



## Turbidity & Suspended Solids Sensors

For All Range of Applications



### In A Glance...

Leadtec Turbidity and Suspended Solids Family is the long-awaited solution to your turbidity and suspended solids measurement.

The measuring principle of the sensors is based on 90° Nephelometry light scatter. The scattered light is measured by the sensing elements in which had a fixed measurement angle of 90° from the particles in the water.

Each sensor was designed in such a way to cover every ranges of measurement, from the cleanest ultrapure water to the dirtiest industrial effluents with uncompromising accuracy.

### Product Features

- Providing solutions for all range of applications
- Compact, robust and reliable
- Low maintenance cost
- High accuracy in any given range
- Unaffected by colour interferences
- Easy to calibrate and maintain

# P-J001

## Low Range Turbidity Sensor



### Your Benefits

- **Robust & reliable;**  
Highest level of waterproof and dustproof sensor for site measurement and easy installation.
- **Low maintenance cost;**  
A LED light source eliminates the need of replacement of bulb.
- **High accuracy;**  
Built-in bubble remover to prevent condensation and maintains stable reading. Also, it can measure up to four decimal places!
- **Hassle-free calibration;**  
Requires only 1-Point offset adjustment with deionized water for calibration.

### Applications



Drinking Water



Boiler Water



Pharmaceuticals



Food & Beverages



Semiconductor



Breweries

### Specifications

Measuring Method	Nephelometric 90° scattered light
Light Source	LED
Measuring Range	0.0001 to 100.00 NTU
Accuracy	±2% of reading or 0.02 NTU, whichever is greater
Display Resolution	0.0000 – 9.9999 NTU; 0.0001 NTU 10.000 – 100.00 NTU; 0.001 NTU
Water Flow Rate	100 – 200 mL/min
Water Temperature	0 to +40°C
Operating Temperature	-20 to +50°C Humidity 95% RH or less
Main Materials	PP-GF AES SUS316L
Cable Length	3 m

# P-J002

## Medium Range Turbidity Sensor



### Your Benefits

- **Compact design;**  
The rugged and compact design makes installation easy.
- **Built-in wiper cleaning system;**  
Features an automatic self-cleaning function for medium range turbidity and suspended solids environment.
- **Sapphire glass optical window;**  
High scratch resistant optical window allows cleaning and scrubbing during maintenance.

### Specifications

Measuring Method	Nephelometric 90° scattered light
Light Source	LED
Measuring Range	0.00 to 1000 NTU
Accuracy	2% of reading or 0.05 NTU, whichever is greater
Display Resolution	0.00 – 19.99 NTU; 0.01 NTU 20.0 – 999.9 NTU; 0.1 NTU
Cleaning System	Automatic Wiper
Time Interval for Cleaning	15; 30; 60 mins
Water Temperature	0 to +40°C
Main Materials	SUS316L Sapphire glass Fluorocarbon rubber EPDM PVC
Cable Length	9 m

### Applications



Municipal Water



Food & Beverages



Breweries



Aquaculture

# P-T001

## High Range Turbidity & Suspended Solids Sensor



### Your Benefits

- **Unaffected by colour interferences;**  
The sensor uses 850 nm infrared as light source, eliminating colour interferences.
- **Robust and compact design;**  
Allows handheld or fixed installations.
- **Reliable low maintenance sensor;**  
The integrated optical design has no moving parts and no consumables.
- **Easy to maintain;**  
The sensor can be easily calibrated with standard formazine solution.
- **Advanced connectivity;**  
Can be connected to any types of transmitters, display unit, controllers or data loggers with Modbus RS485 or SDI-12 inputs.

### Specifications

Measuring Method	Diffusion 850 nm Infrared at 90°
Measuring Range	0 – 4000 NTU 0 – 4500 mg/L
Accuracy	<5% of the reading
Display Resolution	0.01 NTU to 1 NTU 0.01 mg/L to 1 mg/L
Temperature Compensation	NTC
Operating Temperature	0 to +60°C
Maximum Pressure	5 bar
Maximum Refresh Time	<1 second
Signal Type	Modbus RS485 (Standard) SDI-12 (Optional)
Protection Class	IP68
Main Materials	PVC; Delrin; Quartz; PMMA; Polyamide
Cable Length	7 m

### Applications



Aquaculture



Pond / River  
Monitoring



Sewage /  
Wastewater



Food & Beverages

# P-J003

## Suspended Solids Sensor

### Your Benefits

- **High measurement range;**  
Can measure up to 50,000 mg/L of Suspended Solids.
- **Compact design;**  
The rugged and compact design makes installation easy.
- **Built-in wiper cleaning system;**  
Features an automatic self-cleaning function for medium range turbidity and suspended solids environment.
- **Sapphire glass optical window;**  
High scratch resistant optical window allows cleaning and scrubbing during maintenance.

### Specifications

Measuring Method	Nephelometric 90° scattered light
Light Source	LED
Measuring Range	0 to 50,000 mg/L
Accuracy	3% of reading or 300 mg/L, whichever is greater
Display Resolution	10 mg/L
Cleaning System	Automatic Wiper
Time Interval for Cleaning	15; 30; 60 mins
Water Temperature	0 to +40°C
Main Materials	SUS316L Sapphire glass Fluorocarbon rubber EPDM PVC
Cable Length	9 m

### Applications



Paper & Pulp



Mining & Mineral Processing



Sewage / Wastewater



Dairy Industry

# P-S001

## Optical Suspended Solids Sensor



### Your Benefits

- **Unaffected by colour interferences;**  
The sensor uses 870 nm infrared as light source, eliminating colour interferences.
- **Reliable low maintenance sensor;**  
The integrated optical design has no moving parts and no consumables.
- **Easy to maintain;**  
The sensor can be easily calibrated with the sample of sludge.
- **High precision;**  
The optics of the sensor compensates with the temperature of the measured sample.

### Specifications

Measuring Method	Diffusion 870 nm Infrared at 90°
Measuring Range	Suspended Solids : 0 – 50 g/L Turbidity : 0 – 4000 FAU Sludge Blanket : 0 – 100%
Accuracy	Suspended Solids : <10% Turbidity : ±5% (200 – 4000 FAU) Sludge Blanket : ±2%
Display Resolution	Suspended Solids : 0.01 g/L Turbidity : 0.01 at 1 FAU Sludge Blanket : 0.01 at 0.1%
Temperature Compensation	NTC
Operating Temperature	0 to +60°C
Stocking Temperature	0 to +60°C
Maximum Pressure	5 bar
Maximum Refresh Time	<1 second
Response Time	<35 seconds
Protection Class	IP68
Main Materials	Delrin
Cable Type	7 m, bare wire cable (standard)

### Applications



Paper & Pulp



Mining & Mineral  
Processing



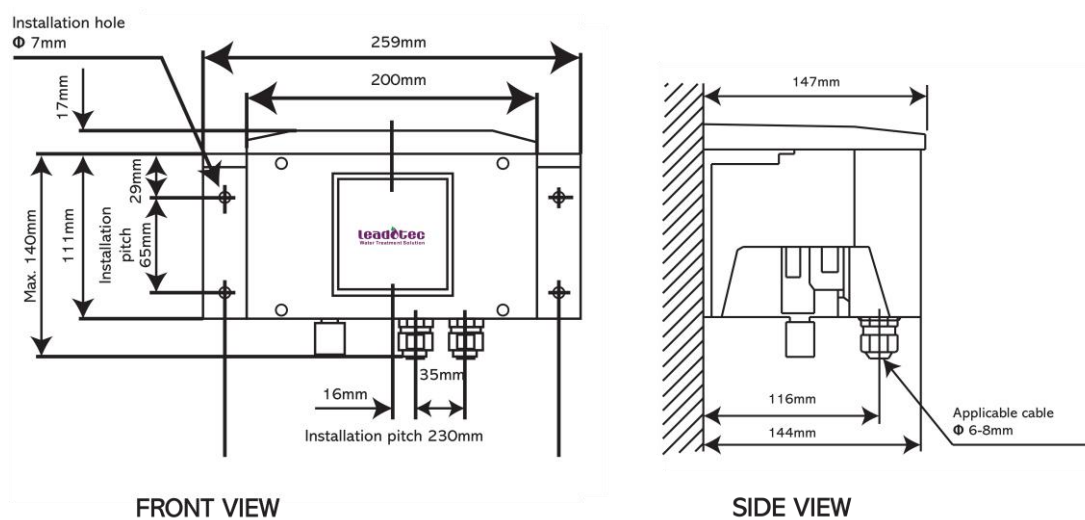
Sewage /  
Wastewater



Dairy Industry

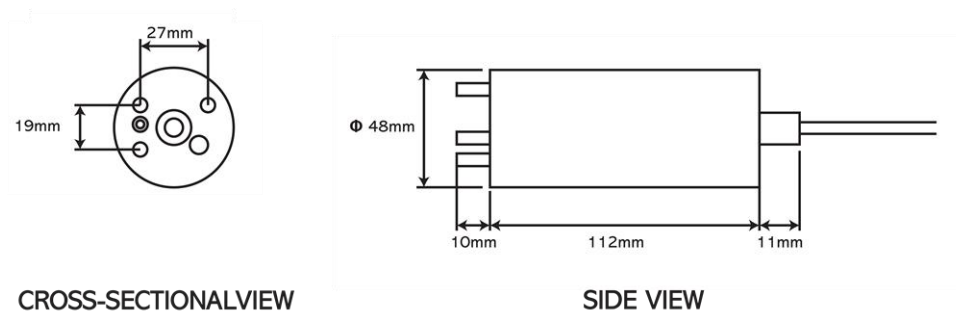
## Dimensions

### P-J001 Low Range Turbidity Sensor



Dimensions of Low Range Turbidity Sensor.

### P-J002 / P-J003 Medium Range Turbidity / Suspended Solids Sensor



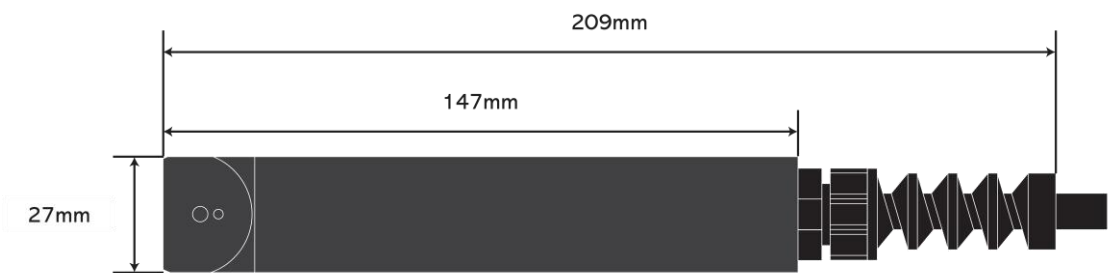
Dimensions of Medium Range Turbidity (P-J002) and Suspended Solids (P-J003) Sensor.

Design outlook subjected to change without prior notice.



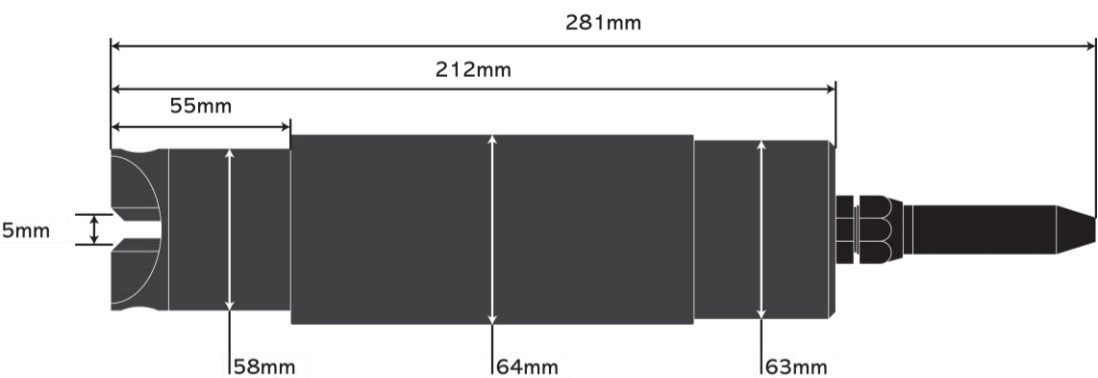
# Dimensions

P-T001  
High Range Turbidity / Suspended Solids Sensor



Dimensions of High Range Turbidity / Suspended Solids Sensor.

P-S001  
Optical Suspended Solids Sensor



Dimensions of Optical Suspended Solids Sensor.

Design outlook subjected to change without prior notice.



## Applications






Applications		Turbidity / SS Range		Sensors				
		Typical Lowest Value	Typical Highest Value	    				
				P-J001	P-J002	P-T001	P-J003	P-S001
<b>Turbidity (NTU)</b>								
Aquaculture		10	25		★			
Boiler Water		0	0.1	★				
Breweries		16	320		★			
Food & Beverages	Fruit Juice	300	900		★	★		★
	Process Feed	0.1	0.9	★				
Municipal Water		0.5	5	★				
Pharmaceuticals		0	0.1	★				
Pure/Ultrapure Water		0	0.1	★				
Semiconductor		0	0.1	★				
Sewage / Wastewater (Final Discharge)		70	2000		★	★		★
River Water Monitoring		10	100		★	★		
<b>Suspended Solids (mg/L)</b>								
Dairy Industry		60	22150			★	★	★
Mining & Mineral Processing		2	160			★	★	★
Paper & Pulp		83	605			★	★	★
Sewage / Wastewater (Sludge)	Activated	3000	7000				★	★
	Primary	3000	6000				★	★
	Recirculated	6000	8000				★	★
	Digested	5000	8000				★	★
Pond Water Monitoring		2	70		★		★	★

Table of Industrial Applications & Sensor Compatibility.

## Order Code

### Turbidity & Suspended Solids Sensors

Part No.	Description
P-J001-EW1-S03FF	Optical Turbidimeter with integral bubble trap and 3m cable length, IP65. Principle of measurement : 90° scattered light. <ul style="list-style-type: none"><li>• Light source : LED</li><li>• Measuring range : 0.0000 – 100.00 NTU</li><li>• Operating temperature : 0 – 40°C</li></ul>
P-J002-EE1-S09FF	Optical Turbidimeter with built-in automatic wiper cleaning system and 9m cable length, IP68. Principle of measurement : 90° scattered light. <ul style="list-style-type: none"><li>• Light source : LED</li><li>• Measuring range : 0.00 – 1000 NTU</li><li>• Operating temperature : 0 – 40°C</li></ul>
P-T001-EE4-S07FF	Optical Turbidity / Suspended Solids Sensor with 7m cable length, IP68. Principle of measurement: Diffusion 850 nm Infrared at 90°. <ul style="list-style-type: none"><li>• Light source : 870 nm Infrared</li><li>• Measuring range : 0 – 4000 NTU (Turbidity) : 0 – 4500 mg/L (Suspended Solids)</li><li>• Operating temperature : 0 – 60°C</li></ul>
P-J003-EE1-S09FF	Optical Suspended Solids Sensor with built-in automatic wiper cleaning system and 9m cable length, IP68. Principle of measurement : 90° scattered light. <ul style="list-style-type: none"><li>• Light source : LED</li><li>• Measuring range : 0 – 50,000 mg/L</li><li>• Operating temperature : 0 – 40°C</li></ul>
P-S001-EE4-S07FF	Optical Suspended Solids Sensor with 7m cable length, IP68. Principle of measurement : Diffusion 870 nm Infrared at 90°. <ul style="list-style-type: none"><li>• Light source : 870 nm Infrared</li><li>• Measuring range : 0 – 50 g/L (Suspended Solids) : 0 – 4000 FAU (Turbidity) : 0 – 100% (Sludge Blanket)</li><li>• Operating temperature : 0 – 60°C</li></ul>

### Turbidity & Suspended Solids Sensor Accessories

Part No.	Description
FIX-002	Immersion Mounting Kit for P-J002 & P-J003 series.
MK-001	Maintenance Kit – Wiper for P-J002 & P-J003 series.