

FEATURES

- Custom Level Ranges up to 230 ft (70 m) H₂O
- Unparalleled Performance
 - Static Accuracy: $\pm 0.05\%$ FS
 - Total Error Band: $\pm 0.25\%$ FS
- Analog Outputs of 4-20 mA, 0-5 VDC or mV
- Welded 316 SS or Titanium Construction
- Small Diameter, Rugged, and Waterproof
- Custom Cable Lengths



APPLICATIONS

- Ground Water Monitoring
- Surface Water Monitoring
- Down Hole
- Shipboard Use
- Dewatering
- Level Control

The Series 340 is a small bore submersible hydrostatic level transducer that combines Pressure Systems' excellent sensor competencies with the latest in Application Specific Integrated Circuit (ASIC) technology. Pressure Systems' implementation of the ASIC provides unmatched sensor compensation over the entire operating range of the pressure sensor.

The Total Error Band specification ($\pm 0.25\%$ FS) over the complete operating temperature range (-20 to 60°C) eliminates the user having to combine multiple performance specifications to understand the total accuracy of the transducer.

All KPSI Transducers utilize 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 to Pressure Systems' specifications and includes Kevlar® 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 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 environments.

The Series 340 is CE compliant to EN 61000-6-4:2001 and EN 61000-6-2:2001 and have a IP 68 and NEMA 6P housing protection rating.



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ISO-9001:2000 Certified

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Specifications subject to change without notice.

Parameter	343	342	Units	Comments
LEVEL RANGES				
Full Scale Level Ranges ¹	10 thru 230 (3 thru 70)		ft H ₂ O (m H ₂ O)	vented gage reference
	N/A	35 thru 230 (10 thru 70)	ft H ₂ O (m H ₂ O)	sealed gage or absolute reference
Proof Pressure	1.5		x FS	
Burst Pressure	2.0		x FS	
STATIC PERFORMANCE				
Static Accuracy	±0.05	±0.10	%FSO	BFSL method
Total Error Band ²	±0.25		%FS TEB	Total Error from BFSL
Resolution	Infinitesimal		%FS	
ENVIRONMENTAL				
Wetted Materials	316 SS or Titanium; polyurethane or Viton®			Viton® is a registered trademark of DuPont.
Compensated Temp Range	-20 to 60		°C	
Operating Temp Range	-20 to 60		°C	
Protection Rating	IP 68, NEMA 6P			
ELECTRICAL				
Excitation	9 – 30		VDC	for mA and VDC output
Input Current	20 3.5		mA max	for mA output for VDC output
Output	4 - 20 0 - 5		mA VDC	
Zero Offset	±0.12 < 0.1		mA VDC	for mA output for VDC output
Output Impedance	See Loop Resistance diagram on page 5 510		ohm	for mA output for VDC output
Insulation Resistance	100		mega ohm	at 50 VDC
Circuit Protection	Polarity, surge/shorted output			

NOTES:

¹ Intermediate level ranges are available.

² Total Error Band (TEB) includes the combined errors due to nonlinearity, hysteresis, nonrepeatability, and thermal effects over the compensated temperature range per ISA S51.1.

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Parameter	343	342	Units	Comments
PHYSICAL				
Approximate Weight	0.50 (224) 0.05 (79)		lbs (g) lbs/ft (g/m)	transducer cable
Cable	Polyurethane (std) Tefzel® (opt)			Tefzel®, Teflon® and Kevlar® are registered trademarks of DuPont.
Jacket Material				
Pull Strength	200 (90)		lbs (kg)	
Number of Conductors	4			
Conductor Size	22		AWG	
Cable Seal	Molded Polyurethane Viton® Gland			for polyurethane cable for Tefzel® cable

Uniquely-Designed Submersible Cable

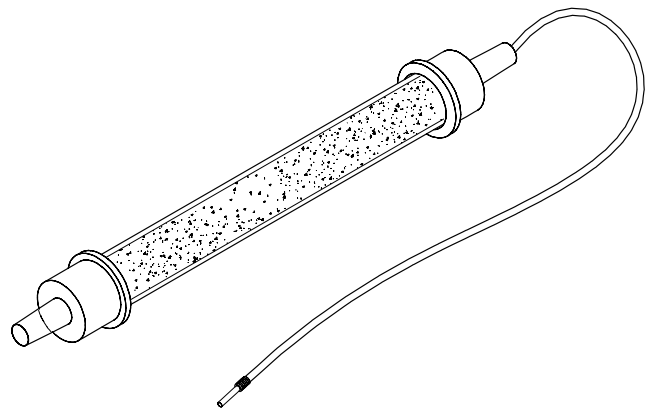
Our level transducers utilize one of two types of custom cable made specifically for submersible applications. The cable of choice for most applications is a polyurethane-jacketed cable incorporating Kevlar® strength members to prevent errors due to cable elongation, and a water block liner to prevent water intrusion due to minor cuts to the cable jacket. Polyurethane cable is attached to the transducer using an injection molded polyurethane cable seal.

The other alternative is a Tefzel®-jacketed cable which provides superior chemical resistance and toughness, yet preserves the other features found in the polyurethane-jacketed cable. Tefzel® is a Teflon® derivative from DuPont and is the better choice for caustic media or when a high degree of abrasion is anticipated. While more expensive and less flexible, it can save money in the long term due to reduced maintenance costs. Tefzel® cable is attached to the transducer using a compressed Viton® gland cable seal.

Both submersible cables have a pull strength of over 200 lbs. In all installations, care should be taken to ensure no damage occurs to the cable, as cable damage represents one of the most frequent causes of transducer failure. In the case where the user is not sure which material is best, contact Pressure Systems for assistance.

Moisture Protection

Our submersible transducers are equipped with custom, vented cable. The vent provides an atmospheric reference for the sensor, which is necessary for ensuring the highest possible accuracy when making a level measurement. It must be noted that if left unprotected, it provides a pathway for water vapor to enter the level transducer. This vapor will condense into water and could create an offset in the transducer output, or cause permanent damage. For these reasons, a Series 810 desiccant-filled vent filter is provided free of charge with each Series 340 we ship. Our latest SuperDry™ Vent Filter prevents moisture from entering the vent tube for at least one year without maintenance. Replacement filters are available from the factory.



**Series 810
SuperDry™ Long Life Vent Filter**

Installation Tips

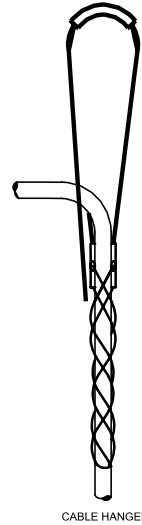
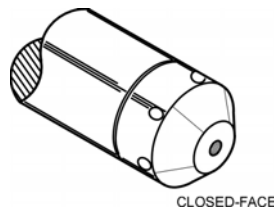
The Series 340 submersible transducers may be suspended directly in the media or in a perforated 1" PVC instrumentation still well.

When suspending by the cable, users often utilize our cable hanger (PN# 12-90-0931). This device slides onto the cable from the bare-wire end and is easily positioned anywhere on the cable by pushing the ends together. Once positioned, the cable hanger contracts to provide a snug grip.

For applications requiring cable length in excess of 500 feet, consult the factory for proper installation and maintenance.

Nose Cap

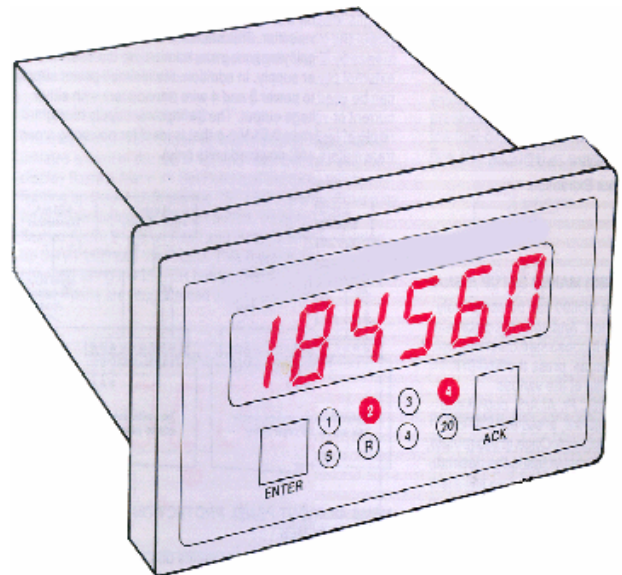
The closed-face nose cap with a #8-32UNC-2B threaded hole can be used to attach weights. It was designed for installations where users may encounter sharp, protruding objects.



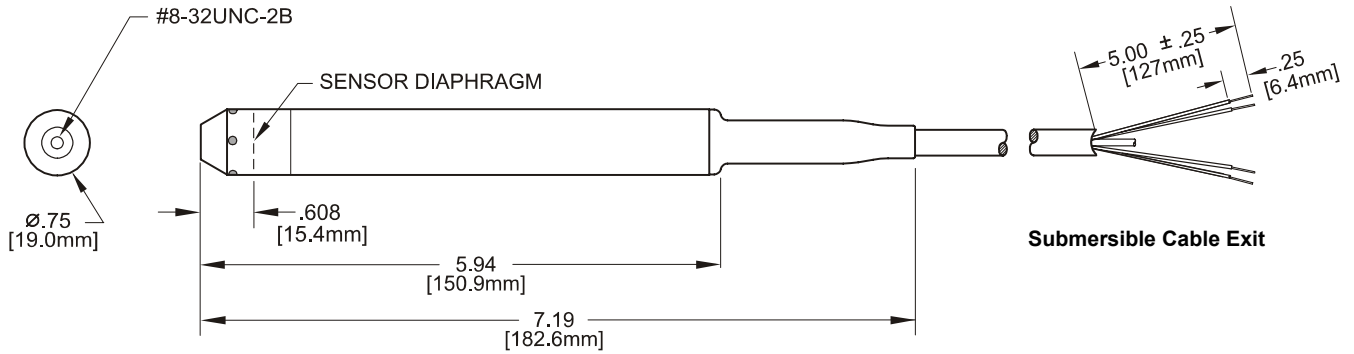
Display Meter

Pressure Systems offers two types of Display Meters to provide a visual readout of a single KPSI transducer having mA or VDC output. Both varieties utilize a red 0.54" LED display with 4 active characters to indicate a numeric range of -1999 to 9999. The units operate from 115 VAC power and provide a 24 VDC supply for power to the transducer.

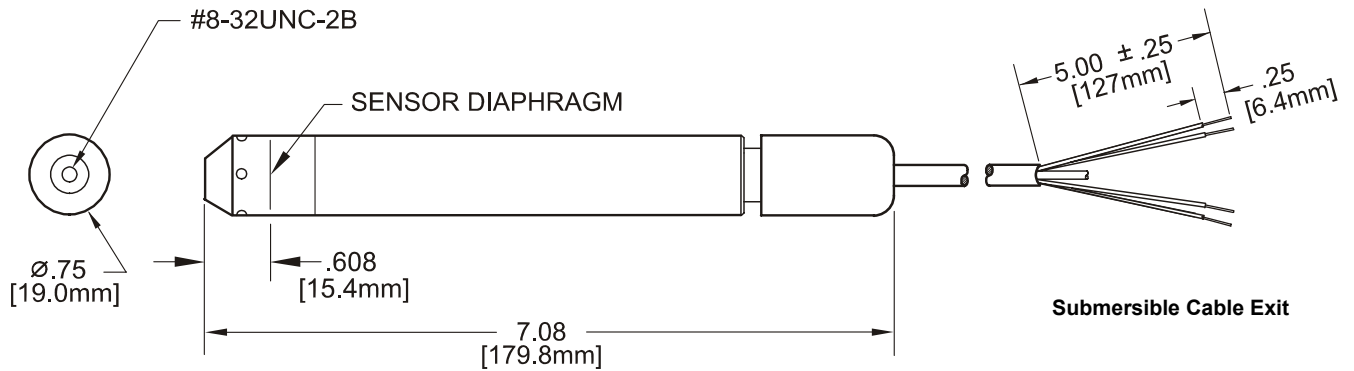
The Model 3019 Digital Readouts provide a sophisticated display of the transducer output with six 14-segment LED's for display of true alphanumeric characters; the last two used for process descriptors. These readouts offer programmable input configuration, isolated transducer power supply, selectable 2-point scaling or up to 17-point linearization, optional 4-20 mA retransmission, and two or four optional 10-amp SPDT alarm contacts for control. The 3019 has a NEMA 4X front panel with a polycarbonate bezel and a 1/8 DIN aluminum housing measuring 1.9375" H x 3.75" W x 6.5" D.



The Model 3620 Pump Controllers provide a more rugged package specifically designed to operate external pumps via two 10-amp SPDT alarm contacts. The 3620 provides front panel scaling, operates from -20 to 70°C, and uses 120 or 240 VAC. The NEMA 4X rated enclosure can be surface or panel mounted and measures 3.2" H x 5.5" W x 2.7" D.



Molded Cable Seal



Gland Cable Seal

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

