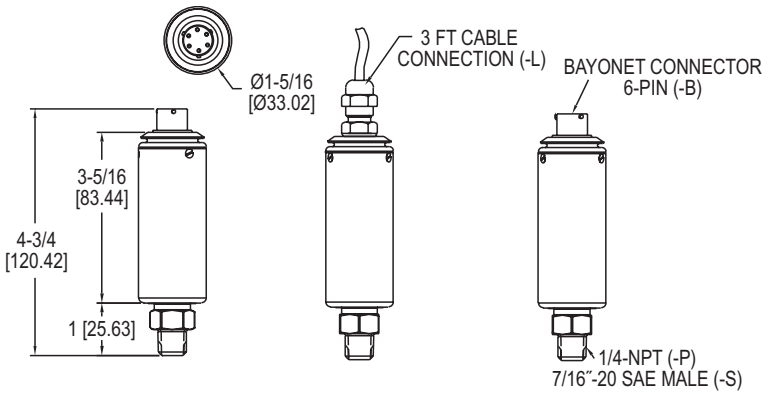
Series 644 Industrial Pressure Transmitter

Specifications - Installation and Operating Instructions



The **Series 644 Industrial Pressure Transmitter** is a robust transmitter designed for high accuracy pressure applications. Boasting an accuracy of ±0.05% FS RSS (<±0.25% TEB), the 644 is intended for precise measurements in the critical applications of calibration technology, hydraulic/pneumatic controls, and many more laboratory and industrial settings. The Series 644 offers multiple measurement options with two output choices (VDC or mA) and ten psig pressure ranges (optional 0 to 15 psia). The robust and compact all stainless steel Series 644 is available with either a 1/4˝ male NPT, or 7/16˝-20 male SAE process connections. Each transmitter is provided with an 11 point NIST traceable calibration certificate.

Range Number	Range	Proof Pressure	Burst Pressure
00	0 to -14.7 psig	30 psig	3000 psig
01	0 to 15 psig	30 psig	3000 psig
02	0 to 25 psig	50 psig	3000 psig
03	0 to 50 psig	100 psig	8000 psig
04	0 to 100 psig	200 psig	10000 psig
05	0 to 150 psig	300 psig	10000 psig
06	0 to 200 psig	400 psig	10000 psig
07	0 to 300 psig	600 psig	10000 psig
08	0 to 500 psig	800 psig	10000 psig
09	0 to 750 psig	1200 psig	10000 psig
10	0 to 1000 psig	1500 psig	10000 psig
11	0 to 15 psia	30 psia	3000 psia

INSTALLATION

1. **Environment**
   The operating temperature limits of the 644 are -40 to 185°F (-40 to 85°C). The compensated temperature range is -4 to 140°F (-20 to 60°C).

2. **Pressure Fittings**
   Available pressure fittings are given in table below:

Pressure Port Code	Fitting Description
-P	1/4˝ - 18 male NPT
-S	7/16˝ - 20 male SAE

3. **Installation of Pressure Fittings**
   Your transmitter is designed for most accurate operation when subjected to pressures within the designated pressure range. Refer to the catalog bulletin specifications for proof pressure limits.

For the most sensitive pressure ranges, excessive high torquing of a metal pressure fitting may cause slight zero shift which may be trimmed out using the zero adjustment. Use of a plastic fitting often shows no noticeable zero shift. The torquing effect does not appreciably affect linearity or sensitivity. The wrench flat on the Series 644 must be used when installing the positive pressure fitting.

SPECIFICATIONS

Service: Compatible gases and liquids.
Wetted Materials: 17- 4 PH SS.
Accuracy: ±0.05% FS RSS.
Total Error Band (Includes all thermal effects): <±0.25% FS over entire temperature compensated range.
Stability: < 0.15% FS/year.
Operating Temperature Limits: -40 to 185°F (-40 to 85°C).
Pressure Limits: Proof pressure and burst pressure: See pressure limits table below.
Compensated Temperature Range: -4 to 140°F (-20 to 60°C).
Power Requirements: 9 to 30 VDC for current output; 15 to 30 VDC for voltage output.
Minimum Supply Voltage: Min. supply voltage (VDC) for current output = 9 + 0.02 x loop resistance Ω (loop resistance Ω = line resistance + receiver resistance).
Output Signal: 0 to 10 VDC (4-wire); 4 to 20 mA (2-wire).
Response Time: < 10 ms (voltage output), < 80 ms (current output).
Max Current Consumption: 4 to 20 mA: 22 mA; 0 to 10 VDC: 20 mA.
Electrical Connections: 3 ft cable or 6-pin male bayonet connector.
Process Connection: 1/4˝ male NPT or 7/16˝-20 male SAE with O-ring.
Enclosure Rating: NEMA 4X (IP65).
Mounting Orientation: Vertical.
Weight: 9 oz (254 g).
Agency Approvals: CE.

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4. Position

The transmitter is not position sensitive. However, all standard models are originally calibrated with the unit in a position with the pressure connection downward. Although they can be used at other angles, for best accuracy it is recommended that units be installed in the position calibrated at the factory.

ELECTRICAL INSTALLATION

1. Electrical Connections

The 644 is available with cable version or bayonet connector options having different connector pin outs shown in table below:

Wiring Codes			Code-B
Electrical Connection		Cable Wire	Bayonet
Current	Voltage	Color	Connector Pinout
+EXC	+EXC	Red	A
-EXC	-EXC	Black	D
N/A	+SIG Out	Green	B
N/A	-SIG Out	White	C

2. Voltage Output Units

The Series 644 voltage units are a four-wire type circuit energized thru +EXC and -EXC terminal with 0 to 5 VDC or 0 to 10 VDC analog output through the +SIG Out and -SIG Out terminals.

3. Current Output Units

The Series 644 current units are two-wire loop-powered 4 to 20 mA current output and delivers rated current into any external load of 0 to 800 ohms.

The current flows into the + terminal and returns back to the power supply through the - terminal (see Diagram 1). The power supply must be a DC voltage source with a voltage range between 9 and 30 measured between the + and - terminals. The unit is calibrated at the factory with a 24 VDC loop supply voltage and a 250 ohm load.

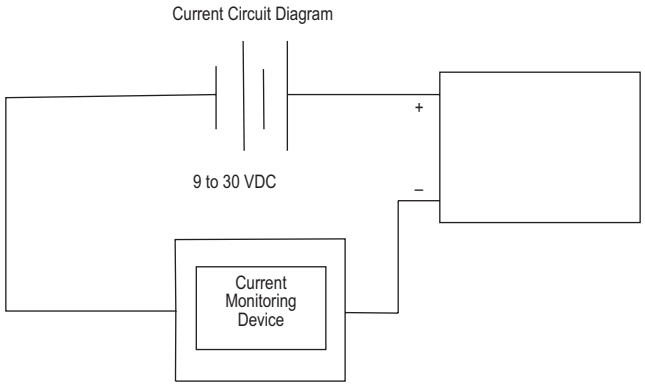

Diagram 1

MAINTENANCE

After final installation of the pressure transmitter and its companion receiver, no routine maintenance is required. A periodic check of system calibration is suggested. The Series 644 transmitter is not field repairable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

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