

# U5100 High Accuracy Pressure Sensor



- Wide Operating Temperature Range
- High Accuracy
- EMI Protected per CE Compliance

## DESCRIPTION

The U5100 series pressure transducers from the UltraStable™ line of MEAS, set a new price performance standard for demanding commercial and heavy industrial applications where high accuracy is required. This series is suitable for measurement of liquid or gas pressure, even for difficult media such as contaminated water, steam, and mildly corrosive fluids.

The U5100 uses MEAS' UltraStable™ technology that provides stability over a wide temperature range, performance previously available only in much higher priced sensors. The UltraStable™ technology employs a silicon-based strain gage isolated by an oil-filled capsule and a stainless steel diaphragm. The high stability rating is provided through MEMS-based technology and obtains excellent repeatability and minimal hysteresis. The U5100 exceeds the latest heavy industrial CE requirements including surge protection, and is over voltage protected in both positive and reverse polarity. The 100% 316L media isolation covers all but the most corrosive environments. Custom OEM designs available including exotic metals and various ports and output options. The durability is excellent. The U5100 exceeds the latest heavy industrial CE requirements including surge protection, and is over voltage protected to 16Vdc in both positive and reverse polarity.

This product is geared to the OEM customer who uses medium to high volumes. The standard version is suitable for many applications, but the dedicated design team at our Transducer Engineering Center stands ready to provide a semi-custom design where the volume and application warrants.

## FEATURES

- Heavy Industrial CE Approval
- 100 V/m EMI Protection
- 0.75% Total Error Band
- Compact Outline
- -40°C to +125°C Operating Temperature Range

## APPLICATIONS

- Advanced HVAC Controllers
- Refrigeration Systems
- Automotive Test Stands
- Industrial Process Control
- Pumps and Compressors
- Hydraulic/Pneumatic Systems
- Agriculture Equipment
- Energy and Water Management

# U5100 High Accuracy Pressure Sensor

## STANDARD RANGES

Range	psig	psia	Range	Barg	Bara
0 to 15	•	•	0 to 1	•	•
0 to 30	•	•	0 to 2	•	•
0 to 50	•	•	0 to 3.5	•	•
0 to 100	•	•	0 to 7	•	•
			0 to 10	•	•
0 to 200	•	•			
0 to 300	•	•	0 to 20	•	•
0 to 500	•	•	0 to 35	•	•
0 to 1k	•	•	0 to 70	•	•
0 to 1.5k	•	•	0 to 100	•	•
0 to 3k	•	•	0 to 200	•	•
0 to 5k	•	•	0 to 350	•	•
0 to 10k	•	•	0 to 700	•	•

## PERFORMANCE SPECIFICATIONS

Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
Accuracy (combined non linearity, hysteresis, and repeatability)	-0.1		0.1	%Span	1
Long Term Stability (1 year)	-0.1		0.1	%Span	
Total Error Band (over compensated range)			±0.75	%Span	2
Compensated Temperature	-20		+85	°C	
Operating Temperature	-40		+125	°C	3
Storage Temperature	-40		+125	°C	3
Pressure Overload	3X			Rated	
Burst Pressure	4X			Rated	
Vibration (20 to 200Hz)	20			g	4
Shock (11ms)	50			g	5
Pressure Cycles (Zero to Full Scale)	1			Million	6
Weight		96.75		grams	
Media Compatibility	All Materials Compatible with 316 Stainless Steel				

For custom configurations, consult factory.

### Notes

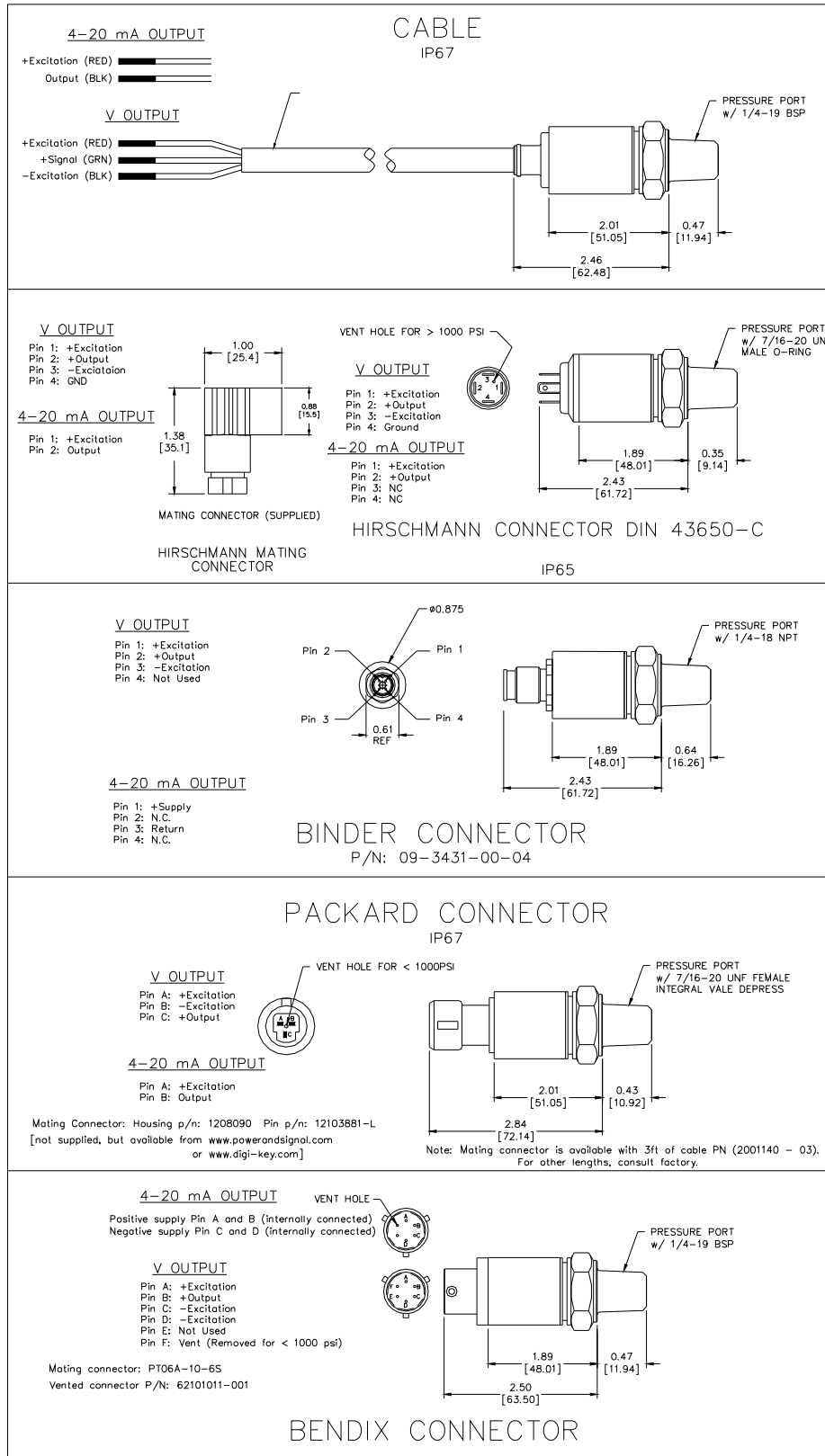
- Best fit straight line.
- TEB includes all accuracy errors, thermal errors, span and zero tolerances.
- Maximum temperature range for product with standard cable is -20°C to +105°C.
- Per MIL-STD-810C, Procedure 514.2, Figure 514.2-2, Curve L.
- 1/2 sine per MIL-STD 202F Method 213B condition A.

### CE Compliance

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)

# U5100 High Accuracy Pressure Sensor

## DIMENSIONS



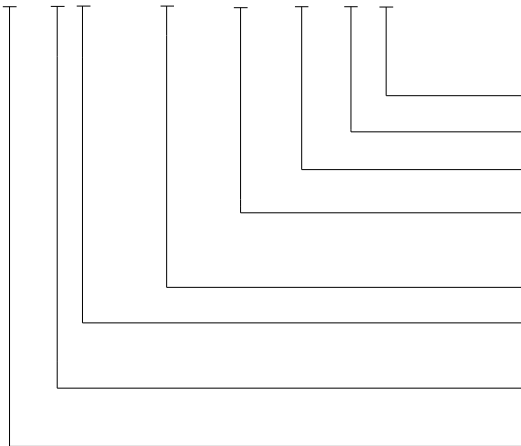
# U5100 High Accuracy Pressure Sensor

## OUTPUT OPTIONS

Code	Output	Supply (V)		
		MIN	TYP	MAX
3	0.5 – 4.5 V (ratiometric)	4.75	5	5.25
4	1 – 5 V	8		30
5	4 – 20 mA	9		30
6	0 – 5 V	8		30
7	0 – 10 V	15		30

## ORDERING INFORMATION

### U5131-000005-300PG



Type (G = Gage, A = Absolute, S = Sealed)

Units (P = psi, B = Bar)

Pressure Range (300 = 300, 1K5 = 1500, 3.5 = 3.5)

Pressure Port (2 = 1/4BSP, 4 = 7/16-20UNF Male O-Ring, 5 = 1/4-18NPT, P = 7/16-20 Female with Integral Valve Depressor)

Specials (nnnnn = Custom Drawing)

Connection (1 = 2ft Cable, 4 = Packard Metripak 150, 5 = Bendix PTIH -10-6P, 6 = Min-Hirschman DIN 43650 Ind C)

Output (3 = 0.5 to 4.5V, 4 = 1 - 5V, 5 = 4 - 20mA, 6 = 0 - 5V, 7 = 0 - 10V)

Model

### NORTH AMERICA

Measurement Specialties  
45738 Northport Loop West  
Fremont, CA 94538  
Tel: 1-800-767-1888  
Fax: 1-510-498-1578  
Sales: [pfg.cs.amer@meas-spec.com](mailto:pfg.cs.amer@meas-spec.com)

### EUROPE

Measurement Specialties  
(Europe), Ltd.  
26 Rue des Dames  
78340 Les Clayes-sous-Bois, France  
Tel: +33 (0) 130 79 33 00  
Fax: +33 (0) 134 81 03 59  
Sales: [pfg.cs.emea@meas-spec.com](mailto:pfg.cs.emea@meas-spec.com)

### ASIA

Measurement Specialties  
(China), Ltd.  
No. 26 Langshan Road  
Shenzhen High-Tech Park (North)  
Nanshan District, Shenzhen 518107  
China  
Tel: +86 755 3330 5088  
Fax: +86 755 3330 5099  
Sales: [pfg.cs.asia@meas-spec.com](mailto:pfg.cs.asia@meas-spec.com)

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.