



### **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 50 ft. (15m) H<sub>2</sub>O
- 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

# **KPSI 351**

- SDI-12 Small Bore Submersible Level Transducer
- $\pm 0.01$  ft. H<sub>2</sub>O, reading <= 10ft (3m) H<sub>2</sub>O
- ±0.10% reading, > 10ft (3m) H<sub>2</sub>O
- Optional Lifetime Lightning Protection
- Two year warranty
- Meets USGS OSW Requirements for Accuracy 0-15 PSI and 0-22 PSI

The KPSI 351 submersible hydrostatic level transducer is specifically designed for small bore applications and to meet the rigorous environments encountered in ground water level measurements. Designed and tuned to meet stringent USGS OSW specifications of ±0.01 Ft. H<sub>2</sub>O often required by governmental regulatory agencies and research institutions. The KPSI 351 incorporates a highly stable mediaisolated sensor, and 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 351 is an excellent solution for applications that require minimal current drain. It will accommodate cable lengths between sensors and recorder up to 1000 feet. The removable cable option allows easy substitution of transducers and cables. A New removable nose cap option extends product applications.

PARAMETER		COMMENT						
LEVEL RANGES								
Full Scale Level Ranges (intermediate level ranges are available)	10 thru 50 ft. (3 thru 15 m) H₂0	Vented Gage Reference						
Proof Pressure	1.5 x FS							
Burst Pressure	2.0 x FS							

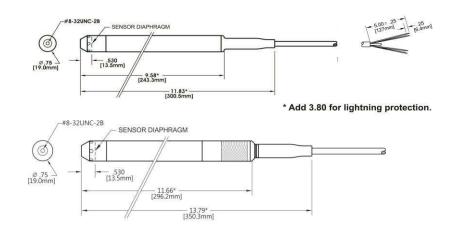
<b>STATIC PERFORMANCE</b> (Combined Errors Due to Nonlinearity, Hysteresis, Non-repeatability, and Thermal Effects over the Compensated Temperature Range)											
Level	±0.01 ft. H <sub>2</sub> 0	For reading $\leq 10$ ft. (3m) H <sub>2</sub> O									
	±0.10% reading	For reading > 10 ft. (3m) $H_2O$									
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 61326-1:2001 and 61326-2-3:2006								
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) 200 lbs. (90 kg)	PVC jacketed steel armored polyurethane Polyurethane								
Cable Pull Strength	4	Folydrethane								
Cable Number of Conductors	4 22 AWG									
Cable Conductor Size										
Cable Seal	Molded Polyurethane, FKM Gland	For polyurethane cable For ETFE cable								
LIGHTNING PROTECTION (powe	er 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									

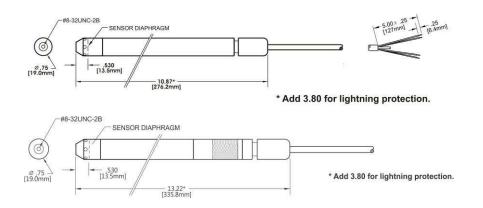
# Dimensions



# 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			RE	MOVABL	E CAB	LE									
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	$\downarrow$	$\downarrow$	$\downarrow$	MA	TERIAL											
				S	S Stainless Steel											
				Т	T Titanium											
				$\downarrow$	↓ OUTPUT											
					C SDI-12											
					D RS 485 w/SDI-12 protocol											
					ELECTRICAL CONNECTION											
						0	Molded	cable sea	I							
						A	Gland c	able seal								
						$\downarrow$	CABLE	TYPE								
							1	Polyure	thane							
							2 ETFE (Connection A Only)									
							4				nly; 200 Feet Max)					
							$\downarrow$	CABLE	LENGTH							
								#	#	#	(in feet)					
	8	5	9													

# **Ordering Information**

MODEL	S	JBME	RSIBI	E LE	VEL	TRAN	ISDUCE	2													
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			1		RS 485 w/SDI-12 protocol PRESSURE CONNECTION																
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																			A B		one (Electrical connection "R" Only) ent Filter
																			D		ainless Steel Vent Filter
																			$\downarrow$	0	
																				-	Polyurethane
																				1	ETFE (Electrical Connection A only)
																				2	CABLE LENGTH
																				Ļ	
																					# # # # (in feet)
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		1	1									1									C m H <sub>2</sub> O
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3 5 1		1	1					1	1 1		1	1	1	1			1	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<sub>2</sub>O / 2.3073 = psi // m H<sub>2</sub>O / 0.703265 = psi Examples: 10 ft. H<sub>2</sub>O / 2.3073 = 4.334 psi (Enter 004.334 in the part number), 10 m H<sub>2</sub>O / 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<sub>2</sub>O / 2.3073 + 14.7 = 19.034 psi (Enter 019.034 in the part number) Notes: 1

- 2 Units of measure on standard MEAS label. Contact Measurement Specialties if private labeling is required.
- Armored Cable must utilize Electrical Connection R only. 3 Armored cable must be ordered as separate 859 Removable Cable Assembly Part Number (see guide on page 2).

### **NORTH AMERICA**

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