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**

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

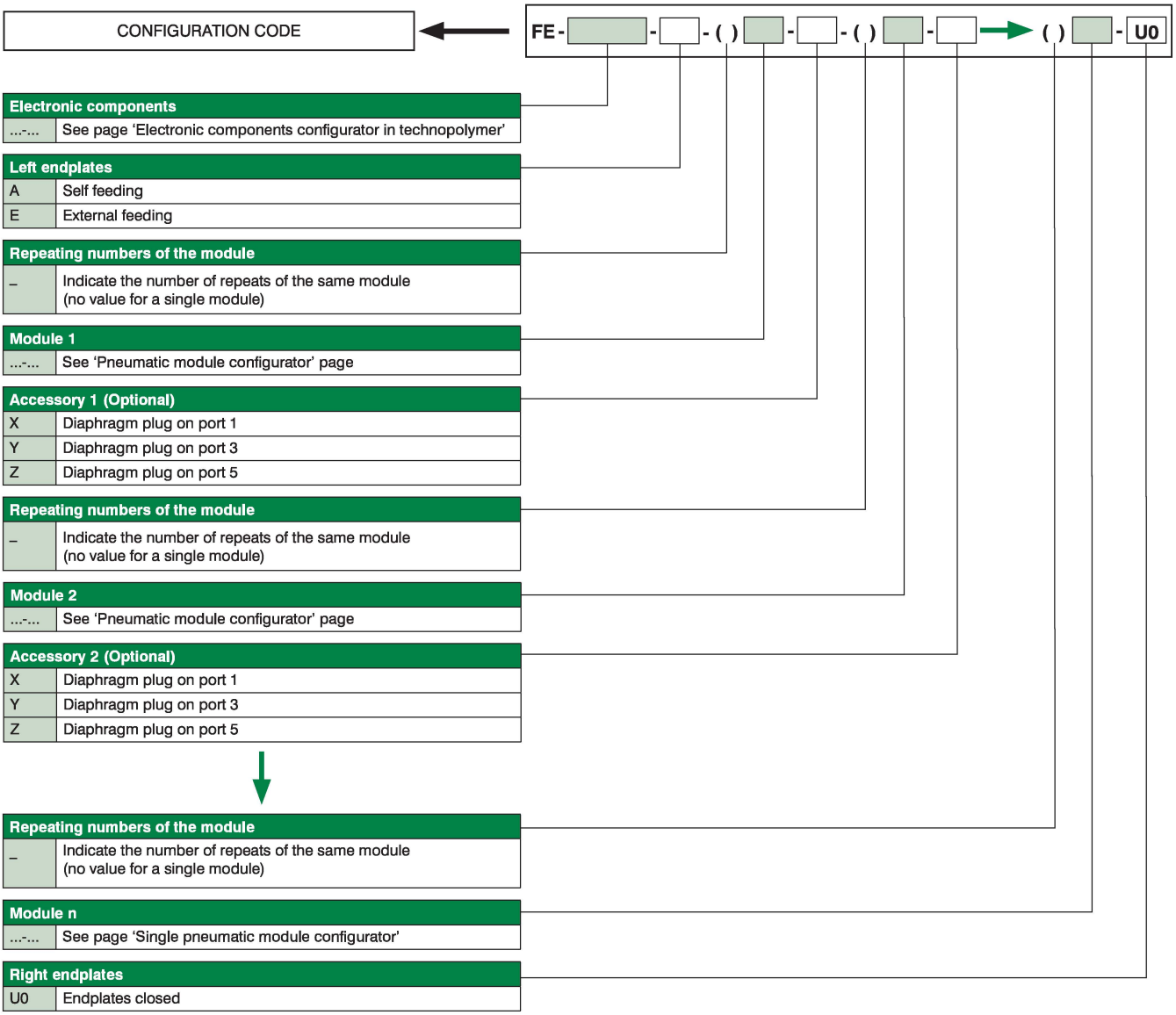
Construction characteristics

Body	Technopolymer
Seals	NBR
Piston seals	NBR
Springs	Stainless Steel
Operators	Technopolymer
Pistons	Technopolymer
Spools	Technopolymer

Operational characteristics

Supply 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



Configurable on Cadenas platform

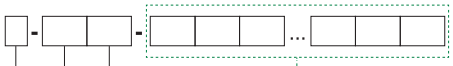
CADENAS

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

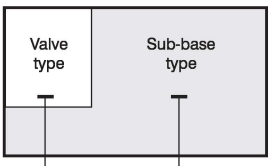
Inputs module - Analog / Digital (EXCLUDED WITH MP)	
D8	8 M8 digital inputs module
D12	8 M12 digital inputs module
D3	32 digital inputs SUB-D 37 poles
T1	2 analogue inputs 0-5V module (voltage signal)
T2	2 analogue inputs 0-10V module (voltage signal)
T3	4 analogue inputs 0-5V module (voltage signal)
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

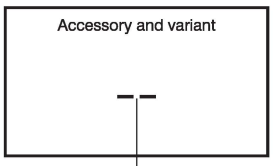
Base module configurator with Solenoid valve



Solenoid valve position	
A	S.V. 5/2 SOL.-SPRING
B	S.V. 5/2 SOL.-DIF.
C	S.V. 5/2 SOL.-SOL.
E	S.V. 5/3 CC SOL.-SOL.
F	S.V. 2x3/2 NC-NC
G	S.V. 2x3/2 NO-NO
H	S.V. 2x3/2 NC-NO
I	S.V. 2x3/2 NO-NC
T	PLUG

Base	
1	Monostable base
2	Bistable base

Accessory module configurator

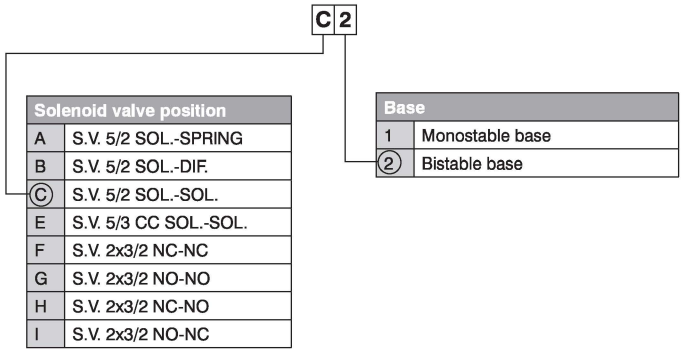


Intermediate inlet/Exhaust module	
W	Separated air supply and exhaust

Intermediate electropneumatic shut-off module			
U	Separated supply (air/electric) and exhaust	2	2 positions
		4	4 positions
		6	6 positions
		8	8 positions
K	Separated supply (air/electric), exhaust and 12/14 piloting	2	2 positions
		4	4 positions
		6	6 positions
		8	8 positions

Configuration example of single module:

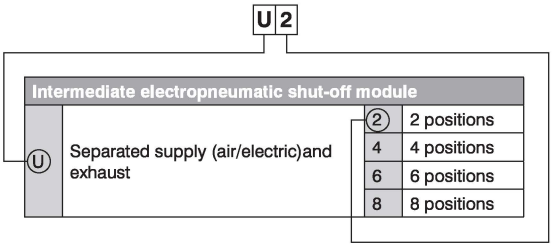
Bistable base, 5/2 Solenoid-Solenoid valve



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

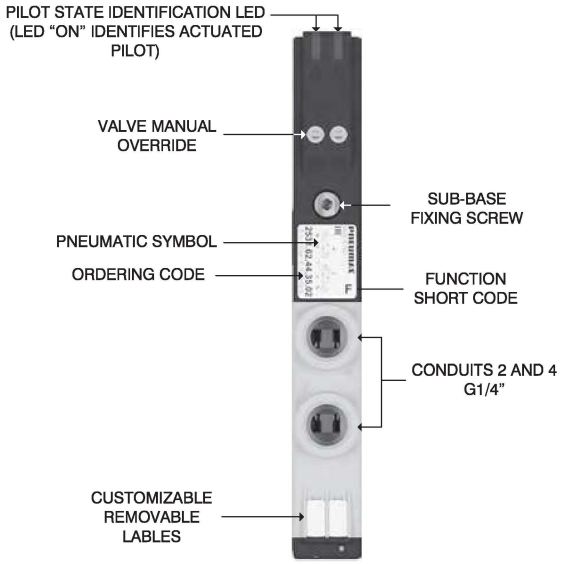


Intermediate electropneumatic shut-off module			
U	Separated supply (air/electric)and exhaust	2	2 positions
		4	4 positions
		6	6 positions
		8	8 positions

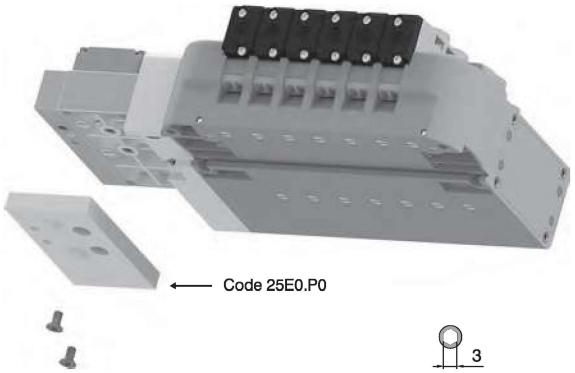
Configuration example of complete group:

- 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

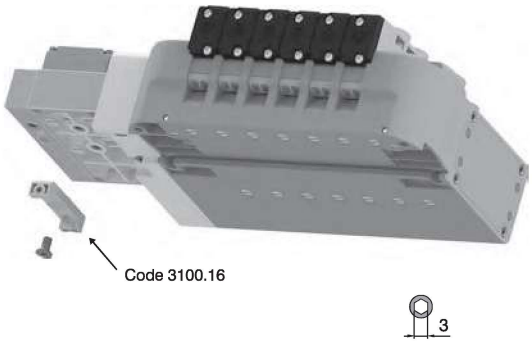


Offset compensation plate



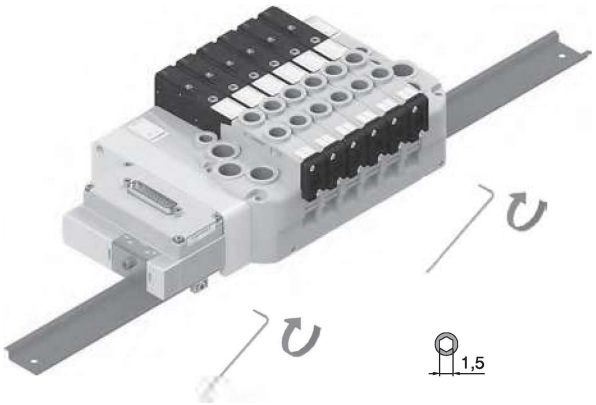
Attention: This accessory is supplied on the manifold unless otherwise stated. This is not compatible for DIN rail mounting.

DIN rail mounting support plate



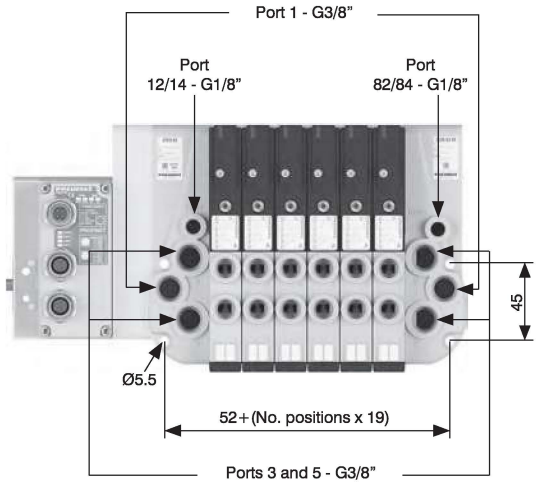
Attention: This must be included when creating the manifold configuration. Exclude the offset compensation plate.

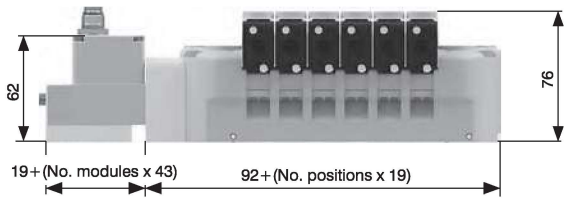
DIN rail fixing



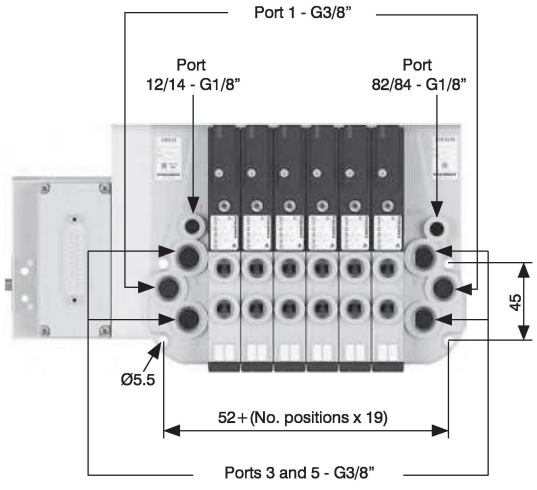
Supply ports and maximum possible size according to valves used

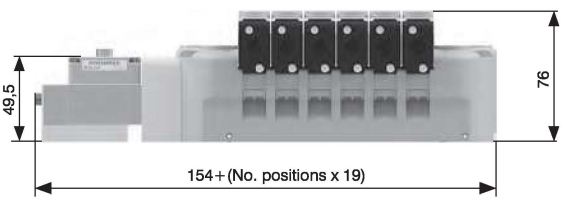
Serial system node version





Multi-pin version





Manual override actuation

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

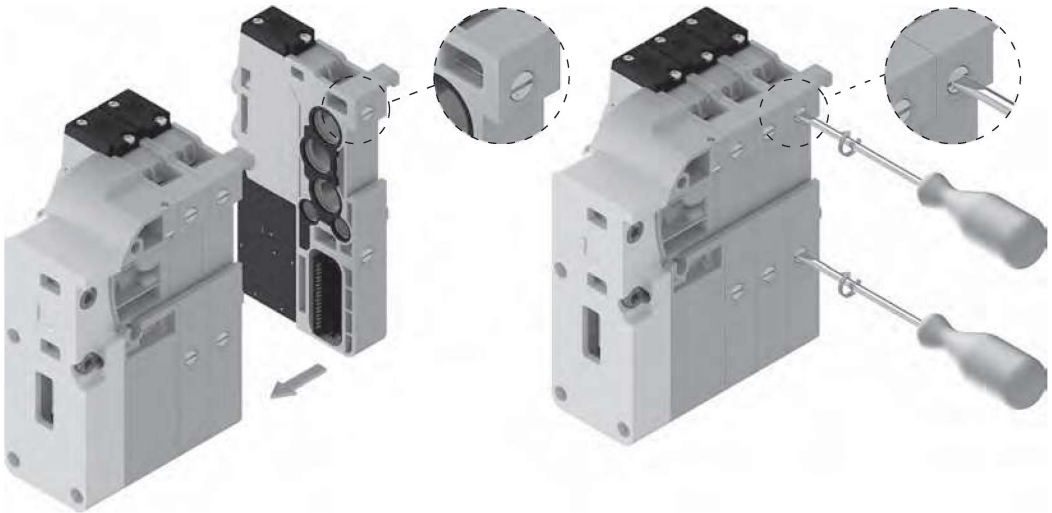
Bistable function:
Push and turn to get the bistable function

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



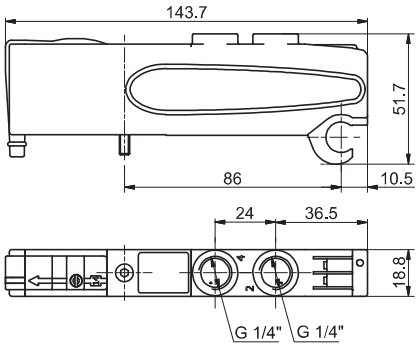
Solenoid-Spring

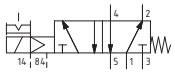
Coding: 2531.52.00.39.Ⓥ

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
Response time according to ISO 12238, activation time (ms)	14
Response time according to ISO 12238, deactivation time (ms)	40

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

SHORT FUNCTION CODE "A"
Weight 123 g





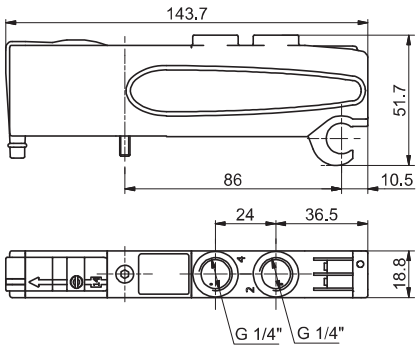
Solenoid-Differential

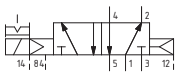
Coding: 2531.52.00.36.Ⓥ

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

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

SHORT FUNCTION CODE "B"
Weight 120 g





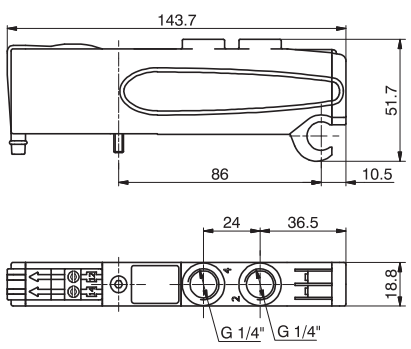
Solenoid-Solenoid

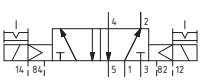
Coding: 2531.52.00.35.Ⓥ

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
Response time according to ISO 12238, activation time (ms)	10
Response time according to ISO 12238, deactivation time (ms)	14

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

SHORT FUNCTION CODE "C"
Weight 128 g





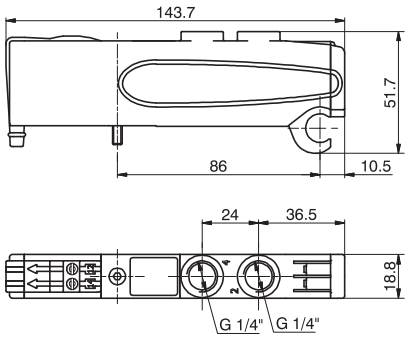
Solenoid-Solenoid 5/3

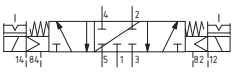
Coding: 2531.53.31.35.Ⓥ

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
Response time according to ISO 12238, activation time (ms)	15
Response time according to ISO 12238, deactivation time (ms)	20

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

SHORT FUNCTION CODE "E"
Weight 126 g





Solenoid-Solenoid 2x3/2

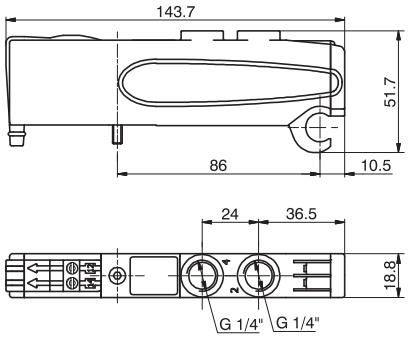
Coding: 2531.62.Ⓕ.35.Ⓥ

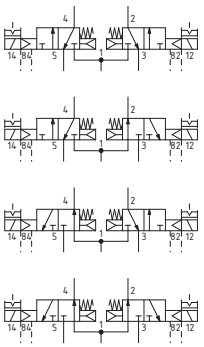
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10
Pilot pressure (bar)	≥3+(0,2xInlet pressure)
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	700
Response time according to ISO 12238, activation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



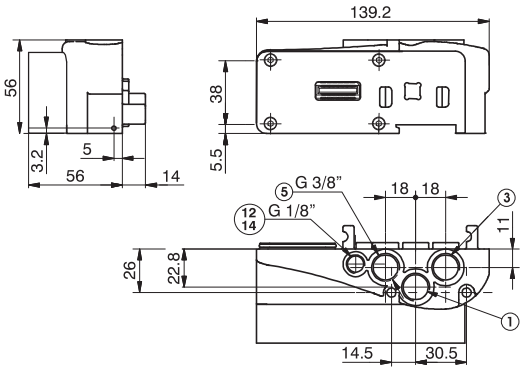


Left Endplate

Coding: 25E0.Ⓥ.F

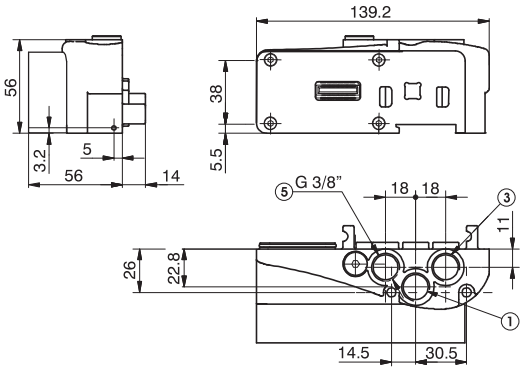
Technical characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Working pressure (bar)	From vacuum to 10 (external feeding) 3 ... 7 (self feeding)
Pilot pressure (bar)	3 ... 7 (external feeding)
Temperature °C	-5 ... +50

Ⓥ	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

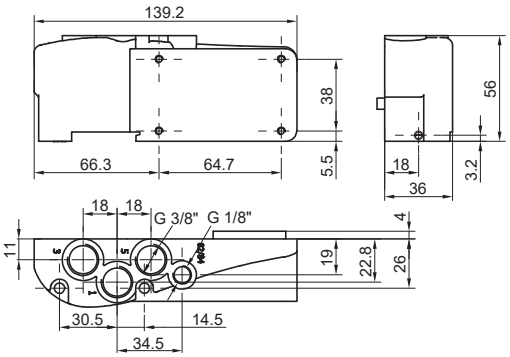
25E0.12.F

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

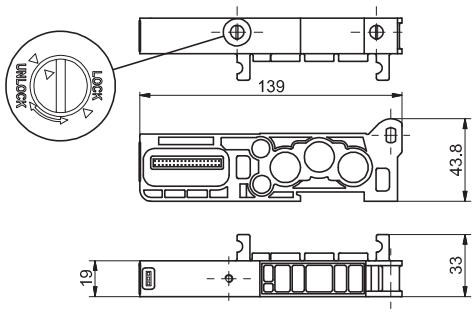
2530.03.00

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