

# ***Electronic Regulator & Proportional Valve***

*Catalog 9CW-UM-212 (Rev. 2)*



**WILKERSON®**

# Table of Contents

Features .....	1
Typical Installations .....	2
Ordering Information .....	3
ER1 & ER2 .....	4-5
EPV .....	6-7
Offer of Sale .....	9

 **WARNING**

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This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

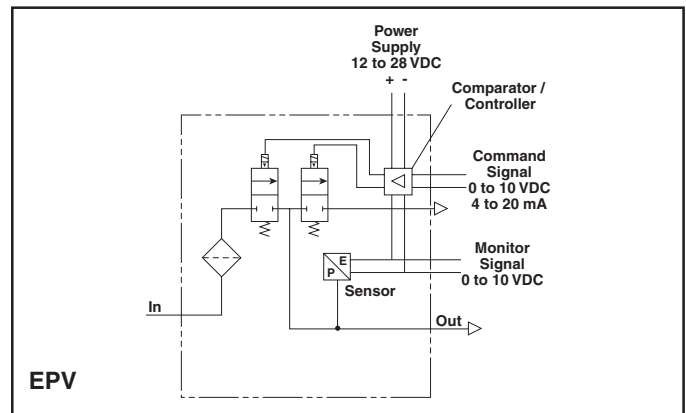
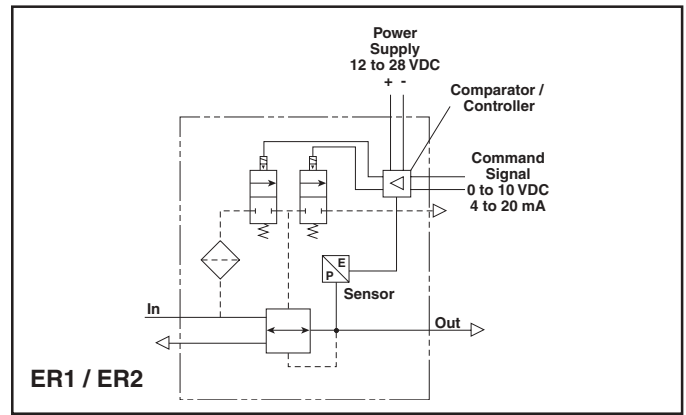
The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

## Offer of Sale

The items described in this document are hereby offered for sale by The Company, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated on the separate page of this document entitled "Offer of Sale".

# Electronic Regulator & Proportional Valve

- Wilkerson electronic regulators provide internal 5-micron filtration to the controller and flows in excess of 200 SCFM without requiring external volume booster options.
- The ER1 and ER2 are available in a variety of sizes, from 1/4" to 3/4" ports, in both NPT and BSPP threads.
- The ER1 and ER2 utilize the same convenient modular connection method as Wilkerson's innovative 18 / 28 FRL system.
- The EPV provides highly accurate pressure for static and low flow applications.
- The EPV's are available in both 1/8" NPT or BSPP outlet ports on three sides and have a unique compact design for easy installation.



Wilkerson's electro-pneumatic series products consist of the ER1, the ER2, and the EPV. The ER1 / ER2 are an integrated pressure controller / mainline regulator capable of delivering accurate pneumatic pressures over a wide range of flow conditions. The EPV is a stand-alone highly accurate pressure controller. This integral system of two control valves and a feedback transducer, provides highly accurate and repeatable closed-loop control through instantaneous pressure adjustment.

The ER1 / ER2 and EPV are powered by 12-28 VDC, supplied by either a programmable logic controller (PLC) or an industrial regulator power supply. The units accept a variety of control inputs that include 0-10 VDC, 4-20 mA, or input from the internal integrated variable resistor.

An optional on-board LCD panel that reads true P2 pressure in either PSI or bar is available. This display is conveniently located in the top cap which can be removed for panel mounting or rotated 180° to suit specific requirements. The LCD panel is particularly useful for monitoring programmed pressures or for setting pressures in manual applications. An output signal of 0-10 VDC for feedback or SPC data monitoring is standard on all units.



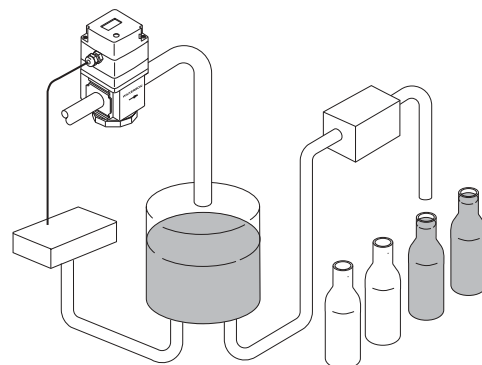
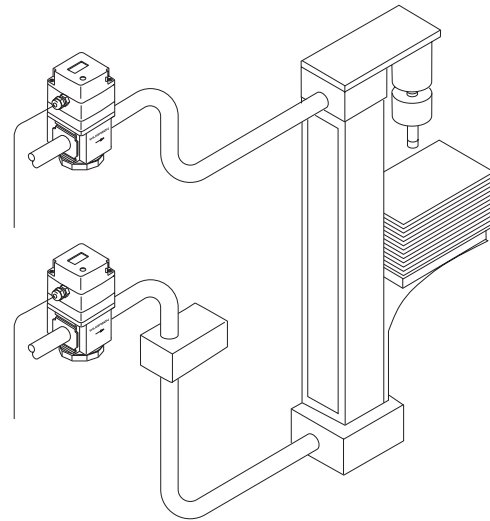
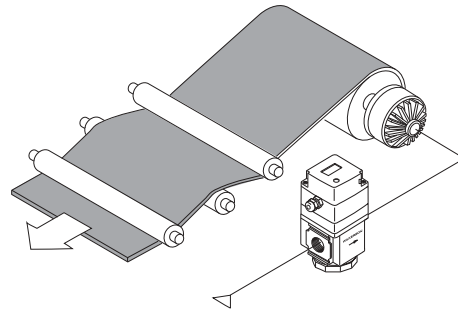
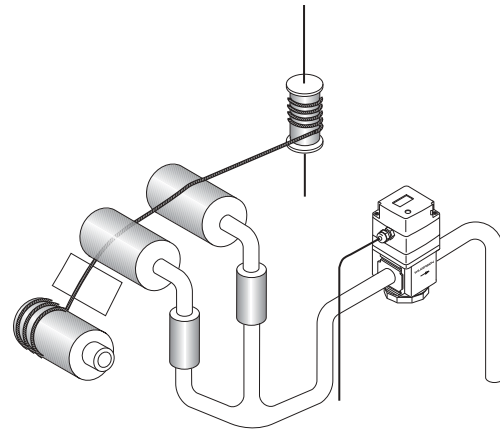
**ER1 / ER2**



**EPV**

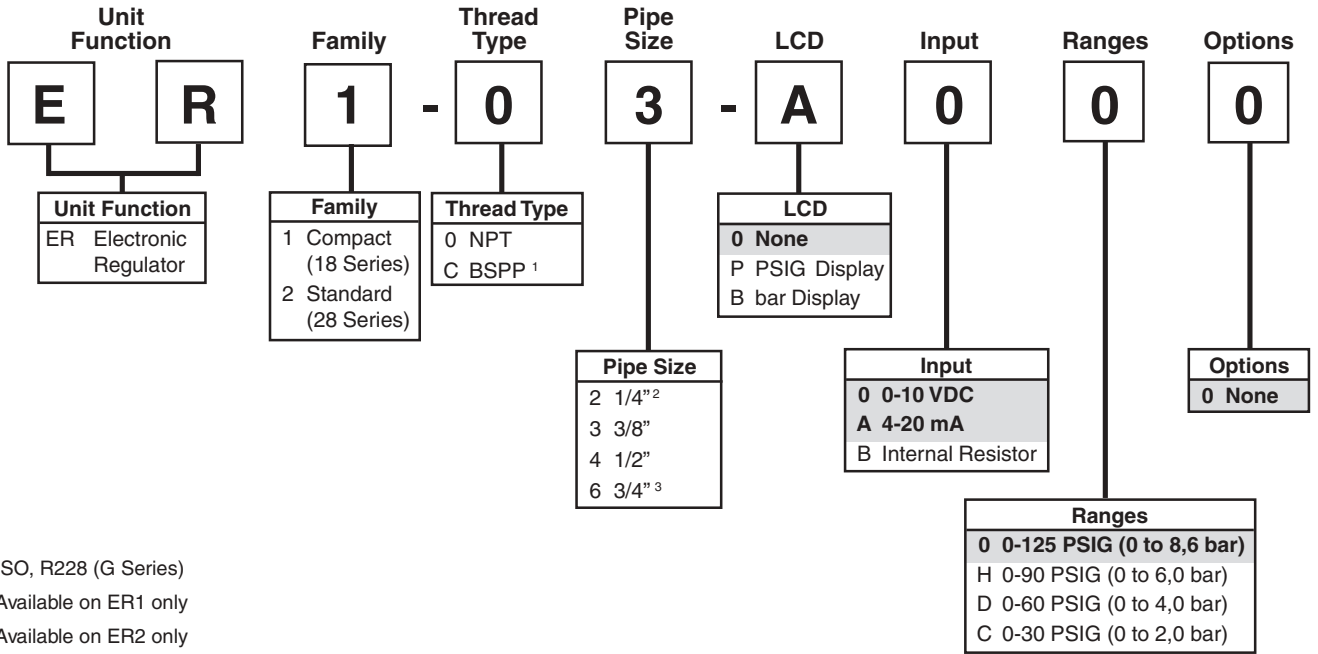
# Typical Installations

- Tip Pressure Control for Resistance Welding
- Cylinder Force Control
- Force Control for Electronic Component Assembly Operations
- Force Control for Grinding Applications
- Control of Feed Rollers on Sheet Feed Devices
- Flow Control for Diaphragm Pumps
- Liquid Flow Control for Pharmaceutical or Food Product Dispensing
- Air Pressure Control for Glue Flow in Lamination Processes
- Flow Control for Mixing Precise Product Formulations
- Control of Air and Fluid in Spray Painting Processes
- Control of System Pressures for Conveying Dry Materials
- Regulation of Thickness in Plastic Film Manufacturing
- Control of Various Processes in the Production of Rubber and Rubber Tires
- Control of Ride Level in Semi-truck Trailers
- Control of Bottled Gas Flow through a Fixed Orifice
- Control of Pressure Required for Leak Testing Containers
- Accurate Edge Guiding in Web Systems
- Web Tension Control Systems
- Tension Control for Thread Settings in Textile Manufacturing
- Control of Air Pressure to Simulate Altitude and Water Depth for Testing Applications
- Control of Rodless Cylinders to Operate Robotic Arms in Case Loading Operations
- Pressure Control for Plastic Blow-molding Operations



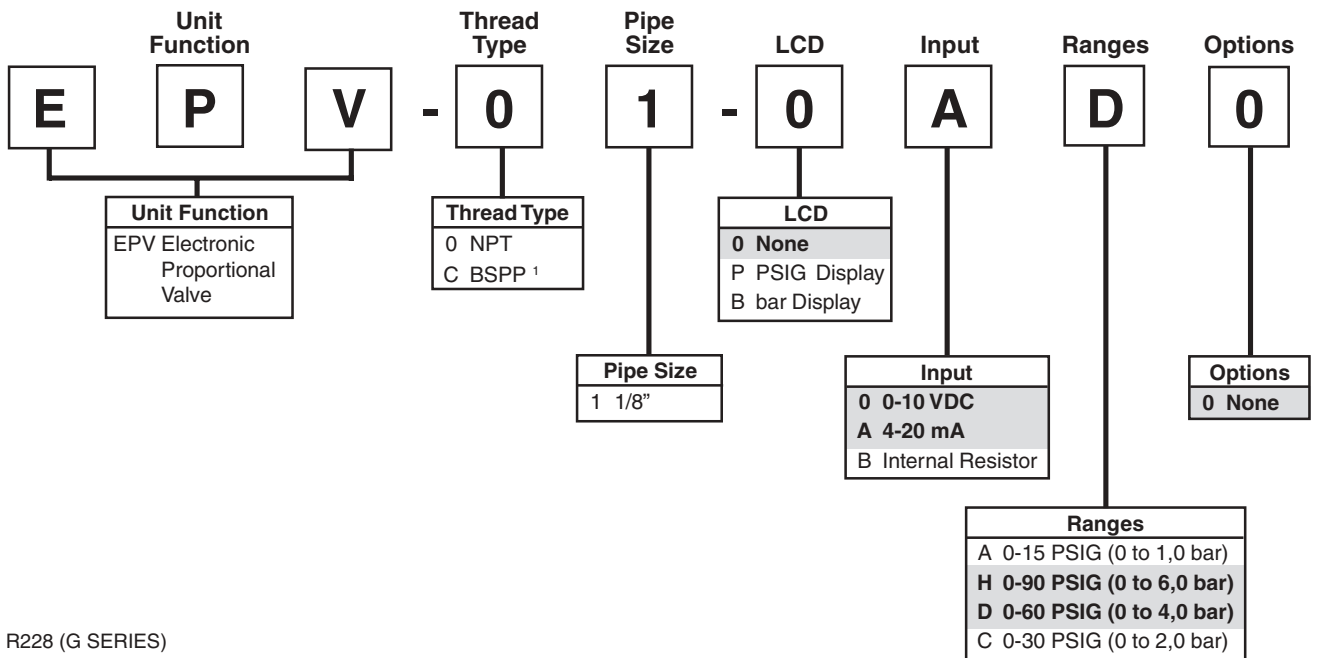
# Electronic Regulator Numbering System

  = "Most Popular"

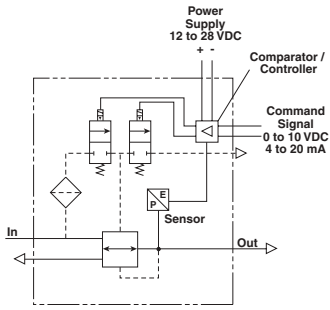


# Electronic Proportional Valve Numbering System

  = "Most Popular"



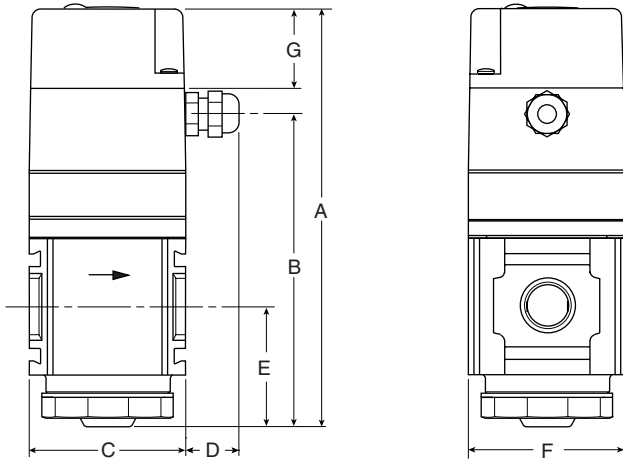
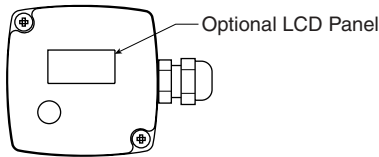
# Electronic Regulator ER1 / ER2



**ER1-02-0000**

## Features

- Optional LCD Panel Displays P2 Pressure in PSIG or bar
- Modern Design and Appearance
- Light Weight
- High Flow Capacity
- 5 Micron Filtration to Controller is Built-in



## Dimensions

Models	Inches (mm)	A	B	C	D	E	F	G
Standard Unit ER1-XX-0000		6.31 (160)	4.71 (120)	2.35 (60)	0.79 (20)	1.79 (45)	2.35 (60)	1.20 (30)
Standard Unit ER2-XX-0000		6.31 (160)	4.71 (120)	2.88 (73)	0.79 (20)	1.79 (45)	2.88 (73)	1.20 (30)

## Specifications

= "Most Popular"

Flow Capacity*	ER1 1/4	165 SCFM (77,9 dm <sup>3</sup> /s)
	3/8	200 SCFM (94,4 dm <sup>3</sup> /s)
	1/2	200 SCFM (94,4 dm <sup>3</sup> /s)
ER2	3/8	200 SCFM (94,4 dm <sup>3</sup> /s)
	1/2	200 SCFM (94,4 dm <sup>3</sup> /s)
	3/4	200 SCFM (94,4 dm <sup>3</sup> /s)
Operating Temperature	32° to 125°F (0° to 52°C)	
Maximum Supply Pressure	150 PSIG (10,3 bar)	
Adjusting Range	0-125 PSIG (0-8,6 bar)	
Sensitivity	± .8% of Full Scale	
Hysteresis / Repeatability	± .8% of Full Scale	
Linearity	< 1.0 PSIG (0,6 bar)	
Response	with Step Input 600 ms	
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2, 3/4
Weight	lb. (kg)	ER1 1.76 (0,8)
		ER2 2.43 (1,1)

\* Inlet pressure 150 PSIG (10,3 bar). Secondary pressure 90 PSIG (6,2 bar).

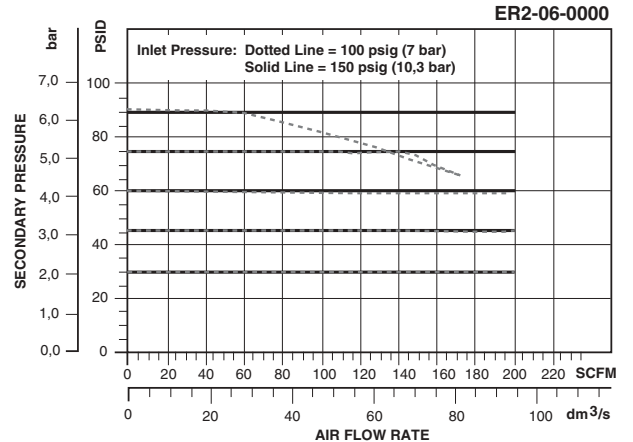
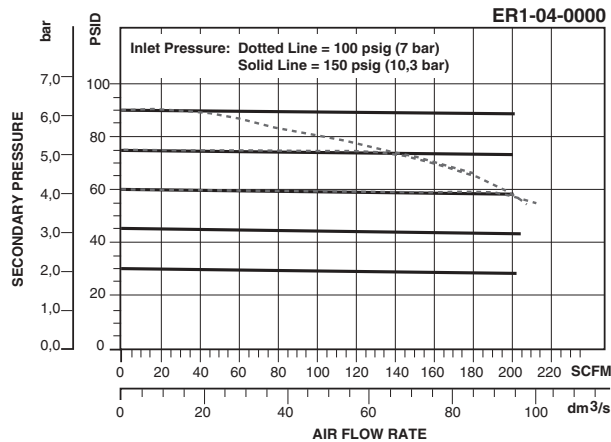
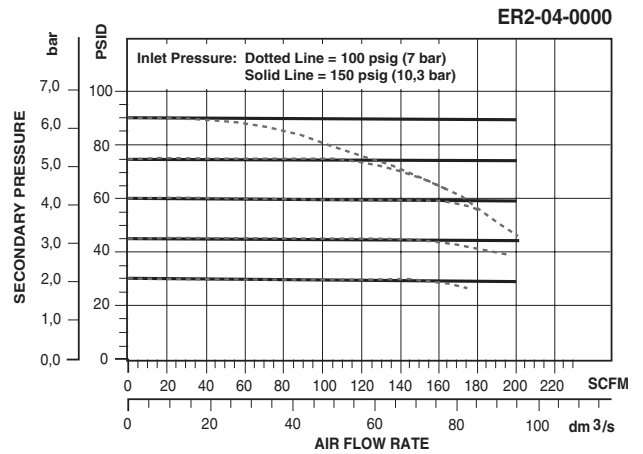
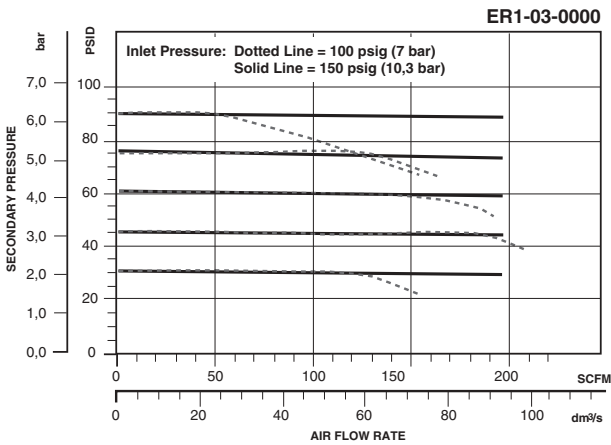
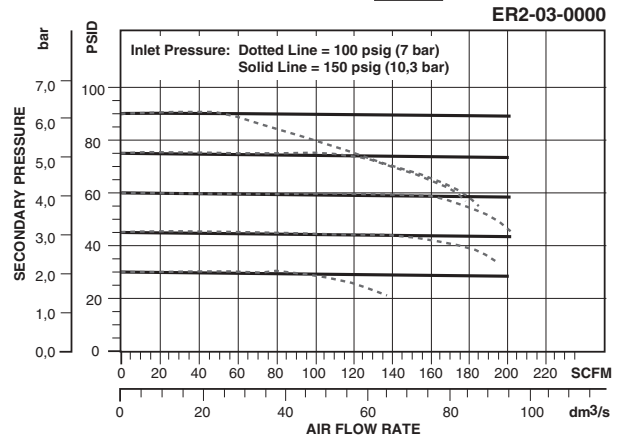
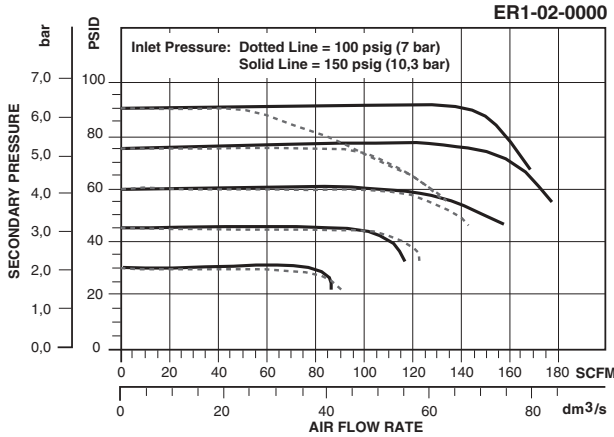
## Materials of Construction

Body	Aluminum
Diaphragm Plate	Acetal
Body Cover	ABS
Diaphragms	Nitrile / Zinc / Brass
Valve Assembly	Brass / Nitrile
Springs	Music Wire / Stainless Steel
Seals	Nitrile
Panel Nut	Acetal
Bottom Plug	33% Glass-Filled – Nylon 6-12

## Accessories

C-Bracket ..... GPA-97-086

= "Most Popular"



### Ordering Information

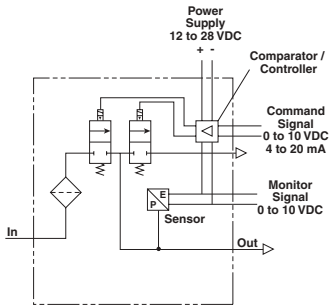
Model	Port	0-10 VDC	0-10 VDC	4-20 mA	4-20 mA	0-10 VDC	4-20mA	Internal	Internal
Type	Size	With LCD(PSI)	With LCD(bar)	With LCD(PSI)	With LCD(bar)	Without LCD	Without LCD	With LCD (PSI)	With LCD (bar)
<b>ER1</b>	1/4	ER1-02-P000	ER1-C2-B000	ER1-02-PA00	ER1-C2-BA00	ER1-02-0000	ER1-02-0A00	ER1-02-PB00	ER1-C2-BB00
	3/8	ER1-03-P000	ER1-C3-B000	ER1-03-PA00	ER1-C3-BA00	ER1-03-0000	ER1-03-0A00	ER1-03-PB00	ER1-C3-BB00
	1/2	ER1-04-P000	ER1-C4-B000	ER1-04-PA00	ER1-C4-BA00	ER1-04-0000	ER1-04-0A00	ER1-04-PB00	ER1-C4-BB00
<b>ER2</b>	3/8	ER2-03-P000	ER2-C3-B000	ER2-03-PA00	ER2-C3-BA00	ER2-03-0000	ER2-03-0A00	ER2-03-PB00	ER2-C3-BB00
	1/2	ER2-04-P000	ER2-C4-B000	ER2-04-PA00	ER2-C4-BA00	ER2-04-0000	ER2-04-0A00	ER2-04-PB00	ER2-C4-BB00
	3/4	ER2-06-P000	ER2-C6-B000	ER2-06-PA00	ER2-C6-BA00	ER2-06-0000	ER2-06-0A00	ER2-06-PB00	ER2-C6-BB00

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.



# Electronic Proportional Valve EPV

= "Most Popular"



**EPV-01-00H0**

## Features

- Optional LCD Panel Displays P2 Pressure in PSIG or bar
- Modern Design and Appearance
- Light Weight
- 0-10 VDC, 4-20mA, or Internal Control Signal Options Available

## Specifications

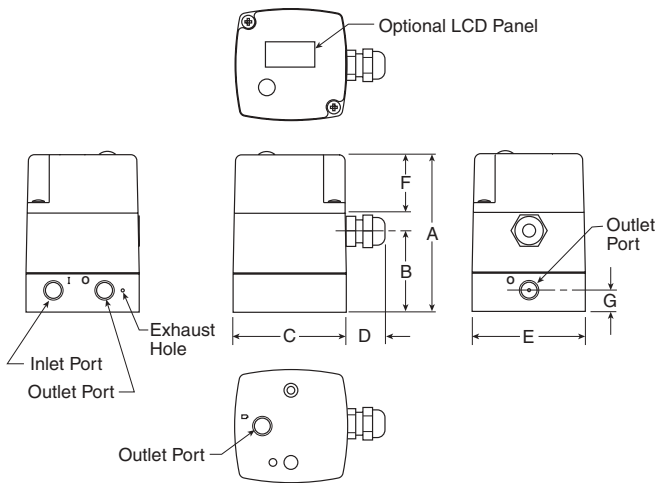
Flow Rate	C <sub>v</sub> = .02	
Operating Temperature	32° to 125°F (0° to 52°C)	
Maximum Supply Pressure	150 PSIG (10,3 bar)	
Output Pressure Ranges	15/30/60/90 PSIG 1/2, 1/4, 1/6, 2 bar	
Overall Accuracy	0.8% Scale	
Linearity	< 1.0 PSIG (.06 bar)	
Response*	50 mSEC	
Step Response**	with Step Input 600 mSEC	
Port Size	NPT / BSPP-G	1/8
Weight	lb. (kg)	.92 (.42)

\* Response time for the unit to recognize and correct for a change in set value or conditions.

\*\* Step response is the time to go from 10-90% of set value with a 60 PSIG (4,0 bar) step input.

## Materials of Construction

Body / Cap	Aluminum
Body Cover	ABS
Valve Assembly	Brass / Nitrile
Seals	Nitrile

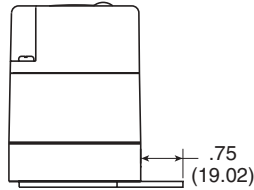
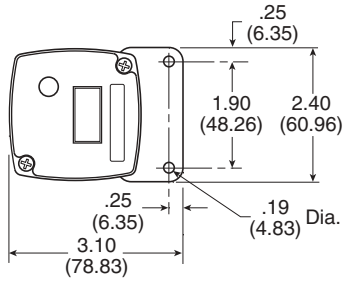


## Dimensions

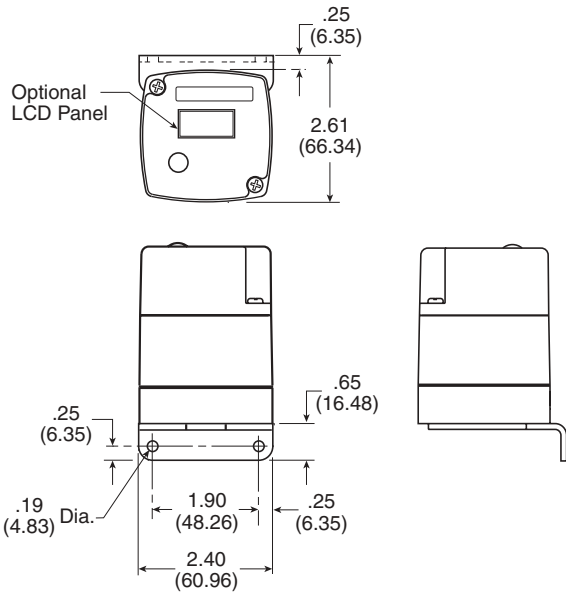
Models	Inches (mm)	A	B	C	D	E	F	G
Standard Unit EPV-XX-0000		3.28 (83)	1.69 (43)	2.35 (60)	0.79 (20)	2.35 (60)	1.20 (30)	0.45 (11)



= "Most Popular"



**Flat Bracket**



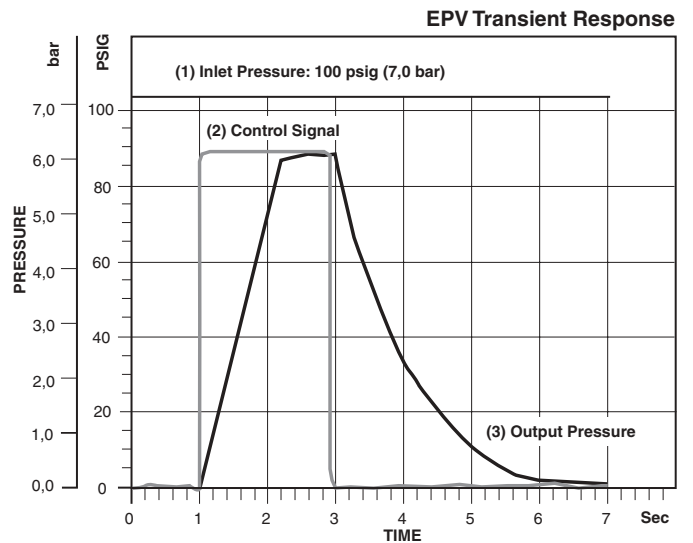
**Angled Bracket**

The EPV provides highly accurate pressure for static and low flow applications. In addition, the EPV is available in both 1/8" NPT or G-series outlet ports on three sides and has a unique compact design which allows for easy installation.

For optimum valve and system performance, we recommend a pre-filter package consisting of a 5 micron particulate filter and a .01 micron coalescing filter.

**Replacement Kits**

- Flat Bracket Kit ..... EPP-95-351
- Angled Bracket Kit ..... EPP-95-352
- Control Board, EPV 15 / 30 PSIG ..... EPP-95-782



**Ordering Information**

Model Type	Port Size	Display	0 to 10VDC w/ LCD	4 to 20 mA w/ LCD	Internal With LCD
EPV	1/8	PSI	EPV-01-P0H0	EPV-01-PAH0	EPV-01-PBH0
		bar	EPV-C1-B0H0	EPV-C1-BAH0	EPV-C1-BBH0
		None	<span style="background-color: #cccccc;">EPV-01-00H0</span>	<span style="background-color: #cccccc;">EPV-01-0AH0</span>	—

**Options** - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number. Units with "H" in model number position 9 = 0 to 90 PSIG (0 to 6,2 bar) range.

## Notes

## Offer of Sale

The items described in this document and other documents or descriptions provided by The Company, its subsidiaries and its authorized distributors, are hereby offered for sale at prices to be established by The Company, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any such item, when communicated to The Company, its subsidiaries or an authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

**1. Terms and Conditions of Sale:** All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

**2. Payment:** Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

**3. Delivery:** Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

**4. Warranty:** Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from date of shipment from The Company. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED.

NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGN OR SPECIFICATIONS.

**5. Limitation of Remedy:** SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

**6. Changes, Reschedules and Cancellations:** Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

**7. Special Tooling:** A tooling charge may be imposed for any special tooling, including without limitations, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed,

Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

**8. Buyer's Property:** Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer, or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

**9. Taxes:** Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

**10. Indemnity For Infringement of Intellectual Property Rights:** Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets (hereinafter "Intellectual Property Rights"). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

**11. Force Majeure:** Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure"). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

**12. Entire Agreement/Governing Law:** The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

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