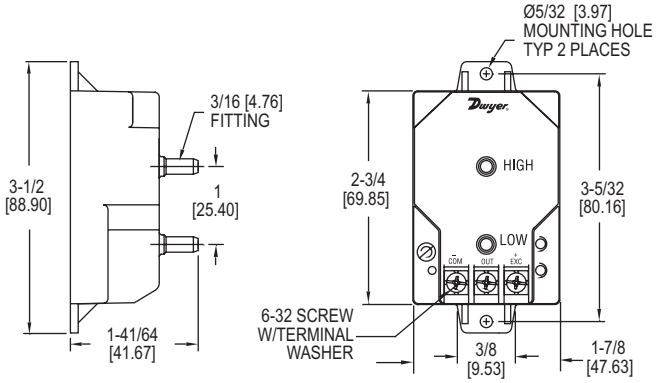
Series 668 Differential Pressure Transmitter

Specifications - Installation and Operating Instructions



Our low cost **Series 668 Differential Pressure Transmitter** is capable of measuring low pressures with a ±1% accuracy ideally suited for proper building pressurization and air flow control. Transmitters can withstand up to 10 psig overpressure with no damage to the unit. Variable capacitance sensor design provides excellent sensitivity and long-term stability. Compact, lightweight design makes installation simple and easy. Units also feature reverse-polarity protection.

INSTALLATION

Mounting

The 668 Series is designed for mounting in either a switch box or by using the two (2) holes that are provided on the housing. Optimum performance is obtained by isolating the instrument from vibration and providing relatively clean, dry ambient air to the pressure ports. In most cases, preferred installation is with the baseplate mounted vertically and located on a relatively flat surface in a junction box or attached to a nearby beam.

CAUTION: The axis most sensitive to vibration is the one perpendicular to the mounting base. Avoid mounting with maximum vibration along the axis.

Pressure Fitting

Two (2) 3/16˝ O.D. pressure fittings are supplied for pressure connection with 1/4˝ push-on tubing. Both the positive (high) pressure port and the reference (low) pressure port are located on the top face of the unit, labeled High and Low respectively. For best results (shortest response times), 3/16˝ I.D. tubing is suggested for tubing lengths up to 100 feet long, 1/4˝ I.D. for tubing lengths up to 300 feet, and 3/8˝ I.D. for tubing lengths up to 900 feet.

SPECIFICATIONS

Service: Air and non-conductive gases.
Accuracy: ±1% of full scale (RSS) (includes non-linearity, hysteresis, and non-repeatability).
Temperature Limits: Operating: 0 to 150°F (-18 to 65°C); Storage: -40 to 185°F (-40 to 85°C).
Pressure Limits: 10 psig (0.7 kg/cm2).
Compensated Temperature Range: 0 to 150°F (-18 to 65°C).
Thermal Effects: 0.033% FS/°F (0.018% FS/°C).
Supply Voltage: 12-30 VDC.
Output: 4-20 mA, 2-wire.
Zero and Span Adjust: ±1 mA, non-interactive.
Response Time: <60 msec.
Loop Resistance: 0 to 800 Ω.
Electrical Connection: Terminal strip.
Pressure Connection: 3/16 9 O.D. fitting for 1/49 I.D. tubing.
Housing: Fire retardant glass filled polyester.
Weight: 3 oz (85 g).
Agency Approvals: CE.

MODELS & RANGES

Model*	Range	Model*	Range
668-1	0 to 0.25 in w.c.	668-5	0 to 5.0 in w.c.
668-2	0 to 0.5 in w.c.	668-6	0 to 10 in w.c.
668-3	0 to 1 in w.c.	668-7	0 to 25 in w.c
668-4	0 to 2.5 in w.c	668-8	0 to 50 in w.c.
		668-9	0 to 100 in w.c.
		668-19	0 to 0.4 in w.c.

*Also available with optional conduit cover. To order add “C” to part number, i.e. 668C-1. Consult factory for additional information.

BI-DIRECTIONAL MODELS

Model*	Range	Model*	Range
668-10	0 to ±0.1 in w.c.	668-14	0 to ±2.5 in w.c.
668-11	0 to ±0.25 in w.c.	668-15	0 to ±5 in w.c.
668-12	0 to ±0.5 in w.c.	668-16	0 to ±10 in w.c
668-13	0 to ±1 in w.c	668-17	0 to ±25 in w.c.
		668-18	0 to ±50 in w.c.
		668-20	-0.05 to 0.20 in w.c.

*Also available with optional conduit cover. To order add “C” to part number, i.e. 668C-1. Consult factory for additional information.

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ELECTRICAL CONNECTIONS

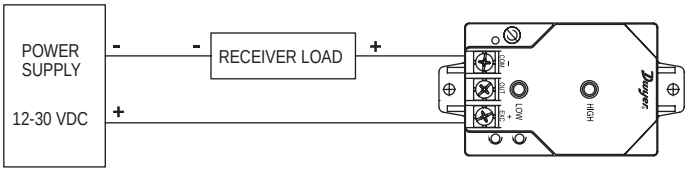
The Series 668 Differential Pressure Transmitter is a loop-powered 4-20 mA current output unit. The current flows into +EXC. terminal and returns back to the power supply through the -EXC. terminal. the power supply must be a DC voltage source with a voltage range between 12 and 30 VDC measured between terminal +EXC. and -EXC.

The unit is calibrated at the factory using a 250 Ω load at 28 VDC.

Notes:

Minimum Supply Voltage (VDC) = 12 + 0.02 x (resistance of receiver plus line).

Maximum Supply Voltage (VDC) = 30 + 0.004 x (resistance of receiver plus line).



CALIBRATION

The 668 series is factory calibrated and should require no field adjustment. However, both zero and span adjustments are provided. Whenever possible, any zero and/or span offsets should be corrected by software adjustment in the user's control system. Use the zero and span adjustments on the 668 Series only if absolutely necessary. The 668 series is calibrated in the vertical position at the factory. For use in other orientations, position the unit and follow the zero adjustment procedure listed below. Pressure ranges are fixed and cannot be changed in the field.

Zero Adjustment

While monitoring the current output with both pressure ports open to atmosphere, the zero may be adjusted. For unidirectional pressure ranges, turn the zero adjustment screw until a reading of 4 mA (±0.15 mA) is achieved.

Span Adjustment (Complete the zero adjustment before setting span)

Span on full scale output adjustments should only be performed by using an accurate pressure standard (electronic manometer, digital pressure gage, etc.) with at least comparable accuracy to the 668 series (<±1% full scale). With full scale pressure applied to the high pressure port (reference port open to atmosphere) adjust span to achieve 20 mA output.

Example 1: Unidirectional pressure range of 0 to 1 in w.c. Apply 1.00 in w.c., adjust span to 20 mA.

Notes: The input is reverse-voltage protected. The output is internally protected against damage is shorted to ground. Recheck all connections before applying power.

MAINTENANCE

After final installation of the Series 668 Differential Pressure Transmitter, no routine maintenance is required. A periodic check of system calibration is recommended. These devices are not field repairable and should be returned if recalibration or other service is required. Contact customer service to obtain an RGA number. Please include a clear description of the problem plus any application information available.

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Printed in U.S.A. 7/19

FR# 443095-00 Rev. 4

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