CBS

Applications

Surface Water Level
Stream Gauging
Flood warning
Hydropower
Storm Water
Lake & Reservoir
Tide Monitoring
Tsunami Warning

Water Level – Compact Bubble Sensor

Indirect measurement principle for precise data

Optimized pump strategy for low power consumption and high dynamics (1 m level change/minute can be detected)
Integrated overload protection – continual monitoring of the tube pressure and the motor current of the pump
No software needed for initial startup – all settings are made via DIP switches
Simple system integration into existing networks and stations – SDI-12 interface and scaleable 4 to 20 mA output present
Air inlet with dust protection – no air drying needed in the 15 m measuring range
Connection of measuring tubes with different inner diameters of 2 mm, 4 mm or 1/8" possible

Compact and long-term stable

The OTT CBS is a lightweight, compact water-level bubble gauge measuring water levels accurately for up to 30 meters that operates on a drift-free air bubble principle. The unit utilizes a small piston pump to compress the air through the measuring tube and bubble chamber into the water. By comparing the barometric pressure to the bubble pressure, the unit calculates the water-level height.

Data output

The OTT CBS (Compact Bubbler Sensor) can issue water-level readings in SDI-12, as 4 ... 20 mA or RS-485 (SDI-12 protocol). The unit can be configured to any of the three output modes by simply using the 8 dual in-line package (DIP) switches located on the underside of the device.

Special advantage of the measuring principle

Due to the indirect measurement principle with no electronic parts in the water, the OTT CBS is especially suitable for areas which are prone to lightning.

Individually tailored – optional versions

An advanced version with an extended calibration and air drying unit allows measurements of up to 30 m. Moreover, a version with ±3 mm accuracy in the first 4.5 m of the 15 m range is available for special applications (USGS Specification).

Technical Specifications

	Feature	Value
MEASUREMENT	Sensor Technology	Bubble sensor, indirect pressure measurement
	Measuring ranges	Standard version + USGS Specification: 0 ... 15 m (0... 50 ft)
		Measuring range 30m version: 0 ... 30 m (0... 100 ft)
	Resolution	1 mm (0.01 ft)
	Accuracy	Standardversion + Measuring range 30 m version: ±5 mm
		USGS Specification version*: measuring range 0 ... 15 ft: ±0.01 ft; measuring range 15 ... 50 ft: ±0.065 % of measured value or ±0.02 ft, whichever is less
	Measuring dynamics (max. level change)	1 m/min
	Units	m, cm, ft, mbar, psi
INTERFACES	Interfaces	4 ... 20 mA, SDI-12, SDI-12 via RS-485
ELECTRICAL DATA	Power supply	9.6 ... 30 V DC, typ. 12/24 V DC
	Power consumption	Sample interval 1 min: typ. 320 mAh/day
		Sample interval 15 min: typ. 25 mAh/day
GENERAL	Measuring tube	Inner diameter typ. 2 or 4 mm
	Dimensions	165 mm x 205 mm x 115 mm
	Weight	approx. 1500 g
	Housing material	ABS
ENVIRONMENTAL CONDITIONS	Protection type	IP 43
	Temperature range	Operational: –20 ... +60 °C
		Storage: –40 ... +85 °C
	Relative humidity	10 ... 95 % non-condensing
EMC/EMI AND NORMS	EMC limits	CE IEC61326 and EN61326 are adhered to

*The OTT CBS with increased accuracy requires regular calibration.

190924-HY-OT-SW-ds-CBS-EN