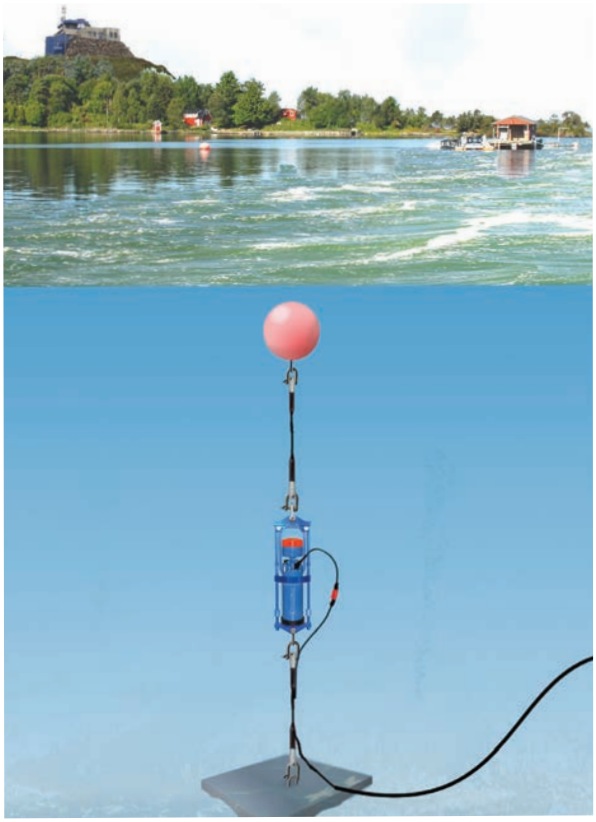
AANDERAA
a xylem brand



SEAGUARD® Platform

Aanderaa SeaGuard Platform is the main module of our Underwater Observatory. The SeaGuard Platform is used as Datalogger in SeaGuard RCM, SeaGuard CTD, SeaGuard WTR and SeaGuard WLR and SeaGuard O_2

Advantages:

- Great Flexibility: data registration from up to 20 sensors
- High resolution and low drift
- Low maintenance needs
- Selectable interval from 2 seconds to 2 hours
- SeaGuard Studio visualization software
- Real-Time XML Output on RS-422(optional)
- Windows CE based Datalogger with TFT colour touch panel for configuration
- For use in sea and fresh water
- 300m/3000m/6000m version
- Smart sensor topology based on a reliable CANbus interface (AiCaP)
- Available sensors: Z-Pulse Doppler current sensor, Temperature, Oxygen optode, Conductivity, Pressure, Wave and Tide
- Up to 4 Analog sensor input (0-5V), e.g. Turbidity

Aanderaa Data Instruments SeaGuard Platform is a self recording instrument with storage on SD card. Storage capacity is more than adequate for any practical applications. The instrument is delivered with pressure case.

The SeaGuard Platform 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 Platform. During power-up, each of the sensors that are connected to the bus will report their capabilities and specifications to the Datalogger. The Datalogger then assembles the information and provides the user with the possibility to configure the instrument based on the present nodes.

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.

Six sensors can be fitted onto the Top-end Plate of the Platform; four of which can be analog (0 - 5V) sensors.

The SeaGuard Platform has 2 Battery Compartments for long deployment time; the AiCaP CANbus based protocol ensures low power consumption.

The ouput parameters from the SeaGuard Platform are easily presented in SeaGuard Studio.

The SeaGuard Platform can be configured to suite your requirements and applications.

The SeaGuard Instrument can be deployed in an In-line string mooring, Fixed bottom frame mooring, Buoy deployment, Long term/short term deployment.

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

SeaGuard RCM with Doppler Current, Conductivity, Temperature and Pressure sensors, 2000 meter version.

SeaGuard CTD with Conductivity, Temperature and Pressure sensors, 300 meter version.

SEAGUARD® Oxygen Recorder

The SeaGuard O_2 is a robust instrument based on the SeaGuard Platform and Aanderaa Oxygen Optode sensor. It is a self contained instrument for measuring dissolved oxygen. The SeaGuard O_2 output parameters are O_2 concentration in µM, the air saturation in % and the temperature in °C. The instrument can be used as a platform for additional measurements (like e.g. conductivity, temperature, pressure, turbidity or Wave and Tide). Refer to D394 for further information.

SEAGUARD® Recording Current Meter

The SeaGuard RCM series is a current meters based on the SeaGuard Platform and the ZPulse™ Doppler current sensor. Modern computer technology combined with advanced digital signal processing provides accurate and detailed measurements with almost unlimited resolution. The current sensor comprises acoustic pulses of several frequency components to lower the statistical variance in the Doppler shift estimate. The Doppler current sensor also incorporates a robust fully electronic compass and a tilt sensor. Optional parameters are available through a range of smart sensors that include temperature, pressure, conductivity, dissolved oxygen, Wave and Tide. Refer D368 for further information.

SEAGUARD® CTD Recorder

The SeaGuard CTD is a robust instrument based on the SeaGuard Platform and the Aanderaa Conductivity, Temperature and Pressure sensors. The output parameters from the SeaGuard CTD are easily presented in SeaGuard Studio. Salinity, density, depth and sound of speed is postcalculated in SeaGuard Studio. The instrument can be used as a platform for additional measurements (like e.g. dissolved oxygen, turbidity or Wave and Tide). Refer D373 for further information.

SEAGUARD® Water Level Recorder

The SeaGuard WLR is a robust instrument based on the SeaGuard Platform and Aanderaa Tide sensor. It is a self contained instrument for measuring tide and temperature. The SeaGuard WLR output parameters are Tide pressure, Tide level, Pressure series, 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 postprocessed if such data is available. Tide pressure is an average of hydrostatic pressure over the integration time. The instrument can be used as a platform for additional measurements (like e.g. conductivity, temperature, dissolved oxygen or turbidity). Refer D387 for further information.

SEAGUARD® Wave and Tide Recorder

The SeaGuard WTR is a robust instrument based on the SeaGuard Platform and Aanderaa Wave and Tide sensor. It is a self contained instrument for measuring wave parameters, water level and temperature. 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 instrument can be used as a platform for additional measurements (e.g. conductivity, temperature, dissolved oxygen or turbidity). Refer D386 for further information.

Platform Capability:	Multiple nodes can be connected to the Platform
Top-end Plate capability:	Up to 7 sensors can be fitted onto the Top-end Plate, of which 4 can be analog sensors (0-5V)
Recording System:	Data Storage on SD card
Storage Capacity:	≤ 2GB
Battery:	1 or 2 batteries inside the instrument
Alkaline 3988:	9V, 15Ah (nominal 12.5Ah; 20W down to 6V at 4°C)
or Lithium 3908:	7V, 35Ah
Recording Interval:	From 2s, depending on the node configuration for each instrument
Recording Settings:	Fixed interval settings or Customized Sequence setting
Protocol:	AiCaP CANbus based protocol
Deployment depth:	
Shallow Water (SW):	0 - 300m (0 - 984.3ft)
Intermediate Water (IW):	0 - 3000m (0 - 9843ft)
Deep Water (DW):	0 - 6000m (0 - 19690ft)
Platform Dimensions:	
Shallow Water (SW):	H: 356mm OD: 139mm
Intermediate Water (IW):	H: 352mm OD: 140mm
Deep Water (DW):	H: 368mm OD: 143mm
Weight:	In Air In Water
Shallow Water (SW):	5.9 kg 1.5 kg
Intermediate Water (IW):	8.8 kg 4.2 kg
Deep Water (DW):	9.2 kg 4.6 kg
External Materials	
300m version:	PET, Titanium, Stainless Steel 316
3000/6000m version:	Stainless steel 316,Titanium,

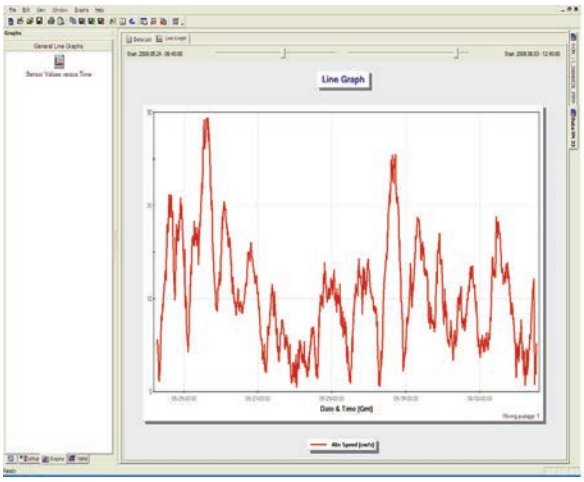
Supply Voltage:	6- 14 Vdc
Operating Temperature:	-5 to +40°C
Accessories Included:	SeaGuard Studio SD card: 2 GB 1 Alkaline Battery 3988 Documentation on CD
Accessories not included:	Carrying handle 4132, 4032, 3965 Morring frame 5031,5031A In-line mooring frame 4044/ 3824A, Protecting Rods 3783 Bottom mooring frame 3448R Internal Lithium 3908 Internal Alkaline 3988 Internal Battery Shell 4513 Maintenance Kit 3813/3813A Tool kit 3986A Real-Time Collector 4715 and license Analog cable/license 4564/ 4802 AC/DC adapter for lab. use 4908 Sensor Cable 4865 to PC Real Time signal/power cable 5071/5072

Available AiCap sensors. Top left: Doppler current sensor 4420, Doppler current sensor 4520. Bottom left: Pressure sensor 4117, Oxygen Optode 4330/4330F, Conductivity sensor 4319, Temperature sensor 4060, Tide sensor 5217, Oxygen Optode 4835, Wave & Tide sensor 5218.

SEAGUARD® Studio

With SeaGuard Studio you can:

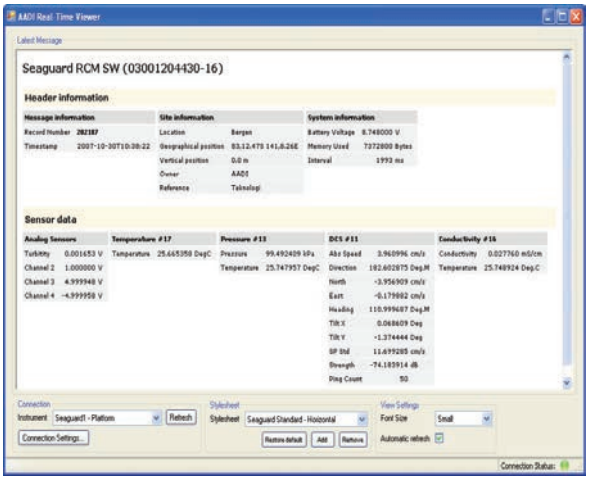
- Import deployment data collected by the SeaGuard RCM from a SD card.
- Display configuration settings used in the depoyment.
- Display listed data.
- Possible to show data from several instruments at the same time for comparative studies.
- Export data to Matlab.
- Export data to ASCII text files.
- Print or export graphs in different formats.
- Copy graphs to the clipboard for inclusion into other programs such as Word, Excel or similar.
- Save edited sessions.
- Calculate virtual parameters.



Example of SeaGuard Studio presenting absolute speed data measured with a SeaGuard RCM.

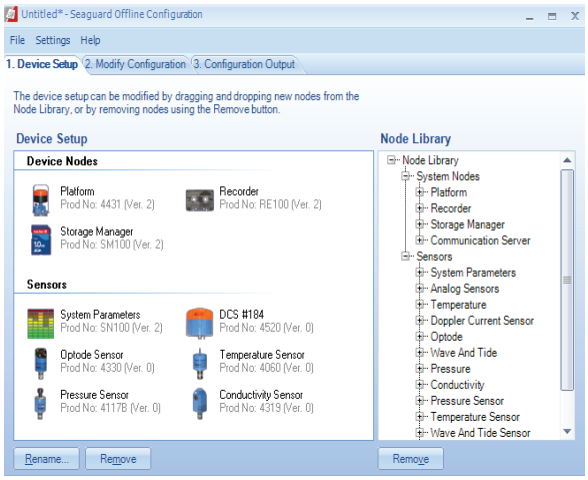
Aanderaa Real-Time

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 license per SeaGuard instrument serves multiple user applications including Aanderaa Real-Time Collector, Aanderaa Real-Time Viewer, StyleSheets and example application (Refer B163)



Offline Configuration

The SeaGuard Offline Configuration is a PC application used to create and modify configuration files for the SeaGuard. The configuration files can be imported to one or multiple SeaGuard instruments using a compatible memory card (SD card). (Refer TD 275).



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www.aanderaa.com

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