

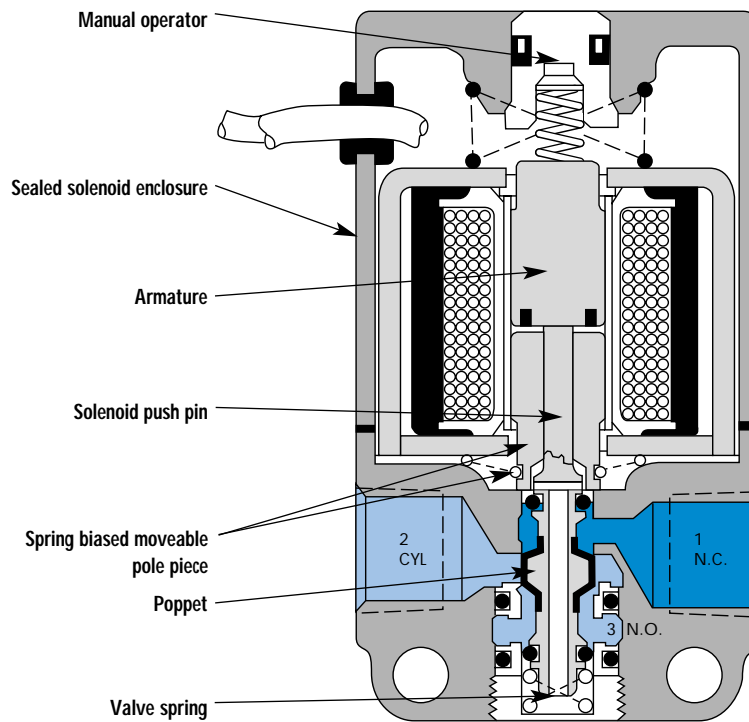
Individual mounting

inline

Manifold mounting

stacking

sub-base
non "plug-in"



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.

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

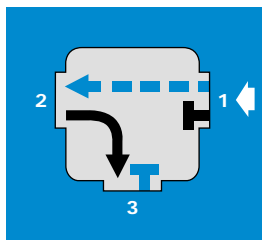
The interchangeable function plate between the valve bodies and base permits selection for 2- or 3-way, Normally Closed or Normally Open operation. On 3-way applications,

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.

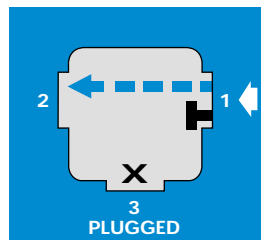
N.C. ONLY MODELS

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.

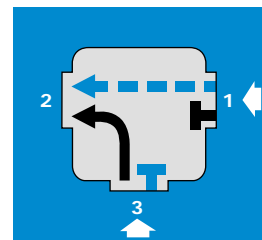
PIPING CHART FOR INDIVIDUAL MODELS



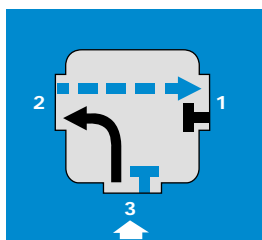
3 Way
Normally Closed



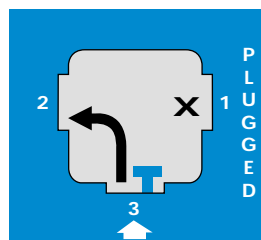
2 Way
Normally Closed



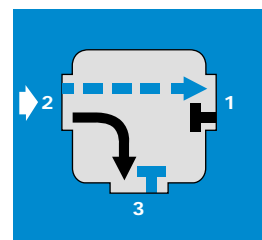
Selector



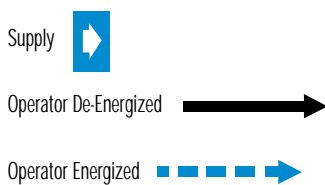
3 Way
Normally Open



2 Way
Normally Open



Divertor





Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Individual mounting
3/2 NO-NC, 2/2 NO-NC	1/8" - 1/4"	0.18 C _v	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.



HOW TO ORDER

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

SOLENOID OPERATOR >

XX Y ZZ

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

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.

TECHNICAL DATA

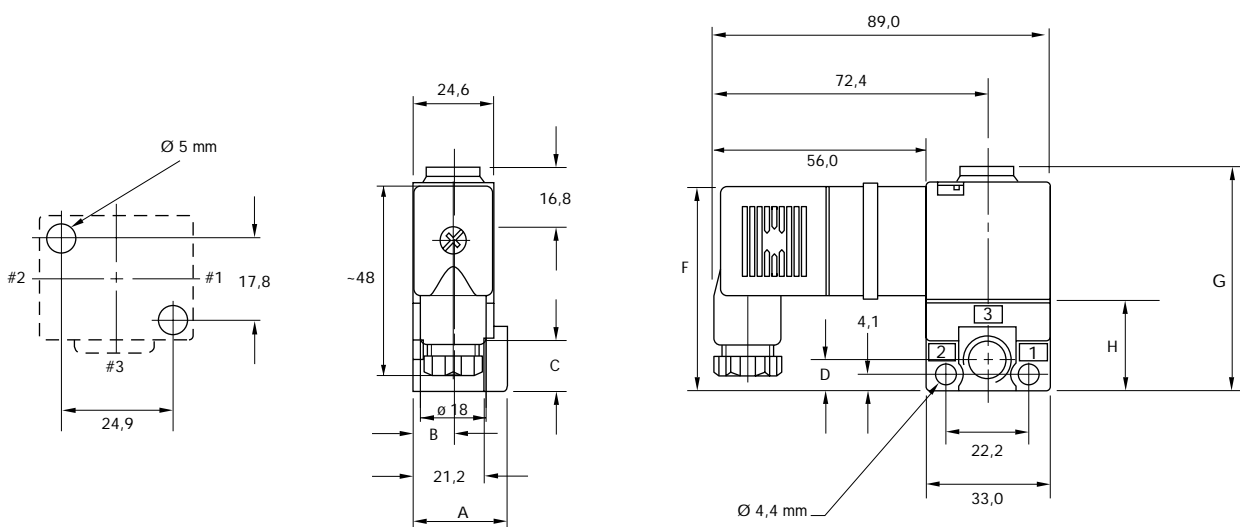
Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Vacuum to 150 PSI		
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)		
Filtration :	40 µ		
Temperature range :	0°F to 140°F (-18°C to 60°C)		
Flow (at 6 bar, ΔP=1bar) :	0.18 C _v		
Leak rate :	50 cm ³ /min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	Consult factory		
Power :	~ Inrush : 14.8 VA Holding : 10.9 VA = 1 to 17 W		
Response times :	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)



PORT SIZE	A	B	C	D	E	F	G	H
1/8"	28.4	12.7	14.0	8.0	40.1	64.9	60.1	23.2
1/4"	29.8	13.3	12.7	9.9	40.9	65.8	60.9	24.1