3-Way MB (Mini B)
Direct Acting Valves - Miniature
#10-32 Ports, 1/8 NPT & Manifoded
Plastic Body Valves/Zinc Manifold Base

General Description:
MB Series valves are designed for the actuation of small air cylinders and clamps, and are suited for applications requiring low air flow.

For manifolding, 2 or 3 station bases are offered. Manifolds can be bolted together to provide the desired banking combination.

The valves are direct acting, multipurpose valves with all ports in the body. The valve body is molded from plastic, while the internal parts are nylon, polyester and stainless steel. The valves will operate at up to 150 PSI, consuming only 4 watts per coil on AC operation, 5 watts per coil on DC.

Functional design flexibility is assured given the wide variety of available valve configurations. The listed accessories enable the user to customize MB Series valves as 2-way normally open or normally closed by plugging one port; 3-way normally open, normally closed or directional control.

Installation
Valves can be mounted in any position. The preferred orientation is with the coil vertical and upright.

Compatible Fluids
Lubricated air, non-lubricated air, and inert gases compatible with materials of construction.

Standard Materials of Construction
- Body—plastic
- Seals—NBR
- Sleeve—stainless steel (305)
- Plunger—stainless steel (430FR)
- Stop—stainless steel (430FR)
- Spring—stainless (17-7PH)
- Shading ring—copper
  (AC valves only)
- Manifold base—zinc

Operating Speed
- Up to 1000 cycles per minute

Coil Classification
- Class A Taped, leaded coil standard

Response Time (approximate):
AC: 3-12 ms to open
  5-16 ms to close

DC: 8-14 ms to open
  5-15 ms to close

Electrical Characteristics:
Voltages
- AC—24/60, 120/60, 240/60
- DC—12, 24 &120

Power Consumption
- 4 watts AC per coil
- 5 watts DC per coil

Maximum allowable internal seat leakage is 3 SCCM @125 psi.

No allowable external leakage.
3-Way Direct Acting Valves

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Orifice Diameter</th>
<th>Cv Factor</th>
<th>Operating Pressure [PSI]</th>
<th>Wattage</th>
<th>Class A Tapped Leaded Coil</th>
<th>Valve Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>#10-32 Ports</td>
<td>3/64 3/64</td>
<td>0.032 0.028</td>
<td>0 150</td>
<td>4 5</td>
<td>MBD002</td>
<td>D3</td>
</tr>
<tr>
<td>Manifold Mounted</td>
<td>3/64 3/64</td>
<td>0.032 0.028</td>
<td>0 150</td>
<td>4 5</td>
<td>MBD005</td>
<td>D4</td>
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</tbody>
</table>

Valve Accessories

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Contents</th>
<th>Part Number</th>
<th>Valve Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Station Manifold Base Kit (for mounting 2 valves)</td>
<td>4 Port plugs</td>
<td>MB-60-S001</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 No. 5 self tapping screws</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-Station Manifold Base Kit (for mounting 3 valves)</td>
<td>5 Port plugs</td>
<td>MB-60-S002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6 No. 5 self tapping screws</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manifold Interface Kit (connects 2 manifold bases)</td>
<td>1 No. 8 screw</td>
<td>MB-60-S003</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 &quot;O&quot; rings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manifold Blank Station Kit (for sealing an unused station)</td>
<td>1 Plate</td>
<td>MB-60-S004</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 &quot;O&quot; rings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Screws</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Station Manifold Base const. ref. 234</td>
<td>1 MB-01-003 manifold block</td>
<td>MB-60-S005</td>
<td>D5</td>
</tr>
<tr>
<td></td>
<td>2 V1-31-254 nuts assembled</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-Station Manifold Base const. ref. 234</td>
<td>1 MB-01-004 manifold block</td>
<td>MB-60-S006</td>
<td>D5</td>
</tr>
<tr>
<td></td>
<td>2 V1-31-254 nuts assembled</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ordering Instructions for Multiple Station Manifolds

**Step 1:** Determine the number of valve stations required. This will equal the number of subbase valves to order (MBD005).

**Step 2:** Select the combination of two and three-station manifolds that sum to equal the number of valve stations required (i.e. five stations total = one three-station and one two-station manifold).

**Step 3:** Choose the accessory kits required to complete the system and determine if you want the valves assembled to the manifolds at the factory.

**Step 4:** Specify the required voltage.

Example:

1. You have selected a valve which is to be manifolded.
2. Your system requires a five-station manifold (i.e. one three-station manifold attached to one two-station manifold).

3. You require the manifold bases and an interface kit. You decide to assemble the valves and manifolds.

4. Your system is 120/60 watts AC: Your order should read:

   - 5-MBD005, 120/60
   - 1-MB-60-S001
   - 1-MB-60-S002
   - 1-MB-60-S003
   - 1-MB-60-S005
   - 1-MB-60-S006

Fig. 1

<table>
<thead>
<tr>
<th>Voltage</th>
<th>24/60*</th>
<th>120/60</th>
<th>240/60*</th>
<th>12VDC</th>
<th>24VDC</th>
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</thead>
<tbody>
<tr>
<td>Coil Code</td>
<td>AB215A</td>
<td>AB619A</td>
<td>AB820A</td>
<td>DC116A</td>
<td>DC218A</td>
</tr>
<tr>
<td>Coil Part Number*</td>
<td>CMB2230N18</td>
<td>CMB2238N18</td>
<td>CMB2240N18</td>
<td>CMB2231N18</td>
<td>CMB2234N18</td>
</tr>
</tbody>
</table>

*When ordering a replacement coil, use Coil Part Number (not Coil Code).

Select the MB series pressure vessel number from above and follow with the coil/enclosure number based on voltage from Fig. 1. Example MBD005 for 120/60 becomes part number MBD005AB619A

*Not active - consult factory
Valve Reference D3

3-Way Universal
Port Identification
1-NC / 2-COMMON / 3-NO

Valve Reference D4

3-way, two station Universal