KPSI 320

- Submersible level transducer
- Small bore, 0.75”diameter
- ±0.25% FSO static accuracy
- Two year warranty

The KPSI 320 is a submersible hydrostatic level transducer specifically designed for small bore applications and to meet the rigorous environments encountered in ground water level measurements. This transducer provides repeatable, precision depth measurement under most adverse conditions.

Every KPSI Transducer utilizes a highly accurate pressure sensor assembly specifically designed for hostile fluids and gases. The assembly is integrated with supporting electronics in a durable waterproof housing constructed of 316 stainless steel or titanium. The attached electrical cable is custom manufactured 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 SuperDry Vent Filter that prevents moisture from entering the vent tube for at least one year without maintenance, even in the most humid environments.

Features

- Custom polyurethane or ETFE cable lengths
- Welded 316SS or titanium body
- Custom level ranges up to 700 ft. (210 m) H_2O
- Multiple analog outputs
- Ported nose cap
- Optional lifetime lightning protection
- Long life vent filter or aneroid bellows
- Available molded cable seal

Applications

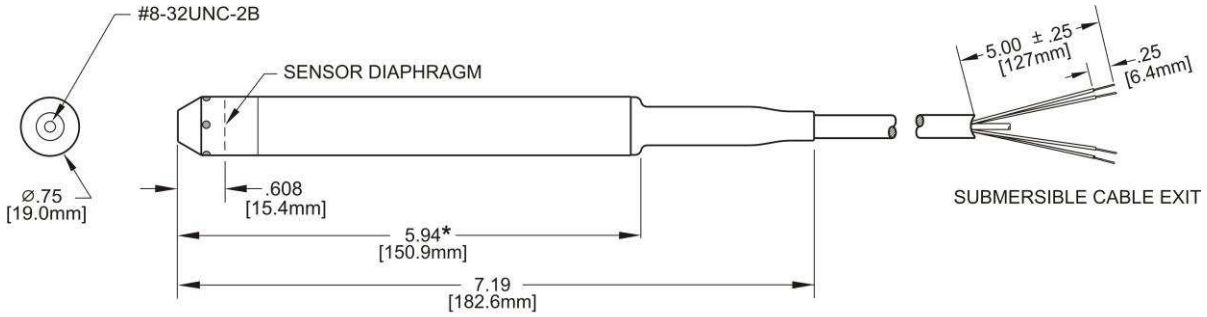
- Surface water monitoring
- Well monitoring
- Groundwater monitoring
- Pump control
- Slug tests
- Level control
- Ballast tank control

Specifications

PARAMETER		COMMENT
LEVEL RANGES		
Full scale level ranges (Intermediate level ranges are available)	5 thru 700 ft. H_2O, (1.5 thru 210 m H_2O)	Vented gage reference
	10 thru 700 ft. H_2O, (3 thru 210 m H_2O)	Sealed gage reference
	35 thru 700 ft. H_2O, (10 thru 210 m H_2O)	Absolute 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)	±0.25% FSO	BFSL method
Resolution	+0.0001% FS	

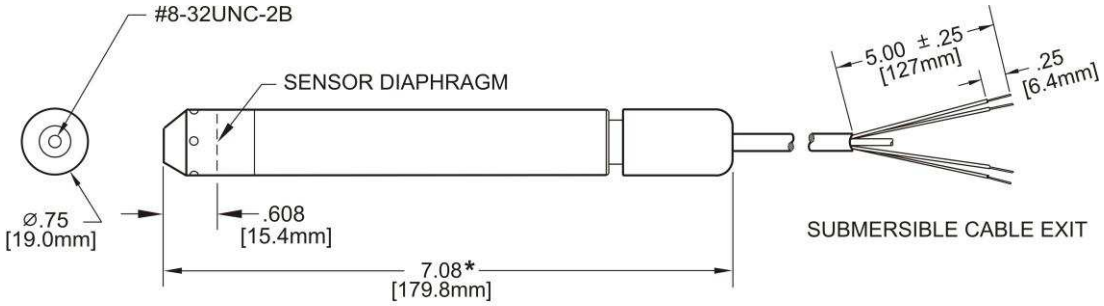
ENVIRONMENTAL		
Wetted materials	316 SS or titanium; FKM; Polyurethane or ETFE	
Compensated temp range	0 to 50ºC	
Thermal error (Maximum allowable deviation from the Best Fit Straight Line due to a change in temperature)	±0.05% FSO/ºC ±0.1% FSO/ºC	Worse case over compensated temperature range for ranges < 12 ft. (4 m) H_2O
Operating temp range	-20 to 60 ºC	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	For ranges < 5 ft. (1.5 m) H_2O, only 4-20 mA output is available
Zero offset	±0.25 mA for mA output < 0.25 VDC for VDC output	
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	0.47 lbs. (224 g) transducer 0.05 lbs./ft. (79 g/m) cable	
Cable jacket material	Polyurethane (standard), ETFE (optional)	
Cable pull strength	200 lbs. (90 kg)	Polyurethane
Cable number of conductors	4	
Cable conductor size	22 AWG	
Cable seal	Molded polyurethane FKM Gland	For polyurethane cable For ETFE cable
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 5.00" FOR LIGHTNING PROTECTION OPTION

Molded Cable Seal Configuration for Polyurethane Cable

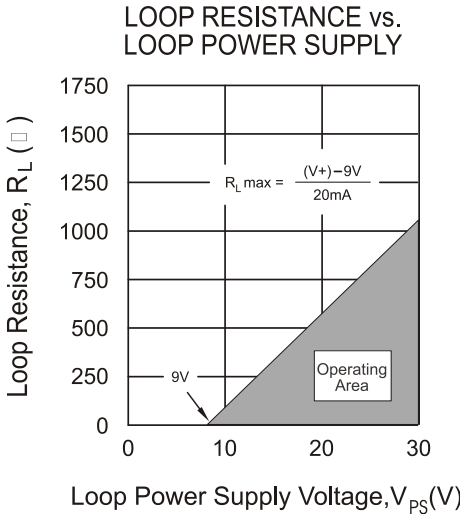


*ADD 5.00" FOR LIGHTNING PROTECTION OPTION

Gland Cable Seal Configuration for ETFE Cable

Electrical Termination

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



Ordering Information

MODEL — **SUBMERSIBLE LEVEL TRANSDUCER**

3 2 0 — ±0.25% FSO Static Accuracy

MATERIAL
- S Stainless Steel
- T Titanium

REFERENCE FORMAT
- 1 Vented gage
- 3 Sealed gage
- 4 Absolute

OUTPUT
- 3 0-5 VDC
- F 0-2.5 VDC
- G 0-4 VDC
- H 0-10 VDC
- J 1.5V-7.5 VDC
- 4 4-20 mA

PRESSURE CONNECTION
- B Ported nose cap

ELECTRICAL CONNECTION
- 0 Molded cable seal
- A 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/absolute only)
- B Vent Filter
- C Aneroid Bellows
- D Stainless Steel Vent Filter

CABLE TYPE
- 1 Polyurethane
- 2 ETFE (Electrical Connection "A" Only)

CABLE LENGTH
(in feet)

LABEL[2]
- A psi
- B ft H_2O
- C m H_2O

3	2	0				B																					

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. H_2O / 2.3073 = psi // m H_2O / 0.703265 = psi**
Examples: 10 ft. H_2O / 2.3073 = 4.334 psi (Enter 004.334 in the part number), 10 m H_2O / 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. H_2O / 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.