP logic, + 24 V DC ± 10%.
Every connector takes two input channels.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity 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 impedence	3kΩ
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

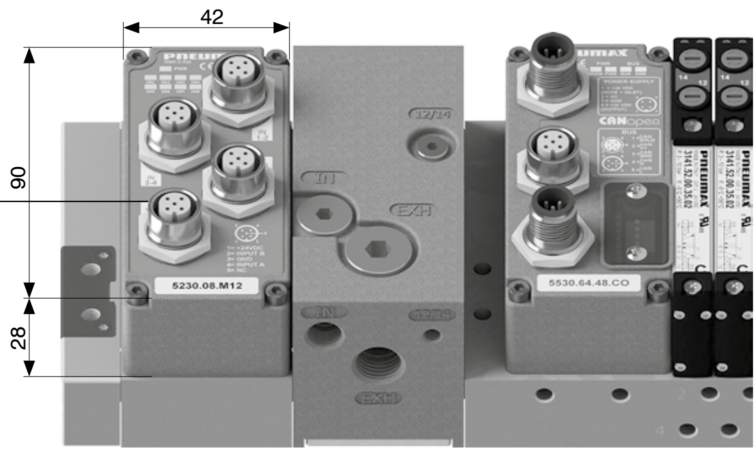
Scheme / Overall dimensions and I/O layout

M12 5P female connector



M12A 5P FEMALE

PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
2	INPUT B
3	0 V
4	INPUT A
5	N.C.



8 digital outputs module kit M8

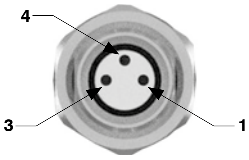
M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Outputs have PNP logic, + 24 V DC ± 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were 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

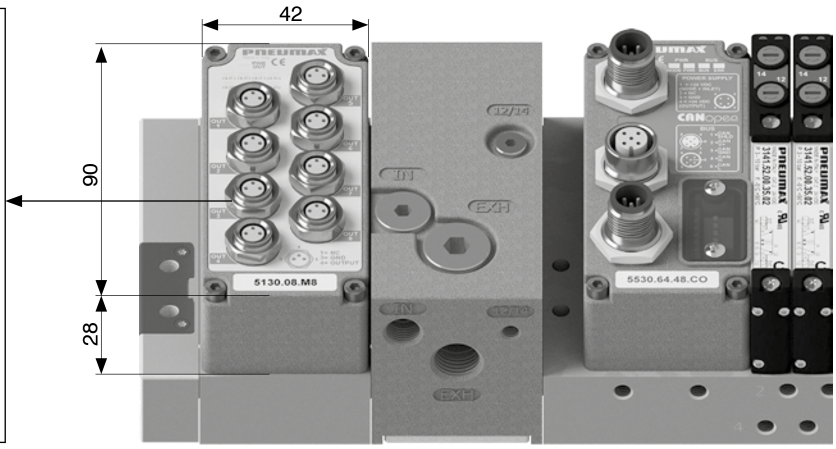
Technical characteristics	
Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	8 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA

Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	N.C.
3	0 V
4	OUTPUT



8 digital outputs module kit M12

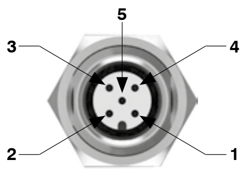
M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Outputs have PNP logic, + 24 V DC ± 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were 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

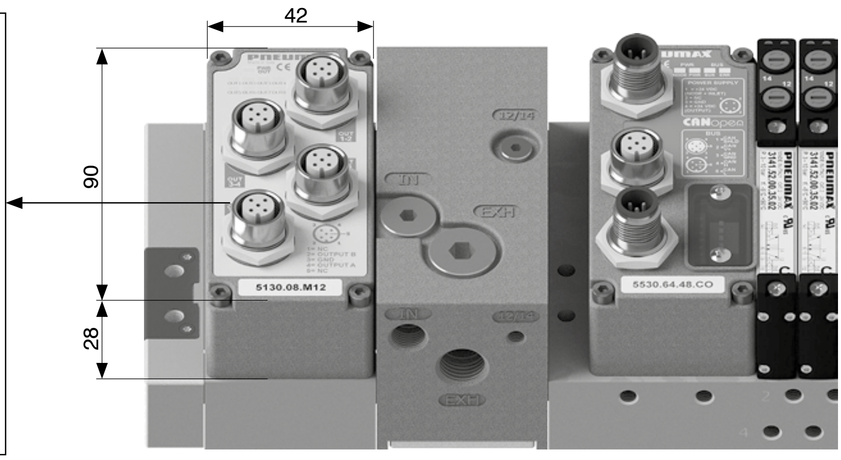
Scheme / Overall dimensions and I/O layout

M12 5P female connector



M12A 5P FEMALE

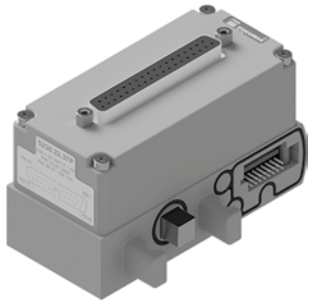
PIN	DESCRIPTION
1	N.C.
2	OUTPUT B
3	0 V
4	OUTPUT A
5	N.C.



32 digital inputs module kit (37 pins SUB-D connector)

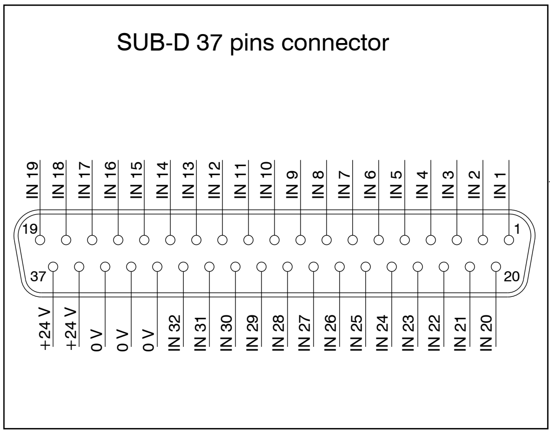
The module provides a SUB-D 37 pins female connector.
Inputs have PNP logic, + 24 V DC ± 10%.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit switches, 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.

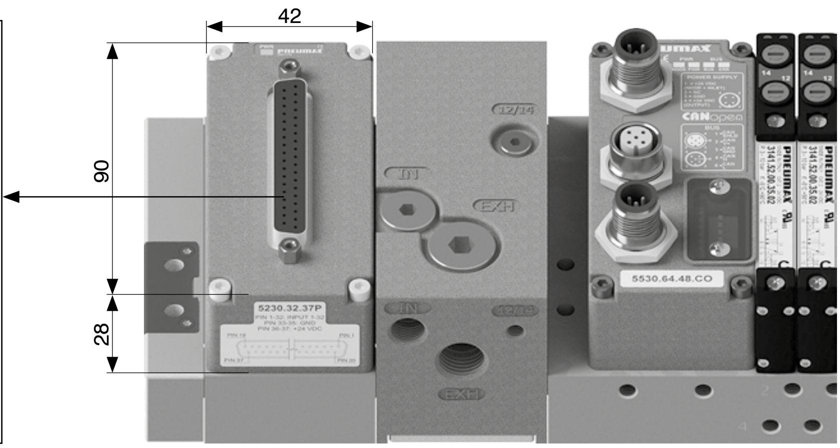
Coding: K5230.32.37P



Technical characteristics	
Maximum current per module	1 A
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedence	3 kΩ
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





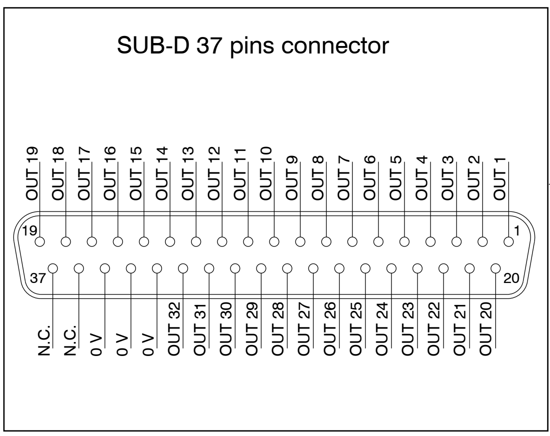
32 digital outputs module kit (37 pins SUB-D connector)

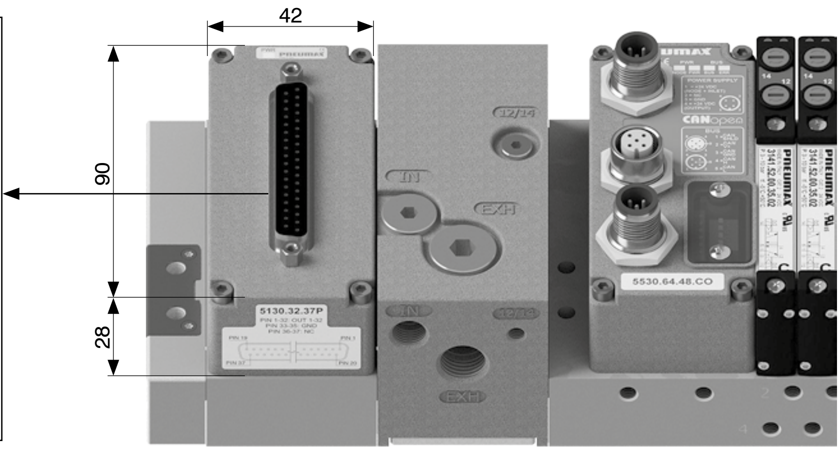
The module provides a SUB-D 37 pins female connector.
Outputs have PNP logic, + 24 V DC ± 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were installed upstream 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.

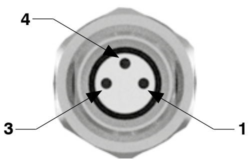
Coding: K5230.ⒸⓈ

	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)

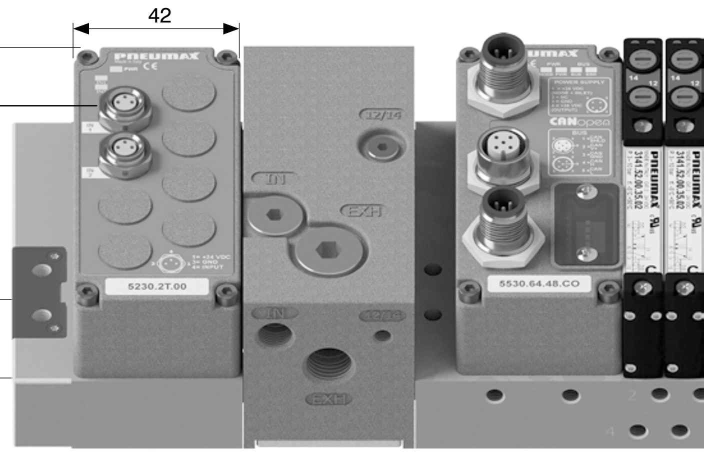
Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Input impedance (voltage inputs)	33 kΩ
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Input data allocation	16 bit per channel
Diagnostic LED	Input signal overcurrent or overvoltage
Accuracy	0,3% F.S.
Overall 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

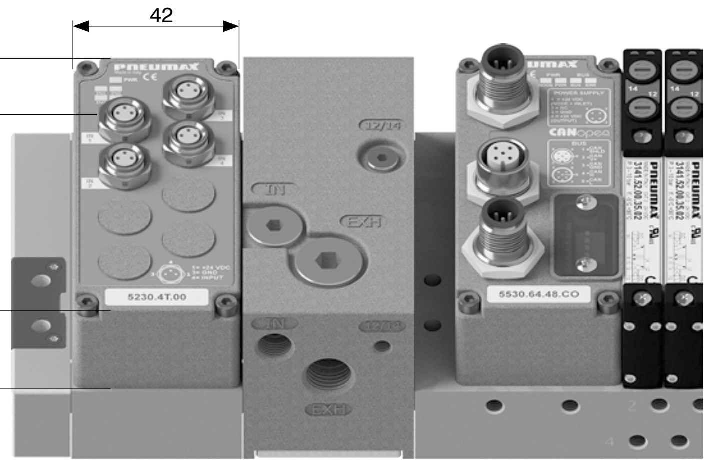
Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
3	0 V
4	INPUT





AIR DISTRIBUTION 1

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.

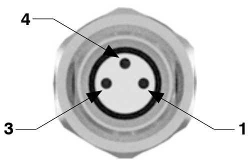
Coding: K5130.ⒸⓈ

Ⓒ	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)

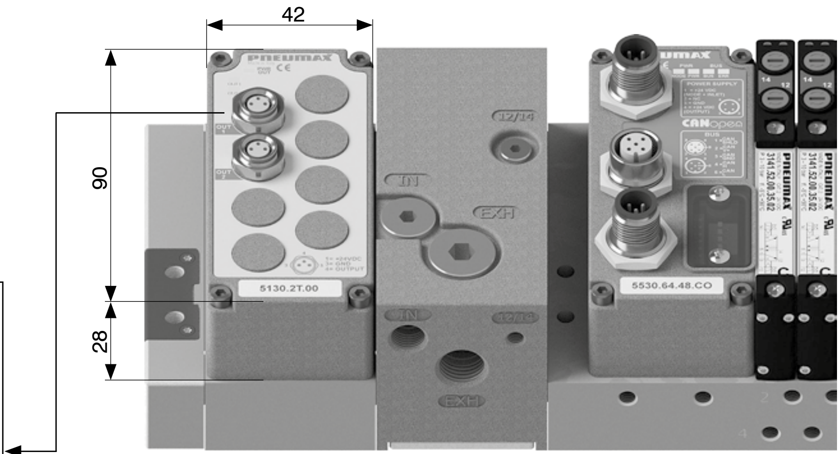
Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Protection (pin 4)	Overcurrent (auto-resettable fuse)
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Output data allocation	16 bit per channel
Diagnostic LED	Output signal overcurrent
Accuracy	0,3% F.S.
Overall maximum current 2 channels (pin 1)	1 A
Overall maximum current 4 channels (pin 1)	2 A (1 A 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

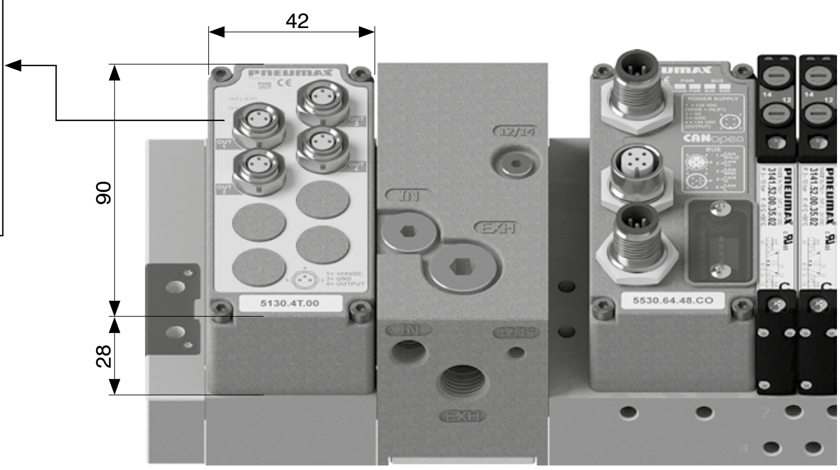
Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (OUTPUTS)
3	0 V
4	OUTPUT





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.ⒸP.0Ⓣ

Ⓒ	CHANNELS
	2 = 2 channels
	4 = 4 channels
Ⓣ	TYPE
	0 = Pt100 2 wires
	1 = Pt100 3 wires
	2 = Pt100 4 wires

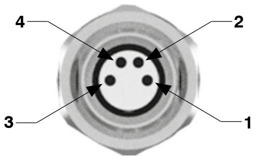
Technical characteristics	
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Input data allocation	16 bit per channel
Diagnostic LED	Probe presence Temperature out of range
Accuracy	±0,2°C
Probe temperature range	-100°C ... +300°C
INPUTS + 24 V DC current consumption of the module only (2 channels)	25 mA
INPUTS + 24 V DC current consumption of the module only (4 channels)	35 mA

Conversion formula (°C)

$$\text{Temperature (°C)} = \left(\frac{\text{Points}}{4095} \times 400\right) - 100$$

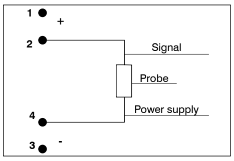
Scheme / Overall dimensions and I/O layout

M8 4P female connector



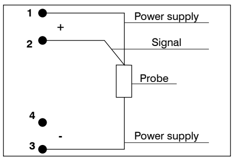
Connection scheme 2 wires probe

PIN	DESCRIPTION
1	N.C.
2	SENSOR +
3	POWER SUPPLY -
4	N.C.



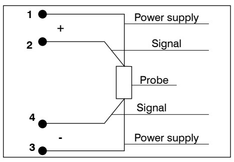
Connection scheme 3 wires probe

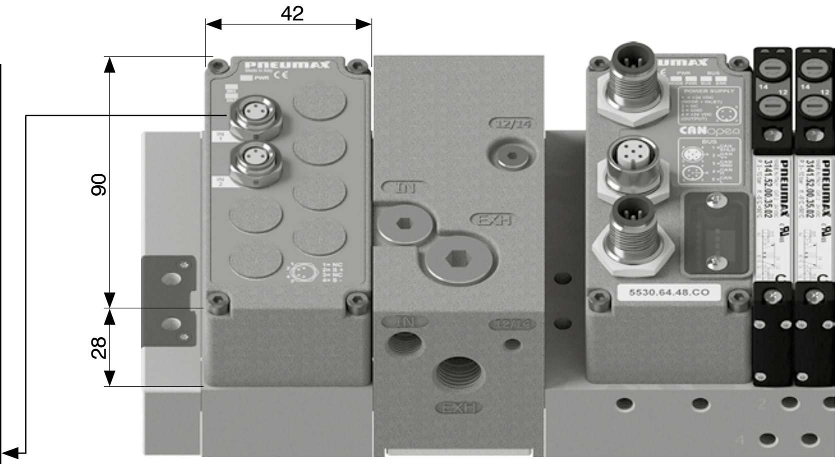
PIN	DESCRIPTION
1	POWER SUPPLY +
2	SENSOR +
3	POWER SUPPLY -
4	N.C.

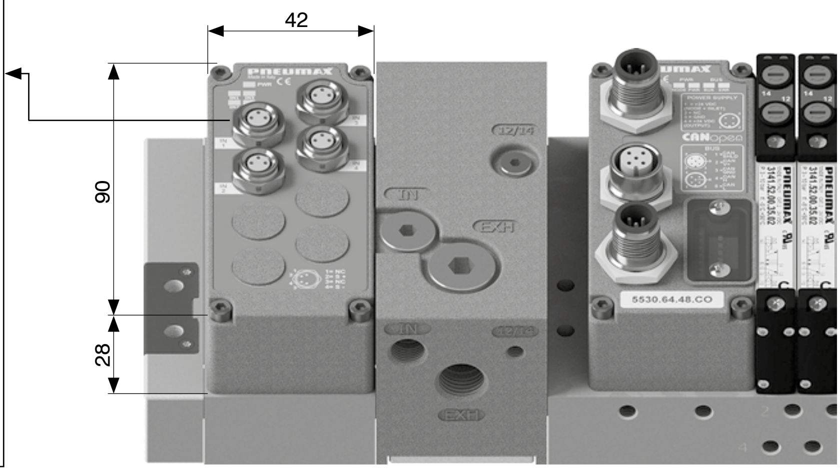


Connection scheme 4 wires probe

PIN	DESCRIPTION
1	POWER SUPPLY +
2	SENSOR +
3	POWER SUPPLY -
4	SENSOR -







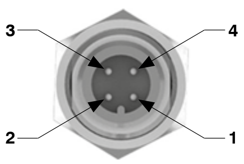
Additional power supply module kit

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

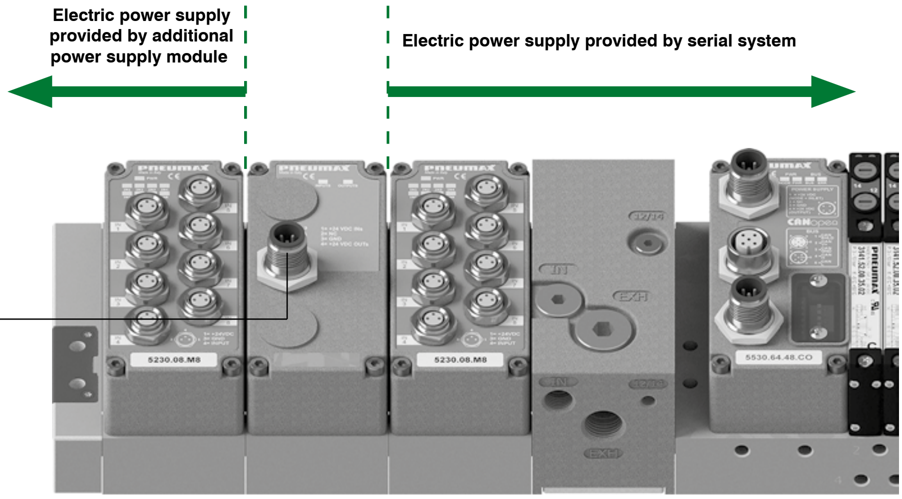
Scheme / Overall dimensions and I/O layout

M12 4P male connector



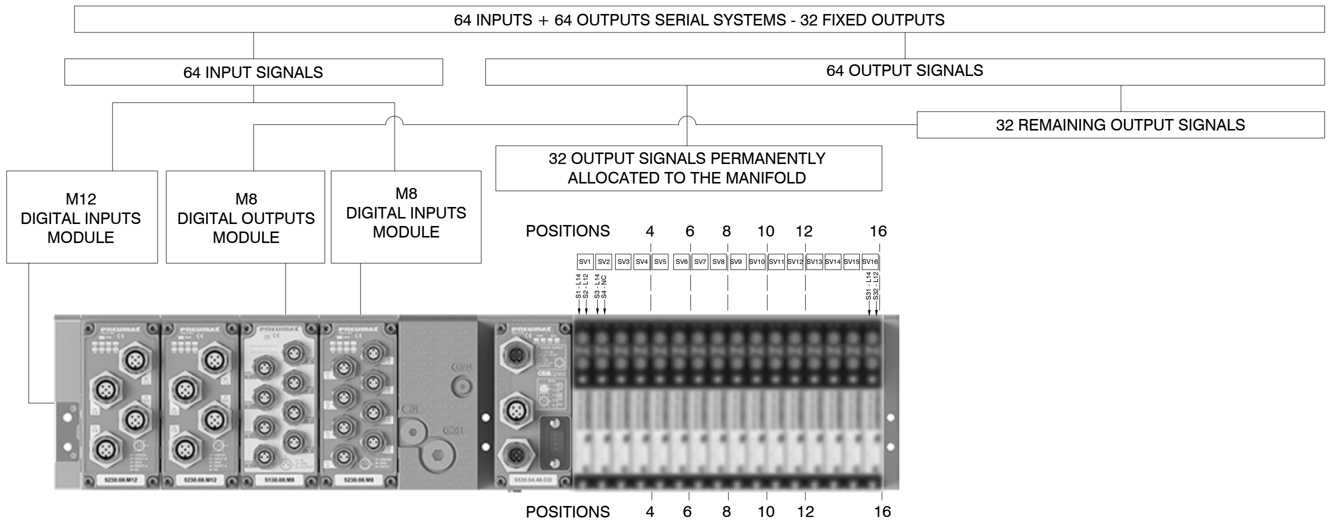
M12A 4P MALE

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

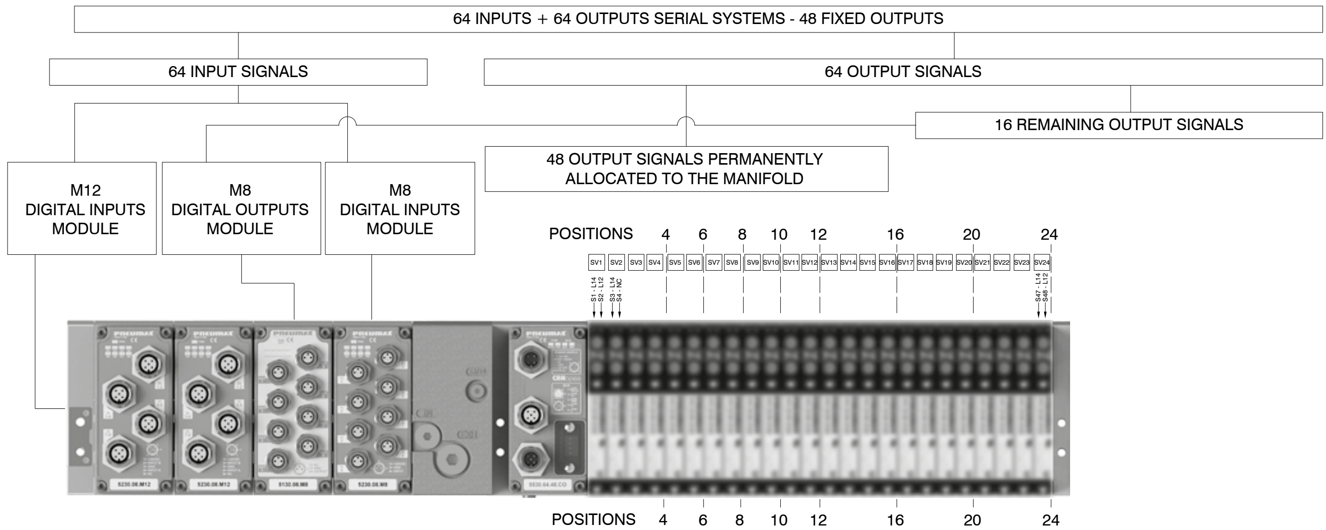


Signal management

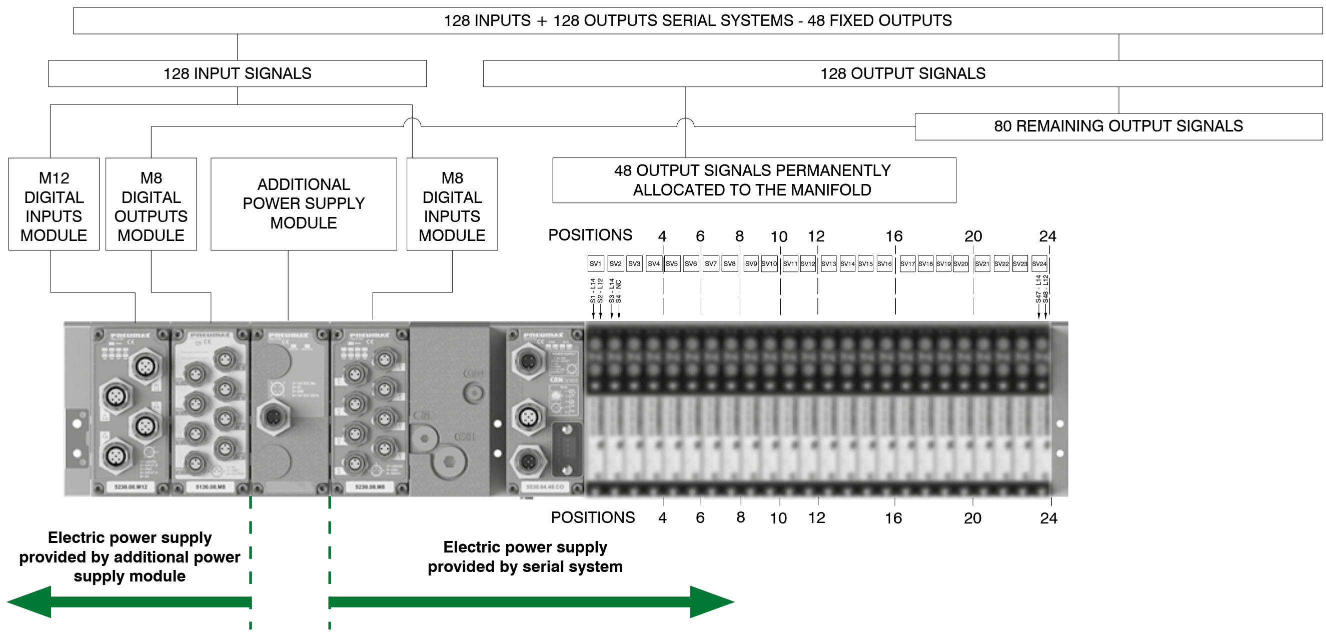
64 INPUT + 64 OUTPUT serial systems - 32 fixed OUTPUT (Ex. PROFIBUS DP and CANopen®)



64 INPUT + 64 OUTPUT serial systems - 48 fixed OUTPUT (Ex. PROFIBUS DP and CANopen®)



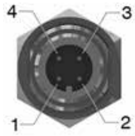
128 INPUT + 128 OUTPUT serial systems - 48 fixed OUTPUT (Ex. EtherNet/IP - EtherCAT® - PROFINET IO RT)



POWER SUPPLY connectors

Straight connector M12A 4P female

Coding: 5312A.F04.00

Upper view slave connector

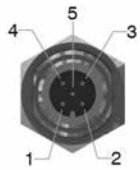
PIN	DESCRIPTION
1	+ 24 V DC (LOGICS AND INPUTS)
2	N.C.
3	0 V
4	+ 24 V DC (OUTPUTS)

Power supply socket

NETWORK connectors

Straight connector M12A 5P female

Coding: 5312A.F05.00

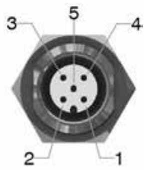
Upper view slave connector

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

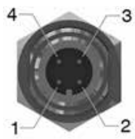
Upper view slave connector

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

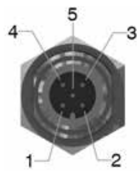
PIN	SIGNAL	DESCRIPTION
1	TX+	EtherNet Transmit High
2	RX+	EtherNet Receive High
3	TX-	EtherNet Transmit Low
4	RX-	EtherNet Receive Low

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

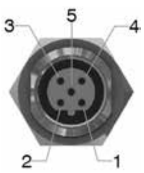
Upper view slave connector

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

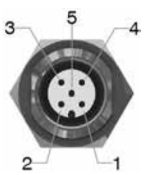
PIN	DESCRIPTION
1	Power Supply
2	A-Line
3	DGND
4	B-Line
5	SHIELD

Socket for bus PROFIBUS DP

INPUTS connectors

Straight connector M12A 5P male

Coding: 5312A.M05.00

PIN	DESCRIPTION
1	+ 24 V DC
2	INPUT B
3	0 V
4	INPUT A
5	N.C.

Upper view slave connector

Plug for inputs modules

Straight connector M8 3P male

Coding: 5308A.M03.00


PIN	DESCRIPTION
1	+ 24 V DC
4	INPUT
3	0 V

Upper view slave connector

Plug for inputs modules

Plugs

M12 plug

Coding: 5300.T12

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**

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
Hydraulic piston seals	NBR
Springs	Stainless Steel
Operators	Technopolymer
Pistons	Technopolymer
Spools	Stainless Steel

Technical characteristics

Voltage	+ 24 V DC ±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

CONFIGURATION CODE ← SE - [ ] - [ ] - ( ) [ ] - [ ] - ( ) [ ] - [ ] → ( ) [ ] - U0

Electronic components	
...-...	See page 'Electronic components configurator in technopolymer'

Left endplates	
A	Self feeding
E	External feeding

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module 1	
...-...	See page 'Single pneumatic module configurator'

Accessory diaphragm plug (Optional)	
X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module 2	
...-...	See page 'Single pneumatic module configurator'

Accessory diaphragm plug (Optional)	
X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

↓

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module n	
...-...	See page 'Single pneumatic module configurator'

Right endplates	
U0	Endplates closed

Configurable on Cadenas platform

CADENAS

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

Type	
P	Technopolymer

Multi-pin electrical connection		
MP	2	Multi-pin, PNP 24 V DC 25 poles
MP	3	Multi-pin, PNP 24 V DC 37 poles
MP	4	Multi-pin, PNP 24 V DC 44 poles
MN	2	Multi-pin, NPN 24 V DC 25 poles
MN	3	Multi-pin, NPN 24 V DC 37 poles
MN	4	Multi-pin, NPN 24 V DC 44 poles
MA	2	Multi-pin, 24 V AC 25 poles
MA	3	Multi-pin, 24 V AC 37 poles
MA	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

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

2 positions base module configurator

Module configurator

Sub-base type	Valve and accessories type
_ _	_ _ | _ _

Base	
1	Ø10 Monostable base
2	Ø10 Bistable base
3	Ø4 Monostable base
4	Ø4 Bistable base
5	Ø6 Monostable base
6	Ø6 Bistable base
7	Ø8 Monostable base
8	Ø8 Bistable base

Base version (optional)	
	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

Note: version not available with Ø10 base

Solenoid valve position 1	
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 CC SOLENOID-SOLENOID
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

S.V. 1 Accessory (optional)	
5	Separated exhausts
6	Separated power supply

Solenoid valve position 2	
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

Note: with base Ø10 the solenoid valve must be the same as the one chosen as position 1

S.V. 2 Accessory (optional)	
5	Separated exhausts
6	Separated power supply

Accessory module configurator

Module configurator

Accessory and variant
_ _ _

Intermediate Inlet/Exhaust module with separate piloting		
K	A C	12/14 through 12/14 closed downstream

Intermediate electropneumatic shut-off module with separate piloting						
K	A C	12/14 through 12/14 closed downstream	2 4 6 8	2 positions 4 positions 6 positions 8 positions	M8 M12	M8 Connector M12 Connector

Proportional regulator module (base + proportional)												
R	0 1	Exhaust closed Ø10 Conveyed discharges	D	Standard proportional regulator	C T	Current signal Voltage signal	/		1 5 9	0-1 bar pressure 0-5 bar pressure 0-9 bar pressure	-	Standard version
			N	Standard proportional regulator M12			F G H	Analogue voltage output Analogue current output Digital output				
			SC MC	CANopen protocol CANopen M12 protocol	/		/		9	0-9 bar pressure	A	Discharge circuit without power supply
			IB EC PN	IO-Link protocol EtherCAT protocol Profinet protocol								

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 power supply accessory, 5/2 Solenoid-Solenoid valve

6 6 F 5 C

Base	
1	Ø10 Monostable base
2	Ø10 Bistable base
3	Ø4 Monostable base
4	Ø4 Bistable base
5	Ø6 Monostable base
6	Ø6 Bistable base
7	Ø8 Monostable base
8	Ø8 Bistable base

Base version (optional)	
	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

S.V. position 2	
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 CC SOLENOID-SOLENOID
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

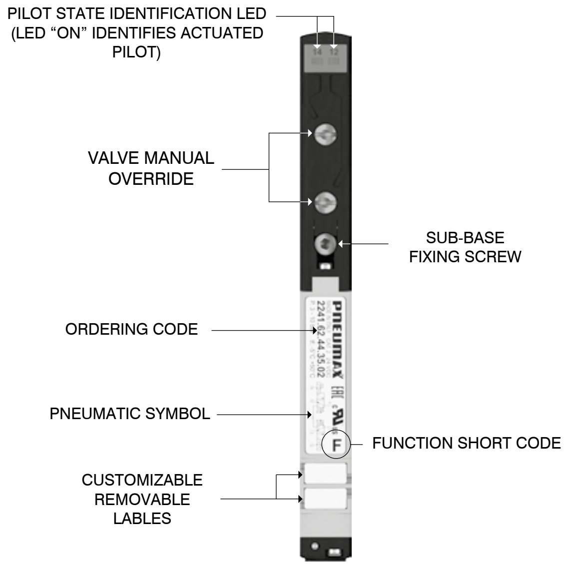
S.V. 1 Accessory (optional)	
5	Separated exhausts
6	Separated power supply

Solenoid valve position 1	
A	Solenoid valve 5/2 SOLENOID-SPRING
B	Solenoid valve 5/2 SOLENOID-DIFFERENTIAL
C	Solenoid valve 5/2 SOLENOID-SOLENOID
E	Solenoid valve 5/3 CC SOLENOID-SOLENOID
F	Solenoid valve 2x3/2 NC-NC
G	Solenoid valve 2x3/2 NO-NO
H	Solenoid valve 2x3/2 NC-NO
I	Solenoid valve 2x3/2 NO-NC

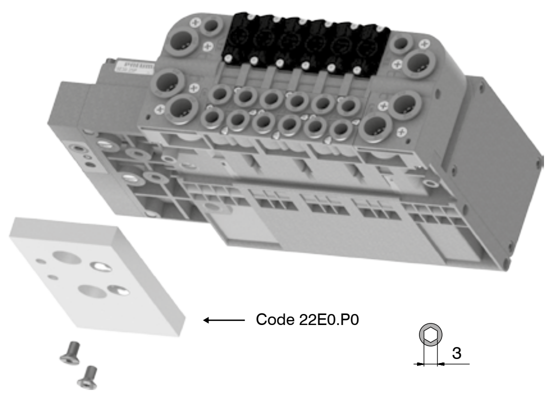
Configuration example of complete group:

- 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

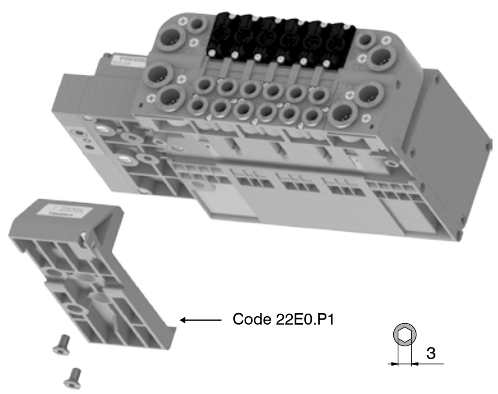


Offset compensation plate



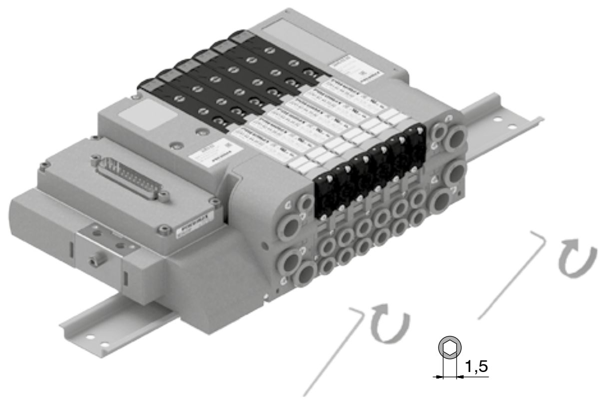
Attention: This accessory is supplied on the manifold unless otherwise stated. This is not compatible for DIN rail mounting.

DIN rail mounting support plate



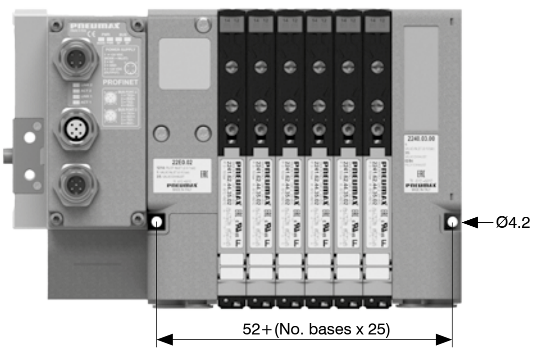
Attention: This must be included when creating the manifold configuration. Exclude the offset compensation plate.

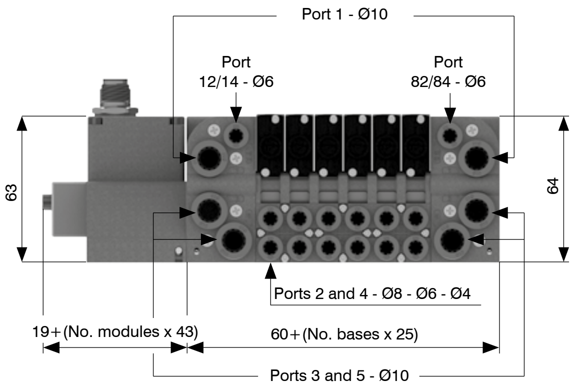
DIN rail fixing



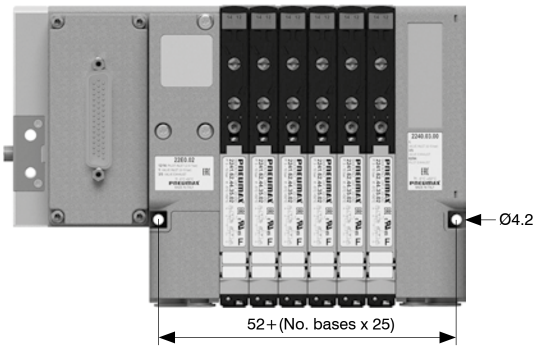
Supply ports and maximum possible size according to valves used

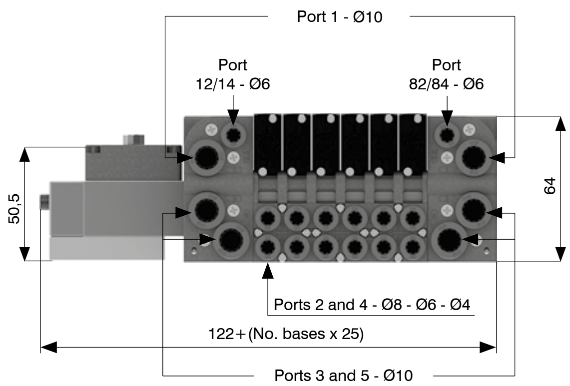
Serial system node version





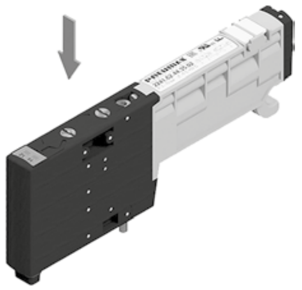
Multi-pin version



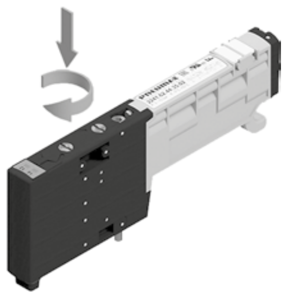


Manual override actuation

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

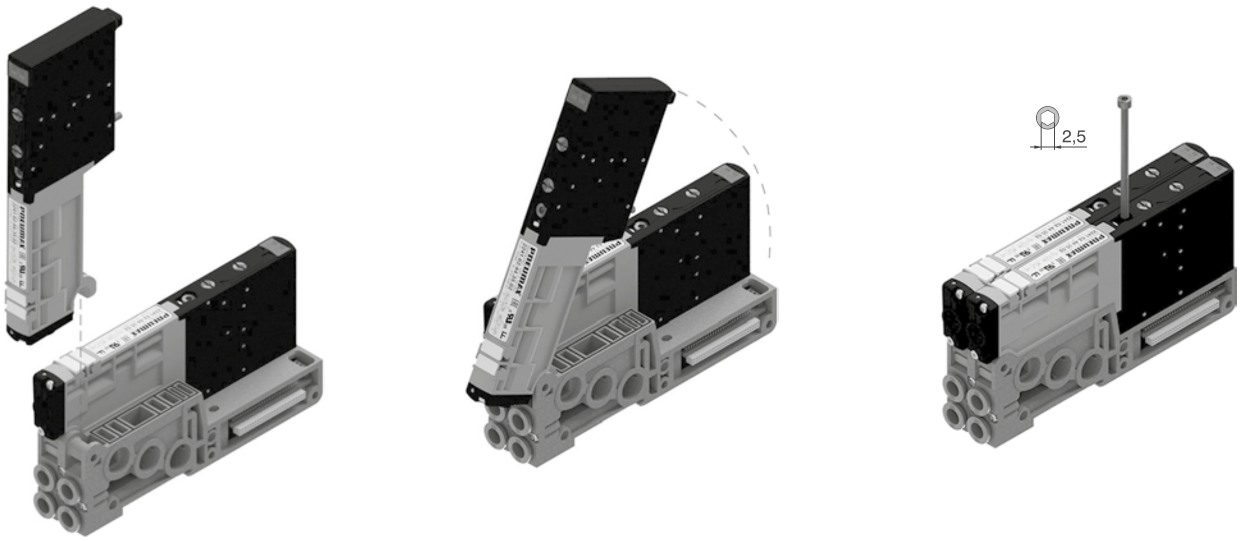


Bistable function:
Push and turn to get the bistable function



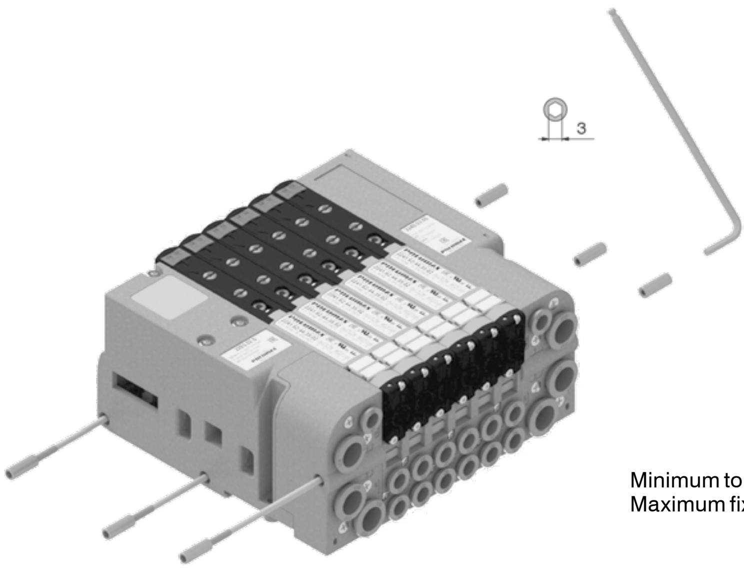
Note: we recommend the manual override is returned to it's original position when not in use

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

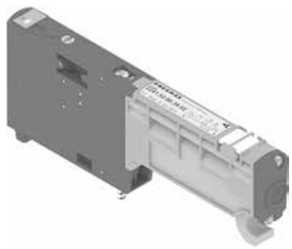
Solenoid-Spring

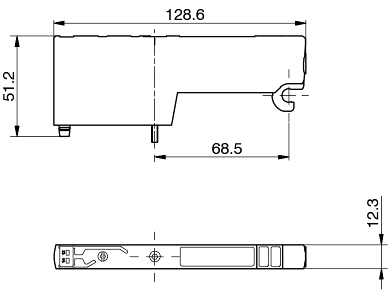
Coding: 2241.52.00.39.Ⓥ

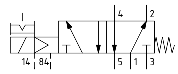
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		2,5 ... 7
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	with modular base, tube ø4	140
	with modular base, tube ø6	300
	with modular base, tube ø8	400
	with modular base, tube ø10	900
Responce time according to ISO 12238, activation time (ms)		15
Responce 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







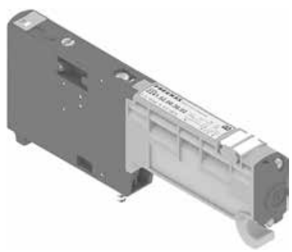
Solenoid-Differential

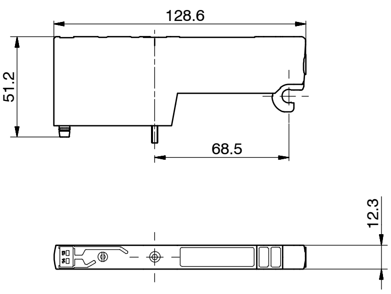
Coding: 2241.52.00.36.Ⓥ

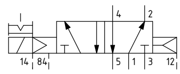
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		2,5 ... 7
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	with modular base, tube ø4	140
	with modular base, tube ø6	400
	with modular base, tube ø8	550
	with modular base, tube ø10	850
Responce time according to ISO 12238, activation time (ms)		20
Responce 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







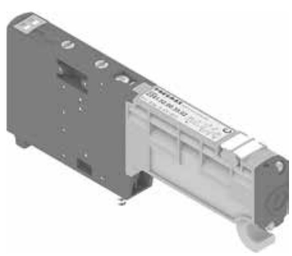
Solenoid-Solenoid

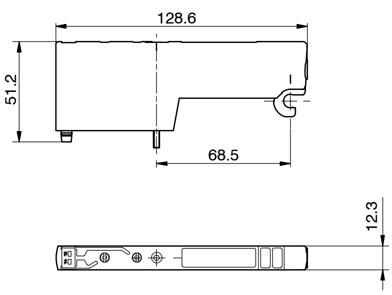
Coding: 2241.52.00.35.Ⓥ

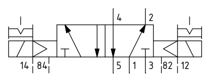
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		2,5 ... 7
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	with modular base, tube ø4	140
	with modular base, tube ø6	400
	with modular base, tube ø8	550
	with modular base, tube ø10	900
Responce time according to ISO 12238, activation time (ms)		10
Responce 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)

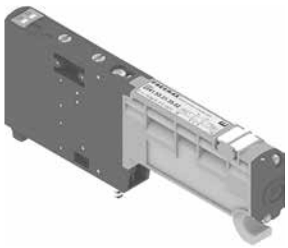
Coding: 2241.53.31.35.Ⓥ

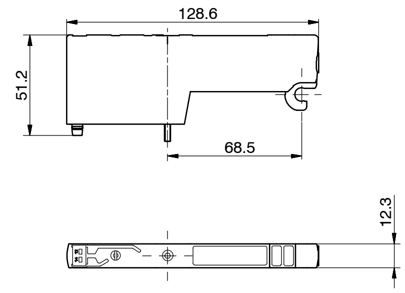
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		2,5 ... 7
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	with modular base, tube ø4	140
	with modular base, tube ø6	300
	with modular base, tube ø8	400
	with modular base, tube ø10	600
Responce time according to ISO 12238, activation time (ms)		15
Responce time according to ISO 12238, deactivation time (ms)		20

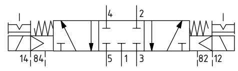
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC

SHORT FUNCTION CODE "E"

Weight 83 g







Solenoid-Solenoid 2x3/2

Coding: 2241.62.Ⓕ.35.Ⓥ

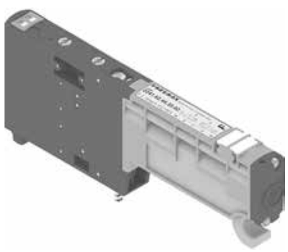
Technical characteristics		
Fluid		Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)		From vacuum to 10
Pilot pressure (bar)		≥3+(0,2xInlet pressure)
Temperature °C		-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	with modular base, tube ø4	140
	with modular base, tube ø6	360
	with modular base, tube ø8	420
	with modular base, tube ø10	650
Responce time according to ISO 12238, activation time (ms)		15
Responce time according to ISO 12238, deactivation time (ms)		25

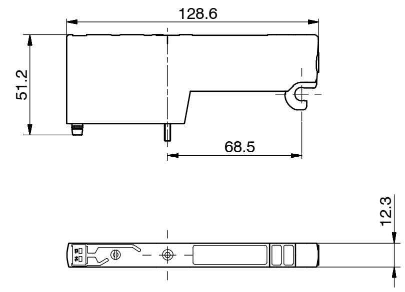
Ⓕ	FUNCTION
	44 = NC-NC (5/3 Open centres)
	45 = NC-NO (normally closed-normally open)
	54 = NO-NC (normally open-normally closed)
	55 = NO-NO (5/3 Pressured centres)
Ⓥ	VOLTAGE
	02 = 24 VDC PNP
	12 = 24 VDC NPN
	05 = 24 VAC

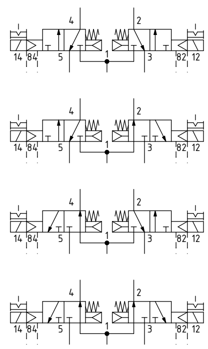
SHORT FUNCTION CODE:
NC-NC (5/3 Open centres)="F"
N.O. - N.O. (5/3 Pressured centres)="G"
N.C.-N.O.="H"
N.O.-N.C.="I"

Weight 75 g

Example: If inlet pressure is set at 5 bar then pilot pressure must be at least Pp=3+(0,2*5)=4 bar





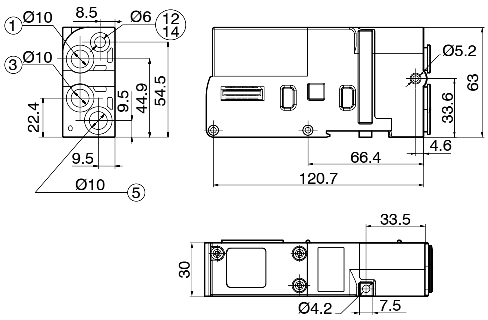


Left Endplate

Coding: 22E0.V.S

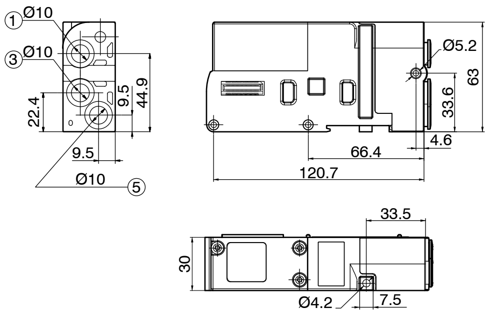
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (External pilot base) 2,5-7 (Self-feeding base)
Pilot pressure (bar)	2,5 ... 7 (External pilot base)
Temperature °C	-5 ... +50

	VERSION
V	**02** = External feeding
	12 = Self-feeding



12/14 SEPARATED FROM PORT 1
Weight 199 g

22E0.02.02.S



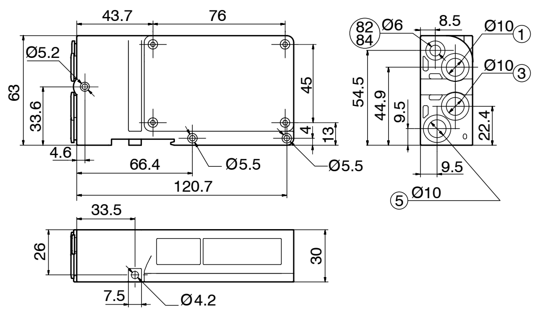
12/14 CONNECTED TO PORT 1
Weight 199 g

22E0.12.12.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

1

AIR DISTRIBUTION

1

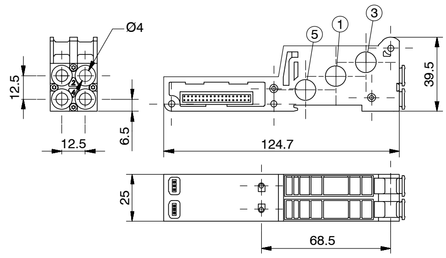
AIR DISTRIBUTION

Modular base (2 places)

Coding: 22EⒸ.ⒻⓋ

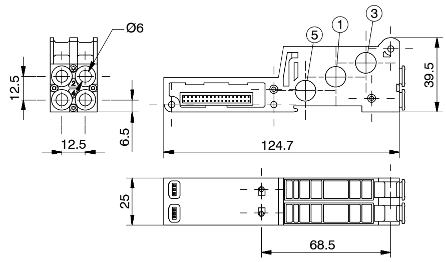
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Temperature °C	-5 ... +50

Ⓒ	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 = Port 1 separated
	08 = Ports 3-5 separated
	09 = Ports 3 separated
Ⓥ	VERSION
	M = for monostable S.V.
	B = for bistable S.V.



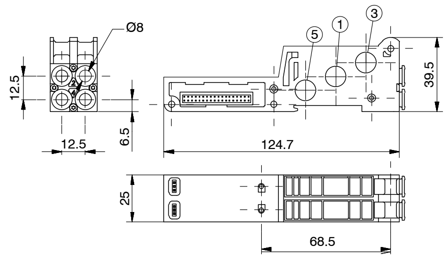
Weight 75 g

22E4.ⒻⓋ



Weight 75 g

22E6.ⒻⓋ



Weight 75 g

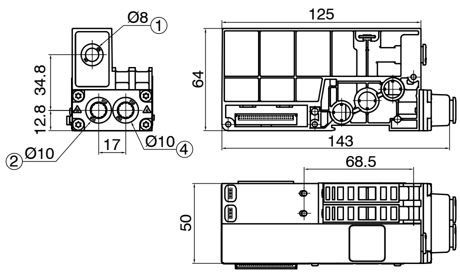
22E8.ⒻⓋ

High flow rate modular base (2 places)

Coding: 22E1.01Ⓥ

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

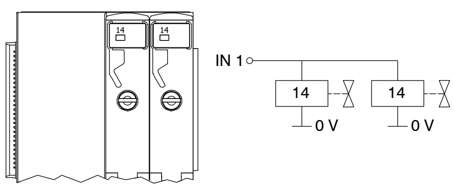
Ⓥ	VERSION
	M = for monostable S.V.
	B = for bistable S.V.



Weight 200 g

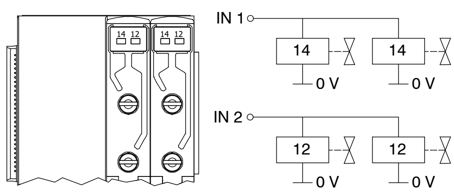
the two solenoid valves mounted on the high-flow base are pneumatically and electrically in parallel.
Attention: solenoid valves must be of the same type.
Attention: the additional supply is necessary to guarantee the declared flow values, the port (1), if not supplied, it must be plugged.

Monostable configuration



the monostable base consumes only one electrical signal and can only mount monostable solenoid valves.

Bistable configuration

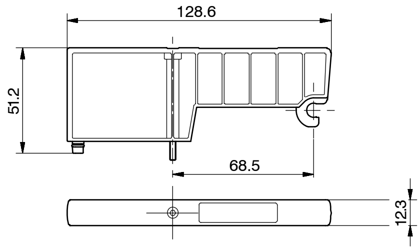


the bistable base consumes two electrical signals and can mount both bistable and monostable solenoid valves; in the latter case one electrical signal will be lost.

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

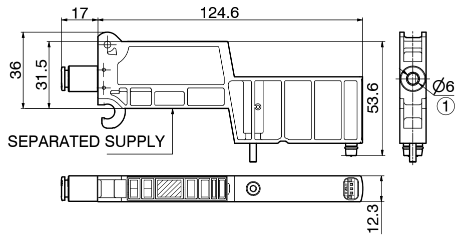
Individual supply or exhaust module

Coding: 22E0.Ⓥ.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

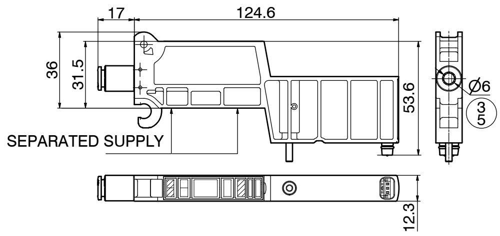
	VERSION
Ⓥ	**01** = Port 1 separated
	35 = Ports 3-5 separated

The flow rate of the solenoid valve will be reduced compared to that shown in the general catalogue



Weight 44 g

22E0.01.06



Weight 44 g

22E0.35.06

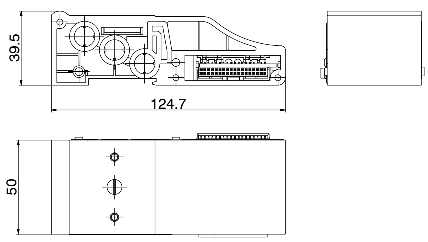
Proportional regulator base

Coding: 22E0.Ⓒ.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

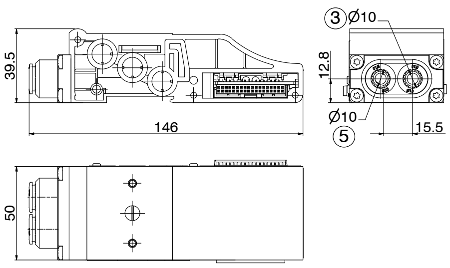
	CONNECTION
Ⓒ	**00** = Closed
	10 = Ø10

3D PRINTING



Weight 120 g

22E0.00.RP



Weight 120 g
3/5 = Exhaust connections

22E0.10.RP

1 AIR DISTRIBUTION

Proportional regulator installation on its base

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 Nl/min
Discharge flow rate (6 bar with 1 bar overpressure)	1300 Nl/min
Air consumption	< 1 Nl/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.

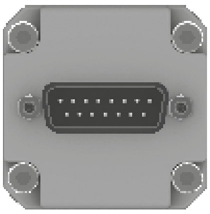
ELECTRICAL CONNECTION

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**

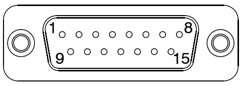
NOTES ON OPERATION

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



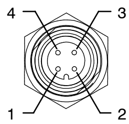
TOP VIEW OF THE
REGULATOR CONNECTOR



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

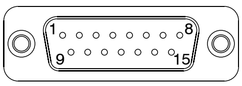


M12 4P
MALE

M12 Standard version
CONNECTOR PINOUT:
1 = POWER SUPPLY (24 VDC)
2 = ANALOG OUTPUT (depending on the model)
3 = GND
4 = ANALOG INPUT

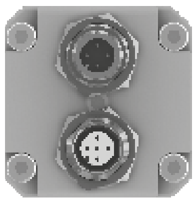
Proportional regulator, CANopen® version with D-SUB connector

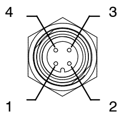
TOP VIEW OF THE
REGULATOR CONNECTOR



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

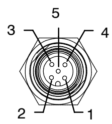
Proportional regulator, CANopen® version with M12 connector





M12 4P
MALE

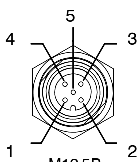
PIN	DESCRIPTION
1	+24 VDC (NODE AND INPUTS)
2	NC
3	GND
4	+24 VDC (OUTPUTS)



M12 5P
FEMALE

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)

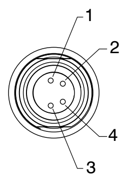
Proportional regulator, IO-Link version



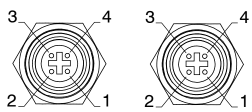
M12 5P
MALE

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



M8 4P
MALE



M12D 4P
FEMALE

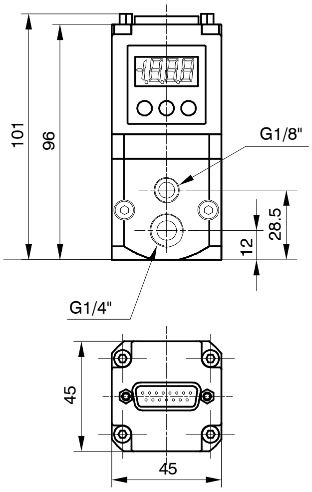
CONNECTOR PINOUT:
1 = Device logic power supply
2 = NC
3 = GND
4 = Solenoid valves power supply

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.T.D.P.V

T	TYPE
	C = Current signal (4-20 mA / 0-20 mA)
	T = Voltage signal (0-10 V / 0-5 V / 1-5 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



Accessories

Model with SUB-D 15 poles connector

Coding: 5300.F15.C.V

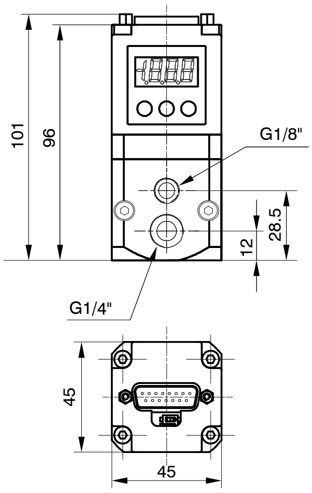
C	CONNECTOR
	00 = straight connector
	90 = 90° connector
V	VARIANT
	00 = casing IP65*
	03 = cable 3 meters
	05 = cable 5 meters

*whitout cable

Proportional regulator, CANopen® version with D-SUB connector

Coding: 221E2N.S.C.P.V

P	PRESSURE RANGE
	0001 = from 0 to 1 bar
	0005 = from 0 to 5 bar
	0009 = froma 0 to 9 bar
V	VARIANT
	= Standard version
	A = Exhaust downstream pressure when power supply is removed



Accessories

Model with SUB-D 15 poles connector

Coding: 5300.F15.C.V

C	CONNECTOR
	00 = straight connector
	90 = 90° connector
V	VARIANT
	00 = casing IP65*
	03 = cable 3 meters
	05 = cable 5 meters

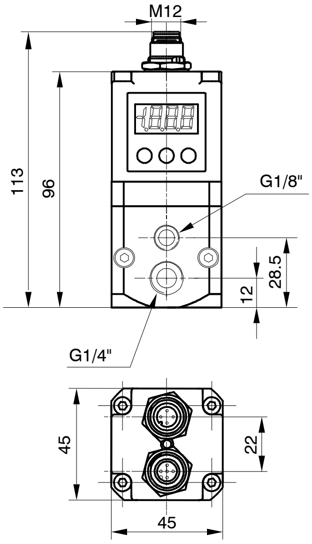
*senza cavo

Proportional regulator, CANopen® version with M12 connector

Coding: 221E2N.M.C.Ⓟ.Ⓥ

Ⓟ	PRESSURE RANGE
	0001 = from 0 to 1 bar
	0005 = from 0 to 5 bar
	0009 = from 0 to 9 bar
Ⓥ	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

Coding: 5312A.F04.00

Network connector

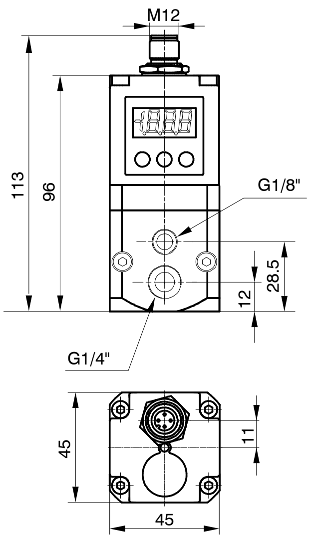
Male straight connector M12A 5P

Coding: 5312A.M05.00

Proportional regulator, M12 standard version

Coding: 221E2N.Ⓣ.Ⓤ.Ⓟ.Ⓥ

Ⓣ	TYPE
	C = Current signal (4-20 mA)
	T = Voltage signal (0-10 V)
Ⓤ	OUTPUT
	F = Voltage analogue output
	G = Current analogue output
	H = Digital output
Ⓟ	PRESSURE RANGE
	0001 = from 0 to 1 bar
	0005 = from 0 to 5 bar
	0009 = from 0 to 9 bar
Ⓥ	VARIANT
	= Standard Version
	A = Exhaust downstream pressure when power supply is removed



Accessories

Power supply connector

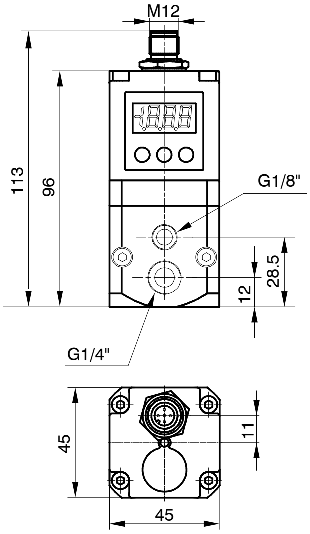
Female straight connector M12A 4P

Coding: 5312A.F04.00

Proportional regulator, IO-Link version

Coding: 221E2N.I.B.009.Ⓥ

Ⓥ	VARIANT
	= Standard Version
	A = Exhaust downstream pressure when power supply is removed



Accessories

Power supply connector

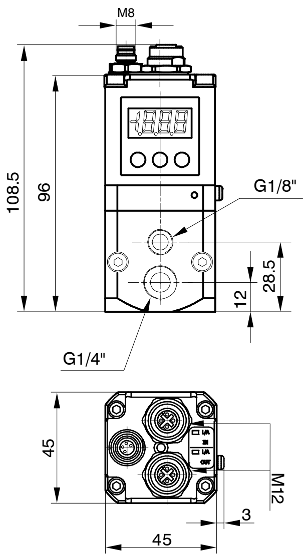
Female straight connector M12A 4P

Coding: 5312A.F05.00

Proportional regulator, EtherCAT®, PROFINET IO RT and EtherNet/IP version

Coding: 221E2N.Ⓣ.0009.Ⓥ

Ⓣ	TYPE
	EC = EtherCAT
	PN = PROFINET IO RT
	EI = EtherNet/IP
Ⓥ	VARIANT
	= 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

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

Coding: 22E0.M.T.C

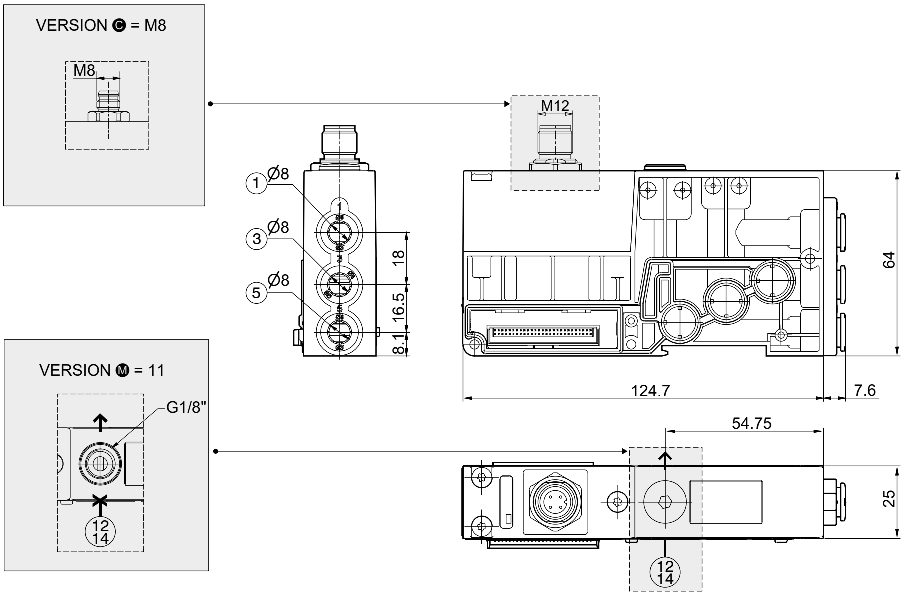
M	MODULE
	10 = 12-14 open
	11 = 12-14 closed
T	SHUT-OFF
	2A = 2 Signals
	4A = 4 Signals
	6A = 6 Signals
	8A = 8 Signals
C	CONNECTION
	M8 = M8
	M12 = M12

Weight 120 g

22E0.M.T.M12

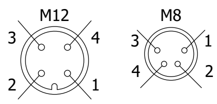
Weight 120 g

22E0.M.T.M8

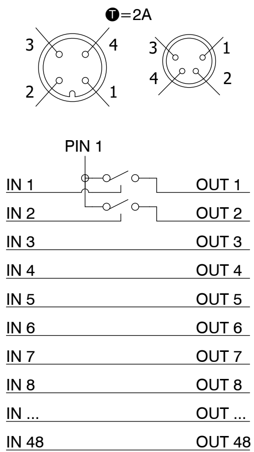


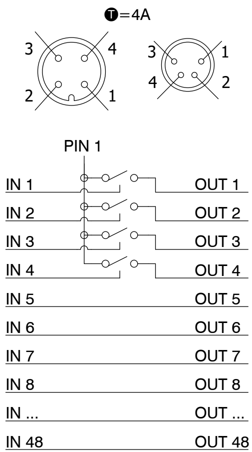
WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

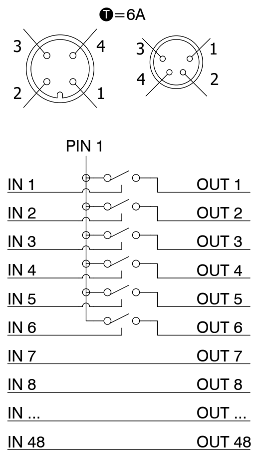
Intermediate electro-pneumatic shut-off module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself.
When the shut-off module is present, the controlled output logic signal values are equal to the input logic signal values which 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.

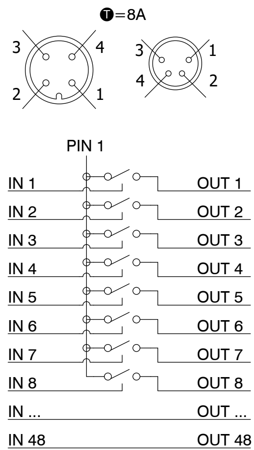


PIN	DESCRIPTION
1	+ 24 V DC
2	NOT CONNECTED
3	GND
4	NOT CONNECTED



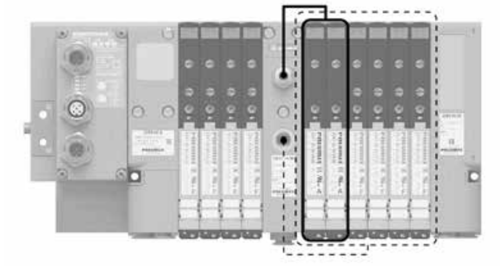




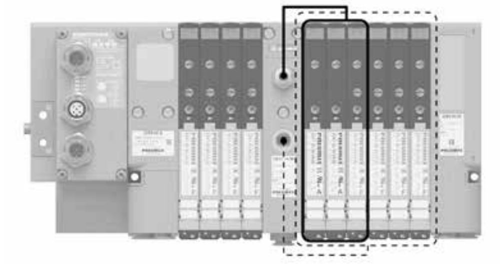


Usage examples

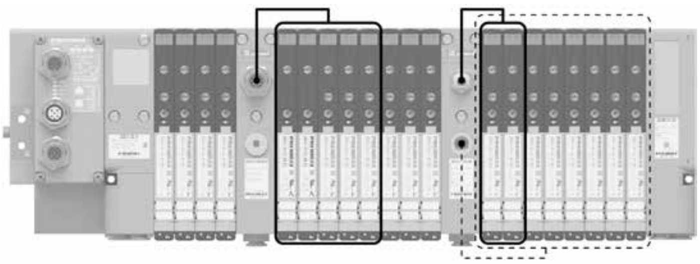
EXAMPLE 1
Manifold of 10 solenoid valves on which you want to interrupt signals 9 and 10.
Assembly:
- 4 bistable solenoid valves (not interruptible because before the module)
- 1 intermediate electro-pneumatic shut-off module, 2 signals M8 with conduit 12/14 closed
- 2 monostable solenoid valves (interruptible)
- 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)



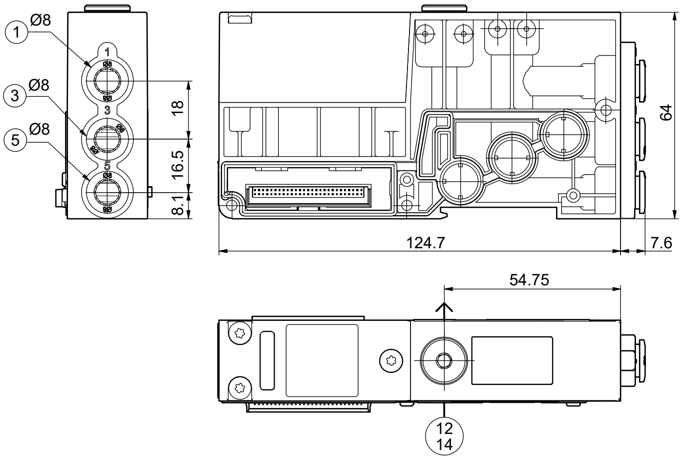
Key
S.V. electrically managed by the shut-off module: ———
S.V. pneumatically managed (12/14) by the shut-off module: - - - - - - - -

Intermediate inlet/Exhaust module with external pilot

Coding: 22E0.Ⓜ

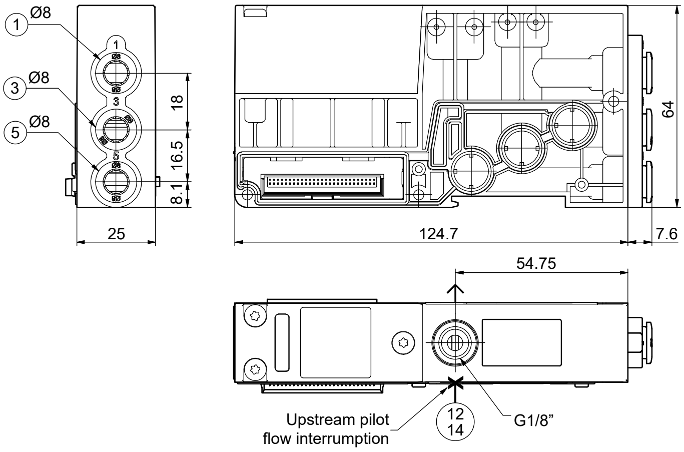
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 3 ... 7 (piloting 12/14)
Temperature °C	-5 ... +50

	MODULE
Ⓜ	**10** = 12-14 open
	11 = 12-14 closed



Weight 111 g

22E0.10



Weight 111 g

22E0.11

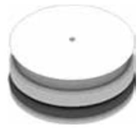
Polyethylene Silencer Series SPL-R

Coding: SPLR.Ⓓ

	TUBE DIAMETER
Ⓓ	**6** = 6 mm
	10 = 10 mm

Diaphragm plug

Coding: 2230.17

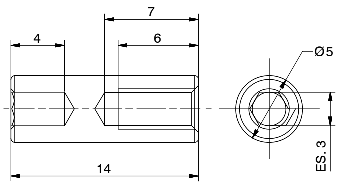


Weight 1,3 g

Tie-rod M3

Coding: 2240.KD.00

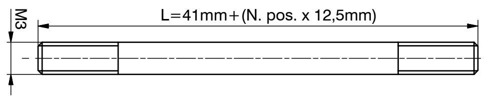
The Kit includes 6 pieces



Tie-rod M3

Coding: 2240.KT.Ⓟ

	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
	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

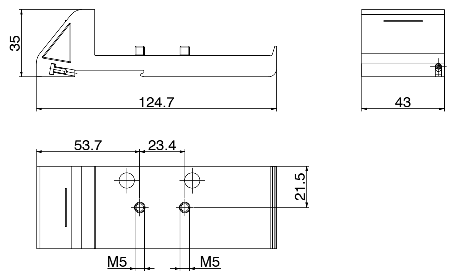


The Kit includes 3 pieces

DIN rail adapter

Coding: 22E0.P1

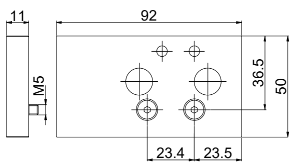
Weight 55 g



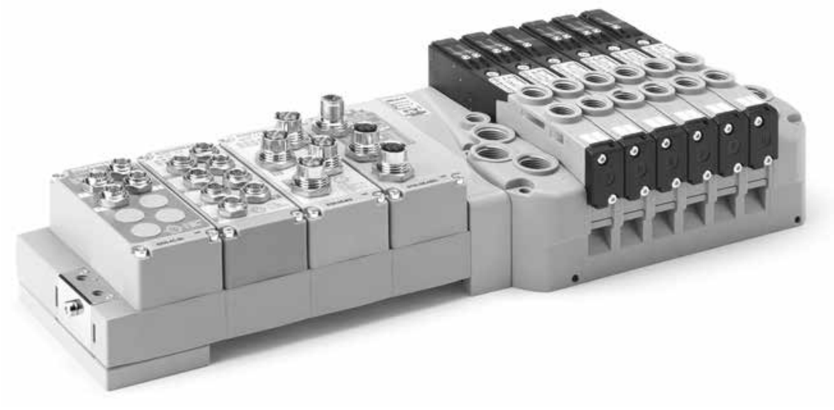
Offset compensation plate

Coding: 22E0.P0

Weight 116 g



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 Nl/min
- Quick assembly using rotating pins
- Operating using different pressures and vacuum

Construction characteristics

Body	Technopolymer
Seals	NBR
Hydraulic piston seals	NBR
Springs	Stainless Steel
Operators	Technopolymer
Pistons	Technopolymer
Spools	Technopolymer

Technical characteristics

Voltage	+ 24 V DC ±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

CONFIGURATION CODE ← FE - [ ] - [ ] - ( ) [ ] - [ ] - ( ) [ ] - [ ] → ( ) [ ] - U0

Electronic components	
...-...	See page 'Electronic components configurator in technopolymer'

Left endplates	
A	Self feeding
E	External feeding

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module 1	
...-...	See 'Pneumatic module configurator' page

Accessory 1 (Optional)	
X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module 2	
...-...	See 'Pneumatic module configurator' page

Accessory 2 (Optional)	
X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

↓

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module n	
...-...	See page 'Single pneumatic module configurator'

Right endplates	
U0	Endplates closed

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

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)

SINGLE ELECTRIC MODULE CONFIGURATION

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

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

Modules configurator

Base module configurator with Solenoid valve

Valve type	Sub-base type
_	_

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

Accessory and variant

_ _

Intermediate inlet/Exhaust module	
W	Separated power supply and exhaust

Intermediate electropneumatic shut-off module			
U	Separated power supply and exhaust	2	2 positions
		4	4 positions
		6	6 positions
		8	8 positions
K	Separated power supply, 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

C 2

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

Base	
1	Monostable base
2	Bistable base

Intermediate electropneumatic shut-off module 2 positions

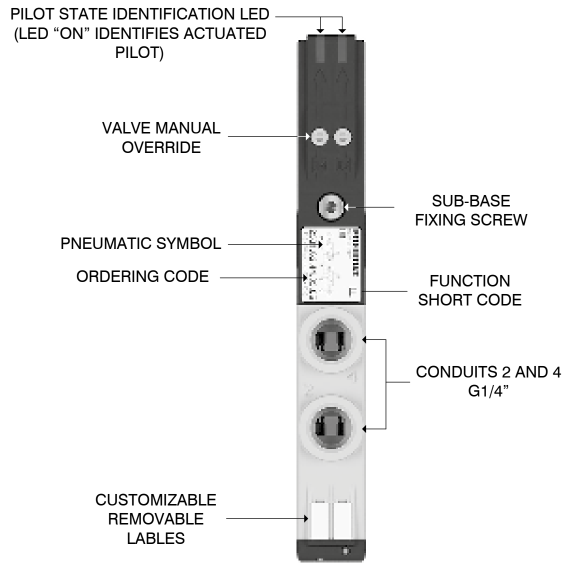
U 2

Intermediate electropneumatic shut-off module			
U	Separated power supply and exhaust	2	2 positions
		4	4 positions
		6	6 positions
		8	8 positions

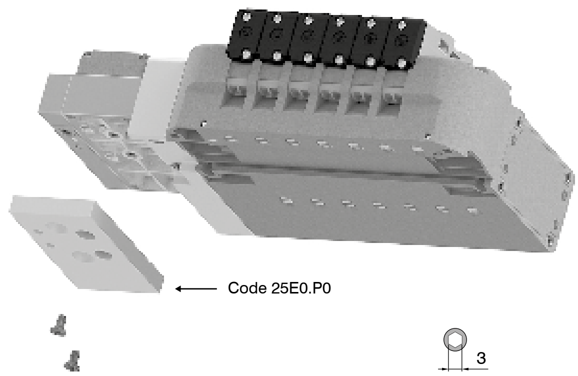
Configuration example of complete group:

- 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

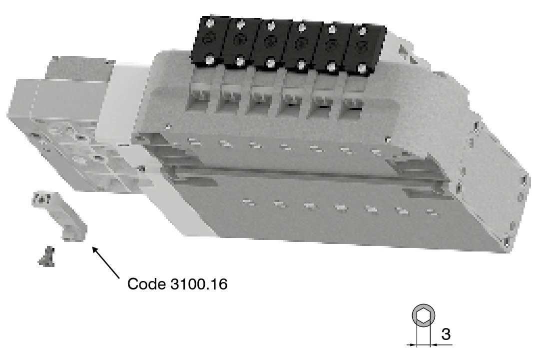


Offset compensation plate



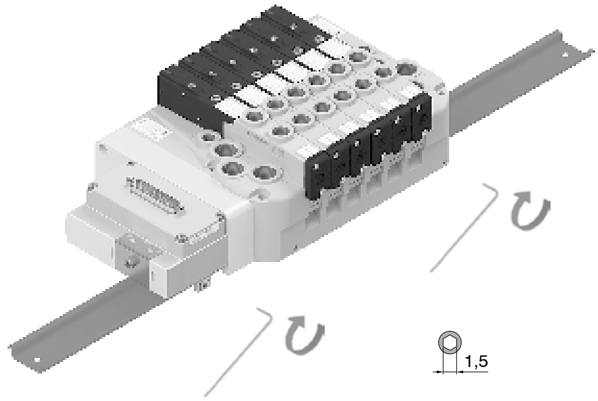
Attention: This accessory is supplied on the manifold unless otherwise stated. This is not compatible for DIN rail mounting.

DIN rail mounting support plate



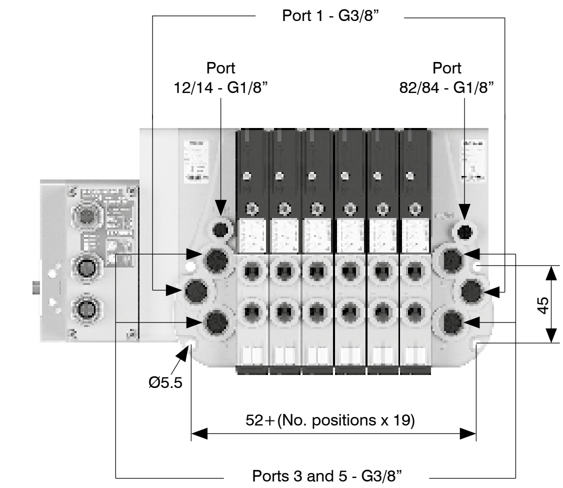
Attention: This must be included when creating the manifold configuration. Exclude the offset compensation plate.

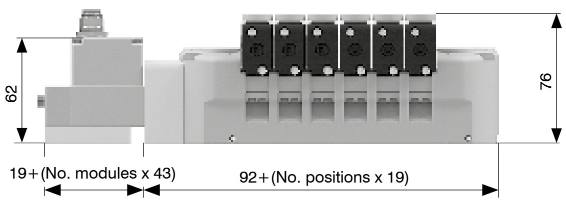
DIN rail fixing



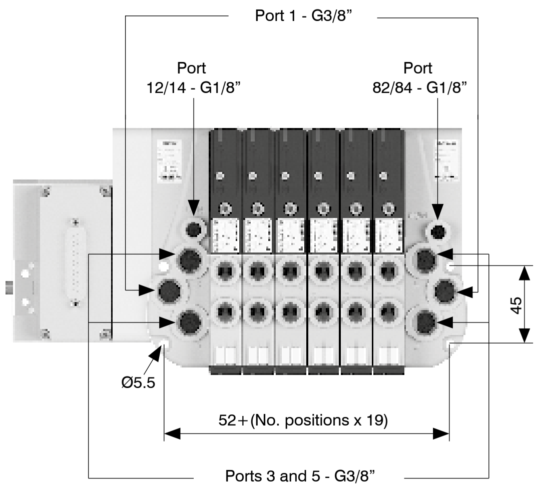
Supply ports and maximum possible size according to valves used

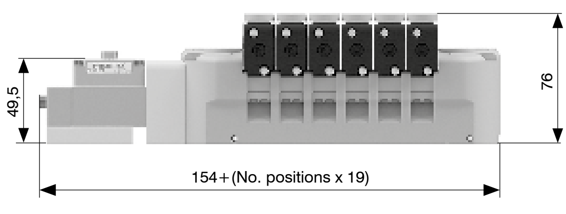
Serial system node version





Multi-pin version





Manual override actuation

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

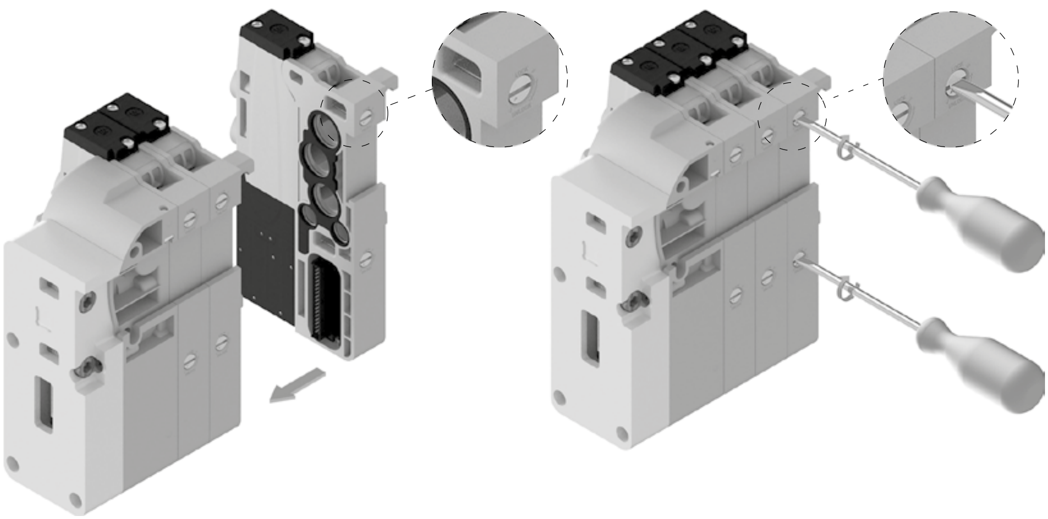
Bistable function:
Push and turn to get the bistable function

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



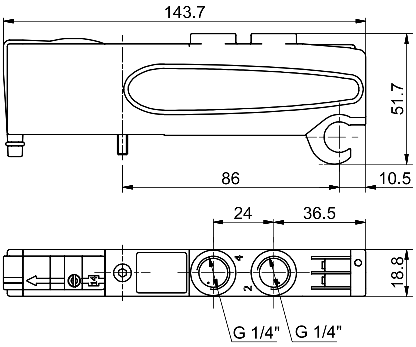
Solenoid-Spring

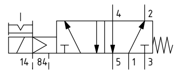
Coding: 2531.52.00.39.Ⓥ

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 Δp=1 (Nl/min)	1000
Responce time according to ISO 12238, activation time (ms)	14
Responce 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 123 g





1

AIR DISTRIBUTION

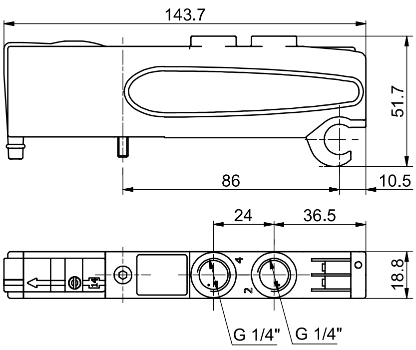
Solenoid-Differential

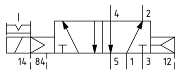
Coding: 2531.52.00.36.Ⓥ

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 Δp=1 (Nl/min)	1000
Responce time according to ISO 12238, activation time (ms)	20
Responce 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 120 g





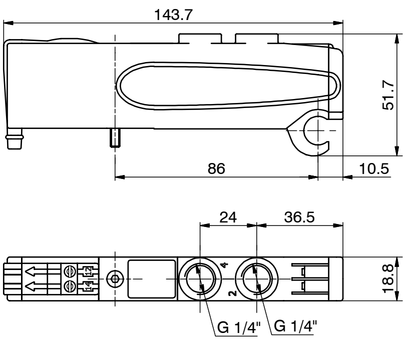
Solenoid-Solenoid

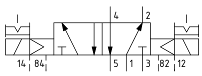
Coding: 2531.52.00.35.Ⓥ

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 Δp=1 (Nl/min)	1000
Responce time according to ISO 12238, activation time (ms)	10
Responce 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 128 g





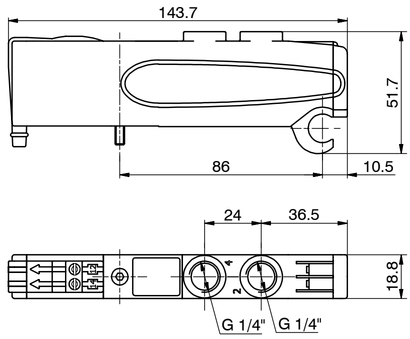
Solenoid-Solenoid 5/3

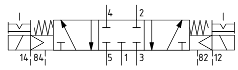
Coding: 2531.53.31.35.Ⓥ

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 Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	15
Responce 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 126 g





Solenoid-Solenoid 2x3/2

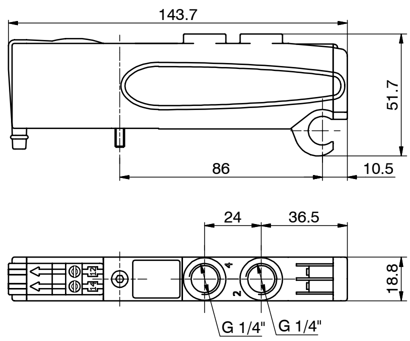
Coding: 2531.62.Ⓕ.35.Ⓥ

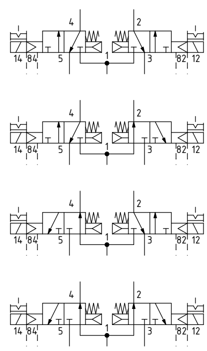
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	≥3+(0,2xInlet pressure)
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	15
Responce time according to ISO 12238, deactivation time (ms)	25

Example: If inlet pressure is set at 5 bar then pilot pressure must be at least Pp=2,5+(0,2*5)=3,5 bar

Ⓕ	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"
N.O. - N.O. (5/3 Pressured centres)="G"
N.C.-N.O.="H"
N.O.-N.C.="I"
Weight 115,5 g



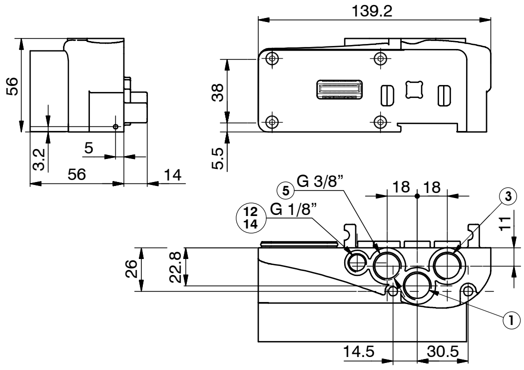


Left Endplate

Coding: 25E0.Ⓥ.F

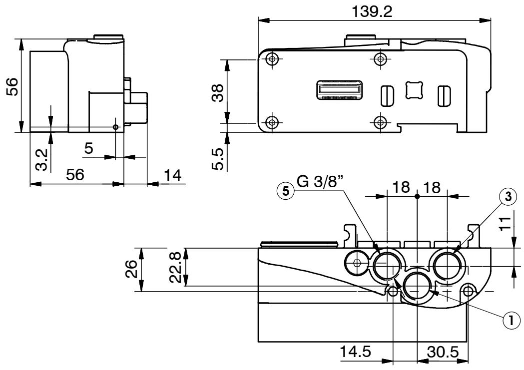
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (external feeding) 3 ... 7 (self feeding)
Pilot pressure (bar)	3 ... 7 (external feeding)
Temperature °C	-5 ... +50

Ⓥ	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

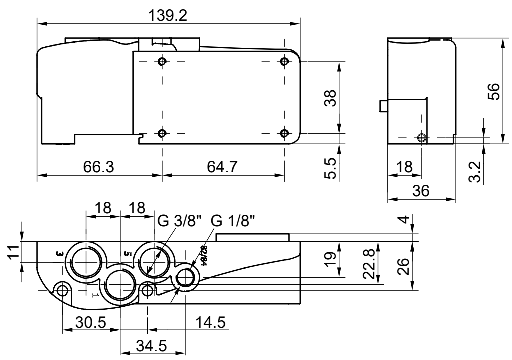
25E0.12.F

Right Endplate

Coding: 2530.03.Ⓒ

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

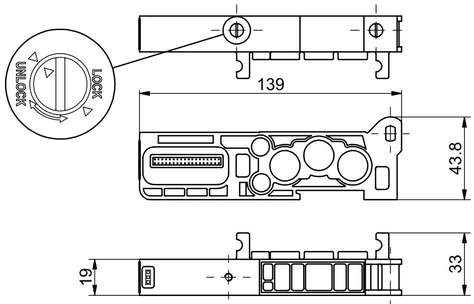
2530.03.00

Modular base

Coding: 2530.01Ⓥ

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.

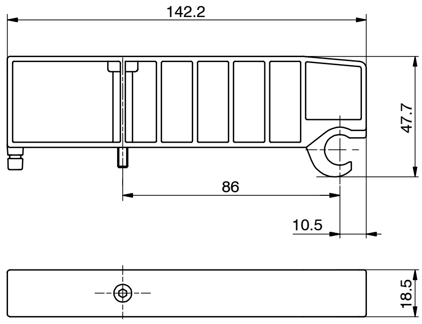


SHORT CODE "1" (for monostable S.V.)
SHORT CODE "2" (for bistable S.V.)
Weight 91,5 g

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

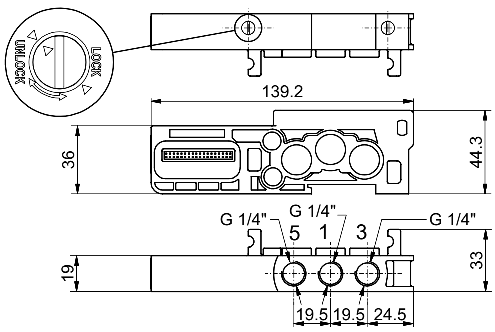


SHORT FUNCTION CODE "T"
Weight 53.5 g

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

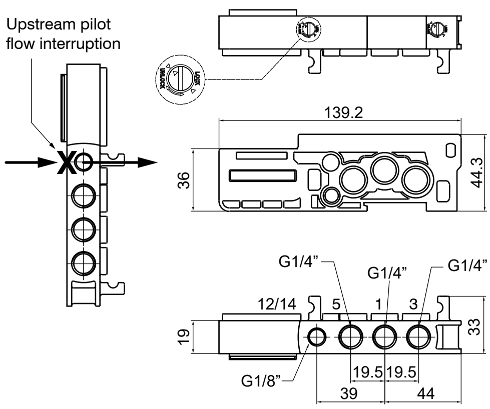


SHORT FUNCTION CODE "W"
Weight 110 g

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

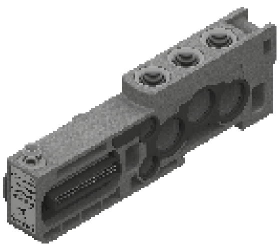
Overall dimensions and technical information are provided solely for informative purposes and may be modified without notice

Intermediate electro-pneumatic shut-off module 2/4/6/8 positions

Coding: 2530.Ⓜ.Ⓣ

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
	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

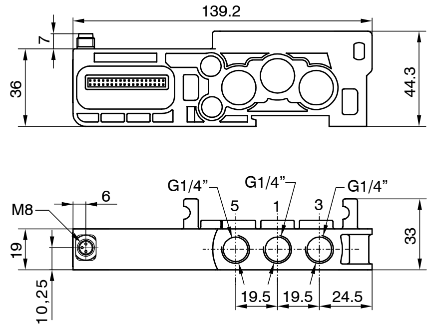


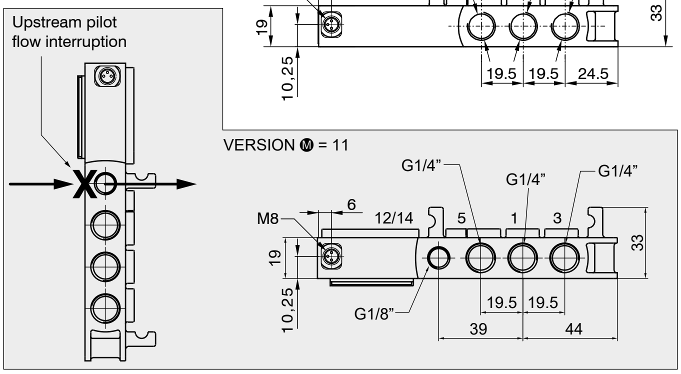
Weight 157 g

2530.10.Ⓣ

Weight 163 g

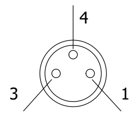
2530.11.Ⓣ



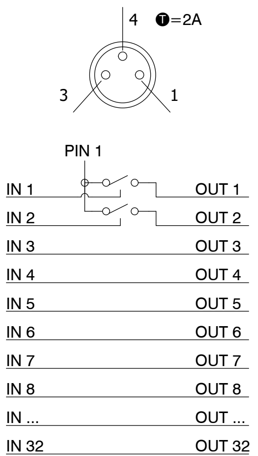


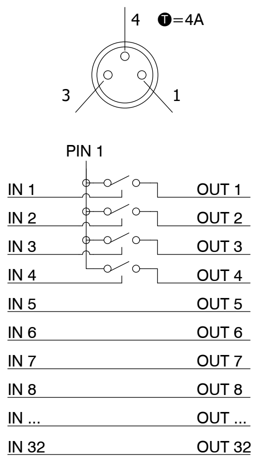
WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

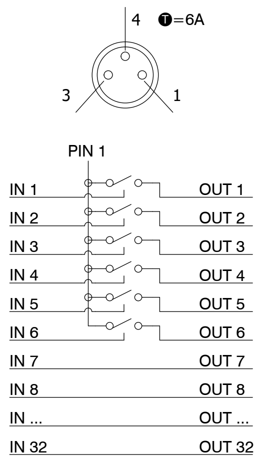
Intermediate electro-pneumatic shut-off module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself.
When the shut-off module is present, the controlled output logic signal values are equal to the input logic signal values which 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.

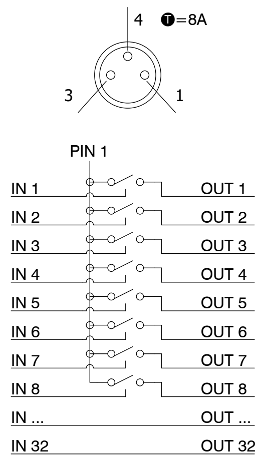


PIN	DESCRIPTION
1	+ 24 V DC
4	NOT CONNECTED
3	GND





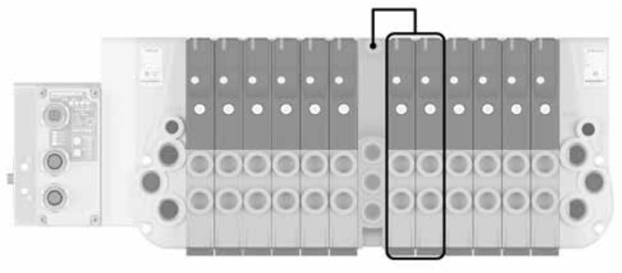




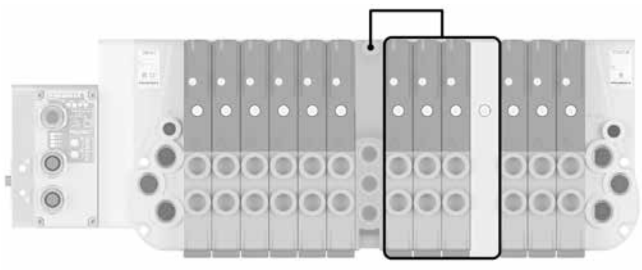
Usage examples

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.



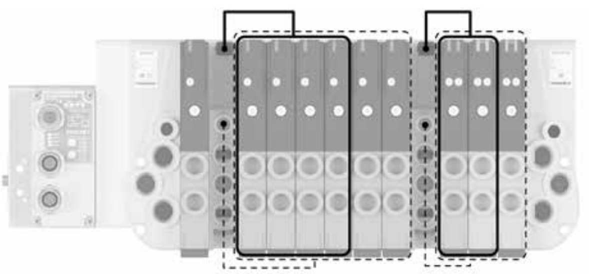
EXAMPLE 2
Manifold of 12 monostable solenoid valves on which you want to interrupt signals 7-8-9.
Assembly:
- 6 monostable solenoid valves (not interruptible because before the module)
- 1 additional power supply module
- 3 monostable solenoid valves (interruptible)
- 1 closing plate mounted on a monostable 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

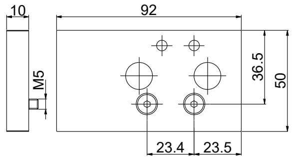
Note no. 3: the first 2 of these 3 bistable solenoid valves are interruptible by the module, while the following will work correctly and are managed directly by the corresponding command signals.
Note no. 4: The pilots of the 3 solenoid valves downstream of the intermediate electro-pneumatic shut-off 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

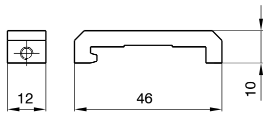
Coding: 25E0.P0



Weight 116 g

DIN rail adapter

Coding: 3100.16



Weight 12 g

Polyethylene Silencer Series SPL-P

Coding: SPLP.Ⓓ

Ⓓ	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

2500 SERIES Optyma-T EVO SOLENOID VALVES MANIFOLD

- **Increased flexibility**
- **Digital and analogue I/O modules**
- **Manufactured in technopolymer**
- **Wide range of communication protocols**

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 Nl/min
- Assembly with tie rods kit
- Operating using different pressures and vacuum
- Electro-pneumatic shut-off module

Construction characteristics

Body	Technopolymer
Seals	NBR
Hydraulic piston seals	NBR
Springs	Stainless Steel
Operators	Technopolymer
Pistons	Technopolymer
Spools	Technopolymer

Technical characteristics

Voltage	+ 24 V DC ±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

CONFIGURATION CODE

TE - [ ] - [ ] - ( ) [ ] - [ ] - ( ) [ ] - [ ] → ( ) [ ] - U0

Electronic components	
...-...	See page 'Electronic components configurator in technopolymer'

Left endplates	
A	Self feeding
E	External feeding

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module 1	
...-...	See page 'Pneumatic module configurator'

Accessory 1 (Optional)	
X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module 2	
...-...	See page 'Pneumatic module configurator'

Accessory 2 (Optional)	
X	Diaphragm plug on port 1
Y	Diaphragm plug on port 3
Z	Diaphragm plug on port 5

Repeating numbers of the module	
–	Indicate the number of repeats of the same module (no value for a single module)

Module n	
...-...	See page 'Single pneumatic module configurator'

Right endplates	
U0	Endplates closed

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

SINGLE ELECTRIC MODULE CONFIGURATION

Type		
P		Technopolymer

Multi-pin electrical connection		
MP	2	Multi-pin, PNP 24 V DC 25 poles
MP	3	Multi-pin, PNP 24 V DC 37 poles
MN	2	Multi-pin, NPN 24 V DC 25 poles
MN	3	Multi-pin, NPN 24 V DC 37 poles
MA	2	Multi-pin, 24 V AC 25 poles
MA	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	
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

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

Modules configurator

Base module configurator with Solenoid valve

Valve type	Sub-base type
_	_

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

Accessory and variant
_ _

Intermediate inlet/Exhaust module

W	Separated power supply and exhaust

Intermediate electropneumatic shut-off module

U	Separated power supply and exhaust	2	2 positions
		4	4 positions
		6	6 positions
		8	8 positions
K	Separated power supply, 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

C 6

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

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

Intermediate electropneumatic shut-off module 2 positions

U 2

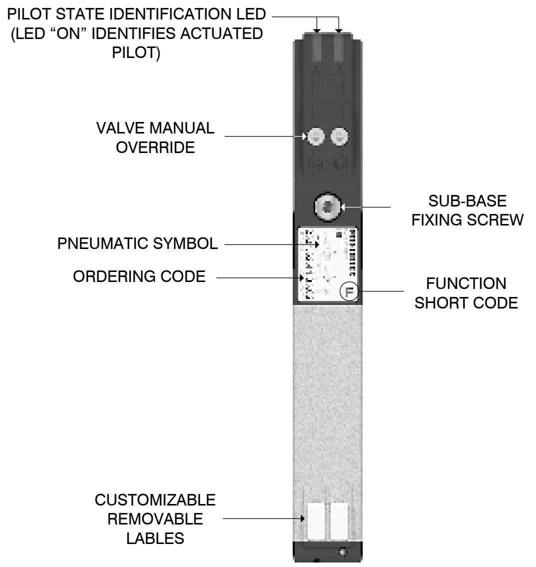
Intermediate electropneumatic shut-off module

U	Separated power supply and exhaust	2	2 positions
		4	4 positions
		6	6 positions
		8	8 positions

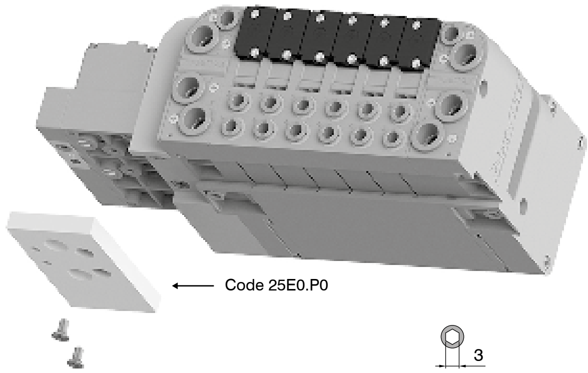
Configuration example of complete group:

- 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

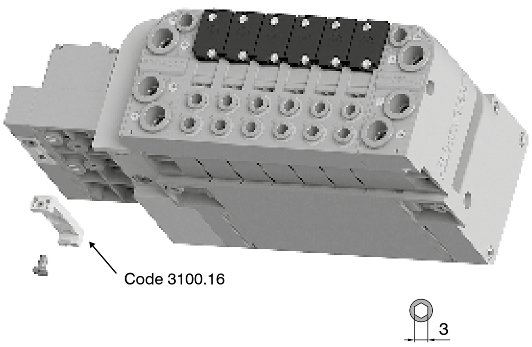


Offset compensation plate



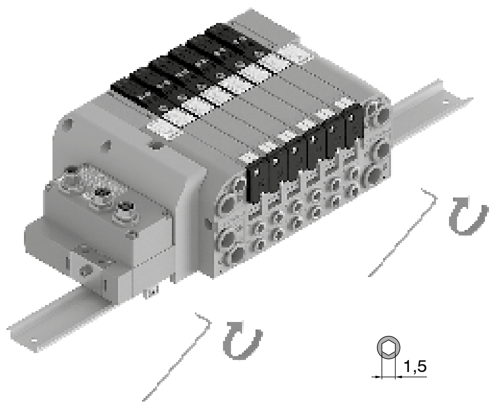
Attention: This accessory is supplied on the manifold unless otherwise stated. This is not compatible for DIN rail mounting.

DIN rail mounting support plate



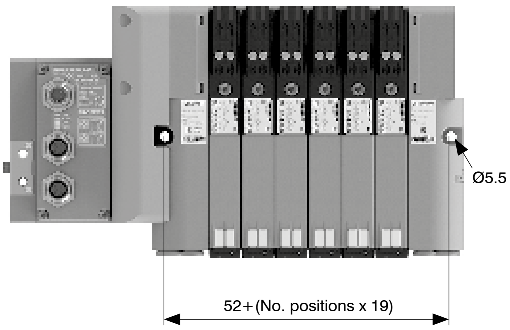
Attention: This must be included when creating the manifold configuration. Exclude the offset compensation plate.

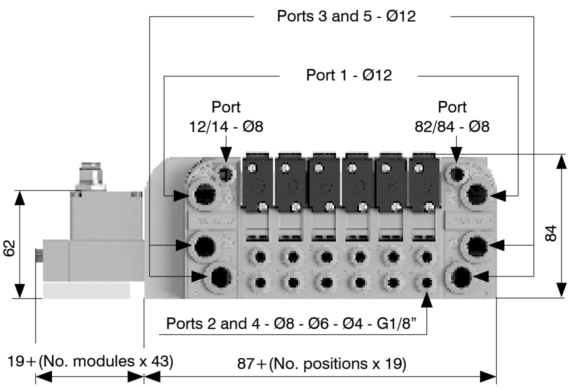
DIN rail fixing



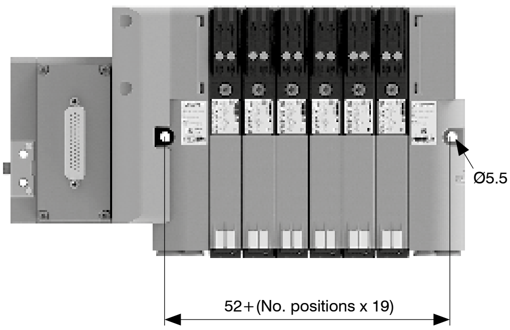
Supply ports and maximum possible size according to valves used

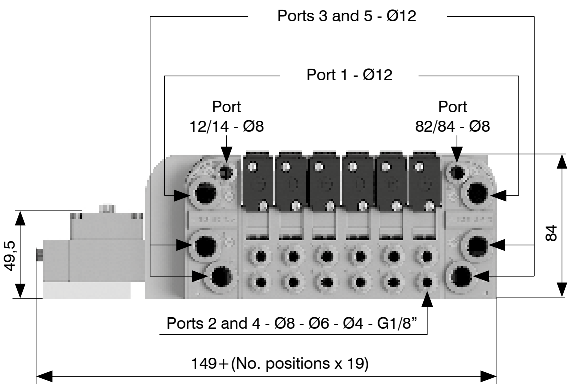
Serial system node version





Multi-pin version





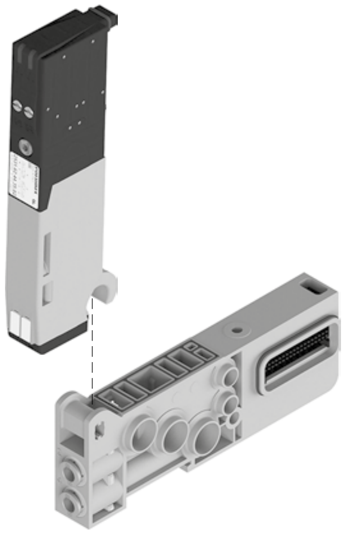
Manual override actuation

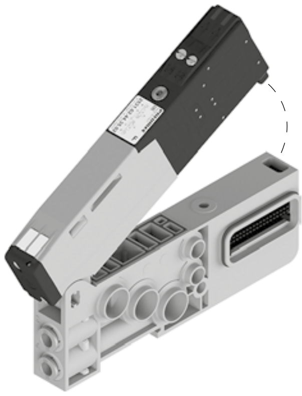
Instable function:
Push to actuate
(when released it moves back to the original position)

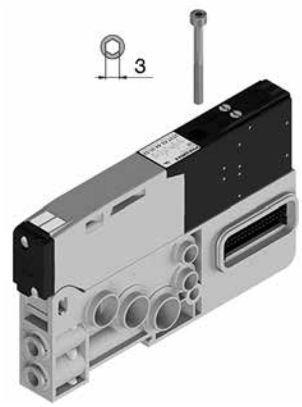
Bistable function:
Push and turn to get the bistable function

Note: we recommend the manual override is returned to it's original position when not in use

Solenoid valves installation

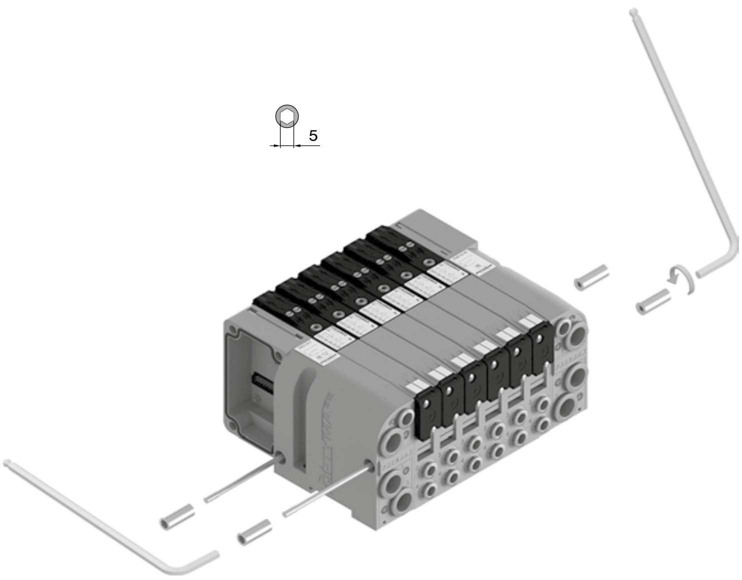






Note: Torque moment 1 Nm

Sub-base assembly



Minimum torque moment: 2,5 Nm
Maximum fixing torque for fittings: 3 Nm

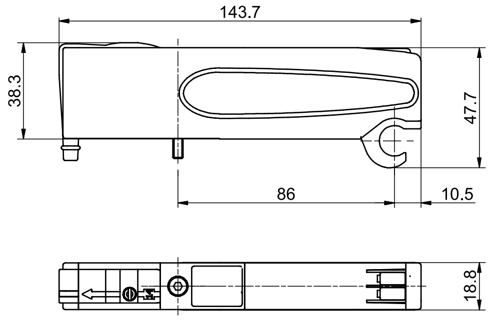
Solenoid-Spring

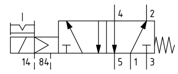
Coding: 2541.52.00.39.Ⓥ

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 Δp=1 (Nl/min)	750
Responce time according to ISO 12238, activation time (ms)	14
Responce 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





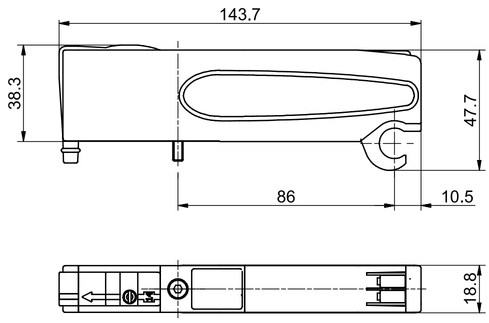
Solenoid-Differential

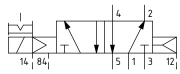
Coding: 2541.52.00.36.Ⓥ

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 Δp=1 (Nl/min)	750
Responce time according to ISO 12238, activation time (ms)	20
Responce 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





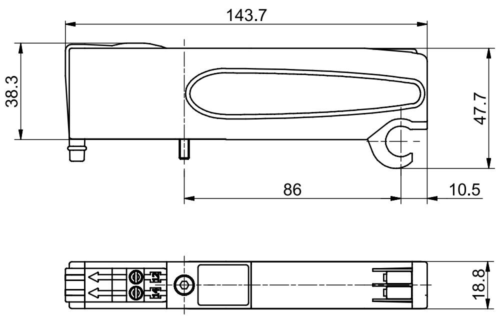
Solenoid-Solenoid

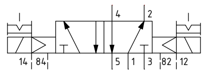
Coding: 2541.52.00.35.Ⓥ

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 Δp=1 (Nl/min)	750
Responce time according to ISO 12238, activation time (ms)	10
Responce 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





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

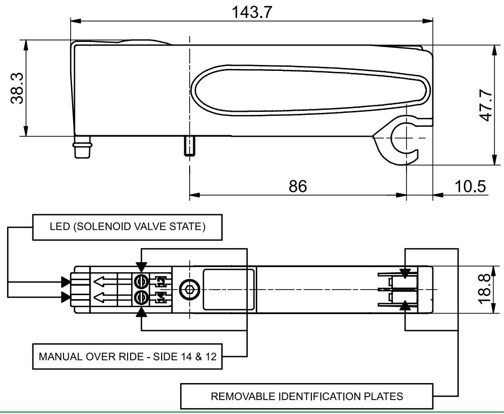
Solenoid-Solenoid 5/3

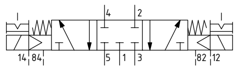
Coding: 2541.53.31.35.Ⓥ

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 Δp=1 (Nl/min)	600
Responce time according to ISO 12238, activation time (ms)	15
Responce 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

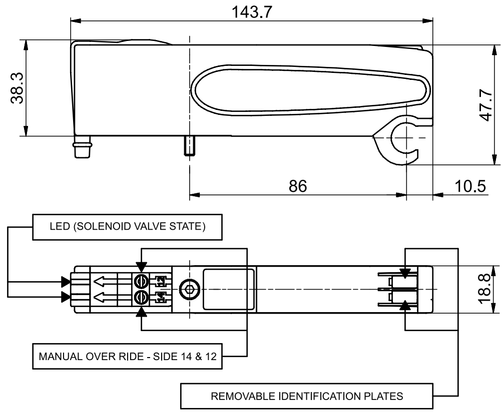
Coding: 2541.62.Ⓕ.35.Ⓥ

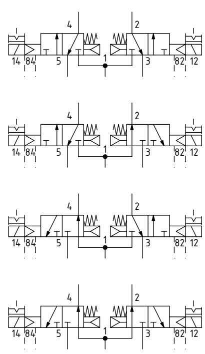
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	≥3+(0,2xInlet pressure)
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	15
Responce 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 Pp=2,5+(0,2*5)=3,5 bar

Weight 122 g



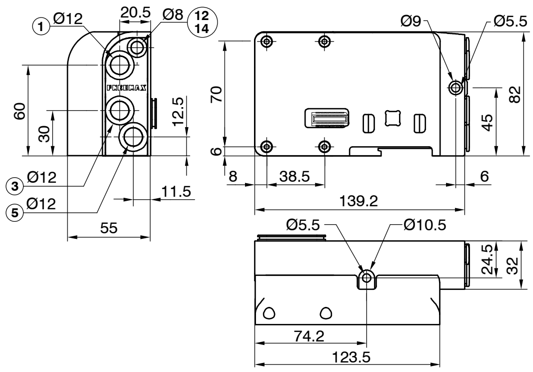


Left Endplate

Coding: 25E0.Ⓥ.T

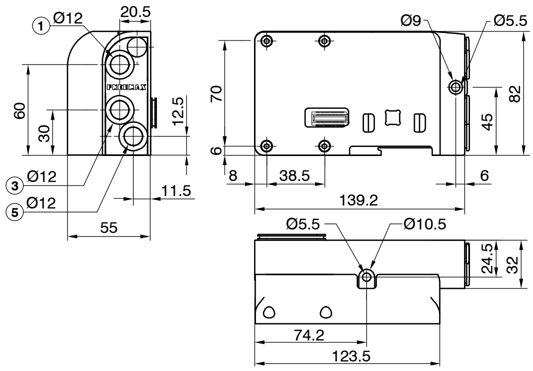
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (external feeding) 3 ... 7 (self feeding)
Pilot pressure (bar)	3 ... 7 (external feeding)
Temperature °C	-5 ... +50

	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

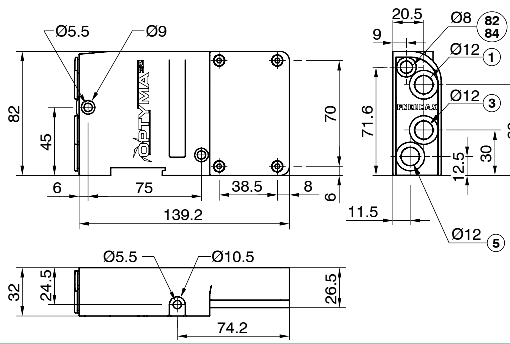
25E0.12.T

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

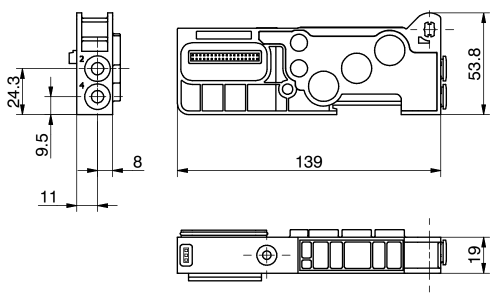
2540.03.Ⓒ

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.

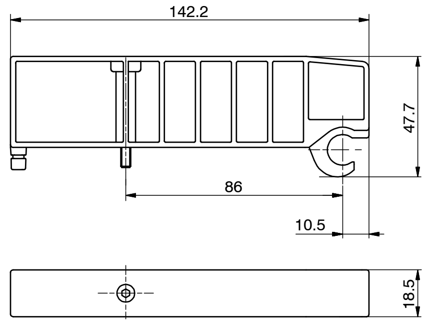


Weight 96,5 g

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

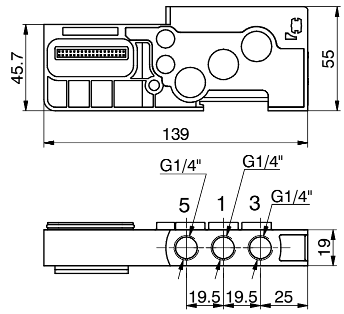


SHORT FUNCTION CODE "T"
Weight 53.5 g

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

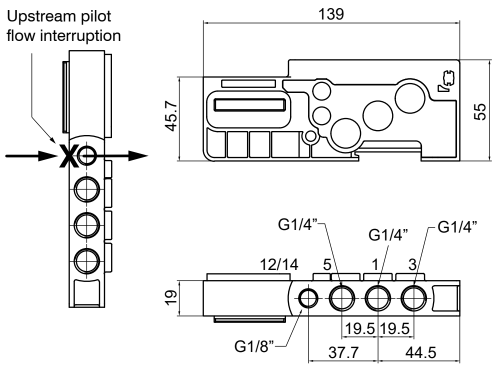


SHORT FUNCTION CODE "W"
Weight 115 g

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



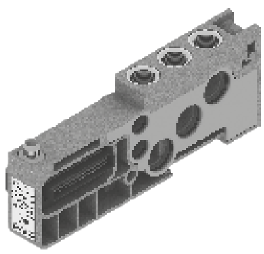
SHORT CODE "K"
Weight 173 g

Intermediate electro-pneumatic shut-off module 2/4/6/8 positions

Coding: 2540.M.T

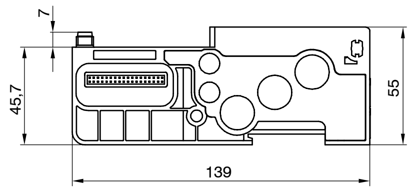
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 3 ... 7 (piloting 12/14)
Temperature °C	-5 ... +50
Feeding	+ 24 V DC ±10%
Protection	Inverted polarity protection
Maximum load	100 mA
Indicators	+ 24 V DC presence LED
Series modules maximum number	3

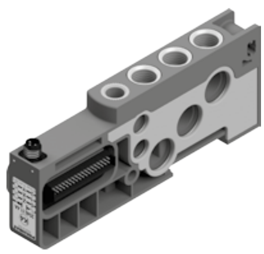
M	MODULE
	10 = Supply and exhaust
	11 = Supply and exhaust with separate pilot
T	SHUT-OFF
	2A = 2 Signals
	4A = 4 Signals
	6A = 6 Signals
	8A = 8 Signals



Weight 168 g

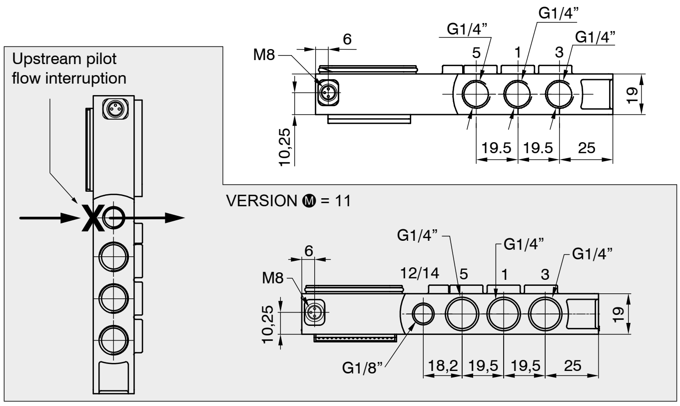
2540.10.M





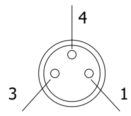
Weight 174 g

2540.11.M

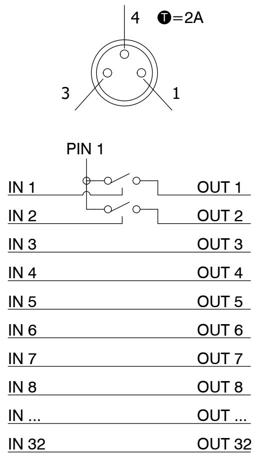


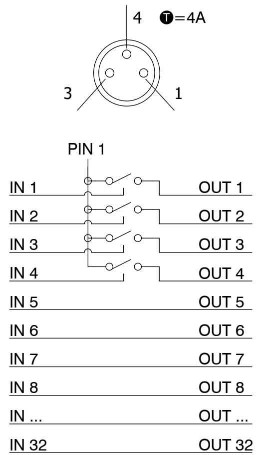
WORKING PRINCIPLE / SIMPLIFIED FUNCTIONAL DIAGRAM

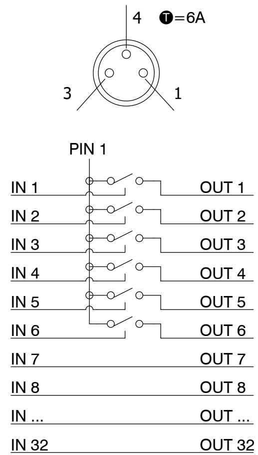
Intermediate electro-pneumatic shut-off module allows you to interrupt at the same time the first 2, 4, 6 or 8 available command signals for the valves after the module itself.
When the shut-off module is present, the controlled output logic signal values are equal to the input logic signal values which 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.

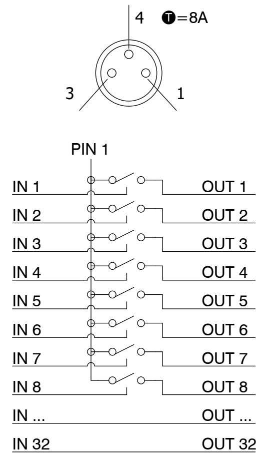


PIN	DESCRIPTION
1	+ 24 V DC
4	NOT CONNECTED
3	GND





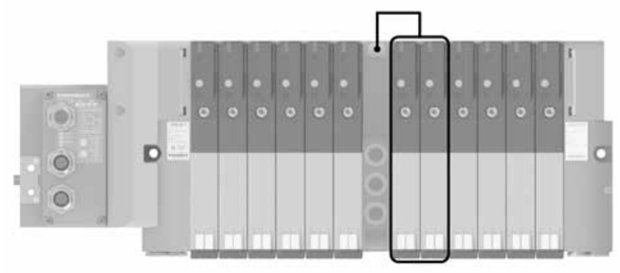




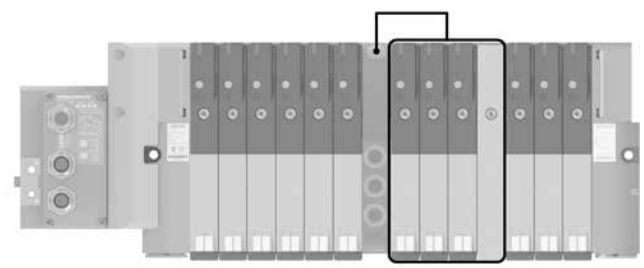
Usage examples

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.



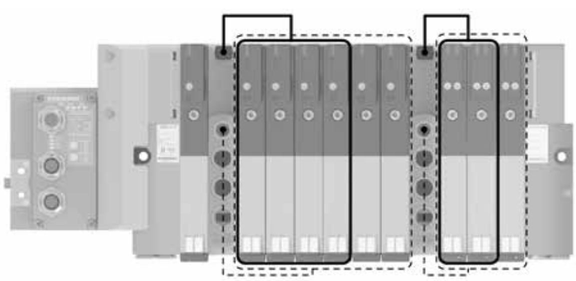
EXAMPLE 2
Manifold of 12 monostable solenoid valves on which you want to interrupt signals 7-8-9.
Assembly:
- 6 monostable solenoid valves (not interruptible because before the module)
- 1 additional power supply module
- 3 monostable solenoid valves (interruptible)
- 1 closing plate mounted on a monostable 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.

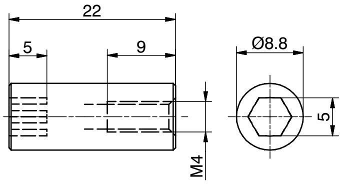


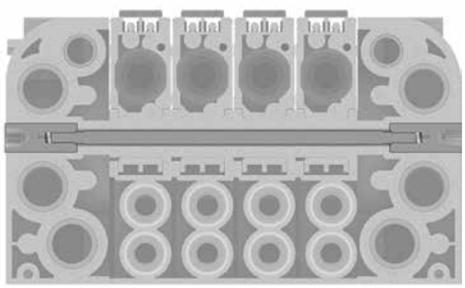
Key
S.V. electrically managed by the shut-off module: ————
S.V. pneumatically managed (12/14) by the shut-off module: - - - - - - - -

Nut

Coding: 2540.KD.00

The Kit includes 4 pieces
Weight 10 g

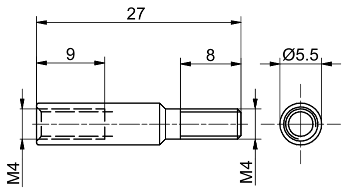


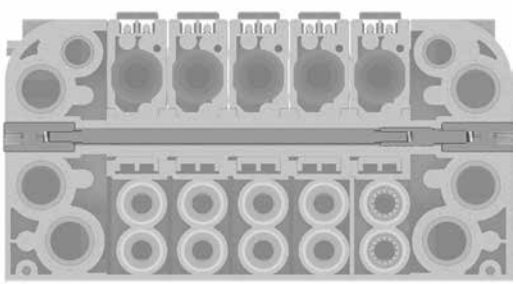


Extension (1 Position)

Coding: 2540.KP.01

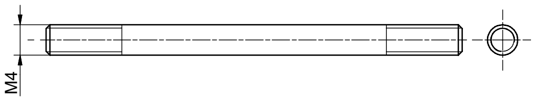
The Kit includes 2 pieces
Weight 3,5 g





Tie-rod M4

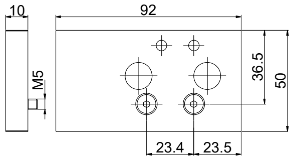
Coding: 2540.KT.Ⓟ



	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
	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

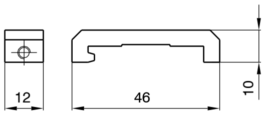
Coding: 25E0.P0



Weight 116 g

DIN rail adapter

Coding: 3100.16



Weight 12 g

Polyethylene Silencer Series SPL-R

Coding: SPLR.D

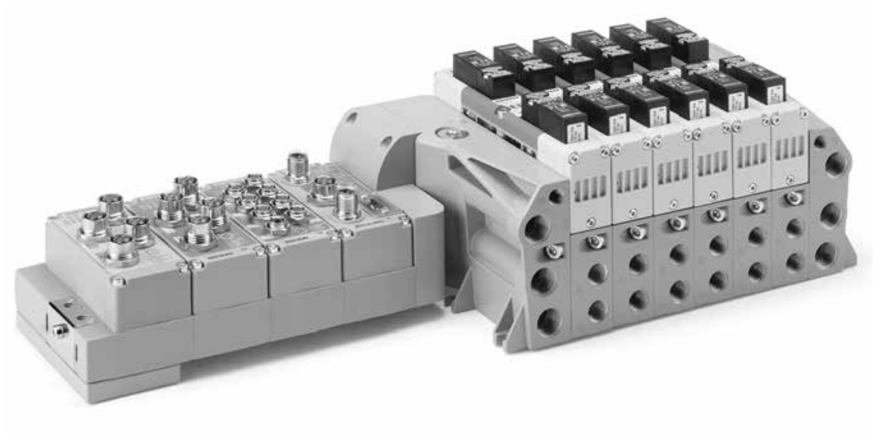
	TUBE DIAMETER
D	**8** = 8 mm
	12 = 12 mm

Diaphragm plug

Coding: 2530.17

Weight 2,3 g

Series 2700 EVO



2700 SERIES EVO SOLENOID VALVES MANIFOLD

- **Increased flexibility**
- **Digital and analogue I/O modules**
- **Manufactured according to ISO 15407-2**
- **Wide range of communication protocols**

WE SPEAK EVO

The 2700 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:

- Size 26 mm with nominal flow rate up to 1000 Nl/min
- Compliant to directive 2014/30/UE
- Monitored solenoid valves
- Vertical configuration

Construction characteristics

Body	Die-cast aluminium
Springs	Stainless Steel
Operators	Technopolymer
Pistons	Technopolymer
Spools	Aluminium

Technical characteristics

Voltage	+ 24 V DC ±10% PNP
Pilot consumption	1W - 2.3W
Valve working pressure [1]	from vacuum to 10 bar max.
Operating temperature	from -10°C to +50°C
Protection degree	IP65
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010

Rules and configuration scheme

CONFIGURATION CODE ← V27 - [ ] - TS30P - [ ] [ ] - [ ] [ ] - → [ ] [ ] - [ ]

Electronic components	
...-...	See page 'Electronic components configurator in technopolymer'

Left endplates	
TS30P	Endplate with electronic interface

Repeating numbers of the module	
_	Indicate the number of repeats of the same module

Module 1	
...-...	See page 'Single pneumatic module configurator'

Repeating numbers of the module	
_	Indicate the number of repeats of the same module

Module 2	
...-...	See page 'Single pneumatic module configurator'

Repeating numbers of the module	
_	Indicate the number of repeats of the same module

Module n	
...-...	See page 'Single pneumatic module configurator'

Right Endplate		
TD	00	Right Endplate with 5-1-3 open ports
	W	Right Endplate with 5-1-3 closed ports
	XY	Right Endplate with 1-3 closed ports
	ZX	Right Endplate with 5-1 closed ports
	ZY	Right Endplate with 5-3 closed ports
	X	Right Endplate with 1 closed port
	Y	Right Endplate with 3 closed port
	Z	Right Endplate with 5 closed port

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 is used, if a node or IO-Link interface 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.
Use bases with dedicated closed ports to interrupt ducts 1, 3 and 5.
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

Type	
P	Technopolymer

Left endplate accessory	
	Offset compensation plate
G	DIN rail fixing accessory

Multi-pin electrical connection	
MP2	Module 25 poles + 24 V DC
MP3	Module 37 poles + 24 V DC

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 - Analogue / 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 - Analogue / 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 module (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:

1) Complete module configurator

Intermediate Inlet/Exhaust module

W	U S	5-3 Common 5-3 Separated	_ W XY ZX ZY X Y Z	5-1-3 open 5-1-3 closed 1-3 closed 5-1 closed 5-3 closed 1 closed 3 closed 5 closed	_ 2 4	14-12 open 12 closed 14 closed

Monitored 3/2 Sol-Spring pilot 14 control solenoid valve

P	A E	Internal Supply External Supply	M8 M12	Proximity M8x1 Proximity M12x1	02 08	24 V DC 24 V DC 1W

Monitored redundant 5/2 Sol-Spring solenoid valve

V2S	A E	Internal Supply External Supply	M8 M12	Proximity M8x1 Proximity M12x1	02 08	24 V DC 24 V DC 1W

Solenoid valve for progressive start

EP	M8 M12	Proximity M8x1 Proximity M12x1	01 02 08	12 V DC 24 V DC 24 V DC 1W	W	5-1-3 closed	4	14 closed	- M	Standard Machinery directive

2) Modular module configorator

Base

B	M B P	Monostable Bistable Pass-through	_ W XY ZX ZY X Y Z	5-1-3 open 5-1-3 closed 1-3 closed 5-1 closed 5-3 closed 1 closed 3 closed 5 closed	_ 2 4	14-12 open 12 closed 14 closed

External supply valve

AS	11 14	External Supply External Supply with piloting 14

Shut-off valve

VL	141	1-14 Exhaust	_ K	Not lockable Lockable

Flow regulator

RF	35	Exhaust flow regulator

Solenoid valves

A B C E F G H I	S.V. 5/2 SOL-SPRING S.V. 5/2 SOL-DIFFERENTIAL S.V. 5/2 SOL-SOL S.V. 5/3 CC SOL-SOL S.V. 2x3/2 NC-NC S.V. 2x3/2 NO-NO S.V. 2x3/2 NC-NO S.V. 2x3/2 NO-NC	A E	Self Supply External Supply	12 18	24 V DC 24 V DC 1W
T00	Free valve space plug				

Monitored 5/2 Sol-Spring solenoid valve

VS	A E	Self Supply External Supply	M8 M12	Proximity M8x1 Proximity M12x1	02 08	24 V DC 24 V DC 1W

5/3 Solenoid valve with self-retention

D	1 2 3	Closed centres Open centres Pressured centres	A E	Self Supply External Supply	12 18	24 V DC 24 V DC 1W

Pressure regulator

R	C P	Compact Extended	D U	Downstream Upstream	2 4 24	Single L12 Single L14 Double L12-L14	A B C	0-2 Bar 0-4 Bar 0-8 Bar	A	With relieving	V G	RAL6032 green RAL7004 gray	_ M	Adjustable gauge Fixed gauge

Configuration example of single module:

Signal pass-through base, ports 5-1-3 open, ports 14-12 open with monitored S.V. internal supply, M12 connector, 24 V DC is identified as:

B P . V S A M 1 2 0 2

Base						
			_	5-1-3 open		
			W	5-1-3 closed		
			XY	1-3 closed		
	M	Monostable	ZX	5-1 closed	_	14-12 open
B	B	Bistable	ZY	5-3 closed	2	12 closed
	P	Pass-through	X	1 closed	4	14 closed
			Y	3 closed		
			Z	5 closed		

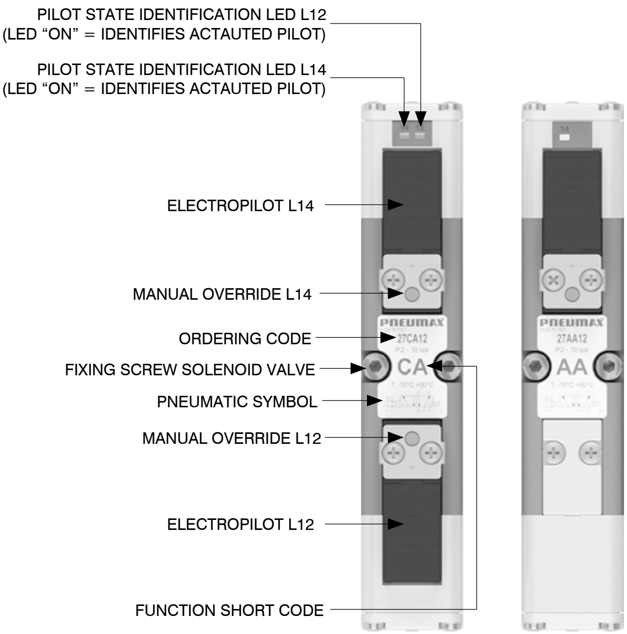
Monitored 5/2 Sol-Spring solenoid valve						
VS	A	Self Supply	M8	Proximity M8x1	02	24 V DC
	E	External Supply	M12	Proximity M12x1	08	24 V DC 1W

Configuration example of complete group:

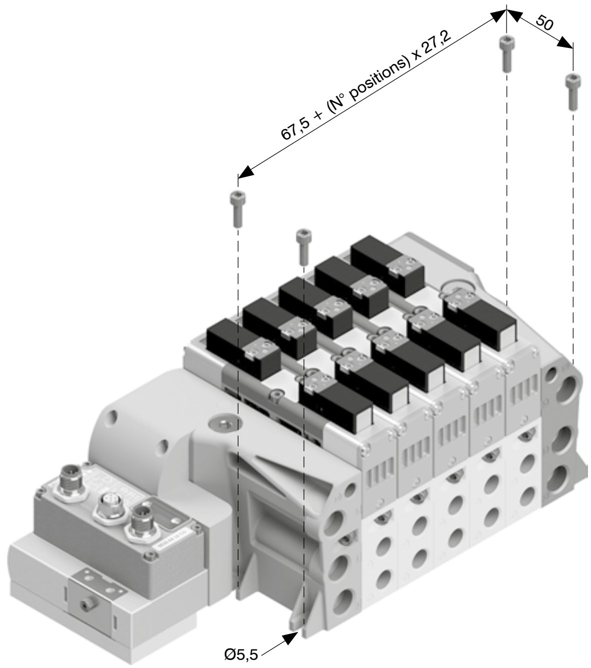
- Technopolymer PX3 serial system (P-C3-2M8-D12)
- Left endplate with interface (TS30P)
- Bistable base with S.V. 5/3 CC Sol-Sol (BB.EE12)
- Bistable base with S.V. 2X3/2 NC-NC (BB.FE12)
- Bistable base with S.V. 5/2 Sol-Sol (BB.CE12)
- Bistable base with S.V. 2X3/2 NC-NC (BB.FE12)
- N°2 bistable bases with S.V. 5/2 Sol-Sol (2BB.CE12)
- Right endplate with open ports 1 - 3 - 5 (TD00)

V27-P-C3-2M8-D12-TS30P-BB.EE12-BB.FE12-BB.CE12-BB.FE12-2BB.CE12-TD00

Solenoid valve description

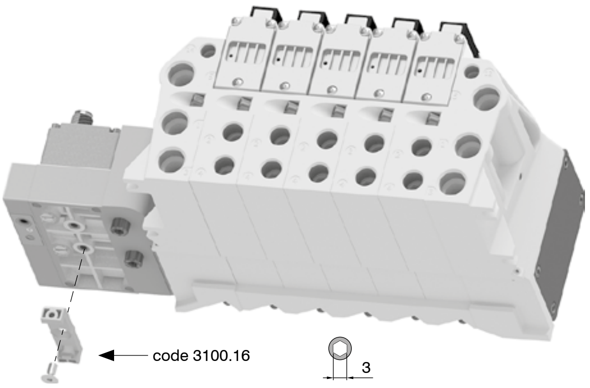


From the top



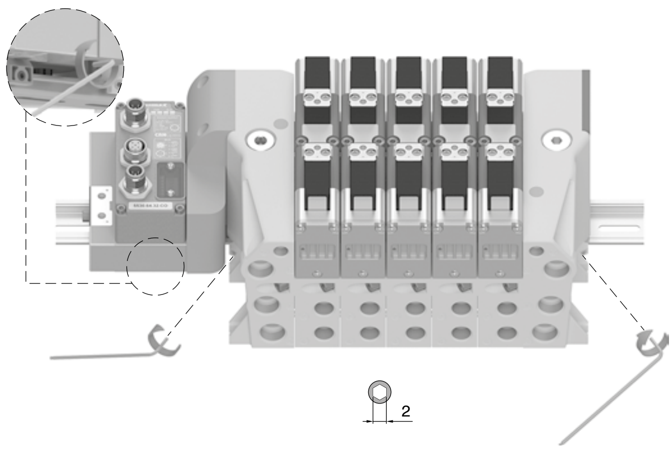
Attention: The overall dimensions shown refer to the modular (valve) sub-bases, and may differ when manifold accessories are included.

DIN rail mounting support plate

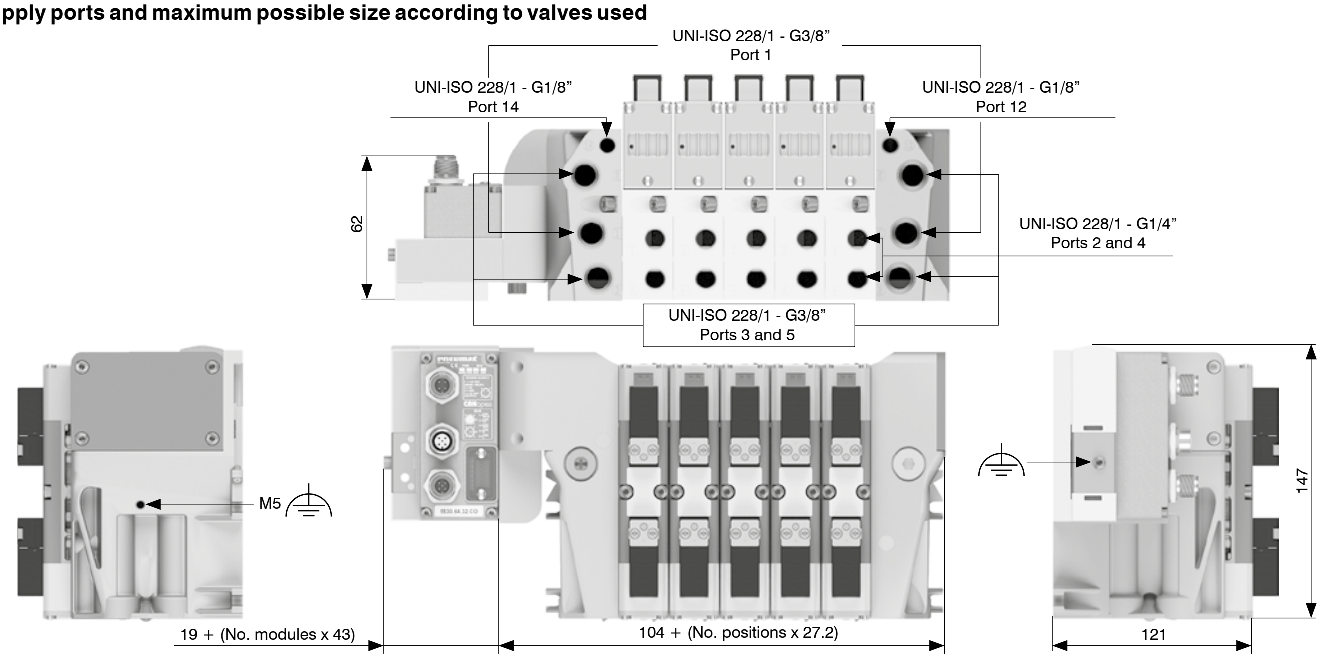


Attention: This must be included when creating the manifold configuration. Exclude the offset compensation plate.

DIN rail fixing



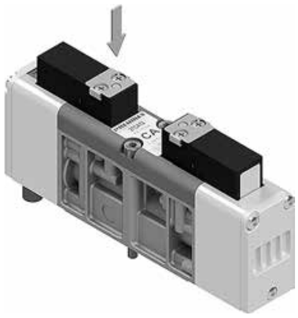
Supply ports and maximum possible size according to valves used



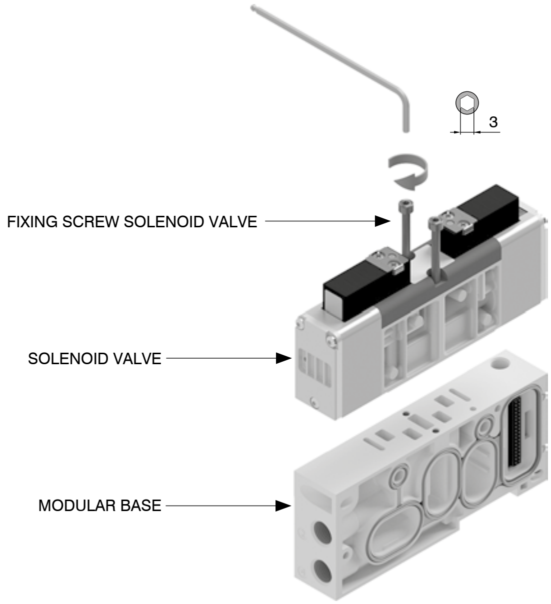
Attention: The overall dimensions shown refer to the modular (valve) sub-bases, and may differ when manifold accessories are included.

Manual override actuation

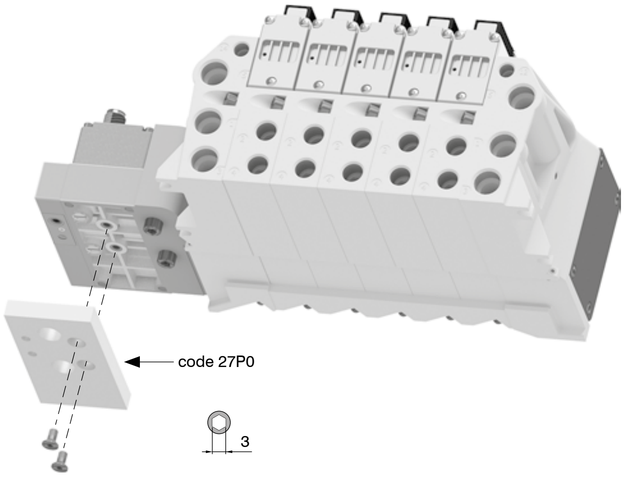
Instable function:
Push to actuate
(when released it moves back to the original position)



Solenoid valves installation

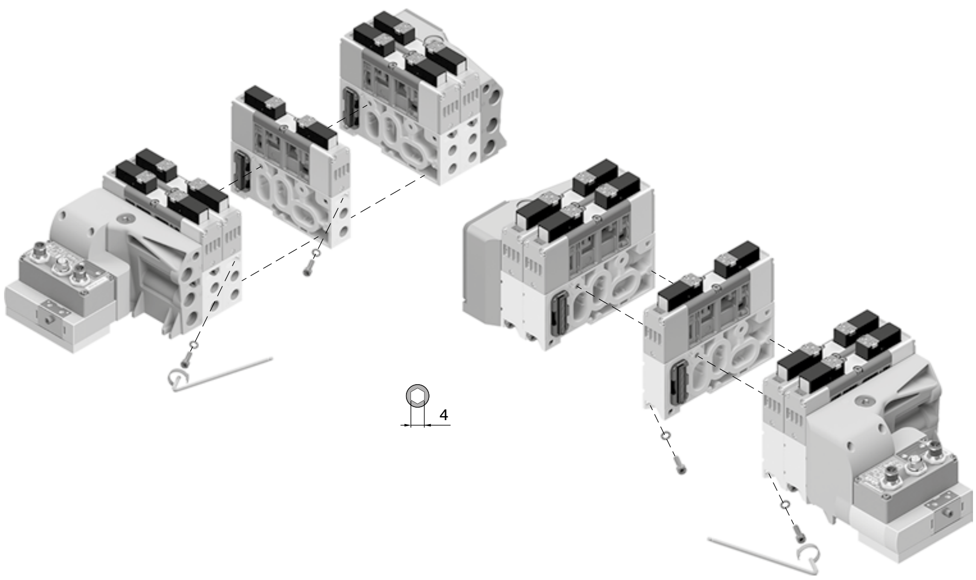


Offset compensation plate



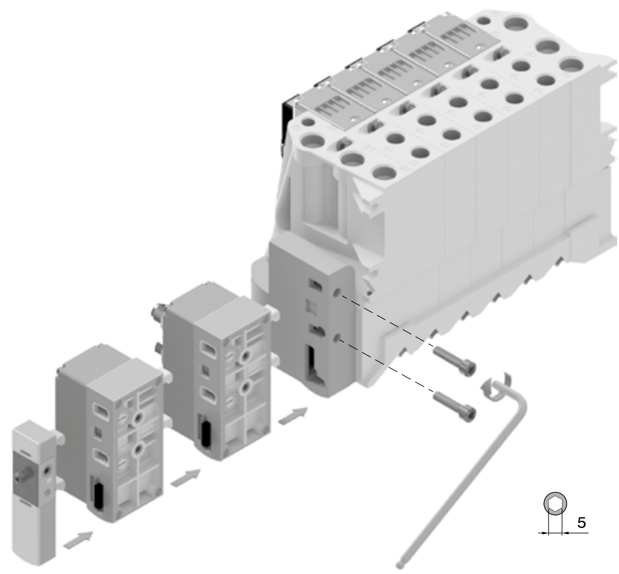
Attention: This accessory is supplied on the manifold unless otherwise stated. This is not compatible for DIN rail mounting.

Sub-base assembly

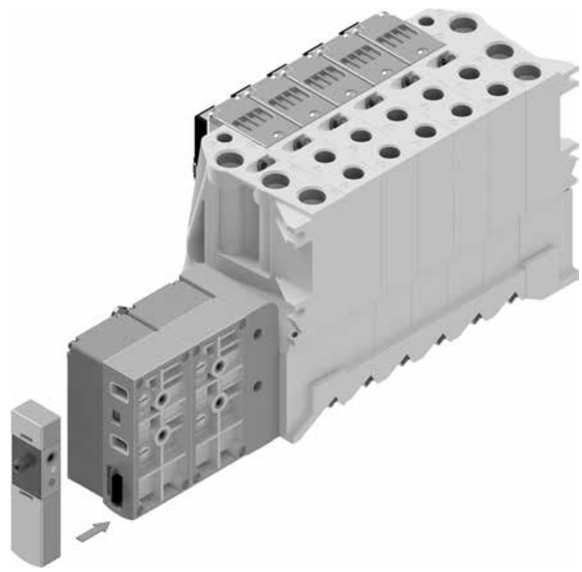


Note: Torque moment 4 Nm
Attention: Ensure the washer is mounted on the screw before tightening

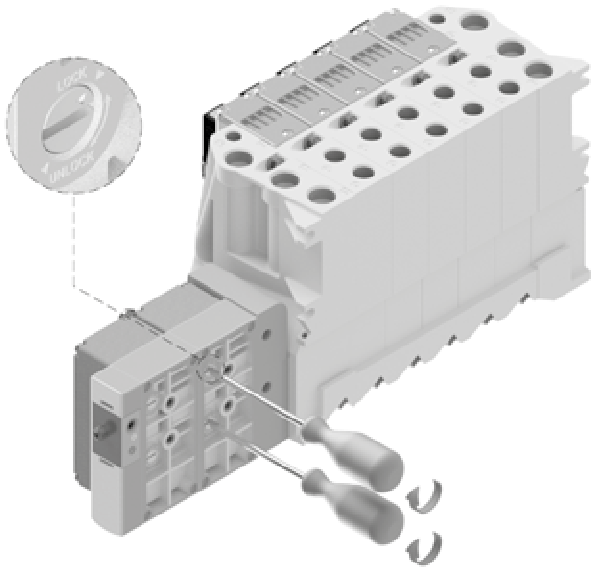
1. Assemble the desired modules and tighten the fixing screws as shown in the figure below.



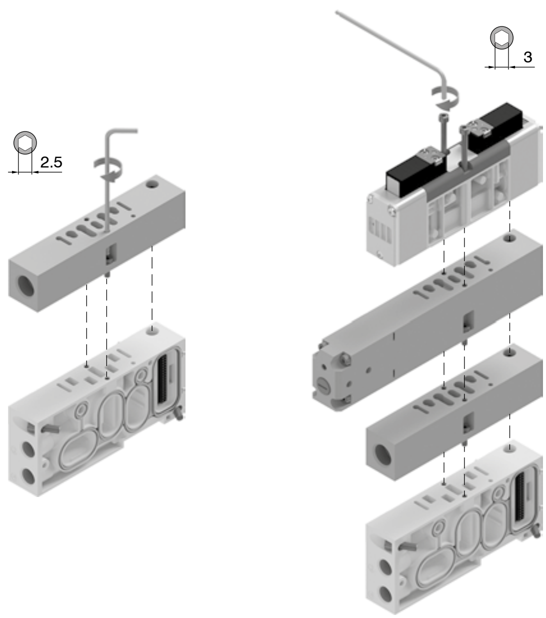
2. Complete the assembly with the 3100.KT.00 left endplate kit.



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.



Modules assembled for vertical configuration



Modules for vertical configuration are as follows:
- Single external supply module
- Flow regulator module
- Shut-off and exhaust module
- Pressure regulator

Attention: The flow rate of the solenoid valve will be reduced compared to that shown in the general catalogue

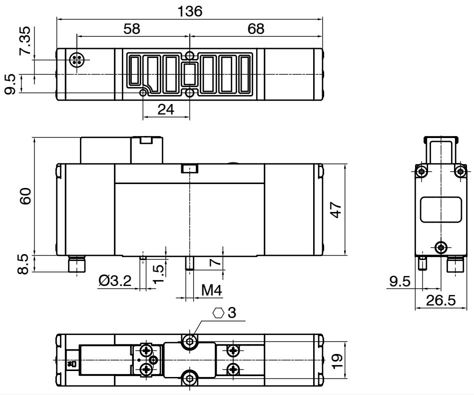
Solenoid-Spring 5/2

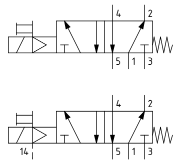
Coding: 27A(P)(T)

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Working pressure (bar)	From vacuum to 10 (external feeding version) 2 ... 10 (self feeding version)
Minimum pilot pressure (bar)	2
Temperature °C	-10 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1000
Responce time according to ISO 12238, activation time (ms)	20
Responce time according to ISO 12238, deactivation time (ms)	38

P	PILOTING	
	A = Self feeding	
	E = External feeding	
T	VOLTAGE	
	12 = 24 V DC	
	18 = 24 V DC 1 W	

Weight 309 g





The "Activations time" values, are valid only for the 24 V DC 2,3W versions

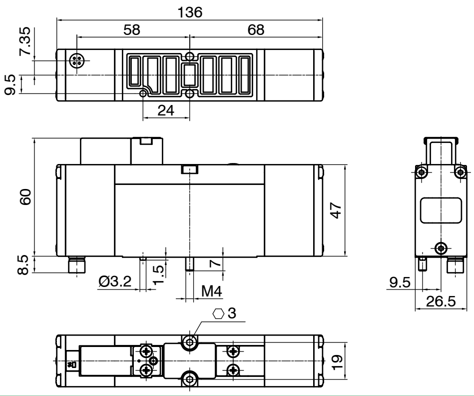
Solenoid-Differential 5/2

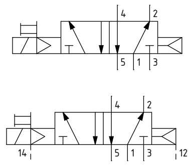
Coding: 27B(P)(T)

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Working pressure (bar)	From vacuum to 10 (external feeding version) 2 ... 10 (self feeding version)
Minimum pilot pressure (bar)	2
Temperature °C	-10 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1000
Responce time according to ISO 12238, activation time (ms)	20
Responce time according to ISO 12238, deactivation time (ms)	38

P	PILOTING	
	A = Self feeding	
	E = External feeding	
T	VOLTAGE	
	12 = 24 V DC	
	18 = 24 V DC 1 W	

Weight 274 g





The "Activations time" values, are valid only for the 24 V DC 2,3W versions

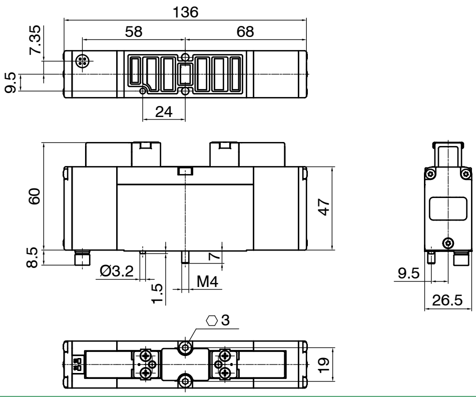
Solenoid-Solenoid 5/2

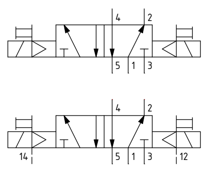
Coding: 27C(P)(T)

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Working pressure (bar)	From vacuum to 10 (external feeding version) 2 ... 10 (self feeding version)
Minimum pilot pressure (bar)	2
Temperature °C	-10 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1000
Responce time according to ISO 12238, activation time (ms)	12
Responce time according to ISO 12238, deactivation time (ms)	14

P	PILOTING	
	A = Self feeding	
	E = External feeding	
T	VOLTAGE	
	12 = 24 V DC	
	18 = 24 V DC 1 W	

Weight 309 g





The "Activations time" values, are valid only for the 24 V DC 2,3W versions

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

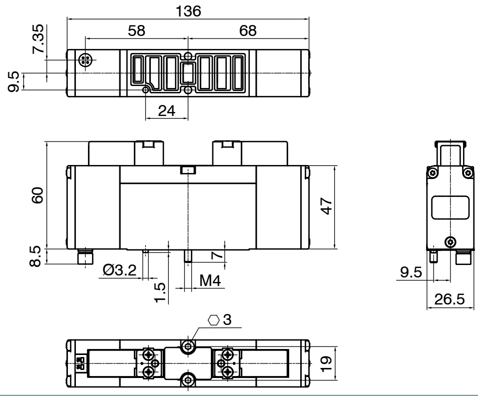
Solenoid-Solenoid 5/3

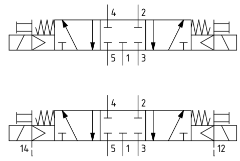
Coding: 27EPT

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Working pressure (bar)	From vacuum to 10 (external feeding version) 3 ... 10 (self feeding version)
Minimum pilot pressure (bar)	3
Temperature °C	-10 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	660
Responce time according to ISO 12238, activation time (ms)	12
Responce time according to ISO 12238, deactivation time (ms)	60

P	PILOTING
	A = Self feeding
	E = External feeding
T	VOLTAGE
	12 = 24 V DC
	18 = 24 V DC 1 W

Weight 309 g





The "Activations time" values, are valid only for the 24 V DC 2,3W versions

Solenoid-Solenoid 5/3 with auto-retaining function

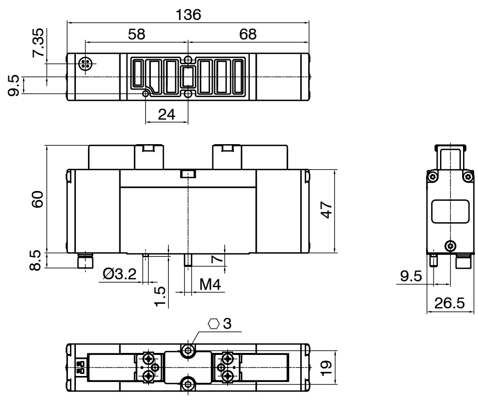
Coding: 27DFPT

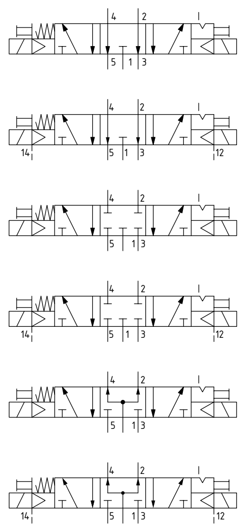
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Working pressure (bar)	From vacuum to 10 (external feeding version) 3 ... 10 (self feeding version)
Minimum pilot pressure (bar)	3
Temperature °C	-10 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Responce time according to ISO 12238, activation time (ms)	15
Responce time according to ISO 12238, deactivation time (ms)	80

F	FUNCTION
	1 = S.V. 5/3 C.C.
	2 = S.V. 5/3 O.C.
	3 = S.V. 5/3 P.C.
P	PILOTING
	A = Self feeding
	E = External feeding
T	VOLTAGE
	12 = 24 V DC
	18 = 24 V DC 1 W

Weight 309 g

- Maintains the valve state without an electric or pneumatic signal after the activation of L14 (self-retention).
- Valve state changes by activating L12.
- Mechanical spring return.





The "Activations time" values, are valid only for the 24 V DC 2,3W versions

1 AIR DISTRIBUTION

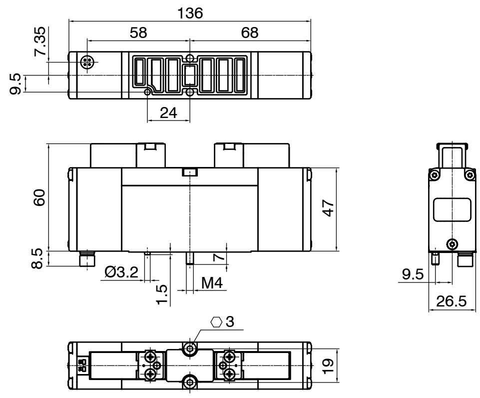
Solenoid-Spring 2x3/2

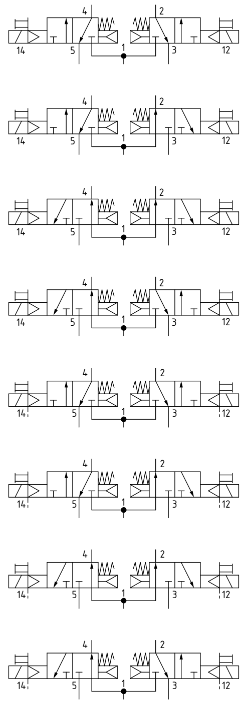
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Working pressure (bar)	From vacuum to 10 (external feeding version) 3,5 ... 10 (self feeding version)
Minimum pilot pressure (bar)	≥2+(0.3 x Inlet pressure)
Temperature °C	-10 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	550
Responce time according to ISO 12238, activation time (ms)	12 (external feeding version) 15 (self feeding version)
Responce time according to ISO 12238, deactivation time (ms)	60 (external feeding version) 15 (self feeding version)

Coding: 27FPT

F	FUNCTION **F** = NC-NC (5/3 Open centres) **G** = NO-NO (5/3 Pressured centres) **H** = NC-NO **I** = NO-NC
P	PILOTING **A** = Self feeding **E** = External feeding
T	VOLTAGE **12** = 24 V DC **18** = 24 V DC 1 W

Weight 309 g





The "Activations time" values, are valid only for the 24 V DC 2,3W versions
Example: If inlet pressure is set at 5 bar then pilot pressure must be at least
Pp=2+(0,3*5)=3,5 bar

Solenoid-Spring monitored (VS)

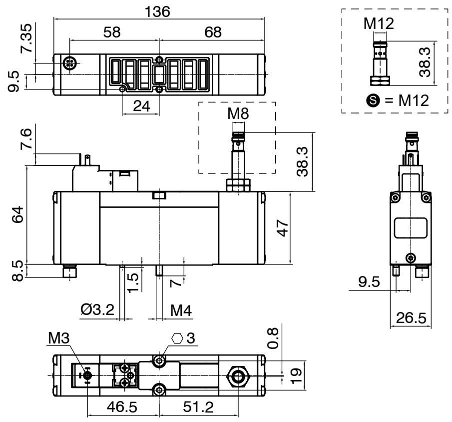
Coding: 27VSPST

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Responce time according to ISO 12238, deactivation time (ms)	70
Responce time according to ISO 12238, activation time (ms)	15
Flow rate from 1 to 2 at 6 bar with Δp=1 (Nl/min)	1000
Flow rate from 1 to 4 at 6 bar with Δp=1 (Nl/min)	1000
Flow rate from 2 to 3 at 6 bar with Δp=1 (Nl/min)	1000
Flow rate from 4 to 5 at 6 bar with Δp=1 (Nl/min)	1000
Flow rate from 2 to 3 at 6 bar with free exhaust (Nl/min)	1700
Flow rate from 4 to 5 at 6 bar with free exhaust (Nl/min)	1700
Temperature °C	-10 ... +50
Working pressure (bar)	From vacuum to 10 (external feeding version) 2 ... 10 (self feeding version)
Minimum pilot pressure (bar)	2
Function	5/2 N.C. Monostable
Noise level (dB)	75

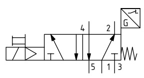
P	PILOTING
	A = Self feeding
	E = External feeding
S	SENSOR
	M8 = M8x1 Proximity Sensor
	M12 = M12x1 Proximity Sensor
T	VOLTAGE
	02 = 24 V DC
	08 = 24 V DC 1 W

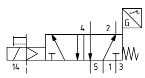
Weight 312 g

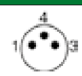
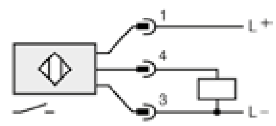
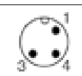
-Monostable with mechanical spring return and proximity sensor
-Safety component according to annex V of 2006/42/EC directive
-Diagnostic system that monitors the state of the valve:
Sensor ON: Valve at rest
Sensor OFF: Valve activated



The "Activations time" values, are valid only for the 24 V DC 2,3W versions
Note: Overall noise level depends on the final application of the device
Note: The noise level indicated on the table is obtained without using silencers





Sensor	Out	Pin-out	Wiring diagram
M8 Male 3P type A	N.O.		
M12 Male 3P type A	N.O.		

Pin 1= Brown - Pin 4= Black - Pin 3= Blue

Electrical characteristics: Electropilot	
Electropilot	Series 300 Size 15 mm
Electrical connection	Earth Faston / Series 300 connectors
Solenoid coils features	24 V DC 2.3 W 24 V DC 1 W
Supply voltage tolerance	-5% ... 10%
Manual override Integrated	Yes
Protection degree	IP65 (with mounted connector)

Note: Refer to the Pneumax general catalogue for detailed information regarding the electropilot

Electrical characteristics: Proximity sensor		
Type	Single channel	Single channel
Thread	M8X1	M12X1
Electrical design	PNP	PNP
Output function	N.O.	N.O.
Operating voltage	10 ... 30 VDC	10 ... 30 VDC
Current consumption (mA)	< 20	< 20
Isolating class	III	III
Display	Switching status 4x90° Yellow LEDs	Switching status 4x90° Yellow LEDs
Protection degree	IP65 (with mounted connector)	IP65 (with mounted connector)

Note: Manufacturer and model of proximity sensors could be changed at the discretion of Pneumax S.p.A.

Safety characteristics		
Standards compliancies	EN ISO 13849-1:2015	
	EN ISO 13849-2:2012	
Performed Safety Function	Interruption of supply and discharge of a pneumatic circuit connected to port 4	
Sensor feedback	Valve at REST	ON
	Valve ACTIVATED	OFF
MTTFd Sensor	Single Channel M8	1088 years
	Single Channel M12	932 years
Performance Level (PL)	Up to PL=d	
Category	Up to 2	
B10d	630.000 cycles	

Note B10d:
General Procedures for assessing pneumatic component reliability by testing performed in accordance with ISO 19973-1, Pneumatic fluid power - Assessment of component reliability by testing - Part 1: General Procedures.
Reliability and lifetime of pneumatic valves assessed in accordance with ISO 19973-2: Pneumatic fluid power – Assessment of component reliability by testing – Part 2: Directional control valves.

Activities regarding the identification of the safety function, the estimation of the required reliability level (e.g. estimation of the PLr according to EN ISO 13849-1), the design and the production of the related safety circuit, its verification and validation are responsibilities of the operator who uses the device in its final application.
The choice of the category and the satisfaction of its requirements according to EN ISO 13849-1 is in charge of the end-user who integrates the device in its final application while considering the final configuration of the safety circuit.
The diagnostic coverage value guaranteed by the sensor must be calculated by the end-user in function of the final configuration of the safety circuit (e.g. in function of the PLC for safety design which controls the solenoid valve and acquires the state of the sensor).
The estimation of the diagnostic coverage must satisfy the requirements of EN ISO 13849-1.
According to EN ISO 13849-1, T10D value must be calculated by the enduser in function of the annual operation number in which the device will be subjected to; in any case, the device must be substituted every 20 years.

Solenoid-Spring monitored redundant (V2S)

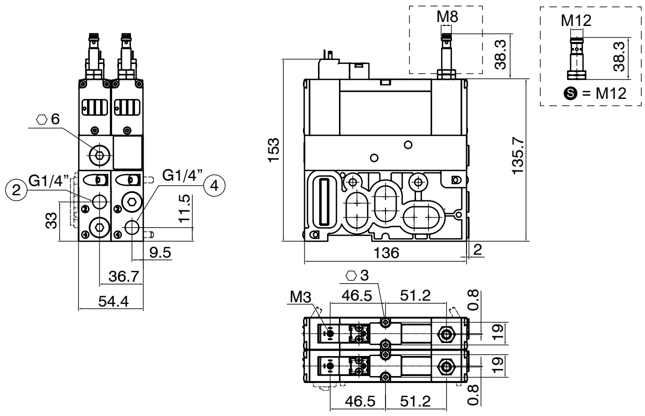
Coding: 27V2S P S T

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Responce time according to ISO 12238, deactivation time (ms)	70
Responce time according to ISO 12238, activation time (ms)	25
Flow rate from 1 to 2 at 6 bar with Δp=1 (Nl/min)	1000
Flow rate from 1 to 4 at 6 bar with Δp=1 (Nl/min)	500
Flow rate from 2 to 3 at 6 bar with Δp=1 (Nl/min)	500
Flow rate from 4 to 5 at 6 bar with Δp=1 (Nl/min)	1000
Flow rate from 2 to 3 at 6 bar with free exhaust (Nl/900)	900
Flow rate from 4 to 5 at 6 bar with free exhaust (Nl/min)	1700
Temperature °C	-10 ... +50
Working pressure (bar)	From vacuum to 10 (external feeding version) 2 ... 10 (self feeding version)
Minimum pilot pressure (bar)	2
Function	5/2 N.C. Monostable
Noise level (dB)	75

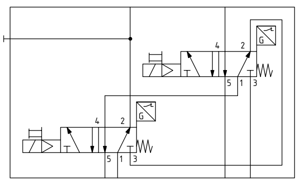
P	PILOTING
	A = Self feeding
	E = External feeding
S	SENSOR
	M8 = M8x1 Proximity Sensor
	M12 = M12x1 Proximity Sensor
T	VOLTAGE
	02 = 24 V DC
	08 = 24 V DC 1 W

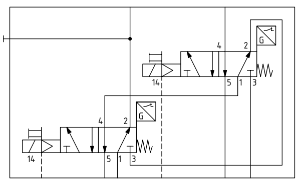
Weight 1786 g

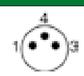
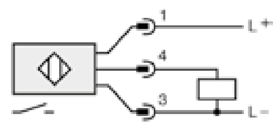
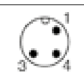
-Double monostable with mechanical spring return and proximity sensor
-Double redundant channel which guarantees that a pneumatic circuit is safely exhausted in case of failure of one of the valves
-Safety component according to annex V of 2006/42/EC directive
-Diagnostic system that monitors the state of the valve:
Sensor ON: Valve at rest
Sensor OFF: Valve activated



The "Activations time" values, are valid only for the 24 V DC 2,3W versions
Note: Overall noise level depends on the final application of the device
Note: The noise level indicated on the table is obtained without using silencers





Sensor	Out	Pin-out	Wiring diagram
M8 Male 3P type A	N.O.		
M12 Male 3P type A	N.O.		

Pin 1= Brown - Pin 4= Black - Pin 3= Blue

Electrical characteristics: Electropilot	
Electropilot	Series 300 Size 15 mm
Electrical connection	Earth Faston / Series 300 connectors
Solenoid coils features	24 V DC 2.3 W 24 V DC 1 W
Supply voltage tolerance	-5% ... 10%
Manual override Integrated	Yes
Protection degree	IP65 (with mounted connector)

Note: Refer to the Pneumax general catalogue for detailed information regarding the electropilot

Electrical characteristics: Proximity sensor		
Type	Single channel	Single channel
Thread	M8X1	M12X1
Electrical design	PNP	PNP
Output function	N.O.	N.O.
Operating voltage	10 ... 30 VDC	10 ... 30 VDC
Current consumption (mA)	< 20	< 20
Isolating class	III	III
Display	Switching status 4x90° Yellow LEDs	Switching status 4x90° Yellow LEDs
Protection degree	IP65 (with mounted connector)	IP65 (with mounted connector)

Note: Manufacturer and model of proximity sensors could be changed at the discretion of Pneumax S.p.A.

Safety characteristics		
Standards compliancies	EN ISO 13849-1:2015	
	EN ISO 13849-2:2012	
Performed Safety Function	Interruption of supply and discharge of a pneumatic circuit connected to port 4	
Sensor feedback	Valve at REST	ON
	Valve ACTIVATED	OFF
MTTFd Sensor	Single Channel M8	1088 years
	Single Channel M12	932 years
Performance Level (PL)	Up to PL=e	
Category	Up to 4	
B10d	630.000 cicli (referred to a single valve)	

Note B10d:
General Procedures for assessing pneumatic component reliability by testing performed in accordance with ISO 19973-1, Pneumatic fluid power - Assessment of component reliability by testing - Part 1: General Procedures.
Reliability and lifetime of pneumatic valves assessed in accordance with ISO 19973-2: Pneumatic fluid power – Assessment of component reliability by testing – Part 2: Directional control valves.

Activities regarding the identification of the safety function, the estimation of the required reliability level (e.g. estimation of the PLr according to EN ISO 13849-1), the design and the production of the related safety circuit, its verification and validation are responsibilities of the operator who uses the device in its final application.
The choice of the category and the satisfaction of its requirements according to EN ISO 13849-1 is in charge of the end-user who integrates the device in its final application while considering the final configuration of the safety circuit.
The diagnostic coverage value guaranteed by the sensor must be calculated by the end-user in function of the final configuration of the safety circuit (e.g. in function of the PLC for safety design which controls the solenoid valve and acquires the state of the sensor).
The estimation of the diagnostic coverage must satisfy the requirements of EN ISO 13849-1.
According to EN ISO 13849-1, T10D value must be calculated by the enduser in function of the annual operation number in which the device will be subjected to; in any case, the device must be substituted every 20 years.

Solenoid-Spring monitored for pilot control 14 (P)

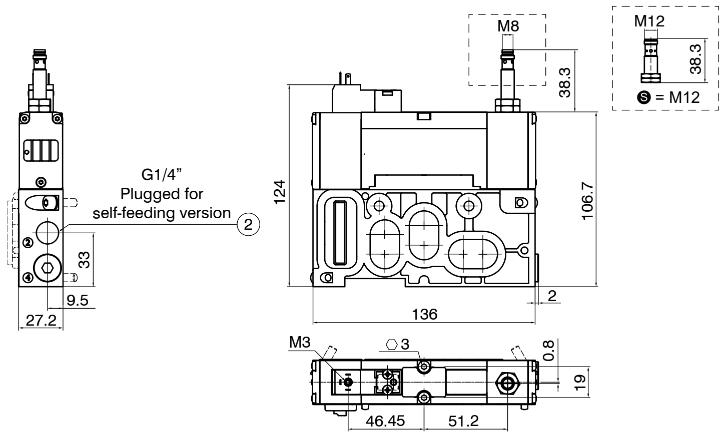
Coding: 27PⓅⓈⓉ

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Responce time according to ISO 12238, deactivation time (ms)	70
Responce time according to ISO 12238, activation time (ms)	15
Flow rate from 1 to 2(14) at 6 bar with Δp=1 (Nl/min)	250
Flow rate from 2(14) to 3(5) at 6 bar with Δp=1 (Nl/min)	250
Flow rate from 2(14) to 3(5) at 6 bar with free exhaust (Nl/min)	500
Temperature °C	-10 ... +50
Working pressure (bar)	2 ... 10 (external feeding version) 2 ... 10 (self feeding version)
Minimum pilot pressure (bar)	2
Function	3/2 N.C. Monostable

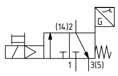
Ⓟ	PILOTING
	A = Self feeding
	E = External feeding
Ⓢ	SENSOR
	M8 = M8x1 Proximity Sensor
	M12 = M12x1 Proximity Sensor
Ⓣ	VOLTAGE
	02 = 24 V DC
	08 = 24 V DC 1 W

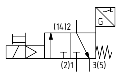
Weight 615 g

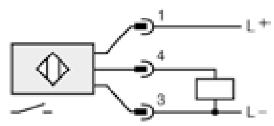
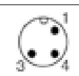
-Monostable with mechanical spring return and proximity sensor
-Control of downstream pressure in pilot channel 14
-Safety component according to annex V of 2006/42/EC directive
-Diagnostic system that monitors the state of the valve:
Sensor ON: Valve at rest
Sensor OFF: Valve activated



The "Activations time" values, are valid only for the 24 V DC 2,3W versions
Note: Overall noise level depends on the final application of the device





Sensor	Out	Pin-out	Wiring diagram
M8 Male 3P type A	N.O.		
M12 Male 3P type A	N.O.		

Pin 1= Brown - Pin 4= Black - Pin 3= Blue

Electrical characteristics: Electropilot	
Electropilot	Series 300 Size 15 mm
Electrical connection	Earth Faston / Series 300 connectors
Solenoid coils features	24 V DC 2.3 W 24 V DC 1 W
Supply voltage tolerance	-5% ... 10%
Manual override Integrated	Yes
Protection degree	IP65 (with mounted connector)

Note: Refer to the Pneumax general catalogue for detailed information regarding the electropilot

Electrical characteristics: Proximity sensor		
Type	Single channel	Single channel
Thread	M8X1	M12X1
Electrical design	PNP	PNP
Output function	N.O.	N.O.
Operating voltage	10 ... 30 VDC	10 ... 30 VDC
Current consumption (mA)	< 20	< 20
Isolating class	III	III
Display	Switching status 4x90° Yellow LEDs	Switching status 4x90° Yellow LEDs
Protection degree	IP65 (with mounted connector)	IP65 (with mounted connector)

Note: Manufacturer and model of proximity sensors could be changed at the discretion of Pneumax S.p.A.

Safety characteristics		
Standards compliancies	EN ISO 13849-1:2015	
	EN ISO 13849-2:2012	
Performed Safety Function	Interruption of supply and exhaust of a pneumatic channel to port 2 (14)	
Sensor feedback	Valve at REST	ON
	Valve ACTIVATED	OFF
MTTFd Sensor	Single Channel M8	1088 years
	Single Channel M12	932 years
Performance Level (PL)	Up to PL=d	
Category	Up to 2	
B10d	1.100.000 cycles	

Note B10d:
General Procedures for assessing pneumatic component reliability by testing performed in accordance with ISO 19973-1, Pneumatic fluid power - Assessment of component reliability by testing - Part 1: General Procedures.
Reliability and lifetime of pneumatic valves assessed in accordance with ISO 19973-2: Pneumatic fluid power – Assessment of component reliability by testing – Part 2: Directional control valves.

Activities regarding the identification of the safety function, the estimation of the required reliability level (e.g. estimation of the PLr according to EN ISO 13849-1), the design and the production of the related safety circuit, its verification and validation are responsibilities of the operator who uses the device in its final application.
The choice of the category and the satisfaction of its requirements according to EN ISO 13849-1 is in charge of the end-user who integrates the device in its final application while considering the final configuration of the safety circuit.
The diagnostic coverage value guaranteed by the sensor must be calculated by the end-user in function of the final configuration of the safety circuit (e.g. in function of the PLC for safety design which controls the solenoid valve and acquires the state of the sensor).
The estimation of the diagnostic coverage must satisfy the requirements of EN ISO 13849-1.
According to EN ISO 13849-1, T10D value must be calculated by the enduser in function of the annual operation number in which the device will be subjected to; in any case, the device must be substituted every 20 years.

Solenoid valve for progressive start (EP)

Coding: 27EPⓈⓉⒸⓅⓋ

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Responce time according to ISO 12238, deactivation time (ms)	70
Responce time according to ISO 12238, activation time (ms)	15
Flow rate from 1 to 2(1) at 6 bar with Δp=1 (Nl/min)	2200
Flow rate from 2(1) to 3 at 6 bar with Δp=1 (Nl/min)	2000
Flow rate from 2(1) to 3 at 6 bar with free exhaust (Nl/min)	4000
Temperature °C	-10 ... +50
Preset switchover pressure (bar)	~ 4
Working pressure (bar)	2 ... 10
Function	5/2 N.C. Monostable
Noise level (dB)	75

Ⓢ	SENSOR	
	M8 = M8x1 Proximity Sensor	
	M12 = M12x1 Proximity Sensor	
Ⓣ	VOLTAGE	
	02 = 24 V DC	
	08 = 24 V DC 1 W	
Ⓒ	SUPPLY AND EXHAUST PORTS	
	W = Ports 5, 1 and 3 closed	
Ⓟ	PILOT PORTS	
	4 = Port 14 closed	
Ⓥ	VERSION	
	= Standard	
	M = Machinery directive	

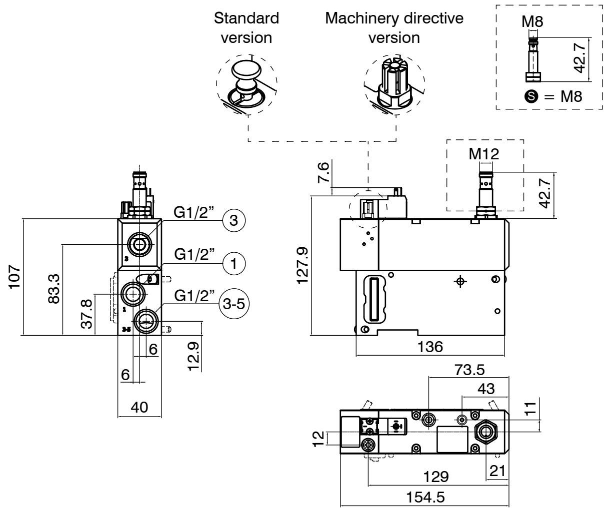
-It allow slow and gradual increase in pressure to the supply port and rapid exhaust
-Available version as a safety component according to annex V of 2006/42/EC directive
-Pressure zone exhaust ports 3 and 5 available
-Diagnostic system that monitors the state of the valve:
Sensor ON: Valve activated
Sensor OFF: Valve at rest

Weight 1360 g

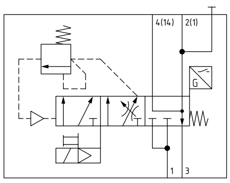
27EPⓈⓉⒸⓅ

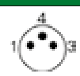
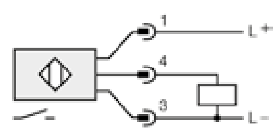
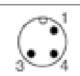
Weight 1360 g

27EPⓈⓉⒸⓅM



The "Activations time" values, are valid only for the 24 V DC 2,3W versions
Note: Overall noise level depends on the final application of the device
Note: The noise level indicated on the table is obtained without using silencers



Sensor	Out	Pin-out	Wiring diagram
M8 Male 3P type A	N.O.		
M12 Male 3P type A	N.O.		

Pin 1= Brown - Pin 4= Black - Pin 3= Blue

Electrical characteristics: Electropilot	
Electropilot	Series 300 Size 15 mm
Electrical connection	Earth Faston / Series 300 connectors
Solenoid coils features	24 V DC 2.3 W 24 V DC 1 W
Supply voltage tolerance	-5% ... 10%
Manual override Integrated	No (separated from the electropilot)
Protection degree	IP65 (with mounted connector)

Note: Refer to the Pneumax general catalogue for detailed information regarding the electropilot

Electrical characteristics: Proximity sensor		
Type	Single channel	Single channel
Thread	M8X1	M12X1
Electrical design	PNP	PNP
Output function	N.O.	N.O.
Operating voltage	10 ... 30 VDC	10 ... 30 VDC
Current consumption (mA)	< 20	< 20
Isolating class	III	III
Display	Switching status 4x90° Yellow LEDs	Switching status 4x90° Yellow LEDs
Protection degree	IP65 (with mounted connector)	IP65 (with mounted connector)

Note: Manufacturer and model of proximity sensors could be changed at the discretion of Pneumax S.p.A.

Safety characteristics		
Standards compliancies	EN ISO 13849-1:2015	
	EN ISO 13849-2:2012	
Performed Safety Function	Interruption of supply and exhaust of pneumatic channels connected to port 2 (1) and port 4 (14)	
Sensor feedback	Valve at REST	OFF
	Valve ACTIVATED	ON
MTTFd Sensor	Single Channel M8	1088 years
	Single Channel M12	932 years
Performance Level (PL)	Up to PL=d	
Category	Up to 2	
B10d	2.000.000 cycles	

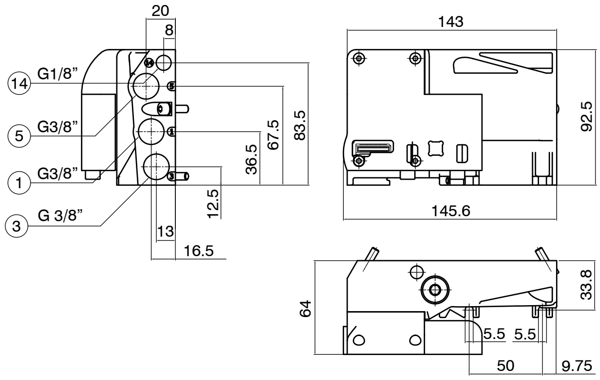
Note B10d:
General Procedures for assessing pneumatic component reliability by testing performed in accordance with ISO 19973-1, Pneumatic fluid power - Assessment of component reliability by testing - Part 1: General Procedures.
Reliability and lifetime of pneumatic valves assessed in accordance with ISO 19973-2: Pneumatic fluid power – Assessment of component reliability by testing – Part 2: Directional control valves.

Activities regarding the identification of the safety function, the estimation of the required reliability level (e.g. estimation of the PLr according to EN ISO 13849-1), the design and the production of the related safety circuit, its verification and validation are responsibilities of the operator who uses the device in its final application.
The choice of the category and the satisfaction of its requirements according to EN ISO 13849-1 is in charge of the end-user who integrates the device in its final application while considering the final configuration of the safety circuit.
The diagnostic coverage value guaranteed by the sensor must be calculated by the end-user in function of the final configuration of the safety circuit (e.g. in function of the PLC for safety design which controls the solenoid valve and acquires the state of the sensor).
The estimation of the diagnostic coverage must satisfy the requirements of EN ISO 13849-1.
According to EN ISO 13849-1, T10D value must be calculated by the enduser in function of the annual operation number in which the device will be subjected to; in any case, the device must be substituted every 20 years.

Left Endplate

Coding: 27TS30P

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50
Working pressure (bar)	From vacuum to 10
Pilot pressure port 14 (bar)	3 ... 7



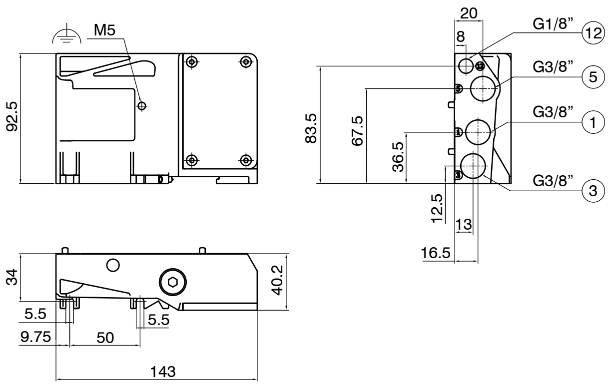
Weight 815 g

Right Endplate

Coding: 27TDⒸ

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50
Working pressure (bar)	From vacuum to 10
Pilot pressure port 12 (bar)	3 ... 7

Ⓒ	SUPPLY AND EXHAUST PORTS
	00 = Ports 5, 1 and 3 open
	W = Ports 5, 1 and 3 closed
	XY = Ports 1-3 closed
	ZX = Ports 5-1 closed
	ZY = Ports 5-3 closed
	X = Port 1 closed
	Y = Port 3 closed
	Z = Port 5 closed



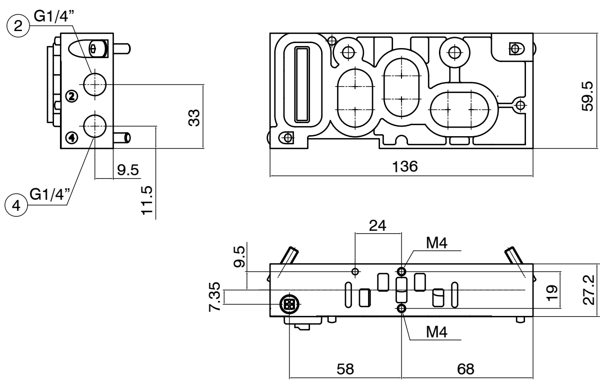
Weight 560 g

Modular base

Coding: 27BⓋⒸⓅ

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50
Working pressure (bar)	3 ... 10

Ⓥ	VERSION
	M = Monostable
	B = Bistable
	P = Pass-through signal
Ⓒ	SUPPLY AND EXHAUST PORTS
	= Ports 5, 1 and 3 open
	W = Ports 5, 1 and 3 closed
	XY = Ports 1-3 closed
	ZX = Ports 5-1 closed
	ZY = Ports 5-3 closed
	X = Port 1 closed
	Y = Port 3 closed
	Z = Port 5 closed
Ⓟ	PILOT PORTS
	= Ports 14-12 open
	4 = Port 14 closed
	2 = Port 12 closed



Weight 298 g

1

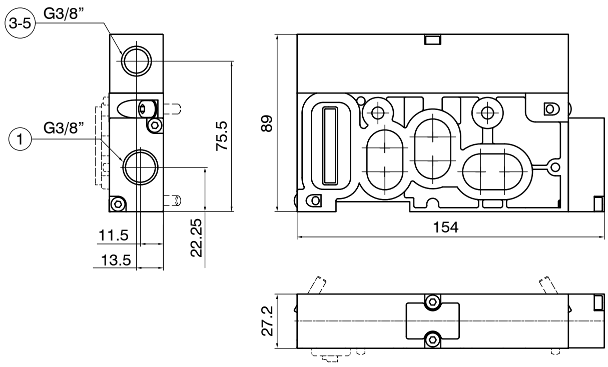
AIR DISTRIBUTION

Intermediate Inlet/Exhaust module

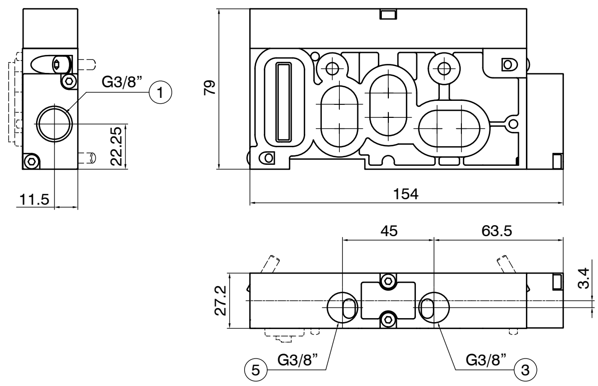
Coding: 27WⓋⒸⓅ

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50
Working pressure (bar)	From vacuum to 10

Ⓥ	VERSION
	U = Conveyed exhausts
	S = Separated exhausts
Ⓒ	SUPPLY AND EXHAUST PORTS
	= Ports 5, 1 and 3 open
	W = Ports 5, 1 and 3 closed
	XY = Ports 1-3 closed
	ZX = Ports 5-1 closed
	ZY = Ports 5-3 closed
	X = Port 1 closed
	Y = Port 3 closed
	Z = Port 5 closed
Ⓟ	PILOT PORTS
	= Ports 14-12 open
	4 = Port 14 closed
	2 = Port 12 closed



Weight 606 g

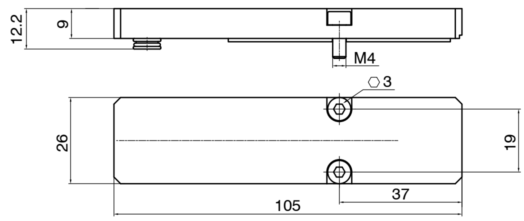


Weight 524 g

Free valve space plug

Coding: 27T00

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50
Working pressure (bar)	From vacuum to 10
Pilot pressure port 14 (bar)	3 ... 7



Weight 70 g

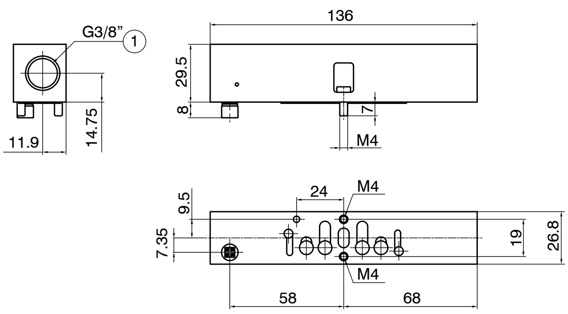
Single external power supply module

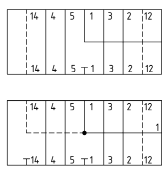
Coding: 27ASⓋ

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50
Working pressure (bar)	2 ... 10 (version 14) From vacuum to 10 (version 11)

Ⓥ	VERSION
	11 = External supply of port 1
	14 = External supply of ports 1 and 14

Weight 246 g





-Suitable module for vertical configuration
-It allows to externally supply a single valve with pressure different from the manifold.

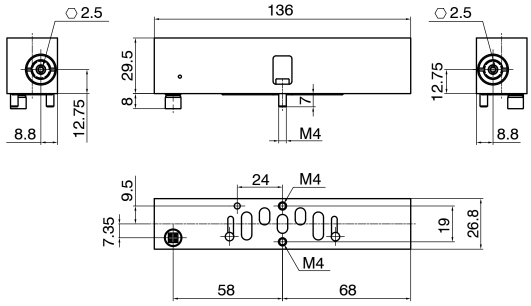
Flow regulator module

Coding: 27RFV

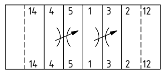
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50

V	VERSION
	35 = Exhaust flow regulator

Weight 283 g



-Suitable module for vertical configuration
-It allows the flow regulation of ports 3 and 5
-Regualtion through two needles independent of each other
-It is designed to control the speed of an actuator

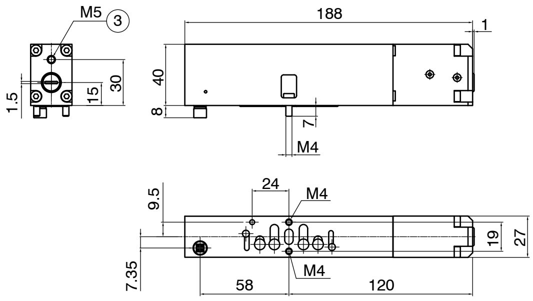


Shut-off and exhaust module

Coding: 27VLVT

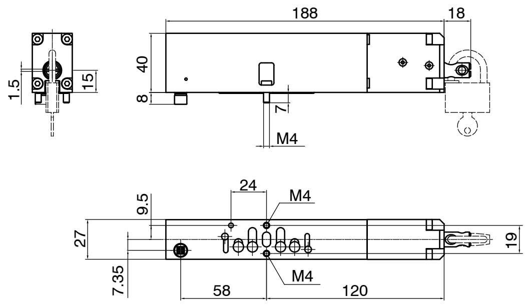
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50

V	VERSION
	141 = Shut-off and exhaust of ports 1-14
T	TYPE
	= Non lockable
	K = Lockable



Weight 504 g

27VLV



Weight 550 g

27VLVK

-Suitable module for vertical configuration
-It allows you to shut-off and exhaust the supply port 1 and pilot port 14 or other modules mounted on it

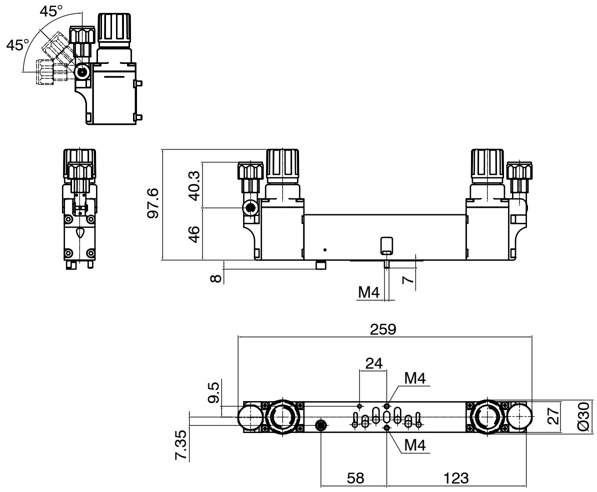
Pressure regulator (compact version)

Coding: 27RC R L G O C

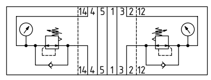
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50
Working pressure (bar)	0,5 ... 10

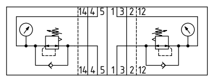
R	REGULATION TYPE
	D = Downstream
	U = Upstream
L	REGULATION SIDE
	2 = Single L12
	4 = Single L14
	24 = Double L12-L14
G	REGULATION RANGE
	A = 0 - 2 bar
	B = 0 - 4 bar
	C = 0 - 8 bar
O	RELIEVING OPTIONS
	A = With reliving
C	KNOB COLOUR
	V = Green (RAL 6032)
	G = Grey (RAL 7004)

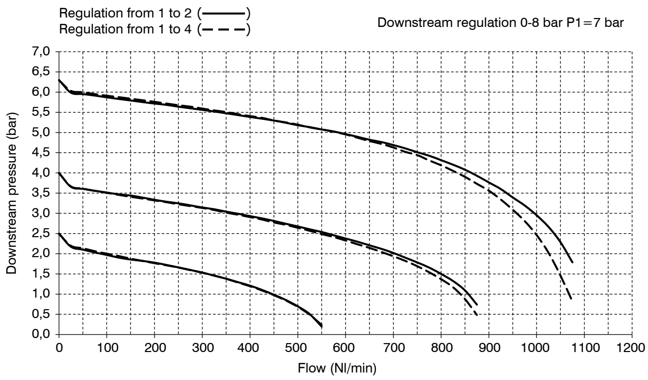
Weight 600 g

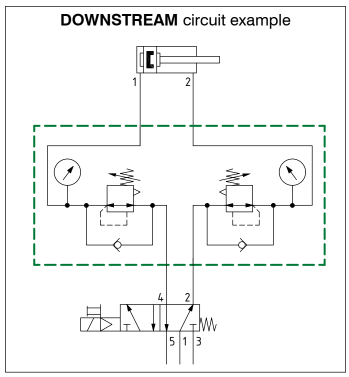


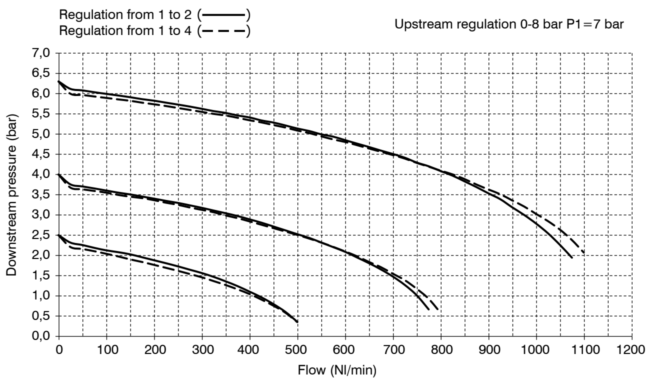
-Suitable module for vertical configuration
-It allows the regulation of output pressure to actuators
-Actuator pressure regulation:
 -with regulator upstream of the solenoid valve (faster exhaust phase of the actuator)
 -with regulator downstream of the solenoid valve
-Possible installation of pressure regulators in succession (available on request)
-Pressure gauges adjustable in 3 positions

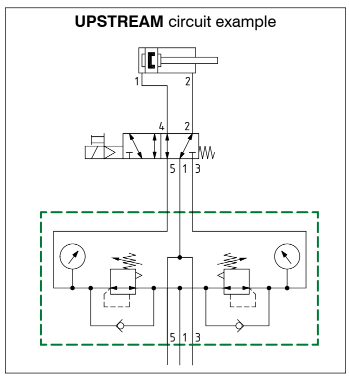












Note:
Pressure must be set upwards.
For greater accuracy and sensitivity, it is recommended using a regulator with a pressure rating as close as possible to the desired pressure.

Pressure regulator (extended version)

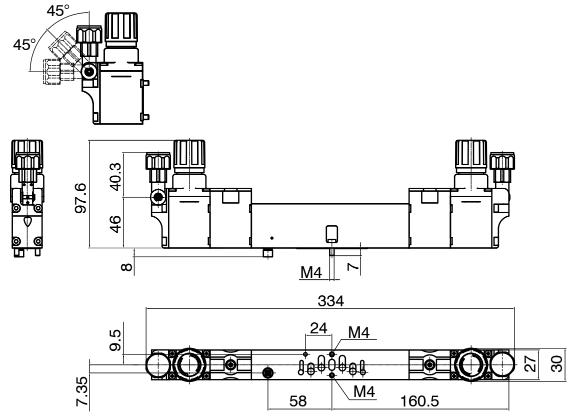
Coding: 27RPRLGOCV

Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous Recommended purity class [5:4:4] according to ISO 8573-1:2010
Temperature °C	-10 ... +50
Working pressure (bar)	0,5 ... 10

R	REGULATION TYPE
	D = Downstream
	U = Upstream
L	REGULATION SIDE
	2 = Single L12
	4 = Single L14
	24 = Double L12-L14
G	REGULATION RANGE
	A = 0 - 2 bar
	B = 0 - 4 bar
	C = 0 - 8 bar
O	RELIEVING OPTIONS
	A = With reliving
C	KNOB COLOUR
	V = Green (RAL 6032)
	G = Grey (RAL 7004)
V	VERSION
	= Adjustable pressure gauge
	M = Fixed pressure gauge

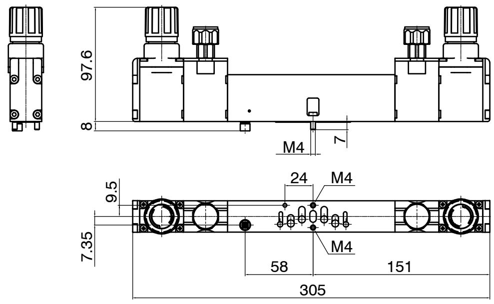
Weight 760 g

27RPRLGOC

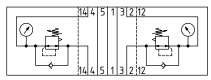


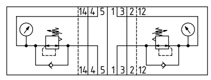
Weight 760 g

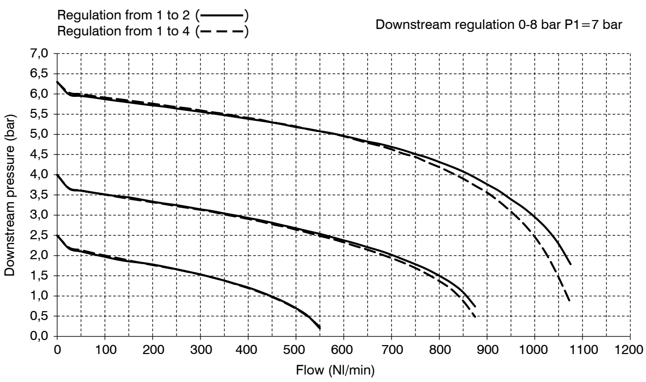
27RPRLGOCM



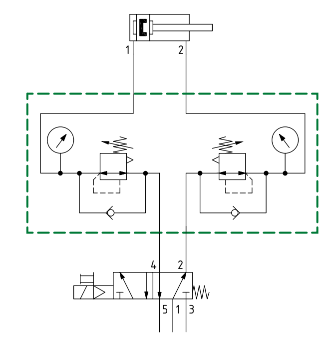
-Suitable module for vertical configuration
-It allows the regulation of output pressure to actuators
-Actuator pressure regulation:
 -with regulator upstream of the solenoid valve (faster exhaust phase of the actuator)
 -with regulator downstream of the solenoid valve
-Possible installation of pressure regulators in succession (available on request)
-Pressure gauges adjustable in 3 positions or fixed

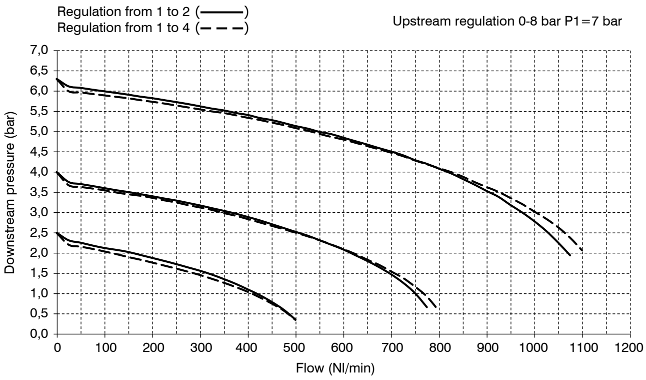




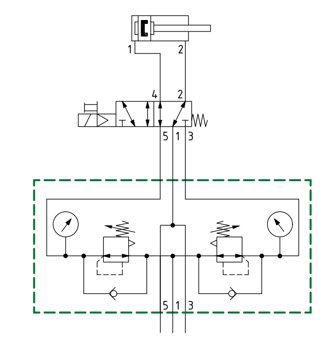


DOWNSTREAM circuit example





UPSTREAM circuit example

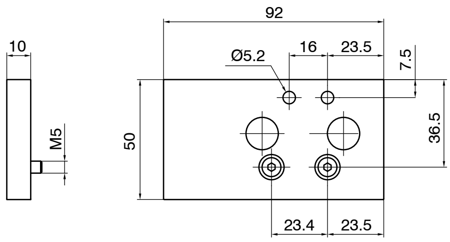


Note:
Pressure must be set upwards.
For greater accuracy and sensitivity, it is recommended using a regulator with a pressure rating as close as possible to the desired pressure.

Offset compensation plate

Coding: 27P0

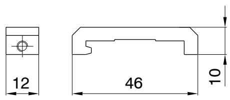
Weight 118 g



DIN rail adapter

Coding: 3100.16

Weight 12 g



EVO Electronics

A UNIQUE CONTROL SYSTEM, A WIDE RANGE OF SOLUTIONS

The PX Series multiserial 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 PROFINET

EtherCAT EtherNet/IP IO-Link

CC-Link IE Field Basic

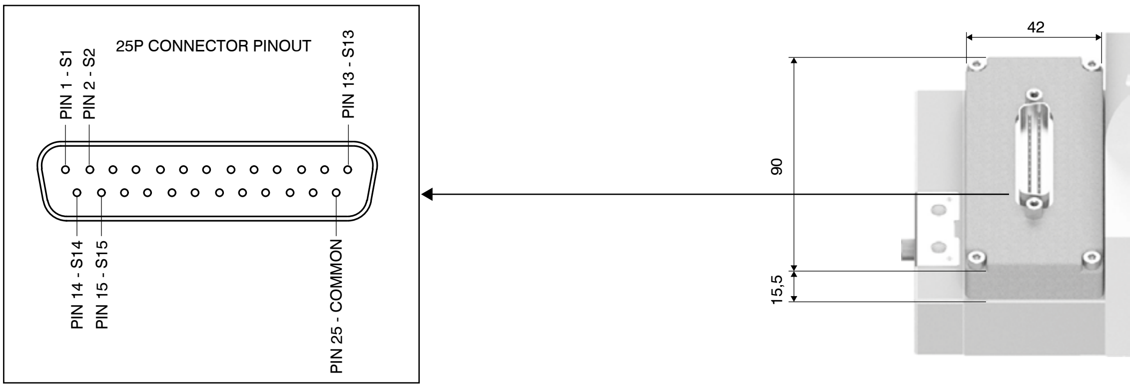
Multi-pin module

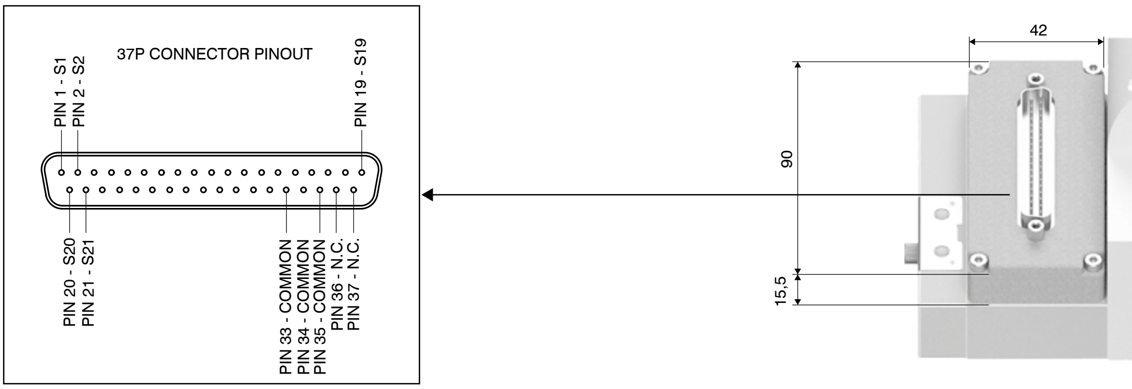
Coding: 5E30.Ⓒ

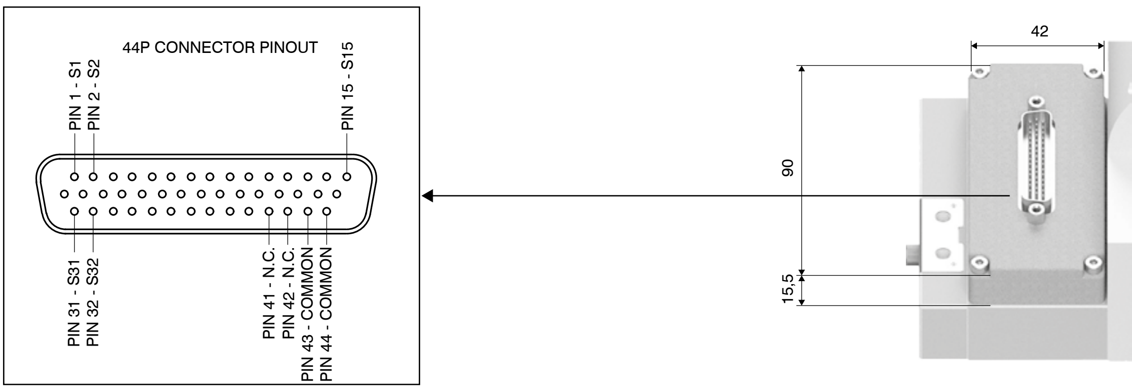
Technical characteristics		
Maximum current per module		300mA
Protection		Overcurrent (auto-resettable fuse) Reverse polarity
Input impedence		3kΩ
Maximum cable length		< 30 m
Input data allocation		8 bit
INPUTS + 24 V DC current consumption of the module only		5mA
Maximum number of handled signals	25 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.

Coding: K5530.64.VCO

	VERSION
V	**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:

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

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 "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.

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

Where:

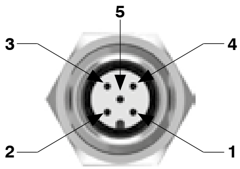
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

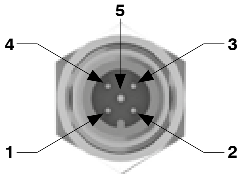
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

NETWORK connectors

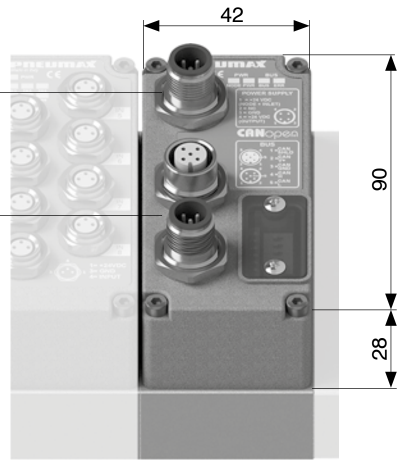


M12A 5P FEMALE

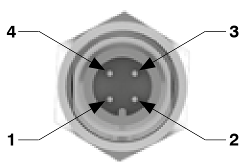


M12A 5P MALE

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



POWER SUPPLY 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

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 V DC 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.ⓥPB

	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:

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

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 "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.

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

Where:

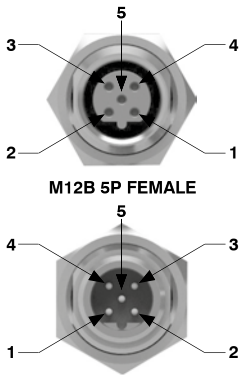
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

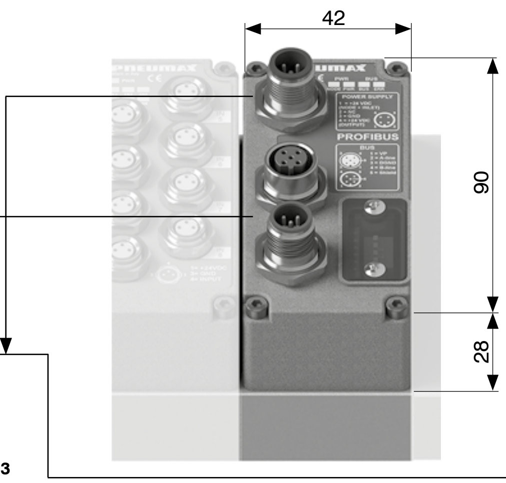
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

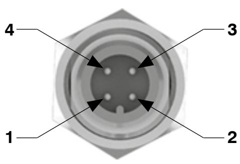
NETWORK connectors



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



POWER SUPPLY connector



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

Technical characteristics		
Specifications		PROFIBUS DP
Case		Reinforced technopolymer
Power supply	Voltage	+ 24 V DC ± 10%
	Node only current consumption on + 24 V DC 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:

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

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 "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.

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

Where:

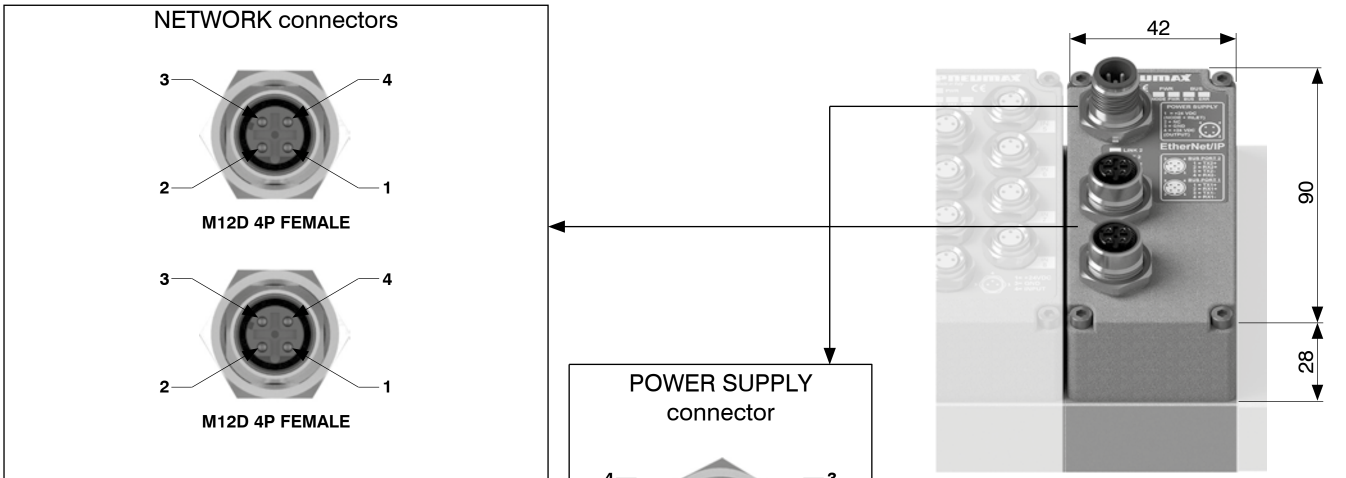
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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



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

PIN	DESCRIPTION	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

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

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:

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

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 "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.

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

Where:

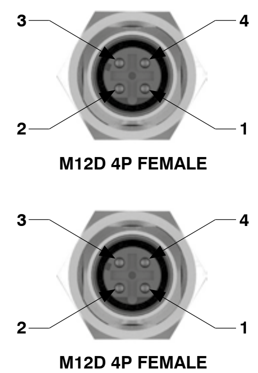
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

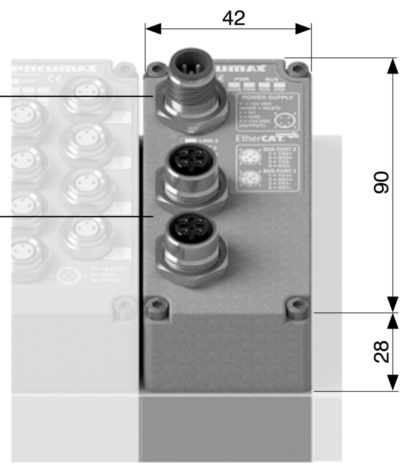
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

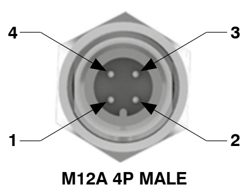
NETWORK connectors



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



POWER SUPPLY connector



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

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:

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

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 "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.

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

Where:

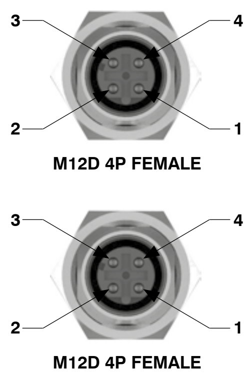
$$I_{24\ V\ DC\ in} = \sum_{i=1}^{n} I_{in,i}$$

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.

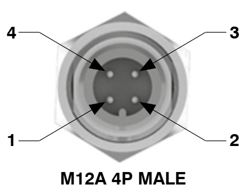
Scheme / Overall dimensions and I/O layout

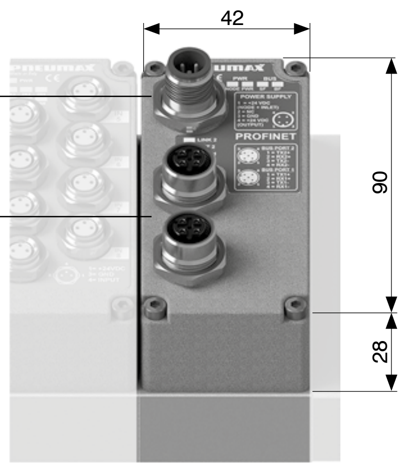
NETWORK connectors



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

POWER SUPPLY connector





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

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

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:

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

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 "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.

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

Where:

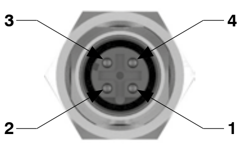
$$I_{24\,V\,DC\,in} = \sum_{i=1}^{n} I_{in,i}$$

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)

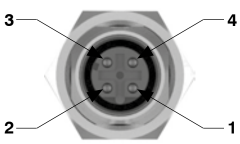
In case total current is more than 4 A, it is mandatory to supply modules exceeding current limit with power supply module K5030.M12.

Scheme / Overall dimensions and I/O layout

NETWORK connectors

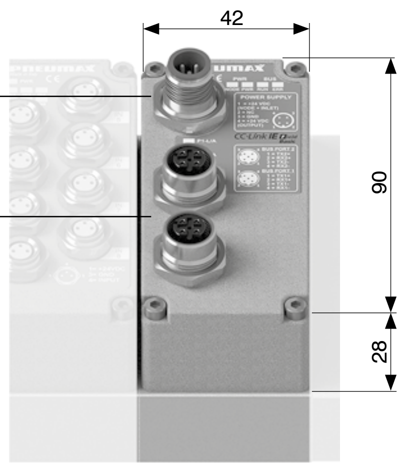


M12D 4P FEMALE

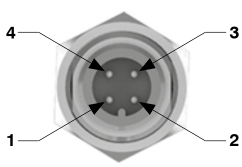


M12D 4P FEMALE

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



POWER SUPPLY 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

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	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.

Coding: K5830.64.ⓥIK

	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 pin 2 and pin 5 (P24 / N24).
To compute the maximum current on the P24 / N24 supply, please use the following formula::

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

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)
$I_{in,i}$ = 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)

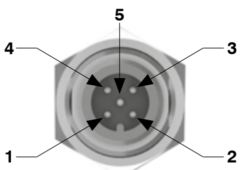
Series	i_EV
2200 "Optyma S"	36 mA
2500 "Optyma F"	54 mA
2500 "Optyma T"	54 mA
Series 2700	24 mA (1 W version) / 100 mA (2,3 W version)

= 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.

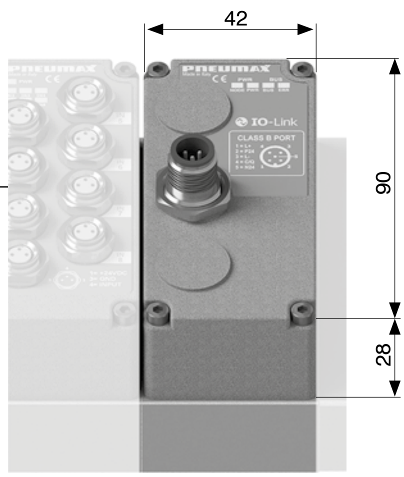
Scheme / Overall dimensions and I/O layout

"CLASS B" connector



M12A 5P MALE

PIN	SIGNAL
1	L+
2	P24 (+ 24 V DC)
3	L-
4	C/Q
5	N24 (0 V)



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 0x0BB8)
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

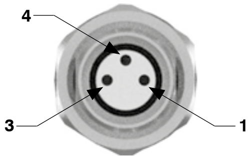
M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Inputs have PNP logic, + 24 V DC ± 10%.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity sensors, photocells, electronic magnetic limit 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

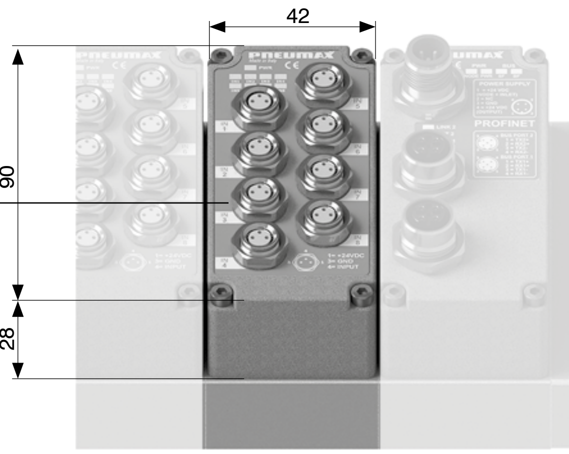
Technical characteristics	
Maximum current per module	300 mA
Protection	Overcurrent (auto-resettable fuse) Reverse polarity
Input impedence	3 kΩ
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
3	0 V
4	INPUT



8 digital inputs module kit M12

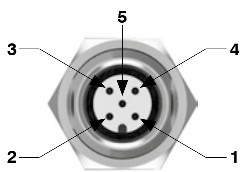
M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Inputs have PNP logic, + 24 V DC ± 10%.
Every connector takes two input channels.
It is possible to connect 2 wires devices (e.g. switches, magnetic limit switches, pressure switches, etc.) as well as 3 wires devices (e.g. proximity 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 impedence	3kΩ
Maximum cable length	< 30 m
Input data allocation	8 bit
INPUTS + 24 V DC current consumption of the module only	5 mA

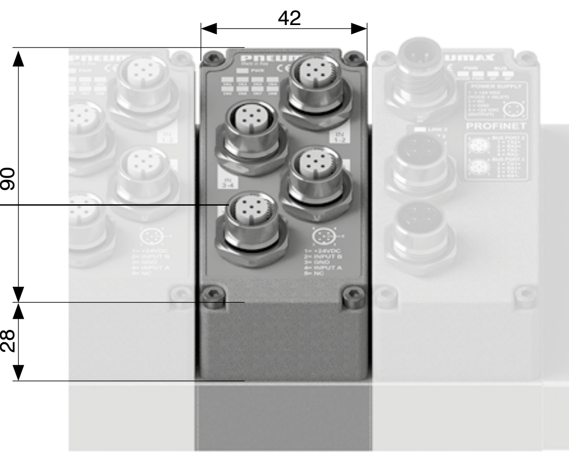
Scheme / Overall dimensions and I/O layout

M12 5P female connector



M12A 5P FEMALE

PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
2	INPUT B
3	0 V
4	INPUT A
5	N.C.



8 digital outputs module kit M8

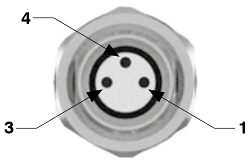
M8 digital inputs module provides 8 M8, 3 pins, female connectors.
Outputs have PNP logic, + 24 V DC ± 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were 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

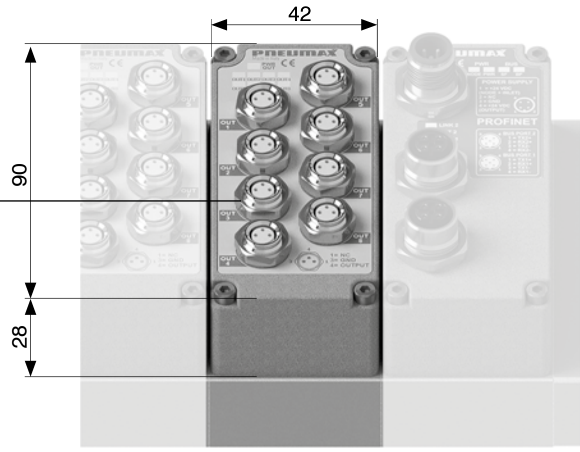
Technical characteristics	
Maximum current per output	100 mA
Protection	Short circuit (electronic), trigger at 2.8A
Maximum cable length	< 30 m
Output data allocation	8 bit
OUTPUTS + 24 V DC current consumption of the module only	15 mA

Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	N.C.
3	0 V
4	OUTPUT



8 digital outputs module kit M12

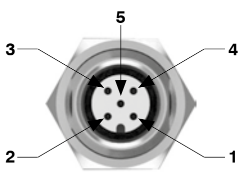
M12 digital inputs module provides 4 M12, 5 pins, female connectors.
Outputs have PNP logic, + 24 V DC ± 10%.
Outputs module power supply is provided by + 24 V DC power input on the serial system (type A, 4 pins M12 power connector, pin 4) or by K5030.M12 additional power supply module, in case it were 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

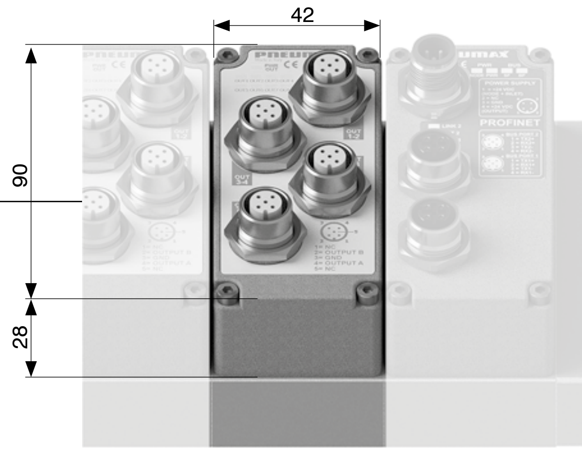
Scheme / Overall dimensions and I/O layout

M12 5P female connector



M12A 5P FEMALE

PIN	DESCRIPTION
1	N.C.
2	OUTPUT B
3	0 V
4	OUTPUT A
5	N.C.



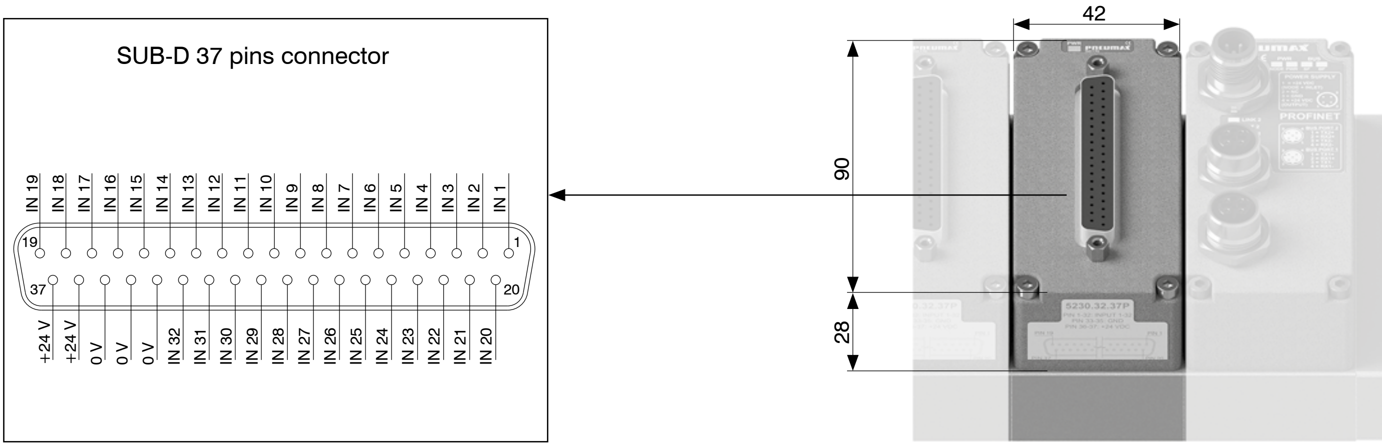
32 digital inputs module kit (37 pins SUB-D connector)

The module provides a SUB-D 37 pins female connector.
Inputs have PNP logic, + 24 V DC ± 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 impedence	3 kΩ
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



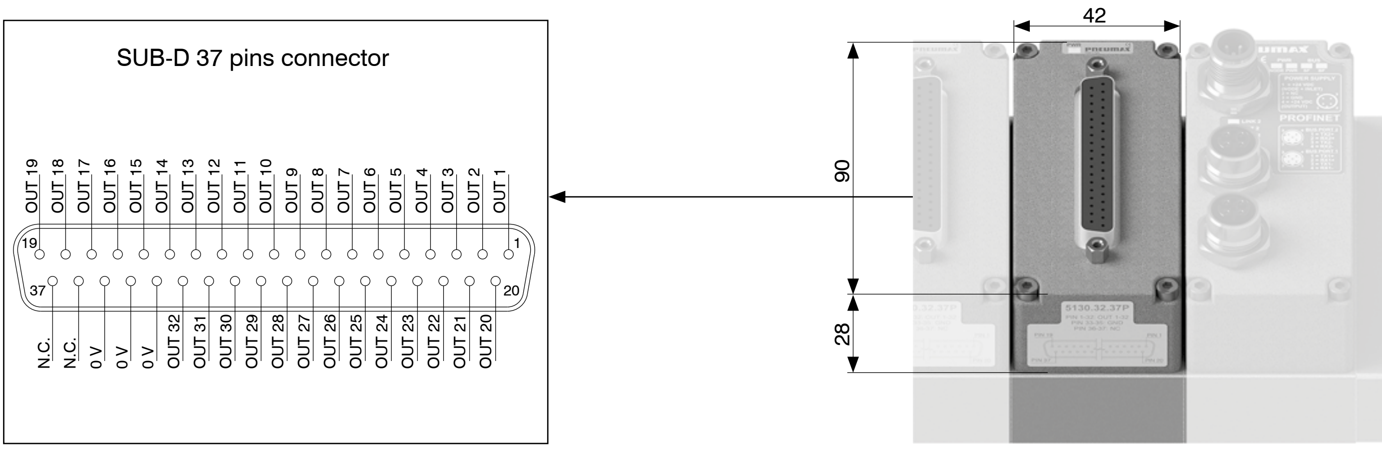
32 digital outputs module kit (37 pins SUB-D connector)

The module provides a SUB-D 37 pins female connector.
Outputs have PNP logic, + 24 V DC ± 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.ⒸⓈ

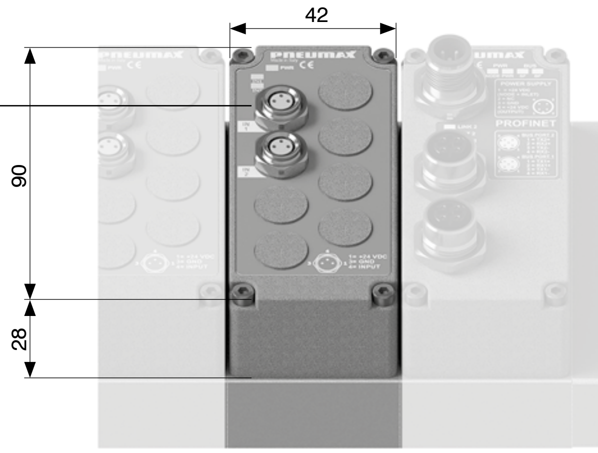
	CHANNELS
Ⓒ	**2** = 2 channels
	4 = 4 channels
	SIGNAL
Ⓢ	**T.00** = VOLTAGE (0-10 V)
	T.01 = VOLTAGE (0-5 V)
	C.00 = CURRENT (4-20 mA)
	C.01 = CURRENT (0-20 mA)

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

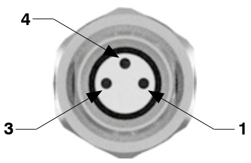
1

AIR DISTRIBUTION

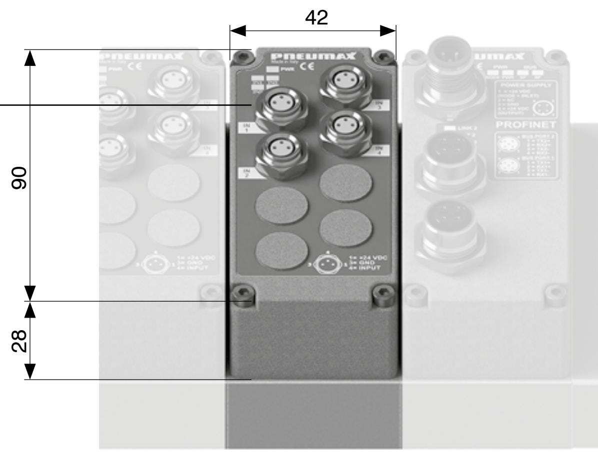
Scheme / Overall dimensions and I/O layout



M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (INPUTS)
3	0 V
4	INPUT



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.

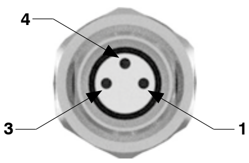
Coding: K5130.ⒸⓈ

	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)

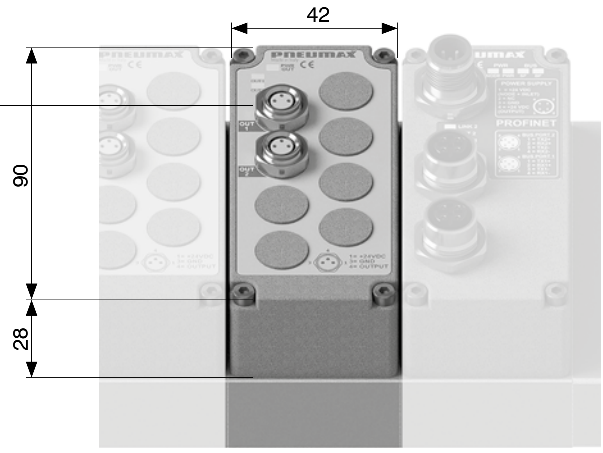
Technical characteristics	
Protection (pin 1)	Overcurrent (auto-resettable fuse)
Protection (pin 4)	Overcurrent (auto-resettable fuse)
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Output data allocation	16 bit per channel
Diagnostic LED	Output signal overcurrent
Accuracy	0,3% F.S.
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

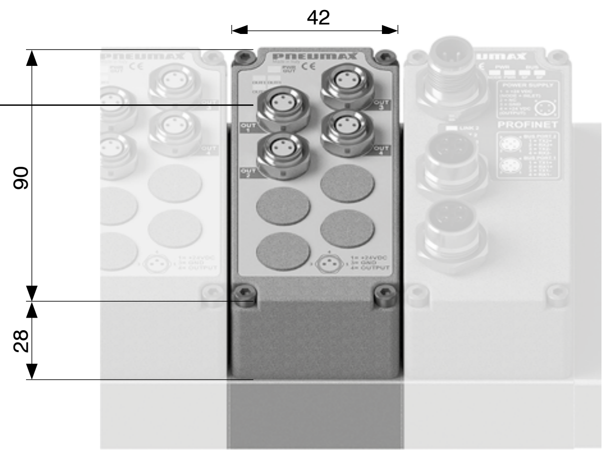
Scheme / Overall dimensions and I/O layout

M8 3P female connector



PIN	DESCRIPTION
1	+ 24 V DC (OUTPUTS)
3	0 V
4	OUTPUT





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

C	CHANNELS
	2 = 2 channels
	4 = 4 channels
T	TYPE
	0 = Pt100 2 wires
	1 = Pt100 3 wires
	2 = Pt100 4 wires

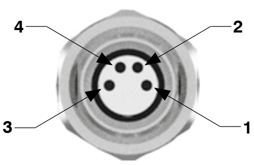
Technical characteristics	
Digital conversion resolution	12 bit
Maximum cable length	< 30 m
Input data allocation	16 bit per channel
Diagnostic LED	Probe presence Temperature out of range
Accuracy	±0,2°C
Probe temperature range	-100°C ... +300°C
INPUTS + 24 V DC current consumption of the module only (2 channels)	25 mA
INPUTS + 24 V DC current consumption of the module only (4 channels)	35 mA

Conversion formula (°C)

$$\text{Temperature (°C)} = \left(\frac{\text{Points}}{4095} \times 400\right) - 100$$

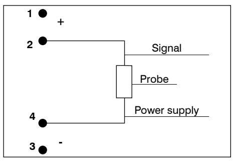
Scheme / Overall dimensions and I/O layout

M8 4P female connector



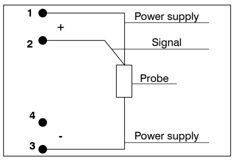
Connection scheme 2 wires probe

PIN	DESCRIPTION
1	N.C.
2	SENSOR +
3	POWER SUPPLY -
4	N.C.



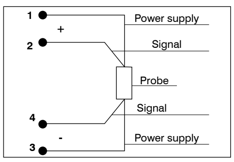
Connection scheme 3 wires probe

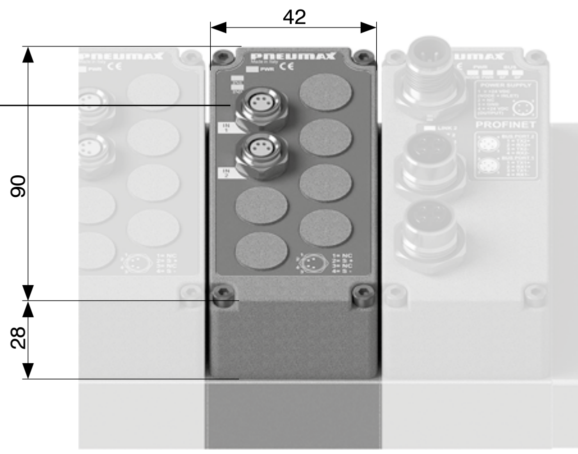
PIN	DESCRIPTION
1	POWER SUPPLY +
2	SENSOR +
3	POWER SUPPLY -
4	N.C.

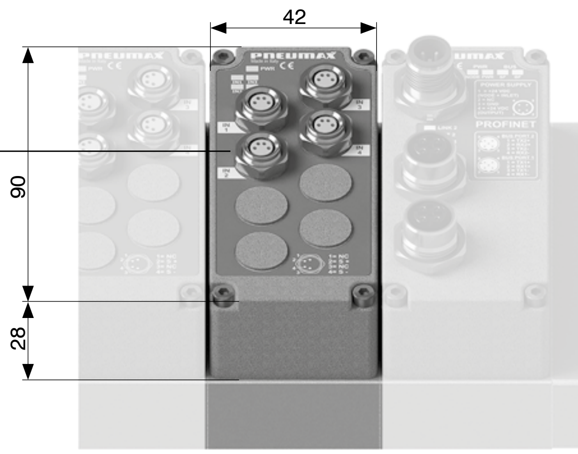


Connection scheme 4 wires probe

PIN	DESCRIPTION
1	POWER SUPPLY +
2	SENSOR +
3	POWER SUPPLY -
4	SENSOR -





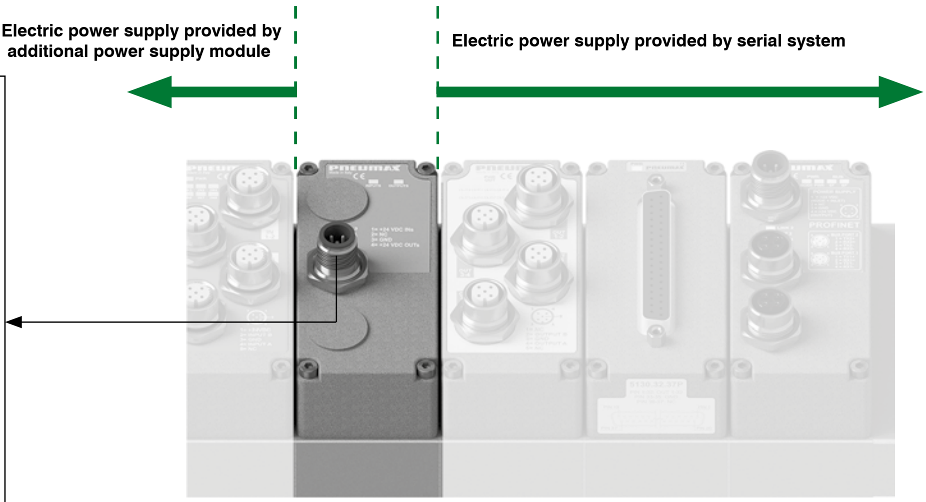


Additional power supply module kit

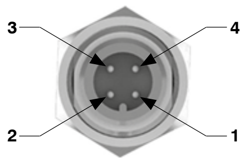
Additional power supply module supplies additional electric power for downstream optional modules, where "downstream" means farther from serial node, **resetting the current limits of the network node / IO-Link interface**.
Electric connection of the module to external power supply unit occurs via an 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



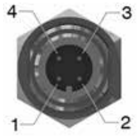
M12A 4P MALE

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

POWER SUPPLY connectors

Straight connector M12A 4P female

Coding: 5312A.F04.00

Upper view slave connector

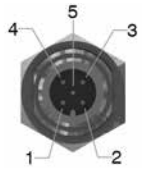
PIN	DESCRIPTION
1	+ 24 V DC (LOGICS AND INPUTS)
2	N.C.
3	0 V
4	+ 24 V DC (OUTPUTS)

Power supply socket

NETWORK connectors

Straight connector M12A 5P female

Coding: 5312A.F05.00

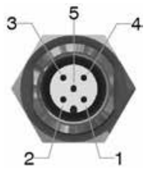
Upper view slave connector

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

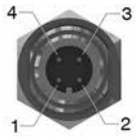
Upper view slave connector

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

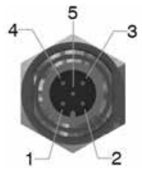
PIN	SIGNAL	DESCRIPTION
1	TX+	EtherNet Transmit High
2	RX+	EtherNet Receive High
3	TX-	EtherNet Transmit Low
4	RX-	EtherNet Receive Low

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

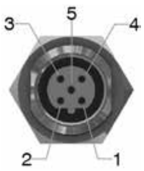
Upper view slave connector

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

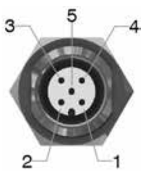
PIN	DESCRIPTION
1	Power Supply
2	A-Line
3	DGND
4	B-Line
5	SHIELD

Socket for bus PROFIBUS DP

INPUTS connectors

Straight connector M12A 5P male

Coding: 5312A.M05.00

PIN	DESCRIPTION
1	+ 24 V DC
2	INPUT B
3	0 V
4	INPUT A
5	N.C.

Upper view slave connector

Plug for inputs modules

Straight connector M8 3P male

Coding: 5308A.M03.00


PIN	DESCRIPTION
1	+ 24 V DC
4	INPUT
3	0 V

Upper view slave connector

Plug for inputs modules

Plugs

M12 plug

Coding: 5300.T12

M8 plug

Coding: 5300.T08

1

AIR DISTRIBUTION

Cable complete with connector, 25 Poles, IP65

Coding: 2300.25.Ⓛ.Ⓒ

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

Cable complete with connector, 37 Poles, IP65

Coding: 2400.37.Ⓛ.Ⓒ

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

Cable complete with connector, 44 Poles, IP65

Coding: 2300.44.Ⓛ.Ⓒ

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

Cable complete with connector, 25 Poles, IP65

Coding: 2400.25.Ⓛ.25

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

Cable complete with connector, 37 Poles, IP65

Coding: 2400.37.Ⓛ.37

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

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