A1 SERIES FLOWMETERS, ALUMINUM OPTION

FLOMEC® A1 Series Meters are designed as self-contained, battery-powered units. Select the A1 Series when you need an accurate meter for thin petroleum-based fluid applications.

- Available in Aluminum
- Available in three sizes
- Designed for thin petroleum based fluids

FEATURES / BENEFITS

- Unique package combines Turbine and LCD into a self-contained, compact, economical meter
- Local Display Computer features: 2 Non-Volatile Totals (Batch Total = Resettable, Total = Non-resettable) and Rate of Flow
- Output capabilities available to communicate with process control equipment
- Lightweight, compact design allows for easy installation
- AAA Alkaline battery life: 2 years
- 12 selectable engineering units (gallons or liters are standard defaults)
- Factory calibration

APPLICATIONS

- Fuel Transfer
- Batching / Blending
- Fuel Products

PRODUCT CONFIGURATION

1 PRODUCT IDENTIFIER:

A1 = Electronic Digital Meter

2 ELECTRONIC CHOICE:

Computer Display, Meter Mounted
Q9 = Q9 2-Button Computer

*Computer Display & Module, Meter Mounted**
P9 = Q9 2-Button Computer w/Pulse Out Module, includes External Power and 10 ft. of Cable
42 = Q9 2-Button Computer w/4-20mA Module and 10 ft. of Cable

*Module, Meter Mounted (No Display)**
PO = Pulse Out (Unscaled) Conditioned Signal Module w/Cable

Retrofit Computer Kit (Display Only)
R9 = Q9 2-Button Computer Retrofit Kit (Replaces 09 Display)

No Electronics - Turbine Only
XX = No Electronics - Turbine Only

**All Electronics Approvals Void*

3 CALIBRATION:

GM = Factory Default Calibration in Gallons
LM = Factory Default Calibration in Liters
XX = No Computer

4 TURBINE SIZE:

A025 = Aluminum - Low Flow
A100 = Aluminum - 1 inch
A200 = Aluminum - 2 inch
X### = No Turbine**

***When ordering Display Only, the ### should be the turbine size.*

5 FITTING TYPE:

N = NPT (Female)
I = ISO (Female) BSPT
B = BSPP Female
X = No Turbine

6 PACKAGING:

With FM, ATEX & IEC Approval for HAZARDOUS AREA
A1 = Standard or Low Flow, 1 inch (w/Q9 & R9 Electronics Choice)
A2 = Standard, 2 inch (w/Q9 & R9 Electronics Choice)
B1 = Standard or Low Flow, 1 inch Turbine Only
B2 = Standard, 2 inch Turbine Only
B3 = Display Only

Non-Approved Version - SAFE AREA ONLY
C2 = Low Flow through 2 inch Turbines (w/P9, 42, & PO Electronics Choice)

	1	2	3	4	5	6
--->>>>	A1	Q9	GM	A100	N	A1

APPROVALS†

CE, ATEX, NEMA 4, FM APPROVED, FM APPROVED, IP65, IEC, IECEx

†All A1 Series Q9 Displays have the CE, NEMA 4, and IP65 approval.

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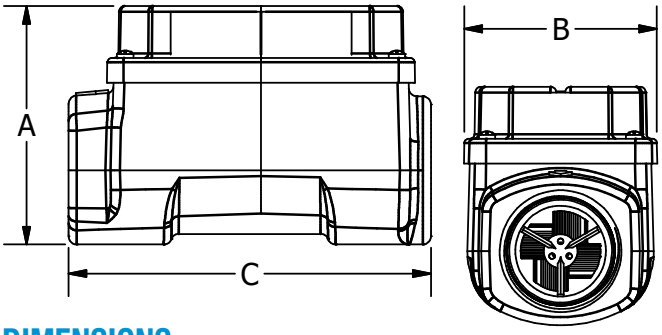
SPECIFICATIONS

Meter Sizes Available:		A025 (Low Flow), A100 (1 inch), A200 (2 inch)	
Design Type:	A025	Paddlewheel	
	A100	Turbine	
	A200	Turbine	
Fitting Size / Fitting Type:	A025	1 inch / NPT, ISO+ or BSPP (Female)	
	A100	1 inch / NPT, ISO+ or BSPP (Female)	
	A200	2 inch / NPT, ISO+	
Flow Range:	A025	0.3 - 3 GPM	1 - 11 L/min
	A100	3 - 50 GPM	11 - 190 L/min
	A200	30 - 300 GPM	114 - 1,135 L/min
Accuracy (% of Reading):		A025: Application Dependent[1]	
		A100, A200: ± 1.5%	
Repeatability:		A025	± 1.0%
		A100	± 0.2%
		A200	± 0.2%

+ISO 7 Designation is RC.
[1]Accuracy can vary up to ± 5% depending on installation and fluid type. Field calibration is recommended for best accuracy.



DIMENSIONS

	A025, 1 in. Low Flow	A100, 1 in.	A200, 2 in.
A = Height*	2.5 in. (6.3 cm)	2.5 in. (6.3 cm)	4.25 in. (11.4 cm)
B = Width	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	3.0 in. (7.6 cm)
C = Length	4.0 in. (10.1 cm)	4.0 in. (10.1 cm)	6.0 in. (15.2 cm)

**Height includes 0.7 in. (1.8 cm) for the computer electronics.*

Pressure Rating (Aluminum):		300 psi (21 bar)	
Operating Temperature Range:		-40° F to 250° F (-40° C to 121° C)	
with Safe Area Only Display:		0° F to 140° F (-18° C to 60° C)	
with Intrinsically Safe Display:		0° F to 129° F (-18° C to 54° C)	
Typical K-Factor:	A025	2,200 PPG (581 Pulses/L)	
	A100	730 PPG (193 Pulses/L)	
	A200	72 PPG (19 Pulses/L)	
Frequency Range:	A025	11-110 Hz @ 0.3-3 GPM (1-11 L/min)	
	A100	36.5-608.3 Hz @ 3-50 GPM (11-190 L/min)	
	A200	36-360 Hz @ 30-300 GPM (114-1135 L/min)	
Recommended Strainer Size:		A025	55 mesh (275 µm)
		A100	28 mesh (700 µm)
		A200	28 mesh (700 µm)
Wetted Materials (Aluminum):	Housing:	Aluminum	
	Bearings:	Ceramic (96% Alumina)	
	Shaft:	Tungsten Carbide	
	Rotor:	Nylon	
	Rings:	316 Stainless Steel	
Calibration Report:		Comes standard with A1 Series meters.	
		N.I.S.T. – Certification available.	

ACCESSORIES

Part No.	Description
113275-10	FM Approved Remote Kit Assembly‡
113435-10	Conditioned Signal Output Module
125260-02	90° Display Adapter Kit
120077-01	FM Approved Sensor Kit‡
120077-02	ATEX Approved Sensor Kit‡
113524-01	Connector Kit for FM or ATEX Approved Sensor‡
125060-10	Pulse Out, External Power, Scaled Pulse Module
125100-10	4-20 mA Module

‡Does not make Non-FM or Non-ATEX Approved meters FM or ATEX Approved.

GREAT PLAINS INDUSTRIES GPI

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: • K-factor entry • Correction Factor (% Adjust) • Dispense Display
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*

FM APPROVED · FM C US APPROVED · CE · ATEX Ex · IEC · IECEx

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-programed 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.*

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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[1]
- Comes with the extra parts required to retrofit a Q9 display in place of an 09 display

†*Separate data sheets available.*
[1] *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)