



## **PF LV550** **Level - Velocity** **Logger**

# Area-Velocity Flow Measurement in Open Channels and Pipes

### **Portable, Battery-powered**

This compact new meter operates on standard alkaline batteries for extended time periods to log level, velocity and water temperature in open channels, partially full sewer pipes and surcharged pipes without a flume or weir. It is designed for municipal stormwater, combined effluent, raw sewage, irrigation water and stream flow.

- **Logs Level and Velocity for Flow Studies**
- **Includes powerful Windows software for Flow analysis and reporting**

### **Streamlined Ultrasonic Sensor**

PF LV550 uses a hydrodynamic ultrasonic sensor to accurately measure both Velocity and Level in the channel. The submerged sensor has no moving parts and is resistant to fouling and corrosion.



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# Portable Area-Velocity Meter

PF LV550 measures Level and Velocity in open channels or pipes. No calibration is required. The sensor is a completely sealed ultrasonic unit with no orifices or ports. It mounts inside the pipe or at the bottom of a channel. The watertight electronics enclosure is hung in the manhole or at a convenient location. Sensor mounting bracket, batteries, software and cables are included with each PF LV550.

## Powered by Standard Alkaline Batteries and Operates up to Four Years!

With 4 D-cell Alkaline batteries the PF LV550 will operate up to 4 years! These low cost batteries are available in stores everywhere and with an extremely low self discharge rate they will reliably power the energy-efficient PF LV550 for the duration of your flow study.

## Stores 130,000 Data Points

PF LV550 stores up to 130,000 data points including level, velocity and water temperature. Between readings it hibernates to conserve energy.

## USB Data Download

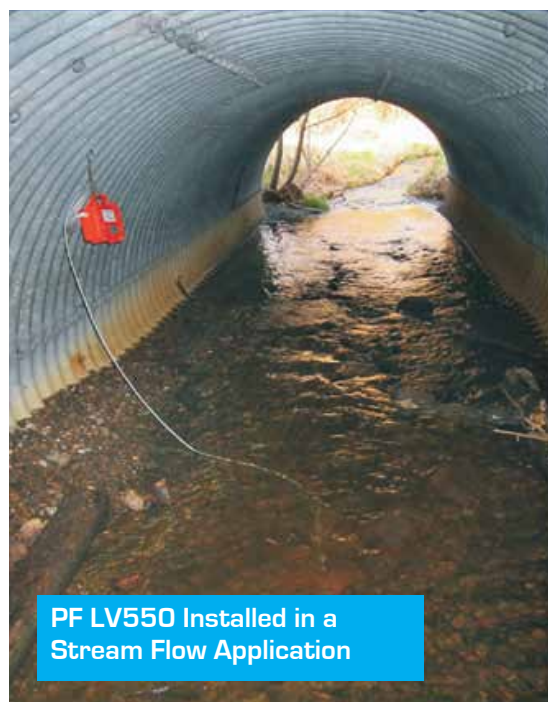
Connect your laptop or PC to the PF LV550's USB output to view realtime level and velocity readings, view remaining logger and battery capacity and to set the PF LV550 logging interval.

## Logger Software

Powerful Windows software is included free with each PF LV550. Use it to set the logger interval, to download log files and view Level, Velocity and water temperature readings in real-time.

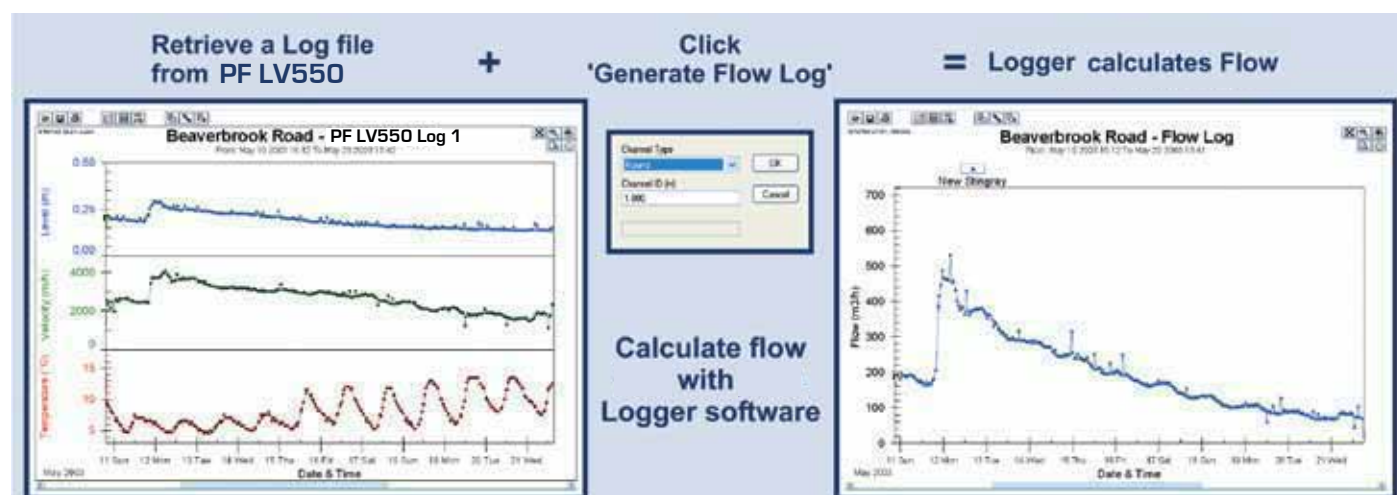
The Logger will display log files and flow rates in graph and table formats. It will generate flow reports including minimum, maximum and average flow, calculate flow totals, and convert between common measurement units.

Reporting is easy with the Logger - you can export charts as image files and export data to use in spreadsheet or database programs.



**PF LV550 Installed in a Stream Flow Application**

Logging Interval	Log Duration	Battery Life
10 sec	15 days	15 days
30 sec	45 days	45 days
1 min	3 months	3 months
2 min	6 months	6 months
5 min	1 year	1 year
10 min	2 years	2 years
15 min	3 years	3 years
30 min	4 years	4 years
60 min	4 years	4 years



# PF LV550 Specifications

## General Specifications PF LV550 Level-Velocity Logger

<b>Electronics Enclosure:</b>	Watertight, airtight, dust proof (IP 67) polycarbonate
<b>Accuracy:</b>	Level: $\pm 0.25\%$ of Range. Velocity: $\pm 2\%$ of Reading
<b>Display:</b>	LCD displays: Level, Velocity, Water Temperature, Battery and Memory capacity
<b>Operating Temp. (electronics):</b>	-20° to 60°C (-4° to 140°F)
<b>Instrument Set-up:</b>	via Logger software for Windows: Logging Time Interval, Site Name
<b>Logger Interval:</b>	10 sec (15 days), 30 sec (45 days), 1 min (3 months), 2 min (6 months), 5 min (1 year), 10 min (2 years), 15 min (3 years), 30 min (4 years) or 60 min (4 years)
<b>Data Logger Capacity:</b>	130,000 data points
<b>Power:</b>	4 Alkaline 'D' cells
<b>Output/Communications:</b>	USB
<b>Software:</b>	Logger for Windows. Supports real-time monitoring, log file download and export, graph and data table presentation, level/velocity to flow conversion

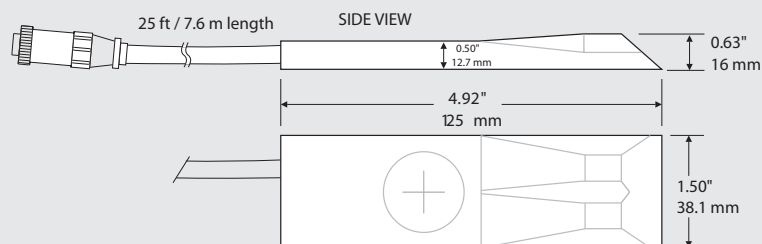
## QZ02 Sensor

<b>Velocity Measurement Range:</b>	0.03 to 3.5 m/sec (0.1 to 12 ft/sec)
<b>Level Measurement Range:</b>	Minimum Head: 25.4 mm (1 in). Maximum Head: 4.5 m (15 ft.)
<b>Operating Temperature:</b>	-15 to 65°C (5 to 150°F)
<b>Exposed Materials:</b>	PVC, polyurethane, epoxy
<b>Sensor Cable:</b>	7.6 m (25 ft.) submersible polyurethane jacket, shielded, 3-coaxial
<b>Sensor Mounting:</b>	includes MB-QZ stainless steel mounting bracket
<b>Temperature Compensation:</b>	Automatic, continuous

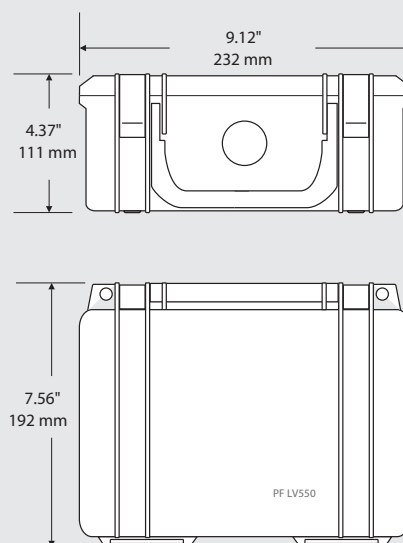
## Options

<b>Sensor Cable Extension:</b>	shielded 15 m (50 ft.) submersible, polyurethane jacket with watertight connectors
<b>Sensor Mounting Bands:</b>	Stainless steel sensor mounting bands for pipes from 150 to 1800 mm (6" to 72")
<b>Extended Temperature Sensor:</b>	QZ02L-HT, CPVC construction rated to 80°C (175°F)

## Dimensions



QZ02L-UT-01-PS VELOCITY/LEVEL SENSOR



ELECTRONICS ENCLOSURE



## **PF LV550** **Level - Velocity** **Logger**

# New Portable Level-Velocity Logger for Flow Surveys in Sewers, Streams and Open Channels



### Recommended for:

- Flow Surveys
- Inflow & Infiltration Studies
- CSO Monitoring
- Stormwater Runoff
- Irrigation Water
- Permit Compliance
- Wastewater Treatment Plant Flow Studies

### Easy to Operate

No calibration is required. Just install the sensor at the bottom of the pipe or channel and the PF LV550 logs level and velocity readings. Use the Logger software (included) to set the logging interval, and to view readings in real-time on your laptop or PC. PF LV550's built-in LCD display lets operators check level and velocity rates, remaining battery life and logger memory.

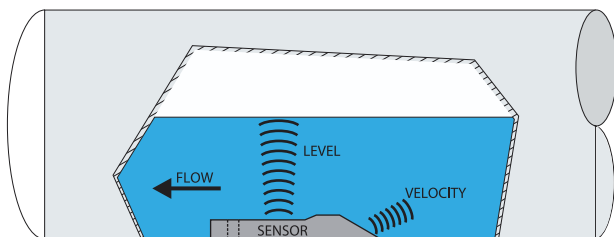
### Built-in Display for Operator Confidence

Operators can check operation with the built-in LCD bar graph display. It scrolls through level, velocity and temperature readings, plus remaining battery and logger storage capacity. The display turns off automatically after 60 seconds to conserve battery power.

### How it Works

The sensor transmits ultrasonic pulses that travel through the water and reflect off the liquid surface. To monitor water level, the PF LV550 precisely measures the time it takes for echoes to return to the sensor.

Velocity is measured with an ultrasonic signal continuously injected into the flow. This high frequency sound is reflected back to the sensor from particles or bubbles suspended in the liquid. If the fluid is in motion, the echoes return at an altered frequency proportionate to flow velocity. The PF LV550 uses this Doppler frequency shift to accurately calculate flow velocity.



SUBMERGED ULTRASONIC SENSOR  
MEASURES LEVEL AND VELOCITY



Micronics Limited, Knaves Beech Business Centre, Davies Way, Loudwater,

**Telephone:** +44 (0) 1628 810 456  
**E-mail:** sales@micronicsltd.co.uk  
**Fax:** +44 (0) 1628 531 540

(ES) Equipements Scientifiques SA - Département Bio-Tests & Industries - 127 rue de Buzenval BP 26 - 92380 Garches  
Tél. 01 47 95 99 90 - Fax. 01 47 01 16 22 - e-mail: bio@es-france.com - Site Web: www.es-france.com