AANDERAA
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SEAGUARD® CTD

Conductivity, Temperature and Depth

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

Advantages:

- 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, Conductivity. The CTD also provides raw data of the Pressure, Temperature and Conductivity measurements.
- Windows CE based datalogger with TFT based color touch panel for configuration
- Real-time XML Output on RS-422(optional)
- For use in sea and fresh water
- 3 Measurement ranges: 0 - 300m, 0 - 2000m, 0 - 6000m

The SeaGuard CTD is a primary tool for determining essential physical properties of sea and fresh water. Standard parameters are Conductivity, Pressure/ Instrument depth and Temperature. From these parameters the salinity of the water as well as the density are calculated.

The SeaGuard CTD is designed for continuous recordings of salinity (via conductivity measurements), temperature and depth (via pressure measurements) used in long term deployments. Typical application areas are related to e.g. coastal circulation, climatic studies and aquaculture. The SeaGuard CTD can also be used as a multi-parameter platform for additional measurements.

The included Conductivity Sensor (4319B) is an intelligent sensor based on an inductive principle. This provides for stable measurement without electrodes that are easily fouled and may wear out in the field.

The included Temperature Sensor (4880/4060) is an intelligent sensor based on a thermistor-bridge.

The included Pressure Sensor (4646/4117) is a compact yet intelligent sensor based on a silicon piezoresistive bridge sampled and temperature compensated by an advanced Digital Signal Processor.

The output parameters from the SeaGuard CTD are easily presented in SeaGuard Studio. Salinity, Density, Depth and Sound of speed are post- calculated in SeaGuard Studio.

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

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

Top-end Plate:	Multiparameter platform
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
Supply voltage:	6 to 14VDdc
Operating temp.:	-5 – +40˚C (23 – 104˚F)
Deployment depth:	
Shallow Water (SW):	0 - 300m (0 - 984.3ft)
Intermediate Water (IW):	0 - 2000m (0 - 6590ft)
Deep Water (DW):	0 - 6000m (0 - 19690ft)
Platform dimensions:	
Shallow Water (SW):	OD: 139mm H: 356mm
Intermediate Water (IW):	OD: 140mm H: 352mm
Deep Water (DW):	OD: 143mm H: 368mm

Weight:	In Air	In Water
Shallow Water (SW):	6.3kg	1.8kg
Intermediate Water (IW):	12.2kg	7.4kg
Deep Water (DW):	13.1kg	8.6kg

External materials:	
300m version:	PET, Titanium, Stainless Steel 316,
2000/6000m version:	Titanium, Stainless steel 316, OSNISIL

Average current drain(@ 9V):Depends on configurations:
Note! The instrument will calculate and present the average current drain based on the configuration (refer to TN 320)

Recording Interval	2 min	10 min	30 min	60 min
SeaGuard CTD	25.1 mA	5.0 mA	1.4 mA	1.2 mA

CONDUCTIVITY (4319B, ref D369):

Range:	0 - 7.5S/m (0 - 75mS/cm)
Resolution:	0.0002S/m (0.002mS/cm)
Accuracy:	±0.0018S/m (±0.018mS/cm)
Response time:	< 3s (depends on flow through cell bore)

TEMPERATURE (4880, ref D391, 4060, ref D363):

Range:	-4 to 36°C (24.8 – 96.8˚F)
Resolution:	0.001°C (0.0018°F)
Accuracy:	±0.03°C (0.054°F)
Response time (63%):	< 2 sec

PRESSURE (4117, ref D362, 4646, ref D381):

SW Range: (4646C)	0 – 3100kPa (449 psia)
IW Range: (4117D)	0 – 20000kPa (2900 psia)
DW Range: (4117E)	0 – 60000kPa (8702 psia)
Resolution:	0.0001% FSO
Accuracy:	±0.02% FSO
Pressure connection:	Swagelok™ 1/8 inch
Inlet port (reference):	top of the pressure port
Measurement units:	Engineering units and raw data

Specifications subject to change without prior notice.

ACCESSORIES included:

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

ACCESSORIES not included:

Carrying handle 4032,3965
SD card with capacity up to 4GB
Electrical terminal 4784
In-line mooring frame 4044/3824A,
Base Brackets 4722 for 3824A
Protecting Rods 3783
Sub-surface floats 2211,2212
Bottom mooring frame 3448R
Real Time Collector 4715 and license
Offline Configuration 4811
Internal Lithium battery 3908
Internal Alkaline battery 3988
Internal battery shell 4513
Analog cable/licence 4564/4802
Maintenance Kit 3813/3813A
Tools kit 3986A
Hardcopy Documentation
Oxygen optode 4330, refer D378
Turbidity sensor 4112 (analog), refer D377 for Wave & Tide measurements, refer SeaGuard WTR (D386) and SeaGuard WLR (D387) for current measurements, refer SeaGuard RCM (D368)

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, Style Sheets 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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Let's Solve Water

Visit our Web site for the latest version of this document and more information
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