Solinst® Water Level Temperature Sensor

Model 301 Data Sheet

Water Level Temperature Sensor

Model 301

The Solinst Water Level Temperature Sensor is a compact, all-in-one submersible hydrostatic level transmitter that provides continuous, stable and accurate water level and temperature readings for a wide variety of applications.

The water level pressure sensor and temperature sensor are enclosed in a slim, robust 22 mm x 192 mm (7/8" x 7.55") 316L stainless steel housing. Double o-ring seals prevent leaks and a Faraday cage design protects against power surges and lightning. Each probe features a removable nose cone for optional use of the 1/4" NPTM threaded connection.

The durable water level pressure sensor provides 0.05% FS accuracy with automatically temperature compensated readings. There are six pressure ranges to choose from (5-200 m), with options for absolute and gauged (vented) pressure sensor setups.

The 301 Water Level Temperature Sensor works with digital protocols – MODBUS and SDI-12 – and are easy to integrate into your existing SCADA or PLC systems.

Communication cable assemblies are available in lengths up to 300 metres. The cables are easily and securely attached to the sensor using a threaded connection.

Simple PC software utilities are used to set up the sensor for the different protocols, perform simple diagnostics, and update sensor firmware if required. A USB-A programming cable is provided for connection to the PC.

Where the Water Level Temperature Sensor is Used

The Water Level Temperature Sensor is suited to a large number of applications. The MODBUS and SDI-12 protocols are common in industrial monitoring, and also used in the environmental sector. For example, the Water Level Temperature Sensor can be used to measure hydrostatic liquid levels, long-term, in:

- Groundwater, wells
- Rivers, canals, lakes, reservoirs, seawater, etc.
- Drinking water
- Wastewater
- Industrial and marine tanks and vessels
- Stormwater structures
- Landfill and other contaminated outflows

Features of the Water Level Temperature Sensor

- Absolute or vented pressure sensor for highly-accurate water level measurements: 0.05% FS
- Single probe can be programmed for use with either MODBUS or SDI-12 protocol
- Built-in hydrophobic filters and no desiccants to replace (vented version)
- Easy to integrate into existing monitoring systems
- Simple software utilities for setup, diagnostics and firmware upgrades
- Compact, narrow diameter housing for discreet installations
- Robust sensor housing design features double o-ring seals for advanced leakage protection
- Strong cables for reliable deployment to 300 m
- 1/4" NPTM threading for connection to pipes and conduits

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Water Level Temperature Sensor Specifications

Level Sensor:	Piezoresistive Silicon with Hastelloy® sensor (Absolute or Gauged)
Ranges:	M5, M10, M20, M30, M100, M200 (meters)
Accuracy:	± 0.05% FS Typical
Resolution:	0.0006% FS
Normalization:	Automatic Temperature Compensation
Temp. Comp. Range:	0°C to 50°C
Temperature Sensor:	Platinum Resistance Temperature Detector (RTD)
Operating Temperature:	-20°C to 80°C
Temp. Sensor Accuracy:	± 0.05°C
Temp. Sensor Resolution:	0.003°C
Response Time:	1~2 minutes
Communication:	Digital communications – Modbus and SDI-12
Interface Connector:	4-Conductor
Power Consumption:	Max 2mA in idle, 10mA while reading sensor
Size:	22 mm x 192 mm (7/8" x 7.55")
Weight:	173 grams (6.1 ounces)
Wetted Materials:	Delrin®, Viton®, 316L stainless steel, Hastelloy, Polyurethane (TPU boot)

Communication Cable Specifications

Wetted Materials:	Polyurethane, Nickel plated Brass, Viton
Diameter:	Cable: 8 mm (0.32") Connector: 20 mm (0.79")
Lengths:	Up to 300 m
Max. Bend Radius:	25 mm (1")
Operating Temperature:	-20°C to 80°C
Vent Tube Moisture Protection:	Built-in hydrophobic filters at sensor connection and plug at surface

USB-A Programming Cable

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