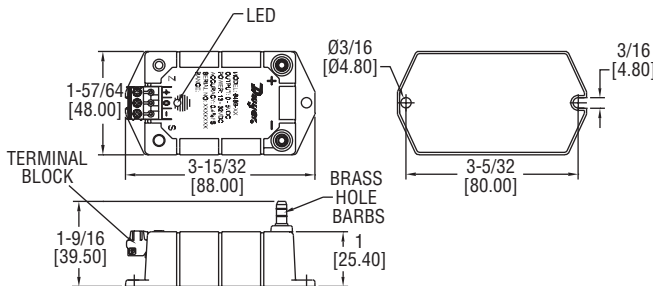




Series 648B and 648C Differential Pressure Transmitter

Specifications - Installation and Operating Instructions



The Series 648B and 648C Differential Pressure Transmitters are designed to be used with clean, dry air and other non-corrosive gases. Each unit features a push-activated zero function and an associated LED light indicator. With the convenient push-button, zero calibration can be performed without any additional equipment, which significantly reduces time and cost for users. The dual color LED indicates if the transmitter is at normal operation, overpressure, or in the process of zero calibration. The enclosure consists of a flame retardant plastic top cover and a stainless steel bottom plate for ruggedness. The pressure ranges vary from 0.1 in. w.c. to 25 in. w.c. unidirectional and 0.25 in. w.c. to 5 in. w.c. bidirectional. Series 648B comes standard with $\pm 0.8\%$ FS* accuracy, while 648C models are available in $\pm 0.4\%$ FS* accuracy for more demanding applications. Wiring time is reduced with the removeable terminal block. Each unit features a 2-wire 4 to 20 mA output that is fully protected against short circuiting and incorrect wiring.

Mounting

Series 648B and 648C transmitters are designed for mounting by using the two (2) slots (suitable for #6 screws) that are provided on the mounting plate. For optimum performance, isolate the instrument from vibration and provide relatively clean, dry air to the pressure ports.

In most applications, preferred installation is with the baseplate mounted vertically and located on a flat surface in a junction box or attached to a nearby beam. Quick and easy field replacement is possible by removing the single case screw that holds the housing to the baseplate and lifting the housing free. The baseplate will remain mounted and can be used with the replacement units housing.

NOTICE The axis most sensitive to vibration is the one perpendicular to the baseplate. Avoid mounting with maximum vibration along axis.

Piping

Two (2) 3/16" OD barbed pressure fittings are provided for pressure connection with 1/8" ID push on tubing.

The overpressure limit with the new tension diaphragm construction is up to 15 psi regardless of range.

SPECIFICATIONS

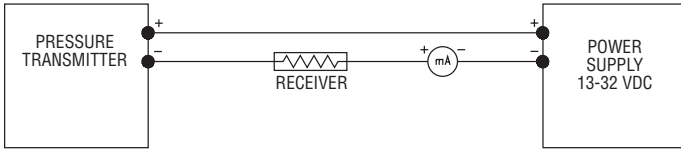
- Service:** Air and non-combustible, compatible gases.
- Wetted Materials:** 302 SS, glass, nickel, silicon rubber, polyethylene, acrylic, ABS and brass.
- Accuracy:** 648B: $\pm 0.8\%$ FS* at room temperature.
648C: $\pm 0.4\%$ FS* at room temperature.
*RSS (Root Sum Square) includes non-linearity, hysteresis and non-repeatability.
- Stability:** $\pm 1\%$ FS/yr.
- Temperature Limits:**
Operating: 0 to 170°F (-18 to 77°C);
Storage: -65 to 185°F (-54 to 85°C).
- Pressure Limits:**
15 psi (100 kPa) proof pressure;
30 psi (200 kPa) burst pressure.
- Thermal Effects:** 648B: $\pm 0.025\%$ FS/°F (0.045%/°C); 648C: $\pm 0.020\%$ FS/°F (0.036%/°C).
- Power Requirements:** 13 to 32 VDC.
- Output Signal:** 4 to 20 mA.
- Zero and Span Adjustments:** Push-button for zero, potentiometer for span.
- Response Time:** Approximately 10 ms.
- Max. Loop Resistance:** DC: 0 to 950 Ω .
- Electrical Connection:** Detachable euro-style terminal block.
- Process Connections:** 3/16" OD barbed fitting for 1/8" ID push-on tubing.
- Housing:** SS and PC+ABS alloy.
- Weight:** 3.8 oz (108 g).

Model	Range in w.c.
648B-1	0 to 0.1
648B-2	0 to 0.25
648B-3	0 to 0.5
648B-4	0 to 1
648B-5	0 to 2.5
648B-6	0 to 5
648B-7	0 to 10
648B-8	0 to 25
648B-13	0 to ± 0.25
648B-14	0 to ± 0.5
648B-15	0 to ± 1
648B-16	0 to ± 2.5
648B-17	0 to ± 5

Note: For units with $\pm 0.4\%$ FS* accuracy, change B to C in model number.
Ex. 648C-01.

Electrical

The Series 648B and 648C are two (2) wire circuits (+SUPPLY, -RECEIVER) with 4 to 20 mA outputs. The units are calibrated at the factory using a 250 Ω load at 24 VDC.



WIRING DIAGRAM FOR 648B SERIES

Calibration

The 648B and 648C series are factory calibrated and should require no field adjustment. However, both zero and span adjustments are provided near the screw terminal strip. 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 only if absolutely necessary. The 648B and 648C transmitters are calibrated in the vertical position at the factory (baseplate vertical). For use in any other orientation, position the unit and follow the adjustment procedure listed below. If a change in range is needed, contact the Customer Service Department for a replacement in the appropriate range.

Zero Adjustment

While monitoring the current output with both pressure ports open to atmosphere, the zero may be adjusted. Use push-button adjustment on the front of the unit to reset zero.

Span Adjustment

Span or output adjustments should only be done using an accurate pressure standard (electric manometer, digital pressure gage, etc.). With FS pressure applied to the high pressure port (reference open to atmosphere), adjust span to achieve 20 mA output.

MAINTENANCE/REPAIR

Upon final installation of the Series 648B and 648C, no routine maintenance is required. The Series 648B and 648C are not field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.

WARRANTY/RETURN

Refer to "Terms and Conditions of Sales" in our catalog and on our website. Contact customer service to receive a Return Goods Authorization number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.