# 2V1-3V1 SERIES SOLENOID VALVE

<table>
<thead>
<tr>
<th><strong>Valve Model</strong></th>
<th><strong>2V1</strong></th>
<th><strong>3V1</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Port &amp; Mounting</td>
<td>Body Ported, Stacking</td>
<td></td>
</tr>
<tr>
<td>Action &amp; Motion</td>
<td>Solenoid, Direct Acting, 2 Way Response Time &lt;20ms</td>
<td>Solenoid, Direct Acting, 3 Way Response Time &lt;20ms</td>
</tr>
<tr>
<td>Operating Pressure</td>
<td>0 to 115 PSI</td>
<td></td>
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<tr>
<td>Port Sizes</td>
<td>1/8 NPT</td>
<td></td>
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<tr>
<td>Operating Temp.</td>
<td>14 to 140 °F</td>
<td></td>
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<tr>
<td>Cv</td>
<td>0.23</td>
<td>0.05</td>
</tr>
<tr>
<td>SFCM @ 100PSI</td>
<td>22</td>
<td>5</td>
</tr>
<tr>
<td>Manual Override</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Electrical Connection</td>
<td>Grommet, DIN</td>
<td></td>
</tr>
<tr>
<td>Working Medium</td>
<td>40 micron filtered air or inert gas</td>
<td></td>
</tr>
<tr>
<td>Coil Insulation &amp; Protection Class</td>
<td>IP 65, Class F</td>
<td></td>
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<tr>
<td>Coil Duty Cycle</td>
<td>100% ED</td>
<td></td>
</tr>
<tr>
<td>Coil Voltage Options</td>
<td>Options: 12, 24 VDC; 24,110/120, 220/240 VAC (50/60Hz)</td>
<td></td>
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<tr>
<td>Coil Power</td>
<td>40 PSI: 3W, 60 PSI: 4.8W, 115 PSI: 6.5W</td>
<td></td>
</tr>
<tr>
<td>Valve Body Material</td>
<td>Anodized Aluminum</td>
<td></td>
</tr>
<tr>
<td>Coil Locking Nut</td>
<td>M8X0.75 Threads</td>
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</tr>
<tr>
<td>Seal Material</td>
<td>NBR (Buna N)</td>
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</tr>
<tr>
<td>Lubrication</td>
<td>Not Required</td>
<td></td>
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2V1-3V1 SERIES SOLENOID VALVE DIMENSIONS
2V1-3V1 SERIES SOLENOID VALVE DIMENSIONS

[Diagram of 2V1-3V1 series solenoid valve dimensions showing various parts and measurements.]
2V1 and 3V1 Assembly

Assembling 2V1 and 3V1 valves will allow for individual control over multiple outlets with a single source, or allow for multiple sources to individually flow into a common outlet.

When all solenoids are inactive, there is flow straight through the connected inlets/default outlet of the valves. At the same time, for models 3V1 in the assembly, there is flow between the active outlet and the exhaust. For 2V1 models, the active outlet remains closed.

When the solenoid on one of the valves is active, the inlet/default outlet and the active outlet are connected, and the

Reference Figures:

Figure 1: Parts of a 2V1 and 3V1 assembly. When connected, air flows through the inlets/default outlets, which are the horizontally oriented ports in this picture. The vertically oriented ports in the 3V1 valves are connected to the exhaust, which is above the black solenoid coils.

Figure 2: 2V1 and 3V1 fully assembled. The right port is the default inlet/outlet, and the three ports to the left are the active inlets/outlets. Exhaust ports are on the top of the assembly.

Figure 3: Default inlet/outlets on the side of the assembly.

To install coil:

For Valve with Plastic Nut: Put the coil onto the armature tube of the valve. Put the lock-washer and nut onto the armature tube. Hand tighten the nut until coil is secured. Do not over-tighten the nut with a wrench, it may cause the armature tube to fail prematurely.

For Valve with Metal Nut: Put the coil onto the armature tube of the valve. Put the lock-washer and nut onto the armature tube. Hand tighten the nut until coil is secured, then use a wrench to tighten the nut to a quarter turn; do not over-tighten the nut, it may cause the armature tube to fail prematurely.
Assembly of 2V1 and 3V1 Solenoid Valves

Installation of direct acting 2 way and 3 way solenoid valves:
Connect the inlet and out as shown in the diagram.
Electrical Connections

To connect DIN coil:

1. Remove the Philip screw from the plastic housing and unplug it from the DIN coil.
2. From the screw opening, use the screw to push the terminal block out of the plastic housing.
3. Note the 1, 2 and ground markings on underside of DIN enclosure.
4. For DC DIN Coil, Connect 1 to Positive, 2 to Negative.
5. For AC DIN Coil, connect 1 to HOT wire, 2 to Neutral wire, and if required connect ground to ground wire.

To connect Grommet coil:

1. For DC Coil, connect the RED wire to Positive, and the BLACK wire to Negative.
2. For AC Coil, connect the BLACK wire to HOT wire, and the WHITE wire to neutral wire.

Do not energize the coil without installing it onto the valve, it will burn the coil and create fire hazards.
Connection of 2V025–035, 2V1, 3V1 Solenoid Valves

COIL CENTER LINE

INLET PORT

LARGER SIDE

SMALLER SIDE

OUTLET PORT

TWO WAY VALVE CONNECTION

COIL CENTER LINE

NORMAL OPEN PORT

LARGER SIDE

SMALLER SIDE

OUTLET PORT

INLET PORT

THREE WAY NORMALLY CLOSED CONNECTION

COIL CENTER LINE

EXHAUST PORT

LARGER SIDE

SMALLER SIDE

INLET PORT

OUTLET PORT

THREE WAY NORMALLY OPEN CONNECTION
Installation of direct acting 2 way and 3 way solenoid valves:
Connect the inlet and outlet as shown in the diagram.
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