

Model PT255 Pressure Transmitter



Kavlico's continuous improvement in product design and manufacturing techniques have resulted in the development of the PT255 electronic pressure transmitter for gage and absolute measurements. The compact and rugged 4-20 mA dc output transmitter utilizes Kavlico's patented and field proven ceramic capacitive sensing technology.

Theory of Operation

The PT255 ceramic capacitive pressure transmitter consists of four components (See fig. 1). The diaphragm and substrate, when processed together, form the basic sensing element of a variable Capacitor proportional to applied pressure. When the diaphragm (a flat piece of ceramic machined to very tight tolerances) is exposed to a pressure media, it deflects causing a change in the substrate-diaphragm electrode spacing, changing the capacitance value which is a measure of the pressure of the media being monitored (See fig. 2).

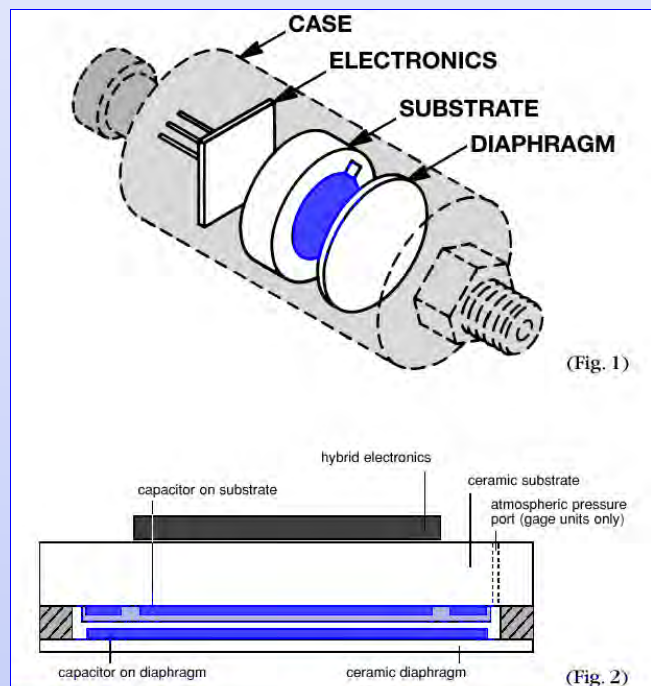
The Kavlico Advantage ... Ceramic Capacitive Pressure Measurement

Repeatability is a critical decision factor when Rating sensor performance and repeatability is what makes Kavlico's ceramic capacitive sensor technology the technology of choice. High resistance to damage from pressure shocks results in more reliable measurements compared to other traditional pressure sensing technologies. Excellent thermal characteristics, long-term operational stability, low hysteresis, resistance to corrosion and virtual elimination of aging drift are inherent characteristics of our sensor design.

Versatility In Measurement Applications

Kavlico's PT255 pressure transmitters are designed for use in a wide variety of general purpose applications.

The ceramic diaphragm sensors are especially suitable in corrosive applications where stainless steel diaphragms exhibit inadequate service life and where exotic alloys are cost prohibitive.



(Fig. 1)

(Fig. 2)

Model PT255 Pressure Transmitter

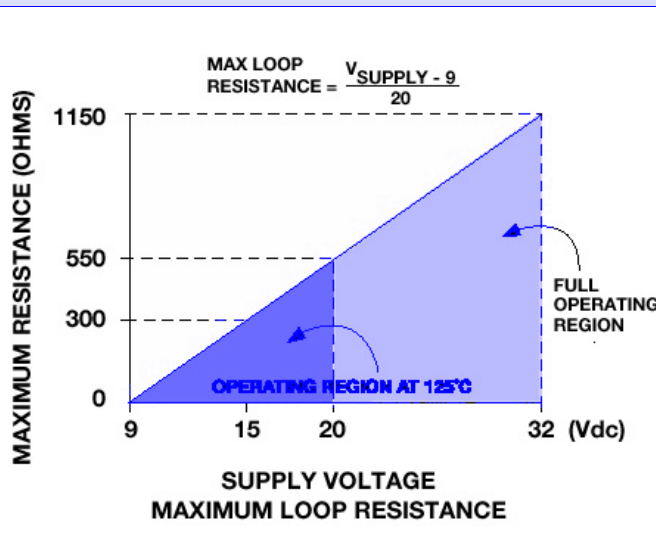
O-RING SEAL GUIDE

Type	Input Port Seal Material	Input Media Compatibility**	Operating Temperature Range (°C)
B	Buna-N (Nitrile)	Hydraulic oils, gasoline, fuels, alcohol and L.P. gases	-40 to +120
C	Neoprene	Refrigeration freon gases, carbon dioxide gases, chlorine and ammonia compounds	-34 to +120
D	Fluorocarbon *(Viton)	Acids, oils, fuels, solvents, gases, fertilizers, freons and butanes	-17 to +125
E	Fluorosilicone	Petroleum oils, fuels, lubricants and chlorinated solvents	-40 to +125
F	Ethylene-Propylene	Steam, acids, alcohols, brake fluid, polar solvents and soaps	-40 to +125

** Contact us for more detailed information on media compatibility and other seal options.

* Viton is trademark of E.I. Dupont

ELECTRICAL CHARACTERISTICS



SPECIFICATIONS

Measurement Ranges

(custom ranges available)

Pressure Ranges (psig/psia)

Pressure Ranges (psig/psia)	Overpressure	Burst Pressure
15 psi	5x	1000 psi
30 psi	5x	1000 psi
50 psi	5x	1000 psi
75 psi	5x	1000 psi
100 psi	3x	3000 psi
150 psi	3x	3000 psi
200 psi	3x	3000 psi
300 psi	3x	3000 psi
500 psi	3x	3000 psi
750 psi	1.5x	3000 psi
1000 psi	1.5x	3000 psi

Electrical Data (see graph)

Supply Voltage:	9-32 Vdc at 95°C max.
Output Signal:	4-20 mA (2-wire)
Load Resistance:	See Characteristics Chart
RFI and Reverse Polarity Protected	

Operational Data (operating at 15 Vdc supply voltage)

Environmental

Vibration:	10G's peak to peak (10 to 2000 Hz)
Operating Temperature Range:	-40°C to +125°C (Seal Material Dependent)
Non-Linearity: (BFSL)	±.4% max. of span
Hysteresis and Repeatability:	±0.15% max. of span
Temperature Error (Max.) (-15° to +100°C):	±0.05% of span per °C
(-40° to +125°C):	±0.06% of span per °C
Response Time:	<15mSec to 63% of full scale pressure with step change on input
Stability	(1 year): ±0.5% typical of span
Process Wetted Materials	
Process Connection:	316L
Sensing Element:	96% alumina ceramic sensing element plated with gold and platinum
Weight:	3.6 oz.
Span is the algebraic difference between end points (zero and full scale output).	

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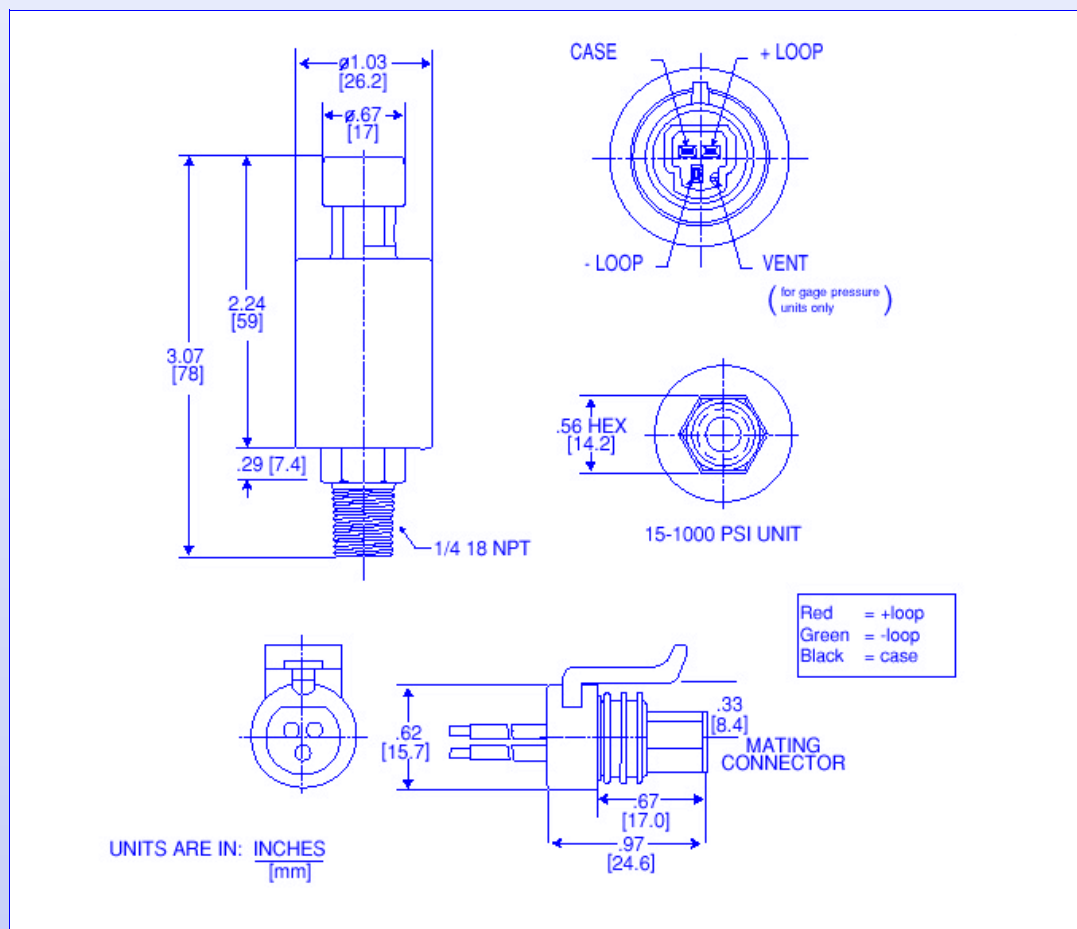
TYPICAL APPLICATIONS

- Process Control
- Pumps and Compressors
- Air Conditioning and Refrigeration
- Engine Monitoring and Test Equipment
- Engine Fuel Controls
- Transmissions
- Hydraulic and Pneumatic Controls
- Environmental Control Systems
- Level/Depth Instrumentation
- Water Management
- Agriculture Chemical Controls
- Power Generators

FEATURES

- Standard Ranges Between 0-15 psi and 0-1000 psi (Gage & Absolute)
- High Overpressure Capability
- Linearity $\pm 0.4\%$ Maximum
- Combined Repeatability and Hysteresis $\pm 0.15\%$ Max.
- 4-20 mA Output (2-wire)
- Computer Controlled Laser Trim to Insure Accuracy
- Fully Factory Calibrated and Temperature Stabilized
- Temperature Range -40°C to $+125^{\circ}\text{C}$
- Ceramic Capacitive Sensing Element
- 316L Stainless Steel Housing
- Weather Resistant Connector
- Elastomer Options for Media Compatibility

DIMENSIONAL DRAWINGS



Model PT255 Pressure Transmitter

HOW TO ORDER

A typical order number is composed of six codes, separated by two hyphens, as shown below.

MODEL	Product Name
PT255	Pressure Transmitter
CODE	Pressure Range*
15	0-15 psi
30	0-30 psi
50	0-50 psi
75	0-75 psi
100	0-100 psi
150	0-150 psi
200	0-200 psi
300	0-300 psi
500	0-500 psi
750	0-750 psi
1000	0-1000 psi
*Above are standard ranges. Contact Kavlico for custom range availability.	
CODE	Reference
A	Absolute
G	Gage
CODE	Seal Material
B	Buna-N (Nitrile)
C	Neoprene
D	Fluorocarbon (Viton)
E	Fluorosilicone
F	Ethylene-Propylene
CODE	Pressure Connection
1	1/4" NPT Male
CODE	Electrical Connector
A	Supplied with mating connector with 12 inch long 16 AWG flying leads.
C	3 pin molded connector without mating connector
PT255-15 G-B 1 A (Typical Order Number)	

**If you need any help contact one of
are technical sale people -
contact details below**

WARRANTY

Warranty: Kavlico warrants that its products will be free from defective materials and workmanship for a period of one (1) year from date of delivery to the original purchaser and that its products will conform to Kavlico's specifications or standards. Any product found to be defective will be replaced or repaired at the sole option of Kavlico.

Note: Kavlico reserves the right to change its specifications at any time without notice. Kavlico is not expert in the customer's technical field and therefore does not warrant the suitability of its product for the application selected by the customer.

Kavlico products are manufactured or covered by one or more of the following patents: 4329732, 4388668, 4398426, 4425799, 4426673, 4617607, 4680971, 4735098, 4974117, 5315877, 5329819, 5540086 with other U.S. and foreign patents pending.

OTHER KAVLICO PRESSURE MEASUREMENT INSTRUMENTS

Voltage Output Pressure Transducers

Model #	Description	Features
P155	General Purpose Pressure Transducer	316SS housing and threaded process connection. Ranges: 0-15 to 1000 psia and psig
P165	General Purpose Pressure Transducer (OEM)	Carbon steel or brass housing and threaded process connection. Ranges 0-15 to 0-1000 psia and psig
P195	General Purpose High Range Pressure Transducer	316SS housing and threaded process connection. Ranges: 0-1500 to 0-3000 psia and psig
P158	Refrigerant Pressure Transducer	Brass housing and threaded process connection. Ranges: 0-100 to 0-500 psia and psig
P350	General Purpose Pressure Transducer	Valox housing, threaded or tube process connection. Ranges: 0-5 to 0-100 psia and psig
P592, P593	Low Range Differential Pressure Transducer	Nema 1 Enclosure. Dry gas or air applications. Ranges: $\pm 0.5"$ H2O to $\pm 10"$ H2O

OEM Pressure Sensor Modules

Kavlico offers a variety of OEM pressure sensing modules to manufacturers of specialty instruments and control systems.