

PRESSURE TRANSMITTER
Model 510



FEATURES

- **USA, Canada and Europe Intrinsicly Safe**
- **Hammer Union pressure fitting**
- **Shock and vibration resistant**
- **Eight gage sensor design**
- **Pressure up to 20,000 psi (1400 bar)**

TYPICAL APPLICATIONS

- **Oil Well Drilling and Servicing**
 - Cementing
 - Fracturing
 - Acidizing

OIL EXTRACTION EXPERIENCE

Viatran's years of oil field experience helps us solve typical application problems. We are very familiar with the demanding performance, reliability and adaptability requirements for secondary recovery, drilling, offshore and land-based production. What's more, our professional sales and applications engineers are dedicated to making sure you get pressure sensing solutions that are a perfect fit for your requirements.

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.

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 510 and the various other oil and gas solutions are shining examples of this success.

For more information, contact Viatran.



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PERFORMANCE

Full Scale Pressure Range	0-5K, 6K, 10K, 15K, 20K PSIS (0-350, 410, 700, 1000, 1400 bar)
Combined Accuracy (BFSL)	
(Non-Linearity, Hysteresis & Repeatability).....	$\leq \pm 0.25\%$ FSO
Full Scale Output (FSO)	16 mA $\pm 1\%$
Zero Balance	4 mA $\pm 1\%$ FSO
Long Term Stability	$\leq \pm 0.25\%$ FSO per 6 months
Response Time	≤ 2.5 mSec to reach 90% of FSO
Temperature Effect on Zero	$\leq \pm 1\%$ FSO per 100°F (37°C)
Temperature Effect on Span	$\leq \pm 1\%$ 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	$\leq \pm 0.01\%$ 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	$\leq \pm 0.2\%$ 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

510	Male hammer union 2 inch #1502
Pressure Cavity Volume.....	<0.78 cubic inches
Proof Pressure.....	1.67 times FSPR or 22.5K PSI (1550 bar)
Burst Pressure.....	3 times the FSPR, limited by union #1502: 22.5K PSI (1550 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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CERTIFICATIONS (Consult Factory for Available Options: FM, CSA, ATEX, EMC, PED, RoHS)

USA Intrinsically Safe Class I, Div. 1, Groups A-D, Class I, Zone 0, AEx ia IIC T4 at Ta = 80°C, T5 at 40, Haz. Loc. Install per CD0666
 CANADA Intrinsically Safe Class I, Div. 1, Groups A-D, Class I, Zone 0, Ex ia IIC T4 at Ta = 80°C, T5 at Ta= 40°C. Haz. Loc. Install per CD0666
 EUROPE ATEX Directive 2014/34/EU
 Intrinsically Safe  II 1 G Ex ia IIC Ga, T4 -20°C ≤ Ta ≤80°C T5 -20°C ≤ Ta ≤40°C Haz. Loc. Install per CD0666
 EMC Directive 2014/30/EU EN 61326-1:2013
 PED Directive 2014/68/EU
 RoHS Directive 2011/65/EU

