

# Triton® TR6 Turbidity 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, Turbidity +pH, DO, Cond, plon or Turbidity
- Side or End mounted Optics
- Waterproof Cable
- Multiple Installation Methods  
Immersion or Flow Through
- NTU, FNU, mg/L, ppm, % Solids



*Model Triton® TR6  
Turbidity / Suspended  
Solids Sensors*

## Description

The Triton®TR6 sensor is designed for the continuous measurement of turbidity or suspended solids in various ranges from 0 -250 NTU to 0 - 4000 NTU. 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 turbidity or the amount of suspended solids in the sample. The TR6 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®TR6 is available in two optical configurations, one with side mounted optics, the TR6-2 or -3 and the other with axially front mounted optics, the TR6-1. 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 TR6-1 are surrounded with a copper ring that inhibits the growth of algae and other biological films.

The Triton®TR6 sensors are dual range sensors, each having a low range output and a high range output. Either the high

channel or low channel can be displayed on the C22 analyzer by simply switching the signal wire to the input card. The available Triton®TR6 sensor ranges are;

- #1. 0-250 NTU with 0-1000 NTU
- #2. 0-500 NTU with 0-2000 NTU
- #3. 0-1000 NTU with 0-4000 NTU
- #4. 0-2000 NTU with 0-4000 NTU

The Triton®TR6 sensors are designed to work with the C22 analyzer. The C22 can be configured as a single or dual channel turbidity/suspended solids instrument. The C22 allows the turbidity/suspended solids measurement to be combined with any of the other standard measurements, pH, ORP, plon, Conductivity or Dissolved Oxygen.

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 water resistant 5 conductor cable. It is available with 10 ft, 20 ft or 30 ft (9.1 meters) lengths. An optional waterproof cable is available for immersion or submersion applications. The TR6 is suitable for submersion to depths of 500 meters.

Designed for use in environmental water, the Triton®TR6 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® TR6 Turbidity Sensor

## Specifications

### Measuring principle:

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

### Measuring Range:

**-1 sensor,**  
0.0 ... 250.0 NTU, FNU & 0 ... 1000 NTU, FNU

**-2 sensor**  
0.0 ... 500.0 NTU, FNU & 0 ... 2000 NTU, FNU

**-3 sensor**  
0 ... 1000 NTU, FNU & 0 ... 4000 NTU, FNU

**-4 sensor**  
0 ... 2000 NTU, FNU & 0 ... 4000 NTU, FNU

ppm, mg/L and %solids to equivalent NTU value (See figure below)

### 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, 500meter submersion depth (50 bar,725 psi)

### Drift:

< 1% / month

### Wetted Materials

Sensor body: stainless steel AISI 316 Ti

Sensing end: epoxy

### Process Connection:

1" NPT Nylon compression fitting

### Electrical connection

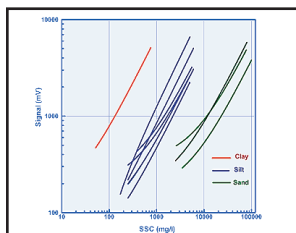
Waterproof 5-wire measuring cable or

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®TR6 Turbidity Sensor, Part # Guide					
TR6	Sensor Style (optical configuration)				
	1	Front Mounted with copper ring for use with immersion assembly			
	2	Side Mounted, for use with immersion assembly			
	3	Side Mounted for use with flow through cell			
	<b>Process Connection</b>				
	0	None			
	1	1" MNPT Nylon Gland Fitting			
	2	Flow Through Cell, 2 x 2" FNPT entries, 1 x 1" FNPT sensor port			
	<b>Cable Length</b>		Water Proof Cable #'s (01-03)	Standard Cable #'s 04-06	
	(01)	04	10 ft (3.0 m)		
	(02)	05	20 ft (6.1 m)		
(03)	06	30 ft (9.1 m)			
<b>Measurement Ranges</b>					
1	0-250 NTU and 0-1000 NTU				
2	0-500 NTU and 0-2000 NTU				
3	0-1000 NTU and 0-4000 NTU				
4	0-2000 NTU and 0-4000 NTU				
TR6-	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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