High Performance PROTECTUS® III
Fire Service Meter

The Neptune® HP PROTECTUS® III Fire Service meter is designed to measure both domestic and fire service water usage through a single water line.

The HP PROTECTUS III 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 NSF/ANSI 372 requirements, and are Underwriters Laboratory (UL) Listed and Factory Mutual (FM) Approved for fire service use.

Application
The HP PROTECTUS III 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
• Epoxy-coated steel mainline body
• Integral detector check valve (stainless steel spring-loaded type)
• Epoxy-coated steel strainer body with stainless steel basket
• HP Turbine measuring element
• All bronze bypass assembly
• Lockable ball valves used on bypass
• Check valve used on bypass
• 1” T-10® 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)

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KEY FEATURES

Compact Size
• Standard laying length fits existing installations
• Reduces new installations 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

SIZES: 4”, 6”, 8”, and 10”
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</th>
<th>Low Flow @ 95% Accuracy</th>
<th>Maximum Intermittent Flow Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>4”</td>
<td>¾ to 1200 US gpm 0.17 to 272.55 m³/h</td>
<td>4 to 700 US gpm 0.91 to 159 m³/h</td>
<td>¾ US gpm 0.09 m³/h</td>
<td>1500 US gpm 340.7 m³/h</td>
</tr>
<tr>
<td>6”</td>
<td>1 ½ 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>¾ US gpm 0.17 m³/h</td>
<td>3100 US gpm 704.1 m³/h</td>
</tr>
<tr>
<td>8”</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>1 US gpm 0.23 m³/h</td>
<td>5000 US gpm 1135.5 m³/h</td>
</tr>
<tr>
<td>10”</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>1 US gpm 0.23 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 Ibs/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>4”</td>
<td>33</td>
<td>983</td>
<td>838</td>
<td>254</td>
<td>10</td>
<td>½ A C</td>
<td>22</td>
<td>15 ¼</td>
<td>6 ½</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>6”</td>
<td>45</td>
<td>1143</td>
<td>1143</td>
<td>281</td>
<td>11 ¾</td>
<td>⅝ B C</td>
<td>29</td>
<td>19 ¼</td>
<td>9 ½</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>8”</td>
<td>53</td>
<td>1346</td>
<td>1346</td>
<td>300</td>
<td>13 ³⁄₄</td>
<td>⅞ C B</td>
<td>34 ¾</td>
<td>21 ¾</td>
<td>12 ⅝</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>10”</td>
<td>68</td>
<td>1727</td>
<td>1727</td>
<td>376</td>
<td>14 ⅛⅛</td>
<td>⅞ C B</td>
<td>36 ⅝</td>
<td>22 ½</td>
<td>13 ⅝</td>
<td>18</td>
<td>3</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>Registration (per sweep hand revolution)</td>
<td>1”</td>
<td>1 ½”</td>
</tr>
<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>10 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>1 Cubic Metres</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>Register Capacity (6 active wheel odometer)</td>
<td>1”</td>
<td>1 ½”</td>
</tr>
<tr>
<td>1,000,000,000,000 Gallons</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>100,000,000,000 Gallons</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10,000,000,000 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10,000,000,000 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>1,000,000,000 Cubic Metres</td>
<td>✔</td>
<td>✔</td>
</tr>
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<td>1,000,000,000 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
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<td>1,000,000,000 Cubic Feet</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>100,000,000,000 Cubic Metres</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
Specifications

Application
- Cold water measurement of flow in one direction

Maximum Operating Water Pressure
- 175 psi (1206 kPa)

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

Measuring Element
- AW WA Class II turbine, hydrodynamically-balanced rotor, nutating disc

Flanges
- Round flanged ends per AW WA C207, Class D

NSF/ANSI 61 and 372 Certified

UL Listed

FM Approved

Options

Sizes
- 4", 6", 8", and 10"

300 Series Stainless Steel
Meter Body with:
- 300 series stainless steel bolts
- 300 series stainless steel strainer cover and valve cover
- Epoxy-coated steel strainer and valve cover

Units of Measure
- U.S. gallons, imperial gallons, cubic feet, cubic metres

Register Types
- Direct reading: bronze box and cover (standard)
- Reclaim

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

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

Warranty

Neptune provides a limited warranty with respect to its HP PROTECTUS III Fire Service meters for performance, materials, and workmanship.

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

Systems Compatibility

Adaptability to all present and future systems for flexibility.

Guaranteed Systems Compatibility

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

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*Consult factory for meter performance specifications when fitted with ARB.

**Non UL/FM approved