



STEVENS
MEASUREMENTS TO MIND

Smart SDI-12 / RS-485 Pressure, Temperature, and Digital Crest Gauge Sensor

Stevens' Smart PT is a ceramic membrane pressure and temperature sensor that delivers accurate results for a wide range of fluid level measurement applications. In addition to simple instantaneous measurements, this smart sensor features the ability to capture peak crest levels, and to automatically sample and report basic statistics on a configurable time interval.

A corrosion-resistant stainless steel housing and potted electronics make Smart PT extremely durable and long lasting for submersible water applications.

Smart PT is available with a vented or absolute pressure sensing module. Both versions come equipped with user specified length of cable. The vent tube provides an atmospheric reference which compensates for variations in barometric pressure.

In addition to programmable corrections for local variations in Earth's gravitational field, Smart PT also compensates automatically for the water temperature-density dependency.

Every Smart PT provides digital SDI-12, RS-485 and Modbus RTU over RS-485. Compatible with existing power and data logging instruments, the sensor can easily be deployed for data collection at remote monitoring sites.





FEATURES

- < ± 0.1% full scale accuracy
- Aluminum oxide ceramic membrane
- Digital output (SDI-12 / RS485)
- Depth scales available from 2 meters (6.6 feet) up to 200 meters (660 feet)
- Rugged housing and fully potted electronics - no risk of leaking
- Compact size
- Not damaged by freezing water
- Vented or non-vented cable, user specified length
- Direct pipe connection option
- Low power consumption
- Lightning protection
- Overpressure tolerant

UNIQUE ABILITIES

- Average and standard deviation outputs on up to 3600 autosampled data points over configurable time window. Data is stored until requested using the M2 command.
- Crest gauge function automatically captures minimum and maximum level and maximum level and number of seconds since the event.
- Smart autosampling can provide smoothing and oversampling.
- Custom offsets.
- Environmental corrections for local gravitational field and changes in fluid density due to temperature.

APPLICATIONS

- Well monitoring
- Ground water monitoring
- Surface water monitoring
- Tank level monitoring
- Soil & ground water remediation
- Lake, river, and wetland studies
- Environmental impact and research studies
- Water level for flow calculations

TECHNICAL SPECIFICATIONS

| | |
|------------------------|--|
| Supply voltage: | 6 - 18 Vdc (12 Vdc typical) |
| Current consumption: | SDI-12: Average one measurement per minute: 0.9 mA RS-485: Average one measurement per minute: 1.5 mA Peak current, during response to host: 30 mA |
| Output: | SDI-12 (Version 1.4), RS-485. Modbus over RS-485 Selectable output: Pressure in bar, kPa, psi or water depth in m, cm, ft Temperature in °C or °F |
| Operating temperature: | -20 °C to 80 °C (-4 °F to 176 °F) |
| Storage temperature: | -40 °C to 80 °C (-40 °F to 176 °F) |
| Pressure accuracy: | ± 0.1% of full scale, temperature corrected |
| Temperature accuracy: | ± 0.25 °C (0.45 °F) |
| Wiring: | Red: 6 - 18 Vdc, Black: Ground, Blue: SDI-12, White: RS-485 A/+, Green: RS-485 B/- |
| Cable: | High durability polyurethane (26 AWG) |
| Pipe threading: | M14-1 |
| Dimensions: | 91 mm x 22 mm (3.6" x 0.9") |
| Housing: | 316L Stainless Steel, Fully Potted, IP68 |
| Weight: | Probe: 120 g (4.2 oz.) Cable: 40 g per m (0.4 oz. per ft.) |

ORDERING INFORMATION

| Part No. | Range (bar / m / feet) | Overpressure max. (m / feet) |
|------------|----------------------------|------------------------------|
| 51168-x01 | 0.2 / 2 / 6.6 | 40 / 140 |
| 51168-x02 | 0.4 / 4 / 13 | 40 / 140 |
| 51168-x03 | 1 / 10 / 33 | 100 / 330 |
| 51168-x04 | 2 / 20 / 66 | 150 / 490 |
| 51168-x05 | 4 / 40 / 130 | 250 / 820 |
| 51168-x06* | 10 / 100 / 330 | 400 / 1300 |
| 51168-x07* | 20 / 200 / 660 | 400 / 1300 |
| 51168-500 | Cable - specify length | |
| 93030-001 | Desiccant cartridge, 20 cm | |
| 93030-010 | Desiccant cartridge, 10 cm | |

* For ranges over 4 bar, contact Stevens for application assessment.
x: 2 for vented, 3 for non-vented