

Series 300

The direct operated solenoid valve is the interface between pneumatic and electronic. In fact, it is actuated by an electrical signal and in turn gives a pneumatic signal directly available for small users or for actuating bigger pneumatic distributors.

A wide range of valves are needed for satisfying various applications. For this need we have available miniature components with very low volume and electrical impute as well as solenoid valves with large flow rate and power for heavy duty operations. These solenoid valves are usually 3/2, normally closed or normally open, but there are available the 2/2, closed or open, for vacuum and others.

Note that the direct operated valves can only be used with bases, individual or multiple with M5 or G 1/8" thread or with connections.

Some PNEUMAX solenoid valves are  homologated valid for USA and Canada (file n. VAIU2.E206325, VAIU8.E206325). For more details, refer to the coding, in the following pages.

The 10mm and 15mm solenoid valves are certified by UL in compliance with both Canadian and USA safety requirements as recognized component and included in the **UL file E206325** and bear the "UL Recognized Component" marking.

The 10mm and 15mm solenoid valves, since they are devices for "class 2 circuits", according with UL standard UL 429/CSA C22.2 N°139, are not considered dangerous for electric shock or fire and thus a **UL certification is not required for cables and connectors.**

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Use and maintenance

Maintenance is normally not required for these components therefore the spare parts list is not provided.

Their construction complexity and low cost do not make repair economically viable. It's easier and more economic to replace the complete valve in case of malfunction.

For proper lubrication use only hydraulic oil class H such as Castrol type MAGNA GC 32.



Direct operated solenoid valves

Series 300 - Size 10 mm

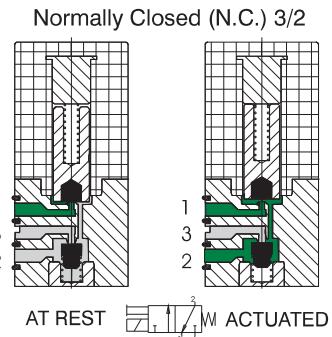
This series of directly operated valves is characterized by its reduced dimensions. They are designed to be mounted individually or on manifold. The high operating speed and high flow rate in consideration of the reduced dimensions, in combination with the high compatibility of the material used to manufacture them ensure a high variety of possible application fields.

All valves have manual override as standard and are available in 3/2 configuration N.O. and N.C. as well as 2/2 N.C. both 12 or 24 V DC or AC. Electrical connection can be via co moulded cables or via connector, in this configuration a LED indicates the coil status. Ensure that the fixing screws are tightened with 0.15Nm maximum.

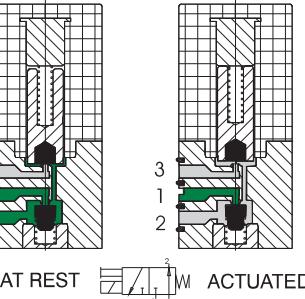
The 10mm Speed-up version are built in accordance to the ISO 15218-2003 standard with a flow rate of 24NI/min. The coil integrates a dedicated circuit board which enables to contain the power consumption to 0.35W in case of the high flow rate version and to 0.1W in case of the standard flow rate version.

Functional schematics for standard version

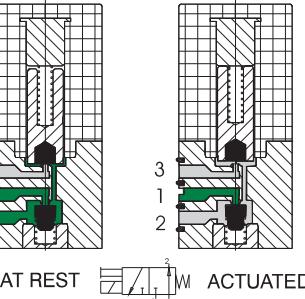
1 = SUPPLY PORT
2 = OUTLET PORT
3 = EXHAUST PORT



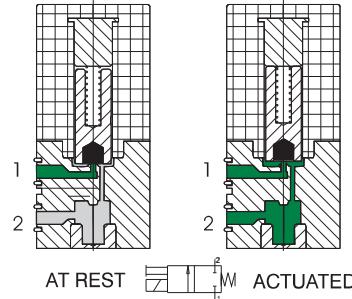
Normaly Closed (N.C.) 3/2



Normaly Open (N.O.) 3/2

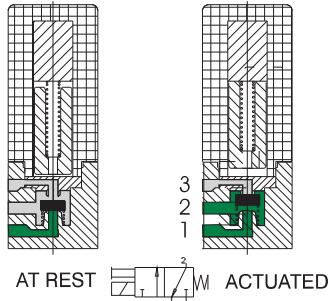


Normaly Closed (N.C.) 2/2



Functional schematics for Speed-up version

1 = SUPPLY PORT
2 = OUTLET PORT
3 = EXHAUST PORT



Normaly Closed (N.C.) 3/2

Construction characteristics:

Electrical part:

Miniature solenoid consisting of a coil made of copper wire of different diameters depending on voltage, isolated according to "F" class standard, with injection-moulded nylon-glass application. All parts forming the cladding, the electrical connections and the pole pieces are protected against corrosion.

Mechanical part:

Stainless steel 430F armatures FPM poppets body in thermoplastic material and manual override and plug in nickel plated brass. Valves must be mounted on single or multiple manifold to be used.

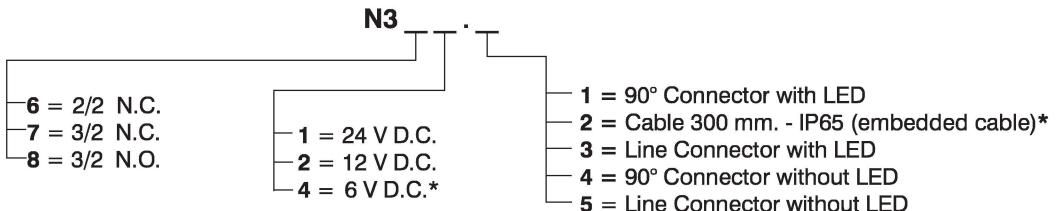
Technical characteristics

		Standard Version	Speed-Up Version
Pneumatic	Working pressure	0 ... 7 bar	
Orifice size	0,7 mm	1,1 mm	
Temperature	-5° ... +50°C		
Flow rate at 6 bar with $\Delta p = 1$ bar	14 NI/min	24 NI/min	
Exhaust flow rate	22 NI/min	29 NI/min	
Life expectancy, number of cycles per minute	50 million		
Compressed air, purity class according to ISO 8573-1:2010	5:4:4		
Electric	Voltages	12 ... 24 Volt D.C.	
Power	1,3 Watt	0,35 Watt ⁽¹⁾	
Voltage tolerance	-5% ... +10%		
Response time when energized *	8 ms		
Response time when de-energized *	10 ms		
Copper wire isolation class	F (155°C)		
	IP65 (with cables)		
Protection degree	IP40 (with connectors)		
	IP00 (with Faston)		

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

(1) = consumption wrapping in opening phase 3, 5W (10 ms), consumption wrapping in maintenance phase 0.35 W.

10 mm Standard miniature solenoid ordering codes

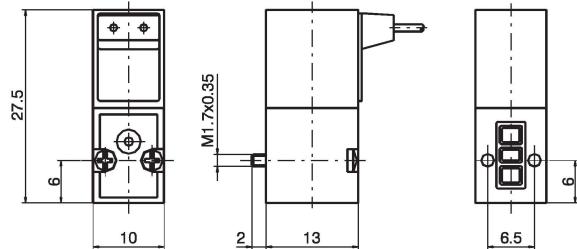


* = The **CE** directive does not apply to these versions

Miniature solenoid valve with cable



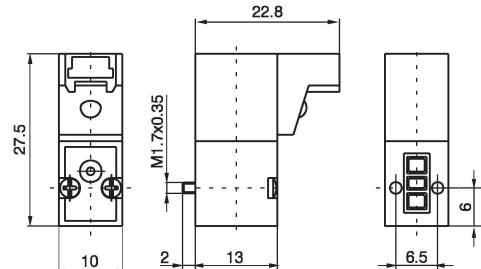
Weight 12 g



Miniature solenoid valve with 90° connector



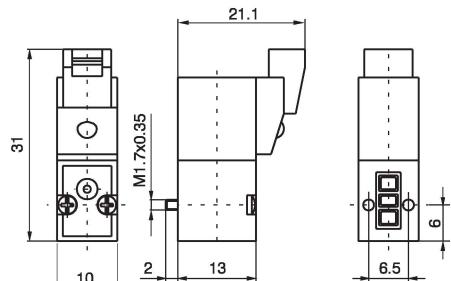
Weight 12 g



Miniature solenoid valve with line connector



Weight 12 g

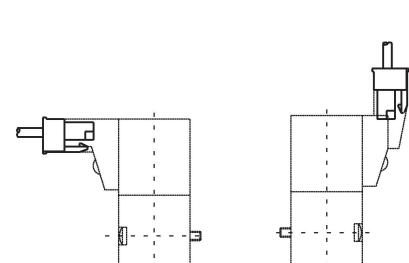


Connector

Ordering codes

371 .

- 300 : Cable L = 300 mm
- 600 : Cable L = 600 mm
- 1000 : Cable L = 1000 mm

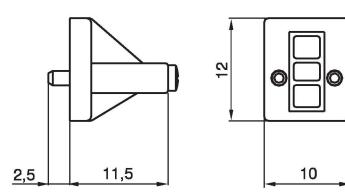


Weight 3 g

Closing plate

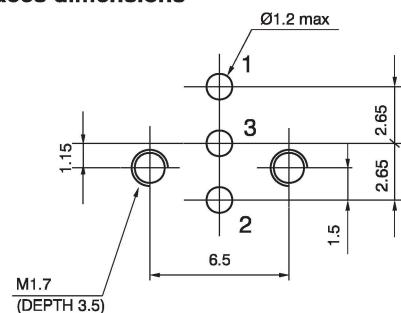
Ordering codes

395.00



Weight 5 g

Interfaces dimensions





Direct operated solenoid valves

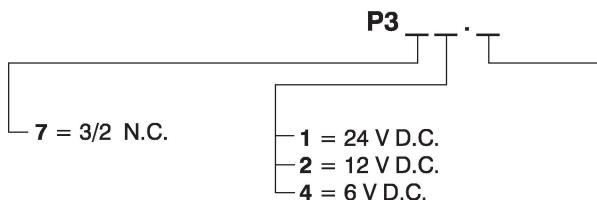
Series 300 - Size 10 mm

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AIR DISTRIBUTION

10 mm - ISO 15218-2003 miniature solenoid ordering codes

The versions are not contemplated by the directive

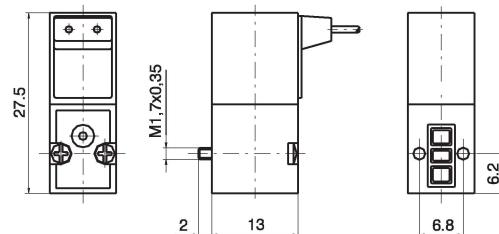


- 1 = 90° Connector with LED
- 2 = Cable 300 mm. - IP65 (embedded cable)
- 3 = Line Connector with LED
- 4 = 90° Connector without LED
- 5 = Line Connector without LED

Miniature solenoid valve with cable



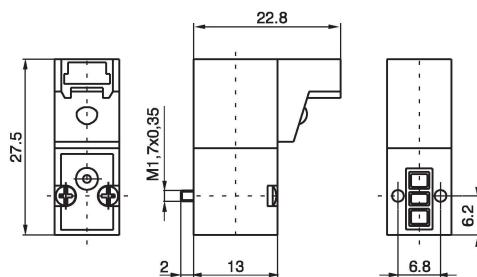
Weight 12 g



Miniature solenoid valve with 90° connector



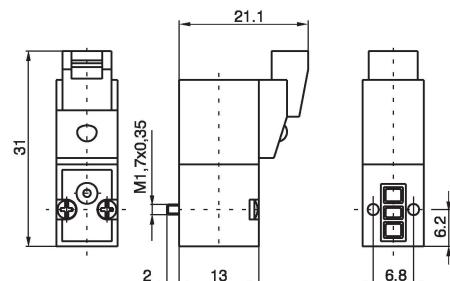
Weight 12 g



Miniature solenoid valve with line connector



Weight 12 g

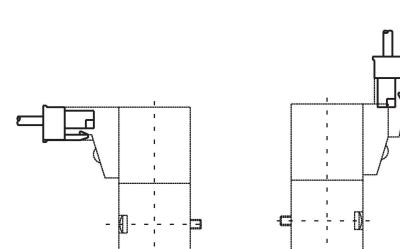


Connector

Ordering codes

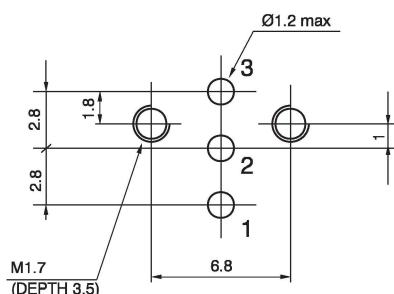
371 .

- 300 : Cable L = 300 mm
- 600 : Cable L = 600 mm
- 1000 : Cable L = 1000 mm



Weight 3 g

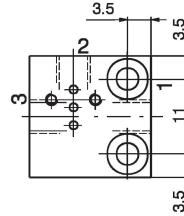
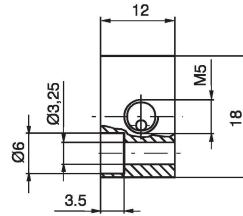
Interfaces dimensions 10 mm - ISO 15218



Standard version
Individual base

Ordering code

395.01



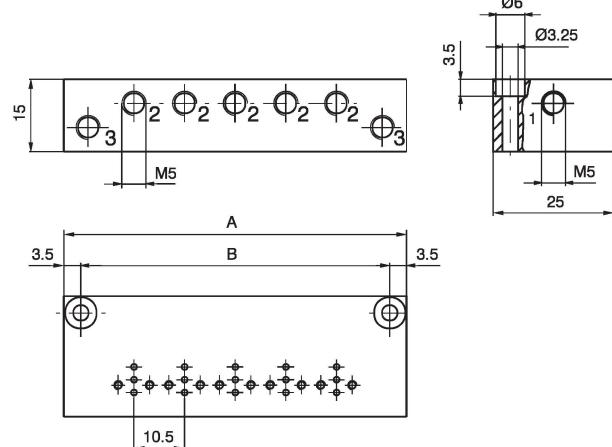
Weight 10 g

Standard version
multiple bases

Ordering code

395 .

No. Positions

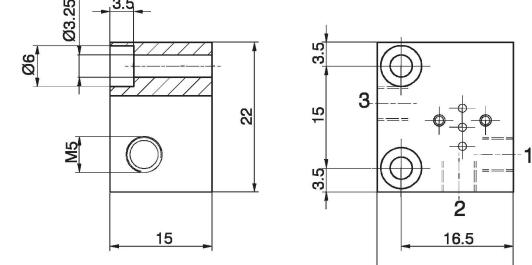


No. Positions	02	03	04	05	06	07	08	09	10
A	39.5	50	60.5	71	81.5	92	102.5	113	123.5
B	32.5	43	53.5	64	74.5	85	95.5	106	116.5
Weight (g)	43	54	65	76	87	98	109	120	131

Individual base for
ISO 15218-2003 version

Ordering code

P395.01



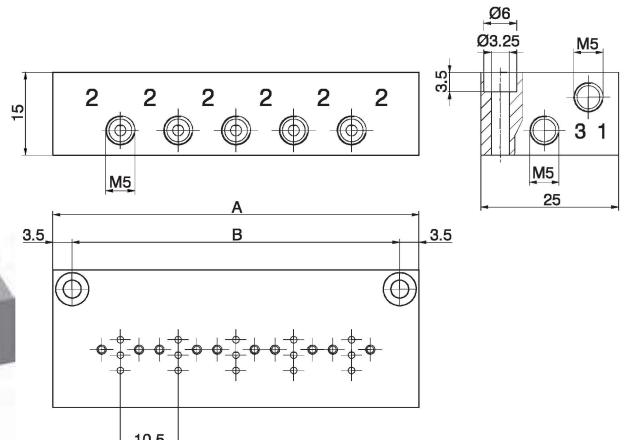
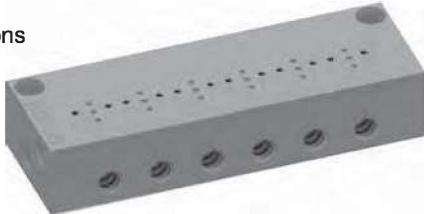
Weight 10 g

Multiple base for
ISO 15218-2003 version

Ordering code

P395 .

No. Positions



No. Positions	02	03	04	05	06	07	08	09	10
A	35	45.5	56	66.5	77	87.5	98	108.5	119
B	28	38.5	49	59.5	70	80.5	91	101.5	112
Weight (g)	43	54	65	76	87	98	109	120	131

This direct operated solenoid valve has minimum overall dimensions (15 mm wide). Its construction method is same as 10 mm valve, of course.

It is suitable to be single or gang mounted or as electro-operator for larger air flow distributors.

Can be utilized with compressed air and other fluids compatible with material used to build the solenoid valve.

The available versions, all equipped with manual override, are 3 ways, normally closed and normally open with DC and AC 50/60 Hz.

It's possible to install the N.O. valve on N.C. interface by using the registered reverse system included in the valve body.

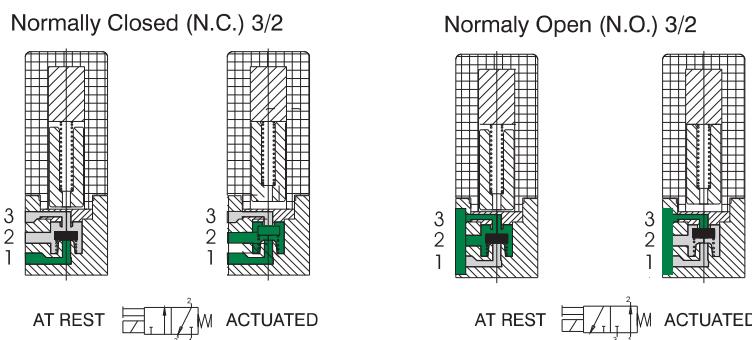
The electrical connection is made with cables (300 mm.), FASTON or with connector.

This type of miniature solenoid valve is interchangeable with most of the same products available on the market.

Coil be can also positioned at 180° to get the electrical connection located on the opposite side than override.

Make sure that the fastening screws are tightened with maximum torque of 0,75 Nm.

Functional schematics



Construction characteristics

Electrical part

Miniature solenoid consisting of a coil made of copper wire of different diameters depending on voltage, isolated according to "F" class standard, with injection-moulded nylon-glass application. All parts forming the cladding, the electrical connections and the pole pieces are protected against corrosion.

Mechanical part

AISI 430F cores, AISI 302 return springs, FPM poppets, thermoplastic polyester body.

Technical characteristics

Pneumatics

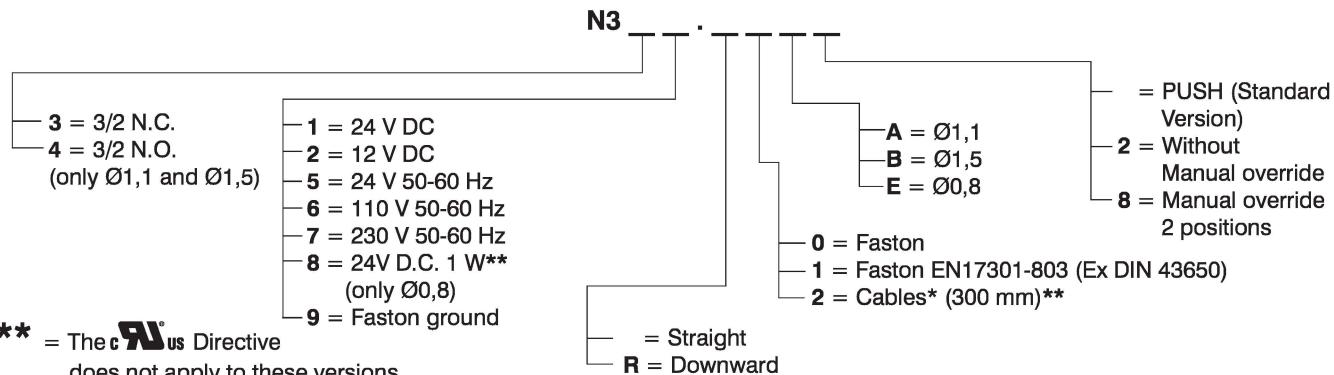
Orifice size	0,8 mm	1,1 mm	1,5 mm (only D.C.)
Flow rate at 6 bar with $\Delta p = 1$ bar	20 NI/min	30 NI/min	50 NI/min
Working pressure for N.C.	0 ... 10 bar		
Working pressure for N.O.	/	0 ... 8 bar	0 ... 5 bar
Temperature	-5° ... +50°C		
Max number of cycles per minute	50 million cycles (with standard working conditions)		
Compressed air, purity class according to ISO 8573-1:2010	5:4:4		

Electrical

Voltage D.C.	24 V DC	12-24 V DC	
Voltage A.C.	/	24-110-230 Volt 50/60 Hz	/
Power consumption D.C.	1 Watt	2,3 Watt	
Power consumption A.C.	/	2,8 VA (at starting) 2,5 VA (at speed)	/
Voltage tolerance	-5% ... +10%		
Response time*	10 ... 12 ms		
Isolating class	F (155°C)		
Protection degree	IP65 (with cables) IP40 (with connectors) IP00 (with faston)		

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

15 mm miniature solenoid ordering codes



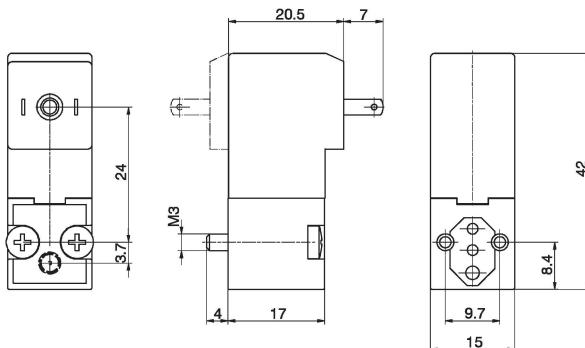
** = The cW us Directive does not apply to these versions

See previous page for available versions

With Faston



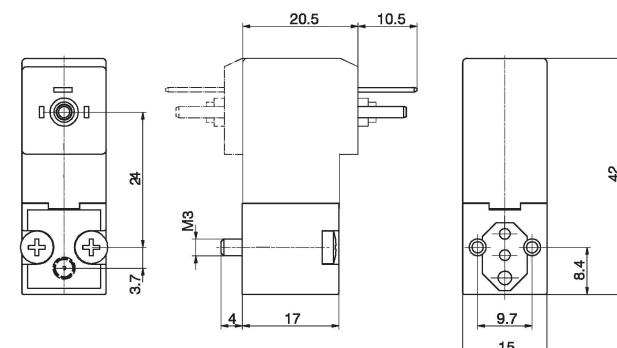
Weight 36 g



With Faston EN17301-803 (Ex DIN 43650)



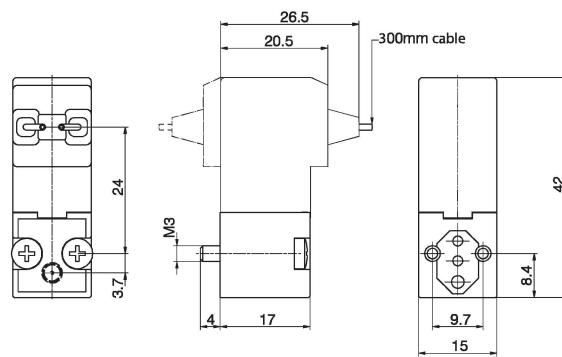
Weight 36 g



With Cables (300 mm)



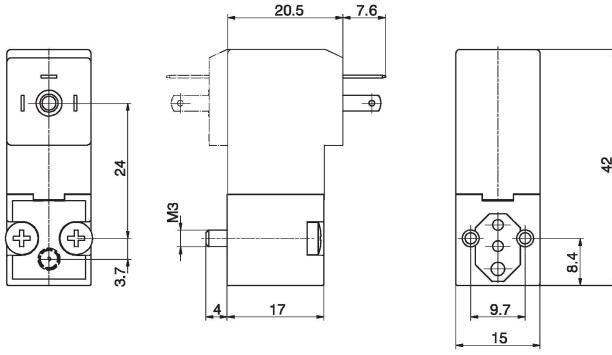
Weight 38 g



With Faston ground



Weight 38 g



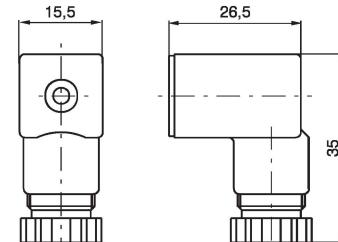
Connector

Ordering code

315.11.00 Standard
 315.12.00 for faston EN17301-803
 (Ex DIN 43650)
 315.11.0 L Led
 1 = 24 V D.C. / A.C.
 2 = 110 V 50/60 Hz
 3 = 230 V 50/60 Hz
 315.12.0 L for faston EN17301-803
 (Ex DIN 43650) with LED
 1 = 24 V D.C. / A.C.
 2 = 110 V 50/60 Hz
 3 = 230 V 50/60 Hz



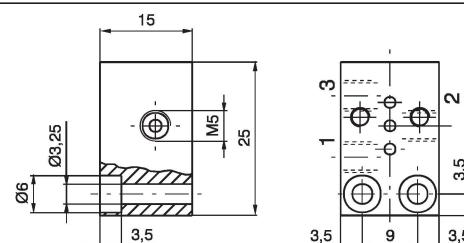
Weight 13 g



Single use base

Ordering code

355.01



Weight 18 g

Multiple bases

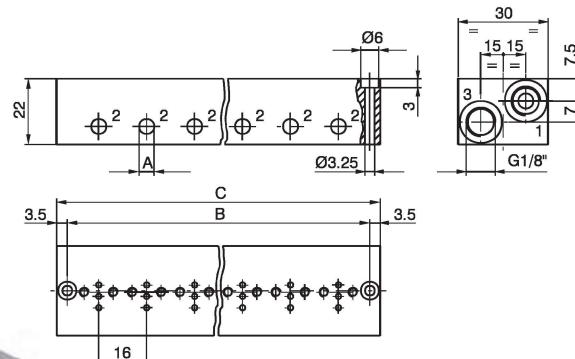
Ordering code

A = Orifice M5

A = Pipe fitting Ø4

355 .
No. Positions

354 .
No. Positions



No. Positions	02	03	04	05	06	07	08	09	10
B	37	53	69	85	101	117	133	149	165
C	44	60	76	92	108	124	140	156	172
Weight (g)	66	92	116	141	165	190	216	242	266

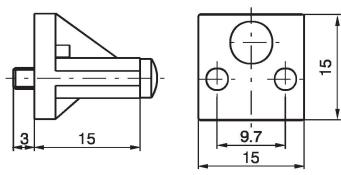
Closing plate

Ordering code

355.00



Weight 6 g



Interface dimensions

