

μSMART SERIES

NEP190/195 Turbidity Probes

The NEP190/195 Turbidity sensor consists of a sensing head attached to the μSmart, fully temperature compensated and microprocessor controlled electronics package. The instrument is fully housed in a stainless steel body or PVC body with a mounting hook located at the top of the sensor. The μSmart electronics converts the standard output to μSmart system compatibility. This then offers all the features of the μSmart sensors including the “Plug and Play” capability.

The NEP-190 series of Turbidity Probes are designed for remote logging applications - both short and long deployments and to depths of up to 100m. The NEP-190 series includes the NEP-195 models with integral wiper to increase deployment time where bio fouling is prevalent. Applications for the NEP-190 and NEP-195 are extensive and too numerous to elaborate in this document 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.

The NEP-190 series turbidity probes are designed for monitoring and process applications where turbidity levels of up to 1,000NTU may be encountered. Standard ranges are 100NTU and 400NTU, but other optional ranges are available. Specifically the NEP-190 probe is designed for applications that will not allow bio fouling to build up such as short monitoring deployment or placement in fast and cold running water. The NEP-195 however, with its integral wiper assembly, is designed where bio-fouling or sedimentation build-up is likely. Both the NEP-190 and NEP-195 are available in two depth ratings of 30mtrs (approx.100ft) and 100mtrs (approx.330ft). These pressure ratings apply for passive (non-moving) water.

The microprocessor controlled μSmart electronics board provides a host of features such as control and alarm outputs, 16 bit resolution (1 part in 65,000) and dual output signals. Each unit is provided with a multi-point calibration curve for maximum accuracy across the range. Current consumption is typically 15 ma, and the sensor is powered from an external 10-16 v supply. The μSmart interface is powered from the data logger and only consumes 1 ma. For more information on the other features of the μSmart sensors, the general specification sheets for the “Standard” and “Gold Line” sensors should be read in conjunction with this specification.

The use of an on-board microprocessor in all μSmart sensors or adapters offers many advantages including the standardisation of the output of each sensor type. With other systems, changeover of a sensor means either re-calibration of the system or resetting of parameters in the data logger or other data collection device. The μSmart sensor eliminates this requirement as the on-board microprocessor ensures that all sensor types exhibit the same electronic specifications and thus have identical performance characteristics with all sensor conforming to a “Type” global algorithm in all output modes. For operation in digital, voltage or current mode, sensors are supplied with individual calibration certificates to enable software conversion to engineering units. In serial mode, the sensor reports in engineering units compensated where applicable, and the global algorithm is implemented internally.

SPECIFICATIONS:

TURBIDITY PROBE

Models:	NEP-190 probe only NEP-195 with integral motorised wiper
Range:	Two range versions per model 100NTU and 400NTU Special Ranges Available
Resolution:	0.1NTU for 100NTU version 0.25NTU for 400NTU version
Linearity:	1% for 100NTU version 3% for 400NTU version
Ratings:	Rated to 30mtr or 100mtr immersion in water
Power:	10 to 16V DC at 15mA (45mA for Model 195 when wiping)
Temperature:	-10°C to +40°C
Dimensions:	31mm diameter 200mm length (208mm for model 195)

Operation Principle: 90° scattered Infrared (870nm) light tech.

µSmart General Specifications:

Data Output:	Serial data ASCII format. Plus, either Voltage 0-1 volt, or Frequency +5 volt pulse 2-10 Hz
Options:	0-2.5 or 0-4 volts 4-20 ma Output RS232
Power Supply:	5-28 v DC unregulated (REFER TO TURBIDITY PROBE REQUIREMENTS)
Current Drain:	<1.5 ma (REFER TO TURBIDITY PROBE REQUIREMENTS)
Associated Products:	AWS1 Automatic Weather Station VO1 µSmart Interface module SL1 µSmart Data Logger SI8 µSmart RS232 to Data Bus converter. (Interfaces NEP to a PC).