ecoTurb

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ecoTurb

Panel mounting: ecoTurb with CUBE

Analyzer ecoTurb

ecoTurb is a cost-effective sensor specially developed for the precise analysis of turbidity in drinking water. It meets the highest standards of accuracy and reliability and its measurement range is tailored to the requirements of drinking water monitoring. The fully encapsulated electronics protect the sensor from moisture, dust and dirt, significantly extending the service life and reliability of the components.

In combination with the **CUBE** controller, the measurement data can be displayed or transferred to existing systems.

The ecoTurb is available in the variant **ecoTurb-40** with an infrared light source and as **ecoTurb-W40** with white light.

Advantages

- Precise analysis of turbidity
- Convenient calibration
- Simple installation and configuration
- Fast cleaning

Applications

- Drinking water monitoring in water supply systems
- Quality control in sewage treatment plants
- Water quality research projects
- Environmental monitoring

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Technical specifications

	ecoTurb-40	ecoTurb-W40
Application	Drinking water, groundwater and surface water	
Measurement technology - Light source	IR LED 860 nm, FWHM* 30 nm	White light LED (color temperature between 2200-3000 °K)
Measurement technology - detector	IR photodiode with a spectral peak response at 860 nm	Photodiode with a spectral peak response betw. 400 and 600 nm
Measurement principle	Nephelometry	
Parameters	Turbidity in FNU or NTU	Turbidity in NTU
Applied standard	DIN EN ISO 7027-1:2016-11	EPA Method 180.1 (Aug. 1993)

*Full Width at Half Maximum (= half value width)

	ecoTurb-40	ecoTurb-W40
Measurement range	0-40 FNU	0-40 NTU
Measuring accuracy	± (5 % + 0.01) FNU	± (5 % + 0.01) NTU
Resolution	0.002 FNU	0.002 NTU
Sensitivity	0.005 FNU	0.005 NTU
Repeatability	± (0.5 % + detection limit)	± (0.5 % + detection limit)
Detection limit	0.015 FNU*	0.03 NTU*

*A detection limit of 0.01 can be achieved by performing a post-offset calibration on the controller.

		ecoTurb-40	ecoTurb-W40
Linearity / coefficient of variation		≤ 0,53 %	≤ 0,53 %
Measurement deviation		≤ (2 % of the measured value + detection limit)	≤ (3 % of the measured value + detection limit)
Reproducibility		≤ (1 % of the measured value + detection limit)*	≤ (1 % of the measured value + detection limit)*
Response time (T90)	**Sensor**	20 s (only for the sensor)	
	Complete system	90 s at a flow rate of 10 L/h	

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	ecoTurb-40	ecoTurb-W40
Warm-up time	60 s	

*when measuring with several devices of the same type using the same procedure in the same laboratory by the same operator with the same equipment and reagents

	ecoTurb-40	ecoTurb-W40
Data logger	no	
Reaction time	20 s	
Smallest measurement interval	3,1 s	
Cross sensitivities	Finely dispersed air bubbles	Colored solutions, finely dispersed air bubbles

Interface - digital	RS-485 (Modbus RTU)	
Interface - analog	-	
Power supply	12 – 24 VDC (± 10 %)	
Power consumption	Typical ≤ 0.6 W; standby: ≤ 0.5 W	
Connection	M12 industrial plug, 8-pin	

Housing material	**Flow cell**	POM / NBR	
	Sensor	Aluminum / POM / PET / quartz glass	
Dimensions (W/H/D)		108 x 154 x 99 mm	~ 4.3 x 6.0 x 3.9 "
Weight		approx. 1.8 kg	~ 3.97 lbs

Temperature	Sample (insitu) 0...40 °C	~ 32...104 °F
Ambient temperature	0...40 °C	~ 32...104 °F
Min. internal pressure	0.2 bar	~ 2.9 psi
Max. Internal pressure	1 bar	~ 14.5 psi

Flow rate	Min. 6 L/h (0.1 L/min)
	Recommended 30 L/h (0.5 L/min)
	Max. 1200 L/h (20 L/min)
Internal volume	Approx. 120 mL

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Transport conditions	0...80 °C	~ 32...176 °F
Storage conditions	0...80 °C	~ 32...176 °F
Degree of protection	IP65	

Maintenance effort	Depending on the water quality, typically < 0.5 h / month
Calibration/maintenance interval	Depending on the water quality (typically every 12 months), regular cleaning depending on the water quality
System compatibility	Modbus RTU
Warranty	1 year (EU & USA: 2 years)

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