AANDERAA
a xylem brand

Conductivity Sensor 4419

is a compact fully integrated sensor for measuring the electrical conductivity of seawater. 4419 is designed to be used with SeaGuard or SmartGuard datalogger using AiCaP CANbus or as stand-alone sensor using RS-232. 4419R to be used with longer cable lenghts using RS-422.

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:
  4419: AiCaP CANbus, RS-232
  4419R: RS-422
- 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 4419 is based on an inductive principle. This provides for stable measurement without electrodes that are easily fouled and may wear out in the field.

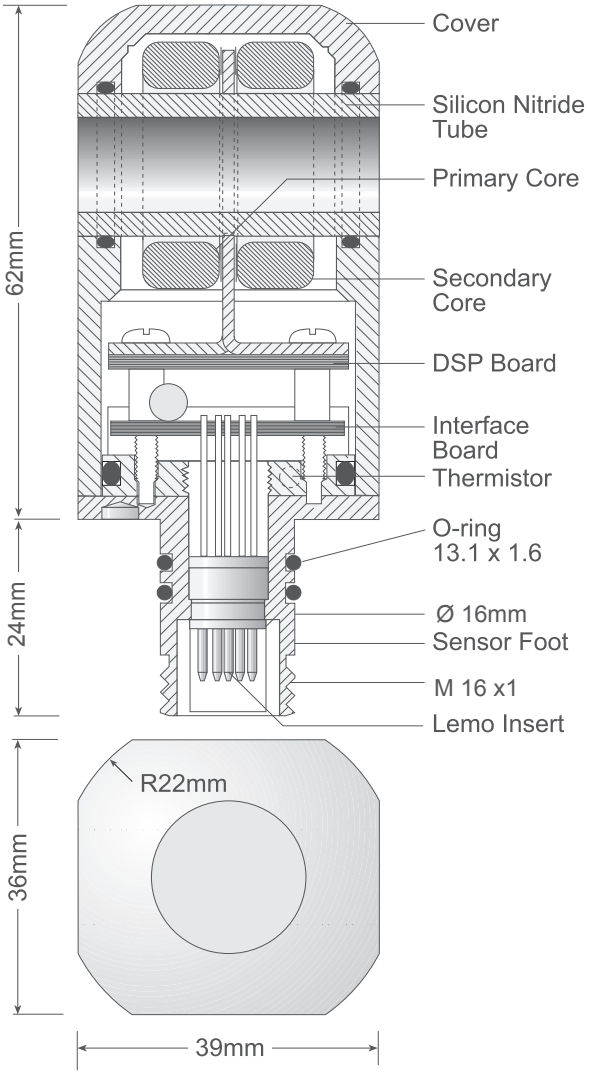
Utilization of miniature components have made it possible to integrate all the required electronics.

The output format for 4419 are AiCaP CANbus and RS-232, while the output format for the 4419R version is RS-422. The sensor version must be specified when ordered as the two version are not interchangeable. The R-version cannot be used in SeaGuard applications.

Output parameters are conductivity and temperature in AiCaP and conductivity, temperature, salinity, density and sound speed in RS-232/RS-422. Data can be presented in engineering units or raw data.

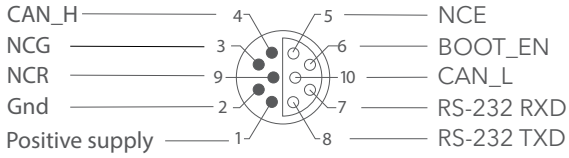
The SmartGuard datalogger and the Smart sensors are interfaced by means of a reliable CANbus interface (AiCaP), using XML for plug and play capabilities.

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



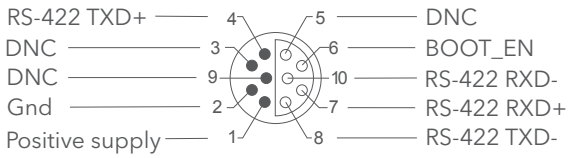
PIN CONFIGURATION 4419 AiCaP/RS-232

Receptacle, exterior view; pin = • bushing = ◦



PIN CONFIGURATION FOR 4419R, RS-422

Receptacle, exterior view; pin =● bushing =○



Conductivity:	
Range:	0–7.5S/m (0–75mS/cm)
Resolution:	0.0002S/m (0.002mS/cm)
Accuracy:	
4419A/4419RA	±0.005S/m (±0.05mS/cm)
4419B/4419RB	±0.0018S/m (±0.018mS/cm)
Response Time (90%):	<3s [1]
Temperature:	
Range:	-5–40°C (23-104°F)[2]
Resolution:	0.01°C (0.018°F)
Accuracy:	±0.05°C (0.09°F)/ (±0.1°C (0.18°F) for interval <30s.)
Response Time (63%):	<10 seconds
Output format:	4419: AiCaP CANbus, RS-232 4419R: RS-422
Output Parameter:	
AiCaP:	Conductivity, temperature
RS-2327/RS-422:	Conductivity, temperature, salinity, density and sound of speed
Sampling interval:	2 sec – 255 min
Supply voltage:	5 to 14VDC
Current drain:	
Average:	0.16 +48mA/S where S is sampling interval in seconds
Maximum:	100mA
Quiescent: 4419:	0.16mA
4419R:	1.5mA
Operating depth:	
Shallow Water (SW):	0–300m (0–984.3ft)
Intermeditate Water (IW):	0–3000m (0–9843ft)
Deep Water (DW):	0–6000m (0–19690ft)
Electrical connection:	10-pin receptacle mating Sensor 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 4762/4763, 4865/4799, Patch Cable 4999,3880L Set-up and Config. Cable 3855 [3]

(1) Dependant on flow through cell bore
(2) Calibrated range is 0 to 36°C (32-96.8 °F)
(3) RS-232 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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Let's Solve Water

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