



***TS3000***  
***Turbidity Sensor***



## Description

The Greenspan TS3000 Turbidity Sensor provides a complete self contained turbidity measurement and data logging system for all environmental water monitoring applications. The integral wiper and digital filtering technology provide long term reliable operation at remote sites where bio-fouling or sedimentation can occur.

The internal data logger allows data collection at remote sites, as well as options for remote telemetry connection. A durable acetal body with double O ring design ensures suitability for the harshest environment applications.

The sensor can be fitted with an external cable, or with an on board battery pack for true stand alone operation. Other cable options can provide serial output in SDI12 format for connection to external Data Logger or process controller.

The TS3000 sensor is easy to configure using Smartcom software and provides a reliable solution for long term monitoring.

## Features

- Turbidity measurement conforms to ISO7027
- Integral self cleaning wiper (field replaceable)
- Rugged acetal body
- Low power requirement for long term remote operation
- Internal logger for collection of critical data
- Telemetry communication options via mobile phone, radio, satellite.



**Integral Wiper Pad provides self cleaning of sensor lens for long term unattended operation**

## Benefits

- Can be installed in active waters (acidic or salty) where stainless steel is not suitable
- Suitable for marine applications and waterways with high sediment loads
- Easy to configure logger – quick retrieval of data, graphical and tabular display.

## Applications

- Monitoring of streams and rivers, lakes and urban waterways
- Catchment studies and forestry management
- Water supply storages including stratification studies
- Intermediate and final effluent treatment monitoring
- Tidal, estuary and oceanographic monitoring.

## Dimensions



## TS3000 Specification

Measurement technique	90° Infra-red (ISO7027)
Std EC ranges available (factory set)	100NTU, 400NTU and 1,000NTU
Resolution	0.1NTU 0.2NTU 0.3NTU
Linearity @ 25°C	+/- 1% +/- 1% +/- 3%
Temperature Coefficient	+/- 0.2%/°C +/- 0.1%/°C +/- 0.1%/°C
Sensor outputs	Internal data logger – serial output via software Optional adaptor provides SDI12 serial output (3 wire)
Calibration standard	APS AEPA polymer solutions 0,100NTU,400NTU,1000NTU
Cable type	Polyurethane sheathed cable, OD 8mm, with 3mm vent tube, moulded entry
Cable lengths	10,20,30,50,100,150m (32,65,100,165,325,490 FT)
Power supply	9 to 30Vdc (at sensor), or On-board battery pack (option)
Power ESD protection	2000 volts
Current consumption	Sleep 0.5mA, logging 35mA, communicating 30mA. Additional 30mA while wiping
Sensor warm up time	10 seconds
On-board battery pack (option)	Housing screws to sensor size (OD x L) 47mm x 250mm
Battery capacity	9 x Lithium AA (3.6Volt) – Total capacity 5.2Ah @ 10.8v
Typical field life (Battery pack)	Over 6 months remote operation @ 30 min logging.
Internal data logger	Non-volatile, battery backed RAM with real-time clock
Memory size	2Mb capacity, with user selectable wrap function
Data storage	>250,000 Readings (Typically 5 minute data for >12 months)
Logging frequency	User selectable from 1 second up to once per day
Averaging, alarms,	User selectable via supplied Smartcomm software
Wiper arrangement	Disposable foam pad on PVC arm. Field replaceable
Wiper control	User selectable via software
Wipe time	6 seconds (1 revolution)
Operating temperature	0-50°C
Depth rating (water column)	100m
Storage temperature	-5°C - +60°C
Weight	500g plus cable weight (665g per 10m length)
Dimensions (L x OD)	418mm x 47mm (16.46" x 1.85")
Wetted materials	UPVC, acetal,316 passivated stainless steel, polyurethane, viton

## Optional Extras and Accessories

- On board battery pack (includes housing and battery pack)
- SDI12 cable adaptor unit (connects to end of sensor cable for serial output to logger or controller )

## How to Order

The following information will be required:

- Model TS3000
- Sensor full scale range (NTU)
- Moulded cable length (m)
- Please specify cable or battery pack and any other options.



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