

Model 550

Low Pressure Transducer



DESCRIPTION

Setra's Model 550 low pressure transducer features 3:1 range turndown for field adjustment from 110% to 32% of the nominal range, making this unit well suited for applications that are subject to overpressure. Adjustment is made via the switch and potentiometer conveniently located on the top of the transducer housing.

The Model 550 is packaged in a rugged 316 stainless steel housing for use in general purpose and submersible applications. A male or female threaded pressure fitting is offered for general purpose applications, and an open face style with a KF25 flange is offered for submersible applications.

The Model 550 circuit is RFI/lightning protected, virtually eliminating costly field replacement.

Principle of Operation:

The capacitive sensor is constructed of an electrically isolated stainless steel electrode and ceramic diaphragm, mounted closely and in parallel to each other. The diaphragm is capable of slight flexing under applied pressure. A minute change in applied pressure alters the gap between the electrode and diaphragm. This change is detected by a custom designed ASIC, amplified and converted to high-level linear output signal that is proportional to applied pressure.

FEATURES

- Superior Stability Avoid Down Time
- NEMA 4/IP65 and NEMA 6/IP68 Rated
- ±0.25% FS High Accuracy
- 3:1 Range Turndown
- Meets CE Conformance Standards

APPLICATIONS

- Tank Level
- Reservoir Level
- River Level
- Hydro-Power
- Open Channel Flow
- Flood Warning
- Waste Water

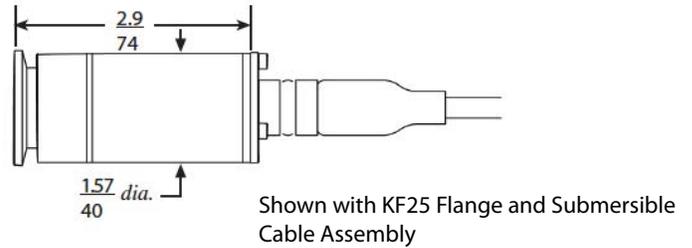
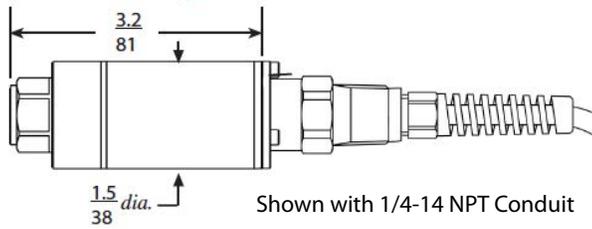
SPECIFICATIONS

| Performance Data | | Environmental Data | | Electrical Data (Voltage) | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------|--|---|-----------------------------|--|----------------|---------------|--------------|---------------|-----------------------------|---------------|---------------|------------------------------|---------------|---------------|---------|--------|--------|--------------|--------|--------|---------------|---------|---------|-----------------------------|---|
| Accuracy RSS ¹ (at constant temp) | ±0.25% F | Operating and Storage Temperature ³ °F/°C | | Circuit | 3-Wire | | | | | | | | | | | | | | | | | | | | | |
| Thermal Effect ² | | for Elec. Codes E2 | +15 to +185 (+25 to +85) | Excitation | 7.5 to 35 VDC (8-35 VDC, 1-6 VDC output) | | | | | | | | | | | | | | | | | | | | | |
| Compensated Range F ² (°C) | -5 to +140 (-20 to + 60) | for Elec. Codes UA | -5 to +120 (-20 to +50) | Output ⁴ | 0.5 to 5.5 VDC, 1 to 6 VDC, 0 to 5 VDC, 0.1 to 5.1 VDC, 1 to 5 VDC | | | | | | | | | | | | | | | | | | | | | |
| Zero/Span Shift %FS/100°F (%FS/50°C) | 1.0 (2.0) | w/ Process Media | -40 to +212 (-40 to +100) | Electrical Data (Millivolt) | | | | | | | | | | | | | | | | | | | | | | |
| Zero/Span Adjustment | ±10% (by Potentiometer) | Physical Description | | Circuit | 2-Wire | | | | | | | | | | | | | | | | | | | | | |
| Response Time | 0.5 milliseconds | Case Rating | 318 Stainless Steel IP68 (NEMA) Submersible G IP65 | Excitation | 9 to 35 VDC | | | | | | | | | | | | | | | | | | | | | |
| Long Term Stability | 0.2% FS/1 year | Wetted Parts | Inconel, Ceramic & Nitrile | Output ⁵ | 4 to 20 mA | | | | | | | | | | | | | | | | | | | | | |
| Pressure Media | | Weight | 11.6 oz. (330g) | Maximum Loop Resistance | (Vs-9) x 50 Ohms | | | | | | | | | | | | | | | | | | | | | |
| Water of Viscous Fluids Compatible with 316 SS, Ceramic and Nitrile | | Diameter | 38.1 mm w/o K2 flange, 40.0 mm w K2 flange | Accessories | | | | | | | | | | | | | | | | | | | | | | |
| ¹ RSS of Non-Linearity, Non-Repeatability and Hysteresis. ² Units calibrated at nominal 70°F. Maximum thermal error is computed from this datum. ³ Operating/Storage temperature limits of the cable or process media. ⁴ Zero/Span output factory set to <1.0% Full Scale ⁵ Zero/Span output factory set within ±0.16 mA. | | <h3>Pressure Ranges</h3> <table border="1"> <thead> <tr> <th>Pressure Range</th> <th>Proof Pressure</th> <th>Burst Pressure</th> </tr> </thead> <tbody> <tr> <td>≤ 85 in. W.C.</td> <td>803 in. W.C.</td> <td>1219 in. W.C.</td> </tr> <tr> <td>86 in. W.C. to 140 in. W.C.</td> <td>1607 in. W.C.</td> <td>2410 in. W.C.</td> </tr> <tr> <td>141 in. W.C. to 400 in. W.C.</td> <td>2025 in. W.C.</td> <td>4017 in. W.C.</td> </tr> <tr> <td>≤ 3 psi</td> <td>29 psi</td> <td>44 psi</td> </tr> <tr> <td>3.1 to 5 psi</td> <td>58 psi</td> <td>87 psi</td> </tr> <tr> <td>5.1 to 15 psi</td> <td>102 psi</td> <td>145 psi</td> </tr> </tbody> </table> | | Pressure Range | Proof Pressure | Burst Pressure | ≤ 85 in. W.C. | 803 in. W.C. | 1219 in. W.C. | 86 in. W.C. to 140 in. W.C. | 1607 in. W.C. | 2410 in. W.C. | 141 in. W.C. to 400 in. W.C. | 2025 in. W.C. | 4017 in. W.C. | ≤ 3 psi | 29 psi | 44 psi | 3.1 to 5 psi | 58 psi | 87 psi | 5.1 to 15 psi | 102 psi | 145 psi | GA9 GA10 GA11 GA25 | Large Din, 4365-A, Strain Relief Large Din, 4365-A, 1/2" Conduit 6-Pin Dendix to 125°C Plastic Nose Cone w/ G 1/4 Port |
| Pressure Range | Proof Pressure | Burst Pressure | | | | | | | | | | | | | | | | | | | | | | | | |
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Model 550

Low Pressure Transducer

OUTLINE DRAWING



ORDERING INFORMATION

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| Model | Range | Pressure | Pressure Fitting | Output | Elec. Term. | Accuracy | Options |
|------------|---------------------------------|----------|--------------------|------------------------|---|------------------|-----------------------|
| 5501 = 550 | 001P 1 PSI 010W 10 in W.C. | G Gauge | G3 G 1/4 Female | 11 4-20 mA, 2-Wire | E2 Large DIN 43650 Conn w. Mating Plug | F 0.25% FS | B ATEX Intrinsic Safe |
| | 002P 2 PSI 015W 15 in W.C. | | 2M 1/4-18 NPT Male | 28 1-6 VDC, 3-Wire | UA Molded Immersible Cable (up to 2000 meters (656 ft)) | S 0.15% FS, Opt. | |
| | 003P 3 PSI 025W 25 in W.C. | | 4M 1/2-14 NPT Male | 2B 0-5VDC, 3-Wire | | | |
| | 004P 4 PSI 050W 50 in W.C. | | G2 G 1/4 Male | 24 0.5-5.5 VDC, 3-Wire | | | |
| | 005P 5 PSI 100W 100 in W.C. | | N2 KF25 Flange | 27 1-5 VDC, 3-Wire | | | |
| | 007P 7 PSI 150W 150 in W.C. | | | 0.1-5-1VDC, 3-Wire | | | |
| | 010P 10 PSI 200W 200 in W.C. | | | | | | |
| | 012P 12 PSI 250W 250 in W.C. | | | | | | |
| | 015P 15 PSI 300W 300 in W.C. | | | | | | |
| | 350W 350 in W.C. | | | | | | |
| | 400W 400 in W.C. | | | | | | |

Ordering example: Part No. 5501002PG211UAF - For a Model 550 Pressure Transducer, 2 PSI, G 1/4" Male Pressure Fitting, 4-20 mA Output, Molded Submersible Cable, and 0.25% Accuracy.