FNTU
NEPHELOMETRIC TURBIDITY

Optical technology for optimized measures

- IR optical sensor with optical fibre
- Range : 0 to 4000 NTU or 0-4500 mg/L
- Robust and waterproof (IP68)
- Ultra low-power consumption
- Digital output Modbus RS-485
- Nephelometry measurement

Application :

- Urban wastewater treatment (inlet/ outlet controls)
- Sanitation network
- Industrial effluent treatment
- Surface water monitoring
- Drinking water

Optical technology :

The measure principle is based on IR nephelometry / 850 nm. The sensor can be calibrated with a formazine standard solution.

The FNTU sensor integrates a low-cost optical technology, with a very few maintenance and no consumables.

Digital communication :

The sensor can be connected to any types of transmitters, display units, controllers or data loggers with Modbus RS-485 or SDI-12 inputs. The optical sensor saves its calibration data for better measures management.

Integrated transmitter :

All data concerning calibration, history, users and measures are directly treated within the FNTU sensor and transmitted via RS-485 or SDI-12.

Physical characteristics :

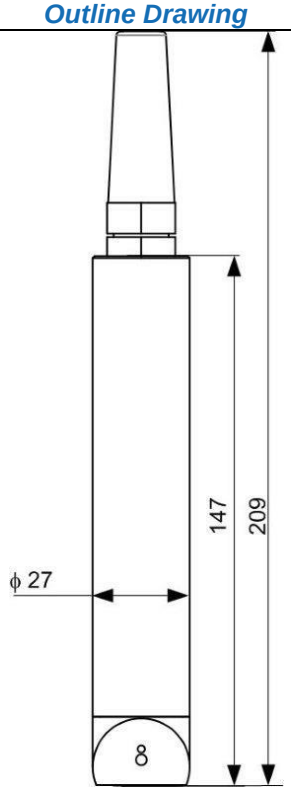
Compact, **robust** and **light**, the PVC sensor allows a handheld or fixed unit application.

Technical characteristics :

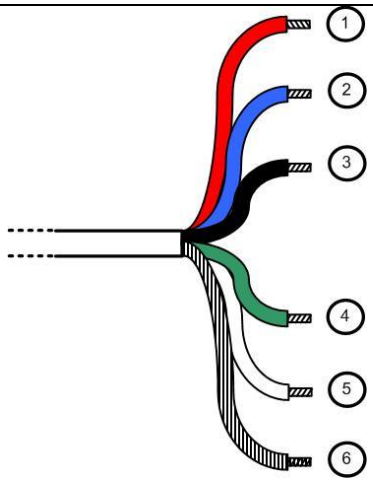
Measures		
Measure principle	Diffusion IR at 90°	
Measure ranges	0 to 4000 NTU in 5 ranges: ▪ 0 – 50 NTU ▪ 0 – 200 NTU ▪ 0 – 1000 NTU ▪ 0 – 4000 NTU ▪ AUTOMATIC	0 to 4500 mg/L **Calibration :** Range 0-500 mg/L according to NF EN 872 Range >500 mg/L according to NF T 90 105 2
Resolution	0,01 to 1 NTU - mg/L	
Accuracy	< 5% of the reading	
Working temperature	0°C to + 50°C	
Measure of temperature	Via CTN	
Stocking temperature	-10°C to + 60°C	
Signal interface	Modbus RS-485 (standard) and SDI-12 (option)	
Maximum refreshing time	< 1 second	
Sensor power-supply	5 to 12 volts	
Electric consumption	Standby : 40 µA Average RS485 (1 measure/seconde) : 820 µA Average SDI12 (1 measure/seconde) : 4,2 mA Current pulse : 500 mA	

Sensor	
Dimensions	Diameter : 27 mm; length : 170 mm
Weight	300 g (sensor + cable 3 meters)
Material	PVC, DELRIN, Quartz, PMMA, Polyamide
Maximum pressure	5 bars
Connection	9 armoured connectors, polyurethane jacket, bare-wires or waterproof Fisher connector
Degree of protection	IP68

Outline Drawing



Wiring diagram



Cable length up to 15m

1- Red	Power supply V+
2 - Blue	SDI-12
3 - Black	Power supply V-
4 - Green	B " RS-485 "
5 - White	A " RS-485 "
6 – Green/yellow	Cable shield

Cable lenght 15 to 100 meters

Red Purple Yellow Orange pink	Power supply V+
2 - Blue	SDI-12
3 - Black	Power supply V-
4 - Green	B " RS-485 "
5 - White	A " RS-485 "
6 – Green/yellow	Cable shield