

# AQUASONIC

## INSERTION ULTRASONIC FLOW METER



The AQUASONIC takes our highly accurate Ultrasonic insert and adds our very popular Q9 Display. The AQUASONIC provides an accurate reading of water flow rate and accumulated total. It is designed to support commercial and industrial applications. The AQUASONIC is available in five line sizes, 1 to 4 in.

### FEATURES / BENEFITS

- Low-cost, effective and easy installation
- No moving mechanical parts (low-maintenance)
- Pin protection, four digit user selectable
- 2 Totals (Batch Total and Accumulative Total); Rate of Flow
- Factory calibrated in gallons or litres
- Diagnostic Meter show % of battery life only on battery powered AQUASONIC
- High accuracy:  $\pm 2.0\%$  of reading (compared to full scale accuracy)
- Provides extended leak detection down to 0.1 fps (0.03 m/s)
- Patented design
- Many field configurable options for ease of operation

### SPECIFICATIONS

<b>Tee Housing Material:</b>	Schedule 80 PVC
<b>Connection Type:</b>	Socket, NPT, BSP, DIN, ANSI Flange
<b>Meter Sizes Available:</b>	1 in., 1½ in., 2 in., 3 in., 4 in.
<b>Insert Wetted Materials:</b>	<b>Body:</b> PPS (Ryton R-4)
	<b>Sensor:</b> PEI (Ultem 1000)
	<b>O-Ring:</b> EPDM
<b>Temperature Rating:</b>	
<b>Operating:</b>	32° F to 140° F (0° C to 60° C)
<b>Storage:</b>	-20° F to +160° F (-29° C to +71° C)
<b>Flow Range:</b>	0.1 to 15 fps (0.03 to 4.6 m/s)
<b>Accuracy:</b>	Typically $\pm 2\%$ of reading
<b>Operating Pressure:</b>	203 psi @ 73° F (14 bar @ 23° C) (Socket Tee only)
	150 psi @ 140° F (10 bar @ 60° C) (Socket Tee only)
<b>Transducer Excitation:</b>	External Power - (4-20mA / Scalable Pulse Output Versions) Supply Voltage: 7.5V (dc) min. to 36V (dc) max, Battery Power - Lithium C
	Quiescent Current: 200 $\mu$ A (typical)
<b>Output Frequency:</b>	0 to 100 Hz (4-20mA / Scalable Pulse Output Versions)
<b>Output Pulse Width:</b>	Scaled Pulse configuration options: Limited to max of 50% duty cycle, User selectable pulse widths of 10ms, 25ms, 50ms, 75ms, & 100ms (4-20mA / Scalable Pulse Output versions)
<b>Electronic Options:</b>	Battery-Powered (2-Year Life) or External Power

### INSERT DESCRIPTION

Designed for above and below grade applications, such as irrigation, municipal and underground monitoring where the flow rates are between 0.1 to 15 fps (0.03 to 4.6 m/s) and temperatures are below 140° F (60° C). UM can be configured in 4-20mA, Pulse Out, or battery powered options, and in 5 tee options.

### APPLICATIONS

- Irrigation & Fresh Water Pumping Station
- Industrial Effluent Water
- OEM Water Treatment equipment/skids
- Water Base Cooling System
- Groundwater Remediation
- Sub-metering of Facility Water System
- Plant Water System

### CERTIFICATIONS/WARRANTY

IP67 CE RoHS



Wichita / Sydney

GREAT PLAINS INDUSTRIES

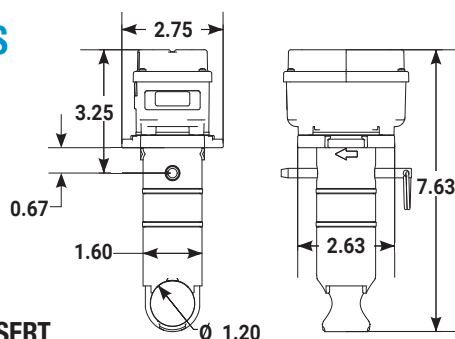


# AQUASONIC INSERTION ULTRASONIC FLOW METER

## FLOW INSERT SELECTION CHART

Pipe Size	Operating Range (Min.)	Operating Range (Max.)	Adjoining Pipe	Typical <sup>1</sup> K-Factor	Hydrawise® <sup>2</sup> K-Factor (Litre/Pulse)	Rain Master® K-Factor	Offset	Reference	
								Pulses/Gal	Pulses/Litre
1 in.	0.22 GPM (0.83 L/min) 0.1 ft/sec	33 GPM (124.92 L/min) 15 ft/sec	Sch 40	0.5575	0.0352	152	0	107.62	28.43
			Sch 80	0.5354	0.0338	146	0	112.06	29.60
1-½ in.	0.55 GPM (2.08 L/min) 0.1 ft/sec	82 GPM (310.41 L/min) 15 ft/sec	Sch 40	0.7923	0.0500	216	0	75.73	20.00
			Sch 80	0.7860	0.0496	214	0	76.34	20.17
2 in.	0.92 GPM (3.48 L/min) 0.1 ft/sec	138 GPM (522.39 L/min) 15 ft/sec	Sch 40	1.4610	0.0922	398	0	41.07	10.85
			Sch 80	1.4568	0.0919	397	0	41.19	10.88
3 in.	2.06 GPM (7.80 L/min) 0.1 ft/sec	309 GPM (1169.70 L/min) 15 ft/sec	Sch 40	4.2630	0.2690	1163	0	14.07	3.72
			Sch 80	4.0850	0.2577	1114	0	14.69	3.88
4 in.	3.58 GPM (13.55 L/min) 0.1 ft/sec	537 GPM (2032.78 L/min) 15 ft/sec	Sch 40	8.0881	0.5103	2206	0	7.42	1.96
			Sch 80	7.9062	0.4988	2156	0	7.59	2.00
Insert Only			Sch 80	Use pipe size to determine value			0	Use pipe size to determine value	

## DIMENSIONS



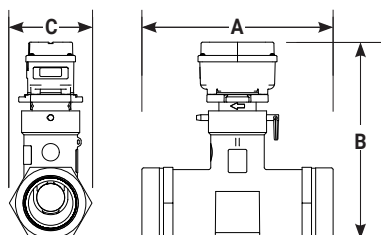
### AQUASONIC INSERT

**K-Factor Information:** NOTE: The meter size is molded on the vertical stem of the Tee. FLOMEC ultrasonic meters use K-Factor plus offset numbers for greater accuracy during calibration. These values are derived by calibrating the meters using NIST traceable instrumentation. Using both sets of values to calibrate the meters provides greater accuracy than using only a K-factor value. The K-factor and offset values for each meter are listed above.

**IMPORTANT:** The K-factors provided are for reference. Accuracy can be affected by plumbing configuration, fluid condition, adjoining pipe schedule, type of meter tee (non-FLOMEC brand), and entrapped air. Customers should always validate accuracy and adjust K-factor as needed. If using non-FLOMEC tees, K-Factor will be different than those shown. Inconsistencies with these tees affect any stated value. Customers must verify accuracy if concerned.

### 1, 1-1/2, & 2 INCH METERS

Meter Size & Fitting	A. Length	B. Height	C. Width
1-Inch Socket	4.25 in. (108mm)	7.63 in. (194mm)	2.75 in. (70mm)
1-Inch NPT	6.50 in. (165mm)	7.63 in. (194mm)	2.75 in. (70mm)
1-Inch BSP	6.73 in. (171mm)	7.63 in. (194mm)	2.75 in. (70mm)
1½-Inch Socket	4.90 in. (125mm)	7.87 in. (200mm)	2.75 in. (70mm)
1½-Inch NPT	7.44 in. (189mm)	7.91 in. (201mm)	2.87 in. (73mm)
1½-Inch BSP	7.40 in. (188mm)	7.87 in. (200mm)	2.75 in. (70mm)
2-Inch Socket	5.56 in. (141mm)	8.36 in. (212mm)	2.88 in. (73mm)
2-Inch NPT	8.22 in. (209mm)	8.44 in. (214mm)	3.55 in. (90mm)
2-Inch BSP	8.09 in. (205mm)	8.36 in. (212mm)	2.88 in. (73mm)



### 3 & 4 INCH METERS

Meter Size & Fitting	A. Length	B. Height	C. Width
3-Inch Socket	6.63 in. (168mm)	9.45 in. (240mm)	4.18 in. (106mm)
3-Inch NPT	14.06 in. (357mm)	9.45 in. (240mm)	4.25 in. (108mm)
3-Inch ANSI Flange	13.25 in. (337mm)	11.11 in. (282mm)	7.50 in. (191mm)
3-Inch DIN Flange	13.25 in. (337mm)	11.36 in. (289mm)	8.00 in. (203mm)
4-Inch Socket	7.38 in. (188mm)	10.66 in. (271mm)	5.23 in. (133mm)
4-Inch NPT	16.31 in. (414mm)	10.66 in. (271mm)	5.87 in. (149mm)
4-Inch ANSI Flange	13.22 in. (336mm)	12.55 in. (318mm)	9.00 in. (229mm)
4-Inch DIN Flange	13.22 in. (336mm)	12.30 in. (313mm)	8.50 in. (216mm)

