



U5700

Submersible Liquid Level Pressure Transducer

SPECIFICATIONS

- **High Accuracy**
- **CE Compliant and Waterproof**
- **Variety of Pressure Port Configurations**
- **Waterproof**
- **Optional Stainless Steel Snubber**
- **IP68 Rated Connection and Submersible Polyurethane Jacketed Cable**
- **Gage, Sealed, Absolute, Compound**
- **Expedite Configurations Available (10 Days)**

The U5700 submersible pressure transducers from the UltraStable line of MEAS, with their modular design, include an IP68 rated connection and submersible polyurethane jacketed cable along with a variety of pressure port options. This latest series features high accuracy and a quick turnaround for demanding commercial and heavy industrial applications, as well as liquid level applications. 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 transducer's durability is excellent with no o-rings or organics exposed to the pressure media. The transducer can be fully submerged since the wetted materials for the back end consist of FKM Fluoroelastomers, 316 stainless steel and polyurethane. A POM protective cap port option is also available for liquid level applications. The U5700 is weatherproof and exceeds the latest heavy industrial CE requirements including surge protection. The circuit is protected from reverse wiring at input and short circuit at output.

This product is geared to the OEM customer for low to mid volumes. MEAS stands ready to provide a custom design of the U5700 where the volume and application warrants. Additional configurations not listed are either available or possible. Please inquire for further information.

FEATURES

- Heavy Industrial CE Approval
- 10 V/m EMI Protection
- Reverse Polarity Protection on Input
- Short Circuit Protection on Output
- Up to $\pm 0.1\%$ Accuracy
- Up to $\pm 0.75\%$ Total Error Band
- Compact Outline
- IP68 Waterproof Grade
- Custom Cable Lengths
- POM Protective Cap for Liquid Level Applications

APPLICATIONS

- Industrial Process Control and Monitoring
- Advanced HVAC Systems
- Refrigeration Systems
- Automotive Test Stands
- Off-Road Vehicles
- Pumps and Compressors
- Hydraulic/Pneumatic Systems
- Agriculture Equipment
- Energy Generation and Management
- Liquid Level Applications

STANDARD RANGES

Range (psi)	Range (Bar)	Gage	Sealed	Absolute	Compound
0 to 005	0 to .35	•	•	•	•
0 to 015	0 to 001	•	•	•	•
0 to 030	0 to 002	•	•	•	•
0 to 050	0 to 3.5	•	•	•	•
0 to 100	0 to 007	•	•	•	•
	0 to 010	•	•	•	•
0 to 200	0 to 014	•	•	•	•
0 to 300	0 to 020	•	•	•	•
0 to 500	0 to 035	•	•	•	•
0 to 01k	0 to 070	•	•	•	•
0 to 03k	0 to 200	•	•	•	•
0 to 05k	0 to 350	•	•	•	•
0 to 10k	0 to 700	•	•	•	•

Intermediate ranges available upon request.

PERFORMANCE SPECIFICATIONS

Ambient Temperature: 25°C (unless otherwise specified)

PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
	-0.5		0.5	%F.S. BFSL	≤ 2psi @ 25°C
Accuracy	-0.25		0.25	%F.S. BFSL	> 2psi and ≤ 5psi @ 25°C
(RSS of linearity, hysteresis, and repeatability)	-0.1		0.1	%F.S. BFSL	> 5psi and ≤ 500psi @ 25°C
	-0.25		0.25	%F.S. BFSL	> 500psi and ≤ 5000psi @ 25°C
	-0.75		0.75	%F.S. BFSL	> 5000psi @ 25°C
Isolation, Body to any Lead	100			MΩ	@500VDC
Dielectric Strength			2	mA	@500VAC, 1min
Pressure Cycles	1.00E+6			0~FS Cycles	
Proof Pressure	3X		20k psi	Rated	
Burst Pressure	4X		20k psi	Rated	
Long Term Stability (1 year)	-0.1		0.1	%F.S.	
	-1.25		1.25	%F.S.	≤ 2psi
Total Error Band	-1.0		1.0	%F.S.	> 2psi and ≤ 5psi
	-0.75		0.75	%F.S.	> 5psi and ≤ 5000psi
	-1.25		1.25	%F.S.	> 5000psi
Compensated Temperature	-10		+60	°C	
Usage Temperature	-10		+60	°C	
Storage Temperature	-10		+60	°C	
Gland Seal Pressure Rating			300	psi	
Wetted Materials	Polyoxymethylene, FKM Fluoroelastomers, Stainless Steel 316, Submersible Polyurethane Jacketed Cable				
Load Resistance (R _L)	< (Supply Voltage -9V) / 0.02A			Ω	Current Output
Load Resistance (R _L)	R _L > 100k			Ω	Voltage Output
Current Consumption			5	mA	Voltage Output
Response Time (10% to 90%)	<2ms (Voltage Output); Without Snubber				
Pressure Port Material	316L Stainless Steel (port & housing); 316L Stainless Steel Snubber				
Shock	50g, 11msec Half Sine Shock per MIL-STD-202G, Method 213B, Condition A				
Vibration	±20g, MIL-STD-810C, Procedure 514.2, Fig 514.2-2, Curve L				

For custom configurations, consult factory.

Notes

Compensated Temperature: The temperature range over which the product will produce an output proportional to pressure within the specified performance limits.

Usage Temperature: The temperature range over which the product will maintain the IP68 rating.

Storage Temperature: The temperature range over which the product can be stored safely in occasions without pressure applied or power input and remains rated performance. Beyond this temperature range may cause permanent damage to the product.

All configurations are built with voltage reverse and output short-circuit protections.

CE Compliance

EN 55022 Emissions Class A & B

IEC 61000-4-2 Electrostatic Discharge Immunity (8kV contact/15kV air)

IEC 61000-4-3 Radiated, Radio-Frequency Electromagnetic Field Immunity (10V/m, 80M-1GHz)

IEC 61000-4-4 Electrical Fast Transient Immunity (1kV)

IEC 61000-4-5 Surge Immunity (V+ to V-: ±2KV/42Ω; L to Case: ±1KV/12Ω; V- to V₀: ±1KV/42Ω)

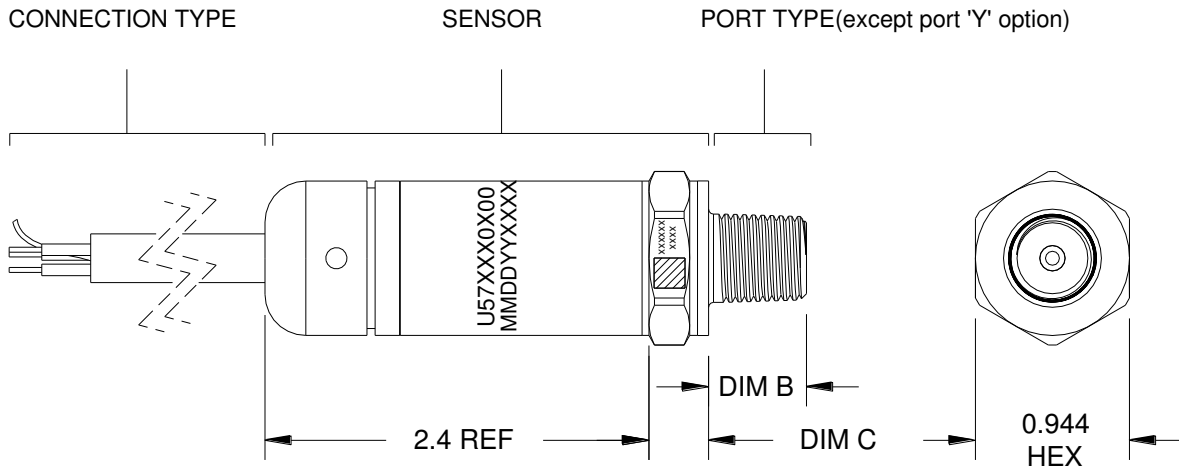
IEC 61000-4-6 Immunity to Conducted Disturbances Induced by Radio Frequency

Fields (150K~80MHz, 10V level for voltage output models, 3V level for current output model)

IEC 61000-4-9 Pulse Magnetic Field Immunity (100A/m peak)

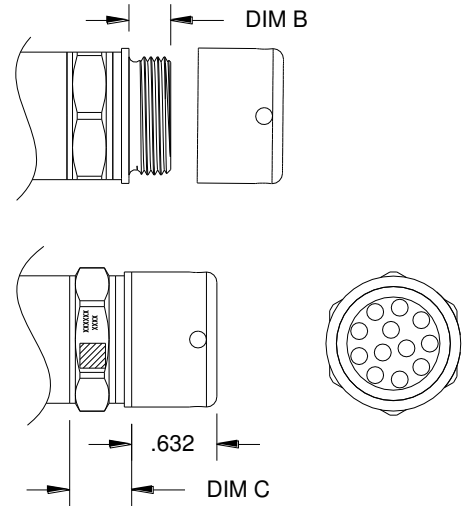
For all CE compliance tests, max allowed output deviation ±1.5 %F.S.

DIMENSIONS [mm]



PRESSURE PORT TYPE			
CODE	PORT	DIM B	DIM C REF.
2	1/4-19 BSPP	0.472 [11.94]	0.366 [9.3]
3	G3/8 JIS B2351	0.540 [13.72]	0.366 [9.3]
4	7/16-20UNF MALE SAE J1926-2 STRAIGHT THREAD O-RING BUNA-N 90SH-904	0.433 [11.0]	0.366 [9.3]
5	1/4-18 NPT	0.600 [15.24]	0.366 [9.3]
6	1/8-27 NPT	0.390 [9.91]	0.366 [9.3]
B	G1/4 JIS B2351	0.472 [11.94]	0.366 [9.3]
E	1/4-19 BSPT	0.500 [12.7]	0.366 [9.3]
F	1/4-19 BSPP FEMALE (without snubber)	0.771 [19.58]	0.366 [9.3]
P	7/16-20UNF FEMALE SAE J514 STRAIGHT THREAD WITH INTEGRAL VALVE DEPRESSOR	0.687 [17.5]	0.366 [9.3]
N	7/16-20UNF FEMALE SAE J513 STRAIGHT THREAD	0.687 [17.5]	0.366 [9.3]
Q	M10 x 1.0 mm ISO 6149-2	0.374 [9.5]	0.366 [9.3]
S	M12 x 1.5 mm ISO 6149-2	0.433 [11.0]	0.366 [9.3]
U	G/14 DIN 3852 FORM E GASKET DIN3869-14 NBR	0.472 [11.94]	0.445 [11.3]
W	M20 x 1.5 mm ISO 6149-2	0.551 [14.0]	0.366 [9.3]
G	M14 x 1.5 mm ISO 6149-2	0.433 [11.0]	0.366 [9.3]
Y	7/8-20UNEF MALE WITH POLYOXYMETHYLENE END CAP	0.46 [11.68]	0.31 [7.87]

COMMON WATER LEVEL MEASUREMENT PORT WITH DELRIN CAP WITH SCREEN

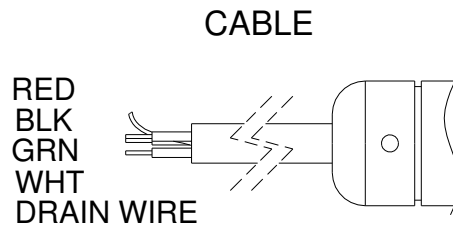


PRESSURE PORT 'Y' OPTION

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WIRING



CABLE WITH GLAND SEAL
4 WIRE, 22AWG, SHIELD, VENT TUBE
SUBMERSIBLE POLYURETHANE JACKETED CABLE

Connection (Current Output)					
CONNECTION	+SUPPLY	-SUPPLY	GROUND	P REF VENT	
CABLE	RED	BLK	DRAIN WIRE	IN CABLE	

Connection (Voltage Output)					
CONNECTION	+SUPPLY	+OUTPUT	COMMON	GROUND	P REF VENT
CABLE	RED	WHT	BLK	DRAIN WIRE	IN CABLE

Notes:

1. The drain wire is internally terminated to pressure port.
2. A psiG transducer requires a vent to atmosphere on the pressure reference. This is accomplished via a vent tube in the cable. The end of the cable should be terminated to a clean dry area.
3. The IP68 rating is only met when the cable termination is to a dry clean area. Moisture can enter the transducer through the vent tube at the cable termination.

OUTPUTS

CODE	OUTPUT SIGNAL	SUPPLY VOLTAGE
3	0.5 - 4.5V RATIOMETRIC	5 ± 0.25V PROTECTED to 30V
4	1 - 5V	8 - 30V
5	4 - 20mA	9 - 30V
6	0 - 5V	8 - 30V
7	0 - 10V	12 - 30V
8	1 - 6V	8 - 30V
9	0.5 - 4.5V	8 - 30V

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ORDERING INFORMATION

U57	3	002	0	0	00	1	5	100P	G	
Model	Output Signal	Cable Length	Shipping	Snubber	00	Label	Pressure Port	Pressure Range	Pressure Type	
U57	3 = 0.5 – 4.5V Ratiometric 4 = 1 – 5V 5 = 4 – 20mA 6 = 0 – 5V 7 = 0 – 10V 8 = 1 – 6V 9 = 0.5 – 4.5V	xxx = 002 – 999 feet	0 = Standard H = Expedite	0 = No Snubber 1 = With Snubber	00	1 = Laser Marking	2 = 1/4-19 BSPP 3 = G3/8 JIS B2351 4 = 7/16-20UNF Male SAE J514 Straight Thread O-Ring BUNA-N 90SH-904 5 = 1/4-18 NPT 6 = 1/8-27NPT B = G1/4 JIS B2351 E = 1/4-19 BSPT F = 1/4-19 BSPP Female P = 7/16-20UNF Female SAE J514 with Integral Valve Depressor Q = M10 x 1.0 mm ISO 6149-2 N = 7/16-20UNF Female SAE J513 Straight Thread S = M12 x 1.5 mm ISO 6149-2 U = G1/4 DIN 3852 Form E Gasket DIN3869-14 NBR W = M20 x 1.5 mm ISO 6149-2 G = M14 x 1.5 mm ISO 6149-2 Y = 7/8-20UNEF Male with Polyoxymethylene Cap	002P 005P 015P 030P 050P 100P 200P 300P 500P 01KP 03KP 05KP 10KP	.14B .35B 001B 002B 3.5B 007B 010B 014B 020B 035B 070B 200B 350B 700B	G = Gage S = Sealed A = Absolute C = Compound G = Gage S = Sealed A = Absolute C = Compound G = Gage S = Sealed (Port 2, 5 only) A = Absolute (Port 2, 5 only) C = Compound

Note: Selections in blue (expedite) have a 10 business day lead time with a 19 piece maximum order.
 Compound pressure range is -14.7 to xxxpsig or -1 to xxxbarg. (e.g. 200PC: -14.7 to 200psig, 020BC: -1 to 20barg)
 Refer to online installation instruction for recommended torque.

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