

M5100 Pressure Sensor

Heavy Industrial - High EMI Rated



DESCRIPTION

The **M5100 series** from Measurement Specialities sets the price / performance standard for transducers used in demanding environments.

The M5100 exceeds the latest heavy industrial CE requirements including surge protection, and is over voltage protected to 16Vdc in both positive and reverse polarity.

The pressure port is machined from a solid piece of 17-4PH stainless steel (316L optional). There are no O-rings, organics or welds exposed to the pressure media. This allows for a leak proof, all-metal sealed pressure system which withstands more than 10 million pressure cycles without failure.

FEATURES

- ◆ Heavy Industrial CE Approval
- ◆ 100 V/m EMI Protection
- ◆ Reverse Polarity Protection
- ◆ Extended temperature range
- ◆ 1% Total Error Band
- ◆ Compact Outline
- ◆ -40 to 125° C Operating

APPLICATIONS

- ◆ Advanced HVAC Controllers
- ◆ Refrigeration Systems
- ◆ Automotive Test Stands
- ◆ Gas compressors
- ◆ Industrial process control
- ◆ Pumps and Compressors
- ◆ Hydraulic/Pneumatic Systems
- ◆ Agriculture Equipment
- ◆ Energy and Water Management

performance specifications

| | |
|---------------------|--|
| Pressure range | 50, 100, 200, 300, 500, 1000, 3000, 5000, 10,000 psi |
| Accuracy | +/- 0.25% FS BFSL |
| Media compatibility | Fluids compatible with 17-4 PH stainless steel (316L optional) |
| Pressure cycles | > 10 million |
| Pressure overload | 2 times rated pressure without calibration shift |
| Burst pressure | 5 times rated pressure |
| Long Term Stability | +/- 0.25% FS typical (12 months) |

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CE compliant per the following specifications

- EN55022 Emissions Class A & B
- IEC61000-4-2 Electrostatic Discharge Immunity (6kV contact/8kV air)
- IEC61000-4-3 EM Field Immunity (30V/m)
- IEC61000-4-4 Electrical Fast Transient Immunity (1kV)
- IEC61000-4-5 Surge (1kV)
- IEC61000-4-6 Conducted Immunity (10V)
- IEC61000-4-9 Pulsed Magnetic Field Immunity (100A/m)
- Automotive EM field immunity 100V/m 80 MHz to 1 GHz

environmental performance

| | |
|------------------------|--|
| Operating Temp Range | -40 to 125 °C |
| Compensated Temp Range | -20 to 85 °C |
| Total Error Band | +/- 1% FS over compensated range (+/- 1.5% typical over extended range contact factory) |
| Vibration | 20G at 20 to 200 Hz |
| Shock | 200 G / 11ms |

ordering information

| Model | Output | Connection | Options | Pressure Port | Pressure Range/Units | Pressure Reference |
|-------|---|---|---|---|--|---|
| M51 | 3 = 0.5 to 4.5 V 4 = 1 to 5 V 5 = 4 to 20 mA 6 = 0 to 5 V 7 = 0 to 10 V | 1 = 2 ft cable 4 = Packard Metripak 150 5 = Bendix 6 = Min-Hirschman DIN 43650 Ind C | 00000 W= 316L wetted material Fill options alphabetically from left | 2 = 1/4 BSP 4 = 7/16-20 UNF Male,O-ring 5 = 1/4-18 NPT P = 7/16-20 female With integrol valve depress | 050P= 50 psi 100P= 100 psi 200P= 200 psi 300P= 300 psi 500P= 500 psi 01KP= 1000 psi 03KP= 3000 psi 05KP= 5000 psi 10KP= 10,000 psi | 3.5B= 3.5 Bar 007B= 7 Bar 010B= 10 Bar 020B= 20 Bar 035B= 35 Bar 070B= 70 Bar 200B= 200 Bar 350B= 350 Bar 700B= 700 Bar |
| | X = Special Connector | X = Special Connector | 1nnnn = Custom Drawing Number | X = Special Port | | |

Consult factory for special options or non-standard part number

Example: M5131-000005-300PG = 5 V power with 0.5 to 4.5 Vout (ratiometric) and 2 ft cable. No options, 1/4 NPT pressure port rated at 100 psi gauge
M515X-12345P-010BG = 4-20 mA current loop, with a custom pressure port to drawing 12345 (consult factory). 7/16 pressure port, 10 bar gauge

output options

| Code | Output | Supply |
|------|----------------------------------|----------------|
| 3 | 0.5 to 4.5 V at 5V (ratiometric) | 4.75 to 5.25 V |
| 4 | 1 to 5 V | 8 - 30V |
| 5 | 4 - 20 mA | 9 - 30V |
| 6 | 0 - 10 V | 8 - 30V |
| 7 | 0 - 10 V | 15 - 30V |

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