

## QSE MAG FLOWMETER

The **FLOMEC® QSE Mag Series** is a dependable highly accurate electromagnetic flowmeter designed for flow and usage monitoring in commercial applications, such as wastewater that is dumped into a city sewer system.

The Noryl™ housing and flow tube offer a lightweight, easy-to-install Mag Meter that is resistant to heat and compatible with many water-based liquid solutions. **This plastic Mag Meter is specifically designed to be used in applications where plastic piping is used.**

The QSE Mag Meter monitors flow rate and total flow in a wide variety of applications including: HVAC, Turf/ Irrigation and other water reclamation applications.

### FEATURES / BENEFITS

- Low investment and operating costs
- $\pm 0.5\%$  Accuracy of Reading (from 0.25 fps to 15 fps [0.08 to 4.6 m/s])
- Wide turndown ratio of 60:1
- Non-intrusive, no moving parts to wear out, low maintenance and repair cost, tolerates high flows without damage
- The slightly modified bore permits unobstructed flow, minimizes flow disturbances and straight pipe requirements
- Seven line sizes ( $\frac{1}{2}$ " to 4")  $\frac{1}{2}$ ",  $\frac{3}{4}$ ", 1", 1- $\frac{1}{2}$ ", 2", 3", and 4"  
**FOR INSTALLATION ON PLASTIC PIPE ONLY**
- Housing ported with "Thermal Well Supports" for sensors (Energy Management)
- Compatible with FLOMEC Q9 Electronics Display or FLOMEC QSI I/O Board

## PRODUCT CONFIGURATION

### 1 PRODUCT IDENTIFIER:

**QSE** = Electro-Magnetic Flowmeter

### 2 TURBINE SIZE:

**05** =  $\frac{1}{2}$ " (15 mm)

**07** =  $\frac{3}{4}$ " (20 mm)

**10** = 1" (25 mm)

**15** = 1- $\frac{1}{2}$ " (40 mm)

**20** = 2" (50 mm)

**30** = 3" (80 mm) (Flange Only)

**40** = 4" (100 mm) (Flange Only)

### 3 FITTING:

**NPT** = NPT (Male) ( $\frac{1}{2}$ " to 2" Only)

**BSP** = BSPP (Male) (ISO 228) ( $\frac{1}{2}$ " to 2" Only)

**FAP** = ANSI Flange - Polymer (3" & 4" Only)

### 4 ELECTRONIC CHOICE:

**Q9** = 2-Button Integral Display with 2 Totals (Batch Total = Resettable, Total = Non-Resettable) and Rate of Flow. Also provides a Scaled Pulse Output (NPN Open Collector).

**42** = 2-Button Integral Display with 2 Totals (Batch Total = Resettable, Total = Non-Resettable) and Rate of Flow. Also provides 4-20 mA Output and Scaled Pulse Output (NPN Open Collector).

**QB** = Integral Pulse Transmitter, Unscaled Pulse Output (NPN Open Collector)

### 5 COMMUNICATION CHOICE:

**Q1** = QSI Module: Bluetooth®, Pulse Output (Flow or Energy and Scalable), RS485 (Modbus RTU or BACnet® MS/TP), Temperature Inputs, BTU Calculator. Energy Use Computation *Note: Energy Use Computation Requires Temperature Sensor Probes (Select Probes Below). No Local Display Option.*

**Q2** = QSI Module: Bluetooth®, Pulse Output (Flow or Energy and Scalable), Temperature Inputs, BTU (Heat) Calculator. Energy Use Computation *Note: Energy Use Computation Requires Temperature Sensor Probes (Select Probes Below). No Local Display Option.*

**Q3** = QSI Module: Bluetooth®, Pulse Output (Scalable), 4-20mA. *No Local Display Option.*

**XX** = No Communication Suite. Required for Q9 and 42 Electronic Choice.

### 6 TEMPERATURE SENSOR PROBES (NOT NSF Certified):

**1** = Integrates with QSI Communications Choice for Energy Use Computation (2ea) 1" (25 mm) Long Temperature Sensor Probes w/Cables (10 ft. [3 m]), Used with  $\frac{1}{2}$ " through 2" Meters

**2** = Integrates with QSI Communications Choice for Energy Use Computation (2ea) 2" (50 mm) Long Temperature Sensor Probes w/Cables (10 ft. [3 m]), Used with 3" and 4" Meters

**X** = No Temperature Probes

### 7 PACKAGING:

**A** =  $\frac{1}{2}$ " - 2" Meters with Q9 or QB Electronics Choice

$\frac{1}{2}$ ",  $\frac{3}{4}$ " and 1" Meters with 42 Electronics Choice

**B** = 3" Meter

**C** = 4" Meter

**D** = 1- $\frac{1}{2}$ " and 2" Meters with 42 Electronics Choice



>>>> **1** **2** **3** **4** **5** **6** **7**  
QSE 30 FAP Q9 XX X B

## SPECIFICATIONS

<b>Fitting Type:</b>	NPT, BSP, ANSI Flanged	
	1/2" to 2" - NPT (Male), BSPP (Male) (ISO 228)	
	3" and 4" 150# ANSI Flanged - Polymer Flange	
<b>Recommended Plastic Flange Bolt Torque:</b>	25 ft.-lbs. (33.9 N-m)	
<b>Pipe Sizes:</b>	1/2", 3/4", 1", 1-1/2", 2", 3", 4"	
<b>Pressure Rating:</b>	150 psi @ 70° F (10.3 bar @ 21° C)	
<b>Velocity:</b>	0.25 to 15 fps (0.08 to 4.6 m/s)	
<b>Flow:</b>	1/2" (05)	0.167 - 10 GPM (0.632 - 37.85 L/min)
	3/4" (07)	0.33 - 20 GPM (1.25 - 75.71 L/min)
	1" (10)	0.67 - 40 GPM (2.54 - 151.42 L/min)
	1-1/2" (15)	1.33 - 80 GPM (5.03 - 302.83 L/min)
	2" (20)	2.5 - 150 GPM (9.46 - 567.81 L/min)
	3" (30)	5 - 300 GPM (18.93 - 1135.62 L/min)
	4" (40)	10 - 600 GPM (37.85 - 2271.25 L/min)
<b>Accuracy</b>		
±0.5% of Reading between 0.25 fps and 15 fps (0.08 m/s and 4.6 m/s) (Reference Owner's Manual for complete accuracy and uncertainty specifications)		

<b>Operating Temperature Range:</b>	32° F to 180° F (0° C to 82° C)	
<b>Ambient Temperature Range:</b>	0° F to 140° F (-18° C to 60° C)	
<b>Typical K-Factor:</b>	1/2" (05)	4347 PPG (1148.4 Pulses/L)
	3/4" (07)	1937 PPG (511.7 Pulses/L)
	1" (10)	1089 PPG (287.7 Pulses/L)
	1-1/2" (15)	484.1 PPG (127.9 Pulses/L)
	2" (20)	400 PPG (105.7 Pulses/L)
	3" (30)	121 PPG (32.0 Pulses/L)
	4" (40)	68.1 PPG (18.0 Pulses/L)
<b>Power Supply:</b>	Externally Powered	
	Voltage Supply (Min): 12V (dc)	
	Voltage Supply (Max): 36V (dc)	
<b>Consumption:</b>	Max current consumption (QSE with QSB): 75mA	
	Max current consumption (QSE with QSI): 150mA	
<b>Wetted Materials:</b>	Body	Noryl™
	Electrodes	316L SS
	Seals	EPDM O-Rings
<b>Output Frequency Range:</b>	All Sizes	10 Hz Minimum - 1,000 Hz Maximum
<b>Calibration Report:</b>	N.I.S.T. Certification Available	

## APPLICATIONS

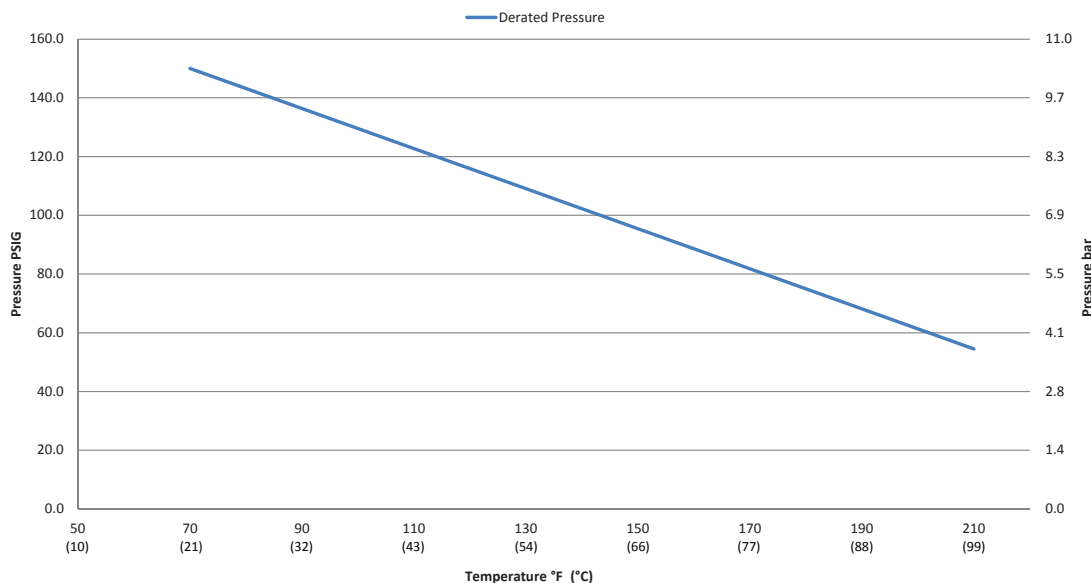
- Waste Water Monitoring
- Agriculture Irrigation
- Turf Irrigation Systems
- Micro Irrigation Systems
- EMS (Energy Management Systems)
- Reclaimed (Recycled) Water
- Greywater
- BAS (Building Automation Systems)
- Chilled water
- Domestic water (hot and cold)
- Energy sub-metering (BTU hot and cold)
- OEM Water Treatment Skids
- Cooling Tower Bleed-Off

## CERTIFICATIONS

IP67



**Derated Pressure Curve for QSE (Pressure vs Temperature)**



Wichita · Sydney

GREAT PLAINS INDUSTRIES



**Service & Warranty:** For technical assistance, warranty replacement or repair contact your FLOMEC® or GPI® distributor: In North or South America: **888-996-3837 / FLOMECmeters.com**  
Outside North or South America: **+61 2 9540 4433 / FLOMECmeters.com**



## SPECIFICATIONS

Standard Factory Configuration:	2 Totals (1 Resettable, 1 Cumulative); Factory Calibration in gallons or litres; User Calibration and Rate of Flow Indication
Display Electronics:	Q9 Electronics can be used on G2, TM, A1, and QSE Series Meters
Totalizing Registers:	Cumulative and Batch
K-Factor Limits:	Min: 0.001 pulses/unit; Max: 999,999 pulses/unit
Field Calibration:	Field calibrate by user methods: <ul style="list-style-type: none"> <li>• K-factor entry</li> <li>• Correction Factor (% Adjust)</li> <li>• Dispense Display</li> </ul>
Readout Totals:	LCD with floating decimal: Minimum Display = 0.001 units; Maximum Display = 999,999 x 100 units (6 digits)
Input Pulse Rate:	Frequency Range is 0.25 Hz - 3 kHz
Turbine Display:	
Internal Power Supply:	2 Alkaline AAA batteries at 1.5 volts each
Alkaline Battery Life:	Typically 2 Years
Temperatures:	
Operating Temperature (FM/ATEX Approved Meters):	0° F to +129° F (-18° C to +54° C)
Operating Temperature (Non-Approved Meters):	0° F to +140° F (-18° C to +60° C)
Storage Temperature:	-40° F to +158° F (-40° C to +70° C)

## APPROVALS\*\*

Select A1 & G2 models\*



## Q9 DISPLAY

The Q9 is the latest version of the popular FLOMEC computer display. It incorporates many of the most requested features over the years including low battery indication and the ability to display custom units with a name label. Optional plug-in daughterboards for 4-20mA, scaled pulse, and external power supply are easily added as original equipment or as a retrofit in the field. All of the daughterboard parameters are addressable through the two buttons on the Q9 display. An additional new feature is the ability to display velocity as well as rate and totals. Packaged in the same form as the familiar FLOMEC display, the Q9 operates on two AAA batteries with approximately 2 years of operation and maintains all of the same intrinsically safe approvals of past products.

## FEATURES / BENEFITS

- Highly Visible LCD characters against a yellow-tinted background
- Many Field Configurable options for ease of operation including diagnostic mode and custom unit name
- Easily retrofit to most existing FLOMEC turbines
- Maximum versatility with optional pre-configured plug-in daughterboards to supply 4-20mA and Scaled Pulse
- Convenient Battery Power Level indication with automatic low battery warning
- Safety first design with FM Class 1, Div 1; ATEX; IECEx; cFM; CE approvals on select A1 and G2 models
- Providing operator consistency for all of your meters, the Q9 can be used with G2, TM, A1, and QSE Series Meters
- Ultimate ease of operation with permanent pre-programmed 5 point factory calibration
- Accommodates a wide range of technical expertise with 3 Field calibration methods (K-Factor, Correction Factor or Dispense Display)
- For simple Plug and Play installation, the Q9 is factory calibrated set to display Cumulative Total, Re-Settable Batch Total and Rate

## USER CONFIGURATION

- PIN Protected, four-digit user selectable
- 11 pre-programmed engineering units and one user-configurable custom unit
- Alphanumeric information line for on-screen instructions and custom unit name
- Four pre-programmed, user-selectable time bases (Day, Hour, Min., Sec.)
- Configurable screen update frequency
- A user-selectable low-frequency filter
- Field Calibration is retained when switched to Factory Cal so you can have two accessible calibrations available
- Three field calibration methods available (1 point Dispense Display, 5 point Correction Factor, 5 point K-Factor)
- Diagnostic mode shows % battery life remaining

\*See A1 & G2 Data Sheets for models that qualify for approvals.

\*\*All Q9 Displays have the CE approval.

OTHER ELECTRONICS OPTIONS†

- P9** = Pulse Output Module installed between the local display and the meter body
- Provides a Scaled NPN Open Collector Pulse
  - Can provide External Power to the local display
  - Comes with 10 ft. of installed cable
- 42** = 4-20 mA Module installed between the local display and the meter body
- Provides a 4–20 mA signal
  - Provides a Scaled NPN Open Collector Pulse
  - Can provide External Power to the local display
  - Comes with 10 feet of installed cable
- PO** = Pulse Output Module installed in place of the display (blind meter)
- Provides an Unscaled NPN Open Collector Pulse
- R9** = Replacement Q9 Computer Display for a meter body that has an old 09 display<sup>1</sup>
- Comes with the extra parts required to retrofit a Q9 display in place of an 09 display

<sup>†</sup>Separate data sheets available.  
<sup>1</sup>FM/ATEX Approved when replacing a FM/ATEX Approved 09 display on a FM/ATEX Approved A1 or G2 meter.

DIMENSIONS

Length "A"	Height "B"	Height (Mounted) "C"	Width (Widest Point) "D"
3.40 in. (8.6 cm)	0.85 in. (2.1 cm)	0.72 in. (1.8 cm)	2.14 in. (5.4 cm)

