

# 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)



# 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 integrol valve depress	050P= 50 psi    3.5B= 3.5 Bar 100P= 100 psi    007B= 7 Bar 200P= 200 psi    010B= 10 Bar 300P= 300 psi    020B= 20 Bar 500P= 500 psi    035B= 35 Bar 01KP= 1000 psi    070B= 70 Bar 03KP= 3000 psi    200B= 200 Bar 05KP= 5000 psi    350B= 350 Bar 10KP= 10,000 psi    700B= 700 Bar	G = Gauge S = Sealed
	X = Special Connector	X = Special Connector	1nnnn = Custom Drawing Number	X = Special Port		

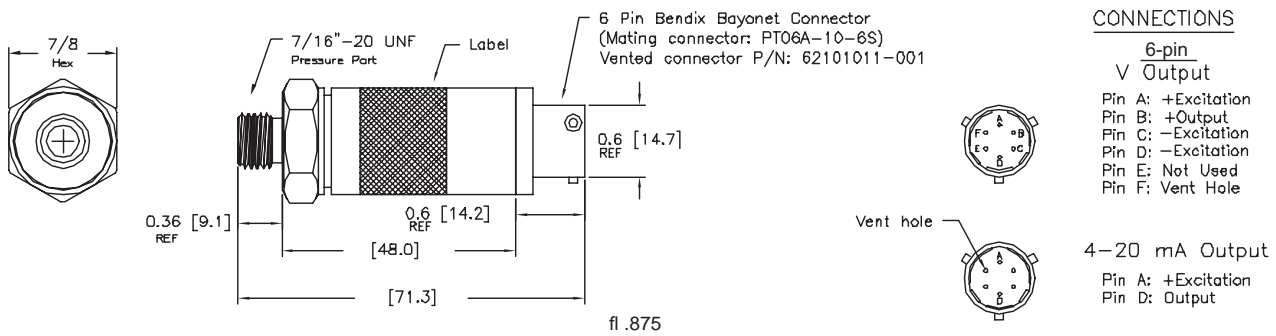
Consult factory for special options or non-standard part number

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

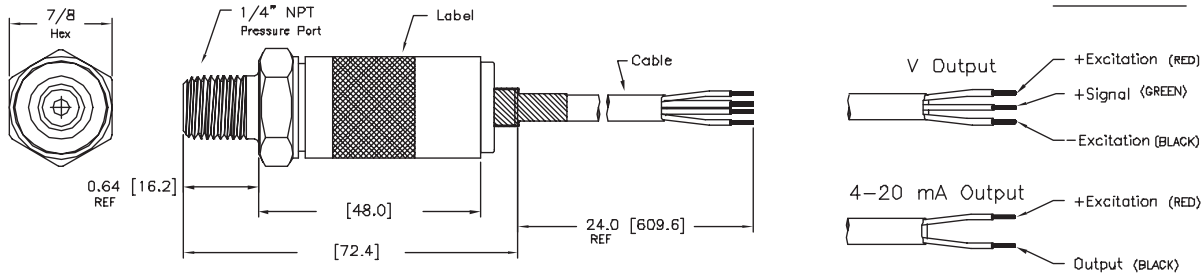
## output options

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

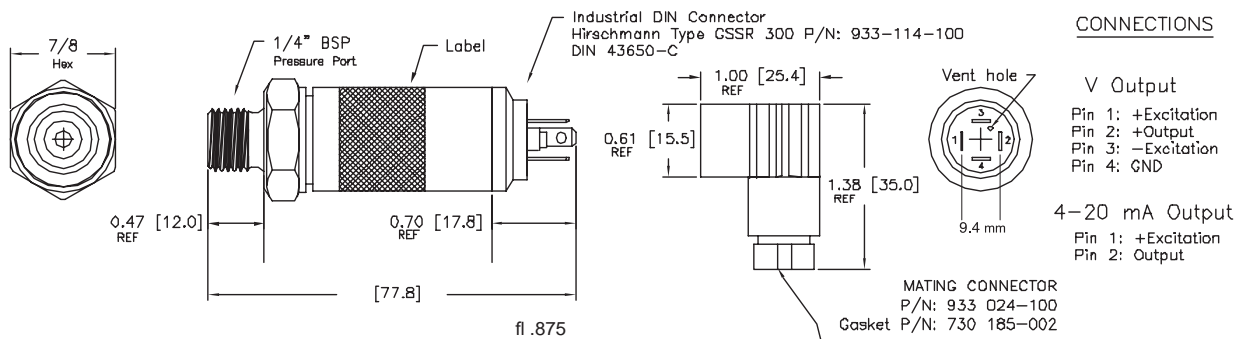
## mechanical dimensions



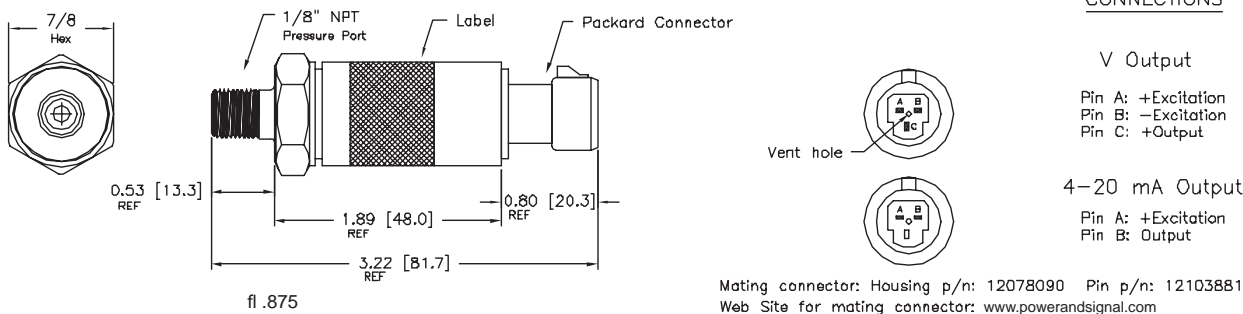
Vent through removed Pin F hole ( under 1000 psi )



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).

Mating connector: Housing p/n: 12078090 Pin p/n: 12103881-L  
Web Site for mating connector: [www.powerandsignal.com](http://www.powerandsignal.com)

Consult factory for other pin-out configurations