AANDERAA
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SEAGUARD® WTR
Wave and Tide Recorder

The new Aanderaa SeaGuard WTR is a robust instrument based on the SeaGuard Platform. It is a self contained instrument for measuring wave parameters, water level and temperature. The instrument can be used as a platform for additional measurements (e.g. CTD, current, dissolved oxygen and turbidity).

Features of the SeaGuard WTR:

- High Resolution and low drift
- Low maintenance needs
- Selectable interval from 2 seconds to 2 hours
- SeaGuard Studio vizualisation software
- Smart sensor topology based on a reliable CANbus interface (AiCaP)
- Output parameters: Pressure, Temperature, Tide, Significant wave height, Maximum wave height, Mean period, Peak period, Energy wave period, Mean zero-crossing period, Wave steepness, and Irregularity of sea-state. The WTR also provides raw data of the pressure and temperature measurements.
- Real-Time XML Output on RS-422(optional)
- For use in sea and fresh water
- Windows CE based Datalogger with TFT based colour touch panel for configuration
- Measurement range: 0 - 400 kPa / ~30m depth
  0 - 1000kPa / ~90m depth

The SeaGuard Wave and Tide Recorder measures wave and tide conditions based on a silicon pressure sensor 5218. The pressure measurements are sampled and temperature compensated by an advanced Digital Signal Processor.

The SeaGuard WTR 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 wave and tide in ports and harbours, marine operations, weather forecast, and climate studies.

The recommended deployment depth for wave measurements is in the range 6 - 15 meters.

The tide measurement is an average of the hydrostatic pressure measured over a time period of 10 seconds to 8 minutes (configured by the user). The update interval is between 2 seconds and 255 minutes.
The wave measurements are based on the pressure time series measured over a time period of 64 seconds to 17 minutes (configured by the user). The update interval is between 2 seconds and 255 minutes.

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

The SeaGuard WTR 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 of an Aanderaa SeaGuard and are automatically detected and recognized.

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

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

The SeaGuard WTR 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:	0 - 30m/0 - 90m
Dimensions:	OD: 139mm H: 356mm
Weight in air:	6.0kg
Weight in water:	1.5kg
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.	Samples	2 sec	1 min	10 min	30 min
2 Hz:	1024	27.3mA	6.5mA	4.8mA	2.3mA
	2048	27.3mA	6.5mA	5.5mA	3.5mA
4 Hz:	1024	31.8mA	11.0mA	4.9mA	2.3mA
	2048	31.8mA	11.0mA	8.7mA	3.6mA

Available ranges:

5218	**Range:**	0 - 400kPa(58psia)
5218A	**Range:**	0 - 1000kPa(145psia)

Pressure:

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

Tide:

Average interval:	10 sec - 8 min
Tide parameters:	Tide pressure, Tide level, Pressure Seies

Wave:

Sampling rate:	2 Hz, 4 Hz
Number of samples:	256, 512, 1024, or 2048
Wave parameters:	Significant wave height, Maximum wave height, Mean period, Peak period, Energy wave period, Mean zerocrossing period, Wave steepness, Irregularity of sea-state, Cut-off frequensy, Pressure Series, and Wave spectrum.

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.

Accessories included:

SeaGuard Studio
SD card: 2 GB
1 Alkaline Battery 3988
Documentation on CD
Carrying handle 4132

Accessories not included:

Mooring frame 5031, 5031A
In-line mooring frame 4044
Bottom mooring frame 3448
Internal Lithium battery 3908
Internal Alkaline battery 3988
Internal battery shell 4513
Maintenance kit 3813
Tools kit 3986A
Real-Time license and Collector 4715
Conductivity sensor 4319, refer D369
Temperature sensor 4060, refer D363
Oxygen optode 4835, refer D385
Turbidity sensor 4112 (analog), refer D377
for current measurements, refer SeaGuard RCM (D368)

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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