

Fast optical DO sensor for integration

RINKO FT

ARO-FT



Fast Response, High Accuracy, and Long-Term Stability.



- Fast response (63%: less than 1s in water)
- Multipoint factory calibration
- High accuracy
- Long-term stability
- Easy installation to various platforms



JFE Advantech Co., Ltd.

Description

The **RINKO** series is based on the optical (phosphorescence) principle which is now widely known as a remarkably fast response oxygen sensor with a high accuracy. As a new member of the **RINKO** family, the **RINKO FT** (model name: **ARO-FT**) had overcome a well-known tradeoff between fast responsivity and stability of oxygen sensing foils. The **RINKO FT** not only **retains the fast response time** identical to that of conventional **RINKO** series but also has **greater accuracy and stability** by incorporating **high-quality multipoint calibration and improved sensing method**. The **RINKO FT** is primarily designed to target Argo float operations. However, its compact, lightweight, and commonly used communication protocol widen the choice of platforms for installation. The **RINKO FT** enables DO measurements with a high spatial resolution, which will contribute to the understanding of new aspects of physical/biochemical processes.

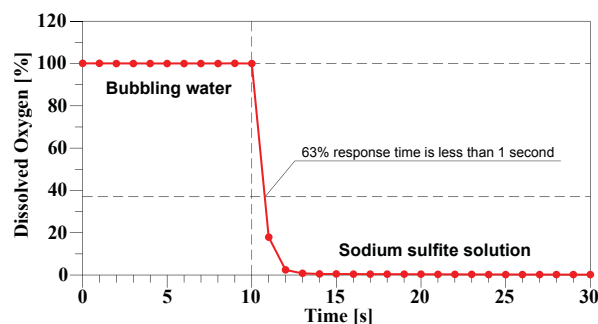


Figure: Time series of dissolved oxygen (DO) in water at 25 °C measured by the RINKO FT. Air saturated water (DO = 100 %) is prepared by bubbling for 30 minutes. Anoxic water (DO = 0 %) is prepared by dissolving 50 g of Na₂SO₃ in 1000 ml of distilled water.

Specifications

Measurement principle	DO	Phosphorescence
	Temperature	Thermistor
Range	DO	Concentration: 0 – 425 μmol L ⁻¹ (1), Air saturation: 0 – 200% (calibration range: 0 – 120%)
	Temperature	-3 – 45 °C (calibration range: 0 – 35 °C)
Resolution	DO	0.01 μmol L ⁻¹
	Temperature	0.001 °C
Initial accuracy	DO	±2% of measured value or ±2.0 μmol L ⁻¹ (calibration range: 3 – 30 °C)
	Temperature	±0.01 °C
Repeatability	DO	Time drift: ±5% of measured value year ⁻¹ or ±5.0 μmol L ⁻¹ year ⁻¹
		Pressure effect: ±2% of measured value or ±2.0 μmol L ⁻¹ (2)
		Temperature effect: ±2% of measured value or ±2.0 μmol L ⁻¹
Response time (63%) (at 25 °C, typical)	DO	< 1 s (in water)
	Temperature	< 1 s (in water)
Representative output parameters	DO in μmol L ⁻¹ , Temperature in °C, Engineering values of DO and temperature, Number of LED emission times, etc.	
Sampling interval	1 s (shorter interval at request)	
Pre-heat time	5 s	
Communication	UART (3.3 V logic) or RS-232C (3)	
Communication protocol	Baud rate: 38400 bps, No parity, Handshake	
AD Converter	16 bit digital conversion	
Power	6 – 26 VDC, 12 VDC recommended	
Current drain (at 12 VDC, typical)	Operation mode: < 30 mA, Sleep mode: < 0.1 mA	
Material	Housing: Titanium, Insulating attachment: POM	
Dimensions	Φ 30 × 146 mm with standard mounting attachment	
Weight	In air: 265 g with standard mounting attachment and 50 cm cable, In water: 162 g (design value)	
Pressure rating	2000 dbar (higher rating at request)	

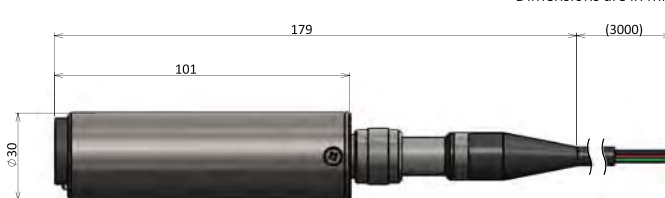
1) Calculated from air saturation at 25 °C and 34 PSU. 2) Pressure hysteresis is not considered. 3) LEMO connector is available only with RS-232C communication.

Drawing

RINKO FT with standard mounting attachment



RINKO FT with LEMO connector



Dimensions are in mm.

※ All specifications on this leaflet are subject to change without notice.



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