PROTEUS INSTRUMENTS

THE QUEEN'S AWARDS FOR ENTERPRISE: INNOVATION 2022

EIDO

The EIDO is a low cost, optical real-time sensing platform, specifically designed for the measurement of organic water quality parameters.

Following the success of the award-winning Proteus, the EIDO has been specifically designed as a low-cost option for the measurement of organic parameters. The CPVC body is compact and robust making it suitable for use even in the toughest applications. The EIDO benefits from low power consumption, low-calibration intervals, reagent free operation and an integrated wiper, making it ultra-low maintenance.

Available in two sizes, the EIDO 30 provides turbidity, temperature and two fluorometers whilst the 35 provides turbidity, temperature and up to four fluorometers. TSS is available as an option on both versions.

Applications

- BOD/COD/TOC Loading to Wastewater Treatment Works
- CSO Monitoring
- Coastal Water Monitoring
- Point Source Pollution Monitoring
- Total Coliform Monitoring (Total, Faecal or E. coli)
- Efficiencies of Wastewater Treatment Works
- Diffuse Pollution Monitoring
- Groundwater Water Quality Monitoring
- Survey tool combined with Bluetooth®
- SCADA, RTU and logger integration via RS232, SDI-12, Modbus® RTU

Parameters include:

BOD* COD* TOC* DOC*
Coliforms (Total, Faecal, E. coli) *
Total Ammoniacal Nitrogen *
Nitrate*
Total Phosphate*
Ortho-Phosphate*
Tryptophan
CDOM
Refined Oils
Optical Brighteners
Turbidity/TSS
Blue Green Algae (Freshwater & Marine)
Chlorophyll a (red excitation)
Chlorophyll a (blue excitation)
Crude Oils
Refined Oils
Rhodamine
Fluorescein Dye

* Providing local adequate field calibration. Contact us for details.

General Specifications

	EIDO 30	EIDO 35
Diameter	76 mm (3.0")	89 mm (3.5")
Length	483 mm (19")	483 mm (19")
Material	CPVC body and sensor guard	
Typical Weight	2.27 kg (5.00 lbs)	2.85 kg (6.28 lbs)
Number of sensors	Up to 4 (2 fluorometers)	Up to 6 (4 fluorometers)

External Power	5-15 vdc
Operating Temperature	0 to 50°C, non-freezing
Calibrated Range	0 to 30°C
Depth Rating	100 m
Communications	USB, RS232, Modbus® RS485, SDI-12 as standard. Bluetooth® optional.

Sample Rate	1 Hz
Data Memory	>1,000,000 logged readings
Logging Rates	1 second to 1 day
Warranty	2 years

Derived Parameter Specifications

Parameter		Range	Resolution	Accuracy	Comments
BOD	BOD mg/l	0 - 2000 mg/l	0.01 mg/l	±5 % of reading*	Local site calibration can improve accuracy.
Coliform Counts	CFU/100 ml	>1 count/100ml	1 count/100ml	±10 Coliforms*	Local site calibration can improve accuracy. Can be used for faecal coliforms, E. coli or total coliforms.
COD	COD mg/l	0 - 4000 mg/l	0.01 mg/l	±5 % of reading*	Local site calibration can improve accuracy.
DOC	DOC mg/l	0 - 3000 mg/l	0.01 mg/l	±5 % of reading*	Local site calibration can improve accuracy.
TOC	TOC mg/l	0 - 3000 mg/l	0.01 mg/l	±5 % of reading*	Local site calibration can improve accuracy.
Total Ammoniacal Nitrogen (TAN). **	TAN	0-200 mg/l	0.01 mg/l	±0.1 mg/l 0 -10 mg/l* ±0.5 mg/l 10 - 200 mg/l*	Environmental/river applications typically 0 - 2 mg/l Wastewater applications typically 0 - 50 mg/l
Ortho-Phosphate**	PO4	0 -100 mg/l	0.01mg/l	±0.1 mg/l 0 -2 mg/l* ±0.5 mg/l 2 -100 mg/l*	Environmental/river applications typically 0 - 1mg/l Wastewater applications typically 0 - 50 mg/l
Turbidity	Total Suspended Solids (TSS)	0 to 500 mg/l	4 digits max 2 d.p.	±2 % of reading or 0.2	Calculated using the correlation between turbidity and a sediment standard or sample. Local calibration can be applied **.

Sensor Specifications

Parameter		Range	Resolution	Accuracy	Comments
Temperature	Water Temperature	-5 to 50°C	0.01	±0.1	Lifetime calibration
Turbidity	Turbidity	0 - 40 NTU	4 digits max 2 d.p.	±2 % of reading or 0.2	Compensated for temperature; filtered for non-turbidity spikes; includes wiper to clean the optics.
		40 - 400 NTU		±2 % of reading or 0.2	
		400 - 5000 NTU		±2 % of range	
Pressure	Depth	0 to 25 m	0.01	±0.05 m	
		0 to 200 m		±0.4 m	
	Barometric pressure	400 to 900 mmHg	0.1 mmHg	±1.5 mmHg	Included with (non-vented) depth sensor.
Fluorometers	CDOM/fDOM	0 to 1000 ppb	4 digits max 2 d.p.	Linearity of 0.99R^2 (temperature compensated 0-50°C) Accuracy ±1 ppb	Latest *pro*Fluor technology rated to 100m depth
	Chlorophyll a - blue excitation	0 to 1000 ppb			
	Chlorophyll a - red excitation	0 to 1000 ppb			
	Crude oil	0 to 1500 ppb			
	Fluorescein dye	0 to 1000 ppb			
	Optical brighteners	0 to 2500 ppb			
	Phycocyanin (freshwater BGA)	0 to 1000 ppb			
	Phycoerythrin (marine BGA)	0 to 1000 ppb			
	Refined oil	0 to 10,000 ppb			
	Rhodamine dye	0 to 1000 ppb			
	Tryptophan	0 to 2000 ppb			

*Providing local adequate field calibration. Contact us for details.

** requires Proteus Telemetry System

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