High Performance PROTECTUS® III Stainless Steel (S) Fire Service Meter

SIZES: 4”, 6”, 8”, and 10”

The Neptune® HP PROTECTUS® III Stainless Steel (S) fire service meter measures extremely wide flow ranges at 100% ± 1.5% accuracy. All HP fire service meters meet or exceed AWWA C703 Standard, are certified to NSF/ANSI 61 and 372 requirements, and are Underwriters Laboratory (UL) Listed and Factory Manual (FM) Approved for fire service use.

Application

The HP PROTECTUS III S fire service meter is designed to measure both domestic and fire service water usage through a single water line. A typical application would be in a warehouse, hotel, or hospital where one water line may supply any number of faucets or bathrooms as well as an automatic sprinkler system.

Operation

At low flow rates, all flow is through the bypass meter. As flow increases, pressure loss through the bypass meter increases and the detector check valve automatically opens. This condition occurs, for example, when a fire sprinkler system goes into operation. This permits flow through the mainline turbine meter. As flow decreases, reduced pressure loss closes the detector check valve and flow is again directed through the bypass meter.

Construction

The combined readings of the mainline turbine and the bypass meter indicate total consumption through the HP PROTECTUS III S meter.

- 300 series stainless steel mainline body
- Integral detector check valve (stainless steel spring-loaded type)
- 300 series stainless steel strainer body with stainless steel basket
- Epoxy-coated steel strainer and valve cover
- HP Turbine measuring element
- Lockable ball valves used on bypass
- Check valve used on bypass
- 1” T-10⁸ meter (on 4” size)
- 1½” T-10 or 1½” HP Turbine meter (on 6” size)
- 2” T-10 or 2” HP Turbine meter (on 8” and 10” sizes)

KEY FEATURES

Compact Size
- Standard laying length fits existing installations
- Lowers new installation and replacement costs

Wide Operating Range
- Measures extremely wide flow ranges at 98.5%–101.5% accuracy
- Combines low-flow sensitivity of disc meter with high-flow capacity of turbine meter
- Registers leaks or unauthorized use of water from fire service lines

Component Repair and Maintenance
- Owner maintenance easily accomplished by replacement of major components
- Calibration vane allows in-field calibration of unitized measuring element (UME)

Roll-Sealed Registers
- Eliminates leaking and fogging
- In-line serviceability
- Magnetic driven, low-torque registration
- Tamperproof seal design
These charts show typical meter performance. Individual results may vary.
### Operating Characteristics

<table>
<thead>
<tr>
<th>Meter Size</th>
<th>Normal Operating Range @ 100% Accuracy (+/- 1.5%)</th>
<th>AWWA Standard Low Flow @ 95% - 101% Accuracy</th>
<th>Maximum Intermittent Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>¾ to 1200 US gpm 0.171 to 272.55 m³/h</td>
<td>4 to 700 US gpm 0.91 to 1.59 m³/h</td>
<td>1500 US gpm 340.7 m³/h</td>
</tr>
<tr>
<td>6&quot;</td>
<td>1½ to 2500 US gpm 0.34 to 567.81 m³/h</td>
<td>5 to 1600 US gpm 1.14 to 363 m³/h</td>
<td>3100 US gpm 704.1 m³/h</td>
</tr>
<tr>
<td>8&quot;</td>
<td>2 to 4000 US gpm 0.45 to 908.5 m³/h</td>
<td>8 to 2800 US gpm 1.8 to 636 m³/h</td>
<td>5000 US gpm 1135.6 m³/h</td>
</tr>
<tr>
<td>10&quot;</td>
<td>2 to 6500 US gpm 0.45 to 1476.31 m³/h</td>
<td>8 to 4400 US gpm 1.8 to 999 m³/h</td>
<td>8000 US gpm 1817 m³/h</td>
</tr>
</tbody>
</table>

### Dimensions

<table>
<thead>
<tr>
<th>Meter Size</th>
<th>A in/mm</th>
<th>B in/mm</th>
<th>C in/mm</th>
<th>D in/mm</th>
<th>E in/mm</th>
<th>F in/mm</th>
<th>G in/mm</th>
<th>H in/mm</th>
<th>I in/mm</th>
<th>J in/mm</th>
<th>Weight lbs/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>33</td>
<td>254</td>
<td>10½</td>
<td>273</td>
<td>22</td>
<td>15¼</td>
<td>6½</td>
<td>12</td>
<td>2</td>
<td>2</td>
<td>215</td>
</tr>
<tr>
<td>6&quot;</td>
<td>45</td>
<td>281</td>
<td>11½</td>
<td>289</td>
<td>29</td>
<td>19½</td>
<td>9½</td>
<td>16</td>
<td>2</td>
<td>3</td>
<td>570</td>
</tr>
<tr>
<td>8&quot;</td>
<td>53</td>
<td>300</td>
<td>13½</td>
<td>342</td>
<td>34½</td>
<td>21½</td>
<td>12½</td>
<td>17</td>
<td>3</td>
<td>3</td>
<td>765</td>
</tr>
<tr>
<td>10&quot;</td>
<td>68</td>
<td>376</td>
<td>14½</td>
<td>381</td>
<td>36½</td>
<td>22½</td>
<td>13½</td>
<td>18</td>
<td>3</td>
<td>3</td>
<td>900</td>
</tr>
</tbody>
</table>

### Registration

<table>
<thead>
<tr>
<th>Registration (per sweep hand revolution)</th>
<th>Disc Side</th>
<th>Turbine Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000 US Gallons</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>100 Gallons</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>100 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>1 US Gallons</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>1 Cubic Foot</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10 Cubic Metres</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>1 Cubic Metre</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>0.1 Cubic Metre</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Register Capacity (6 active wheel odometer)</th>
<th>Disc Side</th>
<th>Turbine Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000,000,000 Gallons</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>100,000,000 Gallons</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>100,000,000 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10,000,000 Gallons</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10,000,000 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>1,000,000 Cubic Metres</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>1,000,000 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>100,000 Cubic Metres</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
Specifications

Application
• Cold water measurement of flow in one direction

Maximum Operating Pressure
• 175 psi (1206 kPa)

Register
• Direct reading, center sweep, roll-sealed magnetic drive with low-flow indicator

Measuring Element
• AWWA Class II Turbine, hydrodynamically-balanced rotor, nutating disc

Flanges
• Round flanged ends per AWWA C207, Class D

Approvals
• NSF/ANSI 61
• NSF/ANSI 372
• UL Listed
• FM Approved

Options

Sizes
• 4”, 6”, 8”, and 10”

300 Series Stainless Steel
Strainer Cover and Valve Cover
300 Series Stainless Steel Bolts
Left Side Bypass

Units Of Measure
• U.S. gallons, Imperial gallons, cubic feet, cubic metres

Register types
• Remote reading systems*: ProRead™, ProCoder™, E-CODER®, E-CODER®R900i™, E-CODER®R450i™, E-CODER®L900i™, TRICON®/S, TRICON/E3

• Reclaim

Companion Flanges
• Cast iron
• Bronze (4” only)

Special Meter Flanges**
• 12” (for 10” meter size)

*TConsult factory for meter performance specifications when fitted with ARB.
**Non-UL/FM approved.

Guaranteed Systems Compatibility

All HP PROTECTUS III S fire service meters are guaranteed adaptable to our ProRead, ProCoder, E-CODER, E-CODER(R900i, E-CODER(R450i, E-CODER)L900i, TRICON/S, TRICON/E3, and Neptune meter reading systems without removing the meter from service.

Warranty

Neptune provides a limited warranty with respect to its HP PROTECTUS III S fire service meter for performance, materials, and workmanship.

When desired, owner maintenance is easily accomplished by in-line replacement of the UME.