



APPLIED MEASUREMENTS LTD.
Transducer Specialists...

+44 (0) 118 981 7339

info@appmeas.co.uk

www.appmeas.co.uk

Pi993 Submersible Depth Sensor

Key Features:

- Ranges 0 - 0.5mWG up to 0-100mWG
- Output: 4-20mA
- Environmental Protection: IP68 to 100 metres
- Accuracy: $<\pm 0.25\%/FS$ (Optional 0.1% Version)
- Factory Scaled/Calibrated Output
- Ø25mm Diameter Body
- Lightning (Surge) Protection
- Excellent Long Term Stability
- Temperature Compensated
- Outstanding Performance
- Seawater Compatible Version Available
- 3 Year Warranty



The Pi993 submersible depth sensors are designed for use in rivers, reservoirs, tanks, boreholes, vessels and channels. They are also suitable for the measurement of pressure within submerged pipes and vessels.

The Pi993's robust body, vented polyurethane (PUR) cable and strain wire provide a high integrity waterproof assembly as standard, which enables the Pi993 depth sensor to withstand the environmental pressures at IP68 integrity, up to 10bar (100mWG).

The Pi993 submersible depth sensors are manufactured from Stainless Steel and utilise a ceramic sensing element (Stainless Steel on ranges below 10mWG). A high-grade duplex stainless steel version is available for applications where aggressive media is present, such as seawater and brackish, which is able to withstand very high corrosion resistance.

The standard submersible level transmitter output is a 2-wire 4-20mA signal which has a surge protection circuit to protect against the effects of electrical transients created by nearby lightning strikes and power fluctuations. For applications where data loggers are to be used, a ratiometric version is available which offers a 0.5-4.5Vdc output from a 5Vdc supply.

The Pi993 series offer rugged construction, excellent long term stability and performance. To further support our claim of long term reliability we offer the product as standard with a 3-year warranty. In addition, we can offer customisation of the depth sensor to meet your specific requirements, please contact our [technical sales team](#).

Options:

- Special Ranging Available
- Internal PT100 Temperature Sensor
- Extended Temperature Ranges Available
- Different Cable Lengths
- Higher Accuracy 0.1% Versions Available
- Seawater Compatible Version Available

Applications:

- Rivers
- Reservoirs
- Tanks and Channels
- Submerged Pipes and Vessels
- Fountains
- Boreholes
- Pots
- Waters







Specification:






CHARACTERISTICS	Pi9930	Pi9931	Pi9933	UNITS
Pressure Ranges:	0.5, 1, 2.5, 5, 10, 20, 25, 50, 75, 100			metres Water Gauge (mWG)
Safe Overpressure:	150			% Pressure Range
Burst Pressure:	300			% Pressure Range
Supply Voltage:	3 min./10 nom./15 max.	9 min./32 max.	13 min./ 32 max.	Volts DC
Load Driving Capacity:	N/A	1000	N/A	Ohms at Max. Supply Voltage
Rated Output:	0.0-2.0mV/V	4-20mA	0-10Vdc	±1%/rated output
Wiring Configuration:	4-wire	2-wire	3-wire	
Electrical Connections:	Screened polyurethane (PUR) cable with vent tube, strain and drain wire			
Accuracy:	<0.25 (0.1% optional)			±%Pressure Range
Temperature Range Operating:	-10 to +80			°C
Temperature Range Compensated:	-10 to +80			°C
Temperature Effect on Output:	<0.015			±%/°C
Temperature Effect On Zero:	<0.02 (0.01 optional)			±%/rated output/°C
Environmental Protection:	IP68 to 100mWG (10bar)			
Weight:	250 approx. (excluding cable)			grams
Construction:	316L St/Steel (SAF2205 optional), AL2O3 Ceramic (10mWG> only), Viton + PUR			
Electrical Protection:	EMC Immunity: EN50082-1 & Surge (Lightning) Protection: EN61000-4-5			

Wiring Diagram:






4-20mA Output (2-wire)

Wire	Designation
 Red	+ve supply
 Blue	-ve supply & 4-20mA output in series
 White	to case
 Green	cable screen

0-10Vdc Output (3-wire)

Wire	Designation
 Red	+ve supply
 Blue	-ve supply
 Yellow	+ve signal
 White	to case
 Green	cable screen

mV/V Output (4-wire)

Wire	Designation
 Red	+ve excitation
 Blue	-ve excitation
 White	+ve signal
 Yellow	-ve signal
 Green	cable screen



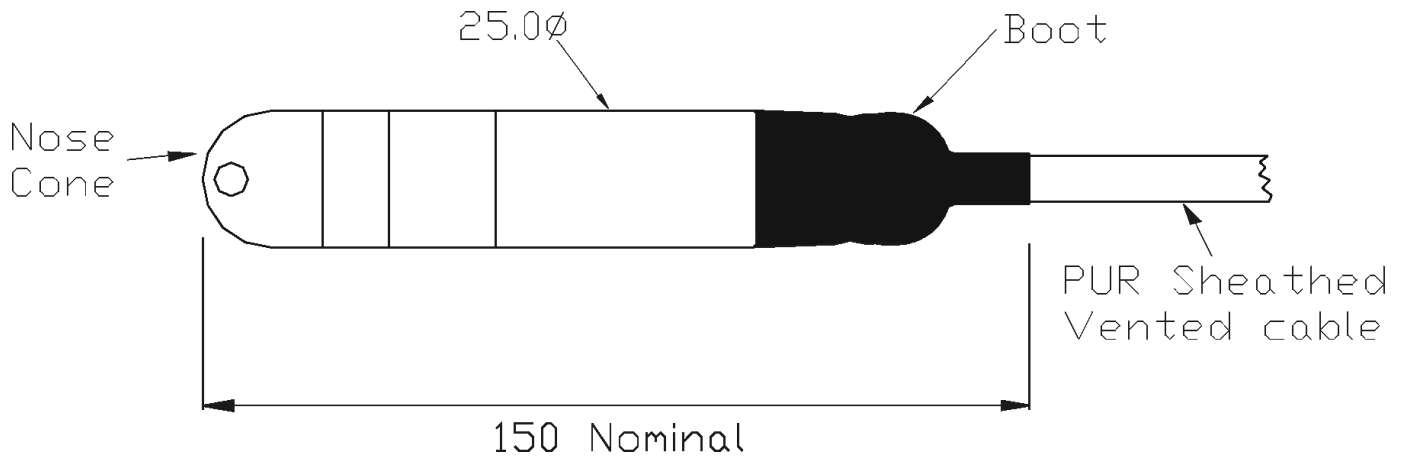
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Dimensions (mm):



Associated Products:



[TR150 Handheld Indicator](#)



[T24 Wireless Telemetry Range](#)



[Intuitive4-L Panel-Mount Indicator](#)



[DSC-USB USB Signal Digitiser](#)



[ICA Miniature Strain Gauge Amplifier](#)



[SGA Signal Conditioner/Amplifier](#)



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Ordering Codes:

Pi9931-10mWG-A2AAV-01-000	Pi993	1	-	10mWG	-	A	2	A	A	V	-	01	-	000
<i>Example Code</i>														
Product Family														
Pi993	Pi993													
Electrical Output														
0 = 2mV/V		0												
1 = 4-20mA (2-wire)		1												
3 = 0-10Vdc (3-wire)		3												
Pressure Range														
10mWG = 0 to 10 metres of water gauge (H2O)				10mWG										
10mWA = 0 to 10 metres of water absolute (H2O)				10mWA										
10mWSG = 0 to 10 metres of water sealed gauge (H2O)				10mWSG										
Accuracy (Non-Linearity & Hysteresis)														
A = $\pm 0.25\%/FS$						A								
B = $\pm 0.1\%/FS$						B								
Zero Temperature Compensation (TZS)														
2 = $\pm 0.02\%/FS/^{\circ}C$							2							
1 = $\pm 0.01\%/FS/^{\circ}C$							1							
Process Connection														
A = Nose Cone								A						
B = G1/4" Male								B						
Housing Material														
A = 316 Stainless Steel									A					
B = High Grade Duplex Stainless Steel									B					
C = PVC									C					
O-Ring Material														
V = Viton (FKM)										V				
N = Nitrile (NBR)										N				
E = EPDM (Ethylene Propylene Diene Monomer)										E				
C = Chemraz (Perfluoroelastomer)										C				
Cable Length (in metres)														
01 = 1 metre												01		
10 = 10 metres												10		
Specials Code														
000 = No Special Requirements														000