PRESSURE TRANSMITTER

Model 520



FEATURES

- USA, Canada and Europe Intrinsically Safe
- Hammer Union pressure fitting
- Shock and vibration resistant
- Eight gage sensor design
- Pressure up to 25,000 psi (1,724 bar)

TYPICAL APPLICATIONS

- Oil Well Servicing
  - Cementing
  - Fracturing
  - Acidizing

OIL EXTRACTION EXPERIENCE

Viatran's years of oil field experience helps us solve typical application problems. The 520 was created as a solution to the application that a customer couldn't solve. Once solved, we modified the unit to accomplish even more in oil extraction.

VIATRAN'S ALTERNATIVE

Viatran's unique fastening system locks under severe vibrations ensuring that the environmental integrity of the assembly is maintained much like a welded unit without welding.

FINITE ELEMENT ANALYSIS

Instability can also come from subtle variations in the Hammer Union and tightening torque. These variances generate point loading of stress on the sensor. Viatran's product development engineers used Finite Element Analysis (FEA) to determine the most effective distribution of the strain gages to reduce the clamping effect. The resulting eight gage sensor design is unaffected by the orientation or tightness of the nut. Using FEA, the 520 has been designed with high overpressure protection, allowing it to withstand pressure spikes found in oil field equipment.

SEMI FLUSH

Our exclusive semi flush design provides a lower cavity volume to prevent clogging. This eliminates the need for tedious cleaning, especially in cementing applications.

Viatran is oil field proven. What often begins as a nagging application turns into a successful solution. The 520 and the various other oil and gas solutions are shining examples of this success.

MECO MEASUREMENTS & CONTROLS
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PERFORMANCE

Full Scale Pressure Range	0-5K, 6K, 10K, 15K, 20K, 25K PSIS (0-345, 414, 689, 1034, 1379, 1724 bar)
Non-Linearity (Best Fits Straight Line)	≤0.25% FSO BFSL
Hysteresis & Repeatability	≤±0.10% FSO
Full Scale Output (FSO)	16 mA±1%
Zero Balance	4 mA ±1% FSO
Long Term Stability	≤±0.25% FSO per 6 months
Response Time	≤2.5 mSec to reach 90% of FSO
Temperature Effect on Zero	≤±1% FSO per 100°F (37°C)
Temperature Effect on Span	≤±1% FSO per 100°F (37°C)
Compensated Temperature	40°F to 140°F (4°C to 60°C)
Operating Temperature	-40°F to 185°F (-40°C to 85°C)
Storage Temperature Limits	-67°F to 302°F (-55°C to 150°C)

ELECTRICAL

Supply Voltage	10.5 to 28 Vdc
Power Supply Regulation	≤±0.01% FSO per Volt
Output Signal	4 - 20 mA at 70°F (21°C)
Loop/Load Impedance	750 Ohms at 24 Vdc decreasing linearly to 0 Ohms @ 9 Vdc Decreasing linearly to 0 Ohms at 9 Vdc
Range Calibration Signal	100% of FSPR
Calibration Power	7.5 to 28 Vdc at 15 mA nominal
Calibration Signal Accuracy	≤±0.2% FSO. Exact signal to pressure correlation provided with each unit
Circuit Protection	Varistor protected across the input leads for surges to 1000V at 50 microseconds. Reverse polarity protected
Bridge Resistance	10K Ohms nominal
Insulation Resistance	≥100 MegOhms to case ground
Electrical Connection	Mates with Bendix P/N PT06E-10-6S(SR) or equivalent. See table for pin connections

MECHANICAL

Pressure Connection	520	Male hammer union 2 inch #2002
	520	Male hammer union 2 inch #2202
	Pressure Cavity Volume	<0.78 cubic inches
	Proof Pressure	1.67 times FSPR or 22.5K PSI (1550 bar) for union #2202; 30K PSI (2068 bar) for union #2002
	Burst Pressure	3 times the FSPR, limited by union #2202: 22.5K PSI (1550 bar); limited by union #2002: 30K PSI (2068 bar)
	Shock Limitation	100 G's
	Weight	5.5 lbs nominal (2.4 kg)
	Enclosure Materials	304 stainless steel
	Wetted Materials	Inconel X-750, heat treated per NACE MR0175-2000
	Identification	Laser etched onto body
	Enclosure Classification	NEMA 4X

OPTIONS

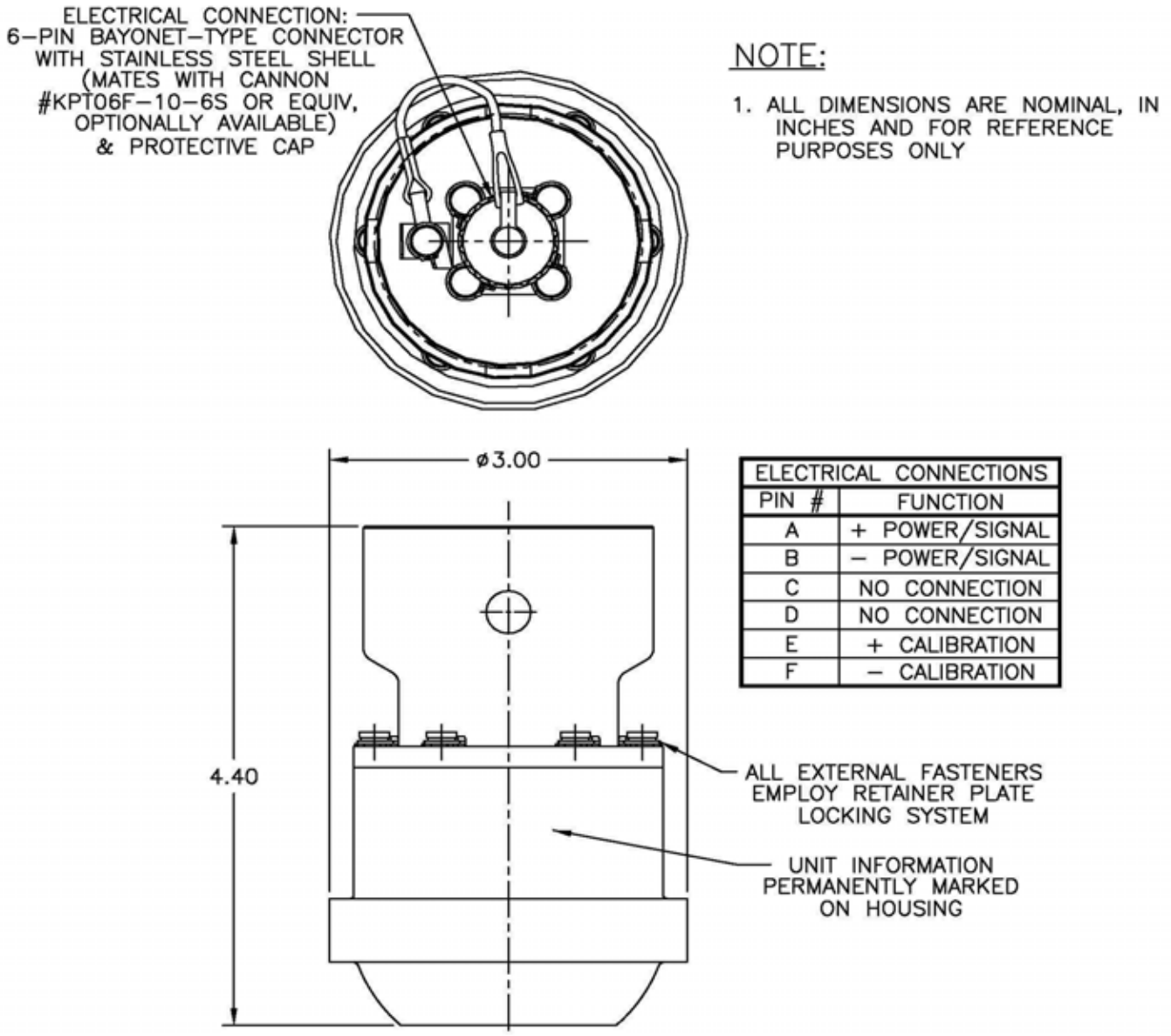
DH	Special range
EA	Special calibration run
NK	Europe Intrinsic Safety label
NX	Canada Intrinsic Safety label
TF	USA Intrinsic Safety label
ZQ	CG379-2-14S-2P (Glenair) electrical connector

Standard Pin connections: Some models are provided with customer specified wiring. Consult Viatran for exact wiring connections.

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Viatran A Dynisco Company

CERTIFICATIONS (Consult Factory for Available Options)

USA	Intrinsically Safe: Class I, Div 1, Groups A-D, Class 1, Zone 0. AEx ia IIC T5 at Ta=40°C. Hazardous Locations Installed per CD0666
CANADA	Intrinsically Safe: Class I, Div 1, Groups A-D, Class 1 Zone 0 Ex ia IIC T5 at Ta=40°C. Hazardous Locations Installed per CD0666
EUROPE	Intrinsically Safe: II 1 G Ex ia IIC Ga T4 at Ta ≤80°C; T5 at Ta ≤40°C DNV 2003 OSL ATEX 0188. Hazardous Locations Installed per CD0666
	EMC Directive 2004/108/EC
	EN 61326-1 - EMC Requirements
	PED 97/23/EC



Information is accurate to the best of Viatran's knowledge. We eserve the right to change specifications at any time.

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