



EPSA-RINKO

Optical Dissolved Oxygen Logger with Wiper



AROW-WFX

AROW-WFX-L

JFE Advantech Co., Ltd.

Model: AROW-WFX / AROW- WFX-L

EPSA-RINKO is an autonomously deployable data logger for long-term DO measurements. In order to protect the sensing foil against accumulating bio-fouling, the instrument has a mechanical wiper to sweep the optical window. The sensor is coated with photostimulable phosphor (PSP) on the outside of the pressure-resistant acrylic optical window, measuring the phase difference between phosphorescent time lengths. The excitation blue LED pulse generates a red phosphorescence pulse, which in turn has an inverse correlation with the oxygen partial pressure in the water (DO concentration). Phosphorescent time lengths under oxygen-free conditions are long. However, under high DO concentration conditions, the time length shortens. Since the method does not consume oxygen, there is no need for stirring.

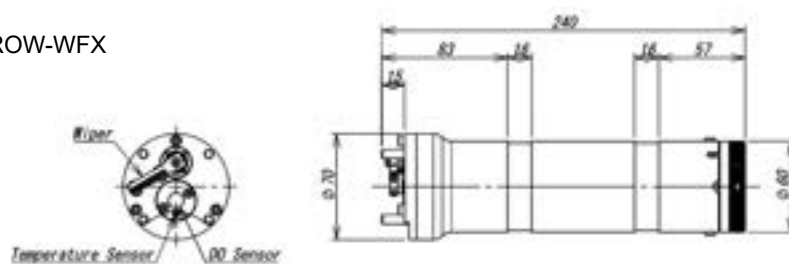
Parameter	DO	Temperature
Principle	Phosphorescence (Optical)	Thermistor
Range	0 to 200 %	-3 to 45 °C
Resolution	0.01 %*	0.001 °C
Accuracy	Non-linearity ±2 % FS	±0.02 °C (3 to 31 °C)

The diagram illustrates the sensing mechanism. A sensing foil is shown with a layer of porphyrin and oxygen molecules. Excitation by a blue LED leads to phosphorescence, which is quenched by oxygen. The diagram shows the process of excitation, phosphorescence, and quenching, with a legend for porphyrin and oxygen states.

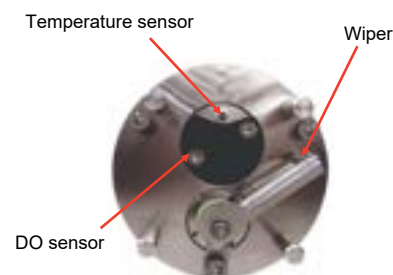
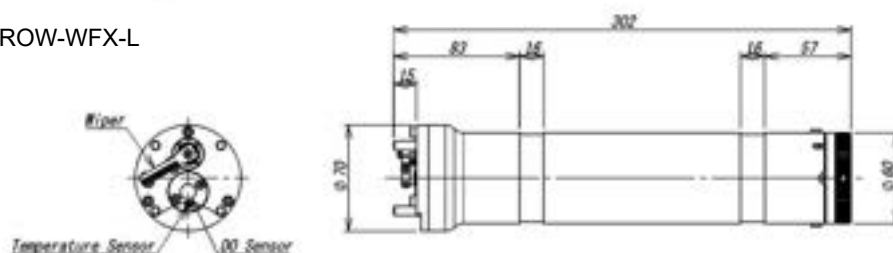
- Porphyrin (excited)
- Porphyrin
- O_2 (excited)
- O_2

Model	AROW-WFX	AROW-WFX-L
Memory medium	1 GB built-in Flash memory	
Maximum data recordable	Approx. 15 million readings	
Measuring mode	Continuous, Burst	
Measuring interval	0.5 sec. or 1 to 600 sec. (1 sec. increment)	
Burst sampling interval	1 to 1,440 min. (1 min. increment)	
Number of samples	1 to 18,000	
Power source	1.5 V AA alkaline battery / 1.5 V or 3.6 V (SAFT) AA lithium battery	
Number of batteries	Max. 6	Max. 12
Communication	USB 2.0 (ver. 1.1 compatible) / Connector: USB-C	
Housing material	Titanium (grade 2)	
Dimensions	Φ70 mm x 240 mm	Φ70 mm x 302 mm
Weight	Approx. 1.4 kg in air, 0.8 kg in water	Approx. 1.8 kg in air, 1.0 kg in water
Depth rating	200 m equivalent	

AROW-WFX



AROW-WFX-L



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