

# UNIVERSAL<sup>®</sup>

Flow Monitors Inc.



INSITE<sup>®</sup> Series PX - IS - TX  
Flow Rate Indicators and Switches



## Inline Flow Meters

- Fluid is always in sight
- Direct reading - English or Metric
- Mount in any position
- Plumb with threaded pipe
- Pressure drop only 4 PSI at full scale flow
- Electric switches available
- Cost effective

### 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

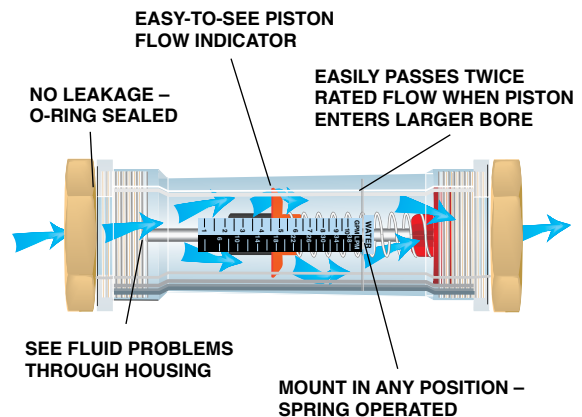
Maximum pressure drop at full scale flow is only 4 PSI. It does not increase beyond rated flow because the tube I.D. opens up to easily pass twice the rated maximums.

#### 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.

#### HOW IT WORKS:

Fluid moves the piston against the spring enough to pass a given flow around the piston periphery. The edge of the piston is visible through the transparent tube. Its position is read from a printed scale on the tube.



### 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)  
**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  
 ..... 3 GPM = ±7% of full scale flow

### Temperature & Pressure

FLUID Temp.			Max. Pressure	
(°F)	(°C)		PSIG	BAR
70	21		200	13.79
100	38		100	6.90

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:

**TX - 10 GPM - 6 - V - F - IS1T**

**SPECIAL OPTIONS:**  
 (No Symbol = None)  
**IS1T** = Installed with One Switch Kit  
**IS2T** = Installed with Two Switch Kit  
**ST** = Stainless Steel ID Tag  
**FL** = 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**  
 (Consult factory for calibrated increments)

SMALL SERIES	
GPM	LPM
3	N/A
5	20
<b>10</b>	<b>38</b>
15	55

LARGE SERIES	
GPM	LPM
20	75
30	110
40	150
50	200

**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

FLUID Temp. (°F) (°C)		Max. Pressure PSIG BAR	
<b>Meters with 316 Stainless Steel Fittings</b>			
210	99	200	13.8
<b>Meters with PVDF Fittings</b>			
120	49	150	10.35

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)

<b>4</b>	= 1/2"	12.70mm (small series only)
<b>6</b>	= 3/4"	19.05mm
<b>8</b>	= 1"	25.40mm
<b>12</b>	= 1-1/2"	38.10mm (large series only)

#### MAX FLOW SIZE & UNITS

(Consult factory for calibrated increments)

##### SMALL SERIES

GPM	LPM
5	20
<b>10</b>	<b>38</b>
15	55

##### LARGE SERIES

GPM	LPM
20	75
30	110
40	150
50	200

#### TUBE MATERIAL

**IS** = Polysulphone (5 to 50 GPM)



## Inline Flow Meters

### Flow Indication of Water, Compressed Air, or Nitrogen

#### Typical Applications:

- |                               |                    |
|-------------------------------|--------------------|
| Cooling Water                 | Scrubber Water     |
| Process Water                 | Potable Water      |
| Weld Water                    | Condensate (Water) |
| Compressed Air                | Ground/Pond Water  |
| Nitrogen Blanketing & Purging | 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: 3GPM(20LPM) 50GPM(200LPM)  
 For Air or Gas (@ 90 PSI): 50SCFM(400SLPM) - 500SCFM(14000SLPM)  
**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

FLUID Temp.		Max. Pressure			
(°F)	(°C)	Liquid		Air	
		PSIG	BAR	PSIG	BAR
<b>PVC</b>					
70	21	200	13.79	60	4.1
100	38	100	6.90	50	3.41
<b>POLYSULFONE</b>					
210	99	200	13.8	60	4.1

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:

(No Symbol = None)

- 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" 12.70mm (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)

WATER		AIR	
SMALL SERIES			
GPM	LPM	SCFM	SLPM
3	-	-	-
5	20	50	1400
10	38	100 (PVC=90)	2500
15	55	135	3600
LARGE SERIES			
GPM	LPM	SCFM	SLPM
20	75	200	5500
<b>30</b>	110	300	8000
40	150	400	11000
50	200	500	14000

#### TUBE MATERIAL

- PX** = PVC (3 to 50 GPM)
- IS** = Polysulphone (5 to 50 GPM)



## Inline Flow Meters

### 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\*)**

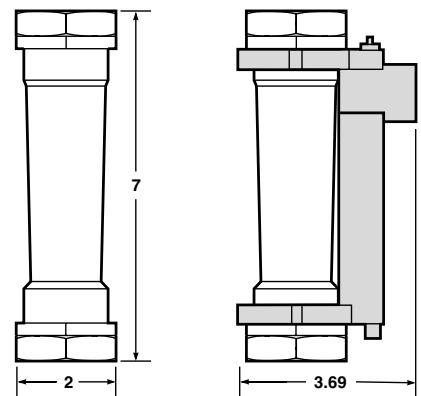
\*-T = Teflon coated magnet standard on Ultra-Pure and Industrial Waste Water applications.

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

#### Dimensions

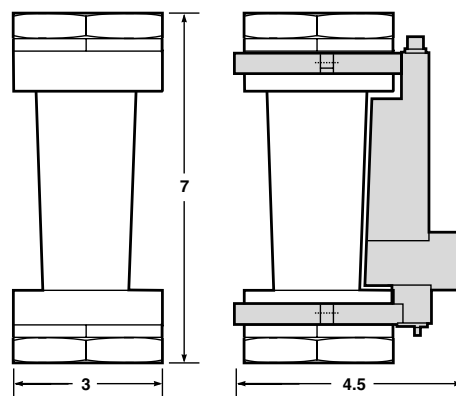
Approximate in inches

##### Small Size Tube



With switch installed

##### Large Size Tube



With switch installed



### Universal Flow Monitors, Inc.

1755 E. Nine Mile Road ▪ P.O. Box 249 ▪ Hazel Park, MI 48030 ▪ Tel: 248-542-9635 ▪ Fax: 248-398-4274  
www.universalfow.com ▪ E-mail: sales@universalfow.com