DMPR-RA001 Differential Pressure Transducer Catalog Page

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LIT-1900609



Description

The DMPR-RA001 Differential Pressure Transducer is an accurate and economical solution for measuring and reporting differential pressure when used in conjunction with the AD-1250 Air Measuring Station or AD-1251 Probe with Differential Pressure Transducer.

The heart of the unit is a micro-machined single-crystal silicon piezoresistive pressure sensor. The sensor receives a five-point error correction over the compensated temperature range for excellent accuracy, repeatability, and stability. The unit comes standard in an IP66-rated enclosure with short circuit resistant outputs and reverse polarity resistant inputs to perform under real-world conditions.

The unit installs quickly by connecting standard 1/8 inch Inside Diameter (I.D.) tubing to the two pressure ports. The various output ranges and pressure ranges are all field-selectable with Dual Inline Package (DIP) switches, and the auto-zeroing process is microprocessor-controlled for simplicity.

Refer to the *DMPR-RA001 Differential Pressure Transducer Product Bulletin (LIT-12011536)* for important product information.

Features

- 4.5 character Liquid Crystal Display (LCD) screen
- Field-selectable ranges
- Field-selectable outputs

Applications

Furnish and install, at locations shown on plans or as in accordance with schedules, an air measuring station pressure transducer, with integral LCD screen indicating actual differential pressure.

The transducer shall be housed in a polycarbonate enclosure that bears an IP66 rating.

The enclosure shall have a hinged cover for access to all DIP switches for field adjustment.

DIP switches allow for field selection of 0 to 5 VDC, 0 to 10 VDC or 4 to 20 mA output signal.

Additionally, DIP switch settings shall accommodate field selection of a minimum of five pressure ranges from 0–2.5 inches Water Column (W.C.).

The transducer shall have an auto-zero function that is microprocessor controlled.

The transducer assembly shall contain a micro-machined, single-crystal silicon, piezoresistive pressure sensor with strain gauges to change resistance as a function of applied pressure.

Sensor shall be paired with an application-specific integrated circuit to digitally compensate for thermal sensitivity.

Accuracy of the transducer shall be ±0.5% on the 0 to 0.1 and 0 to 0.25 inches Water Column (W.C.) pressure ranges. Accuracy of the transducer shall be ±0.25% on all other ranges (0 to 0.5 inches W.C., 0 to 1.0 inches W.C., and 0 to 2.5 inches W.C.). Stability shall be ±2% (of span selected) per year.

Repair Information

If the DMPR-RA001 Differential Pressure Transducer fails to operate within its specifications, replace

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the unit. For a replacement transducer, contact the nearest Johnson Controls® representative.

Technical Specifications

Table 1: DMPR-RA001 Differential Pressure Transducer

Specification	Description
Housing	Hinged, 4 x 5 x 2-1/2 in. IP-66 rated
Pressure Port Fittings	Barbed brass, accepts 1/8 in. or 5/32 in. I.D. tubing
Sensor	Micro-machined, single-crystal silicon, piezoresistive
LCD Screen	4.5 character, displays actual differential pressure
Field-Selectable Output Ranges	4 to 20 mA, 0 to 5 VDC, or 0 to 10 VDC
Power Requirements	7 to 45 VDC (4 to 20 mA output) 7 to 45 VDC or 7 to 32 VAC (0 to 5 VDC output) 13 to 45 VDC or 13 to 32 VAC (0 to 10 VDC output)
Power Consumption	4.9 mA maximum DC at 0 to 5 VDC or 0 to 10 VDC output 0.12 VA maximum AC at 0 to 5 VDC or 0 to 10 VDC output 20 mA maximum, DC only at 4 to 20 mA output
Field-Selectable Ranges, in. W.C.	Unidirectional: 0 to 0.1, 0 to 0.25, 0 to 0.50, 0 to 1.0, 0 to 2.5
Bi-Directional	Special order only
Accuracy	±0.5% on 0 to 0.1 and 0 to 0.25 in. W.C. range ±0.25% on all other ranges
Auto-Zero Function	Microprocessor-controlled
Temperature Limits	Storage: -40 to 203°F (-40 to 95°C) Operational: 32 to 140°F (-0 to 60°C) Compensated: 50 to 104°F (10 to 40°C)
Temperature Error	±2% of Span max (±1.0 in W.C. at 50 to 104°F)
Operating RH Range	0 to 95% RH, noncondensing
Overpressure	Proof 27.68 in W.C. (1 PSI), Burst 41.52 in W.C. (1.5 PSI)
Wiring	4 to 20 mA two wire (Current loop) or three wire (AC or DC powered, voltage out)

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information, and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Patents

Patents: https://jcipat.com

Single point of contact

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