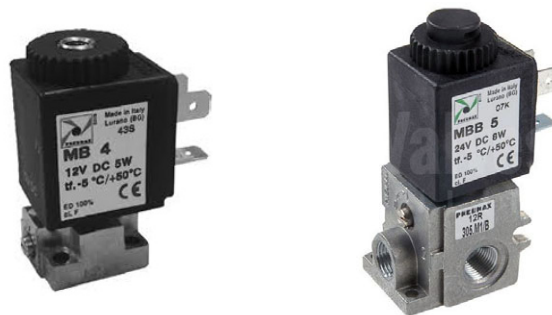


## PILOT VALVES Series 300/M2/M3

### Technical characteristics

<b>Pneumatic</b>	Working pressure	0 - 10 bar	
	Orifice size	1,3 mm	(0,9 mm for 2 W)
	Maximum fluid temperature	50°C	
	Maximum ambient temperature	50°C	
	Maximum flow rate at 6 bar with $\Delta p$ 1 bar	53 NI/min	(20NI/min. for 2 W)
	Cycles/minute	700	
	Fluids	Air-vacuum-inert gases	
	Lubrication	non required	
	Life	45 to 50 million cycles	
<b>Electrical</b>	Power consumption holding - D.C	5 W	(2.5 W) low consumption
	Power consumption holding - A.C	9 VA	(6 VA) low consumption
	Operating voltage tolerance	$\pm 10\%$	
	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 (12-24V). 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.









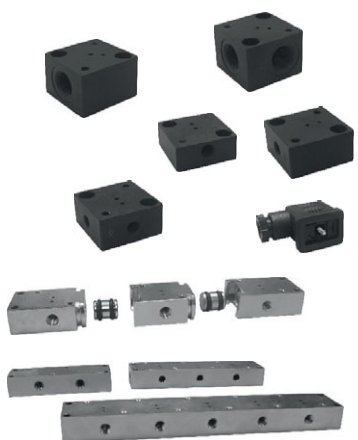


# MICROSOLENOID VALVES

(series 300, section 2)

# PNEUMAX

	Symbol	Description	Code	Max. pressure	Flow at 6 bar, Δp=1	Orifice size
<b>22 mm</b> 		Mechanic N.C.	M2 <b>STD</b>	0 ÷ 10 bar	53 NI/min.	1,3 mm
		Mechanic N.C. threaded lock nut	M2P			
		Mechanic N.O.	M2/1 <b>STD</b>	0 ÷ 10 bar	20 NI/min.	0,9 mm
		Mechanic N.C. (2 W 24 VDC)	M2/9			
		Mechanic 3/2 N.O.	MM7			

	Individual base ports in line - M5 thread	305.00.00 <b>STD</b>	/	/	/
	Individual base ports at 90° - M5 thread	305.90.00 <b>STD</b>			
	Individual base ports in line - G 1/8" thread	305.00.18 <b>STD</b>			
	Individual base ports at 90° - G 1/8" thread	305.90.18			
	Modular base for series mounting -initial	305.05.00 <b>STD</b>			
	Mod. base for ser. mounting - intermediate	305.06.00 <b>STD</b>			
	Modular base for series mounting - last	305.07.00 <b>STD</b>			
	Bored spacer	305.05.01 <b>STD</b>			
	Solid spacer	305.05.02 <b>STD</b>			
	Multiple integral bases	305.08.*			
	External feeding base	305.10.05 <b>STD</b>			
	Connector normal	305.11.00			
	Connector Led	305.11.**L			

\* Number of seats (from 2 to 5)

\*\* 01 = 24 V AC/DC 02 = 110 V 50-60 Hz 03 = 230 V 50-60 Hz

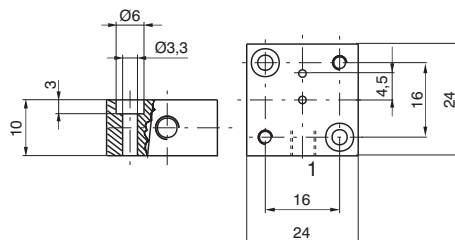
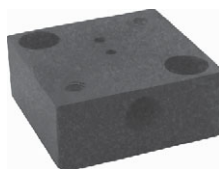
## External feeding base



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

Ordering code

**305.10.05**

Weight 18 gr.



	Symbol	Description	Code	Max. pressure	Flow at 6 bar, Δp=1	Orifice size	
<b>22 mm Modular</b> 	3/2 N.C.	Mechanic G 1/8"	305.M1 <b>STD</b>	0 - 10 bar	53 NI/min	mm 1,3	
		Mechanic M5	355.M1				
		Quick fitting for tube Ø4	345.M1				
	3/2 N.O.	Mechanic G 1/8" (2 W 24 VDC)	305.M1/9	0 - 10 bar	35 NI/min	mm 1,1	
		Mechanic M5 (2 W 24 VDC)	355.M1/9				
		Quick fitting for tube Ø4 - (2 W 24 VDC)	345.M1/9				
	3/2 N.O.		Mechanic G 1/8"	305.M1/1	0 - 10 bar	53 NI/min	mm 1,3
			Mechanic M5	355.M1/1			
			Mechanic- quick fitting for tube Ø4	345.M1/1			



Technical modifications keep in reserve !

(2021/03)



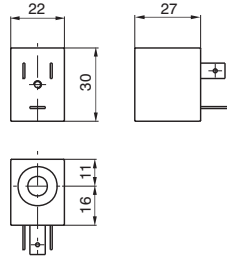
**Coil**



Weight 54 gr.

\* Use only with M2/9

Coil type U1



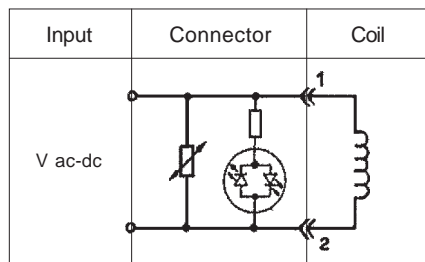
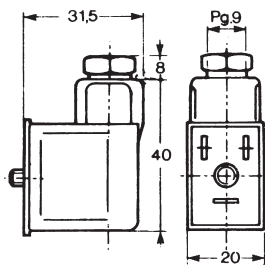
Ordering code	Available voltages Coils	
<b>MB 4</b>	12 D.C.	<b>STD</b>
<b>MB 5</b>	24 D.C.	<b>STD</b>
<b>MB 6</b>	48 D.C.	<b>STD</b>
<b>MB 9*</b>	24 D.C. (2 Watt) (Direct current, low consumption)	
<b>MB 17</b>	24/50	<b>STD</b>
<b>MB 21</b>	48/50	<b>STD</b>
<b>MB 22</b>	110/50	<b>STD</b>
<b>MB 24</b>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

**Connector for coil (DIN 43650)**



Ordering code	Supply voltage until	Coil type	Protection class	Remarks
<b>MP1</b>	0-250V~/300V=	U1	IP 65	CONNECTOR
<b>MP1-LED-24V</b>	24V	U1	IP 65	+LED
<b>MP1-LED-24V-5M</b>	24V	U1	IP 65	+LED+CABLE
<b>MP1-LED-230V</b>	230V	U1	IP 65	+LED

**Electronic circuit for MP-LED**



Bipolar LED and VDR to protect supply and switch.  
(The energy in the coil is limited by the VDR).  
Voltage: 24 or 230V.



Technical modifications keep in reserve !



(2021/03)



# MICROSOLENOID VALVES

(series 300, section 2)

# PNEUMAX

	Symbol	Description	Code	Max. pressure	Flow at 6 bar, Δp=1	Orifice size
<b>30 mm CNOMO</b> 		Mechanic CNOMO manual 1 position N.C.	M3P	0 - 10 bar	53 NI/min	mm 1,3
		Mechanic CNOMO manual 2 positions N.C	M3R <b>STD</b>			
		Mechanic CNOMO 2 Watt man. 1 pos. N.C.	M4P	0 - 10 bar	20 NI/min	mm 0,9
		Mechanic CNOMO 2 Watt man. 2 pos. N.C.	M4R			

## General characteristics

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

Other Technical Characteristics see page 1.01.01

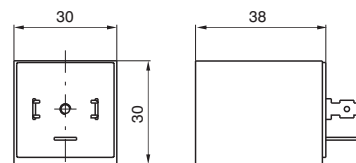
## Coil

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



Weight 110 gr.

Coil type U3

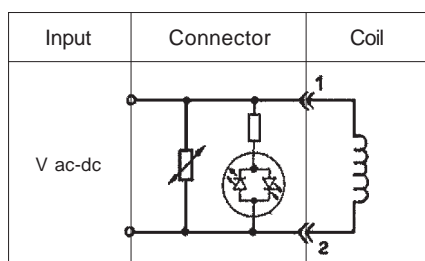
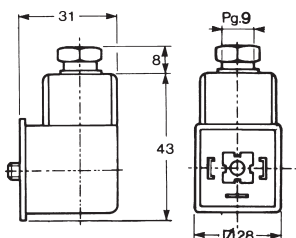


## Connector for coil (DIN 43650)



Ordering code	Supply voltage until	Coil type	Protection class	Remarks
<b>MP2</b> <b>STD</b>	0-250V~/300V=	U2/U3	IP 65	CONNECTOR
<b>MP2-LED-24V</b> <b>STD</b>	24V	U2/U3	IP 65	+LED
<b>MP2-LED-230V</b> <b>STD</b>	230V	U2/U3	IP 65	+LED

## Electronic circuit for MP-LED



Bipolar LED and VDR to protect supply and switch.  
(The energy in the coil is limited by the VDR).  
Voltage: 24 or 230V.



Technical modifications keep in reserve !

(2021/03)

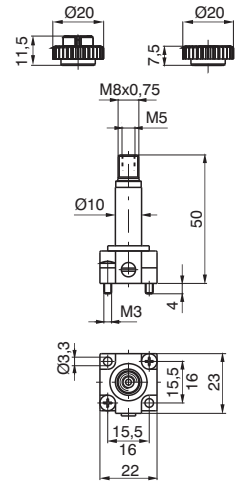
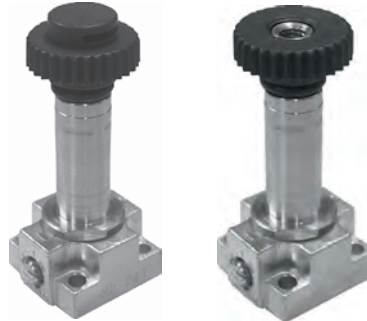
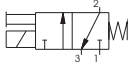


**PNEUMAX**

**Mechanical actuator for miniature solenoid valve**

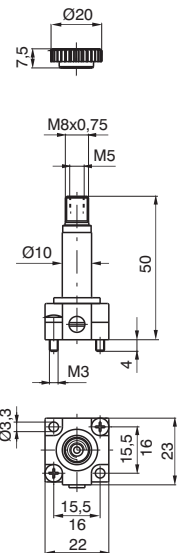
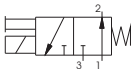
Ordering code

- M 2** Normally Closed (N.C.)
- M 2P** Normally Closed (N.C.) threaded lock nut
- M 2/9** Normally Closed (N.C.) 2 W 24 VDC



Weight 51 gr.

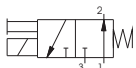
- M 2/1** Normally Open (N.O.) air feeding through fix flunger



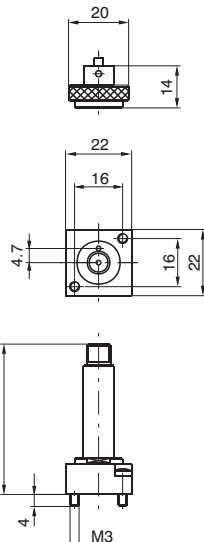
Weight 48 gr.

- Normally Open (N.O.) air feeding through base

**MM 7**



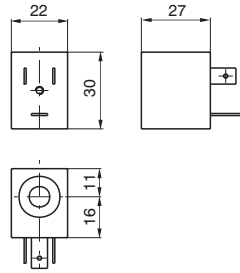
Weight 46 gr.



Ordering code	Available voltages Coil	
N.O.		
<b>MB10/1</b>	24 D.C. (8 Watt)	Direct current
<b>MB17/1</b>	24/50	Alternating current 50 Hz
<b>MB21/1</b>	48/50	
<b>MB22/1</b>	110/50	
<b>MB24/1</b>	230/50	
<b>MB37/1</b>	24/60	Alternating current 60 Hz
<b>MB39/1</b>	110/60	
<b>MB41/1</b>	230/60	
<b>MB56/1</b>	24/50-60	Alternating current 50/60 Hz
<b>MB57/1</b>	110/50-60	
<b>MB58/1</b>	230/50-60	



**Coil**

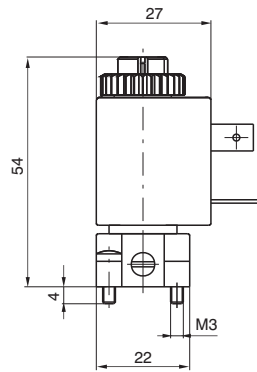
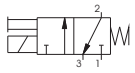


Weight 54 gr.

\* Use only with M2/9

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

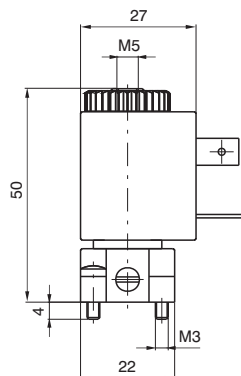
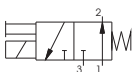
**Miniature solenoid valve Normally Closed (N.C.)**



Weight 100 gr.

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

**Miniature solenoid valve Normally Open (N.O.)**



Weight 103 gr.

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

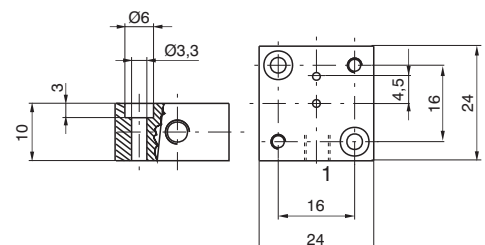
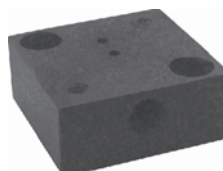
**External feeding base**

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

Ordering code

**305.10.05**

Weight 18 gr.



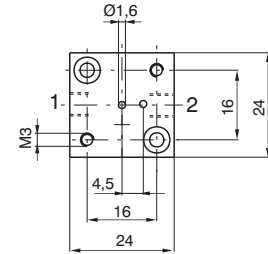
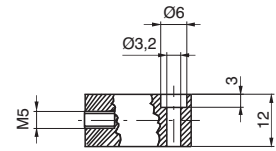
**Individual base**



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

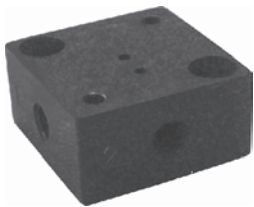


Ordering code

**305.00.00**

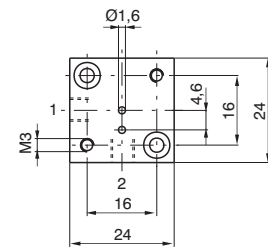
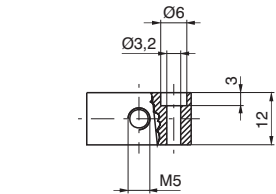
Weight 56 gr.

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

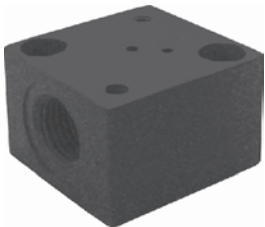


Ordering code

**305.90.00**

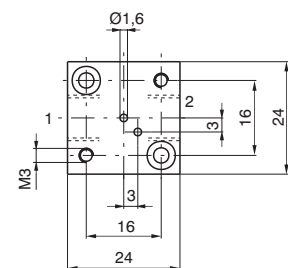
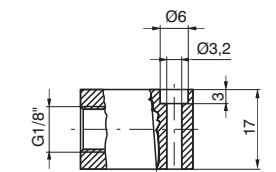
Weight 56 gr.

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

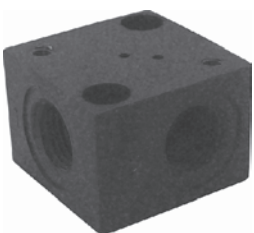


Ordering code

**305.00.18**

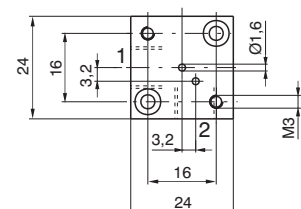
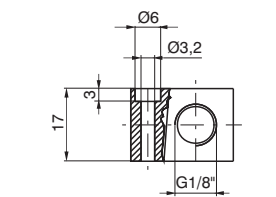
Weight 75 gr.

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

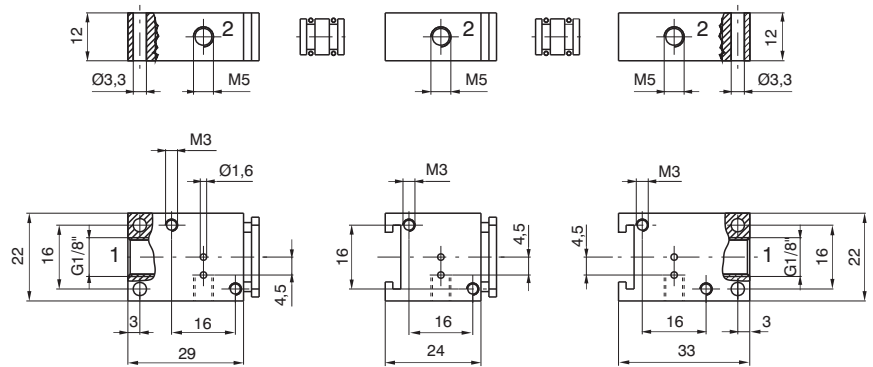
**305.90.18**

Weight 75 gr.





**Modular bases for series mounting**



Ordering code

*Initial base*  
**305.05.00**  
 Weight 57 gr.

*Intermediate base*  
**305.06.00**  
 Weight 44 gr.

*Last base*  
**305.07.00**  
 Weight 53 gr.

*Bored spacer*  
**305.05.01**  
 Weight 3 gr.

*Solid spacer*  
**305.05.02**  
 Weight 4 gr.

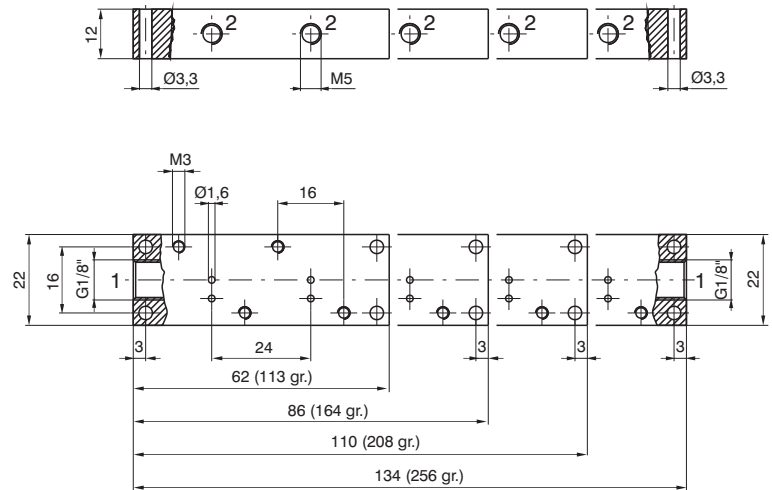
*Initial base*

*Intermediate base*

*Last base*

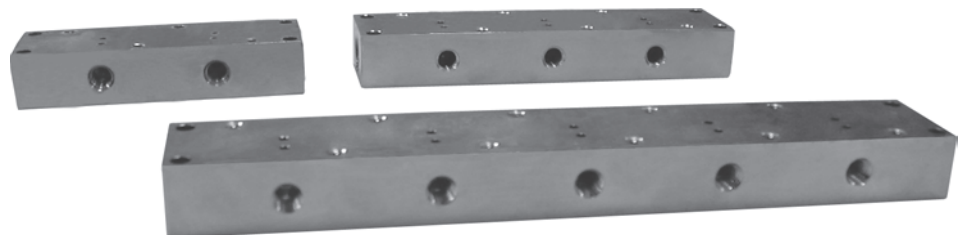


**Multiple integral bases for series mounting**



Ordering code

- 305.08.02** 2 positions
- 305.08.03** 3 positions
- 305.08.04** 4 positions
- 305.08.05** 5 positions



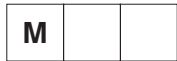


**Electric pilot CNOMO (coil not included)**

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.

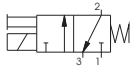
The base is fitted with a manual control which is pulse actuated, without check, or with two stable positions, actuated by means of a screwdriver (pressing down and turning clockwise by 90°). Two different types of solenoids can be mounted on the stem, one in conformity with ISO standard size 30x38 and 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

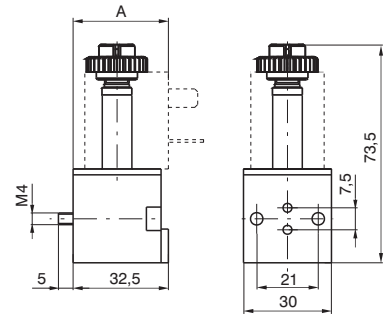


**P** = Manual 1 position  
**R** = Manual 2 positions

**3** = Mechanics CNOMO  
**4** = 2-W Mechanics CNOMO



Weight 49 gr.



**A = 33** (with MB solenoid)  
**A = 38** (with MC solenoid)

**General characteristics**

<b>Structural</b>	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	
	<b>Pneumatic</b>	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)
<b>Electric</b>	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
<b>MC5</b>	24 D.C.
<b>MC9</b>	24 D.C. (2 Watt)
<b>MC56</b>	24/50-60 Hz
<b>MC57</b>	110/50-60 Hz
<b>MC58</b>	230/50-60 Hz



Weight 110 gr.

