PRESSURE TRANSMITTER

# Model 555



## 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**

## 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

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.

## 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.

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

The signal conditioner in the 555 allows for 4:1 ranging of the transmitter's standard pressure range. The 555 represents one transmitter in a family of sensors designed for the process control industry.

CE

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## PERFORMANCE

| | |
|---|---|
| Full Scale Pressure Range | 0-50 thru 0-500 PSIS |
| Non-Linearity (Best Fit Straight Line) | ≤±0.25% FSO |
| Hysteresis & Repeatability | ≤0.1% FSO |
| Full Scale Output (FSO) | 16 mA at 70°F (21°C) |
| Zero and Span Balance | ±0.5% FSO |
| Resolution | Infinite |
| Long Term Stability | ≤±0.50% FSO per year FSO per 6 months |
| Response Time (Mechanical and Electrical Combined) | <20 milliseconds to reach 90% of Full Scale |
| Temperature Effect on Zero and Span | |
| Temperature Effect on Zero | ±1% FSO per 100°F (37°C) |
| Temperature Effect on Span | ±1% FSO per 100°F (37°C) |
| Combined at 4:1 Range Down | ≤±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) - Ambient |
| | 250°F (121°C) - Fluid |
| Minimum Operating Temperature | -40°F (-40°C) |
| Storage Temperature Limits | -65°F to 250°F (-53°C to 121°C) |

## ELECTRICAL

| | |
|---|---|
| Supply Voltage | 12 to 30 Vdc |
| Power Consumption | ≤±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 | ±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 250 Amps Peak with a pulse width of 20 µSec. Reverse polarity protected |
| Bridge Resistance | 5K Ohms nominal |
| Insulation Resistance | ≥200 MegOhms to case ground (≤5 nS) |
| RFI/EMI | Negligible to 500 MHz at 5 Watts direct contact |
| Electrical Connection | 1/2" NPT (M), 18 AWG, 72" |
| Red | +Power/Signal |
| Black | -Power/Signal |
| Green | Case Ground |

## MECHANICAL

| | |
|---|---|
| Pressure Connection | |
| 100-1000 PSI | Flush diaphragm |
| Proof Pressure | 1.5 times URL |
| Burst Pressure | ≥3 times URL |
| Shock Limitation | 100 g's |
| Weight | 70 oz (2 kg) |

## MATERIALS OF CONSTRUCTION

| | |
|---|---|
| Enclosure Material | Inconel X750 and 316L stainless steel |
| Wetted Materials | Inconel X750 and 316L stainless steel |
| Enclosure Classification | NEMA/Type 4X (1P68) |

## CERTIFICATIONS (Consult Factory for Available Options)

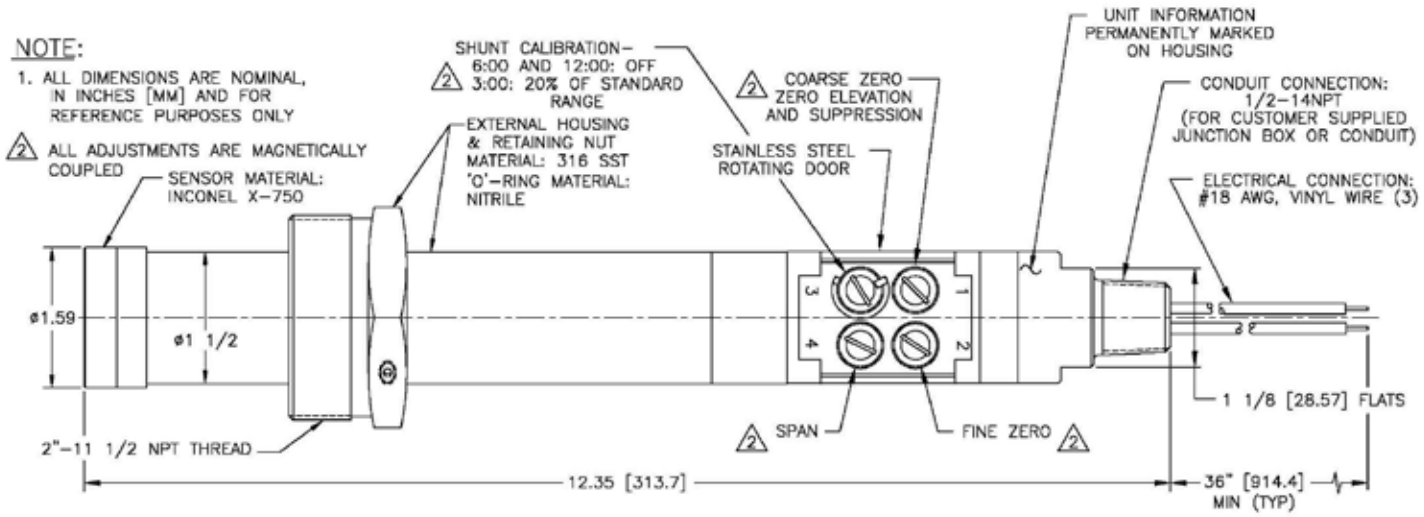
| | |
|---|---|
| FM | Intrinsic Safety: Class I, II, III, Division 1, Groups A-G, and AEx ia IIC, T4 at Ta=80ºC, T5 at Ta=40ºC, Indoor and Outdoor NEMA/Type 4X Hazardous Locations |
| | Nonincendive: Class I,II,III Div. 2, Groups A-G and Class I, Zone 2, Group IIC, T4 at Ta=80ºC, T5 at Ta=40ºC |
| CSA (Pending) | Intrinsic Safety: Class I, Div. 1, A-D Class II, E-G, Class III, Ex ia IIC T4 at Ta=80ºC, T5 at Ta=40ºC |
| ATEX | Intrinsic Safety: II 1 G EEx ia IIC, -20ºC T4, Ta 50ºC |
| 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 EMC Directive 89/336/EEC |

## 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 text fixture




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

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