



OBSERVATOR
instruments

ANALITE NEP5000

Turbidity & Pressure Sensor

The ANALITE NEP5000 series of digital turbidity probes is designed for monitoring and process applications where ultimate sensor flexibility is a consideration. This probe offers a multitude of physical sensor variations, with the further benefit of a PC interface that allows the user to easily Calibrate, modify Range modes, and adjust sensor output modes and data characterization.

ANALITE NEP5000 is a completely customisable turbidity probe that can be ordered to the end user's particular needs. All the benefits of a custom solution at a very competitive price.

The NEP5000 can be ordered in several custom variations:

- 90° ISO7027 turbidity probe
- 180° backscatter turbidity probe
- Optional pressure sensor
- Wiping and non-wiping
- Several outer case material options

The ANALITE PC Configurator allows:

- Fast Accurate Calibration
- Compensation tools
- Adjustable Slew Rates
- Three range settings (low, medium, and high)
- Range Hopping between three ranges
- Wiper behavior settings
- Selection of many digital and analog outputs
- Calibration of analog voltage and current outputs
- Pressure calibration and compensation
- Saving of serial #, configuration, and usage data

Standard outputs included are Analog Voltage or Current, Digital TTL, RS422 / RS485, SDI-12. ModBUS as available as an option.*

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Specifically the ANALITE NEP5000 wiping probes are designed for applications where bio-fouling will build up to obscure the optics such as in long monitoring deployment or placement in warm bio-active waters. The ANALITE integral wiper assembly and customized Copper case is designed for operations where severe bio-fouling or sedimentation build-up is likely.

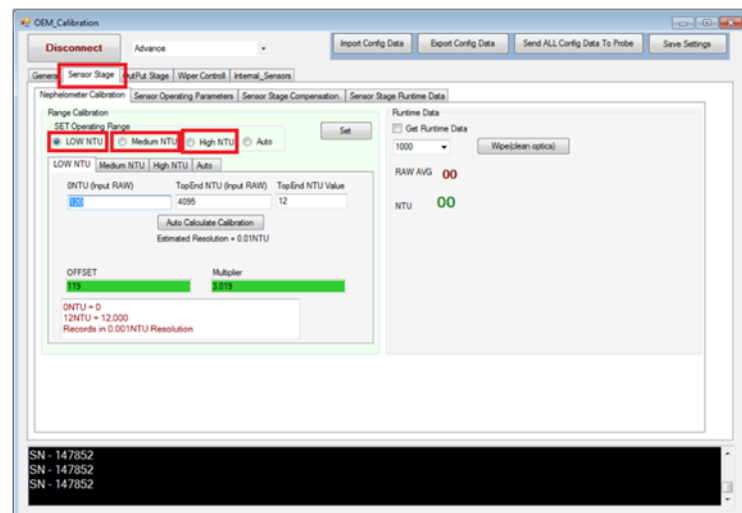
The applications suited to the ANALITE NEP5000 probes are so extensive and too numerous to elaborate on but generally they include:

- Monitoring of streams, rivers and water storage
- 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

The NEP5000 series probe was designed for ultimate ease of use and a long low maintenance life. The NEP5000 offers many technological electronic and software advancements. **The stability at very low NTU values is unprecedented.**

NEP5000 Range Set Concept

The ANALITE NEP5000 series turbidity probe offers a new concept in range setting and range selection. Calibrations can be made for three different levels of usage (Low, Medium, and High). This will apply to the 90°, High Resolution, Low NTU sensor systems or the 180°, High Solids, High NTU sensors systems



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The NEP5000 90° default settings for these three ranges are:

- 0-10 NTU (Low)
- 0-400 NTU (Medium)
- 0-1000 NTU (High)

The NEP5000 180° default settings for these three ranges are:

- 0-5000 NTU (Low)
- 0-10000 NTU (Medium)
- 0-30000 NTU (High)

Choices for different ranges are available for the 90° sensor, but must be specified at time of order and may attract further costs.

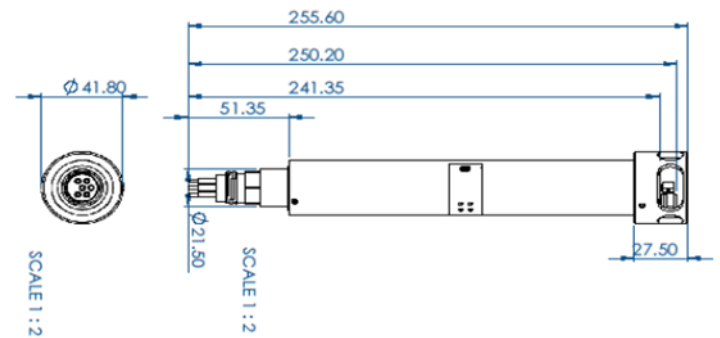
The calibrations allow for three types of usage modes and linearity from low to high in the “range hopping” mode. This is applicable to event based sediment studies where NTU reading are prone to peaks.

90 degree versions provide extremely accurate and stable results at very low NTU values. This sensor can be used in conditions that require high resolution readings from 0 to 5 NTU.

Whatever the requirement the NEP5000 series probe is the most flexible choice. It can be ordered and configured to a multitude of applications.

Add parameters, modify ranges, and refine calibrations. All done on the PC interface and saved to configuration files. These configuration files can be saved and read back in to the sensor to restore settings.

Calibration data is stored in the sensor.



SPECIFICATIONS

TURBIDITY SECTION

Technique 90° modulated infra-red (ISO7027)

Ranges	3 present range groups: low, medium and high	
	Default ranges: 0-10NTU (Low) 0-400NTU (Medium) 0-1000NTU (High)	
	Minimum range 0-5NTU Maximum range 0-5000NTU	
	Range hopping capable	
Resolution	Range	Resolution
	Up to 100NTU	±0.01NTU
	Up to 400NTU	±0.1NTU
	Up to 1,000NTU	±1.0NTU
	Up to 5,000NTU	±2.0NTU
Accuracy	±1% at 25°C up to 400NTU. ±2% at 25°C up to 1,000NTU	
Linearity	Better than 0.5% for 0 to 20NTU Better than 1.0% for 0 to 400NTU Better than 2.0% for 0 to 3,000NTU	
Temp. Coefficient	Better than ±0.05%/°C.	
Outputs	Digital TTL streaming or polled RS422 / RS485 streaming or polled SDI-12 Analog 4 - 20mA and 0 - +5.0V or variations ModBus Optional	
Zero Drift	Less than ±0.2NTU	
Calibration	Factory calibrated using non-toxic AEPA polymer solutions.	
Power	9.6 - 28V dc, 15mA on. 40mA reading and 70mA when wiping	

Settling Time < 1 second after application of power to 99%

Wiping Wiping is configurable through the PC configuration tool. Wipe directions or alternate settings and timeouts will prolong probe life. During a wipe, the output remains within ±1% full scale of the turbidity value just prior to the wipe.

Wipe Time 8 seconds nominal

PRESSURE SECTION

Type	Piezoresistive, absolute gauge, low power demand
Range	0 to 100 meters depth
Accuracy	±0.2% of Full Scale

MECHANICALS

Weight	NEP5000 Delrin models 300 gms – probe only* NEP5000 Metal models 770 gms – probe only* *100gms connector plus 70 gms per meter of cable
Construction	Delrin Composite casing is standard 316 Stainless Steel Titanium Anti-Bio fouling Copper / Nickel
Cable	6 core + shield, 6mm nominal dia. PUR sheath. Conductor resistance 45 ohms per km. Weight - 70 grams per meter.
Cable Length	Glanded Cable length to be specified at time of order
Depth Rating	200m (660ft) Non-wiping 100m (330ft) Wiping
Operating Temp.	-10°C to 40°C.
Storage Temp.	-20°C to 50°C.
Included	PC Interface and Communication Module PC configuration and calibration software
Accessories	NEP-WIPE - Wiper replacement kit comprising of 4 silicon wipers and a hex fastening key NEP-SHRD - Protective shroud for optic head NEP-CBL - Probe cable in meters. NEP-CON-CBL SubConn Connector and cable assembly
Options	Stainless steel (316), Titanium, and Copper casing Marine Connectors