PLS 500

Smart Pressure Level Sensor

OTT HydroMet

> **The metadata and sensor flags are a game changer to ensure quality data remotely.**
>
> ***Device Tester, State Natural Resource Agency***

Robust and reliable water level and temperature measurements

Building on Decades of Experience

The OTT PLS 500 is a vented water level and temperature sensor that solves the frustrating and time-consuming challenges seen with traditional pressure level sensors.

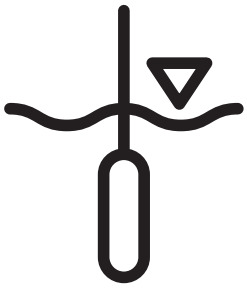
The device reduces sensor drift and failures due to instream events through a robust ceramic pressure cell design, improved production and calibration process, and integrated quality checks enabling remote data validation.

Save your valuable time by eliminating unplanned trips to the field due to the sensor's high accuracy, maximized stability, and ability to withstand the harshest environments.

Enjoy increased trust and confidence in your data without worrying about data verification and validation due to the sensor's metadata and flags for surpassed thresholds.

Smart Sensor Benefits

The OTT PLS 500 includes built-in QA/QC and metadata to verify sensor performance and validate your data remotely, giving you confidence that your data is accurate.

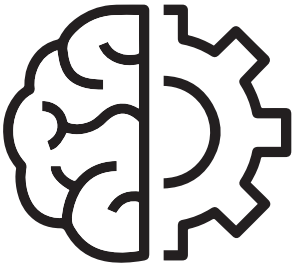


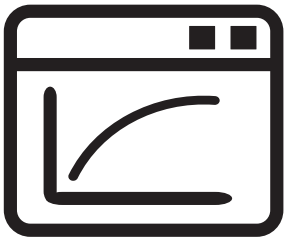
Automatic Compensation

Automatically compensate for changes in atmospheric pressure. Reduce the amount of equipment needed in field by forgoing additional barometric pressure sensors and achieve better accuracy with a single compensated sensor.

Data Processing

Internally convert high frequency (4Hz) measurements to statistics such as computed averages, minimum/maximum levels, and instantaneous values over user-defined intervals, enabling greater information reporting and eliminating manual data post-processing/analysis.



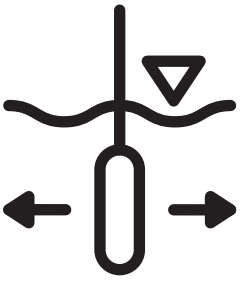


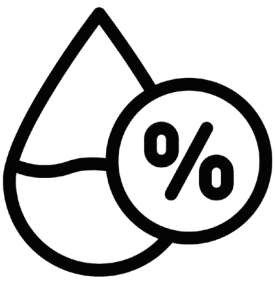
Discharge Calculations

Automatically calculate discharge from either a user-defined rating table or ISO 1100-2 exponential formula set-up via SDI-12 commands. Minimize the need for data post-processing by directly outputting discharge from a trusted level sensor.

Position Sensor

Remotely monitor probe movement in the field with an internal inclinometer, enabling warnings if sensor position has changed due to in-stream events via automatic status flags or direct measurement.



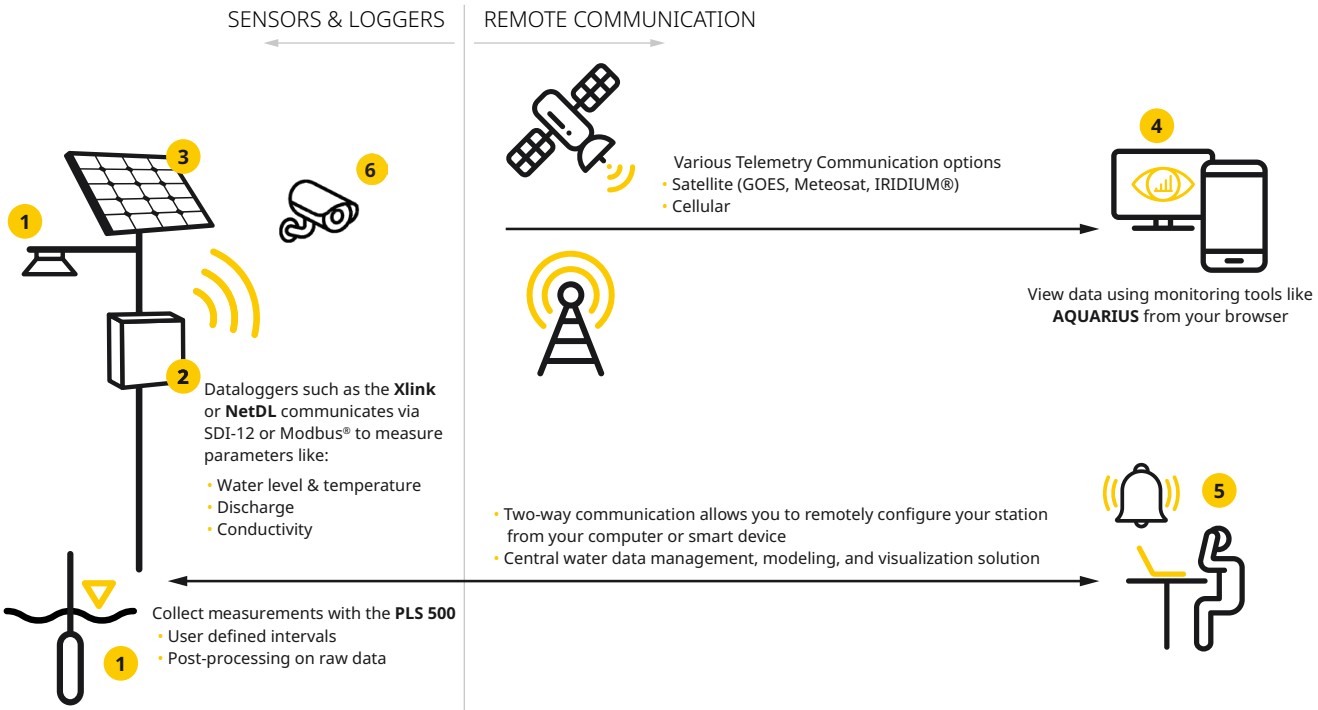


Internal Humidity Sensor

The integrated internal humidity sensor outputs automatic status flags or direct humidity measurements to help you understand if condensation may have formed, impacting your pressure measurements.

Full Solution

Hardware and software to enhance your monitoring network



PLS 500 accessories available

Desiccant

The OTT FAD 6 is an easy-to-use desiccant that absorbs surrounding humidity. Change the desiccant easily while in the field through its replaceable cartridges.

USB/SDI-12 Adapter

Instantly set-up, check, and modify your sensor configurations by plugging the adapter into your computer and SDI-12 sensor. Save time with seamless sensor set up.

Cable suspension

Easily support the weight of your cable while monitoring groundwater parameters. The cable suspension device easily attaches to the top of a well for longer durations within deep wells.

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	~ 0.59 oz/ft
MATERIAL	**Pressure probe housing**	POM, Stainless steel 1.4539 (904L); resistant to sea water	
	Membrane	Al203 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.

For more information, please contact

OTT HydroMet
sales@otthydromet.com
www.otthydromet.com

HY-OT-SW-br-PLS_500-EN-2211 21

OTT HydroMet