

# ANALITE TM5 Turbidity Controller

ANALITE



- Measures Turbidity and Temperature.
- Controls Turbidity.
- IP65 Weatherproof Enclosure.
- Universal AC power (90-240Vac).
- Isolated 0/4-20mA Turbidity and Temperature re-transmission.
- ON/OFF and Proportional Controls.
- Isolated Alarm Contact Set.
- Ideal for use with ANALITE NEP95xx series Turbidity Probes.

## Description

The ANALITE TM5 and an ANALITE NEP95xx series probe constitutes a complete system for the monitoring and control of turbidity in water systems. The ANALITE TM5 systems consist of an IP65 controller in combination with a rugged turbidity probe incorporating an integral cleaning wiper assembly, useful for applications where bio-fouling or sedimentation build-up is likely. The system comes with a choice of turbidity probes, either 0-100 NTU, 0-400 NTU, or 0-1000 NTU. The probe cleaning output from the controller can be varied depending on the fouling potential of the system being monitored. The controller can be connected to an optional dosing pump to deliver the required amount of a coagulant / flocculant to control the turbidity of a system.

Other ANALITE turbidity probes may be connected to the TM5. Consult McVan Instruments or your ANALITE distributor for more details.

## Applications

- Industrial process monitoring
- Waste water clarification processes  
e.g. DAF or floatation cells
- Monitoring of streams and rivers
- Sediment load studies
- Intermediate and final effluent treatment monitoring
- Water filtration & flocculation efficiency
- Monitoring of water storage bodies

## Features & Benefits

- Selectable range based on ANALITE NEP95xx series turbidity probe used: 0-100 NTU, 0-400 NTU, or 0-1000 NTU.
- The NEP9501, NEP9504 and NEP9510 probes, with their integral wiper assembly, are designed for operation where bio-fouling or sedimentation build-up is likely – provides excellent service in difficult environments.
- Robust probe design – probes can be submerged to a depth of 100 metres.
- Easy to program and calibrate via superior user-friendly dot-matrix LCD interface
- Controller outputs can be used to control optional coagulant / flocculant dosing pump/s or can be used for high or low turbidity detection/alarm.
- The isolated 0/4-20mA output can be used to log turbidity and temperature measurements, using an optional data logger.
- Password protection prevents tampering with controller settings and/or probe calibration.
- Weatherproof – IP65, can be mounted outside.

## Operation

Mounted on a vertical surface at eye level, and with the probe immersed in the water system, the turbidity controller performs its control and dosing functions to give complete peace-of-mind turbidity monitoring and/or control.

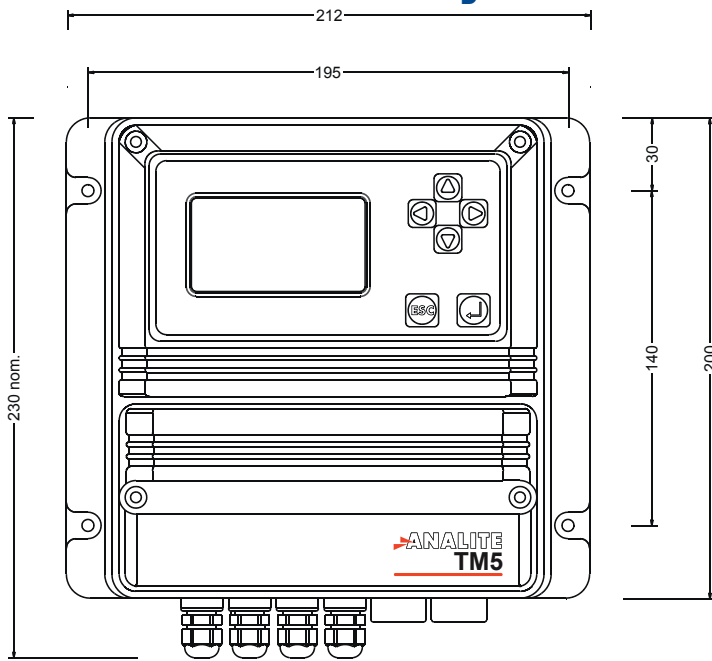
The ANALITE TM5 turbidity controller has 2 ON/OFF outputs as well as 2 digital proportional outputs. The ON/OFF outputs can be independently programmed to activate when above or below a pre-determined setpoint. Each ON/OFF output supplies power directly to an optional pump when it calls for dosing, or can alternatively be used to power a local visual or audible alarm.

Each proportional output has 2 programmable setpoints. One setpoint is the 0% NTU setpoint and the other is the 100% NTU setpoint. The 0% NTU setpoint is usually the desired NTU level. If dosing flocculant or coagulant, then at the 0% NTU setpoint and below, the pump will be OFF. At the 100% NTU setpoint and above, the pump will be ON and dosing at maximum speed. The pump will dose proportionally between the 0% and 100% NTU setpoints.

The controller features a potential free N/O and N/C relay contact as well as an isolated 0/4-20mA output for remote monitoring or data logging (with optional equipment) for both turbidity and temperature.

The ANALITE NEP95xx series turbidity probe is fully submersible up to 100 metres (stainless steel casing only). With an integrated motor and wiper assembly, the interval between successive wipes and the restore time can be programmed in the controller in order to keep the probe's lenses free from bio-film and other sedimentation build-up. For each clean, the wiper performs one revolution. The turbidity probe uses a unique modulation technique that ensures almost total rejection of ambient light conditions, ensuring stable and reliable readings.

## Dimensional & Physical



ANALITE TM5 Controller



ANALITE NEP95xx Probe (G version)

INSTRUMENT DEPTH 108mm.  
ALL DIMENSIONS ARE IN mm.

## Ordering Information

### Ordering Codes

NEP-TM5

NEP95xxG

NEP-CBL

NEP19WIPE

### Description

ANALITE TM5 Turbidity Controller only.

ANALITE Turbidity probe where xx = 01 for 100NTU, 04 for 400NTU and 10 for 1,000NTU range. Other ranges to order - maximum 3,000NTU. Cable (NEP-CBL) length to be specified.

Cable attached and glanded to the NEP95xx probe (per meter).

ANALITE turbidity probe wiper kit including 4 wipers and hex fixing key.

# Specifications: TM5 Controller/Display

Controller Function	
Controller Model	TM5
Variables Measured	Turbidity & Temperature (Pt100)
Control Function	Turbidity
Device Controlled	Switches AC power 1 or 2 optional dosing pumps, or pulsed output for 1 or 2 optional dosing pumps with pulse inputs
Control Algorithm	ON/OFF or digital proportional
Cleaning Function	Activation of wiper on ANALITE NEP9500 series turbidity probes with programmable restore time & time between successive cleans (the wiper performs 1 revolution every cleaning cycle)
Re-transmission	Isolated 0/4-20mA for Turbidity and Temperature , RS232
Display	Dot matrix reverse backlit graphic LCD displays Turbidity, Temperature and Time (24hr)

Controller Alarms	
Activation	High or Low NTU with programmable delay
Relay Contact	1 Change Over Contact Set, 5A/250 VAC, resistive load, potential free

Electrical	
Power Supply	90-240 VAC, 50/60Hz
Control Outputs	ON/OFF relay outputs: switched AC Power, Pulsed outputs: Proportional
Relay Rating	5A/250VAC, resistive load (fuse protected)

Physical	
Protection	IP65 (weatherproof) ABS enclosure
Environment	0-50°C, 0-95% (non condensing) relative humidity
Dimensions	230 (h) x 212 (w) x 108 (d) mm overall
Packaged dimensions	310mm (l) x 260mm (w) x 190mm (h)
Packaged weight	2 kg

## NEP95xx Turbidity Probes

	100NTU	400NTU	1000NTU
<b>Probe Details</b>			
Probe Model	NEP9501G	NEP9504G	NEP9510G
Measurement Technique	90° modulated infra-red (ISO7027)		
Depth Rating	Submersible to 100m (standard stainless steel casing version, 30m for PVC casing)		
Range (Resolution)	0-100 NTU (±0.2 NTU)	0-400 NTU (±1 NTU)	0-1000 NTU (±3 NTU)
Repeatability	±1% at 25°C	±1% at 25°C	±2% at 25°C
Linearity	< 1%	< 1%	< 5%
Temp Coefficient	< ±0.05% / °C		
Output	-2.5V to +2.5V, where 0V=50NTU	-2.5V to +2.5V, where 0V=200NTU	-2.5V to +2.5V, where 0V=500NTU
Zero offset	±3mV max. (0 to 40°C)		
Factory Calibration with APS AEPA polymer solutions	0, 100 NTU	0, 400 NTU	0, 400, 1000 NTU
Construction	Stainless Steel 316 casing with protruding castellations to protect plastic fibre-optic face. PVC casing to special order for corrosive environments.		
Cable Connection	PUR cable (5 core + shield) is glanded directly from the rear of the probe via an integrated plastic strain relief. Cable length to order up to 99 meters.		
Temperature Rating	-20°C to +50°C (storage); -10°C (non-freezing) to +40°C (operating)		

Probe Cleaning Wiper	
Wiper Arrangement	Disposable - Foam Pad on PVC arm. Field replaceable. Mounted on central shaft, fixed by hex grub screw.
Spare Wiper Kit	Ordering code: NEP19WIPE (includes 4 wipers & hex key)
Actuation	When called for by the SELF CLEAN function in the ANALITE TM5 controller
Wiping Time	Approx 8 seconds. The probe wiper performs 1 revolution every cleaning cycle. Probe output held to last measurement during the wipe. (The controller's outputs are disabled during the clean and restore time).

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Specifications subject to change without notice.

# Notes

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