



Robust ceramic pressure transducer for water level measurement

- **Application**
Surface water, Groundwater
- **Measurement technology**
Vented pressure cell
- **Parameters measured**
Water Level, Pressure, Temperature, Position of Sensor, Internal Relative Humidity
- **Product Highlights**
Water level and temperature measurement - for use with external data logger
- **Measurement range**
0 ... 10, 20, 40, and 100 m
- **Accuracy**
 $\pm 0.05\%$ full scale (linearity and hysteresis) // Meets USGS OSW
- **Internal data logger**
No
- **Interface**
SDI-12 and RS485 (SDI-12 v1.4 and Modbus RTU)

Building on years of experience with the robust and accurate OTT PLS, the PLS 500 water level monitoring solution adds innovative metadata and internal sensors to remotely verify

Technical Data

OTT PLS 500 - Pressure Level Sensor



device performance providing peace of mind for long term deployment.

WATER LEVEL (PRESSURE)	
Measurement Range	0 ... 10 m, 20 m, 40 m, 100 m / 0 ... 33 ft, 66ft, 131 ft, 328 ft
Accuracy (linearity and hysteresis)	±0.05 % full scale
Accuracy (linearity and hysteresis) USGS OSW 0 ... 10m / 0 ... 1 bar variant	±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 and hysteresis)	± 0.1%/full scale
Units	m, cm, mm, bar, mbar, kPa ft, inch, psi
Pressure Sensor	Ceramic / temperature compensated
Resolution	0.001 m / 0.1 cm / 0.00001 bar / 0.01 mbar 0.001 ft / 0.001 in / 0.00001 psi
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

COMMUNICATION	
Physical interfaces	SDI-12 and RS-485
R5-485 protocols	SDI-12 (V1.4), Modbus RTU

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

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We reserve the right to make technical changes and improvements without notice. V-03/05/2024

OTT Hydromet GmbH, Germany



Technical Data

OTT PLS 500 - Pressure Level Sensor



MEASUREMENT	
Measured Values	- Water level/water pressure - Internal Relative Humidity - Water temperature - Position of sensor
Value Processing	- Average pressure or level over measurement interval - Minimum pressure or level over measurement interval - Maximum pressure or level over measurement interval - Median pressure or level over measurement interval - Standard deviation of pressure 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 *Longer cable lengths available upon request.
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

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