P700

- **Rugged Design for Harsh Environments**
- **Versatile Packaging Design**
- **Low and High Level Output Signals**
- **Intrinsic Safety Approval to Ex ia llc 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.

For parts requiring RoHS compliance, please contact factory.

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 llc 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, 3500, 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.

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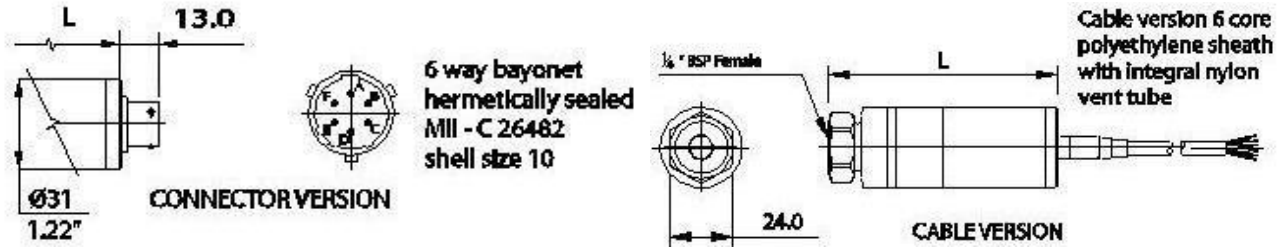
CONNECTIONS

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

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0 0-25 mV (350-Ohm bridge, 10V supply) *
1 0-25 mV (350-Ohm bridge, 10V supply) *
2 0-25 mV (350-Ohm bridge, 10V supply) *
4 0-5V output (10V supply)
5 0-2.5V output (11-18V supply)
6 0-5V output (18-32V supply)
8 4-20 mA output (10-36V supply)
9 0-5V output (+/- 15V supply)

*NLH&R: 0 = +/-0.3% FS BSL
1 = +/-0.2% FS BSL
2 = +/-0.5% FS BSL

0 Standard Pressure Range
1 Non Standard Pressure Range
3 Zero/Span adjustment pots
5 0-30 mV (1000-Ohm bridge)

1 High Range – Cable Outlet
2 Medium Range – Cable Outlet
3 High Range - Connector Outlet
4 Medium Range – Connector Outlet
6 High Range – Cable Outlet(CR)
7 Medium Range – Cable Outlet(CR)
8 High Range - Connector Outlet(CR)
9 Medium Range – Connector Outlet(CR)

(CR): Corrosion Resistant Wetted Parts

0 Standard CE
1 Customer Special
9 Intrinsically Safe (P78X only)

0 Welded
2 Screwed in

1 ¼" BSP Female
2 ¼" BSP Male
3 M14 x 1.5 Male
4 7/16" -20 UNF 2A Male
5 ¼"-18 NPT Male
6 M10 x 1 Arsero Ermeto Female
9 ¼"-18 NPT Female

Pressure Range
High (PSI) 0-75, 100, 150, 200, 250, 350 , 500, 750, 1000, 1500, 2000, 2500, 3500, 5000, 7500, 10000
(Bar) 0-5, 7, 10, 15, 20, 25, 35, 50, 70, 100, 150, 200, 250, 350, 500, 700

DIN (Bar) 4, 6, 10, 16, 25, 40, 60, 100, 160, 250, 400, 600

Medium (PSI) 0-10, 15, 20, 25, 35, 50
(Bar) 0.7, 1.0, 1.5, 2.0, 2.5, 3.5
DIN Bar) 0.7, 1, 1.6, 2.5, 4

BA Bar
PS PSI

A Absolute
S Sealed Gauge
V Vented Gauge

Examples: P722-0005-10PSV = 0 to25mV output, 0.5% NLH&R, cable outlet, welded ¼" NPT port, 10 psi vented gauge
P786-0901-700BAA = 4 to 20mA output, cable outlet (corrosion resistant build), Intrinsically Safe, welded ¼" BSP port, 700 bar absolute

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