

# Pressure Transmitter

## MODEL 555



### GAGE. ABSOLUTE. ACCURATE.

#### COMPACT AND COMPLETELY SEALED

The Viatran 555 is designed to withstand harsh atmospheres including submersion to 100 feet. The all-welded construction, with magnetically-coupled zero and span potentiometers, ensures the water-tight integrity of the high-reliability electronics. The 555 design allows easy installation in pipelines of abrasive slurries or sludge for pump monitoring. The Inconel X750 diaphragm material ensures long life in abrasive slurries. Using a pipe saddle with integral shutoff, the 555 can be installed wet in less than an hour from start to finish.

#### APPROVAL OPTIONS

Model 555 qualifies for FM, CSA, and ATEX ratings. External zero, span, and calibration controls are hermetically sealed, yet easily adjusted by means of Viatran's unique magnetically coupled

adjustments. The signal conditioner in the 555 allows for 4:1 ranging of the transmitter's standard pressure range.

#### IN-FIELD SETUP AND RANGING

A calibration circuit permits ranging and setup without a calibrated pressure source. When the cal switch is activated, an electronic signal is sent through the unit, simulating the level or pressure. The optional non-interactive zero and span circuit allows taring of the zero without effecting the span.

#### JUST ONE PART OF A COMPLETE LINE OF SOLUTIONS FROM VIATRAN

The 555 represents one transmitter in a family of sensors designed for the process control industry. For more information on our complete line of solutions, call the number below to speak to a member of the Viatran process team.

Viatran's rugged Model 555 pressure transmitter is built to provide accurate, stable measurement in extremely harsh abrasive environments.

#### FEATURES

- Hermetically sealed external controls
- Built-in field calibration signal
- All welded, watertight submersible construction
- 4-20 mA
- Flush abrasion resistant diaphragm suitable for pipe saddle mounting.

#### TYPICAL APPLICATIONS

- Shipboard/Marine
- Pulp and paper
- Chemical processing
- Slurries
- Sludge

Approval Options Available.  
Contact Viatran for details.



For product availability or to order please call 1-800-688-0030, ext 512.

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An ISO 9001:2001 Certified Company

## SPECIFICATIONS

### PERFORMANCE

Full Scale Pressure Range (URL) . . . . . 0-100 through 0-500 PSI (0-7 through 0-35 BAR)

Non-Linearity (Best fit straight line) . . . . .  $\leq \pm 0.25\%$  FSO  
 Hysteresis & Repeatability . . . . .  $\leq \pm 0.1\%$  FSO  
 Full Scale Output (FSO) . . . . . 16 mA at 70°F (21°C)  
 Resolution . . . . . Infinite  
 Long Term Stability . . . . .  $\leq \pm 0.25\%$  FSO per 6 months  
 Response time  
 (mechanical & electrical combined) . . . . .  $\leq 5\text{mSec}$  to reach 90% of FSO  
 Temperature effect on zero . . . . .  $\pm 1\%$  FSO per 100°F (37°C)  
 Temperature effect on Span . . . . .  $\pm 1\%$  FSO per 100°F (37°C)

### TEMPERATURE EFFECT ON ZERO AND SPAN

Combined at 4:1 range down . . . . .  $\leq \pm 4.0\%$  FSO per 100°F (37°C)  
 Compensated Temperature Range . . . . . 70°F to +170°F (21°C to +77°C)  
 Maximum operating temperature . . . . . +185°F (+85°C)  
 Minimum operating temperature . . . . . -40°F (-40°C)  
 Non-operating temperature range . . . . . -65°F to +250°F (-53°C to 121°C)

### ELECTRICAL

Supply Voltage . . . . . 12 to 30 VDC  
 Power Supply Regulation . . . . .  $\leq \pm 0.02\%$  FSO per volt  
 Output Signal . . . . . 4-20 mA at 70°F (21°C)  
 Load Impedance . . . . . 900 Ohms maximum at 30 VDC

### ZERO ADJUSTMENT

Elevation . . . . . -100% of FSO  
 Suppression . . . . . +50% of FSO  
 Span Adjustment . . . . . Rangeable down 4:1 from standard range  
 Range Calibration Signal . . . . . 20% of FSPR externally switched  
 Calibration Signal Accuracy . . . . .  $\pm 1.0\%$  FSO. The exact signal to pressure correlation is provided with each unit.  
 Circuit Protection . . . . . Varistor protected across the input leads for surges above 40V and currents to 250A peak with a pulse width of 20  $\mu\text{Sec}$ . Reverse polarity protected.

Bridge Resistance . . . . . 5K Ohms nominal  
 Insulation Resistance . . . . .  $\geq 200$  MegOhms to case ground ( $\leq 5$  nS)  
 RFI/EMI Suppression . . . . . Negligible to 500 MHz at 5 Watts direct contact  
 Electrical Connection . . . . . 1/2" NPT Male, 18 AWG, 72"  
 Red . . . . . +Power/Signal  
 Black . . . . . -Power/Signal  
 Green . . . . . Case Ground

### MECHANICAL

#### PRESSURE CONNECTIONS

100-1000 PSI . . . . . Flush Diaphragm

PROOF PRESSURE . . . . . 1.5 times URL

BURST PRESSURE . . . . .  $\geq 5$  times URL

Shock Limitation . . . . . 100G's

Weight . . . . . 48 oz. (1.4 kg)

ENCLOSURE MATERIALS . . . . . Inconel X750 and 316L stainless steel

WETTED MATERIALS . . . . . Inconel X750 and 316L stainless steel

Enclosure Classification . . . . . NEMA/Type 4x (1P68)

### CERTIFICATIONS

FM . . . . . Intrinsic Safety: Class I, II, III, Division 1, Groups A-G, and AEx ia IIC, T4 at Ta=80°C, T5 at Ta=40°C, Indoor and Outdoor NEMA/Type 4X Hazardous Locations

Nonincendive: Class I,II,III Div. 2, Groups A-G and Class I, Zone 2, Group IIC, T4 at Ta=80°C, T5 at Ta=40°C

CSA (PENDING) . . . . . Intrinsic Safety: Class I, Div. 1, A-D Class II, E-G, Class III, Ex ia IIC T4 at Ta=80°C, T5 at Ta=40°C

ATEX . . . . . Intrinsic Safety: II 1 G

EEx ia IIC, -20°C T4, Ta 50°C

CE . . . . . EMC Directive 89/336/EEC and Low Voltage Directive 72/23/EEC

EN 61010-101993/A2:1995: Low Voltage Standard

EN 61326: EMC Conformity Standard

PED Directive 97/23/EC

### OPTIONS (Codes)

BB . . . . . Mini change electrical connector  
 BP . . . . . Micro change electrical connector  
 CL . . . . . Extra lead length (6 ft standard)  
 DG . . . . . Improved temperature and compensation  
 DK . . . . . Special shunt calibration  
 EA . . . . . Special calibration run  
 NG . . . . . ATEX Flameproof label  
 NH . . . . . Customer specified identification  
 NJ . . . . . CE label  
 NK . . . . . ATEX Intrinsic Safety label  
 NSR . . . . . Non standard range  
 NX . . . . . CSA Intrinsic Safety label  
 NZ . . . . . FM Nonincendive label  
 TF . . . . . FM Intrinsic Safety label  
 TJ . . . . . CSA Div / Zone 2  
 TW . . . . . GOST Approval  
 VD . . . . . G2" retaining nut  
 Z ( ) . . . . . Alternate electrical connection  
 ZU . . . . . Direct coupled cable

### ACCESSORIES

Pipe Saddle with shutoff  
 Conduit Connection Box  
 Calibration Test Fixture

### NOTE:

1. ALL DIMENSIONS ARE NOMINAL IN INCHES [MM]

AND FOR REFERENCE PURPOSES ONLY

ALL ADJUSTMENTS ARE MAGNETICALLY COUPLED

SHUNT CALIBRATION—  
 6000 AND 12000: OFF  
 3-00: 20% OF STANDARD  
 RANGE

COARSE ZERO  
 ZERO ELEVATION  
 AND SUPPRESSION

UNIT INFORMATION  
 PERMANENTLY MARKED  
 ON HOUSING

CONDUIT CONNECTION:  
 1/2-14NPT  
 (FOR CUSTOMER SUPPLIED  
 JUNCTION BOX OR CONDUIT)

ELECTRICAL CONNECTION:  
 #18 AWG, VINYL WIRE (3)

