

P700 Series Pressure Transducer



- Rugged Design for Harsh Environments
- Versatile Packaging Design
- Low and High Level Output Signals
- Intrinsic Safety Approval to Ex ia IIc T4
- High Overpressure Capability

DESCRIPTION

P700 series pressure transducers are designed for high reliability and stability. The all welded construction incorporates a double cantilever beam with bonded foil strain gauges. Coupling to the pressure diaphragm via a force rod, gives excellent thermal isolation from the fluid or gas being measured. High overload protection is an integral part of the design. These units are capable of sensing extremely small changes of applied pressure and are relatively insensitive to vibration, altitude and shock.

FEATURES

- Low and High Level Output
- All Welded Construction
- High Pressure Overload Protection
- Pressure Ranges 0-10,000 PSI (0.7 to 700 bars)
- 2 Wire 4-20 mA Option BASEEFA and Cenelec Approval Class Ex ia IIc T4

APPLICATIONS

- Hydraulic Pressure Monitoring
- Torpedo Depth Sensing
- Vehicle Brake System Monitoring
- Military and Commercial Aircraft

PERFORMANCE SPECS

| Low Level Output | | | |
|---|--------------|--------------|--------------|
| Model Number | P711/9 | P721/4 | P701/9 |
| Input Supply | 10VDC/AC RMS | 10VDC/AC RMS | 10VDC/AC RMS |
| Voltage (Max) | 12V | 12V | 12 V |
| Impedance (ohms) | 350 | 350 | 350 |
| | ±5% | ±5% | ±5% |
| Current | - | - | - |
| Output at +25°C | | | |
| Full Range Output with 1 metre cable | 25mV, ±2% | 25mV, ±2% | 25mV, ±1% |
| Impedance (ohm) | 350, ±5% | 350, ±5% | 350, ±5% |
| Current (mA max) | - | - | - |
| Residual Unbalance % F.R.O. | < ± 2 | < ± 2 | < ± 1 |
| Accuracy | | | |
| Combined Non-Linearity (Typical) | ± 0.2 | ± 0.2 | ± 0.18 |
| Hysteresis and Non Repeatability % F.R.O. (Max) | ± 0.2 | ± 0.5 | ± 0.3 |
| Combined Thermal M.R. | ± 0.03 | ± 0.03 | ± 0.02 |
| Zero and Sensitivity Error %F.R.O./ °C H.R. | ± 0.03 | ± 0.03 | ± 0.015 |
| Physical | | | |
| Max. Height (L/mm) | 64.4 | 64.4 | 64.4 |
| Cable version (mm/in.) | 83/3.27 | 83/3.27 | 83/3.27 |
| Connector version (mm/in.) | 83/3.27 | 83/3.27 | 83/3.27 |
| Weight (gm) | 230 | 230 | 230 |

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PERFORMANCE SPECS (CONT)

| High Level Output | | | | | |
|---|--------------|----------|----------|----------------------------------|---------|
| Model Number | P741/9 | P751/9 | P761/9 | P781/9 | P791/9 |
| Input Supply | | | | | |
| Voltage (Max) | 10VDC/AC RMS | 11-18VDC | 18-32VDC | 10-36VDC | ±15VDC |
| Impedance (ohms) | 12 V max | - | - | - | - |
| Current | 30-35mA | 20-40mA | 30-40mA | - | 30mA |
| Output at +25°C | | | | | |
| Full Range Output with 1 metre cable | 5V ±1% | 2.5V ±1% | 5V ±1% | 4-20 mA | 5.0 ±1% |
| Impedance (ohm) | <10 ohm | <10 ohm | <10 ohm | Load Resist. 1.0 k max. at 36VDC | <10 ohm |
| Current (mA max) | 5 | 5 | 5 | - | 5 |
| Residual Unbalance % F.R.O. | < ± 1 | < ± 2 | < ± 1 | 1 < ± 1 | < ± 1 |
| Accuracy | | | | | |
| Combined Non-Linearity (Typical) | ± 0.18 | ± 0.18 | ± 0.18 | ± 0.18 | ± 0.18 |
| Hysteresis and Non Repeatability % F.R.O. (Max) | ± 0.25 | ± 0.25 | ± 0.25 | ± 0.25 | ± 0.25 |
| Combined Thermal M.R. | ± 0.02 | ± 0.02 | ± 0.02 | ± 0.02 | ± 0.02 |
| Zero and Sensitivity Error %F.R.O./ °C H.R. | ± 0.015 | ± 0.015 | ± 0.015 | ± 0.015 | ± 0.015 |
| Physical | | | | | |
| Max. Height (L/mm) | 91.6 | 91.6 | 91.6 | 91.6 | 91.6 |
| Cable version (mm/in.) | 99/3.90 | 114/4.49 | 114/4.49 | 129/5.07 | 99/3.90 |
| Connector version (mm/in.) | 99/3.90 | 114/4.49 | 114/4.49 | 129/5.07 | 99/3.90 |
| Weight (gm) | 250 gm | 250 gm | 250 gm | 250 gm | 250 gm |

COMMON SPECIFICATIONS

| | |
|------------------------------|---|
| Pressure Ranges | Gauge or absolute reference |
| High (psi) | 0-75, 100, 150, 200, 250, 350, 500, 750, 1000, 1500, 2000, 2500, 5000, 7500, 10,000 |
| (bar) | 0-5, 0, 7, 10, 15, 20, 25, 35, 50, 70, 100, 150, 200, 250, 350, 500, 700 |
| Medium (psi) | 0-10, 15, 20, 25, 35, 50 |
| (bar) | 0-0.7, 1.0, 1.5, 2.0, 2.5, 3.5 |
| DIN (bar) | 0.6, 1, 1.6, 2.5, 4, 6, 10, 16, 25, 40, 60, 100, 160, 250, 400, 600 |
| Pressure Limit | <5x full range pressure or 12,000 psi whichever is less |
| Burst Pressure | >10x full range pressure or 20,000 psi whichever is less |
| Pressure Media | Liquids or gases compatible with 17-4 PH and 17-7 PH stainless steel or Inconel 625 |
| Shunt Calibration | 80% ±5% full range pressure |
| Residual Unbalance | <±1% F.R.O. P700 <±2% F.R.O. P720 |
| Temperature Range | |
| Operable | -65°F to 250°F (-54°C to 120°C) |
| Compensated | 32°F to 212°F (0°C to 100°C) |
| Humidity | |
| Plug Outlet | 95% Relative humidity |
| Cable Outlet | Immersible to 1000 feet |
| Acceleration Response | < 0.10% F.R.O./g (Medium range) <0.02% F.R.O./g (High range) |
| Natural Frequency | Approx 2.5 kHz for 10 psi to approx 40 kHz for 10,000 psi |
| Insulation Resistance | 500 MOhm at 50 VDC |

1. A low current consumption version is available (1000 ohm bridge) at extra cost.

P700 Series Pressure Transducer

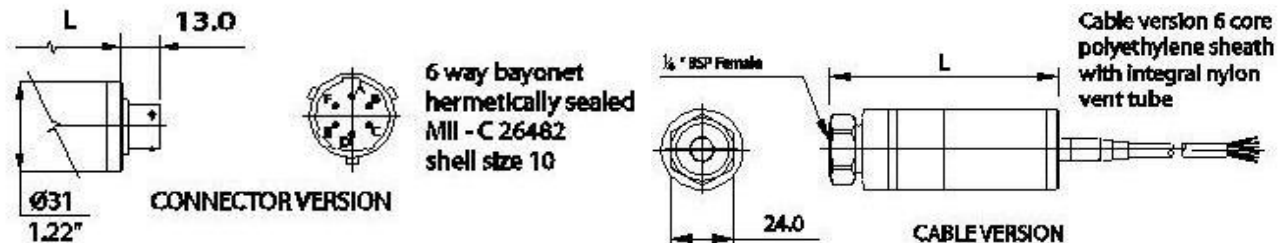
CONNECTIONS

CONNECTIONS:

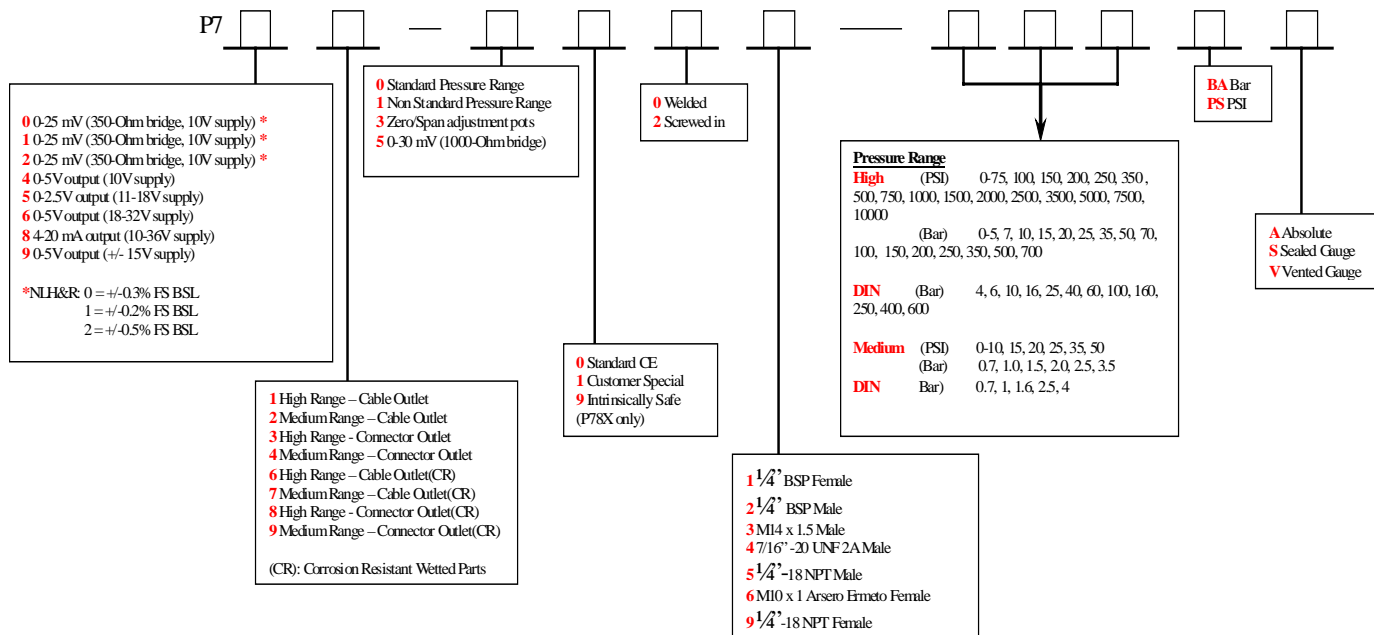
CABLE CONNECTIONS

RED* PIN A* EXCITATION (+)
 WHITE PIN D EXCITATION (-)
 YELLOW PIN B OUTPUT (+)
 BLUE* PIN C* OUTPUT (-)
 VIOLET PIN E } 80% Shunt calibration
 GREY PIN F }

* 2-Wire transmitter connections
 0 Volt P791/4



ORDERING INFORMATION



Examples: P722-0005-10PSV=0 to 25mV output, 0.5% NLH&R, cable outlet, welded 1/4" NPT port, 10 psi vented gauge

P786-0901-700BAA=4 to 20mA output, cable outlet (corrosion resistant build), Intrinsically Safe, welded 1/4" BSP port, 700 bar absolute