

U5100 High Accuracy Pressure Sensor



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

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

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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	•	•

DIN Range	Barg	Bara
0 to 1	•	•
0 to 1.6	•	•
0 to 2.5	•	•
0 to 4	•	•
0 to 6	•	•
0 to 10	•	•
0 to 16	•	•
0 to 25	•	•
0 to 40	•	•
0 to 60	•	•
0 to 100	•	•
0 to 160	•	•
0 to 250	•	•
0 to 400	•	•
0 to 600	•	•
0 to 1000	•	•

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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

1. Best fit straight line.
2. TEB includes all accuracy errors, thermal errors, span and zero tolerances.
3. Maximum temperature range for product with standard cable is -20°C to +105°C.
4. Per MIL-STD-810C, Procedure 514.2, Figure 514.2-2, Curve L.
5. 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)

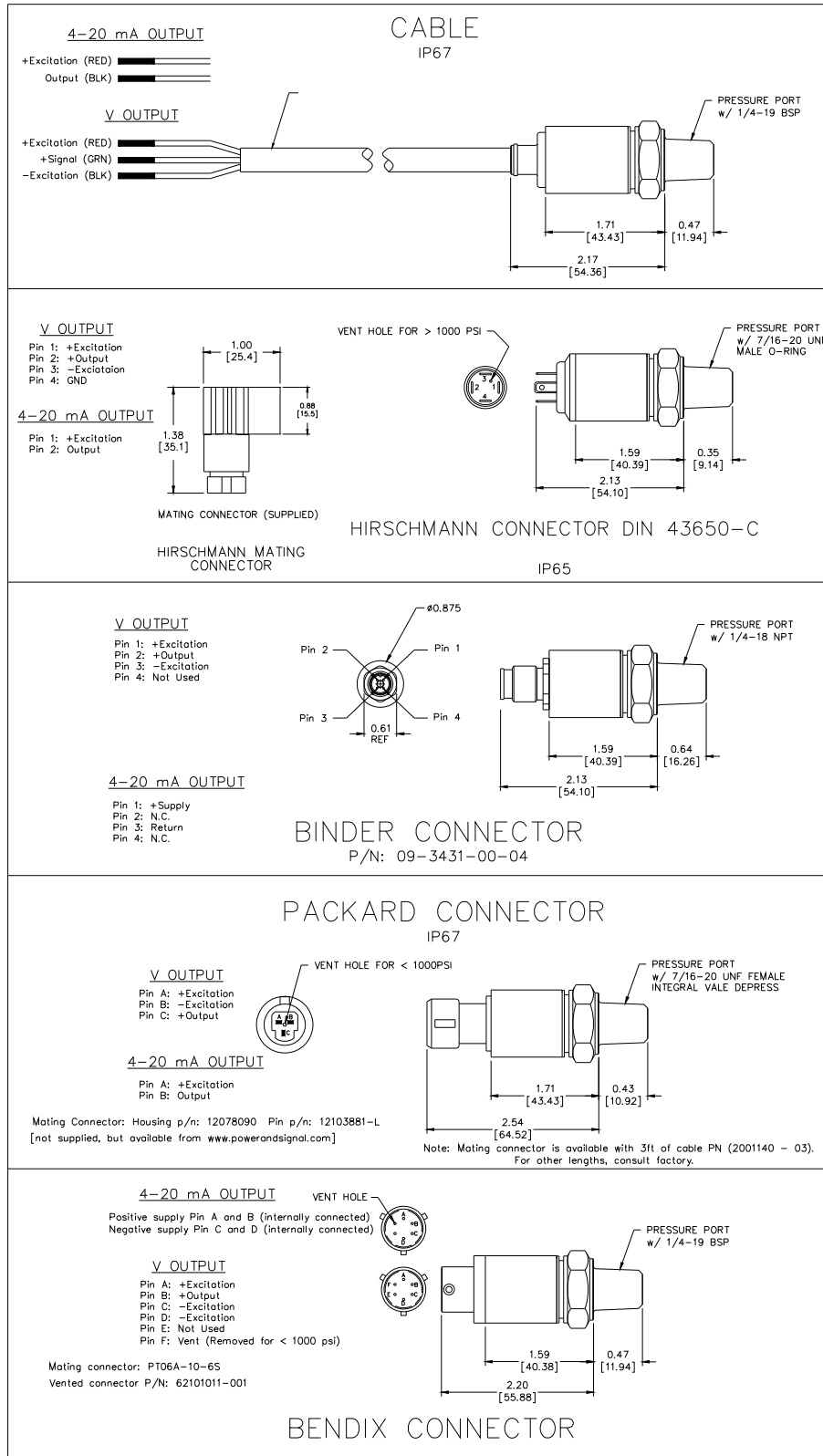
Pressure Port Options	Electrical Connection Options
2 = ¼"-19 BSP Male	1 = 2 ft cable
4 = 7/16-20 UNF Male O-ring	4 = Packard Metripak 150
5 = ¼"-18 NPT Male	5 = Bendix PTIH-10-6P
F = ¼"-19 BSP Female	6 = Hirschmann DIN 43650-C
P = 7/16-20 UNF Female w/ Integral Vale Depressor	D = 4-pin Binder Connector
Q = M10x1	M = 1 metres cable
S = M12x1.5	P = 5 metres cable
U = G1/4B DIN 3852	R = 10 metres cable
V = M14x1.5	

Others available on request

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DIMENSIONS



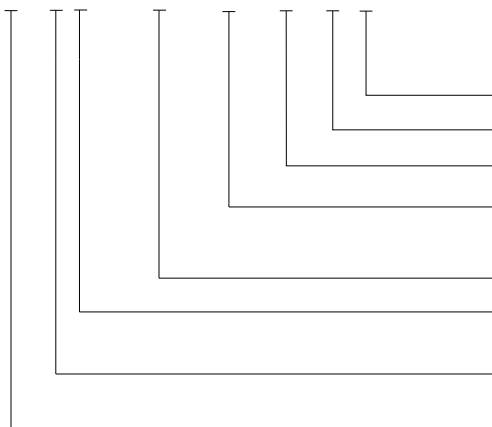
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OUTPUT OPTIONS

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 = 1/4-19BSP, V = M14 x 1.5)

See Pressure Port Options Table)

Specials (nnnnn = Custom Drawing)

Connection (4 = Packard Metripak 150, R = 10 metres cable)

See Electrical Connection Options Table)

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

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

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

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