Lovibond® Water Testing

Tintometer® Group

PTV Process Turbidimeters: A User Inspired System

Low Maintenance

- Stable Light Source
- Easy to Clean
- Rapid Fluidics Connections

Innovative Design

- Low Volume Flow Body
- Simple Installation
- Optimized for Low Level Turbidity
- Integrated Bubble Trap
- Local Display
- Optimized for Grab Samples
- Integrated Flow Indication
- Small Footprint

Smart Interface

- Intuitive Mobile App
- Single Device Communicates with Multiple Sensors
- *Bluetooth*® or Direct Connect
- Superior Data Management

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Turbidity is the key measurement parameter for determining drinking water quality.

To develop this instrument, Lovibond® Tintometer® assembled a team of globally recognized turbidity experts. We tasked them with creating a new process instrument that addresses all of the issues customers struggle with while using their current turbidity systems. These advancements, along with the addition of state-of-the-art communications and user interface make the PTV 1000, PTV 2000 and PTV 6000 the next generation of process turbidimeters.

Rethink the Controller

We've replaced the need for a traditional controller with the familiar interface of a smart device. By utilizing a mobile device app, the user experience is enhanced by allowing quick and easy data viewing, calculation of statistics and access to operator instructions and useful tips.

The app is designed to control any aspect of process turbidity measurement. A maximum of three 'clicks' on your mobile device will take you where you need to be! The app can be utilized with a *Bluetooth*® connection, or can by utilized with a direct USB connection.

The sensors also have a local touch screen display that allows users to set basic testing parameters and perform basic operations.

Designed to Save

These PTV Series of Process Turbidimeters are optimized for drinking water applications with unsurpassed low range accuracy (below 1 NTU). There are a variety of features that help users save.

The design features a long-lasting LED light source and patent-pending bubble exclusion system which will deliver accurate and ultra-stable measurements. Combined with the heated optical assembly, we have eliminated the chance for condensation and fogging - no desiccants needed!

The flow body is easy to clean - there are no "nooks and crannies" where particles can settle. The body can be easily drained for cleanings and calibration with quick-connect fixtures and collecting a "grab sample" for verification is easier than ever with no need to disconnect tubing to access the sample.

The low volume flow body (70% less volume than competitive units) provides faster response to turbidity spikes and uses far less water and calibration standards. In addition, the optimal flow rate of the instrument is 50 to 80 ml per minute which, over the lifetime of the instrument translates to over 1 million gallons of water saved versus competitive instruments!

Process Simplified - A New Approach

The development of the PTV Series considered every aspect of process turbidity workflow - from installation and setup; daily measurement and control; routine procedures such as calibration, verification and maintenance; to data collection and management.

We have created a secure system with significantly reduced complexity, allowing users to interact with an unlimited number of turbidimeters using a single mobile device app. This approach eliminates the requirement of dedicated controllers for each instrument and allows maximum flexibility as your needs and regulatory requirements change in the future.

Readings and alarms are communicated on the instrument display, the mobile device and the SCADA system - wherever you are, whenever you need it.

The instrument can easily be configured with additional features such as integrated flow indication, digital communication protocols and *Bluetooth*® connectivity.

Technical Specifications

Measurement Range	PTV 1000 / PTV 2000: 0.0001 to 100 NTU PTV 6000: 0.0001 to 20.00 NTU
Accuracy	± 2% of reading from 0 to 10 NTU ± 4% of reading between 10 to 100 NTU
Stray Light	PTV 1000 IR (ISO): < 0.005 / 5 mNTU PTV 1000 WL (EPA): <0.015 / 15 mNTU PTV 2000 RL (EPA): <0.008 / 8 mNTU PTV 6000 (EPA): <0.005 / 5 mNTU
Limit of Detection	PTV 1000: <0.0005 NTU PTV 2000: <.0.0001 NTU PTV 6000: <0.0001 NTU
Limit of Quantitation	PTV 1000: Better than 0.005 NTU PTV 2000: Better than 0.001 NTU PTV 6000: Better than 0.001 NTU
Displayed Resolution	up to 0.0001 NTU (range dependent) or 5 digits displayed.
Repeatability / Precision	Better than 1% at 1 NTU
Initial Response	10% Change: 15 seconds @ max flow
Step Response (T-90)	Less than 240 seconds @ 200 mL/min at 1 NTU
Signal Averaging	User Selectable: 1, 3, 6, 10, 30, 60, and 90 Seconds Defaulted to 30 Seconds
Sample Temperature	0 to 50°C (32 to 122°F) Max Sample Temperature: 70°C (158°F)
Sample Flow	30 to 500 ml/minute Optimal Flow: 50-80 ml/minute
Operating Pressure	Atmosphere
Ambient / Operating Temperature Range	5 to 50°C (41 to 122°F)
Ambient / Operating Humidity Range	5 to 95% (Non-condensing)
Storage and Shipping Temperature	-40 to 60°C (-40 to 140°F)
Power Requirements	90 to 264 VAC, 50/60 Hz. Auto Select
Sample Inlet Connection	¼-inch NPT female, ¼-inch compression fitting tubing (Included)
Sample Outlet (drain) Connection	⅜-inch NPT female, ⅜-inch hose barb tubing (Included)

Sample Inlet Tubing	¼-inch OD or 6 mm OD
Sample Outlet Tubing	⅜-inch OD or 9 mm OD
Turbidimeter Body Drain	Quick connect with integrated check valve
Analog Output: Measurement Module	1 Selectable 0-20 mA or 4-20 mA; Output span programmable over any portion of the measurement range.
Analog Output: Junction Box	1 Selectable 0-20 mA or 4-20 mA; Output span programmable over any portion of the measurement range.
Alarms (Requires Junction Box Option)	Three set-point alarms, each equipped with an SPDT relay with unpowered contacts rated 5A resistive load at 230 VAC
Digital Protocol Options (Requires Junction Box Option)	Modbus TCP, Profibus DP-V1, or Modbus (Ethernet) RTU RS485/RS232
Enclosure Type: Junction Box	Fiber Reinforced polyester
Enclosure Rating:	Junction Box: IP 66 Measurement Module: IP 65
Compliance	ISO 7027: PTV 1000 IR EPA: PTV 1000 WL and PTV 2000 RL For EPA Approval information, see 82 FR 34861, published 27 July 2017
Safety	Listed by TÜV Rheinland to UL 61010A-1: Certified by TÜV Rheinland to CSAC22.2 No. 1010.1: CE Certified by TÜV Rheinland to EN 61010-1
Immunity	CE certified by TÜV Rheinland to EN61326 (Industrial Levels)
Emissions	Class A: EN 61326, CISPR 11, FCC Part 15, Canadian Interference-Causing Equipment Regulation ICES-003
Mounting Hardware	Turbidimeter Sensor - Slotted Mounting Bracket that can be affixed to any vertical surface or panel (Optional). Junction Box - Direct mounting to any vertical surface or panel (Optional)
Dimensions PTV Sensor with Junction Box	13.17 x 6.24 x 13.4 inches (L x W x H) 334.5 x 158.5 x 340.4 mm (L x W x H)
Method of Calibration	One Point Calibration at 5.0 or 20 NTU with any regulatory approved formazin
Method of Verification	Wet Standards or dry verification device.

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Part Number: 920444-1; March 2019