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MAC VALVES INC. has earned a reputation as an innovator in solenoid air valve technology as is evidenced by our numerous global patents.

MAC's designs focus on offering customers the best performing products available on the market. Some of the key features MAC's products offer are:

- reliability

- speed

- repeatability

- non lube service

- ease of maintenance

- compact packaging

- modularity

- specific application modifications

- low wattage

- broad electrical options

Many of these performance advantages are based on MAC's high shifting forces. MAC's patended oval shaped armature solenoid and 4-way pilot technologies are two new concepts which result in extremely high shifting forces in small packages.

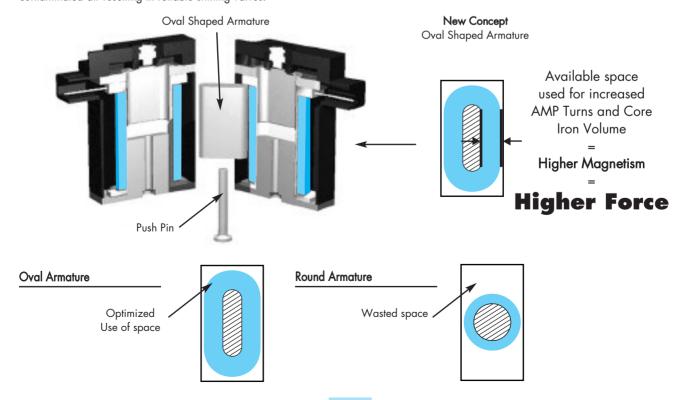
The patented Latching Solenoid is another new offering to the MAC product line. The latching solenoid provides the function of a double solenoid operated valve utilizing only one solenoid.

I. OVAL SHAPED ARMATURE SOLENOID - Maximized Shifting Forces

Compared with typical round armature solenoids, the oval shaped armature design results in much higher shifting forces due to the following:

- Increased coil windings (amp turns)
- Increased core iron volume

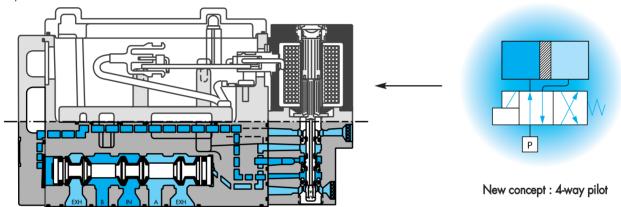
With more amp turns and core iron than conventional round armature designs, more shifting force is available to shift through contaminated air resulting in reliable shifting valves.





II. MAC's 4-WAY PILOT SYSTEM - Maximized Shifting Forces

The balanced 4-way pilot valve provides maximum shifting forces in both directions by supplying air alternately to each end section of the spool, similar to a double acting rodless cylinder. This system provides maximized shifting forces, equal forces at energization and de- energization, with no resistance to shifting at either end. The result is increased shifting reliability and faster, more consistent response times.

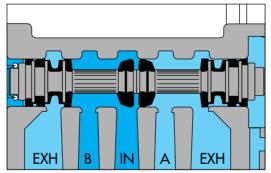


III. MAC'SPATENDED BONDED SPOOL AND BORE - Balanced, Wiping Action, Minimized Friction

MAC invented the bonded spool and bore combination ensuring balanced operation, built in wiping action to contend with air line contaminants with minimal friction. Precision ground and chemically hardened bonded seals control compression and eliminates creep leading to optimum sealing with minimum resistance to shifting. Built in lubricants in the rubber compound enhances non lube service and extends seal life.

A precision machined bore, roller burnished and polished, results in hard smooth surfaces with a glasslike finish to help minimize friction and wear. The end result is exceptionally long seal life.

MAC's short stroking, lightweight aluminum spools produce fast, repeatable response times.



MAC's Bonded Spool and Bore

- Balance
- Wiping Action
- Minimized Friction
- Long Life

IV. MAC's PATENDED LATCHING SOLENOID - Eliminates one Solenoid, Simplifies Wiring, Reduces Package Size

MAC's latching solenoid technology provides the function of a double solenoid operated valve utilizing only one solenoid.

Typical 2 position direct operated double solenoid valves use two solenoids with spool/bore technology. When the power is removed from either solenoid, the spool position and valve function is maintained.

With direct acting solenoid valves, poppets with their inherent short strokes are not typically used as they cannot maintain sealing position when both solenoids are deenergized. As a consequence, longer stroking spool type solenoid valves are used which results in lower shifting forces. MAC's latching solenoid technology eliminates the sealing issue with poppets when no electrical signal is applied, by maintaining solenoid force, ensuring adequate sealing, while using short stroking poppets resulting in high shifting forces.

MAC's latching solenoid only requires one solenoid and correspondingly one plug-in and one conduit wireway versus two for conventional double solenoid valve, saving space, weight and cost. An added benefit of a latching solenoid valve when mounted on a circuit bar is the additional option of side cylinder ports.



HOW IT WORKS

Unlike a spool and bore valve, a poppet valve requires that a force be continuously applied to either end of the poppet to ensure that proper sealing occurs. If another solenoid was simply added to the valve to create a double solenoid valve, power would need to be constantly applied to either solenoid for the valve to function properly (see Figure 1). If the poppet valve is converted to a spool and bore type valve design, the longer stroke of the spool and solenoid would result in lower net shifting forces (see Figure 2), compromising the valves shifting reliability.

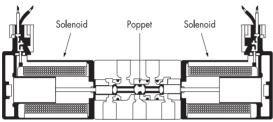
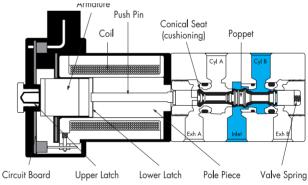


Figure 1 : Double Solenoid Poppet

Long Solenoid Stroke Figure 2 : Double Solenoid Spool Design Armaiure Push Pin

The latching solenoid overcomes these problems by introducing a powerful permanent magnet armature assembly which magnetically latches itself to the pole piece and in turn keeps the poppet sealed against the conical seats when the power is removed from the solenoid. To shift the poppet in the opposite direction, the polarity of the voltage applied to the solenoid leads is reversed and the attractive force between the permanent magnet armature assembly and the pole piece is reduced. The return spring in the valve then shifts the poppet to its other sealing position and the permanent magnet armature assembly is then magnetically attracted to the upper latch. The upper latch prevents the permanent magnet armature assembly from attracting itself back to the pole piece when the voltage is removed. Reversing the polarity again to the solenoid lead wires will create a powerful attractive force between the permanent magnet armature assembly and the pole piece and away from the upper latch which will correspondingly move the poppet to the other shifted position.



Spool

Solenoid

Figure 3 : Latching Solenoid Design

Solenoid

WIRING INSTRUCTIONS AND OPTIONS

As shown in Figure 4, a conventional double solenoid valve requires that the pair of lead wires from each solenoid be wired to an appropriate voltage source, MAC's latching solenoid technology has the option of being wired in one of the three (3) currently available methods.

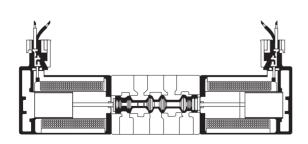
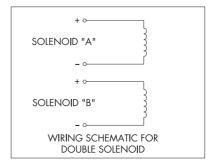


Figure 4: Conventional Double Solenoid





FOUR WIRE

As shown in Figure 5, the four wire method enables the coil to be wired as if it were a conventional double solenoid. By connecting the yellow lead wire to positive voltage and the yellow lead wire with black stripe to negative, the valve will be open to cylinder port"A". When positive voltage is supplied to the red lead wire and negative to the red lead with a black stripe, the valve will now be open to cylinder port"B". Since the negative red and yellow lead wires are internally connected together, the supply voltage for each pair of yellow and red lead wires must be isolated from the other pair (see diagram). Also, power must not be applied to all four leads simultaneously or a short circuit condition will occur possibly damaging the voltage source.

THREE WIRE

Unlike the two wire method (see Figure 7) which requires the user to provide the polarity switching circuitry, the three wire method incorporates the polarity switching circuitry within the solenoid enclosure (see Figure 6). The black lead wire provided must be connected to positive and is used as a common. When negative voltage is supplied to the yellow lead wire with a black stripe the valve will be open to cylinder port "A". When the negative voltage is removed from the yellow lead wire with the black stripe and supplied to the red lead wire with a black stripe, the valve will now be open to cylinder port "B". Applying voltage to all three wires simultaneously or with the wrong polarity will cause permanent damage to the switching circuitry in the solenoid cover, and the valve won't work.

Red/Black Stripe
Red
Yellow
Yellow/Black Stripe

• No circuit board needed
• Wired as conventional double
• Must isolate pairs of red and yellow wires from each other

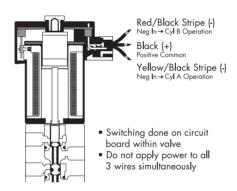
(+) POS IN→A - Yellow

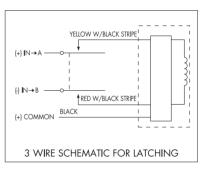
+ 0

| (+) POS IN→B - Red
| (+) POS IN→B - Red
| (+) NEG IN→B
| Yellow/W/Black Stripe
| (+) NEG IN→B
| Red/W/Black Stripe
| 4 WIRE SCHEMATIC FOR LATCHING

Figure 6 : Three Wire Latching

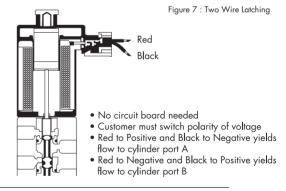
Figure 5: Four Wire Latching





TWO WIRE

The two wire method shown in Figure 7, provides a black and red lead wire connected to the solenoid. The user must provide the polarity switching circuitry to these leads in order to shift the valve to its two positions. By applying positive DC voltage to the red lead wire and negative to the black, the valve will be open to cylinder port "A". When the polarity of the voltage is externally reversed to the lead wires the valve will now become open to cylinder port "B".



AVAILABLE OPTIONS

The 2 and 4 wire connections are available in both a flying lead and plug-in cover. The 3 wire connection is only available in the plug-in style cover. All 2 and 4 wire cover options are available with an LED indicator. The LED indicator on a 3 wire cover is standard. The LED will illuminate red for cylinder "A" operation and green for cylinder "B" operation.

The 3 wire connection must be used for valves connected to either a multi-pin connector or a serial manifold. Mixing single solenoids with latching solenoids on a circuit bar is possible since each station of the bar is wired for a latching coil. The circuit bar must be ordered with this wiring configuration. If required, a negative common 3 wire connection is also available, please consult factory.

HOW TO ORDER

The numbering system for a latching solenoid differs from the numbering system for a single solenoid valve. The letter "L" within the model number indicates a latching solenoid, while the letter "G" or "H" in the same position of the model number indicates a single solenoid valve.



Let us show you via high performance demonstration kits and animated software,

HOW MAC'S PERFORMANCE ADVANTAGES HELP MAKE YOUR EQUIPMENT MORE RELIABLE - FASTER - MORE REPEATABLE.



TLD

Traveling Lab Demonstration measures critical valve performance characteristics - Shifting forces, Response Time, Speed, Repeatability and Flow.



PLD

Proportional Lab Demonstration measures critical proportional regulation characteristics - Response Time, Accuracy, Hysterisis, Repeatability and Flow.



Animation

Animated Software shows inner workings of various Air Valves Designs - Powerful educational tool for learning about how air valves function.







Pneumatic functions

All valves inside the MAC product range allow for multiple pneumatic functions. Direct solenoid and solenoid pilot operated valves could be used as 2 ways, 3 ways (NO, NC) or 4 ways. When plugging one orifice to achieve a 2 way function (or 3 way), it will not affect the valve operation.

- <u>Direct solenoid valves 3 ways :</u> universal The following functions are available
 - 3 ways NC
 - 3 ways NO
 - 2 ways NC
 - 2 ways NO
 - Selector
 - Divertor
- <u>Pilot operated valves 3 ways :</u> The following functions are available
 - 3 ways NC
 - 3 ways NO
 - 2 ways NC
 - 2 ways NO
 - Selector : the highest pressure is connected to the IN port; the lowest pressure is connected to the EXH port. (Use external pilot when the highest pressure is less than 2 bar)
 - Divertor (consult factory)

- <u>Direct solenoid valves 4 ways :</u> The following functions are available
 - 4 ways
 - 3 ways NC
 - 3 ways NO
 - 2 ways NC
 - 2 ways NO
 - Divertor
- <u>Pilot operated valves 4 & 5 ways :</u> The following functions are available
 - 4 or 5 ways
 - 3 ways NC
 - 3 ways NO
 - 2 ways NC
 - 2 ways NO
 - Selector (except 3 positions)
 - Divertor (consult factory).

EVERY VALVE FULLY TESTED PRIOR TO SHIPMENT



Section 1

Direct solenoid and solenoid pilot operated valves



Function	Port size	Flow (Max) NI/	min		Individ	ual mounting							
			Inline	Inline Single operator	Inline Double operator	Sub-base non "plug-in"	Sub-base "plug-in"	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid	Valve only – No base non "plug-in" Conform to ISO 15407/1	Valve only – No base "plug-in" Conform to ISO 15407/2	Valve only – No base non "plug-in" Conform to ISO 5599/1	Valve only – No base "plug-in" Conform to ISO 5599/2
3/2	M3	20 to 50	P.15										
3/2	M3	82	P.19				_	-					
3/2 - 2/2	M5	120	P. 23										
3/2	G1/8"	300	P. 27			-							
3/2	G1/8" - M5	300				-				-			
3/2	G1/8"	400				P. 37							
3/2	M5 - M7	400					P. 39	P. 45	P. 47				
3/2	G1/8" - G1/4"	500	P. 51	-	-	P. 53							
3/2	G1/8"	1200				P. 57	P. 59	P. 63	P. 65				
3/2 - 2/2	G1/8" - G1/4"	1500	P. 69										
3/2	G1/4" - G3/8"	2000	P. 73					-		-			
$3/2 \cdot 2/2$	G3/8" - G1/2" - G3/4"	5100				P.77	P.79						
$3/2 \cdot 2/2$	G3/4" - G1"	20000	P. 83										
	G1" - G1 1/4" - G1 1/2"		P. 87					-		-			
$3/2 \cdot 2/2$	G1 1/2" - G2" - G2 1/2"	60000	P. 91										
5/2	M3	22 to 35	P. 95										
5/2	M3	70	P. 99	-				-	-				
5/2	M5	100	P. 103	-	-								
5/2	M3 - M5	230	P. 107			P.109				-			
5/2 - 5/3	M5	250	P. 115										
$5/2 \cdot 5/3$	M5 - M7	370			-	P. 117	P. 119			-			
5/2 - 5/3	M5 - M7	400								-			
4/2	G1/8" - M5	300	P. 127				-	_		-			
4/2	G1/8"	300			-					-			
5/2 - 5/3	M5 - M7	400				P. 141	P. 143						
5/2	M5 - M7	400			-			P. 149	P. 151				
5/2	G1/8" - G1/4"	500	P. 157			P. 159							
5/2	G1/8"	1000	P. 167							-			
$5/2 \cdot 5/3$	G1/8"	1100				P. 171	P. 173			-			
5/2	G1/8"	1100			-	_		P. 179		-			
5/2	G1/8"	1000				-			P. 181				
$5/2 \cdot 5/3$	G1/8" - G1/4"	1000	P. 187	-	-	P. 189		-		-	-		
$5/2 \cdot 5/3$	G1/8" - G1/4" - G3/8"	1200			-	P. 193	P. 195		-				
$5/2 \cdot 5/3$	G1/4" - G3/8"	1200			-				-	-			
	G1/4" - G3/8"	1500		P. 205	P. 207			-	-				
5/2 - 5/3	G3/8" - G1/2"	3800	P. 211										
	G1/4" - G3/8" - G1/2"	3400				P. 213	P. 215			-			
5/2 - 5/3	G1/4"	1000								P. 225	P.227		
$5/2 \cdot 5/3$	G1/8"	430						-		P. 231			
5/2 - 5/3	G1/8"	510					_				P.233		
	G1/4" - G3/8"	1800					_	-				P. 237	P.239
	G3/8" - G1/2"	3000		-	-			-	-	-		P. 243	P.245
	G1/2" - G3/4"	6100			-		-					P. 249	P.251
	-									-			

stacking	Manifold base non "plug-in"	Manifold base "plug-in"	Manifold base "plug-in" with pressure regulators	Manifold base "plug-in" with flow controls	Manifold base "plug-in" with PR & FC	Sub-base/ manifold base non "plug-in" with latching solenoid	Sub-base/ manifold base "plug-in" with latching solenoid	Valve only – No base non "plug-in" Conform to ISO 15407/1	Valve only – No base "plug-in" Conform to ISO 15407/2	Valve only – No base non "plug-in" Conform to ISO 5599/1	Valve only – No base "plug-in" Conform to ISO 5599/2	
												3
												3
	-											3
D 00		P. 31	P. 33									3
P. 29												
	P. 41	P. 43				P. 45	P. 47					3
												3
		P. 61				P. 63	P. 65					3
	-											5
												<u>5</u>
												6
												6
												6
												4
												4
	P. 111											2
	P. 121	P. 123										2
P. 129	1.121	1.125										
		P. 131	P. 133	P. 135	P. 137							4
	P. 145	P. 147				D 1 /0	D 151					4
P. 161		P. 163				P. 149	P. 151					
1. 101		1.105										4
	P. 175	P. 177										
						P. 179	D 101					4
	-						P. 181					
												4
	P.197	P.199										9

P. 225 P. 231

P.233

P. 251

P. 237 P. 243 P. 245

P. 249

93

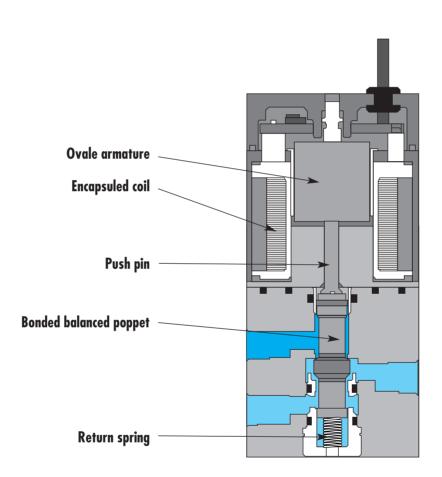
ISO 01 ISO 02

ISO 1 ISO 2



Individual mounting Série

inline



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- 6 mm direct operated valve.
- Very fast response times.

31	
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48P)
48	
70	
400)
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72	
83	
93	
100	
ISO	01
ISO	00
130	VZ
ISO	1
ISO	

ISO 3



Direct solenoid and solenoid pilot operated valves 6 mm valve

Function	Port size	Flow (M	lax]	Mounting		Series
3/2 NC	м з	20 to	50 NI/min	Individual inline		
OPERATIONAL BENEFITS						31
1. 6mm valve direct solen						33
 Balanced poppet, immu Short stroke with high fl 	low					34
4. Patented solenoid deve5. Low wattage solenoids6. Powerful return spring				12/2		36
7. Extremely fast response8. Universal valve	times					32
				10		37
						38
						52
HOW TO ORDER						53 54
						67
	Port size			NC only	valve	68
					2	69
				₩/_	1 3	41
	M3			31A-AAB-1	XXX-XXX	43
						44 23
SOLENOID OPERATO XX Voltage		T <u>XX</u> Wire length	X-XXX*	ual operator	XX Electrical connection	24
DC 24V=/1.8W	A	45 cm	0 No ope	erator*	BA Flying leads	46
DD 24V=/2.5W DE 24V=/3.0W	BC	60 cm 90 cm	Non-lo		and the state of the sector	
DF 24V=/4.0W DJ 12V=/1.8W			— Ose mis option oni	y for nign-speed models	with differential air assist	42
DK 12V=/2.5W						47
DL 12V=/3.0W DM 12V=/4.0W						48P
For high-speed diffe	erential air assist mo	dels only				
FA 24V=/60W						48
FB 24V=/90W FC 24V=/230W						
Mod number required for hi	igh speed models with differe	ential air assist – consult facto	ory			400
* Other options available, se	ee page 405					92
						83
						93
						ISO 01
						ISO 02
						ISO 1 ISO 2 ISO 3



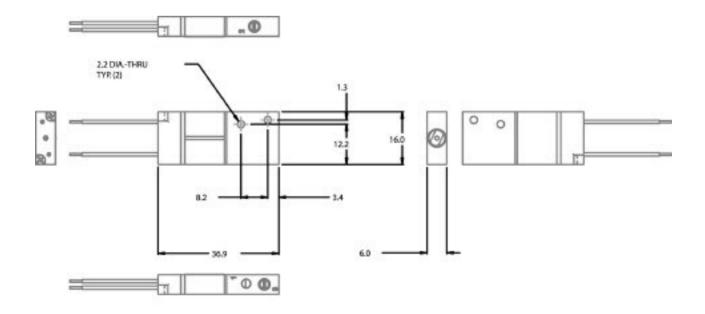




Fluid : Compressed air, vacuum, inert gases Pressure range : Vacuum to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Flow: 20 to 50 NI/min (Cv 0,02 to 0,05) Coil: Class A wires - continuous duty Voltage range: -15% to +10% 1.8W, 2.5W, 3.0W, 4.0W - High wattages available, consult factory Power: Energize: 1,8 ms Response times : De-energize: 0,8 ms

DIMENSIONS

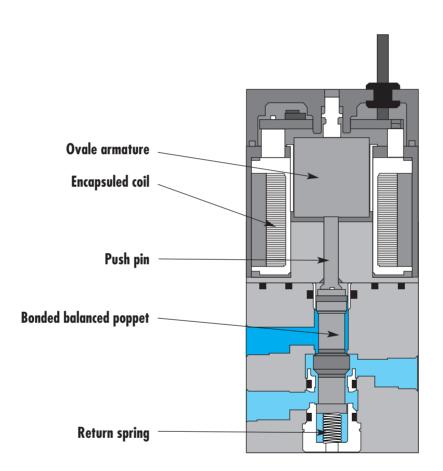
Dimensions shown are metric (mm)





Individual mounting Série

inline



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- \bullet Low wattage DC solenoids down to 0.5 W.
- 8 mm direct operated valve.
- Very fast response times.

400

92

83

93

ISO 01

ISO 02

ISO 1 ISO 2 ISO 3



Function	Port size	Flow (I	Max]	Individual mountin	9	Series
3/2 NC	м з	82 N	l/min	Inline		
1. 8mm valve direct solena 2. Balanced poppet, immu 3. Short stroke with high fl 4. Patented solenoid deve 5. Low wattage solenoids 6. Powerful return spring 7. Extremely fast response	une to pressure variations low lops high shifting forces					31 33 34 36 32 37 38 52 53 54
Port	size	NC o	nly valve	N	C only valve**	67 68
	13		AB-R XXX-XXX		Z Z W W NA-BAB-RXXX-XXX	69 41 43 44
SOLENOID OPERATO	ove 4.0 W - MOD number re		x-xxx*		I	23 24
DB 24V=/1.0W	O II A A A A A A A A A A A A A A A A A A	Vire length No lead wire* 5 cm 0 cm 0 cm 20 cm 80 cm e for flying leads connectors	X Manual oper 0 No manual oper 1 Non-locking rec 3 Non-locking extensions	rator Bessed Bended BR	Electrical connection A Flying leads Flying leads w/LED Flying leads w/MOV Flying leads w/LED & MOV A Mini JAC solenoid plug-in w/LED Mini JAC solenoid plug-in w/MOV Mini JAC solenoid plug-in w/LED & MOV JST Solenoid plug-in JST Solenoid plug-in w/LED & MOV JST Solenoid plug-in w/LED JST Solenoid plug-in w/LED JST Solenoid plug-in w/LED & MOV JST Solenoid plug-in w/LED & MOV	46 42 47 48P 48 400 92 83 93
						ISO 01 ISO 02 ISO 1 ISO 2 ISO 3







 Fluid:
 Compressed air, vacuum, inert gases

 Pressure range:
 Vacuum to 8 bar

 Ubrication:
 Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

 Filtration:
 40 μ

 Temperature range:
 -18°C to +50°C

 Flow:
 4W: 82 NI/min - 3W: 62 NI/min - 2.5W: 62 NI/min - 1.8W: 55 NI/min - 1.0W: 30 NI/min - 0.5W: 20 NI/min

 Coil:
 Class A wire (#26 AWG x18), continuous duty

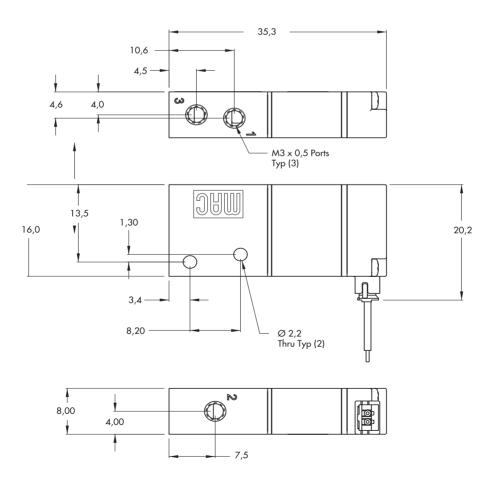
 Voltage range:
 -15% to +10% of nominal voltage

4.0W - 3.0W - 2.5W - 1.8W - 1.0W - 0.5W

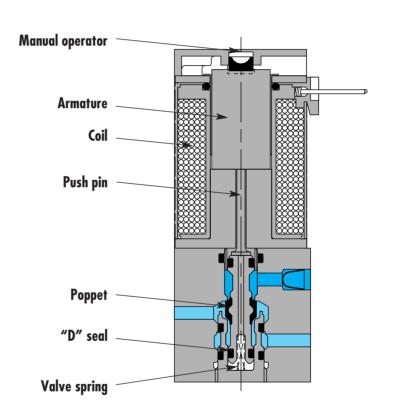
DIMENSIONS

Power:

Dimensions shown are metric (mm)



Individual mounting Series



SERIES FEATURES

- High force MACSOLENOID®.
- Universal porting.
- #10-32 or M5 ports.
- Rated for lubricated or non-lubricated service.
- 10mm direct operated.

ISO 3



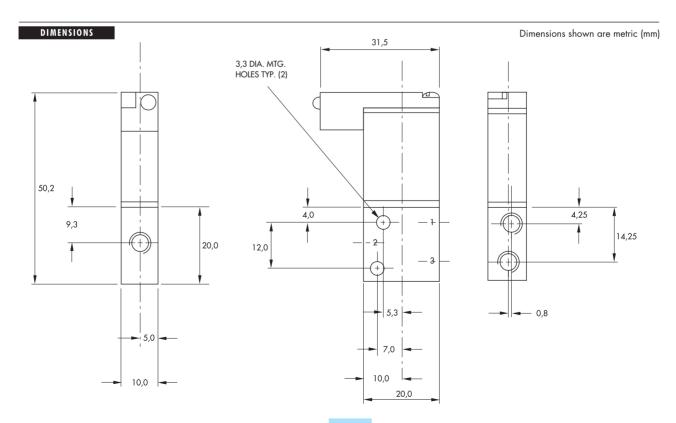
unction	Port size	Flow (Ma	X]	Individual m	ounting	Series
/2 NO-NC, 2/2 NO-NC	M5	120 N	l/min	Inline		
ERATIONAL BENEFITS 10 mm valve, direct solenoid ope Balanced poppet, immune to varioressure. Short stroke with high flow. Patented solenoid develops high forces. Powerful return spring. Manual operator standard on all	ations of shifting				Company of the state of the sta	31 33 34 36 32 37 38 52 53
HOW TO ORDER Port size		Univers	al valve		NC only valve	54 67 68
M5 DLENOID OPERATOR ➤		34C-ABA-	G XXX-XXX		34C-ABB-G XXX-XXX	69 41 43 44 23
XX Voltage	X	Wire length	X Manual op	erator	XX Electrical connection	24
AA 120 V~/2,5W DC 24 V=/1,8W DD 24 V=/2,5W DF 24 V=/4,0W e: AC voltage requires connector volther options available, see page 3	A B C	45 cm 60 cm 90 cm	Non-locking		BA Flying leads with light GA MAC JAC Solenoid plug-in GB MAC JAC Solenoid plug-in with diode GC MAC JAC Solenoid plug-in with MOV GD MAC JAC Solenoid plug-in with LED	46 42 47 481
omer opiions available, see page 3 shdown capability is possible for th isult factory for ordering informatio	ie "G" type electi	rical connector.			GE MAC JAC Solenoid plug-in with diode and IED GF MAC JAC Solenoid plug-in with MOV and IED GG MAC JAC Solenoid plug-in with rectifier GH MAC JAC Solenoid plug-in with rectifier and IED KA Mini connector KC Mini connector with rectifier and light KT Mini connector with light	48 400 92 83 93 ISO
						ISO ISO ISO



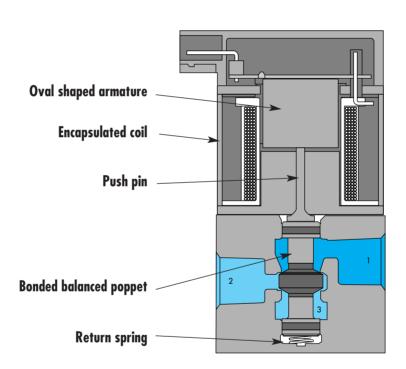




	_
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 bar
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration:	40 µ
Temperature range :	-18°C to +50°C
Orifice :	1,8 mm
Flow:	4 W : 120 NI/min (Cv 0,12) – 2,5 W : 100 NI/min (Cv 0,10) – 1,8 W : 60 NI/min (Cv 0,06)
Coil:	Epoxy encapsulated – 100% ED
Voltage range:	-15% to +10% of nominal voltage
Protection:	IP54 (electrical connection)
Power:	4 W - 2,5 W - 1,8 W
Response times :	Energize : 3,4 ms
(with 4 W coil)	De-energize: 1,5 ms



Individual mounting Series Inline 31 33 Manifold mounting 34



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Balanced poppet permits versatility in function may be used as 3-way or 2-way normally open or normally closed and may be used for vacuum, divertor, or selector applications.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- Manual overrides as standard.
- Various solenoid enclosures and plug-in connectors.
- Optional surge suppression available.
- Low wattage DC solenoids down to 1.8 watts.
- Rectified AC voltage.

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ISO 01

ISO 02

ISO 1 **ISO 2**

ISO 3



ction		Port size	Flow (I	Max)	Individual mounting	Series
2		G1/8"	300	NI/min	Inline	
RATIONA	AL BENEFITS					31
lanced	poppet, immune to varia	itions of				33
essure.		1.6.				34
tented s ces.	solenoid develops high sh	nitting			1	4
	ke with high flow.					36
gher for	rces result in lower wattag	ges for			-	100
en flow					0	32
wertul r	return spring.					
						37
						38
						52
						53
OW TO	ORDER					54
	Port size		Unive	rsal valve	NC only valve	67
				2	3	68
			. 🗖	7 T Nw		69
				1 3	1 3	41
	G1/8"		36A-AC	A-J xxx-xxx	36A-ACB-J xxx-xxx	43
						44
						23
ENI⊜ir	D OPERATOR ➤		l w	vv_vvv* / C1	Add "G" for ground	20
LINOIL	J OI LKATOR >		J 🐴	<u> </u>	Add G for ground	24
				J ५ ───		4-
	Voltage	X	Lead wire length	X Manual op	perator XX Electrical c	onnection
(X		A	45 cm	1 Non-locking	BA Flying leads	46
AA 1	120V~/5,4W		60 cm	2 Locking	GA MAC JAC solei	noid plug-in
AA 1	24V=/5,4W	В				· I I ·
DA 2	24V=/5,4W 12V=/5,4W	B C	90 cm		GB MAC JAC soler with diode	4.2
DA 2 DB DC 2	24V=/5,4W				GB MAC JAC soler with diode GD MAC JAC soler	4.2
DA 2 DB DC 2	24V=/5,4W 12V=/5,4W 24V=/2,4W				GB MAC JAC soler with diode	noid plug-in

> **ISO 2 ISO 3**

^{*} Other options available, see page 393.

Note: - AC voltage requires connector with rectifier.

- With the MAC JAC, washdown capability is possible. Consult factory for washdown modification number.







 Fluid:
 Compressed air, vacuum, inert gases

 Pressure range:
 Vacuum to 8 bar

 Lubrication:
 Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

 Filtration:
 40 μ

 Temperature range:
 -18°C to +50°C

 Orifice:
 3,3 mm

 Flow (at 6 bar, ΔP=1bar):
 G1/8": 300 NI/min (Cv 0 ,3)

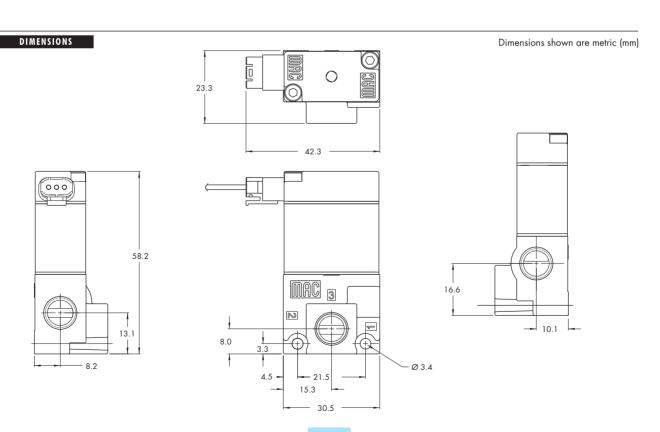
Coil: Epoxy encapsulated – Class A wires – 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 5,4 W - 2,4 W - 1,0 W

Option : • NPTF threads





Function	Port size	Flow (Max)	Manifold mounting	Series
3/2	G1/8" - M5	300 NI/min	Stacking	
OPERATIONAL BENEFITS	l			31
Balanced poppet, immune to variations of pressure. Patented solenoid develops high shifting				33 34
forces.	, ,	9	07	

3. Short stroke with high flow.

- 4. Higher forces result in lower wattages for given flow.
- 5. Powerful return spring.



HOW TO ORDER

Port size	NC only stacking	NC stacking Universal poppet	NO stacking Universal poppet
	W T N EXH	W T T T	IN EXH
G1/8"	36A-SCB-J xxx-xxx	36A-SCC-J xxx-xxx	36A-SCD-J xxx-xxx
M5	36A-SDB-J xxx-xxx	36A-SDC-J xxx-xxx	36A-SDD-J xxx-xxx

SOLENOID OPERATOR ➤

J xxx-xxx (-G) Add "G" for ground

XX	Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
AA	120V~/5,4W	Α	45 cm	1	Non-locking	BA	Flying leads
DA	24V=/5,4W	В	60 cm	2	Locking	GA	MAC JAC solenoid plug-in
DB	12V=/5,4W	C	90 cm			GB	MAC JAC solenoid plug-in
DC	24V=/2,4W						with diode
DD	12V=/2,4W					GD	MAC JAC solenoid plug-in with light
						GG	MAC JAC solenoid plug-in with rectifier

End plate kit required (port size G1/4"): M-36001-01P.

BODY TYPE OPTIONS

36A-SCB-Jxxx-xxx

S Stacking body
T Stacking body with bottom inlet

> **ISO 01** ISO 02 **ISO** 1 **ISO 2 ISO 3**

32

24

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42 47 **48P**

^{*} Other options available, see page 393.

Note: - AC voltage requires connector with rectifier.

- With the MAC JAC, washdown capability is possible. Consult factory for washdown modification number.







Fluid : Compressed air, vacuum, inert gases

Pressure range:

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

-18°C to +50°C Temperature range:

Orifice: 3,3 mm

Flow (at 6 bar, $\Delta P = 1 bar$): G1/8": 300 Nl/min (Cv 0,3) - M5: 300 Nl/min (Cv 0,3)

Coil: Epoxy encapsulated – Class A wires – 100% ED

Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection)

5,4 W - 2,4 W - 1,0 W Power:

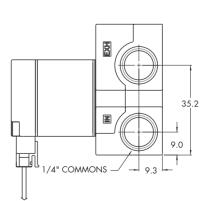
• NPTF threads Option:

• Inlet & exhaust isolator plate : N-36001 • Inlet isolator : N-36002 Spare parts :

• Exhaust isolator : N-36003 • Tie rod (x2) : 79411

DIMENSIONS 8.3_{TYP} -- 16.5 ---<u>TYP.</u> -15.0 CAF" MC CAF" MC CAF' MC CAT NC 14.1 59.2 51.3 0 0 0 0 22.2 لىصيا 5.0 -

86.0 -



Dimensions shown are metric (mm)



Function	Port size	Flow (Max)	Manifold m	ounting	Series
3/2	G1/8"	300 NI/min	Manifold base "plug-in"		
1. Balanced poppet, immune to var pressure. 2. Patented solenoid develops high forces. 3. Short stroke with high flow. 4. Higher forces result in lower wat given flow. 5. Powerful return spring.	shifting				31 33 34 36 32 37 38 52 53
HOW TO ORDER Port size	Universal Valv Normally Close		iversal Valve ormally Open	Normally Closed Only	54 67
		- -	Z , , , , , , , , , , , , , , , , , , ,	2 1 3	68 69 41
Valve less base	36A-J00-00-J xxP-x		K00-00-J xx P- xxx	36A-L00-00-J xxP-xxx	43
G1/8"	36A-JSC-AE-J xxP-x	XX 36A-I	KSC-AF-J xxP-xxx	36A-LSC-AE-J xxP-xxx	44
XX Voltage AA 120V~/5,4W DA 24V=/5,4W DB 12V=/5,4W DC 24V=/2,4W DD 12V=/2,4W * Other options available, see page 3 Note: AC voltage requires connector	1 No 2 Lox 93.	P-XXX* unual operator n-locking king	XX FA FB	Electrical connection Base plug-in Base plug-in with diode Base plug-in with rectifier	24 46 42 47
Example : Manifold base only : 36A-0 End plate quit required (port size G1/	•	ase).			48P 48
					400
					92
					83
					93
					ISO 01
					ISO 02
					ISO 1 ISO 2 ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 ba

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, ΔP=1bar): 1,8W: 200 Nl/min (Cv 0.20) – 2,4W: 200 Nl/min (Cv 0,20) – 5,4W: 300 Nl/min (Cv 0,30)

Coil: Epoxy encapsulated – Class A wires – 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 5,4 W - 2,4 W - 1,8 W

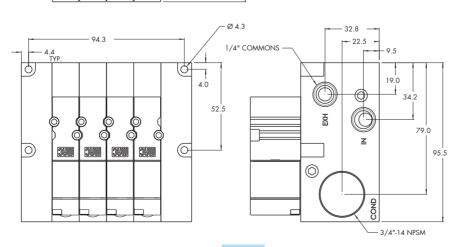
Option : • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002

• Tie rod (x2) : 79443

 Dimensions shown are metric (mm)

Note: For Normally closed manifold the "E" port is plugged. For Normally open manifold the "A" port is plugged.





regulators	Function	Port size	Flow (Max	· · · · · · · · · · · · · · · · · · ·		Series
Bedinard poppel, immune to variations of pressure.	3/2	G1/8"	300 NI,	/min "plug-in" with pressure		
Belonced poppet, immune to variations of pressure. Peters de Jeenard develops high shifting forces. Short stroke with high flow. How to order setul in lower wartages for given flow. Per flow. Per flow. Peters assult in lower wartages for given flow. Peters assult in low	OPERATIONAL BENEFITS				5,0000	31
Presented solenoid develops high shifting forces. Florended solenoid develops high shifting forces result in lower varioges for given flow. Prowerful return spring. **Proverful return spring.** **Powerful return spr	1. Balanced poppet, imm	une to variations of				
Short arcials with high flow. Higher forces result in lower workages for given flow. Powerful return spring. ROW 10 OZDES ROW		alons high shifting			OBR.	
HOW TO OTDEE Port size Universal Valve Normally Closed Only Valve less base 36A-150-00-1 xxP-xxxx 43 OLENOID OPERATOR > JXX P-XXX* (-G) Add "G" for ground XX Voltage XX Volt		stops mgn simmig				
Powerful return spring. 32 37 38 38 38 38 38 38 38						36
Powerful return spring. Powerful return		lower wattages for				0.0
Port size Universal Valve Wormally Closed Universal Valve Normally Closed Only	. Powerful return spring.					32
Port size Port size Universal Valve Normally Open						37
Port size Normally Closed Normally Closed Normally Closed Only				0		38
Port size Universal Valve Normally Closed Universal Valve Normally Closed Only				0.5		52
Port size Universal Valve Normally Closed Normally Open						53
Normally Closed Normally Open Valve less base 36A-J0C-00-J xxP,xxx 36A-K0C-00-J) xxP,xxx 36A-L0C-00-J xxP,xxx 36A-L0C-00-J xxP,xxx 36A-L0C-00-J xxP,xxx 36A-LSC-AG-J xx	HOW TO ORDER					54
Velive less base 36A-100-00-1 xxP-xxx 36A-100-00-1 xxP-xxx 36A-100-00-1 xxP-xxx 36A-100-00-1 xxP-xxx 36A-100-00-1 xxP-xxx 36A-100-00-1 xxP-xxx 36A-15C-AG-1 xxP-xxx 3	Port size		Universal Valve	Universal Valve	Normally Closed Only	67
Valve less base 36A-J00-00-J XXP-XXX 36A-K00-00-J XXP-XXX 36A-K00-00-J XXP-XXX 36A-K00-00-J XXP-XXX 36A-K00-00-J XXP-XXX 36A-KSC-AG-J XXP-XXX 43 36A-KSC-AG-J XXP-XXX 36A-KSC-AG-	1 011 3120				normany diosou omy	
Valve less base 36A-J00-00-J xxP-xxx 36A-K00-00-J xxP-xxx 36A-L00-00-J xxP-xxx 43 61/8" 36A-J5C-AG-J xxP-xxx 36A-K5C-AH-J xxP-xxx 36A-L5C-AG-J xxP-xxx 44 **COLENOID OPERATOR > J XX P-xxx			2	2	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	
Valve less base 36A-J00-00-J XXP XXX 36A-K00-00-J XXP XXX 36A-L00-00-J XXP XXX 44 COLENOID OPERATOR ➤ J XX P-XXX 36A-KSC-AH-J XXP XXX 36A-KSC-AG-J XXP XXX 44 IN In Indian In			1 3 W			
SOLENOID OPERATOR > JXX P-XXX (-G) Add "G" for ground 23 24 XX Voltage X Manual operator XX Electrical connection AA 120V-/5.4W 1 Non-locking FA Bose plug-in with diode DB 12V-/5.4W 2 Locking FB Base plug-in with diode DB 12V-/2.4W PG Bose plug-in with rectifier Other options evailable, see page 393. dote: AC voltage requires connector with rectifier. OPTIONS 36A-USC-AG-JXX P-XXX 44 A Manual operator XX Electrical connection To Romanifold & regulator with slotted stem adjustment S NC manifold & regulator with slotted stem adjustment J NC manifold & regulator with slotted stem adjustment T NO manifold & regulator with slotted stem adjustment T NO manifold & regulator with slotted stem adjustment T NO manifold & regulator with knob adjustment T NO manifold & regulator with knob adjustment S NO manifold & r	Valve less bo	use 3	6A-J00-00-J xx P- xxx	36A-K00-00-J xxP-xxx	36A-L00-00-J xxP-xxx	
SOLENOID OPERATOR > JXX P-XXX (-G) Add "G" for ground 24 XX Voltage X Manual operator XX Electrical connection AA 120V-/5,4W 1 Non-locking FA Bose plug-in with diode DB 12V-/5,4W 2 Locking FB Base plug-in with diode DB 12V-/2,4W FG Bose plug-in with rectifier DC 24V-/2,4W DD 12V-/2,4W DD 12V-/2,4W DD 12V-Y2,4W D	G1/8"	30	6A-JSC-AG-J xxP-xxx	36A-KSC-AH-J xxP-xxx	36A-LSC-AG-J xxP-xxx	
AA 120V-/5,4W 1 Non-locking FA Base plug-in 46 Base plug-in with diode PFB Base plug-in with rectifier DFI 12V-/2,4W DFI 12V-/2,	SOLENOID OPERATO	OR ➤	J <u>xx</u> P	2- <mark>xxx</mark>	G" for ground	
DA 24V=/5,4W DB 12V=/2,4W DC 24V=/2,4W DD 12V=/2,4W Other options available, see page 393. dote: AC voltage requires connector with rectifier. OPTIONS 36A-JSC-AG-JXX P-XXX G NC manifold & regulator with slotted stem adjustment S NC manifold & regulator with slotted stem adjustment H NO manifold & regulator with slotted stem adjustment T NO manifold & regulator with knob adjustment K NO manifold base are only available with a bottom cylinder port. Stormple: Manifold base only: 36A-0SC-AJ (Normally closed manifold base & regulator with knob). ISO (ISO (ISO (ISO (ISO (ISO (ISO (ISO (XX Voltage		X Manual ope	rator XX	Electrical connection	
DB 12V=/5,4W DC 24V=/2,4W DD 12V=/2,4W A2 Other options available, see page 393. Idate: AC voltage requires connector with rectifier. 47 OPTIONS 36A-JSC-AG-Jxx P-xxx G NC manifold & regulator with slotted stem adjustment S NC manifold & regulator with locking slotted stem adjustment J NC manifold & regulator with slotted stem adjustment H NO manifold & regulator with slotted stem adjustment T NO manifold & regulator with knob adjustment K NO manifold & regulator with knob adjustment K NO manifold base are only available with a bottom cylinder port. xxample: Manifold base only: 36A-0SC-AJ (Normally closed manifold base & regulator with knob). ISO ISO ISO ISO ISO ISO ISO ISO ISO IS	. ,					
Other options available, see page 393. Idate: AC voltage requires connector with rectifier. OPTIONS 36A-JSC-AG-JXX P-XXX G NC manifold & regulator with slotted stem adjustment 5 NC manifold & regulator with locking slotted stem adjustment H NO manifold & regulator with locking slotted stem adjustment T NO manifold & regulator with locking slotted stem adjustment T NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with locking slotted stem adjustment W No manifold bases are only available with a bottom cylinder port. Stample: Manifold base only: 36A-05C-AJ (Normally closed manifold base & regulator with knob). Iso (Iso (Iso (Iso (Iso (Iso (Iso (Iso (Locking			40
Other options available, see page 393. Jote : AC voltage requires connector with rectifier. 47 OPTIONS 36A-JSC-AG-JXX P-XXX G NC manifold & regulator with slotted stem adjustment 5 NC manifold & regulator with locking slotted stem adjustment 1 NC manifold & regulator with knob adjustment 1 NC manifold & regulator with knob adjustment 1 NC manifold & regulator with locking slotted stem adjustment 1 NC manifold & regulator with locking slotted stem adjustment 2 NC manifold & regulator with locking slotted stem adjustment 3 NC manifold & regulator with locking slotted stem adjustment 4 NC manifold & regulator with locking slotted stem adjustment 5 NC manifold & regulator with locking slotted stem adjustment 4 NC manifold bases are only available with a bottom cylinder port. 5 NC manifold base are only available with a bottom cylinder port. 5 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). 6 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). 7 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). 7 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). 7 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). 7 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). 7 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). 8 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob.). 8 NC manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob.).			_		· -	_
A TOPIIONS 36A-JSC-AG-JXX P-XXX G NC manifold & regulator with slotted stem adjustment \$ NC manifold & regulator with locking slotted stem adjustment J NC manifold & regulator with knob adjustment H NO manifold & regulator with locking slotted stem adjustment T NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with knob adjustment K NO manifold & regulator with knob adjustment State (All manifold bases are only available with a bottom cylinder port. Stample: Manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). Indiplate quit required (port size G1/4"): M-46003-01P.	. ,	see page 393	_			42
36A-JSC-AG-JXX P-XXX G NC manifold & regulator with slotted stem adjustment S NC manifold & regulator with locking slotted stem adjustment J NC manifold & regulator with shob adjustment H NO manifold & regulator with slotted stem adjustment T NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with locking slotted stem adjustment K NO manifold bases are only available with a bottom cylinder port. State: All manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). Indiplate quit required (port size G1/4"): M-46003-01P.	Note : AC voltage requires	connector with rectifier.				47
36A-JSC-AG-JXX P-XXX G NC manifold & regulator with slotted stem adjustment \$ NC manifold & regulator with knob adjustment J NC manifold & regulator with knob adjustment H NO manifold & regulator with knob adjustment T NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with knob adjustment Solete: All manifold bases are only available with a bottom cylinder port. Six ample: Manifold base only: 36A-0SC-AJ (Normally closed manifold base & regulator with knob). 183 180 180 180 180 180 180 180 180	OPTIONS					48P
G NC manifold & regulator with slotted stem adjustment \$ NC manifold & regulator with locking slotted stem adjustment J NC manifold & regulator with knob adjustment H NO manifold & regulator with locking slotted stem adjustment T NO manifold & regulator with locking slotted stem adjustment K NO manifold & regulator with knob adjustment K NO manifold & regulator with knob adjustment State : All manifold bases are only available with a bottom cylinder port. Example : Manifold base only : 36A-0SC-AJ (Normally closed manifold base & regulator with knob). Indicate quit required (port size G1/4") : M-46003-01P.		_				
K NO manifold & regulator with knob adjustment 92 Note: All manifold bases are only available with a bottom cylinder port. Example: Manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). Indiplate quit required (port size G1/4"): M-46003-01P. ISO ISO ISO ISO	T					48
K NO manifold & regulator with knob adjustment 92 Note: All manifold bases are only available with a bottom cylinder port. Example: Manifold base only: 36A-OSC-AJ (Normally closed manifold base & regulator with knob). Indiplate quit required (port size G1/4"): M-46003-01P. ISO ISO ISO ISO	G NO	C manifold & regulator with	slotted stem adjustment			
K NO manifold & regulator with knob adjustment 92 Note: All manifold bases are only available with a bottom cylinder port. Example: Manifold base only: 36A-0SC-AJ (Normally closed manifold base & regulator with knob). Indiplate quit required (port size G1/4"): M-46003-01P. 150		C manifold & regulator with	knob adjustment			400
Note: All manifold bases are only available with a bottom cylinder port. Example: Manifold base only: 36A-0SC-AJ (Normally closed manifold base & regulator with knob). Iso also also also also also also also al	I INC	O manifola & requiator with	n locking slotted stem adjustment			
xample : Manifold base only : 36A-0SC-AJ (Normally closed manifold base & regulator with knob). 150 150 150						92
150 ISO ISO ISO		•	, ,			83
ISO ISO ISO ISO	•	•	,	or with knob).		0.2
ISO (ISO (ISO (ISO (ISO (ISO (ISO (ISO (nd plate quit required (poi	rt size G1/4") : M-46003-	O1P.			93
ISO 2						ISO (
ISO 2						ICO (
ISO :						130
						ISO
ISO :						ISO
						ISO







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 ba

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, ΔP=1bar): 1,8W: 200 Nl/min (Cv 0.20) – 2,4W: 200 Nl/min (Cv 0,20) – 5,4W: 300 Nl/min (Cv 0,30)

Coil: Epoxy encapsulated – Class A wires – 100% ED

Voltage range: -15% to +10% of nominal voltage

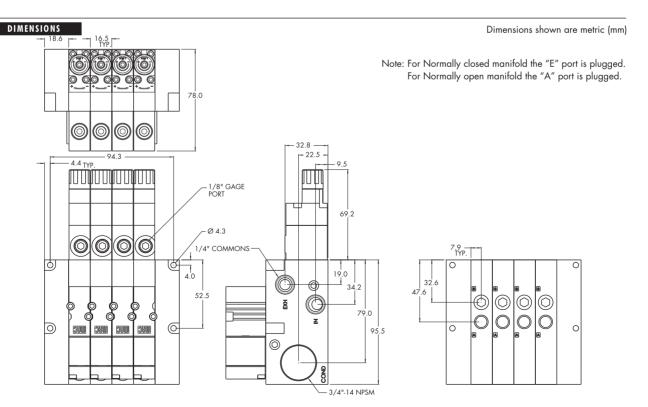
Protection: IP54 (electrical connection)

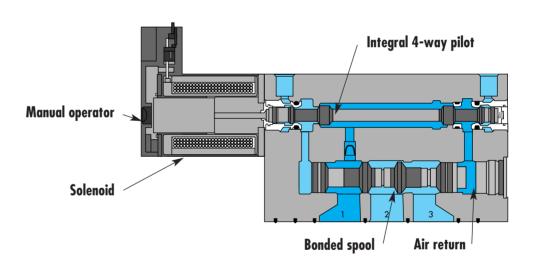
Power: 5,4 W - 2,4 W - 1,8 W

Option : • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002

• Tie rod (x2) : 79443





SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Internal or external pilot.
- Normally open or normally closed function.
- Universal function (external pilot).
- Rectified AC voltage.
- Latching solenoid technology.

ISO 2 ISO 3

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Function	Port size	Floш (Max)	Individual mounting	Series
3/2 NO-NC	G1/8"	400 NI/min	Sub-base non "plug-in"	
OPERATIONAL BENEFITS				31
1. 3-way valve with 4-way				33

- 2. 10 mm valve (stacks on 10.5 mm centres).
- 3. High flow (up to 400 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



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ISO 01 ISO 02 **ISO** 1 **ISO 2 ISO 3**

HOW TO ORDER

Port size	Port size Pilot air NO valve		NC valve	Universal valve
		10 2 12 12 12 12 12 12 12 12 12 12 12 12 1	10 2 12 V3 0 1	10 2 3 12
Valve less base	Internal	32B-BMA-000-Gxxx-xxx	32B-AMA-000-Gxxx-xxx	
	External	32B-BMB-000-Gxxx-xxx	32B-AMB-000-Gxxx-xxx	32B-GMB-000-Gxxx-xxx
G1/8"	Internal	32B-BMA-HAL-Gxxx-xxx	32B-AMA-HAL-Gxxx-xxx	
	External	32B-BMB-HAM-Gxxx-xxx	32B-AMB-HAM-Gxxx-xxx	32B-GMB-HAM-Gxxx-xxx

G xxx-xxx*

Note: Above codes are for side port.

	20 10		2000 I -I		
XX	Voltage	X	Wire length	X	Manual operator
AA	120 V~/2,5W	A	45 cm	1	Non-locking
DA	24 V=/1,0W	В	60 cm	2	Locking
DC	24 V=/1,8W		90 cm		
DD	24 V=/2,5W				
DF	24 V=/4,0W				

STANDARD SOLENOID OPERATOR ➤

* Other options available, see page 387.
Washdown capability is possible for the "G" type electrical connector. Consult factory for ordering information Latching solenoid also available, see page 45.

OPTIONS

Pilot/Base Configuration:

,	
32В-хМх-хАх-Сххх	(-XXX
A	Individual base – Side port Individual base – Bottom port
R	Pilot exhaust muffled Pilot exhaust piped M5 Pilot exhaust to main exhaust (not available with external pilot)

AA.	Lictifical Confiction
BA	Flying leads
BT	Flying leads with light
GA	MAC JAC Solenoid plug-in
GB	MAC JAC Solenoid plug-in with diode
GC	MAC JAC Solenoid plug-in with MOV
GD	MAC JAC Solenoid plug-in with LED
GE	MAC JAC Solenoid plug-in with diode and LED
GF	MAC JAC Solenoid plug-in with MOV and LED
GG	MAC JAC Solenoid plug-in with rectifier
GH	MAC JAC Solenoid plug-in with rectifier and LED
KA	Mini connector
KD	Mini connector with rectifier light and ground
KT	Mini connector with light

Consult "Precautions" page 407 before use, installation or service of MAC Valves.



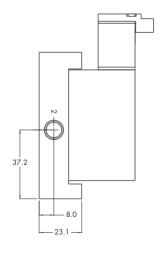


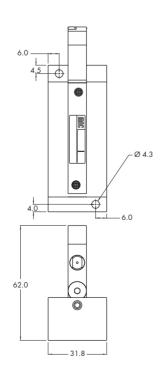


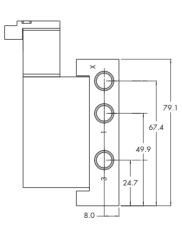
Fluid : Compressed air, vacuum, inert gases Pressure range : Internal Pilot: 1,3 to 8 bar External Pilot : Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 3,8 mm Flow (at 6 bar, $\Delta P=1$ bar): G1/8": 400 Nl/min (Cv 0,40) Coil: Epoxy encapsulated – 100% ED – Class A wire Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 1.0 to 4.0 W Power: Response times : Energize: 5 ms (with 4 W coil) De-energize : 5 ms

Options : • NPTF threads

DIMENSIONS









Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	M5, M7	400 NI/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

- 1. 3-way valve with 4-way integral pilot.
- 2. 10 mm valve (stacks on 10.5 mm centres).
- 3. High flow (up to 400 NI/min).
 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



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400

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ISO 01

ISO 02 **ISO** 1 **ISO 2 ISO 3**

HOW TO ORDER

Port size	Pilot air NO valve		NC valve	Universal valve
		10 2 12 12 471	$ \begin{array}{c c} 10 & 2 \\ \hline 10 & 3 & 1 \end{array} $	10 2 12 10 2 12
Valve less base	Internal	32B-BMA-000-GxxP-xxx	32B-AMA-000-GxxP-xxx	
	External	32B-BMB-000-GxxP-xxx	32B-AMB-000-GxxP-xxx	32B-GMB-000-GxxP-xxx
M5	Internal	32B-BMA-GAA-GxxP-xxx	32B-AMA-GAA-GxxP-xxx	
	External	32B-BMB-GAB-GxxP-xxx	32B-AMB-GAB-GxxP-xxx	32B-GMB-GAB-GxxP-xxx
M7	Internal	32B-BMA-LAA-GxxP-xxx	32B-AMA-LAA-GxxP-xxx	
	External	32B-BMB-LAB-GxxP-xxx	32B-AMB-LAB-GxxP-xxx	32B-GMB-LAB-GxxP-xxx

Note: Above codes are for side port.

STANDARD SOLENOID OPERATOR >

G	XX	P-XXX	

XX	Voltage	X	Manual operator	XX	Electrical connection
AA	120 V~/2,5W	1	Non-locking	SA	Base plug-in
DA	24 V=/1,0W	2	Locking	SJ	Base plug-in with light
DC	24 V=/1,8W			SS	Base plug-in with rectifier & light & ground
DD	24 V=/2,5W				
DF	24 V=/4,0W				

Note: AC voltage requires connector with rectifier.

* Other options available, see page 387.

Washdown capability is possible for the "G" type electrical connector. Consult factory for ordering information. Latching solenoid also available, see page 47.

OPTIONS

Pilot/Base Configuration :

32B-xMx-xAx-Gxx P-xxx

- A Individual base Side port B Individual base Bottom port
- M Pilot exhaust muffled
- Pilot exhaust nipped M5
 Pilot exhaust piped M5
 Pilot exhaust to main exhaust (not available with external pilot)

39



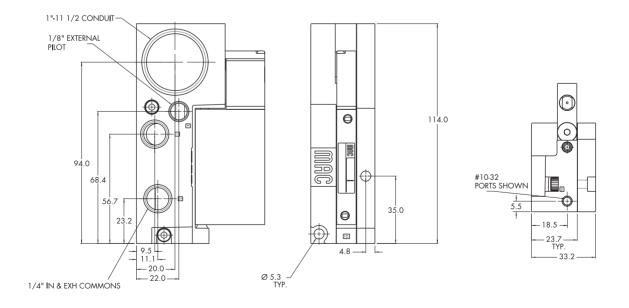




Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 3,8 mm Flow (at 6 bar, $\Delta P = 1 bar$): M5: 350 Nl/min (Cv 0,35) - M7: 400 Nl/min (Cv 0,40) Coil: Epoxy encapsulated – 100% ED – Class A wire Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 1.0 to 4.0 W Power: Response times : Energize : 5 ms (with 4 W coil) De-energize : 5 ms

Options : • NPTF threads

DIMENSIONS





Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC	M5, M7	400 NI/min	Manifold base non "plug-in"	

OPERATIONAL BENEFITS

- 1. 3-way valve with 4-way integral pilot.
- 2. 10 mm valve (stacks on 10.5 mm centres).
- 3. High flow (up to 400 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
		10 Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	$ \begin{array}{c c} 10 & 2 & 12 \\ \hline D & 3 & 51 \end{array} $	10 2 12 D 3 01
Valve less base	Internal	32B-BMA-000-Gxxx-xxx	32B-AMA-000-Gxxx-xxx	
	External	32B-BMB-000-Gxxx-xxx	32B-AMB-000-Gxxx-xxx	32B-GMB-000-Gxxx-xxx
M5	Internal	32B-BMA-GJL-Gxxx-xxx	32B-AMA-GJL-Gxxx-xxx	
	External	32B-BMB-GJM-Gxxx-xxx	32B-AMB-GJM-Gxxx-xxx	32B-GMB-GJM-Gxxx-xxx
M7	Internal	32B-BMA-LJL-Gxxx-xxx	32B-AMA-LJL-Gxxx-xxx	
	External	32B-BMB-LJM-Gxxx-xxx	32B-AMB-LJM-Gxxx-xxx	32B-GMB-LJM-Gxxx-xxx

Note: Above codes are for side port

VV Valtura	v	Wine length	v	Manage
			[」] ነ	
STANDARD SOLENOID OPERATO	OR ➤	G <u>xx</u>	K-XXX	*
. toto : 7 too to codot dio for the port.				

XX	Voltage	X	Wire length	X	Manual operator
AA	120 V~/2,5W	Α	45 cm	1	Non-locking
DA 2	24 V=/1,0W	В	60 cm	2	Locking
DC 2	24 V=/1,8W	C	90 cm		-
DD 2	24 V=/2,5W				
DF 2	24 V=/4,0W	_			

Washdown capability is possible for the "G" type electrical connector. Consult factory for ordering information. Latching solenoid also available, see page 45.

OPTIONS

Base only:

32B-000-xxx (i.e. 32B-000-GJL)

Base Configuration :

32B-xA	V	x-x	X-	Gxx	сх-ххх

J Manifold base – Side port K Manifold base – Bottom port

M Pilot exhaust muffled
 R Pilot exhaust piped M5
 U Pilot exhaust to main exhaust (not available with external pilot)

M-32003-01-01P (Internal pilot) M-32003-02-01P (External pilot) Note: Manifold assemblies require an end plate kit:



53 54 67

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Electrical connection

Flying leads with light
MAC JAC Solenoid plug-in
MAC JAC Solenoid plug-in

MAC JAC Solenoid plug-in

MAC JAC Solenoid plug-in with LED

MAC JAC Solenoid plug-in with diode and LED

MAC JAC Solenoid plug-in

MAC JAC Solenoid plug-in with rectifier

MAC JAC Solenoid plug-in with rectifier and LED

Mini connector with rectifier

Mini connector with light

with MOV and LED

Mini connector

light and ground

Flying leads

with diode

with MOV

BA

GC

GD

GF

GG

GH

KD

KT

47 48P

48

400

92

83 93

ISO 01

ISO 02 **ISO** 1

ISO 2 ISO 3





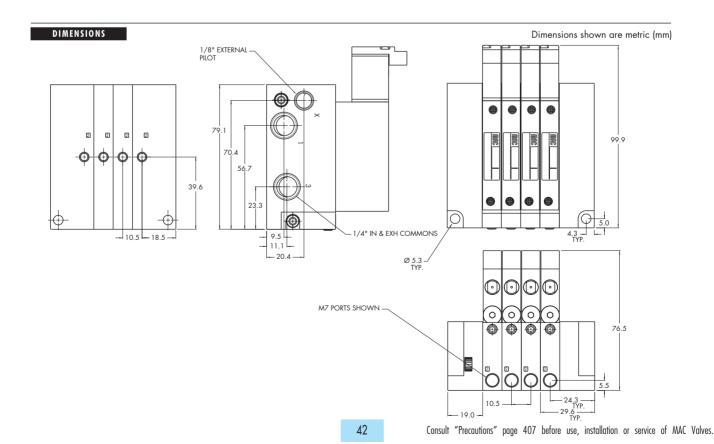


Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 3,8 mm Flow (at 6 bar, $\Delta P=1$ bar): M5: 350 Nl/min (Cv 0,35) - M7: 400 Nl/min (Cv 0,40) Coil: Epoxy encapsulated – 100% ED – Class A wire Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 1.0 to 4.0 W Power: Response times : Energize : 5 ms

Options : • NPTF threads

De-energize : 5 ms

(with 4 W coil)





Function	Port size	Flow (Max)	Manifold mounting	Series
3/2 NO-NC	M5, M7	400 NI/min	Manifold base "plug-in"	

OPERATIONAL BENEFITS

- 1. 3-way valve with 4-way integral pilot.
- 2. 10 mm valve (stacks on 10.5 mm centres).
- 3. High flow (up to 400 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.

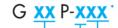


HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
		10 Z ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ	10 2 12 V3 6 1	10 2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1
Valve less base	Internal	32B-BMA-000-GxxP-xxx	32B-AMA-000-GxxP-xxx	
	External	32B-BMB-000-GxxP-xxx	32B-AMB-000-GxxP-xxx	32B-GMB-000-GxxP-xxx
M5	Internal	32B-BMA-GJA-GxxP-xxx	32B-AMA-GJA-GxxP-xxx	
	External	32B-BMB-GJB-GxxP-xxx	32B-AMB-GJB-GxxP-xxx	32B-GMB-GJB-GxxP-xxx
M7	Internal	32B-BMA-LJA-GxxP-xxx	32B-AMA-LJA-GxxP-xxx	
	External	32B-BMB-LJB-GxxP-xxx	32B-AMB-LJB-GxxP-xxx	32B-GMB-LJB-GxxP-xxx

Note: Above codes are for side port.

STANDARD SOLENOID OPERATOR ➤



ХХ	Voltage	X	Manual operator	XX	Electrical connection
AA	120 V~/2,5W	1	Non-locking	SA	Base plug-in
DA	24 V=/1,0W	2	Locking	SJ	Base plug-in with light
DC	24 V=/1,8W			SS	Base plug-in with rectifier & light & ground
DD	24 V=/2.5W				

Note: AC voltage requires connector with rectifier.

* Other options available, see page 387.

Washdown capability is possible for the "G" type electrical connector. Consult factory for ordering information. Latching solenoid also available, see page 47.

OPTIONS

Base only:

32B-000-xxx (i.e. 32B-000-GJA)

DF 24 V=/4,0W

Base Configuration:

32B-xxx-xJx-Gxx P-xxx

- J Manifold base Side port
 K Manifold base Bottom port
 L Left end manifold base Side port
 M Left end manifold base Bottom port
 N Right end manifold base Side port
 P Right end manifold base Bottom port

Note: Manifold assemblies consist of (1) left end manifold, (1) right end manifold and middle station manifolds (options "J" or "K").

68 69 41 43 44 23

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ISO 01

ISO 02

ISO 1 **ISO 2**

ISO 3

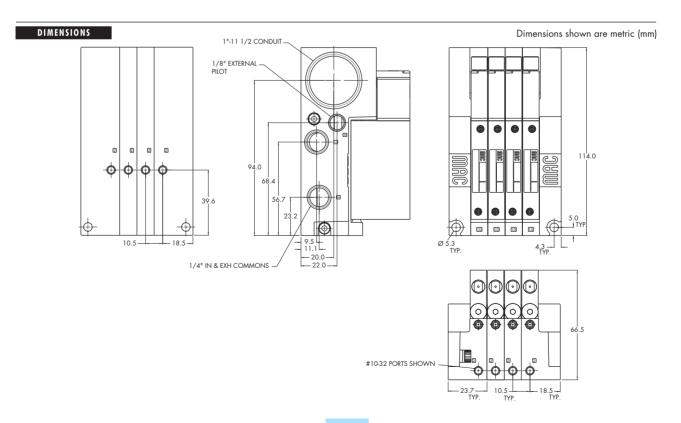






Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 3,8 mm Flow (at 6 bar, $\Delta P=1$ bar): M5: 350 Nl/min (Cv 0,35) - M7: 400 Nl/min (Cv 0,40) Coil: Epoxy encapsulated – 100% ED – Class A wire -15% to +10% of nominal voltage Voltage range: Protection: IP54 (electrical connection) 1.0 to 4.0 W Power: Response times : Energize : 5 ms (with 4 W coil) De-energize : 5 ms

Options : • NPTF threads





Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
3/2 NO-NC	M5, M7	400 NI/min	Sub-base/ manifold base non "plugin" with latching solenoid	

OPERATIONAL BENEFITS

- 1. 3-way valve with 4-way integral pilot.
- 2. 10 mm valve (stacks on 10.5 mm centres).
- 3. High flow (up to 400 NI/min). 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



HOW TO ORDER

Port size	Pilot air	NO valve	NC valve
			10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Valve less base	Internal	32B-BMA-000-Lxxx-xxx	32B-AMA-000-Lxxx-xxx
	External	32B-BMB-000-Lxxx-xxx	32B-AMB-000-Lxxx-xxx
M5	Internal	32B-BMA-GAL-Lxxx-xxx	32B-AMA-GAL-LXXX-XXX
	External	32B-BMB-GAM-Lxxx-xxx	32B-AMB-GAM-Lxxx-xxx
M7	Internal	32B-BMA-LAL-Lxxx-xxx	32B-AMA-LAL-Lxxx-xxx
	External	32B-BMB-LAM-LXXX-XXX	32B-AMB-LAM-Lxxx-xxx

Note: Above codes are for individual base and side port.

LATCHII	ng solenoid oper	RATOR ➤	L	XXX-XXX	<u> </u>		
XX	Voltage	X	Wire length		Manual operator	XX	Electrical connection**
DF HA	24 V=/4,0W 24 V=/1,95W	A B C	45 cm 60 cm 90 cm	0	No operator	BA BJ KA KE LA	2 Wire Flying leads 4 Wire Flying leads 2 Wire Plug-in Assembly 4 Wire Plug-in Assembly 3 Wire plug-in assembly (Polarity Switching Cover)

OPTIONS

Pilot/Base Configuration:

32B-x	Мх-х,	Ax-Lxxx-xxx

A Individual base – Side port B Individual base – Bottom port J Manifold base – Side port K Manifoldl base – Bottom port

M Pilot exhaust muffled
 R Pilot exhaust piped M5
 U Pilot exhaust to main exhaust (not available with external pilot)

Note : Manifold assemblies require an end plate kit: M-32003-01-01P (internal pilot) M-32003-02-01P (external pilot)

ISO 02

24

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42 47 **48P**

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400

92

83

ISO 1 **ISO 2**

ISO 3

^{*} Other options available, see page 395.
** Latching 32 series with non plug-in base configuration must use "B", "K" or "L" type electrical connector.

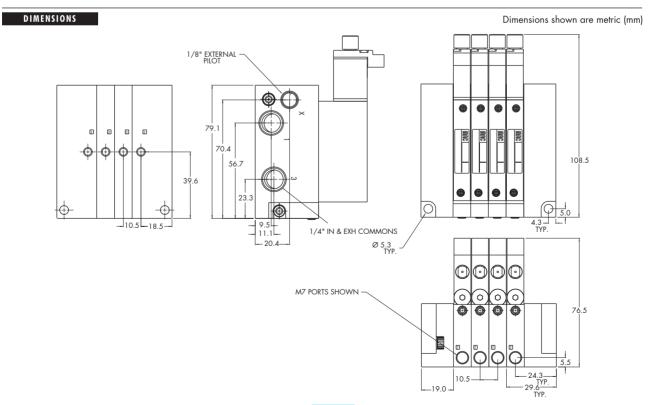






Fluid : Compressed air, vacuum, inert gases Pressure range : Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 3,8 mm Flow (at 6 bar, $\Delta P=1$ bar): M5 : 350 Nl/min (Cv 0,35) - M7 : 400 Nl/min (Cv 0,40) Coil: Epoxy encapsulated – 100% ED – Class A wire Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 1.95 to 4.0 W Power: Response times : Energize: 5 ms (with 4 W coil) De-energize : 5 ms

Options : • NPTF threads





unction	Port size	Floш (Max)	Individual/Manifold mounting	Series
3/2 NO-NC	M5, M7	400 NI/min	Sub-base/ manifold base "plug-in" with latching solenoid	
PERATIONAL BENEFITS				31
. 3-way valve with 4-way	y integral pilot.			33
. 10 mm valve (stacks or			13/2/20	34
. High flow (up to 400 N . Fast, repeatable respor				37
. Maximum shifting force				36
· ·			- 0 G	
				32
			9 6 6	
				37
				38
				52
HOW TO ORDER				53
HOW TO ORDER				54
Port size	Pilot air	NO valve	NC valve	67
		2		68
		10 212	10/20 2 12	69
		▼3 0 1	Ψ ₃ δ ₁	41
Valve less base	Internal	32B-BMA-000-LxxP-xxx	32B-AMA-000-LxxP-xxx	43
	External	32B-BMB-000-LxxP-xxx	32B-AMB-000-LxxP-xxx	44
	4 . I			
M5	Internal	32B-BMA-GAA-LXXP-XXX	32B-AMA-GAA-LxxP-xxx	23
	External	32B-BMB-GAB-LxxP-xxx	32B-AMB-GAB-LxxP-xxx	23
M5	External Internal	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx	32B-AMB-GAB-LXXP-XXX 32B-AMA-LAA-LXXP-XXX	23
M7	External Internal External	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx 32B-BMB-LAB-LxxP-xxx	32B-AMB-GAB-LxxP-xxx	
M7	External Internal	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx 32B-BMB-LAB-LxxP-xxx	32B-AMB-GAB-LXXP-XXX 32B-AMA-LAA-LXXP-XXX	24
M7 lote : Above codes are for	External Internal External individual base and side por	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx 32B-BMB-LAB-LxxP-xxx	32B-AMB-GAB-LXXP-XXX 32B-AMA-LAA-LXXP-XXX	
M7 Note : Above codes are for	External Internal External individual base and side por	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx 32B-BMB-LAB-LxxP-xxx	32B-AMB-GAB-LXXP-XXX 32B-AMA-LAA-LXXP-XXX	24
M7 Note : Above codes are for ATCHING SOLENO	External Internal External individual base and side por	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx 32B-BMB-LAB-LxxP-xxx t.	32B-AMB-GAB-LXXP-XXX 32B-AMA-LAA-LXXP-XXX 32B-AMB-LAB-LXXP-XXX	24
M7 Note : Above codes are for ATCHING SOLENO XX Voltage	External Internal External individual base and side por	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx 32B-BMB-LAB-LxxP-xxx t. L XX P-XXX * Manual operator	32B-AMB-GAB-LXXP-XXX 32B-AMA-LAA-LXXP-XXX 32B-AMB-LAB-LXXP-XXX	24 46 42
M7 Note: Above codes are for ATCHING SOLENO XX Voltage DF 24 V=/4,0W	External Internal External individual base and side por	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx 32B-BMB-LAB-LxxP-xxx t.	32B-AMB-GAB-LXXP-XXX 32B-AMA-LAA-LXXP-XXX 32B-AMB-LAB-LXXP-XXX XX Electrical connection** DA Base/Manifold Plug-in	24 46 42 47
M7 Note: Above codes are for ATCHING SOLENO XX Voltage	External Internal External individual base and side por	32B-BMB-GAB-LxxP-xxx 32B-BMA-LAA-LxxP-xxx 32B-BMB-LAB-LxxP-xxx t. L XX P-XXX * Manual operator	32B-AMB-GAB-LXXP-XXX 32B-AMA-LAA-LXXP-XXX 32B-AMB-LAB-LXXP-XXX	24 46 42

OPTIONS 92 Manifold/Base Configuration : Base Int./Ext. Pilot: 32B-xMx-xAx-LxxP-xxx 32B-xxx-xxA-LxxP-xxx 83 A Individual base – Side port B Individual base – Bottom port J Manifold base – Side port K Manifold base – Bottom port L Left end manifold base - Side port M Left end manifold base - Bottom port N Right end manifold base - Side port P Right end manifold base - Bottom port Plug-In Int. Pilot (2 Wire)** Plug-In Ext. Pilot (2 Wire)** Plug-In Int. Pilot (3 Wire)** Plug-In Ext. Pilot (3 Wire)** Plug-In Int. Pilot (4 Wire)** Plug-In Ext. Pilot (4 Wire)** 93 **ISO 01** ISO 02 M Pilot exhaust muffled Pilot exhaust piped M5 Pilot exhaust to main exhaust (not available with external pilot) **ISO** 1 **ISO 2 ISO 3** Note: Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (option J or K).

EA

Base/Manifold Plug-in 3 Pin

(Polarity Switching Cover)

48

400

^{*} Other options available, see page 395.
**2 and 4 wire base must use "D" type electrical connector, 3 wire base must use "EA" type electrical connector.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot: 1,3 to 8 bar

External Pilot : Vacuum to 8 bar

Pilot pressure: 1,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, ΔP=1bar): M5 : 350 NI/min (Cv 0,35) - M7 : 400 NI/min (Cv 0,40)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range: -15% to +10% of nominal voltage

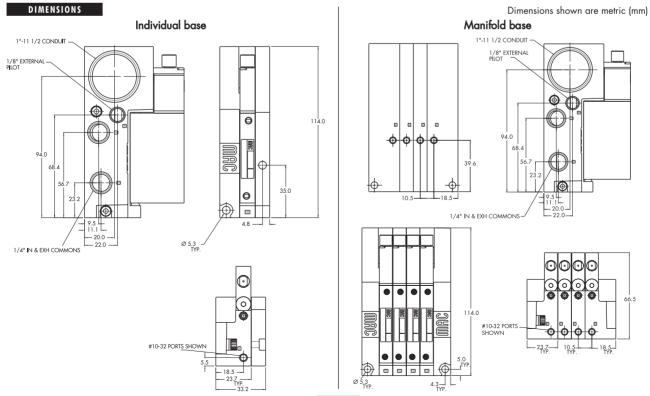
10/010 110/001110111111111

Protection: IP54 (electrical connection)

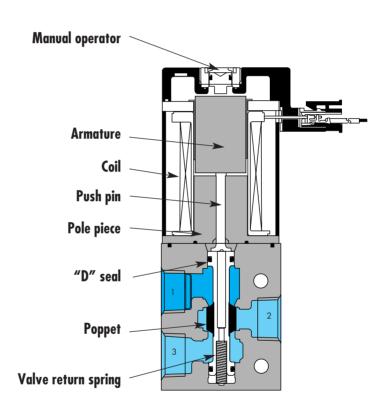
Power: 1.0 to 4.0 W

Response times: Energize: 5 ms (with 4 W coil) De-energize: 5 ms

Options : • NPTF threads



Individual mounting Subbase non plug-in Subbase non plug-in



SERIES FEATURES

- Balanced poppet equals consistent high shifting forces.
- Valve shifting forces are consistent and independent of pressure fluctuations.
- High solenoid and return spring forces ensure high speed and precise repeatability.
- Built-in wear compensation valve stroke is shorter than solenoid stroke.
- Constant high flow maintained throughout the pressure range.
- Exhaust contaminants are isolated from the solenoid.
- Full flow exhaust.
- Universal porting 6 functions in one valve.

ISO 2 ISO 3

31 33 34

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43 44

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47 48P

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unction	Port size	Flow	[Max]	Individual mounting	Series
3/2 NO-NC	G1/8" -	G1/4" 500	NI/min	Inline	
PERATIONAL BENEFITS					31
Balanced poppet equals shifting forces.Valve shifting forces are	consistent and	8. Universal porting – 6	functions in one valve.		33 34
independent of pressure. High solenoid and return ensure high speed and p	spring forces precise repeatability.				36
 Built-in wear compensations shorter than solenoid strong. Constant high flow maint the pressure range. 	oke.				32
 Exhaust contaminants are solenoid. 	e isolated from the			(0)	38
Full flow exhaust.				C)	52 53
HOW TO ORDER					54
Port s	ize	Univ	ersal valve	NC only valve	
		r d		2	68
			1 3		41
G1/8 G1/4			CO-H xxx-xxx DO-H xxx-xxx	37A-BC0-H xxx-x 37A-BD0-H xxx-x	
XX Voltage	Х	Wire length	XX-XXX		al connection
AA 120 V~/6,7W DA 24 V=/5,2W	A B	45 cm 60 cm	1 Non-locking 2 Locking	MA Mini conn MC Mini conn	ector with light
DB 24 V=/2,4W DC 24 V=/1,8W				BA Flying lea BC Flying lea	ds with light 42
				- N - N	
				MT Plug-in wi rectifier a	re assembly with nd light 4.7
lote: AC voltage requires co	nnector with rectifier.			MT Plug-in wi rectifier a	re assembly with ad light 47
ote : AC voltage requires co Other options available, se	nnector with rectifier. e page 391.			MT Plug-in wi rectifier a	4/
ote : AC voltage requires coi Other options available, sec	nnector with rectifier. e page 391.			MT Plug-in wi rectifier a	48P
ote : AC voltage requires coi Other options available, sec	nnector with rectifier. e page 391.			MT Plug-in wi rectifier a	48P
ote : AC voltage requires coi Other options available, sec	nnector with rectifier. e page 391.			MT Plug-in wi rectifier a	48P 48 400
ote : AC voltage requires coi Other options available, sei	nnector with rectifier. e page 391.			MT Plug-in wi rectifier a	48P 48 400 92
ote : AC voltage requires coi Other options available, sed	nnector with rectifier. e page 391.			MT Plug-in wi rectifier a	48P 48 400 92 83 93
ote : AC voltage requires coi Other options available, sec	nnector with rectifier. e page 391.			MT Plug-in wi rectifier a	48P 48 400 92 83 93 ISO 0
ote : AC voltage requires coi Other options available, ser	nnector with rectifier. e page 391.			MT Plug-in wi	48P 48 400 92 83 93 ISO 0
ote : AC voltage requires coi Other options available, see	nnector with rectifier. e page 391.			MT Plug-in wi	48P 48 400 92 83 93 ISO 0



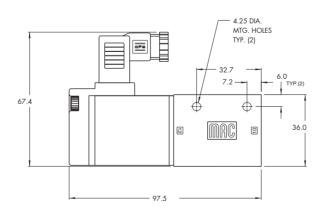


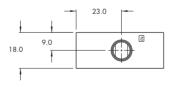


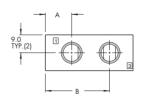
Fluid : Compressed air, vacuum, inert gases Pressure range : Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 4,3 mm Flow: 5,2 W: 500 Nl/min (Cv 0,5) - 2,4 W: 350 Nl/min (Cv 0,35) Coil: Epoxy encapsulated – 100% ED -15% to +10% of nominal voltage Voltage range: Protection: IP54 (electrical connection) 5,2 W - 2,4 W Power: Response times : Energize: 16,9 ms (with 5,2 W coil) De-energize : 6,7 ms

Options : • NPTF ports

DIMENSIONS







Dim	A	В
1/8"	13.3	32.45
1/4"	14.7	33.7



Function	Port size	Flou	ı (Max)	Individual mounting	Series
3/2 NO-NC	G1/8" -	G1/4" 50	0 NI/min	Sub-base non plug-in	
1. Balanced poppet equals shifting forces. 2. Valve shifting forces are independent of pressure 3. High solenoid and return ensure high speed and part of the shorter than solenoid stromatics. 5. Constant high flow main the pressure range. 6. Exhaust contaminants are solenoid. 7. Full flow exhaust. HOW TO ORDER	consistent and fluctuations. In spring forces precise repeatability. In a valve stroke is loke. Italined throughout	8. Universal porting –	6 functions in one valve.		31 33 34 36 32 37 38 52 53
Port	size	Uni	versal valve	NC only valve	54 67 68
Valve les G1/4	8"	37A-	C10-H XXX-XXX CCA-H XXX-XXX CDA-H XXX-XXX	37A-DIO-H XXX-XXX 37A-DCA-H XXX-XXX 37A-DDA-H XXX-XXX	69 41 43 44 23
SOLENOID OPERATOR	₹ >	H <u>x</u>	XXX-XXX ·		24
XX Voltage AA 120 V~/6,7W DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W	X A B	Wire length 45 cm 60 cm	X Manual op 1 Non-locking 2 Locking	MA Plug-in wire asse MC Plug-in wire asse with light BA Flying leads BC Flying leads with	embly 42
Note : AC voltage requires co * Other options available, se	onnector with rectifier. see page 391.			HA Plug-in wire asse rectifier & light	48P 48 400
Base only : 37A-0CA (1/8")					92
37A-0DA (1/4")					83
					93 ISO 01 ISO 02
					ISO 1 ISO 2 ISO 3







Fluid : Compressed air, vacuum, inert gases Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 4,3 mm Flow: 5,2 W: 500 Nl/min (Cv 0,5) - 2,4 W: 350 Nl/min (Cv 0,35) Coil: Epoxy encapsulated – 100% ED Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 5,2 W - 2,4 W Power:

Options : • NPTF ports

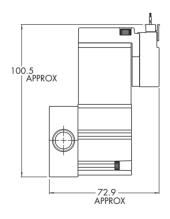
Energize: 16,9 ms

De-energize : 6,7 ms

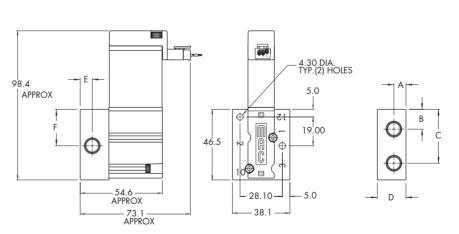
DIMENSIONS

Response times :

(with 5,2 W coil)



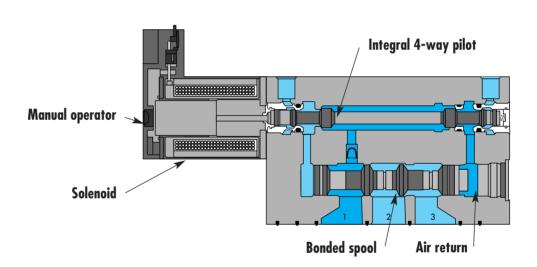
RECTIFIER COVER OPTION (SHOWN WITH 1/4" PORTS)



FLYING LEAD OPTION (SHOWN WITH 1/8" PORTS)

Dim	A	В	C	D	E	F
1/8"	8.0	13.0	35.5	19.05	8.0	24.0
1/4"	9.5	9.5	33.3	17.03	9.5	22.5

Individual mounting Sub-base non "plug-in" Sub-base "plug-in" Sub-base manifold base non "plug-in" with latching solenoid Manifold mounting



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Internal or external pilot.
- Normally open or normally closed function.
- Universal function (external pilot).
- Rectified AC voltage.
- Latching solenoid technology.

ISO 2 ISO 3

Series

31 33

34

36

68 69 41

43

44 23

24

46

42 47 48P

48

400

92

83



Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/8"	1200 NI/min	Sub-base non "plug-in"	
OPERATIONAL BENEFITS			4	31

- 1. 3-way valve with 4-way integral pilot.
- 2. 10 mm valve (stacks on 16.5 mm centers).
- 3. High flow (up to 1200 NI/min).
- 4. Fast, repeatable response times.
- 5. Maximum shifting forces in both directions.



33

34

36

24

46

42 47 48P

48

400

928393

ISO 01 ISO 02 ISO 1 ISO 2 ISO 3

HOW TO ORDER

Port size	Pilot air	NO valve	NC valve	Universal valve
		10 2 1/2	10 2 12 12 471	10 2 12 15 3 6 1
Valve less base	Internal	38B-BMA-000-Gxxx-xxx	38B-AMA-000-Gxxx-xxx	
	External	38B-BMB-000-Gxxx-xxx	38B-AMB-000-Gxxx-xxx	38B-GMB-000-Gxxx-xxx
G1/8"	Internal	38B-BMA-BAL-Gxxx-xxx	38B-AMA-BAL-Gxxx-xxx	
	External	38B-BMB-BAM-Gxxx-xxx	38B-AMB-BAM-Gxxx-xxx	38B-GMB-BAM-Gxxx-xxx

Note: Above codes are for side port.

				<u> </u>	
XX	Voltage	X	Wire length	X	Manual operator
AA	120 V~/2,5W	A	45 cm	1	Non-locking
DA	24 V=/1,0W	В	60 cm	2	Locking
DC	24 V=/1,8W	C	90 cm		•
DD	24 V=/2,5W			_	
DF	24 V=/4,0W	_			
hdow	voltage requires connector w ptions available, see page 38 n capability is possible for the plenoid also available, see po	"G" type ele	ectrical connector. Consult factor	y for orderi	ng information.

0	PT	10	NS

Pilot/Base Configuration

i iiOi/ busi	e Coi	iliguralic	JII .
38B- x /	۷x-x	x-Gxxx	-xxx
		A B	Individual base – Side port Individual base – Bottom port
			Pilot exhaust muffled Pilot exhaust piped M5 Pilot exhaust to main exhaust

BA	Flying leads
BT	Flying leads with light
GA	MAC JAC Solenoid plug-in
GB	MAC JAC Solenoid plug-in with diode
GC	MAC JAC Solenoid plug-in with MOV
GD	MAC JAC Solenoid plug-in with LED
GE	MAC JAC Solenoid plug-in with diode and LED
GF	MAC JAC Solenoid plug-in with MOV and LED
GG	MAC JAC Solenoid plug-in with rectifier
GH	MAC JAC Solenoid plug-in with rectifier and LED
KA	Mini connector
KD	Mini connector with rectifier light and ground
KT	Mini connector with light

Electrical connection

57







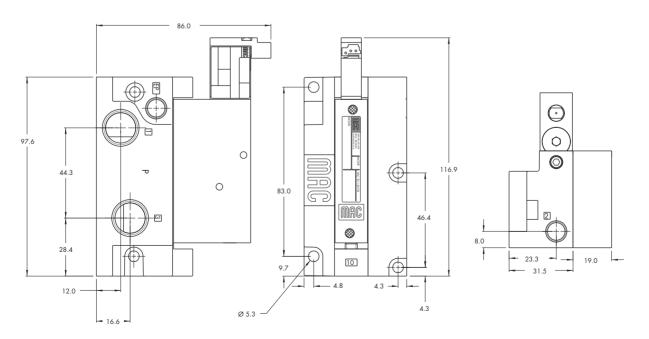
Fluid : Compressed air, vacuum, inert gases Pressure range : Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 6,0 mm Flow (at 6 bar, $\Delta P = 1$ bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port: 1000 NI/min (Cv 1,0) Coil: Epoxy encapsulated – 100% ED – Class A wire Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 1.0 to 4.0 W Power: Response times : Energize : 6 ms

Options : • NPTF threads

De-energize : 6 ms

DIMENSIONS

(with 4 W coil)





nction	P	ort size	Flow (Max	X]	Individual	mounting	Series
/2 NO-NC	G	61/8″	1200	NI/min	Sub-base "plug-in"		
PERATIONAL BENEFITS							31
3-way valve with 4-w	ay integral pilot.						33
10 mm valve (stacks of High flow (up to 120)		ers).					34
Fast, repeatable resp	onse times.						
Maximum shifting for	ces in both direct	ions.					36
					0.00		32
					- 1		37
							38
							52
HOW TO ORDER							53 54
				Na I			67
Port size	Pilot air	NO v	/alve	NC val	ve	Universal valve	68
		10 2	7 3 71.	10 2	12 12,	10 2 12	69
		□	<u>√</u>	□	971	₩ 	41
Valve less base	Internal	38B-BMA-00	00-GxxP-xxx	38B-AMA-000-	GxxP-xxx		43
			0.0	200 4440 000	GyyP-yyy	38B-GMB-000-GxxP-xxx	44
	External	38B-BMB-00		38B-AMB-000-			1919
G1/8" ote : Above codes are fo	Internal External or side port.	38B-BMA-BA 38B-BMB-BA	AA-GxxP-xxx AB-GxxP-xxx	38B-AMA-BAA- 38B-AMB-BAB-	-GxxP-xxx	38B-GMB-BAB-GxxP-xxx	23
ote : Above codes are fo	Internal External or side port.	38B-BMA-BA 38B-BMB-BA	AA-GxxP-xxx AB-GxxP-xxx	38B-AMA-BAA- 38B-AMB-BAB- P-XXX	-GxxP-xxx		23
ote : Above codes are for TANDARD SOLEN XX Voltage	Internal External or side port. OID OPERATO	38B-BMA-BA 38B-BMB-BA	AA-GxxP-xxx AB-GxxP-xxx G XX	38B-AMA-BAA- 38B-AMB-BAB- P-XXX	GxxP-xxx GxxP-xxx	38B-GMB-BAB-GxxP-xxx Electrical connection	23 24 46
ote : Above codes are fo	Internal External or side port. OID OPERATO	38B-BMA-BA 38B-BMB-BA	AA-GxxP-xxx AB-GxxP-xxx G XX	38B-AMA-BAA- 38B-AMB-BAB- P-XXX	-GxxP-xxx GxxP-xxx	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24
TANDARD SOLEN XX	Internal External or side port. OID OPERATO	38B-BMA-BA 38B-BMB-BA	AA-GxxP-xxx AB-GxxP-xxx G XX Manual ope	38B-AMA-BAA- 38B-AMB-BAB- P-XXX	GXXP-XXX GXXP-XXX XX SA	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in	23 24 46
TANDARD SOLEN XX Voltage AA 120 V~/2,5v DA 24 V=/1,0w DC 24 V=/1,8w DD 24 V=/2,5w DF 24 V=/4,0w	Internal External or side port. OID OPERATO	38B-BMA-BA 38B-BMB-BA DR ➤	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42
TANDARD SOLEN XX Voltage AA 120 V~/2,5v DA 24 V=/1,0w DC 24 V=/1,8w DD 24 V=/2,5w DF 24 V=/4,0w	Internal External or side port. OID OPERATO	38B-BMA-BA 38B-BMB-BA DR ➤	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47
TANDARD SOLEN XX Voltage AA 120 V~/2,5v DA 24 V=/1,0w DC 24 V=/1,8w DD 24 V=/2,5w DF 24 V=/4,0w	Internal External or side port. OID OPERATO	38B-BMA-BA 38B-BMB-BA DR ➤	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47
XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/1,8W DD 24 V=/2,5W DF 24 V=/4,0W ote: AC voltage require Other options available (ashdown capability is patching solenoid also available ashdown capability is patching solenoid ashdown capability is patching solenoid also available ashdown capability ashdown ca	Internal External or side port. OID OPERATO	38B-BMA-BA 38B-BMB-BA DR ➤	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P
TANDARD SOLEN XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/1,8W DD 24 V=/2,5W DF 24 V=/4,0W ote: AC voltage require (other options available (ashdown capability is patching solenoid also available) OPTIONS	Internal External or side port. OID OPERATO V as connector with real, see page 387. cossible for the "Gillable, see page 6	38B-BMA-BA 38B-BMB-BA DR ➤	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P
TANDARD SOLEN XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/2,5W DF 24 V=/4,0W Other options available ashdown capability is patching solenoid also available of the control of t	Internal External or side port. OID OPERATO V us connector with re, see page 387. oossible for the "G' gillable, see page 6	38B-BMA-BA 38B-BMB-BA DR ➤	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P
TANDARD SOLEN XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/1,8W DD 24 V=/2,5W DF 24 V=/4,0W Other options available ashdown capability is perching solenoid also available ashdown capability is perching solenoid ashdown capability is perching solenoid also available ashdown capability is perching solenoid also available ashdown capability is perching solenoid ashdown capability is perching solenoid ashdown capability is perching solenoid also available ashdown capability is perching solenoid ashdown capability is perching solenoid ashdown capability is perching solenoid ashdown capability is perchin	Internal External Dr side port. OID OPERATO V Is connector with re, see page 387. cossible for the "Gillable, see page 6	38B-BMA-BA 38B-BMB-BA OR > ectifier. " type electrical conr 55.	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P 48 400 92
TANDARD SOLEN XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/1,8W DD 24 V=/2,5W DF 24 V=/4,0W Other options available ashdown capability is petching solenoid also available ashdown capability of the configuration of Base Configuration 38B-xMx-xAx-Gxx P-	Internal External or side port. OID OPERATO V us connector with re, see page 387. oossible for the "G' gillable, see page 6	38B-BMA-BA 38B-BMB-BA OR > ectifier. " type electrical conr 55.	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P 48
TANDARD SOLEN XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/2,5W DF 24 V=/4,0W Other options available ashdown capability is patching solenoid also available ashdown capability is patching solenoid also available ashdown capability is patching solenoid also available ashdown capability is patching solenoid also available ashdown capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability in patching as a capa	Internal External or side port. OID OPERATO V as connector with ree, see page 387. cossible for the "Gillable, see page 6	38B-BMA-BA 38B-BMB-BA OR > 1 2 ectifier. " type electrical conr 55.	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P 48 400 92
TANDARD SOLEN XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/2,5W DF 24 V=/4,0W Other options available ashdown capability is patching solenoid also available ashdown capability is patching solenoid also available ashdown capability is patching ashdown capability is patching solenoid also available ashdown capability is patching ashdown capability is patching ashdown capability is patching ashdown capability is patching as a constant as a cons	Internal External or side port. OID OPERATO V ss connector with ree, see page 387. ossible for the "G" illable, see page 6 1: XXXX adividual base – S andividual base – B	38B-BMA-BA 38B-BMB-BA OR > 1 2 ectifier. " type electrical conr 55.	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P 48 400 92 83 93
TANDARD SOLEN XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/2,5W DF 24 V=/4,0W Other options available ashdown capability is patching solenoid also available ashdown capability is patching solenoid also available ashdown capability is patching solenoid also available ashdown capability is patching solenoid also available ashdown capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in patching as a capability is patching as a capability in	Internal External or side port. OID OPERATO V as connector with ree, see page 387. cossible for the "Gillable, see page 6	38B-BMA-BA 38B-BMB-BA OR > 1 2 ectifier. " type electrical conr 55.	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P 48 400 92 83 93 ISO 0
XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/2,5W DF 24 V=/4,0W Other options available (ashdown capability is patching solenoid also available (ashdown capability is patching). OPTIONS	Internal External or side port. OID OPERATO V as connector with ree, see page 387. cossible for the "Gillable, see page 6	38B-BMA-BA 38B-BMB-BA OR > 1 2 ectifier. " type electrical conr 55.	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P 48 400 92 83
XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/2,5W DF 24 V=/4,0W Other options available (ashdown capability is patching solenoid also available (ashdown capability is patching). OPTIONS	Internal External or side port. OID OPERATO V as connector with ree, see page 387. cossible for the "Gillable, see page 6	38B-BMA-BA 38B-BMB-BA OR > 1 2 ectifier. " type electrical conr 55.	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P 48 400 92 83 93 ISO 0
XX Voltage AA 120 V~/2,5V DA 24 V=/1,0W DC 24 V=/2,5W DF 24 V=/4,0W Other options available (ashdown capability is patching solenoid also available (ashdown capability is patching). OPTIONS	Internal External or side port. OID OPERATO V as connector with ree, see page 387. cossible for the "Gillable, see page 6	38B-BMA-BA 38B-BMB-BA OR > 1 2 ectifier. " type electrical conr 55.	AA-GxxP-xxx AB-GxxP-xxx G XX Manual open Non-locking Locking	38B-AMA-BAA- 38B-AMB-BAB- P-XXX* erator	GXXP-XXX GXXP-XXX XX SA SJ SS	38B-GMB-BAB-GxxP-xxx Electrical connection Base plug-in Base plug-in with light	23 24 46 42 47 48P 48 400 92 83 93 ISO 0



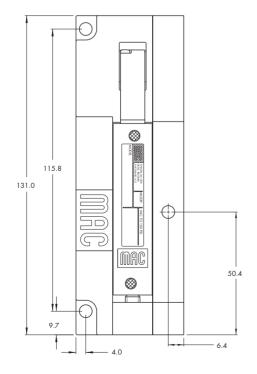


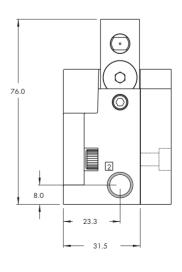


Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 6,0 mm Flow (at 6 bar, $\Delta P=1$ bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port: 1000 NI/min (Cv 1,0) Coil: Epoxy encapsulated – 100% ED – Class A wire Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 1.0 to 4.0 W Power: Response times : Energize : 6 ms (with 4 W coil) De-energize : 6 ms

Options : • NPTF threads

DIMENSIONS







nction	Po	ort size FI	ош (Max)	Manifold mo	unting	Series
/2 NO-NC	P-NC G1/8" 1200 NI/min		Manifold base "plug-in"			
ERATIONAL BENEFITS	i					31
3-way valve with 4-w					1000	33
10 mm valve (stacks High flow (up to 120		ers).			180	34
ast, repeatable resp					1.3/4/	1
Maximum shifting for	rces in both direction	ons.			000	36
				4		32
				4.7		
						37
						38
						52
HOW TO ORDER	1					53 54
Port size	Pilot air	NO valve	NC val		Universal valve	67
Port Size	Pilot dir	NO valve	NC Val	ve	Universal Valve	68
		10 2 12	10 2		10 2 12	69
		T V3 01	<u> </u>	<u> </u>	▼ T T T T T T T T T T T T T T T T T T T	41
Valve less base	Internal	38B-BMA-000-GxxP-xxx	38B-AMA-000-			_ 43
61/9//	External	38B-BMB-000-GxxP-xxx	38B-AMB-000-		38B-GMB-000-GxxP-xxx	_ 44
G1/8"	Internal 	38B-BMA-BJA-GxxP-xxx 38B-BMB-BJB-GxxP-xxx	38B-AMA-BJA- 38B-AMB-BJB-(38B-GMB-BJB-GxxP-xxx	_ 23
			XX P-XXX.			46
Voltage			al operator		lectrical connection	
AA 120 V~/2,5 DA 24 V=/1,0W			king		ase plug-in Base plug-in with light	_ 42
DC 24 V=/1,8W DD 24 V=/2,5W				SS E	ase plug-in with rectifier & light & ground	
DF 24 V=/4,0W	/					48
e : AC voltage require Other options availabl shdown capability is _l	es connector with re- le, see page 387. possible for the "G"	ctifier. type electrical connector. Consult 5.	factory for ordering information	ı.		48
orning solenoid also av	ailable, see page 63	b.				
e only :	•					40
B-000-xxx (i.e. 38A-00	00-BJA)					92
Configuration :						83
8B- xxx-xJx -G xx P-)	CXX					02
J /	Manifold base – Sid Manifold base – Bot	e port				93
	Left end manifold ba Left end manifold ba	ise - Side port ise - Bottom port				ISO
L Left end manifold base - Side port M Left end manifold base - Bottom port N Right end manifold base - Side port P Right end manifold base - Bottom port						ISO
		end manifold, (1) right end manif	old and middle station manifolds	s (options "J" or "K').	
						150
						ISO







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot: 1,3 to 8 bar

External Pilot : Vacuum to 8 bar

Pilot pressure: 1,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port: 1000 NI/min (Cv 1,0)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 1.0 to 4.0 W

Response times: Energize: 6 ms

(with 4 W coil) De-energize: 6 ms

Options : • NPTF threads

DIMENSIONS Dimensions shown are metric (mm) 1/8" COMMON EXT. PILOT — 0 115.8 131.0 107.1 0 51.5 0 o` 6 0 6 16.5 12.0 76.0 16.7 3/8" IN & EXH – 29.5 – Ø 5.3 - 33.5 -— 47.5 1/8" TAPPED OR 1/4" O.D. TUBE FITTING 23.3 1/8" TAPPED OR 1/4" O.D. TUBE FITTING



Function	Po	ort size	Flow (Max)		nl/Manifold mounting	Series
3/2 NO-NC	G	1/8″	1200 NI/mi	Subbase/ manifold base "plug-in" with latchin solenoid	, non 19	
OPERATIONAL BENEFITS				solenoid		31
1. 3-way valve with 4-wo 2. 10 mm valve (stacks o		irol				33
3. High flow (up to 1200	NI/min).	13).				34
 Fast, repeatable response. Maximum shifting force 		ons.				36
						32
					9	
						37
						52
HOW TO ORDER						53
	Dilat uiu	Nol		NC valve	Universal valve	54 67
Port size	Pilot air	NO valve		NC Valve	Universal valve	68
		10 2	12 71	10 2 12	10 2 47	69
Valve less base	 Internal	38B-BMA-000-Lx)	(X-XXX	38B-AMA-000-Lxxx-xxx	Ψ3 δ1	_ 41 43
7 a. 7 6 7 5 5 5 a 6 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7 6 7	External	38B-BMB-000-Lxx		38B-AMB-000-Lxxx-xxx	38B-GMB-000-Lxxx-xxx	_ 43 _ 44
G1/8"	Internal External	38B-BMA-BAL-LXX		38B-AMA-BAL-LXXX-XXX 38B-AMB-BAM-LXXX-XXX	38B-GMB-BAM-Lxxx-xxx	23
LATCHING SOLENC	DID OPERATOR		L xxx-xx			46
XX Voltage DF 24 V=/4,0W		X Wire leng A 45 cm	th X	Manual operator No operator	XX Electrical connection* BA 2 Wire Flying leads	
HA 24 V=/1,95W	/	B 60 cm C 90 cm		140 орегию	BJ 4 Wire Flying leads KA 2 Wire Plug-in Assembly	42
	-	70 (111			KE 4 Wire Plug-in Assembly LA 3 Wire plug-in assembly	47
					(Polarity Switching Cover)	48P
* Other options available ** Latching 38 series with	r, see page 395. non plug-in base c	onfiguration must use "B"	, "K" or "L" type electric	al connector.		48
OPTIONS						
Pilot/Base Configuration						400
38B-xMx-xAx-Lxxx-x	xx ndividual base – Sid	de nort				92
B ir J ∧	ndividual base – Bo Nanifold base – Sid	ottom port le port				83
	Nanifoldl base – Bo ilot exhaust muffled					93
└── R P	ilot exhaust piped lilot exhaust to mair	M5				ISO 01
Note : Manifold assemblie	es require an end p	late kit : M-38003-01- M-38003-02-	-01P (internal pilot) -01P (external pilot)			ISO 02
			•			ISO 1
						ISO 2
						ISO 3





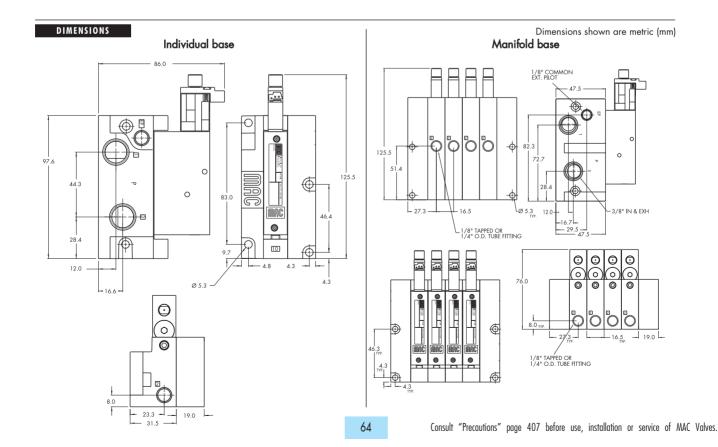


Fluid : Compressed air, vacuum, inert gases Pressure range : Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 6,0 mm Flow (at 6 bar, $\Delta P = 1$ bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port : 1000 NI/min (Cv 1,0) Coil: Epoxy encapsulated – 100% ED – Class A wire -15% to +10% of nominal voltage Voltage range: Protection: IP54 (electrical connection) 1.95 to 4.0 W Power: Response times : Energize : 6 ms

Options : • NPTF threads

De-energize : 6 ms

(with 4 W coil)





nction Port size		rt size Flow (M	•	vidual/Manifold mounting	Series	
3/2 NO-NC	G	1/8" 1200	NI/min	b-base/ ifioid base lug-in' Iatching Jelenoid		
PERATIONAL BENEFITS			•	And	31	
3-way valve with 4-wa 10 mm valve (stacks o		·ol		15/22	33	
High flow (up to 1200	NI/min).	5].		2/4/9	34	
Fast, repeatable respo Maximum shifting force		ons.			36	
					- 00	
					32	
					37	
				25 . 4	38 52	
					53	
HOW TO ORDER					54	
Port size	Pilot air	NO valve	NC valve	Universal valve	67	
		10 2 12	10 2 12	10 2 12	68 69	
		T T T T T	V3 01	V3 O1	41	
Valve less base	Internal	38B-BMA-000-LxxP-xxx	38B-AMA-000-LxxP-xxx		43	
G1/8"	_ External Internal	38B-BMB-000-LxxP-xxx 38B-BMA-BAA-LxxP-xxx	38B-AMB-000-LxxP-xxx 38B-AMA-BAA-LxxP-xxx	38B-GMB-000-LxxP-xxx	44	
01,0	External	38B-BMB-BAB-LxxP-xxx	38B-AMB-BAB-LxxP-xxx	38B-GMB-BAB-LxxP-xxx	23	
XX Voltage	OPERATOR	X Manual o		X Electrical connection**	46	
DF 24 V=/4,0W HA 24 V=/1,95W	1	0 No operator		DA Base/Manifold Plug-in Base/Manifold Plug-in w/Ground	42	
	DD Base/Mor		Base/Manifold Plug-in w/ Led and Groun			
				Base/Manifold Plug-in 3 Pin (Polarity Switching Cover)	48P	
Other options available, 2 and 4 wire bases must 3 wire bases mus	, see page 395. t use "D" type elect t use "EA" type elec	rical connector. ctrical connector.			48	
OPTIONS					400	
anifold/Base Configure			Manifold/Base Int./Ext. Pilot	: (Wire options)	92	
38B-xxx-xA-LxxP-xxx A Individual base – Side port A Plug-In Int. Pilot (2 Wire)**					83	
IM	dividual base – Bot anifold base – Side anifold base – Bott	nort en	B Plug C Plug	B Plug-In Ext. Pilot (2 Wire)** C Plug-In Int. Pilot (3 Wire)** D Plug-In Ext. Pilot (3 Wire)**		
L Le	tt end manitold ba	se - Side port	E Plug	-In Ext. Filot (3 Wire) -In Int. Pilot (4 Wire)** -In Ext. Pilot (4 Wire)**	93	
N Ri P Ri	ft end manifold ba ght end manifold b ght end manifold b	pase - Side port pase - Bottom port	. 1109	· · · · · · · · · · · · · · · · · · ·	ISO 0	
lote : Manifold assembl	ies consist of (1) le	eft end manifold, (1) right end manif	fold, and middle station manifolds	(option J or K).	ISO 0	
					ISO 1	
					ISO 2	
					ISO 3	





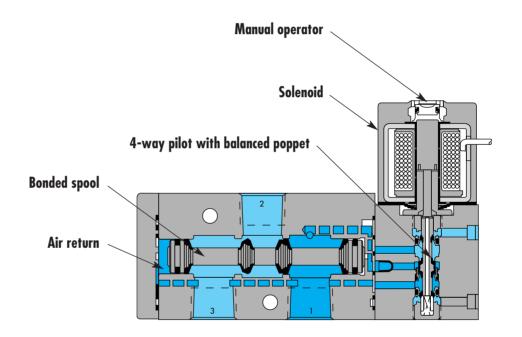


Fluid: Compressed air, vacuum, inert gases Pressure range : Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 6,0 mm Flow (at 6 bar, $\Delta P = 1$ bar): G1/8" bottom port: 1200 NI/min (Cv 1,2) - G1/8" side port: 1000 NI/min (Cv 1,0) Coil: Epoxy encapsulated – 100% ED – Class A wire Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 1.95 to 4.0 W Power: Response times : Energize : 6 ms (with 4 W coil) De-energize : 6 ms

Options : • NPTF threads

Individual base Individual base Manifold base Ma

Individual mounting Series



SERIES FEATURES

- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Various manual operators.
- Optional memory spring.
- Normally closed or normally open valve function.
- May be plugged for 2-way operation.
- Internal or external pilot.

ISO 2 ISO 3

32

> 54 67 68

69 41

43 44 23

24

46

42 47 48P

48

400

92

83

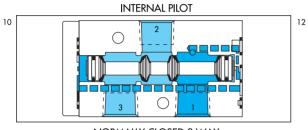
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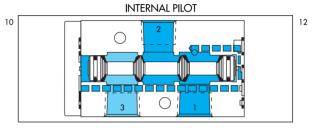




SPOOL CONFIGURATIONS



NORMALLY CLOSED 3 WAY



NORMALLY OPEN 3 WAY



Function		Port size	Floш (Max)		Individual m	nounting		Series
3/2 NO-NC,	2/2 NO-NC	G1/8" - G1/4"	1500 NI/	/min	Inline			
OPERATIONAL BE	NEFITS							31
1. The 4-way pile		ximum shifting						33
force both wa 2. Memory sprin						4		34
3. Balanced spo	ol, immune to v						· 117	36
4. Short stroke w	provides high vith high flow.							00
5. Bonded spool in a alass-like	with minimum finished bore.	friction, shifting			8	22		32
6. Pilot with balo	anced poppet,					10.		37
Wiping effect					160			38
8. Long service l	ife.					1	0	52
HOW TO ORE	DER							53
Port size	Pilot air	Single	Operator			Oouble O	nerator	54 67
PORT SIZE	Pilot dir	NO Valve	NC Val	/e	NO Valve		NC Valve	68
		10 2 12	10 2	12 471	10 2 1	1 1	10 2 12	69
61/9//	 Internal	52A-31-C0A-XX-X-xxx	52A-11-C0A-XX-	V	52A-41-C0A-XX-X-xx		52A-21-C0A-XX-X-xxx	41
G1/8" G1/4"	Internal –	52A-31-C0A-XX-X-XXX-XXX 52A-31-D0A-XX-X-XXX-XXX	52A-11-C0A-XX-		52A-41-C0A-XX-X-XX		52A-21-C0A-XX-X-XXX	43 44
G1/8"	External	52A-31-C0B-XX-X-xxx	52A-11-C0B-XX-	X-xxx-xxx	52A-41-C0B-XX-X-xx	X-XXX	52A-21-C0B-XX-X-xxx	23
G1/4"		52A-31-D0B-XX-X-xxx	52A-11-D0B-XX-	X-xxx-xxx	52A-41-D0B-XX-X-xx	X-XXX	52A-21-D0B-XX-X- xxx - xxx	20
SOLENOID O	PERATOR ➤	D	M-D XXX-	XXX.				24
			T	<u> </u>				
XX Volt	łage	X Wire len	ath	X Ma	nual operator	XX	Electrical connection	46
JA 110 \	/~/50Hz	A 45 cm (Flying	g leads)	1 Non	-locking	KA	Square connector	42
JC 24 V~	/~/50Hz ~/50Hz	B 60 cm (Flying J Connector	g leads)	2 Lock	ing	JB	Square connector with light Rectangular connector	
DA 24 V=	=/1,8W =/5,4W					JD	Rectangular connector with light	47 48P
DF 24 V=	=/12,7W					ВА	Flying leads	401
SOLENOID O	PERATOR ➤	G	M-G <u>xxx</u> -	<u> </u>				48
				4				
	lage	X Wire len	gth		nual operator	ХХ	Electrical connection	400
	=/1,8W =/2,5W	A 45 cm B 60 cm		1 Non 2 Lock	-locking ing	BA BT	Flying leads Flying leads with light	92
DF 24 V=		C 90 cm			-	KA KT	Mini connector Mini connector with light	83
* Other options of the options of th	ivailable, see pa available, see pa	ge 385. ige 389.						
OPTIONS								93
52A-3 1 -C0A-XX	(-X-xxx-xxx							ISO 01
For	memory spring	, replace by 4 (single solenoid only	y)					ISO 02
	, , 0							ISO 1
								ISO 2
								ISO 3



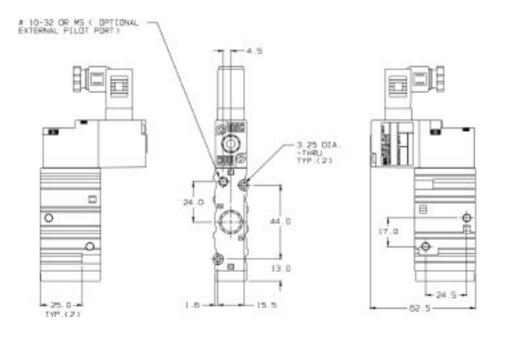


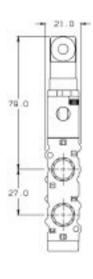


Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 7,3 mm Flow (at 6 bar, $\Delta P = 1 bar$): G1/8": 1200 NI/min (Cv 1,2) - G1/4": 1500 NI/min (Cv 1,5) Coil: Epoxy encapsulated - class A wires - 100% ED (specify mod 0449) Voltage range: -15% to +10% of nominal voltage Protection: IP54 (GM pilot) - IP64 (DM pilot) (electrical connection ~Inrush: 10,9 VA Holding: 7,7 VA Power: = 1.8 to 12.7 WResponse times : 24V=/5,4W Energize: 7,3 ms De-energize: 5,3 ms 110V~/50Hz Energize: 8-12 ms De-energize: 7-11 ms

Options : • NPTF threads

DIMENSIONS





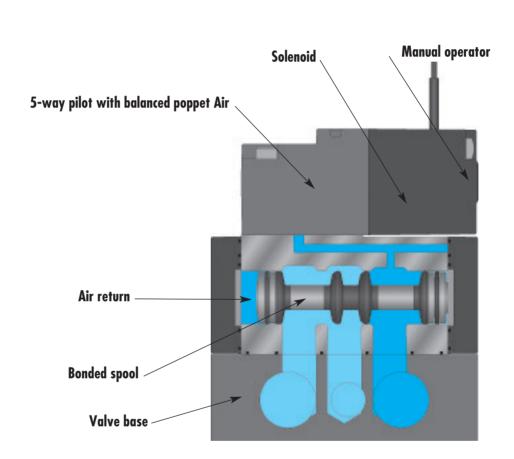


Individual mounting Series

48P

ISO 01

ISO 02



SERIES FEATURES

- The 4-way pilot develops maximum shifting force both ways
- Memory spring available
- Balanced spool, immune to variations of pressure
- Short stroke with high flow
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Pilot with balanced poppet, high flow, short and consistent response times.
- Wiping effect eliminates sticking
- Long life service.



Function	nction Port size Flow (Max) Individual mounting			Series			
3/2 NO-NC	G1/	4"- G3/8"	2000 NI/mir	1	Inline		
forces both way Memory spring Balanced spool pressure, also p Short stroke wit Bonded spool v in a glass-like fi Pilot with balan and consistent r	t develops maximum shifting ys available I, immune to variations of provides high flow th high flow with minimum friction, shiftin inished bore aced poppet, high flow, shor response times. sliminates sticking	9					31 33 34 36 32 37 38 52 53
Port size	Pilot air		NC Valve		NO) Valve	67 68
G1/4" G3/8" G1/4" G3/8"	External from 10 end External from 12 end External from 10 end External from 10 end External from 12 end	5 5 5 5	53A-1AC-XX-X-XXX-XXX 53A-1AD-XX-X-XXX-XXX 53A-1BC-XX-X-XXX-XXX 53A-1CC-XX-X-XXX-XXX 53A-1BD-XX-X-XXX-XXX 53A-1CD-XX-X-XXX-XXX 53A-1CD-XX-X-XXX-XXX		53A-2AD 53A-2BC 53A-2CC 53A-2BD		69 41 43 44 23 24 46 42
							47 48P
JB 220 V- JC 24 V-, FB 24 V=, DA 24 V=,	~/50Hz ~/50Hz /50Hz	Wire lengt 45 cm 60 cm 15 cm use with "J" & "K" type	1 2	Manual oper Non-locking Locking	BA KA KD JB JD	Electrical connection Flying leads Mini square connector Mini square connector with light Rectangular connector Rectangular connector with light	48 400
OLENOID OP	PERATOR ➤	GN	N-G <u>xxx-xx</u>	XX** 			92 83
DD 24 V=, DF 24 V=, Other options av	/1,8W /2,5W /4W vailable, see page 385. vailable, see page 389.	Wire lengt A 45 cm B 60 cm C 90 cm	1 2	Manual oper Non-locking Locking	BA BT KA KT GA	Electrical connection Flying leads Flying leads with light Mini connector Mini connector with light MAC JAC solenoid plug-in wire assembly	93 ISO ISO ISO
I	Memory spring Replace	by 5 (Normally closed by 6 (Normally open	d)) 73	Consult "D	recourtions" page 407 ha	iore use installation or service of	MAC Values







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot: 1,3 to 8 bar

External Pilot : Vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : $-18^{\circ}\text{C to } +50^{\circ}\text{C}$

Orifice: 8,5 mm

Flow: G1/4": 1700 NI/min (Cv 1.7) – G3/8": 2000 NI/min (Cv 2.0)

Coil: Epoxy encapsulated - Class A wires - 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: Consult factory

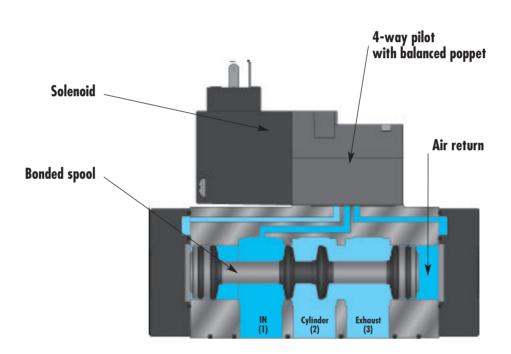
Power: 1,0 to 5,4W (Higher wattages available)

Options : • NPTF threads

DIMENSIONS Dimensions shown are metric (mm)



Individual mounting Subbase Non plugin Subbase Plugin Series



SERIES FEATURES

- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Various manual operators.
- Normally closed or normally open valve function.
- May be plugged for 2-way operation.
- Internal or external pilot.

53

54 67

> 68 69 41

> 43 44

> 23



Function			Port size	}	Flo	ш (Max)		Individual mounting			Series
3/2 NO-NC			G3/8"	- G1/2" - G3/4	l" 51	00 NI/min		Sub-base Non plug-in			
OPERATIONAL B	ENEFITS								41	13	31
1. The 4-way pil	lot develop	s maximum s	hifting fo	orces both ways					-		33
2. Balanced spo	ool, immune	to variation		sure, also provides	high flo	w					34
 Short stroke v Ronded spoo 	with high tlo I with minir	ow num friction	shifting	in a glass-like finish	ed hore			100		1	34
5. Pilot with bald 6. Wiping effect	anced popp t eliminates	pet, high flov		and consistent respo				4			36
7. Long service l									* *	1	32
											37
Port siz	ze	Pilot	air		N	Valve		N	O Valve		38
		- 1101									52
					10	2 12 47		10	<u> </u>	12	53
					₩ /	Ţ _T \				<u> </u>	54
Valve less	base	Internal		544	A-AA-00	00-DM-xxxx-xxx		54A-BA-0	000-DM-xx	XX-XXX	67
		External from	10 end	544	4-AC-00	00-DM-xxxx-xxx		54A-BC-0	00-DM-xx	XX-XXX	68
		External from	12 end	54/	4-AB-00	00-DM-xxxx-xxx		54A-BB-0	00-DM-xxx	X-XXX	69
G3/8	11	Internal				A-DM-xxxx-xxx			1A-DM-xx		41
		External from				A-DM-xxxx-xxx			1A-DM-xx		43
		External from	12 end			A-DM-xxxx-xxx			1A-DM-xx		44
G1/2		Internal External from	10			A-DM-xxxx-xxx			1A-DM-XX		23
		External from				A-DM-xxxx-xxx A-DM-xxxx-xxx			1A-DM-xxx		
G3/4	"	Internal	i iz ena			A-DM-xxxx-xxx			1A-DM-xx		24
00/ 4		External from	10 end			A-DM-xxxx-xxx			1A-DM-xx		
		External from				A-DM-xxxx-xxx			1A-DM-xxx		46
COLENIOLD				_		D www w					
SOLENOID	OPERAT	OR ➤			DIM	-D <u>xxx</u> - <u>x</u>	XX*				42
XX P	Pilot type		XX 1	/oltage	X	Lead wire	X	Manual	XX	Electrical	47
						length		operator		connection	48P
	Nuffled exha iped exhaus			4V=/5,4W 4V=/12,7W	A B	45 cm 60 cm		No operator Non locking	BA JB	Flying leads Rectangular	-
DU U	niversal pilo	ot	FB 2	4V=/1,8W	J*	15 cm	2	Locking		connector	48
	ilot exhaust nain exhaust			10V~/50Hz 20V~/50Hz					JD	Rectangular connector with light	
				4V~/50Hz	Lead	wire length for externo	ıl plug-ın conr	ectors must be "J"	KA	Mini square connector	400
* Other options a	ıvailable, se	e page 385.							KD	Mini square	92
OPTIONS	S									connector with light	- 72
54A-Xx-XxX-D)AA-~~~~	v									83
			.:اد								93
	2 Indiv		Bottom C	linder ports (No side	cylinde	r port)					
	O Base A Base	Mount Body -	- Internal	pilot							150 01
	B Base C Base E Base	Mount Body - Mount Body - Mount Body -	- Externa - Externa - Internal	l pilot (12 end) pilot (10 end) pilot - Pilot exhaust o	out main	exhaust (with DU pilo	ot)				ISO 02
	F Base G Base	Mount Body - Mount Body -	– Externa – Externa	l pilot (12 end) – Pilo l pilot (10 end) – Pilo	t exhaus t exhaus	it out main exhaust (w it out main exhaust (w	ith DU pilot) ith DU pilot)				ISO 1
		,				V	. ,				ISO 2
											ISO 3







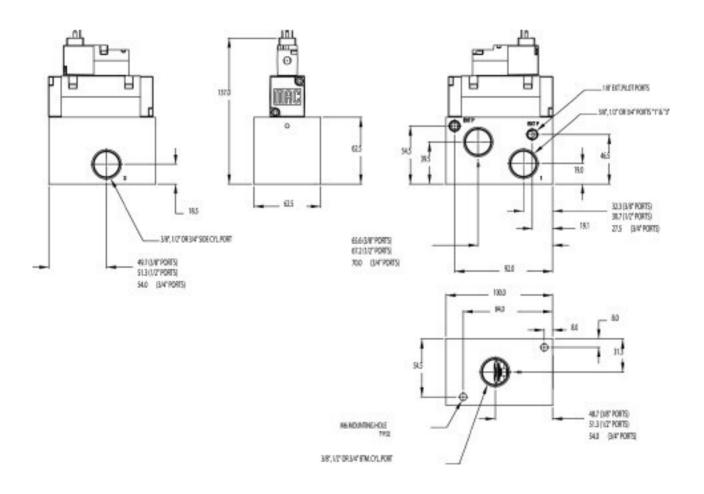
Fluid : Compressed air, vacuum, inert gases Pressure range: Main valve: External pilot :Vacuum to 8 bar Internal pilot: 1,3 to 8 bar External pilot: 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 13,5 mm Up to 5100 NI/min (Cv 5.1) Flow: Coil: Epoxy encapsulated - Class A wires - 100% ED Voltage range: -15% to +10% of nominal voltage Consult factory Protection: 1,8 to 5,4W (Higher wattages available) Power:

DIMENSIONS

Options:

NPTF threads

Dimensions shown are metric (mm)





ction		Po	ort size	FI	ош (Мах)		Individual mounting			Series
2 NO-N	NC G3/8" - G1/2" - G3/4" 5100 NI/min Subbase plug-in		Sub-base plug-in	ub-base July-in						
ERATIONA	AL BENEFITS									31
he 4-way	y pilot develo	ps maximum shi	fting forces both	ways				1		33
			of pressure, also	provides high f	low		1	1	E	34
hort strol	ke with high	flow Jimum friction of	ifting in a glass-l	ika finishad hai	ro.					37
			short and consist					-		36
Viping el	ffect eliminate			•			1000			
ong servi	ice lite						- 0			32
HOW TO	ORDER									27
								-		37
Pori	t size	Pilot ai	r		NC Valve		N	O Valve		38
										52
				10	2 12 3Z1		10 ID	2 12 4 4		53 54
				₩ 1	T T		۳	T T	1	
Valve l	ess base	Internal		54A-AA-(000-DM-xxxx-xxx		54A-BA-0	00-DM-xxx	X-XXX	67
		External from 1		54A-AC-(000-DM-xxxx-xxx		54A-BC-0	00-DM-xxx	x-xxx	68
		External from 1	2 end		000-DM-xxxx-xxx			00-DM-xxx		69
G3	G3/8" Internal		- 1		D1B-DM-xxxx-xxx		54A-BA-D1B-DM-xxxx-xxx 54A-BC-D1B-DM-xxxx-xxx		41	
		External from 1			D1B-DM-xxxx-xxx					43
	. /A!!	External from 12 end			D1B-DM-xxxx-xxx		54A-BB-D1B-DM-XXXX-XXX 54A-BA-E1B-DM-XXXX-XXX			44
GI	I/ 2 "	Internal External from 10 end			E1B-DM-xxxx-xxx E1B-DM-xxxx-xxx			1B-DM-XXX		23
		External from 1			E1B-DM-xxxx-xxx			1B-DM-xxx		0.4
G3	3/4"	Internal		54A-AA-F1B-DM-xxxx-xx 54A-AC-F1B-DM-xxxx-xx			54A-BA-F1B-DM-xxxx-xxx 54A-BC-F1B-DM-xxxx-xxx			24
	•	External from 1	0 end		F1B-DM-xxxx-xxx				x-xxx	
		External from 1	2 end	54A-AB-I	F1B-DM-xxxx-xxx		54A-BB-F	1B-DM-xxx	X-XXX	46
OIFNO	OID OPERA	TOR ➤		Dλ	۸-D xxx - x x					
										42
XX	Pilot typ	e XX	Voltage	X	Lead wire	X	Manual	XX	Electrical	47
					length		operator	7.01	connection	48
DM DP	Muffled exh Piped exha						No operator Non locking	BA JB	Flying leads Rectangular	
DU	Universal p	lot - FB	24V=/1,8W	/ J '		2	Locking		connector	48
	Pilot exhau main exhau			17				JD	Rectangular connector with light	
		JC			d wire length for externo	al plug-in conn	ectors must be "J"	KA	Mini square connector	40
her optio	ns available, s	ee page 385.						KD	Mini square connector with light	92
OPTI	ONS								connector with light	
1Δ-Xx-Xx	X-DM-xxxx-x	YY								83
			o norte							93
_ '	2 Ind	ividual base – Sid ividual Base – Bot	e ports tom Cylinder ports	s (No side cylind	ler port)					
		e only e Mount Body – Ii	nternal pilot							ISO
	B Bas	e Mount Body – E	external pilot (12 e external pilot (10 e	end)						ISO
	E Bas	e Mount Body – Ii	nternal pilot - Pilot	exhaust out ma	in exhaust (with DU pilo	ot)				
	г Ваз G Ваз	e Mount Body – E e Mount Body – E	xternal pilot (12 e xternal pilot (10 e	ena) – Pilot exha end) – Pilot exha	ust out main exhaust (w ust out main exhaust (w	rith DU pilot)				ISO
										ISO

ISO 3





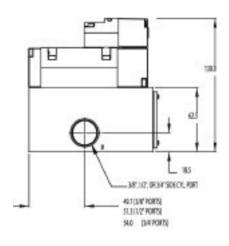


Fluid : Compressed air, vacuum, inert gases Pressure range: Main valve: External pilot :Vacuum to 8 bar Internal pilot: 1,3 to 8 bar External pilot: 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 13,5 mm Up to 5100 NI/min (Cv 5.1) Flow: Coil: Epoxy encapsulated - Class A wires - 100% ED Voltage range: -15% to +10% of nominal voltage Consult factory Protection: 1,8 to 5,4W (Higher wattages available) Power:

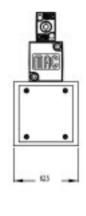
DIMENSIONS

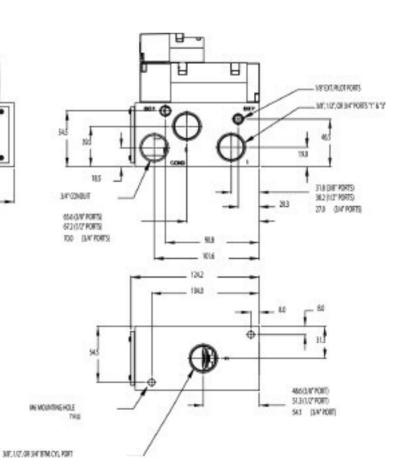
Options:

Dimensions shown are metric (mm)



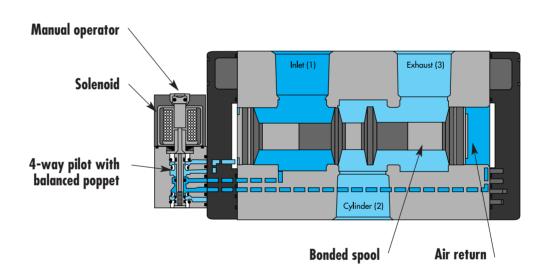
NPTF threads





Individual mounting Series

Inline



SERIES FEATURES

- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Normally closed or normally open valve function.
- Optional universal spool.
- Internal or external pilot.
- Optional memory spring.
- Checked accumulator.
- Optional pilot exhaust to main valve exhaust.
- May be plugged for 2-way operation.

31 33 34

36

44 23

24

46 42

47 48P

48

400 92

83

93

ISO 01

ISO 02

ISO 2 ISO 3



Function		Port size	Flow (Max)	Individual n	nounting	Series
3/2 NO-NC,	2/2 NO-NC	G3/4" - G1"	20000 NI/min	Inline		
OPERATIONAL BEI	NEFITS					31
1. The 4-way pilot force both way		ximum shifting				33
2. Memory spring	g available.	,			6	34
Balanced spoo pressure, also	ol, immune to v provides high			12	0	36
4. Short stroke w5. Bonded spool		friction shifting		_		
in a glass-like	finished bore.	-				32
Pilot with bala and consistent	inced poppet, t t response time				6	37
7. Wiping effect	eliminates sticl	king.		200	Moul	38
				. 60	61	52
HOW TO ORD	ER					53 54
Port size	Pilot air	Single	Operator		Double Operator	67
1 011 5120		NO Valve	NC Valve	NO Valve	NC Valve	68
		10 2 12	10 2 12	10 2 1		69
		√3 o 1	- (71 A CAA DIA D	V3 01	V3 01	41
G3/4" G1"	Internal -	67A-Cx-CAA-DM-Dxxx-xxx 67A-Cx-DAA-DM-Dxxx-xxx	67A-Ax-CAA-DM-Dxxx- 67A-Ax-DAA-DM-Dxxx-			_ 43
G3/4"	External	67A-Cx-CAB-DM-Dxxx-xxx	67A-Ax-CAB-DM-Dxxx-			_ 44
G1"	-	67A-Cx-DAB-DM-Dxxx-xxx	67A-Ax-DAB-DM-Dxxx-			_ 23
SOLENOID OF		X Wire le	OM-D XXX-XXX	Manual operator	XX Electrical connection	46
	/~/50Hz /~/50Hz	A 45 cm B 60 cm	1 2	Non-locking	KA Square connector KD Square connector with light	42
JC 24 V~	/50Hz	J Connector		Locking	JB Rectangular connector	47
	=/1,8W =/5,4W				JD Rectangular connector with light	- 48P
	-/12,7W				BA Flying leads	-
* Other options a	vailable, see pa	ge 385.				48
OPTIONS			- 1			
Spool type : 67A- X X-CAA-DA	A-Dyyy-y77		Spool return : 67A-C X -CAA-DM-D»	777-777		400
T			T			92
H Do	ngle operator u ouble operator u	niversal spool universal spool	2 Stand	dard return dard return with memory spring		83
Port configuration 67A-XX-C X A-DM			Pilot style : 67A-XX-CAA-D M -Dx	XX-XXX		93
	A Standard pil		Ī	M Pilot exhaust muffled		ISO 01
	B Pilot exhaust C Pilot exhaust * Must use DU p	t to main exhaust* t out adapter* oilot		R Pilot exhaust piped M5 U Pilot exhaust to main exhau	ust	ISO 02
Mouting style :						ISO 1
67A-XX-XAX-DM	1-Dxxx-xxx					ISO 2
	G O.D:	at .				ISO 3
	G O-Ring mou	TIT				







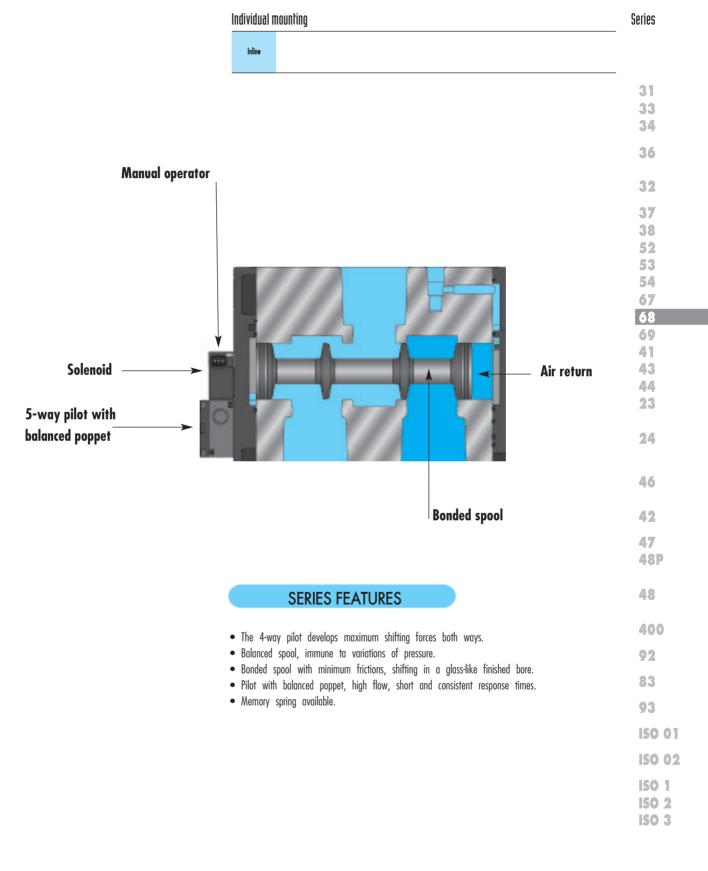
Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot : Vacuum to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ -18°C to +50°C Temperature range : Orifice: 26,8 mm Flow (at 6 bar, $\Delta P = 1 bar$): 3/4": 14500 Nl/min (Cv 14,5) - 1": 20000 (Cv 20,0) Coil: Epoxy encapsulated – 100% ED -15% to +10% of nominal voltage Voltage range: Protection: IP65 (electrical connection) ~ Inrush : 7.6 VA Power: Holding: 4.8 VA = 12.7 to 1.0 WResponse times : Energize : 29 ms

Options : • NPTF threads

De-energize :21 ms

(with 5,4 W coil)

Dimensions shown are metric (mm) 117.9 APROX. FOR SINGE SOIENOID OPTIONAL EXTERNAL PILOT 138.4 92.0 18.7 92.0 18.7 92.0 71.9





Function	Port size	Flow (Max)	Individual mounting		Series
3/2, 2/2	G1"-G1 1/4"-G1 1/2"	31000 NI/min	Inline		

OPERATIONAL BENEFITS

- 1. The 4-way pilot develops maximum shifting forces both ways.

 2. Balanced spool, immune to variations of
- pressure, also provides high flow.

 3. Bonded spool with minimum friction, shifting in a glass like finished bore
- 4. Pilot with balanced popet, high flow, short and consistent response times.



48P

ISO 01 ISO 02

ISO 1 **ISO 2 ISO 3**

HOW TO ORDER

Port size	Pilot air	Single operator NC	Single operator NO	Single operator Universal valve
		'e <mark>₹3 15</mark> 1223°	10 2 377 10 13 17 377	
G1"	Internal	68A-A1-DAA-Jxxx-xxx	68A-C1-DAA-Jxxx-xxx	-
	External	68A-A1-DAB-Jxxx-xxx	68A-C1-DAB-Jxxx-xxx	68A-G1-DAB-Jxxx-xxx
G1 1/4"	Internal	68A-A1-EAA-Jxxx-xxx	68A-C1-EAA-Jxxx-xxx	-
	External	68A-A1-EAB-Jxxx-xxx	68A-C1-EAB-Jxxx-xxx	68A-G1-EAB-Jxxx-xxx
G1 1/2"	Internal	68A-A1-FAA-Jxxx-xxx	68A-C1-FAA-Jxxx-xxx	-
	External	68A-A1-FAB-Jxxx-xxx	68A-C1-FAB-Jxxx-xxx	68A-G1-FAB-Jxxx-xxx

XX	Voltage	X	Wire length		Manual operator	XX	Electrical connection
AA*	120V~/5.4W	0	No lead wire	0	No operator	BA	Flying leads
AC*	24V~/5.4W	A	45 cm	1	Recessed - Non locking	GA	MAC JAC Solenoid plug-i
DA	24V=/5.4W	В	60 cm	2	Recessed - Locking	GB	MAC JAC Solenoid plug-in
DB	12V=/5.4W	С	90 cm	3	Extended - Non locking		with diode
DC	24V=/2.4W	D	120 cm	4	Extended - Locking	GH	MAC JAC Solenoid plug- with rectifier and LED
DD	12V=/2.4W	E	180 cm				
DE	24V=/1.8W	F	240 cm			JB	Rectangular connector
DF	12V=/1.8W					JD	Rectangular connector with light
Note: A	C voltage requires connector	with rectifier				KA	Mini square plug-in
Other o	ptions available, see page 39	3.				КВ	Mini square plug-in with diode
01	PTIONS					KH	Mini square plug-in with rectifier & light
Pilo	ot exhaust: 68A-xx-x- X x-Jxxx-	-xxx (G)					





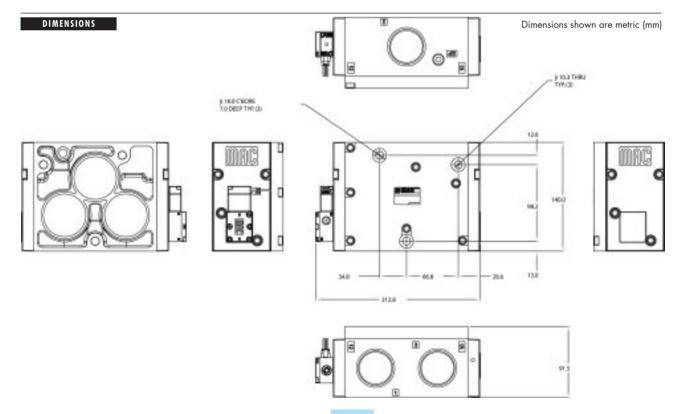


Voltage range:

Fluid : Compressed air, vacuum, inert gases Pressure range : Internal pilot: 1,3 to 8 bar External pilot: Vacuum to 8 bar Pilot pressure : 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Flow: 31000 NI/min (Cv 31.0) Power: 5.4 to 1.8 W

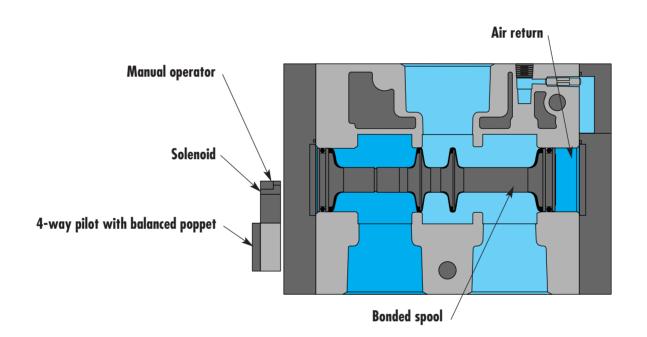
Options : • NPTF threads

-15% to +10% of nominal voltage





Inline



SERIES FEATURES

- High force MACSOLENOID®.
- Optional low watt DC solenoids.
- Internal or external pilot.
- Normally open or normally closed function.
- Checked accumulator.
- May be plugged for 2-way operation.

31 33 34

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32 37

38 52 53

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42 47 48P

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ISO 1 ISO 2 ISO 3



Function Port size Flow (Max) Individual mounting Series

3/2 NO-NC, 2/2 NO-NC

G1 1/2" - G2" - G2 1/2" 60000 NI/min

OPERATIONAL BENEFITS

- 1. The 4-way pilot develops maximum shifting force both ways.
- 2. Balanced spool, immune to variations of pressure, also provides high flow.
- 3. Short stroke with high flow.
- 4. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 5. Pilot with balanced poppet, high flow, short and consistent response times.
- 6. Wiping effect eliminates sticking and contamination.



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47 **48P**

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92 83

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ISO 01

ISO 02 **ISO** 1 **ISO 2 ISO 3**

HOW TO ORDER

Port size	Pilot air	Single Operator NC valve	Single Operator NO valve
		10 2 1/2 10 2 1/2 10 2 1/2	10 2 12
G 1 1/2"		69A-A1-DAA-Jxxx-xxx	69A-C1-DAA-Jxxx-xxx
G 2"	Internal	69A-A1-EAA-Jxxx-xxx	69A-C1-EAA-Jxxx-xxx
G 2 1/2"		69A-A1-FAA-Jxxx-xxx	69A-C1-FAA-Jxxx-xxx
G 1 1/2"		69A-A1-DAB-Jxxx-xxx	69A-C1-DAB-Jxxx-xxx
G 2"	External	69A-A1-EAB-Jxxx-xxx	69A-C1-EAB-Jxxx-xxx
G 2 1/2"		69A-A1-FAB-Jxxx-xxx	69A-C1-FAB-Jxxx-xxx

SOLENOID OPERATOR ➤

J xxx-xxx (-G) Add "G" for ground

ì	WW	Waltana	V		V		VV
	XX	Voltage	X	Lead wire length	X	Manual operator	XX
_	AA	120V~/5,4W	0	No lead wire	1	Non-locking	BA
	DA	24V=/5,4W	A	45 cm	2	Locking	GA
	DB	12V=/5,4W	В	60 cm			GG
	DC	24V=/2,4W	C	90 cm			
	DD	12V=/2,4W					JB
							JD

Other options available, see page 393.
 Note: - Use "O" no lead wire for "I", "K" and "L" type electrical connector.
 - AC voltage requires connector with rectifier.

GA	MAC JAC Solenoid plug-in	
GG	MAC JAC Solenoid plug-in with rectifier	
JB	Rectangular connector	
JD	Rectangular connector with light	
KA	Mini square connector	
KD	Mini square connector with light	

Flying leads

Electrical connection*

OPTIONS

Pilot exhaust configuration:

69A-xx-**XX**x-DM-D**xxx-xxx**

A Standard pilot exhaust
 B Pilot exhaust out main exhaust
 M Manifold O-Ring mount

91

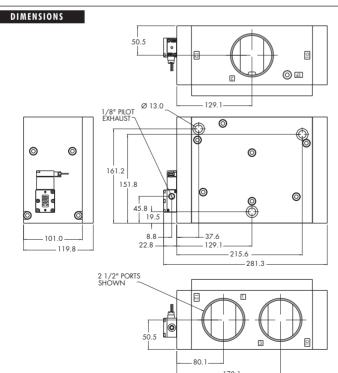






Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot Pressure: 1,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 46,5 mm Flow (at 6 bar, $\Delta P = 1 bar$): 60000 NI/min (Cv 60.0) Coil: Epoxy encapsulated – class A wire – 100% ED Voltage range: -15% to +10% of nominal voltage Power: 5,4W - 2,4W - 1,8W

Options : • NPTF threads



129.1

Dimensions shown are metric (mm)



Individual mounting Series

53 54 67

24

46

42

47 48P

48

400

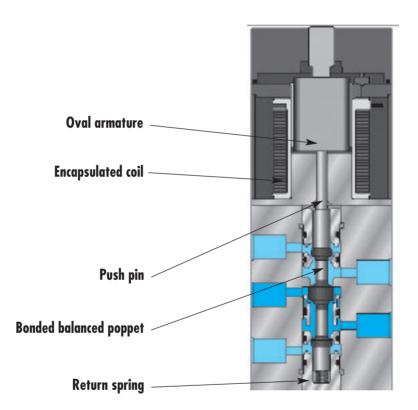
92

83

93

ISO 01 ISO 02 ISO 1 ISO 2 ISO 3

Inline



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- 6 mm direct operating valve.
- Very fast response times.

Consult "Precautions" page 407 before use, installation or service of MAC Valves.



Function	Port size	Flow (Max	(]	Individual mo	unting		Series
5/2	M3	22 to 3	35 NI/min	Inline			
1. 6mm valve direct solenoid operated 2. Balanced poppet, immune to presso 3. Short stroke with high flow 4. Patented solenoid develops high sh 5. Low wattage solenoids 6. Powerful return spring 7. Extremely fast response times (cons	re variation	s					31 33 34 36 32 37 38 52 53
HOW TO ORDER					1		54
Po	rt size			Val v 41A-AAA-	<u></u>		67 68 69
SOLENOID OPERATOR ➤		Т хх)	(- <u>X</u> XX*				43 44 23 24
XX Voltage	X	Lead wire length	_ <u></u>	l operator	XX	Electrical connection	42
DC 24V=/1.8W DD 24V=/2.5W DE 24V=/3.0W DF 24V=/4.0W DJ 12V=/1.8W DK 12V=/2.5W DL 12V=/3.0W DM 12V=/4.0W * Other options available, see page 405	A B C	45 cm 60 cm 90 cm	0 No opera 1 Non locki 3 Non locki	ng recessed ng extended	BA	Flying leads	47 48P 48 400 92 83
							93





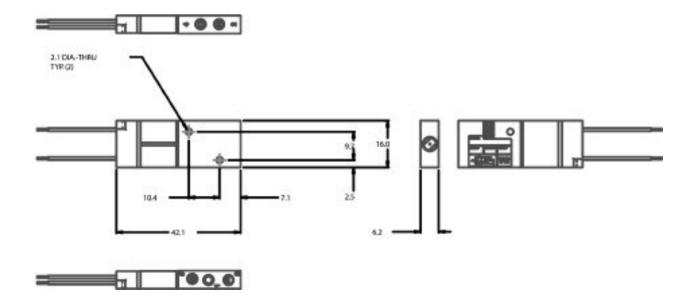


Fluid : Compressed air, vacuum, inert gases Pressure range : Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Flow: Up to 35 NI/min (Cv 0.035) Coil: Class A wires – continuous duty Voltage range: 15% to +10% Power: 4.0W, 3.0W, 2.5W, 1.8W

Options : • NPTF threads

DIMENSIONS

Dimensions shown are metric (mm)



Individual mounting Series

31 33 34

36

32

44 23

24

46

42 47 48P

48

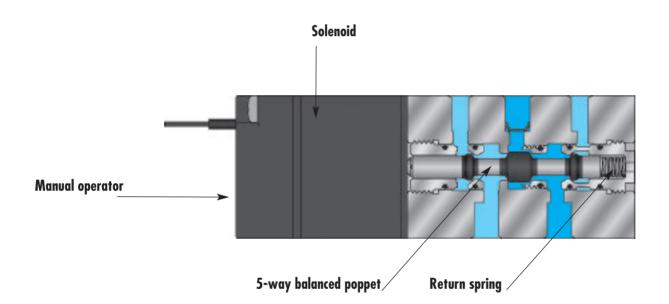
400

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93

ISO 01 ISO 02 ISO 1 ISO 2 ISO 3



SERIES FEATURES

- 8mm valve, direct solenoid operated.
- Balanced poppet, immune to variations of pressure.
- Short stroke with high flow.
- Patented solenoid, for fatest possible response times.
- Powerful return spring.
- Flow is specially adapted on each valve.
- Manual operator standard on all valves.



ion	Port size	Flow (Max)	Individual m	OUNTING	Series	
	мз	70 NI/min	Inline			
ational benefits am direct solenoid operate lanced poppet, immune to ort stroke with high flow e patented solenoid develo werful return spring	o variations of pressure				31 33 34 36	
w is specifically adjusted anual operator standard o	on each valve nn each valve				32 37 38 52	
OW TO ORDER					53 54 67	
	Port size		Va	lve	68	
			4/10	Ze	69 41	
	мз		43A-AAA	-Rxxx-xxx	43	
					44 23 24	
ENOID OPERATOR >	-	R xxx-xx	X *			
ENOID OPERATOR >		R <u>xxx</u> -xx	X *		23 24 46	
X Voltage	X Lead v	wire length X	Manual operator	XX Electrical connection	23 24 46 42	
X Voltage 1C 24V=/1.8W 1D 24V=/2.5W 1F 24V=/4.0W 1J 12V=/1.8W		wire length X		BB Flying leads BB Flying leads with LED BA Mini IAC sclennid plug-in	23 24 46 42 47	
X Voltage C 24V=/1.8W D 24V=/2.5W F 24V=/4.0W J 12V=/1.8W K 12V=/2.5W M 12V=/4.0W	X Lead v 0° No lead A 45 cm B 60 cm C 90 cm Not available for f	wire length X wire 0	Manual operator No operator Non locking recessed	BA Flying leads BB Flying leads with LED RA Mini JAC solenoid plug-in	23 24 46 42 47 481	
X Voltage C 24V=/1.8W D 24V=/2.5W F 24V=/4.0W D 12V=/1.8W K 12V=/2.5W M 12V=/4.0W	X Lead v 0° No lead A 45 cm B 60 cm C 90 cm Not available for f	wire length X wire 0 1 3	Manual operator No operator Non locking recessed	BA Flying leads BB Flying leads with LED RA Mini JAC solenoid plug-in RB Mini JAC solenoid plug-in with LED TA JST solenoid plug-in	23 24 46 42 47 481 48	
X Voltage C 24V=/1.8W D 24V=/2.5W F 24V=/4.0W D 12V=/1.8W K 12V=/2.5W M 12V=/4.0W	X Lead v 0° No lead A 45 cm B 60 cm C 90 cm Not available for f	wire length X wire 0 1 3	Manual operator No operator Non locking recessed	BA Flying leads BB Flying leads with LED RA Mini JAC solenoid plug-in RB Mini JAC solenoid plug-in with LED TA JST solenoid plug-in	23 24 46 42 47 481 48	
X Voltage C 24V=/1.8W D 24V=/2.5W F 24V=/4.0W D 12V=/1.8W K 12V=/2.5W M 12V=/4.0W	X Lead v 0° No lead A 45 cm B 60 cm C 90 cm Not available for f	wire length X wire 0 1 3	Manual operator No operator Non locking recessed	BA Flying leads BB Flying leads with LED RA Mini JAC solenoid plug-in RB Mini JAC solenoid plug-in with LED TA JST solenoid plug-in	23 24 46 42 47 481 48	
X Voltage C 24V=/1.8W D 24V=/2.5W F 24V=/4.0W D 12V=/1.8W K 12V=/2.5W M 12V=/4.0W	X Lead v 0° No lead A 45 cm B 60 cm C 90 cm Not available for f	wire length X wire 0 1 3	Manual operator No operator Non locking recessed	BA Flying leads BB Flying leads with LED RA Mini JAC solenoid plug-in RB Mini JAC solenoid plug-in with LED TA JST solenoid plug-in	23 24 46 42 47 481 48 400 92	
X Voltage C 24V=/1.8W D 24V=/2.5W F 24V=/4.0W D 12V=/1.8W K 12V=/2.5W M 12V=/4.0W	X Lead v 0° No lead A 45 cm B 60 cm C 90 cm Not available for f	wire length X wire 0 1 3	Manual operator No operator Non locking recessed	BA Flying leads BB Flying leads with LED RA Mini JAC solenoid plug-in RB Mini JAC solenoid plug-in with LED TA JST solenoid plug-in	23 24 46 42 47 48 40 92 83 93	
0C 24V=/1.8W 0D 24V=/2.5W 0F 24V=/4.0W 0J 12V=/1.8W 0K 12V=/2.5W	X Lead v 0° No lead A 45 cm B 60 cm C 90 cm Not available for f	wire length X wire 0 1 3	Manual operator No operator Non locking recessed	BA Flying leads BB Flying leads with LED RA Mini JAC solenoid plug-in RB Mini JAC solenoid plug-in with LED TA JST solenoid plug-in	23 24 46 42 47 48 48 400 92 83	

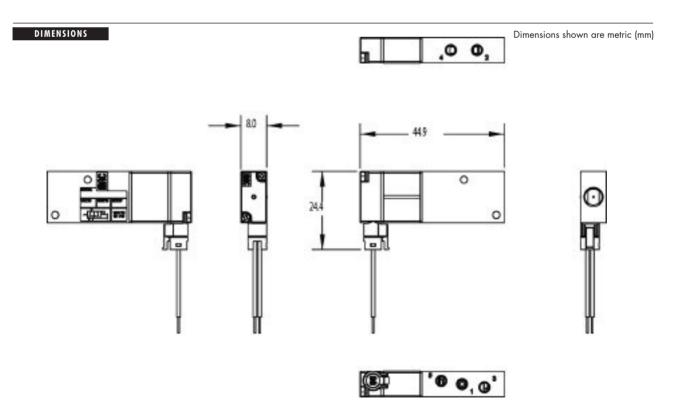


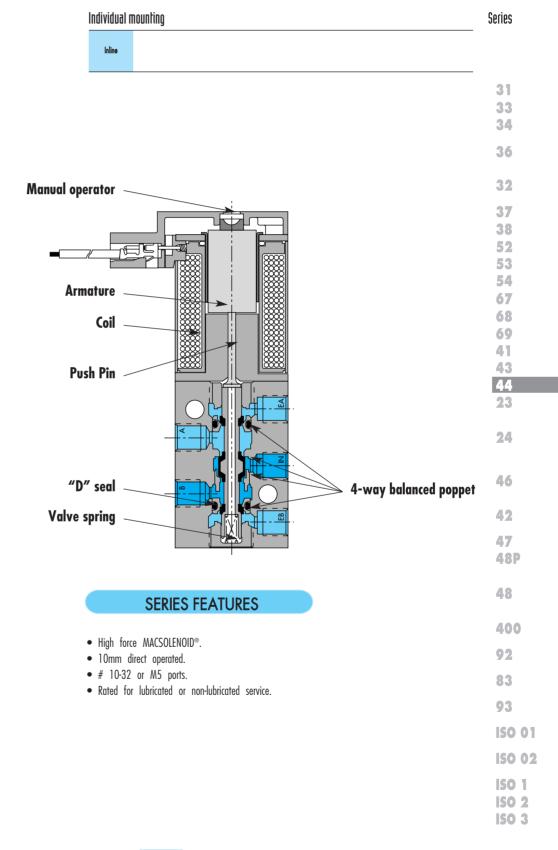




Fluid : Compressed air, vacuum, inert gases Pressure range : Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 1,6 mm Flow (at 6 bar, $\Delta P = 1 bar$): 4,0 W: 70 Nl/min - 3,0 W: 50 Nl/min - 2,5 W: 40 Nl/min - 1,8 W: 30 Nl/min Voltage range: -15% to +10% of nominal voltage 4,0 W - 3,0 W - 2,5 W - 1,8 W Power:

Options : • NPTF threads







Function		Port size	Flow (N	lax]	Individual Mo	ounting	Series
5/2		M5	100	NI/min	Inline		
1. 10 mm 2. Balanc pressur 3. Short s 4. The pa forces. 5. Powerf 6. Flow is	troke with high flow. tented solenoid develops high	ns of shifting valve.				Section 2 (1) and the	31 33 34 36 32 37 38 52 53
HOW	TO ORDER Port size		Mode	l number	Ear us	Model number e with external flow controls	54 67
			W T	A T T T T T T T T T T T T T T T T T T T	Por us	W T OF EAT	68 69 41
	M5		44C-ABA	A-G xxx-xxx		44C-BBA-G xxx-xxx	43
LATCHII	ng solenoid						23
	Port size		Mode	l number	For us	Model number e with external flow controls	24
			M EB V	N EA		EB V OVER	
	M5		44B-AB	A-L xxx-xxx		44B-BBA-L XXX-XXX	46
SOLEN	OID OPERATOR ➤		G <u>xx</u>	<u>x-xxx</u> *			42 47
XX	Voltage	X	Wire length	X Manual o		XX Electrical connection	47 48P
DA DC DD DF	24 V=/1W 24 V=/1,8W 24 V=/2,5W 24 V=/4,0W	Α	45 cm 60 cm	1 Non-locking 2 Locking		BA Flying leads BT Flying leads with light GA MAC JAC Solenoid plug-in KA Mini connector	48
	options available, see page 387.					KT Mini connector with light	400
LATCHII	NG SOLENOID ➤		L <u>xx</u>	X-XXX			92
				J <u>\</u>			83
XX DF	Voltage 24 V=/4,0W		Wire length 45 cm	X Manual (XX Electrical connection BA 2 Wire flying leads	93
HA	24 V=/1,95W	В	40 cm 60 cm 90 cm	0 No operator		BJ 4 Wire flying leads KA 2 Wire plug-in assembly	ISO 01
* Other o	options available, see page 395.		70 GII	_		KA 2 Wire plug-in assembly KE 4 Wire plug-in assembly LA 3 Wire plug-in assembly (Polarity switching cover)	ISO 02
						(i ominy synteming cover)	ISO 1 ISO 2 ISO 3







Fluid: Compressed air, vacuum, inert gases Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 1,8 mm Flow (at 6 bar, $\Delta P = 1 bar$): 4 W: 100 NI/min (Cv 0,10) - 2,5 W: 80 NI/min (Cv 0,08) - 1,8 W: 60 NI/min (Cv 0,06) - 1,0W: 50 NI/min (Cv 0,05) Coil: Epoxy encapsulated – Class A wires – 100% ED Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 4 W - 2,5 W - 1,8 W - 1,0 W Power: Response times : Energize :3,4 ms

Note: • Valve and coil are not interchangeable.

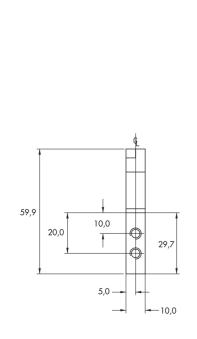
Ø 3,3 MTG. HOLES

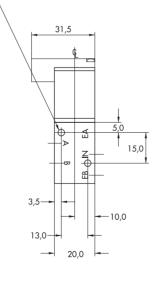
De-energize: 1,5 ms

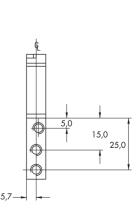
DIMENSIONS

(with 4 W coil)

Dimensions shown are metric (mm)









Individual mounting Inline Sub-base Non plug-in Manifold mounting Manifold-base Non plug-in

Série

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44 23

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42 47

48P

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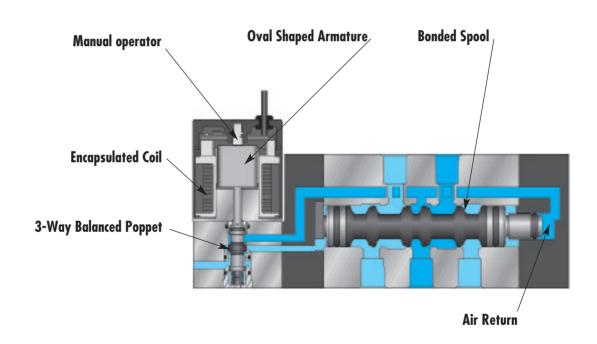
92

83

93

ISO 01

ISO 02 ISO 1 ISO 2 ISO 3



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- 8 mm solenoid pilot operated valve.
- Very fast and repeatable response times.

Consult "Precautions" page 407 before use, installation or service of MAC Valves.



Function	Port size	Floш (Max)	Individual mounting	Series
5/2	M3,M5	230 NI/min	Inline	

OPERATIONAL BENEFITS

- 1.8 mm valve solenoid pilot operated.
- 2. Balanced spool, immune to variations of pressure.
- 3. Bonded spool with minimum friction.
- 4. Wiping effect, eliminates sticking.
- 5. Pilot valve with balanced poppet, high flow, short and consistent response times



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24

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42 47 **48P**

48

400

92 83 93

ISO 01 ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	Single solenoid	Double solenoid
		12 4 1 1 4	12 W 3.1.5 14
мз	Internal	23A-A1-C00-Exx-Rxxx-xxx	23A-B1-C00-Exx-Rxxx-xxx
	External	23A-A4-C00-Exx-Rxxx-xxx	23A-B4-C00-Exx-Rxxx-xxx
M5	Internal	23A-A1-B00-Exx-Rxxx-xxx	23A-B1-B00-Exx-Rxxx-xxx
	External	23A-A4-B00-Exx-Rxxx-xxx	23A-B4-B00-Exx-Rxxx-xxx

DUAL PRESSURE MODELS (INTERNAL PILOT ONLY)

Port size	Pilot air	Single solenoid	Double solenoid
		12 W 14	12
МЗ	Internal from port #3	23A-C2-C00-Exx-Rxxx-xxx	23A-D2-C00-Exx-Rxxx-xxx
	Internal from port #5	23A-C3-C00-Exx-Rxxx-xxx	23A-D3-C00-Exx-Rxxx-xxx
M5	Internal from port #3	23A-C2-B00-Exx-Rxxx-xxx	23A-D2-B00-Exx-Rxxx-xxx
	Internal from port #5	23A-C3-B00-Exx-Rxxx-xxx	23A-D3-B00-Exx-Rxxx-xxx

SOLENC	OID OPERATOR ➤			E X	K-RXXX-XXX	<u>(</u> *			
XX	Pilot type	XX	Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
M2	Muffled exhaust	DB	24VDC (1.0W)	0*	No lead wire	0	No manual operator	BA	Flying leads
P2	Piped exhaust (M3)	DC	24VDC (1.8W)	A	45 cm	1	Recessed non locking	ВВ	Flying leads w/ LED
		DD	24VDC (2.5W)	В	60 cm	3	Extended	RA	Mini JAC
	•	DE	24VDC (3.0W)		90 cm	·	non locking		solenoid plug-in
	- - -		24VDC (4.0W)	* NI-1	*No. of the first of the second			RB	Mini JAC sol.
			12VDC (1.0W)		 Not available for flying lead connectors. Note: For pilot exhaust out main exhaust, Mod. 0353 is required 				plug-in w/ LED
			12VDC (1.8W)	- Note: F					JST solenoid plug-in
		DK	12VDC (2.5W)	_				ТВ	JST sol. plug-in w/ LED
	•	DI	12//DC /2 0/4//	_					W/ LED

12VDC (2.5W) 12VDC (3.0W)

12VDC (4.0W)

^{*} Other options availal le, see page 397.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: Single solenoid air return: 2 to 8 bar

Single solenoid spring return: 2,7 to 8 bar

Double solenoid: 1,3 to 8 bar

External pilot: vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Flow: 230 NI/min

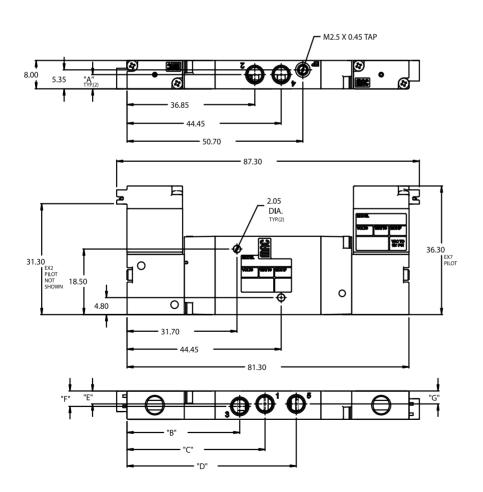
Coil: Class A (#26 AWG x 18), continuous duty

Voltage range: -15% to +10% of nominal voltage

Power: 4.0W, 3.0W, 2.5W, 1.8W, 1.0W

DIMENSIONS

Dimensions shown are metric (mm)



DIM	M3 X 0.5 PORT OPT I ON	#10-32 OR M5 PORT OPTION			
Α	3.20	4.00			
В	33.00	32.50			
С	40.60	39.80			
D	48.20	48.80			
Е	4.00	3.65			
F	4.00	4.35			
G	4.00	3.65			



ction	Port size	Floш (Max)	Individual mounting		Ser	les	
2	M3,M5	230 NI/min	Sub-base non plug-in	Sub-base non plug-in			
RATIONAL BENEFITS			-	680	3	31	
mm valve – solenoid					1 The same	33	
alanced spool, immu onded spool with mir Viping effect, elimina				1	3	34	
ilot valve with balanc	ed poppet, high flow, short o	and consistent response times				36	
IGLE PRESSURE N	NODELS			1		32	
Port size	Pilot air	Single solenoid	Doubl	le solenoid		37	
		2.4	2.4			38	
		12 *** 14	12 ***	14		52	
		1T\ T \ T \	315	 		53	
Valve less base	Internal	23A-AD-000-Exx-Rxxx-xxx		00-Exx-Rxxx		54	
42	External —	23A-AE-000-Exx-Rxxx-xxx		O-Exx-Rxxx		57	
МЗ	Internal External	23A-AD-C1B-Exx-Rxxx-xxx 23A-AE-C1B-Exx-Rxxx-xxx		I B-Exx-Rxxx		58 59	
				23A-BE-C1B-EXX-RXXX-XXX			
AA 5	Internal	22 A _ A D_B 1 B_Evv_Dvvv_vvv	23 V - BIJ - B 1	23A-BD-B1B-Exx-Rxxx-xxx 23A-BE-B1B-Exx-Rxxx-xxx			
M5 AL PRESSURE MC	External DELS (INTERNAL PILOT	23A-AD-B1B-EXX-RXXX-XXX 23A-AE-B1B-EXX-RXXX-XXX ONLY)			-xxx 4	41 43 44	
	External	23A-AE-B1B-Exx-Rxxx-xxx	23A-BE-B1		-xxx	11 13 14 23	
AL PRESSURE MC	External DELS (INTERNAL PILOT	23A-AE-B1B-EXX-RXXX-XXX ONLY)	23A-BE-B1	B-Exx-Rxxx	-xxx	41 43 44	
AL PRESSURE MC Port size	External DELS (INTERNAL PILOT	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid	23A-BE-B1 Doubl	B-Exx-Rxxx	xxx	41 43 44 23	
AL PRESSURE MC Port size	External DELS (INTERNAL PILOT Pilot air	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	23A-BE-B1 Doubl 12 w 1 31 5 23A-DJ-00	B-EXX-RXXX	-xxx 4	11 13 14 23	
AL PRESSURE MC	External DELS (INTERNAL PILOT Pilot air Internal from port #3	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 14	23A-BE-B1 Doubl 12 w 12 31 31 31 31 31 31 31 31 31 31 31 31 31	B-EXX-RXXX le solenoid		11 13 14 23 24	
AL PRESSURE MC Port size Valve less base	External DELS (INTERNAL PILOT Pilot air Internal from port #3 Internal from port #5	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 14	23A-BE-B1 Doubl 12 w 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B-EXX-RXXX le solenoid 14 10-EXX-RXXX	-XXX 44 -XXX -XXX -XXX -XXX	41 43 44 23	
AL PRESSURE MC Port size Valve less base	External DELS (INTERNAL PILOT Pilot air Internal from port #3 Internal from port #3 Internal from port #3 Internal from port #3 Internal from port #5 Internal from port #3	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w	23A-BE-B1 12 w 31 1 2 31 1 3 1 1 3	le solenoid O-Exx-Rxxx B-Exx-Rxxx B-Exx-Rxxx		11 13 14 23 24	
AL PRESSURE MC Port size Valve less base M3	External DELS (INTERNAL PILOT Pilot air Internal from port #3 Internal from port #5 Internal from port #3 Internal from port #3	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 3 1 5 14 23A-CJ-000-EXX-RXXX-XXX 23A-CK-000-EXX-RXXX-XXX 23A-CJ-C1B-EXX-RXXX-XXX 23A-CK-C1B-EXX-RXXX-XXX	23A-BE-B1 12 w 1 12 w 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B-EXX-RXXX le solenoid 00-EXX-RXXX 00-EXX-RXXX B-EXX-RXXX		41 43 44 23 24 46 42	
AL PRESSURE MC Port size Valve less base M3 M5	Internal from port #3 Internal from port #3 Internal from port #3 Internal from port #5 Internal from port #5 Internal from port #3	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 1	23A-BE-B1 Doubl 12 wr 13 1 5 23A-DJ-00 23A-DJ-C1 23A-DK-C1 23A-DK-B1	B-EXX-RXXX le solenoid 14 10-EXX-RXXX DO-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX	XXXXXXXXXXXXXXXXXXXXXXXX	41 43 44 23 24 46 42	
AL PRESSURE MC Port size Valve less base M3 M5 OLENOID OPERA	External DELS (INTERNAL PILOT Pilot air Internal from port #3	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 1 14 23A-CJ-000-EXX-RXXX-XXX 23A-CK-000-EXX-RXXX-XXX 23A-CJ-C1B-EXX-RXXX-XXX 23A-CJ-B1B-EXX-RXXX-XXX 23A-CJ-B1B-EXX-RXXX-XXX 23A-CK-B1B-EXX-RXXX-XXX E XX-RXXX-XXX	23A-BE-B1 23A-BE-B1 12 w 1 1 2 1 2 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3	B-EXX-RXXX le solenoid 0-EXX-RXXX 0-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX		41 43 44 23 24 46 42 47 48	
AL PRESSURE MC Port size Valve less base M3 M5	Internal from port #3	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 1 14 23A-CJ-000-EXX-RXXX-XXX 23A-CK-000-EXX-RXXX-XXX 23A-CJ-C1B-EXX-RXXX-XXX 23A-CJ-B1B-EXX-RXXX-XXX 23A-CJ-B1B-EXX-RXXX-XXX 23A-CK-B1B-EXX-RXXX-XXX E XX-RXXX-XXX	23A-BE-B1 Doubl 12 wr 13 1 5 23A-DJ-00 23A-DJ-C1 23A-DK-C1 23A-DK-B1	B-EXX-RXXX le solenoid 14 10-EXX-RXXX DO-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX		41 43 44 23 24 46 42 47 48	
AL PRESSURE MC Port size Valve less base M3 M5 OLENOID OPERA XX Pilot type M2 Muffled ext	External DELS (INTERNAL PILOT Pilot air Internal from port #3 Internal from port #3 Internal from port #3 Internal from port #3 Internal from port #5 Internal from port #5 Internal from port #5 Internal from port #5 ATOR >	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12	23A-BE-B1 12 w 1 12 w	B-EXX-RXXX le solenoid 10-EXX-RXXX DO-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX	-XXX -XXX	11 13 14 23 24 16 17 18 18	
AL PRESSURE MC Port size Valve less base M3 M5 OLENOID OPERA XX Pilot type	External DELS (INTERNAL PILOT Pilot air Internal from port #3 Internal from port #5 Internal from port #3 Internal from port #3 Internal from port #5 Internal from port #3 I	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 1	23A-BE-B1 12 w 1 12 w 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B-EXX-RXXX le solenoid 00-EXX-RXXX 00-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX	-XXX -XXX	41 43 44 23 24 46 42 47 48	
AL PRESSURE MC Port size Valve less base M3 M5 SOLENOID OPERA XX Pilot typ M2 Muffled exh	External DDELS (INTERNAL PILOT Pilot air Internal from port #3 Internal from port #5 Internal from port #5 Internal from port #3 Internal from port #5 Internal from port #3 Internal from port #5 Internal from port #3	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 14	23A-BE-B1 23A-BE-B1 12 w 1 12 w 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B-EXX-RXXX le solenoid O-EXX-RXXX O-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX	-XXX -XXX	11 13 14 23 24 16 12 17 18 18 100	
AL PRESSURE MC Port size Valve less base M3 M5 SOLENOID OPERA XX Pilot typ M2 Muffled exh	External DDELS (INTERNAL PILOT Pilot air Internal from port #3 Internal from port #5 Internal from port #3 Internal from port #3 Internal from port #5 DD 24VDC DD 24VDC DF 24VDC DH 12VDC DJ 12VDC DJ 12VDC	23A-AE-B1B-EXX-RXXX-XXX ONLY) Single solenoid 12 w 14	23A-BE-B1 23A-BE-B1 23A-DI-DI 23A-DJ-OC 23A-DJ-C1 23A-DJ-B1 23A-DK-B1 X** X Manual operator 0 No manual operator 1 Recessed non locking 3 Extended non locking onnectors. in exhaust, Mod. 0353 is required.	B-EXX-RXXX le solenoid 00-EXX-RXXX 00-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX B-EXX-RXXX	-XXX -XXX	11 13 14 23 24 16 12 17 18 18 10 92 83	

OPTIONS

23A-XX-XxX-Exx-Rxxx-xxx

** Other options available, see page 397.

1 Individual base – Side ports
 2 Individual base – Bottom ports (no side ports)

ISO 1

ISO 2

ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: Single solenoid air return: 2 to 8 bar

Single solenoid spring return: 2,7 to 8 bar

Double solenoid: 1,3 to 8 bar

External pilot: vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Flow: 230 NI/min

200111/1111

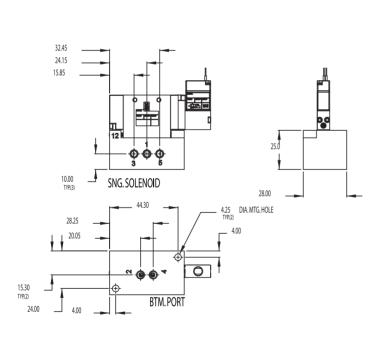
Coil: Class A (#26 AWG x 18), continuous duty

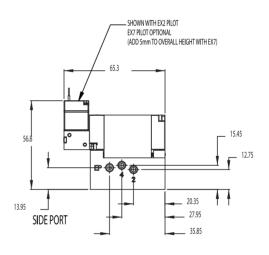
Voltage range: -15% to +10% of nominal voltage

Power: 4.0W, 3.0W, 2.5W, 1.8W, 1.0W

DIMENSIONS

Dimensions shown are metric (mm)







82.3



23A-XX-XxX-Exx-Rxxx-xxx

Direct solenoid and solenoid pilot operated valves 8 mm valve

n .	Port size		Floш (Max)	Manifold mo	Inting	
	M3,M5	1	230 NI/min Manifold base non plug-in			
TIONAL BENEFITS						
m valve – solenoi	d pilot operated.					It is a
	one to variations of press	ure.				No.
ded spool with mi						
ing effect, elimina					100	
vaive with balan	ced poppet, high flow, sl	norr and consistent	response times			
					The state of the state of	16 6
					C.Fa	-
W TO ORDER					16 30	
LE PRESSURE A	NODELS				1	
Port size	Pilot air		Single solenoid		Double soleno	oid
			12 4 14		12 4 1 1 1 .	14
			315		315	
Valve only	Internal	23/	A-AD-000-Exx-Rxxx-xxx	2	3A-BD-000-Exx-Rx	xx-xxx
	External	23/	A-AE-000-Exx-Rxxx-xxx	2	3A-BE-000-Exx-Rxx	XX-XXX
МЗ	Internal	234	A-AD-CAB-Exx-Rxxx-xxx		3A-BD-CAB-Exx-Rx	XX-XXX
	External	23/	A-AE-CAB-Exx-Rxxx-xxx	2	3A-BE-CAB-Exx-Rx	XX-XXX
M5	Internal		A-AD-BAB-Exx-Rxxx-xxx		3A-BD-BAB-Exx-Rx	
	External	23/	A-AE-BAB-Exx-Rxxx-xxx	2	3A-BE-BAB-Exx-Rx	XX-XXX
PRESSURE MC	dels (internal pii	OT ONLY)				
Port size	Pilot air		Single solenoid		Double soleno	oid
			•			
			12 4 14		12 m 2 4	14
			315		315	••
Valve only	Internal from port #3	23	A-CJ-000-Exx-Rxxx-xxx	2	3A-DJ-000-Exx-Rxx	xx-xxx
	Internal from port #5	23/	A-CK-000-Exx-Rxxx-xxx	2	3A-DK-000-Exx-Rx	xx-xxx
МЗ	Internal from port #3	23/	A-CJ-CAB-Exx-Rxxx-xxx	2	3A-DJ-CAB-Exx-Rx	XX-XXX
	Internal from port #5	234	A-CK-CAB-Exx-Rxxx-xxx	2	3A-DK-CAB-Exx-Rx	xx-xxx
M5	Internal from port #3	23,	A-CJ-BAB-Exx-Rxxx-xxx	2	3A-DJ-BAB-Exx-Rxx	xx-xxx
	Internal from port #5	23/	A-CK-BAB-Exx-Rxxx-xxx	2	3A-DK-BAB-Exx-Rx	XX-XXX
ENOID OPER	ATOR ➤		E xx-Rxxx-xx	X **		
VV Billion		a la marc	V 1	V 55		Elosani - ul
XX Pilot ty	pe XX V	oltage	X Lead wire length	X Manual operato	r XX	Electrical connection
M2 Muffled ex		4VDC (1.0W)	0* No lead wire	0 No manual		Flying leads
P2 Piped exh		4VDC (1.8W)	A 45 cm	1 Recessed no	on locking BB RA	Flying leads w/ LED Mini JAC
		4VDC (2.5W) 4VDC (3.0W)	B 60 cm C 90 cm	3 Extended non locking	<u> </u>	solenoid plug-in
	DF 24	1VDC (4.0W)	* Not available for flying lead of	connectors.	RB	Mini JAC sol. plug-in w/ LED
		2VDC (1.0W) 2VDC (1.8W)	Note: For pilot exhaust out mo	ain exhaust, Mod. 0353 is i	required. TA	JST solenoid plug-in
			Must use M7 or P7 pilot type.		TB	JST sol. plug-in
	DK 12	2VDC (2.5W)	Must use M7 or F7 pilot type.		IB	
	DK 12 DL 12	2VDC (2.5W) 2VDC (3.0W) 2VDC (4.0W)	must use M/2 or F/2 pilot type.			w/ LED

A Manifold base – Side cylinder ports
B Manifold base – Bottom cylinder ports (no side cylinder ports)

ISO 2

ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: Single solenoid air return: 2 to 8 bar

Single solenoid spring return: 2,7 to 8 bar

Double solenoid: 1,3 to 8 bar

External pilot: vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

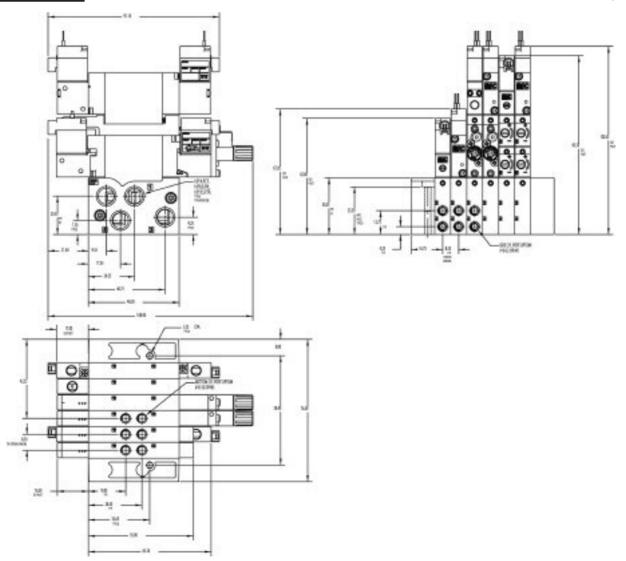
Flow: 230 NI/min

Coil: Class A (#26 AWG x 18), continuous duty

Voltage range: -15% to +10% of nominal voltage

Power: 4.0W, 3.0W, 2.5W, 1.8W, 1.0W

DIMENSIONS





Individual mounting Inline Sub-base Non plug-in Sub-base Pug-in Manifold mounting Manifold-base Non plug-in Manifold-base Plug-in

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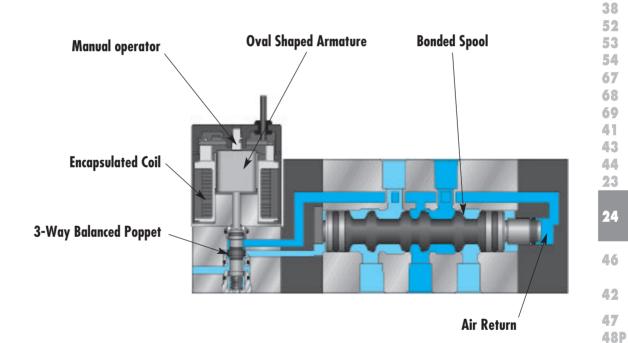
92

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ISO 01

ISO 02 ISO 1 ISO 2 ISO 3



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- 10 mm solenoid pilot operated valve.
- Very fast and repeatable response times.

Consult "Precautions" page 407 before use, installation or service of MAC Valves.



Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	M5	250 NI/min	Inline	

OPERATIONAL BENEFITS

- 1. 10 mm valve solenoid pilot operated.
- 2. Balanced spool, immune to variations of pressure.
- 3. Bonded spool with minimum friction.
- 4. Wiping effect, eliminates sticking.
- Pilot valve with balanced poppet, high flow, short and consistent response time



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42 47 48P

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ISO 01 ISO 02 ISO 1

ISO 2 ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
		12 2 4 14 14 3 1 5 1 4 4 14 14 14 14 14 14 14 14 14 14 14	12 TD T 14 3 1 5	12 14 17 17 17 17 17 17 17 17 17 17	12 14 17 17 17 17 17 17 17 17 17 17
M5	Internal	24A-A1-B00-Exx-Rxxx-xxx	24A-B1-B00-Exx-Rxxx-xxx	24A-E1-B00-Exx-Rxxx-xxx	24A-F1-B00-Exx-Rxxx-xxx
	External	24A-A4-B00-Exx-Rxxx-xxx	24A-B4-B00-Exx-Rxxx-xxx	24A-E4-B00-Exx-Rxxx-xxx	24A-F4-B00-Exx-Rxxx-xxx

DUAL PRESSURE MODELS (INTERNAL PILOT ONLY)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
		12 T 14 T	$ \begin{array}{c c} 12 & 4 & 2 & 4 \\ \hline 1770 & 1 & 1 & 1 \\ \hline 1 & 1 & 1 & 1 \\ $	12 MMD 2 4 1 14 17D T 3 1 5 T
M5	Internal from port #3	24A-C2-B00-Exx-Rxxx-xxx	24A-D2-B00-Exx-Rxxx-xxx	24A-G2-B00-Exx-Rxxx-xxx
	Internal from port #5	24A-C3-B00-Exx-Rxxx-xxx	24A-D3-B00-Exx-Rxxx-xxx	24A-G3-B00-Exx-Rxxx-xxx

SOLENC	OID OPERATOR ➤			EX	x-Rxxx-xx	<u>K</u> **			
XX	Pilot type	XX	Voltage	Х	Lead wire length	X	Manual operator	ХХ	Electrical connection
M2	Muffled exhaust	DB	24V=/1.0W	0*	No lead wire	0	No manual operator	BA	Flying leads
P2	Piped exhaust (M3)	DC	24V=/1.8W	A	45 cm	1	Recessed non locking	BB	Flying leads w/ LED
		DD	24V=/2.5W	В	60 cm	3	Extended	RA	Mini JAC
		DF	24V=/4.0W	C	90 cm		non locking		solenoid plug-in
		DH	12V=/1.0W	* NI-1	atalite for fitting land or			RB	Mini JAC sol.
		DJ	12V=/1.8W	— Nor ave	ailable for flying lead co	nnectors			plug-in w/ LED
		DK	12V=/2.5W					TA	JST solenoid plug-in
		DM	12V=/4.0W	_				ТВ	JST sol. plug-in w/ LED

^{**} Other options available, see page 397.

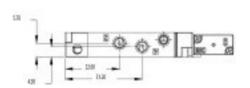


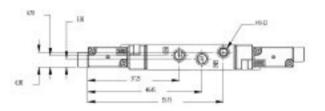


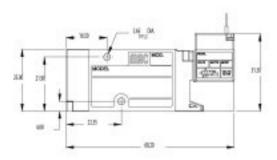


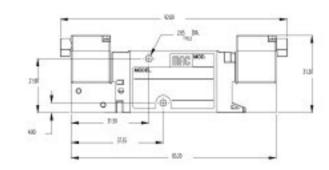
Fluid : Compressed air, vacuum, inert gases Pressure range: 2 position internal pilot: Single solenoid: 2 to 8 bar Double solenoid: 1.3 to 8 bar2/3 position external pilot: vacuum to 8 bar 3 position internal pilot: 2.7 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Flow: 0.25 Cv / 250 Nl/min Coil: Class A (#26 AWG x 18), continuous duty Voltage range: -15% to +10% of nominal voltage Power: 4.0W, 2.5W, 1.8W, 1.0W

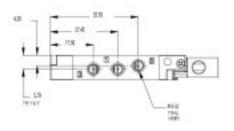
DIMENSIONS

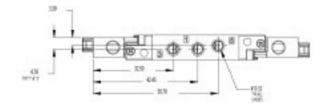














Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	M5, M7	370 NI/min	Sub-base non plugin	

OPERATIONAL BENEFITS

- 1. 10 mm valve solenoid pilot operated.
- 2. Balanced spool, immune to variations of pressure.
- 3. Bonded spool with minimum friction.
- 4. Wiping effect, eliminates sticking.
- 5. Pilot valve with balanced poppet, high flow, short and consistent response times



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ISO 01

ISO 02

ISO 1

ISO 2 ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS (SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
		12 2 4 14 3 15 14 3 1 5 14	12 2 4 14 14 17 14 17 14 17 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 2 4 14 TEMM 3 1 5
Valve only	Internal	24A-AD-000-Exx-Rxxx-xxx	24A-B1-B00-Exx-Rxxx-xxx	24A-ED-000-Exx-Rxxx-xxx	24A-FD-000-Exx-Rxxx-xxx
	External	24A-AE-000-Exx-Rxxx-xxx	24A-BE-000-Exx-Rxxx-xxx	24A-EE-000-Exx-Rxxx-xxx	24A-FE-000-Exx-Rxxx-xxx
M5	Internal	24A-AD-B1B-Exx-Rxxx-xxx	24A-BD-B1B-Exx-Rxxx-xxx	24A-ED-B1B-Exx-Rxxx-xxx	24A-FD-B1B-Exx-Rxxx-xxx
	External	24A-AE-B1B-Exx-Rxxx-xxx	24A-BE-B1B-Exx-Rxxx-xxx	24A-EE-B1B-Exx-Rxxx-xxx	24A-FE-B1B-Exx-Rxxx-xxx
M7	Internal	24A-AD-C1B-Exx-Rxxx-xxx	24A-BD-C1B-Exx-Rxxx-xxx	24A-ED-C1B-Exx-Rxxx-xxx	24A-FD-C1B-Exx-Rxxx-xxx
	External	24A-AE-C1B-Exx-Rxxx-xxx	24A-BE-C1B-Exx-Rxxx-xxx	24A-EE-C1B-Exx-Rxxx-xxx	24A-FE-C1B-Exx-Rxxx-xxx

DUAL PRESSURE MODELS (INTERNAL PILOT ONLY - SIDE PORTS)

Internal from port #3	24A-CJ-000-Exx-Rxxx-xxx	24A-DJ-000-Exx-Rxxx-xxx	24A-GJ-000-Exx-Rxxx-xxx
Internal from port #3	24A-CJ-000-Exx-Rxxx-xxx	24A-DI-000-Exx-Rxxx-xxx	24A-GI-000-Evv-Pvvv-vvv
		Z-7 (D) OOO EAR (OOOK ADA	24/ OJ 000-LAA-KAAA
Internal from port #5	24A-CK-000-Exx-Rxxx-xxx	24A-DK-000-Exx-Rxxx-xxx	24A-GK-000-Exx-Rxxx-xxx
Internal from port #3	24A-CJ-B1B-Exx-Rxxx-xxx	24A-DJ-B1B-Exx-Rxxx-xxx	24A-GJ-B1B-Exx-Rxxx-xxx
Internal from port #5	24A-CK-B1B-Exx-Rxxx-xxx	24A-DK-B1B-Exx-Rxxx-xxx	24A-GK-B1B-Exx-Rxxx-xxx
Internal from port #3	24A-CJ-C1B-Exx-Rxxx-xxx	24A-DJ-C1B-Exx-Rxxx-xxx	24A-GJ-C1B-Exx-Rxxx-xxx
	0.44 CV C1D F D	2.4Δ-DK-C1B-Fxx-Rxxx-xxx	24A-GK-C1B-Exx-Rxxx-xxx
lr	nternal from port #3	nternal from port #3 24A-CJ-C1B-Exx-Rxxx-xxx	· .

SOLENC	OID OPERATOR ➤			E X)	(-Rxxx-xx)	<u>(**</u>			
XX	Pilot type	XX	Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
M2	Muffled exhaust	DB	24V=/1.0W	0*	No lead wire	0	No manual operator	BA	Flying leads
P2	Piped exhaust (M3)	DC	24V=/1.8W	A	45 cm	1	Recessed non locking	BB	Flying leads w/ LED
		DD DF	24V=/2.5W 24V=/4.0W	B	60 cm 90 cm	3	Extended non locking	RA	Mini JAC solenoid plug-in
		DH DJ	12V=/1.0W 12V=/1.8W	* Not ava	ailable for flying lead co	nnectors		RB	Mini JAC sol. plug-in w/ LED
		DK	12V=/1.5VV					TA	JST solenoid plug-in
		DM	12V=/4.0W	_				ТВ	JST sol. plug-in w/ LED

^{**} Other options available, see page 397.

OPTIONS

24A-XX -XxX-Exx-Rxxx-xxx

- 1 Individual base Side ports
 2 Individual base Bottom ports (no side ports)







Fluid: Compressed air, vacuum, inert gases Pressure range:

2 position internal pilot: Single solenoid: 2 to 8 bar

Double solenoid: 1.3 to 8 bar

2/3 position external pilot: vacuum to 8 bar

3 position internal pilot: 2.7 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

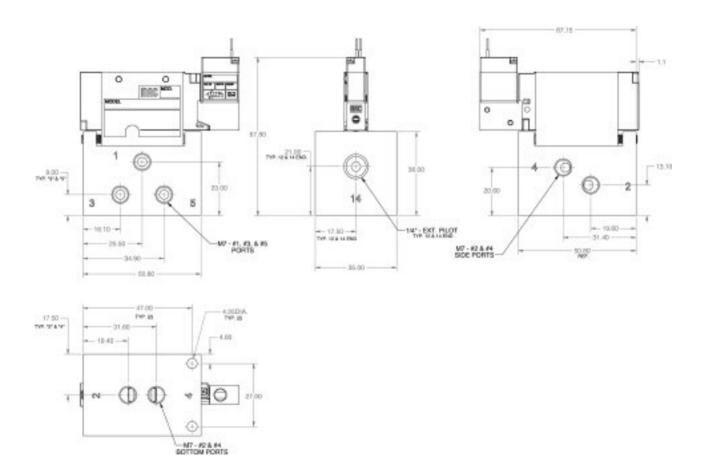
Flow: 0.37 Cv / 370 Nl/min

Coil: Class A (#26 AWG x 18), continuous duty

Voltage range: -15% to +10% of nominal voltage

Power: 4.0W, 3.0W, 2.5W, 1.8W, 1.0W

DIMENSIONS





Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	M5, M7	370 NI/min	Sub-base plug-in	

OPERATIONAL BENEFITS

- 1. 10 mm valve solenoid pilot operated.
- 2. Balanced spool, immune to variations of pressure.
- 3. Bonded spool with minimum friction.
- 4. Wiping effect, eliminates sticking.
- 5. Pilot valve with balanced poppet, high flow, short and consistent response times



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ISO 01

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HOW TO ORDER

SINGLE PRESSURE MODELS (SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
		12 2 4 14 3 1 5 14 3 1 5 14	12 2 4 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve only	Internal	24A-AA-000-Exx-RxxP-xxx	24A-BA-000-Exx-RxxP-xxx	24A-EA-000-Exx-RxxP-xxx	24A-FA-000-Exx-RxxP-xxx
	External	24A-AB-000-Exx-RxxP-xxx	24A-BB-000-Exx-RxxP-xxx	24A-EB-000-Exx-RxxP-xxx	24A-FB-000-Exx-RxxP-xxx
M5	Internal	24A-AA-B1A-Exx-RxxP-xxx	24A-BA-B1A-Exx-RxxP-xxx	24A-EA-B1A-Exx-RxxP-xxx	24A-FA-B1A-Exx-RxxP-xxx
	External	24A-AB-B1A-Exx-RxxP-xxx	24A-BB-B1A-Exx-RxxP-xxx	24A-EB-B1A-Exx-RxxP-xxx	24A-FB-B1A-Exx-RxxP-xxx
M7	Internal	24A-AA-C1A-Exx-RxxP-xxx	24A-BA-C1A-Exx-RxxP-xxx	24A-EA-C1A-Exx-RxxP-xxx	24A-FA-C1A-Exx-RxxP-xxx
	External	24A-AB-C1A-Exx-RxxP-xxx	24A-BB-C1A-Exx-RxxP-xxx	24A-EB-C1A-Exx-RxxP-xxx	24A-FB-C1A-Exx-RxxP-xxx

DUAL PRESSURE MODELS (INTERNAL PILOT ONLY - SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
		12 14 2 14 14 15 14 15 15 15 15 15 15 15 15 15 15 15 15 15	$ \begin{array}{c c} 12 & 4 & 2 & 14 \\ \hline 170 & 7 & 7 & 7 & 7 \end{array} $	12 14 17 17 14 14 14 17 17 17 17 17 17 17 17 17 17
Valve only	Internal from port #3	24A-CG-000-Exx-RxxP-xxx	24A-DG-000-Exx-RxxP-xxx	24A-GG-000-Exx-RxxP-xxx
	Internal from port #5	24A-CK-000-Exx-RxxP-xxx	24A-DH-000-Exx-RxxP-xxx	24A-GH-000-Exx-RxxP-xxx
M5	Internal from port #3	24A-CG-B1A-Exx-RxxP-xxx	24A-DG-B1A-Exx-RxxP-xxx	24A-GG-B1A-Exx-RxxP-xxx
	Internal from port #5	24A-CH-B1A-Exx-RxxP-xxx	24A-DH-B1A-Exx-RxxP-xxx	24A-GH-B1A-Exx-RxxP-xxx
M7	Internal from port #3	24A-CG-C1A-Exx-RxxP-xxx	24A-DG-C1A-Exx-RxxP-xxx	24A-GG-C1A-Exx-RxxP-xxx
	Internal from port #5	24A-CH-C1A-Exx-RxxP-xxx	24A-DH-C1A-Exx-RxxP-xxx	24A-GH-C1A-Exx-RxxP-xxx

SOLENOID OPERATOR ➤			E <u>X</u>	<u>«</u> -R <u>xx</u> x- <u>x</u> x	X* 			
XX Pilot type	ХХ	Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
M2 Muffled exhaust	DB	24V=/1.0W	P	Base plug-in	0	No manual operator	FA	Base plug-in
P2 Piped exhaust (M3)	DC	24V=/1.8W			1	Recessed non locking	FB	Base plug-in w/ LED
	DD	24V=/2.5W			3	Extended	FC	Bașe plug-in
	DF	24V=/4.0W				non locking		w/MÖV
	DH	12V=/1.0W	_				FD	Base plug-in
	DJ	12V=/1.8W	_					w/MOV and LED
•	DK	12V=/2.5W	_					
	DM	12V=/4.0W	_					

^{*} Other options available, see page 397.

OPTIONS

24A-XX -XxX-Exx-Rxxx-xxx

1 Individual base – Side ports 2 Individual base – Bottom ports (no side ports)







Fluid: Compressed air, vacuum, inert gases

Pressure range: 2 position internal pilot: Single solenoid: 2 to 8 bar

Double solenoid: 1.3 to 8 bar

2/3 position external pilot: vacuum to 8 bar

3 position internal pilot: 2.7 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

- 1

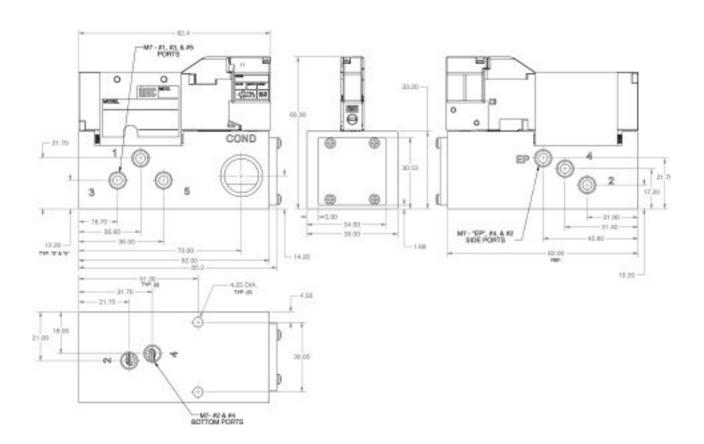
Flow: 0.37 Cv / 370 NI/min

Coil: Class A (#26 AWG x 18), continuous duty

Voltage range: -15% to +10% of nominal voltage

Power: 4.0W, 3.0W, 2.5W, 1.8W, 1.0W

DIMENSIONS





Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	M5, M7	400 NI/min	Manifold base non plugin	

OPERATIONAL BENEFITS

- 1. 10 mm valve solenoid pilot operated.
- 2. Balanced spool, immune to variations of pressure.
- 3. Bonded spool with minimum friction.
- 4. Wiping effect, eliminates sticking.
- 5. Pilot valve with balanced poppet, high flow, short and consistent response times



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HOW TO ORDER

SINGLE PRESSURE MODELS (SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
		12 2 4 14 14 3 1 5 T	12 2 4 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 2 4 14 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve only	Internal	24A-AD-000-Exx-Rxxx-xxx	24A-B1-B00-Exx-Rxxx-xxx	24A-ED-000-Exx-Rxxx-xxx	24A-FD-000-Exx-Rxxx-xxx
	External	24A-AE-000-Exx-Rxxx-xxx	24A-BE-000-Exx-Rxxx-xxx	24A-EE-000-Exx-Rxxx-xxx	24A-FE-000-Exx-Rxxx-xxx
M5	Internal	24A-AD-BAB-Exx-Rxxx-xxx	24A-BD-BAB-Exx-Rxxx-xxx	24A-ED-BAB-Exx-Rxxx-xxx	24A-FD-BAB-Exx-Rxxx-xxx
	External	24A-AE-BAB-Exx-Rxxx-xxx	24A-BE-BAB-Exx-Rxxx-xxx	24A-EE-BAB-Exx-Rxxx-xxx	24A-FE-BAB-Exx-Rxxx-xxx
M7	Internal	24A-AD-CAB-Exx-Rxxx-xxx	24A-BD-CAB-Exx-Rxxx-xxx	24A-ED-CAB-Exx-Rxxx-xxx	24A-FD-CAB-Exx-Rxxx-xxx
	External	24A-AE-CAB-Exx-Rxxx-xxx	24A-BE-CAB-Exx-Rxxx-xxx	24A-EE-CAB-Exx-Rxxx-xxx	24A-FE-CAB-Exx-Rxxx-xxx

DUAL PRESSURE MODELS (INTERNAL PILOT ONLY - SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
		12 14 2 14 14 14 14 14 14 14 14 14 14 14 14 14	12 4 2 14 5 6 7 6 3	12 4 14 14 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18
Valve only	Internal from port #3	24A-CJ-000-Exx-Rxxx-xxx	24A-DJ-000-Exx-Rxxx-xxx	24A-GJ-000-Exx-Rxxx-xxx
	Internal from port #5	24A-CK-000-Exx-Rxxx-xxx	24A-DK-000-Exx-Rxxx-xxx	24A-GK-000-Exx-Rxxx-xxx
M5	Internal from port #3	24A-CJ-BAB-Exx-Rxxx-xxx	24A-DJ-BAB-Exx-Rxxx-xxx	24A-GJ-BAB-Exx-Rxxx-xxx
	Internal from port #5	24A-CK-BAB-Exx-Rxxx-xxx	24A-DK-BAB-Exx-Rxxx-xxx	24A-GK-BAB-Exx-Rxxx-xxx
M7	Internal from port #3	24A-CJ-CAB-Exx-Rxxx-xxx	24A-DJ-CAB-Exx-Rxxx-xxx	24A-GJ-CAB-Exx-Rxxx-xxx
	Internal from port #5	24A-CK-CAB-Exx-Rxxx-xxx	24A-DK-CAB-Exx-Rxxx-xxx	24A-GK-CAB-Exx-Rxxx-xxx

SOLENOID OPERATOR ➤

ХХ	Pilot type	XX	Voltage	X	Lead wire length	X	Manual operator	ХХ	Electrical connection
M2	Muffled exhaust	DB	24V=/1.0W	0*	No lead wire	0	No manual operator	BA	Flying leads
P2	Piped exhaust (M3)	DC	24V=/1.8W	Α	45 cm	1	Recessed non locking	BB	Flying leads w/ LED
		DD	24V=/2.5W	В	60 cm	3	Extended	RA	Mini JAC
		DF	24V=/4.0W	C	90 cm		non locking		solenoid plug-in
		DH	12V=/1.0W	* Nlat a	ailable for flying lead co			RB	Mini JAC sol.
		DJ	12V=/1.8W	- 1401 dv	allable for flying lead co	nnectors			plug-in w/ LED
		DK	12V=/2.5W	_				TA	JST solenoid plug-in
		DM	12V=/4.0W	_				TB	JST sol. plug-in

** Other options available, see page $\overline{397}$.

OPTIONS

24A-XX -XxX-Exx-Rxxx-xxx

End plate kit required (Port size 1/4"): M-24002-01-01P (internal pilot) - M-24002-02-01P (external pilot) Note: For pilot exhaust out main exhaust mod. 0353 is required

A Manifold base – Side cylinder ports
 B Manifold base – Bottom cylinder ports (no side cylinder ports)



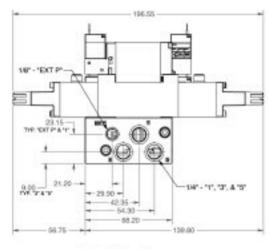


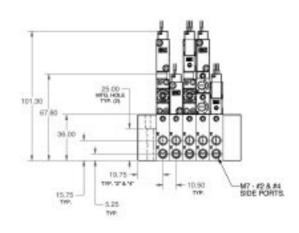


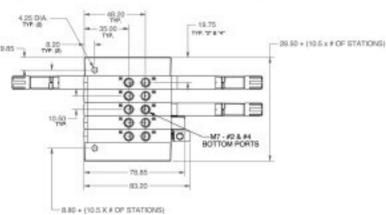
Fluid : Compressed air, vacuum, inert gases Pressure range: 2 position internal pilot: Single solenoid: 2 to 8 bar Double solenoid: 1.3 to 8 bar 2/3 position external pilot: vacuum to 8 bar 3 position internal pilot: 2.7 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Flow: 0.4 Cv / 400 NI/min Coil: Class A (#26 AWG x 18), continuous duty Voltage range: -15% to +10% of nominal voltage 4.0W, 3.0W, 2.5W, 1.8W, 1.0W Power:

Spare parts: • Blank station cover plate: M-24004 • Inlet isolator: 28568 • Exhaust isolator (Port #5): 28569 • Exhaust isolator (Port #3): 28570

DIMENSIONS









Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	M5, M7	400 NI/min	Manifold base plug-in	

OPERATIONAL BENEFITS

- 1. 10 mm valve solenoid pilot operated.
- 2. Balanced spool, immune to variations of pressure.
- 3. Bonded spool with minimum friction.
- 4. Wiping effect, eliminates sticking.
- 5. Pilot valve with balanced poppet, high flow, short and consistent response times



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HOW TO ORDER

SINGLE PRESSURE MODELS (SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
		12 2 4 14 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 17D 14 14 14 17D 14 17D	12 14 17 17 17 17 17 17 17 17 17 17	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve only	Internal	24A-AA-000-Exx-RxxP-xxx	24A-BA-000-Exx-RxxP-xxx	24A-EA-000-Exx-RxxP-xxx	24A-FA-000-Exx-RxxP-xxx
	External	24A-AB-000-Exx-RxxP-xxx	24A-BB-000-Exx-RxxP-xxx	24A-EB-000-Exx-RxxP-xxx	24A-FB-000-Exx-RxxP-xxx
M5	Internal	24A-AA-BAA-Exx-RxxP-xxx	24A-BA-BAA-Exx-RxxP-xxx	24A-EA-BAA-Exx-RxxP-xxx	24A-FA-BAA-Exx-RxxP-xxx
	External	24A-AB-BAA-Exx-RxxP-xxx	24A-BB-BAA-Exx-RxxP-xxx	24A-EB-BAA-Exx-RxxP-xxx	24A-FB-BAA-Exx-RxxP-xxx
M7	Internal	24A-AA-CAA-Exx-RxxP-xxx	24A-BA-CAA-Exx-RxxP-xxx	24A-EA-CAA-Exx-RxxP-xxx	24A-FA-CAA-Exx-RxxP-xxx
	External	24A-AB-CAA-Exx-RxxP-xxx	24A-BB-CAA-Exx-RxxP-xxx	24A-EB-CAA-Exx-RxxP-xxx	24A-FB-CAA-Exx-RxxP-xxx

DUAL PRESSURE MODELS (INTERNAL PILOT ONLY - SIDE PORTS)

		5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
			$ \begin{array}{c c} 12 & 4 & 2 & 4 \\ \hline 1770 & 1 & 14 & 3 & 4 \\ \hline 1870 & 1 & 14 & 4 & 4 \\ \hline 1870 & 1 & 14 & 14 & 4 \\ \hline 1870 & 1 & 14 & 14 & 14 \\ \hline 1870 & 1 & 14 & 14 \\ \hline 1870 & 1 & 14 & 14 \\ \hline 1870 & 1 & 14 & $	12 14 STM 37 15
Valve only	Internal from port #3	24A-CG-000-Exx-RxxP-xxx	24A-DG-000-Exx-RxxP-xxx	24A-GG-000-Exx-RxxP-xxx
	Internal from port #5	24A-CK-000-Exx-RxxP-xxx	24A-DH-000-Exx-RxxP-xxx	24A-GH-000-Exx-RxxP-xxx
M5	Internal from port #3	24A-CG-BAA-Exx-RxxP-xxx	24A-DG-BAA-Exx-RxxP-xxx	24A-GG-BAA-Exx-RxxP-xxx
	Internal from port #5	24A-CH-BAA-Exx-RxxP-xxx	24A-DH-BAA-Exx-RxxP-xxx	24A-GH-BAA-Exx-RxxP-xxx
M7	Internal from port #3	24A-CG-CAA-Exx-RxxP-xxx	24A-DG-CAA-Exx-RxxP-xxx	24A-GG-CAA-Exx-RxxP-xxx
	Internal from port #5	24A-CH-CAA-Exx-RxxP-xxx	24A-DH-CAA-Exx-RxxP-xxx	24A-GH-CAA-Exx-RxxP-xxx

SOI	ENC	OID OPERATOR >			EX	x-Rxxx-xx	X*			
	XX	Pilot type	XX	Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
	M2	Muffled exhaust	DB	24V=/1.0W	P	Base plug-in	0	No manual operator	FA	Base plug-in
	P2	Piped exhaust (M3)	DC	24V=/1.8W			1	Recessed non locking	FB	Base plug-in w/ LED
			DD DF	24V=/2.5W 24V=/4.0W	_		3	Extended non locking	FC	Base plug-in w/MOV
			DH	12V=/1.0W	_				FD	Base plug-in w/MOV and LED
			DJ	12V=/1.8W	_			-		W/MOV and LED
			DV	10\/ /2 5\\/						

* Other options available, see page 397

OPTIONS 24A-XX -XxX-Exx-Rxxx-xxx

End plate kit required (Port size 1/4"): M-24005-01-01P (internal pilot) – M-24005-02-01P (external pilot)

12V=/4.0W

A Manifold base – Side cylinder ports
B Manifold base – Bottom cylinder ports (no side cylinder ports)

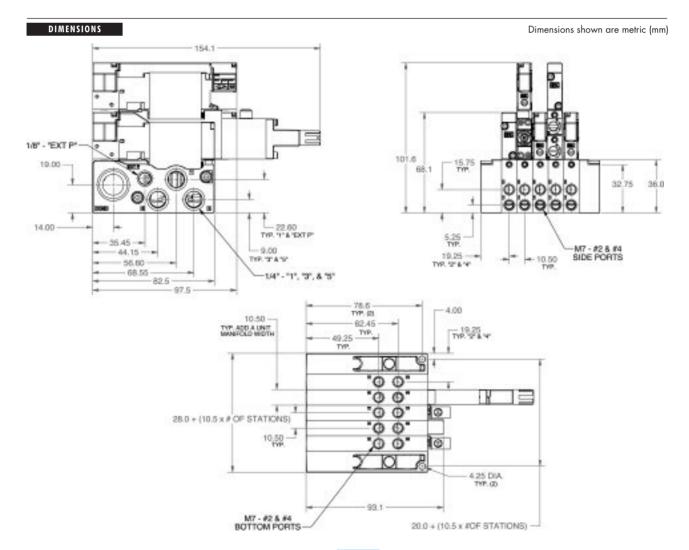






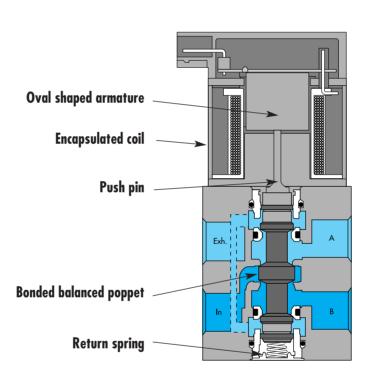
Fluid : Compressed air, vacuum, inert gases Pressure range : 2 position internal pilot: Single solenoid: 2 to 8 bar Double solenoid: 1.3 to 8 bar 2/3 position external pilot: vacuum to 8 bar 3 position internal pilot: 2.7 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Flow: 0.4 Cv / 400 NI/min Coil: Class A (#26 AWG x 18), continuous duty Voltage range: -15% to +10% of nominal voltage 4.0W, 3.0W, 2.5W, 1.8W, 1.0W Power:

Spare parts: • Blank station cover plate: M-24004 • Inlet isolator: 28568 • Exhaust isolator (Port #5): 28569 • Exhaust isolator (Port #3): 28570



Individual mounting Series Manifold mounting Series 31 33

"plug-in" with PR & FC



SERIES FEATURES

- Patented high force MACSOLENOID® for fastest possible response times.
- Bonded balanced poppet for high flow, precise repeatability, and consistent operation.
- Balanced poppet permits versatility in function may be used as 3-way or 2-way normally open or normally closed and may be used for vacuum, divertor, or selector applications.
- Extremely high cycle rate capability.
- Use on lube or non-lube service.
- Manual overrides as standard.
- Various solenoid enclosures and plug-in connectors.
- Optional surge suppression available.
- Low wattage DC solenoids down to 1.3 watts.
- Rectified AC voltage.

24

34

36

54 67 68

69 41

43 44 23

Л	n
40	16

4		1	/		
1	4	(8	8	P

48

400

92

83

93

ISO 01

ISO 02

ISO 1 ISO 2

ISO 3



Function	Port size	Flow (Max)	Individual mounting		Series
4/2	G1/8" - M5	300 NI/min	Inline		
OPERATIONAL BENEFITS					31
Balanced poppet, immune to prossure	to variations of				33
pressure. 2. Patented solenoid develops	high shifting				34
forces. 3. Short stroke with high flow.					36
4. Higher forces result in lower given flow.5. Powerful return spring.	r wattages for		5		32
e. reweller telefil spring.			6		37
				00 00	38
					52
					53
HOW TO ORDER					54
	Single O	perator	Double (Operator	67
Port size	Without flow controls	With flow controls	Without flow controls	With flow controls	68
	A A B B	A B B	A A B B	A A B B	69 41
	EXH V IN	EXH V OIN	EXH V IN	EXH V IN	43
			_		44
G1/8" M5	46A-AC1-J xxx-xxx 46A-AD1-J xxx-xxx	46A-AC2-J xxx-xxx 46A-AD2-J xxx-xxx	46A-GC1-J xxx-xxx 46A-GD1-J xxx-xxx	46A-GC2-J xxx-xxx 46A-GD2-J xxx-xxx	23
SOLENOID OPERATOR >		<u> </u>	(-G) Add "G" for	ground	46
XX Voltage	X Lead wire		lanual operator XX		
Single & double solenoid AA 120 V~/5,4W	A 45 cm B 60 cm		on-locking BA ocking GA		42
AC 24 V~/5,4W DA 24 V=/5,4W	C 90 cm **○ No lead wire		GG	MAC JAC Solenoid plug-in with rectifier	47
DB 12 V=/5,4W	** Use with rectangular	and mini connectors.	JB JD	<u> </u>	48P
Single solenoid only DC 24 V=/2,4W			KA	light	
* Other options available, see p Note: - AC voltage requires con	 page 393.		KD KD	Mini square connector Mini square connector with light	48
Note : - AC voltage requires con - With the MAC JAC, wa: - Double solenoid require	shdown capability is possible. Consul-	t factory for washdown modificat	tion number.	3	400
OPTIONS					92
46A- AC 1-Jxxx-xxx					83
II	O ring mount (body option D and "H	1")			93
A 6: 1					ISO 01
A Single of C Single of D Sing	perator - 4 port body with side ports perator - 4 port body with bottom por perator - Bottom O ring mount - All p perator - Bottom O ring mount - Cyli	ts (No side ports) ports (No side ports)			ISO 02
F Single of G Double of	perator - Bottom O ring mount - Cyli operator - 4 Port body - with side por operator - Bottom O ring mount. All p	nder ports only - Side inlet and e.	xhaust		ISO 1
H Double o	operator - Bottom O ring mount. All p	orts (no side ports).			ISO 2
Examples: 46A-DG1-Jxxx-xx	x (Bottom O ring mount – all ports)				ISO 3
46A-CD1-Jxxx-xx	x (4 port body with bottom ports – no	side ports)			

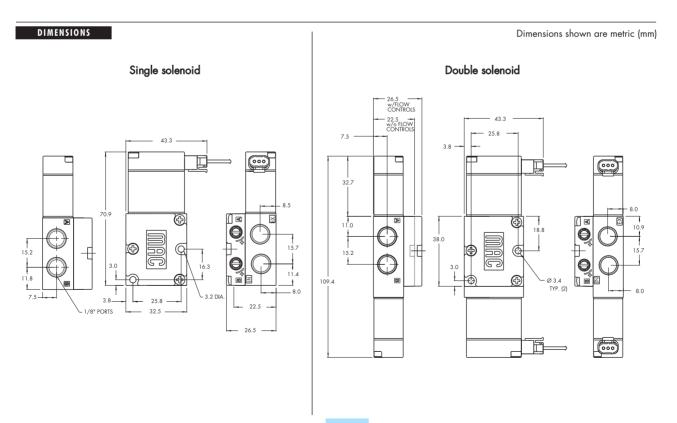






Fluid : Compressed air, vacuum, inert gases Pressure range: Vacuum to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 3,3 mm Flow: 1,8W: 200 Nl/min (Cv 0,20) - 2,4W: 200 Nl/min (Cv 0,20) - 5,4W: 300 Nl/min (Cv 0,30) Coil: Epoxy encapsulated – Class A wires – 100% ED Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 5,4W - 2,4W - 1,0W Power:

Options : • NPTF threads





Function	Port size	Flow (Max)	Manifold Mounting	Series
4/2	G1/8" - M5	300 NI/min	Stracking	
1. Balanced poppet, impressure. 2. Patented solenoid devforces. 3. Short stroke with high 4. Higher forces result in given flow. 5. Powerful return spring	mune to variations of velops high shifting n flow. n lower wattages for			31 33 34 36 32 37 38 52 53
HOW TO ORDER	ort size	Without flow controls	With flow controls	54 67 68
G	51/8" M5	46A-SC1-J xxx-xxx 46A-SD1-J xxx-xxx	46A-SC2-J XXX-XXX 46A-SD2-J XXX-XXX	69 41 43 44
XX Voltage AA 120 V~/5,4V DA 24 V=/5,4W DB 12 V=/5,4W DC 24 V=/2,4W DD 12 V=/2,4W	X Wire X A 45 cm B 60 cm C 90 cm	length X Manual of 1 Non-locking 2 Locking	Add "G" for ground Perator	46 42 47
	e, see page 393. res connector with rectifier. AC, washdown capability is possible. rt size 1/4"): M-46001-01P.	Consult factory for washdown modification number		48
				92 83 93 ISO 01
				ISO 1 ISO 2 ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, ΔP=1bar): 1,8W: 200 NI/min (Cv 0,20) – 2,4W: 200 NI/min (Cv 0,20) – 5,4W: 300 NI/min (Cv 0,30)

Coil: Epoxy encapsulated – Class A wires – 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

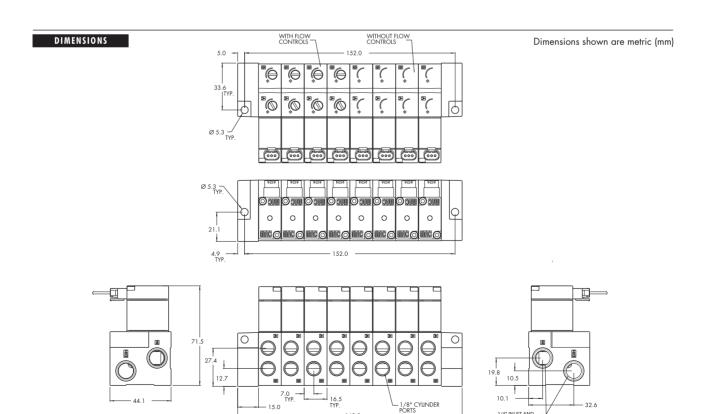
Power: 5,4W - 2,4W - 1,0W

Response times : Energize : 7,20 ms

De-energize : 4,20ms

Options : • NPTF threads

Spare parts : • Inlet isolator : 28494 • Exhaust isolator : 28493 • Tie rod (x2) : 79411





Function	Port size	Flow (Max)	Manifold mounting	Series
4/2	G1/8"	300 NI/min	Manifold base "plug-in"	
OPERATIONAL BENEFITS				31
1. Balanced poppet, immur	ne to variations of			33
pressure. 2. Patented solenoid develo	ops high shifting			34
forces. 3. Short stroke with high flo				36
4. Higher forces result in lo				
given flow. 5. Powerful return spring.				32
				37
				38
				52
HOW TO ORDER				53 54
Port	civo	Single solenoid	Double solenoid	67
ron	JIAC	Single solenola	Dooble Solelloid	68
				69
Valve le	es haso	46A-L00-00-J xxP-xxx	46A-N00-00-J xxP-xxx	41
G1/		46A-LSB-AC-J xxP-xxx	46A-NSB-BL-J xxP-xxx	43 44
				23
SOLENOID OPERATO	R ➤	J <u>xx</u> P- <u>xxx</u> · (-G)) Add "G" for ground	23
SOLENOID OPERATO	R >	J <u>xx</u> P- <u>xxx</u> . (-G)) Add "G" for ground	23
XX Voltage		X Manual operator	XX Electrical connection	
XX Voltage Single & double solenoi AA 120 V~/5,4W			XX Electrical connection FA Base plug-in FB Base plug-in with diode	
XX Voltage Single & double solenoi AA 120 V~/5,4W AC 24 V~/5,4W DA 24 V=/5,4W		X Manual operator 1 Non-locking	XX Electrical connection FA Base plug-in	24
XX Voltage Single & double solenoi AA 120 V-/5,4W AC 24 V-/5,4W		X Manual operator 1 Non-locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24
Single & double solenois AA 120 V~/5,4W AC 24 V~/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W		X Manual operator 1 Non-locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47
Single & double solenoi AA 120 V~/5,4W AC 24 V~/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W	d	X Manual operator 1 Non-locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42
Single & double solenoi AA 120 V~/5,4W AC 24 V~/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W * Other options available, solenoies: - AC voltage requires	ee page 393.	X Manual operator 1 Non-locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47 48P
XX Voltage Single & double solenoid AA 120 V~/5,4W AC 24 V~/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W Control of the control of th	dee page 393.	X Manual operator 1 Non-locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47
Single & double solenoic AA 120 V-/5,4W AC 24 V-/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W * Other options available, solenoid requires - Double solenoid requires - Double solenoid requires	ee page 393.	X Manual operator 1 Non-locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47 48P
XX Voltage Single & double solenoid AA 120 V~/5,4W AC 24 V~/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W Control of the control of th	ee page 393.	X Manual operator 1 Non-locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47 48P 48
Single & double solenoi AA 120 V~/5,4W AC 24 V~/5,4W DA 24 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W Other options available, solenoid requires - Double solenoid requires - Double solenoid requires - C Single Single & C Singl	ee page 393. s connector with rectifier. puires minimum 5,4 watts.	X Manual operator 1 Non-locking 2 Locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47 48P 48 400 92
XX Voltage Single & double solenoid AA 120 V~/5,4W AC 24 V~/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W DD 12 V=/2,4W * Other options available, solenoid requires - Double solen	ee page 393. s connector with rectifier. puires minimum 5,4 watts. Ingle solenoid - Side cylinder pongle & double solenoid - Bottom	X Manual operator 1 Non-locking 2 Locking	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47 48P 48 400 92 83
Single & double solenoic AA 120 V-/5,4W AC 24 V-/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W * Other options available, son the solenoid requires - Double solenoid	ee page 393. connector with rectifier, juires minimum 5,4 watts. ngle solenoid - Side cylinder po ngle & double solenoid - Bottom nly - no valve solenoid - Base mount body	X Manual operator 1 Non-locking 2 Locking orts in cylinder ports	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47 48P 48 400 92
Single & double solenoic AA 120 V-/5,4W AC 24 V-/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W * Other options available, son the solenoid requires - Double solenoid	ee page 393. s connector with rectifier. puires minimum 5,4 watts. Ingle solenoid - Side cylinder pongle & double solenoid - Bottom	X Manual operator 1 Non-locking 2 Locking orts in cylinder ports	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47 48P 48 400 92 83
Single & double solenoid AA 120 V-/5,4W AC 24 V-/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W * Other options available, solenoid requires - Double	ee page 393. s connector with rectifier. guires minimum 5,4 watts. Ingle solenoid - Side cylinder po ngle & double solenoid - Bottom nly - no valve solenoid - Base mount body	X Manual operator 1 Non-locking 2 Locking orts in cylinder ports	XX Electrical connection FA Base plug-in FB Base plug-in with diode	46 42 47 48P 48 400 92 83 93 ISO 01
Single & double solenoid AA 120 V-/5,4W AC 24 V-/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W * Other options available, solenoid requires - Double solenoid requires	ee page 393. connector with rectifier. juires minimum 5,4 watts. Ingle solenoid - Side cylinder pongle & double solenoid - Bottom hly - no valve solenoid - Base mount body	X Manual operator 1 Non-locking 2 Locking orts in cylinder ports	XX Electrical connection FA Base plug-in FB Base plug-in with diode	24 46 42 47 48P 48 400 92 83 93 150 01 150 02
Single & double solenoid AA 120 V-/5,4W AC 24 V-/5,4W DA 24 V=/5,4W DB 12 V=/5,4W Single solenoid only DC 24 V=/2,4W DD 12 V=/2,4W * Other options available, son the solenoid requires and the	ee page 393. connector with rectifier. juires minimum 5,4 watts. Ingle solenoid - Side cylinder pongle & double solenoid - Bottom hly - no valve solenoid - Base mount body	X Manual operator 1 Non-locking 2 Locking orts in cylinder ports	XX Electrical connection FA Base plug-in FB Base plug-in with diode	46 42 47 48P 48 400 92 83 93 ISO 01







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, ΔP=1bar): 1,8W: 200 Nl/min (Cv 0,20) – 2,4W: 200 Nl/min (Cv 0,20) – 5,4W: 300 Nl/min (Cv 0,30)

Coil: Epoxy encapsulated – Class A wires – 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 5,4W - 2,4W - 1,0W

Response times : Energize : 7,20 ms
De-energize : 4,20ms

Options : • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002

• Tie rod (x2) : 79443

DIMENSIONS Dimensions shown are metric (mm) Single Solenoid Double solenoid 0 0 0 0 **((** 0 lolo \bigcirc $\oplus \oplus \oplus$ **→** 22.5 꿆 6 0 34W 34W 0



Function	Port size	Floш (Ma		fold mounting	Series
4/2	G1/8"	300 N	■ /° "plug	fold base g-in" with essure gulators	
OPERATIONAL BENEFITS	1		178	youtore	31
1. Balanced poppet, im	mune to variations of				33
pressure. 2. Patented solenoid de	velops high shifting				34
forces. 3. Short stroke with high				90	36
 Higher forces result in given flow. 					32
5. Powerful return spring	g.			0	
					37 38
					52
HOW TO ORDER			,		53
HOW TO ORDER	n e e e				54 67
	Port size		, and the second	Aodel number	68
			A		69
	Valve less base		46A	A-LOO-OO-J XXP-XXX	41 43
	G1/8"			A-LSB-AJ-J xxP-xxx	44
SOLENOID OPERA	T∩R ➤	l vv	P- x<u>xx</u> * (-G) Add	"G" for ground	23
OCIETADID CTERVA	10117	J <u> </u>	T TO Add	o loi groona	24
XX Voltage		(Manual op	erator X	X Electrical connection	24
AA 120V~/5,4V DA 24V=/5,4W	V		F	Base plug-in Base plug-in with diode	46
DB 12V=/5,4W DC 24V=/2,4W	,	Locking		G Base plug-in with rectifier	
					42
Note : AC voltage require	le, see page 393. es connector with rectifier.				47
OPTIONS	ı				48P
46A-LSB-AJ-JxxP-xx T					48
E	Regulator with adjusting knob Regulator with slotted stem Regulator with slotted stem with lockn	ut			
O Bas	se only – no valve se mount body				400
M Bas	se mount body with gage port				92
Example : base only with End plate kit required (po	regulator : 46A-0SB-AJ. ort size G1/4") : M-46003-01P.				83
					93
					ISO 01
					ISO 02
					ISO 1
					ISO 3







Fluid : Compressed air, vacuum, inert gases

Pressure range:

Lubrication : Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

-18°C to +50°C Temperature range:

Orifice: 3,3 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 1,8W: 200 Nl/min (Cv 0,20) - 2,4W: 200 Nl/min (Cv 0,20) - 5,4W: 300 Nl/min (Cv 0,30)

Coil: Epoxy encapsulated – Class A wires – 100% ED

-15% to +10% of nominal voltage Voltage range:

Protection: IP54 (electrical connection)

Power: 5,4W - 2,4W - 1,0W

Response times: 7,20 ms Energize: 4,20ms De-energize:

Options : • NPTF threads

Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002 • Tie rod (x2) : 79443

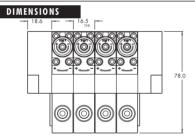
• Replacement regulators: PR46A-0AAA (slotted stem)

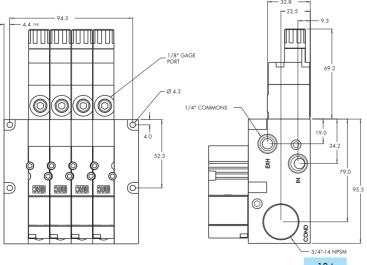
PR46A-OBAA (adjusting knob)

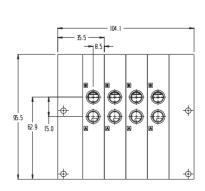
PR46A-OCAA (slotted stem with locknut)

Regulating range options : • PR46A-xxxA

A 0 to 8 bar **B** 0 to 5,3 bar **C** 0 to 2 bar









Function	Port size	Flow (Ma	x]	Manifold mounting	Series
4/2	G1/8"	300 N	l/min	Manifold base "plug-in" with flow controls	
OPERATIONAL BENEFI					31
 Balanced poppet, i pressure. 	immune to variations of				33
2. Patented solenoid of	develops high shifting				34
	igh flow. It in lower wattages for				36
given flow. 5. Powerful return spri	ing.			600	32
				20 00	37
					38 52
					53
HOW TO ORDER					54
	Port size			Model number	67
				A B	68
					69
	Valve less base			EXH ♥ ■IN 46A-L00-00-J XXP-XXX	41 43
	G1/8"			46A-LSB-AD-J xxP-xxx	44
SOLENOID OPERA	ATOR ➤	J XX	P- xxx * (-	G) Add "G" for ground	23
				·	24
XX Voltage	e	X Manual op	erator	XX Electrical connection	on .
AA 120V~/5, DA 24V=/5,4		1 Non-locking 2 Locking		FA Base plug-in FB Base plug-in with diode	46
DB 12V=/5,4°	W	Locking		FG Base plug-in with rectifier	
* Other options availa					42
OPTIONS	ones connector with rectifier.				47 48P
46A-LSB-AJ-JxxP-	-xxx D Side cylinder ports M Bottom cylinder ports				48
	Base only – no valve Base mount body				400
L В М В	Base mount body Base mount body with gage port				92
Example : base only wi End plate kit required (ith regulator: 46A-0SB-AD. (port size G1/4") : M-46003-01P.				83
					93
					ISO 01
					ISO 02
					ISO 1
					ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 3,3 mm

Flow (at 6 bar, ΔP=1bar): 1,8W: 200 NI/min (Cv 0,20) – 2,4W: 200 NI/min (Cv 0,20) – 5,4W: 300 NI/min (Cv 0,30)

Coil: Epoxy encapsulated – Class A wires – 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 5,4W - 2,4W - 1,0W

Response times : Energize : 7,20 ms

De-energize: 4,20ms

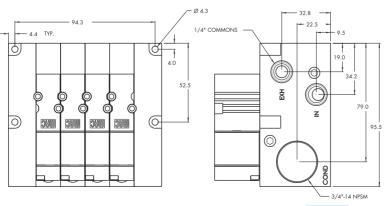
Options : • NPTF threads

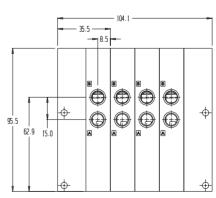
Spare parts : • Inlet isolator : 28501 • Exhaust isolator : 28502 • Valve cover plate : M-46002

• Tie rod (x2) : 79443

DIMENSIONS

18.6 16.5 77.9 8.0 77.0 1 24.0 78.0 78.0







Function	Port size	Flow (Ma	X]	Manifold mounting	Series
4/2	G1/8"	300 N	l/min	Manifold base "plug-in" with PR & PC	
OPERATIONAL BENEFITS					31
1. Balanced poppet, imm	nune to variations of			0.2	33
pressure. 2. Patented solenoid dev	elops high shifting				34
forces. 3. Short stroke with high	flow				36
4. Higher forces result in	lower wattages for				
given flow. 5. Powerful return spring					32
3				0.11	37
					38
					52
HOW TO ORDER				0000	53
HOW TO ORDER				370	54
	Port size			Model number	67
				A A B B	68 69
				EXH V IN	41
	Valve less base			46A-L00-00-J xxP-xxx	43
	G1/8"			46A-LSB-AK-J xxP-xxx	44
	0.70				
SOLFNOID OPERATE	<u> </u>		P- XXX * <i>I-(</i>	3) Add "G" for ground	23
SOLENOID OPERAT	<u> </u>	J <u>xx</u> l	P- <u>xxx</u> * (-0	G) Add "G" for ground	23
	<u> </u>				23
XX Voltage	OR ➤	X Manual ope		XX Electrical connection	23 24
XX Voltage AA 120V~/5,4W DA 24V=/5,4W	OR ➤	X Manual op		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23
XX Voltage AA 120V~/5,4W	OR ➤	X Manual ope		XX Electrical connections	23 24 on 46
XX Voltage AA 120V~/5,4W DA 24V=/5,4W DB 12V=/5,4W DC 24V=/2,4W * Other options available	OR ➤	X Manual ope		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24
XX Voltage AA 120V~/5,4W DA 24V=/5,4W DB 12V=/5,4W DC 24V=/2,4W	OR ➤	X Manual ope		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 46 42 47
XX Voltage AA 120V~/5,4W DA 24V=/5,4W DB 12V=/5,4W DC 24V=/2,4W * Other options available	OR ➤	X Manual ope		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 46 42
XX Voltage	or, see page 393.	X Manual ope		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 46 42 47 48P
XX Voltage AA 120V~/5,4W DA 24V=/5,4W DB 12V=/5,4W DC 24V=/2,4W * Other options available Note: AC voltage requires OPTIONS 46A-LSB-AJ-JxxP-xxx	OR > c, see page 393. s connector with rectifier. Regulator with adjusting knob & f Regulator with slotted stem & flow	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 46 42 47
XX Voltage AA 120V~/5,4W DA 24V=/5,4W DB 12V=/5,4W DC 24V=/2,4W * Other options available Note: AC voltage requires OPTIONS 46A-LSB-AJ-JxxP-xxx	OR > o, see page 393. s connector with rectifier. K Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with la	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 00 46 42 47 48P 48
XX Voltage	or, see page 393. It is connector with rectifier. Regulator with adjusting knob & frequency fr	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 00 46 42 47 48P 48 400
XX Voltage	Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with lo	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 00 46 42 47 48P 48
XX	Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with lo	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 00 46 42 47 48P 48 400
XX	e, see page 393. s connector with rectifier. Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with lo e only – no valve e mount body e mount body e mount body e would body	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 46 42 47 48P 48 400 92 83
XX	e, see page 393. s connector with rectifier. Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with lo e only – no valve e mount body e mount body e mount body e would body	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 on 46 42 47 48P 48 400 92 83 93
XX	e, see page 393. s connector with rectifier. Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with lo e only – no valve e mount body e mount body e mount body e would body	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 on 46 42 47 48P 48 400 92 83 93
XX	e, see page 393. s connector with rectifier. Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with lo e only – no valve e mount body e mount body e mount body e would body	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 on 46 42 47 48P 48 400 92 83 93 ISO 01
XX	e, see page 393. s connector with rectifier. Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with lo e only – no valve e mount body e mount body e mount body e would body	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 on 46 42 47 48P 48 400 92 83 93 150 01 150 02
XX	e, see page 393. s connector with rectifier. Regulator with adjusting knob & f Regulator with slotted stem & flow Regulator with slotted stem with lo e only – no valve e mount body e mount body e mount body e would body	X Manual ope 1 Non-locking 2 Locking		XX Electrical connection FA Base plug-in FB Base plug-in with diode	23 24 on 46 42 47 48P 48 400 92 83 93 ISO 01







Fluid : Compressed air, vacuum, inert gases

Pressure range:

Lubrication : Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

-18°C to +50°C Temperature range:

Orifice: 3,3 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 1,8W: 200 Nl/min (Cv 0,20) - 2,4W: 200 Nl/min (Cv 0,20) - 5,4W: 300 Nl/min (Cv 0,30)

Coil: Epoxy encapsulated – Class A wires – 100% ED

-15% to +10% of nominal voltage Voltage range:

Protection: IP54 (electrical connection)

Power: 5,4W - 2,4W - 1,0W

Response times: 7,20 ms Energize:

4,20ms De-energize:

• NPTF threads Options:

Spare parts: • Inlet isolator: 28501 • Exhaust isolator: 28502 • Valve cover plate: M-46002 • Tie rod (x2): 79443

• Replacement regulators : PR46A-0AAA (slotted stem)

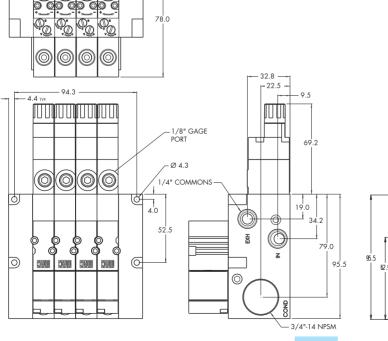
PR46A-OBAA (adjusting knob)

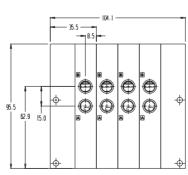
PR46A-OCAA (slotted stem with locknut)

Regulating range options : • PR46A-xxxA

A 0 to 8 bar **B** 0 to 5,3 bar **C** 0 to 2 bar

DIMENSIONS





Individual mounting Subbase non "plug-in" Subbase "plug-in" Subbase "plug-in" Subbase "plug-in" with latching solenoid Manifold mounting

Series

31 33

34

36

43

44 23

24

46

42

47 48P

48

400

92

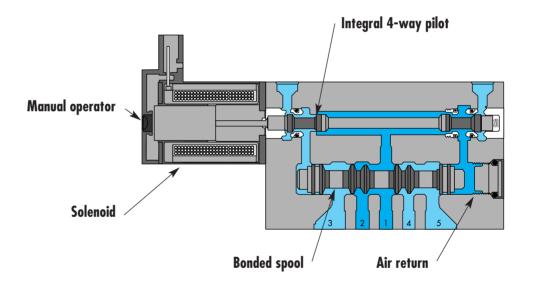
83

93

ISO 01

ISO 02

ISO 3



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Single or dual pressure.
- Internal or external pilot.
- Single or double solenoid.
- 2 or 3 position.
- Rectified AC voltage.
- Latching solenoid technology.

ISO 1 ISO 2



		Port size	Flow [Max]	Flow (Max) Individual mounting	
/2, 5/3		M5, M7	400 NI/min	Sub-base non "plug-in"	
PERATIONAL BE	NEFITS				A 3
4-way valve w					3
10 mm valve (: High flow (up t					3
Fast repeatable	e response time	P\$.			
Maximum shift Long life.	ing forces in bo	oth directions.			3
3				9	3
					0
				100	3
				5	3
				2.4	5
					5
HOW TO ORD	DER				5
NGLE PRESS	SURE MODEL	S			6
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
		12 2 4 14	12 2 4 14	12 2 4 14 MMDD \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	12 2 4 14
Valve less	Internal	42B-AMA-000-Gxxx-xxx	- 42B-BMA-000-Gxxx-xxx	42B-EMA-000-Gxxx-xxx	42B-FMA-000-Gxxx-xxx
base	External	42B-AMD-000-Gxxx-xxx	42B-BMD-000-Gxxx-xxx	42B-EMD-000-Gxxx-xxx	42B-FMD-000-Gxxx-xxx
M5	Internal	42B-AMA-GAL-Gxxx-xxx	42B-BMA-GAL-Gxxx-xxx	42B-EMA-GAL-Gxxx-xxx	42B-FMA-GAL-GXXX-XXX
	External	42B-AMD-GAM-GXXX-XXX	42B-BMD-GAM-Gxxx-xxx	42B-EMD-GAM-GXXX-XXX	42B-FMD-GAM-GXXX-XXX
M7	Internal	42B-AMA-LAL-Gxxx-xxx	42B-BMA-LAL-Gxxx-xxx	42B-EMA-LAL-Gxxx-xxx	42B-FMA-LAL-Gxxx-xxx
	External	42B-AMD-LAM-Gxxx-xxx	42B-BMD-LAM-Gxxx-xxx	42B-EMD-LAM-Gxxx-xxx	42B-FMD-LAM-Gxxx-xxx
LIAL BRECCHI		42B-AMD-LAM-GXXX-XXX	42B-BMD-LAM-Gxxx-xxx	42B-EMD-LAM-GXXX-XXX	
	RE MODELS				4
UAL PRESSUI	RE MODELS	42B-AMD-LAM-GXXX-XXX Pilot air	42B-BMD-LAM-GXXX-XXX 5/2 Single solenoid	42B-EMD-LAM-GXXX-XXX 5/2 Double solenoid	5/3 Pressure centre
	RE MODELS				5/3 Pressure centre
	RE MODELS				5/3 Pressure centre 12 2 4 14 14 14 14 14 14 14 14 14 14 14 14 1
Port size	RE MODELS	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
Port size	RE MODELS base Int	Pilot air Ternal Supply #3 port	5/2 Single solenoid 1/4	5/2 Double solenoid 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	5/3 Pressure centre 1/4
Port size	RE MODELS base Int Ex	Pilot air ernal Supply #3 port Supply #5 port	5/2 Single solenoid 1/4	5/2 Double solenoid 14 14 15 5 5 7 5 3 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	5/3 Pressure centre 12 2 4 15 15 15 16 16 17 18 18 18 18 18 18 18 18 18 18 18 18 18
Port size	RE MODELS base Int Ex	Pilot air ernal Supply #3 port Supply #5 port ternal	5/2 Single solenoid 1/4	5/2 Double solenoid 14	5/3 Pressure centre 12 2 4 42B-HMB-000-Gxxx-xxx 42B-HMC-000-Gxxx-xxx 42B-HMD-000-Gxxx-xxx
Port size	RE MODELS base Int Ex	Pilot air Ternal Supply #3 port Supply #5 port Supply #3 port Ternal Supply #3 port	5/2 Single solenoid 1/2/2	5/2 Double solenoid 14 175 19 19 19 19 19 19 19 19 19 19 19 19 19	5/3 Pressure centre
Port size	RE MODELS base Int Ex	Pilot air Ternal Supply #3 port Supply #5 port ternal Supply #3 port Supply #3 port Supply #5 port	5/2 Single solenoid 1/4	42B-DMB-O00-GXXX-XXX 42B-DMB-GAL-GXXX-XXX 42B-DMC-GAL-GXXX-XXX	5/3 Pressure centre 12 2 4 14 42B-HMB-000-GXXX-XXX 42B-HMC-000-GXXX-XXX 42B-HMD-000-GXXX-XXX 42B-HMB-GAL-GXXX-XXX 42B-HMC-GAL-GXXX-XXX 42B-HMD-GAM-GXXX-XXX
Port size Valve less I	RE MODELS base Int Ex	Pilot air Fernal Supply #3 port Supply #5 port Supply #3 port Supply #3 port Supply #5 port Supply #5 port	5/2 Single solenoid 1/4	5/2 Double solenoid 14 14 15 5 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	42B-HMC-GAL-GXXX-XXX 42B-HMC-GAM-GXXX-XXX
Port size Valve less I	RE MODELS base Int Ex Int Ex	Pilot air ternal Supply #3 port Supply #5 port ternal supply #3 port Supply #5 port Supply #5 port ternal supply #5 port	5/2 Single solenoid 1/4	42B-DMB-000-GXXX-XXX 42B-DMC-000-GXXX-XXX 42B-DMC-GAL-GXXX-XXX 42B-DMC-GAL-GXXX-XXX 42B-DMD-GAM-GXXX-XXX	42B-HMB-GAL-GXXX-XXX 42B-HMD-GAM-GXXX-XXX 42B-HMD-GAM-GXXX-XXX 42B-HMD-GAM-GXXX-XXX
Valve less I	RE MODELS Base Int Ex Int Ex	Pilot air Pernal Supply #3 port Supply #5 port Supply #5 port Supply #5 port Supply #5 port Supply #3 port Supply #3 port Supply #3 port Supply #5 port Supply #5 port	5/2 Single solenoid 14	5/2 Double solenoid 14 175 187 187 187 187 187 187 187 187 187 187	5/3 Pressure centre 12
Valve less I M5	RE MODELS Base Int Ex Int Ex	Pilot air Pernal Supply #3 port Supply #5 port Supply #5 port Supply #5 port Supply #5 port Supply #3 port Supply #3 port Supply #3 port Supply #5 port Supply #5 port	5/2 Single solenoid 42B-CMB-000-GXXX-XXX 42B-CMC-000-GXXX-XXX 42B-CMC-GAL-GXXX-XXX 42B-CMC-GAL-GXXX-XXX 42B-CMD-GAM-GXXX-XXX 42B-CMB-LAL-GXXX-XXX 42B-CMD-LAL-GXXX-XXX	5/2 Double solenoid 14 175 187 187 187 187 187 187 187 187 187 187	5/3 Pressure centre 12 2 4 42B-HMB-000-GXXX-XXX 42B-HMC-000-GXXX-XXX 42B-HMB-GAL-GXXX-XXX 42B-HMC-GAL-GXXX-XXX 42B-HMB-LAL-GXXX-XXX 42B-HMB-LAL-GXXX-XXX 42B-HMB-LAL-GXXX-XXX
Valve less I M5 M7	RE MODELS Base Int Ex Int Ex OLENOID OI	Pilot air Pernal Supply #3 port Supply #5 port Supply #5 port Supply #5 port Supply #5 port Supply #3 port Supply #3 port Supply #3 port Supply #5 port Supply #5 port	5/2 Single solenoid 42B-CMB-000-GXXX-XXX 42B-CMC-000-GXXX-XXX 42B-CMB-GAL-GXXX-XXX 42B-CMD-GAM-GXXX-XXX 42B-CMB-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX	5/2 Double solenoid 14 175 187 187 187 187 187 187 187 187 187 187	5/3 Pressure centre 12
Valve less I M5 M7 TANDARD SO	RE MODELS Base Int Ex Int Ex OLENOID OI	Pilot air supply #3 port Supply #5 port ternal supply #3 port Supply #5 port ternal supply #3 port Supply #3 port Supply #3 port Supply #5 port ternal PERATOR >	5/2 Single solenoid 42B-CMB-000-GXXX-XXX 42B-CMC-000-GXXX-XXX 42B-CMD-000-GXXX-XXX 42B-CMB-GAL-GXXX-XXX 42B-CMD-GAM-GXXX-XXX 42B-CMD-GAM-GXXX-XXX 42B-CMD-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX	5/2 Double solenoid 14 175 187 187 187 187 187 187 187 187 187 187	5/3 Pressure centre 12 2 4 42B-HMB-000-GXXX-XXX 42B-HMC-000-GXXX-XXX 42B-HMD-000-GXXX-XXX 42B-HMB-GAL-GXXX-XXX 42B-HMC-GAL-GXXX-XXX 42B-HMD-GAM-GXXX-XXX 42B-HMB-LAL-GXXX-XXX 42B-HMC-LAL-GXXX-XXX 42B-HMC-LAL-GXXX-XXX 42B-HMC-LAL-GXXX-XXX 42B-HMD-LAM-GXXX-XXX
Valve less I M5 M7 TANDARD SO XX Volt AA 120 V DC 24 V=	RE MODELS Base Int Ex Int Ex OLENOID OF	Pilot air Supply #3 port Supply #5 port ternal Pernal Supply #3 port Supply #5 port ternal Supply #5 port ternal PERATOR > X Wire ler A 45 cm B 60 cm	5/2 Single solenoid 42B-CMB-000-GXXX-XXX 42B-CMC-000-GXXX-XXX 42B-CMD-000-GXXX-XXX 42B-CMB-GAL-GXXX-XXX 42B-CMD-GAM-GXXX-XXX 42B-CMB-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX	5/2 Double solenoid 14 17 17 17 17 17 17 17 17 17 17 17 17 17	5/3 Pressure centre 12 2 4 14 42B-HMB-000-Gxxx-xxx 42B-HMC-000-Gxxx-xxx 42B-HMB-GAL-Gxxx-xxx 42B-HMC-GAL-Gxxx-xxx 42B-HMD-GAM-Gxxx-xxx 42B-HMB-LAL-Gxxx-xxx 42B-HMC-LAL-Gxxx-xxx 42B-HMC-LAL-Gxxx-xxx 42B-HMC-LAL-Gxxx-xxx 42B-HMC-LAL-Gxxx-xxx 42B-HMC-LAL-Gxxx-xxx 42B-HMC-LAL-Gxxx-xxx 42B-HMD-LAM-Gxxx-xxx 42B-HMD-LAM-Gxxx-xxx
Valve less I M5 M7 TANDARD SC XX Volt AA 120 V DC 24 V= DD 24 V=	RE MODELS Boase Int Ex Int Ex OLENOID OF	Pilot air Supply #3 port Supply #5 port ternal Supply #5 port Supply #5 port ternal Supply #3 port Supply #5 port ternal PERATOR > X Wire ler A 45 cm	5/2 Single solenoid 42B-CMB-000-GXXX-XXX 42B-CMC-000-GXXX-XXX 42B-CMD-000-GXXX-XXX 42B-CMB-GAL-GXXX-XXX 42B-CMD-GAM-GXXX-XXX 42B-CMB-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX	5/2 Double solenoid 14 1/25 1/327 42B-DMB-000-GXXX-XXX 42B-DMC-000-GXXX-XXX 42B-DMB-GAL-GXXX-XXX 42B-DMC-GAL-GXXX-XXX 42B-DMD-GAM-GXXX-XXX 42B-DMD-LAL-GXXX-XXX 42B-DMC-LAL-GXXX-XXX	5/3 Pressure centre 12 2 4 42B-HMB-000-GXXX-XXX 42B-HMC-000-GXXX-XXX 42B-HMD-000-GXXX-XXX 42B-HMB-GAL-GXXX-XXX 42B-HMB-GAL-GXXX-XXX 42B-HMB-GAL-GXXX-XXX 42B-HMB-LAL-GXXX-XXX 42B-HMB-LAL-GXXX-XXX 42B-HMC-LAL-GXXX-XXX 42B-HMC-LAL-GXXX-XXX 42B-HMC-LAL-GXXX-XXX 42B-HMD-LAM-GXXX-XXX
Valve less I M5 M7 TANDARD SC XX Volt AA 120 V DC 24 V= DD 24 V=	Ex OLENOID OI	Pilot air Supply #3 port Supply #5 port ternal Pernal Supply #3 port Supply #5 port ternal Supply #5 port ternal PERATOR > X Wire ler A 45 cm B 60 cm C 90 cm	5/2 Single solenoid 42B-CMB-000-GXXX-XXX 42B-CMC-000-GXXX-XXX 42B-CMD-000-GXXX-XXX 42B-CMB-GAL-GXXX-XXX 42B-CMD-GAM-GXXX-XXX 42B-CMB-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX 42B-CMC-LAL-GXXX-XXX	42B-DMB-000-GXXX-XXX 42B-DMB-000-GXXX-XXX 42B-DMB-GAL-GXXX-XXX 42B-DMC-GAL-GXXX-XXX 42B-DMB-GAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX 42B-DMB-LAL-GXXX-XXX	5/3 Pressure centre 12 13 15 142B-HMB-000-GXXX-XXX 142B-HMC-000-GXXX-XXX 142B-HMD-000-GXXX-XXX 142B-HMB-GAL-GXXX-XXX 142B-HMD-GAM-GXXX-XXX 142B-HMD-GAM-GXXX-XXX 142B-HMD-LAL-GXXX-XXX 142B-HMD-LAL-GXXX-XXX 142B-HMD-LAL-GXXX-XXX 142B-HMD-LAM-GXXX-XXX







Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar External Pilot: vacuum to 8 bar Pilot pressure : 2 position : 1,3 to 8 bar 3 position: 2,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 3,8 mm Flow (at 6 bar, $\Delta P=1$ bar): M7: 400 NI/min (Cv 0,4) - M5: 350 NI/min (Cv 0,35) Coil: Epoxy encapsulated – 100% ED – Class A wire -15% to +10% of nominal voltage Voltage range:

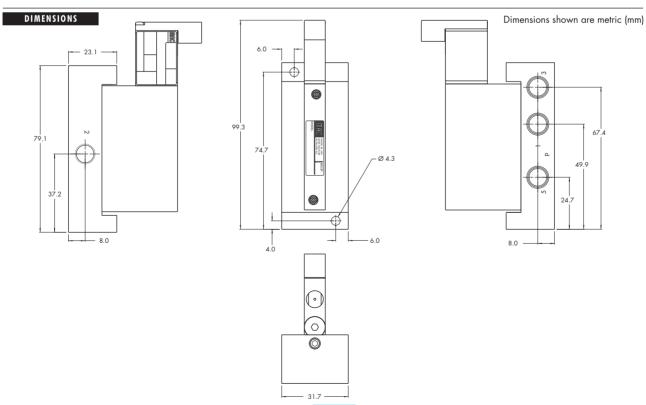
Protection: IP54 (electrical connection)

1.0 to 4.0 W Power:

Response times : Energize : 5 ms (with 24V 4 W coil) De-energize : 5 ms

• NPTF threads Options :

• Sandwich flow controls : FC42B-BB • Sandwich regulator : see 'Regulator' section





Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	M5, M7	400 NI/min	Sub-base "plug-in"	

OPERATIONAL BENEFITS

- 1. 4-way valve with 4-way integral pilot.
- 2. 10 mm valve (stacks on 10,5 mm centres).

- 3. High flow (up to 400 NI/min).
 4. Fast repeatable response times.
 5. Maximum shifting forces in both directions.
- 6. Long life.



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42 47 **48P**

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ISO 01 ISO 02 **ISO** 1 **ISO 2 ISO 3**

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
		3 1 5	12 17D 14 14 14 14 14 14 17 14	12 2 4 14 MD 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 2 4 14 3 MM TO
Valve less	Internal	42B-AMA-000-GxxP-xxx	42B-BME-000-GxxP-xST	42B-EME-000-GxxP-xST	42B-FME-000-GxxP-xST
base	External	42B-AMD-000-GxxP-xxx	42B-BMH-000-GxxP-xST	42B-EMH-000-GxxP-xST	42B-FMH-000-GxxP-xST
M5	Internal	42B-AMA-GAA-GxxP-xxx	42B-BME-GAC-GxxP-xST	42B-EME-GAC-GxxP-xST	42B-FME-GAC-GxxP-xST
	External	42B-AMD-GAB-GxxP-xxx	42B-BMH-GAD-GxxP-xST	42B-EMH-GAD-GxxP-xST	42B-FMH-GAD-GxxP-xST
M7	Internal	42B-AMA-LAA-GxxP-xxx	42B-BME-LAC-GxxP-xST	42B-EME-LAC-GxxP-xST	42B-FME-LAC-GxxP-xST
	External	42B-AMD-LAB-GxxP-xxx	42B-BMH-LAD-GxxP-xST	42B-EMH-LAD-GxxP-xST	42B-FMH-LAD-GxxP-xST

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
	14 4 2 12 15 0 7 0 3	14 2 12 12 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 14 17 17 17 17 17 17 17 17
Internal Supply #3 port	42B-CMB-000-GxxP-xxx	42B-DMF-000-GxxP-xST	42B-HMF-000-GxxP-xST
Supply #5 port	42B-CMC-000-GxxP-xxx	42B-DMG-000-GxxP-xST	42B-HMG-000-GxxP-xST
External	42B-CMD-000-GxxP-xxx	42B-DMH-000-GxxP-xST	42B-HMH-000-GxxP-xST
Internal Supply #3 port	42B-CMB-GAA-GxxP-xxx	42B-DMF-GAC-GxxP-xST	42B-HMF-GAC-GxxP-xST
Supply #5 port	42B-CMC-GAA-GxxP-xxx	42B-DMG-GAC-GxxP-xST	42B-HMG-GAC-GxxP-xST
External	42B-CMD-GAB-GxxP-xxx	42B-DMH-GAD-GxxP-xST	42B-HMH-GAD-GxxP-xST
Internal Supply #3 port	42B-CMB-LAA-GxxP-xxx	42B-DMF-LAC-GxxP-xST	42B-HMF-LAC-GxxP-xST
Supply #5 port	42B-CMC-LAA-GxxP-xxx	42B-DMG-LAC-GxxP-xST	42B-HMG-LAC-GxxP-xST
External	42B-CMD-LAB-GxxP-xxx	42B-DMH-LAD-GxxP-xST	42B-HMH-LAD-GxxP-xST
	Internal Supply #3 port Supply #5 port External Internal Supply #3 port Supply #5 port External Internal Supply #3 port Supply #5 port	Single solenoid	Single solenoid Double Sol

STANDARD SOLENOID OPERATOR ➤

G	XX	P-XXX	*

XX	Voltage	X Manual operator	XX Electrical connection
AA	120 V~/2,5W	1 Non-locking	Double solenoid & 3 position models
DC	24 V=/1,8W	2 Locking	ST Base plug-in
DD	24 V=/2,5W		Single solenoid models
DF	24 V=/4,0W		SA Base plug-in
10	AC II I I I I I I I I I I		SJ Base plug-in with light
e : AC	AC voltage requires connector with rectifier (for double solenoid consult factory).		SS Base plua-in with rectifier & light & grou

Other options available for the 42 series valves, see page 154.







Fluid : Compressed air, vacuum, inert gases Pressure range:

Internal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar

External Pilot: vacuum to 8 bar

Pilot pressure : 2 position: 1,3 to 8 bar 3 position: 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, $\Delta P=1$ bar): M7: 400 NI/min (Cv 0,4) - M5: 350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED – Class A wire

-15% to +10% of nominal voltage Voltage range:

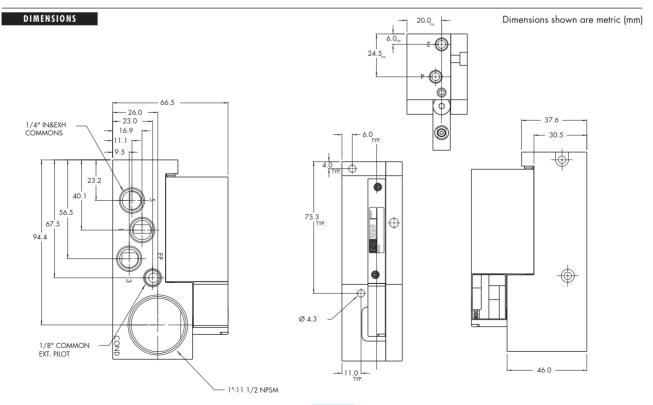
Protection: IP54 (electrical connection)

1.0 to 4.0 W Power: Response times : Energize : 5 ms

(with 24V 4 W coil) De-energize : 5 ms

Options : • NPTF ports

• Sandwich flow controls : FC42B-AB • Sandwich regulator : see 'Regulator' section





nction		Port size	Floш (Max)	Manifold mounting	Seri
/2, 5/3		M5, M7	400 NI/min	Manifold base non "plug-in"	
ERATIONAL BEN	IEFITS				3
4-way valve wit					3
10 mm valve (st High flow (up to				,	3
ast repeatable Naximum shiftir	response time	es.		164	3
ong life.				: 11	3
				65(4)	3
				1 2	3
				And the	5
					5
HOW TO ORDI	ER				5
NGLE PRESSU	URE MODEL	LS (MIDDLE STATION MAN	NIFOLDS WITH SIDE PORT	S)	6
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
		12 2 4 14	12 2 4 14	12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12
		T V V T 3 1 5	3 1 5	3 1 5	
Valve less	Internal	42B-AMA-000-Gxxx-xxx	42B-BMA-000-Gxxx-xxx	42B-EMA-000-Gxxx-xxx	42B-FMA-000-Gxxx-xxx
base	External	42B-AMD-000-Gxxx-xxx	42B-BMD-000-Gxxx-xxx	42B-EMD-000-Gxxx-xxx	42B-FMD-000-Gxxx-xxx
M5	Internal	42B-AMA-GJL-Gxxx-xxx	42B-BMA-GJL-Gxxx-xxx	42B-EMA-GJL-Gxxx-xxx	42B-FMA-GJL-Gxxx-xxx
	External	42B-AMD-GJM-GXXX-XXX	42B-BMD-GJM-Gxxx-xxx	42B-EMD-GJM-Gxxx-xxx	42B-FMD-GJM-Gxxx-xxx
M7	Internal	42B-AMA-LJL-Gxxx-xxx	42B-BMA-LJL-Gxxx-xxx	42B-EMA-LJL-Gxxx-xxx	42B-FMA-LJL-Gxxx-xxx
	External	42B-AMD-LJM-Gxxx-xxx	42B-BMD-LJM-Gxxx-xxx	42B-EMD-LJM-Gxxx-xxx	42B-FMD-IJM-Gxxx-xxx
JAL PRESSUR	E MODELS	(MIDDLE STATION MANIF	OLDS WITH SIDE PORTS)		4
Port size	•	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
				14 4 2 12 7 1 1 1 2	12 2 4 14 IIII
			5 0 7 0 3	5 9 9 3	3 1 5
Valve less b	ase Inf	ternal Supply #3 port	42B-CMB-000-Gxxx-xxx	42B-DMB-000-Gxxx-xxx	42B-HMB-000-Gxxx-xxx
		Supply #5 port	42B-CMC-000-Gxxx-xxx	42B-DMC-000-Gxxx-xxx	42B-HMC-000-Gxxx-xxx
	Ex	ternal	42B-CMD-000-Gxxx-xxx	42B-DMD-000-Gxxx-xxx	42B-HMD-000-Gxxx-xxx
M5	Int	ternal Supply #3 port	42B-CMB-GJL-Gxxx-xxx	42B-DMB-GJL-Gxxx-xxx	42B-HMB-GJL-Gxxx-xxx
		Supply #5 port	42B-CMC-GJL-Gxxx-xxx	42B-DMC-GJL-Gxxx-xxx	42B-HMC-GJL-GXXX-XXX
		ternal	42B-CMD-GJM-Gxxx-xxx	42B-DMD-GJM-GXXX-XXX	42B-HMD-GJM-Gxxx-xxx
M7	ini	Supply #3 port Supply #5 port	42B-CMB-LJL-GXXX-XXX 42B-CMC-LJL-GXXX-XXX	42B-DMB-LJL-GXXX-XXX 42B-DMC-LJL-GXXX-XXX	42B-HMB-LJL-GXXX-XXX 42B-HMC-LJL-GXXX-XXX
	Fx	ternal	42B-CMD-LJM-GXXX-XXX	42B-DMD-LJM-Gxxx-xxx	400 11140 1114 0
				- TED DING BIN COOK AUX	42B-HMD-LJM-GXXX-XXX
'ANDARD SC	DLENOID OI	PERATOR ➤	G <u>xx</u> x- <u>xxx</u> *		9
			<u> </u>		
XX Volto	_	X Wire leng		anual operator XX	
AA 120 V~	~/2,5W /1,8W	A 45 cm B 60 cm		on-locking BA cking BT	Flying leads with light
		C 90 cm		GA	MAC JAC Solenoid plug-in
DD 24 V=/	/ 4 0 14 /			KA	Mini connector
DF 24 V=/				KT	Mini connector with light
DF 24 V=/	e requires conne vailable, see pa	ector with rectifier. ige 387.		·	







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar

External Pilot: vacuum to 8 bar

Pilot pressure: 2 position: 1,3 to 8 bar 3 position: 2,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

Flow (at 6 bar, $\Delta P = 1$ bar): M7: 400 NI/min (Cv 0,4) – M5: 350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)
Power: 1.0 to 4.0 W

Response times : Energize : 5 ms

(with 24V 4 W coil) De-energize: 5 ms

Options : • NPTF threads • Sandwich flow controls : FC42B-BB

• Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454

• Valve blanking plate : M-42004

Dimensions shown are metric (mm) 12.8 12.8 12.8 12.8 12.8 13.5 14.3 15.5 16.5 17.0 17.0 18.5 19.5 10



unction Port size		Port size	Floш (Max)	Manifold mounting		Series
/2, 5/3	, 5/3 M5, M7		400 NI/min	Manifold base "plug-in"		
PERATIONAL BENI	EFITS					31
4-way valve with	n 4-way integr	al pilot.			1	33
10 mm valve (sta	acks on 10,5	mm centres).				34
High flow (up to Fast repeatable						34
Maximum shiftin Long life.					W A	36
3				1 5 mg	Day.	32
						37
				-		38
						52
						53
HOW TO ORDE	R					54
JGIE PRESSI	IRE MODEL	S (IED STANDARD EXCEP	T FOR SINGLE SOLENOIDS	1		67
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre	68
		12 2 4 14	12 2 4 14	12 2 4 14	12 2 4 14 MMD 1 1 4 4 MM	69
						41
Valve less	 Internal	42B-AMA-000-GxxP-xxx	42B-BME-000-GxxP-xST	42B-EME-000-GxxP-xST	42B-FME-000-GxxP-xST	43
base	External	42B-AMD-000-GxxP-xxx	42B-BMH-000-GxxP-xST	42B-EMH-000-GxxP-xST	42B-FMH-000-GxxP-xST	44
M5	Internal	42B-AMA-GJA-GxxP-xxx	42B-BME-GJC-GxxP-xST	42B-EME-GJC-GxxP-xST	42B-FME-GJC-GxxP-xST	23
	External	42B-AMD-GJB-GxxP-xxx	42B-BMH-GJD-GxxP-xST	42B-EMH-GJD-GxxP-xST	42B-FMH-GJD-GxxP-xST	
M7	Internal	42B-AMA-LJA-GxxP-xxx	42B-BME-LJC-GxxP-xST	42B-EME-LJC-GxxP-xST	42B-FME-LJC-GxxP-xST	24
	External	42B-AMD-LJB-GxxP-xxx	42B-BMH-LJD-GxxP-xST	42B-EMH-LJD-GxxP-xST	42B-FMH-LJD-GxxP-xST	47
IAI PRESSURE	= MODELS	 (LED STANDARD EXCEPT F	OR SINGLE SOLENOIDS)			4.6
Port size	711002220	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre	46
1 011 5120		T HOT WILL	14 4 2 12	14 4 2 12	12 2 4 14	42
						4.2
Valve less bo	se Int	ernal Supply #3 port	42B-CMB-000-GxxP-xxx	42B-DMF-000-GxxP-xST	42B-HMF-000-GxxP-xST	47
		Supply #5 port	42B-CMC-000-GxxP-xxx	42B-DMG-000-GxxP-xST	42B-HMG-000-GxxP-xST	48
	Ex	ternal	42B-CMD-000-GxxP-xxx	42B-DMH-000-GxxP-xST	42B-HMH-000-GxxP-xST	
M5	Int	ernal Supply #3 port	42B-CMB-GJA-GxxP-xxx	42B-DMF-GJC-GxxP-xST	42B-HMF-GJC-GxxP-xST	48
		Supply #5 port	42B-CMC-GJA-GxxP-xxx	42B-DMG-GJC-GxxP-xST	42B-HMG-GJC-GxxP-xST	
	Ex	ternal	42B-CMD-GJB-GxxP-xxx	42B-DMH-GJD-GxxP-xST	42B-HMH-GJD-GxxP-xST	40
M7	Int	ernal Supply #3 port	42B-CMB-LJA-GxxP-xxx	42B-DMF-LJC-GxxP-xST	42B-HMF-LJC-GxxP-xST	
		Supply #5 port	42B-CMC-LJA-GxxP-xxx	42B-DMG-LJC-GxxP-xST	42B-HMG-LJC-GxxP-xST	92
	Ex	ternal	42B-CMD-LJB-GxxP-xxx	42B-DMH-LJD-GxxP-xST	42B-HMH-LJD-GxxP-xST	83
andard so	LENOID OI	PERATOR ➤	G <u>xx</u> P- <u>xxx</u> *	Above numbers are mi	iddle station manifold with side ports	93
						ISC
XX Volta	ge	X	Manual operator	XX Electr	ical connection	100
AA 120 V~	/2,5W	1	Non-locking		d & 3 position models	ISC
DC 24 V=/		2	Locking	ST Base plu Single solenoid		ISC
DF 24 V=/				SA Base plu		ISC
Other options avo	ailable, see pa	ge 387.			ig-in with light	ISC
atching solenoid	available for 3	5/2 valves. ector with rectifier (for double soler st of (1) left end manifold, (1) righ	:-	SS Base plu	ig-in with rectifier & light & ground	134
te: - AC voltaae	requires conne	ector with rectifier (for double solet	iola consult factory).			







Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar External Pilot: vacuum to 8 bar Pilot pressure : 2 position: 1,3 to 8 bar 3 position: 2,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 3,8 mm Flow (at 6 bar, $\Delta P = 1 bar$): M7: 400 NI/min (Cv 0,4) - M5: 350 NI/min (Cv 0,35) Coil: Epoxy encapsulated – 100% ED – Class A wire -15% to +10% of nominal voltage Voltage range: Protection: IP54 (electrical connection) 1.0 to 4.0 W Power: Energize : 5 ms Response times :

Options :

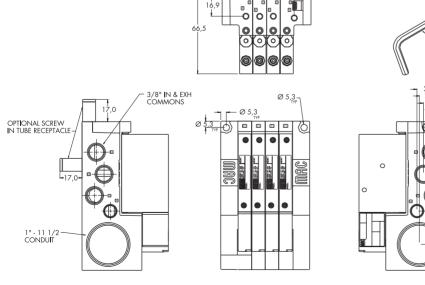
(with 24V 4 W coil)

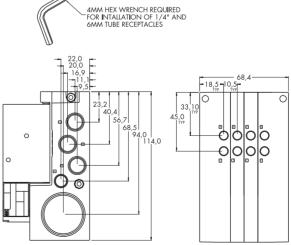
• NPTF threads • Sandwich flow controls : FC42B-AB

De-energize : 5 ms

- Sandwich regulator : see "regulators" section Isolator disk for inlet and exhaust: 28454
- Valve blanking plate : M-42004 Plug-in wire protector : 24180

DIMENSIONS Dimensions shown are metric (mm)







unction	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2	M5, M7	400 NI/min	Sub-base/ manifold base non "plug-in" with latching solenoid	
OPERATIONAL BENEFITS			10.20	31
I . 4-way valve with 4-wo				33
2. 10 mm valve (stacks o				34
B. High flow (up to 400 L. Fast repeatable respo				0-7
5. Maximum shifting forc				36
5. Long life.			9	
			No. of the second	32
			B 1 2 2 2 2	37
			15	38
				5 2
				53
HOW TO ORDER				54
	AODEIC			
SINGLE PRESSURE A	VODET2			67
Port size	Pilot air	5/2 Si	ngle pressure	68
		12 17D		69
			<u> </u>	41
Valve less base	Internal	42B-AM	A-000-Lxxx-xxx	43
	External	42B-AMI	D-000-Lxxx-xxx	44
M5	Internal	42B-AMA	A-GAL-Lxxx-xxx	23
	External	42B-AMD	D-GAM-Lxxx-xxx	
M7	Internal		A-LAL-Lxxx-xxx	24
	External	42B-AME	D-LAM-Lxxx-xxx	
DUAL PRESSURE MC	DDELS			46
Port size	Pilot air		5/2 Dual pressure	
				42
			3 1 5	47
Valve less base	Internal Supply #3 port	42	2B-CMB-000-Lxxx-xxx	48P
	Supply #5 port	42	2B-CMC-000-Lxxx-xxx	
	External		2B-CMD-000-Lxxx-xxx	48
M5	Internal Supply #3 port		2B-CMB-GAL-LXXX-XXX	
	Supply #5 port		PB-CMC-GAL-LXXX-XXX	400
	External		B-CMD-GAM-LXXX-XXX	
M7	Internal Supply #3 port		2B-CMB-LAL-LXXX-XXX 2B-CMC-LAL-LXXX-XXX	92
	Supply #5 port External		2B-CMD-LAM-LXXX-XXX	
			D-CIVID-DAIVI-LAAA-AAA	83
ATCHING SOLENC	OID OPERATOR ➤	L <u>xx</u> x- <u>x</u> xx ·		93
		─────────────────────────────────────		160.0
XX Voltage	X	Wire length X Ma	nual operator XX Electrical conn	ISO 0
DF 24 VDC (4,0 V			operator BA 2 Wire Flying leads	ISO 0
HA 24 VDC (1,95		60 cm	KA 2 Wire Plug-in Asser	mbly
		90 cm	LA 3 wire plug-in assem	ibly ISO 1
	С	70 cm	(polarity switching of	over)
		ld, (1) right end manifold, and middle station ma e 153.	(polarity switching of KE 4-wire plug-in assen	







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar

External Pilot : vacuum to 8 bar

Pilot pressure: 2 position: 1,3 to 8 bar 3 position: 2,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

Temperature range : -18°C to +50°C

Orifice: 3,8 mm

0,0 11111

Flow (at 6 bar, ΔP=1bar): M7: 400 NI/min (Cv 0,4) – M5: 350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 1.95 to 4.0 W

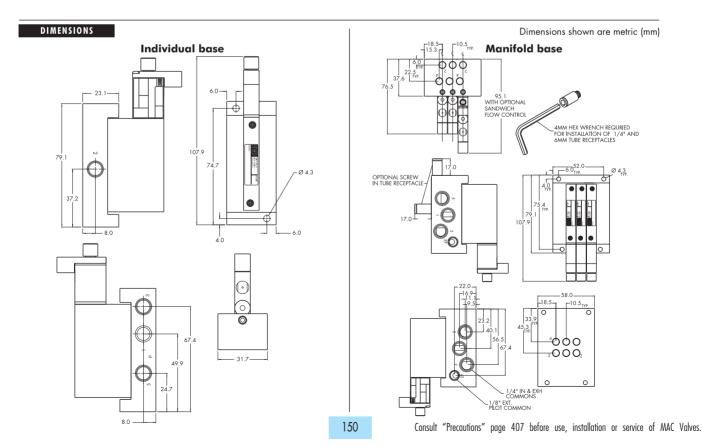
Response times : Energize : 5 ms

(with 24V 4 W coil) De-energize: 5 ms

Options : • NPTF threads • Sandwich flow controls : FC42B-BB

• Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454

• Valve blanking plate : M-42004





ınction	Port size	Floш (Max)	Individual/Manifold mounting	Series
/2	M5, M7	400 NI/min	Sub-base/ manifold base "plug-in" with latching solenoid	
PERATIONAL BENEFITS			200	31
4-way valve with 4-w				33
10 mm valve (stacks of				34
High flow (up to 400 Fast repeatable respo				0.7
Maximum shifting for	ces in both directions.			36
Long life.			0)	32
				37
				38
				52
				53
HOW TO ORDER				54
IGLE PRESSURE A	MODELS			67
				68
Port size	Pilot air	5/2 Sin	gle pressure	69
		12	<u> </u>	41
		3 1	<u>// </u>	— 43
Valve less base	Internal	42B-AMA	-000-LxxP-xxx	
	External	42B-AMD	-000-LxxP-xxx	44
M5	Internal		GAA-LxxP-xxx	23
	External		-GAB-LxxP-xxx	
M7	Internal		-LAA-LxxP-xxx	24
	External	42B-AMD	-LAB-LxxP-xxx	
AL PRESSURE MO	ODELS			46
Port size	Pilot air	5	/2 Dual pressure	
			120 7 14	42
Valve less base	Internal Supply #3 port	42	B-CMB-000-LxxP-xxx	47
	Supply #5 port		B-CMC-000-LxxP-xxx	48F
	External		B-CMD-000-LxxP-xxx	
M5	Internal Supply #3 port	428	3-CMB-GAA-LxxP-xxx	48
	Supply #5 port	428	-CMC-GAA-LxxP-xxx	
	External	428	3-CMD-GAB-LxxP-xxx	400
M7	Internal Supply #3 port	42	B-CMB-LAA-L xx P- xxx	-
	Supply #5 port	421	B-CMC-LAA-LxxP-xxx	92
	External	42	B-CMD-LAB-LXXP-XXX	83
TCHING SOLEN	OID OPERATOR >	L <u>xx</u> P- <u>xxx</u> *		93
				ISO
XX Voltage		X Manual operator	XX Electrical connection**	
DF 24 VDC/4,0° HA 24 VDC/1,9		0 No operator	DA Plug-in EA Plug-in 3 pin (polarity switching covi	ISO
				ISO
Omer options availabl For latching solenoid 2	e, see page 375. and 4 wire, use electrical connec	ctor DA, DB, DC or DD. For 3 wire latching, us 154.	e the "EA" connector.	ISO
ner options available fo	or the 42 series valves, see page	154.		ISO







Fluid : Compressed air, vacuum, inert gases

Pressure range: Internal Pilot - 2 pos. : 1,3 to 8 bar 3 pos. : 2,3 to 8 bar

External Pilot: vacuum to 8 bar

Pilot pressure : 2 position: 1,3 to 8 bar 3 position: 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

3,8 mm Orifice:

Flow (at 6 bar, $\Delta P = 1 bar$): M7: 400 NI/min (Cv 0,4) - M5: 350 NI/min (Cv 0,35)

Coil: Epoxy encapsulated – 100% ED – Class A wire

-15% to +10% of nominal voltage Voltage range:

Protection: IP54 (electrical connection)

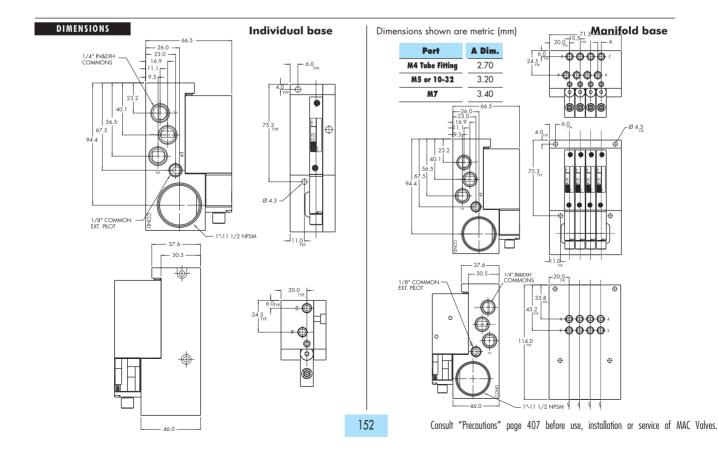
1.95 to 4.0 W Power:

Response times : Energize: 5 ms (with 24V 4 W coil) De-energize : 5 ms

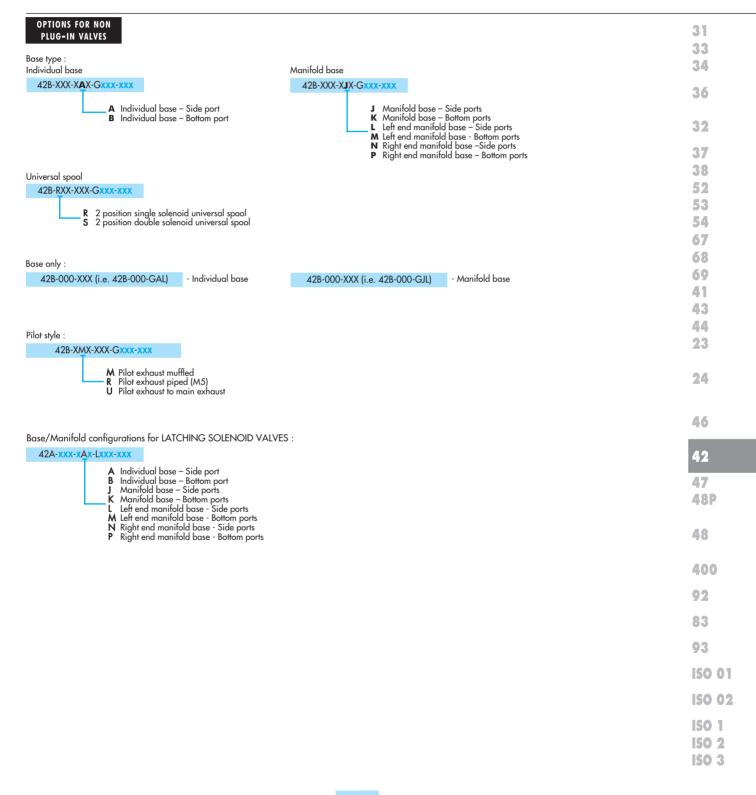
Options : • NPTF threads • Sandwich flow controls : FC42B-AB

• Sandwich regulator : see "regulators" section • Isolator disk for inlet and exhaust: 28454

• Valve blanking plate : M-42004 • Plug-in wire protector : 24180









OPTIONS FOR PLUG-IN VALVES Base type : Individual base Manifold base 42B-XXX-XAX-GxxP-xxx 42B-XXX-XJX-GxxP-xxx J Manifold base – Side ports K Manifold base – Bottom ports L Left end manifold base – Side ports M Left end manifold base - Bottom ports N Right end manifold base – Side ports P Right end manifold base – Bottom ports A Individual base – Side port B Individual base – Bottom port Universal spool 42B-RXX-XXX-GxxP-xxx 2 position single solenoid universal spool 2 position double solenoid universal spool Base only: 42B-000-XXX (i.e. 42B-000-GAC) 42B-000-XXX (i.e. 42B-000-GJC) - Individual base wired for a double solenoid - Manifold base wired for a single solenoid For LED with diode (2 & 3 position double solenoid valves) 42B-XXJ-XXX-GxxP-xGA J Internal pilot single pressure K Internal pilot dual pressure supply from #3 port L Internal pilot dual pressure supply from #5 port L Internal pilot of M External pilot Pilot style : 42B-XMX-XXX-GxxP-xxx M Pilot exhaust muffled R Pilot exhaust piped (M5) U Pilot exhaust to main exhaust Base/Manifold configurations for LATCHING SOLENOID VALVES: 42A-xxx-xAx-LxxP-xxx A Individual base – Side port B Individual base – Bottom port J Manifold base – Side ports K Manifold base – Bottom ports L Left end manifold base - Side ports M Left end manifold base - Bottom ports N Right end manifold base - Side ports P Right end manifold base - Bottom ports

Base/Manifold options for int./ext. pilot for LATCHING SOLENOID VALVES:

A Plug-in Int. Pilot – 2 Wire Latching
B Plug-in Ext. Pilot – 2 Wire Latching
C Plug-in Int. Pilot – 3 Wire Latching
D Plug-in Ext. Pilot – 3 Wire Latching
F Plug-in Int. Pilot – 4 Wire Latching
Plug-in Ext. Pilot – 4 Wire Latching

42A-xxx-xxA-LxxP-xxx

Individual mounting Series 31 33 Manifold mounting 34 36 Manual operator 32 37 38 **52** 53 54 **Armature 67** Coil 68 69 **Push pin** 41 43 Pole piece 44 23 "D" seal 24 **Conical seat** 46 **Poppet** 42 Valve return spring 47 **48P** 48 **SERIES FEATURES** 400 • Short stroke solenoid produces high energization shifting force. • High force return spring due to high force solenoid maximizes 92 both energization and de-energization shifting forces. 83 • Built-in wear compensation - valve stroke is shorter than solenoid stroke. • Four (4) bonded balanced poppets on a one-piece valve stem. 93 • End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting. • Exhaust seals are not under inlet pressure thus reducing friction. **ISO 01** • Short stroking balanced poppet allows for direct solenoid operation with high shifting forces, ISO 02 minimized friction, fast response and high flow in a small package. **ISO** 1 **ISO 2**

ISO 3



unction	Port size	Flow (Max	()	Individual Mounting		Series
7/2	G1/8" -	G1/4" 500 NI/min		Inline		
Short stroke solenoid proenergization shifting force High force return spring a solenoid maximizes both de-energization shifting for Built-in wear compensation shorter than solenoid strol Four bonded balanced propiece valve stem. End poppets seal first on a cushion inlet poppet, elim Exhaust seals are not und reducing friction.	e. due to high force energization and orces. on – valve stroke is oke. oppets on a one- conical seats and ninating cutting.	 7. Integral non-rising flow co inline models. 8. Short stroking balanced predirect solenoid operation of forces, minimized friction, high flow in a small packet 	oppet alows for with high shifting fast response and			31 33 34 36 32 37 38 52 53
HOW TO ORDER	ize	Without flo	w controls	With	flow controls	54 67
G1/8		12 w 13 1 5 47A-ACO-H		_	BCO-H XXX-XXX	68 69 41 43 44
DLENOID OPERATOR	\ >	H <u>xx</u> x	K-XXX .			23 24
XX Voltage	X	Lead Wire length	X Manual o	perator XX	Electrical connection	
DA 24V=/5,2W DB 24V=/2,4W DC 24V=/1,8W DD 24V=/1,0W AA 120V~/6,7W Other options available, see	A B C C	45 cm 60 cm 90 cm	1 Non-locking 2 Locking	BA BC M1	Plug-in wire assembly with light Flying leads Flying leads with light	46 42 47 48P
re: AC voltage requires con	mector with rectifier.					
		L <u>xx</u>	<u> </u>			48
TCHING OPERATOR			<u> </u>			
TCHING OPERATOR XX Voltage	X >	Lead Wire length	X Manual o			400
TCHING OPERATOR	₹		<u> </u>	BA BJ LA	2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover)	
TCHING OPERATOR XX Voltage DA 24V=/5,2W	X A B	Lead Wire length 45 cm 60 cm	X Manual o	BA BJ	2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover) 2 Wire Plug-in	400 92
TCHING OPERATOR XX Voltage DA 24V=/5,2W DF 12V=/5,2W	X A B C	Lead Wire length 45 cm 60 cm	X Manual o	BA BJ LA	2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover) 2 Wire Plug-in	400 92 83 93
TCHING OPERATOR XX Voltage DA 24V=/5,2W DF 12V=/5,2W Other options available, sections:	X A B C	Lead Wire length 45 cm 60 cm	X Manual o	BA BJ LA	2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover) 2 Wire Plug-in	400 92 83 93 ISO
DA 24V=/5,2W	X A B C	Lead Wire length 45 cm 60 cm	X Manual o	BA BJ LA	2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover) 2 Wire Plug-in	400 92 83







Fluid : Compressed air, vacuum, inert gases Pressure range:

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

-18°C to +50°C Temperature range:

Orifice: 4,3 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 5,2W: 500 NI/min (Cv 0,50) - 2,4W: 350NI/min (Cv 0,35) - 1,0W: 300 NI/min (Cv 0,30)

Coil: Epoxy encapsulated – 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

5,2W - 2,4W - 1,0W Power:

Response times :

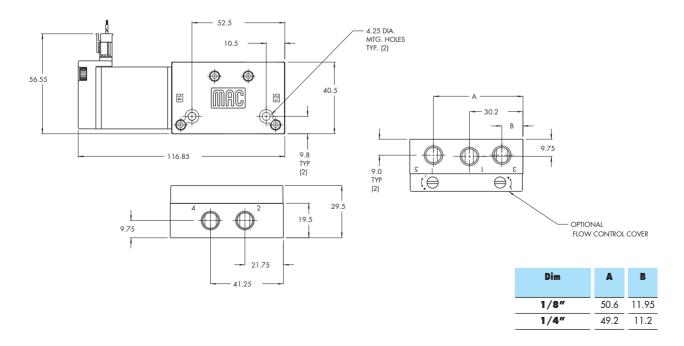
Energize: 17,4 ms (with 5,2 W coil) De-energise: 3,8 ms

• NPTF threads Options:

• Flow control assembly : N-47004 Spare parts:

DIMENSIONS

Dimensions shown are metric (mm)





Section of the control of the cont	Function	Port size		Flow (Max)		Individual Mounting	!	Series
1. Short stroke soleroid produces high unergotion shifting force, as the high force soleroid nominists with energy time of high force soleroid nominists with energy time soleroid sometimes with high shifting forces. 2. Bullish were compression - wheel stoke is shorter than sclenoid strokes in a complete with sigh shifting forces and cachin ride property and cachin ride property and cachin ride property and the strokes a	5/2	G1/8"	- G1/4"	500 NI/mi	in			
1. Short state a celenoid produces high energization shifting force as the special control of the product of th	OPERATIONAL	BENEFITS						31
energization shifting force softened maximizes both energization and deenergization shifting forces 3.8 Bellink wear compensation—valve stacks is 3.8 Bellink wear compensation with fight flow to one 3.8 Bellink wear compensation with flow controls 4.8 Bellink wear compensation with flow controls 5.8 Bellink with flow controls 5.8 Bellink wear compensation with flow controls 5.8 Bellink wear compensa					s available on			
solenaid maximizes both energization and deenergization shifting forces. 3. Builth wear compensation – who stroke is shorter than solenoid stroke. 4. Four bonded belanced poppets on a one-piece volve size. 5. End poppets seel first on conical seeds and cushion intell peoppet, eliminating cutting. 6. Exhaust sacks are not under intel pressure thus reducing fiction. 8. With outside sacks are not under intel pressure thus reducing fiction. 8. With flow centrols Without flow centrols With flow centrols With flow centrols 7. A TA-LIDH XXXXXX 6. 1/8" 4. A TA-LIDH XXXXXX 6. 1/8" 4. A TA-LIDH XXXXXX 4. A TA-LIDH XXXXXX 4. A TA-LIDH XXXXXXX 4. A TA-LIDH XXXXXXX 4. A TA-LIDH XXXXXXX 4. A TA-LIDH XXXXXXX 5. End popped seed of the pressure thus reducing fiction. 8. SOLENOID OPERATOR > HXXX-XXX 8. SOLENOID OPERATOR > HXXX-XXX 2. Electrical connection to be a samely with light on the piece was examply with light on the piece was examply with light. 8. A TA-LIDH XXX-XXX 4. A TA-LIDH XXX-XXXX 4. A TA-LIDH XXX-XXXXX					t alows for		A la	
shorter from solenoid stroke. 4. Four bonded solloned proppets on a one- piece valve stem. 5. End proppets seal first on conicol seats and cushion field poppet, eliminating cutting. 6. Exhouts seats are not under field pressure thus reducing friction. ROW TO ORDER Port size Without flow controls With flow controls O1/8" A7A-ID-H XXXXXXX O1/8" A7A-ID-H XXXXXXX A7A-ID-H XXXXXXX A7A-ID-H XXXXXXX A7A-ID-H XXXXXXX A7A-ID-H XXXXXXXX A7A-ID-H XXXXXXXXXXX A7A-ID-H XXXXXXXXXXX A7A-ID-H XXXXXXXXXXXX A7A-ID-H XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	solenoid mo de-energiza	aximizes both energization and attion shifting forces.	direct soleno forces, minim	id operation with nized friction, fast	high shifting			36
piece volve stem. 3. End poppes seel first on conical seats and custion intel poppet, eliminating cutting. 5. End poppes seel first on conical seats and custion intel poppet, eliminating cutting. 5. Enhance seads or not under intel pressure thus reducing friction. 8. HOW TO GEDER Port size Without flow controls With flow controls 6. Port size Without flow controls 6. Port size Valve less base 4. PA-LICH XXXXXXXX 4. PA-LICH XXXXXXXXX 4. PA-LICH XXXXXXXXXX 4. PA-LICH XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	shorter than	solenoid stroke.	high flow in	a small package.			1	32
3. City Depthers sent into Orthoris section and cushon intelligence interioring cutting.	piece valve	stem.				0		27
6. Exhoust seeds are not under inlet pressure thus reducing friction. **POW TO ORDER** Port size								
Now To DRDER	6. Exhaust sec	ils are not under inlet pressure thus					2	
Valve less base	reducing fri	ction.						
Valve less base	HOW TO	ORDER						54
Valve less base		Port size		Without flow co	ontrols	With f	low controls	~ ~
Valve less base				2 4	1	2	4	
SOLENOID OPERATOR				12 W T V T	14	12 W _T	5 14 5	
SOLENOID OPERATOR >				47A-L10-H xxx	(-XXX	47A-L	10-H xxx-xxx	43
SOLENOID OPERATOR > HXXX-XXX XX Voltage		<u> </u>						44
XX Voltage X Wire length X Manual operator XX Electrical connection 46		G1/4"		47A-LDA-H XXX	(-XXX	47A-L	DB-H xxx-xxx	23
DA 24V=/5,2W	SOLENOID	OPERATOR ➤		H <u>xx</u> x- <u>x</u>	XXX *			24
DB 24V=/1,24W B 60 cm 2 Locking MC Plug-in wire assembly with light	XX V	oltage X	Wire length		X Manual op	erator XX	Electrical connection	46
DC 24V=/1,8W C 90 cm BA Flying leads BC								
* Other options available, see page 391. Note: AC voltage requires connector with rectifier. LATCHING OPERATOR > L XXX-XXX * Voltage					2 Locking	MC	light	42
* Other options available, see page 391. Note: AC voltage requires connector with rectifier. LATCHING OPERATOR > LXXX-XXX 48 LATCHING OPERATOR > LXXX-XXX 400 22 XX Voltage XX Lead Wire length X Manual operator DA 24/=/5,2W A 45 cm O No operator BA 2 Wire Flying leads BJ 4 Wire Flying leads LA 3 Wire Flying leads LA 4 Wire Flying leads LA 5 CM A 4 Wire Flying leads								47
* Other options available, see page 391. Note: AC voltage requires connector with rectifier. LATCHING OPERATOR > LXXX-XXX* 400 XX Voltage X Lead Wire length DA 24V=/5,2W DF 12V=/5,2W B 60 cm C 90 cm XX Electrical connection BA 2 Wire Flying leads BJ 4 Wire Flying leads BJ 4 Wire Flying leads LA 3 Wire Plug-in (Polarity switching cover) MA 2 Wire Plug-in ME 4 Wire Plug-in ISO 01 * Other options available, see page 395.	AA 12	20 \~ / 0, / \\					Plug-in wire assembly with	
Note: AC voltage requires connector with rectifier. LATCHING OPERATOR > LXXX-XXX 400 XX Voltage XX Lead Wire length DA 24V=/5,2W DF 12V=/5,2W B 60 cm C 90 cm AC 24V=/5,2W MA 2 Wire Flying leads LA 3 Wire Flug-in (Polarity switching cover) MA 2 Wire Plug-in ME 4 Wire Plug-in SO 01 * Other options available, see page 395.							rectifier & light	407
LATCHING OPERATOR > XXX Voltage X Lead Wire length X Manual operator XX Electrical connection	 Other option Note: AC voltage 	ns available, see page 391. ge requires connector with rectifier.						4.9
XX Voltage DA 24V=/5,2W DF 12V=/5,2W C 90 cm A 45 cm O No operator BA 2 Wire Flying leads BJ 4 Wire Flying leads LA 3 Wire Flug-in (Polarity switching cover) MA 2 Wire Plug-in ME 4 Wire Plug-in SO 01 SO 02 ISO 02	LATCHING	OPERATOR ➤		L XXX-X	XX.			70
DA 24V=/5,2W				— 				400
DA 24V=/5,2W	VV V	altuus V	Land Wine I		V Manual and	auntau VV	Electrical connection	92
DF 12V=/5,2W B 60 cm C 90 cm BJ 4 Wire Flying leads LA 3 Wire Plug-in (Polarity switching cover) MA 2 Wire Plug-in ME 4 Wire Plug-in ISO 01				_	-			
* Other options available, see page 395. Comparison of the plant of		2V=/5,2W	60 cm		. to operate.	BJ	4 Wire Flying leads	83
ME 4 Wire Plug-in ISO 01 * Other options available, see page 395. ISO 02 ISO 1 ISO 2			90 cm				(Polarity switching cover)	93
ISO 1 ISO 1 ISO 2								ISO 01
ISO 2	* Other option	ns available, see page 395.						ISO 02
ISO 2								ISO 1







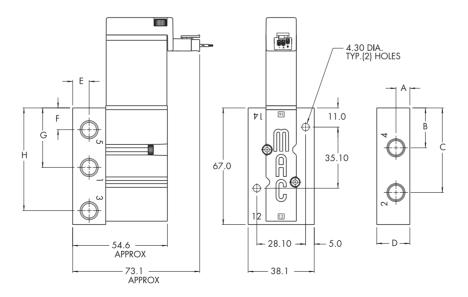
Fluid: Compressed air, vacuum, inert gases Pressure range: Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ -18°C to +50°C Temperature range: Orifice: 4,3 mm Flow (at 6 bar, $\Delta P = 1 bar$): 5,2W: 500 NI/min (Cv 0,50) - 2,4W: 350NI/min (Cv 0,35) - 1,0W: 300 NI/min (Cv 0,30) Coil: Epoxy encapsulated – 100% ED Voltage range: -15% to +10% of nominal voltage Protection: IP54 (electrical connection) 5,2W - 2,4W - 1,0W Power: Response times : Energize: 17,4 ms (with 5,2 W coil) De-energise: 3,8 ms

Options : • NPTF threads

Spare parts : • Pressure seal body to base: 16628 • Mounting screw (x2): 35043

• Flow control assembly (x2): N-04001

DIMENSIONS



Dimensions shown are metric (mm)



		Port size	Flow (M	ax)	Man	ifold Mounting		Series
/2		G1/8" -	G1/4" 500 N	NI/min	S	itacking		
PERATIO	NAL BENEFITS							31
	roke solenoid produces hi	igh	7. Integral non-rising flow o	controls av	ailable on		92555	33
	cation shifting force. Orce return spring due to hig	ah force	inline models. 8. Short stroking balanced	poppet al	ows for			34
solenoi de-ener	d maximizes both energize gization shifting forces.	ation and	direct solenoid operation forces, minimized friction	n with high n, fast resp	n shifting	D	- Tun-	36
shorter	wear compensation – valve than solenoid stroke. onded balanced poppets of		high flow in a small pac	kage.		2	3.	32
piece v	alve stem.					-		37
	ppets seal first on conical s inlet poppet, eliminating o					0		38
	t seals are not under inlet p ig friction.	oressure thus						52
	<u> </u>							53
HOW	TO ORDER							54
	Port size		Without f	low conti	rols	With f	low controls	67
			2 4			2	4	68
			12 W T	√ _T 14		12 W	14	69 41
	G1/8"		47A-SC0)-H xxx-xx	<u>x</u>	47A-TC	CO-H xxx-xxx	43
	G1/4"		47A-SD0-H xxx-xxx		x	47A-T[00-H xxx-xxx	44
XX	Voltage	X	Wire length	」	Manual operate	or XX	Electrical connection	24
/1/1								
DA	24V=/5,2W	A	45 cm	1	Non-locking	MA	Plug-in wire assembly	46
			45 cm 60 cm 90 cm	2	Non-locking Locking	MA MC	Plug-in wire assembly Plug-in wire assembly with light	46
DA DB DC DD	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W	A B	60 cm			MA MC BA	Plug-in wire assembly Plug-in wire assembly with light Flying leads	46 42
DA DB DC	24V=/5,2W 24V=/2,4W 24V=/1,8W	A B	60 cm			MA MC	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with	42
DA DB DC DD AA	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W	A B C	60 cm			MA MC BA BC	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light	42
DA DB DC DD AA Other ope: AC v	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W	A B C	60 cm 90 cm	2	Locking	MA MC BA BC	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with	42
DA DB DC DD AA Other o	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3 voltage requires connector wi	A B C	60 cm 90 cm		Locking	MA MC BA BC	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with	42 47 48F 48
DA DB DC DD AA Other ofte: AC v	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3' voltage requires connector with the second sec	A B C C 91. ith rectifier.	60 cm 90 cm L XX	X-XX	Locking Manual operator	MA MC BA BC MT	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light	42 47 48F 48
DA DB DC DD AA Other of the AC violation of th	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3' voltage requires connector with the second of	A B C	60 cm 90 cm	X-XX	Locking X	MA MC BA BC MT	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads Flying leads with light Plug-in wire assembly with rectifier & light Electrical connection 2 Wire Flying leads	42 47 48F 48
DA DB DC DD AA Other ofte: AC v	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3' voltage requires connector with the second sec	91. ith rectifier.	60 cm 90 cm L XX Lead Wire length 45 cm	X-XX	Locking Manual operator	MA MC BA BC MT XX BA	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light Electrical connection 2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in	42 47 48F 48
DA DB DC DD AA Other of the AC vital TCHIN XXX DA	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3' voltage requires connector with the second of	91. sith rectifier.	Lead Wire length 45 cm 60 cm	X-XX	Locking Manual operator	MA MC BA BC MT	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light Electrical connection 2 Wire Flying leads 4 Wire Flying leads	42 47 48P 48 400 92
DA DB DC DD AA Other o o TCHIN XXX DA DF	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3 voltage requires connector with the second sec	91. sith rectifier.	Lead Wire length 45 cm 60 cm	X-XX	Locking Manual operator	MA MC BA BC MT XX BA BJ LA	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light Electrical connection 2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover) 2 Wire Plug-in	42 47 48F 48 400 92 83 93
DA DB DC DD AA Other o o TCHIN XXX DA DF	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3' voltage requires connector with the second of	91. sith rectifier.	Lead Wire length 45 cm 60 cm	X-XX	Locking Manual operator	MA MC BA BC MT XX BA BJ LA	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light Electrical connection 2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover) 2 Wire Plug-in	42 47 48P 48 400 92 83 93 ISO
DA DB DC DD AA Other oo te: AC v TCHIN XXX DA DF	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3 voltage requires connector with the second sec	91. sith rectifier.	Lead Wire length 45 cm 60 cm	X-XX	Locking Manual operator	MA MC BA BC MT XX BA BJ LA	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light Electrical connection 2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover) 2 Wire Plug-in	42 47 48P 48 400 92 83 93 ISO
DA DB DC DD AA Other of te: AC v TCHIN XXX DA DF	24V=/5,2W 24V=/2,4W 24V=/1,8W 24V=/1,0W 120V~/6,7W ptions available, see page 3 voltage requires connector with the second sec	91. sith rectifier.	Lead Wire length 45 cm 60 cm	X-XX	Locking Manual operator	MA MC BA BC MT XX BA BJ LA	Plug-in wire assembly Plug-in wire assembly with light Flying leads Flying leads with light Plug-in wire assembly with rectifier & light Electrical connection 2 Wire Flying leads 4 Wire Flying leads 3 Wire Plug-in (Polarity switching cover) 2 Wire Plug-in	42 47 48P 48 400 92 83 93 ISO ISO







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 ba

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 4,3 mm

Flow (at 6 bar, ΔP=1bar): 5,2W: 500 NI/min (Cv 0,50) – 2,4W: 350NI/min (Cv 0,35) – 1,0W: 300 NI/min (Cv 0,30)

Coil: Epoxy encapsulated – 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 5,2W - 2,4W - 1,0W

Response times : Energize : 17,4 ms

(with 5,2 W coil) De-energise: 3,8 ms

Options : • NPTF threads

Spare parts : • Inlet isolator: 28451 • Exhaust isolator: N-47009 • Tie Rod (x2): 79057

DIMENSIONS Dimensions shown are metric (mm) 95.0 19.0 TYP. Ø 6.3 THRU. 15.8 € 20 0 **⊕** \bigoplus \oplus \oplus 30.3 JHW [DHM] JHW # (*) + E (* E Diw Diw 117.1 DHW - Ø 6.3 THRU. 0 Dim 1/8" 22.8 18.4 19 1/4" 24.2



		Flow (Ma	[X]	Manifold	MOUNTING	Series
5/2	G1/8" - G	51/4" 500 N	l/min	Manifold bo "plug-in"	se	
OPERATIONAL BENEFITS						31
I. Short stroke solenoid pr		7. Integral non-rising flow co	ontrols available on			33
energization shifting forc 2. High force return spring		inline models. 3. Short stroking balanced p	connet alows for			34
solenoid maximizes both		direct solenoid operation	with high shifting			0.7
de-energization shifting f B. Built-in wear compensation		forces, minimized friction high flow in a small pack			4	36
shorter than solenoid stro		nigh now in a sinah pack	age.		O ALE	32
1. Four bonded balanced p	oppets on a one-					32
piece valve stem. 5. End poppets seal first on	conical seats and					37
cushion inlet poppet, elir	minating cutting.					38
 Exhaust seals are not und reducing friction. 	der inlet pressure thus					52
						53
HOW TO ORDER						54
	Port size			Mod	el number	67
						68
				12 4	14	69
				II. 3	15	41
	Valve less base				IO-H xxP-xxx	43
	G1/8" G1/4"				CJ-H xxP-xxx DJ-H xxP-xxx	44
	01/4		-	4/ A-L	7)-11 441 -444	23
SOLENOID OPERATO	R ≻	Н хх	P- xxx *			24
			' T			27
Mark Market			•	7/7/	mt	
XX Voltage		X Manual op	erator	XX	Electrical connection	46
DA 24 V=/5,2W DB 24 V=/2,4W		X Manual op Non-locking Locking	erator	FA FB	Base plug-in Base plug-in w/ ground	
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W		1 Non-locking	erator	FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light	46
DA 24 V=/5,2W DB 24 V=/2,4W		1 Non-locking	erator	FA FB	Base plug-in Base plug-in w/ ground	42
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, se		1 Non-locking	erator	FA FB FC FD	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground	
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, selection of the control	onnector with rectifier.	1 Non-locking 2 Locking		FA FB FC FD	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground	42
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, se	onnector with rectifier.	1 Non-locking 2 Locking	P- <u>XXX</u> *	FA FB FC FD	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground	42
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, selection of the control	onnector with rectifier.	1 Non-locking 2 Locking		FA FB FC FD	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground	42 47 48P
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, selection of the control	onnector with rectifier.	1 Non-locking 2 Locking	P- x <u>x</u> x	FA FB FC FD	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground	42 47 48P
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, so Note: AC voltage requires according to the control of the control o	onnector with rectifier.	1 Non-locking 2 Locking	P- x <u>x</u> x	FA FB FC FD FT	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, sonce: AC voltage requires constant of the constant of th	onnector with rectifier.	1 Non-locking 2 Locking L XX X Manual op	P- x <u>x</u> x	FA FB FC FD FT XX FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400 92
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, so Note: AC voltage requires according to the control of the control o	onnector with rectifier.	1 Non-locking 2 Locking L XX X Manual op	P- x <u>x</u> x	FA FB FC FD FT XX FA FB	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground Base plug-in w/ ground Base plug-in w/ ground	42 47 48P 48 400
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, solute: AC voltage requires of the control of the contr	onnector with rectifier.	1 Non-locking 2 Locking L XX X Manual op	P- x <u>x</u> x	FA FB FC FD FT XX FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400 92 83
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, so Note: AC voltage requires constant and the constant and	onnector with rectifier.	1 Non-locking 2 Locking L XX X Manual op	P- x <u>x</u> x	FA FB FC FD FT XX FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400 92 83 93
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, solute: AC voltage requires accurately acc	onnector with rectifier.	1 Non-locking 2 Locking L XX X Manual op	P- x <u>x</u> x	FA FB FC FD FT XX FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400 92 83 93
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V-/6,7W Other options available, so the second of the second	ee page 395.	1 Non-locking 2 Locking L XX X Manual op 0 No operator	P- x <u>x</u> x	FA FB FC FD FT XX FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400 92 83 93 ISO 01
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, solote: AC voltage requires at ATCHING SOLENOID XX Voltage DA 24 V=/5,2W DF 12 V=/5,2W Other options available, solotes at Color of the Color of th	ee page 395. ifold base, side cylinders (mitold base, bottom cylinders	1 Non-locking 2 Locking L XX X Manual op 0 No operator	P- x <u>x</u> x	FA FB FC FD FT XX FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400 92 83 93 150 01 150 02
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V-/6,7W Other options available, so options XX Voltage DA 24 V=/5,2W DF 12 V=/5,2W Other options available, so options 47A-xxJ-Hxxx-xxx J Man K Man L Rich	ee page 395. ifold base, side cylinders (m ifold base, bottom cylinders t end manifold base, side cy	1 Non-locking 2 Locking L XX X Manual op 0 No operator	P- x <u>x</u> x	FA FB FC FD FT XX FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400 92 83 93 150 01 150 02
DA 24 V=/5,2W DB 24 V=/2,4W DC 24 V=/1,8W DD 24 V=/1,0W AA 120 V~/6,7W Other options available, so concern the concern that the concern t	ee page 395. ifold base, side cylinders (mitold base, bottom cylinders	1 Non-locking 2 Locking L XX X Manual op 0 No operator iddle station) (middle station) linders cylinders nders	P- x <u>x</u> x	FA FB FC FD FT XX FA FB FC	Base plug-in Base plug-in w/ ground Base plug-in w/ LED light Base plug-in w/ LED light w/ ground Base plug-in w/ rectifier and light Electrical connection Base plug-in w/ ground	42 47 48P 48 400 92 83 93 150 01 150 02







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 ba

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 4,3 mm

Flow (at 6 bar, ΔP=1bar): 5,2W: 500 NI/min (Cv 0,50) – 2,4W: 350NI/min (Cv 0,35) – 1,0W: 300 NI/min (Cv 0,30)

Coil: Epoxy encapsulated – 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Fower: 5,2W - 2,4W - 1,0W

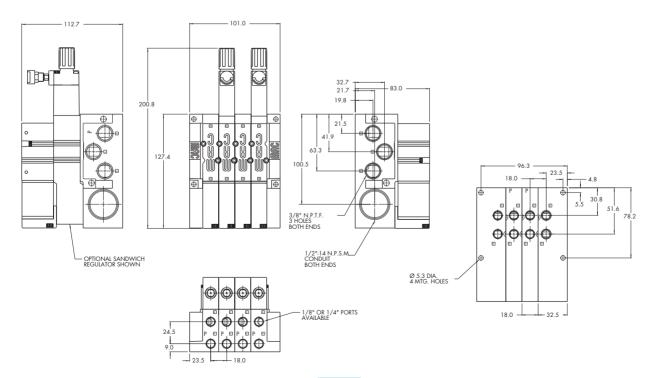
Response times : Energize : 17,4 ms [with 5,2 W coil] De-energise : 3,8 ms

Options : • NPTF threads • Sandwich flow control: FC47A-AA

Spare parts : • Inlet/exhaust isolator: 28447 • Valve cover plate: M-47001

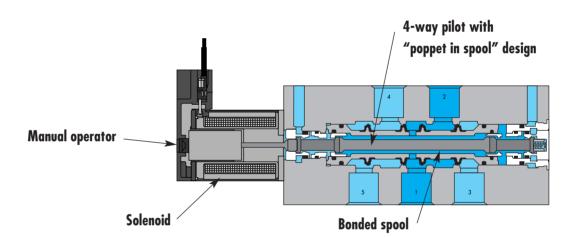
DIMENSIONS

Dimensions shown are metric (mm)



Individual mounting Series

Inline



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot with poppet inside the spool.
- Large flow in compact package.
- Single or dual pressure.
- Rectified AC voltage.

48P

ISO 1 ISO 2 ISO 3



Function	Port size	Flow (Max)	Individual mounting	Series
5/2	G1/8"	1000 NI/min	Inline	
OPERATIONAL BENEFITS				31
 5-way valve with 5-way pile Poppet in spool design 	ot.			33
3. 16 mm valve (stacks on 16.	.5 mm centers).			34
 High flow (up to 1000 NI/) Fast repeatable response tire 			-	36
6. Maximum shifting forces in 7. Long life.	both directions.			32
8. Compact design.				37
				38
				52
			15	53
HOW TO ORDER				54
Port size	Pilot	5/2 Single operator	5/2 Single operator	
		Single pressure	Dual pressure	68
				69
	Internal	48PB-AAA-B00-Gxxx-xxx		41 43
G1/8"	Internal from port 3	•	48PB-CAB-B00-Gxxx-xxx	44
	Internal from port 5	-	48PB-CAC-B00-Gxxx-xxx	23
XX Voltage	X Wire length	G XXX-XXX X	erator XX Electrical co	24
AA 120 V~/2,5W	A 45 cm	1 Non-locking	BA Flying leads	40
DC 24 V=/1,8W DD 24 V=/2,5W	B 60 cm C 90 cm	2 Locking	BT Flying leads with GA MAC JAC Solence	oid plug-in 42
DF 24 V=/4,0W			KA Plug-in wire assy KT Plug-in wire assy	
* Other antions available see	nage 387		KD Plug-in wire assy rectifier & light &	with light 47
* Other options available, see Note : AC voltage requires conn	nector with rectifier.			
OPTIONS				48
48PB-X X X-X00-Gxx-xxx				400
A Pilot exhau C Pilot exhau	ust muffled ust piped M5 ust out main exhaust			92
D Pilot exhau	ust out main exhaust			83
				93
				ISO 01
				ISO 02
				160 1
				ISO 1
				ISO 3

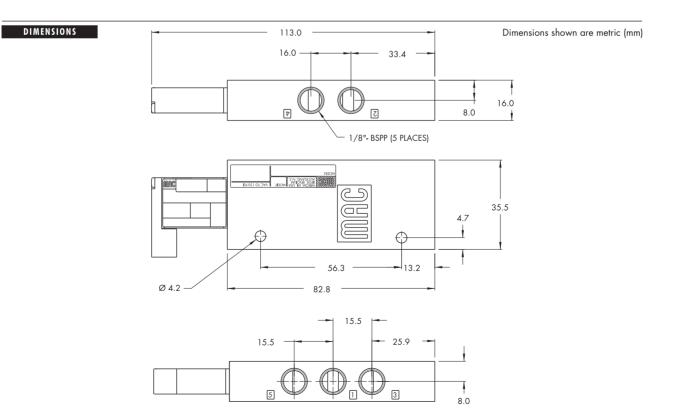




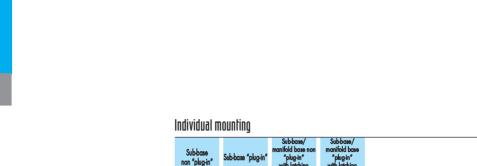


Fluid :	Compressed air, vacuum, inert gases
Pressure range :	1,7 to 8 bar
Lubrication:	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration:	40 µ
Temperature range :	-18°C to +50°C
Orifice :	6,0 mm
Flow:	1000 NI/min (Cv 1,0)
Coil:	Epoxy encapsulated – Class A wire - 100% E.D.
Voltage range :	-15% to +10% of nominal voltage
Power:	1.0 to 4.0 W

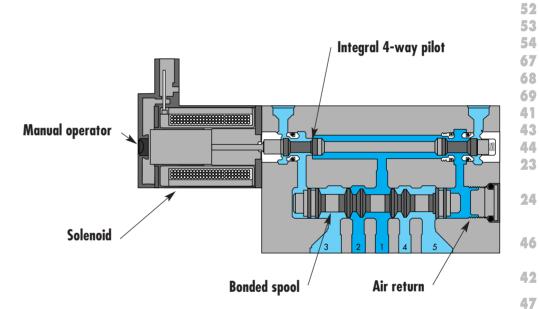
Options : NPTF Threads



Series 48



Manifold mounting



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Single or dual pressure.
- Internal or external pilot.
- Single or double solenoid.
- 2 or 3 position.
- Rectified AC voltage.
- Latching solenoid technology.

48P

48

400

92

Series

31 33

34

36

32 37 38



001100 -1					
unction		Port size	Flow (Max)	Individual mounting	
5/2, 5/3		G1/8"	1100 NI/min	Subbase non "plug-in"	
PERATIONAL BEN	NEFITS				
4-way valve wi	th 4-way integ	ral pilot.			
. 16 mm valve (s	stacks on 16.5	mm centers).			
. High flow (up to . Fast repeatable					47 8
. Maximum shifti . Long life.	ing forces in bo	oth directions.			
Ü					1
					(39, 40)
					2 7
HOW TO ORD	ER				
INGLE PRESS	URE MODEL	LS			
Port size	Pilot air	5/2	5/2	5/3	5/3
		Single solenoid	Double solenoid	Closed centre	Open centre
		12 2 4 14 14 I	12 2 4 14 dZ	12 14 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 14 15 MM
Valve less	Internal	48B-AMA-000-Gxxx-xxx	48B-BMA-000-Gxxx-xxx	48B-EMA-000-Gxxx-xxx	48B-FMA-000-Gxxx-xxx
base	External	48B-AMD-000-GXXX-XXX	48B-BMD-000-GXXX-XXX	48B-EMD-000-GXXX-XXX	48B-FMD-000-GXXX-XXX
G1/8"	Internal	48B-AMA-BAL-Gxxx-xxx	48B-BMA-BAL-Gxxx-xxx	48B-EMA-BAL-Gxxx-xxx	48B-FMA-BAL-Gxxx-xxx
21, 2	External	48B-AMD-BAM-Gxxx-xxx	48B-BMD-BAM-Gxxx-xxx	48B-EMD-BAM-Gxxx-xxx	48B-FMD-BAM-Gxxx-xxx
UAL PRESSUR	RE MODELS				
Port size	•	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
			14 14 12 12	14 4 2 12	12 2 4 14
					3 1 5
Valve less k	pase Int	ternal Supply #3 port	48B-CMB-000-Gxxx-xxx	48B-DMB-000-Gxxx-xxx	48B-HMB-000-Gxxx-xxx
		Supply #5 port	48B-CMC-000-Gxxx-xxx	48B-DMC-000-Gxxx-xxx	48B-HMC-000-Gxxx-xxx
	Ex	ternal	48B-CMD-000-Gxxx-xxx	48B-DMD-000-Gxxx-xxx	48B-HMD-000-Gxxx-xxx
G1/8"	Int	ternal Supply #3 port	48B-CMB-BAL-Gxxx-xxx	48B-DMB-BAL-Gxxx-xxx	48B-HMB-BAL-Gxxx-xxx
		Supply #5 port	48B-CMC-BAL-Gxxx-xxx	48B-DMC-BAL-Gxxx-xxx	48B-HMC-BAL-Gxxx-xxx
	Ex	ternal	48B-CMD-BAM-Gxxx-xxx	48B-DMD-BAM-Gxxx-xxx	48B-HMD-BAM-Gxxx-xxx
andard sc	DLENOID O	PERATOR ➤	G <u>xx</u> x- <u>x</u> xx		
XX Volte	age	X Wire len	gth X M	anual operator XX	Electrical connection
AA 120 V	~/2,5W	A 45 cm	1 No	on-locking BA	Flying leads
	/1,8W	B 60 cm C 90 cm		cking BT	Flying leads with light
	/2,5W /4,0W	<u> </u>		GA KA	1 0
	. ,			KT	

* Other options available, see page 387. Latching solenoid also available, see page 179. Note: AC voltage requires connector with rectifier. Other options available for the 48 series valves, see page 183.

Mini connector with light

Mini connector with rectifier & light & ground

KT

KD

ISO 02

ISO 1 **ISO 2 ISO 3**







Fluid :

Pressure range:
Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar

External pilot: vacuum to 8 bar

Pilot pressure:
2 position: 1,3 to 8 bar - 3 position: 2,3 to 8 bar

Workington:
Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Compressed air, vacuum, inert gases

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports: 1100 NI/min (Cv 1.1)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

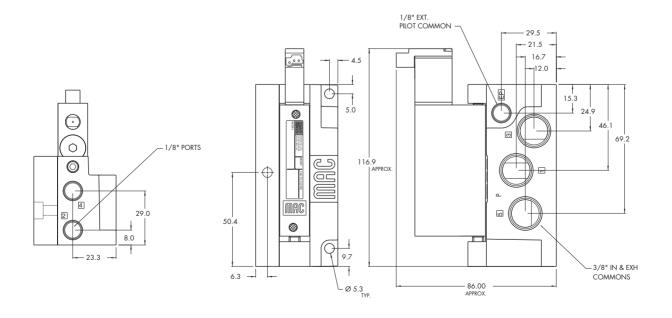
Power: 1.0 to 4.0 W

Response times: Energize: 6 ms
(with 4 W coil) De-energize: 6 ms

Options : • NPTF threads • Sandwich Flow controls: FC48B-BB

• Sandwich regulator: see "regulators" section

Dimensions shown are metric (mm)





Function	Port size	Flow (Max)	Individual mounting	Series
5/2, 5/3	G1/8"	1100 NI/min	Sub-base "plug-in"	
OPERATIONAL BENEFITS				31
1. 4-way valve with 4-way 2. 16 mm valve (stacks or	y integral pilot.			33
3. High flow (up to 1100	NI/min).			34
 Fast repeatable responses Maximum shifting force 	ise times. es in both directions.			36
6. Long life.				
				32

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

		. ,		1	
Port size	Pilot air	5/2 Single solenoid	5/3 Double solenoid	5/3 Closed centre	5/3 Open centre
		12 2 4 14 3 1 5	12 17D 14 14 14 17D 14 17D	12 14 17D 17D 17D 17D 17D 17D 17D 17D 17D 17D	12 14 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17
Valve less	Internal	48B-AMA-000-GxxP-xxx	48B-BME-000-GxxP-xST	48B-EME-000-GxxP-xST	48B-FME-000-GxxP-xST
base	External	48B-AMD-000-GxxP-xxx	48B-BMH-000-GxxP-xST	48B-EMH-000-GxxP-xST	48B-FMH-000-GxxP-xST
G1/8"	Internal	48B-AMA-BAA-GxxP-xxx	48B-BME-BAC-GxxP-xST	48B-EME-BAC-GxxP-xST	48B-FME-BAC-GxxP-xST
	External	48B-AMD-BAB-GxxP-xxx	48B-BMH-BAD-GxxP-xST	48B-EMH-BAD-GxxP-xST	48B-FMH-BAD-GxxP-xST

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
		14 17D 14 17D 10 10 10 10 10 10 10 10 10 10 10 10 10	14 / 12 12 12 12 12 12 12 12	12 14 15 17 17 17 17 17 17 17 17
Valve less base	Internal Supply #3 port	48B-CMB-000-GxxP-xxx	48B-DMF-000-GxxP-xST	48B-HMF-000-GxxP-xST
	Supply #5 port	48B-CMC-000-GxxP-xxx	48B-DMG-000-GxxP-xST	48B-HMG-000-GxxP-xST
	External	48B-CMD-000-GxxP-xxx	48B-DMH-000-GxxP-xST	48B-HMH-000-GxxP-xST
G1/8"	Internal Supply #3 port	48B-CMB-BAA-GxxP-xxx	48B-DMF-BAC-GxxP-xST	48B-HMF-BAC-GxxP-xST
	Supply #5 port	48B-CMC-BAA-GxxP-xxx	48B-DMG-BAC-GxxP-xST	48B-HMG-BAC-GxxP-xST
	External	48B-CMD-BAB-GxxP-xxx	48B-DMH-BAD-GxxP-xST	48B-HMH-BAD-GxxP-xST

STANDARD SOLENOID OPERATOR ➤

			_	
XX	Voltage	X Manual ope	rator XX	Electrical connection
AA	120 V~/2,5W	 Non-locking 	Do	ouble solenoid & 3 position models
DC	24 V=/1,8W	2 Locking	ST	Base plug-in
DD	24 V=/2,5W		Sir	ngle solenoid models
DF	24 V=/4,0W		SA	Base plug-in
			SJ	Base plug-in with LED light
			SS	Base plug-in with rectifier & light & ground

^{*} Other options available, see page 387. Latching solenoid also available, see page 181. Note: AC voltage requires connector with rectifier (for double solenoid consult factory). Other options available for the 48 series valves, see page 184.

54

24

46

42 47 48P

48

400

928393

ISO 01

ISO 1 ISO 2 ISO 3





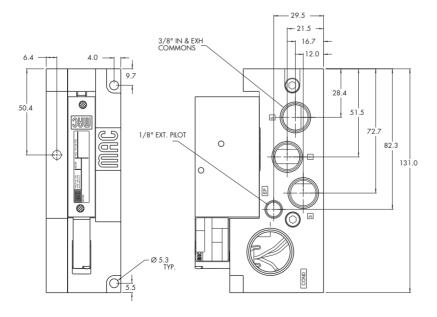


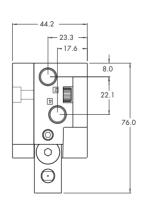
Fluid : Compressed air, vacuum, inert gases Pressure range: Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar External pilot: vacuum to 8 bar Pilot pressure : 2 position: 1,3 to 8 bar - 3 position: 2,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 6,0 mm Flow (at 6 bar, $\Delta P = 1 bar$): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports : 1100 NI/min (Cv 1.1) Coil: Epoxy encapsulated – 100% ED – Class A wire -15% to +10% of nominal voltage Voltage range: Protection: IP54 (electrical connection) 1.0 to 4.0 W Power: Energize : 6 ms Response times : (with 4 W coil) De-energize : 6 ms

Options :

- NPTF threads Sandwich Flow controls: FC48B-AB
 Sandwich regulator: see "regulators" section
- DIMENSIONS

Dimensions shown are metric (mm)







unction		Port size	Flow (Max)	Manifold mounting	Se	erie
/2, 5/3		G1/8"	1100 NI/min	Manifold base non "plug-in"		
PERATIONAL BEN	NEFITS				41/	31
4-way valve wi	th 4-way integr	ral pilot.		2	The state of the s	33
16 mm valve (s						34
High flow (up to Fast repeatable				À		
Maximum shifti						36
Long life.				nli		
						32
				2 4 2	000	37
						38
						52
						53
HOW TO ORD	ER					54
NGLE PRESS	URE MODEL	S (MIDDLE STATION MAN	IIFOLDS WITH SIDE PORT	S)		67
Port size	Pilot air	5/2	5/2	5/3	5/3	68
		Single solenoid	Double solenoid	Closed centre	Open centre	69
		12 2 4 14		12 2 4 14 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12 4 14 14 14 17 17 17 18 14 14 17 18 18 18 18 18 18 18 18 18 18 18 18 18	41
		3 1 5	<u> </u>	3 1 5	3 1 5	43
Valve less	Internal	48B-AMA-000-Gxxx-xxx	48B-BMA-000-Gxxx-xxx	48B-EMA-000-Gxxx-xxx		44
base	External	48B-AMD-000-Gxxx-xxx	48B-BMD-000-Gxxx-xxx	48B-EMD-000-Gxxx-xxx		23
G1/8"	Internal	48B-AMA-BJL-Gxxx-xxx	48B-BMA-BJL-GXXX-XXX	48B-EMA-BJL-GXXX-XXX	48B-FMA-BJL-GXXX-XXX	
	External	48B-AMD-BJM-Gxxx-xxx	48B-BMD-BJM-Gxxx-xxx	48B-EMD-BJM-Gxxx-xxx	48B-FMD-BJM-Gxxx-xxx	24
JAL PRESSUR	RE MODELS	(MIDDLE STATION MANIF	OLDS WITH SIDE PORTS)			
Port size	•	Pilot air	5/2	5/2 Pouble selencid	5/3	46
			Single solenoid	Double solenoid	Pressure centre	
						42
Valve less b	ase Int	ernal Supply #3 port	48B-CMB-000-Gxxx-xxx	48B-DMB-000-Gxxx-xxx	48B-HMB-000-Gxxx-xxx	47
	_	Supply #5 port	48B-CMC-000-Gxxx-xxx	48B-DMC-000-Gxxx-xxx		48
	Ex	ternal	48B-CMD-000-Gxxx-xxx	48B-DMD-000-Gxxx-xxx	48B-HMD-000-Gxxx-xxx	
G1/8"	Int	ernal Supply #3 port	48B-CMB-BJL-Gxxx-xxx	48B-DMB-BJL-Gxxx-xxx	48B-HMB-BJL-Gxxx-xxx	48
		Supply #5 port	48B-CMC-BJL-Gxxx-xxx	48B-DMC-BJL-Gxxx-xxx	48B-HMC-BJL-Gxxx-xxx	
	Ex	ternal	48B-CMD-BJM-Gxxx-xxx	48B-DMD-BJM-Gxxx-xxx	48B-HMD-BJM-Gxxx-xxx	40
TANDARD SC	DLENOID OF	PERATOR ➤	G xxx-xxx			
	, 5,5 01					92
			<u></u>			83
XX Volte		X Wire leng		anual operator XX	Electrical connection	
	~/2,5W /1,8W	A 45 cm B 60 cm		on-locking BA		93
						100
DD 24 V=, DF 24 V=,		C 90 cm		G/K/	MAC JAC Solenoid plug-in Mini connector	ISC

* Other options available, see page 387.
Latching solenoid also available, see page 179.
Note: - AC voltage requires connector with rectifier.
- Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").
Other options available for the 48 series valves, see page 183.

Mini connector with light

Mini connector with rectifier & light & ground

ISO 02

ISO 1 **ISO 2 ISO 3**

KT

KD







Fluid : Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar

External pilot: vacuum to 8 bar

Pilot pressure : 2 position: 1,3 to 8 bar - 3 position: 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 1/8" side ports: 1000 NI/min (Cv 1,0) - 1/8" bottom ports: 1100 NI/min (Cv 1.1)

Coil: Epoxy encapsulated – 100% ED – Class A wire

-15% to +10% of nominal voltage Voltage range:

Protection: IP54 (electrical connection) 1.0 to 4.0 W Power:

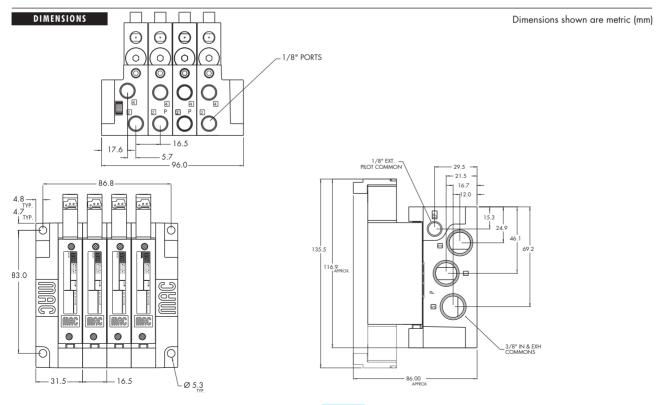
Energize : 6 ms

Response times : (with 4 W coil) De-energize : 6 ms

Options : • NPTF threads • Sandwich flow controls: FC48B-BB

• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471





Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	G1/8"	1100 NI/min	Manifold base "plug-in"	

OPERATIONAL BENEFITS

- 1. 4-way valve with 4-way integral pilot.
- 2. 16 mm valve (stacks on 16.5 mm centers).

- 3. High flow (up to 1100 NI/min).
 4. Fast repeatable response times.
 5. Maximum shifting forces in both directions.
- 6. Long life.



HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

		`		•	
Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed centre	5/3 Open centre
		12 2 4 3 1 5	12 2 4 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 STM 3 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 2 4 14 2 MMD TO THE TOTAL T
Valve less	Internal	48B-AMA-000-GxxP-xxx	48B-BME-000-GxxP-xST	48B-EME-000-GxxP-xST	48B-FME-000-GxxP-xST
base	External	48B-AMD-000-GxxP-xxx	48B-BMH-000-GxxP-xST	48B-EMH-000-GxxP-xST	48B-FMH-000-GxxP-xST
G1/8"	Internal	48B-AMA-BJA-GxxP-xxx	48B-BME-BJC-GxxP-xST	48B-EME-BJC-GxxP-xST	48B-FME-BJC-GxxP-xST
	External	48B-AMD-BJB-GxxP-xxx	48B-BMH-BJD-GxxP-xST	48B-EMH-BJD-GxxP-xST	48B-FMH-BJD-GxxP-xST

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure centre
		14 17D 10 10 10 10 10 10 10	14 2 12 12 12 12 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 3 1 5
Valve less base	Internal Supply #3 port	48B-CMB-000-GxxP-xxx	48B-DMF-000-GxxP-xST	48B-HMF-000-GxxP-xST
	Supply #5 port	48B-CMC-000-GxxP-xxx	48B-DMG-000-GxxP-xST	48B-HMG-000-GxxP-xST
	External	48B-CMD-000-GxxP-xxx	48B-DMH-000-GxxP-xST	48B-HMH-000-GxxP-xST
G1/8"	Internal Supply #3 port	48B-CMB-BJC-GxxP-xxx	48B-DMF-BJC-GxxP-xST	48B-HMF-BJC-GxxP-xST
	Supply #5 port	48B-CMC-BJC-GxxP-xxx	48B-DMG-BJC-GxxP-xST	48B-HMG-BJC-GxxP-xST
	External	48B-CMD-BJD-GxxP-xxx	48AB-DMH-BJD-GxxP-xST	48B-HMH-BJD-GxxP-xST
			Above numbers are mic	dle station manifold with side por

STANDARD SOLENOID OPERATOR ➤



	Voltage	Manual operator	Electrical connection
A	A 120 V~/2,5W	1 Non-locking	Double solenoid & 3 position models
D	24 V=/1,8W	2 Locking	ST Base plug-in
DI	24 V=/2,5W		Single solenoid models
DI	24 V=/4,0W		SA Base plug-in
			SJ Base plug-in with LED light
			SS Base plua-in with rectifier & light & ground

400

48

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33

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24

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42 47 48P

92

83 93

ISO 01

ISO 02

ISO 1 **ISO 2**

ISO 3

^{*} Other options available, see page 387.
Latching solenoid also available, see page 181.
Note: - AC voltage requires connector with rectifier (for double solenoid consult factory).
- Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").
Other options available for the 48 series valves, see page 184.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar

External pilot: vacuum to 8 bar

Pilot pressure: 2 position: 1,3 to 8 bar - 3 position: 2,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports: 1100 NI/min (Cv 1.1)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 1.0 to 4.0 W

Response times : Energize : 6 ms

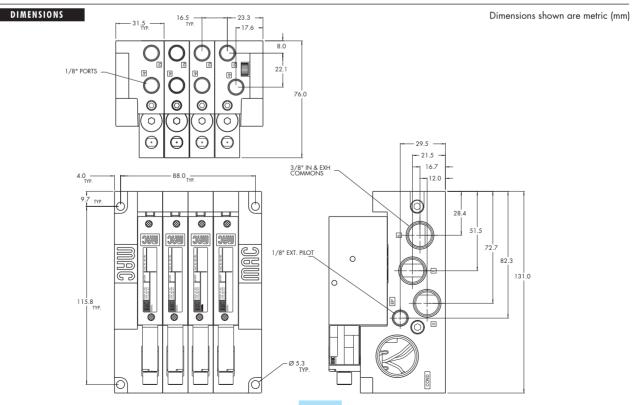
(with 4 W coil) De-energize: 6 ms

Options : • NPTF threads • Sandwich flow controls: FC48B-AB

• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

• Plug-in wire protector: 24180





Function		Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2		G1/8"	1100 NI/min	Sub-base/ manifold base non "plugh" with latching solenoid	
OPERATIONAL BENEFITS				SURINU	31
1. 4-way valve with 4-wo 2. 16 mm valve (stacks o 3. High flow (up to 1100 4. Fast repeatable responder	on 16.5 mm ce NI/min).				33 34
5. Maximum shifting forces. Long life.		ctions.			36
				S. Carlotte	32
				190.00	37 38
					52 53
HOW TO ORDER					54
SINGLE PRESSURE A	MODELS				67
Port size	Pilot air			5/2	68
			Single	pressure	69
					41 43
Valve less base	Internal			000-Lxxx-xxx	44
	External			000-Lxxx-xxx	23
G1/8"	Internal			BAL-Lxxx-xxx BAM-Lxxx-xxx	
	External		40D-A/ND-E	SAW-LXXX-XXX	24
DUAL PRESSURE MC				- (2	
Port size	'	Pilot air		5/2 Dual pressure	46
				12 2 4 4 14 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	42
Valve less base	Internal	Supply #3 port		48B-CMB-000-Lxxx-xxx	47
		Supply #5 port		48B-CMC-000-Lxxx-xxx	48P
G1/8"	External Internal	Sumply #2 most		48B-CMD-000-Lxxx-xxx 48B-CMB-BAL-Lxxx-xxx	_
91/8	Internal	Supply #3 port Supply #5 port		48B-CMC-BAL-LXXX-XXX	48
	External			48B-CMD-BAM-LXXX-XXX	400
LATCHING SOLENC)ID ➤		L <u>xxx-xxx</u> .		400 92
XX Voltage		X Wire leng	th X Man	ual operator XX Electrical conne	ection 83
DF 24 VDC/4,0V HA 24 VDC/1,95		A 45 cm 60 cm	0 No ор	BJ 4 Wire flying leads	93
		C 90 cm		KA 2 Wire Plug-in assen KE 4 Wire Plug-in assen	
Other options available	, see page 395.	٠		LA 3 Wire Plug-in assen	nbly
Note : Manifold assemblie Other options available fo	s consist of (1) le r the 48 series v	ett end manifold, (1) right e alves, see page 183.	nd manifold, and middle station man	itolds (options "J" or "K").	ISO 1
					ISO 2
					ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar

External pilot: vacuum to 8 bar

Pilot pressure: 2 position: 1,3 to 8 bar - 3 position: 2,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 i

Temperature range : -18°C to +50°C

Orifice: 6,0 mm

Flow (at 6 bar, ΔP=1bar): 1/8" side ports: 1000 NI/min (Cv 1,0) – 1/8" bottom ports: 1100 NI/min (Cv 1.1)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (electrical connection)

Power: 1.0 to 4.0 W

Response times : Energize : 6 ms

(with 4 W coil) De-energize : 6 ms

Options : • NPTF threads • Sandwich flow controls: FC48B-BB

• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

Individual base | Manifold ba



Function		Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2	(G1/8"	1000 NI/min	Sub-base/ manifold base "plug-in" with latching solenoid	
OPERATIONAL BENEFITS				and Ma	31
1. 4-way valve with 4-way				-	33
 16 mm valve (stacks of the stacks) High flow (up to 1100) 	on 16.5 mm cen 0 NI/min).	iters).		130	34
 Fast repeatable respo Maximum shifting ford Long life. 	nse times.	ctions.		6 0	36
					32
				5 - 6 - 0 0	37
					38
				2 4 4	52
HOW TO ORDER					53
					54
SINGLE PRESSURE A					67
Port size	Pilot air			/2 pressure	68
			12 2 4	14	69 41
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		43
Valve less base	Internal		48B-AMA-0	00-LxxP-xxx	44
	External		48B-AMD-0	00-LxxP-xxx	23
G1/8"	Internal			AA-LxxP-xxx	
	External		48B-AMD-B	AB-LxxP-xxx	24
DUAL PRESSURE MO					
Port size	Р	ilot air		5/2 Dual pressure	46
				12 2 4 14	42
Valve less base	Internal	Supply #3 port		18B-CMB-000-LxxP-xxx	
valve less base	Internal	Supply #5 port		ISB-CMC-000-LxxP-xxx	47 48P
	External			ISB-CMD-000-LxxP-xxx	40F
G1/8"	Internal	Supply #3 port	4	8B-CMB-BAA-LxxP-xxx	48
		Supply #5 port		8B-CMC-BAA-LxxP-xxx	
	External		4	I8B-CMD-BAB-LxxP-xxx	400
LATCHING SOLENC	OID ➤		L <u>xx</u> P- <u>xxx</u> *		92
					83
XX Voltage	A./	X 0	Manual operator	XX Electrical connection**	
DF 24 VDC/4,0V DN 12 VDC/4,0V	٧		No operator	Plug-in EA Plug-in 3 PIN (Polarity Switching Co	ver) 93
HA 24 VDC/1,95 HE 12 VDC/1,95	5W				ISO 01
		1 1	DB, DC or DD. For 3 wire latching, use t		ISO 02
** For latching solenoid 2 Other options available fo	and 4 wire, use or the 48 series vo	electrical connector DA alves, see page 184.	, DB, DC or DD. For 3 wire latching, use t	he "EA" connector.	
					ISO 1
					ISO 2
					ISO 3







Fluid : Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 2 pos.: 1,3 to 8 bar - 3 pos.: 2,3 to 8 bar

External pilot: vacuum to 8 bar

Pilot pressure : 2 position: 1,3 to 8 bar - 3 position: 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

6,0 mm Orifice:

Flow (at 6 bar, $\Delta P = 1 bar$): 1/8" side ports: 1000 NI/min (Cv 1,0) - 1/8" bottom ports: 1100 NI/min (Cv 1.1)

Coil: Epoxy encapsulated – 100% ED – Class A wire

Voltage range: -15% to +10% of nominal voltage

Protection:

IP54 (electrical connection) 1.0 to 4.0 W Power:

Response times : Energize : 6 ms

(with 4 W coil) De-energize : 6 ms

Options : • NPTF threads • Sandwich flow controls: FC48B-AB

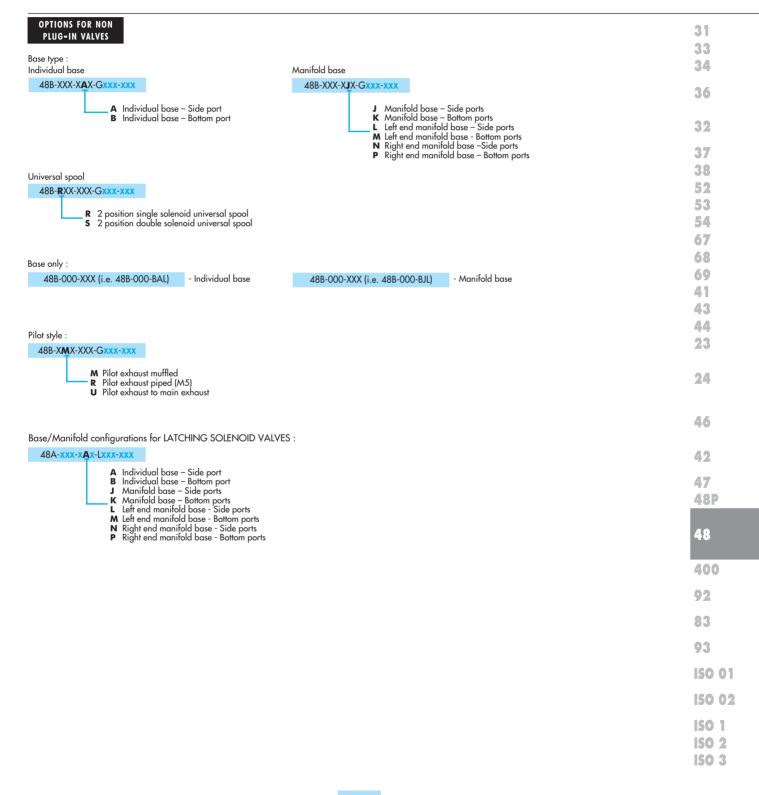
• Sandwich regulator: see "regulators" section

• Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

• Plug-in wire protector : 24180

DIMENSIONS Individual base 0 3/8" IN & EXH 8

Dimensions shown are metric (mm) **Manifold base** 3/8" IN & EXH COMMONS 1/8" EXT. PILO





OPTIONS FOR PLUG-IN VALVES Base type : Individual base Manifold base 48B-XXX-XAX-GxxP-xxx 48B-XXX-XJX-GxxP-xxx J Manifold base – Side ports K Manifold base – Bottom ports L Left end manifold base – Side ports M Left end manifold base - Bottom ports N Right end manifold base - Side ports P Right end manifold base – Bottom ports A Individual base – Side portB Individual base – Bottom port Universal spool 48B-RXX-XXX-GxxP-xxx R 2 position single solenoid universal spoolS 2 position double solenoid universal spool Base only: 48B-000-XXX (i.e. 48B-000-BAA) 48B-000-XXX (i.e. 48B-000-BJC) - Individual base wired for a single solenoid valve - Manifold base wired for a double solenoid valve For LED with diode (2 & 3 position double solenoid valves) 48B-XX**J**-XXX-GxxP-xGA J Internal pilot single pressure K Internal pilot dual pressure supply from #3 port L Internal pilot dual pressure supply from #5 port M External pilot

Base/Manifold configurations for LATCHING SOLENOID VALVES:

M Pilot exhaust muffled R Pilot exhaust piped (M5)
U Pilot exhaust to main exhaust

48A-xxx-x**A**x-LxxP-xxx

48B-XMX-XXX-GxxP-xxx

Pilot style :

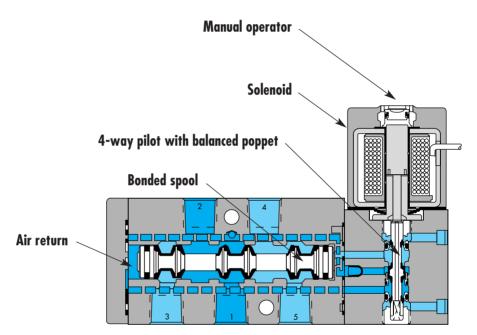
- A Individual base Side port
 B Individual base Bottom port
 J Manifold base Side ports
 K Manifold base Bottom ports
 L Left end manifold base Side ports
 M Left end manifold base Bottom ports
 N Right end manifold base Side ports
 P Right end manifold base Bottom ports
- Base/Manifold options for int./ext. pilot for LATCHING SOLENOID VALVES:

48A-xxx-xxA-LxxP-xxx

- A Plug-in Int. Pilot 2 Wire Latching
 B Plug-in Ext. Pilot 2 Wire Latching
 C Plug-in Int. Pilot 3 Wire Latching
 D Plug-in Ext. Pilot 3 Wire Latching
 E Plug-in Int. Pilot 4 Wire Latching

- F Plug-in Ext. Pilot 4 Wire Latching

Individual mounting Subbase non "plug-in" Subbase non "plug-in"



SERIES FEATURES

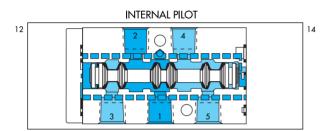
- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Various manual operators.
- Optional memory spring.
- 2 position or 3 position valve configurations.
- Internal or external pilot.



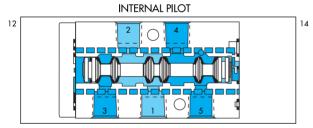




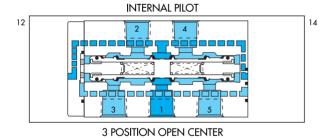
SPOOL CONFIGURATIONS



SINGLE OPERATOR - SINGLE INLET SHOWN WITH 12 OPERATOR ENERGIZED



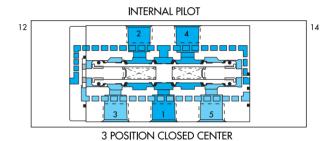
SINGLE OPERATOR - DUAL INLET SHOWN WITH 12 OPERATOR ENERGIZED

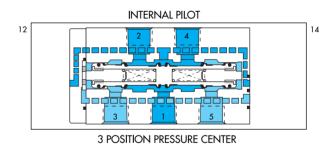


INTERNAL PILOT EXT. PILOT PORT

12

SINGLE OPERATOR - SINGLE INLET SHOWN WITH 12 OPERATOR ENERGIZED







Function		Port size	Flow (Max)		Individual mounting		Series
5/2, 5/3		G1/8" - G1/	4" 1000 NI,	/min	Inline		
OPERATIONAL BE	NEFITS						31
1. The 4-way pile		aximum shifting					33
forces both wo 2. Memory sprin					450		34
3. Balanced spoo	ol, immune to				A	(0)	
pressure, also 4. Short stroke w	provides high	flow.					36
 Bonded spool 		friction, shifting			2016		32
	finished bore.					3	32
 Wiping effect Long service li 		iking.			- Ne	1	37
· ·							38
					@ @ J		52
HOW TO ORD) E P						53
							54
SINGLE PRESS							67
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre	68
		12 2 4 14	12 2 4 14	12 2 4 14	12 2 4 14	12 2 414	69 41
					3 1 5		43
G1/8"	Internal	411A-C0A-XX-XXXX	421A-C0A-XX-XXXX	451A-C0A-XX-XXXX	461A-C0A-XX-XXXX-XXX	471A-C0A-XX-XXXX	44
G1/4"	_	411A-D0A-XX-Xxxx-xxx	421A-D0A-XX-Xxxx-xxx	451A-D0A-XX-Xxxx-xxx	461A-D0A-XX-XXXX-XXX	471A-D0A-XX-Xxxx-xxx	23
G1/8"	External	411A-C0B-XX-XXXX-XXX	421A-C0B-XX-XXXX-XXX	451A-C0B-XX-XXXX-XXX	461A-COB-XX-XXXX-XXX	471A-C0B-XX-Xxxx-xxx	
G1/4"		411A-DOB-XX-XXXX-XXX	421A-DOB-XX-XXXX-XXX	451A-DOB-XX-XXXX-XXX	461A-DOB-XX-XXXX-XXX	471A-D0B-XX-Xxxx-xxx	24
DUAL PRESSUI	RE MODELS	(INTERNAL PILOT – PI	ILOT PRESSURE SUPPI	LY FROM #5 PORT)			
Port size	e	Pilot air		5/2		5/2	46
			Sing	gle operator	Double	operator	-10
			12	2 4 14			
			12 D	2 4 14 14 17 14 17 14 17 14 17 17 17 17 17 17 17 17 17 17 17 17 17	12	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	42
G1 /8"		Internal		1 / T T 1 1 1 1 1 1 1 1			
G1/8"		Internal	431A-0	∀	441A-C0A	-XX-XXXX-XXX	47
G1/8" G1/4" G1/8"		Internal External	431A-C	1 / T T 1 1 1 1 1 1 1 1	441A-COA 441A-DOA	-XX-X xxx-xxx	
G1/4"			431A-C 431A-C		441A-COA 441A-DOA 441A-COB	-XX-Xxxx-xxx	47 48P
G1/4" G1/8" G1/4"		External	431A-C 431A-C 431A-C 431A-C		441A-COA 441A-DOA 441A-COB	-XX-Xxxx-xxx	47
G1/4" G1/8"		External	431A-C 431A-C		441A-COA 441A-DOA 441A-COB	-XX-Xxxx-xxx	47 48P
61/4" 61/8" 61/4" SOLENOID O	PERATOR >	External	431A-C 431A-C 431A-C 431A-C 431A-C		441A-COA 441A-DOA 441A-COB	-XX-Xxxx-xxx	47 48P 48
61/4" 61/8" 61/4" SOLENOID O	PERATOR ➤	External X Wire	431A-0 431A-0 431A-0 431A-1 DM-D XXX-		441A-COA 441A-DOA 441A-COE 441A-DOE	-XX-XXXX-XXX -XX-XXXX-XXX -XX-XXXX-XXX	47 48P 48
61/4" 61/8" 61/4" SOLENOID O XX Voli JA 110	PERATOR >	External	431A-C 431A-C 431A-C 431A-C 431A-C		441A-COA 441A-DOA 441A-COE 441A-DOE	-XX-Xxxx-xxx -XX-Xxxx-xxx -XX-Xxxx-xxx	47 48P 48
G1/4" G1/8" G1/4" SOLENOID O XX Voli JA 110 V JB 220 V JC 24 V	PERATOR ➤ Page /~/50Hz /~/50Hz -/50Hz	External X Wire A 45 cm	431A-C 431A-C 431A-C 431A-C 431A-C		441A-COA 441A-DOA 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB	-XX-XXXX-XXX -XX-XXXX-XXX -XX-XXXX-XXX	47 48P 48 400 92 83
G1/4" G1/8" G1/4" SOLENOID O XX Voit JA 110 V JB 220 V JC 24 V- FB 24 V- DA 24 V-	PERATOR ➤ lage /-/50Hz /-/50Hz -/50Hz -/1,8W =/5,4W	X Wire A 45 cm B 60 cm	431A-C 431A-C 431A-C 431A-C 431A-C		441A-COA 441A-COA 441A-COB 441A-COB 441A-COB 441A-COB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB	Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xx	47 48P 48 400 92
G1/4" G1/8" G1/4" SOLENOID O XX Voli JA 110 V JB 220 V JC 24 V- FB 24 V- DA 24 V- DF 24 V-	PERATOR ➤ Page /~/50Hz /~/50Hz -/50Hz -/50Hz =/1,8W =/5,4W =/12,7W	External X Wire A 45 cm B 60 cm J Conne	431A-0 431A-0 431A-0 431A-0 431A-0 431A-0 431A-0	The first of the f	441A-COA 441A-COA 441A-COB 441A-COB 441A-COB 441A-COB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB	Lext-Xxxx-xxx Lext-Xxxx-xxx Lext-Xxxx-xxx Lectrical connection quare connector quare connector with light ectangular connector ectangular connector ectangular connector with	47 48P 48 400 92 83
G1/4" G1/8" G1/4" SOLENOID O XX Voit JA 110 V JB 220 V JC 24 V- FB 24 V- DA 24 V-	PERATOR ➤ Page /~/50Hz /~/50Hz -/50Hz -/50Hz =/1,8W =/5,4W =/12,7W	External X Wire A 45 cm B 60 cm J Conne	431A-C 431A-C 431A-C 431A-C 431A-C	The first of the f	441A-COA 441A-COA 441A-COB 441A-COB 441A-COB 441A-COB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB	Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx	47 48P 48 400 92 83 93 ISO 01
G1/4" G1/8" G1/4" SOLENOID O XX Voli JA 110 V JB 220 V JC 24 V- FB 24 V- DA 24 V- DF 24 V-	PERATOR ➤ Page /~/50Hz /~/50Hz -/50Hz -/50Hz =/1,8W =/5,4W =/12,7W	External X Wire A 45 cm B 60 cm J Conne	431A-0 431A-0 431A-0 431A-0 431A-0 431A-0 431A-0	The first of the f	441A-COA 441A-COA 441A-COB 441A-COB 441A-COB 441A-COB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB 441A-DOB	Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx	47 48P 48 400 92 83 93 ISO 01 ISO 02
G1/4" G1/8" G1/4" SOLENOID O XX Volt JA 110 V JB 220 V JC 24 V FB 24 V DA 24 V SOLENOID O	PERATOR ➤ Page /-/50Hz /-/50Hz/50Hz/50Hz/1,8W/5,4W/12,7W PERATOR ➤	External X Wire A 45 cm B 60 cm J Conne	431A-0 43	XXXX XXXX Manual oper 1 Non-locking 2 Locking	441A-COA 441A-COA 441A-COE 441A-DOE	Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx Lext-Xxxx-xxx Lext-Xxx-xxx	47 48P 48 400 92 83 93 ISO 01 ISO 02 ISO 1
G1/4" G1/8" G1/4" SOLENOID O XX Voli JA 110 V JB 220 V FB 24 V= DA 24 V= DF 24 V= SOLENOID O XX Voli DC 24V=	PERATOR ➤ PERATOR ➤ PERATOR ➤ PERATOR ➤ PERATOR ➤ PERATOR ➤	External X Wire A 45 cm B 60 cm J Conne	431A-C 43	XXXX Manual oper 1 Non-locking Locking Manual oper Non-locking	441A-COA 441A-COB 441A-COB 441A-COB 441A-COB 441A-COB 4	Lectrical connection quare connector with light ectangular connector with ght lying leads	47 48P 48 400 92 83 93 ISO 01 ISO 02 ISO 1 ISO 2
G1/4" G1/8" G1/4" SOLENOID O XX Voli JA 110 V JB 220 V FB 24 V DA 24 V DF 24 V SOLENOID O XX Voli XX Voli DC 24V DD 24V DD 24V DD 24V	PERATOR ➤ Page /-/50Hz /-/50Hz -/-50Hz -/1,8W -/5,4W -/12,7W PERATOR ➤	External X Wire A 45 cm B 60 cm J Conne	431A-C 43	XXX Manual oper X Manual oper	### ##################################	Lectrical connection quare connector quare connector ectongular connector ectongular connector with light ectongular connector with lying leads	47 48P 48 400 92 83 93 ISO 01 ISO 02 ISO 1







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot – 2 pos.: 1,3 to 8 bar (with memory spring: 2 to 8 bar) 3 pos.: 2,3 to 8 bar

External pilot: vacuum to 8 bar

Pilot pressure : 2 position: 1,3 to 8 bar (with memory spring: 2 to 8 bar) 3 position: 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

Orifice: 6,2 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 1000 NI/min (Cv 1.0)

Coil: Epoxy encapsulated - class A wire - 100% ED (specify mod 0449)

Voltage range: -15% to +10% of nominal voltage

IP54 (GM pilot) - IP65 (DM pilot) (Electrical connection) Protection:

Power: ~Inrush: 10.9 VA Holding: 7.7 VA

= 1.8 to 12.7 W

Response times : 24 V=/5.4W Energize: 7.3 ms De-energize: 5.3 ms 110V~/50Hz Energize: 8-12 ms De-energize: 7-11 ms

• NPTF threads • Namur interface (specify mod. 1080 after model) Options:

4**11**A-C0**A**-XX-X**XXX**

Dual pressure models, replace by **C** for pilot supply from #3 port For memory spring, replace by ${\bf 4}$ (single operator models only) Replace by ${\bf 8}$ for 3 position dual pressure, pressure centre

Spare parts:

• DM pilot body pressure seal: 16542 • DM pilot spacer plate: 24168-01.

DIMENSIONS

125.0 -DOUBLE PILOT (DM) Dimensions shown are metric (mm) 3.25 DIA. MTG. HOLES, TYP.(2) -52.0 30.5 PILOT W/ GM SOLENOID DOUBLE PILOT -137.5 -SINGLE PILOT W/ PLUG-IN (GM) OPTIONAL MANUAL OPERATOR DOUBLE PILOT W/ FIYING IFADS IGM SINGLE PILOT W/ FLYING LEADS (GM) —шп 42.7 -- 51.2 ---- PILOT W/ DM SOLENOID

- PILOT W/ GM SOLENOID

1

-34.5 —



unction		Port size	Flow (Max)		Individual mounting	Series
5/2, 5/3		G1/8" - G1/	4" 1000 NI,	/min	Sub-base non "plug-in"	
PERATIONAL BEN	IEFITS					31
. The 4-way pilo	t develops mo	aximum shifting			-	33
forces both wa					1	34
Memory springBalanced spoo		variations of			1.00	- OT
pressure, also pressure						36
. Short stroke wi					100	*
. Bonded spool v in a glass-like f					10	32
Wiping effect					100	27
Long service lif	e.	-			The same	37
						38
						52
HOW TO ORD	FR					53
						54
ngle pressi	URE MODE					67
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre 68
		12 4 14 37				
		3 1 5	3 1 5	3 1 5	3 1 5	3 1 5
Valve only	Internal	413A-00A-XX-XXXX-XXX	423A-00A-XX-XXXX-XXX	453A-00A-XX-XXXX-XXX	463A-00A-XX-XXXX-XXX	473A-00A-XX-XXXX-XXX 43
G1/8"	External Internal	413A-00D-XX-Xxxx-xxx 413A-CAA-XX-Xxxx-xxx	423A-00D-XX-Xxxx-xxx 423A-CAA-XX-Xxxx-xxx	453A-00D-XX-Xxxx-xxx 453A-CAA-XX-Xxxx-xxx	463A-00D-XX-Xxxx-xxx 463A-CAA-XX-Xxxx-xxx	473A-00D-XX-XXXX-XXX 473A-CAA-XX-XXXX-XXX
G1/4"	iniernai	413A-DAA-XX-XXXX-XXX	423A-DAA-XX-XXXX-XXX	453A-DAA-XX-XXXX-XXX	463A-DAA-XX-XXXX-XXX	473A-DAA-XX-XXX-XXX
G1/8"	External	413A-CAD-XX-Xxxx-xxx	423A-CAD-XX-Xxxx-xxx	453A-CAD-XX-Xxxx-xxx	463A-CAD-XX-XXXX-XXX	473A-CAD-XX-XXXX
	E MODELS	(INTERNAL PILOT – P	ILOT PRESSURE SUPPL	Y FROM #5 PORT)		
Port size		Pilot air		ingle operator	5/2 Dou	ble operator 46
Port size		Pilot air	5/2 Si	•	5/2 Dou	ble operator 46
Port size		Pilot air		•	5/2 Dou	4 14 14
Port size		Pilot air Internal	5/2 S 12 12 13 433A-0	ingle operator	443A-00A	4
Valve only		Internal External	5/2 S 12 2 3 433A-0 433A-0	ingle operator 1	443A-00A 443A-00D	42 -XX-XXXX-XXX -XX-XXXX-XXX -XX-XXXX-XX
Valve only		Internal	5/2 S 12 2 3 433A-0 433A-0 433A-0	ingle operator 1	443A-00A 443A-0A 443A-CAA	4
Valve only G1/8" G1/4" G1/8"		Internal External	5/2 S 12 2 433A-0 433A-0 433A-0 433A-0 433A-0	ingle operator 1	443A-00A 443A-0A 443A-CAA 443A-CAA 443A-CAD	42 -XX-XXXX-XXX -XX-XXXX-XXX -XX-XXXX-XX
Valve only G1/8" G1/4"		Internal External Internal	5/2 S 12 2 433A-0 433A-0 433A-0 433A-0 433A-0 433A-0	ingle operator A	443A-00A 443A-0A 443A-CAA 443A-CAA 443A-CAD	42 -XX-XXXX-XXX -XX-XXXX-XXX -XX-XXXX-XX
Valve only G1/8" G1/4" G1/4"	y	Internal External Internal External	5/2 S 12 433A-0 433A-0 433A-0 433A-0 433A-0 433A-0	ingle operator 1	443A-00A 443A-0A 443A-CAA 443A-CAA 443A-CAD	42
Valve only G1/8" G1/4" G1/4"	y	Internal External Internal External	5/2 S 12 2 433A-0 433A-0 433A-0 433A-0 433A-0 433A-0	ingle operator 1	443A-00A 443A-0A 443A-CAA 443A-CAA 443A-CAD	42 -XX-XXXX-XXX -XX-XXXX-XXX -XX-XXXX-XX
Valve only G1/8" G1/4" G1/8" G1/4" OLENOID OP	PERATOR >	Internal External Internal External	5/2 \$ 12 12 13 13 14 13 14 14 14 14 14 14 14 14 14 14 14 14 14	ingle operator 1	443A-00A 443A-00D 443A-CAA 443A-DAA 443A-DAA 443A-DAD	42
Valve only 61/8" 61/4" 61/8" 61/4" OLENOID OP	y PERATOR ➤	Internal External Internal External	5/2 \$	ingle operator 1	443A-00A 443A-00D 443A-CAA 443A-DAA 443A-DAA 443A-DAA	42
Valve only G1/8" G1/4" G1/8" G1/4" OLENOID OP XX Volta JA 110 V- JB 220 V-	y	Internal External Internal External External X Wirk A 45 cm B 60 cm	5/2 \$ 433A-0 433A-0 433A-0 433A-0 433A-0 A33A-0 DM-D XXX	ingle operator 1	443A-00A 443A-00D 443A-CAA 443A-DAA 443A-DAA 443A-DAD	42
Valve only G1/8" G1/4" G1/8" G1/4" OLENOID OP XX Volte JA 110 V- JB 220 V- JC 24 V JC 24 V	y	Internal External Internal External External X Wire A 45 cm	5/2 \$ 433A-0 433A-0 433A-0 433A-0 433A-0 A33A-0 DM-D XXX	ingle operator 1	443A-00A 443A-00D 443A-CAA 443A-DAA 443A-DAA 443A-DAA 443A-DAD	42 -XX-XXXX-XXX -XX-XXXX-XXX -XX-XXXX-XX
### Valve only ### G1/8" ### G1/4" ### G1/4" OLENOID OP *** **XX** Volte** JA 110 V- JB 220 V- JC 24 V- FB 24 V- DA 24 V- DA 24 V- DA 24 V- ** ** ** ** ** ** ** ** **	PERATOR ➤ PERATOR ➤	Internal External Internal External External X Wirk A 45 cm B 60 cm	5/2 \$ 433A-0 433A-0 433A-0 433A-0 433A-0 A33A-0 DM-D XXX	ingle operator 1	### A SE FOR SE	42
### Valve only ### G1/8" ### G1/4" ### G1/4" OLENOID OP *** **XX** Volte** JA 110 V- JB 220 V- JC 24 V- FB 24 V- DA 24 V- DA 24 V- DA 24 V- ***	PERATOR ➤ DERATOR ➤ DERATOR ➤ DERATOR ➤ DERATOR ➤ DERATOR ➤ DERATOR ➤	Internal External Internal External External X Wirk A 45 cm B 60 cm	5/2 \$ 433A-0 433A-0 433A-0 433A-0 433A-0 A33A-0 A33A-0 DM-D XXX e length	ingle operator 1	### A SE FOR SE	42
Valve only G1/8" G1/4" G1/8" G1/4" OLENOID OP XX Volte JA 110 V- JB 220 V- JC 24 V- DA 24 V- DA 24 V- DA 24 V-	PERATOR ➤ DERATOR ➤	Internal External Internal External External X Wirk A 45 cm B 60 cm J Conne	5/2 \$ 433A-0 433A-0 433A-0 433A-0 433A-0 A33A-0 DM-D XXX	ingle operator 1	### A SE FOR SE	42
Valve only G1/8" G1/4" G1/8" G1/4" OLENOID OP XX Volta JA 110 V JB 220 V JC 24 V FB 24 V DA 24 V DF 24 V OLENOID OP	PERATOR ➤ PERATOR ➤ PERATOR ➤ PERATOR ➤ PERATOR ➤	External Internal External External X Wirv A 45 cm B 60 cm J Conne	5/2 \$ 433A-0 433A-0 433A-0 433A-0 433A-0 433A-0 A33A-0 A33A-0	ingle operator 1	443A-00A 443A-00D 443A-CAA 443A-DAA 443A-DAA 443A-DAA 443A-DAD ***Cator** ***Example 12	42
## Valve only ## G1/8" ## G1/4" ## G1/4" OLENOID OP XX	PERATOR ➤ PERATOR ➤ PERATOR ➤ PERATOR ➤ PERATOR ➤ PERATOR ➤	Internal External Internal External X Wire A 45 cm B 60 cm J Conne	5/2 \$ 12 12 13 14 14 14 14 14 14 14	ingle operator 1	### A ST PROPERTY OF THE PROPE	42
## Valve only	PERATOR ➤	External Internal External External X Wire A 45 cm B 60 cm J Conner X Wire A 45 cm B 60 cm	5/2 \$ 12 2 3 433A-0 433A-0	ingle operator 1	### ##################################	42 14 14 15 15 15 15 15 15
## Valve only ## G1/8" ## G1/4" ## G1/4" OLENOID OP XX	PERATOR ➤	External Internal External Internal External X Wire A 45 cm B 60 cm J Conne X Wire A 45 cm B 60 cm C 90 cm	5/2 \$ 12 2 3 433A-0 433A-0	ingle operator 1	### ##################################	42





Base only:

400A-XXX (i.e. 400A-CAA)



TECHNICAL DATA

Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot – 2 pos.: 1,3 to 8 bar (with memory spring: 2 to 8 bar) 3 pos.: 2,3 to 8 bar

External pilot: vacuum to 8 bar

Pilot pressure: 2 position: 1,3 to 8 bar (with memory spring: 2 to 8 bar) 3 position: 2,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

Temperature range : $-18^{\circ}\text{C} \text{ to } +50^{\circ}\text{C}$

Orifice: 6,2 mm

Flow (at 6 bar, ΔP=1bar): 1000 NI/min (Cv 1.0)

Coil: Epoxy encapsulated – class A wire – 100% ED (specify mod 0449)

Voltage range: -15% to +10% of nominal voltage

Protection: IP54 (GM pilot) – IP65 (DM pilot) (Electrical connection)

Power: ~Inrush: 10.9 VA Holding: 7.7 VA

~Inrush: 10.9 VA Holding: 7.7 VA

= 1.8 to 12.7 W

 Response times :
 24 V=/5.4W
 Energize : 7.3 ms
 De-energize : 5.3 ms

110V~/50Hz Energize: 8-12 ms De-energize: 7-11 ms

Options : • NPTF threads

413A-CAA-XX-XXXX-XXX

Dual pressure models, replace by C for pilot supply from #3 port
 For flow control, replace by B

For memory spring, replace by **6**

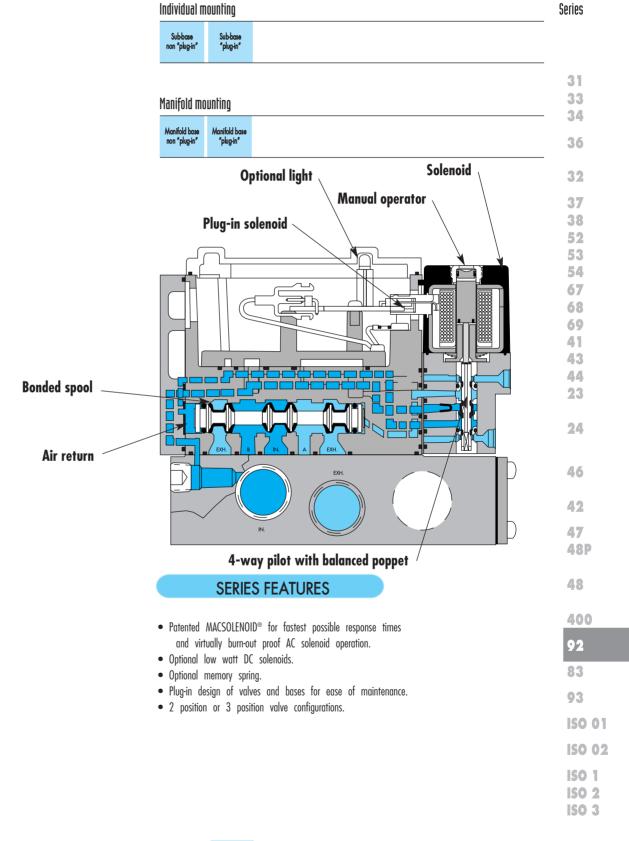
Spare parts: • Body to base seal: 16525 • Flow control assembly: N-04001 • Body mounting screws (x2): 35043.

Dimensions shown are metric (mm)

82 DOZING
BOTENDED OPERATOR
OPERATOR
OPERATOR

100 SINGLE PILOT
100 SINGLE PILOT
100 SINGLE PILOT
100 SINGLE PILOT
11.9 SI



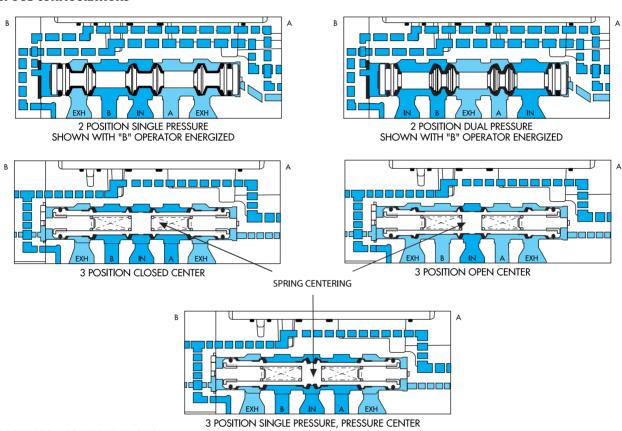








SPOOL CONFIGURATIONS



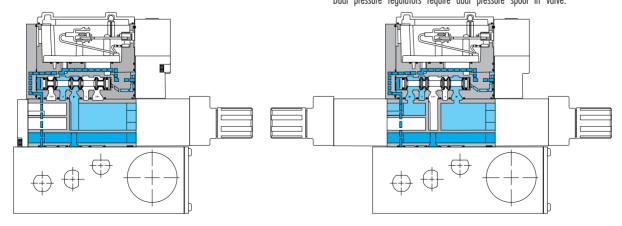
REGULATOR CONFIGURATIONS

SINGLE REGULATOR - SINGLE PRESSURE

Pressure supplied to the individual or manifold base passes through the regulator. Regulated pressure is supplied to the pressure path of the valve.

DUAL REGULATOR - DUAL PRESSURE

Pressure supplied from each regulator is divided in the block.
Regulated pressure from "A" regulator supplies cylinder port "A".
Regulated pressure from "B" regulator supplies cylinder port "B".
Dual pressure regulators require dual pressure spool in valve.



MANIFOLD WITH REGULATOR - SINGLE PRESSURE

Note: For both single and dual pressure, air supply to the pilot system is never regulated.

MANIFOLD WITH REGULATOR - DUAL PRESSURE



5/2, 5/3	G1/8" - G1/4" - G3/8"	1200 NI/min	Subbase	
Function	Port size	Flow (Max)	Individual mounting	Series

OPERATIONAL BENEFITS

- 1. The 4-way pilot develops maximum shifting forces both ways.
- 2. Memory spring available.
- 3. Balanced spool, immune to variations of pressure, also provides high flow.
- 4. Short stroke with high flow.
- 5. Bonded seal spool with minimum friction, shifting in a glass-like finished bore.
- 6. Pilot with balanced poppet, high flow; short and consistent response times.



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42 47 48P

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400

92 83

93

ISO 01 ISO 02 ISO 1 ISO 2 ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

SILVOID TRESCORE MODELS										
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre				
		$\frac{\frac{n-1}{2} \frac{1}{n-1} \frac{1}{n-1}}{\frac{n-1}{2} \frac{1}{n-1} \frac{1}{n-1}} \frac{1}{n} \frac{1}{n-1} \frac{1}{n-1}}{\frac{n-1}{2} \frac{1}{n-1} \frac{1}{n-1}}$		20 mg / 22						
Valve less base		92B-ABA-000-DM-Dxxx-xxx	92B-BBA-000-DM-Dxxx-xxx	92B-EBA-000-DM-Dxxx-xxx	92B-FBA-000-DM-Dxxx-xxx	92B-GBA-000-DM-Dxxx-xxx				
G1/8"		92B-ABA-DAG-DM-Dxxx-xxx	92B-BBA-DAG-DM-Dxxx-xxx	92B-EBA-DAG-DM-Dxxx-xxx	92B-FBA-DAG-DM-Dxxx-xxx	92B-GBA-DAG-DM-Dxxx-xxx				
G1/4"	Internal	92B-ABA-EAG-DM-Dxxx-xxx	92B-BBA-EAG-DM-Dxxx-xxx	92B-EBA-EAG-DM-Dxxx-xxx	92B-FBA-EAG-DM-Dxxx-xxx	92B-GBA-EAG-DM-Dxxx-xxx				
G3/8"		92B-ABA-FAG-DM-Dxxx-xxx	92B-BBA-FAG-DM-Dxxx-xxx	92B-EBA-FAG-DM-Dxxx-xxx	92B-FBA-FAG-DM-Dxxx-xxx	92B-GBA-FAG-DM-Dxxx-xxx				
G1/8"		92B-ABA-DAH-DM-Dxxx-xxx	92B-BBA-DAH-DM-Dxxx-xxx	92B-EBA-DAH-DM-Dxxx-xxx	92B-FBA-DAH-DM-Dxxx-xxx	92B-GBA-DAH-DM-Dxxx-xxx				
G1/4"	External	92B-ABA-EAH-DM-Dxxx-xxx	92B-BBA-EAH-DM-Dxxx-xxx	92B-EBA-EAH-DM-Dxxx-xxx	92B-FBA-EAH-DM-Dxxx-xxx	92B-GBA-EAH-DM-Dxxx-xxx				
G3/8"		92B-ABA-FAH-DM-Dxxx-xxx	92B-BBA-FAH-DM-Dxxx-xxx	92B-EBA-FAH-DM-Dxxx-xxx	92B-FBA-FAH-DM-Dxxx-xxx	92B-GBA-FAH-DM-Dxxx-xxx				

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR – SEE "REGULATORS" SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator
		2	17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Valve less base		92B-CBA-000-DM-Dxxx-xxx	92B-DBA-000-DM-Dxxx-xxx
G1/8"		92B-CBA-DAG-DM-Dxxx-xxx	92B-DBA-DAG-DM-Dxxx-xxx
G1/4"	Internal	92B-CBA-EAG-DM-Dxxx-xxx	92B-DBA-EAG-DM-Dxxx-xxx
G3/8"		92B-CBA-FAG-DM-Dxxx-xxx	92B-DBA-FAG-DM-Dxxx-xxx
G1/8"		92B-CBA-DAH-DM-Dxxx-xxx	92B-DBA-DAH-DM-Dxxx-xxx
G1/4"	External	92B-CBA-EAH-DM-Dxxx-xxx	92B-DBA-EAH-DM-Dxxx-xxx
G3/8"		92B-CBA-FAH-DM-Dxxx-xxx	92B-DBA-FAH-DM-Dxxx-xxx

SOLENOID OPERATOR ➤

DM-D XXX-XXX

				י ד			
XX	Voltage	Х	Wire length	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	Α	45 cm (Flying leads)	1	Non-locking	BM	Flying leads
JB	220 V~/50Hz	В	60 cm (Flying leads)	2	Locking	BN	Flying leads with diode
JC	24 V~/50Hz	J	Connector			BP	Flying leads with M.O.V.
FB	24 V=/1,8W					BG	Flying leads with ground
DA	24 V=/5,4W					JB	Rectangular connector
DF	24 V=/12,7W					JD	Rectangular connector with light
• 0.1						KA	Square connector

^{*} Other options available, see page 385. Other options available for the 92 series valves, see page 201.

Above models are shown with side ports.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 1,3 to 8 bar 3 position: 2,3 to 8 bar External pilot: vacuum to 8 bar 3 position: 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

40 µ

Temperature range : -18°C to +50°C

Orifice: 6,2 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 1/8": 1000Nl/min (Cv 1.0) - 1/4": 1100 Nl/min (Cv 1.1) - 3/8": 1200 Nl/min (Cv 1.2)

Coil: Epoxy encapsulated - class A - 100%ED (specify mod 0449)

-15% to +10% of nominal voltage Voltage range:

Protection: IP65 (electrical connection)

~Inrush 7,6 VA Holding: 4,8 VA Power:

= 1.8 to 12.7 W

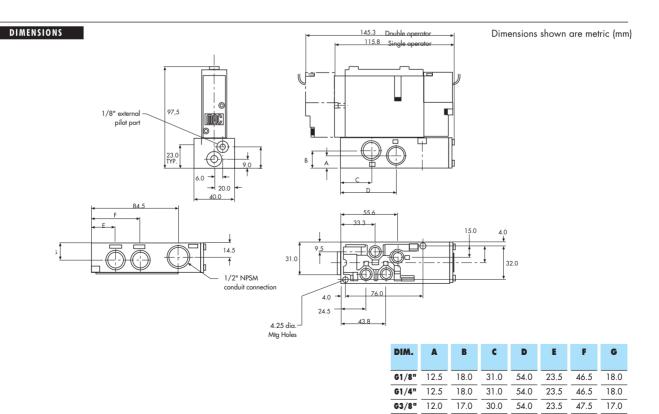
Response times : 24V=/5,4W Energize: 8 ms $De\text{-energize}: 7 \ ms$

Energize: 7-13 ms 120V~/60Hz De-energize: 12-20 ms

Options : • NPTF thread. • Sandwich flow control: FC92B-CA

• Pilot valve DM-Dxxx-xxx • Valve blanking plate: M-92002 Spare parts :

• Pressure seal between valve and base: 16543. • Mounting screws valve to base (X2): 35050.





Function	Port size	Floш (Max)	Individual mounting	Series
·				

5/2, 5/3

G1/8" - G1/4" - G3/8" 1200 NI/min



OPERATIONAL BENEFITS

- 1. The 4-way pilot develops maximum shifting forces both ways.
- 2. Memory spring available.
- 3. Balanced spool, immune to variations of pressure, also provides high flow.
- 4. Short stroke with high flow.
- 5. Bonded seal spool with minimum friction, shifting in a glass-like finished bore.
- 6. Pilot with balanced poppet, high flow; short and consistent response times.



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92 83

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ISO 01 ISO 02 ISO 1 ISO 2 ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
		# 10 10 11 11 11 11 11 11 11 11 11 11 11	$\left(\frac{1}{1+\frac{1}{2}},\frac{1}{1+\frac{1}{2}}\right)^{-1} = \left(\frac{1}{1+\frac{1}{2}},\frac{1}{1+\frac{1}{2}}\right)^{-1}$	22_{220}\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
Valve less base		92B-AAA-000-DM-DxxP-xxx	92B-BAA-000-DM-DxxP-xxx	92B-EAA-000-DM-DxxP-xxx	92B-FAA-000-DM-DxxP-xxx	92B-GAA-000-DM-DxxP-xxx
G1/8"		92B-AAA-DAA-DM-DxxP-xxx	92B-BAA-DAA-DM-DxxP-xxx	92B-EAA-DAA-DM-DxxP-xxx	92B-FAA-DAA-DM-DxxP-xxx	92B-GAA-DAA-DM-DxxP-xxx
G1/4"	Internal	92B-AAA-EAA-DM-DxxP-xxx	92B-BAA-EAA-DM-DxxP-xxx	92B-EAA-EAA-DM-DxxP-xxx	92B-FAA-EAA-DM-DxxP-xxx	92B-GAA-EAA-DM-DxxP-xxx
G3/8"		92B-AAA-FAA-DM-DxxP-xxx	92B-BAA-FAA-DM-DxxP-xxx	92B-EAA-FAA-DM-DxxP-xxx	92B-FAA-FAA-DM-DxxP-xxx	92B-GAA-FAA-DM-DxxP-xxx
G1/8"		92B-AAA-DAD-DM-DxxP-xxx	92B-BAA-DAD-DM-DxxP-xxx	92B-EAA-DAD-DM-DxxP-xxx	92B-FAA-DAD-DM-DxxP-xxx	92B-GAA-DAD-DM-DxxP-xxx
G1/4"	External	92B-AAA-EAD-DM-DxxP-xxx	92B-BAA-EAD-DM-DxxP-xxx	92B-EAA-EAD-DM-DxxP-xxx	92B-FAA-EAD-DM-DxxP-xxx	92B-GAA-EAD-DM-DxxP-xxx
G3/8"		92B-AAA-FAD-DM-DxxP-xxx	92B-BAA-FAD-DM-DxxP-xxx	92B-EAA-FAD-DM-DxxP-xxx	92B-FAA-FAD-DM-DxxP-xxx	92B-GAA-FAD-DM-DxxP-xxx

DUAL PRESSURE MODELS (REQUIRE SANDWICH REGULATOR - SEE "REGULATORS" SECTION)

Port size	Pilot air	5/2 Single operator	5/2 Double operator
		$\sum_{k=1}^{p} \frac{1}{10^{k}} \sum_{i=1}^{p} \frac{1}{10^{k}} \frac{di}{10^{k}}.$	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Valve less base		92B-CAA-000-DM-DxxP-xxx	92B-DAA-000-DM-DxxP-xxx
G1/8"		92B-CAA-DAA-DM-DxxP-xxx	92B-DAA-DAA-DM-DxxP-xxx
G1/4"	Internal	92B-CAA-EAA-DM-DxxP-xxx	92B-DAA-EAA-DM-DxxP-xxx
G3/8"		92B-CAA-FAA-DM-DxxP-xxx	92B-DAA-FAA-DM-DxxP-xxx
G1/8"		92B-CAA-DAD-DM-DxxP-xxx	92B-DAA-DAD-DM-DxxP-xxx
G1/4"	External	92B-CAA-EAD-DM-DxxP-xxx	92B-DAA-EAD-DM-DxxP-xxx
G3/8"		92B-CAA-FAD-DM-DxxP-xxx	92B-DAA-FAD-DM-DxxP-xxx
		-	

SOLENOID OPERATOR ➤

	Г					
	ХХ	Voltage	Х	Manual operator	ХХ	Electrical connection
ı	JA	110 V~/50Hz	1	Non-locking	DM	Plug-in
	JB	220 V~/50Hz	2	Locking	DN	Plug-in with diode
	JC	24 V~/50Hz			DP	Plug-in with M.O.V.
	FB	24 V=/1,8W			DG	Plug-in with ground
	DΔ	21 V-/5 1W			DI	Plug-in with M O V & ground

DM-D XX P-XXX

24 V=/12,7W

Plug-in with diode & ground

Above models are shown with side ports.

^{*} Other options available, see page 385. Note: Ground required for 30 Volts or higher. Other options available for the 92 series valves, see page 202.







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 1,3 to 8 bar 3 position: 2,3 to 8 bar

External pilot: vacuum to 8 bar 3 position: 2,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range: -18°C to +50°C

Orifice: 6,2 mm

Flow (at 6 bar, ΔP=1bar): 1/8": 1000NI/min (Cv 1.0) – 1/4": 1100 NI/min (Cv 1.1) – 3/8": 1200 NI/min (Cv 1.2)

Coil: Epoxy encapsulated – class A – 100%ED (specify mod 0449)

Voltage range: -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~Inrush 7,6 VA Holding: 4,8 VA

= 1,8 to 12,7 W

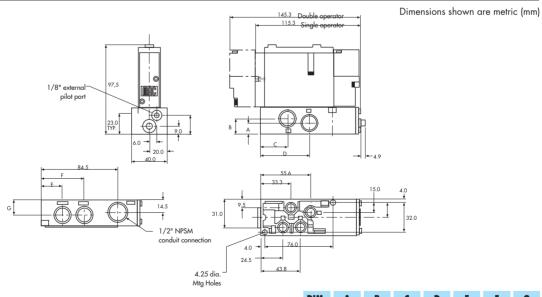
Response times :24V=/5,4WEnergize : 8 msDe-energize : 7 ms $120V\sim/50$ HzEnergize : 7-13 msDe-energize : 12-20 ms

Options: • NPTF threads • Sandwich flow control: FC92B-AA (sgl. operator), FC92B-BA (dbl. operator)

Spare parts : • Pilot valve DM-DxxP-xxx • Valve blanking plate: M-92002

• Pressure seal between valve and base : 16543. • Mounting screws valve to base (X2) : 35050.

DIMENSIONS



DIM.	A	В	C	D	E	F	G
G1/8"	12.5	18.0	31.0	54.0	23.5	46.5	18.0
G1/4"	12.5	18.0	31.0	54.0	23.5	46.5	18.0
G3/8"	12.0	17.0	30.0	54.0	23.5	47.5	17.0



Function		Port size	Flow (Max)		Manifold mounting	Series
/2, 5/3	/3 G1/4" - G3/8" 1200 NI/m		/min	Manifold base non "plug-in"		
PERATIONAL BEN	IEFITS					3 1
The 4-way pilot		aximum shifting			2-6	33
forces both way Memory spring	available.					34
Balanced spoo pressure, also						36
Short stroke wit	th high flow.					0
Bonded seal sp shifting in a glo	ass-like finishe	ed bore.				32
Pilot with balar and consistent					01	37
Wiping effect e	eliminates stic				2 10	38
Long service life	e.					52
HOW TO ORDI	ER					53 54
INGLE PRESSU	JRE MODE	LS				67
Port size	Pilot air	5/2	5/2	5/3	5/3	5/3 68
		Single operator	Double operator	Closed centre	Open centre	Pressure centre 69
		EN THE PROPERTY.		22 July 182		41 43
alve less base		92B-ABA-000-DM-Dxxx-xxx	92B-BBA-000-DM-Dxxx-xxx	92B-EBA-000-DM-Dxxx-xxx	92B-FBA-000-DM-Dxxx-xxx	92B-GBA-000-DM-Dxxx-xxx
G1/4"	Internal	92B-ABA-EJG-DM-Dxxx-xxx	92B-BBA-EJG-DM-Dxxx-xxx	92B-EBA-EJG-DM-Dxxx-xxx	92B-FBA-EJG-DM-Dxxx-xxx	92B-GBA-EJG-DM-Dxxx-xxx 23
G3/8"		92B-ABA-FJG-DM-Dxxx-xxx	92B-BBA-FJG-DM-Dxxx-xxx	92B-EBA-FJG-DM-Dxxx-xxx	92B-FBA-FJG-DM-Dxxx-xxx	92B-GBA-FJG-DM-Dxxx-xxx
		(REQUIRE SANDWIC	CH REGULATOR – SEE			24
Port size		Pilot air	Sing	5/2 gle operator		5/2 e operator
				l horas	<u></u> †	46
				10.0		14
Valve less be	ase	Internal		A-000-DM-Dxxx-xxx A-EJG-DM-Dxxx-xxx		
G3/8"		morrai		A-FJG-DM-Dxxx-xxx		G-DM-Dxxx-xxx G-DM-Dxxx-xxx 47
OLENOID OP	EDATOD >			VVV *	Above mode	els are shown with side ports.
OLLINOID OF	LKAIOK >		$DM-D \times XXX-$	<u> </u>		48
				5		
XX Volta	_		e length	X Manual oper		lectrical connection 40
JA 110 V~ JB 220 V~	-/50Hz -/50Hz	X Wire A 45 cm J Conne	1	•	KA S	lectrical connection quare connector quare connector with light
JA 110 V~ JB 220 V~ JC 24 V~/ FB 24 V=/	~/50Hz ~/50Hz /50Hz /1,8W	A 45 cm	1	Non-locking	KA S KD S JB R JD R	lectrical connection quare connector with light ectangular connector ect. connector with light
JA 110 V~ JB 220 V~ JC 24 V~/ FB 24 V=/ DA 24 V=/	~/50Hz ~/50Hz /50Hz /1,8W	A 45 cm	1	Non-locking	KA S KD S JB R JD R BA F	quare connector with light ectongular connector with light ectongular connector with light light light light with light
JA 110 V- JB 220 V- JC 24 V-/ FB 24 V=/ DA 24 V=/ DF 24 V=/ Other options av	~/50Hz ~/50Hz /50Hz /1,8W /5,4W /12,7W	A 45 cm J Conne	nector	Non-locking	KA S KD S JB R JD R BA F	lectrical connection quare connector with light ectangular connector ect. connector with light lying leads ying leads with diode 93
JA 110 V- JB 220 V- JC 24 V-/ FB 24 V=/ DA 24 V=/ DF 24 V=/ Other options available kit require	~/50Hz ~/50Hz /50Hz /1,8W /5,4W /12,7W railable, see po	A 45 cm J Conne age 385. /8"): M-92004-01-01P M-92004-02-01P	ector (internal pilot)	Non-locking	KA S KD S JB R JD R BA F	quare connector with light ectongular connector with light ectongular connector with light light light light with light
JA 110 V- JB 220 V- JC 24 V-/ FB 24 V=/ DA 24 V=/ DF 24 V=/ Other options av ad plate kit require let/exhaust Isolata	-/50Hz -/50Hz /50Hz /1,8W /5,4W /12,7W railable, see pred (port size 3) or disc: N-920	A 45 cm J Conne age 385. /8"): M-92004-01-01P M-92004-02-01P	ector (internal pilot) (External pilot)	Non-locking	KA S KD S JB R JD R BA F	lectrical connection quare connector with light ectangular connector ect. connector with light lying leads ying leads with diode 93
JA 110 V- JB 220 V- JC 24 V-/ FB 24 V=/ DA 24 V=/ DF 24 V=/ Other options av nd plate kit require let/exhaust Isolata	-/50Hz -/50Hz /50Hz /1,8W /5,4W /12,7W railable, see pred (port size 3) or disc: N-920	A 45 cm J Conne age 385. (8"): M-92004-01-01P M-92004-02-01P	ector (internal pilot) (External pilot)	Non-locking	KA S KD S JB R JD R BA F	lectrical connection quare connector with light ectangular connector ect. connector with light ying leads ying leads with diode 93
JA 110 V- JB 220 V- JC 24 V-/ FB 24 V=/ DA 24 V=/ DF 24 V=/ Other options av nd plate kit require let/exhaust Isolata	-/50Hz -/50Hz /50Hz /1,8W /5,4W /12,7W railable, see pred (port size 3) or disc: N-920	A 45 cm J Conne age 385. (8"): M-92004-01-01P M-92004-02-01P	ector (internal pilot) (External pilot)	Non-locking	KA S KD S JB R JD R BA F	lectrical connection quare connector with light ectangular connector ect. connector with light lying leads ying leads with diode 150







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 1,3 to 8 bar 3 position: 2,3 to 8 bar External pilot: vacuum to 8 bar 3 position: 2,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : $-18^{\circ}\text{C} \text{ to } +50^{\circ}\text{C}$

Orifice: 6,2 mm

Flow (at 6 bar, ΔP=1bar): 1/4": 1100 NI/min (Cv1.1) – 3/8": 1200 NI/min (Cv 1.2)

Coil: Epoxy encapsulated – class A – 100%ED (specify mod 0449)

Voltage range: -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~Inrush 7,6 VA Holding: 4,8 VA

= 1,8 to 12,7 W

Response times : 24V=/5,4W Energize : 8 ms De-energize : 7 ms

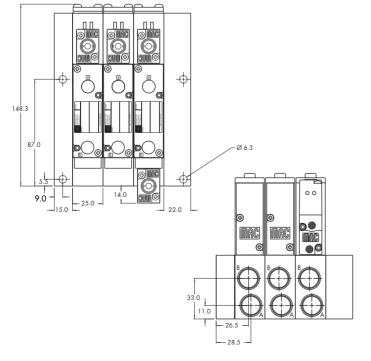
120V~/50Hz Energize : 7-13 ms De-energize : 12-20 ms

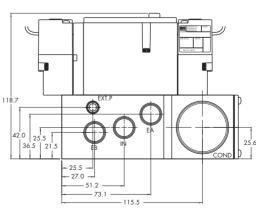
Options : • NPTF threads • Sandwich flow controls: FC92B-CA

Spare parts : • Pilot valve: DM-Dxxx-xxx • Valve blanking plate: M-92002 • Pressure seal, valve to base 16543

DIMENSIONS

Dimensions shown are metric (mm)







Function		Port size	Flow (Max)		Manifold mounting	Series
/2, 5/3 G1/4" - G3/			4" - G3/8" 1200 NI/min		Manifol base "plug-in"	
PERATIONAL BEN	IEFITS				227	31
The 4-way pilot	t develops mo	aximum shifting			- 60	33
forces both way					200	34
Memory spring Balanced spool		variations of				
pressure, also p	provides high				100	36
Short stroke wit Bonded seal sp		mum friction				A 6
shifting in a gla						32
Pilot with balan					0.00	37
and consistent i Wiping effect e					60	38
Long service life		king.			100	52
-						53
HOW TO ORDE	ER				-	54
NGLE PRESSL	IDE MODE	ıc				67
			T/0	T /0	= /0	7.0
Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 08 Pressure centre 69
		1,1 1, ,, 1	. 1. 1 , .	1	المحارب المراز	<u> </u>
		E 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		22 Marcel 182		- 7
			92B-BAA-000-DM-DxxP-xxx	000 544 000 044 0	92B-FAA-000-DM-DxxP-xxx	92B-GAA-000-DM-DxxP-xxx
ilve less base		92B-AAA-000-DM-DxxP-xxx	72D-DAA-UUU-DIYI-DAAF-AAA	92B-EAA-000-DM-DxxP-xxx		
alve less base	Internal	92B-AAA-000-DM-DxxP-xxx 92B-AAA-EJA-DM-DxxP-xxx	92B-BAA-EJA-DM-DxxP-xxx	92B-EAA-UUU-DM-DXXP-XXX	92B-FAA-EJA-DM-DxxP-xxx	000 011 511 511 5
G1/4" G3/8"		92B-AAA-FJA-DM-DxxP-xxx 92B-AAA-FJA-DM-DxxP-xxx	92B-BAA-FJA-DM-DxxP-xxx 92B-BAA-FJA-DM-DxxP-xxx	92B-EAA-FJA-DM-DxxP-xxx 92B-EAA-FJA-DM-DxxP-xxx	92B-FAA-EJA-DM-DxxP-xxx 92B-FAA-FJA-DM-DxxP-xxx	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx
G1/4" G3/8"	E MODELS	92B-AAA-EJA-DM-DxxP-xxx	928-BAA-EJA-DM-DXXP-XXX 928-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC	92B-FAA-EJA-DM-DxxP-xxx 92B-FAA-FJA-DM-DxxP-xxx	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 23 5/2 2 operator
G1/4" G3/8" UAL PRESSUR	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	928-BAA-EJA-DM-DXXP-XXX 928-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC	92B-FAA-EJA-DM-DxxP-xxx 92B-FAA-FJA-DM-DxxP-xxx	92B-GAA-FJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24
G1/4" G3/8" UAL PRESSUR	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	928-BAA-EJA-DM-DXXP-XXX 928-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC	92B-FAA-EJA-DM-DxxP-xxx 92B-FAA-FJA-DM-DxxP-xxx	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 operator 46
G1/4" G3/8" JAL PRESSUR Port size	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	928-BAA-EJA-DM-DXXP-XXX 928-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator	92B-FAA-EJA-DM-DxxP-xxx 92B-FAA-FJA-DM-DxxP-xxx CTION)	92B-GAA-FJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 e operator 46
G1/4" G3/8" JAL PRESSUR	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC	928-FAA-EJA-DM-DXXP-XXX 928-FAA-FJA-DM-DXXP-XXX CTION) Double 928-DAA-00	92B-GAA-FJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 operator 46 40 00-DM-DxxP-xxx
G1/4" G3/8" UAL PRESSUR Port size	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA	92B-EAA-EJA-DM-DxxP-xxxx 92B-EAA-FJA-DM-DxxP-xxxx "REGULATORS" SEC 5/2 gle operator A-000-DM-DxxP-xxx	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX CTION) Double 92B-DAA-00 92B-DAA-61	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 poperator 46 40 41 42 42 42 46 46 47
G1/4" G3/8" UAL PRESSUR Port size Valve less be G1/4" G3/8"	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	928-BAA-EJA-DM-DXXP-XXX 928-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 928-CA 928-CA	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-61 92B-DAA-FJA-DM-DXXP-XXX	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 operator 46 42 A-DM-DxxP-xxx 47
G1/4" G3/8" JAL PRESSUR Port size Valve less be G1/4" G3/8"	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-61 92B-DAA-FJA-DM-DXXP-XXX	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 operator 46 00-DM-DxxP-xxx A-DM-DxxP-xxx A-DM-DxxP-xxx with side ports and no lights.
G1/4" G3/8" JAL PRESSUR Port size Valve less be G1/4" G3/8"	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	928-BAA-EJA-DM-DXXP-XXX 928-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 928-CA 928-CA	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-61 92B-DAA-FJA-DM-DXXP-XXX	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 9 operator 46 40-DxxP-xxx A-DM-DxxP-xxx 47 481
G1/4" G3/8" UAL PRESSUR Port size Valve less be G1/4" G3/8"	E MODELS	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	928-BAA-EJA-DM-DXXP-XXX 928-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 928-CA 928-CA	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-61 92B-DAA-FJA-DM-DXXP-XXX	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 e operator 46 40 40-DM-DxxP-xxx A-DM-DxxP-xxx with side ports and no lights.
G1/4" G3/8" JAL PRESSUR Port size Valve less be G1/4" G3/8" DLENOID OPI XX Volte JA 110 V-	E MODELS BISE ERATOR >	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 1 Non-locking	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	928-FAA-EJA-DM-DXXP-XXX 928-FAA-FJA-DM-DXXP-XXX CTION) Double 928-DAA-00 928-DAA-00 928-DAA-EJ 928-DAA-FJ Above models are shown	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 9 operator 46 40 41 42 43 44 45 45 46 47 48 48 48 48 48
G1/4" G3/8" JAL PRESSUR Port size Valve less be G1/4" G3/8" DLENOID OPI XX Volte JA 110 V-	E MODELS BSE ERATOR >	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 92B-CA 92B-CA 92B-CA 92B-CA	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX CTION) Double 92B-DAA-00 92B-DAA-00 92B-DAA-EJ 92B-DAA-EJ Above models are shown XX Electrical co DM Plug-in DN Plug-in with diod	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 55/2 c operator 46 40 42 A-DM-DxxP-xxx A-DM-DxxP-xxx with side ports and no lights. 48 48 49 40 40
G1/4" G3/8" JAL PRESSUR Port size Valve less be G1/4" G3/8" DLENOID OP XX Volte JA 110 V- JB 220 V- JC 24 V-/ FB 24 V-/	ERATOR >	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 1 Non-locking	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-O 92B-DAA-O 92B-DAA-EJ 92B-	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 5/2 e operator 46 40 40 92 92 92 92 92 93 94 95 94 95 95 96 97 98 98 98 98 98 98 98 98 98
G1/4" G3/8" JAL PRESSUR Port size Valve less be G1/4" G3/8" DLENOID OP XX Volte JA 110 V- JB 220 V- JC 24 V- JC 24 V- DA 24 V- DA 24 V-	ERATOR >	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 1 Non-locking	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	928-FAA-EJA-DM-DXXP-XXX 928-FAA-FJA-DM-DXXP-XXX CTION) Double 928-DAA-00 928-DAA-01 928-DAA-EJ 928-DAA-OJ 928-DAA-EJ 928-DAA-EJ 928-DAA-EJ 928-DAA-EJ 928-DAA-EJ 928-DAA-EJ 928-DAA-DJ 928-DAA-EJ 928-DAA-EJ 928-DAA-DJ 928-DAA-EJ PHON Plug-in with diod DP Plug-in with M.C	928-GAA-EJA-DM-DxxP-xxx 928-GAA-FJA-DM-DxxP-xxx 24 55/2 e operator 46 40 40 92 92 90 90 90 90 90 90 90 9
G1/4" G3/8" JAL PRESSUR Port size Valve less be G1/4" G3/8" DLENOID OP XX Volte JA 110 V- JB 220 V- JC 24 V-/ FB 24 V-/ DF 24 V-/ Other options av	ERATOR > ERATOR > ERATOR > ERATOR > Graph Graph	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC Pilot air Internal	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 1 Non-locking	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-00 92B-DAA-EJ 92B-DAA-FJ Above models are shown XX Electrical co DM Plug-in DN Plug-in with diod DP Plug-in with M.C. DG Plug-in with M.C. DJ Plug-in with M.C.	928-GAA-EJA-DM-DxxP-xxx 928-GAA-FJA-DM-DxxP-xxx 24 55/2 e operator 46 40 40 92 92 90 90 90 90 90 90 90 9
G1/4" G3/8" UAL PRESSUR Port size Valve less be G1/4" G3/8" OLENOID OP XX Volte JA 110 V- JB 220 V- JC 24 V-/ DB 24 V=/ DA 24 V=/ DF 24 V=/ Other options avoite: Ground requ	E MODELS BSE ERATOR > ERATOR > (50Hz /50Hz /	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC Pilot air Internal age 385. bits or higher. bits or higher. bits or higher.	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 1 Non-locking 1 Non-locking 2 Locking	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-00 92B-DAA-EJ 92B-DAA-FJ Above models are shown XX Electrical co DM Plug-in DN Plug-in with diod DP Plug-in with M.C. DG Plug-in with M.C. DJ Plug-in with M.C.	928-GAA-EJA-DM-DxxP-xxx 928-GAA-FJA-DM-DxxP-xxx 24 55/2 9 operator 46 40-DM-DxxP-xxx A-DM-DxxP-xxx with side ports and no lights. 48 48 49 400 400 400 400 400 4
G3/8" UAL PRESSUR Port size Valve less be G1/4" G3/8" OLENOID OP XX Volte JA 110 v- JB 220 v- JC 24 v-/ FB 24 v-/ DF 24 v-/ Other options avote: Ground required (let / exhaust isolated	ERATOR > ERATOR > ERATOR > ERATOR > In the second of t	92B-AAA-EJA-DM-DxxP-xxx 92B-AAA-FJA-DM-DxxP-xxx (REQUIRE SANDWIC Pilot air Internal age 385. bits or higher. "): M-92004-01-01P (internal M-92004-02-01P (external management).	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 1 Non-locking 2 Locking 2 Locking	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-00 92B-DAA-EJ 92B-DAA-FJ Above models are shown XX Electrical co DM Plug-in DN Plug-in with diod DP Plug-in with M.C. DG Plug-in with M.C. DJ Plug-in with M.C.	928-GAA-EJA-DM-DxxP-xxx 928-GAA-FJA-DM-DxxP-xxx 24 55/2 9 operator 46 40-DM-DxxP-xxx A-DM-DxxP-xxx with side ports and no lights. 48 48 49 400 400 400 400 400 4
G1/4" G3/8" UAL PRESSUR Port size Valve less be G1/4" G3/8" OLENOID OP XX Volte JA 110 V- JB 220 V- JC 24 V-/ FB 24 V-/ DF 24 V-/ Other options avoite: Ground required (let / exhaust isolated	ERATOR > ERATOR	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC Pilot air Internal age 385. olts or higher. "): M-92004-01-01P (internal) 018.	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 1 Non-locking 2 Locking 2 Locking	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-00 92B-DAA-EJ 92B-DAA-FJ Above models are shown XX Electrical co DM Plug-in DN Plug-in with diod DP Plug-in with M.C. DG Plug-in with M.C. DJ Plug-in with M.C.	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 55/2 2 operator 46 40 40 41 42 43 44 45 46 47 48 48 48 48 48 48 48 48 48
G1/4" G3/8" UAL PRESSUR Port size Valve less be G1/4" G3/8" OLENOID OP XX Volte JA 110 V- JB 220 V- JC 24 V-/ FB 24 V-/ DA 24 V-/ DF 24 V-/ Other options avote: Ground required (let / exhaust isolated)	ERATOR > ERATOR	92B-AAA-EJA-DM-DXXP-XXX 92B-AAA-FJA-DM-DXXP-XXX (REQUIRE SANDWIC Pilot air Internal age 385. olts or higher. "): M-92004-01-01P (internal) 018.	92B-BAA-EJA-DM-DXXP-XXX 92B-BAA-FJA-DM-DXXP-XXX CH REGULATOR — SEE Sing 92B-CA 92B-CA 92B-CA 92B-CA 1 Non-locking 2 Locking 2 Locking	92B-EAA-EJA-DM-DXXP-XXX 92B-EAA-FJA-DM-DXXP-XXX "REGULATORS" SEC 5/2 gle operator A-000-DM-DXXP-XXX A-EJA-DM-DXXP-XXX A-FJA-DM-DXXP-XXX	92B-FAA-EJA-DM-DXXP-XXX 92B-FAA-FJA-DM-DXXP-XXX TION) Pouble 92B-DAA-00 92B-DAA-00 92B-DAA-EJ 92B-DAA-FJ Above models are shown XX Electrical co DM Plug-in DN Plug-in with diod DP Plug-in with M.C. DG Plug-in with M.C. DJ Plug-in with M.C.	92B-GAA-EJA-DM-DxxP-xxx 92B-GAA-FJA-DM-DxxP-xxx 24 55/2 2 operator 46 40 42 A-DM-DxxP-xxx A-DM-DxxP-xxx With side ports and no lights. 48 48 49 49 40 40 40 40 40 40 40 40







Fluid : Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 1,3 to 8 bar 3 position: 2,3 to 8 bar External pilot : vacuum to 8 bar 3 position: 2,3 to 8 bar

Pilot pressure: 1,3 to 8 bar 3 positions 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

Orifice: 6,2 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 1/4": 1100 NI/min (Cv1.1) - 3/8": 1200 NI/min (Cv 1.2)

Coil: Epoxy encapsulated – class A – 100%ED (specify mod 0449)

-15% to +10% of nominal voltage Voltage range: IP65 (electrical connection) Protection:

Power: ~Inrush 7,6 VA Holding: 4,8 VA

= 1.8 to 12.7 W24V=/5,4W

Energize: 8 ms Energize: 7-13 ms De-energize: 12-20 ms 120V~/50Hz Options : • NPTF threads • Sandwich flow controls: FC92B-AA (sgl. operator), FC92B-BA (dbl. operator)

• Pilot valve: DM-DxxP-xxx • Valve blanking plate: M-92002 • Pressure seal, valve to base: 16543 Spare parts :

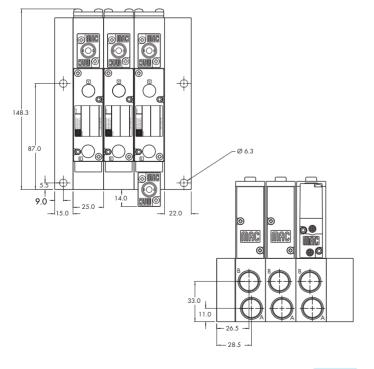
De-energize: 7 ms

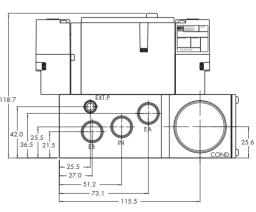
• Mounting screws valve to base (x2): 35050

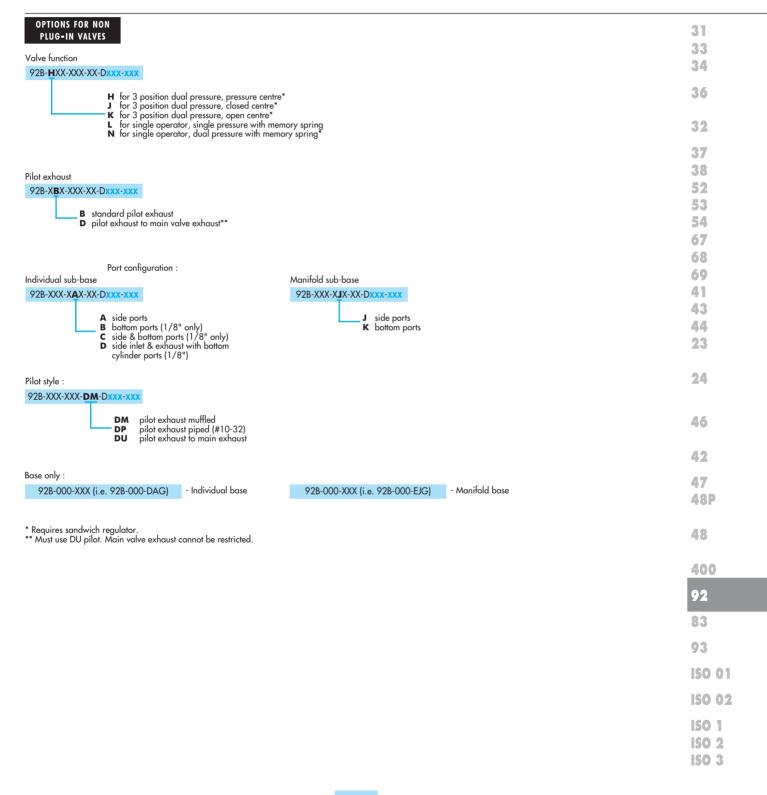
DIMENSIONS

Response times :

Dimensions shown are metric (mm)









OPTIONS FOR PLUG-IN VALVES Valve function 92B-**H**XX-XXX-XX-DxxP-xxx **H** for 3 position dual pressure, pressure centre* If or 3 position dual pressure, closed centre* If or 3 position dual pressure, closed centre* If or 3 position dual pressure, open centre* If or 3 position dual pressure with memory spring of single operator, single pressure with memory spring for single operator, dual pressure with memory spring* Pilot exhaust 92B-XAX-XXX-XX-DxxP-xxx A standard pilot exhaust C pilot exhaust to main valve exhaust** Body electrical 92B-XXA-XXX-XX-DxxP-xxx A no light B light(s) F suppression and blocking diode with light(s) H M.O.V. with light(s) Port configuration: Individual sub-base Manifold sub-base 92B-XXX-XAX-XX-DxxP-xxx 92B-XXX-XJX-XX-DxxP-xxx A side ports B bottom ports (1/8" only) C side & bottom ports (1/8" only) D side inlet & exhaust with bottom cylinder ports (1/8") J side ports K bottom ports Base/manifold int./ext. pilot 92B-XXX-XXA-XX-DxxP-xxx A internal pilot no light B internal pilot single light C internal pilot double light D external pilot no light E external pilot single light external pilot double light Pilot style : 92B-XXX-XXX-**DM**-DxxP-xxx pilot exhaust muffled pilot exhaust piped (#10-32) pilot exhaust to main exhaust DU Lead Wire Lengths : (manifold sub-base only) 92B-XXX-XXX-DM-DxxP-xxx P option - 30 cm leads 1 option - 45 cm leads 2 option - 60 cm leads 3 option - 90 cm leads 4 option - 120 cm leads 5 option - 180 cm leads

* Requires sandwich regulator.
** Must use DU pilot. Main valve exhaust cannot be restricted.

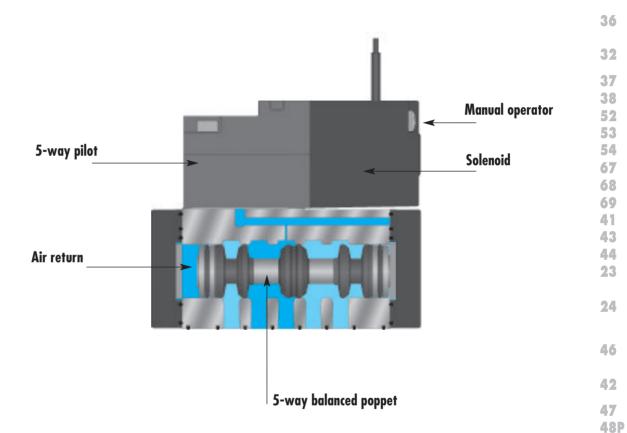
92B-000-XXX (i.e. 92B-000-DAA) - Individual base

(Note: bases are wired for double solenoid valves)

Base only:

92B-000-XXX (i.e. 92B-000-EJA) - Manifold base

Individual Mounting Série



SERIES FEATURES

- The 4-way pilot develops maximum shifting forces both ways.
- Memory spring available.
- \bullet Balanced spool, immune to variations of pressure.
- Short stroke with high flow.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Pilot with balanced poppet, high flow, short and consistent response times.
- Wiping effect eliminates sticking.
- Long service life.

ISO 3

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		G1/4" -	G3/8"	1500 NI/min	1	Individual base Non plug-in			
						Single operator			
ATIONAL BE		·fo· f	1 4						31
e 4-way piic emory spring	ot develops maximum sh a available	niffing force	s both ways				0		33
lanced spoo	ol, immune to variations	of pressure	e, also provides hi	gh flow				ès.	34
	rith high flow	1.6.	l let fe e t						36
	with minimum friction, s inced poppet, high flow							B	3(
iping effect	eliminates sticking	, shorr and	consisioni respons	oo miioo.					35
ng service li	fe							- T	92
								0	37
									38
OW TO ORI	DER								52
ort size	Pilot air			ngle			Du		53
			pre	essure			pres	sure	54
			, ers 1.	III/]=			22 \	7 <u>1</u> e"	67
				SW.F.				MITS"	68
31/4"	Internal			XX-XXXX-XXX				(-XXXX-XXX	69
	External 14 End External 12 End	-		XX-XXXX-XXX				(-XXXX-XXX	4
33/8′′	Internal			XX-XXXX-XXX				(-XXXX-XXX (-XXXX-XXX	- 43
33/8"	Internal		83A-AAD-	XX-XXXX-XXX					
			037 100	VV VVVV VVV		01) Y CDD ***	A ANANA ANAN	44
	External 14 End			XX-XXXX-XXX				(-XXXX-XXX	
supply from	External 14 End External 12 End			XX-XXXX-XXX				(-XXXX-XXX	23
supply from	External 14 End External 12 End a port #5		83A-AED-	xx-xxxx-xxx	V**				
	External 14 End External 12 End		83A-AED-		X**				
ENOID O	External 14 End External 12 End port #5 PERATOR >		83A-AED-	D <u>XX</u> X- <u>X</u> X		83	3A-CED-XX	(-XXXX-XXXX	23
ENOID O	External 14 End External 12 End port #5 PERATOR >	X	83A-AED- DM-	D <u>XXX-XXX</u>	Manual o	perator 8:	XX	Electrical connection	24
ENOID O	External 14 End External 12 End a port #5 PERATOR >	X A B	83A-AED-	D <u>XX</u> X- <u>X</u> X	Manual op	perator locking	3A-CED-XX	Electrical connection	24 24
X Volt A 110V B 24 V=	External 14 End External 12 End port #5 PERATOR >	A B J*	83A-AED- DM- Wire length 45 cm 60 cm 15 cm	D <u>XXX-XXX</u> x 1 2	Manual o	perator locking	XX BA KA KD	Electrical connection Flying leads Square connector Square connector with light	24 24
X Voli A 110V B 24 V=	External 14 End External 12 End n port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W	A B J*	83A-AED- DM- Wire length 45 cm 60 cm	D <u>XXX-XXX</u> x 1 2	Manual op	perator locking	XX BA KA	Electrical connection Flying leads Square connector Square connector with ligate Rectangular connector	24 24 on 46 ght 42
X Voli A 110V B 24 V=	External 14 End External 12 End port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W	A B J*	Wire length 45 cm 60 cm 15 cm with "J" & "K" type	D XXX-XXX x 1 2 connectors	Manual o Recessed non Recessed lock	perator locking	XX BA KA KD JB	Electrical connection Flying leads Square connector Square connector with light	24 24 24 26 27 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28
X Voli A 110V B 24 V=	External 14 End External 12 End port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W	A B J*	Wire length 45 cm 60 cm 15 cm with "J" & "K" type	D <u>XXX-XXX</u> x 1 2	Manual o Recessed non Recessed lock	perator locking	XX BA KA KD JB	Electrical connection Flying leads Square connector Square connector with ligate Rectangular connector	24 24 on 46
X Voli A 110V B 24 V=	External 14 End External 12 End port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W	A B J*	Wire length 45 cm 60 cm 15 cm with "J" & "K" type	D XXX-XXX x 1 2 connectors	Manual o Recessed non Recessed lock	perator locking	XX BA KA KD JB	Electrical connection Flying leads Square connector Square connector with ligate Rectangular connector	24 24 24 24 24 24 24 24 24 24 24 24 24 2
ENOID O A 110V B 24 V= OA 24 V= er options av	External 14 End External 12 End port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W	A B J*	Wire length 45 cm 60 cm 15 cm with "J" & "K" type	D XXX-XXX x 1 2 connectors	Manual o Recessed non Recessed lock	perator locking ing	XX BA KA KD JB	Electrical connection Flying leads Square connector Square connector with ligate Rectangular connector	24 24 24 25 26 26 27 26 27 28 28 28 28 28 28 28 28 28 28 28 28 28
X Volt A 110V B 24 V= OA 24 V= er options av X Volt OC 24V=	External 14 End External 12 End n port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385.	A B J* * For use v	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM-1	D XXX-XXX X 1 2 connectors G XXX-XX X 1	Manual of Recessed lock * Manual of Recessed lock *	perator locking ing	XX BA KA KD JB JD	Electrical connection Flying leads Square connector with ligate Rectangular connector Rectangular connector with the second connection	24 24 24 24 24 24 24 24 24 24 24 24 24
X Volt A 110V B 24 V= OX Volt CX Volt CX Volt CX Volt CX Volt CX 24V= CD 24V=	External 14 End External 12 End n port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385.	B J* * For use v	Wire length 45 cm 60 cm 15 cm with "J" & "K" type	D XXX-XXX X 1 2 connectors G XXX-XX	Manual of Recessed lock X* Manual of	perator locking ing	XX BA KA KD JB JD	Electrical connection Flying leads Square connector with lights Rectangular connector with lights Rectangula	24 24 24 24 24 24 24 24 24 24 24 24 24 2
CX Volida CX Vol	External 14 End External 12 End n port #5 PERATOR > tage /-/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385.	A B J' For use v	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM-I Wire length 45 cm 60 cm 90 cm	D XXX-XXX X 1 2 connectors G XXX-XX 1 2	Manual of Recessed lock * Manual of Recessed lock Recessed lock **	perator locking ing	XX BA KA KD JB JD	Electrical connection Flying leads Square connector with ligate Rectangular connector Rectangular connector with the section of the section o	24 24 24 24 24 24 24 24 24 24 24 24 24 2
CX Volida CX Vol	External 14 End External 12 End n port #5 PERATOR > tage /-/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385.	A B J' For use v	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM-I Wire length 45 cm 60 cm 90 cm	D XXX-XXX X 1 2 connectors G XXX-XX X 1	Manual of Recessed lock * Manual of Recessed lock Recessed lock **	perator locking ing	XX BA KA KD JB JD	Electrical connection Flying leads Square connector with lights Rectangular connector with lights Rectangula	24 24 24 25 26 27 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28
CX Volida CX Vol	External 14 End External 12 End n port #5 PERATOR > tage /-/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385.	A B J' For use v	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM-I Wire length 45 cm 60 cm 90 cm	D XXX-XXX X 1 2 connectors G XXX-XX 1 2	Manual of Recessed lock * Manual of Recessed lock Recessed lock **	perator locking ing	XX BA KA KD JB JD	Electrical connection Flying leads Square connector with lights Rectangular connector with lights Rectangula	24 24 24 24 24 25 24 24 25 26 27 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28
ENOID O X Volt A 110V B 24 V= DA 24 V= er options av X Volt C 24V= DD 24V= DF 24V= options available	External 14 End External 12 End n port #5 PERATOR > tage /-/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385.	A B J' For use v	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM-I Wire length 45 cm 60 cm 90 cm	D XXX-XXX X 1 2 connectors G XXX-XX 1 2	Manual of Recessed lock * Manual of Recessed lock Recessed lock **	perator locking ing perator locking	XX BA KA KD JB JD	Electrical connection Flying leads Square connector with lights Rectangular connector with lights Rectangula	24 24 24 24 24 25 24 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28
CX Volt A 110V B 24 V= DA 24 V= er options av CX Volt DC 24V= options avai CX Volt C	External 14 End External 12 End n port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385. tage =/1.8W =/4.0W iilable, see page389.	A B J' For use v X A B C	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM- Wire length 45 cm 60 cm 90 cm	XX-XXXX-XXX D XXX-XX x 1 2 connectors G XXX-XX x 1 2	Manual of Recessed lock X* Manual of Recessed lock X *	perator locking ing perator locking ing perator locking ing	XX BA KA KD JB JD XX BA KA GA	Electrical connection Flying leads Square connector with light Rectangular connector Rectangular connector with light Rectangular connection Rectangular connection light Rectangular connection light Rectangular connection light Rectangular connection light Rectangular light R	24 24 24 24 24 24 24 24 24 24 24 24 24 2
CX Volida A 110V B 24 V= ODA 24 V= O	External 14 End External 12 End n port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385. tage =/1.8W =/2.5W =/4.0W iilable, see page389.	A B J' For use v X A B C	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM- Wire length 45 cm 60 cm 90 cm RM-	XX-XXXX-XXX D XXX-XX x 1 2 connectors G XXX-XX x 1 2	Manual of Recessed lock X* Manual of Recessed lock X* Manual of Recessed lock X *	perator locking ing perator locking ing perator locking ing	XX BA KA KD JB JD XXX BA KA GA RA	Electrical connection Flying leads Square connector with ligate connection light connection light li	24 24 24 24 24 24 24 24 24 24 24 24 24 2
ENOID O (X Volt A 110V B 24 V= OA 24 V= er options avail (X Volt C 24V= OD 24V=	External 14 End External 12 End n port #5 PERATOR > tage /~/50Hz (2.9W) =/1,8W =/5,4W vailable, see page 385. tage =/1.8W =/4.0W iilable, see page389.	A B J' For use v X A B C	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM-1 Wire length 45 cm 60 cm 90 cm RM-	XX-XXXX-XXX D XXX-XX x 1 2 connectors G XXX-XX x 1 2	Manual of Recessed lock X* Manual of Recessed lock X * Manual of Recessed lock X *	perator locking ing perator locking ing perator locking ing	XX BA KA KD JB JD XXX BA KA GA RB	Electrical connection Flying leads Square connector with ligate Rectangular connector Rectangular connector with solution of the second plug-in wire assembly Electrical connection Flying leads Solenoid plug-in wire assembly Electrical connection Flying leads Mini JAC solenoid plug-in wire assembly Electrical connection Flying leads Mini JAC solenoid plug-in with JAC solenoid plug-in with JAC solenoid plug-in with LED	24 24 24 24 24 24 24 24 24 24 24 24 24 2
ENOID O (X Volt A 110V B 24 V= OA 24 V= er options avail (X Volt C 24V= OF 24V= OD 2	External 14 End External 12 End PERATOR > PERATOR >	A B J' For use v X A B C	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM- Wire length 45 cm 60 cm 90 cm RM-	XX-XXXX-XXX D XXX-XX x 1 2 connectors G XXX-XX x 1 2	Manual of Recessed lock X* Manual of Recessed lock X * Manual of Recessed lock X *	perator locking ing perator locking ing perator locking ing	XX BA KA KD JB JD XXX BA KA GA RA	Electrical connection Flying leads Square connector with ligate Rectangular connector Rectangular connector with Rectangular connector with Rectangular connector with Rectangular connector with Rectangular connection Flying leads Solenoid plug-in wire as MAC JAC solenoid plug-in wire assembly Electrical connection Flying leads Mini JAC solenoid plug-in JAC soleno	24 24 24 24 24 24 24 24 24 24 24 24 24 2
ENOID O (X Volt A 110V B 24 V= OA 24 V= er options avai (X Volt C 24V= OF 24V= OD 24	External 14 End External 12 End PERATOR > PERATOR >	A B J' For use v X A B C	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM- Wire length 45 cm 60 cm 90 cm RM-	XX-XXXX-XXX D XXX-XX x 1 2 connectors G XXX-XX x 1 2	Manual of Recessed lock X* Manual of Recessed lock X * Manual of Recessed lock X *	perator locking ing perator locking ing perator locking ing	XX BA KA KD JB JD XXX BA KA GA RB	Electrical connection Flying leads Square connector with ligate Rectangular connector Rectangular connector with solution of the second plug-in wire assembly Electrical connection Flying leads Solenoid plug-in wire assembly Electrical connection Flying leads Mini JAC solenoid plug-in wire assembly Electrical connection Flying leads Mini JAC solenoid plug-in with JAC solenoid plug-in with JAC solenoid plug-in with LED	24 24 24 24 24 24 24 24 24 24 24 24 24 2
er options available (X Volta	External 14 End External 12 End PERATOR > PERATOR >	A B J' For use v X A B C	Wire length 45 cm 60 cm 15 cm with "J" & "K" type GM- Wire length 45 cm 60 cm 90 cm RM-	XX-XXXX-XXX D XXX-XX x 1 2 connectors G XXX-XX x 1 2	Manual of Recessed lock X* Manual of Recessed lock X * Manual of Recessed lock X *	perator locking ing perator locking ing perator locking ing	XX BA KA KD JB JD XXX BA KA GA RB	Electrical connection Flying leads Square connector with ligate Rectangular connector Rectangular connector with solution of the second plug-in wire assembly Electrical connection Flying leads Solenoid plug-in wire assembly Electrical connection Flying leads Mini JAC solenoid plug-in wire assembly Electrical connection Flying leads Mini JAC solenoid plug-in with JAC solenoid plug-in with JAC solenoid plug-in with LED	24 24 24 24 24 24 24 24 24 24 24 24 24 2



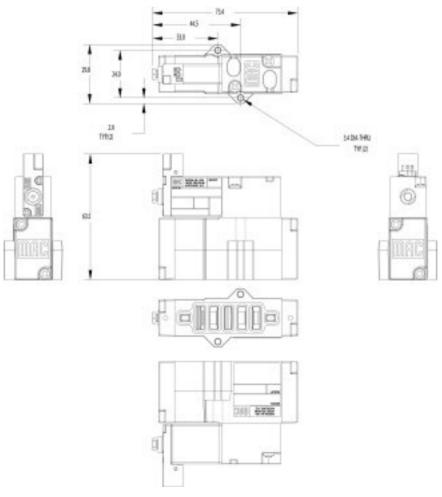




Fluid: Compressed air, vacuum, inert gases Pressure range : Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Pilot signal: 1,3 to 8 bar 2,3 to 8 bar for memory spring Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range: -18°C to +50°C Flow: 1500 Nl/min (Cv 1.5) Coil: Epoxy encapsulated - Class A wires - 100% ED Voltage range: -15% à +10% Power: 5.4 W - 4.0 W - 2.5 W - 1.8 W NPTF thread Option:

DIMENSIONS

Dimensions shown are metric (mm)





unction	P	ort size	Flow (Max)	Individual r	MOUNTING	Series
/2, 5/3	G	61/4" - G3/8"	1500 NI/min	Individual base Non plug-in Double operator		
PERATIONAL BEN	IEFITS					31
The 4-way pilot	develops maximum sh	ifting forces both ways				33
Memory spring			1 . 1 . 0		-60	34
Short stroke wit		of pressure, also provides	nigh flow		**	
Bonded spool v	vith minimum friction, s	hifting in a glass-like finish				36
	iced poppet, high flow, eliminates sticking	short and consistent respo	onse times.		9	1
Long service life						32
· ·						37
HOW TO ORD	ER					38
NGLE PRESSI	URE MODELS					52
Port size	Pilot air	5/2		5/3	5/3	53
		Double operate	tor (losed center	open cente	54
				97.J ²² J785.	Security 18	E 67
		144		21412	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	68
G1/4"	Internal	83A-BAC-xx-xxxx-		A-EAC- xx-xxxx - xxx	83A-FAC-xx-xxxx	(-XXX
	External 14 End	83A-BDC-xx-xxxx-		A-EDC-xx-xxxx-xxx	83A-FDC-xx-xxxx	-xxx 41
00/01/	External 12 End	83A-BEC-xx-xxxx-		A-EEC-xx-xxxx-xxx	83A-FEC-xx-xxxx	-XXX A2
G3/8"	Internal External 14 End	83A-BAD-xx-xxxx-3		A-EAD-xx-xxxx-xxx	83A-FAD-xx-xxxx	
	External 12 End	83A-BED- xx-xxxx -		A-EED-XX-XXXX-XXX	83A-FED-xx-xxxx	
INGLE PRESSI	· 	00/10/20/20/20/20/20/20/20/20/20/20/20/20/20		TELD JOK JOUR JOK		
Port size	Pilot gir		5/2		5/3	24
PORT SIZE	Pilot dir	Doub	le operator		Closed center	
		1	\fi/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			46
G1/4"	Internal from Port 5	92 A DD	C-xx-xxxx-xxx		83A-GBC-xx-xxxx	
G1/4"	External 14 End		C-xx-xxxx-xxx		83A-GDC-xx-xxxx-xxx	42
	External 12 End		C-xx-xxxx-xxx		83A-GEC-xx-xxxx-xxx	47
G3/8"	Internal from Port 5		D-xx-xxxx-xxx		83A-GBD-xx-xxxx-xxx	48P
,	External 14 End		DD-xx-xxxx-xxx		83A-GDD-xx-xxxx-xxx	
	External 12 End	83A-DE	D-xx-xxxx-xxx		83A-GED-xx-xxxx-xxx	48
OLENOID OP	PERATOR ➤	TM	-D xxx-xxx**			
						400
XX Volte	nna	X Wire lengtl	h X /	Nanual operator	XX Electrical c	onnection 92
	-/50Hz	A 45 cm		ecessed non locking	BA Flying leads	
	/1,8W	B 60 cm		ecessed locking	KA Square connec	
DA 24 V=,	/5,4W	J* 15 cm For use with "J" & "K" typ	ne connectors		JB Rectangular co	
Other options av	ailable, see page 403.		N-R xxx-xxx *		JD Rectangular co	nnector with light
		101				ISO
XX Volte	nna	X Wire lengtl		Nanual operator	XX Electrical c	onnection
	/1.0W	A 45 cm		lo operator	BA Flying leads	ISO
	/1.8W	B 60 cm		ecessed non locking		noid plua-in
	/2 0) //					TEN IEN
DH 12V=/	/1.0W /1.8W	C 90 cm	3 E	xtended non locking	RB Mini JAC soler with LED	noid plug-in



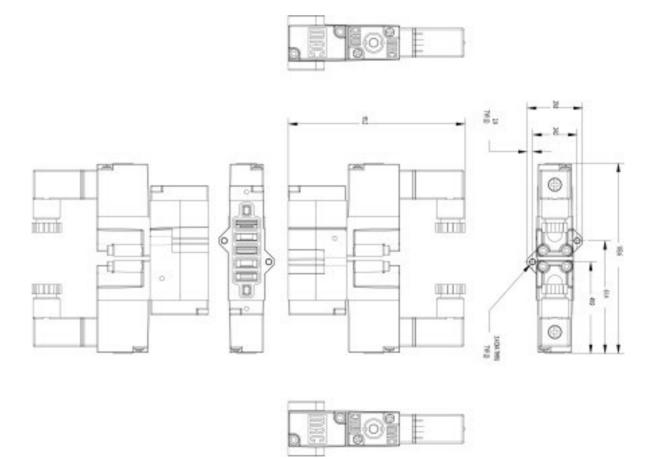




Fluid : Compressed air, vacuum, inert gases Pressure range : Internal pilot: 1,3 to 8 bar (2 pos.) - 2 to 8 bar (3 pos.) External pilot : Vacuum to 8 bar Pilot signal: 1,3 to 8 bar 2 to 8 bar (3 positions) Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Flow: 2-position: 1500 NI/min (Cv 1.5) - 3-position: 1100 NI/min (Cv 1.1) Coil: Epoxy encapsulated - Class A wires - 100% ED Voltage range: -15% à +10% Power: 5.4 W – 1.8 W NPTF thread Option:

DIMENSIONS

Dimensions shown are metric (mm)





Inline Subbase Subbase "plug-in" Manifold mounting

Series

31 33

34

36

48P

48

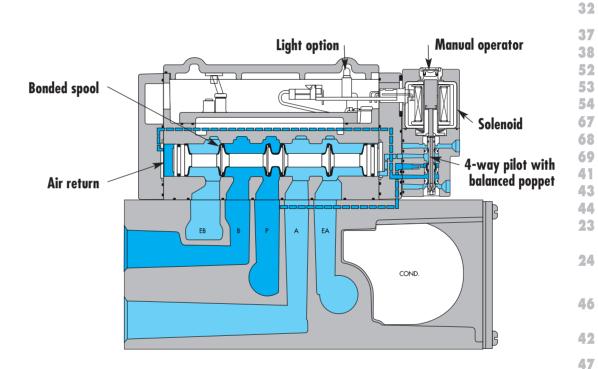
400

92

83

93

ISO 01 ISO 02 ISO 1 ISO 2 ISO 3



SERIES FEATURES

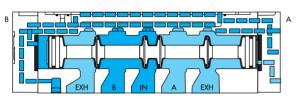
- Patented MACSOLENOID® for fastest possible response times and virtually burn-out proof AC solenoid operation.
- Optional low watt DC solenoids.
- Optional memory spring.
- Plug-in design of valves and bases for ease of maintenance.
- 2 position or 3 position valve configurations.



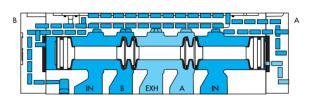




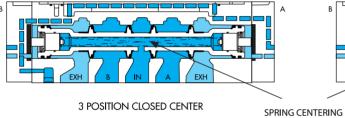
SPOOL CONFIGURATIONS



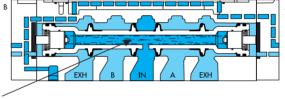
2 POSITION SINGLE PRESSURE SHOWN WITH "B" OPERATOR ENERGIZED



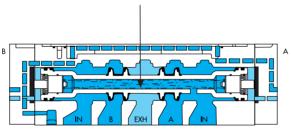
2 POSITION DUAL PRESSURE SHOWN WITH "B" OPERATOR ENERGIZED



3 POSITION CLOSED CENTER



3 POSITION OPEN CENTER



3 POSITION DUAL PRESSURE, PRESSURE CENTER

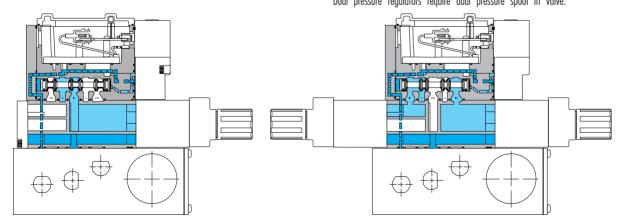
REGULATOR CONFIGURATIONS

SINGLE REGULATOR - SINGLE PRESSURE

Pressure supplied to the individual or manifold base passes through the regulator. Regulated pressure is supplied to the pressure path of the valve.

DUAL REGULATOR - DUAL PRESSURE

Pressure supplied from each regulator is divided in the block. Regulated pressure from "A" regulator supplies cylinder port "A". Regulated pressure from "B" regulator supplies cylinder port "B". Dual pressure regulators require dual pressure spool in valve.



MANIFOLD WITH REGULATOR - SINGLE PRESSURE

Note: For both single and dual pressure, air supply to the pilot system is never regulated.

MANIFOLD WITH REGULATOR - DUAL PRESSURE



Function		Port size	Floш (Max)	Individual mountin	g Si	eries
/2, 5/3	, 5/3 G3/8" - G1/2"		1/2" 3800 NI/min	Inline		
ERATIONAL BEN	NEFITS				.020.	31
Unique patente					- Alle	33
possible respo burn-out proof	solenoid oper	ation.		9		34
maximum shifti epeatability a	ing forces, pre nd consistent o	operation.			A 1	36
also available.		mory spring is blenoid down to		6	9 1	32 37
l watt. MAC spool an	d bore combir	nation wines				38
away contamii	nation, elimino	ates sticking and			0	52
allows for use		ervice.				53
HOW TO ORD	ER					54
NGLE PRESSI	ure modei	LS				67
Port size	Pilot air	5/2 Single opera	5/2 tor Double operator	5/3 Closed centre	5/3	68
		Single opera	tor Dooble operator	12 24 14	Open centre	69
						41 43
G3/8"	Internal	93A-AJ0-E0J-DM-Dxx	x-xxx 93A-BJ0-E0J-DM-Dxxx-xxx	93A-EJO-EOJ-DM-Dxxx-xxx		44
G1/2"	•	93A-AJ0-F0J-DM-Dxx	x-xxx 93A-BJ0-F0J-DM-Dxxx-xxx	93A-EJ0-F0J-DM-Dxxx-xxx	93A-FJ0-F0J-DM-Dxxx-xxx	23
G3/8"	External	93A-AJ0-E0K-DM-Dxx			93A-FJ0-E0K-DM-Dxxx-xxx	
G1/2"		93A-AJ0-F0K-DM-Dxx	YX-XXX 93A-BJ0-F0K-DM-DXXX-XXX	93A-EJO-FOK-DM-Dxxx-xxx	93A-FJ0-F0K-DM-Dxxx-xxx	24
AL PRESSUR	RE MODELS					
Port size	•	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure centre	46
						42
G3/8"		Internal	93A-CJ0-E0J-DM-Dxxx-xxx	93A-DJ0-E0J-DM-Dxxx-xxx		47
G1/2"			93A-CJ0-F0J-DM-Dxxx-xxx	93A-DJ0-F0J-DM-Dxxx-xxx	93A-HJ0-F0J-DM-Dxxx-xxx	48 F
G3/8" G1/2"		External	93A-CJ0-E0K-DM-Dxxx-xxx 93A-CJ0-F0K-DM-Dxxx-xxx	93A-DJ0-E0K-DM-Dxxx-xxx 93A-DJ0-F0K-DM-Dxxx-xxx	93A-HJ0-E0K-DM-Dxxx-xxx 93A-HJ0-F0K-DM-Dxxx-xxx	
0.72			70A GO TOR BIR BAAR AAA	70A DJO TOK DIN DAAR AAR	70A TIBO TON DIN DANK AAK	48
LENOID OF	PERATOR >		DM-D <u>xxx-xxx</u>	*		400
WW - W - In			7		v = =1 - 1 - 1 1 1	92
JA 110 V	age ~/50Hz		/ire length X 5 cm (Flying leads) 1	Manual operator X Non-locking K	X Electrical connection	
JB 220 V	~/50Hz	B 60	O cm (Flying leads) 2	Locking K	D Square connector with light	83
	/1,8W		onnector			93
	/5,4W /12,7W			В	A Flying leads	ISO
	vailable, see pa	 age 385.				
<u> </u>		-				ISO
OPTIONS						ISO
	-X IX-XXX-DVV	-Dyyy-yyy				130
	A-X J X-XXX-DM	n-Dxxx-xxx				ISO





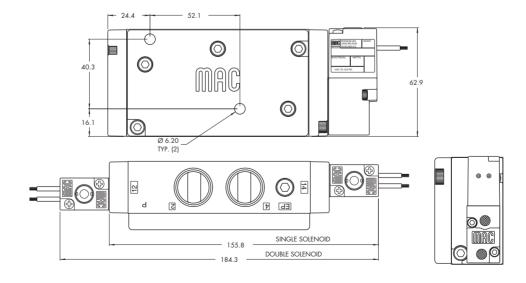


Fluid : Compressed air, vacuum, inert gases Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range : -18°C to +50°C Orifice: 11,7 mm Flow (at 6 bar, $\Delta P = 1 bar$): 3800 NI/min (Cv 3,8) Coil: Epoxy encapsulated – 100% ED Voltage range: -15% to +10% of nominal voltage Protection: IP65 (electrical connection) Power: ~ Inrush 7,6 VA Holding: 4,8 VA = 1.8 to 12.7 WResponse times : Energize :13 ms (with 4 W coil) De-energize: 10 ms

Option : • NPTF thread

DIMENSIONS

Dimensions shown are metric (mm)





ınction		Port size		Flow (Max)	Individual mounting		Series
/2, 5/3		G1/4" - G	3/8" - G1/2"	3400 NI/min	Subbase non "plug-in"		
PERATIONAL BEN	EFITS					400	31
Unique patente	d Macsolenoi	d® for fastest					33
possible respon					. 6	20	34
burn-out proof s Balanced popp maximum shifting	et 4-way pilot ng forces, pre	valve provides cise					36
repeatability ar Air only return. also available.	Optional mer	mory spring is				0	32
Optional low w	vattage DC so	lenoid down to					37
MAC spool and							38
away contamin		ites sticking and			(0)		52
		1 VICE.					53
HOW TO ORDI							54
ngle pressu	JRE MODEL	.S (1/4" MODELS	ARE BOTTON	1 PORTED)			67
Port size	Pilot air	5/2	uto v	5/2	5/3	5/3	68
		Single oper	aror	Double operator	Closed centre	Open centre	69
		(2) (1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	<u>ė.,</u>			A Company of Company o	41 43
alve less base		93A-ABA-000-DM-D	xxx-xxx 9	3A-BBA-000-DM-Dxxx-xxx	93A-EBA-000-DM-Dxxx-xxx	93A-FBA-000-DM-Dxxx-xxx	44
G1/4"		93A-ABA-DBG-DM-D		BA-BBA-DBG-DM-Dxxx-xxx	93A-EBA-DBG-DM-Dxxx-xxx	93A-FBA-DBG-DM-Dxxx-xxx	23
G3/8"	Internal	93A-ABA-EAG-DM-D		BA-BBA-EAG-DM-Dxxx-xxx	93A-EBA-EAG-DM-Dxxx-xxx	93A-FBA-EAG-DM-DXXX-XXX	
G1/2"		93A-ABA-FAG-DM-D		3A-BBA-FAG-DM-Dxxx-xxx	93A-EBA-FAG-DM-DXXX-XXX	93A-FBA-FAG-DM-Dxxx-xxx	24
G1/4" G3/8"	External	93A-ABA-DBH-DM-D		3A-BBA-DBH-DM-Dxxx-xxx 3A-BBA-EAH-DM-Dxxx-xxx	93A-EBA-DBH-DM-Dxxx-xxx 93A-EBA-EAH-DM-Dxxx-xxx	93A-FBA-DBH-DM-Dxxx-xxx 93A-FBA-EAH-DM-Dxxx-xxx	
G1/2"	LXICITIO	93A-ABA-FAH-DM-D		3A-BBA-FAH-DM-Dxxx-xxx	93A-EBA-FAH-DM-Dxxx-xxx	93A-FBA-FAH-DM-Dxxx-xxx	46
	E MODELS				ORS" SECTION (1/4" MOD		40
Port size		Pilot air		/2	5/2	5/3	42
			Single o	perator	Double operator	Pressure centre	47
				h ki jan B	<u>1 </u>	EB IN EA	48
Valve less be	ase			DM-Dxxx-xxx	93A-DBA-000-DM-Dxxx-xxx	93A-HBA-000-DM-Dxxx-xxx	48
G1/4"		Internal		-DM-Dxxx-xxx	93A-DBA-DBG-DM-DXXX-XXX	93A-HBA-DBG-DM-DXXX-XXX	
G3/8" G1/2"		Internal		-DM-Dxxx-xxx -DM-Dxxx-xxx	93A-DBA-EAG-DM-Dxxx-xxx 93A-DBA-FAG-DM-Dxxx-xxx	93A-HBA-EAG-DM-DXXX-XXX 93A-HBA-FAG-DM-DXXX-XXX	40
G1/2 G1/4"		·		DM-Dxxx-xxx	93A-DBA-DBH-DM-DXXX-XXX	93A-HBA-DBH-DM-Dxxx-xxx	
G3/8"		External		DM-Dxxx-xxx	93A-DBA-EAH-DM-Dxxx-xxx	93A-HBA-EAH-DM-Dxxx-xxx	92
-, -				DM-Dxxx-xxx	93A-DBA-FAH-DM-Dxxx-xxx	93A-HBA-FAH-DM-Dxxx-xxx	83
G1/2"							
G1/2" OLENOID OP	FRATOR >) <u>XX</u> X- <u>X</u> XX.			93

Voltage

110 V~/50Hz

220 V~/50Hz 24 V~/50Hz 24 V=/1,8W 24 V=/5,4W 24 V=/12,7W

FB

Manual operator

Non-locking

Locking

Wire length

45 cm

60 cm

Connector

Flying leads

ВМ

BG

JD

Electrical connection

Flying leads with diode Flying leads with M.O.V

Flying leads with ground Rectangular connector

Rectangular connector with light

ISO 02

ISO 1

ISO 2

ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot: 1,3 to 8 bar
External Pilot: Vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 11,7 mm

Flow (at 6 bar, ΔP=1bar): 1/4", 3/8": 3000 NI/min (Cv3.0) – 1/2": 3400 NI/min (Cv 3,4)

Coil: Epoxy encapsulated – 100% ED

Voltage range : -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~ Inrush 7,6 VA Holding: 4,8 VA

= 1 to 12.7 W

Response times: Energize: 13 ms (with 4 W coil) De-energize: 10 ms

Options : • NPTF thread • Sandwich regulator (see ,regulators' section)

• Sandwich flow controls FC93A-BA (screwdriver slot adjustment)

FC93A-BB (locking knob adjustment)

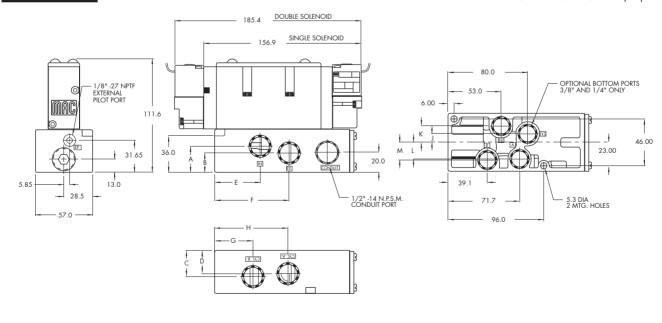
Spare parts: • Pilot valve: DM-Dxxx-xxx • Valve to base pressure seal: 16622

• Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249

• Pilot valve mounting screws (x2): 35069

DIMENSIONS

Dimensions shown are metric (mm)





Function	Port size	Floш (Max)	Individual mounting	Series

5/2, 5/3

G1/4" - G3/8" - G1/2" 3400 NI/min



OPERATIONAL BENEFITS

- Unique patented Macsolenoid® for fastest possible response times and virtually burn-out proof solenoid operation.
- Balanced poppet 4-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
- Air only return. Optional memory spring is also available.
- 4. Optional low wattage DC solenoid down to 1 watt.
- MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.



31

33

34

36

32

37

38

52

53

54

24

46

42 47 48P

48

400

92 83

93

ISO 01 ISO 02 ISO 1 ISO 2 ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS (1/4" MODELS ARE BOTTOM PORTED)

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
		10 10 10 10 10 10 10 10 10 10 10 10 10 1	$\left\{\frac{\frac{1}{2^{1/2}} \frac{1}{10}}{\frac{1}{10}}\right\}_{ij}^{ij} = \left\{\frac{1}{2^{1/2}} \frac{1}{10^{1/2}}\right\}_{ij}^{ij}$		
Valve less base		93A-AAA-000-DM-DxxP-xxx	93A-BAA-000-DM-DxxP-xxx	93A-EAA-000-DM-DxxP-xxx	93A-FAA-000-DM-DxxP-xxx
G1/4"		93A-AAA-DBA-DM-DxxP-xxx	93A-BAA-DBA-DM-DxxP-xxx	93A-EAA-DBA-DM-DxxP-xxx	93A-FAA-DBA-DM-DxxP-xxx
G3/8"	Internal	93A-AAA-EAA-DM-DxxP-xxx	93A-BAA-EAA-DM-DxxP-xxx	93A-EAA-EAA-DM-DxxP-xxx	93A-FAA-EAA-DM-DxxP-xxx
G1/2"		93A-AAA-FAA-DM-DxxP-xxx	93A-BAA-FAA-DM-DxxP-xxx	93A-EAA-FAA-DM-DxxP-xxx	93A-FAA-FAA-DM-DxxP-xxx
G1/4"		93A-AAA-DBD-DM-DxxP-xxx	93A-BAA-DBD-DM-DxxP-xxx	93A-EAA-DBD-DM-DxxP-xxx	93A-FAA-DBD-DM-DxxP-xxx
G3/8"	External	93A-AAA-EAD-DM-DxxP-xxx	93A-BAA-EAD-DM-DxxP-xxx	93A-EAA-EAD-DM-DxxP-xxx	93A-FAA-EAD-DM-DxxP-xxx
G1/2"		93A-AAA-FAD-DM-DxxP-xxx	93A-BAA-FAD-DM-DxxP-xxx	93A-EAA-FAD-DM-DxxP-xxx	93A-FAA-FAD-DM-DxxP-xxx

Port size	Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure Centre
		$\ \mathbf{r}\ _{L^{2}(\Omega)}^{2} \leq \frac{1}{2} \frac{1}$	+ + + + + + + + + + + + + + + + + + +	B A A A A A A A A A A A A A A A A A A A
Valve less base		93A-CAA-000-DM-DxxP-xxx	93A-DAA-000-DM-DxxP-xxx	93A-HAA-000-DM-DxxP-xxx
G1/4"		93A-CAA-DBA-DM-DxxP-xxx	93A-DAA-DBA-DM-DxxP-xxx	93A-HAA-DBA-DM-DxxP-xxx
G3/8"	Internal	93A-CAA-EAA-DM-DxxP-xxx	93A-DAA-EAA-DM-DxxP-xxx	93A-HAA-EAA-DM-DxxP-xxx
G1/2"		93A-CAA-FAA-DM-DxxP-xxx	93A-DAA-FAA-DM-DxxP-xxx	93A-HAA-FAA-DM-DxxP-xxx
G1/4"		93A-CAA-DBD-DM-DxxP-xxx	93A-DAA-DBD-DM-DxxP-xxx	93A-HAA-DBD-DM-DxxP-xxx
G3/8"	External	93A-CAA-EAD-DM-DxxP-xxx	93A-DAA-EAD-DM-DxxP-xxx	93A-HAA-EAD-DM-DxxP-xxx
G1/2"		93A-CAA-FAD-DM-DxxP-xxx	93A-DAA-FAD-DM-DxxP-xxx	93A-HAA-FAD-DM-DxxP-xxx

SOLENOID OPERATOR ➤

DM-D XX P-XXX

Above models	are shown	without light	
Above models	are snown	without light.	

XX	Voltage	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	1	Non-locking	DM	Plug-in
JB	220 V~/50Hz	2	Locking	DN	Plug-in with diode
JC	24 V~/50Hz			DP	Plug-in with M.O.V.
FB	24 V=/1,8W			DG	Plug-in with ground
DA	24 V=/5,4W				
DF	24 V=/12,7W				

^{*} Other options available, see page 385. Note: Ground required for 30 Volts or higher. Other options available for the 93 series valves, see page 222







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot: 1,3 to 8 bar
External Pilot: Vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range: -18°C to +50°C

Orifice: 11,7 mm

Flow (at 6 bar, $\Delta P = 1bar$): 1/4", 3/8": 3000 NI/min (Cv3.0) – 1/2": 3400 NI/min (Cv 3,4)

Coil: Epoxy encapsulated – 100% ED

Voltage range : -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~ Inrush 7,6 VA Holding: 4,8 VA

= 1 to 12.7 W

Response times: Energize: 13 ms (with 4 W coil) De-energize: 10 ms

Options : • NPTF thread • Sandwich regulator (see ,regulators' section)

• Sandwich flow controls FC93A-AA (screwdriver slot adjustment)

FC93A-AB (locking knob adjustment)

Spare parts : • Pilot valve: DM-DxxP-xxx • Valve to base pressure seal: 16622

• Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249

• Pilot valve mounting screws (x2): 35069

DIMENSIONS Dimensions shown are metric (mm) DOUBLE SOLENOID 185.4 SINGLE SOLENOID 80.0 - 1/8" -27 NPTF EXTERNAL PILOT PORT OPTIONAL BOTTOM PORTS 3/8" AND 1/4" ONLY 53.0 -6.00 111.6 46.00 23.00 36.0 31.65 20.0 13.0 39.1 28.5 1/2" -14 N.P.S.M. CONDUIT PORT 5.3 DIA 2 MTG. HOLES 57.0

	DIM.	A	В	C	D	E	F	G	Н
	G3/8"	27.15	20.65	27.15	24.15	54.1	81.7	38.2	73.5
	G1/2"	25.5	19.0	25.5	22.5	45.8	75.3	38.2	73.5
-									



Function		Port size	Flow (I	Floш (Max)		ting	Series
2, 5/3	, 5/3 G3/8" - G1/2"		G1/2" 3800	NI/min	Manifold base non "plug-in"		
ERATIONAL BEN	NEFITS					_	31
	ed Macsolenoid					-	33
	nse times and v solenoid opera					500	34
Balanced pop _l maximum shift	pet 4-way pilot ing forces, pred and consistent o	valve provides cise			4		36
Air only return Ilso available	. Optional men	nory spring is				3	32
Optional low v watt.	wattage DC sol	enoid down to				0100	37
	nd bore combin	ation wipes			9		38
	nation, elimina on non-lube se	tes sticking and			6)		52
		i vice.					53
IOW TO ORD	ER						54
GLE PRESS	URE MODEL	S					67
Port size	Pilot air	5/2		5/2	5/3	5/3	68
		Single oper	rator Doubl	Double operator Closed		Open centre	69
		副 前列	lie philip	$1.7m_{\odot}$	*** / PP		41
		# # 15	<u> </u>	W.	F##	1 2 2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	43
ve less base		93A-ABA-000-DM-E		00-DM-Dxxx-xxx	93A-EBA-000-DM-Dxxx-xx		44
G3/8"	Internal	93A-ABA-EJG-DM-D		G-DM-Dxxx-xxx	93A-EBA-EJG-DM-DXXX-XXX		_ 23
G1/2"		93A-ABA-FJG-DM-D		G-DM-DXXX-XXX	93A-EBA-FJG-DM-DXXX-XXX		-
G3/8" G1/2"	External	93A-ABA-EJH-DM-D 93A-ABA-FJH-DM-D		H-DM-Dxxx-xxx	93A-EBA-EJH-DM-DXXX-XXX 93A-EBA-FJH-DM-DXXX-XXX		24
	DE MODEIS		WICH REGULATOR, S			- /on Ion Ion on one	-
Port size		Pilot air	5/2	LL "KLOOLATC	5/2	5/3	46
			Single operator		Double operator	Pressure centre	
			到分类			B A A A A A A A A A A A A A A A A A A A	42 47
Valve less b	ase		93A-CBA-000-DM-Dxxx	-xxx	93A-DBA-000-DM-Dxxx-xxx	93A-HBA-000-DM-Dxxx-xxx	48I
G3/8"		Internal	93A-CBA-EJG-DM-Dxxx	-xxx	93A-DBA-EJG-DM-Dxxx-xxx	93A-HBA-EJG-DM-Dxxx-xxx	- 701
G1/2"			93A-CBA-FJG-DM-Dxxx	-xxx	93A-DBA-FJG-DM-Dxxx-xxx	93A-HBA-FJG-DM-Dxxx-xxx	48
G3/8"		External	93A-CBA-EJH-DM-Dxxx	XXX	93A-DBA-EJH-DM-Dxxx-xxx	93A-HBA-EJH-DM-Dxxx-xxx	70
G1/2"			93A-CBA-FJH-DM-Dxxx	·XXX	93A-DBA-FJH-DM-Dxxx-xxx	93A-HBA-FJH-DM-Dxxx-xxx	40
ENOID OF	PERATOR >		DM-D 💢	XX-XXX ·		_	92
				<u> </u>			83
XX Volt	_		Wire length		anual operator	XX Electrical connection	
	~/50Hz ~/50Hz	A B	45 cm (Flying leads) 60 cm (Flying leads)		on-locking cking	BM Flying leads BN Flying leads with diode	93
	/50Hz /1,8W	J	Connector		_	KA Square connector KD Square connector with light	ISO
	/5,4W				_	Square connector with light	- 160
	/12 7\4/						ISO
DF 24 V=	. ,						
DF 24 V=	. ,	ge 385. M-93001-01-01	P internal pilot.				ISO
Other options are plate kit require	vailable, see paged (1/2" ports):	ge 385. M-93001-01-01 M-93001-02-01 series valves, see pag	P external pilot.				ISO ISO







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot: 1,3 to 8 bar External Pilot: Vacuum to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 11,7 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 3/8": 3400 Nl/min (Cv 3,4) - 1/2": 3800 Nl/min (Cv 3.8)

Coil: Epoxy encapsulated – 100% ED

-15% to +10% of nominal voltage Voltage range:

Protection: IP65 (electrical connection)

~ Inrush 7,6 VA Holding: 4,8 VA Power:

= 1 to 12.7 W

Response times : Energize:13 ms (with 4 W coil) De-energize: 10 ms

• NPTF thread • Sandwich regulator (see ,regulators' section) Options :

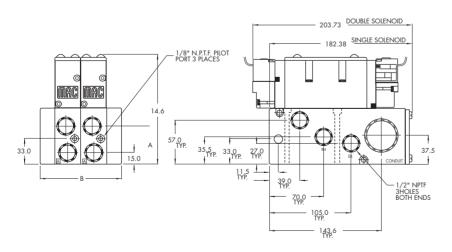
• Sandwich flow controls FC93A-BA (screwdriver slot adjustment), FC93A-BB (locking knob adjustment)

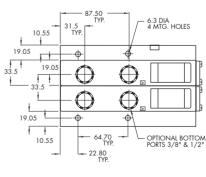
Spare parts: • Pilot valve: DM-Dxxx-xxx • Valve to base pressure seal: 16622

• Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249

• Inlet/exh. Isolator disc: N-93008 • Valve blanking plate: M-93002

DIMENSIONS





#	1	2	3	4	5	6	7	8	9	10
В	71.6	105.1	138.6	172.1	205.6	239.1	272.6	306.1	339.6	373.1



unction	ion Port size Flow (Max) Manifold moun		Manifold mounting	Seri		
/2, 5/3		G3/8" - G	1/2"	3800 NI/min	Manifold base "plug-in"	
PERATIONAL BEN	NEFITS					3
. Unique patente	ed Macsolenoi	d® for fastest			0	454
	nse times and v				-	237
burn-out proot Balanced pop	solenoid opera					9
maximum shift	ring forces, pred and consistent o	cise			**	3
Air only return also available.	. Optional men	nory spring is				3
Optional low v	wattage DC sol	enoid down to				3000
MAC spool an	nd bore combin	ation wipes			0 %	3
away contami	nation, elimina	tes sticking and			20	5
allows for use	on non-lube se	rvice.				5
HOW TO ORD	ER					5
INGLE PRESS	URF MODEL	S				6
Port size	Pilot gir	5/2		5/2	5/3	5/3
POII SIZE	Filor air	Single oper	itor	Double operator	Closed centre	Open centre
		# # #		1 to 1 to 1	American State	
		E	<u></u>		22 Mary 1/2	
alve less base		93A-AAA-000-DM-D	CXP-XXX	93A-BAA-000-DM-DxxP-xxx	93A-EAA-000-DM-DxxP-xxx	93A-FAA-000-DM-DxxP-xxx
G3/8"	Internal	93A-AAA-EJA-DM-D		93A-BAA-EJA-DM-DxxP-xxx	93A-EAA-EJA-DM-DxxP-xxx	93A-FAA-EJA-DM-DxxP-xxx
G1/2"	-	93A-AAA-FJA-DM-D	xxP-xxx	93A-BAA-FJA-DM-DxxP-xxx	93A-EAA-FJA-DM-DxxP-xxx	93A-FAA-FJA-DM-DxxP-xxx
G3/8"	External	93A-AAA-EJD-DM-D	xxP-xxx	93A-BAA-EJD-DM-DxxP-xxx	93A-EAA-EJD-DM-DxxP-xxx	93A-FAA-EJD-DM-DxxP-xxx
G1/2"	-	93A-AAA-FJD-DM-D	xxP-xxx	93A-BAA-FJD-DM-DxxP-xxx	93A-EAA-FJD-DM-DxxP-xxx	93A-FAA-FJD-DM-DxxP-xxx
UAL PRESSUR	RE MODELS	(require sandy	VICH REGULA	ATOR, SEE "REGULA		
Port size		Pilot air		5/2	5/2	5/3
			Single operator		Double operator	Pressure Centre
			비	N. Kr ata Tali	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	B A A A A A A A A A A A A A A A A A A A
Valve less b	ase		93A-CAA-00	O-DM-DxxP-xxx	93A-DAA-000-DM-DxxP-xxx	93A-HAA-000-DM-DxxP-xxx
G3/8"		Internal	93A-CAA-EJ	A-DM-DxxP-xxx	93A-DAA-EJA-DM-DxxP-xxx	93A-HAA-EJA-DM-DxxP-xxx
G1/2"		-	93A-CAA-FJ	A-DM-DxxP-xxx	93A-DAA-FJA-DM-DxxP-xxx	93A-HAA-FJA-DM-DxxP-xxx
G3/8"		External	93A-CAA-EJI	D-DM-DxxP-xxx	93A-DAA-EJD-DM-DxxP-xxx	93A-HAA-EJD-DM-DxxP-xxx
G1/2"			93A-CAA-FJI	D-DM-DxxP-xxx	93A-DAA-FJD-DM-DxxP-xxx	93A-HAA-FJD-DM-DxxP-xxx
OLENOID OF	PERATOR >		DM-	D <u>xx</u> P- <u>xxx</u>	* Above model numbers are	e shown with side ports without light.
						8
XX Volt	-			anual operator		ical connection
	/~/50Hz (2,9W) /~/50Hz (2,9W)			n-locking king	DM Plug-in DN Plug-in	with diode
JC 24 V~	/50Hz (3,7W)			3	DP Plug-in	with M.O.V.
	:/1,8W :/5,4W				DG Plug-in	with ground
	:/12,7W					1
Other options a	vailable, see pa	ge 385.				
Other options and plate required	(1/2" ports):	M-93001-01-01P In M-93001-02-01P Ex	ternal pilot.			I
ther options avail	lable for the 93	series valves, see page				







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal Pilot: 1,3 to 8 bar
External Pilot: Vacuum to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : $-18^{\circ}\text{C to } +50^{\circ}\text{C}$

Orifice: 11,7 mm

Flow (at 6 bar, ΔP=1bar): 3/8": 3400 NI/min (Cv 3,4) – 1/2": 3800 NI/min (Cv 3.8)

Coil: Epoxy encapsulated – 100% ED

Voltage range : -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~ Inrush 7,6 VA Holding: 4,8 VA

= 1 to 12.7 W

Response times: Energize: 13 ms (with 4 W coil) De-energize: 10 ms

Options : • NPTF thread • Sandwich regulator (see ,regulators' section)

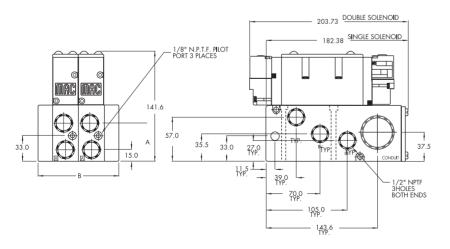
• Sandwich flow controls FC93A-AA (screwdriver slot adjustment), FC93A-AB (locking knob adjustment)

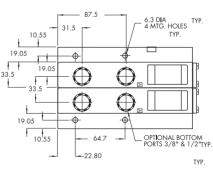
Spare parts : • Pilot valve: DM-DxxP-xxx • Valve to base pressure seal: 16622

• Pilot valve pressure seal: 16542 • Mounting screws valve to base (x4): 35249

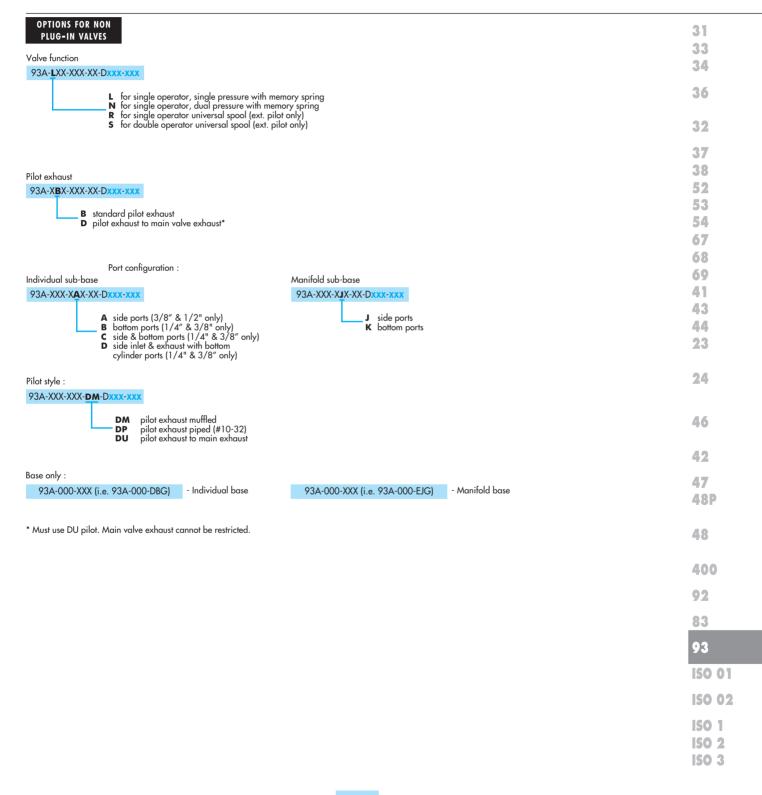
• Inlet/exh. Isolator disc: N-93008 • Valve blanking plate: M-93002

DIMENSIONS





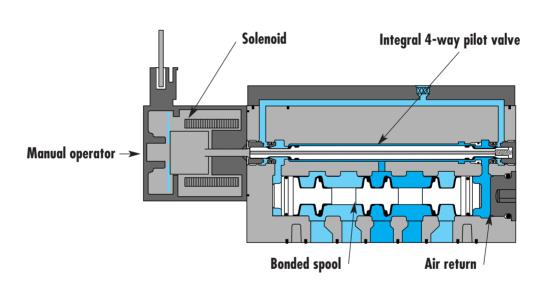
#	1	2	3	4	5	6	7	8	9	10
В	71.6	105.1	138.6	172.1	205.6	239.1	272.6	306.1	339.6	373.1





OPTIONS FOR PLUG-IN VALVES Valve function 93A-LXX-XXX-XX-DxxP-xxx L for single operator, single pressure with memory spring N for single operator, dual pressure with memory spring r for single operator universal spool (ext. pilot only) for double operator universal spool (ext. pilot only) Pilot exhaust 93A-XAX-XXX-XX-DxxP-xxx A standard pilot exhaust C pilot exhaust to main valve exhaust* Body electrical 92B-XXA-XXX-XX-DxxP-xxx Port configuration: Individual sub-base Manifold sub-base 93A-XXX-X**A**X-XX-DxxP-xxx 93A-XXX-XJX-XX-DxxP-xxx A side ports (3/8" & 1/2" only) B bottom ports (1/4" & 3/8" only) C side & bottom ports (1/4" & 3/8" only) D side inlet & exhaust with bottom cylinder ports (1/4" & 3/8" only) J side ports K bottom ports Base/manifold int./ext. pilot 93A-XXX-XX**A**-XX-DxxP-xxx internal pilot no light internal pilot single light internal pilot double light external pilot no light external pilot single light external pilot double light Pilot style : 93A-XXX-XXX-DM-DxxP-xxx pilot exhaust muffled pilot exhaust piped (#10-32) pilot exhaust to main exhaust DP DU Base only: 93A-000-XXX (i.e. 93A-000-DBA) - Individual base 93A-000-XXX (i.e. 93A-000-DJA) - Manifold base (Note: bases are wired for double solenoid valves)

* Must use DU pilot. Main valve exhaust cannot be restricted.



SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- 2-position, single or double operator.
- 3-position, double solenoid, open centre, closed centre and pressure centre.
- Internal or external pilot.
- Single or dual pressure.

ISO 01

36

23

24

46

42

47 48P

48

400

92

83

93

ISO 02

ISO 1

ISO 2



Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G1/4"	1000 NI/min	Valve only — No base non "plug-in" Conform to ISO 15407/1	

OPERATIONAL BENEFITS

- 1. Unique patented MACsolenoid® with oval shaped armature for fastest possible response times.
- 2. Balanced poppet 5-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
- 3. MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.
- 4. Large spool area for maximum shifting forces even at minimum operating pressure.
- 5. Very high flow in a compact package. Pilot valve and main valve in the same body.

- 6. Internal or external pilot operation.
- 7. Air only return
- 8. Optional low wattage DC solenoid down to 1 0 Watt



34 36 32 **37**

38 **52** 53

31

33

54

67 68

69 41 43

44 23

24

46

42 47

48P 48

400

92 83

93

ISO 01 ISO 02

ISO 1

ISO 2 ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
	14	14 4 2 12 5 V 01 V 3	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 1
Internal	MV-A01A-AAMA-Jxxx-xxx	MV-A01A-ABMA-Jxxx-xxx	MV-A01A-AEMA-Jxxx-xxx	MV-A01A-AFMA-Jxxx-xxx
External "12" end	MV-A01A-AAMD-Jxxx-xxx	MV-A01A-ABMD-Jxxx-xxx	MV-A01A-AEMD-Jxxx-xxx	MV-A01A-AFMD-Jxxx-xxx
External "14" end	MV-A01A-AAME-Jxxx-xxx	MV-A01A-ABME-Jxxx-xxx	MV-A01A-AEME-Jxxx-xxx	MV-A01A-AFME-Jxxx-xxx

DUAL PRESSURE MODELS

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Pressure centre
	$ \begin{array}{c c} 12 & 4 & 2 & 4 \\ \hline \end{array} $	12 4 2 14	12 14 5 0 0 0 0 3
Internal from port #3	MV-A01A-ACMB-Jxxx-xxx	MV-A01A-ADMB-Jxxx-xxx	MV-A01A-AHMB-Jxxx-xxx
Internal from port #5	MV-A01A-ACMC-Jxxx-xxx	MV-A01A-ADMC-Jxxx-xxx	MV-A01A-AHMC-Jxxx-xxx
External from "12" end	MV-A01A-ACMD-Jxxx-xxx	MV-A01A-ADMD-Jxxx-xxx	MV-A01A-AHMD-Jxxx-xxx
External from "14" end	MV-A01A-ACME-Jxxx-xxx	MV-A01A-ADME-Jxxx-xxx	MV-A01A-AHME-Jxxx-xxx

J XXX-XXX

SOLENOID OPERATOR ➤

				ፓኒ	
XX	Voltage	X	Lead wire length	X	Manual operator
DA	24V=/5,4W	0	No lead wire/ connector	1	Non-locking
DB	12V=/5,4W	Α	45 cm	2	Locking
DC	24V=/2,4W	В	60 cm		
DD	12V=/2,4W	C	90 cm	-	

DD	12V=/2,4W	C	90 cm	
DE	24V=/1,8W			
DU	24V=/1,0W			

Other options available, see page 393.

ote: - ISO series, valve and base are ordered separately, see page 299 for base codes.

- If sandwich regulator is required, valve must be ordered as external pilot. For internal pilot regulator use valve with external pilot 12 end valve - for external pilot regulator, use valve with external pilot 12 or 14 end.

OPTIONS

Pilot exhaust:

MV-A01A-XX X X-Jxxx-xxx

- M Pilot exhaust muffled
- R Pilot exhaust piped M5
 U Pilot exhaust out main exhaust

Electrical connection

Square connector with light Rectangular connector Rectangular connector with light

Mini square connector Mini square connector with light

Flying leads Square connector







Fluid : Compressed air, vacuum, inert gases

Pressure range: Internal pilot – 2 pos.: 1,4 to 8 bar 3 pos.: 2,3 to 8 bar

External pilot – Vacuum to 8 bar

Pilot pressure : 2 pos.: 1,4 to 8 bar – 3 pos.: 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

Orifice:

6 mm

Flow (at 6 bar, $\Delta P = 1 bar$): 2 pos.: 1000 NI/min (Cv 1.0) - 3 pos. 800 NI/min (Cv 0.8)

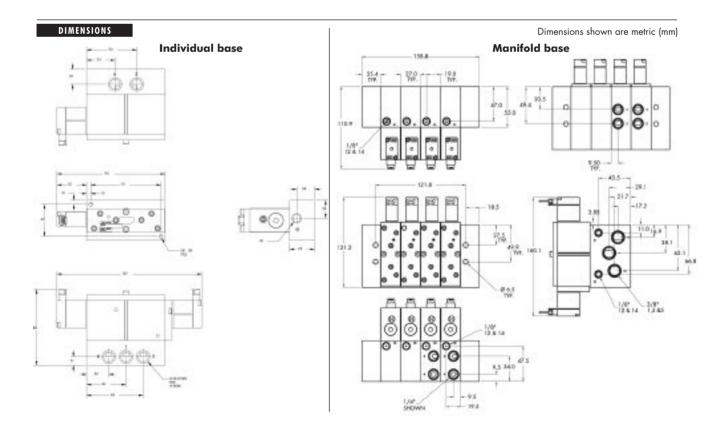
Coil: Epoxy encapsulated – Class F wires - 100% ED

Voltage range: -15% to +10% of nominal voltage

Power: 1,0 to 5,4 W

• Sandwich flow controls: FCA01A-AA (screwdriver slot adjustment). Options :

• Sandwich pressure regulator, see ,Regulators' section





unction	Port size		Floш (Max)	Individual/Manifo	ld mounting	Series
5/2, 5/3	G1/4"		1000 NI/min	Valve only No base Plug-in Conform to ISO 15407/2		
OPERATIONAL BENEFITS						31
I. Unique patented MAC			xternal pilot operation.			33
shaped armature for for times.	astest possible response	 Air only retu Valve width: 			THE STATE OF THE S	34
2. Balanced poppet 5-wo	es, precise repeatability	o. yaivo waiii.	. 20	0	H	36
. MAC spool and bore away contamination,	eliminates sticking and			0		32
allows for use on non-lube service 4. Large spool area for maximum shifting forces,				180		37
even at minimum oper. Very high flow in a co					300	38
valve and main valve						52
HOW TO ORDER						53 54
SINGLE PRESSURE A	AODELS					67
Pilot air	5/2		5/2	5/3	5/3	68
1 1101 411	Single ope	rator	Double operator	Closed centre	Open centre	69
	14 4 7	2 12	14 4 2 12	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 1	41
		₹3	<u> </u>	5 V O V 3	<u> </u>	43
Internal	MV-P01A-AACA-F		MV-P01A-ABCA-RxxP-xxx		MV-P01A-AFCA-RxxP-xxx	44
External "12" end	MV-P01A-AACD-R		MV-P01A-ABCD-RXXP-XXX		MV-P01A-AFCD-RxxP-xxx	23
External "14" end	MV-P01A-AACE-R	XXXP-XXX	MV-P01A-ABCE-RxxP-xxx	X MV-P01A-AECE-RXXP-XXX MV-P01A-AFCE-RXXP		
DUAL PRESSURE MC	DDELS					24
Pilo	ot air	a	5/2	5/2	5/3	
		Singl	e operator	Double operator	Pressure centre	46
			√			-
Internal fr	rom port #3	MV-P01A-ACCB-RxxP-xxx		MV-P01A-ADCB-RxxP-xxx	MV-P01A-AHCB-RxxP-xxx	42
Internal fr	om port #5	MV-P01A	-ACCC-RxxP-xxx	MV-P01A-ADCC-RxxP-xxx	MV-P01A-AHCC-RxxP-xxx	47
					1010011111000	

SOLENOID OPERATOR ➤

External from "12" end

External from "14" end



MV-P01A-ADCD-RxxP-xxx

MV-P01A-ADCE-RxxP-xxx

MV-P01A-ACCD-RxxP-xxx

MV-P01A-ACCE-RxxP-xxx

XX	Voltage	X	Manual operator	XX	Electrical connection
AA*	120 VAC	0	Non operator	PA	Base plug-in
AC*	24 VAC	1	Recessed non locking	PB	Base plug-in with light
DC	24V=/1.8W	3	Extended non locking	PC	Base plug-in with MOV
DD	24V=/2.5W			PD	Base plug-in with light & MOV
DE	24V=/3.0W				
DF	24V=/4.0W				
DJ	12V=/1.8W				

¹²V=/4.0W

12V=/2.5W 12V=/3.0W

Use either PA or PB connector
Note: ISO series, valve and base are ordered separately, see page 301 for base codes.

** Other options available, see page 401.

OPTIONS

Pilot exhaust:

DK

MV-P01A-XXxMVx-RxxP-xxx

C Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust out main exhaust

227

Consult "Precautions" page 407 before use, installation or service of MAC Valves.

MV-P01A-AHCD-RxxP-xxx

MV-P01A-AHCE-RxxP-xxx

48P

48

ISO 01

ISO 02

ISO 1

ISO 2







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot – 2 pos.: 1,3 to 8 bar 3 pos.: 2,3 to 8 bar

External pilot: vacuum to 8 bar

Pilot pressure: 2 pos.: 1,3 to 8 bar - 3 pos.:2,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

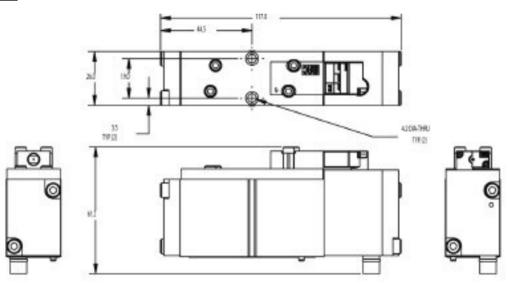
Flow (at 6 bar, ΔP=1bar): 2 pos.: 1000 NI/min (Cv 1.0) – 3 pos.: 800 NI/min (Cv.8)

Coil: Epoxy encapsulated - Class A wires - 100% ED

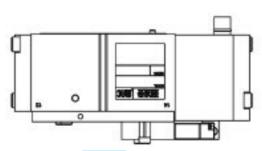
Voltage range : -15% to +10%

Power: 1,8 to 5,4 W

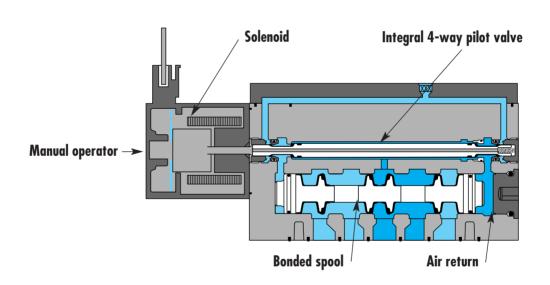
DIMENSIONS











SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- 2-position, single or double operator.
- 3-position, double solenoid, open centre, closed centre and pressure centre.
- Internal or external pilot.
- Single or dual pressure.

ISO 01

ISO 1

Series

48P

ISO 2



Function	Port size	Flow (Max)	Individual/Manifold mounting	Series
5/2, 5/3	G1/8"	430 NI/min	Valve only— No base non "plugin" Conform to ISO 15407/1	

OPERATIONAL BENEFITS

- Unique patented MACsolenoid® with oval shaped armature for fastest possible response times.
- Balanced poppet 5-way pilot valve provides maximum shifting forces, precise repeatability and consistent operation.
- MAC spool and bore combination wipes away contamination, eliminates sticking and allows for use on non-lube service.
- 4. Large spool area for maximum shifting forces even at minimum operating pressure.
- 5. Very high flow in a compact package. Pilot valve and main valve in the same body.

HOW TO ORDER

SINGLE PRESSURE MODELS

Pilot air

Internal

External "12" end

External "14" end

DUAL PRESSURE MODELS

SOLENOID OPERATOR ➤

Voltage

24V=/5,4W

12V=/5,4W

24V=/2,4W

12V=/2.4W

24V=/1,8W

24V=/1,0W

Pilot air

Internal from port #3

Internal from port #5

External from "12" end

External from "14" end

- 6. Internal or external pilot operation.
- 7. Air only return

5/2

Single operator

MV-A02A-AAMA-Jxxx-xxx

MV-A02A-AAMD-Jxxx-xxx

MV-A02A-AAME-Jxxx-xxx

₽,\₩

8. Optional low wattage DC solenoid down to 1.0 Watt.

5/2

Double operator

MV-A02A-ABMA-Jxxx-xxx

MV-A02A-ABMD-Jxxx-xxx

MV-A02A-ABME-Jxxx-xxx

5/2

Single operator

MV-A02A-ACMB-Jxxx-xxx

MV-A02A-ACMC-Jxxx-xxx

MV-A02A-ACMD-Ixxx-xxx

MV-A02A-ACME-Jxxx-xxx

Lead wire length

No lead wire/connector

45 cm

60 cm

90 cm

5/3

Closed centre

MV-A02A-AEMA-Jxxx-xxx

MV-A02A-AEMD-Jxxx-xxx

MV-A02A-AEME-Jxxx-xxx

5/2

Double operator

MV-A02A-ADMB-Jxxx-xxx

MV-A02A-ADMC-Jxxx-xxx

MV-A02A-ADMD-Ixxx-xxx

MV-A02A-ADME-Jxxx-xxx

Manual operator

Non-locking

Locking

9. Valve width: 18 mm.



5/3

Open centre

MV-A02A-AFMA-Jxxx-xxx

MV-A02A-AFMD-Jxxx-xxx

MV-A02A-AFME-Jxxx-xxx

5/3

Pressure centre

MV-A02A-AHMB-Jxxx-xxx

MV-A02A-AHMC-Jxxx-xxx

MV-A02A-AHMD-Jxxx-xxx

MV-A02A-AHME-Jxxx-xxx

Electrical connection

Square connector with light

Rectangular connector with light

Flying leads

Square connector

Rectangular connector

Mini square connector

Mini square connector with light

31

33

34

52 53 54

67 68

69 41 43

44 23

24

46

42 47

48P

400

92

83 93

ISO 01

ISO 02

ISO 1 ISO 2

ISO 2

Other options available, see page 393. lote: - ISO series, valve and base are ordered separately, see page 303 for base codes. - If sandwich regulator is required, valve must be ordered as external pilot. For internal pilot regulator use valve with external pilot 12 end valve - for external pilot regulator, use valve with external pilot 12 or 14 end.

Pilot exhaust:

DΔ

MV-A02A-XX **X** X-Jxxx-xxx

- M Pilot exhaust muffled
- R Pilot exhaust piped M5
 U Pilot exhaust out main exhaust
- 231

ВΔ

JA







Fluid : Compressed air, vacuum, inert gases

Pressure range: Internal pilot – 2 pos.: 1,4 to 8 bar 3 pos.: 2,3 to 8 bar

External pilot – Vacuum to 8 bar

Pilot pressure : 2 pos.: 1,4 to 8 bar – 3 pos.: 2,3 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

Orifice: 4 mm

Flow (at 6 bar, $\Delta P = 1 bar$):

2 pos.: 430 Nl/min (Cv 0.43) – 3 pos. 280 Nl/min (Cv 0.28) Coil:

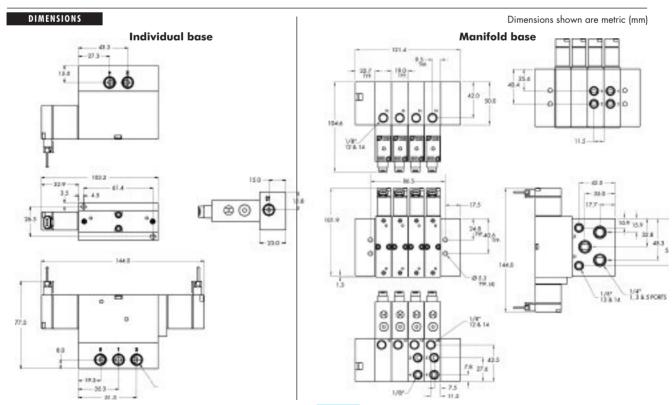
Epoxy encapsulated – Class A wires - 100% ED

Voltage range: -15% to +10% of nominal voltage

Power: 1,0 to 5,4 W

• Sandwich flow controls: FCA02A-AA (screwdriver slot adjustment). Options :

• Sandwich pressure regulator, see "Regulators' section





Pilot exhaust:

MV-P02A-XXxMVx-RxxP-xxx

C Pilot exhaust muffled
R Pilot exhaust piped M5
U Pilot exhaust out main exhaust

Direct solenoid and solenoid pilot operated valves

nction	Port size	Flow (Max)	Individual/Manifol	d mounting	Series
/2, 5/3	G1/8"	510 NI/min	Valve only – No base "plugin" Conform to ISO 15407/2		
ERATIONAL BENEFITS					31
Jnique patented MACsol		nal or external pilot operation.			33
haped armature for faste imes.		only return re width: 18 mm.			34
salanced poppet 5-way p naximum shifting forces, and consistent operation.	oilot valve provides precise repeatability	e widin. To illili.			36
MAC spool and bore con away contamination, elim allows for use on non-lube	inates sticking and				32
arge spool area for max	imum shifting forces				37
ven at minimum operatir 'ery high flow in a comp				alight.	38
alve and main valve in t					52
HOW TO ORDER					53 54
IGLE PRESSURE MO	DEIC				67
Pilot air	5/ 2	5/2	F /9	F /9	68
Pilot dir	5/2 Single operator	Double operator	5/3 Closed centre	5/3 Open centre	69
	14 4 2 12	14 4 2 12	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12	41
		1 V V V V V V V V V V V V V V V V V V V	5 \$ \$ \$ \$ \$ \$		43
Internal	MV-P02A-AACA-RxxP-xxx	MV-P02A-ABCA-RxxP-xxx	MV-P02A-AECA-RxxP-xxx	MV-P02A-AFCA-RxxP-xxx	44
External "12" end	MV-P02A-AACD-RxxP-xxx	MV-P02A-ABCD-RxxP-xxx	MV-P02A-AECD-RxxP-xxx	MV-P02A-AFCD-RxxP-xxx	23
External "14" end	MV-P02A-AACE-RxxP-xxx	MV-P02A-ABCE-RxxP-xxx	MV-P02A-AECE-RXXP-XXX	MV-P02A-AFCE-RXXP-XXX	
AL PRESSURE MODE	ELS				24
Pilot c	iir	5/2 Single operator	5/2 Double operator	5/3 Pressure centre	46
		12 4 2 14 5 0 1 0 3	12 4 2 14	12 12 14 5 0 1 0 3	42
Internal from	·	MV-P02A-ACCB-RxxP-xxx	MV-P02A-ADCB-RxxP-xxx	MV-P02A-AHCB-RxxP-xxx	44
Internal from	·	MV-P02A-ACCC-RxxP-xxx	MV-P02A-ADCC-RxxP-xxx	MV-P02A-AHCC-RxxP-xxx	47
External from		MV-P02A-ACCD-RxxP-xxx	MV-P02A-ADCD-RxxP-xxx	MV-P02A-AHCD-RxxP-xxx	48P
External from	"14" end	MV-P02A-ACCE-RXXP-XXX	MV-P02A-ADCE-RxxP-xxx	MV-P02A-AHCE-RxxP-xxx	
DLENOID OPERATOR	>	R <u>xx</u> P- <u>xxx</u>	**		48
					400
VV Voltage		V Manual anaustas	VV Florin	iaul cannaction	
XX Voltage		Manual operator		ical connection	92
AA* 120 VAC AC* 24 VAC		Non operator Recessed non locking	PA Base pl PB Base pl	ug-in ug-in with light	
AA* 120 VAC AC* 24 VAC DC 24V=/1.8W		Non operator	PA Base pl PB Base pl PC Base pl	ug-in ug-in with light ug-in with MOV	92 83
AA* 120 VAC AC* 24 VAC DC 24V=/1.8W DD 24V=/2.5W DE 24V=/3.0W		Non operator Recessed non locking	PA Base pl PB Base pl PC Base pl	ug-in ug-in with light	
AA* 120 VAC AC* 24 VAC DC 24V=/1.8W DD 24V=/2.5W		Non operator Recessed non locking	PA Base pl PB Base pl PC Base pl	ug-in ug-in with light ug-in with MOV	83 93
AA* 120 VAC AC* 24 VAC DC 24V=/1.8W DD 24V=/2.5W DE 24V=/3.0W DF 24V=/4.0W DJ 12V=/1.8W DK 12V=/2.5W		Non operator Recessed non locking	PA Base pl PB Base pl PC Base pl	ug-in ug-in with light ug-in with MOV	83 93
AA* 120 VAC AC* 24 VAC DC 24V=/1.8W DD 24V=/2.5W DE 24V=/3.0W DF 24V=/4.0W DJ 12V=/1.8W		Non operator Recessed non locking	PA Base pl PB Base pl PC Base pl	ug-in ug-in with light ug-in with MOV	83
AA* 120 VAC AC* 24 VAC DC 24V=/1.8W DD 24V=/2.5W DE 24V=/4.0W DJ 12V=/1.8W DK 12V=/2.5W DL 12V=/3.0W DM 12V=/4.0W Se either PA or PB connect	tor	Non operator Recessed non locking Extended non locking	PA Base pl PB Base pl PC Base pl	ug-in ug-in with light ug-in with MOV	83 93 ISO (
AA* 120 VAC AC* 24 VAC DC 24V=/1.8W DD 24V=/2.5W DE 24V=/4.0W DJ 12V=/1.8W DK 12V=/2.5W DL 12V=/3.0W DJ 12V=/4.0W DJ 12V=/4.0W DJ 12V=/4.0W DJ 12V=/4.0W DJ 12V=/4.0W	tor I base are ordered separately, see	Non operator Recessed non locking Extended non locking	PA Base pl PB Base pl PC Base pl	ug-in ug-in with light ug-in with MOV	93 ISO (

233

Consult "Precautions" page 407 before use, installation or service of MAC Valves.



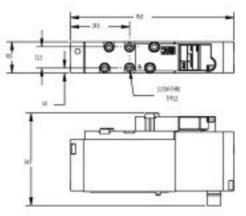




Fluid: Compressed air, vacuum, inert gases Pressure range : Internal pilot – 2 pos.: 1,3 to 8 bar 3 pos.: 2,3 to 8 bar External pilot: vacuum to 8 bar Pilot pressure : 2 pos.: 1,3 to 8 bar – 3 pos.:2,3 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 µ Temperature range: -18°C to +50°C Flow (at 6 bar, $\Delta P = 1 bar$): 2 pos.: 510 Nl/min (Cv .51) - 3 pos.: 350 Nl/min (Cv .35) Coil: Epoxy encapsulated - Class A wires - 100% ED Voltage range: -15% to +10% Power: 1,8 to 5,4 W

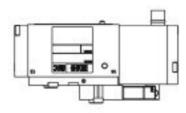
DIMENSIONS





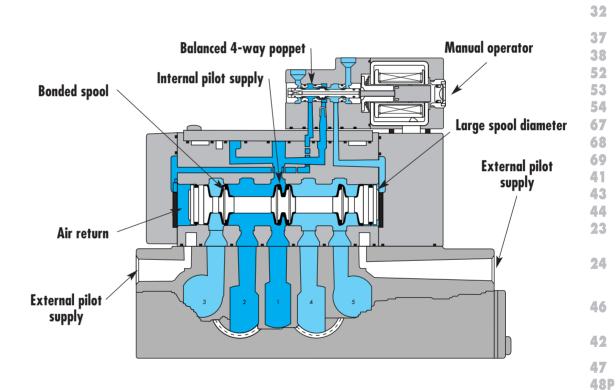








Individual mounting Valve onlyNo base non 'plug-in' Conform to ISO 5599/1 Manifold mounting



SERIES FEATURES

- Plug-in (5599/2) and non plug-in (5599/1) models.
- 2-position, single or double operator. (Solenoid or Remote Air)
- 3-position, double solenoid, open center, closed center, and pressure center.
- Extended or recessed manual operators.
- Single pressure and dual pressure.

235

- Individual base or add-a-unit manifold base.
- Plug-in, sandwich, single and dual pressure regulators for both individual and manifold valves.

ISO 02 ISO 1 ISO 2

ISO 3

ISO 01

48

400

92

83

93

Series

31 33

34

36



unction	Port size	Floш (Max)	Individual/Mar	nifold mounting	Serie
5/2, 5/3	G1/4" - G3	3/8" 1800 NI/m	Valve only – No base non "plug-in" Conform to ISO 5599/1		
PERATIONAL BENEFITS					31
. Unique patented Macsole		Plug-in design of valves, bases			33
possible response times a out proof AC solenoid op	eration.	regulators for modular assembl maintenance.	•		34
Balanced poppet 4-way p maximum shifting forces, repeatability and consiste	precise ent operation.	Internal or external pilot operat Manifolds supplied with commo pilot.	on external		36
MAC spool and bore con away contamination, elim allows for use on non-lube	ninates sticking and	Air only return. Optional memoralso available. Optional low wattage DC soler		9	32
Large spool area for max		1.0 watt.	IOIG GOWN TO		37
even at minimum operatir	ng pressure.			0	38
Very high flow in a comp	act package.			0	
	act package.				
Very high flow in a comp	act package.			0 0	53
HOW TO ORDER	. 0			6 0	52 53 54 67
HOW TO ORDER	. 0	5/2 or Double opera	5/3 tor Closed centre	5/3 Open centre	53 54 67 68
HOW TO ORDER	DELS 5/2		•		53 54
HOW TO ORDER	DELS 5/2		•	Open centre	53 54 67 68
HOW TO ORDER	DELS 5/2	Double opera	Closed centre	Open centre	53 54 67 68 69 41
HOW TO ORDER NGLE PRESSURE MOI Pilot air	Single operate	Double operation of the state o	Closed centre 12 14 14 17 17 17 17 17 17 17 17	Open centre 14	53 54 67 68 69 41 43
INGLE PRESSURE MOI Pilot air Internal	Single operate Single operate WV-B1A-AAAA-DM-DXX MV-B1A-AAAB-DM-DXX	Double operation of the state o	Closed centre 12 14 14 17 17 17 17 17 17 17 17	Open centre 14	53 54 67 68 69 41 43 44 23
HOW TO ORDER INGLE PRESSURE MOI Pilot air Internal External "12" end	Single operate NV-B1A-AAAA-DM-DXXX MV-B1A-AAAB-DM-DXXX	Double opera 12 14 14 15 15 14 15 16 17 18 18 18 18 18 18 18 18 18	Closed centre 12 14 4 2 17 18 18 18 18 18 18 18	Open centre 14	53 54 67 68 69 41 43
HOW TO ORDER NGLE PRESSURE MOI Pilot air Internal External "12" end UAL PRESSURE MODE	Single operate NV-B1A-AAAA-DM-DXXX MV-B1A-AAAB-DM-DXXX	Double opera 12 14 14 15 15 16 17 18 18 18 18 18 18 18 18 18	Closed centre 12 14 17 18 19 19 19 19 19 19 19 19 19	MV-B1A-AFAB-DM-DXXX-XXX MV-B1A-AFAB-DM-DXXX-XXX	53 54 67 68 69 41 43 44 23
HOW TO ORDER INGLE PRESSURE MOI Pilot air Internal External "12" end UAL PRESSURE MODE	Single operate NV-B1A-AAAA-DM-DXXX MV-B1A-AAAB-DM-DXXX	Double opera 12 14 14 15 15 14 15 16 17 18 18 18 18 18 18 18 18 18	Closed centre 12 14 4 2 17 18 18 18 18 18 18 18	Open centre 14	53 54 67 68 69 41 43 44 23
HOW TO ORDER INGLE PRESSURE MOI Pilot air Internal External "12" end	Single operate Single operate MV-B1A-AAAA-DM-DXXX MV-B1A-AAAB-DM-DXXX MV-B1A-AAAB-DM-DXXX MV-B1A-AAAB-DM-DXXX	Double operator	Closed centre 12 14 4 2 17 18 18 18 18 18 18 18	Open centre 14	53 54 67 68 69 41 43 44 23
HOW TO ORDER INGLE PRESSURE MOI Pilot air Internal External "12" end DUAL PRESSURE MODE Pilot a	Single operate MV-B1A-AAAA-DM-DXXX MV-B1A-AAAB-DM-DXXX MV-B1A-AAAB-DM-DXXX MV-B1A-AAAB-DM-DXXX MV-B1A-AAAB-DM-DXXX	Double operator Double operator NV-B1A-ABAA-DM-DX S/2 Single operator 14 14 15 16 17 18 18 18 18 18 18 18 18 18	Closed centre 12	Open centre 14	53 54 67 68 69 41 43 44 23

SOLENOID OPERATOR ➤

DM-D XXX-XXX

				7 7			
XX	Voltage	X	Lead wire length	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	Α	45 cm	1	Non-locking	KA	Square connector
JB	220 V~/50Hz	В	60 cm	2	Locking	KD	Square connector with light
JC	24 V~/50Hz	J	Connector		-	JB	Rectangular connector
FB	24 V=/1,8W			•		JD	Rectangular connector with light
DA	24 V=/5,4W					BA	Flying leads
DF	24 V=/12,7W						

* Other options available, see page 385. Note: ISO series, valve and base are ordered separately, see page 307 for base code.

OPTIONS

Valve function:

MV-B1A-AXXX-XX-Dxxx-xxx

J for single operator universal spool (ext. pilot only)
 K for double operator universal spool (ext. pilot only)

Pilot style :

MV-B1A-AXXX-**DM**-Dxxx-xxx

DM Pilot exhaust muffled Pilot exhaust piped (#10-32)

Spool return:

MV-B1A-AXAX-XX-Dxxx-xxx

A Standard return

B Memory spring return
C Standard return with light
D Memory spring return with light

ISO 02 ISO 1

ISO 01

48

400 92 83

93

ISO 2 ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 bar

Pilot pressure: Single / double operator: 1,3 to 8 bar

3 positions : 2 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 7.8 mm

Flow (at 6 bar, ΔP=1bar): 3/8": 1800 NI/min (Cv 1.8) – 1/4": 1600 NI/min (Cv 1.6)

Coil: Epoxy encapsulated – Class A wires - 100% ED

=poxy encaporated encorr wheel reco

Voltage range: -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~ Inrush 7,6 VA Holding: 4,8 VA

= 1 to 12.7 W

Response times : Energize : 11.3 ms (with 5,4 W coil) De-energize : 7.8 ms

Options: • Sandwich flow controls: FCP1A-BA (screwdriver slot adjustment)

FCP1A-BB (locking knob adjustment)

• Sandwich regulator, see 'Regulators' section

Spare parts : • Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16661

DIMENSIONS Dimensions shown are metric (mm) Individual base **Manifold base** 127.9 DOUBLE SOLENOID 126.9 SINGLE SOLENOID 3/8" COMMONS 15.8 23.3 - 33 5 45.5 -34.5 1/2" NPSM CONDUIT OPTIONAL COM EXTERNAL PILOT -103.5 147.5 OPTIONAL BOTTOM PORT OPTIONAL BOTTOM PORTS 21.5 6.3 DIA. THRU (2) MTG HOLES 12 _86.5-- 77.4 - 100 2



unction	Port size	Flow (Max)	Individual/Manifold	mounting	Seri
5/2, 5/3	G1/4" - G3/8"	1800 NI/min	Valve only – No base "plug-in" Conform to ISO 5599/2		
PERATIONAL BENEFITS				-	3
. Unique patented Macsoleno		design of valves, bases and	r		3
possible response times and out proof AC solenoid opera		ors for modular assembly and eco nance.	ise of		3
 Balanced poppet 4-way pilo maximum shifting forces, pro repeatability and consistent 	ot valve provides 7. Internal ecise Manifol	or external pilot operation. ds supplied with common extern	nal	9	3
 MAC spool and bore combination, elimination, elimination, 	ination wipes 8. Air only ates sticking and also avo				3
allows for use on non-lube s Large spool area for maxim		al low wattage DC solenoid dow tt.	vn to		3
even at minimum operating	pressure.			9	3
Very high flow in a compac	t package.				5
HOW TO ORDER			-		5
HOW TO ORDER					5
INGLE PRESSURE MODE					5: 5: 6:
	ELS 5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5 5 6
INGLE PRESSURE MODE	5/2	•	•		5 5 6 6
SINGLE PRESSURE MODE	5/2	•	•		5
INGLE PRESSURE MODE Pilot air Internal	5/2	•	•		5 5 6 6 6 4 4
INGLE PRESSURE MODE Pilot air	5/2 Single operator	Double operator	Closed centre	Open centre	5; 5; 6; 6; 4
SINGLE PRESSURE MODE Pilot air Internal	Single operator 14 12 12 12 12 MV-P1A-AAAA-DM-DxxP-xxx MV-P1A-AAAB-DM-DxxP-xxx	Double operator 14 12 12 12 15 NV-P1A-ABAA-DM-DXXP-XXX	Closed centre 14 17 17 17 17 17 17 17 17 17 17 17 17 17	Open centre	5. 5. 6 6 6 4 4 4 2
Pilot air Internal External "12" end	5/2 Single operator 14 14 12 12 12 12 13 12 14 14 15 15 16 17 16 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	MV-P1A-ABAB-DM-DxxP-xxx MV-P1A-ABAB-DM-DxxP-xxx	MV-P1A-AEAB-DM-DxxP-xxx MV-P1A-AEAB-DM-DxxP-xxx	MV-P1A-AFAB-DM-DxxP-xxx MV-P1A-AFAB-DM-DxxP-xxx	5; 6; 6; 6; 4; 4;
Internal External "12" end	5/2 Single operator 14 14 12 12 12 12 13 12 14 14 15 15 16 17 16 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	MV-P1A-ABAB-DM-DxxP-xxx	MV-P1A-AEAB-DM-DxxP-xxx	MV-P1A-AFAB-DM-DxxP-xxx MV-P1A-AFAB-DM-DxxP-xxx	5. 5. 6 6 6 4 4 4 2
Internal External "12" end	5/2 Single operator 14 14 12 12 12 12 13 12 14 14 15 15 16 17 16 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	MV-P1A-ABAB-DM-DxxP-xxx MV-P1A-ABAB-DM-DxxP-xxx	MV-P1A-AEAB-DM-DxxP-xxx MV-P1A-AEAB-DM-DxxP-xxx	MV-P1A-AFAB-DM-DxxP-xxx MV-P1A-AFAB-DM-DxxP-xxx	5 5 6 6 6 4 4 4 2
Internal External "12" end	5/2 Single operator 14 4 2 112 Single operator MV-P1A-AAAA-DM-DxxP-xxx MV-P1A-AAAB-DM-DxxP-xxx Single operator 14 4 2 112 Single operator MV-P1A-AAAA-DM-DxxP-xxx MV-P1A-AAAB-DM-DxxP-xxx	MV-P1A-ABAA-DM-DxxP-xxx MV-P1A-ABAB-DM-DxxP-xxx MV-P1A-ABAB-DM-DxxP-xxx 5/2 ingle operator 4 2 12 12 12 12 12 12 12 12 12 1	MV-P1A-AEAB-DM-DxxP-xxx MV-P1A-AEAB-DM-DxxP-xxx	MV-P1A-AFAB-DM-DxxP-xxx MV-P1A-AFAB-DM-DxxP-xxx	55 56 66 44 42 2
Internal External "12" end DUAL PRESSURE MODELS Pilot air	Single operator	MV-P1A-ABAA-DM-DxxP-xxx MV-P1A-ABAB-DM-DxxP-xxx MV-P1A-ABAB-DM-DxxP-xxx MV-P1A-ABAB-DM-DxxP-xxx A-ACAD-DM-DxxP-xxx A-ACAE-DM-DxxP-xxxx A-ACAE-DM-DxxP-xxxx	MV-P1A-AEAB-DM-DXXP-XXX MV-P1A-AEAB-DM-DXXP-XXX 5/2 Double operator 12 14 15 14 15 16 17 17 17 17 17 17 17 17 17	MV-P1A-AFAB-DM-DxxP-xxx MV-P1A-AFAB-DM-DxxP-xxx MV-P1A-AFAB-DM-DxxP-xxx	55 56 66 44 44 22

SOLENOID OPERATOR ➤

DM-D XX P-XXX

XX	Voltage	X	Manual operator	XX	Electrical connection
JA	110 V~/50Hz	1	Non-locking	DM	Plug-in
JB	220 V~/50Hz	2	Locking	DN	Plug-in with diode
JC	24 V~/50Hz			DP	Plug-in with M.O.V.
FB	24 V=/1,8W			DG	Plug-in with ground
DA	24 V=/5,4W				
DF	24 V=/12,7W				

* Other options available, see page 385.

Note: - ISO series, valve and base are ordered separately, see page 309 for base codes.

- Ground wire required for 30 volts or higher.

OPTIONS

Valve function:

MV-P1A-A**X**XX-XX-DxxP-xxx

J for single operator universal spool (ext. pilot only)
K for double operator universal spool (ext. pilot only)

Pilot style :

MV-P1A-AXXX-**DM**-DxxP-xxx

DM Pilot exhaust muffled Pilot exhaust piped (#10-32)

Spool return :

MV-P1A-AXAX-XX-DxxP-xxx

A Standard return
B Memory spring return
D Standard return with light
E Memory spring return with light

ISO 01

93

48

400 92 83

ISO 02

ISO 1 **ISO 2**







Fluid: Compressed air, vacuum, inert gases

Pressure range: Vacuum to 8 bar

Pilot pressure: Single / double operator: 1,3 to 8 bar

3 positions : 2 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 7.8 mm

Flow (at 6 bar, ΔP=1bar): 3/8": 1800 NI/min (Cv 1.8) – 1/4": 1600 NI/min (Cv 1.6)

Coil: Epoxy encapsulated – Class A wires - 100% ED

Voltage range: -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~ Inrush 7,6 VA Holding: 4,8 VA

= 1 to 12.7 W

Response times: Energize: 10 ms (with 5,4 W coil) De-energize: 9 ms

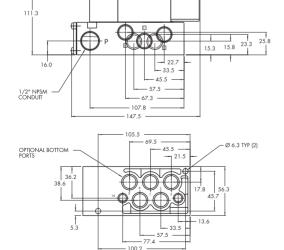
Options :
• Sandwich flow controls: FCP1A-AA (screwdriver slot adjustment) FCP1A-AB (locking knob adjustment)

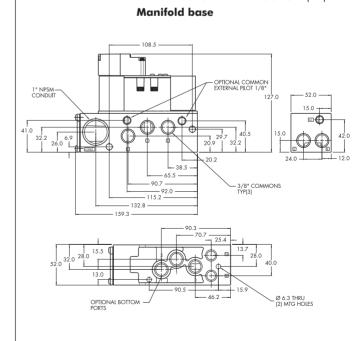
• Sandwich regulator, see ,Regulators' section

Spare parts : • Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16661

DIMENSIONS

Individual base

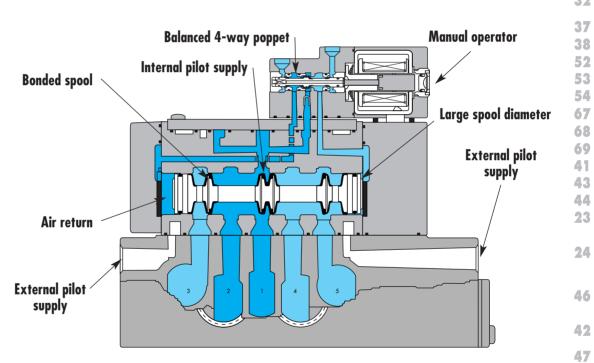






Individual mounting





SERIES FEATURES

- Plug-in (5599/2) and non plug-in (5599/1) models.
- 2-position, single or double operator. (Solenoid or Remote Air)
- 3-position, double solenoid, open center, closed center, and pressure center.
- Extended or recessed manual operators.
- Single pressure and dual pressure.
- Individual base or add-a-unit manifold base.
- Plug-in, sandwich, single and dual pressure regulators for both individual and manifold valves.

ISO 3

Series

31

37

38 **52**

53

54 67

68 69

41

43 44 23

24

46

48P



DM Pilot exhaust muffled Pilot exhaust piped (#10-32)

Direct solenoid and solenoid pilot operated valves

nction	Port size	Flow (Max)	Individual/Mani	fold mounting	Series
/2, 5/3	G3/8" - G1/2"	3000 NI/minn	Valve only – No base non "plug-in" Conform to ISO 5599/1		
ERATIONAL BENEFITS				200 - 200	31
Unique patented Macsolenoid		lesign of valves, bases and	ſ	200	33
possible response times and vout proof AC solenoid operations.		rs for modular assembly and ance.	ease of	S	34
Balanced poppet 4-way pilot	valve provides 7. Internal	or external pilot operation.	1		36
maximum shifting forces, pre- repeatability and consistent of		ds supplied with common exte	ernal		30
MAC spool and bore combin	nation wipes 8. Air only	return. Optional memory spr	ing is	4	32
away contamination, elimina allows for use on non-lube se		illable. Il low wattage DC solenoid d	own to		
Large spool area for maximum	m shifting forces 1.0 wat				37
even at minimum operating p Very high flow in a compact				CUIT O	38 52
, , ,	1			0	53
HOW TO ORDER					54
IGLE PRESSURE MODEL	S				67
Pilot air	5/2	5/2	5/3	5/3	68
	Single operator	Double operator	Closed centre	Open centre	69
	14 4 2 12	14 4 2 12			41
	<u> </u>	<u> </u>	1 \\ 1 \qquad \qua		43
Internal	MV-B2A-AAAA-DM-Dxxx-xxx	MV-B2A-ABAA-DM-Dxxx-xxx			44
External "12" end	MV-B2A-AAAB-DM-Dxxx-xxx	MV-B2A-ABAB-DM-Dxxx-xxx	MV-B2A-AEAB-DM-Dxxx-xxx	MV-B2A-AFAB-DM-Dxxx-xxx	23
AL PRESSURE MODELS					0.4
Pilot air	Si	5/2 ngle operator	5/2 Double operator	5/3 Pressure centre	24
	14 	7 12 12 12 12 12 12 12 12 12 12 12 12 12	12 4 2 14	14 12 12 12 12 12 12 12 12 12 12 12 12 12	46
Internal From port	t #3 MV-B2/	A-ACAD-DM-Dxxx-xxx	MV-B2A-ADAD-DM-Dxxx-xxx	MV-B2A-AGAD-DM-Dxxx-xxx	
Internal From port		A-ACAE-DM-Dxxx-xxx	MV-B2A-ADAE-DM-Dxxx-xxx	MV-B2A-AGAE-DM-Dxxx-xxx	42
External From "12'	" end MV-B2.	A-ACAB-DM-Dxxx-xxx	MV-B2A-ADAB-DM-Dxxx-xxx	MV-B2A-AGAB-DM-Dxxx-xxx	47
DLENOID OPERATOR >	D	M-D <u>xx</u> x- <u>x</u> xx			48P
					48
XX Voltage	X Lead wir		Manual operator	XX Electrical connection	400
JA 110 V~/50Hz JB 220 V~/50Hz	A 45 cm B 60 cm		Non-locking Locking	KA Square connector KD Square connector with light	400
JC 24 V~/50Hz FB 24 V=/1,8W	J Connector		_	JB Rectangular connector JD Rectangular connector with light	92
DA 24 V=/5,4W			_	BA Flying leads	83
DF 24 V=/12,7W					03
Other options available, see page: ISO series, valve and base a	ge 385. Ire ordered separately, see page 3	111 for base code.			93
OPTIONS					ISO 01
ve function :		Spo	pol return :		ISO 02
MV-B2A-A X XX-XX-Dxxx-xxx		. Λ	MV-B2A-AX A X-XX-Dxxx-xxx		13 0 V 2
for single op	perator universal spool (ext. pilot o operator universal spool (ext. pilot	nly)	A Standard return		ISO 1
K tor double o	perator universal spool lext pilot	oniyl	B Memory spring	return	160.2
t style :	por anor on moroar spoor (o.m. piner	- //	,		ISO 3







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 1,3 to 8 bar

External pilot : vacuum to 8 bar

Filot pressure: Single operator and 3 positions: 1,3 to 8 bar double operator: 2 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 u

Temperature range : $-18^{\circ}\text{C} \text{ to } +50^{\circ}\text{C}$

Orifice: 10.5 mm

Flow (at 6 bar, $\Delta P = 1bar$): G3/8": 2800 NI/min (Cv 2.8) - G1/2": 3000 NI/min (Cv 3,0)

Coil: Epoxy encapsulated – class A wires – 100% ED (specify mod 0449)

Epoxy offcapounded class 7 three 100% Ep (specify file

Voltage range: -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Power: ~ Inrush 7,6 VA Holding: 4,8 VA

= 12.7 to 1.0 W

Response times: 24 V=/5,4w Energize: 10 ms De-energize: 9.6 ms

110V~/50Hz Energize : 6-15 ms De-energize : 10-17 ms

FCP2A-BA (screwdriver slot adjustment)

FCP2A-BB (locking knob adjustment)
• Sandwich regulator, see ,Regulators' section

Spare parts : • Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16576

• Valve mounting screws (x4): 35413

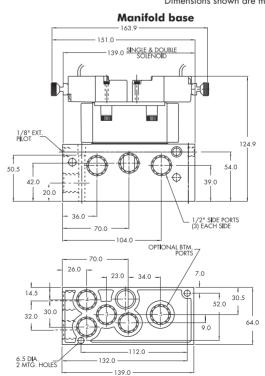
DIMENSIONS

Options :

Individual base

• Sandwich flow controls:

- 163.9 -138.0 -120.5 1/8 EXT PILOT 124.9 42.0 38.0 23.0 32.0 40.0 - 56.0 72.0 - 87.0 7.5 DIA. THRU 2 MTG. HOLES OPT**I**ONAL BTM PORTS - 74.0 -100.0





ction	Port size	Floш (Max)	Individual/Manifold	l mounting	Series
2, 5/3	G3/8" - G1/2"	3000 NI/min	Valve only – No base "plug-in" Conform to ISO 5599/2		
ERATIONAL BENEFITS					31
Unique patented Macsoleno possible response times and out proof AC solenoid opera	l virtually burn- regulato ation. mainten	Hesign of valves, bases and ors for modular assembly and eas ance.	se of		33 34
Balanced poppet 4-way pilo maximum shifting forces, pre repeatability and consistent	ecise Manifold operation. pilot.	or external pilot operation. ds supplied with common externo	-	9	36
MAC spool and bore combi	ates sticking and also ava		W/1/200		32
allows for use on non-lube so Large spool area for maximo		ıl low wattage DC solenoid dowr t.	n io	Division in the second	37
Large spoor area for maxima					
even at minimum operating	pressure.		•		38
even at minimum operating	pressure.		-	0	52
even at minimum operating Very high flow in a compact	pressure.		•	0	52 53
even at minimum operating Very high flow in a compact	pressure. t package.		•	0	52 53 54
even at minimum operating Very high flow in a compact HOW TO ORDER NGLE PRESSURE MODE	pressure. t package. ELS	- 4-		0	52 53 54 67
even at minimum operating Very high flow in a compact	pressure. t package.	5/2 Double operator	5/3 Closed centre	5/3 Open centre	52 53 54
even at minimum operating Very high flow in a compact HOW TO ORDER	pressure. t package. ELS 5/2				52 53 54 67 68 69 41
even at minimum operating Very high flow in a compact HOW TO ORDER	pressure. t package. ELS 5/2				52 53 54 67 68 69 41 43
even at minimum operating Very high flow in a compact HOW TO ORDER NGLE PRESSURE MODE Pilot air	pressure. t package. 5/2 Single operator 14 14 12 12 12 12 14 14 15 10 10 10 10 10 10 10 10 10 10 10 10 10	Double operator	Closed centre	Open centre	52 53 54 67 68 69 41
even at minimum operating Very high flow in a compact HOW TO ORDER NGLE PRESSURE MODE Pilot air Internal	SLS 5/2 Single operator 14 14 12 12 12 12 12 12 12 12 12 12 12 12 12	Double operator 14 4 2 12 3 7 5 00 1 WV-P2A-ABAA-DM-DxxP-xxx	Closed centre 14	Open centre	52 53 54 67 68 69 41 43 44 23
even at minimum operating Very high flow in a compact HOW TO ORDER NGLE PRESSURE MODE Pilot air Internal External "12" end	SLS 5/2 Single operator 14	Double operator 14 4 2 12 3 7 5 00 1 WV-P2A-ABAA-DM-DxxP-xxx	Closed centre 14	Open centre	52 53 54 67 68 69 41 43 44
even at minimum operating Very high flow in a compact HOW TO ORDER NGLE PRESSURE MODE Pilot air Internal External "12" end JAL PRESSURE MODELS	SLS 5/2 Single operator 14	MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx	MV-P2A-AEAB-DM-DxxP-xxx MV-P2A-AEAB-DM-DxxP-xxx	MV-P2A-AFAB-DM-DxxP-xxx MV-P2A-AFAB-DM-DxxP-xxx	52 53 54 67 68 69 41 43 44 23
even at minimum operating Very high flow in a compact HOW TO ORDER NGLE PRESSURE MODE Pilot air Internal External "12" end JAL PRESSURE MODELS	pressure. t package. Single operator 14	MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx 5/2 ngle operator	MV-P2A-AEAB-DM-DxxP-xxx MV-P2A-AEAB-DM-DxxP-xxx	MV-P2A-AFAB-DM-DxxP-xxx MV-P2A-AFAB-DM-DxxP-xxx	52 53 54 67 68 69 41 43 44 23 24
even at minimum operating Very high flow in a compact HOW TO ORDER NGLE PRESSURE MODE Pilot air Internal External "12" end JAL PRESSURE MODELS Pilot air	pressure. t package. 5/2 Single operator 14	MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx MV-P2A-ABAB-DM-DxxP-xxx MA-ACAB-DM-DxxP-xxx MA-ACAB-DM-DxxP-xxx MA-ACAB-DM-DxxP-xxx	Closed centre A	MV-P2A-AFAB-DM-DXXP-XXX MV-P2A-AFAB-DM-DXXP-XXX MV-P2A-AFAB-DM-DXXP-XXX	52 53 54 67 68 69 41 43 44 23

JB	220 V~/50Hz	
JC	24 V~/50Hz	

Voltage

JA 110 V~/50Hz 24 V=/1,8W 24 V=/5,4W 24 V=/12,7W DA

Other options available, see page 385.
lote: - ISO series, valve and base are ordered separately, see page 313 for base codes.
- Ground wire required for 30 volts or higher.

OPTIONS

Valve function:

MV-P2A-A**X**XX-XX-DxxP-xxx

J for single operator universal spool (ext. pilot only)
K for double operator universal spool (ext. pilot only)

Pilot style :

MV-P2A-AXXX-**DM**-DxxP-xxx

DM Pilot exhaust muffled Pilot exhaust piped (#10-32)

Spool return :

MV-P2A-AXAX-XX-DxxP-xxx

A Standard return
B Memory spring return
D Standard return with light
E Memory spring return with light

DM

Plug-in

Plug-in with diode Plug-in with M.O.V.

Plug-in with ground

ISO 01 ISO 02

400

92

83

93

ISO 1 ISO 2

ISO 3

Manual operator

Non-locking

Locking

Electrical connection







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 1,3 to 8 bar External pilot : vacuum to 8 bar

Pilot pressure : Single operator and 3 positions : 1,3 to 8 bar

double operator : 2 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 10.5 mm

Flow (at 6 bar, $\Delta P = 1 bar$): G3/8": 2800 NI/min (Cv 2.8) - G1/2": 3000 NI/min (Cv 3,0)

Coil: Epoxy encapsulated - class A wires - 100% ED (specify mod 0449)

Voltage range: -15% to +10% of nominal voltage

IP65 (electrical connection) Protection:

Power: ~ Inrush 14,8 VA Holding: 4,8 VA

= 12.7 to 1,0 W

Response times : 24 V=/5,4w Energize: 10 ms De-energize: 9.6 ms Energize : 6-15 ms De-energize: 10-17 ms 110V~/50Hz

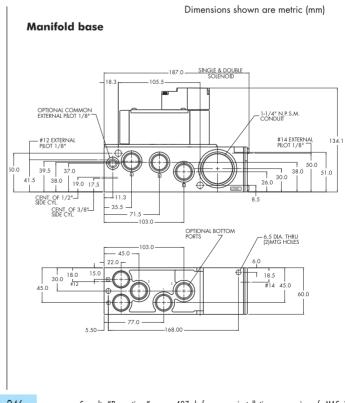
FCP2A-AA (screwdriver slot adjustment)

Options : • Sandwich flow controls: FCP2A-AB (locking knob adjustment) • Sandwich regulator, see ,Regulators' section

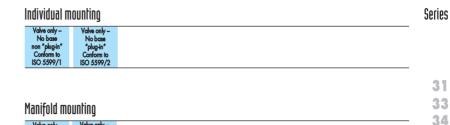
• Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16576 Spare parts:

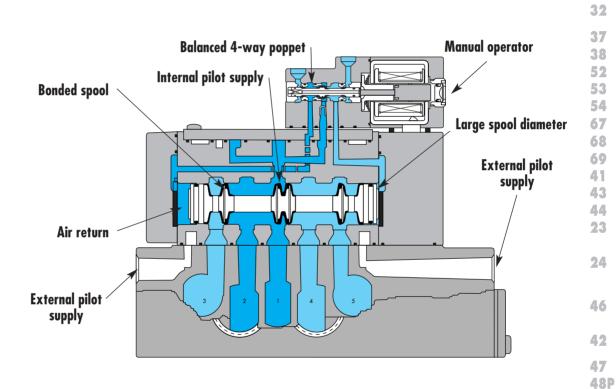
• Valve mounting screws (x4): 35413

DIMENSIONS Individual base - 156.1 DOUBLE SOLENOID - 1/2" N.P.S.M CONDUIT #14 EXTERNAL PILOT 1/8" #12 EXTERNAL-PILOT 1/8" 6.5 DIA. THRU (2)MTG HOLES 17.0 #14 5.5 OPTIONAL BOTTOM PORTS DIM. A В C E G3/8" 25.2 22.7 20.6 26.7 40.5 69.4 83.3 G1/2" 24.0 21.0 19.0 25.5 40.0 70.0 84.5









SERIES FEATURES

- Plug-in (5599/2) and non plug-in (5599/1) models.
- 2-position, single or double operator. (Solenoid or Remote Air)
- 3-position, double solenoid, open center, closed center, and pressure center.
- Extended or recessed manual operators.
- Single pressure and dual pressure.
- Individual base or add-a-unit manifold base.
- Plug-in, sandwich, single and dual pressure regulators for both individual and manifold valves.

ISO 01 ISO 02 ISO 1

48

400

92

83

93

36



unction	Port size	Flow (Max)	Individual/Manifol	d mounting	Series
/2, 5/3	G1/2" - G3/4"	6100 NI/min	Valve only – No base "non plugin" Conform to ISO 5599/1		
PERATIONAL BENEFITS					31
Unique patented Macsolenoid		esign of valves, bases and		60	33
possible response times and v		s for modular assembly and	ease of		34
out proof AC solenoid operat Balanced poppet 4-way pilot maximum shifting forces, pred	valve provides 7. Internal of	ince. or external pilot operation. s supplied with common exte	ernal		36
repeatability and consistent o MAC spool and bore combin	peration. pilot.	return. Optional memory spr			32
away contamination, eliminate allows for use on non-lube ser		lable. Iow wattage DC solenoid d	oven to		
Large spool area for maximur			OWII IO		37
even at minimum operating p				20	38
Very high flow in a compact	package.			91	52
HOW TO ORDER					53
HOW TO ORDER					54
NGLE PRESSURE MODEL	S				67
Pilot air	5/2	5/2	5/3	5/3	68
	Single operator	Double operator	Closed centre	Open centre	69
					41
	5 VO1 V 3	5 ♥ 3	5 ♥ ♥ 3	5 \$ \$ \$ \$ 3	43
Internal External "12" end	MV-B3A-AAAA-DM-Dxxx-xxx MV-B3A-AAAB-DM-Dxxx-xxx	MV-B3A-ABAA-DM-Dxxx-xxx MV-B3A-ABAB-DM-Dxxx-xxx	MV-B3A-AEAA-DM-Dxxx-xxx MV-B3A-AEAB-DM-Dxxx-xxx	MV-B3A-AFAA-DM-Dxxx-xxx MV-B3A-AFAB-DM-Dxxx-xxx	_ 44
	MY-DJA-AAAD-DM-DAAA-AAA	MIY-DJA-ADAD-DINI-DAAA-AAA	MIY-DJA-ALAD-DIVI-DAAA-AAA	- INV-DJA-AI AD-DIN-DAAA-AAA	_ 23
UAL PRESSURE MODELS		T (0	T /0	T (0	24
Pilot air	Sin	5/2 gle operator	5/2 Double operator	5/3 Pressure centre	
	14 			14 17	46
		5 0V1 03	5 0 1 0 3	50 \$ 03	-
· · · · · · · · · · · · · · · · · · ·		-ACAD-DM-Dxxx-xxx	MV-B3A-ADAE DIA DIGGENERA	MV-B3A-AGAD-DM-Dxxx-xxx MV-B3A-AGAE-DM-Dxxx-xxx	- 42
Internal From port External From "12"		-ACAE-DM-Dxxx-xxx	MV-B3A-ADAE-DM-Dxxx-xxx MV-B3A-ADAB-DM-Dxxx-xxx	MV-B3A-AGAB-DM-DXXX-XXX MV-B3A-AGAB-DM-DXXX-XXX	-
External From 12	end MV-D3F	-ACAD-DM-DXXX-XXX	MIV-DJA-ADAD-DM-DXXX-XXX	MIV-DJA-AGAD-UM-UXXX-XXX	_ 47
OLENOID OPERATOR >	D/	M-D <u>XX</u> X- <u>X</u> XX	•		48P
					48
XX Voltage	X Lead wire	length X		X Electrical connection	
JA 110 V~/50Hz JB 220 V~/50Hz	A 45 cm B 60 cm	1 2		A Square connector Square connector with light	400
JC 24 V~/50Hz	J Connector			B Rectangular connector	- 92
FB 24 V=/1,8W DA 24 V=/5,4W				 Rectangular connector with light A Flying leads 	<u>t</u>
DF 24 V=/12,7W				r rying ieuus	- 83
Other options available, see pag te: ISO series, valve and base a	ge 385. re ordered separately, see page 3	15 for base code.			93
OPTIONS					ISO
live function :		Sno	ool return :		ISO
AIVE TOTICHOTT.					

J for single operator universal spool (ext. pilot only)
K for double operator universal spool (ext. pilot only)

DM Pilot exhaust muffled Pilot exhaust piped (#10-32)

Pilot style :

MV-B3A-AXXX-**DM**-Dxxx-xxx

A Standard return
B Memory spring return

ISO 1

ISO 2







Fluid : Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 1,3 to 8 bar External pilot : vacuum to 8 bar

Pilot pressure : Single operator and 3 positions : 1,3 to 8 bar double operator : 2 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range : -18°C to +50°C

Orifice: 14.9 mm

Flow (at 6 bar, $\Delta P = 1 bar$): G1/2": 5400 NI/min (Cv 5,4) - G3/4": 6100 NI/min (Cv 6,1)

Coil: Epoxy encapsulated – class A wires – 100% ED (specify mod 0449)

Voltage range: -15% to +10% of nominal voltage

Protection: IP65 (electrical connection)

Holding: 4,8 VA Power: ~ Inrush 7,6 VA

> = 12.7 to 1.0 WEnergize: 16,2 ms

Response times : (5,4 W coil) De-energize: 13,6 ms

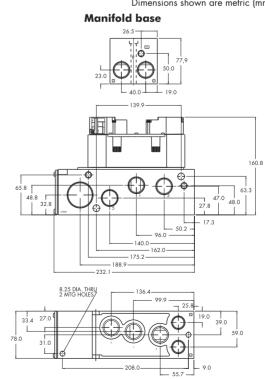
Options : • Sandwich regulator, see ,Regulators' section

• Pilot valve: DMB-Dxxx-xxx • Valve to base pressure seal: 16614 Spare parts :

• Valve mounting screws (x4): 35451

DIMENSIONS

Individual base DOUBLE SOLENOID W EXTENDED OVERRIDE 190.4 -SINGLE SOLENOID W/ EXTENDED OVERRIDE 175.0 160.0 138.5 33.0 27.0 23.5 29.0 57.5 98.5 127.0 8.3 DIA. THRU 4 MTG. HOLES 28.0 18.5 24.5 66.5 OPTIONAL BTM PORTS





Pilot style :

MV-P3A-A**X**XX-XX-DxxP-xxx

MV-P3A-AXXX-**DM**-DxxP-xxx

Direct solenoid and solenoid pilot operated valves

ınction	Port size	Flow (Max)	Individual/Manifolo	d mounting	Series
5/2, 5/3	G1/2" - G3/4"	6100 NI/min	Valve only – No base "plug-in" Conform to ISO 5599/2		
PPERATIONAL BENEFITS					31
. Unique patented Macsolenoi	d® for fastest 6. Plug-in d	esign of valves, bases and		_	33
possible response times and		rs for modular assembly and ea	se of		34
out proof AC solenoid opera Balanced poppet 4-way pilot maximum shifting forces, pre	t valve provides 7. Internal cise Manifold	or external pilot operation. As supplied with common extern	al	1	36
repeatability and consistent of MAC spool and bore combination, elimination, elimin	nation wipes 8. Air only	return. Optional memory spring	is		32
allows for use on non-lube se		l low wattage DC solenoid dow	n to		37
Large spool area for maximu				2	38
even at minimum operating p Very high flow in a compact				91	52
, - '	· -				53
HOW TO ORDER					54
INGLE PRESSURE MODEL	.S				67
Pilot air	5/2	5/2	5/3	5/3	68
	Single operator	Double operator	Closed centre	Open centre	69
				14 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	41
	5 VO1 V 3	5 VO1 V3	5 V Q V 3	5 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	43
Internal External "12" end	MV-P3A-AAAA-DM-DxxP-xxx MV-P3A-AAAB-DM-DxxP-xxx	MV-P3A-ABAA-DM-DxxP-xxx MV-P3A-ABAB-DM-DxxP-xxx	MV-P3A-AEAA-DM-DxxP-xxx MV-P3A-AEAB-DM-DxxP-xxx	MV-P3A-AFAA-DM-DxxP-xxx MV-P3A-AFAB-DM-DxxP-xxx	. 44
	MY 10A AAAD DIN DAAL AAA	אווי ואס משמ אמו	- MY 13A ALAD DIN DAAI AAA	- MY 13A AIAU UM UAAI AAA	_ 23
DUAL PRESSURE MODELS Pilot air		5/2	5/2	5/3	24
7 1101 411	Siı	igle operator	Double operator	Pressure centre	
	14 L		12 4 2 14	14 T T T T T T T T T T T T T T T T T T T	46
Internal From port #3		A-ACAD-DM-DxxP-xxx	MV-P3A-ADAD-DM-DxxP-xxx	MV-P3A-AGAD-DM-DxxP-xxx	- - 42
Internal From port #5		A-ACAE-DM-DxxP-xxx	MV-P3A-ADAE-DM-DxxP-xxx	MV-P3A-AGAE-DM-DxxP-xxx	42
External From "12"	<u>end</u> MV-P3,	A-ACAB-DM-DxxP-xxx	MV-P3A-ADAB-DM-DxxP-xxx	MV-P3A-AGAB-DM-DxxP-xxx	47
SOLENOID OPERATOR >	D	M-D <u>XX</u> P- <u>XXX</u> *			48
					48
XX Voltage X		Manual operator		ical connection	40
JA 110 V~/50Hz 1 JB 220 V~/50Hz 2		Non-locking Locking		vith diode	40
JC 24 V~/50Hz FB 24 V=/1,8W				vith M.O.V. vith ground	92
DA 24 V=/5,4W DF 24 V=/12,7W				g. 44114	83
Other options available, see pa	ge385. se are ordered separately, see pag	e 317 for base codes.			93
- Ground wire required fo	r 30 volts or higher.				ISO
OPTIONS					130
OFFIONS					

251

MV-P3A-AXAX-XX-DxxP-xxx

J for single operator universal spool (ext. pilot only)

K for double operator universal spool (ext. pilot only)

A Standard return
B Memory spring return
D Standard return with light
E Memory spring return with light

ISO 1

ISO 2







Fluid: Compressed air, vacuum, inert gases

Pressure range: Internal pilot: 1,3 to 8 bar
External pilot: vacuum to 8 bar

External pilot : vacuum to 8 bar

Pilot pressure: Single operator and 3 positions: 1,3 to 8 bar double operator: 2 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40 µ

Temperature range : -18°C to +50°C

Orifice: 14.9 mm

Flow (at 6 bar, ΔP=1bar): G1/2": 5400 NI/min (Cv 5,4) – G3/4": 6100 NI/min (Cv 6,1)

Coil: Epoxy encapsulated – class A wires – 100% ED (specify mod 0449)

Voltage range: -15% to +10% of nominal voltage

Voltage range:
-15% to +10% of nominal voltage
Protection:

IP65 (electrical connection)

Power: ~ Inrush 7,6 VA Holding: 4,8 VA

= 12.7 to 1,0 W Energize : 16,2 ms

Response times: Energize: 16,2 ms

De-energize: 13,6 ms

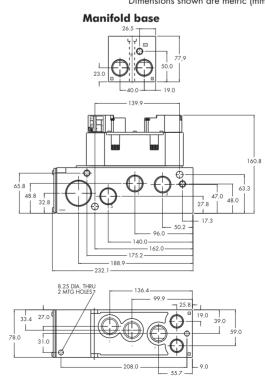
Options : • Sandwich regulator, see ,Regulators' section

Spare parts : • Pilot valve: DMB-DxxP-xxx • Valve to base pressure seal: 16614

• Valve mounting screws (x4): 35451

DIMENSIONS

Individual base 29.0 29.0 23.5 28.5 23.5 28.5 24.5 69.5 8.5 106.5 107.0 69.0 31.0 24.5 69.0 31.0 24.5 69.0 31.0 24.5 69.0 31.0 24.5 69.0 31.0





Section 2

Remote air valves

			_



Function	Port size	Floш (Max) N	II/min Individ	dual mountin	g	Mani	fold mounting Series
			Inline	Sub-base non "plug-in"	Valve only – no base	Valve only – no base	
5/2 - 5/3	G1/8" - G1/4"	1000	P. 259	P. 261			400
3/2	G1/4" - G3/8"	2000	P. 265				53
3/2	G3/8" - G1/2" - G3/4"	5100	P. 269				54
3/2	G3/4" - G1"	20000	P. 273				67
3/2	G1" - G1 1/4" - G1 1/2"	31000	P. 277				68
3/2 - 2/2	G1 1/2" - G2" - G2 1/2"	60000	P. 281				69
5/2	G1/4" - G3/8"	1500	P. 285				83
5/2 - 5/3	G3/8" - G1/2"	3100			P. 289	P. 289	ISO 2
5/2 - 5/3	G1/2" - G3/4"	6200			P. 293	P. 293	ISO 3



Individual mounting Series

ISO 2



emote air valv S

Function Port size Flow (Max) Individual mounting Series 5/2 - 5/3 G1/8" - G1/4" 1000 NI/min

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure, also provides high flow.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
 Wiping effect eliminates sticking.
- 4. Long service life.
- 5. Short stroke with high flow.



400

53

54

67

68

69

83

ISO 2

ISO 3

HOW TO ORDER

SINGLE PRESSURE VALVES

Pilot air	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
	$ \begin{array}{c c} 12 & 4 \\ 14 & 3 & 1 & 5 \end{array} $	12 2 4 14 14 II	12 2 4 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	12 2 4 14 14 III III III III III III III III
G1/8"	411A-COJ-RA Mod 1493	421A-C0J-RA	451A-C0J-RA	461A-COJ-RA	471A-C0J-RA
G1/4"	411A-D0J-RA Mod 1493	421A-D0J-RA	451A-D0J-RA	461A-D0J-RA	471A-D0J-RA

DUAL PRESSURE VALVES

5/2 Double operator		
\square		
441A-COJ-RA		
441A-DOJ-RA		







Fluid:

Pressure range :

Air signal pressure :

Lubrication : Filtration :

Temperature range :

Orifice:

Flow:

Note:

Compressed air, vacuum, inert gases

Single operator: vacuum to 6,7 bar Double operator: vacuum to 10 bar

Single oper.: 2.7 to 10 bar Double oper., 2 pos.: 1,3 to 10 bar, 3 pos.: 2,3 to 10 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

40u

-18°C to 50°C

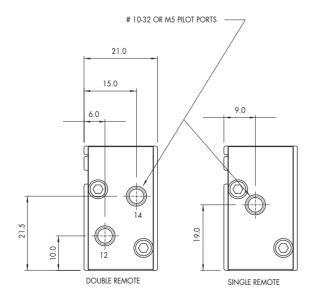
6.2 mm

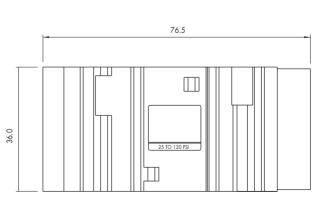
1000 NI/min (Cv 1.0)

Air signal must be ≥ main valve pressure

Option : • NPTF threads

DIMENSIONS







Function Port size Flow (Max) Individual mounting Series

5/2 - 5/3 G1/8" - G1/4" 1000 NI/min Sub-base non "plug-in"

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure, also provides high flow.
- 2. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- Wiping effect eliminates sticking.
- 4. Long service life.
- 5. Short stroke with high flow.



400

53

54

67

68

69

83

ISO 2

ISO 3

HOW TO ORDER

SINGLE PRESSURE VALVES

Port size	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre	5/3 Pressure centre
	12 2 4 14 M 3 1 5	12 2 4 14 14 III III III III III III III III	12 2 4 14 14 3 1 5	12 2 4 14 14 3 1 5	12 2 4 14 14 14 14 14 14 14 14 14 14 14 14 14 14 1
Valve less base	413A-00J-RA	423A-00J-RA	453A-00J-RA	463A-00J-RA	473A-00J-RA
G1/8"	413A-CAJ-RA Mod 1493	423A-CAJ-RA	453A-CAJ-RA	463A-CAJ-RA	473A-CAJ-RA
G1/4"	413A-DAJ-RA Mod 1493	423A-DAJ-RA	453A-DAJ-RA	463A-DAJ-RA	473A-DAJ-RA

DUAL PRESSURE VALVES

Port size	5/2 Double operator
	$ \begin{array}{c c} 12 & 4 & 14 \\ \hline 0 & 3 & 1 & 5 \end{array} $
G1/8"	443A-CAJ-RA
G1/4"	443A-DAJ-RA

OPTIONS

423A-C**A**J-RA

B for base with flow controls







Fluid: Compressed air, vacuum, inert gases Pressure range: Single operator: vacuum to 6,7 bar Double operator: vacuum to 10 bar Air signal pressure : Single oper.: 2.7 to 10 bar Double oper., 2 pos.: 1,3 to 10 bar, 3 pos.: 2,3 to 10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to 50°C Orifice: 6.2 mm Flow: 1000 NI/min (Cv 1.0) Note: Air signal must be \geq main valve pressure

Options : • NPTF threads

Spare parts : • Valve to base pressure seal: 16525 • Valve mounting screw (x2): 35043

• Flow control assembly (x2): N-04001

DIMENSIONS Dimensions shown are metric (mm) #10-32 pilot port **6** 55.0 19.05 STOCK REF DOUBLE REMOTE SINGLE REMOTE 1/8" - 27 N.P.T.F. 1/4" - 18 N.P.T.F. TYPICAL 31.0-– 20.0 – OPTIONAL FLOW CONTROLS 62.0 Ф 9.5 REF. 28.10 33.1 **(** 4.30 DIA. (2) 5.0-MIG. HOLES 53.00



Individual mounting Series

ISO 2



Function	Port size	Flow (Max)	Individual mounting	Series
3/2 NO-NC	G1/4"- G3/8"	2000 NI/min	Inline	

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure, also provides high flow.
- 2. Bonded spool with minimum friction, shifting in a glass-like finished bore.

 3. Wiping effect eliminates sticking
- 4. Long service life
- 5. Short stroke with high flow



400

54

67

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69

83

ISO 2 ISO 3

HOW TO ORDER

SINGLE OPERATOR

Port size	Pilot air	Single operator NC Valve	Single operator NO Valve
		$ \begin{array}{c c} \hline 0 & \hline 2 & \hline 10 & \hline 2 & \hline$	10 2 12 T 3 0 1 12
G1/4"	Internal	53A-1AC-DM-RA14	53A-2AC-DM-RA14
G3/8"		53A-1AD-DM-RA14	53A-2AD-DM-RA14
G1/4"	External from 10 end	53A-1BC-DM-RA14	53A-2BC-DM-RA14
	External from 12 end	53A-1CC-DM-RA14	53A-2CC-DM-RA14
G3/8"	External from 10 end	53A-1BD-DM-RA14	53A-2BD-DM-RA14
	External from 12 end	53A-1CD-DM-RA14	53A-2CD-DM-RA14

DOUBLE OPERATOR

Port size	Double operator NC Valve	Double operator NO Valve
	$ \begin{array}{c c} 10 & 2 & 3 \\ \hline $	$ \begin{array}{c c} 10 & 2 & 3 \\ \hline 10 & 7 & 4 \end{array} $
G1/4"	53A-3DC-RA	53A-4DC-RA
G3/8"	53A-3DD-RA	53A-4DD-RA

OPTIONS

53A-X xx-DM-RA14

Replace by 5 for N.C. valve with memory spring Replace by 6 for N.O. valve with memory spring







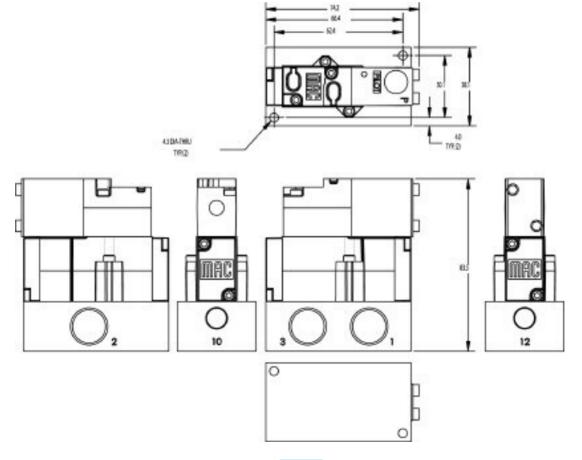
Fluid: Compressed air, vacuum, inert gases Int. pilot & double remote: 1,3 to 8 bar Pressure range: Internal pilot with memory spring: 2,3 to 8 bar External pilot: Vacuum to 8 bar Air signal pressure : Single operator: 2,3 to 4 bar - Double operator: 1,3 to 8 bar* Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Orifice: 8,5 mm Flow: 2000 NI/min (Cv 2.0)

Options : • NPTF threads

Air signal pressure must be ≥ main valve pressure

DIMENSIONS

* Note:





Individual	mounting	Series
Individual base		
		400
		53
		54
		67
		68
		69
		83
		ISO 2



m o teair v a I v

Function Port size Flow (Max) Individual mounting Series 3/2 G3/8" - G1/2"- G3/4" 5100 NI/min

OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure, also provides high flow.

- 2. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 3. Wiping effect eliminates sticking
- 4. Long service life
- 5. Short stroke with high flow

HOW TO ORDER

SINGLE OPERATOR

Port size	Pilot air	NC Valve	NO Valve
		$ \begin{array}{c c} 10 & 2 & 12 \\ \hline & \sqrt{2} & \sqrt{1} & \boxed{d} \end{array} $	10 2 12 <u>12</u> <u>12</u>
Valve less base	Internal	54A-AA-000-DM-RA14	54A-BA-000-DM-RA14
•	External from 10 end	54A-AC-000-DM-RA14	54A-BC-000-DM-RA14
•	External from 12 end	54A-AB-000-DM-RA14	54A-BB-000-DM-RA14
G3/8"	Internal	54A-AA-D1A-DM-RA14	54A-BA-D1A-DM-RA14
•	External from 10 end	54A-AC-D1A-DM-RA14	54A-BC-D1A-DM-RA14
•	External from 12 end	54A-AB-D1A-DM-RA14	54A-BB-D1A-DM-RA14
G1/2"	Internal	54A-AA-E1A-DM-RA14	54A-BA-E1A-DM-RA14
	External from 10 end	54A-AC-E1A-DM-RA14	54A-BC-E1A-DM-RA14
•	External from 12 end	54A-AB-E1A-DM-RA14	54A-BB-E1A-DM-RA14
G3/4"	Internal	54A-AA-F1A-DM-RA14	54A-BA-F1A-DM-RA14
	External from 10 end	54A-AC-F1A-DM-RA14	54A-BC-F1A-DM-RA14
	External from 12 end	54A-AB-F1A-DM-RA14	54A-BB-F1A-DM-RA14

DOUBLE OPERATOR

Port size	Double operator NC Valve	Double operator NO Valve
		10 2 12 12 12 12 12 12 12 12 12 12 12 12 1
Valve less base	54A-ED-000-RA	54A-FD-000-RA
G3/8"	54A-ED-D1C-RA	54A-FD-D1C-RA
G1/2"	54A-ED-E1C-RA	54A-FD-E1C-RA
G3/4"	54A-ED-F1C-RA	54A-FD-F1C-RA

OPTIONS

SINGLE OPERATOR MODELS

54A-xX-xXx-DM-RA14

- 1 Individual Base – Side ports 2 Individual Base – Bottom Cylinder ports (No side cyl. port)

O Base only

E Base Mount Body – Internal pilot - Pilot exhaust out main exhaust (with DU pilot)

F Base Mount Body – External pilot (12 end) – Pilot exhaust out main exhaust (with DU pilot)

G Base Mount Body – External pilot (10 end) – Pilot exhaust out main exhaust (with DU pilot)

DUAL OPERATOR MODELS

54A-xx-xXx-RA

1 Individual Base – Side ports 2 Individual Base – Bottom Cylinder ports (No side cyl. port)

400

53

67

68

69

83

ISO 2







Fluid: Compressed air, vacuum, inert gases

Pressure range: Int. pilot & double remote: 1,3 to 8 bar

External pilot: Vacuum to 8 bar

Air signal pressure: Single operator: 2,3 to 4 bar - Double operator: 1,3 to 8 bar*

Lubrication : Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

Temperature range : -18°C to +50°C

Orifice: 13,5 mm

Flow: 5100 NI/min (Cv 5.1

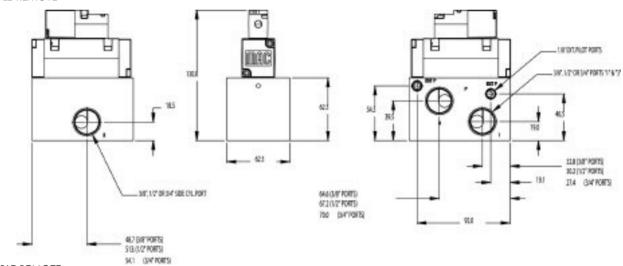
* Note: For external pilot and double remote, air signal pressure must be \geq main valve pressure

Options : • NPTF threads

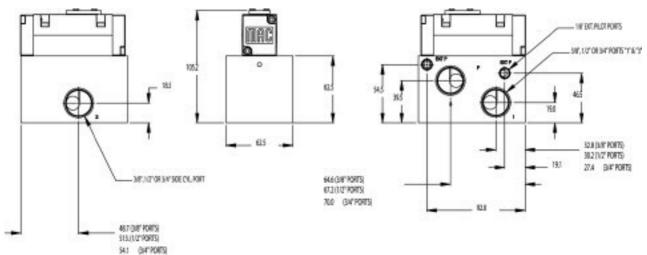
DIMENSIONS

Dimensions shown are metric (mm)

SINGLE REMOTE



DOUBLE REMOTE





Individual mounting

line	
	400
	53
	54
	67
	68
	69
	83
	ISO 2
	ISO 3

Series

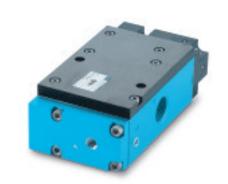


m o te a i r v a I v S

Function	Port size	Flow (Max)	Individual n	nounting	Series
3/2	G3/4" - G1"	20000 NI/min	Inline		

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure.
- 2. Powerful return forces thanks to the combination of mechanical and air springs.
- 3. Bonded spool with minimum friction, shifting in a glass like finished bore.
- 4. Wiping effect eliminates sticking.5. Long service life.



54 67

400

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68

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83

ISO 2

ISO 3

HOW TO ORDER

Port size	Pilot air	Single Operator		Double Operator		
		NO Valve	NC Valve	NO Valve	NC Valve	
		10 2 12 12 V3 0 1	10 2 12 12 12 V3 0 1	10 2 12 12 V3 0 1	10 2 12 12 12 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	
G3/4"	Internal	67A-C3-CRA-RA	67A-A3-CRA-RA	67A-D4-CRA-RA	67A-B4-CRA-RA	
G1"	•	67A-C3-DRA-RA	67A-A3-DRA-RA	67A-D4-DRA-RA	67A-B4-DRA-RA	
G3/4"	External	67A-C3-CRB-RE	67A-A3-CRB-RE	-	-	
G1"	•	67A-C3-DRB-RE	67A-A3-DRB-RE	-	-	

Note : Designation 'RE' required on remote air models with main valve pressures of vacuum to 1,3 bar.

'RE' provides an external pilot and should have a pressure range of 1,3 - 5 bar. Since the external pilot supplies the air spring, it must not exceed the remote air pilot pressure.







Fluid: Compressed air, vacuum, inert gases Pressure range: Vacuum to 10 bar

Air signal pressure : 1.3 to 10 bar (must be \geq main valve pressure)

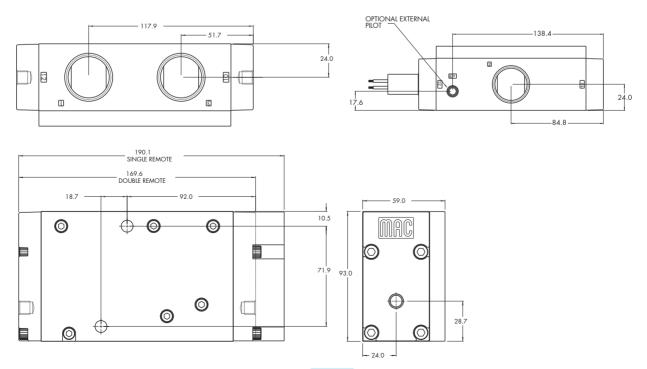
Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: -18°C to +50°C Temperature range :

Orifice : 26.8 mm Flow: 3/4": 14500 NI/min (Cv 14.5) - 1": 20000 NI/min (Cv 20.0)

Options: • NPTF threads

DIMENSIONS





Individual mounting	Series
Inline	
	400
	53
	54
	67
	68
	69
	83
	ISO 2
	ISO 3



Function Port size Flow (Max) Individual mounting Series

3/2, 2/2 G1", G1 1/4", G1 1/2" 31000 NI/min

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure, also provides high flow.
- Bonded spool with minimum friction, shifting in a glass-like finished bore.
 Wiping effect eliminates sticking
- 4. Long service life



HOW TO ORDER

SINGLE OPERATOR

Port size	Air Spring	Single Operator NO valve	Single Operator NC valve
		10 12 12 12	10 2 12 12 12 12 12 12 12 12 12 12 12 12 1
G 1		68A-C3-DRA-RA	68A-A3-DRA-RA
G 1 1/4"	Internal	68A-C3-ERA-RA	68A-A3-ERA-RA
G 1 1/2"		68A-C3-FRA-RA	68A-A3-FRA-RA
G 1		68A-C3-DRB-RE	68A-A3-DRB-RE
G 1 1/4"	External	68A-C3-ERB-RE	68A-A3-ERB-RE
G 1 1/2"		68A-C3-FRB-RE	68A-A3-FRB-RE

DOUBLE OPERATOR

Port size	Double Operator NO valve	Double Operator NC valve
	-10 $\frac{2}{\sqrt{3}}$ $\frac{12}{\sqrt{3}}$ $-$	$\frac{10}{\sqrt{7}} \sqrt{\frac{2}{1}} \sqrt{\frac{1}{4}}$
G 1	68A-D4-DRB-RA	68A-B4-DRB-RA
G 1 1/4"	68A-D4-ERB-RA	68A-B4-ERB-RA
G 1 1/2"	68A-D4-FRB-RA	68A-B4-FRB-RA

400

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83

ISO 2







 Fluid:
 Compressed air, vacuum, inert gases

 Pressure range:
 Vacuum to 8 bar

 Air signal pressure:
 1,3 to 8 bar (Must be ≥ main valve pressure)

 Lubrication:
 Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

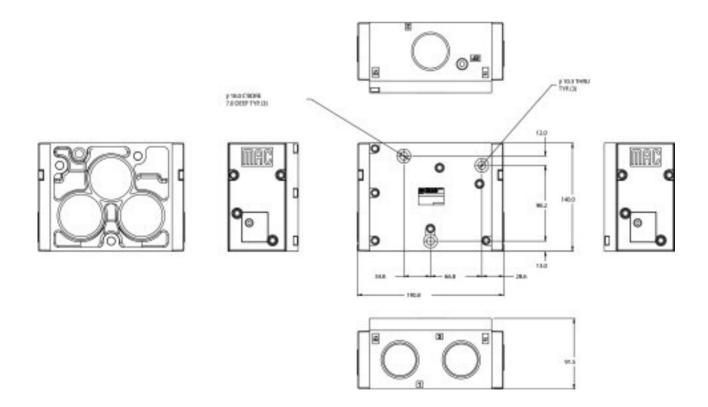
 Filtration:
 40 μ

 Temperature range:
 -18°C to +50°C

 Orifice:
 33,4 mm

 Flow:
 31000 NI/min (Cv 31.0)

DIMENSIONS





Individual mounting

400	
53	
54	
67	
68	
69	
83	
ISO 2	
ISO 3	

Series



Function Port size Flow (Max) Individual mounting Series

3/2 NO-NC, 2/2 NO-NC G1

G1 1/2" - G2" - G2 1/2" 60000 NI/min

Inline

OPERATIONAL BENEFITS

- Balanced spool, immune to variations of pressure
- 2. Bonded spool with minimum friction, shifting in a glass like finished bore
- 3. Wiping effect eliminates sticking and contamination
- 4. Long service life



HOW TO ORDER

SINGLE OPERATOR

Port size	Air Spring	Single Operator NO valve	Single Operator NC valve
		10 12 12 12	10 2 12 12 12 12 12 12 12 12 12 12 12 12 1
G 1 1/2"		69A-C3-DRA-RA	69A-A3-DRA-RA
G 2"	Internal	69A-C3-ERA-RA	69A-A3-ERA-RA
G 2 1/2"		69A-C3-FRA-RA	69A-A3-FRA-RA
G 1 1/2"		69A-C3-DRB-RE	69A-A3-DRB-RE
G 2"	External	69A-C3-ERB-RE	69A-A3-ERB-RE
G 2 1/2"		69A-C3-FRB-RE	69A-A3-FRB-RE

DOUBLE OPERATOR

Port size	Double Operator NO valve	Double Operator NC valve
	$-\frac{10}{10} \left[\frac{2}{\sqrt{3}} \right] \left[\frac{12}{\sqrt{3}} \right]$	$\frac{10}{100} \sqrt{\frac{2}{11}} \sqrt{\frac{1}{100}}$
G 1 1/2"	69A-D4-DRB-RA	69A-B4-DRB-RA
G 2"	69A-D4-ERB-RA	69A-B4-ERB-RA
G 2 1/2"	69A-D4-FRB-RA	69A-B4-FRB-RA

400

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67

68

69

83

ISO 2







Fluid:

Supply pressure:

Air signal pressure :

Lubrication :

Filtration:

Temperature range :

DIMENSIONS

Orifice: Flow:

Compressed air, vacuum, inert gases

Internal pilot: 1,3 to 10 bar

External pilot: Vacuum to 10 bar

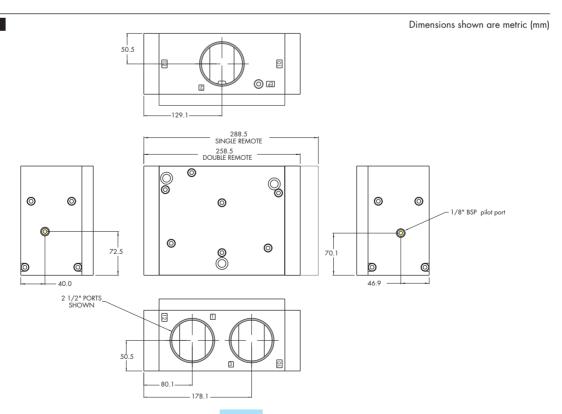
1,3 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

-18°C to +50°C

46,5 mm

60000 NI/min (Cv 60.0))





ndividual Mounting		Série
Inline		

ISO 2

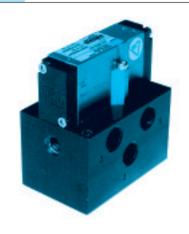


mote air valv

Function Port size Flow (Max) Individual mounting Series 5/2 - 5/3 G1/4" - G3/8" 3100 NI/min Inline

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure, also provides high flow.
- 2. Bonded spool with minimum friction, shifting in a glass-like finished bore.
- 3. Wiping effect eliminates sticking.
- 4. Long service life.
- 5. Short stroke with high flow.



400

53

54

67

68 69

83

ISO 2

ISO 3

HOW TO ORDER

SINGLE OPERATOR

Port size	Port size	5/2 Single operator	5/2 Dual pressure
		12 14 25 25 25 25 25 25 25 25 25 25 25 25 25	
G 1/4"	Internal	83A-AAC-DM-RA1 <i>4</i>	83A-CBC-DM-RA14
	External 14 end	83A-ADC-DM-RA1 <i>4</i>	83A-CDC-DM-RA14
	External 12 end	83A-AEC-DM-RA14	83A-CEC-DM-RA14
G 3/8"	Internal	83A-AAD-DM-RA1 <i>4</i>	83A-CBD-DM-RA14
	External 14 end	83A-ADD-DM-RA1 <i>4</i>	83A-CDD-DM-RA14
	External 12 end	83A-AED-DM-RA14	83A-CED-DM-RA14

DOUBLE OPERATOR

Port size	5/2 Single pressure	5/2 Dual pressure	5/3 Closed centre	5/3 Open centre	5/3 Dual pressure Pressure centre
		12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
G 1/4"	83A-BFC-RA	83A-DFC-RA	83A-EFC-RA	83A-FFC-RA	83A-GFC-RA
G 3/8"	83A-BFD-RA	83A-DFD-RA	83A-EFD-RA	83A-FFD-RA	83A-GFD-RA

Note: Above models are for side cylinder ports

OPTIONS

Single operator 83A-xxx-DM-RA14

Replace by ${\bf M}$ for single pressure with memory spring Replace by ${\bf N}$ for dual pressure with memory spring

Double operator 83A-xxX-RA

Replace by **H** for bottom cylinder ports (1/4" BSPP)

83A-xxx-DM-RA14

Replace by **H** for bottom cylinder ports (1/4" BSPP)







Fluid: Compressed air, vacuum, inert gases

Pressure range: Sgl. operator: vacuum to 8 bar (external pilot)

1,3 to 8 bar (internal pilot)

2,3 to 8 bar (internal pilot with memory spring)

Dbl. operator: 1,3 to 8 bar

Air signal pressure: Sgl. operator: 2,3 to 4 bar – Dbl. operator: 1,3 to 8 bar (must be ≥ main valve pressure)

Lubrication : Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: 40

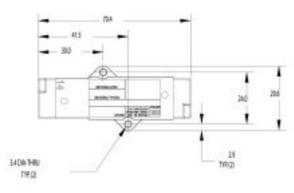
Temperature range : $-18^{\circ}\text{C to } +50^{\circ}\text{C}$

Orifice: 8,5 mm

Flow: 1500 NI/min (2 pos.) – 1100 NI/min (3 pos.)

Option : • NPTF threads

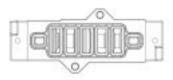
DIMENSIONS

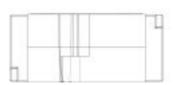














Individual mounting	Series
Valve only no base	
	400
Manifold mounting	53
Valve only no base	54
	67
	68
	69

83

ISO 2



emote air valv

Function	Port size	Flow (Max)	Individual/Ma	anifold mounting	Series
5/2 - 5/3	G3/8" - G1/2"	3100 NI/min	Valve only no base		

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure.
- 2. Powerful return forces thanks to the combination of mechanical and air springs.
- 3. Bonded spool with minimum friction, shifting in a glass-like finished bore.

 4. Wiping effect eliminates sticking.

 5. Long service life.



HOW TO ORDER

SINGLE PRESSURE MODELS

Air spring	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
	14 	14 	14 4 2 12 	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 1
Internal	MV-R2A-BACF	11/ DOA DDAI/	ANA DOA DEAK	10/ DOA DEAL/
External	MV-R2A-BACG	MV-R2A-BBAK	MV-R2A-BEAK	MV-R2A-BFAK

DUAL PRESSURE MODELS

Air spring	5/2 Single operator	5/2 Double operator	5/3 Open centre	5/3 Pressure centre
	14 	14 	14 4 2 12 	14 4 2 12 12 D 4 5 6 7 6 3
Internal port #3	MV-R2A-BCCH			
Internal port #5	MV-R2A-BCCJ	MV-R2A-BDAK	MV-R2A-BHAK	MV-R2A-BGAK
External	MV-R2A-BCCG			

Note: ISO series, valve and base are ordered separately, see page 311 for base code.

53

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68

69

83

ISO 2

ISO 3







TECHNICAL DATA

Fluid: Compressed air, vacuum, inert gases Pressure range: Vacuum to 10 bar Air signal pressure : Single/double operator: 1,3 to 10 bar 3 position: 2 to 10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: 40 μ -18°C to +50°C Temperature range : Orifice : 10,6 mm Flow (at 6 bar, $\Delta P = 1 bar$): G3/8": 2800 NI/min - G1/2": 3100 NI/min (Cv 3,1)

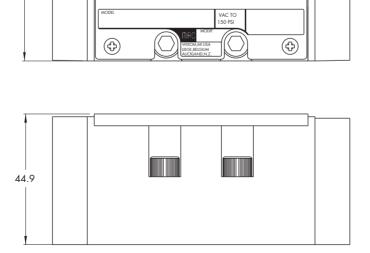
Spare parts: • Valve to base pressure seal: 16576 • Valve mounting screws (x4): 35413

⟨₩

50.0

DIMENSIONS

Dimensions shown are metric (mm)



102.4



Remote air valves

Individual mounting	Series
Valve only no base	
	400
Manifold mounting	53
Valve only no base	54
	67
	68
	69
	83
	ISO 2



emote air valves

Function	Port size	Flow (Max)	Individual/Ma	anifold mounting	Series
5/2 - 5/3	G1/2" - G3/4"	6200 NI/min	Valve only no base		

OPERATIONAL BENEFITS

- 1. Balanced spool, immune to variations of pressure.
- 2. Powerful return forces thanks to the combination of mechanical and air springs.
- 3. Bonded spool with minimum friction, shifting in a glass-like finished bore.

 4. Wiping effect eliminates sticking.

 5. Long service life.



400

54

53

67

68 69

83

ISO 2

ISO 3

HOW TO ORDER

SINGLE PRESSURE MODELS

Air spring	5/2 Single operator	5/2 Double operator	5/3 Closed centre	5/3 Open centre
	14 	14 	14 4 2 12 12 12 12 12 12 12 12 12 12 12 12 1	14 4 2 12 12 12 12 12 12 12 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15
Internal	MV-R3A-BACF	10/ DOA DDAI/	ANA DOA DEAK	10/ POA PEAK
External	MV-R3A-BACG	MV-R3A-BBAK	MV-R3A-BEAK	MV-R3A-BFAK

DUAL PRESSURE MODELS

Air spring	5/2 Single operator	5/2 Double operator	5/3 Pressure centre
	14 15 4 2 3 12	$ \begin{array}{c c} & 4 & 2 \\ & - & 5 & 0 & 0 \\ \end{array} $	14 4 2 12 12
Internal port #3	MV-R3A-BCCH		
Internal port #5	MV-R3A-BCCJ	MV-R3A-BDAK	MV-R3A-BGAK
External	MV-R3A-BCCG		

Note: ISO series, valve and base are ordered separately, see page 313 for base code.







TECHNICAL DATA

Fluid:

Compressed air, vacuum, inert gases

Vacuum to 10 bar

Single/double operator: 1,3 to 10 bar 3 position: 2 to 10 bar

Lubrication:
Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:
40 µ

Temperature range:
-18°C to +50°C

Orifice:
24 mm

Flow:
G1/2": 5400 NI/min (Cv 5,4) – G3/4": 6200 NI/min (Cv 6,2)

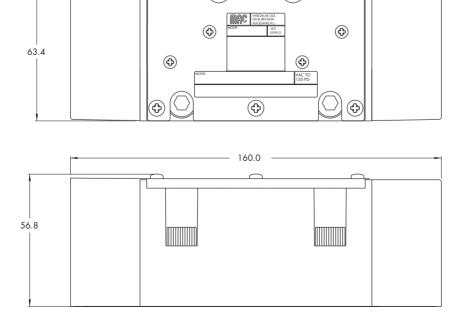
Spare parts : • Valve to base pressure seal: 16614 • Valve mounting screws (x4): 35451

(

DIMENSIONS

Dimensions shown are metric (mm)

(





Section 3

Bases according to ISO standards





Series			
	Plug-in Base/manifold	Non plug-in Base/manifold	
ISO 01	P. 301	P. 299	
ISO 02	P. 305	P. 303	
ISO 1	P. 309	P. 307	
ISO 2	P. 313	P. 311	
ISO 3	P. 317	P. 315	

Series ISO 01

Series

Non plug-in individual / manifold base



ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Pilot air	Side ports	Bottom 2 & 4 ports With all side ports
G1/4"	Internal	MB-A01A-221	MB-A01A-222

MANIFOLD BASE

Port size	Pilot air	Side ports	Bottom 2 & 4 ports With side 1, 3 & 5 ports
G1/4"	Internal	MM-A01A-221	MM-A01A-222

Notes:

- For manifold bases external pilot is common

- A base is ordered as internal pilot and can be changed into external pilot by removing pipe plugs from the external pilot ports (individual base).

- Manifold base: same base for internal and external pilot, different end plate kits.

End plate kit: Internal pilot M-00017-01-01P External pilot M-00017-02-01P

Inlet/exhaust isolator: 28413



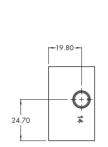


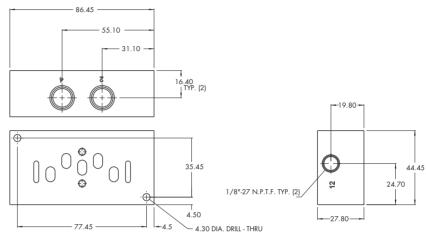


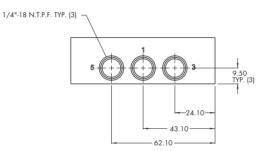
DIMENSIONS

Individual

Dimensions shown are metric (mm)

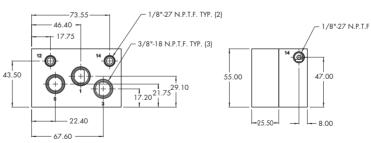


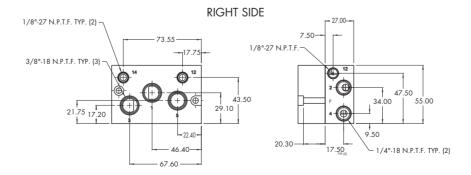




Manifold

LEFT SIDE







Plug-in individual / manifold base



ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Pilot air	Side ports with all side ports	Bottom 2 & 4 ports
G1/4"	Internal	MB-P01A-221	MB-P01A-222

MANIFOLD BASE

Port size	Pilot air	Side ports With side 1, 3 & 5 ports	Bottom 2 & 4 ports
G1/4"	Internal	MM-P01A-221	MM-P01A-222

Notes:

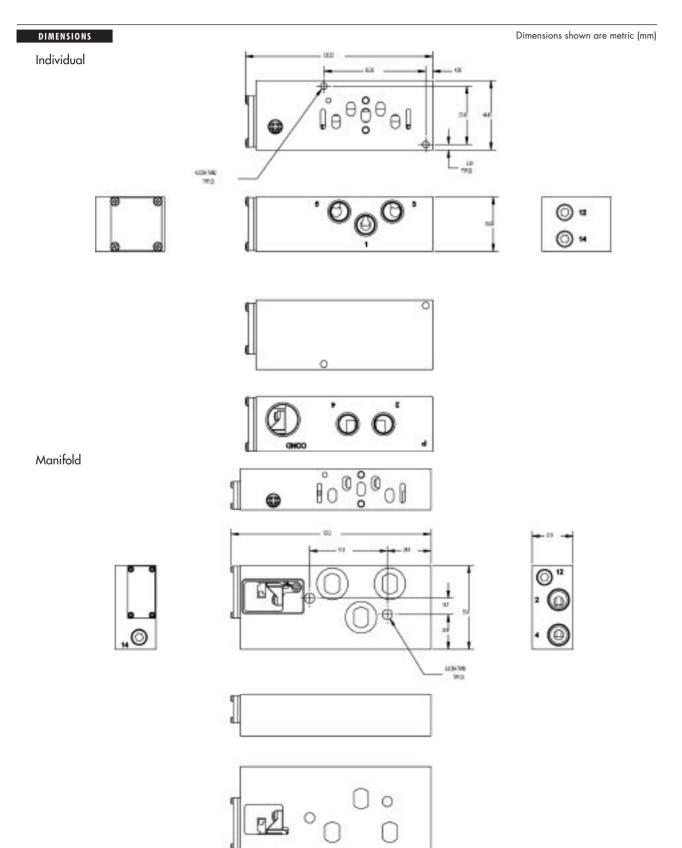
- For manifold bases external pilot is common

- End plate kit: Internal pilot M-00020-01-01P External pilot M-00020-02-01P











Non plug-in individual / manifold base



ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Pilot air	Side ports	Bottom 2 & 4 ports With all side ports
G1/8"	Internal	MB-A02A-211	MB-A02A-212

MANIFOLD BASE

Port size	Pilot air	Side ports	Bottom 2 & 4 ports With side 1, 3 & 5 ports
G1/8"	Internal	MM-A02A-211	MM-A02A-212

Notes:

- For manifold bases external pilot is common

- A base is ordered as internal pilot and can be changed into external pilot by removing pipe plugs from the external pilot ports (individual base).

- Manifold base: same base for internal and external pilot, different end plate kits.

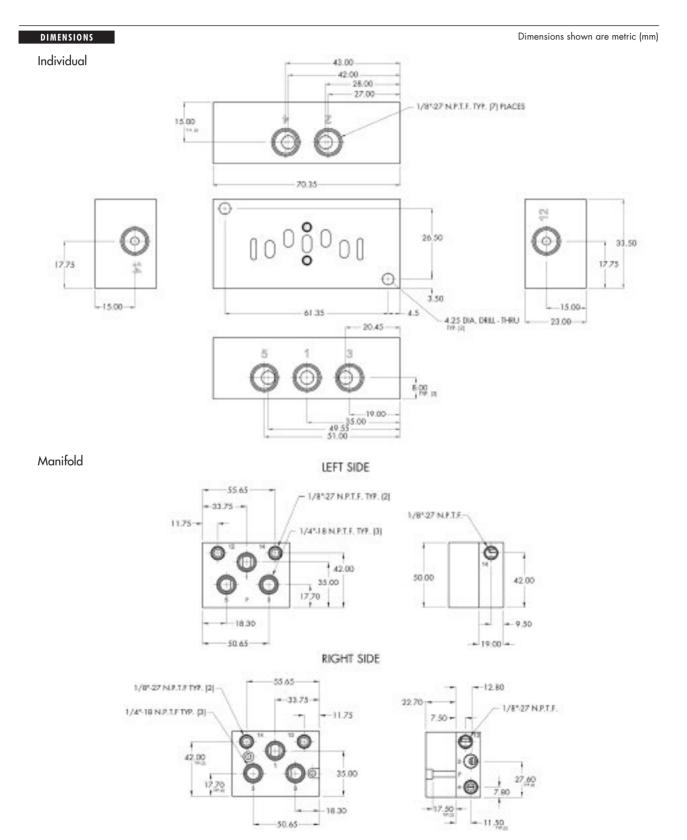
End plate kit: Internal pilot M-00018-01-01P External pilot M-00018-02-01P

Inlet/exhaust isolator: 28499











Plug-in individual / manifold base



ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Pilot air	Side ports with all side ports	Bottom 2 & 4 ports
G1/8"	Internal	MB-P02A-211	MB-P02A-212

MANIFOLD BASE

Port size	Pilot air	Side ports With side 1, 3 & 5 ports	Bottom 2 & 4 ports
G1/8"	Internal	MM-P02A-211	MM-P02A-212

Notes:

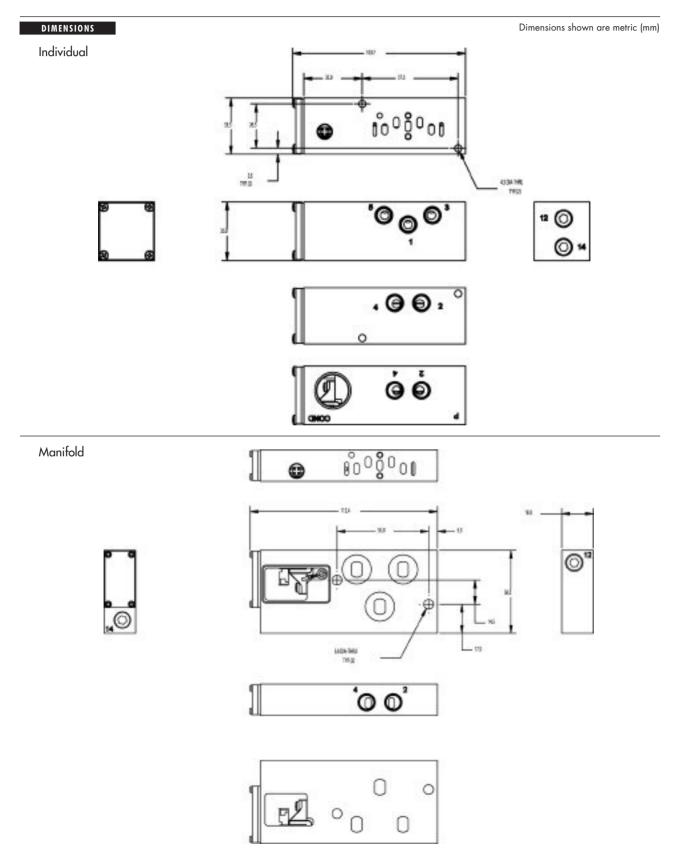
- For manifold bases external pilot is common

- End plate kit: Internal pilot M-00021-01-01P External pilot M-00021-02-01P









Series **ISO**

Series

Non plug-in base / manifold



ISO 01

ISO 02

SO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G1/4"	MB-A1C-121	MB-A1C-123	MB-A1C-122	MB-A1C-124
G3/8"	MB-A1C-131	MB-A1C-133	MB-A1C-132	MB-A1C-134

INDIVIDUAL BASE ACCORDING TO VDMA 24345

Port size	Side ports	Bottom ports
G1/4"	HB-A1A-A	HB-A1A-B

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G1/4"	MM-A1C-121	MM-A1C-123	MM-A1C-122	MM-A1C-124
G3/8"	MM-A1C-131	MM-A1C-133	MM-A1C-132	MM-A1C-134

Manifold fastening kit: N-63002-01.

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Side ports
G1/4"	HM-A1A-C

End plate kit: HM-A1A-D.

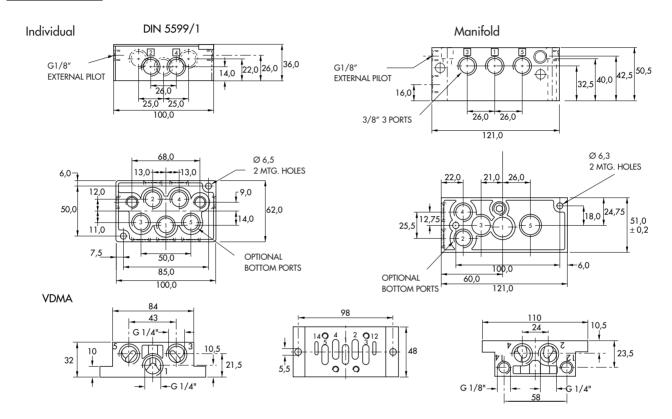
Valve blanking plate: MA1003. Inlet/exhaust isolator plug: 32835.







DIMENSIONS Dimensions shown are metric (mm)





Plug-in base / manifold



ISO 01

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G1/4"	Single solenoid	MB-P1A-121-A	MB-P1A-122-A	MB-P1A-123-A
01/4	Double solenoid	MB-P1A-121-B	MB-P1A-122-B	MB-P1A-123-B
	Single solenoid	MB-P1A-131-A	MB-P1A-132-A	MB-P1A-133-A
G3/8" —	Double solenoid	MB-P1A-131-B	MB-P1A-132-B	MB-P1A-133-B

MANIFOLD BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports (see note)
G1/4"	Single solenoid	MM-P1A-121-A	MM-P1A-122-A	MM-P1A-123-A
01/4"	Double solenoid	MM-P1A-121-B	MM-P1A-122-B	MM-P1A-123-B
	Single solenoid	MM-P1A-131-A	MM-P1A-132-A	MM-P1A-133-A
G3/8"	Double solenoid	MM-P1A-131-B	MM-P1A-132-B	MM-P1A-133-B

Note: Ports 1,3, and 5 are always 3/8".

OPTIONS

Manifold options:

External pilot

MM-P1A-12x-xx

32 for 1/4" port – common external pilot
33 for 3/8" port – common external pilot

Terminal strip

MM-P1A-xxx-A

(N/A with light)

J wired for sgl solenoid
wired for double solenoid

Base / Manifold option: light(s)

MX-P1A-xxx-xJA

JA 110/120 volt
JB 220/240 volt
DA 24 volt

Accessories: M-P1001

M-P1001 Valve blanking plate.
N-P1007-01 Manifold fastening kit.
32835 Inlet/exhaust isolator plug.



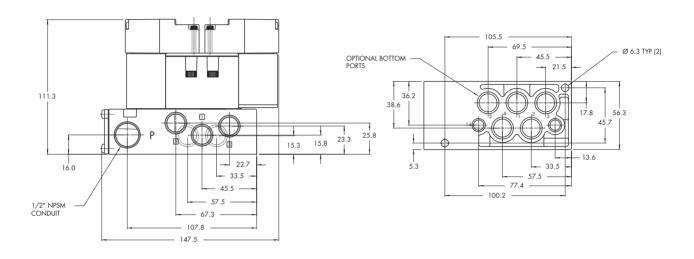


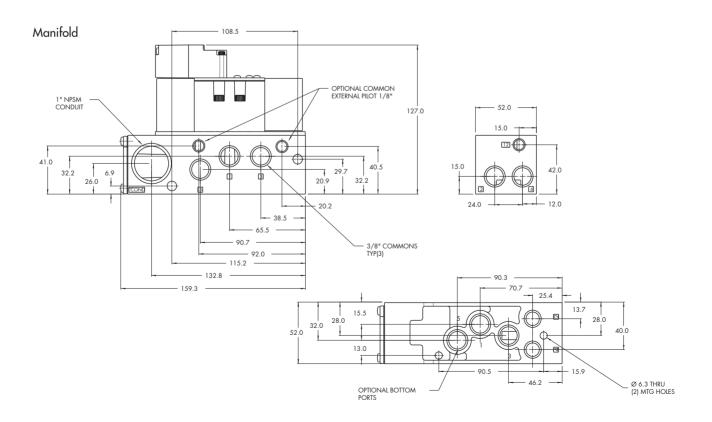


DIMENSIONS

Dimensions shown are metric (mm)

Individual







Non plug-in base / manifold



ISO 01

ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G3/8"	MB-A2B-121	MB-A2B-123	MB-A2B-122	MB-A2B-124
G1/2"	MB-A2B-131	MB-A2B-133	MB-A2B-132	MB-A2B-134

INDIVIDUAL BASE ACCORDING TO VDMA 24345

Port size	Side ports	Bottom ports
G3/8"	HB-A2B-A	HB-A2B-B

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G3/8"	MM-A2B-121	MM-A2B-123	MM-A2B-122	MM-A2B-124
G1/2"	MM-A2B-131	MM-A2B-133	MM-A2B-132	MM-A2B-134

Manifold fastening kit: N-63002-01.

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Side ports
G3/8"	HM-A2B-C

End plate kit: HM-A2B-D.

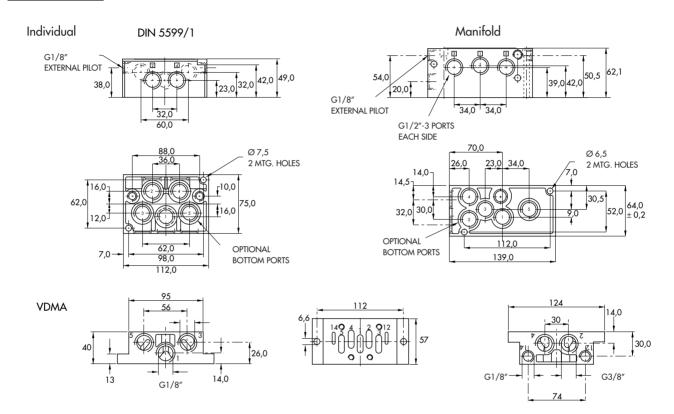
Valve blanking plate: MA2003. Inlet/exhaust isolator plug: 32839.







DIMENSIONS Dimensions shown are metric (mm)





Plug-in base / manifold



ISO 01 ISO 02

ISO 1

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G3/8"	Single solenoid	MB-P2A-121-A	MB-P2A-122-A	MB-P2A-123-A
03/0	Double solenoid	MB-P2A-121-B	MB-P2A-122-B	MB-P2A-123-B
0.1 /0.11	Single solenoid	MB-P2A-131-A	MB-P2A-132-A	MB-P2A-133-A
G1/2"	Double solenoid	MB-P2A-131-B	MB-P2A-132-B	MB-P2A-133-B

MANIFOLD BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports (see note)
G3/8"	Single solenoid	MM-P2A-121-A	MM-P2A-122-A	MM-P2A-123-A
03/0	Double solenoid	MM-P2A-121-B	MM-P2A-122-B	MM-P2A-123-B
	Single solenoid	MM-P2A-131-A	MM-P2A-132-A	MM-P2A-133-A
G1/2"	Double solenoid	MM-P2A-131-B	MM-P2A-132-B	MM-P2A-133-B

Note: Ports 1,3, and 5 are always 1/2".

OPTIONS

 ${\it Manifold\ options}:$ External pilot MM-P2A-12x-xx for 3/8" port – common external pilot for 1/2" port – common external pilot Terminal strip MM-P2A-xxx-A (N/A with light) wired for sgl solenoid wired for double solenoid Base / Manifold option: light(s) MX-P2A-xxx-xJA 110/120 volt 220/240 volt 24 volt JA JB DA

Accessories: M-P2001

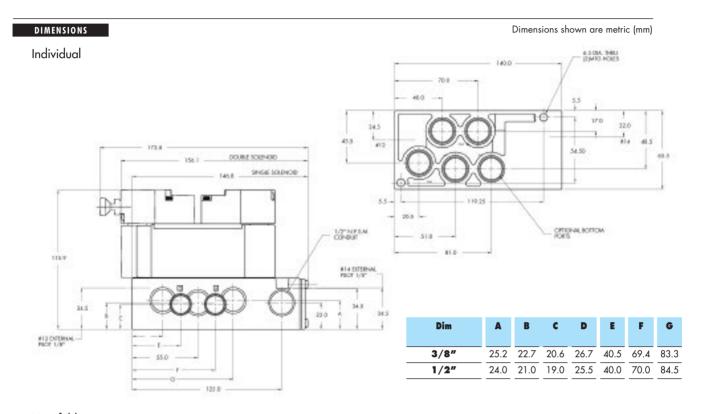
N-P2004-01 32839 Inlet/exhaust isolator plug.

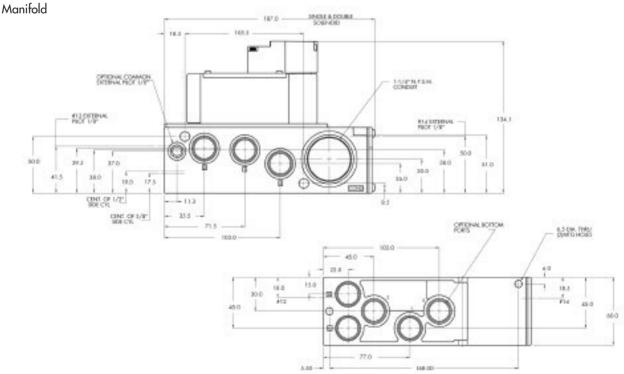
Valve blanking plate. Manifold fastening kit.













Non plug-in base / manifold



ISO 02

ISO 01

ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G1/2"	MB-B3A-121-A	MB-B3A-123-A	MB-B3A-122-A	MB-B3A-124-A
G3/4"	MB-B3A-131-A	MB-B3A-133-A	MB-B3A-132-A	MB-B3A-134-A

INDIVIDUAL BASE ACCORDING TO VDMA 24345

Port size	Side ports	Bottom ports
G1/2″	HB-B3A-A	HB-B3A-B

MANIFOLD BASE

Port size	Side ports	Bottom ports	Bottom cylinder ports 2 and 4.	Bottom port 1
G1/2"	MM-B3A-121-A	MM-B3A-123-A	MM-B3A-122-A	MM-B3A-124-A
G3/4"	MM-B3A-131-A	MM-B3A-133-A	MM-B3A-132-A	MM-B3A-134-A

MANIFOLD BASE ACCORDING TO VDMA 24345

Port size	Side ports
G1/2"	нм-вза-с

End plate kit: HM-B3A-D.

Manifold fastening kit: N-P3003-01. Valve blanking plate: M-P3001. Inlet/exhaust isolator plug: 32845.



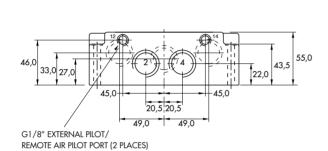


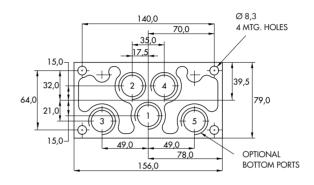


DIMENSIONS Dimensions shown are metric (mm)

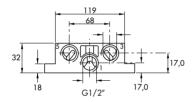
Individual

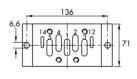
ISO DIN 5599/1

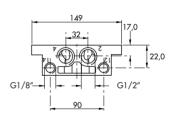


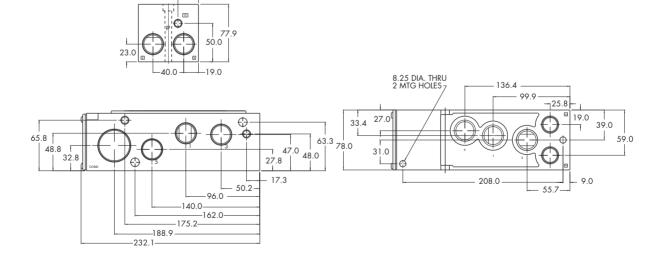


Manifold











Plug-in base / manifold



ISO 01 ISO 02 ISO 1 ISO 2

ISO 3

HOW TO ORDER

INDIVIDUAL BASE

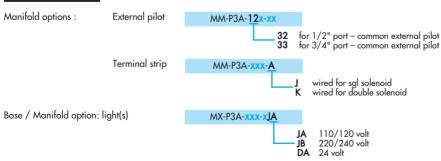
Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports
G1/2"	Single solenoid	MB-P3A-121-A	MB-P3A-122-A	MB-P3A-123-A
01/2	Double solenoid	MB-P3A-121-B	MB-P3A-122-B	MB-P3A-123-B
	Single solenoid	MB-P3A-131-A	MB-P3A-132-A	MB-P3A-133-A
G3/4"	Double solenoid	MB-P3A-131-B	MB-P3A-132-B	MB-P3A-133-B

MANIFOLD BASE

Port size	Wired for	Side ports	Side ports w/ bottom 2 & 4 ports	All side & bottom ports (see note)
G1/2"	Single solenoid	MM-P3A-121-A	MM-P3A-122-A	MM-P3A-123-A
G1/2"	Double solenoid	MM-P3A-121-B	MM-P3A-122-B	MM-P3A-123-B
	Single solenoid	MM-P3A-131-A	MM-P3A-132-A	MM-P3A-133-A
G3/4"	Double solenoid	MM-P3A-131-B	MM-P3A-132-B	MM-P3A-133-B

Note: Ports 1,3, and 5 are always 3/4".

OPTIONS



Accessories: M-P3001

M-P3001 Valve blanking plate.
N-P3003-01 Manifold fastening kit.
32845 Inlet/exhaust isolator plug.

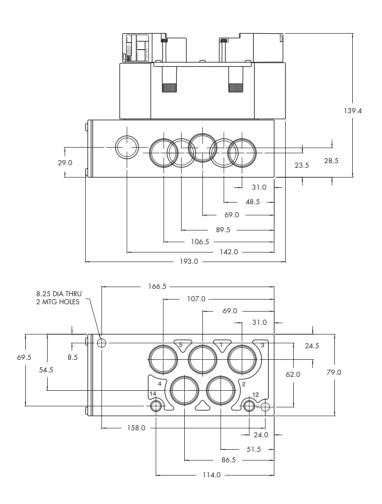






DIMENSIONS

Dimensions shown are metric (mm)





Section 4

Pressure regulators

			_



Sandwich pressure regulators with manual adjust knob	P. 323	PR24A	
Sandwich pressure regulator with manual adjust knob	P. 325	PR37A	
Sandwich pressure regulator with manual adjust knob	P. 327	PR42B	
Sandwich pressure regulator	P. 329	PR46A	
Sandwich pressure regulator with manual adjust knob	P. 331	PR47A	
Sandwich pressure regulator with manual adjust knob	P. 333	PR48B	
Sandwich pressure regulator with air pilot adjust	P. 335		
Sandwich selector pressure regulator with manual adjust knob	P. 337 PR92		
Sandwich pressure regulator with manual adjust knob	P. 339		
Sandwich pressure regulator with air pilot adjust	P. 341		
Sandwich selector pressure regulator with manual adjust knob	P. 343	FR20A	
Sandwich pressure regulator with manual adjust knob	P. 345		
Non plug-in sandwich pressure regulator with manual adjust	P. 347	PRAO1	
Non plug-in sandwich pressure regulator with air pilot adjust	P. 349		
Plug-in sandwich pressure regulator with manual adjust	P. 351		
Plug-in sandwich pressure regulator with air pilot adjust	P. 353	PRP01	
Non plug-in sandwich pressure regulator with manual adjust	P. 355	PRA02	
Plug-in sandwich pressure regulator with manual adjust	P. 357	PRP02	
Non plug-in sandwich pressure regulator with manual adjust knob	P. 359	DDATA	
Non plug-in sandwich pressure regulator with air pilot adjust	P. 361	PRA1A	
Plug-in sandwich pressure regulator with manual adjust knob	P. 363	DDDIA	
Plug-in sandwich pressure regulator with air pilot adjust	P. 365	PRP1A	
Non plug-in sandwich pressure regulator with manual adjust knob	P. 367	DDAAD	
Non plug-in sandwich pressure regulator with air pilot adjust	P. 369	PRA2D	
Plug-in sandwich pressure regulator with manual adjust knob	P. 371	DD 4 6 D	
Plug-in sandwich pressure regulator with air pilot adjust	P. 373	PRA2B	
Non plug-in sandwich pressure regulator with manual adjust knob	P. 375	DD 4 0 4	
Non plug-in sandwich pressure regulator with air pilot adjust	P. 377	PRA3C	
Plug-in sandwich pressure regulator with manual adjust knob	P. 379	DDDAD	
Plug-in sandwich pressure regulator with air pilot adjust	P. 381	PRP3B	

Sandwich pressure regulators with manual adjust knob

OPERATIONAL BENEFITS

- Easy mounting: saves on installation costs in comparison with inline regulators
- 2. Compact all-included units.
- 3. Large orifice provides high flow
- 4. Various functions available

HOW TO ORDER

5. Simple, reliable and solid design



PR24A PR37A

PR42B

PR46A PR47A

PR48B

PR92C

NON PLUG-IN SANDWICH REGULATORS

Gauge	Single pressure - Regulator "12" end	Dual pressure* - Regulator both ends	
No gauge port	PR42B-BAAA	PR42B-BCAA	
With gauge Port	PR42B-BBAA	PR42B-BDAA	

PLUG-IN SANDWICH REGULATORS (WITH GAGE PORT)

A 0 to 8 barB 0 to 5,3 barC 0 to 2,7 bar

Single pressure	Single pressure
Regulator "12" end Internal pilot	Regulator "12" end External pilot
PR24A-AAAA	PR24A-ABAA

^{*} For use with dual pressure valves.

OPTIONS

PR24A-xxxX

Pressure range :

PRA01A

PRPO 1 A

PRA02A

PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C

Notes:

- External pilot regulator required only when supply pressure (primary) to the valve is below the minimum operating pressure of the 24 series valve.
- When an internal pilot regulator is used with the 24 series valve, the valve should be ordered as external pilot. This ensures that the pilot supply is not regulated. If an internal pilot valve is used with an internal pilot regulator, the pilot supply is regulated.

PRP3B







TECHNICAL DATA

Fluid:

Compressed air, inert gases

Pressure range:

0 to 8 bar

Regulating range:

0 to 8 bar

Lubrication:

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Coil:

Temperature range :

Class A (#26 AWG x 18), continuous duty

 0° F to 120° F / -18° C to $+50^{\circ}$ C

Spare parts :

• Gage Kit No coupling: With short coupling: With long coupling:

N-42004-01 N-42004-02 (required with double solenoid valve) N-42004-03 (required with double solenoid valve)

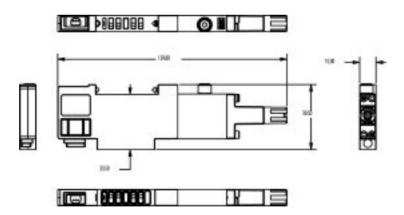
Sandwich flow control
 Plug-in with flow control on same end:
 Non plug-in with flow control on same end:
 Non plug-in with flow control on each end:

FC24A-AB FC24A-BB FC24A-CA

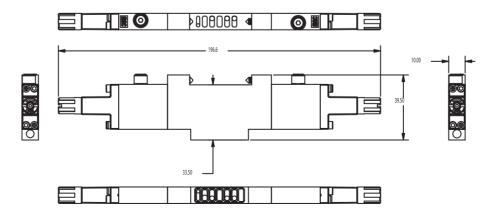
DIMENSIONS

Dimensions shown are metric (mm)

Single regulator



Double regulator



Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A

PR42B

PR46A

PR47A

PR48B

PR92C

HOW TO ORDER

REGULATORS FOR "NON PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure	
No gauge port	PR37A-FAAA	PR93A
With gauge Port (plugged)	PR37A-FABA	

Regulating pressure range for above models is 0 to 8 bar For other ranges, see technical data page.

OPTIONS

Adjustment :

PR37A-FXXX **B** for slotted stem **K** for slotted stem with locknut

Pressure range PR37A-xxxA

> **B** for 0 to 5,3 bar C for 0 to 2 bar

PRA01A

PRPO 1 A

PRA02A PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid: Pressure range: 0 to 8 bar

Regulating range : 0 to 8 bar

Lubrication:

Filtration: Temperature range :

Flow (at 6 bar, $\Delta P = 1$ bar)

Compressed air, inert gases

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

-18°C to +50°C

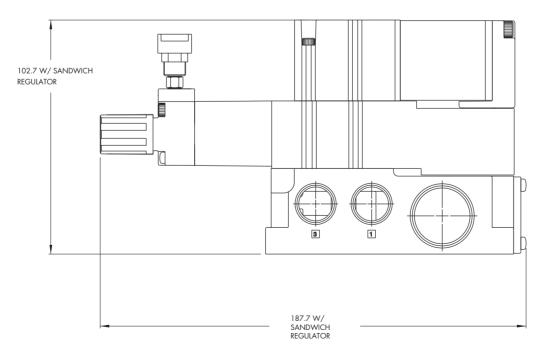
400 Nl/min (Cv 0.4)

Spare parts :

• Pressure regulator (less sandwich block): PR37A-G0AA (knob), PR37A-C0AA (slotted stem), PR37A-L0AA (slotted stem with locknut)

• Gauges : 24177-160 (0 to 10,7 bar, 23 mm) 24177-100 (0 to 6,7 bar, 23 mm) 24177-060 (0 to 4 bar, 23 mm)

DIMENSIONS



Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A

PR42B

PR46A

PR47A

PR48B

PR92C

PRA01A

PRPO 1 A

PRA02A

PRP02A

PRA1A

HOW TO ORDER

NON PLUG-IN SANDWICH REGULATORS

Gauge	Regulator "12" end Internal pilot	Regulator "12" end External pilot	
No gauge port	PR42B-BAAA	PR42B-BBAA	PR93A
With gauge Port	PR42B-BABA	PR42B-BBBA	

PLUG-IN SANDWICH REGULATORS

Gauge	Gauge Regulator "12" end Internal pilot		
No gauge port	PR42B-AAAA	PR42B-ABAA	
With gauge Port	PR42B-AABA	PR42B-ABBA	

Notes

- External pilot regulator required only when supply pressure (primary) to the valve is below the minimum operating pressure of the 42 series valve.
- When an internal pilot regulator is used with the 42 series valve, the valve should be ordered as external pilot and the base should be ordered as internal pilot. This ensures that the pilot supply is not regulated. If an internal pilot valve and base are used with an internal pilot regulator, the pilot supply is regulated.

Example: Valve 42B-AM D -AA A -GxxP-xxx with PR42B-AAAA

Internal pilot option in base

External pilot option in valve

DDD1A

PRP1A

PRA2D

PRA2B

PRA3C

PRP3B

OPTIONS

Pressure range :

PR42B-AAAA

A 0 to 8 bar
B 0 to 5,3 bar
C 0 to 2,7 bar







Fluid:

Pressure range : Regulating range:

Lubrication:

Filtration:

Temperature range :

Flow (at 6 bar, $\Delta P = 1 bar$):

Compressed air, inert gases

0 to 8 bar

0 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

-18°C to +50°C

250 Nl/min (Cv 0,25)

Spare parts :

Pressure regulator (less sandwich block): PR42B-C0xx • Gauge port plug: N-PE003
 M5 to 1/8" adapter: N-35005 • Gauge: 24177-160 (0 to 10,7 bar, 23 mm) 24177-100 (0 to 6,7 bar, 23 mm) 24177-060 (0 to 4 bar, 23 mm)

DIMENSIONS Dimensions shown are metric (mm) NON PLUG-IN 113.2 - 166.6 PLUG-IN 101.7 0 0 O 0 0



Series

Sandwich-pressure regulator

OPERATIONAL BENEFITS

- Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.
- 6. Single pressure regulator.



PR24A PR37A PR42B

PR46A PR47A

PR48B

PR92C

HOW TO ORDER

REGULATORS FOR "PLUG-IN" AND "NON PLUG-IN" VALVES

Gauge	For plug-in valves	For non plug-in valves
Gauge port (plugged)	PR46A-AAAA	PR46A-BAAA

OPTIONS

Pressure range :

PR46A-AAA A

A 0 to 8 bar
B 0 to 5,3 bar
C 0 to 2,7 bar

A Manual adjust with slotted screwdriver stem
B Manual adjust with adjusting knob
C Manual adjust with slotted screwdriver stem and locknut

• Regulator only (no sandwich block)

PRA01A

PRP01A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:

Compressed air, inert gases

0 to 8 bar

Regulating range:

0 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

40 µ

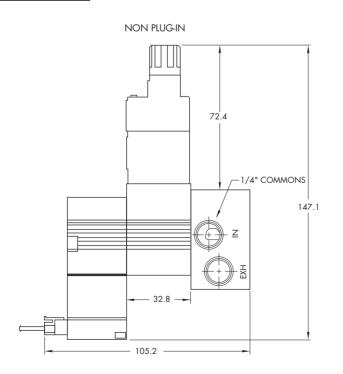
Temperature range:

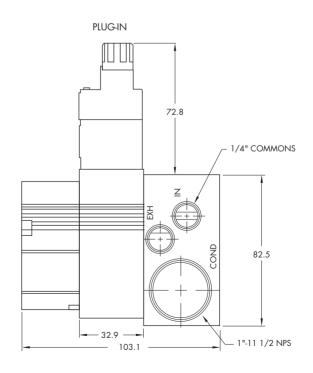
-18°C to +50°C

Flow:

210 NI/min (Cv 0,21)

DIMENSIONS Dimensions shown are metric (mm)





Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B

PR46A

PR47A

PR48B

PR92C

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (KNOB ADJUSTMENT)

Gauge	Single pressure	
No gauge port	PR47A-EAAA	PR93A
With gauge Port	PR47A-EABA	

REGULATORS FOR "NON PLUG-IN" VALVES (KNOB ADJUSTMENT)

Gauge	Single pressure
No Gauge port	PR47A-FAAA
With Gauge Port	PR47A-FABA

OPTIONS

Pressure range :

PR47A-XXXA A 0 to 8 bar B 0 to 5,3 bar C 0 to 2 bar

Adjustment for : Plug-in





PRA01A

PRPO 1 A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid: Compressed air, inert gases Pressure range: 0 to 8 bar Regulating range: 0 to 8 bar

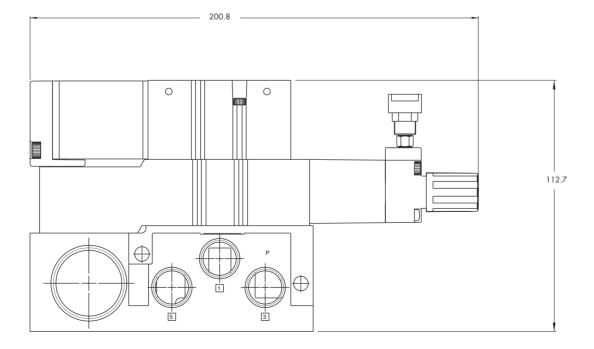
Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration: Temperature range : -18°C to +50°C

Flow (at 6 bar, $\Delta P = 1$ bar): 400 Nl/min (Cv 0.4)

 Pressure regulator (less sandwich block): PR47A-G0xx (knob), PR47A-C0xx (screwdriver slot), PR47A-L0xx (screwdriver slot with locknut)
 Gauge: 24177-160 (0 to 10,7 bar, 23 mm)
 24177-100 (0 to 6,7 bar, 23 mm)
 24177-060 (0 to 4 bar, 23 mm) Spare parts :

DIMENSIONS



Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR46A PR47A

PR24A

PR37A

PR42B

PR48B

PR92C

HOW TO ORDER

NON PLUG-IN SANDWICH REGULATORS (KNOB ADJUSTMENT)

Gauge	Regulator "12" end Internal pilot	Regulator "12" end External pilot	
Gauge port	PR48B-BAAA	PR48B-BBAA	PR93A

PLUG-IN SANDWICH REGULATORS (KNOB ADJUSTMENT)

Gauge	Regulator "12" end Internal pilot	Regulator "12" end External pilot
Gauge port	PR48B-AAAA	PR48B-ABAA

Notes:

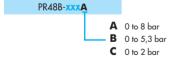
External pilot regulator required only when supply pressure (primary) to the valve is below the minimum operating pressure of the 48 series valve.

- When an internal pilot regulator is used with the 48 series valve, the valve should be ordered as external pilot and the base should be ordered as internal pilot. This ensures that the pilot supply is not regulated. If an internal pilot valve and base are used with an internal pilot regulator, the pilot supply is regulated.



OPTIONS

Pressure range :



Adjustment for : Plug-in regulator



Non plug-in regulator
PR48B-BXXX

B Knob
E Screwdriver slot
H Screwdriver slot with locknut

PRA01A

PRPO 1 A

PRA02A

PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:

Pressure range : Regulating range:

Lubrication:

Filtration:

Temperature range :

Flow (at 6 bar, $\Delta P = 1 bar$):

Compressed air, inert gases

0 to 8 bar

0 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

-18°C to +50°C

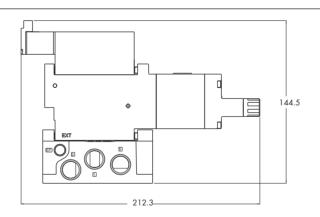
800 NI/min (Cv 0,8)

Spare parts:

Pressure regulator (less sandwich block): PR48B-C0xx (knob), PR48B-F0xx (screwdriver slot), PR48B-J0xx (screwdriver slot with locknut)
 Gauge: 24177-160 (0 to 10,7 bar, 23 mm)
 24177-100 (0 to 6,7 bar, 23 mm)
 24177-060 (0 to 4 bar, 23 mm)

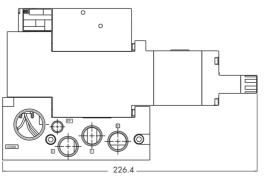
DIMENSIONS

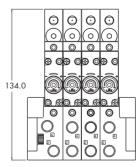
NON PLUG-IN



Dimensions shown are metric (mm)

PLUG-IN







Sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR42B PR46A

PR24A

PR37A

PR47A PR48B

PR92C

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR92C-EAAA	PR92C-EBAA	PR92C-ECAA	PR92C-EDAA	PR92C-EEAA
Gauge with face perpendicular to manual operator	PR92C-EABA	PR92C-EBBA	PR92C-ECBA	PR92C-EDBA	PR92C-EEBA
Gauge with face parallel to manual operator	PR92C-EACA	PR92C-EBCA	PR92C-ECCA	PR92C-EDCA	PR92C-EECA

Note: above models are coded for use with single solenoid valves

REGULATORS FOR "NON PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR92C-GAAA	PR92C-GBAA	PR92C-GCAA	PR92C-GDAA	PR92C-GEAA
Gauge with face perpendicular to manual operator	PR92C-GABA	PR92C-GBBA	PR92C-GCBA	PR92C-GDBA	PR92C-GEBA
Gauge with face parallel to manual operator	PR92C-GACA	PR92C-GBCA	PR92C-GCCA	PR92C-GDCA	PR92C-GECA

^{*} For use with dual pressure valves.

PLUG-IN OPTIONS

PR92C-Exxx

F for double solenoid valve

PR93A

PRA01A

PRPO 1 A

PRA02A PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C



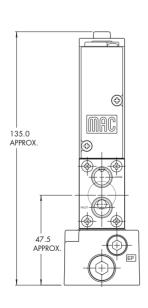


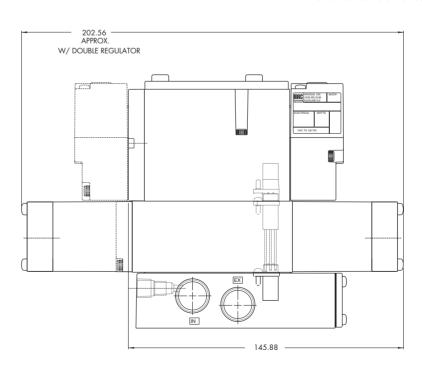


Fluid: Compressed air, inert gases Pressure range : 0 to 8 bar Regulating range : 0 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Flow (at 6 bar, $\Delta P = 1 bar$): 800 Nl/min (Cv 0.8)

R-92003: regulator end plate kit
Gauge kit 0 - 10,7 bar: N-92006-01
R-92003-01: regulator by-pass end plate kit
Pressure regulator (less sandwich block): PR92C-H0AA Spare parts :

DIMENSIONS





Sandwich selector pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
No Gauge	PR92C-JPAA	PR92C-JRAA	PR92C-JSAA	PR92C-JTAA
Gauge with face perpendicular to manual operator	PR92C-JPBA	PR92C-JRBA	PR92C-JSBA	PR92C-JTBA
Gauge with face parallel to manual operator	PR92C-JPCA	PR92C-JRCA	PR92C-JSCA	PR92C-JTCA

Note: above models are coded for use with single solenoid valves

REGULATORS FOR "NON PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
No Gauge	PR92C-LPAA	PR92C-LRAA	PR92C-LSAA	PR92C-LTAA
Gauge with face perpendicular to manual operator	PR92C-LPBA	PR92C-LRBA	PR92C-LSBA	PR92C-LTBA
Gauge with face parallel to manual operator	PR92C-LPCA	PR92C-LRCA	PR92C-LSCA	PR92C-LTCA

Notes: - Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page - Use single pressure valve for all above models.

OPTIONS

Regulator less sandwich block

PR92C-x0xx

- M Knob
- Slotted stem D
- Slotted stem with locknut

Other adjustment

PR92C-xxx

- Slotted stem, single solenoid Slotted stem, double solenoid В
- Slotted stem, non plug-in
- Knob, double solenoid
- Slotted stem w/ locknut, single solenoid Slotted stem w/ locknut, double solenoid Slotted stem w/ locknut, non plug-in

PR24A PR37A PR42B

PR46A PR47A PR48B

PR92C

PR93A

PRA01A

PRPO 1 A

PRA02A PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C

PRP3B

Consult "Precautions" page 407 before use, installation or service of MAC Valves.







Fluid:

0 to 8 bar

Pressure range: Regulating range:

0 to 8 bar

Lubrication:

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range :

-18°C to +50°C

Flow (at 6 bar, $\Delta P = 1$ bar):

800 Nl/min (Cv 0.8)

Compressed air, inert gases

Spare parts :

- R-92003: end plate kit
 R-92003-01: by-pass end plate kit
 Gauge kit 0 10,7 bar: N-92006-01
 Gauge kit 0 6,7 bar: N-92006-02
 Gauge kit 0-4 bar: N-92006-03

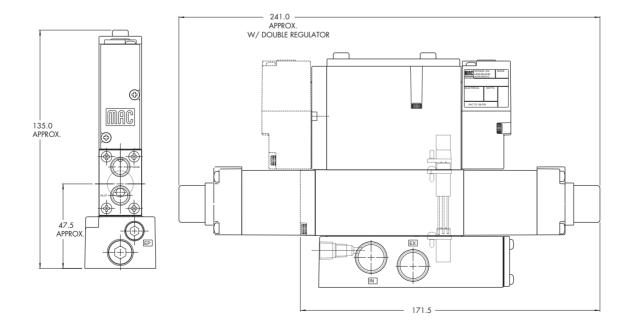
Options:

• Pressure range: PR92C-xxxA (A 0 to 8 bar)

B 0 to 5,3 bar -C 0 to 2 bar

— C 0 to 2 bar — D 0 to 8 bar "A" end, 0 to 5,3 bar "B" end — E 0 to 8 bar "B" end, 0 to 5,3 bar "A" end — F 0 to 8 bar "A" end, 0 to 2 bar "B" end — G 0 to 8 bar "B" end, 0 to 2 bar "A" end — H 0 to 5,3 bar "A" end, 0 to 2 bar "B" end — J 0 to 5,3 bar "B" end, 0 to 2 bar "A" end

DIMENSIONS





Series

Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR46A PR47A

PR24A

PR37A

PR42B

PR48B

PR92C

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
No Gauge	PR92C-JAAA	PR92C-JBAA	PR92C-JCAA	PR92C-JDAA	PR92C-JEAA
Gauge with face perpendicular to manual operator	PR92C-JABA	PR92C-JBBA	PR92C-JCBA	PR92C-JDBA	PR92C-JEBA
Gauge with face parallel to manual operator	PR92C-JACA	PR92C-JBCA	PR92C-JCCA	PR92C-JDCA	PR92C-JECA

Note: above models are coded for use with single solenoid valves

REGULATORS FOR "NON PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plulled)	PR92C-LAAA	PR92C-LBAA	PR92C-LCAA	PR92C-LDAA	PR92C-LEAA
Gauge with face perpendicular to manual operator	PR92C-LABA	PR92C-LBBA	PR92C-LCBA	PR92C-LDBA	PR92C-LEBA
Gauge with face parallel to manual operator	PR92C-LACA	PR92C-LBCA	PR92C-LCCA	PR92C-LDCA	PR92C-LECA

^{*} For use with dual pressure valves.

Note: Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page.

OPTIONS Regulator less sandwich block Other adjustment

PR92C-x0xx

M Knob

D Slotted stem

S Slotted stem with locknut

PR92C-xxxx

Slotted stem, single solenoid

Slotted stem, double solenoid C Slotted stem, non plug-in

Knob, double solenoid Slotted stem w/ locknut, single solenoid Slotted stem w/ locknut, double solenoid

Slotted stem w/ locknut, non plug-in

PR93A

PRA01A

PRPO 1 A

PRA02A PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:

Compressed air, inert gases

Pressure range:

0 to 8 bar

Regulating range:

0 to 8 bar

Lubrication:

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range :

-18°C to +50°C

Flow (at 6 bar, $\Delta P = 1$ bar):

800 Nl/min (Cv 0.8)

Spare parts :

- R-92003: end plate kit
 R-92003-01: by-pass end plate kit
 Gauge kit 0 10,7 bar: N-92006-01
 Gauge kit 0 6,7 bar: N-92006-02
 Gauge kit 0-4 bar: N-92006-03

Options :

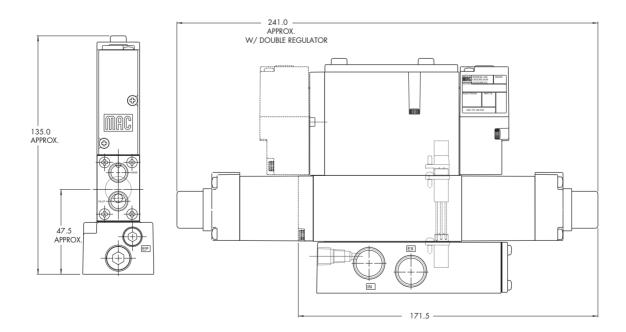
• Pressure range: PR92C-xxxA (A 0 to 8 bar)

B 0 to 5,3 bar

-C 0 to 2 bar

— C 0 to 2 bar — D 0 to 8 bar "A" end, 0 to 5,3 bar "B" end — E 0 to 8 bar "B" end, 0 to 5,3 bar "A" end — F 0 to 8 bar "A" end, 0 to 2 bar "B" end — G 0 to 8 bar "B" end, 0 to 2 bar "A" end — H 0 to 5,3 bar "A" end, 0 to 2 bar "B" end — J 0 to 5,3 bar "B" end, 0 to 2 bar "A" end

DIMENSIONS





Series

Sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B PR46A PR47A

PR92C

PR48B

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-DAAA	PR93A-DBAA	PR93A-DCAA	PR93A-DDAA	PR93A-DEAA
Gauge with face perpendicular to manual operator	PR93A-DABA	PR93A-DBBA	PR93A-DCBA	PR93A-DDBA	PR93A-DEBA
Gauge with face parallel to manual operator	PR93A-DACA	PR93A-DBCA	PR93A-DCCA	PR93A-DDCA	PR93A-DECA

Note: above models are coded for use with single solenoid valves.

REGULATORS FOR "NON PLUG-IN" VALVES

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-EAAA	PR93A-EBAA	PR93A-ECAA	PR93A-EDAA	PR93A-EEAA
Gauge with face perpendicular to manual operator	PR93A-EABA	PR93A-EBBA	PR93A-ECBA	PR93A-EDBA	PR93A-EEBA
Gauge with face parallel to manual operator	PR93A-EACA	PR93A-EBCA	PR93A-ECCA	PR93A-EDCA	PR93A-EECA

Note: Above models may be used with either single or double solenoid valves.

PR93A

PRA01A

PRPO1A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C

^{*} For use with dual pressure valves.





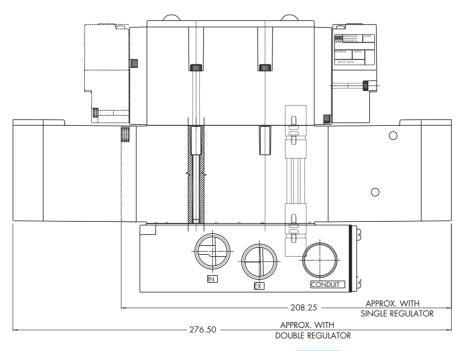


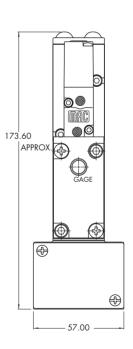
Fluid: Compressed air, inert gases Pressure range : 0 to 8 bar Regulating range: 0 to 8 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Flow (at 6 bar, $\Delta P = 1 bar$): 2400 NI/min (Cv 2.4)

Spare parts :

- Regulator end plate kit: R-93004
 Regulator by-pass end plate kit: R-93004-01
 Gauge kit: N-92006-01 (0 to 10,7 bar)
 Pressure regulator (less sandwich block): PR93A-F0AA

DIMENSIONS





Sandwich selector pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B PR46A PR47A

PR48B

PR92C

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
Gauge port only (plugged)	PR93A-GPAA	PR93A-GRAA	PR93A-GSAA	PR93A-GTAA
Gauge with face perpendicular to manual operator	PR93A-GPBA	PR93A-GRBA	PR93A-GSBA	PR93A-GTBA
Gauge with face parallel to manual operator	PR93A-GPCA	PR93A-GRCA	PR93A-GSCA	PR93A-GTCA

REGULATORS FOR "NON PLUG-IN" VALVES

Gauge	Select to A port Regulator A end By-pass plate B end	Select to B port Regulator B end By-pass plate A end	Select to A port Reg. both ends A end low press. B end high press.	Select to B port Reg. both ends A end high press. B end low press.
Gauge port only (plugged)	PR93A-HPAA	PR93A-HRAA	PR93A-HSAA	PR93A-HTAA
Gauge with face perpendicular to manual operator	PR93A-HPBA	PR93A-HRBA	PR93A-HSBA	PR93A-HTBA
Gauge with face parallel to manual operator	PR93A-HPCA	PR93A-HRCA	PR93A-HSCA	PR93A-HTCA

Notes: - Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page

OPTIONS

Regulator less sandwich block

PR93A-x0xx

J Knob

C Slotted stem

M Slotted stem with locknut

Other adjustment

PR93A-xxxx

A Slotted stem, plug-in
 B Slotted stem, non plug-

B Slotted stem, non plug-in
K Slotted stem w/ locknut, plug-in

L Slotted stem w/ locknut, non plug-in

Note: Above models may be used with either single or double solenoid valves.

PR93A

PRA01A

PRPO 1 A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C

⁻ Use single pressure valve for all above models.







Fluid: Compressed air, inert gases

Pressure range: 0 to 8 bar

Regulating range: 0 to 8 bar

Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range :

-18°C to +50°C

Flow (at 6 bar, $\Delta P = 1$ bar):

2400 NI/min (Cv 2.4)

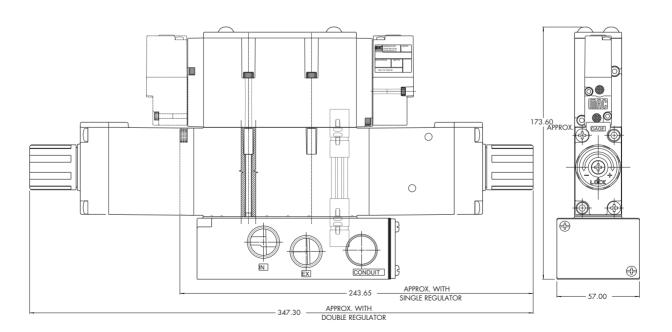
Spare parts:

R-93004: end plate kit
R-93004-01: by-pass end plate kit
Gauge kit 0 – 10,7 bar: N-92006-01
Gauge kit 0 – 6,7 bar: N-92006-02
Gauge kit 0-4 bar: N-92006-03

Option:

• Pressure range: PR93A-xxxA (A 0 to 8 bar) B 0 to 5,3 bar C 0 to 2 bar D 0 to 8 bar "A" end, 0 to 5,3 bar "B" end
E 0 to 8 bar "B" end, 0 to 5,3 bar "A" end
F 0 to 8 bar "A" end, 0 to 2 bar "B" end
G 0 to 8 bar "A" end, 0 to 2 bar "B" end -H 0 to 5,3 bar "A" end, 0 to 2 bar "B" end -J 0 to 5,3 bar "B" end, 0 to 2 bar "A" end

DIMENSIONS



Sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B PR46A

PR47A PR48B

PR92C

PR93A

PRA01A

PRPO 1 A

PRA02A

PRP02A

PRA1A

HOW TO ORDER

REGULATORS FOR "PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-GAAA	PR93A-GBAA	PR93A-GCAA	PR93A-GDAA	PR93A-GEAA
Gauge with face perpendicular to manual operator	PR93A-GABA	PR93A-GBBA	PR93A-GCBA	PR93A-GDBA	PR93A-GEBA
Gauge with face parallel to manual operator	PR93A-GACA	PR93A-GBCA	PR93A-GCCA	PR93A-GDCA	PR93A-GECA

Note: above models are coded for use with single solenoid valves.

REGULATORS FOR "NON PLUG-IN" VALVES (CODED FOR KNOB ADJUSTMENT)

Gauge	Regulator A end Single pressure	Regulator B end Single pressure	Regulator A * end with by-pass end plate B end	Regulator B* end with by-pass end plate A end	Regulator * both ends
Gauge port only (plugged)	PR93A-HAAA	PR93A-HBAA	PR93A-HCAA	PR93A-HDAA	PR93A-HEAA
Gauge with face perpendicular to manual operator	PR93A-HABA	PR93A-HBBA	PR93A-HCBA	PR93A-HDBA	PR93A-HEBA
Gauge with face parallel to manual operator	PR93A-HACA	PR93A-HBCA	PR93A-HCCA	PR93A-HDCA	PR93A-HECA

^{*} For use with dual pressure valves.

Note: Regulating range for above models is 0 to 8 bar. For other ranges, see technical data page.

OPTIONS	Regulator less	sandw	rich block
	PR93A-	(Oxx	
		J	Knob

Slotted stem M Slotted stem with locknut Other adjustment PR93A-xxxx

> Slotted stem, plug-in В Slotted stem, non plug-in Slotted stem w/ locknut, plug-in Slotted stem w/ locknut, non plug-in K

PRA2D

PRP1A

PRA2B

PRA3C

PRP3B

Note: Above models may be used with either single or double solenoid valves.







Fluid:

Compressed air, inert gases

Pressure range:

0 to 8 bar

Regulating range:

0 to 8 bar

Lubrication:

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

Temperature range :

-18°C to +50°C

Flow (at 6 bar, $\Delta P = 1$ bar):

2400 NI/min (Cv 2.4)

Spare parts :

- R-93004: end plate kit
 R-93004-01: by-pass end plate kit
 Gauge kit 0 10,7 bar: N-92006-01
 Gauge kit 0 6,7 bar: N-92006-02
 Gauge kit 0-4 bar: N-92006-03

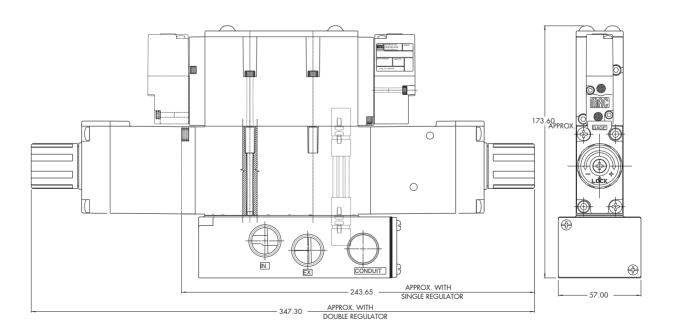
Option:

• Pressure range: PR93A-xxxA (A 0 to 8 bar) B 0 to 5,3 bar C 0 to 2 bar

— C 0 to 2 bar

— D 0 to 8 bar "A" end, 0 to 5,3 bar "B" end
— E 0 to 8 bar "B" end, 0 to 5,3 bar "A" end
— F 0 to 8 bar "A" end, 0 to 2 bar "B" end
— G 0 to 8 bar "B" end, 0 to 2 bar "A" end
— H 0 to 5,3 bar "A" end, 0 to 2 bar "B" end
— J 0 to 5,3 bar "B" end, 0 to 2 bar "A" end

DIMENSIONS



Non plug-in sandwich pressure regulator with manual adjust

OPERATIONAL BENEFITS

- Easy mounting: saves on installation costs and space in comparison with inline regulators
- 2. Compact all-included units
- 3. Large orifice provides high flow
- 4. Various functions available
- 5. Simple, reliable and solid design



PR37A PR42B PR46A PR47A

PR24A

PR47A

PR92C

PR93A

HOW TO ORDER

Pilot	Single pressure Regulator 12 end	Dual pressure Regulator 12 end with by-pass 14 end	Dual pressure Regulator 14 end with by-pass 12 end	Dual pressure Regulator both ends
Internal	PRA01A-AAAA	PRAO1A-ABAA	PRA01A-ADAA	PRA01A-AEAA
External	PRA01A-BAAA	PRA01A-BBAA	PRA01A-BDAA	PRA01A-BEAA

Above models are for manual adjust with knob For other manual adjustments and pressure ranges, see Options.

Note: Add –9 after part number for regulator block assembled to valve.

* To be used with dual pressure valves.

OPTIONS

Adjustments:

PRA01A - xxxx

A Manual adjust with knob – Internal pilot
 B Manual adjust with knob – External pilot

G Manual adjust with screwdriver slot – Internal pilot

H Manual adjust with screwdriver slot - External pilot

K Manual adjust with screwdriver slot with locknut- Internal pilot

L Manual adjust with screwdriver slot with locknut - External pilot

Regulated Pressure range:

PRA01A - xxxx

A 0 to 8 bar
B 0 to 5,3 bar
C 0 to 2 bar
D 0 to 8 bar "14" end - 0 to 5,3 bar "12" end
E 0 to 8 bar "12" end - 0 to 5,3 bar "14" end
F 0 to 8 bar "14" end - 0 to 2 bar "12" end
G 0 to 8 bar "12" end - 0 to 2 bar "14" end
H 0 to 5,3 bar "12" end - 0 to 2 bar "12" end
J 0 to 5,3 bar "12" end - 0 to 2 bar "14" end

PRAO1A

PRPO 1 A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:

Compressed air, inert gases

Pressure supply:

Higher than maximum regulated pressure (max. 8,5 bar)

Regulating range:

0 to 8 bai

Lubrication : Filtration :

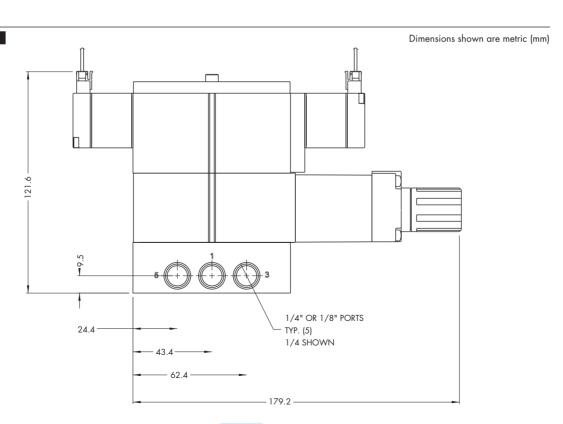
Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

40 ı

Temperature range :

-18°C to +50°C

DIMENSIONS



Series

Non plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- Easy mounting: saves on installation costs in comparison with inline regulators
- 2. Compact all-included units
- 3. Large orifice provides high flow
- 4. Various functions available

HOW TO ORDER

5. Simple, reliable and solid design

PR24A

PR37A

PR42B

PR46A

PR46A

PR47A

PR48B

PR92C

PR93A

Pilot	Single pressure Regulator 12 end	Dual pressure Regulator 12 end with by-pass 14 end	Dual pressure Regulator 14 end with by-pass 12 end	Dual pressure Regulator both ends
Internal	PRA01A-DAAA	PRAO1A-DBAA	PRA01A-DDAA	PRA01A-DEAA
External	PRA01A-EAAA	PRA01A-EBAA	PRA01A-EDAA	PRA01A-EEAA

Note: Only pressure range available for air adjust regulator is 0-8 bar.

PRA01A

PRPO 1 A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C

^{*} To be used with dual pressure valves.







Fluid:

Compressed air, inert gases

Pressure range:

Higher than maximum regulated pressure (max. 8,5 bar)

Regulating range:

U to 8 bai

Lubrication:

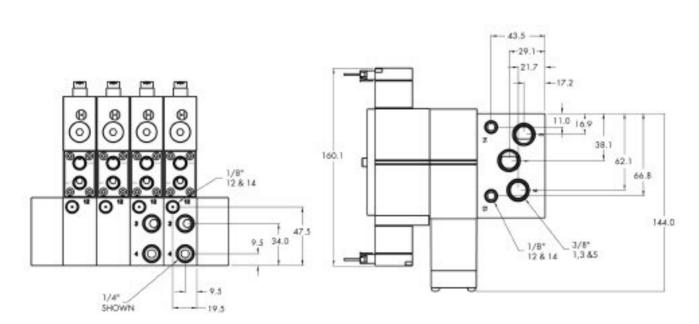
Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:

40 µ

Temperature range :

-18°C to +50°C





Series

Plug-in sandwich pressure regulator with manual adjust

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs and space in comparison with inline regulators
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.

HOW TO ORDER

5. Simple, reliable and solid design.

PR24A

PR37A

PR42B

PR46A

PR47A

PR48B

PR92C

Pilot	Single pressure Regulator 12 end	Dual pressure Regulator 12 end with by-pass 14 end	Dual pressure Regulator 14 end with by-pass 12 end	bual pressure Regulator both ends
Internal	PRPO1A-AAAA	PRPO1A-ABAA	PRP01A-ADAA	PRPO1A-AEAA
External	PRPO1A-BAAA	PRPO1A-BBAA	PRP01A-BDAA	PRPO1A-BEAA

Above models are for manual adjust with knob For other adjustments and pressure ranges, see Options.

* To be used with dual pressure valves.

PRA01A

PR93A

OPTIONS

Adjustments:

PRP01A - xxxx

A Manual adjust with knob - Internal pilot Manual adjust with knob - External pilot

G Manual adjust with screwdriver slot – Internal pilot

Manual adjust with screwdriver slot – External pilot

Manual adjust with screwdriver slot with locknut- Internal pilot

Manual adjust with screwdriver slot with locknut - External pilot

Regulated Pressure range :

PRP01A - xxxx

0 to 8 bar

В 0 to 5,3 bar

C 0 to 2 bar

0 to 8 bar "14" end – 0 to 5,3 bar "12" end 0 to 8 bar "12" end – 0 to 5,3 bar "14" end 0 to 8 bar "14" end – 0 to 2 bar "12" end

Ε

0 to 8 bar "12" end – 0 to 2 bar "14" end 0 to 5,3 bar "14" end– 0 to 2 bar "12" end

0 to 5,3 bar "12" end – 0 to 2 bar "14" end

PRPO 1 A

PRA02A PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:

Compressed air, inert gases

Pressure supply:

Higher than maximum regulated pressure (max. 8,5 bar)

Regulating range:

Temperature range :

0 to 8 bar

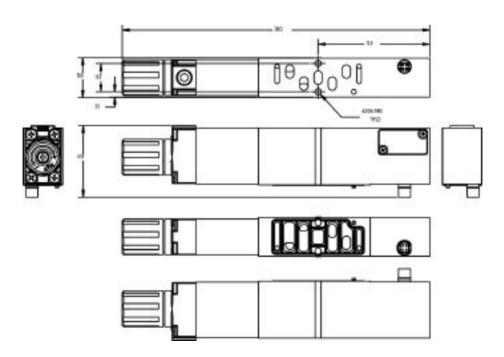
Lubrication : Filtration :

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

40 µ

-18°C to +50°C

DIMENSIONS





Series

Plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs and space in comparison with inline regulators
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.

HOW TO ORDER

5. Simple, reliable and solid design

PR24A

PR37A

PR42B

PR46A

PR47A

PR48B

PR92C

Pilot	Single pressure Regulator 12 end	Dual pressure Regulator 12 end with by-pass 14 end	Dual pressure Regulator 14 end with by-pass 12 end	Dual pressure Regulator both ends
Internal	PRPO1A-DAAA	PRP01A-DBAA	PRP01A-DDAA	PRP01A-DEAA
External	PRP01A-EAAA	PRP01A-EBAA	PRP01A-EDAA	PRP01A-EEAA

Note: Only pressure range available for air adjust is 0-8 bar

PRA01A

PR93A

PRPO1A

PRA02A PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C

^{*} To be used with dual pressure valves.







Fluid :

Compressed air, inert gases

Pressure supply:

Higher than maximum regulated pressure (max. 8,5 bar)

Regulating range :

0 to 8 bar

Lubrication : Filtration :

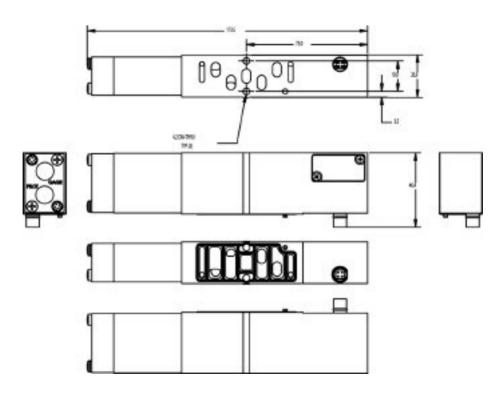
Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

40 ı

Temperature range :

-18°C to +50°C

DIMENSIONS



Non plug-in sandwich pressure regulator with manual adjust

OPERATIONAL BENEFITS

- Easy mounting: saves on installation costs and space in comparison with inline regulators
- 2. Compact all-included units
- 3. Large orifice provides high flow
- 4. Various functions available
- 5. Simple, reliable and solid design



PR24A PR37A PR42B PR46A

PR47A PR48B

PR92C

HOW TO ORDER

Pilot	Single pressure Regulator 12 end	Dual pressure Regulator 12 end with by-pass 14 end	Dual pressure Regulator 14 end with by-pass 12 end	Dual pressure Regulator both ends	
Internal	PRA02A-AAAA	PRA02A-ABAA	PRA02A-ADAA	PRA02A-AEAA	
External	PRA02A-BAAA	PRA02A-BBAA	PRA02A-BDAA	PRA02A-BEAA	_

Above models are for manual adjust with knob For other manual adjustments and pressure ranges, see Options.

Note: Add -9 after part number for regulator block assembled to valve.

* To be used with dual pressure valves.

OPTIONS	

Adjustments:

PRA02A - xxxx

A Manual adjust with knob – Internal pilot

B Manual adjust with knob – External pilot

G Manual adjust with screwdriver slot – Internal pilot

H Manual adjust with screwdriver slot – External pilot

K Manual adjust with screwdriver slot with locknut- Internal pilot

L Manual adjust with screwdriver slot with locknut – External pilot

Regulated Pressure range:

PRA02A - xxxx

Α	0 to 8 bar
В	0 to 5,3 bar
С	0 to 2 bar
D	0 to 8 bar "14" end – 0 to 5,3 bar "12" er
E	0 to 8 bar "12" end – 0 to 5,3 bar "14" er
F	0 to 8 bar "14" end – 0 to 2 bar "12" end
G	0 to 8 bar "12" end – 0 to 2 bar "14" end
н	0 to 5 3 bar "14" end- 0 to 2 bar "12" en

0 to 5,3 bar "12" end – 0 to 2 bar "14" end

PR93A

PRA01A

PRPO 1 A

PRAO2A

PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:

Compressed air, inert gases

Pressure supply:

Higher than maximum regulated pressure (max. 8,5 bar)

Regulating range:

0 to 8 bar

Lubrication : Filtration :

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

40 ı

Temperature range :

-18°C to +50°C

Dimensions shown are metric (mm) 144.0 0 144.0



Series

Plug-in sandwich pressure regulator with manual adjust

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs and space in comparison with inline regulators
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.

PR24A

PR37A

PR42B

PR46A

PR47A

PR48B

PR92C

HOW TO ORDER

Pilot	Single pressure Regulator 12 end
Internal	PRPO2A-AAAA
External	PRP02A-BAAA

Above models are for manual adjust with knob For other manual adjustments and pressure ranges, see Options.

Note: Add –9 after part number for regulator block assembled to valve.

PRA01A

PR93A

PRPO 1 A

PRA02A

PRPO2A

OPTIONS

Adjustments:

PRPO2A -

- - A Manual adjust with knob Internal pilot Manual adjust with knob – External pilot
 - G Manual adjust with screwdriver slot Internal pilot
 - H Manual adjust with screwdriver slot External pilot
 - Manual adjust with screwdriver slot with locknut- Internal pilot
 - Manual adjust with screwdriver slot with locknut External pilot

Regulated Pressure range:

PRP02A - xxxx

0 to 8 bar

0 to 5,3 bar

0 to 2 bar

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:

Compressed air, inert gases

Pressure supply:

Higher than maximum regulated pressure (max. 8,5 bar)

Regulating range:

0 to 8 bar

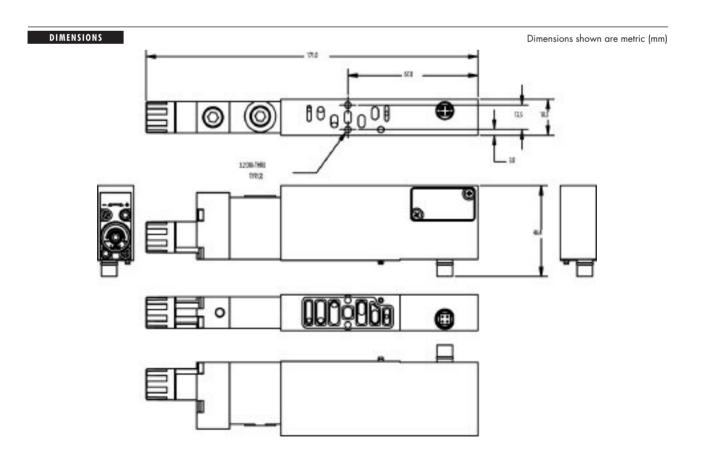
Lubrication : Filtration :

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

40 µ

Temperature range :

-18°C to +50°C



OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR37A PR42B PR46A PR47A

PR24A

PR48B

PR92C

PR93A

PRA01A

PRPO 1 A

PRA02A

PRP02A

PRA 1 A

PRP1A

PRA2D

INTERNAL PILOT

HOW TO ORDER

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-GAAA	PRA1A-GCAA	PRA1A-GBAA	PRA1A-GDAA	PRA1A-GEAA
Gauge perpendicular to regulator(s)	PRA1A-GABA	PRA1A-GCBA	PRA1A-GBBA	PRA1A-GDBA	PRA1A-GECA
Gauge parallel to regulator(s)	PRA1A-GADA	PRA1A-GCDA	PRA1A-GBDA	PRA1A-GDDA	PRA1A-GEEA

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 1 4 end Regulated pressure to port 4	Dual pressure Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-HAAA	PRA1A-HCAA	PRA1A-HBAA	PRA1A-HDAA	PRA1A-HEAA
Gauge perpendicular to regulator(s)	PRA1A-HABA	PRA1A-HCBA	PRA1A-HBBA	PRA1A-HDBA	PRA1A-HECA
Gauge parallel to regulator(s)	PRA1A-HADA	PRA1A-HCDA	PRA1A-HBDA	PRA1A-HDDA	PRA1A-HEEA

* - To be used with dual pressure valves.

Note: regulating range for above models is 0-8 bar. For other ranges see technical data page.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35336.

PRA2B

PRA3C

PRP3B

ADJUSTMENT OPTIONS

PRA1A-xxxx

- A for slotted stem adjustment (internal pilot)
- **B** for slotted stem adjustment (external/remote air)
- K for slotted stem with locknut (internal pilot)
- L for slotted stem with locknut (external/remote air)







Fluid:
Compressed air, inert gases

Pressure range:
0 to 10 bar

Regulating range:
0 to 8 bar (other ranges see below)

Lubrication:
Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)

Filtration:
40 µ

Temperature range:
-18°C to 50°C

Flow:
1000 NI/min (Cv 1.0)

Spare parts:

• Pressure regulator (less sandwich block): PRA1A-JOAA (KNOB), PRA1A-COAA (SLOTTED STEM), PRA1A-M0AA (SLOTTED STEM WITH LOCKNUT).

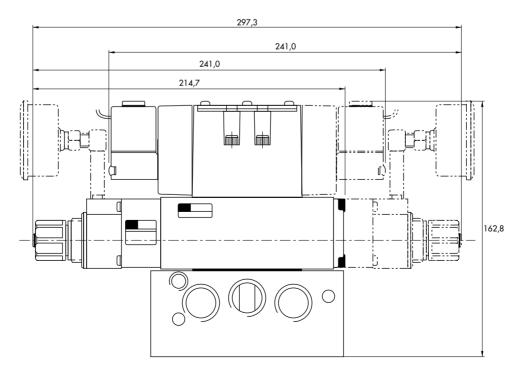
• Fressure regulator (less sandwich block): FRATA)

• Gauge: N-82016-01 (0-8 bar perpendicular)
N-82016-02 (0-8 bar parallel)
N-82016-03 (0-5,3 bar perpendicular)
N-82016-04 (0-5,3 bar parallel)
N-82016-05 (0-2 bar perpendicular)
N-82016-06 (0-2 bar parallel)

```
Regulating range options: PRA1A-XXXA
```

```
Replace by B -0 to 5,3 bar
Replace by C -0 to 2 bar
Replace by D -0 to 8 bar on "14" end -0 to 5,3 bar on "12" end
Replace by E -0 to 8 bar on "12" end -0 to 5,3 bar on "12" end
Replace by F -0 to 8 bar on "14" end -0 to 2 bar on "12" end
Replace by G -0 to 8 bar on "12" end -0 to 2 bar on "14" end
Replace by H -0 to 5,3 bar on "14" end -0 to 2 bar on "12" end
Replace by J -0 to 5,3 bar on "12" end -0 to 2 bar on "12" end
```

DIMENSIONS





Non plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- $1. \ Easy \ mounting: saves \ on \ installation \ costs \ in$ comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available
- 5. Simple, reliable and solid design.



PR37A PR42B PR46A PR47A

PR24A

PR48B

PR92C

HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 1 2 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-DAAA	PRA1A-DCAA	PRA1A-DBAA	PRA1A-DDAA	PRA1A-DEAA
Gauge perpendicular to regulator(s)	PRA1A-DABA	PRA1A-DCBA	PRA1A-DBBA	PRA1A-DDBA	PRA1A-DECA
Gauge parallel to regulator(s)	PRA1A-DADA	PRA1A-DCDA	PRA1A-DBDA	PRA1A-DDDA	PRA1A-DEEA

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 1 2 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA1A-EAAA	PRA1A-ECAA	PRA1A-EBAA	PRA1A-EDAA	PRA1A-EEAA
Gauge perpendicular to regulator(s)	PRA1A-EABA	PRA1A-ECBA	PRA1A-EBBA	PRA1A-EDBA	PRA1A-EECA
Gauge parallel to regulator(s)	PRA1A-EADA	PRA1A-ECDA	PRA1A-EBDA	PRA1A-EDDA	PRA1A-EEEA

^{* -} To be used with dual pressure valves.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35336.

PR93A

PRA01A

PRPO 1 A

PRA02A PRP02A

PRA 1 A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid: Pressure range: Regulating range:

Lubrication:

Filtration: Temperature range :

Flow:

Compressed air, inert gases

0 to 10 bar

0 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)

-18°C to 50°C

1000 NI/min (Cv 1.0)

Spare parts :

Pressure regulator (less sandwich block): PRA1A-F0AA.
 Gauge: N-82016-01 (0-8 bar perpendicular)
 N-82016-02 (0-8 bar parallel)

DIMENSIONS Dimensions shown are metric (mm) 194.1

Plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B PR46A PR47A PR48B

PR92C

PR93A

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 1 4 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
Gauge port only	PRP1A-GAKA	PRP1A-GCKA	PRP1A-GBKA	PRP1A-GDKA	PRP1A-GEKA
Gauge perpendicular to manual operator	PRP1A-GABA	PRP1A-GCBA	PRP1A-GBBA	PRP1A-GDBA	PRP1A-GECA
Gauge parallel to manual operator	PRP1A-GADA	PRP1A-GCDA	PRP1A-GBDA	PRP1A-GDDA	PRP1A-GEEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP1A-HAKA	PRP1A-HCKA	PRP1A-HBKA	PRP1A-HDKA	PRP1A-HEKA
Gauge perpendicular to manual operator	PRP1A-HABA	PRP1A-HCBA	PRP1A-HBBA	PRP1A-HDBA	PRP1A-HECA
Gauge parallel to manual operator	PRP1A-HADA	PRP1A-HCDA	PRP1A-HBDA	PRP1A-HDDA	PRP1A-HEEA

^{*} For use with dual pressure valves.

Note: Regulating range for above models is 0-8 bar. For other ranges, see technical data page.

ADJUSTMENT OPTIONS

۲	КP	IA- <u>x</u> xxx	

for slotted stem adjustment (internal pilot) for slotted stem adjustment (external/remote air) for slotted stem with locknut (internal pilot) for slotted stem with locknut (external/remote air)

Notes:

- 1. Valves used with above models must be external pilot models.
- 2. Cannot field convert regulator block from single pressure to dual pressure.
- 3. Cannot field convert from internal pilot to external pilot.
- 4. Wired for double solenoid valves.

PRA01A

PRPO1A

PRA02A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid: Compressed air, inert gases

Pressure range: 0 to 10 bar

Regulating range: 0 to 8 bar

Lubrication : Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

1100 NI/min (Cv 1.1)

Filtration:

-18°C to +50°C

Temperature range : Flow (at 6 bar, $\Delta P=1$ bar) :

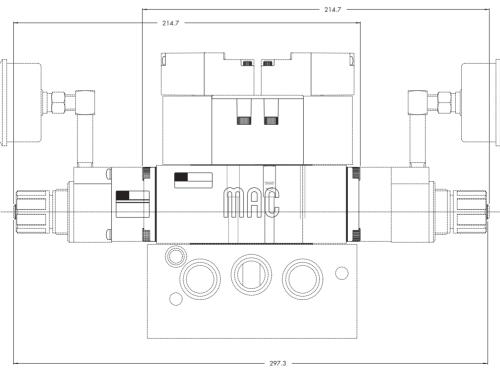
Spare parts :

Pressure regulator (less sandwich block) : PRP1A-JOKA (knob), PRP1A-COKA (slotted stem) PRP1A-MOKA (slotted stem with locknut)

Replace by B - 0 to 5,3 bar
Replace by C - 0 to 2 bar
Replace by D - 0 to 8 bar on "12" end - 0 to 5,3 bar on "12" end
Replace by E - 0 to 8 bar on "12" end - 0 to 5,3 bar on "14" end
Replace by F - 0 to 8 bar on "12" end - 0 to 2 bar on "12" end
Replace by G - 0 to 8 bar on "12" end - 0 to 2 bar on "14" end
Replace by H - 0 to 5,3 bar on "14" end - 0 to 2 bar on "12" end
Replace by H - 0 to 5,3 bar on "14" end - 0 to 2 bar on "12" end
Replace by H - 0 to 5,3 bar on "14" end - 0 to 2 bar on "12" end

DIMENSIONS

Dimensions shown are metric (mm)





Plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR37A PR42B PR46A PR47A

PR24A

PR92C

PR48B

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Pual regulator Two regulated pressures to ports 2 and 4
Gauge port only	PRP1A-DAKA	PRP1A-DCKA	PRP1A-DBKA	PRP1A-DDKA	PRP1A-DEKA
Gauge perpendicular to manual operator	PRP1A-DABA	PRP1A-DCBA	PRP1A-DBBA	PRP1A-DDBA	PRP1A-DECA
Gauge parallel to manual operator	PRP1A-DADA	PRP1A-DCDA	PRP1A-DBDA	PRP1A-DDDA	PRP1A-DEEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
Gauge port only	PRP1A-EAKA	PRP1A-ECKA	PRP1A-EBKA	PRP1A-EDKA	PRP1A-EEKA
Gauge perpendicular to manual operator	PRP1A-EABA	PRP1 A-ECBA	PRP1A-EBBA	PRP1A-EDBA	PRP1A-EECA
Gauge parallel to manual operator	PRP1A-EADA	PRP1A-ECDA	PRP1A-EBDA	PRP1A-EDDA	PRP1A-EEEA

* - To be used with dual pressure valves.

Notes:

- Valves used with above models must be external pilot models.
 Cannot field convert regulator block from single pressure to dual pressure.
 Cannot field convert from internal pilot to external pilot.
- 4. Wired for double solenoid valves.

PR93A

PRA01A

PRPO 1 A

PRA02A PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:
Compressed air, inert gases

Pressure range:
0 to 10 bar

Regulating range:
0 to 8 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:
40 \(\rho

Temperature range:
-18°C to +50°C

Flow (at 6 bar, \(\rho
 = 1100 NI/min (Cv 1.1)

Spare parts:

DIMENSIONS

- Pressure regulator (less sandwich block): PRP1A-FOKA
- Regulator block to base mounting tie rod: 19496

APPROX. WITH DOUBLE REGULATOR SINGLE AND DOUBLE SOLENOIDS SINGLE AND DOUBLE SOLENOIDS SINGLE REGULATOR 12 END SINGLE REGULATOR 12 END SINGLE REGULATOR 14 END SINGLE RADD DOUBLE SOLENOIDS

Non plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- $1. \ Easy \ mounting: saves \ on \ installation \ costs \ in$ comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR37A PR42B PR46A PR47A

PR24A

PR48B

PR92C

PR93A

PRA01A

PRPO1A

PRA02A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

INTERNAL PILOT

HOW TO ORDER

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-1AAA	PRA2D-1EAA	PRA2D-1BAA	PRA2D-1FAA	PRA2D-1JAA
Non-filled gauge on regulator(s)	PRA2D-1ADA	PRA2D-1EDA	PRA2D-1BDA	PRA2D-1FDA	PRA2D-1JEA
Non-filled gauge opposite to regulator	PRA2D-1CDA	PRA2D-1GDA	PRA2D-1DDA	PRA2D-1HDA	
Glycerine filled gauge on regulator(s)	PRA2D-1ABA	PRA2D-1EBA	PRA2D-1BBA	PRA2D-1FBA	PRA2D-1JCA
Glycerine filled gauge opposite to regulator	PRA2D-1CBA	PRA2D-1GBA	PRA2D-1DBA	PRA2D-1HBA	

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-2AAA	PRA2D-2EAA	PRA2D-2BAA	PRA2D-2FAA	PRA2D-2JAA
Non-filled gauge on regulator(s)	PRA2D-2ADA	PRA2D-2EDA	PRA2D-2BDA	PRA2D-2FDA	PRA2D-2JEA
Non-filled gauge opposite to regulator	PRA2D-2CDA	PRA2D-2GDA	PRA2D-2DDA	PRA2D-2HDA	
Glycerine filled gauge on regulator(s)	PRA2D-2ABA	PRA2D-2EBA	PRA2D-2BBA	PRA2D-2FBA	PRA2D-2JCA
Glycerine filled gauge opposite to regulator	PRA2D-2CBA	PRA2D-2GBA	PRA2D-2DBA	PRA2D-2HBA	

* - To be used with dual pressure valves. Note: regulating range for above models is 0-10 bar. For other ranges see technical data page.

ADJUSTMENT OPTIONS

PRA2D-xxxx

for slotted stem adjustment (internal pilot) for slotted stem adjustment (external pilot) for slotted stem with locknut (internal pilot)

for slotted stem with locknut (external pilot)

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block.
Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #19177.

PRA3C







Fluid:

Compressed air, inert gases

0 to 10 bar

Regulating range:

0 to 10 bar (other ranges see below)

Lubrication:

Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)

Filtration:

40 µ

Temperature range:

-18°C to 50°C

Flow:

2300 NI/min (Cv 2.3)

Spare parts: • Pressure regulator (less sandwich block): PRA2D-30AA (KNOB), PRA2D-COAA (SLOTTED STEM), PRA2D-FOAA (SLOTTED STEM WITH LOCKNUT).

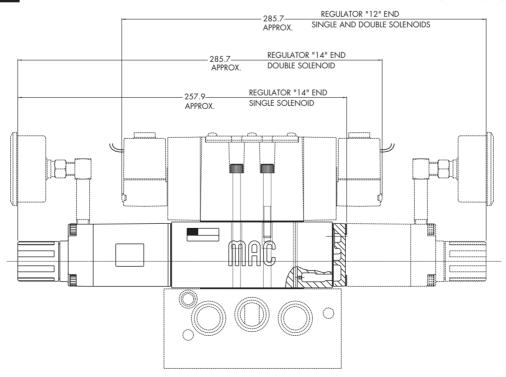
• Gauge : • Glycerine filled : N-62015-01 • Non filled : N-62016-01

Regulating range options: PRA2D-XXXA

Replace by B - 0 to 6,7 bar Replace by C - 0 to 3 bar

DIMENSIONS

Dimensions shown are metric (mm)





Non plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available
- 5. Simple, reliable and solid design.



PR37A PR42B PR46A PR47A PR48B

PR24A

PR92C

HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-4AAA	PRA2D-4EAA	PRA2D-4BAA	PRA2D-4FAA	PRA2D-4JAA
Non-filled gauge on regulator(s)	PRA2D-4ADA	PRA2D-4EDA	PRA2D-4BDA	PRA2D-4FDA	PRA2D-4JEA
Non-filled gauge opposite to regulator	PRA2D-4CDA	PRA2D-4GDA	PRA2D-4DDA	PRA2D-4HDA	
Glycerine filled gauge on regulator(s)	PRA2D-4ABA	PRA2D-4EBA	PRA2D-4BBA	PRA2D-4FBA	PRA2D-4JCA
Glycerine filled gauge opposite to regulator	PRA2D-4CBA	PRA2D-4GBA	PRA2D-4DBA	PRA2D-4HBA	

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Pual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA2D-5AAA	PRA2D-5EAA	PRA2D-5BAA	PRA2D-5FAA	PRA2D-5JAA
Non-filled gauge on regulator(s)	PRA2D-5ADA	PRA2D-5EDA	PRA2D-5BDA	PRA2D-5FDA	PRA2D-5JEA
Non-filled gauge opposite to regulator	PRA2D-5CDA	PRA2D-5GDA	PRA2D-5DDA	PRA2D-5HDA	
Glycerine filled gauge on regulator(s)	PRA2D-5ABA	PRA2D-5EBA	PRA2D-5BBA	PRA2D-5FBA	PRA2D-5JCA
Glycerine filled gauge opposite to regulator	PRA2D-5CBA	PRA2D-5GBA	PRA2D-5DBA	PRA2D-5HBA	

* - To be used with dual pressure valves.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #19177.

PR93A

PRA01A

PRPO 1 A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







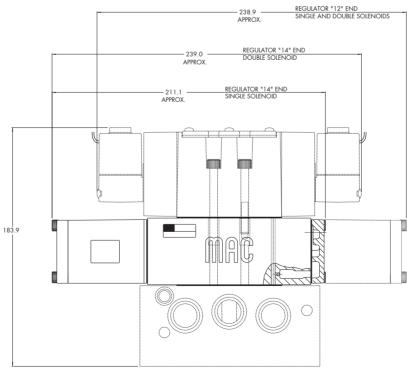
Fluid:	Compressed air, inert gases
Pressure range :	0 to 10 bar
Regulating range :	0 to 10 bar
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)
Filtration :	40 μ
Temperature range :	-18°C to 50°C
Flow:	2300 NI/min (Cv 2.3)

Spare parts :

Pressure regulator (less sandwich block): PRA2D-60AA.
 Gauge: Glycerine filled: N-62015-01
 Non filled: N-62016-01

DIMENSIONS

Dimensions shown are metric (mm)



Plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B PR46A PR47A PR48B

PR92C

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 1 4 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP2B-AAAA	PRP2B-AEAA	PRP2B-ABAA	PRP2B-AFAA	PRP2B-AJAA
Glycerine gauge	PRP2B-AABA	PRP2B-AEBA	PRP2B-ABBA	PRP2B-AFBA	PRP2B-AJCA
Non-filled gauge	PRP2B-AADA	PRP2B-AEDA	PRP2B-ABDA	PRP2B-AFDA	PRP2B-AJEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP2B-BAAA	PRP2B-BEAA	PRP2B-BBAA	PRP2B-BFAA	PRP2B-BJAA
Glycerine gauge	PRP2B-BABA	PRP2B-BEBA	PRP2B-BBBA	PRP2B-BFBA	PRP2B-BJCA
Non-filled gauge	PRP2B-BADA	PRP2B-BEDA	PRP2B-BBDA	PRP2B-BFDA	PRP2B-BJEA

* For use with dual pressure valves.

Note: Regulating range for above models is 0-10 bar. For other ranges, see technical data page.

ADJUSTMENT OPTIONS

PRP2B-xxxx

- G for slotted stem (internal pilot)
- for slotted stem (external pilot)
- Κ for slotted stem with locknut (internal pilot)
- for slotted stem with locknut (external pilot)

- 1. Valves used with above models must be external pilot models.
- 2. Cannot field convert regulator block from single pressure to dual pressure.
- $3. \ \mbox{Cannot field convert from internal pilot to external pilot.}$
- 4. Wired for double solenoid valves.

PR93A

PRA01A

PRPO1A

PRA02A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid: Compressed air, inert gases Pressure range: 0 to 10 bar Regulating range : 0 to 10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C

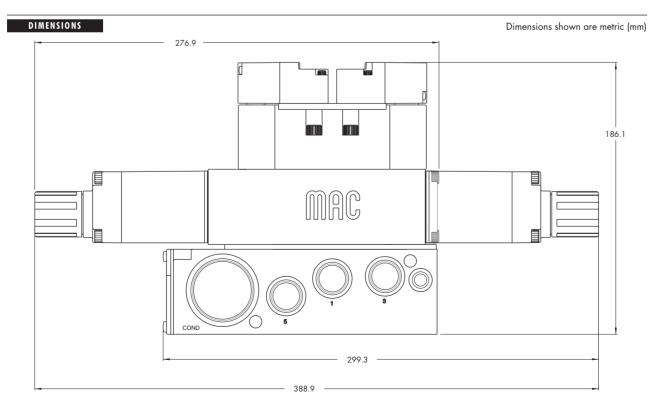
Spare parts :

Flow (at 6 bar, $\Delta P = 1$ bar)

Pressure regulator (less sandwich block)
 Regulator block to base mounting screw: 19177
 Regulating range option: PRP2B-xxxx

3100 NI/min (Cv 3.1)

Replace by B for 0 to 6,7 bar Replace by C for 0 to 3 bar





Plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR42B PR46A PR47A PR48B

PR24A

PR37A

PR92C

PR93A

PRA01A

PRPO 1 A

PRA02A

PRP02A

PRA1A

PRP1A

PRA2D

REGULATORS FOR INTERNAL PILOT

HOW TO ORDER

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP2B-DAAA	PRP2B-DEAA	PRP2B-DBAA	PRP2B-DFAA	PRP2B-DJAA
Glycerine gauge	PRP2B-DABA	PRP2B-DEBA	PRP2B-DBBA	PRP2B-DFBA	PRP2B-DJCA

PRP2B-DJEA Non-filled gauge PRP2B-DADA PRP2B-DEDA PRP2B-DBDA PRP2B-DFDA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 14 end Regulated pressure to port 4	Dual pressure Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP2B-EAAA	PRP2B-EEAA	PRP2B-EBAA	PRP2B-EFAA	PRP2B-EJAA
Glycerine gauge	PRP2B-EABA	PRP2B-EEBA	PRP2B-EBBA	PRP2B-EFBA	PRP2B-EJCA
Non-filled gauge	PRP2B-EADA	PRP2B-EEDA	PRP2B-EBDA	PRP2B-EFDA	PRP2B-EJEA

PRA2B

PRA3C

PRP3B

Notes:

^{* -} To be used with dual pressure valves.

Valves used with above models must be external pilot models.
 Cannot field convert regulator block from single pressure to dual pressure.
 Cannot field convert from internal pilot to external pilot.

^{4.} Wired for double solenoid valves.







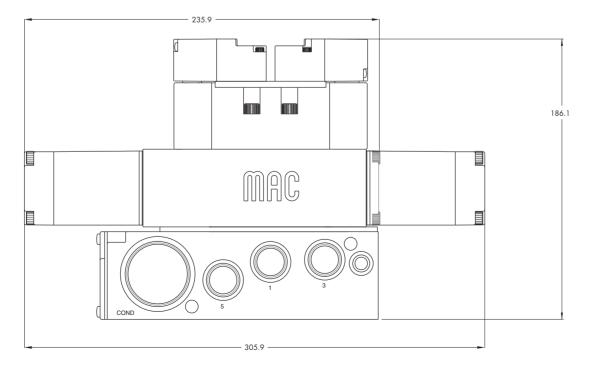
Fluid: Compressed air, inert gases Pressure range : 0 to 10 bar Regulating range: 0 to 10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C and 100°C) Filtration: Temperature range : -18°C to +50°C Flow (at 6 bar, $\Delta P = 1 bar$): 3100 Nl/min (Cv 3.1)

Spare parts :

- Pressure regulator (less sandwich block): PRP2B-F0AA
 Body/block to base mounting screw: 19177

DIMENSIONS

Dimensions shown are metric (mm)



Non plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B PR46A PR47A PR48B

PR92C

PR93A

PRA01A

PRPO1A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

INTERNAL PILOT

HOW TO ORDER

PRA3C-1AAA PRA3C-1ADA	PRA3C-1EAA PRA3C-1EDA	PRA3C-1BAA PRA3C-1BDA	PRA3C-1FAA	PRA3C-1JAA
PRA3C-1ADA	PRA3C-1EDA	PRA3C-1RDA	DD 4 3C 1 ED 4	·
		TIONOC TODA	PRA3C-1FDA	PRA3C-1JEA
PRA3C-1CDA	PRA3C-1GDA	PRA3C-1DDA	PRA3C-1HDA	
PRA3C-1ABA	PRA3C-1EBA	PRA3C-1BBA	PRA3C-1FBA	PRA3C-1JCA
PRA3C-1CBA	PRA3C-1GBA	PRA3C-1DBA	PRA3C-1HBA	

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-2AAA	PRA3C-2EAA	PRA3C-2BAA	PRA3C-2FAA	PRA3C-2JAA
Non-filled gauge on regulator(s)	PRA3C-2ADA	PRA3C-2EDA	PRA3C-2BDA	PRA3C-2FDA	PRA3C-2JEA
Non-filled gauge opposite to regulator	PRA3C-2CDA	PRA3C-2GDA	PRA3C-2DDA	PRA3C-2HDA	
Glycerine filled gauge on regulator(s)	PRA3C-2ABA	PRA3C-2EBA	PRA3C-2BBA	PRA3C-2FBA	PRA3C-2JCA
Glycerine filled gauge opposite to regulator	PRA3C-2CBA	PRA3C-2GBA	PRA3C-2DBA	PRA3C-2HBA	

* - To be used with dual pressure valves. Note : regulating range for above models is 0-10 bar. For other ranges see technical data page. Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35418.

PRA3C

PRA2B

ADJUSTMENT OPTIONS

PRA3C-xxxx

- A for slotted stem adjustment (internal pilot)
 - for slotted stem adjustment (external pilot)
- **D** for slotted stem with locknut (internal pilot)
- for slotted stem with locknut (external pilot)







Fluid:
Compressed air, inert gases

Pressure range:
0 to 10 bar

0 to 10 bar (other ranges see below)

Lubrication:
Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)

Filtration:
40 µ

Temperature range:
-18°C to 50°C

Flow:
5400 NI/min (Cv 5.4)

Spare parts: • Pressure regulator (less sandwich block): PRA3C-30AA (KNOB), PRA3C-C0AA (SLOTTED STEM), PRA3C-F0AA (SLOTTED STEM WITH LOCKNUT).

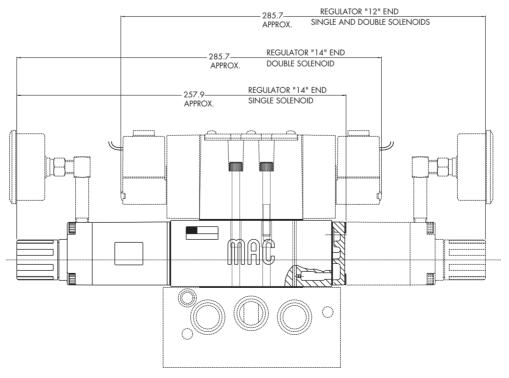
• Gauge : • Glycerine filled : N-62015-01 • Non filled : N-62016-01

Regulating range options: PRA3C-XXXA

Replace by B - 0 to 6,7 bar Replace by C - 0 to 3 bar

DIMENSIONS

Dimensions shown are metric (mm)



Non plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- Easy mounting : saves on installation costs in comparison with inline regulators.
- 2. Allows to have compact, all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available
- 5. Simple, reliable and solid design.



PR42B PR46A PR47A PR48B

PR24A

PR37A

PR92C

PR93A

PRA01A

PRPO 1 A

PRAO2A PRPO2A

HOW TO ORDER

INTERNAL PILOT

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 14 end Regulated pressure to port 4	Dual pressure Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-4AAA	PRA3C-4EAA	PRA3C-4BAA	PRA3C-4FAA	PRA3C-4JAA
Non-filled gauge on regulator(s)	PRA3C-4ADA	PRA3C-4EDA	PRA3C-4BDA	PRA3C-4FDA	PRA3C-4JEA
Non-filled gauge opposite to regulator	PRA3C-4CDA	PRA3C-4GDA	PRA3C-4DDA	PRA3C-4HDA	
Glycerine filled gauge on regulator(s)	PRA3C-4ABA	PRA3C-4EBA	PRA3C-4BBA	PRA3C-4FBA	PRA3C-4JCA
Glycerine filled gauge opposite to regulator	PRA3C-4CBA	PRA3C-4GBA	PRA3C-4DBA	PRA3C-4HBA	

EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRA3C-5AAA	PRA3C-5EAA	PRA3C-5BAA	PRA3C-5FAA	PRA3C-5JAA
Non-filled gauge on regulator(s)	PRA3C-5ADA	PRA3C-5EDA	PRA3C-5BDA	PRA3C-5FDA	PRA3C-5JEA
Non-filled gauge opposite to regulator	PRA3C-5CDA	PRA3C-5GDA	PRA3C-5DDA	PRA3C-5HDA	
Glycerine filled gauge on regulator(s)	PRA3C-5ABA	PRA3C-5EBA	PRA3C-5BBA	PRA3C-5FBA	PRA3C-5JCA
Glycerine filled gauge opposite to regulator	PRA3C-5CBA	PRA3C-5GBA	PRA3C-5DBA	PRA3C-5HBA	

^{* -} To be used with dual pressure valves.

Main valve body assembly must be external pilot model. Pilots are supplied internally from primary pressure in regulator block. Cannot field convert regulator block from Single Pressure to dual pressure. Body/Block to base mounting screw #35418.

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C



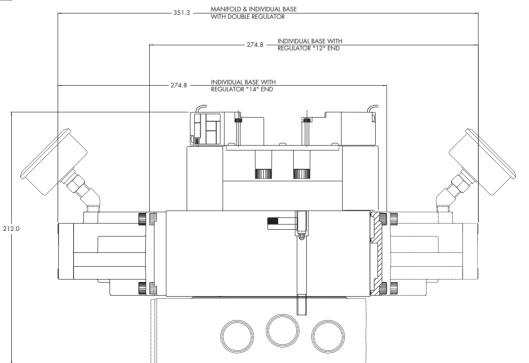




Fluid: Compressed air, inert gases Pressure range: 0 to 10 bar Regulating range: 0 to 10 bar Lubrication: Not required, if used select a medium aniline point lubricant (between 80°C to 100°C) Filtration: -18°C to 50°C Temperature range : Flow: 5400 NI/min (Cv 5.4)

 Pressure regulator (less sandwich block): PRA3C-60AA.
 Gauge: Glycerine filled: N-62015-01
 Non filled: N-62016-01 Spare parts :

DIMENSIONS Dimensions shown are metric (mm)





Plug-in sandwich pressure regulator with manual adjust knob

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B PR46A PR47A

PR92C

PR48B

HOW TO ORDER

REGULATORS FOR INTERNAL PILOT (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 1 4 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP3B-AAAA	PRP3B-AEAA	PRP3B-ABAA	PRP3B-AFAA	PRP3B-AJAA
Glycerine gauge	PRP3B-AABA	PRP3B-AEBA	PRP3B-ABBA	PRP3B-AFBA	PRP3B-AJCA
Non-filled gauge	PRP3B-AADA	PRP3B-AEDA	PRP3B-ABDA	PRP3B-AFDA	PRP3B-AJEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR (CODED FOR KNOB ADJUSTMENT)

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure * Regulator 14 end Regulated pressure to port 4	Dual pressure * Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP3B-BAAA	PRP3B-BEAA	PRP3B-BBAA	PRP3B-BFAA	PRP3B-BJAA
Glycerine gauge	PRP3B-BABA	PRP3B-BEBA	PRP3B-BBBA	PRP3B-BFBA	PRP3B-BJCA
Non-filled gauge	PRP3B-BADA	PRP3B-BEDA	PRP3B-BBDA	PRP3B-BFDA	PRP3B-BJEA

* For use with dual pressure valves.

ADJUSTMENT OPTIONS

PRP3B-xxxx

- **G** for slotted stem (internal pilot)
- for slotted stem (external pilot)
- K for slotted stem with locknut (internal pilot)
- L for slotted stem with locknut (external pilot)

Notes:

- Regulating range for above models is 0-10 bar. For other ranges, see technical data page.
- 2. Valves used with above models must be external pilot models.
- 3. Cannot field convert regulator block from single pressure to dual pressure.
- 4. Cannot field convert from internal pilot to external pilot.
- 5. Wired for double solenoid valves.

PR93A

PRA01A

PRPO 1 A

PRAO2A PRPO2A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:

Pressure range:

Regulating range :

Lubrication:

Filtration:

Temperature range : Flow (at 6 bar, $\Delta P = 1$ bar) Compressed air, inert gases

0 to 10 bar

0 to 10 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

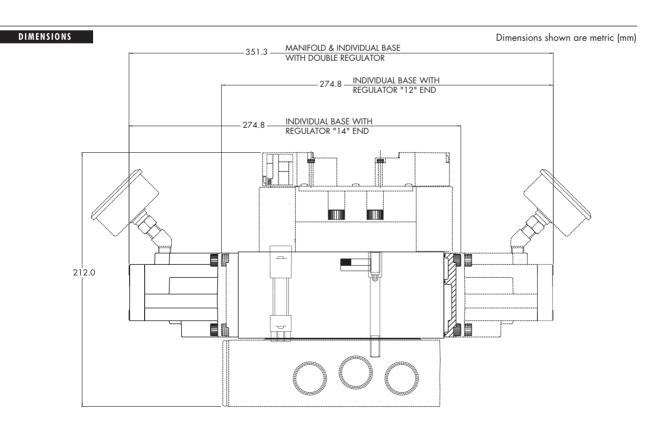
-18°C to +50°C

5400 NI/min (Cv 5.4)

Spare parts :

Pressure regulator (less sandwich block): PRP3B-COAA (knob), PRP3B-JOAA (slotted stem), PRP3B-MOAA (slotted stem with locknut)
 Regulating block to base mounting screw: 19457
 Regulating range options: PRP3B-xxxA

Replace by B for 0 to 6,7 bar Replace by C for 0 to 3 bar



6

Plug-in sandwich pressure regulator with air pilot adjust

OPERATIONAL BENEFITS

- 1. Easy mounting: saves on installation costs in comparison with inline regulators.
- 2. Compact all-included units.
- 3. Large orifice provides high flow.
- 4. Various functions available.
- 5. Simple, reliable and solid design.



PR24A PR37A PR42B PR46A PR47A

PR92C

PR48B

REGULATORS FOR INTERNAL PILOT

HOW TO ORDER

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 1 4 end Regulated pressure to port 4	Dual pressure Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP3B-DAAA	PRP3B-DEAA	PRP3B-DBAA	PRP3B-DFAA	PRP3B-DJAA
Glycerine gauge	PRP3B-DABA	PRP3B-DEBA	PRP3B-DBBA	PRP3B-DFBA	PRP3B-DJCA
Non-filled gauge	PRP3B-DADA	PRP3B-DEDA	PRP3B-DBDA	PRP3B-DFDA	PRP3B-DJEA

REGULATORS FOR EXTERNAL PILOT AND REMOTE AIR

Gauge	Single pressure Regulator 14 end Same regulated pressure to ports 2 and 4	Single pressure Regulator 12 end Same regulated pressure to ports 2 and 4	Dual pressure Regulator 1 4 end Regulated pressure to port 4	Dual pressure Regulator 12 end Regulated pressure to port 2	Dual pressure Dual regulator Two regulated pressures to ports 2 and 4
No gauge	PRP3B-EAAA	PRP3B-EEAA	PRP3B-EBAA	PRP3B-EFAA	PRP3B-EJAA
Glycerine gauge	PRP3B-EABA	PRP3B-EEBA	PRP3B-EBBA	PRP3B-EFBA	PRP3B-EJCA
Non-filled gauge	PRP3B-EADA	PRP3B-EEDA	PRP3B-EBDA	PRP3B-EFDA	PRP3B-EJEA

* - To be used with dual pressure valves.

Notes:

- Valves used with above models must be external pilot models.
 Cannot field convert regulator block from single pressure to dual pressure.
 Cannot field convert from internal pilot to external pilot.
- 4. Wired for double solenoid valves.

PR93A

PRA01A

PRPO 1 A

PRA02A PRP02A

PRA1A

PRP1A

PRA2D

PRA2B

PRA3C







Fluid:
Compressed air, inert gases

Pressure range:
0 to 10 bar

Regulating range:
0 to 10 bar

Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)

Filtration:
40 \(\rho

Temperature range:
-18°C to +50°C

Flow (at 6 bar, \(\rho
) 5400 NI/min (Cv 5.4)

Spare parts :

- Pressure regulator (less sandwich block): PRP3B-F0AA
- Regulator block to base mounting screw: 19457

DIMENSIONS 351.3 MANIFOLD & INDIVIDUAL BASE WITH 274.8 INDIVIDUAL BASE WITH ESCULATOR 1/27 END 274.8 INDIVIDUAL BASE WITH 274.8 INDIVIDUAL BASE WITH 274.8 INDIVIDUAL BASE WITH ESCULATOR 1/27 END 212.0



Section 5

Options

Codification table for voltages / Manual operator / Electrical connection

VALVE CODE > -DM- D $\frac{XX}{1}$ $\frac{X-X}{2}$ $\frac{XX}{4}$

OPTIONS AVAILABLE FOR

- Pilot operated valves 52, 53, 67, 83, 92, 93, 400, ISO1, ISO2, ISO3 Series



	1. VOLTAGE		4. ELECTRICAL CONNECTION
D-XX X-X XX	VOLTAGE	D-XX X-X XX	ELECTRICAL CONNECTION
DA	24V=/5,4W	BA*	Flying leads
DB	12V=/5,4W	BK*	BA with protection diode
DC	12V=/7,5W	BL*	BA with protection varistor
DD	24V=/7,3W	BM**	Flying leads (solenoid plug-in)
DE	12V=/12,7W	BN**	BM with protection diode
DF	24V=/12,7W	BP**	BM with protection varistor
DK	110V=/4,7W	BG**	BM with ground
DJ	28V=/5,2W	BH**	BM with protection diode & ground
DL	64V=/6W	BJ**	BM with protection varistor & ground
DM	36V=/5,3W	CA*	1/2" NPS conduit with flying leads
DN	6V=/6W	CM*	1/2" NPS metal conduit with flying leads
DR	90V=/6,6W	CN*	1/2" NPS metal conduit with flying leads & ground
DS	110V=/7,3W	DG	Plug-in with ground
DT	75V=/5,6W	DH	Plug-in with diode & ground
DP	48V=/5,8W	DJ	Plug-in with M.O.V. & ground
FA	12V=/1,8W	DM	Plug-in
FB	24V=/1,8W	DN	Plug-in with diode
FE	12V=/2,4W	DP	Plug-in with M.O.V.
FF	24V=/2,4W	JB	Rectangular connector
JA	120V~/60Hz, 110V~/50Hz (2,9W)	JD	Rectangular connector with light
JB	240V~/60Hz, 220V~/50Hz (2,9W)	JM	Rectangular connector, male only
JC	24V~/60Hz, 24V~/50Hz (3,7W)	KA	Square connector
JD	100V~/60Hz, 100V~/50Hz, 110V~60Hz (3,9W)	KB	Square connector with protection diode
JE	220V~/60Hz (3,4W)	KC	Square connector with protection varistor
JF.	240V~/50Hz (2,8W)	KD	Square connector with light
JG	200V~/60Hz, 200V~/50Hz (3,9W)	KE	Square connector with light and protection diode
	2007 700112, 2007 700112 (0,777)	KF	Square connector with light and protection varistor
	2. WIRE LENGTH	KG	Square connector with light & diode
	2. WIRE BIROTII	KJ	Square connector (male only)
-XX X-X XX	WIRE LENGTH	KK	Square connector with protection diode (male only)
0	No wires	KL	Square connector with protection varistor (male only)
A	45 cm – 18"	TA	Dual tabs with receptacles
B	60 cm – 24"	TB	TA with protection diode
C	90 cm – 36"	TD	TA with light
D	120 cm - 48"	TE	TA with light and protection diode
E	180 cm – 72"		Dual tabs (male only)
E	240 cm - 96"		
r	Z40 (III = 70	TK TM	TJ with protection diode
	2 MANUAL OPERATOR	TM TN	TJ with light TJ with light and protection diode
	3. MANUAL OPERATOR		<u> </u>
	MANUAL OPERATOR		igth options choose A through F gth options choose 0 through F
O-XX X-X XX	MANUAL OPERATOR		• .
0	No operator		ove 30 volts, a ground wire is required. Applies to option
1	Non-locking recessed	with flying leads.	
2	Locking recessed		
3	Non-locking extended		
4	Locking extended		



) ptions

Codification table for voltages / Manual operator / Electrical connection

VALVE CODE ➤

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 34, 38, 42, 44, 48 & 48P Series



	1. VOLTAGE		4. ELECTRICAL CONNECTION
G-XX X-X XX	VOLTAGE	G-XX X-X XX	ELECTRICAL CONNECTION
AA	120V~/2,5W Requires electrical connector with rectifier	BA	Flying leads
AC	24V~/4,0W Requires electrical connector with rectifier		BA with ground wire
DA	24V=/1,0W	ВС	BA with light
DC	24V=/1,8W	BD	BA with light and ground wire
DD	24V=/2,5W	BE	BA with suppression diode
DE	24V=/3,0W	BF	BA with suppression diode and ground wire
DF	24V=/4,0W	BG	BA with suppression diode and light
DG	12V=/1,0W	ВН	BA with suppression diode, light and ground wire
DJ	12V=/1,8W	BN	BA with suppression diode and blocking diode
DK	12V=/2,5W	ВР	BA with suppression diode, blocking diode and ground wire
DM	12V=/3,0W		
DN	12V=/4,0W	BR	BA with suppresion diode, blocking diode and light
DR	6V=/1,8W	_ BS	BA with suppression diode, blocking diode, light and ground wire
DS	6V=/3,0W		<u> </u>
EB	48V=/1,8W	GA GR	MAC JAC Solenoid plug-in
EC	48V=/3,0W	GB	MAC JAC Solenoid plug-in with diode
ED	120V=/2,5W	GC	MAC JAC Solenoid plug-in with MOV
GD	12V=/0,5W 34 series only	GD	MAC JAC Solenoid plug-in with LED
GE	24V=/0,5W 34 series only	GE	MAC JAC Solenoid plug-in with diode and LED
	A WIDE LENGTH	GF	MAC JAC Solenoid plug-in with MOV and LED
	2. WIRE LENGTH	GG GH	MAC JAC Solenoid plug-in with rectifier
C VV V V VV	WIRE LENGTH	KA	MAC JAC Solenoid plug-in with rectifier and LED Mini connector
G-XX X-X XX	No lead wires (used only with "KJ" & "KM" connectors)	KA KB	KA with ground
A	45 cm – 18" coil leads	KC	KA with rectifier and light
В	60 cm - 24" coil leads	- KD	KA with rectifier, light and ground
C	90 cm - 36" coil leads	KE KE	KA with suppression diode
D	120 cm - 48" coil leads	KF	KA with suppression diode and ground
E	180 cm – 72" coil leads	- KI	Solenoid plug-in housing without wire assembly
F	240 cm - 96" coil leads	KM	Solenoid plug-in housing with ground pin without wire
 G	305 cm - 120" coil leads	-	assembly
H	366 cm - 144" coil leads	KN	KA with suppression diode and blocking diode
1	45 cm – 18" base leads	KP	KA with suppression diode, blocking diode and ground
2	60 cm - 24" base leads	KT	KA with light
3	90 cm – 36" base leads	KU	KA with light and ground
4	120 cm – 48" base leads	KV	KA with suppression diode and light
5	180 cm – 72" base leads	KW	KA with suppression diode, light and ground
6	240 cm – 96" base leads	KX	KA with suppression diode, blocking diode and light
7	305 cm – 120" base leads	KY	KA with suppression diode, blocking diode, light &
		-	ground ''
	3. MANUAL OPERATOR	ELECT	RICAL CONNECTION FOR PLUG-IN VALVES
G-XX X-X XX	MANUAL OPERATOR Non-locking recessed	G-XX X-X XX	PLUG-IN OPTIONS
2	Locking recessed	SB	Base plug-in with ground
3	Non-locking extended	SC SC	Base plug-in with suppression & blocking diode
4	Locking extended	SD	Base plug-in with suppression & blocking diode & ground
•		SE	Base plug-in with MOV
		SF	Base plug-in with MOV & ground
		SG	Base plug-in with rectifier
		SH	Base plug-in with rectifier & ground
		SK	Base plug-in with light & ground
		SL	Base plug-in with suppression & blocking diode & light
		SM	Base plug-in with suppression & blocking diode
			
			with light & ground
		SN	with light & ground Base plug-in with MOV & light
		SN SP	Base plug-in with MOV & light Base plug-in with MOV & light



O ptions

Codification table for voltages / Manual operators / Electrical connections

VALVE CODE > -GM- G $\frac{XX}{1}$ $\frac{X-X}{2}$ $\frac{XX}{3}$

OPTIONS AVAILABLE FOR

- Solenoid valves 52, 83 & 400 Series



1. VOLTAGE		4. ELECTRICAL CONNECTION
VOLTAGE	G-XX X-X XX	ELECTRICAL CONNECTION
24 V=/1,8 W	BA	Flying leads
24 V=/2,5 W	BB	BA with ground wire
24 V=/3,0 W	ВС	BA with light parallel to leads
24 V=/4,0 W	BD	BA with light parallel to leads & ground wire
12 V=/1,8 W	BE	BA with suppression diode
12 V=/2,5 W	BF	BA with suppression diode & ground wire
12 V=/3,0 W	BG	BA with suppression diode plus light parallel to leads
12 V=/4,0 W	ВН	BA with suppression diode plus light parallel to leads & ground wire
2. WIRE LENGTH	*BN	BA with suppression diode plus blocking diode
WIRE LENGTH	*BP	BA with suppression diode plus blocking diode & ground wire
No lead wire (use only with "KJ" & "KM" elecrical connectors)	*BR	BA with suppression diode plus blocking diode & light parallel to leads
45 cm = 18" 60 cm = 24"	*BS	BA with suppression diode plus blocking diode & light parallel to leads & ground wire
90 cm - 36"	BT	BA with light on top
120 cm – 48"	BU	BA with light on top & ground wire
180 cm – 72"	BV	BA with suppression diode plus light on top
240 cm - 96"	BW	BA with suppression diode plus light on top & ground wire
305 cm = 120"	*BX	BA with suppression diode plus blocking diode & light on top
366 cm = 144"	*BY	BA with suppression diode plus blocking diode & light on top & ground wire
MANUAL OPERATOR	G-XX X-X XX	SOLENOID PLUG-IN CONNECTOR WITH LEADS
Non-locking recessed	GA	MAC JAC Solenoid plug-in
Locking recessed	GB	MAC JAC Solenoid plug-in with diode
Non-locking extended	GC	MAC JAC Solenoid plug-in with MOV
Locking extended	GD	MAC JAC Solenoid plug-in with LED
	GE	MAC JAC Solenoid plug-in with diode and LED
	GF	MAC JAC Solenoid plug-in with MOV and LED
	GG	MAC JAC Solenoid plug-in with rectifier
	GH	MAC JAC Solenoid plug-in with rectifier and LED
	KA	Plug-in wire assembly
	KB	KA with ground wire
	KE	KA with suppression diode
	KF	KA with suppression diode & ground wire
	KJ	Plug-in housing without wire assembly ('KA' without wire assembly)
	KM	Plug-in housing without wire assembly
		('KB' without wire assembly)
	*KN	KA with suppression diode plus blocking diode
	*KN *KP	•
		KA with suppression diode plus blocking diode
	*KP	KA with suppression diode plus blocking diode KA with suppression diode plus blocking diode & ground wire
	*KP KT	KA with suppression diode plus blocking diode KA with suppression diode plus blocking diode & ground wire KA with light on top
	*KP KT KU	KA with suppression diode plus blocking diode KA with suppression diode plus blocking diode & ground wire KA with light on top KA with light on top & ground wire KA with suppression diode plus light on top
	*KP KT KU KV	KA with suppression diode plus blocking diode KA with suppression diode plus blocking diode & ground wire KA with light on top KA with light on top & ground wire
	VOLTAGE 24 V=/1,8 W 24 V=/2,5 W 24 V=/3,0 W 24 V=/4,0 W 12 V=/1,8 W 12 V=/2,5 W 12 V=/3,0 W 12 V=/4,0 W 2. WIRE LENGTH No lead wire (use only with "KJ" & "KM" elecrical connectors) 45 cm = 18" 60 cm = 24" 90 cm - 36" 120 cm - 48" 180 cm - 72" 240 cm - 96" 305 cm = 120" 366 cm = 144" 3. MANUAL OPERATOR Non-locking recessed Locking recessed Non-locking extended	VOLTAGE 24 V=/1,8 W 24 V=/2,5 W BB 24 V=/4,0 W BC 12 V=/1,8 W BE 12 V=/2,5 W BF 12 V=/2,5 W BF 12 V=/4,0 W BH 2. WIRE LENGTH *BN *BP WIRE LENGTH No lead wire (use only with "KJ" & "KM" elecrical connectors) 45 cm = 18" 60 cm = 24" 90 cm - 36" 120 cm - 48" BU 305 cm = 120" 305 cm = 120" 306 cm = 144" *BY 3. MANUAL OPERATOR MANUAL OPERATOR MANUAL OPERATOR MON-locking extended Locking extended GC GG GH KA KB KE KF KJ



O p t i o n s

Codification table for voltages / Manual operators / Electrical connections

VALVE CODE > $H \times XX \times X - X \times XX$

OPTIONS AVAILABLE FOR

- Solenoid valves 37 & 47 Series



	1. VOLTAGE	H-XX X-X XX	ELECTRICAL CONNECTION
		BL	BA with full wave rectifier & ground wire
H-XX X-X XX	VOLTAGE	ВТ	BA with full wave rectifier plus light
AA	120 V~/ 50Hz, 120 V~/ 60Hz (6,7 W) (use connector with rectifier)	BU	BA with full wave rectifier plus light & ground wire
AB	220 V~/ 50Hz, 220 V~/ 60Hz (5,6 W) (use connector with rectifier)	H-XX X-X XX	PLUG-IN CONNECTOR
		FA	Base plug-in
AC	240 V~/ 50Hz, 240 V~/ 60Hz (5,8 W) (use connector with rectifier)	FB	FA with ground wire
4.0	<u> </u>	FC	FA with light
AD	24 V~/ 50Hz, 24 V~/ 60Hz (7,8 W) (use connector with rectifier)	FD	FA with light & ground wire
D.A.	· · · · · · · · · · · · · · · · · · ·	FE	FA with suppression diode
DA DB	24 V=/5,2 W 24 V=/2,4 W	FF FO	FA with suppression diode & ground wire
DC	24 V=/2,4 VV 24 V=/1,8 W	FG FH	FA with suppression diode & light
DD	24 V=/1,0 W 24 V=/1,0 W	FK FK	FA with suppression diode plus light & ground wire FA with full wave rectifier
DF	12 V=/5,2 W	FL	
DG		*FN	FA with full wave rectifier & ground wire
	12 V=/2,4 W	*FP	FA with suppression diode plus blocking diode
DH	12 V=/1,8 W 12 V=/1,0 W		FA with suppression diode plus blocking diode & ground wi
	12 V=/1,0 W 120 V=/6,3 W	*FR	FA with suppression diode plus blocking diode plus light
DL	120 V=/0,3 W	775	FA with suppression diode plus blocking diode & light & ground wire
	2. WIRE LENGTH	FT	FA with full wave rectifier plus light
		FU	FA with full wave rectifier plus light & ground wire
H-XX X-X XX	WIRE LENGTH	MA	Solenoid plug-in wire assembly
0	No lead wire (use with "MJ", "MM" & "K" style connectors)	MB	MA with ground wire
A	45 cm = 18"	MC	MA with light
В	60 cm = 24"	MD	MA with light & ground wire
C	90 cm – 36"	ME	MA with suppression diode
D	120 cm – 48"	MF	MA with suppression diode & ground wire
E	180 cm – 72"	MG	MA with suppression diode plus light
F	240 cm - 96"	MH	MA with suppression diode plus light & ground wire
G	305 cm = 120"	MK	MA with full wave rectifier
Н	366 cm = 144"	ML	MA with full wave rectifier & ground wire
		*MN	MA with suppression diode plus blocking diode
	3. MANUAL OPERATOR	*MP	MA with suppression diode plus blocking diode & ground wir
		*MR	MA with suppression diode plus blocking diode & light
H-XX X-X XX	MANUAL OPERATOR No operator	*MS	MA with suppression diode plus blocking diode & light & ground wire
1	Non-locking recessed	MT	MA with full wave rectifier plus light
2	Locking recessed	MU	MA with full wave rectifier plus light & ground wire
3	Non-locking extended	MJ	Plug-in housing without wire assembly ('MA' option
4	Locking extended		without wire assembly)
	Ů	MM	Plug-in housing without wire assembly ('MB' option
	4. ELECTRICAL CONNECTION		without wire assembly)
		KA	Mini square connector
H-XX X-X XX	ELECTRICAL CONNECTION	KB	KA with suppression diode
BA	Flying leads	KC	KA with M.O.V.
BB	BA with ground wire	KD	KA with light
ВС	BA with light	KE	KA with light & suppression diode
BD	BA with light & ground wire	KF	KA with light & M.O.V.
BE	BA with suppression diode	KJ	Mini square connector – male only
BF	BA with suppression diode & ground wire	KK	KJ with suppression diode
BG	BA with suppression diode plus light	KL	KJ with M.O.V.
ВН	BA with suppression diode plus light & ground wire	KM	KA with full wave rectifier
*BN	BA with suppression diode plus blocking diode	KN	KA with full wave rectifier & M.O.V.
*BP	BA with suppression diode plus blocking diode & ground wire	KP	KA with full wave rectifier & light
*BR	BA with suppression diode plus blocking diode & light	KR	KA with full wave rectifier plus light & M.O.V.
*BS	BA with suppression diode plus blocking diode & light & ground wire	KS	KJ with full wave rectifier
		Note: Blocking diode	is located in the lead wire
BK	BA with full wave rectifier		

Codification table for voltages / Manual operators / Electrical connections

OPTIONS AVAILABLE FOR

- Solenoid valves 36, 46, 68, 69, ISO 01 and ISO 02 (non plug-in) Series.



AA AC DE DF DJ DL DR DU Not available on 36 ser J-XX X-X XX A B C D E F P O	1. VOLTAGE VOLTAGE 120V~/5,4W 24V=/5,4W 24V=/1,8W 12V=/1,3W 12V=/1,3W 12V=/1,0W* ries universal valves 2. WIRE LENGHT WIRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 120 cm - 48" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in No leads (use with J, K & L type connectors)	J-XX X-X XX	Square connector Male only (Plain) Square connector with rectifier Square connector with rectifier with light Rectangular connector Male only (Plain) Rectangular connector With diode Rectangular connector with MOV Rectangular connector with MOV/light Rectangular connector with with rectifier Rectangular connector with rectifier Retangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in with diode Mini plug-in with diode Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with rectifier Mini plug-in with rectifier
AA AC DE DF DJ DL DR DU Not available on 36 ser J-XX X-X XX A B C D E F P O	120V~/5,4W 24V=/5,4W 24V=/1,8W 12V=/1,8W 24V=/1,3W 12V=/1,3W 12V=/1,0W* 24V=/1,0W* ies universal valves 2 . W IRE LENGHT W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JK *JL *JM *JN *JN *JN *JP *JR *JS *JT *JU *Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Square connector with rectifier Square connector with rectifier with light Rectangular connector Male only (Plain) Rectangular connector with diode Rectangular connector with MOV Rectangular connector with MOV/light Rectangular connector with MOV/light Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with diode Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
AA AC DE DF DJ DL DR DU Not available on 36 ser J-XX X-X XX A B C D E F P O	120V~/5,4W 24V=/5,4W 24V=/1,8W 12V=/1,8W 24V=/1,3W 12V=/1,3W 12V=/1,0W* 24V=/1,0W* ies universal valves 2 . W IRE LENGHT W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JL *JM *JN *JN *JP *JR *JS *JT *JU *Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Square connector with rectifier with light Rectangular connector Male only (Plain) Rectangular connector with diode Rectangular connector with MOV Rectangular connector with MOV/light Rectangular connector with MOV/light Rectangular connector with rectifier Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with diode Mini plug-in with MOV Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
A C DE DF DJ DL DR DU Not a vailable on 36 ser J-XX X-X XX A B C D E F P O	24V=/5,4W 24V=/1,8W 12V=/1,8W 24V=/1,3W 12V=/1,3W 12V=/1,0W* 24V=/1,0W* 24V=/1,0W* ies universal valves 2 . W IRE LENGHT W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JM *JN *JP *JR *JR *JS *JT *JU *Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Rectangular connector Male only (Plain) Rectangular connector with diode Rectangular connector with MOV Rectangular connector with MOV/light Rectangular connector with MOV/light Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
DE DF DJ DL DR DU Not available on 36 ser J-XX X -X XX A B C D E F P O	24V=/1,8W 12V=/1,8W 24V=/1,3W 12V=/1,0W* 12V=/1,0W* 24V=/1,0W* ies universal valves 2. WIRE LENGHT WIRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JN *JP *JR *JR *JS *JT *JU *Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Rectangular connector with diode Rectangular connector with MOV Rectangular connector with diode/light Rectangular connector with MOV/light Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
DF DJ DL DR DU Not available on 36 ser -XX X-X XX A B C D E F P O	12V=/1,8W 24V=/1,3W 12V=/1,3W 12V=/1,0W* 24V=/1,0W* 24V=/1,0W* ies universal valves 2 . W IRE LENGHT W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 120 cm - 72" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JP *JR *JS *JS *JT *JU *Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Rectangular connector with MOV Rectangular connector with diode/light Rectangular connector with diode/light Rectangular connector with MOV/light Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with diode Mini plug-in with MOV Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
DJ DL DR DU lot available on 36 ser -XX X-X XX A B C D E F P O	24V=/1,3W 12V=/1,3W 12V=/1,0W* 24V=/1,0W* ies universal valves 2 . W IRE LENGHT W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JR *JS *JT *JU *Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Rectangular connector with diode/ light Rectangular connector with MOV/ light Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with diode Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
DU Ot available on 36 ser -XX X-X XX A B C D E F P O	12V=/1,3W 12V=/1,0W* 24V=/1,0W* ries universal valves 2. W IRE LENGHT W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JS *JT *JU *Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Rectangular connector with diode/ light Rectangular connector with MOV/ light Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with diode Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
DU lot available on 36 ser -XX X-X XX A B C D E F P	12V=/1,0W* 24V=/1,0W* ries universal valves 2. W IRE LENGHT W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 120 cm - 96" coil leads 240 cm - 96" coil leads Base plug-in	*JS *JT *JU *Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Rectangular connector with MOV/light Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
DU lot available on 36 ser -XX X-X XX A B C D E F P	24V=/1,0W* ries universal valves 2. WIRE LENGHT WIRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JT *JU * Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Rectangular connector with rectifier Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with moV and light Mini plug-in with rectifier
DU lot available on 36 ser -XX X-X XX A B C D E F P	24V=/1,0W* ries universal valves 2. WIRE LENGHT WIRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	*JU * Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	Rectangular connector with rectifier with light anifold or stacking valves MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with rectifier
DU ot available on 36 ser -XX X-X XX A B C D E F P	24V=/1,0W* ries universal valves 2. WIRE LENGHT WIRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	* Not available on ma J-XX X-X XX KA KB KC KD KE KF KG KH	MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with MOV and light
ot available on 36 ser	2. W IRE LENGHT W IRE LENGHT 45 cm – 18" coil leads 60 cm – 24" coil leads 90 cm – 36" coil leads 120 cm – 48" coil leads 180 cm – 72" coil leads 240 cm – 96" coil leads	J-XX X-X XX	MINI SQUARE PLUG-IN CONNECTORS 9,4 MM SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with MOV and light Mini plug-in with mov and light
ot available on 36 ser	2. W IRE LENGHT W IRE LENGHT 45 cm – 18" coil leads 60 cm – 24" coil leads 90 cm – 36" coil leads 120 cm – 48" coil leads 180 cm – 72" coil leads 240 cm – 96" coil leads	KA KB KC KD KE KF KG	9,4 M M SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with mov and light
-XX X-X XX A B C D E F P O	2. W IRE LENGHT W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	KA KB KC KD KE KF KG	9,4 M M SPACING BETWEEN PINS Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with mov and light
A B C D E F P O	W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	KB KC KD KE KF KG	Mini plug-in Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with rectifier
A B C D E F P O	W IRE LENGHT 45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	KB KC KD KE KF KG	Mini plug-in with diode Mini plug-in with MOV Mini plug-in with light Mini plug-in with diode and light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with rectifier
A B C D E F P O	45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	KC KD KE KF KG	Mini plug-in with MOV Mini plug-in with light Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with rectifier
A B C D E F P O	45 cm - 18" coil leads 60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	KD KE KF KG	Mini plug-in with light Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with rectifier
B C D E F P	60 cm - 24" coil leads 90 cm - 36" coil leads 120 cm - 48" coil leads 180 cm - 72" coil leads 240 cm - 96" coil leads Base plug-in	KE KF KG KH	Mini plug-in with diode and light Mini plug-in with MOV and light Mini plug-in with rectifier
C D E F O	90 cm – 36" coil leads 120 cm – 48" coil leads 180 cm – 72" coil leads 240 cm – 96" coil leads Base plug-in	KF KG KH	Mini plug-in with MOV and light Mini plug-in with rectifier
D E F P O	120 cm – 48" coil leads 180 cm – 72" coil leads 240 cm – 96" coil leads Base plug-in	KG KH	Mini plug-in with rectifier
E F P O	180 cm – 72" coil leads 240 cm – 96" coil leads Base plug-in	. KH	
F P O	240 cm – 96" coil leads Base plug-in		Mini plug-in with rectifier and light
P O	Base plug-in	. KJ	with plug-in with recurrer and light
0			Mini plug-in – Male only
	No leads (use with J, K & L type connectors)	KK	Mini plug-in with diode - Male only
-X X X-X XX		. KL	Mini plug-in with MOV - Male only
-X X X -X X X		KM	Mini plug-in with light - Male only
-X	3. MANUAL OPERATOR	KN	Mini plug-in with diode and light – Male only
-XX X-X XX		KP	Mini plug-in with MOV and light – Male only
	MANUAL OPERATOR	KR	Mini plug-in with rectifier – Male only
	No operator	KS	Mini plug-in with rectifier and light – Male only
1	Non-locking recessed		
2	Locking recessed	" Not available on ma	anifold or stacking valves
3	Non-locking extended		CONNECTORS FOR NON RULES IN VALVES
4	Locking extended	J-XX X-X XX	CONNECTORS FOR NON PLUG-IN VALVES
			MINI SQUARE PLUG-IN CONNECTORS
	4. ELECTRICAL CONNECTION		8.0 MM SPACING BETWEEN PINS
		- 1.4	ISO SPECIFICATION 15217
-X X X -X X X	ELECTRICAL CONNECTION	LA	Mini plug-in
ВА	Flying leads	LB	Mini plug-in with diode
GA	MAC JAC solenoid plug-in	LC LC	Mini plug-in with MOV
GB	MAC JAC solenoid plug-in with diode	LD	Mini plug-in with light
	MAC JAC solenoid plug-in with MOV	LE	Mini plug-in with diode and light
	MAC JAC solenoid plug-in with light	LF	Mini plug-in with MOV and light
	MAC JAC solenoid plug-in with diode and light	LG	Mini plug-in with rectifier
	MAC JAC solenoid plug-in with MOV and light	LH	Mini plug-in with rectifier and light
		LJ	Mini plug-in – Male only
	MAC JAC solenoid plug-in with rectifier	LK	Mini plug-in with diode - Male only
	MAC JAC solenoid plug-in with rectifier and light	LL	Mini plug-in with MOV - Male only
	MAC JAC solenoid plug-in – Male only	LM	Mini plug-in with light - Male only
	MAC JAC solenoid plug-in with diode – Male only	LN	Mini plug-in with diode and light – Male only
	MAC JAC solenoid plug-in with MOV – Male only	LP	Mini plug-in with MOV and light – Male only
	MAC JAC solenoid plug-in with light – Male only	LR	Mini plug-in with rectifier – Male only
	MAC JAC solenoid plug-in with diode and light – Male only	LS	Mini plug-in with rectifier and light – Male only
GP	MAC JAC solenoid plug-in with MOV and light – Male only	LJ	with plug-in with recurser and light - Male only
GR	MAC JAC solenoid plug-in with rectifier – Male only		CONNECTORS FOR DUILS IN VALVES
GS	MAC JAC solenoid plug-in with rectifier and light – Male only	J-XX X-X XX	CONNECTORS FOR PLUG-IN VALVES
*JA	Square connector	FA	Base plug-in
	Rectangular connector	FB	Base plug-in with diode
	Square connector with light	FC	Base plug-in with MOV
	Rectangular connector with light	FD	Base plug-in with light
	Square connector with diode	FE	Base plug-in with diode and light
	·	FF	Base plug-in with MOV and light
	Square connector with MOV	FG	Base plug-in with rectifier
*JG	Square connector with diode/ light Square connector with MOV/ light	FH	Base plug-in with rectifier and light

Codification table for voltages / Manual operators / Electrical connections

VALVE CODE > $L \frac{XX}{1} \frac{X-X}{2} \frac{XX}{3}$

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 38, 42, 44, 47 & 48 Series



1. VOLTAGE (32, 38, 42, 44, 48 SERIES)			1. VOLTAGE (47 SERIES)
L- XX X-X XX	VOLTAGE	L- XX X-X XX	VOLTAGE
DF	24V=/4,0W	DA	24V=/5,2W
DN	12V=/4,0W	DF	12V=/5,2W
НА	24V=/1,95W		
HE	12V=/1,95W		

	LEN	

L- XX X-X XX	WIRE LENGTH
0	No lead wire
A	45 cm – 18"
В	60 cm – 24"
C	90 cm – 36"
D	120 cm – 48"
E	180 cm – 72"
F	240 cm - 96"
G	300 cm - 120"
Н	365 cm – 144"

3. MANUAL OPERATOR (all series)

L- XX X-X XX	MANUAL OPERATOR
0	No operator

KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly	ght & ground wire ground ground ight	L- XX X-X XX BA BB BC BD BJ BK	NON PLUG-IN 2 wire flying leads 2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire 4 wire flying leads
BB 2 wire flying leads with g BC 2 wire flying leads with li BD 2 wire flying leads with li BJ 4 wire flying leads with li BJ 4 wire flying leads with g BL 4 wire flying leads with li BM 4 wire flying leads with li BM 2 wire flying leads with li KA 2 wire plug-in assembly KB 2 wire plug-in assembly KC 2 wire plug-in assembly KC 2 wire plug-in assembly KC 4 wire plug-in assembly KF 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly -XX X-X XX PLUG-IN Base plug-in	ght & ground wire ground ground ight	BB BC BD BJ	2 wire flying leads with ground wire 2 wire flying leads with light 2 wire flying leads with light & ground wire
BC 2 wire flying leads with I BD 2 wire flying leads with I BJ 4 wire flying leads BK 4 wire flying leads with g BL 4 wire flying leads with I BM 4 wire flying leads with I KA 2 wire plug-in assembly KB 2 wire plug-in assembly KC 2 wire plug-in assembly KC 2 wire plug-in assembly KC 4 wire plug-in assembly KF 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly -XX X-X XX PLUG-IN Base plug-in	ght & ground wire ground ground ight	BC BD BJ	2 wire flying leads with light 2 wire flying leads with light & ground wire
BD 2 wire flying leads with li BJ 4 wire flying leads BK 4 wire flying leads with g BL 4 wire flying leads with g BL 4 wire flying leads with li BM 4 wire flying leads with li KA 2 wire plug-in assembly KB 2 wire plug-in assembly KC 2 wire plug-in assembly KC 2 wire plug-in assembly KD 2 wire plug-in assembly KF 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly L-XX X-X XX PLUG-IN Base plug-in	ght & ground wire ground	BD BJ	2 wire flying leads with light & ground wire
BJ 4 wire flying leads BK 4 wire flying leads with g BL 4 wire flying leads with g BL 4 wire flying leads with li BM 4 wire flying leads with li KA 2 wire plug-in assembly KB 2 wire plug-in assembly KC 2 wire plug-in assembly KD 2 wire plug-in assembly KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly LAXX-XXX PLUG-IN Base plug-in	ground ight	ВЈ	7 0 0
BK 4 wire flying leads with g BL 4 wire flying leads with li BM 4 wire flying leads with li KA 2 wire plug-in assembly KB 2 wire plug-in assembly KC 2 wire plug-in assembly KD 2 wire plug-in assembly KD 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly Base plug-in	ight		4 wire flying leads
BL 4 wire flying leads with li BM 4 wire flying leads with li KA 2 wire plug-in assembly KB 2 wire plug-in assembly KC 2 wire plug-in assembly KD 2 wire plug-in assembly KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly LA 3 was plug-in assembly Base plug-in	ight	BK	,
BM 4 wire flying leads with li KA 2 wire plug-in assembly KB 2 wire plug-in assembly KC 2 wire plug-in assembly KD 2 wire plug-in assembly KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly LA 3 was plug-in assembly Base plug-in			4 wire flying leads with ground
KA 2 wire plug-in assembly KB 2 wire plug-in assembly KC 2 wire plug-in assembly KD 2 wire plug-in assembly KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly LA 3 wire plug-in assembly	ght & ground wire	BL	4 wire flying leads with light
KB 2 wire plug-in assembly KC 2 wire plug-in assembly KD 2 wire plug-in assembly KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly LA 3 was plug-in assembly Base plug-in		ВМ	4 wire flying leads with light & ground wire
KC 2 wire plug-in assembly KD 2 wire plug-in assembly KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KG 4 wire plug-in assembly LA 3 wire plug-in assembly		EA	Base plug-in 3 pin (Polarity switching cover)
KD 2 wire plug-in assembly KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly LA Base plug-in	with ground wire	LA	3 wire plug-in assembly (Polarity switching cover)
KE 4 wire plug-in assembly KF 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly LA 3 wire plug-in assembly L-XX X-X XX PLUG-IN *DA Base plug-in	with light	MA	2 wire plug-in assembly
KF 4 wire plug-in assembly KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly L-XX X-X XX PLUG-IN Base plug-in	with light and ground wire	MB	2 wire plug-in assembly with ground wire
KG 4 wire plug-in assembly KH 4 wire plug-in assembly LA 3 wire plug-in assembly L-XX X-X XX PLUG-IN Base plug-in		MC	2 wire plug-in assembly with light
KH 4 wire plug-in assembly LA 3 wire plug-in assembly L-XX X-X XX PLUG-IN *DA Base plug-in	with ground wire	MD	2 wire plug-in assembly with light and ground wire
L-XX X-X XX PLUG-IN *DA Base plug-in	with light	ME	4 wire plug-in assembly
L-XX X-X XX PLUG-IN *DA Base plug-in	with ground wire with light	MF	4 wire plug-in assembly with ground wire
*DA Base plug-in	(polarity switching cover)	MG	4 wire plug-in assembly with light
*DA Base plug-in		MH	4 wire plug-in assembly with light and ground wire
*DR Base plug-in with groups		L- XX X-X XX	PLUG-IN
base plug in willi ground	pin	EA	Base plug-in 3 pin (Polarity switching cover)
*DC Base plug-in with light		FA	Base plug-in with ground
*DD Base plug-in with light &	ground pin	FB	Base plug-in with ground & light
**EA Base plug-in 3 pin (Polar	ity switching cover)	FC	Base plug-in 4 wire with ground
Jse these options for plug-in base with 2 or 4 wi		FD	Base plug-in 4 wire with light & ground



Codification table for voltages / Manual operators / Electrical connections

VALVE CODE > $\frac{EXX}{1}$ - $\frac{XX}{2}$ $\frac{X}{3}$ - $\frac{X}{4}$ $\frac{XX}{5}$

OPTIONS AVAILABLE FOR

- Solenoid valves 24 & 23 series



	1. PILOT OPTION	4. MANUAL OPERATOR		
XX - RXX X- X XX VOLTAGE		E XX - RXX X- X XX MANUAL OPERATOR		
M2	12mm – muffled exhaust	No operator		
P2	12mm – piped exhaust (M3)	1 Non-locking recessed		
M7	17mm – muffled exhaust	3 Non-locking extended		
P7	17mm – piped exhaust (M3)			
		5. ELECTRICAL CONNECTION		
	2. VOLTAGE	FIEATRIANI AANNEATIANG TAR MAN BIIIA IN VAIVE		
XX - RXX X- X XX	VOLTAGE	ELECTRICAL CONNECTIONS FOR NON PLUG-IN VALVES E XX - RXX X- X XX		
DB	24 VDC (1.0W)	BA Flying leads		
DC	24 VDC (1.6W)	BB Flying leads with LED		
DD	24 VDC (1.6W) 24 VDC (2.5W)	BC Flying leads with MOV		
DE	24 VDC (3.0W)	BD Flying leads with LED and MOV		
DF	24 VDC (4.0W)	RA Mini JAC solenoid plug-in		
DH	12 VDC (1.0W)	RB Mini JAC solenoid plug-in with LED		
DJ	12 VDC (1.8W)	RC Mini JAC solenoid plug-in with MOV		
DK	12 VDC (2.5W)	RD Mini JAC solenoid plug-in with LED and MOV		
DL	12 VDC (3.0W)	TA JST solenoid plug-in		
DM	12 VDC (4.0W)	TB JST solenoid plug-in with LED		
		TC JST solenoid plug-in with MOV		
	3. WIRE LENGHT	TD JST solenoid plug-in with LED and MOV		
XX - RXX X- X XX		ELECTRICAL CONNECTIONS FOR PLUG-IN VALVES		
0*	No lead wire	E XX - RXX X- X XX		
A	45 cm - 18"	FA Base plug-in		
В	60 cm - 24"	FB Base plug-in with LED		
C	90 cm - 36"	FC Base plug-in with MOV		
D	120 cm - 48"	FD Base plug-in with LED and MOV		
E	180 cm - 72"			
F	240 cm - 96"			
G	300 cm - 120"			
H	365 cm - 144"			
Not available for flying	Base plug-in (24 Series plug-in)			



Codification table for voltages / Manual operators / Electrical connections

VALVE CODE > RM-R $\frac{XX}{1}$ $\frac{X}{2}$ - $\frac{X}{3}$ $\frac{XX}{4}$

OPTIONS AVAILABLE FOR

- Solenoid valves 83 series



	1. VOLTAGE		3. MANUAL OPERATOR
XX X - XXX	VOLTAGE	R XX X - XXX	MANUAL OPERATOR
DB	24 VDC (1.0W)	0	No operator
DC	24 VDC (1.8W)	1	Non-locking recessed
DD	24 VDC (2.5W)	3	Non-locking extended
DE	24 VDC (3.0W)		
DF	24 VDC (4.0W)		4. ELECTRICAL CONNECTION
DH	12 VDC (1.0W)		
DJ	12 VDC (1.8W)	R XX X – XXX	ELECTRICAL CONNECTION
DK	12 VDC (2.5W)	BA	Flying leads
DL	12 VDC (3.0W)	BB	Flying leads with LED
DM	12 VDC (4.0W)	ВС	Flying leads with MOV
		BD	Flying leads with LED and MOV
	2. WIRE LENGHT	RA	Mini JAC solenoid plug-in
		RB	Mini JAC solenoid plug-in with LED
XXX - XXX	WIRE LENGHT	RC	Mini JAC solenoid plug-in with MOV
0	No lead wire	RD	Mini JAC solenoid plug-in with LED and MOV
A	45 cm - 18"	TA	JST solenoid plug-in
В	60 cm - 24"	ТВ	JST solenoid plug-in with LED
С	90 cm - 36"	TC	JST solenoid plug-in with MOV
D	120 cm - 48"	TD	JST solenoid plug-in with LED and MOV
E	180 cm - 72"		
F	240 cm - 96"		
G	300 cm - 120"		
н	365 cm - 144"		



Codification table for voltages / Manual operators / Electrical connections

VALVE CODE ➤ R)

 $R \frac{XX}{1} \frac{X}{2} - \frac{X}{3} \frac{XX}{4}$

OPTIONS AVAILABLE FOR

- Solenoid valves 33 , 43, Iso 01 plug-in, Iso 02 plug-in Series



	1. VOLTAGE		3. MANUAL OPERATOR
R XX X – XXX	VOLTAGE	R XX X - XXX	MANUAL OPERATOR
DB	24 VDC (1.0W)	0	No operator
DC	24 VDC (1.8W)	1	Non-locking recessed
DD	24 VDC (2.5W)	3	Non-locking extended
DE	24 VDC (3.0W)		
DF	24 VDC (4.0W)		4. ELECTRICAL CONNECTION
DH	12 VDC (1.0W)		
DJ	12 VDC (1.8W)		ECTION FOR NON PLUG-IN VALVES
DK	12 VDC (2.5W)	R XX X - XXX	
DL	12 VDC (3.0W)	BA	Flying leads
DM	12 VDC (4.0W)	BB	Flying leads with LED
EA*	24 VDC (60W)	ВС	Flying leads with MOV
EB*	24 VDC (90W)	BD	Flying leads with LED and MOV
EC*	24 VDC (230W)	DA	Base plug-in
AOD numbers required for these voltages (consult factory)		DB	Base plug-in with LED
		DC	Base plug-in with MOV
	2. WIRE LENGHT	DD	Base plug-in with LED and MOV
		RA	Mini JAC solenoid
XXX X - XXX	WIRE LENGHT	RB	Mini JAC solenoid with LED
0*	No lead wire	RC	Mini JAC solenoid with MOV
<u>A</u>	45 cm - 18"	RD	Mini JAC solenoid with LED and MOV
В	60 cm - 24"	TA	JST solenoid plug-in
С	90 cm - 36"	TB	JST solenoid plug-in with LED
D	120 cm - 48"	TC	JST solenoid plug-in with MOV
E	180 cm - 72"	TD	JST solenoid plug-in with LED and MOV
F	240 cm - 96"		
G	300 cm - 120"		ECTION FOR PLUG-IN VALVES
Н	365 cm - 144"	R XX X - XXX	p. I :
P	Base plug-in	PA	Base plug-in
Not available for fly	ying leads connector	PB	Base plug-in with light
		PC	Base plug-in with MOV
		PD	Base plug-in with light and MOV



Codification table for voltages / Manual operators / Electrical connections

VALVE CODE > $\frac{\text{TM-D}}{1} \frac{XX}{2} \frac{X}{3} \frac{XX}{4}$

OPTIONS AVAILABLE FOR

- Solenoid valves 83 series (double operator)



	1. VOLTAGE		3. MANUAL OPERATOR
D XX X - XXX	VOLTAGE	D XX X - XXX	MANUAL OPERATOR
AA	120 V~/60 Hz, 110V~/50Hz	0	No operator
AB	240 V~/60 Hz, 220V~/50Hz	1	Non-locking recessed
AC	24 V~/60 Hz, 24V~/50Hz	2	Locking recessed
AD	24 V~/60 Hz	3	Non-locking extended
AE	200 V~/60 Hz	4	Locking extended
AF	240 V~/50 Hz		
AG	100 V~/50 Hz, 100V~/60Hz, 110 V~/ 60 Hz		4. ELECTRICAL CONNECTION
DA	24V=/5.4W		
DB	12V=/5.4W	D XX X - XXX	ELECTRICAL CONNECTION
DC	12V=/7.5W	BA	Flying leads
DD	24V=/7.3W	BK	BA with protection diode
DE	12V=/12.7W CLSF only	BL	BA with protection variator (MOV)
DF	24V=/12.7W CLSF only	JB	Rectangular connector
DK	110V=/4.7W	JD	Rectangular connector with light
DL	64V=/6W	JM	Rectangular connector, male only
DM	36V=/5.3W	KA	Square connector
DN	6V=/6W	KB	Square connector with protection diode
DP	18V=/5.8W	KC	Square connector with protection variator (MOV)
DU	24V=/6W	KD	Square connector with light
EA	12V=/6W	KE	Square connector with light and protection diode
FA	12V=/1.8W	KF	Square connector with light and protection variator (MO)
FB	24V=/1.8W	KG	Square connector with light and diode
FE	12V=/2.4W	— KJ	Square connector, male only
FF	24V=/2.4W	KK	Square connector with protection diode (male only)
		KL	Square connector with protection variator (male only) (MOV)
	2. WIRE LENGHT	TA	Dual tabs
		ТВ	TA with protection diode
D XX X - XXX	WIRE LENGHT	TD	TA with light
A	45 cm - 18"	TE	TA with light and protection diode
В	60 cm - 24"	TJ	Dual tabs (male only)
C	90 cm - 36"	TK	TJ with protection diode
D	120 cm - 48"	TM	TJ with light
E	180 cm - 72"	TN	TJ with light and protection diode
F	240 cm - 96"		
J	For external plug-in connectors ("J", "K", and "T" type electrical connection)	_	



Codification table for voltages / Manual operators / Electrical connections

VALVE CODE > $\frac{XX}{1} \frac{X}{2} - \frac{X}{3} \frac{XX}{4}$

OPTIONS AVAILABLE FOR

- Solenoid valves 31 and 41 Series



1. VOLTAGE		3. MANUAL OPERATOR	
T XX X - XXX	VOLTAGE	T XX X - XXX	MANUAL OPERATOR
DC	24 VDC (1.8W)	0	No operator
DD	24 VDC (2.5W)	1	Recessed non-locking
DE	24 VDC (3.0W)	3	Extended non-locking
DF	24 VDC (4.0W)		
DJ	12 VDC (1.8W)	_	4. ELECTRICAL CONNECTION
DK	12 VDC (2.5W)	_	
DL	12 VDC (3.0W)	T XX X - XXX	ELECTRICAL CONNECTION
DM	12 VDC (4.0W)	BA	Flying leads
FA*	24 VDC (60W)	_	

FB* 24 VDC (90W)

FC* 24 VDC (230W)

* MOD numbers required for these voltages (consult factory)

2. WIRE LENGHT		
T XX X - XXX	WIRE LENGHT	
Α	45 cm - 18"	
В	60 cm - 24"	
C	90 cm - 36"	
D	120 cm - 48"	
E	180 cm - 72"	
F	240 cm - 96"	
G	300 cm - 120"	
H	365 cm - 144"	



PRECAUTIONS CONCERNING THE APPLICATION, INSTALLATION AND SERVICE OF MAC VALVES

The precautions below are important to be read and understood before designing into a system any MAC valve, and before installing or servicing any MAC valve. Improper use, installation or servicing of any MAC valve in some systems could create a hazard to personnel or equipment.

APPLICATION PRECAUTIONS:

INDUSTRIAL USE

MAC valves are intended for general use in industrial pneumatic and/or vacuum systems. They are general purpose industrial valves with literally thousands of different applications in industrial systems. These products are not inherently dangerous, but they are only a component of an overall system. The system in which they are used must provide adequate safeguards to prevent injury or damage in the event failure occurs, whether it be failure of switches, regulators, cylinders, valves or any other component.

POWER PRESSES -

MAC valves are not designed nor intended to be used to operate and/or control the operation of clutch and/or brake systems on power presses. There are special products on the market for such use.

2-POSITION VALVES

Some MAC valves are 2-position, 4-way valves. When air is supplied to the inlet port(s) of these valves, there will always be a flow path from the inlet to one of the outlets regardless of which of the two positions the valve is situated. Therefore, if pressurized air retained in the system would present a hazard in the application or servicing of the valve or system, a separate method in the system must be provided to remove the trapped air.

3- POSITION VALVES-

Some MAC valves are 3-position, 4-way valves. These valves are either double solenoid or double remote air operated.

If either of the two operators is in control, air supplied to the inlet port(s) will pass through the valve to one of the outlets as on 2-position, 4-way valves. However, if neither operator is in control, the valve moves to a center position. Listed below are the various center position functions:

A. CLOSED CENTER-

With this type valve, when in the center position all ports are blocked (inlets and exhausts) meaning the air at both outlet ports is trapped. If trapping the air in both outlet ports would present a hazard in the application or servicing, a separate method in the system must be provided to remove the trapped air or this type valve should not be used.

B. OPEN CENTER-

With this type valve, when in the center position, the inlet port(s) is blocked and the two outlet ports are open to the exhaust port(s) of the valve. If having no air in either outlet port would present a hazard in the application or servicing, this type valve should not be used.

C. PRESSURE CENTER-

With this type valve, when in the center position, the inlet port(s) is connected to both outlet ports of the valve. If having pressurized air to either or both outlet ports would present a hazard in the application or servicing of the valve or system, a separate method in the system must be provided to remove the retained air.

OPERATING SPECIFICATIONS

MAC valves are to be installed only on applications that meet all operating specifications described in the MAC catalog for the valve.

MANUAL OPERATORS-

Most MAC valves can be ordered with manual operators. Manual operators when depressed, are designed to shift the valve to the same position as would the corresponding solenoid or remote air pilot operator if it were activated. Care must be taken to order a type, if any, that will be safe for the physical location of the manual

operator in the system. Accidental activation of a manual operator could create a dangerous situation. If intentional or accidental operation of a valve by a manual operator could create a dangerous situation then the "no operator" option should be used.

REMOTE AIR OPERATED VALVES

Pilot valves supplying signal pressure to remote air operated valves should be 3-way valves with adequate supply and exhaust capacity to provide positive pressurizing and exhausting of the pilot supply line. Pilot lines should be open to exhaust when valves are deeneraized.

INSTALLATION PRECAUTIONS:

- A. Do not install MAC valves on a machine without first turning off air (bleed system completely) and electricity to the machine.
- B. MAC valves should only be installed by qualified, knowledgeable personnel who understand how the specific valve is to be pneumatically piped and electrically connected (where applicable). Flow paths through the valve are shown in the catalog and on the valve by use of ANSI or ISO type standard graphic symbols. Do not install unless these symbols and the valve functions and operations are thoroughly understood.

SERVICE PRECAUTIONS:

- A. Do not service or remove from service any MAC valve without first shutting off both the air and electricity to the valve and making certain no pressurized air which could present a hazard is retained in the system.
- B. MAC valves should only be serviced or removed from service by qualified, knowledgeable personnel who understand how the specific valve is piped and used and whether there is air retained in the connecting lines to the valve or electric power still connected to the valve.
- C. MAC valves are never to be stepped on while working on a machine. Damage to the valve, or lines to the valve (either air or electrical lines) or accidental activating of a manual operator on the valve could result in a dangerous situation.

WARNING:

Under no circumstances are Mac valves to be used on power presses for air clutch and/or brake operations where failure of the valve to operate as intended could in any way jeopardize the safety of the operator or any other person. Under no circumstances are Mac valves to be used in any circuit or in any manner intended to prevent unintended operation of any machinery or other equipment where failure of the valve to operate as intended could jeopardize the safety of the operator or any other person. Air valves are not safety devices nor should they be used in safety systems of any type.



MAC Valves Product Warranty Information

MAC VALVES Warranty, Warranty Limitations

The MAC Valves organization has established a reputation over many years for fulfilling the needs and requirements of the users of its products. All MAC Valves are quality products specifically designed and built for long and rugged service. For this reason, MAC Valves is able to provide the Buyer a limited warranty.

WARRANTY.

MAC Valves, Inc. hereby warrants to Buyer that, for a period of 18 months from the original date of shipment of each valve from our factory ("Warranty Period"), such valve will be free from significant defects in material and workmanship and will conform to all specifications agreed to by MAC Valves, Inc.. In addition, MAC Valves, Inc. warrants that the electrical coils on such valves will be free from significant defects in material and workmanship for their normal useful life. EXCEPT FOR THESE LIMITED WARRANTIES, MAC VALVES, INC. EXPRESSLY DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES OF ANY KIND (WHETHER EXPRESS, IMPLIED OR ARISING BY OPERATION OF LAW) WITH RESPECT TO THE VALVES, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OR REPRESENTATIONS AS TO MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER. THIS SECTION SURVIVES THE EXPIRATION, TERMINATION OR CANCELLATION OF ANY AGREEMENTS BETWEEN THE PARTIES RELATING TO THE PURCHASE OF THE VALVES.

WARRANTY LIMITATIONS:

This Warranty does not apply where the valves have been (i) subjected to abuse, misuse, damage, neglect, negligence, accident, improper testing, improper installation, improper storage, improper handling, abnormal physical stress, abnormal environmental condition, or use contrary to any instructions issued by MAC Valves, Inc.; (ii) modified, reconstructed, repaired, or altered by persons other than MAC Valves, Inc. or its authorized representative; or (iii) used with any third-party product, hardware, software or other product that has not been previously approved in writing by MAC Valves, Inc. Additionally, this Warranty does not cover claims for labor, material, time or transportation, and does not apply to loss or damage caused by fire, theft, riot, explosion, labor dispute, act of God, or other causes beyond the control of MAC Valves, Inc.

EXCLUSIVE REMEDY:

The Buyer's sole remedy under this Warranty is limited to the replacement or rebuilding of any valve which does not conform to the warranties provided herein or, in MAC Valves, Inc.'s sole discretion, refund of the purchase price for the non-conforming valve. Buyer's remedy is conditioned on Buyer's compliance with its obligations under this Warranty. Valves that Buyer believes do not conform to this Warranty must be returned (with or without bases) transportation prepaid and received at our factory within the Warranty Period. If MAC Valves, Inc. determines that the valve is non-conforming and is otherwise covered by this Warranty, the rebuilt or replaced valve will be returned to the customer at the expense of MAC Valves, Inc. MAC VALVES, INC. WILL NOT BE RESPONSIBLE FOR ANY INCIDENTAL, SPECIAL, EXEMPLARY OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION DIRECT AND INDIRECT LOST PROFITS, REGARDLESS OF WHETHER THOSE DAMAGES WERE FORESEEABLE.