

Applications

Groundwater
Surface water
Water quantity
Flood warning



Smart Pressure Level Sensor

Robust and reliable water level and temperature measurements

Reliable for long-term continuous operation with vented ceramic pressure probe and 904L stainless steel housing

Vented pressure probe to compensate for changes in atmospheric pressure

Worry-free operation with innovative inclinometer and internal humidity sensors to verify performance

Increase confidence in data due to high accuracy and minimal sensor drift at <0.1%FS/a

Convenient remote data verification using integrated QA/QC and metadata flags

Simple connection to external data loggers with industry standard communication protocols (SDI-12 and Modbus RTU)

Advanced measurements and derived parameters such as discharge calculations

Have peace of mind for long deployments

The PLS 500 is constructed of high quality saltwater resistant stainless steel (904L) for reliable use in harsh environments. The robust ceramic cell does not deform over time like membrane technology, providing long-term measurement stability, to keep equipment worry-free and allow you to focus on important daily tasks.

Ensure highly accurate measurements

The vented pressure probe automatically compensates for changes in atmospheric pressure. The built-in microcontroller compensates for temperature effects and corrects for gravitational acceleration and water density. Maximized stability reduces sensor drift, allowing it to continuously monitor long-term trends for years.

Achieve full confidence in long-term data

Built-in QA/QC and metadata enable you to verify performance and validate your data remotely from the office or on the go. Ensure long-term data quality with the confidence that your sensor is operating correctly via integrated internal humidity and inclinometer sensors.

Save valuable time while visiting the field

Standard communication protocols (SDI-12 and Modbus RTU) allow for simple and flexible connection to external data loggers. The PLS 500's robust ceramic cell makes it easy to maintain, ensuring that your team's field visits are efficient and timely.

Technical Specifications

WATER LEVEL (PRESSURE)	Measuring range	0 ... 10 m water column / 0 ... 1 bar	0 ... 33 ft water column / 0 ... 14.5 psi
		0 ... 20 m water column / 0 ... 2 bar	0 ... 66 ft water column / 0 ... 29 psi
		0 ... 40 m water column / 0 ... 4 bar	0 ... 131 ft water column / 0 ... 58 psi
		0 ... 100 m water column / 0 ... 10 bar	0 ... 328 ft water column / 0 ... 145 psi
	Resolution	0.001 m / 0.1 cm / 0.00001 bar / 0.01 mbar	0.001 ft / 0.001 inch / 0.0001 psi
	Accuracy (linearity + hysteresis) For all measuring ranges		± 0.05 % full scale
	Accuracy for 0 ... 10 m / 0... 1 bar variant Meets USGS OSW	±2 mm / 0 ... 5 m (-5 ... +55 °C) ±3 mm / 0 ... 5 m (-20 ... -5 °C; +55 ... +70 °C) ±5 mm / 5 ... 10 m (-20 ... +70 °C)	0.007 ft / 0 ... 17 ft (+23 ... +131 °F) 0.010 ft / 0 ... 17 ft (-4 ... +23 °F; +131 ... +158 °F) 0.017 ft / 17 ... 33 ft (-4 ... +158 °F)
	Long-term stability (linearity + hysteresis)		± 0.1 %/a full scale
	Units	m, cm, mm, bar, mbar, kPa	ft, inch, psi
	Pressure sensor		Ceramic / temperature compensated
Temperature-compensated operating range	-20 °C (ice-free) ... +70 °C	-4 °F (ice-free) ... +158 °F	
TEMPERATURE	Measuring range	-40 °C ... +70 °C	-40 °F ... +158 °F
	Resolution	0.01 °C	0.01 °F
	Accuracy	± 0.15 °C (Typ. ± 0.05 °C)	± 0.07 °F (Typ. ± 0.03 °F)
	Units	°C	°F
INTERNAL RELATIVE HUMIDITY	Measuring range		0...100% RH (non-condensing)
	Resolution		1% RH
	Accuracy		± 3% (0...100% RH) Typically ± 2% (10...80% RH)
	Units		% RH
POWER	Supply voltage		5.5...28.8 V typically 12/24 V DC
	Power consumption - sleep		< 250 µA; typically 15 µA
	Power consumption - active		< 4mA; typically 2.9 mA
COMMUNICATION	Physical interfaces		SDI-12 and RS-485
	RS-485 protocols		SDI-12 (V1.4), Modbus RTU
MEASUREMENT	Measured values	Water level / water pressure	Internal Relative Humidity
		Water temperature	Position of sensor
	Value processing	Average pressure or level over measurement interval	Median pressure or level over measurement interval
		Minimum pressure or level over measurement interval	Standard deviation of pressure or level over measurement interval
		Maximum pressure or level over measurement interval	
	Derived parameters		Discharge
	Measurement interval		0.5 s ... 59.5 s (1.5 s default)
ENVIRONMENTAL	Temperature range, operating	-20 °C (ice-free) ... +70 °C	-4 °F (ice-free) ... +158 °F
	Temperature range, storage	-40°C ... +80 °C	-40 °F ... +176 °F
	Humidity		0% ... 100 %
	IP rating (probe)		IP68
DIMENSIONS/WEIGHT	Pressure probe	LxD: 194x22 mm	LxD: 7.7 x 0.9 in
	Cable length*	2 ... 200 m, ± 1% / ± 5 cm	7 ... 656 ft, ± 1% / ± 0.17 ft
	Pressure probe	~ 650 g	~ 22.9 oz
	Pressure probe cable	~ 55 g/m	~ 0.51 oz/ft
MATERIAL	Pressure probe housing		POM, Stainless steel 1.4539 (904L); resistant to sea water
	Membrane		Al2O3 ceramics
	Cable jacket		PUR (UV resistant)
REGULATORY	FCC		FCC/ICES Suppliers Declaration of Conformity (SDoC) FCC Part 15 Rules Section §15.109
	CE		IEC61326-1:2013
	DIN EN ISO 4373		Measurement reliability / performance class 1

*Longer cable lengths available upon request.

Please check website for country availability. All technical specifications are subject to change without notice.