Industrial Flow Computer

Model FC-5000 Flow Monitor

DESCRIPTION

The Badger Meter® FC-5000 is a microprocessor-driven flow computer designed for flow monitoring. The FC-5000 flow computer is compatible with the complete line of Badger Meter industrial flow meters, creating a solution to totalize and indicate fluid flows. Many years of experience in the industrial market has allowed Badger Meter to incorporate features indispensable in control operations.

OPERATION

Input signal—in the form of pulses from open collector transistors or dry contact closures—can be scaled to any unit of measure for totalization and instantaneous rate-of-flow indication. Linearized volumetric flow rate and totals are examples of flow parameters that can be viewed on the panel display or through Modbus communications. Dedicated frequency output channels provide scaled outputs. Additionally, a user defined smoothing function can be applied for improved stability of the flow readings.

FEATURES

This product is designed with a focus on:
- Large display for easy viewing
- Ease-of-use with softkeys and a full numeric keypad
- Ruggedness for its application with a robust enclosure, keypad and proper mechanical relays
- Info/sensor data—view raw and calculated flow data, as well as relay and digital I/O status
- User-friendly installation with quality plug-and-play terminals
- 100-point linearization
- A wide range of outputs and functions for a broad fulfillment in many applications
- User-programmable relay triggers for Flow and Total alarms— High, Low, High/Low

FLEXIBILITY

- Non-volatile memory preserves all programmed information during power failure
- Low voltage AC/DC power
- Default sets all functions to factory-programmed values
- Ability to restore to factory programmed settings

ACCESSORIES

- 110…230V AC line power adapter
- NEMA-4X enclosure (for wall-mount applications)
- Memory card (USB thumb drive)
- PC programming interface / USB cable

VIEWING CAPABILITIES

Quickly toggle views on the *Home* screen to switch from or to:
- FLOW RATE CH 1 (*Figure 1*)
- FLOW TOTAL CH 1 (*Figure 1*)
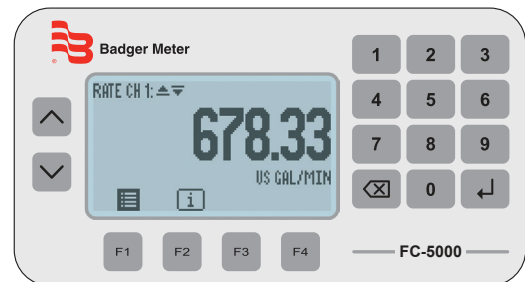- FLOW RATE CH 1 + FLOW TOTAL CH 1 (Dual Display) (*Figure 2*)
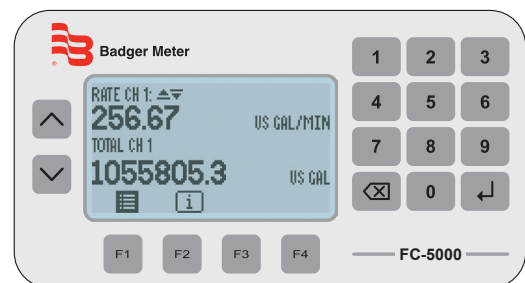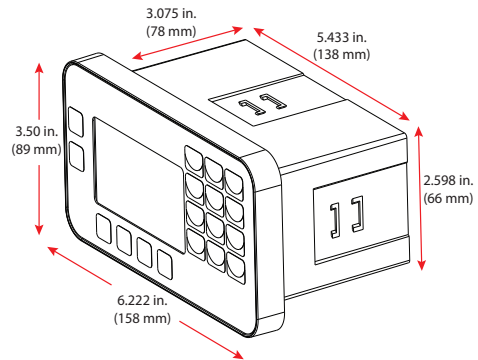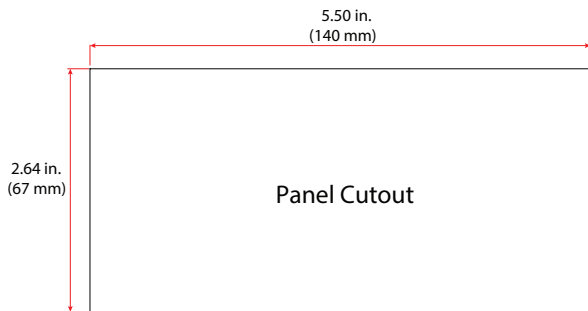

Figure 1: Single display

Figure 2: Dual display

Product Data Sheet
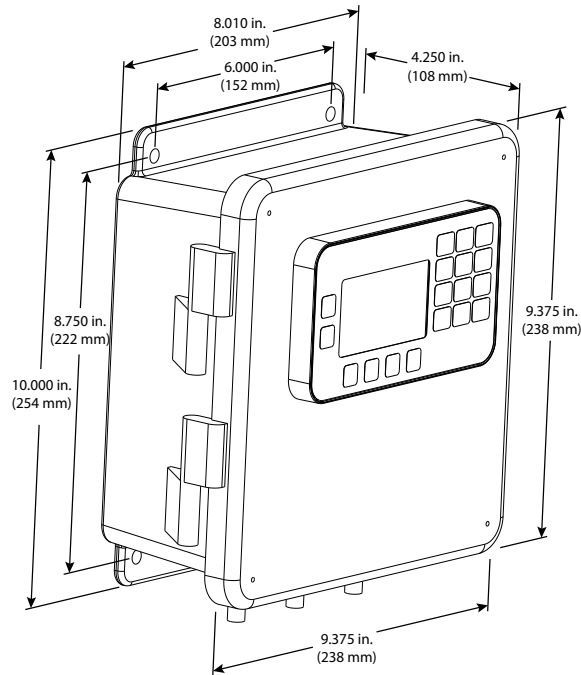
PROGRAMMABILITY

Fluid Properties	Custom fluid characteristics can be stored for reference.
Digital I/O	Reset relays and/or totals remotely via the 6 available I/O ports.
Scaled Outputs	Assignable to flow and/or total.
Relay Outputs	Assignable relay outputs that can be tied to flow or total. Option to enable/disable latching functionality.
Display Properties	Adjustable contrast and brightness for readability and controlling power consumption.
Stored or Custom Units of Measure	Select from a list of standardized units of measure, or complete the customized option with labels and quantity assignments.
Passwords	User defined password pins to manage configuration parameters and reset functions.
Sensor Inputs	Select from a predefined list of flow sensor input types.

DIMENSIONS

Panel Mount Unit

Wall Mount Unit

SPECIFICATIONS

Power Supply		Input range 10…40V DC and 9…28V AC RMS
		AC input voltage frequency range 50…60 Hz
		Maximum 8 Watts power consumption
		Isolated from power ground
		Over-voltage, transient and reverse polarity protected
Flow Meter Input		1 independent channel
		Configurable as square wave 0…30V pulse with 2.5 V threshold
		Configurable as sine wave, zero-centered with 200 mV amplitude and 45 mV threshold
		0…10 kHz frequency input range
		Configurable debounce
		Isolated from power ground
		Over-voltage, transient and reverse polarity protected
Frequency Outputs		2 independent channels
		Isolated from power ground
		TTL, 1…4000 Hz, square wave
		Over-voltage, transient and reverse polarity protected
		Output is multiplexed on the process out pins
		Resolution 0.01 Hz
		Uncertainty ±0.01% RDG
Field Configurable Digital I/O (Optional)		6 independent channels
		Isolated from power ground
		Over-voltage, transient and reverse polarity protected
		0…30 Volts as input
		De-bounce
		0…5V, TTL, 200 ms 90…10% step response, driving < 0.1 uF
Relay Outputs		2 Form C mechanical
		Isolated coil drivers
		Over-voltage, transient and reverse polarity protected
RS-485 Communications		4-wire interface
		Over-voltage/ESD Protection
		Isolated from power ground
USB Communications		USB host interface (A connector)
		USB device interface (mini B connector)
		Over-voltage/ESD/transient protected
Display/User interface		Membrane keypad / domed tactile response
		128×64 pixel backlit graphical display
		Protected from EMI/RFI
		Keypad interface is protected from ESD
Flow Calculation		± 0.01% uncertainty
		Adjustable FIR/IIR filtering
Pollution Degree		2
Altitude Restriction		Up to 2000 m (6561 ft)
Over-Voltage Rating		Category II
Operator Functions		Unlatch Relays Reset Totalizer Unlatch Relays and Reset Totalizer
		Flow Rate Total Flow Rate and Total
Flow Total	Digits	8 digits
	Units	US Gallons (US GAL), Imperial Gallons (I GAL), Mega US Gallons (US MGAL), Mega Imperial Gallons (I MGAL), Liters (L), Mega Liters (ML), Cubic Meters (M^3), Cubic Feet (FT^3), Acre Feet (ACFT), Oil Barrels (OBBL), Liquid Barrels (LBBL), US Ounces (US OZ), Imperial Ounces (I OZ), Custom
	Decimals	0…4
Flow Rate	Digits	8 digits
	Units	US Gallons (US GAL), Imperial Gallons (I GAL), Mega US Gallons (US MGAL), Mega Imperial Gallons (I MGAL), Liters (L), Mega Liters (ML), Cubic Meters (M^3), Cubic Feet (FT^3), Acre Feet (ACFT), Oil Barrels (OBBL), Liquid Barrels (LBBL), US Ounces (US OZ), Imperial Ounces (I OZ), Custom
	Time unit	second (S), minute (M), hour (H), day (D)
	Decimals	0…4

PART NUMBER MATRIX

| FC5 | - | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

Function
Flow Monitor   FM

Sensor Inputs
One Pulse Only   P0

Output
Two Frequency Outputs   F

Relay Outputs
Two Form "C" Relays   C

Digitial Output
Six Programable Inputs/Outputs   6

Communications
EIA-485; Modbus and USB   A

Mounting Method
Panel Mount   P
Wall Mount (includes NEMA 4X rated enclosure)   W

Control. Manage. Optimize.

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