RBR

MEASURE THE BLUE PLANET

rbr-global.com

RBR*duet*^{4}|2x

SMALL DUAL-SENSOR LOGGERS



COMPACT, ACCURATE, DEPENDABLE

The RBR*duet*^{4}|2x loggers are compact, lightweight instruments designed for high-precision oceanographic measurements in demanding environments. They combine exceptional accuracy and resolution using any standard AA battery chemistry. Engineered for durability in harsh marine conditions, the RBR*duet*^{4}|2x delivers reliable, long-term performance across a wide range of oceanographic applications.

FEATURES

- Compact and lightweight
- Two AA batteries
- Up to 32Hz sampling
- USB-C download
- Infinite memory*

*not really, but we stopped counting at billions of samples.

Available configurations

▶ RBR*duet*^{4} D.ODO|2x	pressure, temperature, and dissolved oxygen; depths up to 1000m
▶ RBR*duet*^{4} D.Tu|2x	pressure and turbidity; depths up to 1000m
▶ RBR*duet*^{4} D.chl-*a*|2x	pressure and chlorophyll-*a*; depths up to 1000m

Deep variant

▶ |deep	depths up to 6000m

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Specifications

Physical

Configuration	D.Tu	D.chl-*a*	D.ODO
Storage	Infinite memory[1]		
Power	Any AA cells, any chemistry		
Communication	USB-C		
Clock drift	±60 seconds / year		
Housing	Plastic (pl) or Titanium (Ti)		
Depth rating[2]	1700m (pl) 6000m (Ti)		
Diameter	33.3mm (pl) 36.5mm (Ti)		
Length	374mm (pl) 379mm (Ti)		425mm (pl) 425mm (Ti)
Weight in air in water	254g (pl) 560g (Ti) 55g (pl) 360g (Ti)		304g (pl) 625g (Ti) 65g (pl) 390g (Ti)

[1] Not really, but we stopped counting at billions of samples.
[2] Actual depth rating is determined by pressure and/or optical sensor.

Dissolved oxygen

Measurement range	0 to 1000µmol/L
Calibrated range	0 to 500µmol/L concentration 0 to 120% saturation 1.5°C to 30°C temperature
Initial accuracy	Max of ±2µmol/L or ±1.5% Max of ±8µmol/L or ±5% |fast Max of ±2µmol/L or ±1.5% |slow
Resolution	<0.5µmol/L (saturation 0.2%) <1µmol/L (saturation 0.4%) |fast <0.1µmol/L (saturation 0.04%) |slow
Time constant	<8s standard, <1s |fast, or <30s |slow
Sampling rates	24h to 1Hz
Output Values	Temperature (°C) Dissolved O_2 concentration (µmol/L) Dissolved O_2 concentration (salinity compensated, µmol/L) Dissolved O_2 saturation (%) Dissolved O_2 phase (°)

Temperature

Range	-5°C to 35°C
Initial accuracy	±0.002°C
Resolution	<0.00005°C
Typical stability	±0.002°C / year
Time constant	<1s

Pressure

Range*	
plastic	20 / 100 / 300 / 1000dbar
Ti	1000 / 2000 / 6000 / 10000dbar
Accuracy	±0.01% full scale
Resolution	<0.001% full scale
Typical stability	±0.01% full scale / year
Time constant	<10ms

* Recommended pressure ranges for wave measurements are 20 and 100dbar.

Chlorophyll-*a*

Wavelength	470nm/695nm (excitation/emission)
Calibrated range*	0 to 50µg/L
Measurement range	0 to 500µg/L
Detection limit*	0.020µg/L
Optical	
Linearity, R^2	0.99
Initial accuracy	5%

* Scaled for the in vivo fluorescence response.

Turbidity

Wavelength	880nm
Centroid angle	90°
Linearity, R^2	0.99
Initial accuracy	5%
Calibrated range	0 to 1000FTU
Measurement range[1]	0 to 1500FTU
Detection limit	0.005FTU
Optical backscatter	
Wavelength	880nm
Centroid angle	135°
Linearity, R^2	0.99
Initial accuracy	5%
Calibrated range	1000 to 4000FTU
Measurement range[2]	0 to 20000FTU
Detection limit	2.0FTU

[1] Response becomes non-linear above 1000FTU.
[2] Response becomes non-linear below 500FTU and above 15000FTU.



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