

QS200 SERIES

INSERTION ULTRASONIC FLOW SENSOR



The FLOMEC® QS200 Insertion Ultrasonic Flow Sensor provides an accurate reading of liquid flow rate and accumulative flow. Designed to support commercial irrigation applications, the QS200 is available in five pipe sizes, 1 to 4 in.

Can be a drop-in replacement for most insert paddle wheels that have been installed in a gray schedule 80 PVC tee (1.5" - 4" tee) with a quick release pin. Recommend tee and sensor replacement to ensure complete functionality and minimize false readings or fitment issues.

FEATURES / BENEFITS

- Low-cost, effective and easy installation
- No moving mechanical parts (low-maintenance)
- Conventional Irrigation: Two-wire connection (for power and pulse)
- Compatible with most irrigation controllers that have a flow sensor input. See our QS200 K-factor calculator for controller compatibility.
<https://FLOMECmeters.com/pages/qs200-k-factor-calculator>
- 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)
- LED light indicators: (green for power and amber for pulse)
- Patented design
- External wiring: (direct burial wire)

SPECIFICATIONS

Technology:	Ultrasonic
Line Size:	1 in., 1½ in., 2 in., 3 in., 4 in.
Accuracy (% of Reading):	Typically $\pm 2\%$
Material Housing:	Schedule 80 PVC
Fitting Type:	Socket (Female)
Flow Range:	0.1 to 15 fps (0.03 to 4.6 m/s)
Transducer Excitation:	Supply Voltage: 7.5V (dc) min. to 36V (dc) max Quiescent Current: 200 μ A (typical)
Operating Pressure:	203 psi @ 73°F (14 bar @ 23°C) 150 psi @ 140°F (10 bar @ 60°C)
Operating Temperature:	32°F to 140°F (0°C to 60°C)
Wetted Materials:	Body: PPS (Ryton® R-4) Sensor: PEI (Utem 1000) O-Ring: EPDM
Out Frequency:	0 to 100 Hz
Output Pulse Width:	4 ms
Electrical Cable for Insert Electronics:	36 inches (91.4 cm) of 18 AWG, solid copper, "Direct Burial" (UL 493 & 83)

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). QS200 inserts are supplied with two single conductors, 18 AWG solid copper wire leads that are 36 inches (91.4 cm) in length with UL Style 116666 direct burial insulation.

APPROVALS / WARRANTY



APPLICATIONS (Typical application but not limited to)

- Turf / Landscape Irrigation Systems
- Agriculture Irrigation
- Micro Irrigation Systems
- Greenhouse and Grow house
- Groundwater Monitoring
- Reclaimed (Recycled) Water
- Greywater



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FLOW INSERT SELECTION CHART

Flow Sensor Model	Pipe Size	Operating Range (Min.)	Operating Range (Max.)	Adjoining Pipe	Typical¹ K-Factor	Hydrawise®² K-Factor (Litre/Pulse)	Rain Master® K-Factor	Offset	Reference	
									Pulses/Gal	Pulses/Litre
QS200-10	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
QS200-15	1½ 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
QS200-20	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
QS200-30	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
QS200-40	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
QS200	Insert Only			Sch 80	Use pipe size to determine value			0	Use pipe size to determine value	

¹ Controller Brands: Baseline™, Calsense, Hunter®, HydroPoint® (WeatherTrak®), Rain Bird®, Toro®, @Tucor, and Weathermatic®. ² Hydrawise® HCC models only.

K-Factor Information:

NOTE: The meter size is molded on the vertical stem of the tee.

FLOMEC® ultrasonic sensors use K-Factor plus offset numbers for greater accuracy during calibration. These values are derived by calibrating the sensors using N.I.S.T. traceable instrumentation. Using both sets of values to calibrate the sensors provides greater accuracy than using only a K-factor value. The K-factor and offset values for each sensor 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.

DIMENSIONS

	Dimension "A"	Dimension "B"	Dimension "C"
QS200 INSERT	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	5.2 in. (13.2 cm)
QS200-10 QS200-10PW 1 in.	4.3 in. (10.9 cm)	2.5 in. (6.4 cm)	5.4 in. (13.7 cm)
QS200-15 QS200-15PW 1½ in.	4.9 in. (12.4 cm)	2.5 in. (6.4 cm)	5.6 in. (14.2 cm)
QS200-20 QS200-20PW 2 in.	5.6 in. (14.2 cm)	2.9 in. (7.4 cm)	6.1 in. (15.5 cm)
QS200-30 QS200-30PW 3 in.	6.6 in. (16.8 cm)	4.2 in. (10.7 cm)	7.2 in. (18.3 cm)
QS200-40 QS200-40PW 4 in.	7.4 in. (18.8 cm)	5.2 in. (13.2 cm)	8.4 in. (21.3 cm)

