

# Portable Level-Velocity Logger

Area-Velocity Flow Measurement in Open Channels and Pipes

## Level-Velocity Logger

### Stingray

Logs Level and Velocity  
for Flow Studies

Includes powerful  
Windows software for  
Flow analysis and reporting



## Measures Level, Velocity + Temperature in Open Pipes and Channels

### 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.

### Streamlined Ultrasonic Sensor

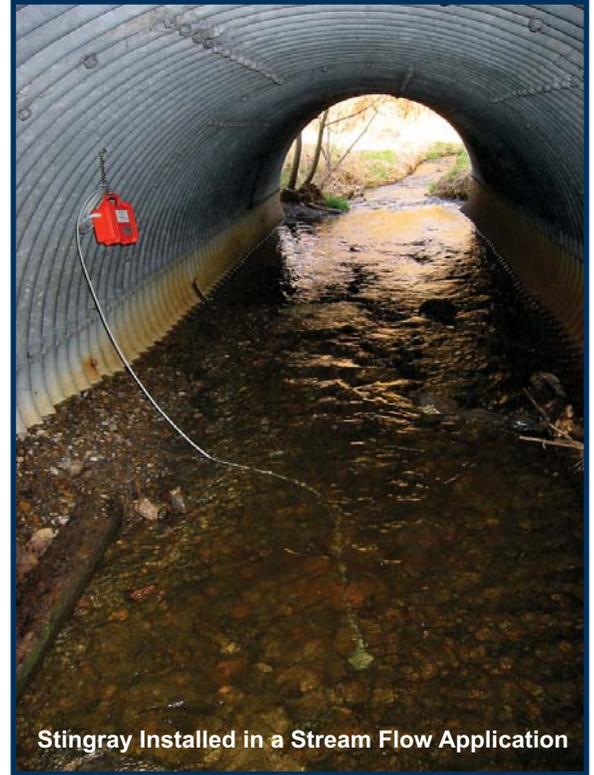
Stingray uses a submerged ultrasonic sensor to continuously measure both Velocity and Level in the channel. The sensor has no moving parts and is resistant to fouling and corrosion.

*Greyline*  
instruments inc.

RELIABLE MEASUREMENT AND CONTROL

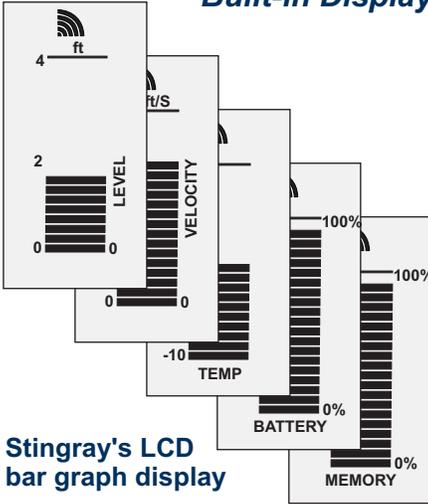
# Portable Area-Velocity Meter

Stingray 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 Stingray.



Stingray Installed in a Stream Flow Application

## Built-in Display for Operator Confidence



Stingray's LCD bar graph display

Check Stingray status and performance without connecting to your laptop. Press the display button and the Stingray scrolls through bar graph displays of level, velocity and temperature readings, plus remaining battery and logger storage capacity.

Operators can use the LCD display to check performance at start-up and confirm Stingray readings and signal strength at any time during operation. The display powers off automatically after 60 seconds to conserve battery power.

## Greyline Logger Software

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

Greyline 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 Greyline Logger - you can export charts as image files and export data to use in spreadsheet or database programs.



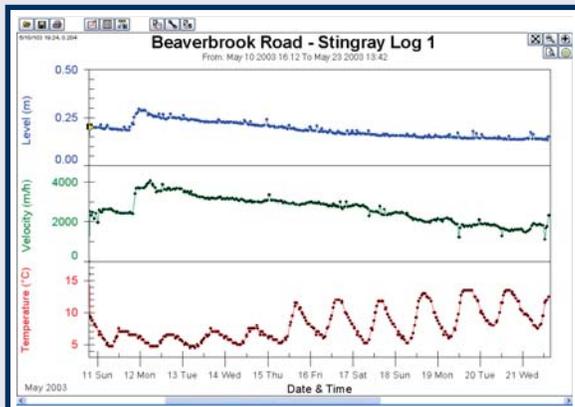
Retrieve a Log file from Stingray

+

Click 'Generate Flow Log'

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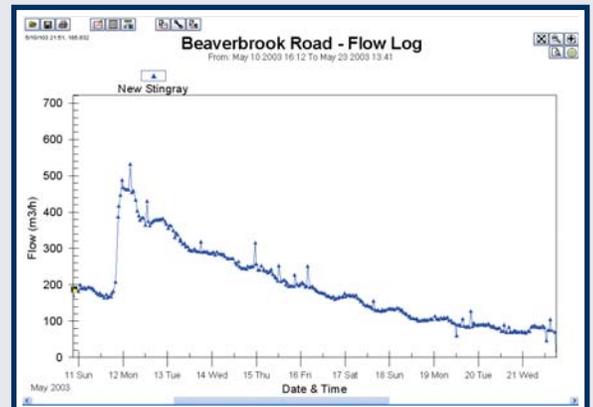
Greyline Logger calculates Flow



Channel Type:  OK

Channel ID (ft):  Cancel

Calculate flow with Greyline Logger software



# Stingray Specifications

## General Specifications

## Greyline Stingray Level-Velocity Logger

<b>Electronics Enclosure:</b>	Watertight, airtight, dust proof (IP 67) polycarbonate
<b>Accuracy:</b>	Level: $\pm 0.25\%$ of Level. Velocity: $\pm 2\%$ of Reading
<b>Display:</b>	LCD displays: Level, Velocity, Water Temperature, Battery and Memory capacity
<b>Operating Temp. (electronics):</b>	-4° to 140°F (-20° to 60°C)
<b>Instrument Set-up:</b>	via Greyline 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), 20 min (4 years)
<b>Data Logger Capacity:</b>	130,000 data points
<b>Power:</b>	4 Alkaline 'D' cells
<b>Output/Communications:</b>	RS232, 28,800 Baud
<b>RS232 Cable:</b>	20 ft (6 m) shielded with DB9 M/F connectors
<b>Software:</b>	Greyline Logger for Windows. Supports real-time monitoring, log file download and export, graph and data table presentation, level/velocity to flow conversion
<b>Approximate Shipping Weight:</b>	10 lbs. (4.5 kg)

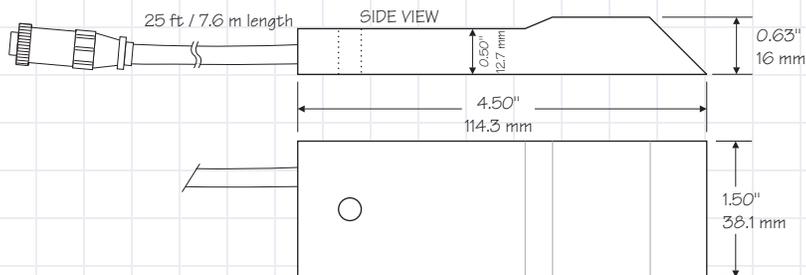
## QZ02 Sensor

<b>Velocity Measurement Range:</b>	0.1 to 10 ft/sec (0.03 to 3.05 m/sec)
<b>Level Measurement Range:</b>	Minimum Head: 1 in (25.4 mm). Maximum Head: 15 ft. (4.5 m)
<b>Operating Temperature:</b>	5 to 150°F (-15 to 65°C)
<b>Exposed Materials:</b>	PVC, polyurethane, epoxy
<b>Sensor Cable:</b>	25 ft. (7.6 m) submersible polyurethane jacket, shielded, 3-coaxial
<b>Sensor Mounting:</b>	includes MB-QZ stainless steel mounting bracket
<b>Temperature Compensation:</b>	Automatic, continuous

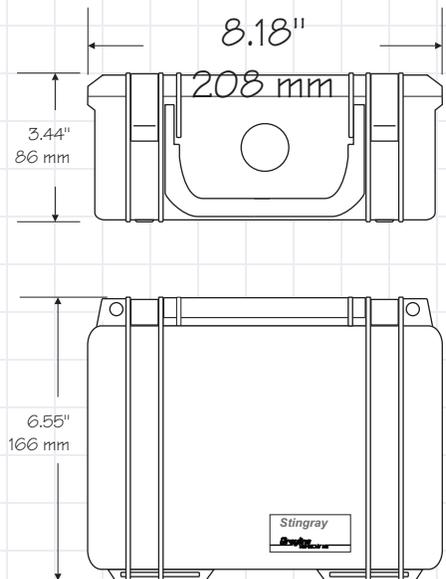
## Options

<b>Sensor Cable Extension:</b>	shielded 50 ft. (15 m) submersible, polyurethane jacket with watertight connectors
<b>Sensor Mounting Bands:</b>	Stainless steel sensor mounting bands for pipes from 6" to 72" (150 to 1800 mm)

## Dimensions



QZ02-SD-01-PS VELOCITY/LEVEL SENSOR



ELECTRONICS ENCLOSURE

# New Portable Level-Velocity Logger

## for Flow Surveys in Sewers, Streams and Open Channels

### Use Stingray 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 Stingray logs level and velocity readings. Use Greyline Logger software (included) to set the logging interval, and to view readings in real-time on your laptop or PC. Stingray's built-in LCD display lets operators check level and velocity rates, remaining battery life and logger memory.

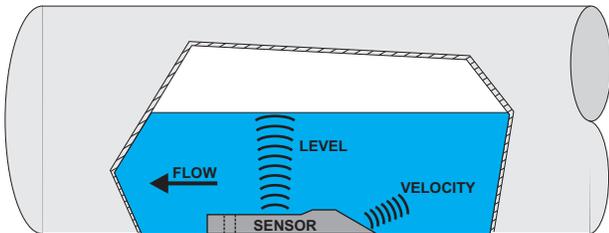
### **Efficient, Battery Powered**

With 4 standard Alkaline D-cells the Stingray will operate and datalog for extended time periods. (For example: logging at 5 minute intervals the Stingray batteries will last for 12 months and store over 105,000 separate level, velocity and temperature readings!)

### **How it Works**

The sensor transmits ultrasonic pulses that travel through the water and reflect off the liquid surface. To monitor water level, the Stingray 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 Stingray uses this Doppler frequency shift to accurately calculate flow velocity.



SUBMERGED ULTRASONIC SENSOR  
MEASURES LEVEL AND VELOCITY

### **How to Order**

Contact a Greyline sales representative in your area or phone one of our sales engineers. Describe your requirements and receive our prompt quotation.

### **Applications Support**

Take advantage of Greyline's applications experience. Phone toll free 1-888-473-9546 for advice on applications, installation or service for Greyline instruments.

### **No Risk Appraisal**

The Stingray Level-Velocity Meter must meet your requirements. Discuss your application with a Greyline representative to arrange a performance test.

### **The Greyline Guarantee**

Quality of Materials and Workmanship - Each instrument manufactured by Greyline is warranted against defects in materials and workmanship for a period of one year from date of purchase. Refer to our limited warranty included with each product.

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