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154BC

SPECIFICATIONS

- **Low Cost**
- **316L Stainless Steel or Titanium**
- **19mm Diameter Package**
- **0 - 100mV Output**
- **Gage and Absolute**
- **Wide Compensated Temperature Range**

The 154BC is a 19mm small profile, media compatible, piezoresistive silicon pressure sensor packaged in a 316L stainless steel or ASTM Grade 2 CP titanium housing. The 154BC is a low cost unit designed without a header for o-ring mounting and OEM applications where compatibility with corrosive media is required. The titanium option offers greater resistance to corrosive materials and harsh cleaning chemicals, opening the range of its application use to things such as dialysis machines and salt/brackish water measurements.

The sensing package utilizes silicone oil to transfer pressure from either a 316L stainless steel or titanium diaphragm to the sensing element. A ceramic substrate is attached to the package that contains laser-trimmed resistors for temperature compensation and offset correction. An additional laser-trimmed resistor is included which can be used to adjust an external differential amplifier and provide span interchangeability to within $\pm 1\%$.

Please refer to the 154N uncompensated and constant voltage datasheets for more information on different features of the 154.

FEATURES

- O-Ring Mount
- -20°C to +85°C Compensated Temperature
- 1.0% Interchangeable Span
1. (provided by gain set resistor)
- Solid State Reliability
- ±0.3% Pressure Non Linearity
- Titanium Option

APPLICATIONS

- Medical Instruments (Dialysis Machines)
- Process Control
- Fresh, Waste, Salt and Brackish Water Measurements
- Refrigeration/Compressors
- Pressure Transmitters
- Hydraulic Controls

STANDARD RANGES

| Range (psi) | Gage | Range (Bar) | Absolute |
|-------------|------|-------------|----------|
| 0 to 015 | • | | |
| 0 to 030 | • | | |
| 0 to 050 | • | | |
| 0 to 100 | • | 0 to 007 | • |
| | | 0 to 012 | • |
| | | 0 to 018 | • |
| 0 to 300 | • | | |
| | | 0 to 028 | • |

PERFORMANCE SPECIFICATIONS

Supply Current: 1.5 mA

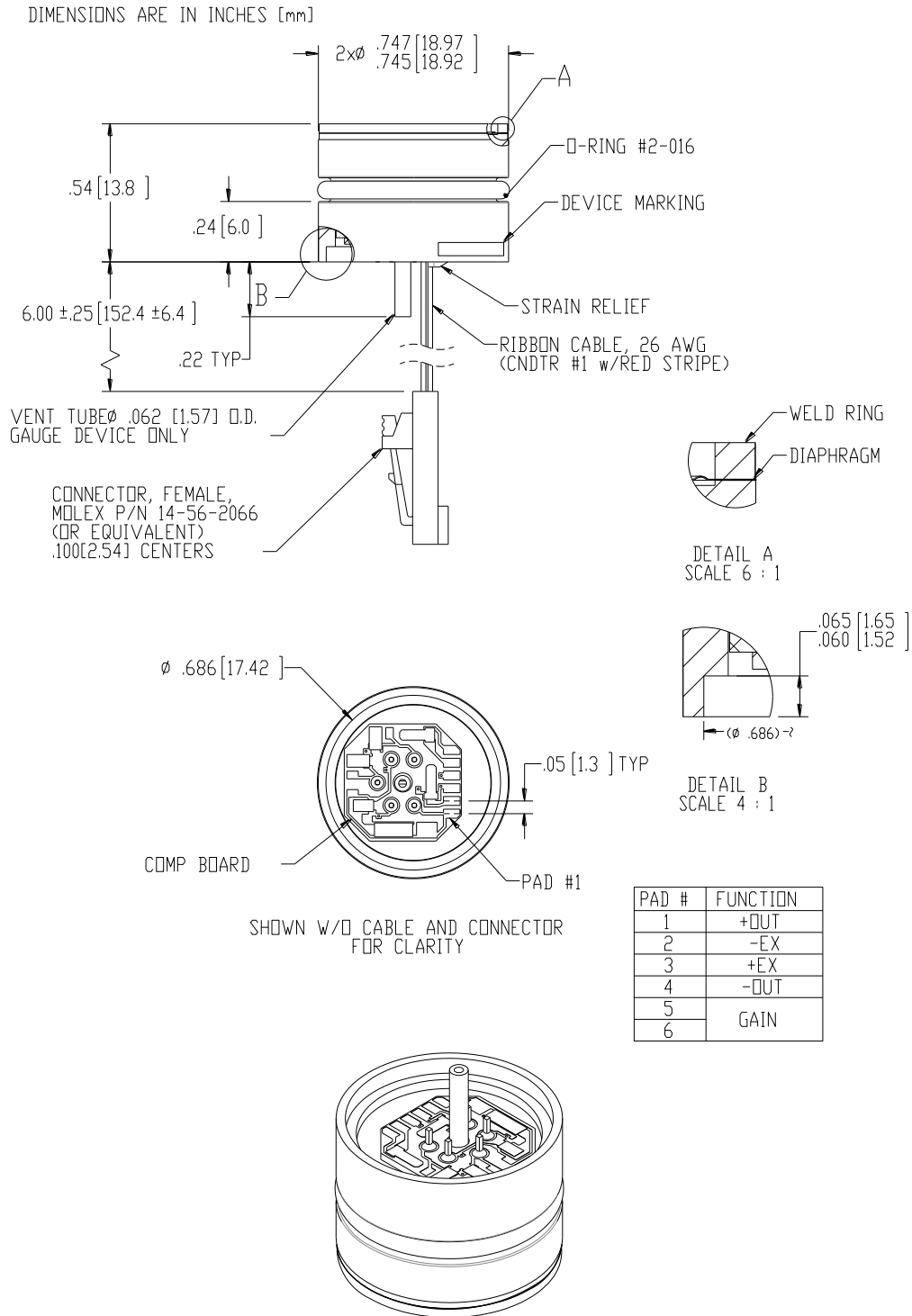
Ambient Temperature: 25°C (unless otherwise specified)

| PARAMETERS | MIN | TYP | MAX | UNITS | NOTES |
|-------------------------------|------------------------------------------------------------------------------------|-------|------|------------|-------|
| Span | 75 | 100 | 150 | mV | 1 |
| Zero Pressure Output | -1.0 | 0 | 1.0 | mV | 2 |
| Pressure Non Linearity | -0.30 | | 0.30 | %Span | 3 |
| Pressure Hysteresis | -0.20 | | 0.20 | %Span | |
| Repeatability | | ±0.02 | | %Span | |
| Input Resistance | 2.0 | 3.5 | 5.8 | kΩ | 3 |
| Output Resistance | 3.0 | | 6.0 | kΩ | |
| Temperature Error – Span | -1.0 | | 1.0 | %Span | 4 |
| Temperature Error – Offset | -1.0 | | 1.0 | %Span | 4 |
| Thermal Hysteresis – Span | -0.25 | ±0.05 | 0.25 | %Span | 4 |
| Thermal Hysteresis – Offset | -0.25 | ±0.05 | 0.25 | %Span | 4 |
| Long Term Stability – Span | | ±0.10 | | %Span/Year | |
| Long Term Stability – Offset | | ±0.25 | | %Span/Year | |
| Supply Current | 0.5 | 1.5 | 2.0 | mA | 5 |
| Output Load Resistance | 5 | | | MΩ | 6 |
| Insulation Resistance (50Vdc) | 50 | | | MΩ | 7 |
| Output Noise (10Hz to 1kHz) | | 1.0 | | μV p-p | |
| Response Time (10% to 90%) | | 0.1 | | ms | |
| Overload Pressure | | | 2X | Rated | 8 |
| Burst Pressure | | | 3X | Rated | 9 |
| Compensated Temperature | -20 | | +85 | °C | |
| Operating Temperature | -40 | | +125 | °C | 10 |
| Storage Temperature | -50 | | +125 | °C | 10 |
| Media – Pressure Port | Liquids and Gases compatible with 316L Stainless Steel or ASTM Grade 2 CP Titanium | | | | |

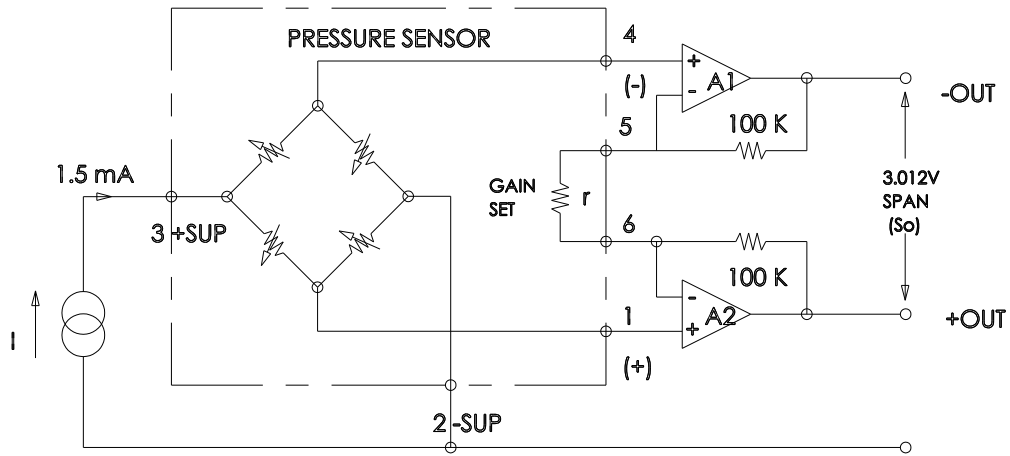
Notes

- For amplified output circuits, 3.012V ±1% interchangeability with gain set resistor. See application schematic.
- Measured at vacuum for absolute (A), ambient for gage (G).
- Best fit straight line.
- Over the compensated temperature range with respect to 25°C.
- Guarantees output/input ratiometricity.
- Load resistance to reduce measurement errors due to output loading.
- Between case and sensing element.
- 2X or 500psi, whichever is less. The maximum pressure that can be applied without changing the transducer's performance or accuracy.
- 3X or 600psi, whichever is less. The maximum pressure that can be applied to a transducer without rupture of either the sensing element or transducer.
- Maximum temperature range for product with standard cable and connector is -20°C to +105°C.

DIMENSIONS



APPLICATION SCHEMATIC



ORDERING INFORMATION

| | | | | | | |
|--------------|---|----------------------------------------------------|---|------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------|
| 154BC | - | S | - | 100PG | - | C |
| Model | - | Material | - | Pressure Type and Range | - | Electrical |
| 154BC | - | S = 316L Stainless Steel T = ASTM Grade 2 CP Ti | - | 015PG 030PG 050PG 100PG 300PG | - | P = Solder Pads R = Ribbon Cable C = Cable w/ Connector |
| | | | | 007BA 012BA 018BA 028BA | | |

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