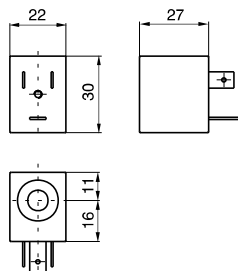


Coil

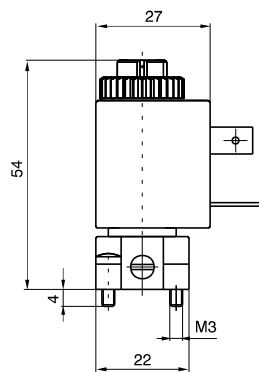
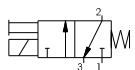


Weight 54 gr.

* Use only with M2/9

Ordering code	Available voltages Coils
MB 4	12 D.C.
MB 5	24 D.C.
MB 6	48 D.C.
MB 9*	24 D.C. (2 Watt) (Direct current, low consumption)
MB 17	24/50
MB 21	48/50
MB 22	110/50
MB 24	230/50
MB 37	24/60
MB 39	110/60
MB 41	230/60
MB 56	24/50-60
MB 57	110/50-60
MB 58	230/50-60
MB 66	24/50-60
MB 67	110/50-60
MB 68	230/50-60

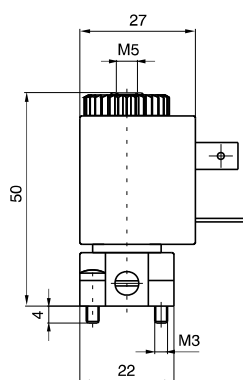
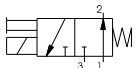
Miniature solenoid valve Normally Closed (N.C.)



Weight 100 gr.

Ordering code	Available voltages Miniature solenoid valve N.C.
M 2.4	12 D.C.
M 2.5	24 D.C.
M 2.6	48 D.C.
M 2.9	24 D.C. (2 Watt)
M 2.17	24/50
M 2.21	48/50
M 2.22	110/50
M 2.24	230/50
M 2.37	24/60
M 2.39	110/60
M 2.41	230/60
M 2.56	24/50-60
M 2.57	110/50-60
M 2.58	230/50-60
M 2.66	24/50-60
M 2.67	110/50-60
M 2.68	230/50-60

Miniature solenoid valve Normally Open (N.O.)



Weight 103 gr.

Ordering code	Available voltages Miniature solenoid valve N.O.
M 2/1.4	12 D.C.
M 2/1.5	24 D.C.
M 2/1.6	48 D.C.
M 2/1.9	24 D.C. (2 Watt)
M 2/1.17	24/50
M 2/1.21	48/50
M 2/1.22	110/50
M 2/1.24	230/50
M 2/1.37	24/60
M 2/1.39	110/60
M 2/1.41	230/60
M 2/1.56	24/50-60
M 2/1.57	110/50-60
M 2/1.58	230/50-60

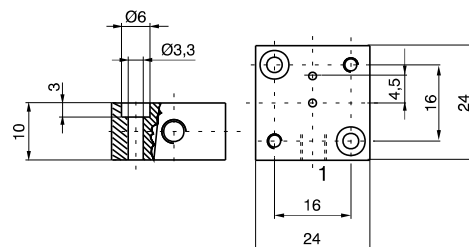
External feeding base

Use with solenoid valves for piloting pressure different from the using pressure

Ordering code

305.10.05

Weight 18 gr.



Individual base



In line ports - thread M5

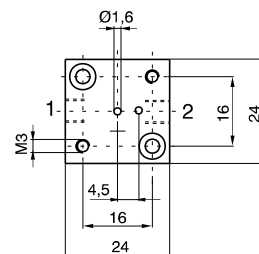
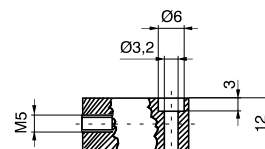
1 = INLET PORT (N.C.)
2 = OUTLET PORT

With a N.O. miniature
solenoid valve
1 = EXHAUST
2 = OUTLET PORT

Ordering code

305.00.00

Weight 56 gr.



90° Port - thread M5

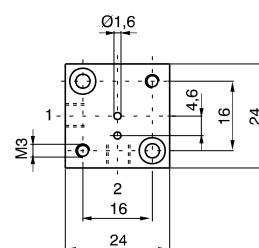
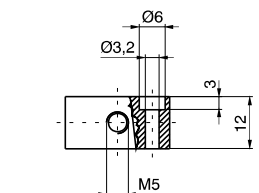
1 = INLET PORT (N.C.)
2 = OUTLET PORT (N.C.)

With a N.O. miniature
solenoid valve
1 = EXHAUST
2 = OUTLET PORT

Ordering code

305.90.00

Weight 56 gr.



In line ports - thread G 1/8"

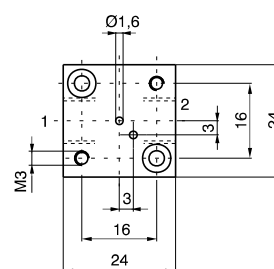
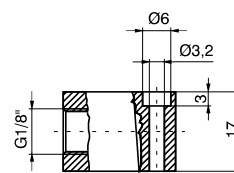
1 = INLET PORT (N.C.)
2 = OUTLET PORT (N.C.)

With a N.O. miniature
solenoid valve
1 = EXHAUST
2 = OUTLET PORT

Ordering code

305.00.18

Weight 75 gr.



90° Port - thread G 1/8"

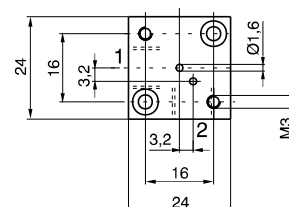
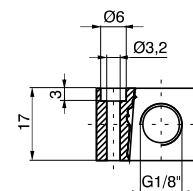
1 = INLET PORT (N.C.)
2 = OUTLET PORT (N.C.)

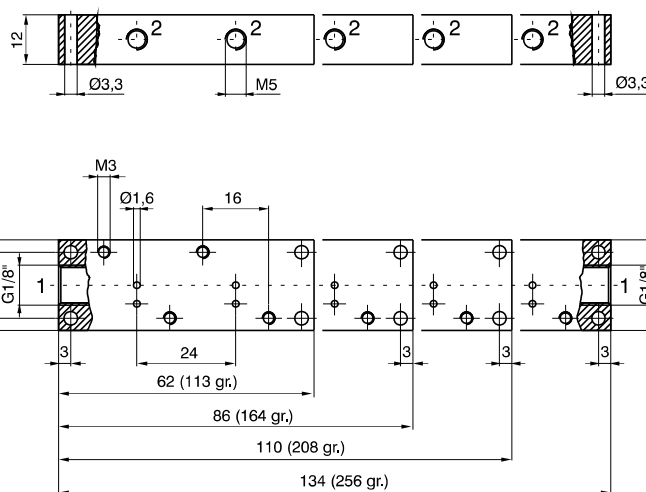
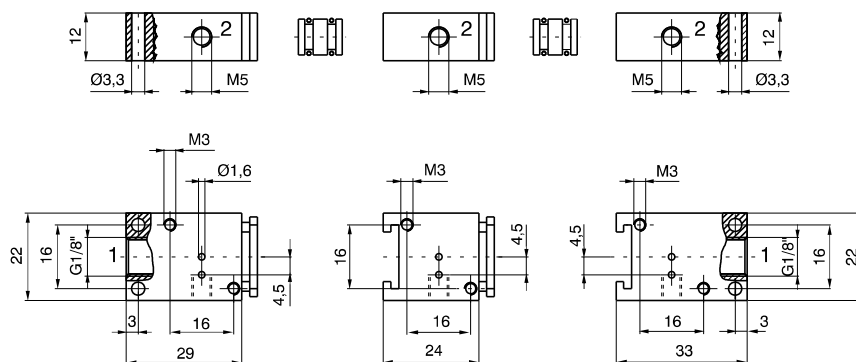
With a N.O. miniature
solenoid valve
1 = EXHAUST
2 = OUTLET PORT

Ordering code

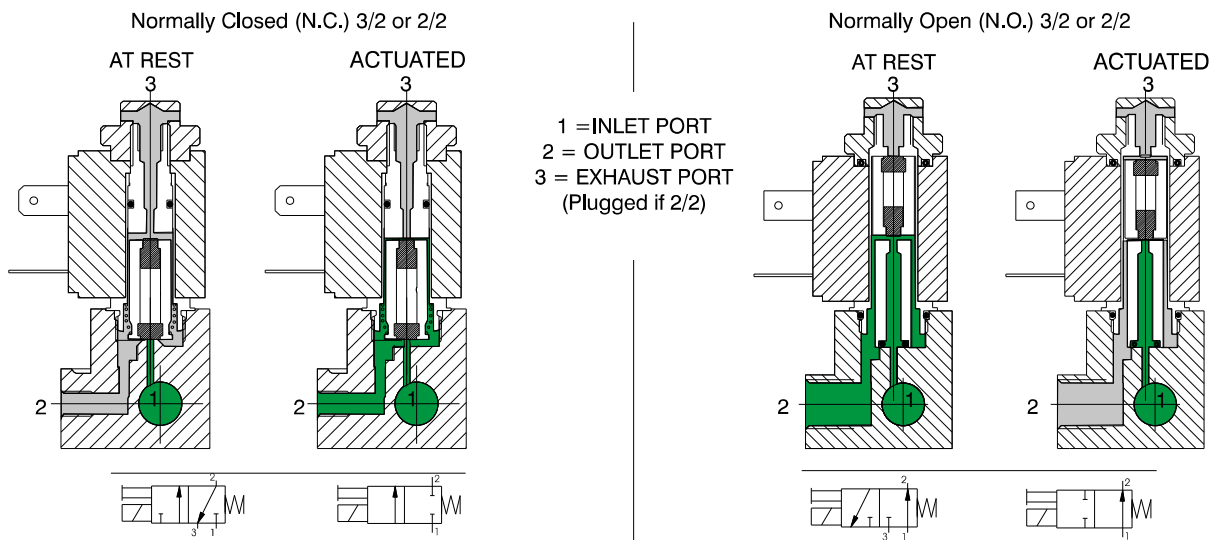
305.90.18

Weight 75 gr.





Functional schematic



Construction characteristics

Electrical parts: Solenoids: the solenoid consist of coils having different diameter copper wire windings insulated according standards "H"; they are encased in a nylon-glass compound. All parts are corrosion resistant.

Mechanical parts: Nickel plated brass tube nitrile (NBR) stainless steel plunger (AISI 430F), stainless steel adjusted springs, viton poppet seals, tropicalized zinc alloy interface plate, nickered brass manual override, Technopolymer coil lock nut, zinc steel mounting screws. Electrical connectors are standard.

Technical characteristics

Pneumatic	Working pressure	0 - 10 bar	
	Orifice size	1,3 mm	(1,1 mm for 2 W)
	Maximum fluid temperature	50°C	
	Maximum ambient temperature	50°C	
	Maximum flow rate at 6 bar with $\eta_p = 1$	53 NI/min	(35 NI/min. for 2 W)
	Cycles/minute	700	
	Fluids	Air-Vacuum-Inert gases	
	Lubrication	Non needed	
	Life	40 to 50 million cycles	
Electrical	Power consumption holding - D.C	5 W	(2 W) low consumption
	Power consumption holding - A.C	8 VA	(6 VA) low consumption
	Operating voltage tolerance	±10%	
	Response time opening *	8 ms	
	Response time closing *	6 ms	
	Insulation of the copper wire	H	
	Insulation of the coil	F	
	Connector protection	IP 65	
	Cable protection	DIN 43650 INDUSTRIAL FORM	

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

Maintenance and replacement parts

Maintenance practices for these valves are similar to those already detailed for other products - replacement of the plunger or poppet is not advisable since the new replacement would not provide the best fit with the rest of the already used valve.

Special care should be taken that no dirt is accumulated between the working surface of fixed core and the plunger which would result in vibrations and overheating of the solenoid. In the case of microsolenoid it must be assured that the alternate current coil is not charged when the mechanical part is not mounted to avoid destruction of the coil.

The electrical connections have to be perfect, especially where low currents are used (12-24 V). Oxidation of contacts between the connector and the coil can lead to intermittent malfunctions which are difficult to trace. Oxidation of contacts due to humidity or corrosive atmosphere are one of the most common causes of false alarms. Clean the contacts with appropriate spray.

**Mechanical actuator for Normally Closed (N.C.)
Miniature solenoid valve**

Normally Closed (N.C.)

Ordering code

305.M1 A = G 1/8"

355.M1 A = M5

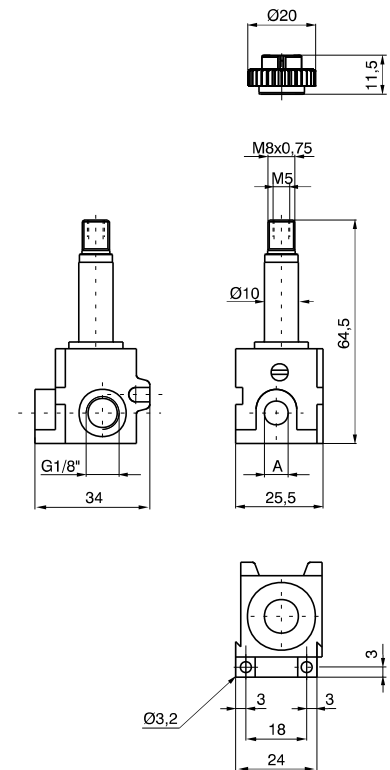
345.M1 A = Push in
fitting for
4 mm tube

305.M1/9 A = G 1/8"

355.M1/9 A = M5

345.M1/9 A = Push in fitting for 4 mm tube

2 W
24 DC



Weight 95 gr.

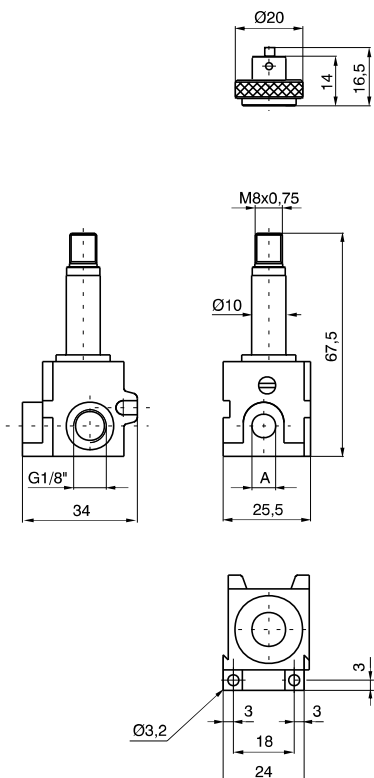
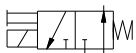
Normally Open (N.O.)

Ordering code

305.M1/1 A = G 1/8"

355.M1/1 A = M 5

345.M1/1 A = Push in fitting for 4 mm tube

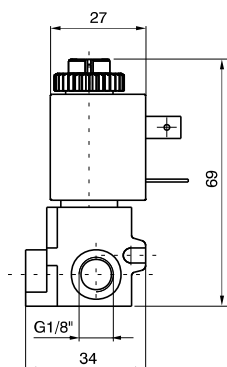


Weight 106 gr.

1

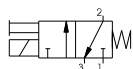
AIR DISTRIBUTION

Miniature solenoid valve

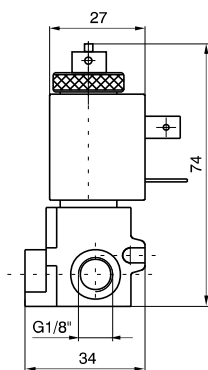


Normally Closed (N.C.)

Weight 149 gr.

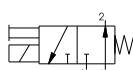


Ordering code			Available voltage miniature solenoid	
G 1/8"	M5	TUBE Ø4 mm		
305.M4	355.M4	345.M4	12 D.C.	Direct current
305.M5	355.M5	345.M5	24 D.C.	
305.M6	355.M6	345.M6	48 D.C.	
305.M9	355.M9	345.M9	24 D.C. (2 Watt)	
305.M17	355.M17	345.M17	24/50	Alternating current 50 Hz
305.M21	355.M21	345.M21	48/50	
305.M22	355.M22	345.M22	110/50	
305.M24	355.M24	345.M24	230/50	
305.M37	355.M37	345.M37	24/60	Alternating current 60 Hz
305.M39	355.M39	345.M39	110/60	
305.M41	355.M41	345.M41	230/60	
305.M56	355.M56	345.M56	24/50-60	Alternating current 50/60 Hz
305.M57	355.M57	345.M57	110/50-60	
305.M58	355.M58	345.M58	230/50-60	
305.M66	355.M66	345.M66	24/50-60	Alternating current low consumption 50/60 Hz
305.M67	355.M67	345.M67	110/50-60	
305.M68	355.M68	345.M68	230/50-60	



Normally Open (N.O.)

Weight 165 gr.

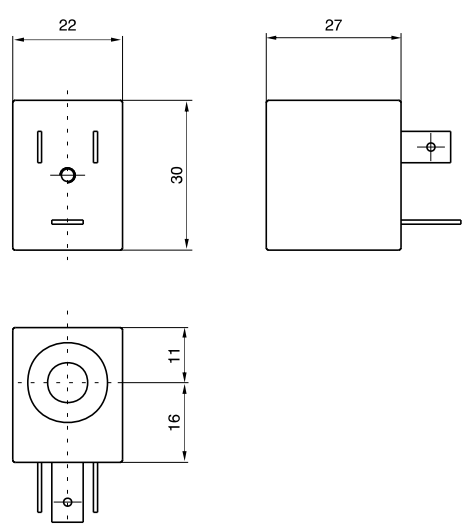


Ordering code			Available voltages miniature solenoid	
G 1/8"	M5	TUBE Ø4 mm		
305.M10/1	355.M10/1	345.M10/1	24 D.C. (8 Watt)	Direct current
305.M17/1	355.M17/1	345.M17/1	24/50	Alternating current 50 Hz
305.M21/1	355.M21/1	345.M21/1	48/50	
305.M22/1	355.M22/1	345.M22/1	110/50	
305.M24/1	355.M24/1	345.M24/1	230/50	
305.M37/1	355.M37/1	345.M37/1	24/60	Alternating current 60 Hz
305.M39/1	355.M39/1	345.M39/1	110/60	
305.M41/1	355.M41/1	345.M41/1	230/60	
305.M56/1	355.M56/1	345.M56/1	24/50-60	Alternating current 50/60 Hz
305.M57/1	355.M57/1	345.M57/1	110/50-60	
305.M58/1	355.M58/1	345.M58/1	230/50-60	

Coil



Weight 54 gr.



Ordering code		Available voltages	
N.C.	N.O.	Coil	
MB4 MB5 MB6 MB9	 MB10/1	12 D.C. 24 D.C. 48 D.C. 24 D.C. (2 Watt) 24 D.C. (8 Watt)	 Direct current
MB17 MB21 MB22 MB24	MB17/1 MB21/1 MB22/1 MB24/1	24/50 48/50 110/50 230/50	 Alternating current 50 Hz
MB37 MB39 MB41	MB37/1 MB39/1 MB41/1	24/60 110/60 230/60	 Alternating current 60 Hz
MB56 MB57 MB58	MB56/1 MB57/1 MB58/1	24/50-60 110/50-60 230/50-60	 Alternating current 50/60 Hz
MB66 MB67 MB68	/	24/50-60 110/50-60 230/50-60	 Alternating current (low consumption) 50/60 Hz

Electrical connector

Ordering code

- 305.11.00

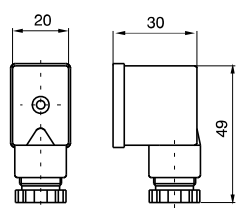
Normal
- 305.11.0 L

with Led

1 = 24 V D.C. / A.C.

2 = 110 V 50/60 Hz

3 = 230 V 50/60 Hz



Weight 19 gr.

BISTABLE General

The most interesting aspects of this bi-stable miniature solenoid valve operating with D.C. only, is that it can be commuted with a simple electric impulse and stay commuted till an inverted polarity impulse deactivates it. It means that the valve is not automatically deactivated if current fail as happens with normal solenoid valves.

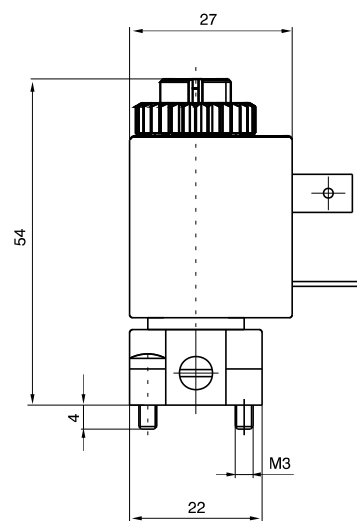
The applications differ but are all based on above mentioned feature.

The internal construction is relatively special. The fix plunger is equipped with a permanent magnet that hold or release the mobile plunger according to the magnetic field generated by the coil.

A specific coil is used for this application and it cannot be replaced by the standard ones.

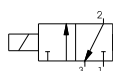
Ordering code is **MBB5**.

Miniature solenoid valve for distributors and bases



Ordering code

M5/B



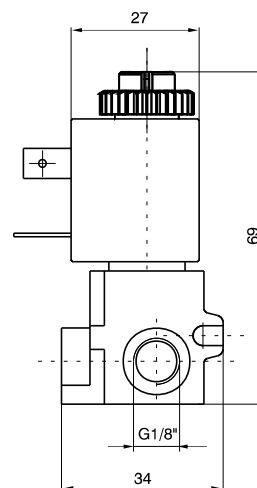
Miniature solenoid valve with inseries mounting base

Ordering code

305.M5/B = G 1/8"

355.M5/B = M5

345.M5/B = Fitting for 4 mm tube



Electric pilot CNOMO (coil not included)

Mechanics with base for solenoid to be used where an electric pilot system is required.

May be used on all sizes and is standardized as an interface on the distributor.

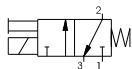
The base is fitted with a manual control which is pulse actuated, without check, or with two stable positions, actuated by means of a screwdriver (pressing down and turning clockwise by 90°). Two different types of solenoids can be mounted on the stem, one in conformity with ISO standard size 30x38 and ISO 4400 (DIN 43650) electrical connection, and a compact one size 22x27, having the same performance but at lower price. The technical characteristics of the latter are described in the catalogue, series 300, and refer to MB solenoids. The base is fitted with screws (M4x30) for fastening to the distributor.

Ordering code

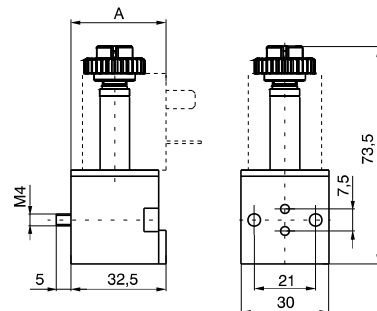
M

P = Manual 1 position
R = Manual 2 positions

3 = Mechanics CNOMO
4 = 2-W Mechanics CNOMO



Weight 49 gr.



A = 33 (with MB solenoid)

A = 38 (with MC solenoid)

General characteristics

Structural	Body	Thermoplastic polyester	
	Stem	Nickel-plated brass	
	Cores	AISI 430F stainless steel	
	Springs	AISI 302 stainless steel	
	Shutters	FPM	
	Other seals	NBR	
	Manual control	Nickel-plated brass	
Pneumatic	Fluid	Air, Neutral gases	
	Working pressure	0-10 bar	
	Fluid ambient temperature	-5°C - +50°C	
	Flow rate at 6 bar with Δp 1 bar	53 NI/min	(20 NI/min for 2 W)
	Nominal flow cross section	1,3 mm	(0,9 mm for 2 W)
Electric	Power consumption (inrush) - A.C.	13 VA	
	Power consumption holding - D.C.	4 W	(2 W)
	Power consumption holding - A.C.	8,5 VA	
	Operating voltage tolerance	$\pm 10\%$	
	Response time opening *	13 ms	
	Response time closing *	5 ms	
	Insulation of the copper wire	H	
	Insulation of the coil	F	
	Connector protection	IP 65	
	Cable protection	DIN 43650 "A" FORM	

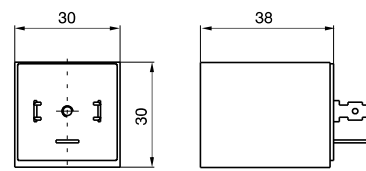
(*) "Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001, Pneumatic fluid power - Directional control valves - Measurement of shifting time"

Coil

Ordering code	Available voltages
	Coil
MC5	24 D.C.
MC9	24 D.C. (2 Watt)
MC56	24/50-60 Hz
MC57	110/50-60 Hz
MC58	230/50-60 Hz

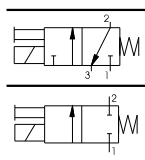


Weight 110 gr.

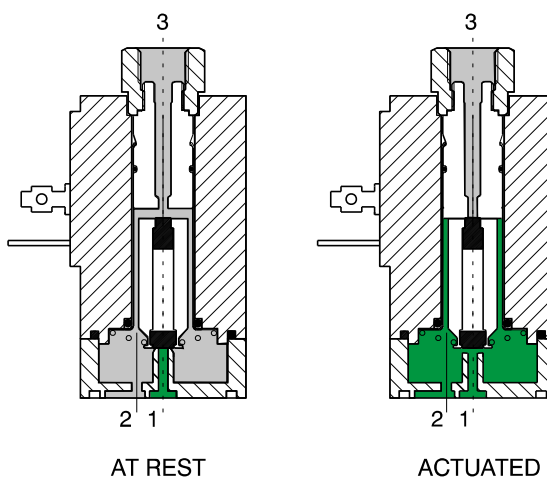


Functional schematic

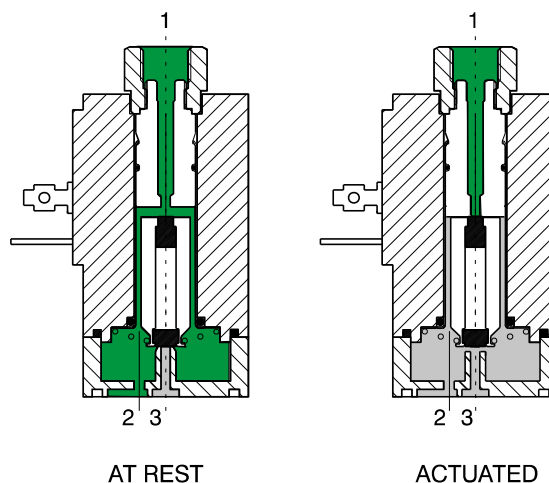
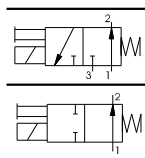
Normally Closed (N.C.) 3/2 or 2/2



- 1 = INLET PORT
2 = OUTLET PORT
3 = EXHAUST PORT
(Plugged if 2/2)



Normally Open (N.O.) 3/2 or 2/2



Construction characteristics

Electrical parts:

Solenoids: the solenoid consists of coils having different diameter copper wire windings insulated according standards "H"; they are encased in a nylon-glass compound. All parts are corrosion resistant.

Mechanical parts:

Stainless steel tube and plunger (AISI 430F), stainless steel adjusted springs, viton poppet seals, tropicalized zinc alloy interface plate, nitrile (NBR) seal nicked brass manual override, nickel steel coil lock nut, zinc steel mounting screws. To be usable, the solenoids have to be attached either to a base or directly to the distributor's operators by means of connectors G 1/8". Electrical connectors are standard. These solenoid are available in all voltages and frequencies used in the world. The following are the technical characteristics of the solenoid.

Technical characteristics

Pneumatic	Working pressure	0 - 10 bar
	Orifice size	1,8 mm
	Maximum fluid temperature	50°C
	Maximum ambient temperature	50°C
	Maximum flow rate at 6 bar with $\Delta p = 1$	80 NI/min
	Cycles/minute	700
	Fluids	Air-Vacuum-Inert gases
	Lubrication	Not required
	Life	40 to 50 millions
Electric	Power consumption (inrush) - D.C.	-
	Power consumption (inrush) - A.C.	19,5 VA
	Power consumption holding - D.C.	8,2 W
	Power consumption holding - A.C.	9 VA
	Operating voltage tolerance	$\pm 10\%$
	Response time opening *	15 ms
	Response time closing *	30 ms
	Insulation of the copper wire	H
	Insulation of the coil	F
	Connector protection	IP 65
	Cable protection	DIN 43650 "A" FORM

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

1

AIR DISTRIBUTION

Maintenance and replacement parts

Maintenance practices for these valves are similar to those already detailed for other products - replacement of the plunger or poppet is not advisable since the new replacement would not provide the best fit with the rest of the already used valve.

Special care should be taken that no dirt is accumulated between the working surface of fixed cores 3 and the plunger 2 which would result in vibrations and overheating of the solenoid. In the case of microsolenoid it must be assured that the alternate current coil is not charged when the mechanical part is not mounted to avoid destruction of the coil.

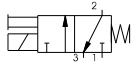
The electrical connections have to be perfect, especially where low currents are used (12-24 V). Oxidation of contacts between the connector and the coil can lead to intermittent malfunctions which are difficult to trace. Oxidation of contacts due to humidity or corrosive atmosphere are one of the most common causes of false alarms. Clean the contacts with appropriate spray.

Solenoid valve S and S/1

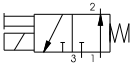


Weight 220 gr.

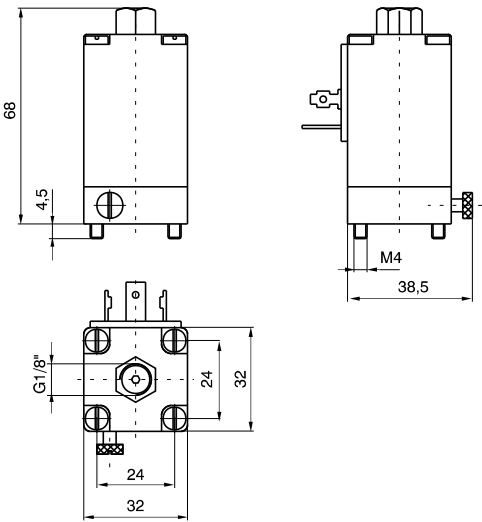
Normally Closed
(N.C.) - **S**



Normally Open
(N.O.) - **S/1**



Ordering code		Available voltages Coil	
S 2	S 2/1	6 D.C.	Direct current
S 4	S 4/1	12 D.C.	
S 5	S 5/1	24 D.C.	
S 6	S 6/1	48 D.C.	
S 16	S 16/1	12/50	Alternating current 50 Hz
S 17	S 17/1	24/50	
S 19	S 19/1	32/50	
S 20	S 20/1	42/50	
S 21	S 21/1	48/50	
S 22	S 22/1	110/50	
S 23	S 23/1	115/50	
S 24	S 24/1	230/50	
S 36	S 36/1	12/60	Alternating current 60 Hz
S 37	S 37/1	24/60	
S 38	S 38/1	48/60	
S 39	S 39/1	110/60	
S 40	S 40/1	115/60	
S 41	S 41/1	230/60	
S 56	S 56/1	24/50-60	Alternating current 50/60 Hz
S 57	S 57/1	110/50-60	
S 58	S 58/1	230/50-60	



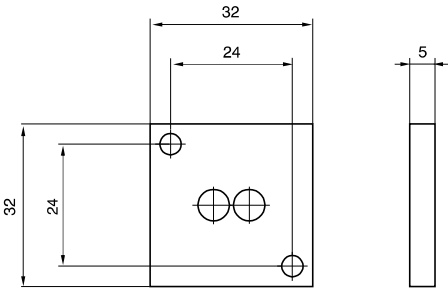
Closing plate

Ordering code

300.12.00



Weight 14 gr.



External feeding base

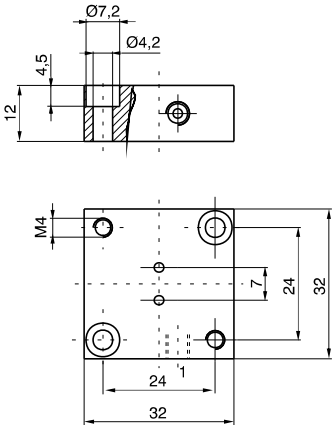
To be used with electrodistributeurs to get a different piloting pressure from the line one.

Ordering code

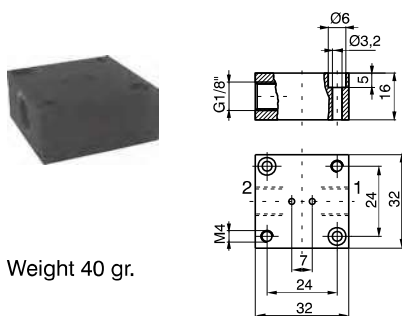
300.10.05



Weight 35 gr.



Individual base



Weight 40 gr.

In line port - thread G 1/8"

1 = INLET PORT (N.C.)

2 = OUTLET PORT (N.C.)

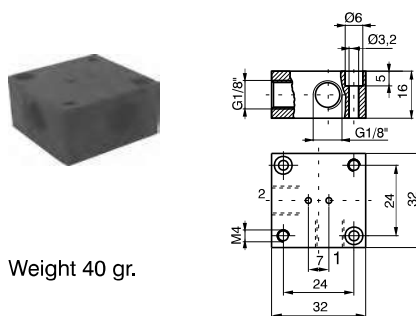
With solenoid valve N.O.

1 = EXHAUST PORT

2 = OUTLET PORT

Ordering code

300.04.00



Weight 40 gr.

90° Port - thread G 1/8"

1 = INLET PORT (N.C.)

2 = OUTLET PORT (N.C.)

With solenoid valve N.O.

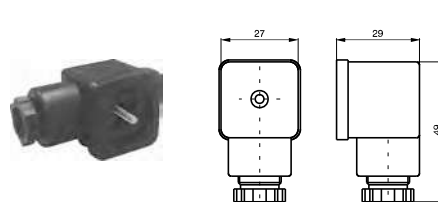
1 = EXHAUST PORT

2 = OUTLET PORT

Ordering code

300.04.90

Electrical connector



Weight 25 gr.

Ordering code

300.11.00

Standard

300.11.0 L

Led

1 = 24 V D.C. / A.C.

2 = 110 V 50/60 Hz

3 = 230 V 50/60 Hz

Modular bases for series mounting

Ordering code

Initial base

300.05.00

Intermediate base

300.06.00

Last base

300.07.00

Bored specer

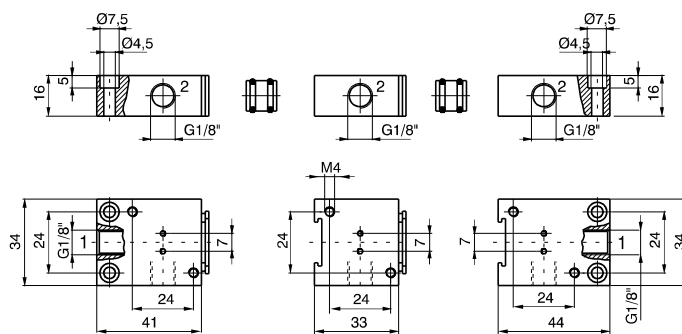
300.05.01

Weight 5 gr.

Solid space

300.05.02

Weight 6 gr.



Initial base

Intermediate base

Last base



Weight 52 gr.

Weight 40 gr.

Weight 52 gr.

Multiple integral bases for series mounting



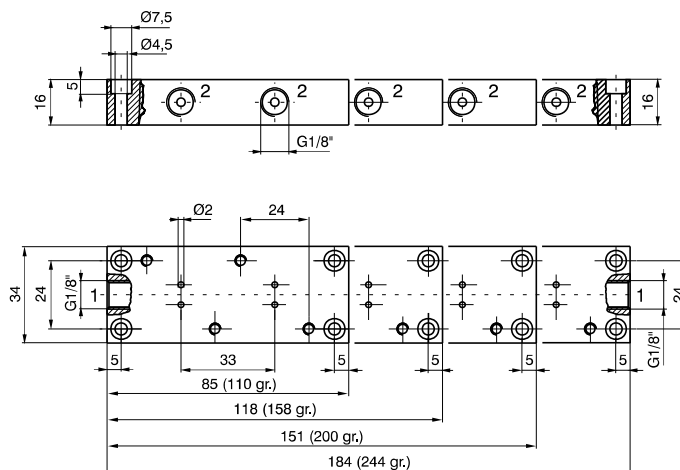
Ordering code

300.08.02 2 positions

300.08.03 3 positions

300.08.04 4 positions

300.08.05 5 positions



General

The series **us** homologated solenoid valves (valid for USA and Canada file n. E206325-VAIU2, VAIU8) are different from the standard ones for microsolenoid made with an injected RYNITE embedded copper wire (they are included in class "F" insulation).

Refer to standard versions as for as other details and accessories to be used with solenoid valves.

1

AIR DISTRIBUTION

Miniature solenoid valve 10mm

Ordering code

UN3

6 = 2/2 N.C.
7 = 3/2 N.C.
8 = 3/2 N.O.

1 = 24 V D.C.
2 = 12 V D.C.

1 = 90° connector with Led
2 = Cable 300 mm (IP40)
3 = Line connector with Led
4 = 90° connector without Led
5 = Line connector without Led
32 = Cable (300 mm) coil incorporated (IP65)



Miniature solenoid valve 15mm

Ordering code

UN3

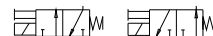
3 = 3/2 N.C.
4 = 3/2 N.O.

1 = 24 V D.C.
2 = 12 V D.C.

5 = 24 V 50/60 Hz
6 = 110-120 V 50/60 Hz
7 = 230V 50/60 Hz

A = Orifice Ø1,1
B = Orifice Ø1,5

0 = Faston
1 = Faston EN17301-803 (Ex DIN 43650)
2 = Cables* (300 mm)



* On request and for large quantity only (only 24 V D.C. 2,3 W)

Miniature solenoid valve 22mm

Ordering code

Coil

UMB

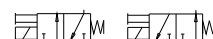
Miniature solenoid valve N.C.

UM2

Miniature solenoid valve N.O.

UM2/1.

4 = 12V D.C.
5 = 24V D.C.
56 = 24V 50/60 Hz
57 = 110-120 V 50/60 Hz
58 = 230V 50/60 Hz



Miniature solenoid valve 22mm for series mounting

Ordering code	
Coil N.C.	UMB <ul style="list-style-type: none"> 4 = 12 V D.C. 5 = 24 V D.C. 56 = 24 V 50/60 Hz 57 = 110-120 V 50/60 Hz 58 = 230 V 50/60 Hz
Coil N.O.	UMB /1 <ul style="list-style-type: none"> 10 = 24 V D.C. 8W 56 = 24 V 50/60 Hz 57 = 110-120 V 50/60 Hz 58 = 230 V 50/60 Hz
Solenoid valve N.C.	U3 5.M <ul style="list-style-type: none"> 0 = G1/8" 5 = M5 4 = fitting for 4mm tube 4 = 12 V D.C. 5 = 24 V D.C. 56 = 24 V 50/60 Hz 57 = 110-120 V 50/60 Hz 58 = 230 V 50/60 Hz
Solenoid valve N.O.	U3 5.M /1 <ul style="list-style-type: none"> 0 = G1/8" 5 = M5 4 = fitting for 4mm tube 10 = 24 V D.C. 8W 56 = 24 V 50/60 Hz 57 = 110-120 V 50/60 Hz 58 = 230 V 50/60 Hz



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AIR DISTRIBUTION

Bi-stable miniature solenoid valve 22mm

Ordering code	
Coil	UMBB5
Miniature solenoid valve for distributors and bases (N.C.)	UM5/B
Miniature solenoid valve with inseries mounting base (N.C.)	U3 5.M5/B <ul style="list-style-type: none"> 0 = G1/8" 5 = M5 4 = fitting for 4mm tube



Solenoid valve 30 mm (for mechanics M3 and M4)

Ordering code	
UMC5	= 24 V D.C.
UMC56	= 24 V 50/60 Hz
UMC57	= 110÷120 V 50/60 Hz
UMC58	= 230 V 50/60 Hz



Solenoid valve 32 mm

Ordering code	
Solenoid valve N.C.	US
Solenoid valve N.O.	US /1 <ul style="list-style-type: none"> 4 = 12 V D.C. 5 = 24 V D.C. 56 = 24 V 50/60 Hz 57 = 110-120 V 50/60 Hz 58 = 230 V 50/60 Hz

