

M5100 Pressure Sensor

Heavy Industrial - High EMI Rated



DESCRIPTION

The **M5100 series** from Measurement Specialties 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)

M5100 Pressure Sensor

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 integral 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		G = Gauge S = Sealed

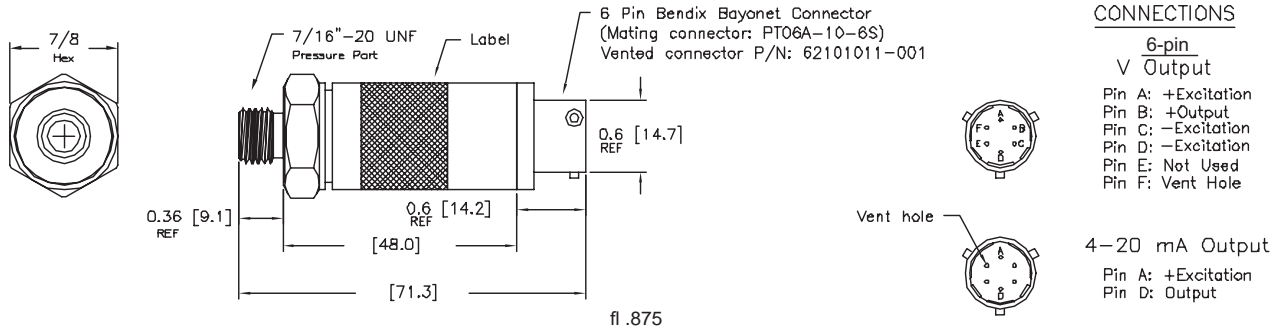
Consult factory for special options or non-standard part number

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

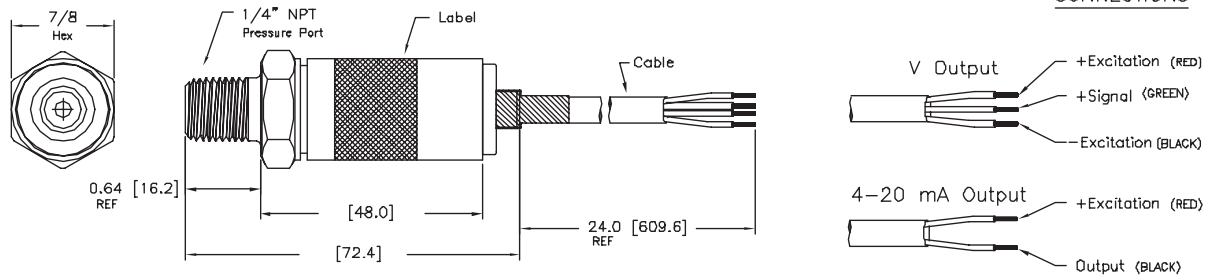
output options

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

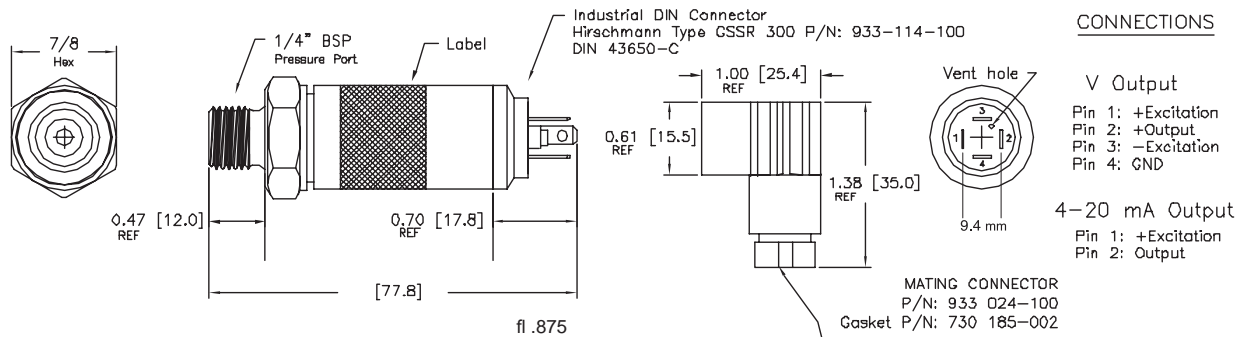
mechanical dimensions



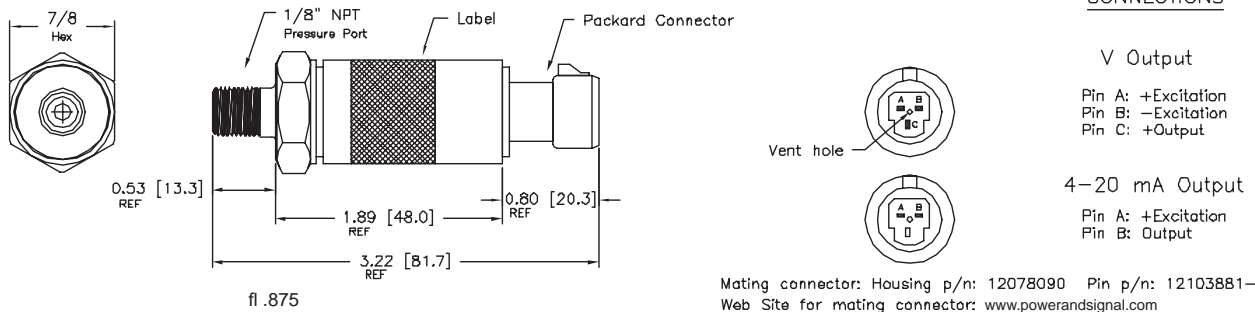
Vent through removed Pin F hole (under 1000 psi)



Vent through cable (under 1000 psi) Max operating temperature for cable is 100°C.



Vent through hole in connector (under 1000 psi)



Vent through hole in connector (under 1000 psi)

Note: Mating connector is available with 3 ft of cable PN (2001140 - 03).

Consult factory for other pin-out configurations