Vented Hydrostatic Pressure Sensor

SURFACE WATER | GROUND WATER

General Description

HyQuest Solutions' vented hydrostatic pressure sensor VHPS is a **programmable submersible level transmitter** for measuring water level and temperature in groundwater and surface water. It is **low power, robust**, and especially designed for use in harsh environments, ensuring longterm measurement stability.

The VHPS provides **very accurate** results: The sensor is vented and automatically **self-compensates for barometric pressure changes**, i.e. it eliminates errors up to several inches that can be caused by pressure changes. Additionally temperature compensation is calculated from the measured water temperature. Capillary is integrated into the sensor cable with moisture filter at the open end (optional, see flipside). The **fast reacting membrane technology** of the VHPS provides long-term measurement stability.

Special attention was paid to **robustness**: The pressure cell is resistant to physical force (3 x burst pressure). The VHPS can be deployed in a variety of environments including natural and grey waters, drinkable water, saltwater and oil polluted waters. You can choose between stainless steel and titanium enclosures, and between three types of cable materials.

Equipped with an **SDI-12 interface**, the VHPS is easily connected to data loggers, and can be configured using standard SDI-12 commands. In addition, SDI-12 is the best choice for low-power applications.

Applications

Its robustness makes the VHPS an ideal sensor for monitoring water level in surface and groundwater, including:

- Sloping point bars or embankments
- Pipes and bore holes with Ø > 1
- Dams, weirs, irrigation systems
- Waterways that occasionally ice over
- Brackish water, saltwater
- Retention basins

Features

- Very accurate readings thanks to
    - Barometric pressure compensation (venting)
    - Temperature compensation (calculated)
    - Digital data transfer to data logger
- Robust design
- Wide application range
- Low-power sensor
- SDI-12 interface
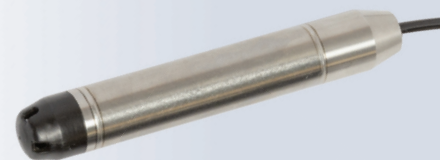
Technical Specifications

Pressure Measuring Range (MH2O)

	>5 to 20	>20 to 250
Overpressure	3 x FS (≥ 3 bar)	3 x FS
Burst pressure	> 200 bar	> 200 bar
Accuracy (± % FS)	≤ ± 0.1	≤ ± 0.1
Thermal shift (± % FS/°C) zero point -5 to 50 °C	≤ 0.03	≤ 0.015
Thermal shift (± % FS/°C) span -5 to 50 °C	≤ 0.015	≤ 0.015
Long term stability	< 0.2 % FS / < 4 mbar	< 0.1 % FS / < 0.2 % FS

Temperature Measuring Range
- Standard: -25 °C to +85 °C
- Accuracy: ≤ ± 0.3 °C / ≤ ± 0.5 °C

Temperature Range
- Operating temperature: -5 °C to +80 °C
- Storage temperature: -10 °C to +80 °C

Material
- Transducer: stainless steel (316L / 1.4435), optional titanium (Gr. 2)
- Housing: stainless steel (316L / 1.4404), optional titanium (Gr. 2)
- Seals: viton (standard), optional EPDM, Kalrez
- Cable: PUR (optional PE or FEP, see below), max. cable length 250 m (850 ft)

Output
SDI-12, version 1.3

Resolution
- Pressure: 0.01 % FS
- Temperature: 0.05 °C

Measurement Units
- Pressure: mbar, bar, mWC, mH2O, psi, inWC, ftWC, inH2O
- Temperature: °C, °F, K
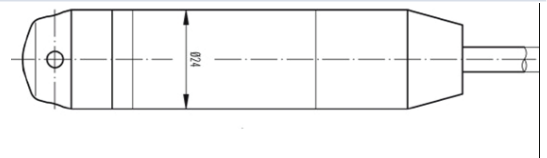
Power Supply and Consumption
- Power supply: 8 to 30 V DC, supply influence < 0.1 % FS
- Power consumption: in sleep mode < 0.5 mA, in active mode < 6 mA

Compliance
CE, RoHS

Dimensions and Weight
- Length 157 mm
- Diameter 24 mm
- Weight without cable 200 g

Accessories

Humidity Filter: Prevents moisture from entering the capillary needed for barometric pressure compensation. Humidity inside the capillary may form a tiny drop clogging the capillary and thereby influencing the measurement.

Cable: PUR, optional PE (drinking water), optional FEP (contaminated water)

Please ask for details.

Reseller

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