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SPECIFICATIONS

DOCUMENT #W102

WTW IQ SensorNet FDO®

Optical Dissolved Oxygen Sensor

The FDO is an optical, luminescent based DO sensor for the IQ SensorNet system. During the biological nutrient removal process at wastewater treatment plants, continuous and precise measurement of dissolved oxygen concentration is of vital importance for optimal performance and trouble-free operation. Efficiency and energy demand is mainly determined by the performance of the aeration control system. The FDO is a reliable, proven, long-term solution for continuous DO data that can help optimise your process and lower energy costs.

Parameters:
Dissolved Oxygen (optical)
Temperature

- **Intelligent Sensor Cap**
  The sensor cap is individually factory calibrated. Calibration data is stored on a chip that is embedded in the sensor cap. No need to enter calibration coefficients. When a new cap is installed, the coefficients are recognized and sent directly to the controller terminal eliminating the need to manually enter information.

- **Equal Path Reference System**
  The optical measurement and reference paths are identically designed. This allows for identical aging of the components which enables accurate compensation and eliminates calibrations. That's correct, there is no calibration required.

- **Green Light Technology**
  Softer, low-intensity excitation light increases the lifetime of the cap. This translates into a two year warranty on the standard cap.

The FDO's lower energy green light excitation technology extends the sensor cap lifetime.

IQ SensorNet FDO Optical Dissolved Oxygen General Specifications

Sensor Cap Replacement	Yes; the cap, can be replaced. Automatic recognition by the sensor of the cap including the factory calibration.	
Calibration Capability	Yes; not required, factory calibrated	
Interferences	None	
Minimum Flow Rate	None; no flow requirement	
Response Time at 25 °C	700 IQ and 700 IQ SW - T90 = <150 seconds; T95 = <200 seconds	
	701 IQ and 701 IQ SW - T90 = <80 seconds	
Signal Output	Digital	
Lightning Protection	Yes	
Power Consumption	0.7 watts	
Maximum Pressure	10 bars (145 psi); with sensor connection cable	
Electrical Connections	2-wire shield cable with quick sensor connection	
Conformance/Certifications	EN 61326, Class B, FCC Class A; Intended for indispensable operation, CE, cETLus	
Temperature Conditions	Operating Temperature:	23 to 122 °F (-5 to 50 °C)
	Storage Temperature:	-13 to 122 °F (-25 to 50 °C)
Sensor	Material:	Housing - VA steel 1.4571; Sensor Cap and Locking Cap - POM (Polyoxmethylene), PVS, silicone, PMMA
	Rating:	IP-68; waterproof
	Dimensions:	400 L x 40 D mm (15.75 L x 1.57 D in)
	(length x diameter)	400 L x 59.5 D mm (15.75 L x 2.34 D in) Salt Water version
	Weight:	900 g (1.98 lbs)
		1,500 g (3.31 lbs) Salt Water version
	Warranty:	2 years

IQ SensorNet FDO Optical Dissolved Oxygen Technical Specifications

Dissolved Oxygen Range		
	Concentration	0 to 20.00 mg/L
	Saturation	0 to 200.0%
Dissolved Oxygen Resolution		
	Concentration	0.01 mg/L
	Saturation	0.1%
Temperature		
	Measurement	23 to 140 °F (-5 to 60 °C)
	Compensation	32 to 140 °F (0 to 60 °C)

IQ SensorNet FDO Ordering Information (order 2020 XT terminal, modules, cables, sensors separately)

FDO 700 IQ (#201 650)	Optical DO sensor for monitoring and control; includes 1 factory calibrated sensor cap.
FDO 700 IQ SW (#201 652)	Salt Water Design Optical DO sensor for monitoring and control; includes 1 factory calibrated sensor cap.
FDO 701 IQ (#201 660)	Optical DO sensor for monitoring and control; faster response time; includes 1 fast response factory calibrated cap.
FDO 701 IQ SW (#201 653)	Salt Water Design Optical DO sensor for monitoring and control; faster response time; includes 1 fast response factory calibrated cap.
SC-FDO 700 (#201 654)	Replacement; universal factory calibrated sensor cap for FDO 700 IQ and FDO 700 IQ SW
SC-FDO 701 (#201 655)	Replacement; fast response factory calibrated sensor cap for FDO 701 IQ and FDO 701 IQ SW

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