Parker Pneumatic

Pneumatic Division
Richland, Michigan 49083

Installation & Service Instructions
CVM-102P

MPS-2 Series Sensor

ISSUED: June, 2003
Supersedes: July, 2002
Doc.# CVM-102P, ECN030385, Rev. 2

⚠ WARNING

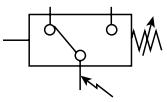
To avoid unpredictable system behavior that can cause personal injury and property damage:

- **Disconnect electrical supply (when necessary) before installation, servicing, or conversion.**
- **Disconnect air supply and depressurize all air lines connected to this product before installation, servicing, or conversion.**
- **Operate within the manufacturer's specified pressure, temperature, and other conditions listed in these instructions.**
- **Medium must be moisture-free if ambient temperature is below freezing.**
- **Service according to procedures listed in these instructions.**
- **Installation, service, and conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.**
- **After installation, servicing, or conversion, air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or the product does not operate properly, do not put into use.**
- **Warnings and specifications on the product should not be covered by paint, etc. If masking is not possible, contact your local representative for replacement labels.**

Introduction

Follow these instructions when installing, operating, or servicing the product.

ANSI



⚠ Cautions

The MPS-2 Pressure Sensor is designed to monitor pressure and is not a safety measure to prevent accidents.

The compatibility of the sensor is the responsibility of the designer of the system and specifications.

Operating Environment

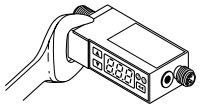
- Parker / Convum Sensors have not been investigated for explosion- proof construction in hazardous environments.
- Do not use with flammable gases, liquids, or in hazardous environments.
- Avoid installing the sensor in locations where excessive voltage surges could damage or affect the performance of the sensor.

Operations

- Dedicate a power supply of 10.8 to 30VDC to the sensor and set the ripple to Vp-p10% or less. Avoid excessive voltage. Avoid voltage surges.
- A small amount of internal voltage drop is possible. Ensure the power supply minus any internal voltage drop exceeds the operating load.
- Verify the operating media is compatible with the specified sensor. Check the chemical make-up, operating temperatures, and maximum pressure ranges of the system before installing.
- Installation of air dryer system is recommended to remove moisture.

Installation

- Never insert an object into the pressure port other than an appropriate fluid connector.
- Avoid short-circuiting the sensor. Connect the brown lead to V+ and blue lead to 0V.
- Do not connect the output lead wires (black / white) to the power supply.
- Outputs not being used should be trimmed and insulated.
- Install as shown using the metal mounting base.

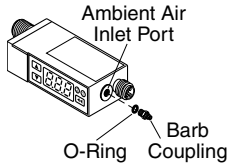


For 1/8 Inch Male Series Installation

- To achieve IP65 rating, connect the o-ring and barb to a normal environment with a 2mm I. D. tube as shown below.

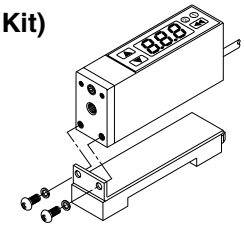
IP65 Kit (Included Parts)

1 Venting Nipple M3
1 Washer M3



DIN Rail Mounting Kit (Accessory Kit)

1 DIN Rail
2 Washer M3
2 Screws M3



⚠ WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, 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 systems 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.

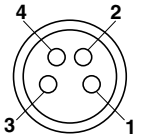
The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

EXTRA COPIES OF THESE INSTRUCTIONS ARE AVAILABLE FOR INCLUSION IN EQUIPMENT / MAINTENANCE MANUALS THAT UTILIZE THESE PRODUCTS. CONTACT YOUR LOCAL REPRESENTATIVE.

Specifications

Operating Pressure Range	(V) Vacuum (0 to -30 inHg)	(R) Compound (-14.7 to +72.5 PSI)
Units of Measure Display Resolution	bar: 0.001 kPa: 0.1 mmHg: 1 inHg: 0.1	bar: 0.01 kPa: 1 kgf/cm^2: 0.01 PSI: 0.1
Media	Air and Non-Corrosive Gases	
Pressure Port	**N**: 1/8" NPT, **R**: 1/8" BSPT, **G**: 1/8" BSPP, **M5:** M5 Female	
Proof Pressure	**V**: 72.5 PSI, **R**: 116.0 PSI	
Operating Temperature	32 to 122°F (0 to 50°C)	
Storage Temperature	14 to 140°F (-10 to 60°C)	
Humidity	35 to 85% RH	
Electrical Connection	**C**: 4-Pin, M8 Connector, **G**: 2m Grommet Open Lead	
Power Supply	10.8 to 30VDC, Ripple Vp-p 10% Max., Reverse Voltage Protection	
Display	3-Digit, 7-Segment LED	
Display Refresh	0.1 to 3.0 sec. (Factory set at 0.1)	
Output Circuit	NPN (Sinking) or PNP (Sourcing) Output, Open Collector Transistor 30VDC, 125mA	
Switch Output	2 Output Signals, NPN or PNP, Normally Open or Closed, LED Indicator	
Output Modes	Hysteresis or Window Comparator	

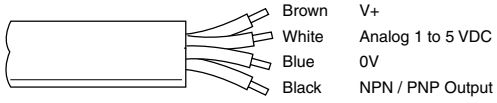
Sensor Pin Out



Pin #

1 Brown: 24VDC
2 White: NPN / PNP Open Collector Output
3 Blue: 0VDC
4 Black: NPN / PNP Open Collector Output

Lead Wiring

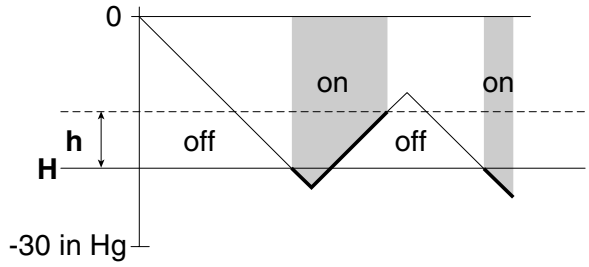


Output Modes

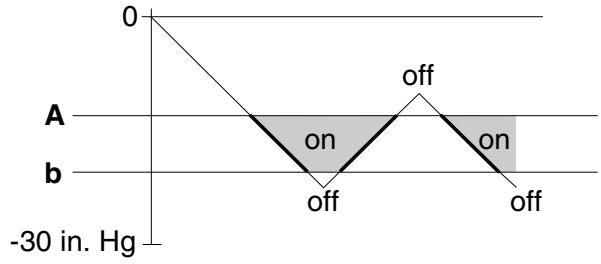
The MPS-2 Series Sensor has two independent NPN or PNP open collector output signals. The Switch Output Mode has a switch point programmed by the user at a specified pressure. The Hysteresis Range **(h)** adjustment controls the output signal 0 to 100% below the Switch Point **(H)**.

The Window Comparator Mode provides two Switchpoint Settings **(A)** and **(b)** that control the output signals (NPN / PNP) between two pressures. This is referred to as the “High / Low” setting.

Switch Output



Window Comparator Output

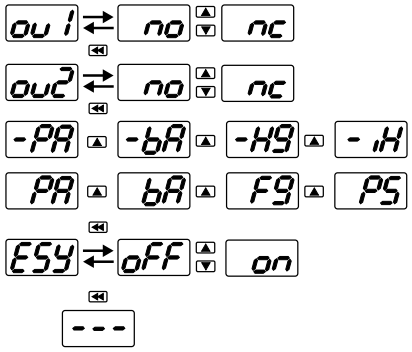


Programming

1 Hold ◄◄
Press ▲ 1x

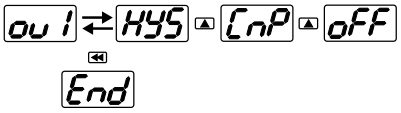
Output Set Open or Closed Selecting Units of Measure

Easy Mode Activation

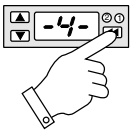


2 Press ◄◄ 2x

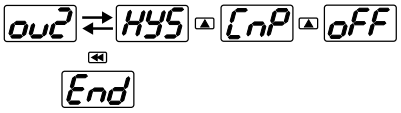
Output Mode 1 Hysteresis or Window Comparator



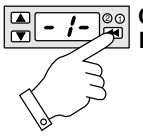
3 Press ◄◄ 4x



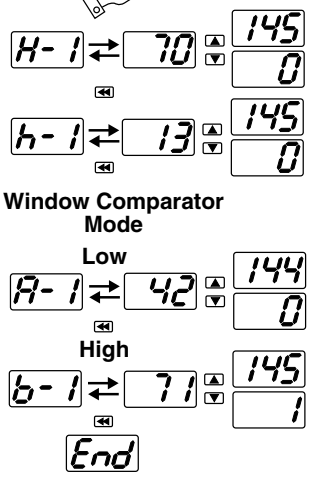
Output Mode 2 Hysteresis or Window Comparator



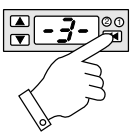
4 Press ◄◄ 1x



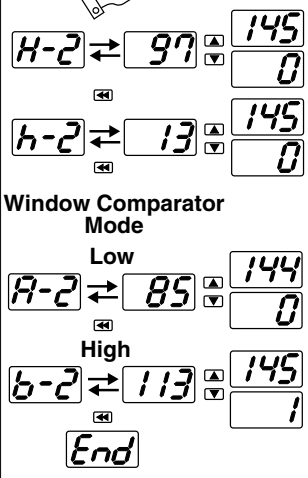
Output 1 Setting Hysteresis Mode



5 Press ◄◄ 3x

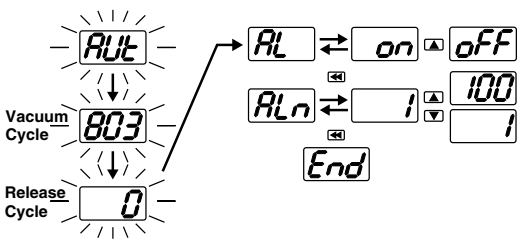


Output 2 Setting Hysteresis Mode

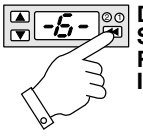


6 Press ◄◄ 5x

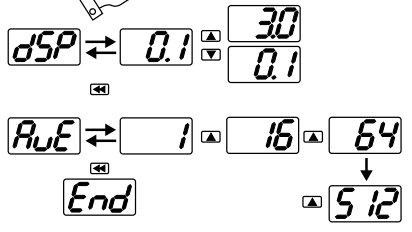
Automatic Teach Mode & Auto Surveillance



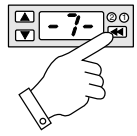
7 Press ◄◄ 6x



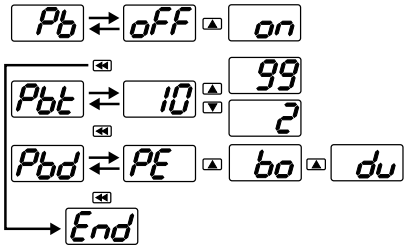
Display Refresh Settings / Output Response Time Interval



8 Press ◄◄ 7x

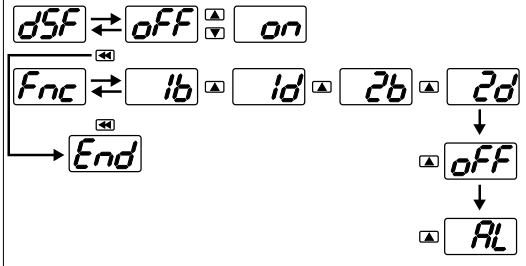


Display Peak Value Bottom Value or Their Difference



9 Press ◄◄ 8x

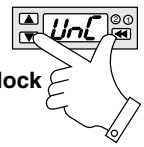
Special Display Features



10 Hold ◄◄
Press ▼

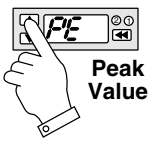
Lock

Hold ◄◄
Press ▼



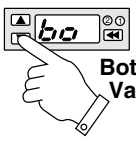
Unlock

11 Press ▲ 1x



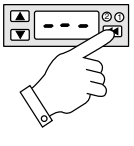
Peak Value

Press ▼ 1x

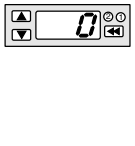


Bottom Value

12 Press ◄◄ for 3 Seconds



Zero Reset

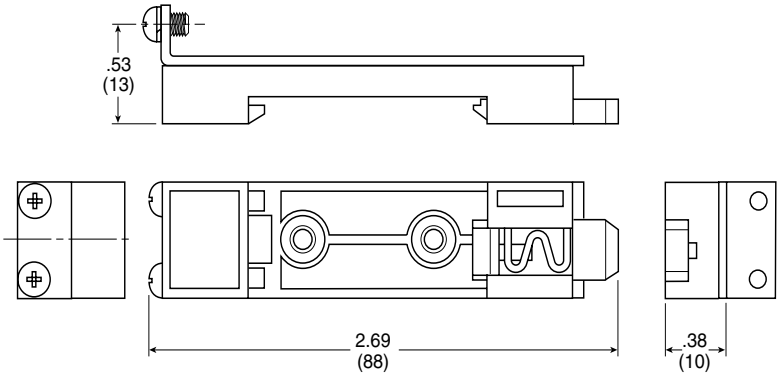


Error Messages

Display	Description	Solutions
Err	Zero Reset Error	Reset Zero Below 3% of F.S.
Er1	System Error (Internal)	Contact Factory
Er2	Auto Teach Mode Error	Restart Function
CE1	Over current of Output 1	Load current exceeds
CE2	Over current of Output 2	maximum 125mA.
FFF –FF	Applied pressure exceeds pressure range	Apply pressures with the rating of the sensor

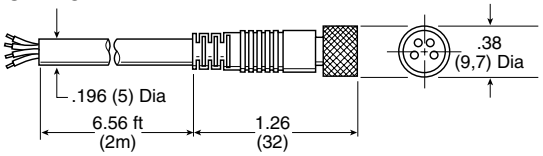
Accessories

MPS-ACCK4
Din Rail

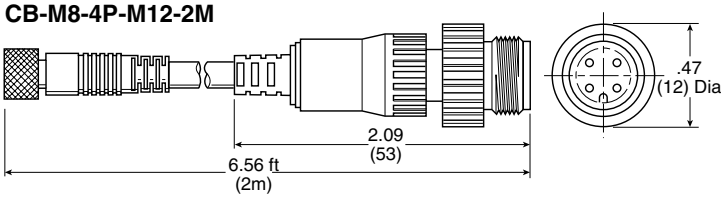


Cables

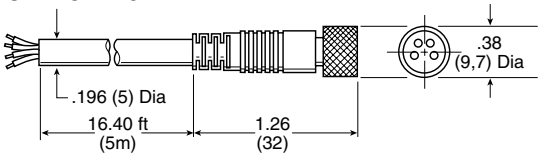
CB-M8-4P-2M



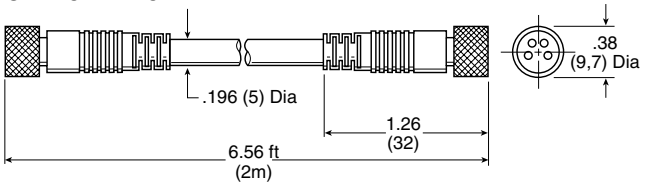
CB-M8-4P-M12-2M



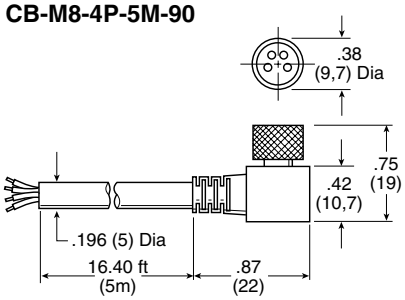
CB-M8-4P-5M



CB-M8-4P-M8-2M



CB-M8-4P-5M-90



Replacement Kit

MPS-2-IP65 ..... IP65 Kit