

Triton EV82 Environmental Sensors

The ECD **6** Point Advantage



ELECTRO-CHEMICAL DEVICES

- 1 Fluorescence Sensing Technology** to measure in vivo Chlorophyll, Algae, phytoplankton, Cyanobacteria and other plant matter in marine and fresh water applications
- 2 Intelligent Sensor with Stored Calibration Data**, advanced generation software algorithms for fast settling time & stable output
- 3 Built in Light Scatter Rejection** limits the effect that external reflected light sources have on the measurement
- 4 Multiple Optical Configurations in standard sensor format** which are interchangeable sensors to match the application requirement, just select the sensor configuration at time of order
- 5 Universal Design with Waterproof Fixed Cable** assemblies. Available with immersion assemblies, standpipes, flow through cells and automatic spray cleaning systems
- 6 Interfaces with T80 Transmitter and LQ800 Multi-Channel controllers:** 4-20 mA with MODBUS RTU or HART®, Relay outputs on the transmitter and controllers, single, dual or 8 channel models and remote monitoring systems



Description

The **Triton EV82 environmental Sensor Series** measure Chlorophyll, Algae, Phytoplankton, Cyanobacteria and other plant matter. The sensors utilize the state-of-the-art Fluorescence technology in four unique optical configurations for water quality and environmental applications. The EV82 sensors are of the ECD Intelligent Sensor design with Digital Communication. Calibration data is stored in the sensor allowing field installation of a pre-calibrated sensor. The EV82 sensors directly connect to the ECD T80 Universal Transmitter, the LQ800 Multi-Channel Controller or directly with a control system/PLC via the sensor serial communication.

Applications include: Drinking water, Aquaculture, Ocean/River/Lake Studies, River and surface water quality, and Water Desalination Plants. Sensor configurations include: Chlorophyll/Algae/Phytoplankton using either Blue Excitation optics for typically marine water application or Red Excitation for dissolved organics in Freshwater applications.

Also available is Cyanobacteria Sensors for blue-green Algae which measures phycocyanin for freshwater cyanobacteria or phycoerythrin for marine water

cyanobacteria. Sensors are typically used to measure rising or lower trends of the desired measurement.

The most common application and sensor used is Chlorophyll measurement. Chlorophyll is bound within the living cells of algae, phytoplankton, and other plant matter found in water. Chlorophyll is a commonly used measure of water quality, and concentrations are an indicator of algae abundance and productivity in aquatic environments. Higher concentrations typically indicate poor water quality, usually when high algae production is maintained due to high nutrient concentrations.

In applications where cyanobacteria are most present or phytoplankton is needed to be measured, the phycocyanin or phycoerythrin sensor configurations are the appropriate sensor for the application. The EV82 Sensors provide real time measures of relative changes in phytoplankton biomass. Where quantitative values using laboratory methods are needed (typically in ug/L), the EV82 sensor can be standardized or correlated by the use of grab samples for in quantitative lab analysis and the correlated or standardized to these values to determine this measured relationship.



Specifications

Measurement Technology
Fluorescence

Measurement Parameter
-1 Chlorophyll - Algae - Blue Excitation
-3 Chlorophyll - Algae - Red Excitation
-5 Phycocyanin
-7 Phycoerythrin

Measurement Range
-1 = 0 to 500 ug/L
-3 = 0 to 500 ug/L
-5 = 0 to 4000 ppb
-7 = 0 to 750 ppb

Minimum Detection Limit
-1 = 0.03 ug/L
-3 = 0.3 ug/L
-5 = 2 ppb
-7 = 0.1 ppb

Temperature Range
-0° - 50°C (32° - 120°F) Measuring
-0° - 60°C (32° - 140°F) Ambient

Wetted Materials
CPVC, Epoxy Coating

Sensor Cable
Shielded 4 core cable
10 ft (3 m), 20 ft (6.1 m), 30 ft (9.1 m), 40 ft (12.2 m),
50 ft (15.25 m) lengths
Optional Detachable cable assembly, IP68 rating

Ingress Protection
IP68

Process Connection
1" MNPT

Maximum Cable Length
100 m maximum from T80 transmitter

Dimensions
Length 10" (250 mm)
Diameter 1.0" (25 mm)

Weights
Cable length 10 ft (3 m): 0.7 kg (1.5 lbs)
Cable length 50 ft (15.2 m): 1.1 kg (2.4 lbs)

Part Number Configurator

EV82	TRITON EV82 Series Environmental Sensor			
Sensor Style	1	Chlorophyll - Algae - Blue Excitation 0-500 ug/L (Standard)		
	3	Chlorophyll - Algae - Red Excitation 0 -500 ug/L		
	5	Phycocyanin - 0 - 4000 ppb		
	7	Phycoerythrin - o - 750 ppb		
	Process Fitting	00	No Process Fitting	
		01	1" MNPT PP Gland Fitting	
		02	Flow Through Cell, 2 x 2" FNPT Entries, 1 x 1" FNPT sensor port	
		03	De-Bubbler 3/4" FNPT Entries	
	Cable Style	-0	Fixed Cable (Waterproof Submersible Cable Style)	
		-1	(DA) Axially Detachable Cable (consult factory)	
	Cable Length	00	No Cable (consult factory)	
		10	10 ft	
		20	20ft (Standard)	
30		30 ft		
40		40 ft		
50		50 ft		
X0	Specify Length			
EV82 -	0	00	-1	20

Accessories and Spare Parts

2000260-XX (X=length in ft), -99 (user supplied 1" pipe)	Immersion assembly, (1" FNPT to 1" pipe diameter, 1" Cable feed thru, PVC pipe down tube with Tee Handle)
1000300-1	Data Logger - USB
1000251-4	Retractable Valve Assembly
3600066.PP	1" MNPT Polypropylene Gland Fitting
Calibration Solutions	Consult Factory for Calibration Solutions

Specifications subject to change without notice.

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