

# Pressure Transmitter

## MODEL 510/520



### OIL EXTRACTION EXPERIENCE

Viatran's years of oil field experience helps us solve typical application problems. The 510/520 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 510/520 has been designed with high overpressure protection, allowing it to withstand pressure spikes found in oil field equipment.

### APPROVAL OPTIONS AVAILABLE

The 510/520 comes with FM, CSA and ATEX intrinsically safe approval options and is designed to meet all applicable CE directives.

### 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 510/520, and the various other oil and gas solutions are shining examples of this success.

Viatran's 510/520 pressure transmitters is equipped with a Hammer Union fitting for use in oil well cementing, fracturing and acidizing. They have been designed to be accurate yet rugged instruments ideally suited to the harsh oil field environment.

### FEATURES

- FM, CSA and ATEX Intrinsically Safe
- Hammer Union pressure fitting
- Shock and vibration resistant
- Eight gage sensor design
- Pressure up to 20,000 PSI

### TYPICAL APPLICATIONS

- Oil well servicing
  - Cementing
  - Fracturing
  - Acidizing

Contact Viatran for approval options



**Viatran**  
A DYNISCO COMPANY

For product availability, or to order please call 1-800-688-0030, ext 518.

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An ISO 9001: 2001 Certified Company

## SPECIFICATIONS

### PERFORMANCE

Full Scale Pressure Range (FSPR)	0-5K, 6K, 10K, 15K, 20K PSIG
Non-Linearity (Best Fit Straight Line)	≤ 0.25% FS
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
Temperature Effect on Span	≤ ±1% FSO per 100° F
Compensated Temperature Range	40° F to +140° F
Operating Temperature Limits	-40° F to +185° F
Storage Temperature Limits	-67° F to +302° F

### ELECTRICAL

Supply Voltage	9-32 VDC 10.5-28 VDC on approved models
Power Supply Regulation (Calibrated @ 12VDC)	≤ ±0.01% FSO per Volt
Output Signal	4-20 mA at 70°
Loop / Load Impedance	1150 Ohms maximum at 32 VDC 950 Ohms maximum at 28 VDC Decreasing linearly to 0 Ohms at 9VDC
Range Calibration Signal	100% of FSPR
Calibration Power	7.5 to 28 VDC at 15 mA nominal
Calibration Signal Accuracy	≤ ±0.2% FSO. The exact signal to pressure correlation is provided with each unit.
Circuit Protection	Varistor protected across the input leads for surges to 1000V @ 50 microseconds. Reverse polarity protected.
Bridge Resistance	10K Ohms nominal
Insulation Resistance	≥ 100 MegOhms to case ground
Electrical Connection	Mates with Bendix P/N PT09E-10-6S(SR) or equivalent. See table for pin connections.

### MECHANICAL

Pressure Connection	510 - male hammer union 2 inch #1502 520 - male hammer union 2 inch #2002
Pressure Cavity Volume	0.4 cubic inches
Proof Pressure	1.67 times the FS or 22,500 PSI (1550 Bar) for union #1502, 30,000 PSI (2068 Bar) for union #2002 whichever is less
Burst Pressure	≥ 3 times the FS, limited by union #1502: 22,500 PSI (1530 Bar), limited by union #2002: 30,000 PSI (2068 Bar)
Shock Limitation	100 G's
Weight	5.5 lbs. nominal
Enclosure Materials	304 stainless steel
Wetted Materials	Inconel X-750
Identification	Laser etched onto body
Enclosure Classification	NEMA 4X

### CERTIFICATIONS

FM	Intrinsically Safe: Class I, Div I, Groups A-D, Class I, Zone 0. AEx ia IIC T5 at Ta=40°C. Hazardous Locations installed per CD0666
CSA	CSA 03 1437390 Class I, Div 1, Groups A-D Ex ia IIC T5 at Ta=40°C per CD0666
ATEX	II 1 G EEx ia IIC T4 DNV 2003 OSL ATEX 0188 0575
CE	EMC Directive 89/336/EEC and Low Voltage Directive 72/23/EEC EN 61010-1 (2001) - Safety Requirements EN 61326-(1997) - EMC Requirements PED Directive 97/23/EC IECEx Directive IEC 60079-11 EN 60079-11 (1999) - Intrinsic Safety for Explosive gas atmospheres EN 60079-0 (2004) - General requirements for Explosive gas atmospheres

### OPTIONS

Codes	Customer modification
DH	Special range
EA	Special calibration
NK	ATEX IS label
NJ	CE label
NX	CSA IS label
TF	FM IS label
ZQ	GC379-2-145-2P (Glenair) electrical connector.

### ACCESSORIES

Carrying handle	Adapter fastener kit
Connector fastener kit	Retaining ring tool
Buna-N O-Ring seal	Calibration Kit
Serial Cable assembly	Ring pliers

### STANDARD PIN CONNECTIONS

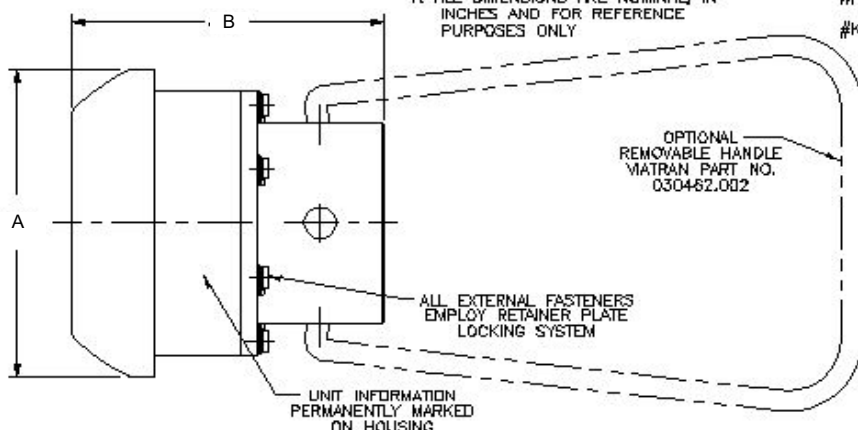
Some models are provided with customer specified wiring. Consult Viatran for exact wiring connections.

PIN A	+Power/Signal
PIN B	-Power/Signal
PIN C	No Connection
PIN D	No Connection
PIN E	+Calibration
PIN F	-Calibration
Grn Ter	Case Ground

Model Number	Union Fitting	A	B	
			Min.	Max.
510	1502	3.688	2.973	4.473
520	2002	3.000	3.775	5.275

### NOTE:

1. ALL DIMENSIONS ARE NOMINAL, IN INCHES AND FOR REFERENCE PURPOSES ONLY



ELECTRICAL CONNECTION:  
6-PIN BAYONET-TYPE CONNECTOR  
WITH STAINLESS STEEL SHELL  
(MATES WITH CANNON  
#KPT06F-10-6S OR EQUIV.  
OPTIONALLY AVAILABLE)  
& PROTECTIVE CAP

