

# DIGITAL SENSOR

## TURBIDITY

Optical technology for optimized measures

- IR optical sensor with optical fibre
- Range : 0 to 4000 NTU
- 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.

### Digital communication :

The PONSEL 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 NTU 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.

Measures	
Measure principle	Diffusion IR at 90°
Measure ranges	0 to 4000 NTU in 4 ranges: <ul style="list-style-type: none"> <li>▪ 0 – 50 NTU</li> <li>▪ 0 – 200 NTU</li> <li>▪ 0 – 1000 NTU</li> <li>▪ 0 – 4000 NTU</li> </ul>
Resolution	0,01 to 1 NTU
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
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, 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												
	<table border="1" style="margin-top: 10px;"> <tr><td>1</td><td>Power supply V+</td></tr> <tr><td>2</td><td>SDI-12</td></tr> <tr><td>3</td><td>Power supply V-</td></tr> <tr><td>4</td><td>B " RS-485 "</td></tr> <tr><td>5</td><td>A " RS-485 "</td></tr> <tr><td>6</td><td>Cable shield</td></tr> </table>	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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