



KPSI 705

- ◆ Non-fouling submersible level transducer
- ◆ Non-Clogging PTFE coated elastomeric diaphragm
- ◆ $\pm 0.25\%$ FS static accuracy
- ◆ Two year warranty

Features

- ◆ Custom polyurethane or ETFE cable lengths
- ◆ Welded 316SS or titanium body
- ◆ Custom level ranges up to 115 ft. (35 m) H₂O
- ◆ PTFE coated elastomeric diaphragm
- ◆ Optional lifetime lightning protection
- ◆ Available molded cable seal

Applications

- ◆ Lift stations
- ◆ Wastewater
- ◆ Slurry Tanks
- ◆ Pump control

The KPSI 705 is a submersible hydrostatic level transducer specifically designed to meet the adverse environments encountered in wastewater applications. This suitably-sized transducer features a wide sensing area comprised of a PTFE coated elastomeric diaphragm for reliable operation in highly viscous or slurry environments.

All KPSI Transducers utilize a highly accurate pressure sensor assembly. The assembly is integrated with supporting electronics in a durable waterproof housing constructed of 316 stainless steel or titanium. The attached polyurethane or ETFE electrical cable are custom manufactured to specifications and includes para-aramid synthetic fiber members to prevent errors due to cable elongation, and a unique water block feature that self-seals in the event of accidental cuts to the cable. Each vented reference transducer is shipped with our latest SuperDry Vent Filter that prevents moisture from entering the vent tube for at least one year without maintenance, even in the most humid environment.

Specifications

PARAMETER	COMMENT	
LEVEL RANGES		
Full Scale Level Ranges (intermediate level ranges are available)	6 thru 115 ft. H ₂ O (2 thru 35 m H ₂ O)	Vented Gage Reference
	10 thru 115 ft. H ₂ O (3 thru 35 m H ₂ O)	Sealed Gage Reference
Proof Pressure	1.5 x FS	
Burst Pressure	2.0 x FS	
STATIC PERFORMANCE		
Static Accuracy (Combined effects of non-linearity, hysteresis and repeatability, best fit straight line method)	$\pm 0.25\%$ FSO	BFSL method
Resolution	+0.0001% FS	

ENVIRONMENTAL

Wetted Materials	316 SS or Titanium; FKM; PTFE; Polyurethane or ETFE	
Compensated Temp Range	0 to 50°C	
Thermal Error <small>(maximum allowable deviation from the Best Fit Straight Line due to a change in temperature)</small>	±0.10% FSO/°C	Worse case for level ranges > 23' (7 m) H ₂ O prorated for level ranges ≤23' (7 m) H ₂ O
Operating Temp Range	-20 to 60 °C	When attached to polyurethane cable
Protection Rating	IP 68, NEMA 6P	

ELECTRICAL

Excitation	9-28 V – VDC output 9-28 V – mA output 15-28 V – VDC output 10-28 V – VDC output	0-5 V, 0-2.5 V, 0-4 V 4-20 0-10 V 1.5-7.5 V
Input Current	20 mA max. 3.5 mA max.	For mA output For VDC output
Output	4-20 mA, 0-5 VDC, 0-2.5 VDC, 0-4 VDC, 0-10 VDC, 1.5-7.5 VDC	
Zero Offset	Rezero after installation for optimum accuracy. Span is not affected (See application note on website)	
Output Impedance	See loop diagram for mA output 20 ohm for VDC output	
Insulation Resistance	100 mega ohm at 50 VDC	
Circuit Protection	Polarity, surge/shorted output	

CERTIFICATIONS

	CE compliant	EN 61326-1:2013 and 61326-2-3:2013
	UL, CUL and FM	Class I, II, III, Div. 1, Groups A,B,C,D,E,F&G
	WEEE/RoHS	Waste from Electrical and Electronic Equipment (WEEE) and Restrictions on the use of Hazardous Substances (RoHS)

PHYSICAL

Approximate Weight	0.5 lbs. (227 g) transducer 0.05 lbs./ft. (79 g/m) cable	
Cable Jacket Material	Polyurethane (Standard) ETFE (Optional)	
Cable Pull Strength	200 lbs. (90 kg)	
Cable Number of Conductors	4	
Cable Conductor Size	22 AWG	
Cable Seal	Molded Polyurethane FKM Gland	For polyurethane cable For ETFE cable

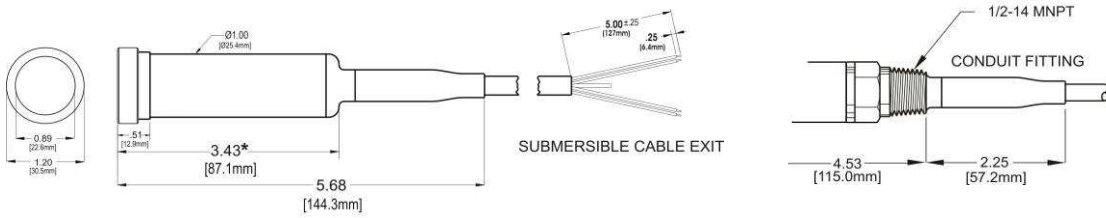
TEMPERATURE OUTPUT OPTION (Not intrinsically safety approved)

Temperature Range	-20 to 60°C	Available for 4-20 mA output versions only
Output Signal	4-20 mA	
Temperature Measurement Accuracy	±4°C	± 1°C with single point calibration

LIGHTNING PROTECTION (Power supply needs to be limited to 150mA to avoid lock up of the gas tube after a suppression event)

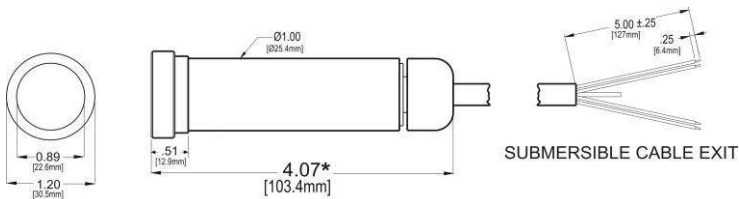
Life Expectancy	>1,000 operations	
Peak Clamping Voltage	36 volts	
Response Time	<10 nsecs	
Shunts	20,000 amperes	

Dimensions



*ADD 1.95" FOR LIGHTNING PROTECTION OPTION

Molded Cable Seal Configuration for Polyurethane Cable

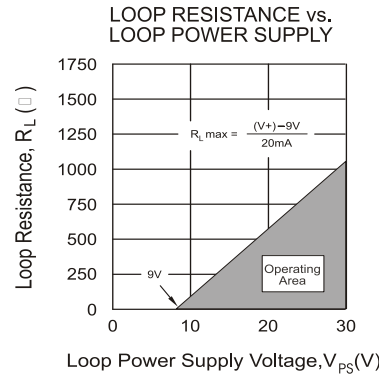


*ADD 1.95" FOR LIGHTNING PROTECTION OPTION

Gland Cable Seal Configuration for ETFE Cable

Electrical Termination / Loop Resistance

ELECTRICAL TERMINATION		
22AWG CONDUCTORS IN A SHIELDED CABLE WITH VENT TUBE		
4-20 mA	RED	+ EXCITATION
	BLACK	- EXCITATION
0-5 VDC	RED	+ EXCITATION
	BLACK	- EXCITATION
	WHITE	+ SIGNAL
ALL	DRAIN WIRE	SHIELD



Ordering Information

MODEL	SUBMERSIBLE LEVEL TRANSDUCER									
7 0 5	±0.25% FSO Static Accuracy									
↓ ↓ ↓	MATERIAL									
	S Stainless Steel									
	T Titanium									
↓	REFERENCE FORMAT									
	1 Vented gage									
	3 Sealed gage									
↓	OUTPUT									
	3 0-5 VDC									
	F 0-2.5 V									
	G 0-4 V									
	H 0-10 V									
	J 1.5-7.5V									
	4 4-20mA									
	6 4-20mA temperature measurement option									
↓	PRESSURE CONNECTION									
	C PTFE-coated elastomeric diaphragm									
↓	ELECTRICAL CONNECTION									
	0 Molded cable seal									
	4 1/2" - 14 NPT male conduit fitting with molded cable seal									
	A Gland cable seal									
	B 1/2" - 14 NPT male conduit fitting with gland cable seal									
↓	LIGHTNING PROTECTION									
	A None									
	B Full Lightning Protection									
↓	LEVEL RANGE (at MAX output) ¹									
	#	#	#	.	#	#	#			
	↓	↓	↓	↓	↓	↓	↓			
	LEVEL RANGE (at MIN output) ¹									
	#	#	#	.	#	#	#			
	↓	↓	↓	↓	↓	↓	↓			
	MOISTURE PROTECTION									
	A None (sealed only)									
	B Vent Filter									
	C Aneroid Bellows									
	D Stainless Steel Vent Filter									
↓	CABLE TYPE									
	1 Polyurethane									
	2 ETFE (Electrical Connection "A" or "B" Only)									
↓	CABLE LENGTH									
	#	#	#	#	(in feet)					
	↓	↓	↓	↓						
					LABEL ²					
					A psi					
					B Ft. H ₂ O					
					C m H ₂ O					
					↓					
7 0 5										

Notes: 1 The part number requires two level range limits, corresponding to the maximum and minimum analog outputs of the transducer, to be specified in pounds per square inch (psi) to three decimal places. The lower level range is typically 000.000 unless otherwise required. For reverse output requirements, enter the lower level range for the maximum output signal and the upper range for the minimum output. Use the following conversion factors: Ft. H₂O / 2.3073 = 4.334 psi (Enter 004.334 in the part number), 10 m H₂O / 0.703265 = 14.219 psi (Enter 014.219 in the part number)
 Examples: 10 ft. H₂O / 2.3073 = 4.334 psi (Enter 004.334 in the part number), 10 m H₂O / 0.703265 = 14.219 psi (Enter 014.219 in the part number)
 For sealed gage reference add local atmosphere when converting to psi. Contact PSI for assistance.
 Example: 10 ft. H₂O / 2.3073 + 14.7 = 19.034 psi (Enter 019.034 in the part number)

2 Units of measure on standard MEAS label. Contact Measurement Specialties if private labeling is required.

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