# P528
# Refrigeration Ceramic Pressure Sensor

## Typical Applications

- High and Low Side Pressure Measurements in Refrigeration Systems
- Product Refrigeration
- Refrigerant Recovery
- Transport Refrigeration
- Environmental Test Equipment

## Standard Full Scale Pressure Ranges

0-100 through 0-1,000 PSI
0-6 through 0-70 Bar
Absolute and Sealed Gage

## Features

- UL Certified Component
- Small Size (3/4" Hex)
- External Hex for Easy Installation
- SAE female Pressure Connection with Built-in Schrader Deflator
- Linear Amplified Output
- Temperature Compensated
- Superior Long-Term Stability
- Low Power Consumption
- Minimum Life Expectancy: 10 Million Cycles
- Outstanding Shock & Vibration Performance
- 36Vdc Over Voltage and Reverse Polarity Protection

## Description

The P528 incorporates Kavlico's 4th generation ceramic capacitive sense element with the latest state-of-the-art ASIC. Available with a brass or stainless steel housing, the P528 has been specifically designed for high volume OEM refrigeration applications. It can endure the high vibration, broad temperature ranges and humidity conditions found in refrigeration systems while withstanding high over-pressures and pressure pulsations without damage or degradation.

The P528 package has a built-in Metri-Pack 150, electrical connector and supports male and female pressure connections. The P528 is offered with seal materials that are suitable for many of the latest refrigerants such as R134a, R22, R123, R12, R410A, including many of the proprietary blends, and associated lubricants.

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## Technical Specifications

Note: Performance Specifications with 5 Vdc ± 0.002 Vdc supply at 25°C

| | |
|---|---|
| Pressure Ranges: | See "How to Order" |
| Proof Pressure: | 3x F.S. Pressure (up to 200 PSI [14 Bar])<br>2x F.S. Pressure (above 200 PSI [14 Bar]) |
| Burst Pressure: | 1,500 PSI [100 Bar] (up to 350 PSI [24 Bar])<br>2,500 PSI [170 Bar] (above 350 PSI [24 Bar]) |
| Supply Voltage: | 5.00 ± 0.50 Vdc |
| Supply Current: | < 5mA |
| Nominal Output Voltage: | 0.5 to 4.5 Vdc |
| Linearity Error: | < ±0.5% of Full Span |
| Total Error Band[1]: | ±1.5% of Span (0° ≤ T ≤ 85°C)<br>±2.0% of Span (T < 0° , T > 85°C) |
| Accuracy[2]: | < 0.5% of Span |
| Output Impedance: | < 100 Ω |
| Over Voltage Protection: | 36 Vdc |
| Reverse Polarity Protection: | -36 Vdc |
| Operating Temperature: | -40°C to +125°C (Seal Material Dependent) |
| Storage Temperature: | -40°C to +125°C (Seal Material Dependent) |
| Service Life: | 10 Million Full Pressure Cycles (Minimum) |
| Vibration: | 10 g's Peak-to-Peak Sine (10 to 2,000 Hz) |
| Mechanical Shock: | 75 g's ½ Sine Wave |
| Ingress Protection: | IP67 |
| Stability: | ±0.5% of Full Span over 1-Year |
| Response Time: | < 2ms to 63% of Final Output Voltage<br>with step change in Input Pressure |
| Housing Material: | Brass (P ≤ 350 PSI [24 Bar])<br>Stainless Steel (P > 350 PSI [24 Bar]) |
| Weight: | < 50 grams |
| Electrical Termination: | Packard Electric Metri-Pack 150 Series[3] |
| Pressure Connection: | See "How to Order" |
| Output Load: | > 10 kΩ |

*1) Accuracy is the sum of linearity, repeatability and hysteresis errors at 25°C*
*2) Total Error Band includes all sources of error, including effects of Offset, Span, Temperature and Accuracy*
*3) Electrical termination (black) for pressure ranges ≤ 350 PSI [24 Bar], (white) for pressure ranges > 350 PSI [24 Bar]*

## How to Order

Use this diagram, working top to bottom and left to right to construct your model number. An example is shown below. Custom OEM options are also available.

**P528 Refrigeration Ceramic Pressure Sensor**

**Pressure Ranges**

| | | | |
|---|---|---|---|
| 100 | 0 – 100 PSI | 6B | 0 – 6 Bar |
| 150 | 0 – 150 PSI | 10B | 0 – 10 Bar |
| 300 | 0 – 300 PSI | 16B | 0 – 16 Bar |
| 400 | 0 – 400 PSI | 25B | 0 – 25 Bar |
| 500 | 0 – 500 PSI | 40B | 0 – 40 Bar |
| 600 | 0 – 600 PSI | 50B | 0 – 50 Bar |
| 750 | 0 – 750 PSI | 70B | 0 – 70 Bar |
| 1000 | 0 – 1000 PSI | XXB | 0 – XX Bar (Large Volume Only) |
| XXX | 0 – XXX PSI (Large Volume Only) | | |

**Reference**

| | |
|---|---|
| A | Absolute |
| S | Sealed Gage (Referenced to 14.7 PSIA) |

**Seal Material**

| | |
|---|---|
| C | Neoprene (-40° to 120°C) |
| F | Ethylene Propylene (-40° to +120°C) |
| H | HNBR (-25° to +125°C) |

**Pressure Connection**

| | |
|---|---|
| 1 | 1/4 - 18 NPT (External Threads) |
| 2 | 1/4 SAE Female Flare w/ Schrader Deflator (7/16 - 20 UNF-2B Internal Threads) |
| 3 | 7/16 - 20 UNF-2A Per SAE J513f (External Threads) |
| 4 | 1/8 - 27 NPT (External Threads) |

**Electrical Connection**

| | |
|---|---|
| A | With Mating Connector, w/12", 18 AWG Leads |
| C | Without Mating Connector |

P528 - 500 - S - F - 1 - A

Example: P528 - 500 - S - F - 1 - A

Desctiption: P528 Pressure Sensor, 0 - 500 PSI Sealed Gage,
Ethylene Propylene Seal Material,
1/4 - 18 NPT Pressure Connection, with Mating Connector

Before installation and operation, ensure that the appropriate pressure sensor has been selected in terms of pressure range, design and specific measuring conditions.
Non-compliance can result in serious injury and/or damage to the equipment.

***Don't see what you want?***
*Call us at +1 (619) 710-2068 to customize this product to meet your application-specific needs!*

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