# SMART STORM LTD
## WASTE WATER SOLUTIONS

# RANGE DIGISENS

## 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

- ISO 7027 compliance (Nephelometry)

### 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 / 880 nm (ISO 7027). The sensor can be calibrated with a formazine standard solution.
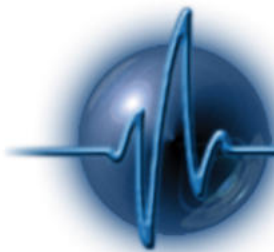
The NTU sensor integrates a low-cost optical technology, with a very few maintenance and no consumables.

### Integrated transmitter :

All data concerning calibration, history, users and measures are directly measured within the NTU sensor and transmitted via RS-485.

### Physical characteristics :

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

Datasheet : NTU sensor
Application : wastewater, drinking water, seawater, natural water
MAJ : July 2011

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## *Technical characteristics :*

### Measures

| | |
|---|---|
| **Measure principle** | Diffusion IR at 90° |
| **Measure ranges** | 0 to 4000 NTU in 5 ranges:<br>  • 0 – 50 NTU<br>  • 0 – 200 NTU<br>  • 0 – 1000 NTU<br>  • 0 – 4000 NTU<br>  • AUTOMATIC     0 to 4500 mg/L<br>**Calibration :**<br>Range 0-500 mg/L according to NF EN 872<br>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 |
| **Temperature compensation** | 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 |
| **Power Consumption** | Standby : 40 µA<br>Average RS485 (1 measure/seconde) : 820 µA<br>Current pulse : 500 mA |

### Sensor

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

| *Outline Drawing* | *Wiring diagram* |
|---|---|

167
147
8
ø 27

Cable lenght 15 to 100 meters

| Red Purple Yellow Orange pink | Power supply V+ |
|---|---|
| 2 | SDI-12 |
| 3 | Power supply V- |
| 4 | B " RS-485 " |
| 5 | A " RS-485 " |
| 6 | Cable shield |

Cable length up to 15m

| 1 | Power supply V+ |
|---|---|
| 2 | SDI-12 |
| 3 | Power supply V- |
| 4 | B " RS-485 " |
| 5 | A " RS-485 " |
| 6 | Cable shield |

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