

MODEL NEP 495

Recording turbidity sensor with temperature



The NEP 495 turbidity probe measures and records turbidity and temperature in a self-contained package that is easy to set up and easy to download to a PC via the RS-232 interface.

The microprocessor based turbidity probe is designed for monitoring and logging applications where turbidity levels of up to 1,000NTU may be encountered. User selectable ranges of 40NTU, 100NTU, 400NTU and 1000NTU are included as standard to maximize resolution over the range. The integral wiper assembly is designed to keep the lens clear where bio-fouling or sedimentation build-up over extended periods is likely. The instrument may be submerged to a depth of 100 meters. This pressure rating applies to static (non-flowing) water.

All 495 probes use nephelometric 90° optical retro-scatter technology to ISO-7027. A newly implemented differential measurement technique with sample and hold provides enhanced performance at low turbidity levels, and extremely low zero drift. All probes use a unique modulation technique that ensures almost total rejection of ambient light. Calibrations are under user control and later versions of firmware may be uploaded via the RS232 interface.

The NEP 495 is functionally equivalent to the NEP 395 probe but with the inclusion of temperature measurement and a flexible, internal data logger. As normally supplied the NEP 495 can store over 30,000 data sets with each data set consisting of turbidity, temperature, time and date. Logging intervals can be set from less than 1 second to over 18 hours. Data is stored in non-volatile memory.

The NEP 495 is self-contained requiring no external power or commands once logging has commenced. The internal batteries are sufficient for over 30,000 data sets or about 60 days - whichever comes first and assuming a wipe for each reading.

Features:

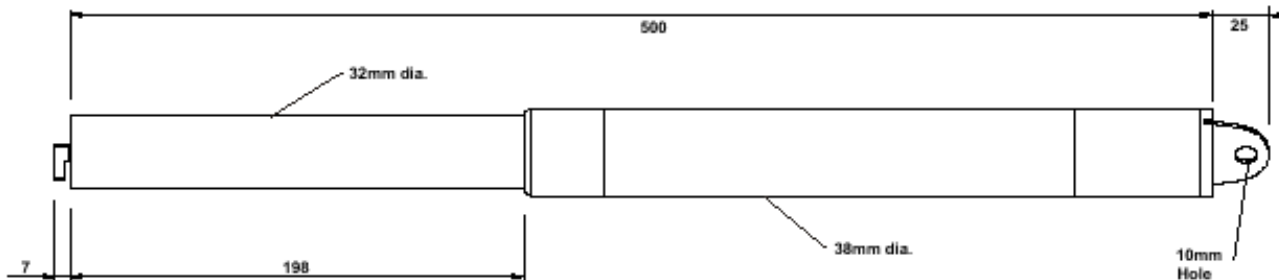
- Turbidity logging
- Temperature logging
- RS232 Interface
- Integral and auto wiping
- 30,000 data sets
- User range select
- User calibrate
- Firmware upgradeable

Applications:

- Stream & river monitoring for water quality
- Open ocean and lake stratification studies
- Waste water monitoring
- Ground & bore water analysis
- Hydrological run off studies
- Sludge & dredge monitoring
- Intermediate & final effluent treatment monitoring
- Food & beverage processes

Specifications:

Technique	90° Infra-Red (ISO 7027).	
Range	40, 100, 400 and 1,000NTU – set by user, default 100 NTU.	
Resolution	Range	Resolution
	40NTU	±0.01NTU
	100NTU	±0.02NTU
	400NTU	±0.1NTU
	1,000NTU	±0.2NTU
Repeatability	±1% at 25°C.	
Linearity	Better than 1% for 40NTU, 100NTU and 400NTU, 3% for 1,000NTU (using 3 point calibration).	
Temperature	-10°C to 50°C with ±0.1 resolution and ±0.5°C accuracy. Time constant 20 seconds in water.	
Output	RS232 – 9600 baud, 7 data bits, even parity, one stop bit. Data set download can be implemented at higher speed using the ANA-Down utility supplied. The ANA-Down utility requires the Windows® operating system versions 95, 98, Me, 2000, NT or XP. A free COM: port must be available on the PC.	
Measurements	RS232 Realtime	
	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 battery voltage. External (water) temperature.	
	RS232 Logging	
	Each logging point generates a data set containing. Turbidity in NTU. External (water) Temperature in °C. Time at which the data set was recorded. Date on which the data set was recorded.	
Logging Interval	User set, from less than 1 second to over 18 hours in 1 second increments.	
Logging Capacity	32,000 data sets minimum but depends on memory capacity installed in the probe.	
Calibration	Turbidity	
	2 or 3 point calibration for each range. May be set by the user only through the RS232 interface.	
	Temperature	
	factory calibration only.	
Power	3 off 1.5 V batteries – C cells alkaline. (3.6 to 6.2 volts).	
Wipe Time	8 seconds nominal.	
Weight	1,100gms - probe including batteries.	
Dimensions	532mm long, 38mm diameter.	
Construction	316 Stainless steel casing with protruding castellations to protect the plastic fibre-optic face.	
Depth Rating	100m (330ft) static water column.	
Operating Temp	-10°C to 50°C.	
Storage Temp	-20°C to 55°C.	
Download cable	3m with DB9 connector.	
Accessories	Protective shroud (NEP49SHRD). Replacement wipers (NEP19WIPE).	



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