

NEP390 SERIES Digital Turbidity Probes SDI-12 & RS232 Interface & 0-1V, 0-2.5 V & 4-20mA, 0-20mA



The ANALITE 390 series turbidity probes are **DIGITAL** probes with a choice of digital and analogue outputs. Designed for monitoring and process applications where turbidity levels of up to 5,000NTU may be encountered, available ranges are 40NTU, 100NTU, 400NTU, 1000NTU, 3000NTU and 5000NTU which may be set by the user. The probes incorporate a host of user selectable features, which enhances their already excellent performance.

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 term 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.

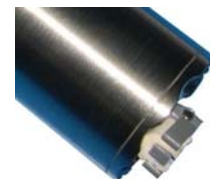
The ANALITE 390 series probes may be submerged to a depth of 50 m (plastic) or 100m (stainless). The probes use 90° optics and employ infrared light in accordance with ISO7027. All probes use a unique modulation technique that ensures almost total rejection of ambient light. The ANALITE 390/395 series probes can utilise the SDI-12 (V1.3 compliant) or RS232 serial protocols whilst the 391 and 396, incorporate 0-1 Volt DC and 4-20mA outputs in place of the SDI-12 interface.

For RS232 application the optional RS232 Interface Adapter (Part NEP390-RS232) must be used. An RS232 to SDI-12 adapter (part NEP390-SDI/RS) is also available to allow SDI-12 simulation using a PC.

The probe may be calibrated at any time by the user but only via the RS232 interface adapter.

All probes are available in either stainless steel (100m) or composite plastic (50m) and a choice of cable length, cable gland or underwater connector is available.

Standard
plastic version



Lens wiper

Applications:

Stream & river monitoring for water quality
Waste water monitoring
Food & beverage processes

Open ocean and lake stratification studies
Ground & bore water analysis
Sediment transport studies

Feature	NEP-390	NEP-391	NEP-395	NEP-396
RS-232	Yes	Yes	Yes	Yes
SDI-12	Yes	No	Yes	No
Analogue O/P	No	Yes	No	Yes
Integral Wiper	No	No	Yes	Yes

Case materiel, cable length to suit, with cable gland or underwater connector at time of order.

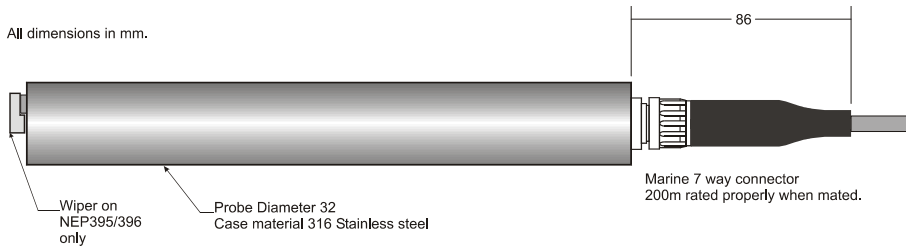
Specifications:

Technique	90° Infra-Red (ISO7027).
Range	40, 100, 400, 1000, (V1) and either 3000 (V2) or 5000 NTU (v3)- user set.
Resolution Digital	Range RS232/SDI-12 40NTU < ±0.01NTU 100NTU < ±0.02NTU 400NTU < ±0.1NTU 1,000NTU < ±0.2NTU 3,000NTU < ±0.1.0NTU 5,000NTU < ±1.5NTU <i>Over 10% to 90% of range.</i>
Resolution Analogue	40NTU ±0.06NTU 100NTU ±0.15NTU 400NTU ±0.6NTU 1,000NTU ±1.5NTU
Repeatability	±1% at 25°C.
Linearity	<1% for 40NTU, 100NTU and 400NTU, 3% for 1,000NTU 5% for 5000 NTU. (using 3 point cal)
Output	RS232 1200 Baud 7 data even parity 1 stop All models: SDI-12 Protocol (V1.3) 390 & 395 0-1V dc Or 0 –2.5 vdc minimum load 3K0 391 – 396 4-20mA Or 0 – 20mA maximum load 350 ohms 391 - 396
Measurements	Latest turbidity measurement -1 sample. Mean and Sample Variance (over 100 samples) Median (over 100 samples) Minimum (over 100 samples) Maximum (over 100 samples)
Calibration	2 or 3 point calibration for each range may be set by the user only through the RS232 interface.
Power	9.6 - 16V dc, 1.5mA OFF, 35mA ON. 60mA ON and wiping (NEP395 only).
Wipe Time	6 seconds nominal.
Weight	NEP390S Stainless 500gms NEP395S Stainless 550gms NEP390P Plastic 300gms NEP395P Plastic 350gms 70g/m for cable NEP390-CBL .Cable Length To order 60m (200ft) max.
Depth Rating	50m (plastic) 100m (Stainless).
Operating Temp.	-10°C to 40°C.
Storage Temp.	-20°C to 50°C.

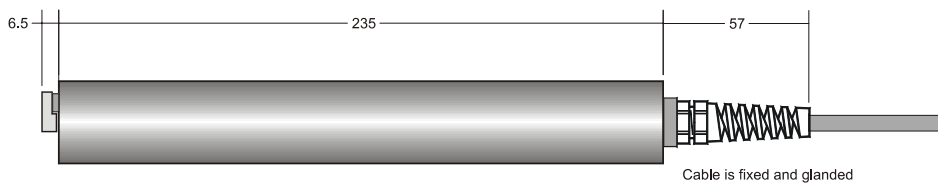
Command Set Summary:

a!	Acknowledge active	aD#!	Send data
a!	Send identification	aU OPEN!	Unlock address
aAb!	Change address	aL!	Lock address
?!	Address query	aXR#!	Set range (temporarily)
aV!	Start verification	aXW!	Wipe
aM!	Measure	aM!	Battery, temperature, mean,
aMC!	Measure, crc	variance	
aM#!	Measure	aM1!	Mean, variance, median, min,
aMC#!	Measure, crc	max	
aC!	Concurrent measure	aM2!	Median, min, max
aCC!	Concurrent measure, crc	aM3!	Single
aC#!	Concurrent	aM5!	Mean, variance
aCC#!	Concurrent, crc	aM6!	Battery
aR#!	Continuous data	aM7!	Temperature
aRC#!	Continuous data, crc	aM8!	Wipe command

where a, b and # stands for a character argument:



STANDARD VERSION



G VERSION - FIXED GLANDED CABLE

Optional
Stainless steel
version

REF: NEP-390 iss D Jan 2010