

# 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
<b>Input Supply</b>	10VDC/AC RMS	10VDC/AC RMS	10VDC/AC RMS
Voltage (Max)	12V	12V	12 V
Impedance (ohms)	350	350	350
Current	±5%	±5%	±5%
	-	-	-
<b>Output at +25°C</b>			
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
<b>Accuracy</b>			
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. Zero and Sensitivity Error %F.R.O./ °C	± 0.03	± 0.03	± 0.02
H.R.	± 0.03	± 0.03	± 0.015
<b>Physical</b>			
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

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

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

# P700 Series Pressure Transducer

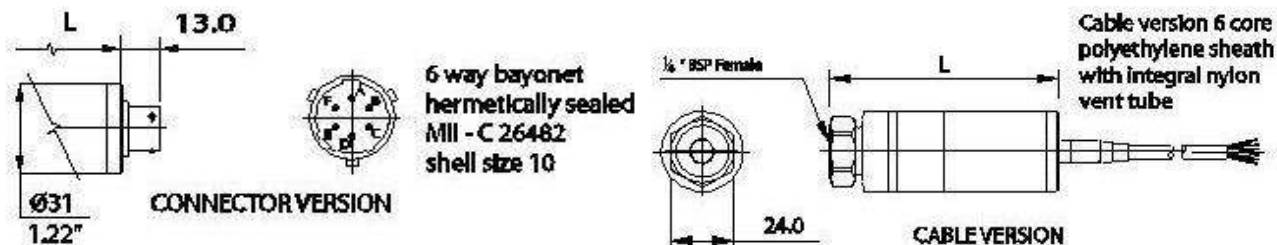
## CONNECTIONS

### CONNECTIONS:

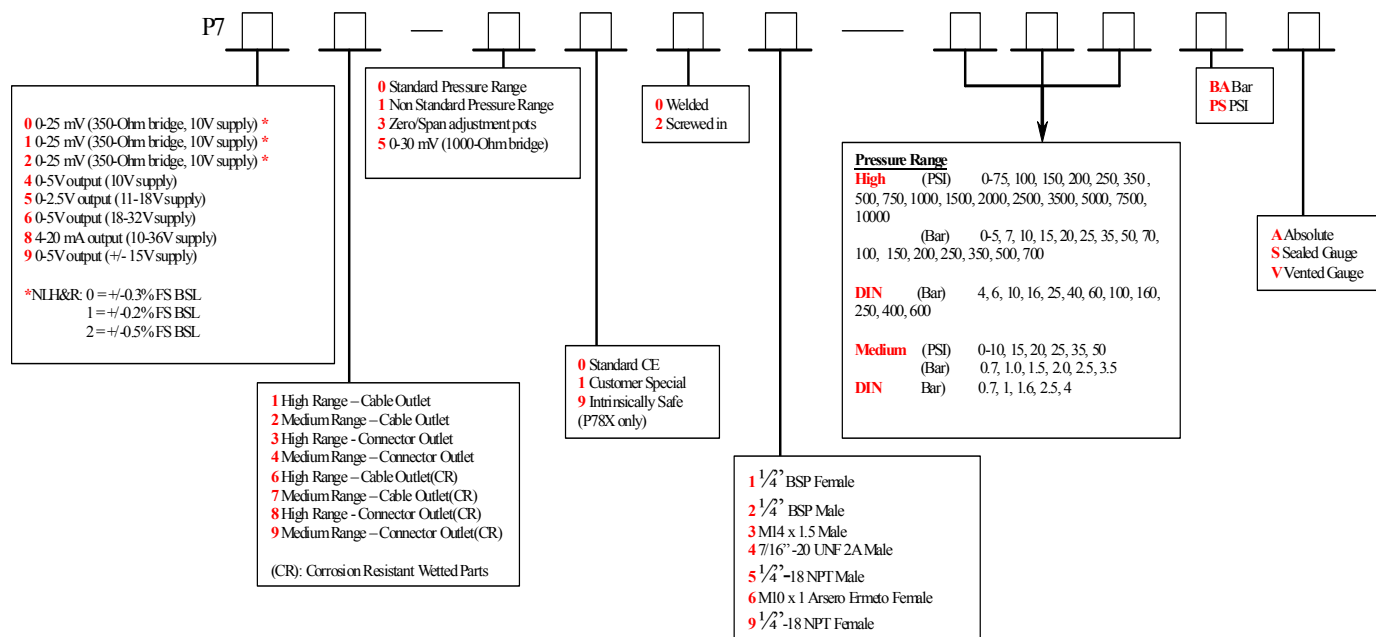
#### CABLE CONNECTIONS

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

## P700 Series Pressure Transducer

### NORTH AMERICA

Measurement Specialties  
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Tel: 1-800-767-1888  
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