OBSERVATOR
instruments

ANALITE NEP390 Series Turbidity Probes

With RS323 & SDI-12 Interface

ANALITE



The ANALITE 390 series of microprocessor based turbidity probes are designed for monitoring and process applications where turbidity levels of up to 5,000NTU may be encountered. Currently there are two probe types available in the ANALITE 390 series, namely the NEP390 and the NEP395. Specifically the **NEP390** probe is designed for applications where bio-fouling will not be a problem such as short monitoring deployment or placement in fast and cold running water. The **NEP395** probe however, with its integral wiper assembly, is designed where bio-fouling or sedimentation build-up is likely. Wiping can be initiated automatically (periodically), via a direct RS232 command or externally as required.

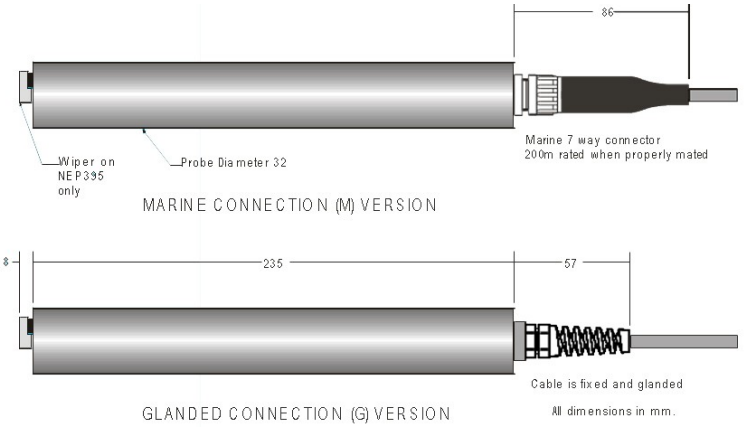
The ANALITE 390 series probes may be operated at depths of up to 100m (approx. 330 feet) in stainless steel construction and 60m (200 feet in delrin constructed case.

All ANALITE 390 series probes use 90° optics and employs infrared light in accordance with ISO7027. All probes use a unique modulation technique that ensures almost total rejection of fluctuating ambient light conditions.

The probes may be calibrated at any time or have later firmware uploaded by the user via the RS232 interface.

The applications that suit the ANALITE 390 series probes are so extensive and too numerous to list but generally they include:

- Monitoring of streams and rivers
- Monitoring of water storage bodies including stratification studies
- Intermediate and final effluent treatment monitoring
- Hydrological run off studies
- Ground and bore water analysis
- Drinking water filtration efficiency
- Industrial process monitoring
- Sludge and dredge monitoring
- Sediment load studies



Dimensions Analite NEP390 probe

SPECIFICATIONS

Technique	90° modulated infra-red (ISO7027).
Ranges	40, 100, 400, 1,000, 3,000 and 5,000NTU – range selection set by user

Resolution

Range	RS232/SDI-12	Version
40NTU	< ±0.01NTU	V1 only
100NTU	< ±0.02NTU	V1, 2 & 3.
400NTU	< ±0.1NTU	V1, 2 & 3.
1,000NTU	< ±0.2NTU	V1, 2 & 3.
3,000NTU	< ±01.0NTU	V2 only.
5,000NTU	< ±1.5NTU	V3 only.

Repeatability	±1% at 25°C up to 1000NTU, 2% from 1000NTU.
Linearity	Better than 1% for 100NTU and 400NTU, 3% for 1,000NTU and 5% for 5,000NTU after calibration.
Temp. Coefficient	Better than ±0.07%/°C
Outputs	RS232 - 1200BPS, 7 data bits, even parity, one stop bit; and SDI-12 Protocol (V1.3).

Measurements

RS232 and SDI-12 interfaces

Latest turbidity measurement -1 sample
Mean and Sample Variance (over 100 samples)
Median (over 100 samples)
Minimum (over 100 samples)
Maximum (over 100 samples)
Probe supply voltage
Probe internal temperature

Calibration	2 or 3 point calibration for each range. May be set by the user only through the RS232 interface and for the range selected. Can be reverted back to factory calibration settings after user calibration by user.
Power	9.6 - 16V dc, 35mA ON. 60mA ON and wiping for NEP395 only. STANDBY of 1.5mA.
Wiping	Initiated by wipe or auto wipe $ commands under the RS232 interface or M8! Command under SDI-12 or it can be externally initiated by momentarily (>50msecs) bringing the RS232RX conductor to the 0V conductor.
Wipe Time	8 seconds nominal

Weight

NEP390S	500gms - probe only stainless steel
NEP390P	450gms - probe only composite
NEP395S	550gms - probe only stainless steel
NEP395P	500gms - probe only composite

Dimensions

NEP390M	250mm long unmated, 321mm long mated to end of protective boot, 32mm diameter.
NEP390G	292mm long including glancing and strain relief assembly, 32mm diameter.
NEP395M	258mm long unmated, 329mm long mated to end of protective boot, 32mm diameter.
NEP395G	300mm long including glancing and strain relief assembly, 32mm diameter.

Construction	Composite casing (P suffix) or, Stainless steel casing (S suffix).
Cable	7 core + overall shield, 6.5mm dia. PUR sheath. Conductor resistance 75 ohms per km. Cable part number is NEP-CBL.
Depth Rating	60 meters (200 feet)
Operating Temp.	-10°C to 40°C
Storage Temp.	-20°C to 50°C.

Version 102014 The Observator range is in continuous development and so specifications may be subject to change without prior notice