



SMART RANGEABLE PRESSURE TRANSMITTER

Model 411, 411X/P



FEATURES:

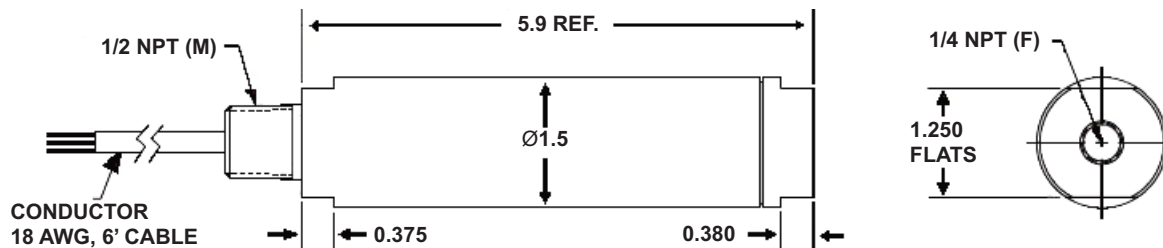
- HART Communication
- 0 Through 100,000 PSI Ranges in PSISG, PSIA, Vacuum Options
- 4-20 mA Loop Powered
- 5:1 Ranging
- Waterproof
- 316 SS
- 12-36 Vdc Excitation
- Secondary Containment
- FM/CSA Approved Explosion Proof available (411X/411P), Class I, II, III, Division I, II, Groups A, B, C, D, E, F & G

APPLICATIONS:

- Off Shore Rigs and Pumping Platforms
- Pipelines and Processing
- Shipboard and Marine Applications
- Plastics and Paper - All Processes



PETROLEUM & PROCESS



WIRING CODE
 RED = + EXCITATION/SIGNAL
 BLACK = - EXCITATION/SIGNAL
 GREEN = CASE GROUND
 DRAIN WIRE

This rugged, harsh-environment transmitter is small in size and designed to solve your worst weather nightmare. GP:50 Model 411 features HART communications protocol and microprocessor based electronics in a small, rugged package. HART communication allows simpler system commissioning and start up, while digital compensation provides enhanced accuracy and rangeability.

Because HART allows simultaneous analog and digital communication, this instrument is fully compatible with existing analog systems. Communication is most commonly done with a HART hand-held communicator, but can also be done with commercially available PC-based software. All-welded and hermetically sealed, it can be submersed to 100 feet with submersible conduit. The all-welded construction and 17-4 and 316 stainless steels used in the pressure cavity make the 411 watertight and strong against corrosion. The unit is designed without an "O"-ring and insures reliability. For sour gas and other corrosive media, the 411 is available with 316 stainless steel, Inconel or Hastelloy wetted parts.

Pressure ranges include 0 through 100,000 PSI and are available in sealed gauge, absolute and sealed vacuum.



Pressure, Level & Temperature Transmitters & Transducers

Ordering: Specify model, and pressure range and indicate modifications or accessories required.

*Measured fluid temperature in excess of the compensated temperature limits may be acceptable depending on ambient temperature conditions.

Full Scale Pressure Range (FSPR)	0-5, 10, 15 PSISG, A, SV and 3-15 PSISG 0-20, 25, 30, 50, 75, 100, 150, 200, 300, 400, 500, 750, 1000, 1500, 2000, 3000, 4000, 5000, 7500, 10,000, 15,000, 20,000, 25,000, 30,000, 40,000, 50,000, 75,000, 100,000 PSISG, PSIA	Long-Term Stability	Greater than 0.25% FSPR over six months.
Full Scale Temperature Range	0-170°F, unless customer specified (only applies when ordered with QF option).	Resolution	12 bit
Supply Voltage	12-36 Vdc	Frequency Response	Analog output response to a step change in pressure will be from 0.070 sec minimum to 40 sec maximum for one time constant & is adjustable through software.
Regulations	Less than 0.02% FSO/V over supply voltage range.	Shock & Vibration Without Change	100 g's PK to PK
Output Signal	Two wire 4-20 mA. Digital process signal superimposed on a 4-20 mA signal, available to any host computer system conforming to HART protocol.	Enclosure Materials	316 SS
Load Impedance	250 ohms at 17 Vdc	Measured Fluids	Any gas or liquid compatible with 17-4 PH, 316 SS, Inconel X750, Hastelloy C-276 optional.
Accuracy	Greater than 0.25% of calibrated span including errors due to linearity, hysteresis and repeatability, RSS	Standard Process Pressure Connection	0-5 thru 0-15,000 PSI -1/4" Female Connection. 0-20,000 thru 0-50,000 PSI - 9/16"-18 gland thread, pressure relieved. 1/4" OD high pressure tube, 60 degree cone. Conforms to Autoclave type F-250-C. 0-61,00 thru 0-100,000 PSI - 5/8" -18 gland thread pressure relieved. 5/16" OD high pressure tube, 60 degree cone. Conforms to Autoclave type F-312-C150.
Combined Zero & Span Temperature Effects on Accuracy	At 1:1 is less than 0.25% FSO per 50°F At 5:1 is less than 0.5% FSO per 50°F	Electrical Connection	1/2" NPT male, 2 conductor w/Ground + Drain wire, 18 AWG, 72" L
Compensated Temperature Limits*	0 thru +170°F based on actual operating temperature.	Enclosure Classification	NEMA 3, 4
Operating Temperature Limits	-40 to +185°F	Weight	Less than 24 oz.
Range Adjustments	5:1 (ranges 0-100 psi thru 1-15,000 psi only).	Accessories	Mounting Bracket, Conduit connection box, HART Communicator.
Circuit Protection	Reverse polarity protected Units are protected against voltage transients above 45V to 20A at 0.02 milliseconds.	Approved Options	QF - Temperature output over second 4-20 mA loop.
RFI/EMI Suppression	Negligible effect to 500 Mhz at 5 watts direct contact.		
Insulation Resistance	Better than 10 megohms at 50V DC		
Proof Pressure	5 to 50 PSI 100 PSI 75 to 15,000 2xFSPR or 20,000 PSI, whichever is less 20,000 to 100,000 PSI 1.2x FSPR or 125,000 PSI whichever is less		
Burst Pressure	0-5 thru 0-50 PSISG, A, SV and 3-15 PSISG 250 PSI. 0-75 thru 0-15,000 PSIG, A-5 times full scale pressure range or 22,500 PSIG, whichever is less. 0-20,000 thru 0-100,000 PSIG, A-1.5 times full scale pressure range or 125,000 PSIG, whichever is less.		