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PV100 SERIES

ELECTRONICALLY CONTROLLED PROPORTIONAL VALVES

INSTRUCTION
SHEET

M2160-0204



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
e-mail: cservice@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 ½" NPTF fittings. Tightening torque on the ½" 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

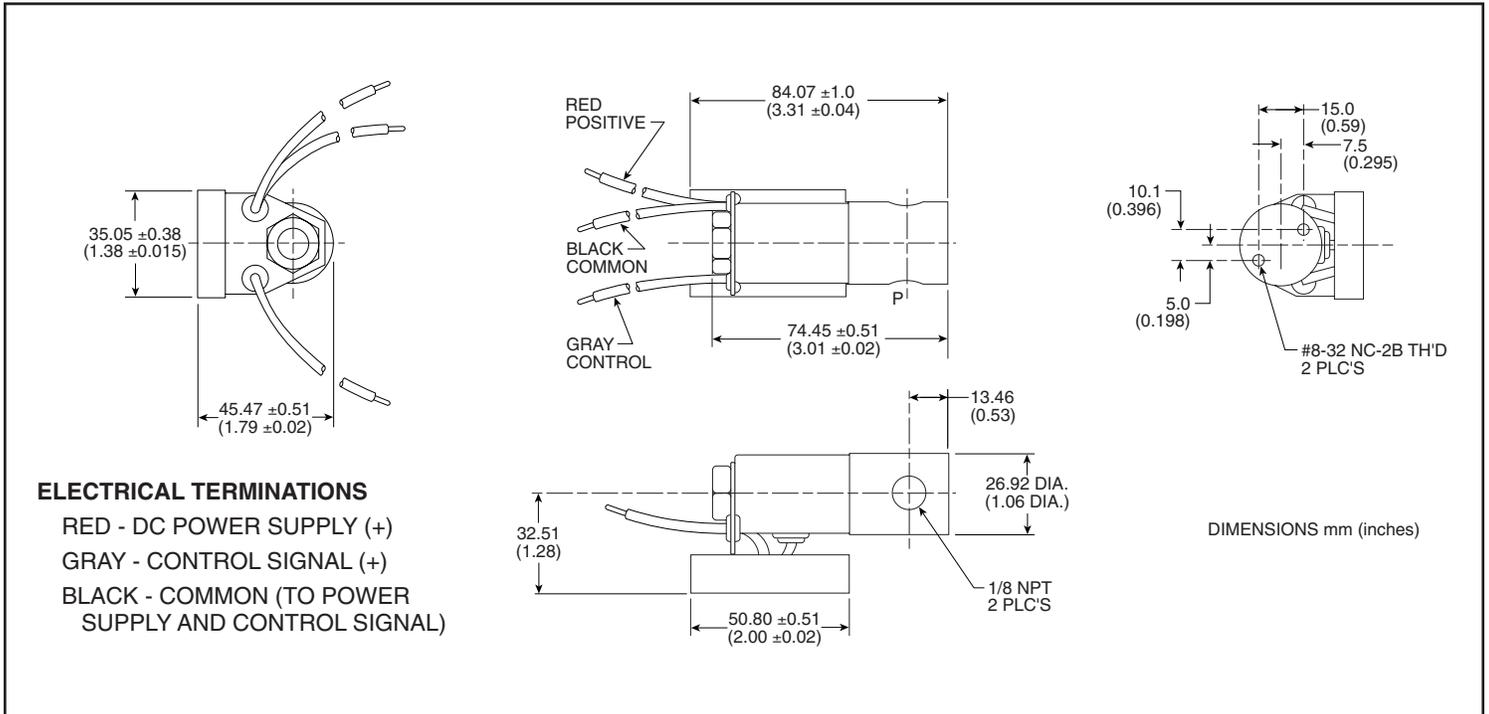
Valves are calibrated at the factory and should not be disassembled by the user.

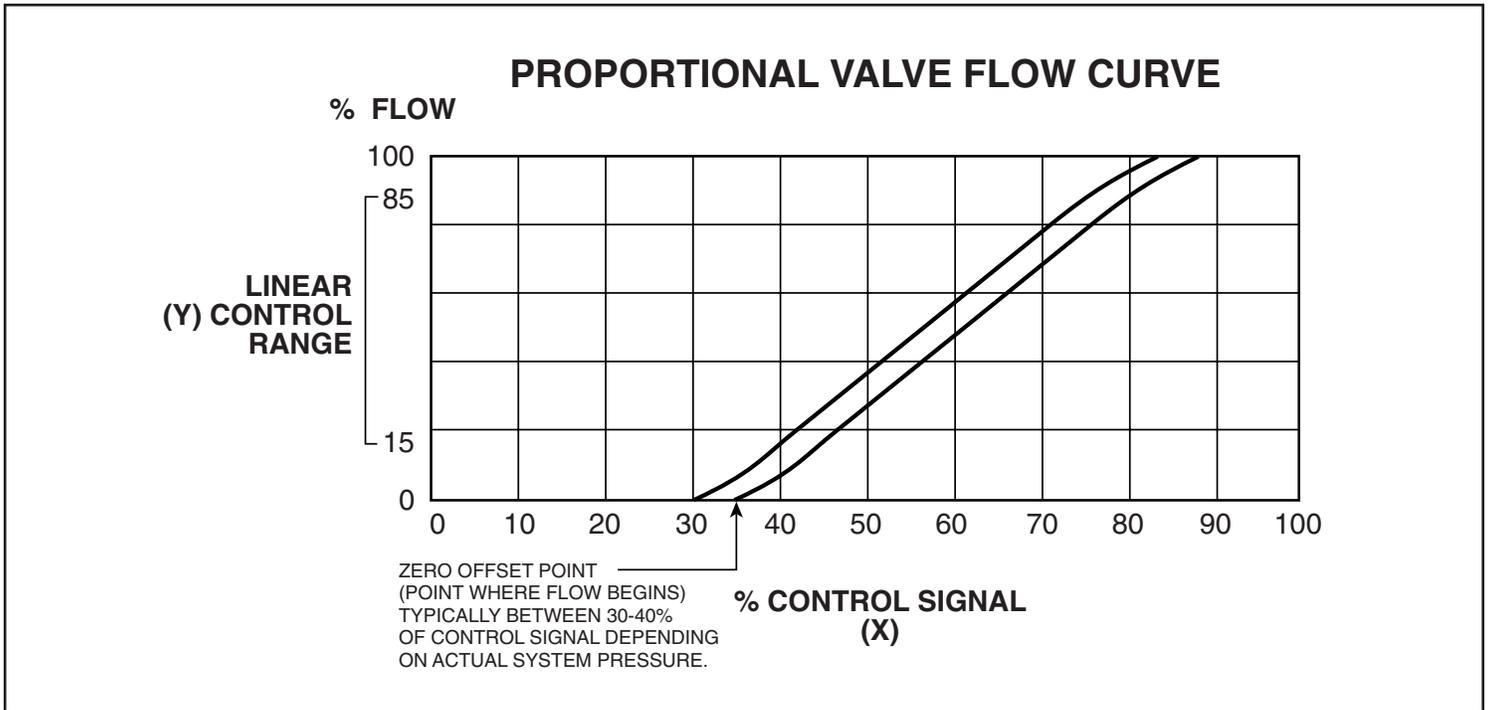
Available Models

Model Number	Orifice		Cv	Flow Ranges, SCCM		
	Millimeters	Inches		Maximum Pressure	At Maximum Pressure	At 10 PSI
PV101-(*)	.80	1/32	0.02	200 PSI	0-50,000	0-8,000
PV102-(*)	1.19	3/64	0.045	100 PSI	0-65,000	0-17,000
PV103-(*)	1.59	1/16	0.08	60 PSI	0-75,000	0-30,000
PV104-(*)	1.98	5/64	0.12	40 PSI	0-80,000	0-45,000

*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



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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 evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by the company will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive, and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

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.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

- 1. Purchase Order number to cover the COST of the repair,
- 2. Model and serial number of the product, 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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