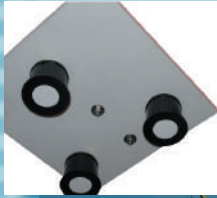


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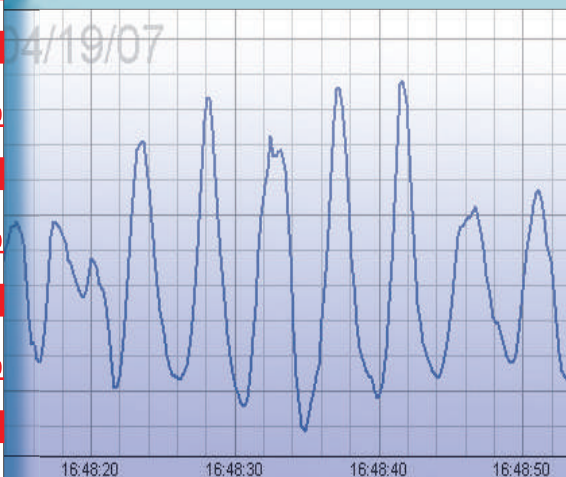
Ease of Water Level and Wave Measurement for Offshore and Onshore



LOG_aLevel® is a calibration free, accurate, robust, cost-effective, complete, remote sensing and stand-alone water level gauge. On the basis of advanced ultrasonic technology it measures reliable, fast and precise all kinds of water level and its dynamics. LOG_aLevel® system is easy to deploy due to it's small sensors, needs no maintenance, works automatically and is (optional) independent of any external connections.

Main Advantages:

- Calibration Free and Accurate due to Outstanding Sound Velocity Compensation
- Maintenance - Free and Ease of Deployment
- Precise, Robust and Economical
- Reliable under Extreme Conditions: Flood, Ice, Storms, Debris, etc.
- Small, Narrow Beam, Low Power Sensors Enabling Easy Installation and Accurate Level Also at Wavy Water Surface
- Wave and Level Measurement Simultaneously
- Extension With Additional Sensors (Redundancy, Meteorology, Hydrology etc.)
- Remote Data Transmission, Control and Alerting
- Easy Installation and Operation of Measuring Network
- Ease of Use Windows-Software for Setup and Data Visualisation



Applications:

- Offshore Platforms
- Storm Tide, Flood and Tsunami Measuring Networks
- Hydrology and Environmental Monitoring
- Harbor Management
- Wave Monitoring and Analysis
- Water Reservoir Management
- Load Determination for Hydraulic Engineering
- Event Alerting System
- River Monitoring from Bridges

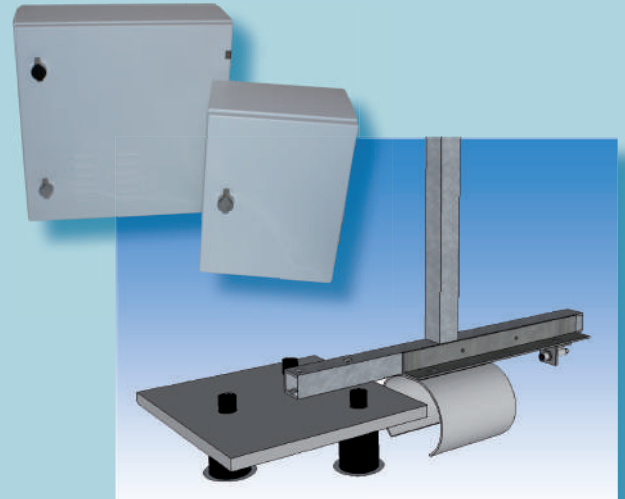
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Calibration Free Sensing of Water Level and Waves



Standard System:

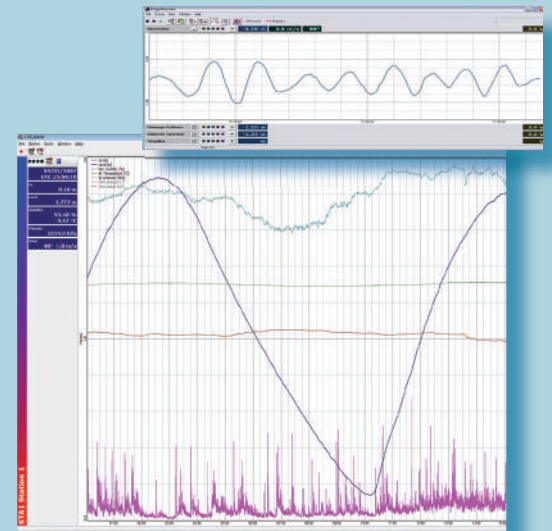
- Stainless steel housing, IP 66, lockable, size: 300x300x200 mm (or 500x500x200 mm)
- Ultrasound sensor ULL15040, IP 68, measuring range 15 m (options up to 20 m)
- REF300 sound velocity sensor for precise distance measurement
- Controller module for signal processing and sensor control/data acquisition incl. RTC
- RS232/RS485 data interface
- Power supply 12 VDC
- LOG_aLevel® Software for system set-up, online-analysis of measuring network, visualisation, managing and storing of data on a Windows PC



LOG_aLevel housings and off-shore sensor bracket (sample)

Options:

- Ultrasound Sensors: ULL20040 - 20m measuring range
- Sensor bracket
- Additional wave parameter (direction-with current meter, wave spectra etc.)
- Data Logger incl. 2 GB Industrial Grade CF Card or complex/sophisticated data acquisition system
- Radio Data Modems: licence free and licensed
- GSM/GPRS data transmission to dyn. or fixed IP-Addr.
- Modem or Ethernet-Module LAN/WLAN - connectivity
- Integration into SCADA systems (Modbus etc.)
- Wind generator up to 300 W, Solar panel up to 180 Wp
- Buffer batteries, 12 V; 7,5 Ah up to 200 Ah (AGM type)
- Power supply 230/110 VAC; overvoltage protection
- GPS-Time module (pps; drift free 1ms accuracy)
- Additional environmental / redundancy sensors e.g. Ultrasonic wind gauge, temperature, humidity, precipitation, barometric pressure, visibility, cloud height etc.
- Data server, additional Windows clients, alerting software



Example LOG_aLevel software

Specifications:

Measuring range:	15 or 20m (higher on request)
Resolution / Field accuracy:	1 mm / 2 cm (Level)
Wave parameter:	Hs, Hmax, Ts
Sample rate:	up to 5 Hz (user selectable)
Ultrasound sensor:	40 kHz, narrow beam
Working temp:	-20 °C up to +70 °C
Storage temp:	-40 °C up to +80 °C



Examples LOG_aLevel additional modules

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