UNIVERSAL®
Flow Monitors Inc.

INSITE® Series PX - IS - TX
Flow Rate Indicators and Switches
**General Description**

**DIRECT READING** scales are offered for liquid in GPM or LPM, and for air (at 90 PSI) in SCFM or SLPM. Maximum liquid flow is 3 GPM (20 LPM) to 50 GPM (200 LPM). Maximum air flow is 50 SCFM (1400 SLPM) to 500 SCFM (14000 SLPM). (For other units consult factory.)

**EASY TO READ** because of the large diameter knife-edged piston. The piston edge remains visible even through cloudy liquids.

**PUT IN ANYWHERE** Horizontally, vertically, or in between. A spring-loaded piston is used instead of a gravity float. Straight pipe runs are not required, either before or after the meter.

**PIPE IT RIGHT IN** The durable metal end fittings (available in various materials) are threaded directly to male NPT pipe. PVC end fittings are also available for applications that aggressively attack metals. Straight threaded fittings are optional at special request.

**LITTLE POWER LOSS** Maximum pressure drop at full scale flow is only 4 PSI. It does not increase beyond rated flow because the tube I.D. opens up to easily pass twice the rated maximums.

**EASY MAINTENANCE** By unscrewing the O-ring-sealed outlet fitting, all working parts (there are only three) are easily removed. The shaft, spring, piston and the large tapered bore make for easy cleaning.

**Quick Guide to Insite Models**

**INSITE Inline Flow Meters for Water, Compressed Air, and Nitrogen Gas** See Page 5

Visual indication and verification of flow rate used in cooling water and process water applications. Visual indication of Compressed Air and Nitrogen. Some applications include compressor output verification, tool usage and leak detection, blanketing and purging.

**INSITE Inline Flow Meters for Ultra Pure Water** See Page 4

Visual indication of Ultra Pure water flow rate on tools, Deionized water return lines and UPW wetbench returns.

**INSITE Inline Flow Meters for Municipal and Industrial Wastewater Treatment** See Page 3

Visual indication and verification of 1 to 5% dilute aqueous chemical solutions used in the clarification and treatment of water and wastewater.

**INSITE Inline Flow Meters Electrical Switches and Dimensions** See Page 6

Electrical contact switch high and/or low signals, switch ratings, and overall Insite dimensions.

Note: For other applications please consult our factory.
**Inline Flow Meters**

*For Municipal and Industrial Water/Wastewater Treatment*

Provides rate of flow indication for 1-5% Dilute Aqueous Chemical Solutions used in the treatment of water and wastewater

Typical Applications:
- Aluminum sulfate (Alum) - Clarification
- Chlorinated water - Disinfection
- Ferric chloride - Clarification
- Potassium permanganate - Disinfection
- Sodium bisulfite - Dechlorination
- Sodium hypochlorite (bleach) - Disinfection
- Sodium hydroxide - Neutralization
- Sulfur dioxide (in water) - Dechlorination
- Chlorine dioxide - Disinfection

**Construction Materials**

- Clear PVC Tube and Piston Flow Indicator
- Titanium Spring and Shaft
- Viton Seals
- End Fitting Material: PVC

**Specifications**

- Maximum Flow Ranges: 3 GPM (20 LPM) - 50 GPM (200 LPM)
- Required Pipe Diameters: None
- Pressure Drop: 4 PSI @ full scale flow
- Accuracy: ± 5% of full scale flow

**Temperature & Pressure**

<table>
<thead>
<tr>
<th>FLUID Temp. (°F)</th>
<th>Max. Pressure (PSIG)</th>
<th>BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>200</td>
<td>13.79</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>6.90</td>
</tr>
<tr>
<td>125</td>
<td>75</td>
<td>5.17</td>
</tr>
</tbody>
</table>

For other chemicals not listed above, consult factory for compatibility.

**HOW TO ORDER FLOW METERS:**

Select appropriate symbols, and build an ordering code as shown

**EXAMPLE:**

![Flow Meter Image]

**SPECIAL OPTIONS:**
- (No Symbol = None)
- IS1T = Installed with One Switch Kit
- IS2T = Installed with Two Switch Kit
- ST = Stainless Steel ID Tag
- SE = LED Switch Indicator Light

**SEAL MATERIAL**
- F = Viton

**FITTING MATERIAL**
- V = PVC

**PORT SIZE (NPT)**
- 4 = 1/2" 12.70mm (small series only)
- 6 = 3/4" 19.05mm
- 8 = 1" 25.40mm
- 12 = 1-1/2" 38.10mm (large series only)

**MAX FLOW SIZE & UNITS**

<table>
<thead>
<tr>
<th>SMALL SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPM</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LARGE SERIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPM</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>40</td>
</tr>
<tr>
<td>50</td>
</tr>
</tbody>
</table>

**TUBE MATERIAL**
- TX = PVC
Inline Flow Meters

Ultra Pure Water Insite Series

For Ultra Pure Water indication of flow rate to tools, on deionized water returns, and UPW returns

- Class 1000 cleaning available
- Electro polished stainless steel shaft and spring available
- PVDF (Kynar) end fittings
- Kalrez® seals

Typical Applications:
Deionized Water
Ultra Pure Water
Distilled Water
Demineralized

Construction Materials
Clear Polysulphone Tube and Piston Flow Indicator
316 Stainless Steel Spring and Shaft
Viton or Kalrez Seals
End Fitting Materials offered:
PVDF and 316 Stainless Steel

Specifications

Maximum Flow Ranges: 5GPM(20LPM) - 50GPM(200LPM)
Process Connection Sizes (NPTF) Small Tube: 1/2", 3/4", & 1"
Large Tube: 3/4", 1", 1-1/2"
Note: Consult factory for S.A.E. Straight Threads, JIS, Unions, etc. connections.
Required Pipe Diameters: None
Pressure Drop: 4 PSI @ full scale flow
Accuracy: ± 5% of full scale flow

Temperature & Pressure

<table>
<thead>
<tr>
<th>Fluid Temp. (°F)</th>
<th>Max. Pressure (PSIG)</th>
<th>BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>110</td>
<td>250</td>
</tr>
<tr>
<td>150</td>
<td>65</td>
<td>150</td>
</tr>
</tbody>
</table>

For higher temperatures and pressures consult factory.

HOW TO ORDER FLOW METERS:
Select appropriate symbols, and build an ordering code as shown.

EXAMPLE:
IS - 10 GPM - 6 - M4 - J - EP

SPECIAL OPTIONS:
(No Symbol = None)
IS1T = Installed with One Switch Kit
IS2T = Installed with Two Switch Kit
ST = Stainless Steel Identification Tag
FL = LED Switch Indicator Light
EP = Electro Polished stainless steel shaft and spring
C1 = Class 1000 cleaning
B1 = BCF End Fittings (PVDF only)

SEAL MATERIAL
J = Kalrez
F = Viton

FITTING MATERIAL
M4 = PVDF
I = 316 Stainless Steel

PORT SIZE (NPT)
4 = 1/2" 12.70mm (small series only)
6 = 3/4" 19.05mm
8 = 1" 25.40mm
12 = 1-1/2" 38.10mm (large series only)

MAX FLOW SIZE & UNITS
(Consult factory for calibrated increments)

SMALL SERIES
<table>
<thead>
<tr>
<th>GPM</th>
<th>LPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td>15</td>
<td>55</td>
</tr>
</tbody>
</table>

LARGE SERIES
<table>
<thead>
<tr>
<th>GPM</th>
<th>LPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>75</td>
</tr>
<tr>
<td>30</td>
<td>110</td>
</tr>
<tr>
<td>40</td>
<td>150</td>
</tr>
<tr>
<td>50</td>
<td>200</td>
</tr>
</tbody>
</table>

TUBE MATERIAL
IS = Polysulphone (5 to 50 GPM)
Flow Indication of Water, Compressed Air, or Nitrogen

Typical Applications:
- Cooling Water
- Process Water
- Weld Water
- Compressed Air
- Nitrogen Blanketing & Purging
- Scrubber Water
- Potable Water
- Condensate (Water)
- Ground/Pond Water
- Pool Water

Construction Materials

Clear PVC Tube and Piston Flow Indicator
Optional Clear Polysulfone Tube and Piston Flow Indicator
316 Stainless Steel Spring and Shaft
Viton Seals
End Fitting Materials offered: Brass, Aluminum, 316 Stainless Steel, & PVC

Specifications

Maximum Flow Ranges: For liquids: 3 GPM (20 LPM) - 50 GPM (200 LPM)
For Air or Gas (@ 90 PSI): 50 SCFM (400 SLPM) - 500 SCFM (14000 SLPM)
Process Connection Sizes (NPTF): Small Tube: 1/2", 3/4", & 1"
Large Tube: 3/4", 1", & 1-1/2"

Temperature & Pressure

<table>
<thead>
<tr>
<th>FLUID Temp. (°F)</th>
<th>Max. Pressure Liquid PSIG</th>
<th>Max. Pressure Air BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PVC</td>
<td>POLYSULFONE</td>
</tr>
<tr>
<td>70</td>
<td>200</td>
<td>13.79</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>6.90</td>
</tr>
<tr>
<td>125</td>
<td>75</td>
<td>5.17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>230</td>
<td></td>
<td>125</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.62</td>
</tr>
</tbody>
</table>

For chemical compatibility consult factory.

How to Order Flow Meters:
Select appropriate symbols, and build an ordering code as shown.

Example:
PX - 30 GPM - 8 - F - F

Special Options:
- IS1 = Installed with One Switch Kit
- IS2 = Installed with Two Switch Kit
- ST = Stainless Steel Identification Tag
- BVB = Brass ball valve and pressure gauge
- BVS = Stainless steel ball valve and pressure gauge
- FL = LED Switch Indicator Light

Seal Material
- F = Viton
- Consult factory for other materials

Fitting Material
- D = Aluminum
- F = Brass
- I = 316 stainless steel
- V = PVC*
*PVC tube material (series PX) only

Port Size (NPT)
- 4 = 1/2" (12.70 mm) (small series only)
- 6 = 3/4" (19.05 mm)
- 8 = 1" (25.40 mm)
- 12 = 1-1/2" (38.10 mm) (large series only)

Max Flow Size & Units
(Consult factory for calibrated increments)

<table>
<thead>
<tr>
<th>WATER</th>
<th>AIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPM</td>
<td>LPM</td>
</tr>
<tr>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td>15</td>
<td>55</td>
</tr>
</tbody>
</table>

| SMALL SERIES |
| GPM | LPM | SCFM |
| 20  | 75  | 200  |
| 30  | 110 | 300  |
| 40  | 150 | 400  |
| 50  | 200 | 500  |

| LARGE SERIES |
| GPM | LPM | SCFM |
| 30  | 110 | 300  |
| 40  | 150 | 400  |
| 50  | 200 | 500  |

Tube Material
- PX = PVC (3 to 50 GPM)
- TS = Polysulphone (5 to 50 GPM)
Electric Switch Kits and Dimensions

Electric Switch Kits

Electric switches provide high and/or low alarms, when flow rises or falls to a predetermined level. Order and install one or two switches per meter. Switches are field adjustable.

The kit contains a magnet ring that fits over the piston and is held in place by the spring. A proximity switch in the housing is triggered by a magnetic field as the piston moves past it. The proximity switch is mounted on an adjustment screw, and moves up and down to change the flow level at which it will be triggered. For more information, consult factory.

Switch Ratings and Contents

One 3-wire Reed switch, Form C contact ratings (max.)
8W: 0.3 A: 120 VAC / 100VDC
One ceramic magnet
One housing
One foam gasket
Two half-collars
Mounting hardware

How to Order Switch Kits

For small series meters, maximum flows 3-15 GPM (20-55 LPM)
Kit No. ISS-15-B (-T*)
For large series meters, maximum flows 20-50 GPM (75-200 LPM)
Kit No. ISS-50-B (-T*)
*T = Teflon coated magnet standard on Ultra-Pure and Industrial Waste Water applications.

(To order switch kits factory installed, see special options in the HOW TO ORDER FLOW METERS).