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 output 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® Recording Current Meter

The SeaGuard RCM series is a current meter 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.

SEAGUARD® Oxygen Recorder

The SeaGuard O₂ 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 O₂ output parameters are O₂ 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.
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: Shallow Water (SW): 5.9 kg
- Intermediate Water (IW): 8.8 kg
- Deep Water (DW): 9.2 kg
- In Water: Shallow Water (SW): 1.5 kg
- Intermediate Water (IW): 4.2 kg
- Deep Water (DW): 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


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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 deployment.
- 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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