Unpacking
Remove the Packing List and verify that you have received all equipment, including a PV100 Series proportional valve, and instruction sheet. If you have any questions about the shipment, please call the Customer Service Department at 1-800-622-2378 or 203-359-1660. We can also be reached on the Internet at www.omega.com. When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

General Description
The OMEGA® PV100 Series Electronically Controlled Proportional Valves are two-way normally closed valves. When the valve is deenergized, pressure is sealed off by the force of the plunger assembly return spring and the seal in the plunger assembly. When the valve is energized, the plunger assembly moves upward, permitting flow through the valve. The valve is direct acting. Higher current or control signal results in more plunger movement and more flow.

Installation
Port Identification
Apply inlet pressure to the port marked “P”.

Mounting Position and Pressure Limits
Valves can be mounted directly on piping and are designed to operate in any position. Two 8-32 tapped mounting holes ¼” deep are provided in the base of the body. Line pressure must not exceed the nameplate rating.

Piping
Remove closures from ports and connect pressure lines to proper ports. All valves have ¼” NPTF fittings. Tightening torque on the ⅝” NPT should not exceed 38 in-lbs.

Media Filtration
Filtration of air lines is recommended. Install the filter in the inlet side as close to the valve as possible. These valves have no sliding fits and are generally not sensitive to a small amount of foreign material, however, they do contain soft rubber inserts. Dirt or foreign material in the media may cause excessive leakage, excessive wear, or in exceptional cases, malfunction.

Electrical Connection
Electrical supply must conform to nameplate rating. Connect coil leads to DC voltage using standard electrical practice.

Black wire  Common Ground (to Power Supply and Control)
Red wire  (+) DC Positive Power Supply
Gray wire  (+) Control Signal
If the coil housing is located in an inconvenient position, the housing nut can be loosened and the housing rotated to any convenient position. Then re-tighten the nut to 13 to 35 in-lbs.

Coil Housing Temperature
Standard valves are supplied with coils designed for continuous duty service. Normal free space must be provided for proper ventilation. When coil is energized continuously for long periods of time, the coil housing will become hot 54 to 71°C (130 to 160°F). The coil is designed to operate continuously under these conditions. Any excessive heating will be indicated by smoking and/or odor of burning insulation.

Lubrication
Lubrication is not required.

Maintenance Instructions
Valves are calibrated at the factory and should not be disassembled by the user.
Available Models

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Orifice Size</th>
<th>CV</th>
<th>Maximum Pressure</th>
<th>Flow Ranges, SCCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV101-(*)</td>
<td>.80 1/32</td>
<td>0.02</td>
<td>200 PSI</td>
<td>0-50,000 0-8,000</td>
</tr>
<tr>
<td>PV102-(*)</td>
<td>1.19 3/64</td>
<td>0.045</td>
<td>100 PSI</td>
<td>0-65,000 0-17,000</td>
</tr>
<tr>
<td>PV103-(*)</td>
<td>1.59 1/16</td>
<td>0.08</td>
<td>60 PSI</td>
<td>0-75,000 0-30,000</td>
</tr>
<tr>
<td>PV104-(*)</td>
<td>1.98 5/64</td>
<td>0.12</td>
<td>40 PSI</td>
<td>0-80,000 0-45,000</td>
</tr>
</tbody>
</table>

*Specify Control Signal: MA for 4-20 MADC
5V for 0-5 VDC
10V for 0-10 VDC

Dimensions
Specifications

Valve Type: 2-Way Normally Closed
Wetted Parts: Stainless Steel with Viton Seals
Power: 12-24 VDC
Power Consumption: 7 Watts Maximum
Control Signals: 0-5 VDC, 0-10 VDC, 4-20 MADC
Ambient Temperature Range: -10 to 50°C (14 to 122°F)
Media Temperature Range: -18 to 82°C (0 to 180°F)
Linear Control Range: 15-85% of Full Flow
Response Time for Complete Cycle Off - Full Open - Off:
40 msec @ 0 pressure
100 msec @ maximum pressure
Repeatability: ±5% when in operating linear control range
Electrical Connection: 18” color-coded lead wires
Wiring:
Red DC Power Supply
Gray Control Signal (+)
Black Common (to Power and Control)
Pressure Connections: ½” NPTF
Enclosure: General Purpose, NEMA-1
It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice. WARNING: These products are not designed for use in, and should not be used for, human applications.

WARRANTY/ DISCLAIMER
OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA’s WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA’s customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA’s Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA’s WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA’s control. Components in which wear is not incidental or special damages.

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RETURN REQUESTS / INQUIRIES
Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA’S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:
1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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