

Individual mounting

inline	
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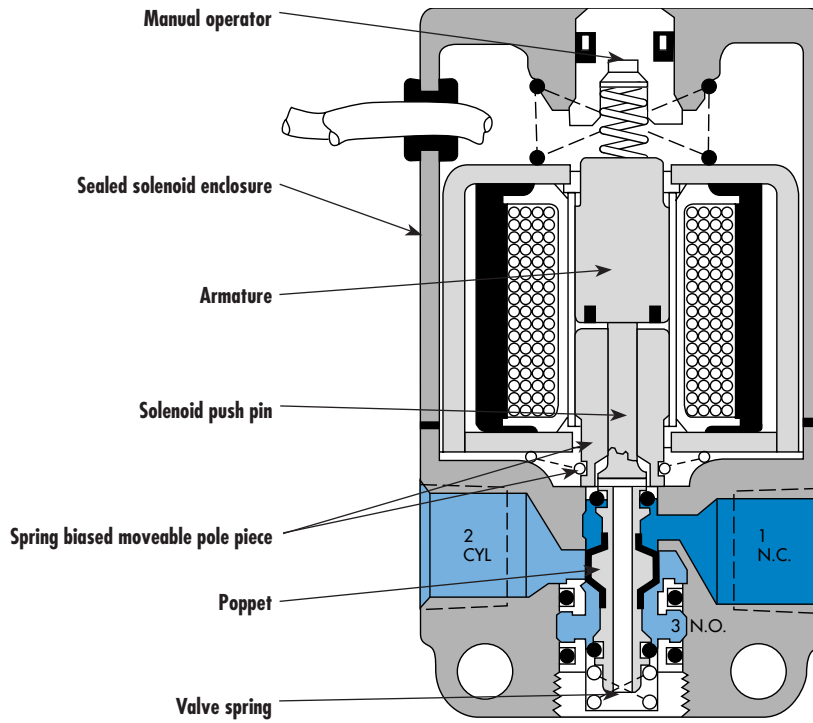
Manifold mounting

stacking	sub-base non "plug-in"
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Series

35

100



200

55

56

57

58

59

45

700

900

82

**SERIES FEATURES**

- The patented MACSOLENOID® with its non-burn out feature on AC service.
- Six valve functions with one individual valve.
- Individual, stacking body & add-a-unit manifold base capability.
- Use on lube or non-lube service.
- Extremely rapid response and cycle rate.
- Various types of manual operators and electrical enclosures.
- Extremely long service life.
- Optional low wattage DC solenoids down to 1 watt.

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

**APPLICATION CONVERSION PROCEDURE:**

**INDIVIDUAL MODELS**

The balanced poppet design facilitates using the same valve for 6 functions with any port being connected to vacuum, pressure or plugged. Piping is shown in the chart below.

**STACKING BODY MODELS**

The interchangeable function plate between the valve bodies permits selection of either 3-way Normally Closed or 3-way Normally Open operation.

**MANIFOLD BASE MODELS**

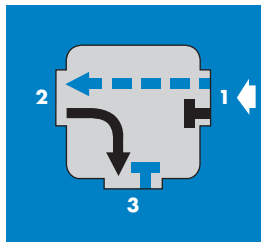
The interchangeable function plate between the valve bodies and base permits selection for 2- or 3-way, Normally Closed or Normally Open operation. On 3-way applications, one

function plate is used for both N.C. and N.O. When "3-NC" is visible on the plate, the function will be N.C. When "3-NO" is visible, the function is N.O. On 2-way applications, two separate plates are used—one for N.C., marked "2-NC"; the other for N.O., marked "2-NO". The 2-way plates block the exhaust at the valve, permitting the mixing in a stack of 3-ways and 2-ways. Changes within a stack from one function to another can be made without disturbing the plumbing.

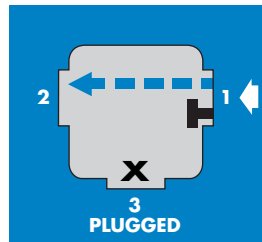
**N.C. ONLY MODELS**

A single purpose Normally Closed Only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired.

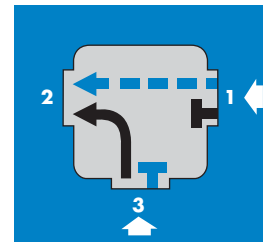
**PIPING CHART FOR INDIVIDUAL MODELS**



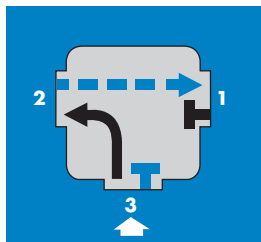
**3 Way  
Normally Closed**



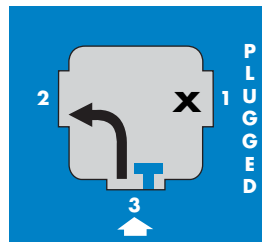
**2 Way  
Normally Closed**



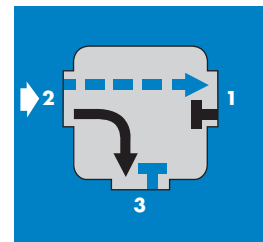
**Selector**



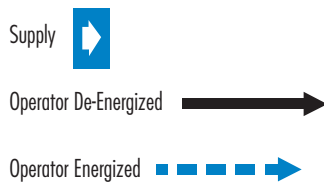
**3 Way  
Normally Open**



**2 Way  
Normally Open**



**Divertor**



Function	Port size	Flow (Max)	Individual mounting	Series
<b>3/2 NO-NC, 2/2 NO-NC</b>	<b>1/8" - 1/4"</b>	<b>0.18 C<sub>v</sub></b>	inline	

**OPERATIONAL BENEFITS**

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.



35

100

200

55

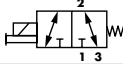
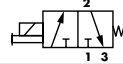
56

57

58

59

**HOW TO ORDER**

Port size	Universal valve	NC only valve
		
<b>1/8" NPTF</b>	111B- <b>XXYZZ</b>	161B- <b>XXYZZ</b>
<b>1/4" NPTF</b>	113B- <b>XXYZZ</b>	163B- <b>XXYZZ</b>

45

SOLENOID OPERATOR >

**XX Y ZZ\***

XX Voltage	Y Manual operator	ZZ Electrical connection
<b>11</b> 120/60, 110/50	<b>1</b> Non-locking	<b>JB</b> Rectangular connector
<b>12</b> 240/60, 220/50	<b>2</b> Locking	<b>JD</b> Rectangular connector with light
<b>22</b> 24/60, 24/50		<b>JA</b> Square connector
<b>59</b> 24 VDC (2.5 W)		<b>JC</b> Square connector with light
<b>87</b> 24 VDC (17.1 W)		<b>BA</b> Flying leads (18")
<b>61</b> 24 VDC (8.5 W)		<b>CA</b> Conduit 1/2" NPS

700

900

82

\* Other options available, see page 357.

Notes:

CHANGING FROM NORMALLY CLOSED TO NORMALLY OPEN

Individual inline valves can be changed from normally closed to normally open by connecting the inlet to port 3 instead of port 1.

NORMALLY CLOSED ONLY MODELS

A single purpose Normally Closed only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired. Model numbers are indicated above.

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

**TECHNICAL DATA**

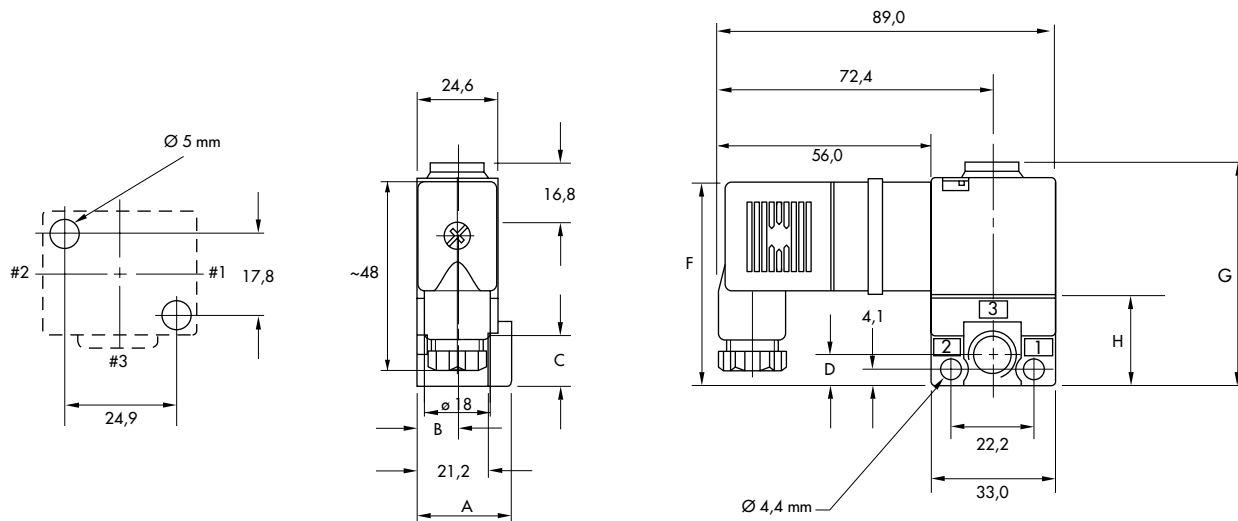
<b>Fluid :</b>	Compressed air, vacuum, inert gases		
<b>Pressure range :</b>	Vacuum to 150 PSI		
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
<b>Filtration :</b>	40 µ		
<b>Temperature range :</b>	0°F to 140°F (-18°C to 60°C)		
<b>Flow (at 6 bar, ΔP=1bar) :</b>	0.18 C <sub>v</sub>		
<b>Leak rate :</b>			
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated		
<b>Voltage range :</b>	-15% to +10% of nominal voltage		
<b>Protection :</b>	Consult factory		
<b>Power :</b>	~ Inrush : 14.8 VA	Holding : 10.9 VA	
	= 1 to 17 W		
<b>Response times :</b>	24 VDC (8.5 W)	Energize : 7 ms	De-energize : 2 ms
	120/60	Energize : 3-8 ms	De-energize : 2-7 ms

Spare parts : • Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 32184 and seal 16234.

Options : • BSPP threads.

**DIMENSIONS**

Dimensions shown are metric (mm)



<b>1/8"</b>	28.4	12.7	14.0	8.0	40.1	64.9	60.1	23.2
<b>1/4"</b>	29.8	13.3	12.7	9.9	40.9	65.8	60.9	24.1

Function	Port size	Flow (Max)	Manifold mounting	Series
<b>3/2 NO-NC, 2/2 NO-NC</b>	<b>1/8" - 1/4"</b>	<b>0.18 C<sub>v</sub></b>	stacking	

**OPERATIONAL BENEFITS**

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.



35

100

200

55

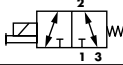
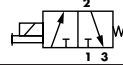
56

57

58

59

**HOW TO ORDER**

Port size	Universal valve	NC only valve
		
<b>1/8" NPTF</b>	181B- <b>XXYYZZ</b>	184B- <b>XXYYZZ</b>
<b>1/4" NPTF</b>	183B- <b>XXYYZZ</b>	185B- <b>XXYYZZ</b>

45

**SOLENOID OPERATOR** ▶

**XX Y ZZ\***

XX Voltage	Y Manual operator	ZZ Electrical connection
<b>11</b> 120/60, 110/50	<b>1</b> Non-locking	<b>JB</b> Rectangular connector
<b>12</b> 240/60, 220/50	<b>2</b> Locking	<b>JD</b> Rectangular connector with light
<b>22</b> 24/60, 24/50		<b>BA</b> Flying leads (18")
<b>59</b> 24 VDC (2.5 W)		<b>MB</b> Common conduit 1" NPS
<b>87</b> 24 VDC (17.1 W)		
<b>61</b> 24 VDC (8.5 W)		

700

900

\* Other options available, see page 357.

End plate kit required (Port size 1/4") : M-01001-01  
 "MB" option also requires end plate kit: M-01002-01

Notes:

CHANGING FROM NORMALLY CLOSED TO NORMALLY OPEN

In the case of stacking valves a reversible plate, complete with indicator, is placed between each valve body assembly. This determines whether the valve is N.C. or N.O.

NORMALLY CLOSED ONLY MODELS

A single purpose Normally Closed only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired. Model numbers are indicated above.

82

6300

6500

6600

1300

800

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A

### TECHNICAL DATA

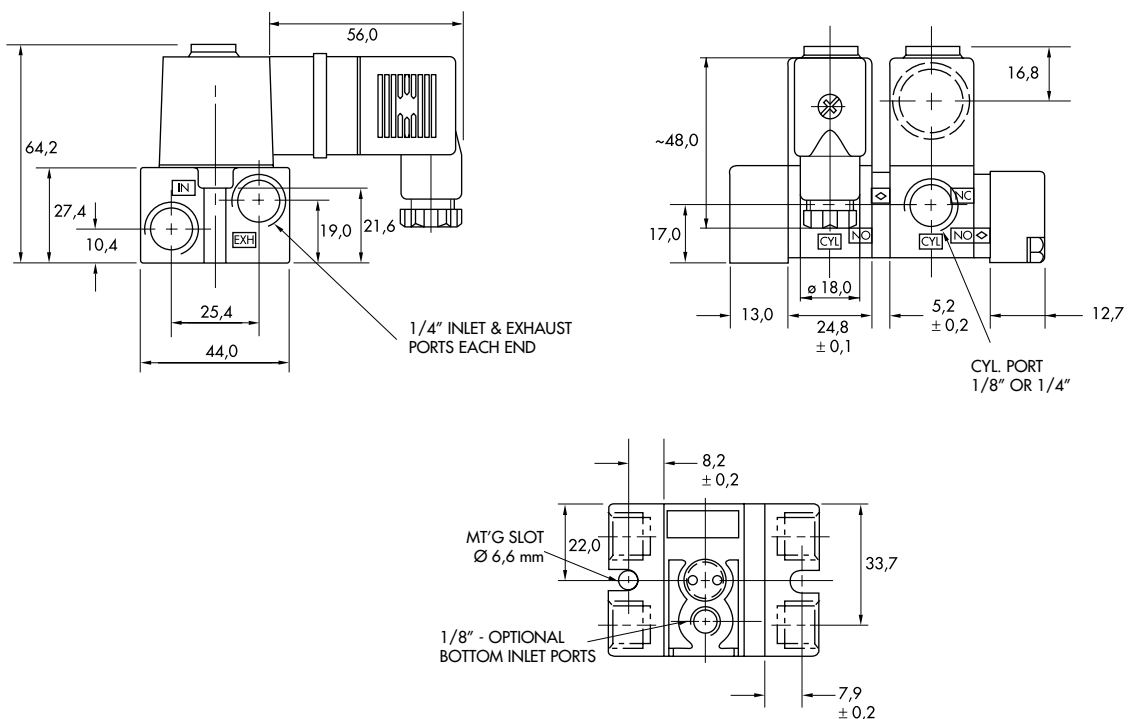
<b>Fluid :</b>	Compressed air, vacuum, inert gases		
<b>Pressure range :</b>	Vacuum to 150 PSI		
<b>Lubrication :</b>	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
<b>Filtration :</b>	40 µ		
<b>Temperature range :</b>	0°F to 140°F (-18°C to 60°C)		
<b>Flow (at 6 bar, ΔP=1bar) :</b>	0.18 C <sub>v</sub>		
<b>Leak rate :</b>	100 cm <sup>3</sup> /min		
<b>Coil :</b>	General purpose class A, continuous duty, encapsulated		
<b>Voltage range :</b>	-15% to +10% of nominal voltage		
<b>Protection :</b>	Consult factory		
<b>Power :</b>	~ Inrush 14.8 VA      Holding : 10.9 VA DC : 1 to 17.1 W		
<b>Response times :</b>	24 VDC (8.5 W)	Energize : 7 ms	De-energize : 2 ms
	120/60	Energize : 3-8 ms	De-energize : 2-7 ms

Spare parts :      • Solenoid operator (power ≥ 4 W) : D1-XXAA, cover mounting screws 35206 and seal 16234.  
 • Function plate : N-01002. • Tie-rod (x2) : 19674. • Inlet isolator plate : N01003. • Exhaust isolator plate : N01004.

Options :      • BSPP threads. • Bottom inlet (Mod. 0210).

### DIMENSIONS

Dimensions shown are metric (mm)



Function	Port size	Flow (Max)	Manifold mounting	Series
<b>3/2 NO-NC, 2/2 NO-NC</b>	<b>1/8"</b>	<b>0.14 C<sub>v</sub></b>	sub-base non "plug-in"	

**OPERATIONAL BENEFITS**

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Burn-out proof solenoid on AC service.



35

100

200

55

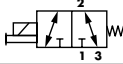
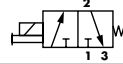
56

57

58

59

**HOW TO ORDER**

Port size	Universal valve	NC only valve
		
<b>Valve less base</b>	130B- <b>XXYYZZ</b>	170B- <b>XXYYZZ</b>
<b>1/8" base NPTF</b>	132B- <b>XXYYZZ</b>	172B- <b>XXYYZZ</b>

45

SOLENOID OPERATOR ➤

**XX Y ZZ\***

XX Voltage	Y Manual operator	ZZ Electrical connection
<b>11</b> 120/60, 110/50	<b>1</b> Non-locking	<b>JB</b> Rectangular connector
<b>12</b> 240/60, 220/50	<b>2</b> Locking	<b>JD</b> Rectangular connector with light
<b>22</b> 24/60, 24/50		<b>BA</b> Flying leads (18")
<b>59</b> 24 VDC (2.5 W)		<b>MA</b> Common conduit 1" NPS
<b>87</b> 24 VDC (17.1 W)		<b>RA</b> Conduit 3/8" NPS
<b>61</b> 24 VDC (8.5 W)		

700

900

\* Other options available, see page 357.

End plate kit required (Port size : 1/4" ) : A2-5004-01  
"MA" option also requires end plate kit : M-01002-01

82

6300

**OPTIONS**

<b>12XB-<b>XXYYZZ</b></b>	2-way N.C.
<b>14XB-<b>XXYYZZ</b></b>	2-way N.O.
<b>102</b>	(Base only)

6500

6600

1300

800

Notes:

CHANGING FROM NORMALLY CLOSED TO NORMALLY OPEN

For manifold base mounted valves a plate is provided between the valve and the base. Three plates are available; a reversible plate for 3 Way valves (N.C. & N.O.), one plate for 2 Way N.C. and one for 2 Way N.O. Appropriate plates, determined by the valve model number, are supplied automatically with the valve.

NORMALLY CLOSED ONLY MODELS

A single purpose Normally Closed only model is available for those applications where a greater tolerance for heavy concentrations of water, compressor products and other air line contaminants is desired. Model numbers are indicated above.

ISO 1

ISO 2

ISO 3

MAC 125A

MAC 250A

MAC 500A



**HOW TO ORDER**

**BODY OPTIONS**

**1 X X B - (XXYZZ) - FM - SOLENOID OPTIONS**

SEE BELOW

SERIES ——— REVISION LEVEL

VALVE FUNCTION		PORT SIZE/BODY STYLE	
6	N.C. only ind. inline	0	Manifold valve less base
7	N.C. only manifold	1	1/8" NPTF ind.inline
8	Stacking body	2	1/8" NPTF manifold
		3	1/4" NPTF ind.inline
		4	1/8" NPTF stacking, 3-way N.C. only
		5	1/4" NPTF stacking, 3-way N.C. only
		6	1/8" BSPP inline
		7	1/4" BSPP inline
		8	1/8" BSPP stacking, 3-way N.C. only
		9	1/4" BSPP stacking, 3-way N.C. only

**SOLENOID OPTIONS**

**EXAMPLE : XX Y ZZ - FM**

XX	DC VOLTAGE	Y	MANUAL OPERATOR	ZZ	ENCLOSURE
A5	12 VDC (0.6 W)	0	No operator	AA	JIC w/1/2" NPS Conduit
A6	24 VDC (0.6 W)	1	Non-locking Recessed (std.)	BA	Grommet
		2	Locking Recessed	CA	Conduit 1/2" NPS
		3	Non-locking Extended	CC	Conduit 1/2" NPT (CSA threads)
		4	Locking Extended	JB	Rectangular Plug-in
				JM	Rectangular Male only
				NA	Conduit 1/2" NPS w/ground wire
				RA	Conduit 3/8" NPS for Manifold models
				MA	Com. Conduit 1" NPS (Manifold models)
				MB	Com. Conduit 1" NPS (Stacking models)

(MA & MB common conduit covers require 1#M-01002-01 conduit end plate kit per stack)

**100 SERIES-SUPPLEMENTAL TECHNICAL DATA**

MOD. NO.	DESCRIPTION	MODEL AVAILABILITY
0004	All bottom and side ports	Manifold models only
0009	Bottom and side cylinder ports with side only inlet and exhaust ports	Manifold models only
0210	Additional bottom inlet	Manifold & stacking models
313P	For isolating the common inlet passage between manifold bases	Manifold models only
313E	For isolating the common exhaust passage between manifold bases	Manifold models only

**TO ORDER** Add the appropriate modification number from the table above after the valve number, **EXAMPLE :** 172B-A51BA-FM MOD 0004.

**STACKING BODY ACCESSORIES : STACKING END PLATE KIT-**  
For each gang one kit is required.

**TO ORDER-** Specify number M-01001-01 (1/4" NPTF) or M-01001-01P (1/4" BSPP).  
INLET ISOLATOR PLATE N-01003  
EXHAUST ISOLATOR PLATE N-01004

**MANIFOLD ACCESSORIES : MANIFOLD END PLATE KIT-**  
For each gang one kit is required.

**TO ORDER-** Specify number A2-5004-01 (1/4" NPTF) or A2-5004-01P (1/4" BSPP).

**Codification table for voltages / Manual operator / Electrical connection / Wire length**

VALVE CODE ► **- XX Y ZZ (-VV)**  
1 2 3 4

OPTIONS AVAILABLE FOR	OPTIONS AVAILABLE FOR
<ul style="list-style-type: none"> <li>- valves type 100 Series</li> <li>- pilot valves "CNOMO"</li> </ul>	<ul style="list-style-type: none"> <li>- valves type 200 Series</li> </ul>
<ul style="list-style-type: none"> <li>- Pilot operated valves with pilots type 100 Series</li> <li>Series : 55 - 56 - 700 - 800 - 900</li> <li style="margin-left: 20px;">- 6300 - 6500 - 6600 - 1300</li> <li style="margin-left: 20px;">- ISO 1 - ISO 2 - ISO 3.</li> <li style="margin-left: 20px;">- MAC 125 - MAC 250 - MAC 500</li> </ul>	<ul style="list-style-type: none"> <li>- pilot operated valves with pilots type 200 Series</li> <li>Series : 200 - 57 - 58 - 59.</li> </ul>
<ul style="list-style-type: none"> <li>- Pilot operated valves with pilots "CNOMO"</li> <li>Series : ISO1 - ISO2 - ISO3</li> </ul>	

Used on valve series: 100, 55, 56, 700, 800, 900, 6300, 6500, 6600, 1300, MVA1C, MVA2B, MVA3B, MAC125, MAC250, MAC500.

Used on valve series: 200, 57, 58, 59.

1. VOLTAGE (100 Serie type coil)		1. VOLTAGE (200 Serie type coil)	
- XX Y ZZ	VOLTAGE	- XX Y ZZ	VOLTAGE
11	120/60, 110/50	11	120/60, 110/50, 24 VDC (6 W)
12	240/60, 220/50	12	240/60, 220/50
13	100/60, 100/50	13	100/60, 100/50
15	200/60, 200 /50	14	200/60, 200/50
16	10/60	20	6/60
20	6/60	21	12/60
21	12/50, 12/60	22	24/60, 24/50
22	24/60, 24/50	23	32/60, 32/50
23	32/60, 32/50	24	48/60, 42/50
24	48/60, 42/50	25	240/50
26*	380/50, 440/50, 440/60, 480/60	26	480/60, 440/50
29	220/60	27	127/60
34	127/50, 120/50	28	415/50
35	48/50	29	220/60
36	16/60	30	380/50
B1	24/50	31	550/60, 550/50
50	24 VDC (6 W)	32	120/60, 110/50
51	24 VDC (4 W)	33	600/60
54	12 VDC (4 W)	34	127/50
55	12 VDC (6 W)	35	48/50
57	12 VDC (2.5 W)	50	24 VDC (6 W)
59	24 VDC (2.5 W)	51	24 VDC (4.5 W)
60	12 VDC (8.5 W)	52	24 VDC (2.5 W)
61	24 VDC (8.5 W)	53	24 VDC (1.0 W)
64	6 VDC (6 W)	55	12 VDC (6 W)
65	32 VDC (7 W)	57	12 VDC (2.5 W)
66	48 VDC (5.8 W)	58	48 VDC (2.5 W)
67	64 VDC (7.5 W)	60	12 VDC (9.5 W)
68	120 VDC (6.4 W)	61	24 VDC (8.5 W)
69*	220 VDC (8.7 W), 250 VDC (11.2 W)	64	6 VDC (8.5 W)
75	90 VDC (8.8 W)	65	32 VDC (10 W)
76*	100 VDC (6.9 W)	66	48 VDC (11.5 W)
84*	125 VDC (10.9 W)	67	64 VDC (10.5 W)
87*	24 VDC (17.1 W)	68	120 VDC (12.3 W)
88*	12 VDC (17.4 W)	69	250 VDC (9.2 W)
89*	36 VDC (18.8 W)	71	8 VDC (8.2 W)
90	28 VDC (8.2 W)	72	24 VDC (12 W)
91*	6 VDC (10.6 W)	73	198 VDC (10 W)
92	190 VDC (6.5 W)	74	72 VDC (11.3 W)
94	3 VDC (7 W)	75	90 VDC (11.3 W)
95	38 VDC (6.4 W)	76	100 VDC (9 W)
A1	24 VDC (1 W)	77	220 VDC (10 W), 230 VDC (11.6 W)
A2	12 VDC (1 W)	78*	24 VDC (24 W)
A3	9 VDC (1 W)	80	55 VDC (10.6 W)
		82	170 VDC (11.1 W)
		83	15 VDC (8.1 W)
		84	125 VDC (10 W)
		86	36 VDC (11 W)
		93*	12 VDC (24 W)

MOD. DD01 : Protection diode (DC) - MAX. 8.5W

MOD. MOV1 : Protection varistor (AC) - MAX. 8.5W

\* Voltages are CLSF only

**2. MANUAL OPERATOR (Common options for 100 & 200 Series type coils)**

- XX Y ZZ	MANUAL OPERATOR
<b>0</b>	No operator
<b>1</b>	Non-locking recessed
<b>2</b>	Locking recessed
<b>3</b>	Non-locking extended
<b>4</b>	Locking extended

<b>5*</b>	No Operator with Light
<b>6*</b>	Non-Locking Recessed with Light
<b>7*</b>	Locking Recessed with Light
<b>8*</b>	Non-Locking Extended with Light
<b>9*</b>	Locking Extended with Light

\* Lights used with "AA" electrical connection

**3. ELECTRICAL CONNECTION (100 Serie type coil)**

- XX Y ZZ	ELECTRICAL CONNECTION
<b>AA</b>	Wiring box with 1/2" NPS conduit
<b>BA</b>	Flying leads
<b>CA</b>	1/2" NPS conduit
<b>CC</b>	1/2" NPT conduit
<b>FA</b>	Military type 2 PIN
<b>GA</b>	Military type 3 PIN
<b>HA</b>	AA with ground wire
<b>JA*</b>	Square connector
<b>JB</b>	Rectangular connector
<b>JC*</b>	Square connector with light
<b>JD</b>	Rectangular connector with light
<b>JE</b>	Square connector on top (ISO2, ISO3)
<b>JF</b>	Rectangular connector on top (ISO1, ISO2, ISO3)
<b>JG</b>	JE with light
<b>JH</b>	JF with light
<b>JJ</b>	Square connector, male only
<b>JM</b>	Rectangular connector, male only
<b>MA</b>	Electrical common conduit (100 Series-Manifold/900 Series)
<b>MB</b>	Electrical common conduit (100 Series-Stacking/700 Series)
<b>NA</b>	CA with ground wire
<b>NC</b>	CC with ground wire
<b>RA</b>	3/8" NPS conduit

\* Not to be used with 100, 800 and 900 Series manifold mounting

**3. ELECTRICAL CONNECTION (200 Serie type coil)**

- XX Y ZZ	ELECTRICAL CONNECTION
<b>AA</b>	Wiring box with 1/2" NPS conduit
<b>BA</b>	Flying leads
<b>CA</b>	1/2" NPS conduit
<b>CC</b>	1/2" NPT conduit
<b>EA</b>	Explosion proof (200 Series)
<b>EA</b>	Explosion proof (57, 58 & 59 Series)
<b>FA</b>	Military type 2 PIN
<b>GA</b>	Military type 3 PIN
<b>HA</b>	AA with ground wire
<b>JA*</b>	Square connector
<b>JC</b>	Square connector with light
<b>JJ</b>	Square connector, male only
<b>NA</b>	CA with ground wire
<b>NC</b>	CC with ground wire

**4. COIL WIRE LENGTH (Common options for 100 & 200 Serie type coils)**

<b>- XX Y ZZ (-VV)</b>	<b>WIRE LENGTH</b>
<b>AA</b>	18"
<b>AB</b>	24"
<b>AD</b>	36"
<b>AE</b>	48"
<b>AF</b>	72"
<b>AG</b>	6"
<b>AR</b>	12"
<b>AU</b>	120"
<b>BA</b>	60"
<b>BB</b>	144"
Series 6000 : wire length, from the base	
<b>MOD L024</b>	24"
<b>MOD L036</b>	36"
<b>MOD L048</b>	48"
<b>MOD L060</b>	60"
<b>MOD L072</b>	72"
<b>MOD L120</b>	120"