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OTT CBS

Compact Bubbler Sensor

The OTT Compact Bubble Sensor (CBS) was designed specifically for monitoring surface or groundwater levels. The OTT CBS optimizes the volume of air required for water level measurement using an intelligent pumping strategy. This strategy reduces power consumption, prolongs sensor life and eliminates the gas tank and desiccant.

To carry out a measurement the OTT CBS compares the previous measurement to the actual pressure at the end of the measuring tube. The necessary pumping time is determined from the results. The sensor generates only the required compressed air using a powerful internal motor. The compressed air is pushed through a measuring tube and bubbles exit inside a bubble chamber.

Depending on the water level above the bubble chamber, an air pressure equal to the hydrostatic pressure is established inside the measuring tube when the bubbles exit. The OTT CBS measures the hydrostatic pressure established in the measuring tube and automatically calculates the water level above the bubble chamber.

Quantitative
Hydrology

Accurate, Compact, and Easy-to-Use Bubbler Sensor for Water Level Monitoring



Applications

For water level measurement of:

- Streams, rivers, channels, or canals
- Lightning prone areas
- Groundwater wells

Performance Features & Benefits

- **Accurate**– Meets and exceeds USGS guidelines for water level accuracy, and will not drift over time
- **Complete Solution**– Combining the CBS with an EPS-50 bubble chamber reduces the influence of wave action and prevents unnecessary noise in the data
- **Low Maintenance**– No desiccant, pump maintenance or lubrication required
- **Easy-to-Start/Easy-to-Install**– All programming can be completed using DIP switches; connect directly into existing platforms with 1/8 inch, 2 mm or 4mm measuring tube
- **Flexible Integration**– Connects to most any data logger via standard communication interfaces, SDI-12 or 4-20 mA; no need for additional PC software
- **Compact Size**– Powerful internal motor generates compressed air-no compressed gas tank is required
- **Low Power Consumption**– Intelligent pumping strategy optimizes the pumping time (i.e., small changes in level are measured with very short pump cycles)

Additional Features

- Overload protection powers the unit off if pressure or current is too high
- No offset calibration required
- All calibration data is stored on the pressure cell so field replacement is easily accomplished
- Manual purge button easily accessed from the face of the unit, or purge function available via SDI-12 command
- Sensor diagnostics available with every measurement

Flexibility to work with 1/8-in, 2-mm, or 4-mm ID orifice tubes



Quick and easy to install

EPS-50 bubble chamber reduces wave action near the end of the measuring tube



Specifications

Measuring Range

0-50 ft (0-15 m)

Accuracy of Pressure Measurement

High Accuracy 0-50 ft range Version

0-15 ft: ± 0.01 ft

15-50 ft: $\pm 0.065\%$ of reading
or ± 0.02 ft, which ever is less

Standard 0-50 ft range Version

± 0.02 ft

Resolution

0.01 ft/0.001 psi

Units

ft, psi, m, bar

Sensor Technology

Bubble sensor, indirect pressure measurement

Rate of Level Change

0-16 ft, 10 ft within 14 seconds

16-50 ft, 3ft/min

Output

SDI-12

SDI-12 via RS-485

4-20 mA

Power Supply

10 to 30 Vdc

Power Consumption (Typical)

15 min. measurement interval 25 mAh/day

1 min. measurement interval 320 mAh/day

Measuring Tube

1/8 in., 2 mm or 4 mm ID

Environmental Conditions

Operating Temperature:

-4 to 140°F (-20 to 60°C)

Storage Temperature:

-40 to 185° F (-40 to 85°C)

Relative Humidity:

10-95% (non-condensing)

Dimensions

6.5 in. x 8.1 in. x 4.6 in. (L x W x H)

Weight

3.3 lbs.

Ingress Protection Rating

IP 43



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