

831 | 851 | 861 Series

Pressure sensor

Flexible design



Description

Dynisco models 831, 851, and 861 general purpose transducers offer flexible design and a pressure measurement accuracy of $\pm 0.25\%$ full scale output. Interchangeable configuration allows users to specify the pressure range, pressure port and output level that meet specific application requirements. A bonded strain gage sensor provides reliable operation in a wide range of industrial applications.

Features

- Accuracy $\pm 0.25\%$
- 3 mV/V, 5 Vdc and 10 Vdc outputs
- 0 - 100 to 0 - 30,000 psi
- Excellent temperature compensation
- Internal shunt calibration
- Bonded strain gage sensor

Performance Characteristics

| | |
|------------------------------|--|
| Pressure Range (psi): | 0 - 100, 0 - 250, 0 - 500, 0 - 1,000, 0 - 1,500, 0 - 2,500, 0 - 3,000, 0 - 5,000, 0 - 7,500, 0 - 10,000, 0 - 15,000, 0 - 20,000, 0 - 30,000 |
| Accuracy: | ±0.25% FSO including linear- ity, hysteresis, and repeat- ability |

Electrical Characteristics

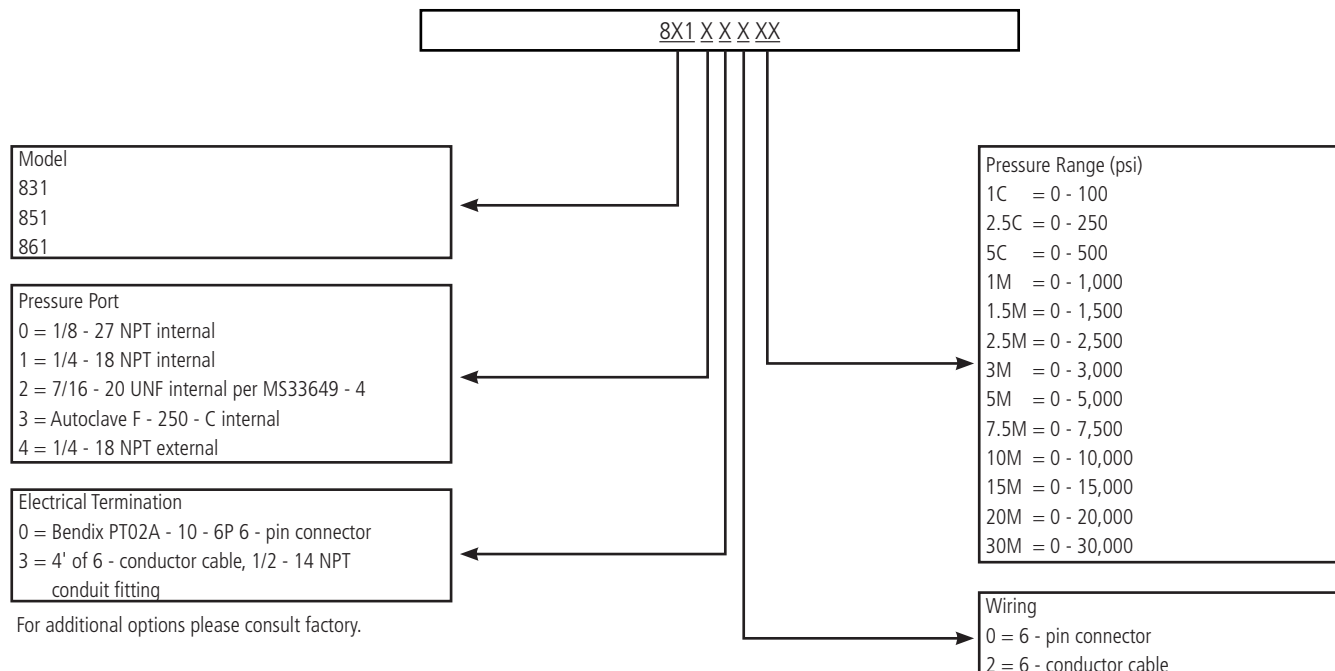
| | |
|------------------------------------|--|
| Full Scale Output: | 831: 3 mV/V ±0.5% 851/861: 5 Vdc/10 VDC |
| Input/Output Resistance: | 831: 350 ±10 Ohms |
| Internal Shunt Calibration: | 831/851/861: 80% ±0.5% FSO |
| Zero Balance: | 831: ±2% FSO |
| Zero And Span Adjustment: | 851/861: ±5% FSO |
| Input Voltage: | 831: 10 Vdc recommended, 15 Vdc maximum 851: ±12 to ±16 Vdc, 24 to 32 Vdc 861: ±14 to ±16 Vdc, 24 to 32 Vdc |
| Insulation Resistance: | 831: 1,000 megohms @ 50 VDC 851/861: 100 megohms @ 50 Vdc |
| Input Current: | 851/861: 45 mA (maximum) @ 2K load |

Temperature Characteristics

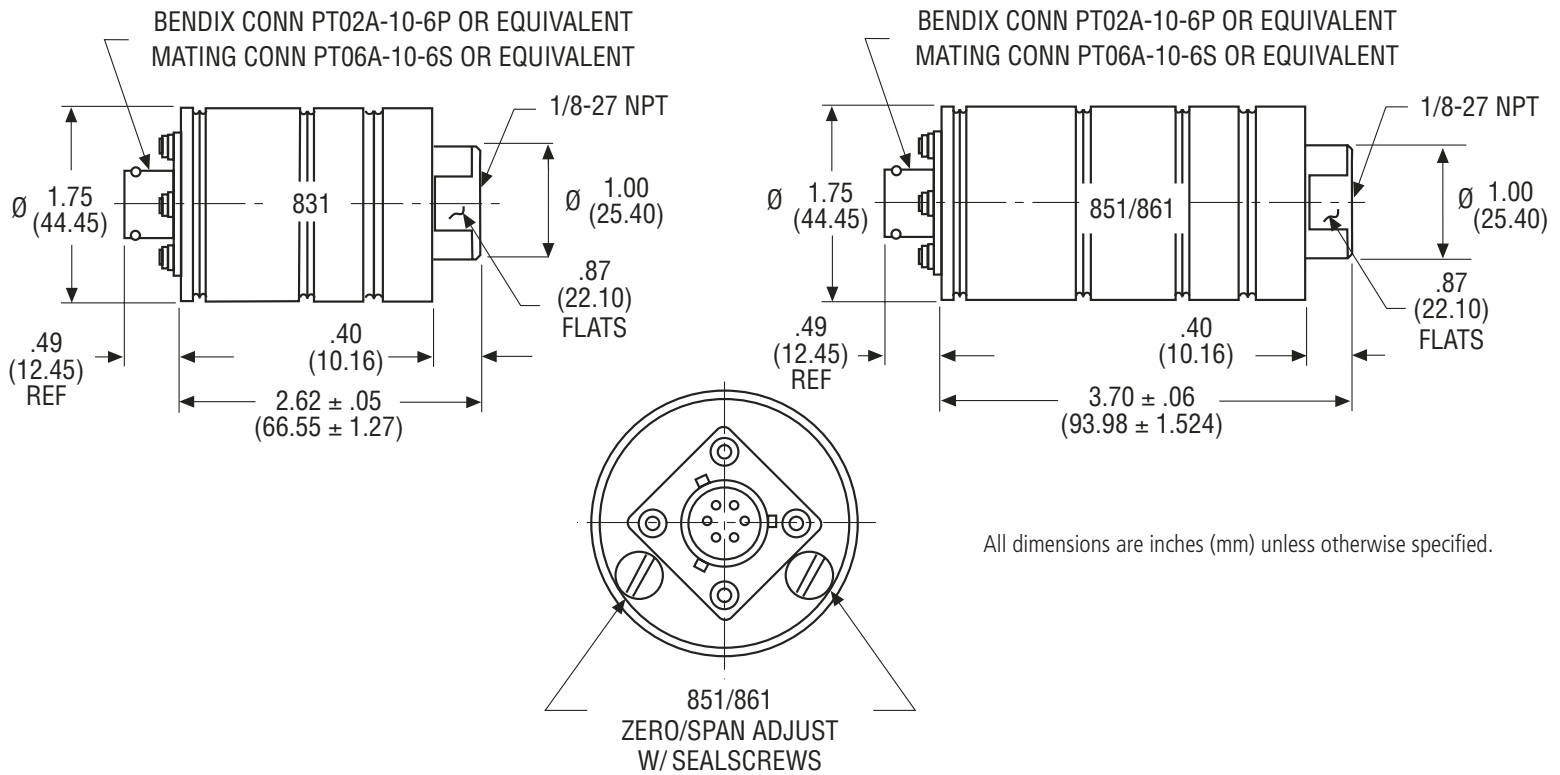
| | |
|------------------------------------|---|
| Operating Range: | 831: -65°F to +250°F (-54°C to +120°C) 851/861: -20°F to +185°F (-29°C to +85°C) |
| Compensated Range | 831/851/861: 0°F to 150°F (-18°C to +66°C) |
| Temperature Effect On Zero: | 831/851/861: ±0.005% full scale/°F(±0.009% full scale/°C) |
| Temperature Effect On Span: | 831/851/861: ±0.005% full scale/°F(±0.009% full scale/°C) |

Mechanical Characteristics

| | |
|---------------------------|--|
| Safe Overpressure: | 1.5 x rated pressure |
| Burst Pressure: | 100 - 250 psi: 10 x rated pressure 500 - 3,000 psi: 5 x rated pressure 5,000 - 10,000 psi: 3 x rated pressure |
| Wetted Material: | 17 - 4 PH, 15 - 5 PH stainless steel |
| Cover Material: | 303, 304 stainless steel |
| Weight: | 851/861: Approximately 17 ounces; 831: 13 ounces |

Ordering Guide for 831, 851, & 861 Series

Dimensions



CE EAC SIL2
Safety Integrity Level

Dynisco

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Options

For Melt and Industrial Pressure Transducers and Transmitters

1. Options for Melt Pressure Transducers and Transmitters.

1.1 All detailed specifications for the below mentioned options see table next page (Specifications for tip-versions with 1/2"-20UNF thread).

| | |
|------------------|--|
| B106 | Oil fill material (safe for medical and food applications). Max. operating temperature 315°C. Available for all standard transducer and transmitter versions, pressure ranges 70 bar up to 700 bar. (Details and characteristics see on pages 112 / 113) |
| B170 | Titanium nitride coated diaphragm , available for sensors with standard fill material with 15-5 PH- or the thicker Inconel 718-diaphragm as well as sensors with NaK fill material and Inconel 718 diaphragm. |
| B171 | NaK fill alternate to the Standard fill material, only with Inconel 718 or Hastelloy C-276 diaphragm. High operating temperature up to 540°C only with Inconel 718 diaphragm. Max. pressure range 700 bar. |
| B173 | Borafuse coated diaphragm for sensors with Inconel 718 diaphragm and the fill material standard or NaK. Best solution for applications in abrasive materials. Only for high pressure ranges 350 bar up to 1400 bar. |
| B220 | The thicker Inconel 718 diaphragm with standard fill material. |
| H - Code | Hastelloy C-276 material of the diaphragm and transducer's lower stem and threads. Corrosion resistance against aggressive polymer and chemical materials. |
| XL - Code | Version with stronger, 0.15mm inconel 718 diaphragm , for high pressure ranges 200bar up to 2000bar |
| T80 | 0.008" thick 15-5 PH diaphragm with DyMax coating for any 1/2" thread transducer configurations with standard fill. Only for high pressure ranges 350 bar up to 1400 bar. |

1.2 Additional general options

| | |
|----------------|--|
| D01 | Sealing surface flat (90°) instead of the standard 45° sealing surface. |
| D05 | Cable connected output with cable bushing, IP65 protection, single wire end. |
| D30/xxx | Special calibration with range expansion of the signal output for MDT & EMT versions. Max. expansion up to 2-times, e.g. 100 bar range calibration max. 0-50 bar acc. 0-100% signal, 80% cal value of modified output signal. |
| D83 | Weather proof matching plug 6-pin connector. |
| PT100 | RTD100 Temperature measurement element instead of standard thermocouple. |
| S137 | Thermocouple PT100 stem and flexible length like the pressure sensor dimension. |
| T93 | 0.009" thick diaphragm for M18x1.5 thread transducer versions |
| TCxx | Diverse thermocouples available, please call for specific delivery information |



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