



Greyline

# MANTARAY

## Technical Specifications:

The MantaRay Portable Area-Velocity Flow Meter measures both level and velocity to calculate flow in an open channel or partially filled pipe. Designed for flow studies, infiltration and inflow studies, or portable area-velocity measurement. Ideal for sewage, stormwater, irrigation, and environmental flows.



### GENERAL SPECIFICATIONS

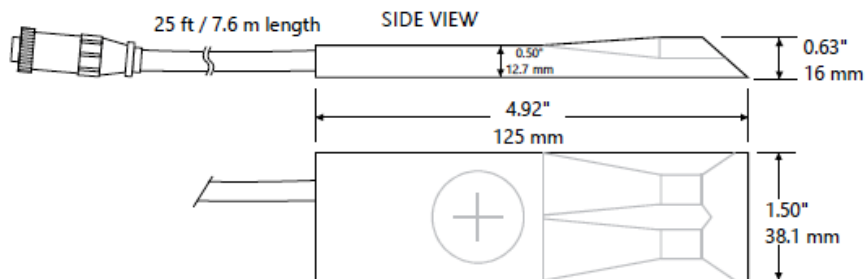
<b>Channel Types:</b>	Round pipe, rectangular, trapezoid, egg, or custom shapes
<b>Electronics Enclosure:</b>	IP67 polycarbonate
<b>Operating Temp. (Electronics):</b>	-20 °C to +60 °C
<b>Accuracy:</b>	• Level: $\pm 0.25\%$ of Range or 1 mm (0.04 in). Velocity: $\pm 2\%$ of reading • Repeatability and Linearity: $\pm 0.1\%$
<b>Display:</b>	White, backlit matrix — displays flow rate, totalizer, relay states, operating mode, and calibration menu
<b>Programming:</b>	Built-in 5-key calibrator with English, French, or Spanish language selection
<b>Battery:</b>	Internal rechargeable NiMH, 12 V DC, 10,000 mAh
<b>Battery Charger:</b>	6 A (100 W Max), 100-240 V AC 50/60 Hz input, UL and CE listed
<b>Output/Communications:</b>	4-20mA, 500 $\Omega$ or 0-5 V DC (100mA) by menu selection 2 solid-state Relays, 40 V AC/DC max., rated 250mA; programmable for flow and/or level alarm or flow proportional pulse (sampler/totalizer, Max frequency 0.4 Hz)
<b>Breakout Box:</b>	Connections for charger input, external battery input, 2 relays, 4-20mA (0-5 V)
<b>Electrical Surge Protection:</b>	Sensor: 4-20mA outputs and AC power input
<b>Data Logger:</b>	Programmable 2-million point data capacity, time and date stamped plus formatted flow reports including total, average, minimum, maximum, and times of occurrence. Includes USB output to Flash Drives.
<b>Logger Intervals:</b>	Programmable: 10 sec, 30 sec, 1 min, 2 min, 5 min, 10 min, 15 min, 30 min, 60 min
<b>Software:</b>	Greyline Logger for Windows. Graph and data table presentation, level / velocity to flow conversion, exports data to Excel, exports graphs.
<b>Approximate Shipping Weight:</b>	6.8 kg
<b>Electronics Enclosure:</b>	IP67 polycarbonate

### QZ02L TRANSDUCER SPECIFICATIONS

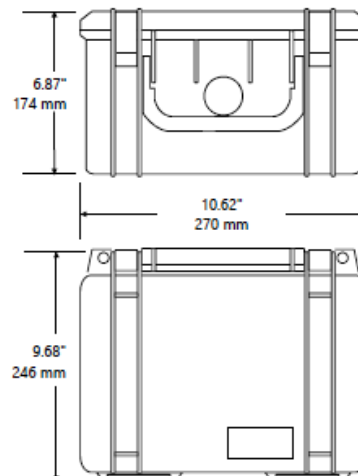
<b>Velocity Measurement Range:</b>	0.031 m/s to 6.2 m/s and reverse flow to -1.5 m/s
<b>Level Measurement Range:</b>	• Minimum Head: 25.4 mm • Maximum Head: 4.6 m
<b>Operating Temperature:</b>	-15 °C to +80 °C
<b>Exposed Materials:</b>	316 stainless steel, epoxy resin, polyurethane
<b>Sensor Cable:</b>	7.6 m submersible polyurethane jacket, shielded, 3-coaxial
<b>Transducer Mounting:</b>	Includes MB-QZ stainless steel mounting bracket
<b>Temperature Compensation:</b>	Automatic, continuous

### POPULAR OPTIONS

<b>Transducer Cables Extension:</b>	Shielded 15.2 m submersible, polyurethane jacket with watertight connectors
<b>Sensor Mounting Bands:</b>	Stainless steel sensor mounting bands for pipes from 152.4 mm to 1.8 m



QZ02L-SS-01-PS Velocity/Level Sensor



Electronics Enclosure



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