KPSI 353

- SDI-12 Small Bore Submersible Level Transducer
- ±0.10% FS Total Error Band
- Economical Digital Transducer
- Optional Lifetime Lightning Protection
- Two year warranty

The KPSI 353 submersible hydrostatic level transducer is specifically designed for small bore applications and to meet the rigorous environments encountered in ground water level measurements. Incorporating a highly stable media-isolated sensor, the KPSI 353 features SDI-12 serial-digital interface. SDI-12 is a standard for interfacing data recorders with microprocessor-based sensors, especially in the environmental monitoring field.

The KPSI 353 is an excellent choice for applications that require minimal current drain. It will accommodate cable lengths between sensor and recorder up to 1000 feet. Removable cable option allows easy substitution of transducers and cables. A new removable nose cap option extends product applications.

Features

- Removable cable option
- Custom Polyurethane or ETFE Cable Lengths
- Optional PVC jacketed steel armored cable
- Welded 316SS or Titanium
- Custom Level Ranges up to 230 ft. (70m) H_2O
- Multiple Nose Cap Options
- Shipped with Long-Life Vent Filter

Applications

- Groundwater Monitoring
- Down Hole
- Surface Water Monitoring
- Tailrace and Forebay Monitoring
- Oceanographic Research

Specifications

PARAMETER		COMMENT
LEVEL RANGES		
Full Scale Level Ranges (intermediate level ranges are available)	10 thru 230 ft. (3 thru 70m) H_20	Vented Gage Reference
Proof Pressure	1.5 x FS	
Burst Pressure	2.0 x FS	

STATIC PERFORMANCE (Combined Errors Due to Nonlinearity, Hysteresis, Non-repeatability, and Thermal Effects over the Compensated Temperature Range)		
Level	±0.10% FS TEB	
Temperature	+0.5ºC	
Excitation	±0.5 VDC	8 to 28 volts
Resolution	+0.0001% FS	

MEASUREMENT RESOLUTION		
Level	±0.0001%FS	
Temperature	±0.001ºC	
Excitation	±0.1 VDC	
ENVIRONMENTAL		
Wetted Materials	316 SS or Titanium; FKM; polyurethane or ETFE	
Compensated Temp Range	0 to 50ºC	
Operating Temp Range	-20 to 60 ºC	When attached to polyurethane cable
Protection Rating	IP 68, NEMA 6P	
ELECTRICAL		
Excitation	6-28V – VDC output	
Input Current	8 mA max 1.0 mA	Average current during data acquisition Quiescent
Interface	SDI-12, version 1.3 RS-485	 SDI-12 protocol
CERTIFICATIONS		
	CE compliant	EN 61326-1:2013 and 61326-2-3:2013
PHYSICAL		
Approximate Weight	0.75 lbs. (340 g) transducer 0.05 lbs./ft. (79 g/m) cable	
Cable Jacket Material	Polyurethane ETFE Armored polyurethane (optional 859 accessory)	 PVC Jacketed steel armored polyurethane
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	

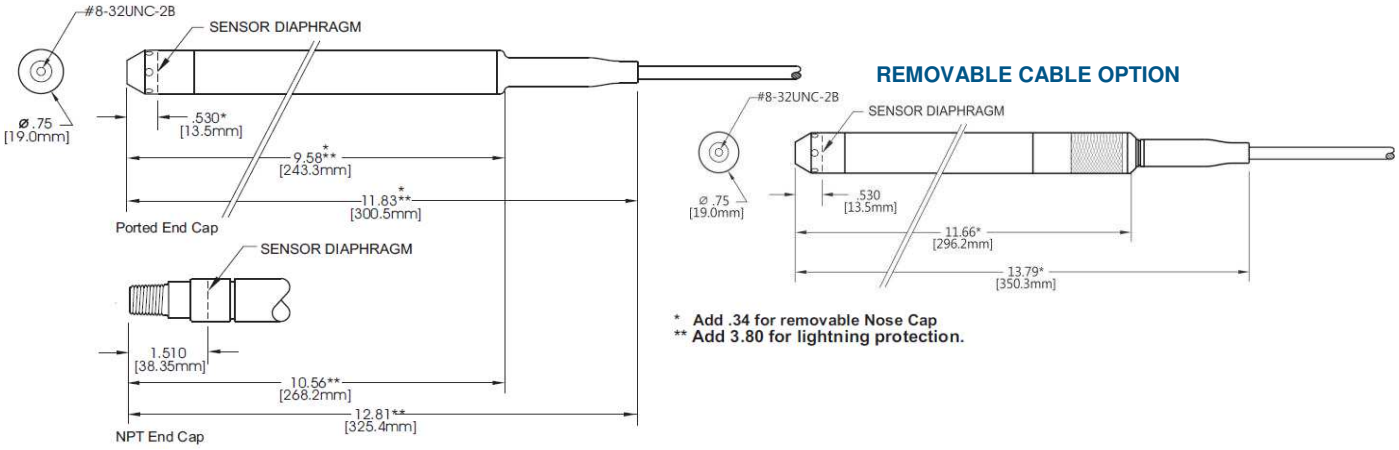
Removable Cable and Nose Cap Options

NOTE:

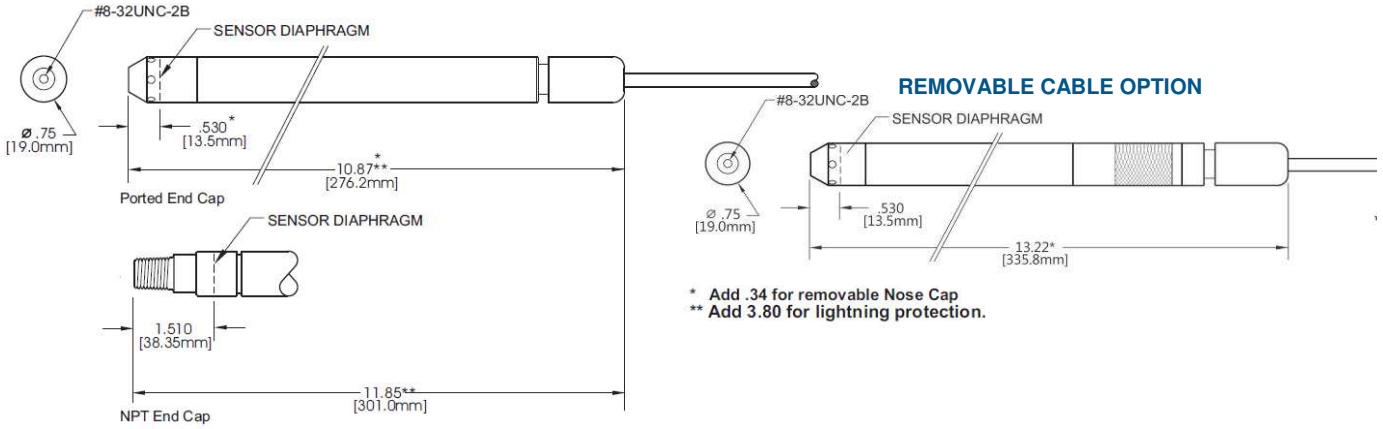
¼" MNPT FITTING IS NON-REMOVABLE (WELDED); ONLY AVAILABLE IN STAINLESS STEEL; AND FOR RANGES BELOW 100 PSI

Dimensions

Molded Cable Seal Configuration for Polyurethane Cable



Gland Cable Seal Configuration for ETFE Cable



Electrical Termination and Removable Cable Options

ELECTRICAL TERMINATION		
22AWG CONDUCTORS IN A SHIELDED CABLE WITH VENT TUBE		
SDI-12	RED BLACK WHITE	+ SUPPLY - SUPPLY SIGNAL
RS-485	RED BLACK WHITE GREEN	+ SUPPLY - SUPPLY RS485-A RS485-B
ALL	DRAIN WIRE	SHIELD

MODEL	REMOVABLE CABLE							
8 5 9								
↓ ↓ ↓	MATERIAL							
	S	Stainless Steel						
	T	Titanium						
	↓	OUTPUT						
		C	SDI-12					
		D	RS 485 w/SDI-12 protocol					
		↓	ELECTRICAL CONNECTION					
			0	Molded cable seal				
			A	Gland cable seal				
			↓	CABLE TYPE				
				1	Polyurethane			
				2	ETFE (**Connection A Only**)			
				4	Armored (**Connection O Only; 200 Feet Max**)			
				↓	CABLE LENGTH			
					#	#	#	(in feet)
8 5 9								

Ordering Information

MODEL	SUBMERSIBLE LEVEL TRANSDUCER
3 5 3	±0.10% FS TEB Accuracy
↓ ↓ ↓	**MATERIAL**
	S Stainless Steel
	T Titanium
	↓ **REFERENCE FORMAT**
	1 Vented gage
	↓ **OUTPUT**
	C SDI-12
	D RS 485 w/SDI-12 protocol
	↓ **PRESSURE CONNECTION**
	B Ported nose cap
	R Removable nose cap (Delrin)
	2 ¼"-18 NPT Male fitting (**See Note 4**)
	↓ **ELECTRICAL CONNECTION**
	0 Molded cable seal
	A Gland cable seal
	R Removable cable
	↓ **LIGHTNING PROTECTION**
	A None
	B Full Lightning Protection
	↓ **LEVEL RANGE (at MAX output in PSI)[1]**
	# # # . # # #
	↓ ↓ ↓ ↓ ↓ ↓ ↓ **LEVEL RANGE (at MIN output in PSI) [1]**
	# # # . # # #
	↓ ↓ ↓ ↓ ↓ ↓ ↓ **MOISTURE PROTECTION**
	A None (Electrical connection "R" Only)
	B Vent Filter
	D Stainless Steel Vent Filter
	↓ **CABLE TYPE**
	0 Removable (**See Note 3**)
	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 5 3	1

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.

3 Removable / Armored Cable must utilize Electrical Connection R only.
Removable / Armored cable must be ordered as separate 859 Removable Cable Assembly Part Number (see guide on page 2).

4 ¼" MNPT cap is only available in Stainless Steel and for ranges below 100 PSI.