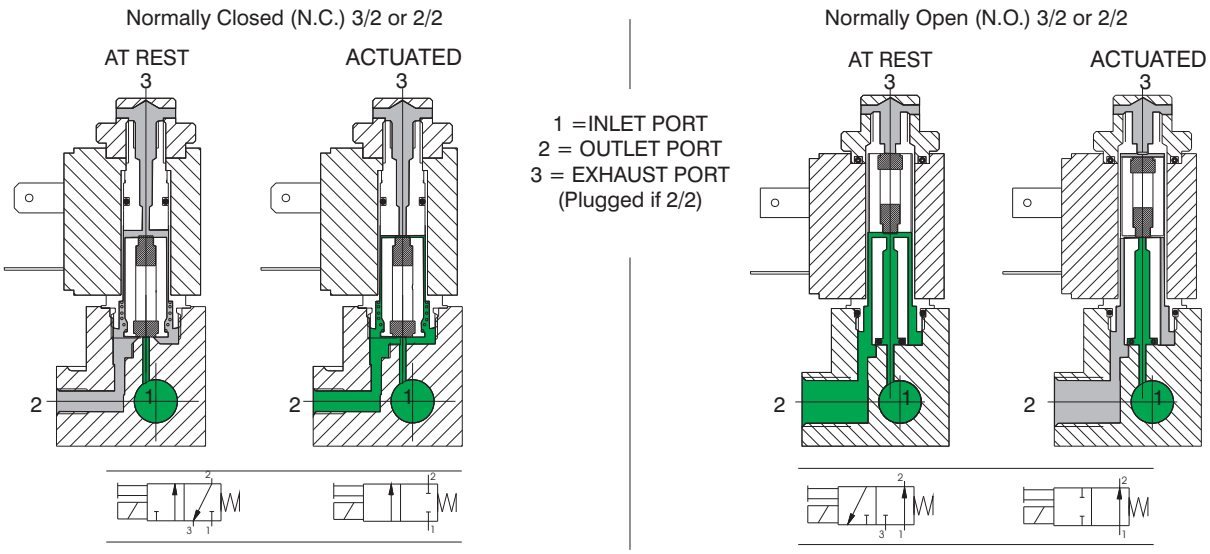
2

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, nickeled brass manual override, nickel steel 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 ?p = 1	53 Nl/min	(35 Nl/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

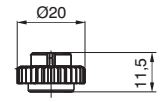
Maintenace practices for these valves are similar to those already detailed for other products - replacement of the plunger or poppet is not advisable since the new replacement would not provide the best fit with the rest of the already used valve.

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 machanical 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.)

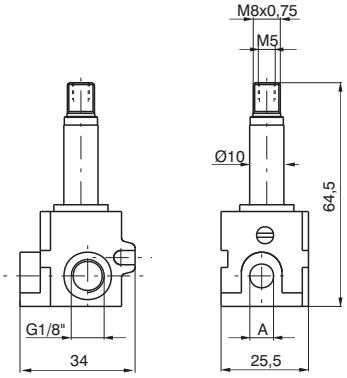


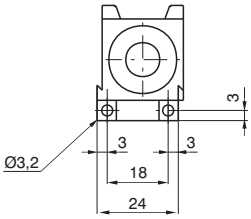
Ordering code

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

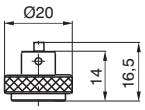
2 W
24 DC





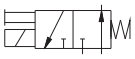
Weight 95 gr.

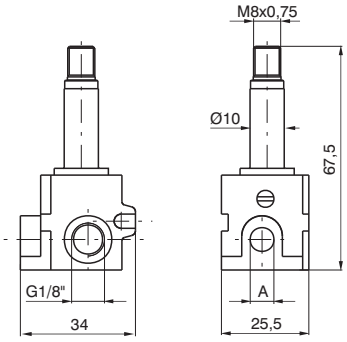
Normally Open (N.O.)

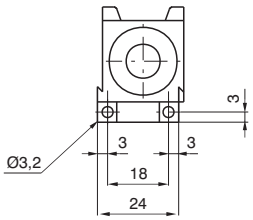


Ordering code

305.M1/1 **A** = G 1/8"
355.M1/1 **A** = M 5
345.M1/1 **A** = Push in fitting for 4 mm tube

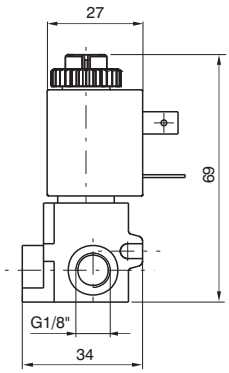






Weight 106 gr.

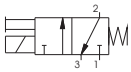
Miniature solenoid valve

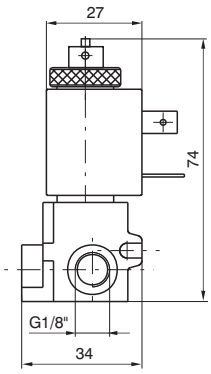


Normally Closed (N.C.)

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

Weight 149 gr.

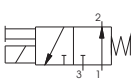




Normally Open (N.O.)

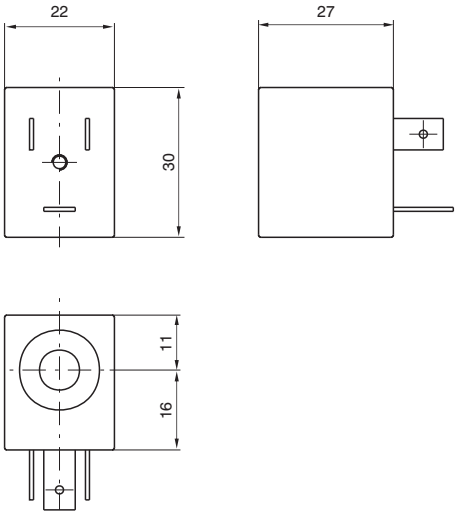
Ordering code			Available voltages miniature solenoid	
G 1/8"	M5	TUBE Ø4 mm		
305.M10/1	**355.M10/1**	**345.M10/1**	24 D.C. (8 Watt)	Direct current
305.M17/1 **305.M21/1** **305.M22/1** **305.M24/1**	**355.M17/1** **355.M21/1** **355.M22/1** **355.M24/1**	**345.M17/1** **345.M21/1** **345.M22/1** **345.M24/1**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

Weight 165 gr.



Coil

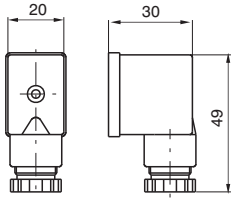
Weight 54 gr.



Ordering code		Available voltages Coil	
N.C.	N.O.		
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.

BISTABILE
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.

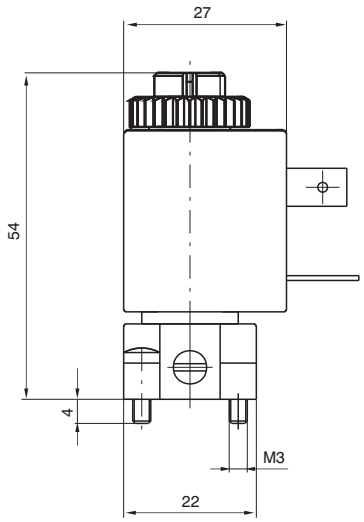
The internal construction is relatively special. The fix plunger is equipped with a permanent magnet that hold or release the mobile plunger according to the magnetic field generated by the coil.

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

Ordering code is **MBB5**.

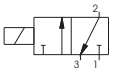
2

Miniature solenoid valve for distributors and bases



Ordering code

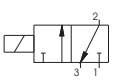
M5/B

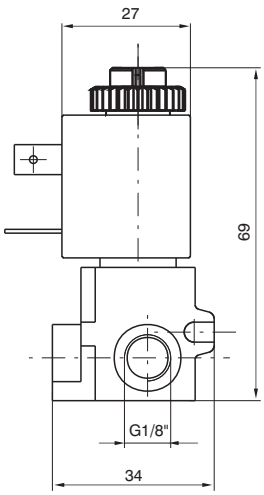


Miniature solenoid valve with inseries mounting base

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)

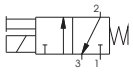
Mechanics with base for solenoid to be used where an electric pilot system is required.
May be used on all sizes and is standardized as an interface on the distributor.
The base is fitted with a manual control which is pulse actuated, without check, or with two stable positions, actuated by means of 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

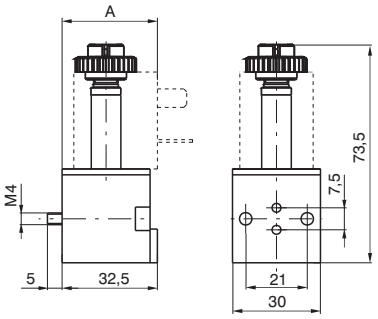
M

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-platted brass	
	Cores	AISI 430F stainless steel	
	Springs	AISI 302 stainless steel	
	Shutters	FPM	
	Other seals	NBR	
	Manual control	Nickel-platted 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 Nl/min	(20 Nl/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	±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.