Baseline Flow Sensors and Hydrometers

Baseline’s “smart” flow sensors and hydrometers are two-wire ready flow measurement and control devices that are pre-programmed with the correct K and Offset values. In addition, all Baseline flow devices have the flow biCoder built in—no additional decoders are required. The PFS and BFS Series Flow Sensors offer industry leading low-flow accuracy and built-in diagnostic LEDs. The IDFS Series offers clamp-on indoor flow sensors. The BFM Flow Meters and BHM Hydrometers from Baseline are rugged and accurate units that feature sealed totalizers and diagnostic LEDs.

PFS Series Flow Sensor Features

- Molded Mounting Tee - improved sensor accuracy and low flow performance
- Threaded Retaining Nut - easier to service in valve box, more moisture resistant than competitive sensors
- Lightweight Impeller - improved low flow performance, detects and measures flows as low as 0.25 FPS
- Built-in two-wire decoder
- Pre-configured K and Offset values
- Sensor can be connected directly to the two-wire path on any Baseline controller - no additional equipment required
- Diagnostic LEDs - visual indication of flow, improved troubleshooting
- Detects and properly measures lower flow rates - compatible with micro and sub-surface drip applications
- Highly accurate over a large range of flows
- Available in 1", 1.5", 2", 3", 4", and 6" versions

PFS Series Flow Sensor Specifications

- Wetted Materials
  - Impeller: High Density Polyethylene
  - Shaft: Tungsten Carbide
  - O-ring: BUNA N
  - Tee, housing, and retaining nut: Type 1 PVC
- Connection Type
  - 1", 1.5", & 2" Slip
  - 3", 4", & 6" Saddle mount
- Maximum Working Pressure
  - 1", 1.5", & 2" 240 psi
  - 3", 4", & 6" 150 psi
- Recommended Flow Range
  - 1", 1.5", & 2" 0.25 to 15 FPS
  - 3" & 4" 0.25 to 12 FPS
  - 6" 0.5 to 12 FPS
- Pressure Rating: Designed to Schedule 40 specifications
- Electrical Output: Baseline two-wire, 30 VAC RMS
- Temperature Range: 32°F to 140°F (0°C to 60°C)
- Accuracy: Better than ±1% within recommended flow range
- Repeatability: Better than ±0.3% within recommended flow range

Specifications subject to change without notice
PFS Series Flow Sensor Specifications, cont.

>>>Recommended Flow Range

<table>
<thead>
<tr>
<th>Size</th>
<th>Recommended Flow Range</th>
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</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>0.86 gpm - 52 gpm</td>
</tr>
<tr>
<td>1.5&quot;</td>
<td>1.8 gpm - 108 gpm</td>
</tr>
<tr>
<td>2&quot;</td>
<td>2.8 gpm - 170 gpm</td>
</tr>
<tr>
<td>3&quot;</td>
<td>6 gpm - 300 gpm</td>
</tr>
<tr>
<td>4&quot;</td>
<td>10 gpm - 480 gpm</td>
</tr>
<tr>
<td>6&quot;</td>
<td>45 gpm - 1100 gpm</td>
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>>>Dimensions

<table>
<thead>
<tr>
<th>Size</th>
<th>Height</th>
<th>Length</th>
<th>Diameter</th>
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<tr>
<td>1&quot;</td>
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<td>1.5&quot;</td>
<td>5.097&quot;</td>
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<td>2&quot;</td>
<td>4.573&quot;</td>
<td>7.0&quot;</td>
<td>2.875&quot;</td>
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<td>3&quot;</td>
<td>6.5&quot;</td>
<td>5.0&quot;</td>
<td>5.5&quot;</td>
</tr>
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<td>4&quot;</td>
<td>7.5&quot;</td>
<td>5.0&quot;</td>
<td>7.5&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>9.75&quot;</td>
<td>5.0&quot;</td>
<td>8.5&quot;</td>
</tr>
</tbody>
</table>

How to Specify PFS Series Sensors

- BL-PFS100 – 1" Two-Wire Ready PVC Flow Sensor
- BL-PFS150 – 1.5" Two-Wire Ready PVC Flow Sensor
- BL-PFS200 – 2" Two-Wire Ready PVC Flow Sensor
- BL-PFS300 – 3" Two-Wire Ready PVC Flow Sensor
- BL-PFS400 – 4" Two-Wire Ready PVC Flow Sensor
- BL-PFS600 – 6" Two-Wire Ready PVC Flow Sensor

BFS Flow Sensor Features

- Brass bodied sensor with female NPT connections
- Threaded Retaining Nut - easier to service in valve box, more moisture resistant than competitive sensors
- Lightweight Impeller - detects and measures flows as low as 0.50 FPS
- Built-in two-wire decoder
- Pre-configured K and Offset values
- Sensor can be connected directly to the two-wire path on any Baseline controller - no additional equipment required
- Diagnostic LEDs - visual indication of flow, improved troubleshooting
- Highly accurate over a large range of flows
- Available in 1.5"

BFS Flow Sensor Specifications

- Wetted Materials
  - Impeller: High Density Polyethylene
  - Shaft: Tungsten Carbide
  - O-ring: BUNA N
  - Body and Retaining Nut Material: Lead free Bronze Alloy C89833 Federalloy® I-836
- Connections: Female Pipe Thread (NPT)
- Maximum Working Pressure: 250 psi
- Temperature Range: 32° - 140°F (0° - 60°C)
- Recommended Flow Range: 0.50 to 15 FPS
- Electrical: Baseline two-wire (30 VAC RMS)
### BFS Flow Sensor Specifications, cont.

<table>
<thead>
<tr>
<th>Size</th>
<th>Recommended Flow Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5”</td>
<td>3 gpm - 90 gpm</td>
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</table>

#### How to Specify the BFS Flow Sensor

- BL-BFS150 – 1.5” Two-Wire Ready Brass Flow Sensor

### Dimensions

<table>
<thead>
<tr>
<th>Size</th>
<th>Height</th>
<th>Length</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5”</td>
<td>4.07&quot;</td>
<td>5.00&quot;</td>
<td>2.38&quot;</td>
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</tbody>
</table>

### IDFS Series Indoor Flow Sensors

Baseline’s IDFS Series Indoor Flow Sensors have clamp-on mounting brackets that fit pipe sizes from ¼” up to 2”. These ultrasonic flow sensors send hourly flow data to the Baseline irrigation controller and to BaseManager and BACnet Manager.

#### IDFS Series Flow Sensor Features

- The sensor clamps onto the outside of a pipe and can accurately sense the flow of liquid through the pipe.
- Requires no pipe modification
- Takes ultrasonic readings
- Specifically designed for indoor use
- Integrated Baseline BL-5309 Flow biCoder
- Pre-configured K and Offset values
- Sensor can be connected directly to the two-wire path on any Baseline controller - no additional equipment required
- Available in ¼”, ½”, ¾”, 1”, 1¼”, 1½”, and 2” versions
- Settings are locked to prevent inadvertent changes. Can be unlocked with assistance from Baseline Support.

#### IDFS Series Flow Sensor Specifications

- Supported Pipe Materials
  - Pre-configured for Schedule 40 copper pipe
  - The settings can be changed to support other types of metal or resin pipe.
- Supported Fluids
  - Water
  - Oils
  - Chemicals
- Supported Fluid Temperature: 32° to 185° F (Pipe surface must be free of condensation or frost, which can affect the ultrasonic pulse)
- Flow Direction
  - Pre-configured for left-to-right flow
  - The settings can be changed to accommodate right-to-left flow
- Connection Type: Clamp on
- Repeatability: 1.5%
BFM Series Flow Meter Features

- Small, rugged, highly reliable - only one moving part
- No straight pipe installation requirement
- Highly accurate over a large range of flows
- Magnetically driven sealed register with totalizer
- Baseline two-wire ready - no decoder required
- Compatible with all Baseline controllers
- Pre-configured K and Offset values

BFM Series Flow Meter Specifications

- Maximum Working Pressure: 140 psi
- Maximum Liquid Temperature: 122 °F (50 °C)
- Body Material: Corrosion proof copper alloy with polyester coating
- Connections: Male Pipe Thread (NPT)
- Electrical: Baseline two-wire (30 VAC RMS)

IDFS Series Flow Sensor Specifications, cont.

- Maximum Rated Flow
  - ¼" 5.2 GPM
  - ¾" 7.9 GPM
  - ½" 15.9 GPM
  - ¾" 26.4 GPM
- Pipe must be full
- No air pockets in liquid to be measured
- Oil-resistant Polyurethane connector cable
- Temperature Range: 14° to 140°F (-10° to 60°C), no freezing
- Relative Humidity: 35 to 85% non-condensing
- Power Supply Voltage: 30 VDC
- Electrical Output: Baseline two-wire, 30 VAC RMS

How to Specify IDFS Series Flow Sensors

<table>
<thead>
<tr>
<th>Baseline Part #</th>
<th>Nominal Pipe Size</th>
<th>Outside Diameter</th>
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<tbody>
<tr>
<td>BL-IDFS-25</td>
<td>¼&quot;</td>
<td>13 - 16 mm</td>
</tr>
<tr>
<td>BL-IDFS-37</td>
<td>¾&quot;</td>
<td>16 - 18 mm</td>
</tr>
<tr>
<td>BL-IDFS-50</td>
<td>½&quot;</td>
<td>18 - 23 mm</td>
</tr>
<tr>
<td>BL-IDFS-75</td>
<td>¾&quot;</td>
<td>23 - 28 mm</td>
</tr>
<tr>
<td>BL-IDFS-100</td>
<td>1&quot;</td>
<td>28 - 37 mm</td>
</tr>
<tr>
<td>BL-IDFS-125</td>
<td>1¼&quot;</td>
<td>37 - 44 mm</td>
</tr>
<tr>
<td>BL-IDFS-150</td>
<td>1½&quot;</td>
<td>44 - 52 mm</td>
</tr>
<tr>
<td>BL-IDFS-200</td>
<td>2&quot;</td>
<td>52 - 64 mm</td>
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</table>

Flow Performance Information

<table>
<thead>
<tr>
<th>Size</th>
<th>Lowest (gpm ± 5%)</th>
<th>Nominal (gpm ± 2%)</th>
<th>Maximum (gpm ± 2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.75&quot;</td>
<td>0.2</td>
<td>0.9 - 11.0</td>
<td>14.0</td>
</tr>
<tr>
<td>1&quot;</td>
<td>0.3</td>
<td>1.2 - 15.4</td>
<td>20.0</td>
</tr>
<tr>
<td>1.5&quot;</td>
<td>0.9</td>
<td>3.5 - 44.0</td>
<td>55.0</td>
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Dimensions and Weight

<table>
<thead>
<tr>
<th>Size</th>
<th>Height</th>
<th>Length</th>
<th>Width</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>.75&quot;</td>
<td>4.25&quot;</td>
<td>11.25&quot;</td>
<td>3.75&quot;</td>
<td>4.8 lbs</td>
</tr>
<tr>
<td>1&quot;</td>
<td>4.25&quot;</td>
<td>14.75&quot;</td>
<td>4.25&quot;</td>
<td>7.3 lbs</td>
</tr>
<tr>
<td>1.5&quot;</td>
<td>6.75&quot;</td>
<td>17.25&quot;</td>
<td>15&quot;</td>
<td>7.6 lbs</td>
</tr>
</tbody>
</table>
How to Specify BFM Series Flow Meters

- BL-BFM075 - 0.75" Two-Wire Ready Flow Meter with Integrated Flow biCoder
- BL-BFM100 - 1" Two-Wire Ready Flow Meter with Integrated Flow biCoder
- BL-BFM150 - 1.5" Two-Wire Ready Flow Meter with Integrated Flow biCoder

BHM Series Hydrometer Specifications

- Maximum Working Pressure: 235 psi
- Minimum Working Pressure: 14 psi
- Connections: National Pipe Thread or ANSI Flange
- Body Material: Cast iron with polyester coating
- Diaphragm Material: Reinforced natural rubber
- Electrical: Baseline two-wire (30 VAC RMS)

>>>Dimensions & Weight

<table>
<thead>
<tr>
<th>Size</th>
<th>Height</th>
<th>Length</th>
<th>Width</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5&quot;</td>
<td>10.31&quot;</td>
<td>6.31&quot;</td>
<td>4.75&quot;</td>
<td>10.7 lbs</td>
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<tr>
<td>2&quot;</td>
<td>13.81&quot;</td>
<td>6.25&quot;</td>
<td>4.75&quot;</td>
<td>16.4 lbs</td>
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<td>3&quot;</td>
<td>16.94&quot;</td>
<td>9.56&quot;</td>
<td>8.25&quot;</td>
<td>52.5 lbs</td>
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<tr>
<td>4&quot;</td>
<td>17.75&quot;</td>
<td>10.94&quot;</td>
<td>9.06&quot;</td>
<td>65.5 lbs</td>
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</tbody>
</table>

>>>Flow Performance Information

<table>
<thead>
<tr>
<th>Size</th>
<th>Lowest (gpm ± 5%)</th>
<th>Nominal (gpm ± 2%)</th>
<th>Maximum (gpm ± 2%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5&quot;</td>
<td>1.8</td>
<td>4.4 - 44</td>
<td>55</td>
</tr>
<tr>
<td>2&quot;</td>
<td>5.3</td>
<td>20 - 66</td>
<td>95</td>
</tr>
<tr>
<td>3&quot;</td>
<td>14</td>
<td>53 - 176</td>
<td>220</td>
</tr>
<tr>
<td>4&quot;</td>
<td>21</td>
<td>79 - 264</td>
<td>380</td>
</tr>
</tbody>
</table>

BHM Series Hydrometer & Master Valve

- Combination master valve, water meter, and flow sensor
- Rugged, heavy-duty construction
- Fast and highly reliable double-chambered valve
- No straight pipe installation requirement
- Highly accurate over a large range of flows
- Magnetically driven sealed register with totalizer
- Baseline two-wire ready – no additional decoders required
- Compatible with all Baseline controllers
- Pre-configured K and Offset values
- Optional pressure regulation available
How to Specify BHM Series Hydrometers

- **BL-BHM150** 1.5” Two-Wire Ready Hydrometer, Normally Closed (NPT Male Threaded)
- **BL-BHM150-NO** 1.5” Two-Wire Ready Hydrometer, Normally Open (NPT Male Threaded)
- **BL-BHM200** 2” Two-Wire Ready Hydrometer, Normally Closed (NPT Female Threaded)
- **BL-BHM200-NO** 2” Two-Wire Ready Hydrometer, Normally Open (NPT Female Threaded)
- **BL-BHM300** 3” Two-Wire Ready Hydrometer, Normally Closed (Flanged)
- **BL-BHM300-NO** 3” Two-Wire Ready Hydrometer, Normally Open (Flanged)
- **BL-BHM400** 4” Two-Wire Ready Hydrometer, Normally Closed (Flanged)
- **BL-BHM400-NO** 4” Two-Wire Ready Hydrometer, Normally Open (Flanged)