Sparling Instruments, Inc.
Technical Specifications

FM144
Waterworks Intake Meter
Electronic Propeller

DESCRIPTION
A Waterworks Intake Meter is an economical and easily installed meter for large volume flow measurement at the discharge end of a closed conduit, inverted siphon or reservoir. Existing structures often provide an excellent mounting for the meter.

ELECTRONIC DESIGN
The Model FM144 interfaces with the FT194 battery powered electronic rate/totalizer which senses the rotation of the propeller by means of a magnetic pickup sensor located in the gearbox. The rate/totalizer and pickup are completely isolated from the flow stream.

Fewer moving parts combined with a proven Sparling design results in less wear, reduced maintenance costs and longer life.

ACCURACY
±2% of actual volumetric flow over the specified range. Each meter is individually flow calibrated in Sparling's certified hydraulic laboratory. This laboratory is traceable to the National Institute of Science and Technology (NIST). Certified test records are provided.

RATE INDICATION AND TOTALIZER
The rate is shown on a 4-digit LCD readout and the cumulative total flow is shown on a 8-digit LCD straight reading totalizer in any standard volumetric units.

The FT194 is ordered separately, it can be mounted integrally, remotely and with a 4-20mA and pulse output.

Minimum Flows - As noted, are required before accurate registration can be obtained in standard volumetric units.

Maximum Flows - as noted, may be safely increased to 150% of rated capacity for intermittent use.

MATERIALS
All materials used are resistant to normal water corrosion but are not guaranteed against chemical or electrolytic attack. Plastic propellers may be stored in air temperatures up to 175° or used in water up to 100°F without damage.

Propeller Design Minimizes Maintenance - The propeller is made of a tough, durable, abrasion-resistant material. The conical shape and the ability of the material to flex under stress allows the propeller to shed debris such as clumps of algae or rags without damage.

Rugged Construction Guarantees Long Life - Materials of construction have been selected to provide many years of service. Shafts and bearings are stainless steel, bearing housings are brass (10'-30') and cast iron (36'-72'). Drop pipes are brass (10-30') and steel (36'-72')

INSTALLATION
The meter propeller, fully submerged and facing the center of the flow at the discharge end of a pipe, closed conduit, or inverted siphon, is suspended from a pipe column attached to a wall or simple support structure. Concrete pipe or a simple culvert structure is a satisfactory meter tube. Gate valves or other obstructions should be at least ten pipe diameters upstream from the meter. Straightening vanes may be furnished as a separate item to insure straight flow conditions and accurate measurement.
### Table 1 – Base Model Number
FM144-Electronic Open Flow Meterheads

<table>
<thead>
<tr>
<th>Size</th>
<th>Wt (lbs)</th>
<th>B</th>
<th>C</th>
<th>E</th>
<th>H</th>
<th>Flow Ranges (US GPM)</th>
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<td>90</td>
<td>9-1/2</td>
<td>2-1/8</td>
<td>16-1/2</td>
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<td>4</td>
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<td>90</td>
<td>9-1/2</td>
<td>2-1/8</td>
<td>16-1/2</td>
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<td>3</td>
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<td>9-1/2</td>
<td>2-1/8</td>
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<td>25-1/4</td>
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<td>38-3/8</td>
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<td>4-1/2</td>
<td>108</td>
<td>38-3/8</td>
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</tbody>
</table>

### Table 2 – Size
10 = 10", 12 = 12", etc.

### Table 3 – Mounting
6 Standard Wall Brackets

### Table 4 – Construction
1 Standard

### Table 5 – Flow Range
1 Low Range
2 Standard Range

### Table 6 – Readouts
0 None
1 Welding Vanes
2 Bolting Vanes
5 Additional drop pipe length
6 1 and 5 above
7 2 and 5 above

### Table 7 – Accessories
0 None
1 Welding Vanes
2 Bolting Vanes
5 Additional drop pipe length
6 1 and 5 above
7 2 and 5 above