



Water Level and
Conductivity Measurement
OTT PLS-C
Pressure probe with built-in temperature sensor
and conductivity cell

OTT PLS-C

Long-term reliable readings

In addition to water level and temperature, the OTT PLS-C unit measures conductivity thus providing basic water quality indicators. It is best suited for long-term use with solar or mains powered measuring stations and may be used for both surface water and groundwater measurements. Its top-quality features ensure long-term precise readings at attractive cost efficiency.

The particularly robust and precise ceramic capacitive pressure cell features long-term stability, nearly no drifting, and overload protection of at least four times the measuring range. For conductivity measurement, a four graphite electrode measuring cell is incorporated. Thanks to its waterproof moulded electronics, saltwater resistant stainless steel enclosure (904L), and Kevlar reinforced probe cable, the PLS-C unit even withstands harsh operating conditions.

The probe may be easily incorporated into an existing infrastructure using the SDI-12 interface. When large distance communication is required, the RS-485 interface provides cable lengths of up to 1,000 m when used together with an OTT datalogger.

Quantitative
Hydrology

Quality that pays off – OTT PLS-C

Features and benefits

- Relative pressure probe including pressure compensation capillary, temperature sensor, and conductivity cell
- Precise ceramic pressure cell featuring long-term stability – withstands mechanical impacts and aggressive media
- Exact water level data due to compensation of influencing factors (temperature, changes in atmospheric pressure, local gravitational acceleration, and specific water gravity)
- Four graphite electrode conductivity cell – remains unaffected by polarization effects and immune to contamination
- Fad 5 connection box – keeps moisture out of the connector area using a color coded desiccant
- Flexibility in use – may be connected to each datalogger fitted with SDI-12 interface
- Cable lengths of up to 1,000 m thanks to RS-485 interface (together with OTT datalogger, e.g. OTT netDL)

Simplified communication during setup and calibration

- Simple Windows based software providing user guidance for calibration of conductivity sensor
- USB interface of the OTT netDL datalogger may be used to quickly and conveniently connect a notebook computer
- Alternatively: SDI-12/USB adapter for flexible connectivity (accessory)
- Pre-wired SDI-12 plug-in contact for convenient handling (accessory)

Applications

- Water quality monitoring
- Saltwater intrusion monitoring
- Groundwater monitoring during drilling operations involving fracking
- Studies on discharge water from farms
- Wastewater monitoring in mining
- Measurements in estuaries, swampland or moorland
- Tracer studies



Technical data

Output parameters

Water level/pressure, temperature, specific conductivity, salinity, TDS

Water level measurement (pressure)

- Pressure sensor: ceramic, temperature-compensated
- Measuring range: 0 ... 4 m, 0 ... 10 m, 0 ... 20 m, 0 ... 40 m, 0 ... 100 m water col.
- Resolution: 0.01 % FS
- Accuracy (linearity + hysteresis): $\leq \pm 0.05$ % FS
- Long-term stability (linearity + hysteresis): $\leq \pm 0.1$ %/a FS
- Zerodrift: $\leq \pm 0.1$ % FS
- Pressure sensor capability to withstand overloads: (without permanent mechanical damage) $\geq 4x$ measuring range
- Temperature-compensated operating range: -5 °C ... $+45$ °C (ice free)
- Units: m, cm, ft, mbar, psi

Temperature measurement

- Sensor: NTC
- Measuring range: -25 °C ... $+70$ °C (ice free)
- Calibrated range: $+5$ °C ... 45 °C
- Resolution: 0.01 °C
- Accuracy: ± 0.1 °C
- Units: °C, °F

Conductivity measurement

- Sensor: 4 graphite electrodes
Measuring range 5 ... 2,000 $\mu\text{S}/\text{cm}$:
- Resolution: 1 $\mu\text{S}/\text{cm}$
 - Accuracy: ± 1 $\mu\text{S}/\text{cm}$ or ± 0.5 % of measured value (whichever is higher)
 - Unit: $\mu\text{S}/\text{cm}$
- Measuring range 0.1 ... 100 mS/cm :
- Resolution: 0.01 mS/cm
 - Accuracy: ± 0.01 mS/cm or ± 1.5 % of measured value (whichever is higher)
 - Unit: mS/cm
- Calibrated range: $+5$ °C ... 45 °C

Temperature compensation options:
freshwater, saltwater, standard method 2510, ISO 7888/EN27888

Salinity calculation options:
Standard method, USGS 2311

Supply voltage

6 ... 27 V DC, typically 12/24 V DC

Power consumption

- SDI-12 sleep mode: <30 μAV
- SDI-12 active mode: <32 mA

Interfaces

SDI-12, RS-485 (SDI-12 protocol)

Storage temperature

-40 °C ... $+85$ °C

Cable length

Depending on interface-variant:

- SDI-12: 1 ... 100 m
- RS-485: 1 ... 1,000 m

Dimensions L x Ø

Probe: 317 mm x 22 mm

Weight

- Probe: approx. 0.43 kg
- Probe cable: approx. 82 g/m

Housing material probe

POM, stainless steel (DIN 1.4539, 904 L), resistant to sea water

Type of protection

Probe: IP68

EMC limits

Meets EG 2004/108/EC
Meets EN 61326-1:2013

