



Triton® TR86 Suspended Solids Sensor



ELECTRO-CHEMICAL DEVICES

Applications

- Monitoring WWTP discharge
- Filter rupture or backwash
- Clarity in Settling Ponds
- Monitoring Surface Waters
- Environmental Monitoring
- Control of Clear Rinse Water

Features

- 2 Channel capability, SS +pH, DO, Cond, plon or Turbidity
- Side or End mounted Optics
- Multiple Installation Methods
 - Immersion
 - Flow Through
- mg/L, ppm, % Solids



*Model Triton® TR86
Suspended Solids Sensors*

Description

The Triton®TR86 sensor is designed for the continuous measurement of suspended solids in various ranges from 0 - 1000 mg/l to 0 - 5000 mg/l. The sensor emits a beam of 850 nm near infrared light into the sample where it is scattered by particles suspended in the water. The amount of back scattered light returning to the sensor is measured and correlated to the amount of suspended solids in the sample. The TR86 response depends on the size, shape and composition of the suspended particles. For this reason, mg/L, ppm and % Solids measurements must be calibrated with suspended solids from the waters to be monitored. Turbidity measurements (NTU, FNU) can be calibrated with calibration standards such as Formazin, StablCal or SDVB beads.

The Triton®TR86 is available in two optical configurations, one with side mounted optics, the TR86-2 and the other with axially front mounted optics, the TR86-1. These design options address the fact that reflective surfaces in the emitted lights range will yield artificially high readings. The side mounted optical configuration minimizes interference from surfaces below the sensor while the axially mounted optics avoid interference from surfaces around the sensor. A daylight rejection filter blocks sun light and reduces ambient-light interference. The axial front mounted optics of the TR86-1 are surrounded with a copper ring that inhibits the growth of algae and other biological films.

The Triton®TR86 sensors are available in (3) different ranges. The sensors are 10 inches long by 1 inch diameter with a

reference line scored into the PVC body. This indicates the proper insertion depth of the sensor when used with the ECD compression fitting on the flow through Tee. The available Triton® TR86 sensor ranges are;

- 0-1000 NTU**
- 0-2000 NTU**
- 0-4000 NTU**

The Triton®TR86 sensors are designed to work with the T80 transmitter. The T80 is a single or dual channel transmitter with one or two 4-20 mA outputs with MODBUS RTU and optional (3) Alarm Relays or HART 7 communication. The T80 Transmitter allows the suspended solids measurement to be combined with any of it's other standard measurements using the S80 pH, S80 ORP, S80 plon, S80 Conductivity or S80 Dissolved Oxygen or DO 82 sensors.

Installation is accomplished with a 1" stand pipe for immersion service or with the PVC flow cell for an in line flow through application. Either optical configuration is suitable for immersion service while only the Side Mounted optical configuration is suitable for in line service.

The standard cable is a water resistant 4 conductor cable. It is available with 10 ft, 20 ft or 30 ft (9.1 meters) lengths.

Designed for use in environmental water, the Triton®TR86 is suitable for most aqueous applications. It is not suitable for use in organic solvents or in solutions with an extreme pH value, only use when the pH is between 2-12 pH. The temperature range for the sensor is 0° to 50°C.

Triton® TR86 Suspended Solids Sensor

Specifications

Measuring principle:

Particle caused back scattering of 850 nm near infrared light with sunlight rejection filter

Measuring Range:

- 1 sensor, 0.00-1000 mg/l or 0 ... 1000 NTU, FNU
- 2 sensor 0.00-2000 mg/l or 0 ... 2000 NTU, FNU
- 3 sensor 0.00-5000 mg/l or 0 ... 4000 NTU, FNU ppm, mg/L and %solids

Accuracy

2% of reading or 0.5 NTU, whichever is larger

Process Temperature Range:

-5 ... 50°C

Temperature Compensation:

Internal Temperature compensation

Process pressure range:

50 psi max. in Flow Cell. Vacuum operation is not permitted,

Drift:

< 1% / month

Wetted Materials

Sensor body: stainless steel AISI 316 Ti

Sensing end: epoxy

Process Connection:

1" NPT Nylon compression fitting

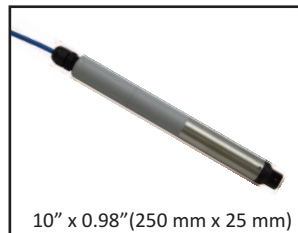
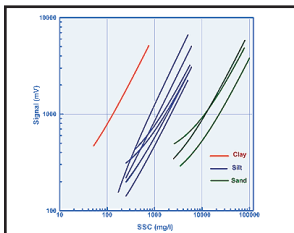
Electrical connection

Water Resistant 5-wire measuring cable(Standard)

Cable Length:

10 ft (3.0 m), 20 ft (6.1 m), 30 ft(9.1 m) cables

Specifications subject to change without notice.



Model Triton®TR86 Turbidity Sensor, Part # Guide				
TR86	Sensor Style (optical configuration)			
	1	Front Mounted with copper ring for use with immersion assembly		
	2	Side Mounted, for use with immersion assembly		
	Process Connection			
	0	None		
	1	1" MNPT Nylon Gland Fitting		
	2	Flow Through Cell, 2 x 2" FNPT entries, 1 x 1" FNPT sensor port		
	3	Flow Through Cell, 2 x 2" FNPT entries, 1 x 1" FNPT sensor port with spray cleaner		
	Cable Length			
	04	10 ft (3.0 m)		
	05	20 ft (6.1 m)		
06	30 ft (9.1 m)			
Measurement Ranges				
0	0-1000 NTU			
1	0-2000 NTU			
2	0-4000 NTU			
TR86-	1	0	01	2

Model Triton® TR6 Installation Assemblies	
Part #	Description
1000260-5	Immersion Assembly, 5 ft x 1"OD standpipe, with 1" compression fitting and T-Handle
1000260-99	Immersion Assembly, User supplied standpipe, with 1" Compression fitting and T-Handle
1000280-1	Flow Through Tee, 4" PVC tee base reduced to 2" FNPT entries
3600066.NY	1" MNPT Nylon Gland Fitting

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