

SeaGuardII® Recording Current Meter



The SeaGuardII RCM series is based on the SeaGuardII data logger and the ZPulse Doppler Current Sensor. Onboard processing of acoustic Doppler readings gives detailed measurements of currents and water quality.

Features of SeaGuardII® Recording Current Meter

- The only single-point current meter with tow tank proven performance (Fig. 1). Provides the most accurate measurements on the market.
- Simultaneous pinging on four horizontally facing transducers. Upstream measurements (forward pinging) assure no disturbance from structure. Water quality at the same depth.
- Able to handle dynamic situations and challenging moorings. Automatic tilt and heading compensation for every acoustic ping.
- Long deployments with extremely low power consumption. 3 years multisensor deployments at 20 min interval.
- Real-time management of modems and data delivery, including sensor meta data and flow control.
- Versatile sensor inputs in addition to currents: waves, temperature, salinity, oxygen, turbidity, sensor strings, serial and analog sensors

The SeaGuardII RCM series comes in 300m, 3000m and 6000m depth ranges as standard. 11000 m (hadal) version available on request.

The SeaGuardII RCM is fitted with the ZPulse dual frequency Doppler current sensor, which sends out two acoustic pulses to increase the accuracy, and lower the power use. The sensor also incorporates a robust electronic compass and a tilt sensor that makes it possible to measure the horizontal currents correctly up to 50 deg tilt.

AANDERAA

a xylem brand

Specifications SEAGUARDII® RECORDING CURRENT METER

SPECIFICATIONS XAD434-R1-NOR

Technical Details

Top-end Plate capability: Up to 6 sensors on the Top-end Plate. Aicap, string, 4 analog or 2 serial sensors of other brands.

Storage Capacity: Data storage on 4GB SD card

Battery Options:
Alkaline 3988: Two batteries, 9V, total 30 Ah
Lithium 3908: Two batteries, 7V, total 70 Ah

Recording Interval: From 2s to 2h, depending on the sensor configuration.

Flexible Logging: Three sensor groups possible with different recording intervals.

Configuration of system: USB,RS232,RS422 Real Time Collector software

Depth Capacity: 300m/3000m/6000m, 11000m on request.

Platform:	Dimensions	Weight(kg):	Air	Water
300m version (SW):	H: 356mm OD: 139mm	7.6	2.0	
3000m version (IW):	H: 352mm OD: 140mm	11.5	5.2	
6000m version (DW):	H: 368mm OD: 143mm	12.4	7.2	

External Materials:
300m version: PET, Titanium, Stainless Steel 316, Polyurethane.
3000/6000m version: Titanium, Polyurethane.

Supply Voltage: 6-14 Vdc

Operating Temperature: -5 to +50°C

ZPulse Doppler Current Sensor (DCS) Specifications:

Current Speed: (Vector averaged horizontal currents)
Range: 0-300 cm/s, higher range on request
Resolution: 0.1 mm/s
Mean Accuracy: ± 0.15 cm/s
Relative: ± 1% of reading
Statistic variance (std): 0.3 cm/s (ZPulse mode), 0.45 cm/s¹⁾
Acoustic Frequency: 1.9 to 2.0 MHz
Beam angle (main lobe): 2°

Current Direction:
Range: 0 - 360° magnetic
Resolution: 0.01°
Accuracy: ±3° 0-15° tilt, ±5° 15-35° tilt

Tilt Circuitry:
Range: 0-90°
Resolution: 0.01°
Accuracy: ±1.5°²⁾

Minimum Installation distance:
From surface: 0.75m
From bottom: 0.5m

Additional information from DCS:

Signal strength: Relative particle concentrations from clear waters to fluid mud
Standard deviation currents: Automatically calculated, detection of turbulence and animals.
Status by internal LED: Green/Yellow/Red indicate operational status.

Accessories Included: Real Time Collector instrument set-up software. DataStudio post processing software.

Optional Accessories: Carry handle 4032,3965, 4132
In-line frame 5744³⁾/3824B³⁾
Clamp on frame
Bottom frame 3448R
Additional protecting Rods 3783
AC/DC adapter, lab. use 4908

Other: Maintenance Kit 3813/3813A
Tools kit 3986
Geoview or Hydrosphere for real time data

Optional Sensors:

Temperature Sensor 4060:
Range: -4-36°C (32-96.8°F)⁴⁾
Resolution: 0.001°C (0.0018°F)
Accuracy: ±0.03°C (0.054°F)
Response Time 63%: < 2 seconds

Conductivity/Temperature Sensor 5819:
Range: 0-75 mS/cm
Resolution: 0.002 mS/cm
Accuracy⁵⁾:
5819C ±0.004 mS/cm Temp: ±0.003°C
5819B ±0.018 mS/cm Temp: ±0.05°C
5819A ±0.05 mS/cm Temp: ±0.05°C
Response Time: <2s⁶⁾

Pressure/Tide/ Wave/Temperature 4117/5217/5218:

Pressure/Tide: Different Ranges: 0-60MPa (0-8700psia)
Wave max depth: 1000kPa (145psia)
Resolution: <0,0001% FSO
Accuracy⁷⁾: 0.02 % FSO, 0.01% optional, Temp: ±0.1°C
Wave/Tide Sampling rate: 2Hz, 4Hz
No. of wave samples: 256, 512, 1024, 2048

Turbidity/Temperature Sensor 4296:

Different ranges FTU: 0-25 ; 0-125 (A); 0-500 (B); 0-2500 (C)
Resolution: 0.1 % of reading or 0.025 FTU
Accuracy: ± 3 % of range, multipoint calibrated for each range, Temp: ±0.1°C

Oxygen/ Temperature Optode 4835 (300 m)/4330 (6000 m):

	O ₂ -Concentration	Air Saturation
Measurement Range:	0 - 1000 µM	0 - 300%
Resolution:	< 0,1 µM	0.05 %
Accuracy:	<2 µM	<1.5 % ⁸⁾
Temp Accuracy:	±0.05 °C	
Response Time O ₂ (63%):	4330F (with fast response foil): <8 sec	
	4835/4330 (with standard foil): <30 s	

¹⁾ Based on 300 pings.

²⁾ Calibrated range 0-35°

³⁾ Breaking strength 4044: 800 kg, 3824A: 8000kg.

⁴⁾ Extended range available on request.

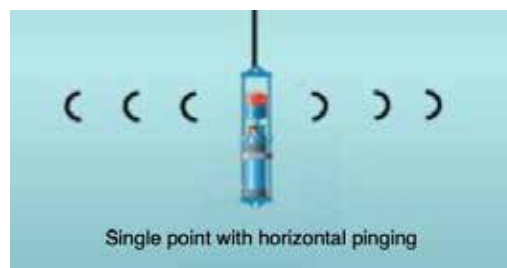
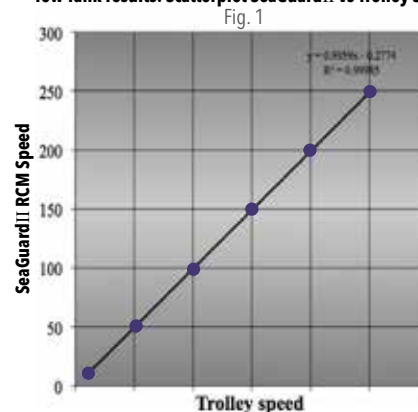
⁵⁾ 208-point calibration, IAPSO salinity standard referenced.

⁶⁾ Dependent on flow through cell bore.

⁷⁾ 20-point calibration, dead-weight referenced.

⁸⁾ 40-point calibration, Winkler referenced.

Tow Tank results: Scatterplot SeaGuardII vs Trolley Speed



Specifications subject to change without prior notice.

Aanderaa Data Instruments AS

Sanddalsringen 5b

P.O. Box 103 Midtun

5843 Bergen, Norway

+47 55 60 48 00

aanderaa.info@xylem.com

Aanderaa.com



Aanderaa.com/URL