



## Conductivity Sensor 4319

*is a compact fully integrated sensor for measuring the electrical conductivity of seawater. It is designed to be used with SeaGuard or SmartGuard datalogger using AiCaP CANbus or as stand-alone sensor using RS-232*

### Advantages:

- Smart Sensor for easy integration with SeaGuard and SmartGuard
- Direct readout of engineering data
- Internal pressure never exceeds 1 bar therefore electronics and sensors are unaffected by sea depth
- Rugged and robust with low maintenance needs
- Output format AiCaP CANbus, RS-232
- 3 depth ranges available max. 6000 meters

Conductivity is a key parameter for in-situ determination of several fundamental physical properties of seawater.

For seawater, the ability to conduct electrical current is mostly dependent on temperature and the amount of inorganic dissolved solids. This means that, together with temperature and depth information, a good estimate of the salinity may be determined.

Salinity is defined as the concentration of dissolved solids. Other important properties of seawater are again dependent on the salinity. Among these are the density and the speed of sound.

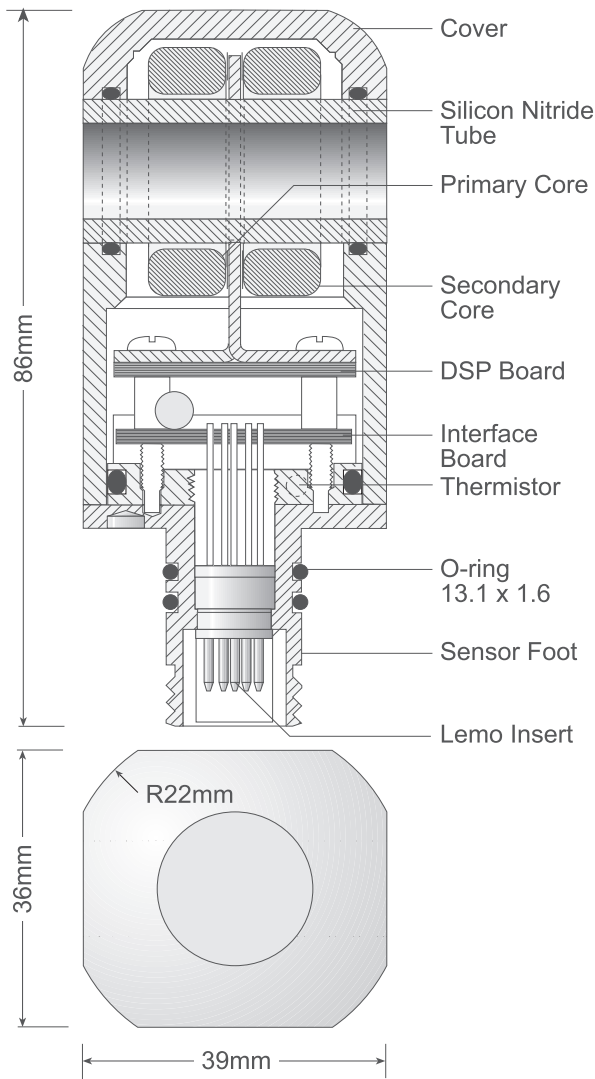
The Conductivity Sensor 4319 is based on an inductive principle. This provides for stable measurement without electrodes that are easily fouled and may wear out in the field.

Utilization of miniature components have made it possible to integrate all the required electronics.

The Conductivity Sensor outputs data in AiCaP CANbus and RS-232. Output parameters are conductivity and temperature in AiCaP and conductivity, temperature, salinity, density and sound speed in RS-232. Data can be presented in engineering units or raw data.

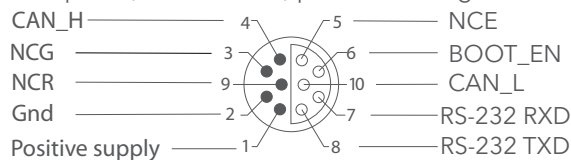
The SmartGuard datalogger and the Smart sensors are interfaced by means of a reliable CANbus interface (AiCaP), using XML for plug and play capabilities.

The Smart sensors can be mounted directly on the top end plate of the Aanderaa SmartGuard, in a String System node or connected to the SmartGuard and are automatically detected and recognized.



#### PIN CONFIGURATION

Receptacle, exterior view; pin = • bushing = ◦



The 10-pin receptacle in the sensor foot mates with Aanderaa CSP (Cylindrical Sealing Plug) giving access to both outputs. In RS-232 mode, use Sensor Cable 4865 for connection to a Personal Computer (PC). Cable 4865 is furnished with a watertight 10-pin CSP-plug at the sensor end. An additional USB plug is used for providing power to the sensor.

**Conductivity:**  
 Range: 0-7.5S/m (0-75mS/cm)  
 Resolution: 0.0002S/m (0.002mS/cm)  
 Accuracy: 4319A ±0.005S/m (±0.05mS/cm)  
 4319B ±0.0018S/m (±0.018mS/cm)  
 Response Time (90%): <3s<sup>1)</sup>

**Temperature:**  
 Range: -5-40°C (23-104°F)<sup>2)</sup>  
 Resolution: 0.01°C (0.018°F)  
 Accuracy: ±0.1°C (0.18°F)  
 Response Time (63%): <10 seconds

**Output format:** AiCaP CANbus, RS-232  
**Output Parameter:**  
 AiCaP: Conductivity, temperature  
 RS-232: Conductivity, temperature, salinity, density and sound of speed  
**Sampling interval:** 2 sec - 255 min

**Supply voltage:** 6 to 14VDC  
**Current drain:**  
 Average: 0.16 +48mA/S where S is sampling interval in seconds  
 Maximum: 100mA  
 Quiescent: 0.16mA

**Operating depth:**  
 Shallow Water (SW): 0-300m (0-984.3ft)  
 Intermediate Water (IW): 0-2000m (0-6590ft)  
 Deep Water (DW): 0-6000m (0-19690ft)

**Electrical connection:** 10-pin receptacle mating CSP-plug  
**Dimension (WxDxH):** 36 x 39 x 86mm (1.4"x1.5"x3.4")  
**Weight:** 240g (8.466oz)  
**Materials:** Epoxy coated titanium

**Accessories, not included:** Resistor Set 3719 for functional test  
 Sensor Cable 4762,4865  
 Patch Cable 4999,3880L  
 Set-up and Config. Cable 3855<sup>3)</sup>

<sup>(1)</sup> Dependant on flow through cell bore  
<sup>(2)</sup> Calibrated range is 0 to 36°C (32-96.8 °F)  
<sup>(3)</sup> Laboratory use only

*The above specifications are for the stand-alone sensor only, not the installation it is utilized with.*

Specifications subject to change without prior notice.



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