AANDERAA
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SEAGUARD® WLR

Water Level Recorder

The new Aanderaa SeaGuard WLR is a robust instrument based on the SeaGuard Platform. It is a self contained instrument for measuring tide and temperature. The instrument can be used as a platform for additional measurements (e.g. CTD, current, dissolved oxygen and turbidity). SeaGuard WLR comes in 300m, 3000m and 6000m depth ranges.

Features of the SeaGuard WLR:

- High Resolution and low drift
- Low maintenance needs
- Selectable interval from 2 seconds to 2 hours
- SeaGuard Studio visualization software
- Smart sensor topology based on a reliable CANbus interface (AiCaP)
- Output parameters: Pressure, Temperature, Tide pressure, Tide level.Pressure time series. The WLR also provides raw data of the pressure and temperature measurements.
- Real-Time XML Output on RS-422(optional)
- Windows CE based Datalogger with TFT colour touch panel for configuration
- 7 pressure ranges:
  - 0 - 400 kPa / ~30m depth
  - 0 - 1000 kPa / ~90m depth
  - 0 - 4000 kPa / ~390m depth
  - 0 - 10MPa / ~1000m dept
  - 0 - 20MPa / ~2000m depth
  - 0 - 40MPa / ~4000m depth
  - 0 - 60MPa / ~6000m depth

SeaGuard Water Level Recorder measures hydrostatic pressure based on a silicon pressure sensor 5217. The pressure measurements are sampled and temperature compensated by an advanced Digital Signal Processor.

The SeaGuard WLR application areas are in fixed installations, either deployed in a seabed installation in shallow waters, or mounted onto a fixed structure in the upper water column. Typical applications for the sensor are measurements of tide in ports and harbours, marine operations, hydrography, weather forecast, and climate studies.

The tide measurement is an average of the hydrostatic pressure measured over a time period of 10 seconds to 8 minutes (Integration time configurable by the user). The update interval is between 2 seconds and 2 hours.

The SeaGuard WLR output parameters are tide pressure, tide level, pressure and temperature. Tide levels are preliminary internally calculated estimates, based on fixed user selectable values of atmospheric pressure and water salinity. Compensation for actual atmospheric pressure and salinity can be postprosessed if such data is available. Tide pressure is an average of hydrostatic pressure over the integration time.

Since all calibration and temperature compensation data are stored inside the sensor, the parameters are by default presented directly in engineering units without any external calculation. The WLR also provides raw data of the pressure and the temperature measurements.

The output parameters from the SeaGuard WLR are easily presented in SeaGuard Studio.

The SeaGuard WLR and the Aanderaa smart sensors are interfaced by means of a reliable CANbus protocol (AiCaP) using XML for plug and play capabilities. The smart sensors can be mounted directly on the Top end Plate or connected via cable to an Aanderaa SeaGuard and are automatically detected and recognized.

The SeaGuard WLR can be used with Aanderaa Real-Time Collector for real-time data.

The SeaGuard WLR has 2 battery compartments for long deployment time.

The SeaGuard WLR can be equipped with a Conductivity sensor for calculation of Salinity, Density and Sound of speed.

Top-End Plate:	Multiparameter platform
Recording system:	Data Storage on SD card
Storage Capacity:	≤ 2GB
Battery:	2 batteries inside the instrument
Alkaline 3988	9V, 15Ah (nominal 12.5Ah; 20W) down to 6V at 4°C)
or Lithium 3908:	7V, 35Ah
Supply voltage:	6 to 14Vdc
Operating temperature:	-5 – +40°C (23 – 104°F)
Deployment depth:	SW: 300meter IW: 3000meter DW: 6000meter

Dimensions:

SW:	OD: 139mm H: 356mm
IW:	OD: 140mm H: 352mm
DW:	OD: 143mm H:368mm

Weight:	in air:	in water
SW:	6.0kg	1.5kg
IW:	8.9kg	4.3kg
DW:	14.5kg	6.8kg

Materials: PET, Titanium, Stainless Steel 316, Epoxy

Average current drain(@ 9V): Tidal average period of 40 sec

Note! The instrument will calculate and present the average current drain based on the configuration, refer to TN 320.

Output Interval: freq.	2 sec	1 min	10 min	30 min
2 Hz:	25.1mA	5.0mA	1.4mA	1.2mA
4 Hz:	25.1mA	5.0mA	1.4mA	1.2mA

Tide sensor specifications:

Available ranges:

5217	Range:	0 – 400kPa (58 psia)
5217A	Range:	0 – 1000kPa (145 psia)
5217B	Range:	0 – 4000kPa (580 psia)
5217C	Range:	0 – 10MPa (1450 psia)
5217D	Range:	0 – 20MPa (2900 psia)
5217E	Range:	0 – 40Mpa(5801 psia)
5217F	Range:	0 – 60MPa (8702 psia)

Pressure:

Resolution:	0.0001% FSO
Accuracy:	±0.02% FSO
Pressure connection:	Swagelok™ 1/8 inch
Inlet port (reference):	Top of the pressure port
Pressure parameters:	Pressure in kPa, Pressure raw data in LSB

Tide:

Integration time:	10 sec - 8 min
Tide parameters:	Tide pressure in kPa, Tide level in meter, Pressure Series

Temperature:

Range:	0 – 36°C (32 – 96.8°F)
Resolution:	0.001°C (0.0018°F)
Accuracy:	±0.2°C (0.72°F)
Response Time (63%):	< 10sec.
Temperature parameters:	Temperature in °C, Temperature raw data in LSB

Accessories included:

SeaGuard Studio
SD card: 2 GB
1 Alkaline Battery 3988
Documentation on CD
Carrying handle

Accessories not included:

Mooring frame 5031, 5031A
In-line mooring frame 4044
Internal Lithium battery 3908
Internal Alkaline battery 3988
Internal battery shell 4513
Maintenance kit 3813
Tools kit 3986A
Real-Time Collector 4715 and license
Conductivity sensor 4319, refer D369
Temperature sensor 4060, refer D363
Oxygen optode 4835, refer D385
Oxygen optode 4330, refer D378
Turbidity sensor 4112 (analog), refer D377
for Current measurements, refer SeaGuard RCM (D368)
for Wave and Tide measurements, refer SeaGuard WTR (D386)

Specifications subject to change without prior notice.

Aanderaa Real Time

The data message from the instrument is in XML format. A user application can access the Aanderaa Real-Time Collector over the Internet or Intranet. Each user application will experience an individual connection to the instrument data due to a queue management system in the collector. One licence per SeaGuard instrument serves multiple user applications, including Aanderaa Real-Time Collector, Aanderaa Real-Time Viewer, Style Sheets and example application (refer B163).

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Let's Solve Water

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