

Installation Instructions for the 24PC Series Pressure Sensors

ISSUE 1

50047629

⚠ WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

GENERAL INFORMATION

24PC Series pressure sensors are four active element piezoresistive bridges. When pressure is applied, the resistance changes and the 24PC provides an output signal proportional to the input pressure.

Gage pressure is measured with respect to ambient pressure. When applied pressure increases, the differential voltage $V_2 - V_4$ increases. As pressure decreases, differential voltage $V_2 - V_4$ decreases.

Differential sensors provide a differential voltage proportional to the pressure differential between port P2 and P1. As $DP = P_2 - P_1$ increases, differential voltage $V_2 - V_4$ increases. As $DP = P_2 - P_1$ decreases, differential voltage $V_2 - V_4$ decreases.

Absolute sensors measure pressure with respect to a vacuum reference. As absolute pressure increases, the differential voltage $V_2 - V_4$ goes more negative.

SOLDERING

Limit soldering to 315 °C [600 °F] maximum, with duration of 10 seconds maximum.

CLEANING

Proper cleaning fluids should be selected, based on the type of contaminants to be removed. Honeywell recommends alcohols or fluorinated solvents. Do not immerse the sensor.

24PC SERIES PERFORMANCE CHARACTERISTICS at 10.0 ± 0.01 Vdc Excitation, 25 °C

	Min.	Typ.	Max.	Units
Excitation	—	10	12	Vdc
Response Time	—	—	1.0	ms
Input Resistance*	4.0 k	5.0 k	6.0 k	Ohm
Output Resistance*	4.0 k	5.0 k	6.0 k	Ohm
Weight		2		gram

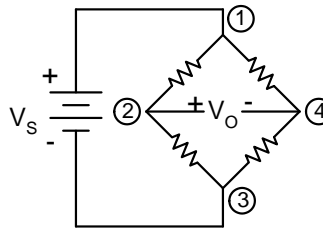
* Measured using a 1 mA current

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 °C to 85 °C [-40 °F to 185 °F]
Storage Temperature	-55 °C to 100 °C [-67 °F to 212 °F]
Shock	Qualification tested to 150 G
Vibration	Qualification tested: 0 kHz to 2 kHz, 20 G sine

Note: For media compatibility specifications, refer to catalog or web site: www.honeywell.com/sensing

24PC CIRCUIT TERMINATION



Pin 1 = V_s (+)

Pin 2 = Output + (V_2)

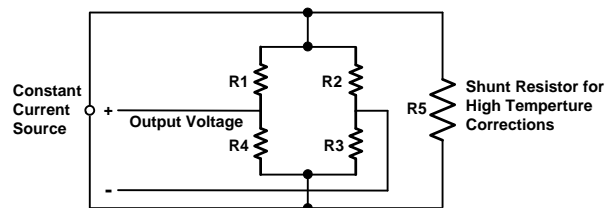
Pin 1 is notched

Pin 2 is next to Pin 1, etc.

Pin 4 = Output (-)

Pin 3 = Ground - (V_4)

CONSTANT CURRENT EXCITATION SCHEMATIC



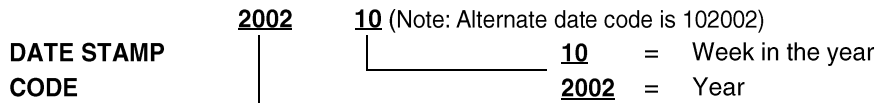
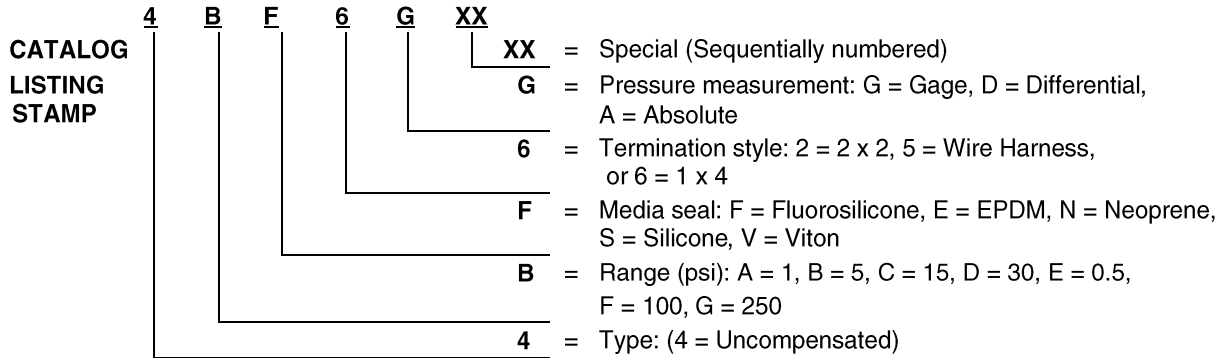
Noncompensated pressure sensors, excited by constant current instead of voltage, exhibit temperature compensation of span.

Constant current excitation has an additional benefit of temperature measurement. When driven by a constant current source, a silicon pressure sensor's terminal voltage will rise with increased temperature. The rise in voltage not only compensates for the span, but is also an indication of sensor temperature.

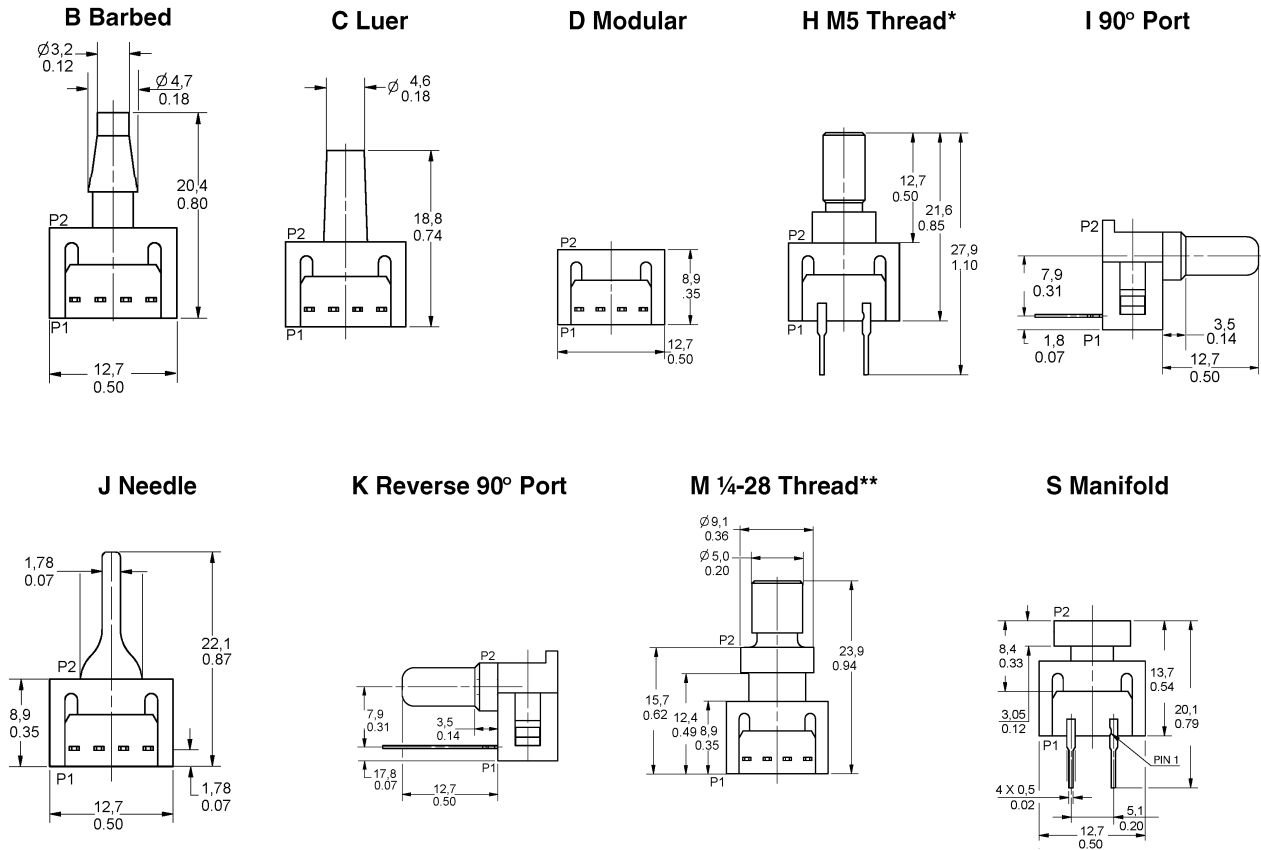
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24PCLASER BRANDING SCHEME (Note: Alternate form is entire catalog listing)



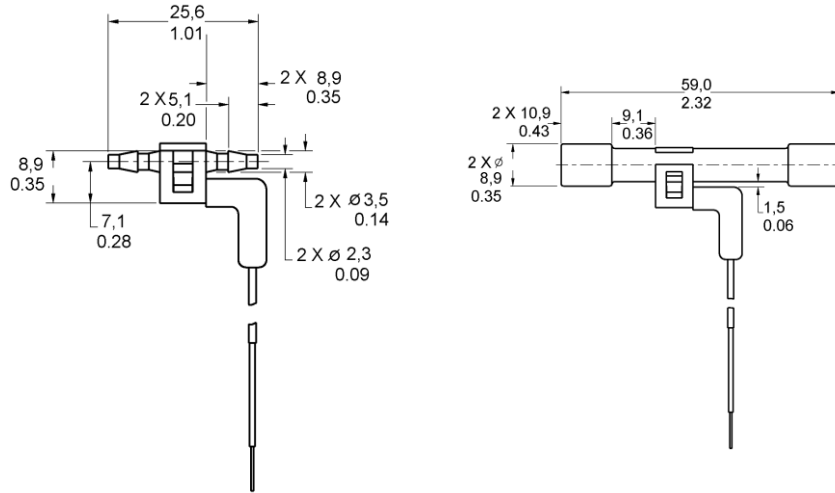
ADDITIONAL PORT VARIATIONS (dimensions for reference only) mm/in



* Recommended torque for sealing is 4 in-lb. Do not exceed 6 in-lb of torque. Use size 007 O-Ring. O-Ring counterbore dimensions are $0.04 \pm .005$ in D x $0.300 \pm .003$ in Dia.

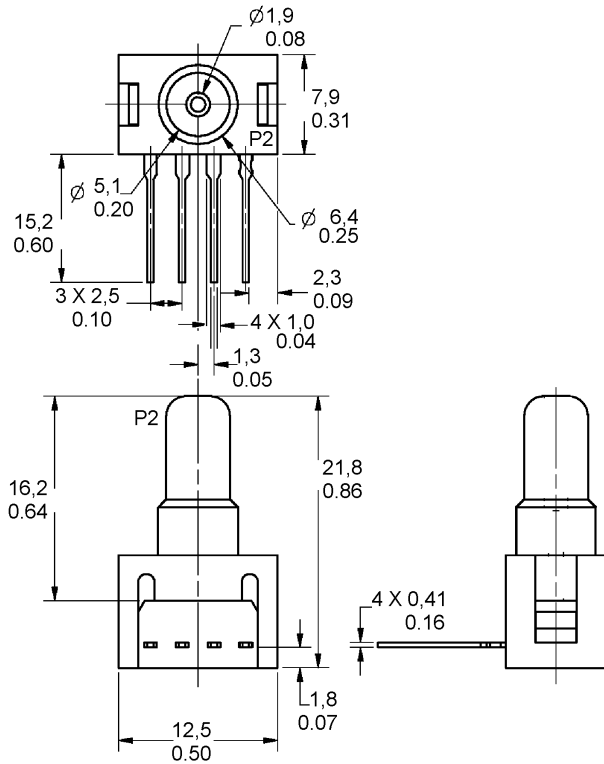
** Recommended torque for sealing is 8 in-lb. Do not exceed 12 in-lb. Use size 009 O-Ring. O-Ring Counterbore dimensions are $.040 \pm .002$ in D x $0.360 \pm .003$ in Dia.

ADDITIONAL PORT VARIATIONS (dimensions for reference only) mm/in
G SMALL FLOW THROUGH **U LARGE FLOW THROUGH**

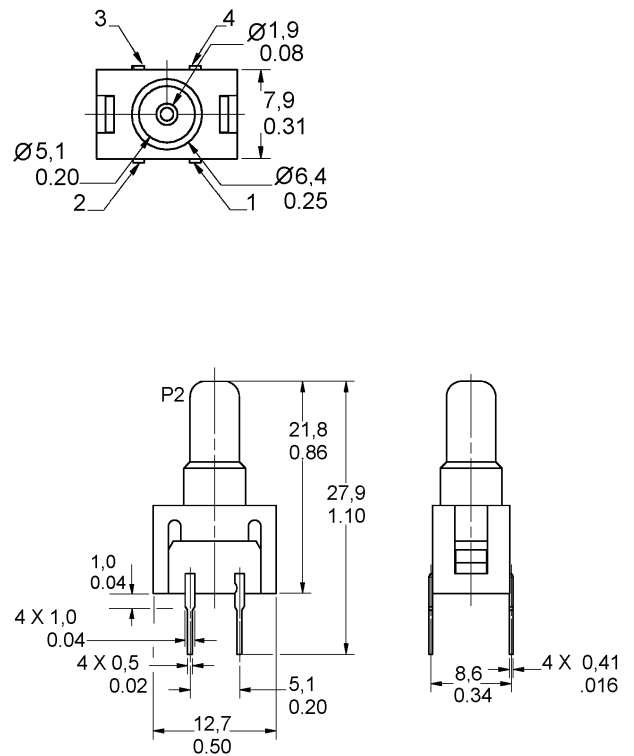


MOUNTING DIMENSIONS (dimensions for reference only) mm/in
GAGE SENSORS

1 x 4 Termination (Style 6) Port Style A, Straight
 Pin 1 is notched, Pin 2 is next to Pin 1, etc.



2 x 2 Termination (Style 2) Port Style A, Straight
 Pin 1 is notched, Pin 1 is shown at lower right corner.
 Pins 2, 3, 4 are clockwise.



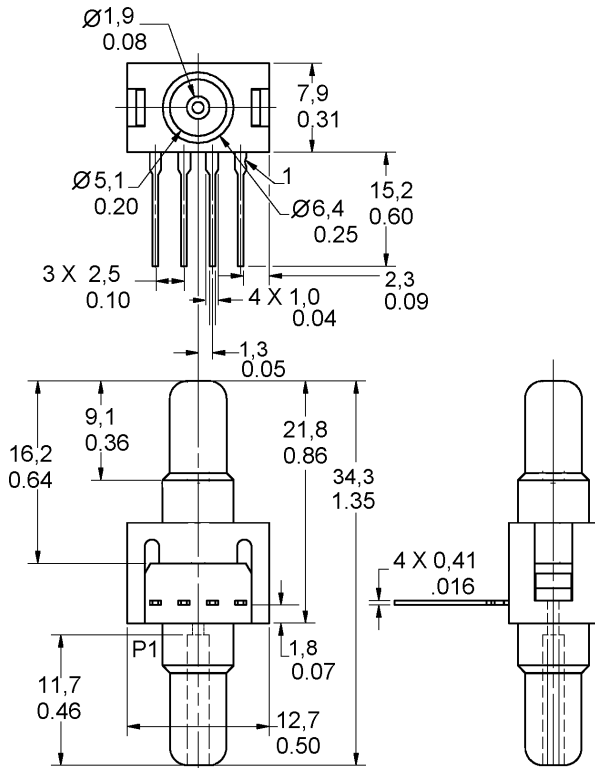
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MOUNTING DIMENSIONS (dimensions for reference only) mm/in

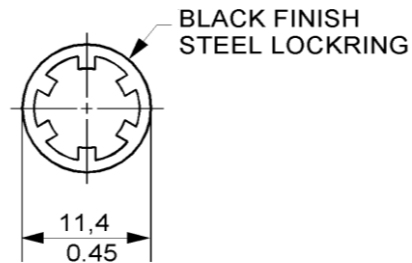
DIFFERENTIAL SENSOR 1 X 4 Termination (Style 6)

Port Style A, Straight (Only)



ACCESSORY

PC-10182 — Steel Lockring



WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. The foregoing is Buyer's sole remedy and is **in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For application assistance, current specifications, or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

1-800-537-6945 USA
1-800-737-3360 Canada
1-815-235-6847 International

FAX

1-815-235-6545 USA

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