

Description:

The BC Flow Computer satisfies the instrument requirements for a variety of flowmeter types in liquid applications. Multiple flow equations and instrument functions are available in a single unit with many advanced features. The alphanumeric display shows measured and calculated parameters in easy to understand format. Single key direct access to measurements and display scrolling is supported.

The isolated analog output can be chosen to follow volume flow, corrected volume flow, mass flow, temperature, or density by means of a menu selection. Most hardware features are assignable by this method. The user can assign the standard RS-232 Serial Port for data logging, transaction printing, or for connection to a modem for remote meter reading. Remote metering software available.

Specifications:

Flow Meters and Computations

Meter Types: All linear and square law meters supported including: turbine, magnetic, PD, target,
 Computations: Volume, Corrected Volume & Mass
 Fluid Computations: Temperature, Density, Viscosity and API 2540 for petroleum.

Environmental

Operating Temperature: 32°F to 122°F (0°C to +50°C)
 Storage Temperature: -40°F to 185°F (-40°C to +85°C)
 Humidity : 0-95% Non-condensing
 Materials: U.L. approved

Approvals: UL/C-UL Listed (File No. E192404), CE Compliant

Display

Type: 2 lines of 20 characters, LCD
 Character Size: 0.3" nominal
 User programmable label descriptors and units of measure

Keypad

Keypad Type: Membrane Keypad with 16 keys

Enclosure

Type: DIN
 Materials: Plastic, UL94V-0, Flame retardant
 Bezel: Textured per matt finish

Real Time Clock

The BC is equipped with a battery backed real time clock with display of time and date.
 Format: 12 or 24 hour time display
 Day, Month, Year date display

Power Input

The factory equipped power option is internally fused. An internal line to line filter capacitor and MOV are provided for added transient suppression.
 110 VAC Power: 85 to 127 Vrms, 50/60 Hz
 Power Consumption: AC: 11.0 VA (11W)

Flow Inputs:

Analog Input:

Accuracy: 0.01% FS at 20° C
 Ranges
 Voltage: 0-10 VDC, 0-5 VDC, 1-5 VDC
 Current: 4-20 mA, 0-20 mA
 Basic Measurement Resolution:
 16 bit
 Update Rate: 4 updates/sec
 Automatic Fault detection: Signal over/under-range,
 Current Loop Broken
 Calibration: Software Calibration (no trimmers) and Auto-zero
 Continuously
 Extended calibration:
 Learns Zero and Full Scale of each range using special test mode.



Fault Protection:

Reverse Polarity: No ill effects
 Over-Voltage Limit: 50 VDC Over voltage protection
 Over-Current Protection: Internally current limited protected to 24VDC

Pulse Inputs:

Number of Flow Inputs: one with or without quadrature or pulse security checking
 Input Impedance: 10 KΩ nominal
 Pullup Resistance: 10 KΩ to 5 VDC (menu selectable)
 Pull Down Resistance: 10 KΩ to common
 Trigger Level: (menu selectable)
 High Level Input
 Logic On: 3 to 30 VDC
 Logic Off: 0 to 1 VDC
 Low Level Input (mag pickup)
 Sensitivity:
 10 mV or 100 mV
 Minimum Count Speed: Menu selectable
 Maximum Count Speed:
 Menu Selectable: 40Hz, 3000Hz or 20 kHz
 Overvoltage Protection: 50 VDC

Auxiliary / Compensation Input

The auxiliary/compensation input is menu selectable for temperature, density or not used. This input is used for the compensated input when performing compensated flow calculations. It can also be used as a general purpose input for display and alarming.

Operation: Ratiometric
 Accuracy: 0.01% FS at 20° C
 Basic Measurement Resolution:
 16 bit

Update Rate: 1 update/sec minimum

Automatic Fault detection:

Signal Over-range/under-range
 Current Loop Broken
 RTD short
 RTD open
 Fault mode to user defined default settings

Fault Protection:

Reverse Polarity: No ill effects
 Over-Voltage Limit (Voltage Input): 50 VDC

Available Input Ranges

Voltage: 0-10 VDC, 0-5 VDC, 1-5 VDC
 Current: 4-20 mA, 0-20 mA
 Resistance: 100 Ohms DIN RTD

100 Ohm DIN RTD
 (DIN 43-760, BS 1904):

Three Wire Lead Compensation
 Internal RTD linearization learns ice point resistance
 1 mA Excitation current with reverse polarity protection
 Temperature Resolution: 0.01°C
 Temperature Accuracy: ± 0.25°C

Control Inputs

Switch Inputs are menu selectable for Start, Stop, Reset, Lock, Inhibit, Alarm Acknowledge, Print or Not Used.

Number of Control Inputs: 3

Control Input Specifications

Input Scan Rate: 10 scans per second

Logic 1: 4 - 30 VDC

Logic 0: 0 - 0.8 VDC

Input Impedance: 100 KΩ

Control Activation:

Positive Edge or Pos. Level based on product definition for switch usage.

Excitation Voltage

Menu Selectable: 5, 12 or 24 VDC @ 100 mA (fault protected)

Relay Outputs

The relay outputs are menu assignable to (Individually for each relay) Low Rate Alarm, High Rate Alarm, Prewarn Alarm, Preset Alarm or General purpose warning (security), low temperature/high temperature.

Number of relays: 2

Contact Style: Form C contacts

Contact Ratings: 5 amp, 240 VAC or 30 VDC

Serial Communication

The serial port can be used for printing, datalogging, modem connection and communication with a computer.

RS-232:

Device ID: 01-99

Baud Rates: 300, 600, 1200, 2400, 4800, 9600, 19200

Parity: None, Odd, Even

Handshaking: None, Software, Hardware

Print Setup: Configurable print list and formatting.

Isolated Analog Output

The analog output is menu assignable to correspond to the Uncompensated Volume Rate, Corrected Volume Rate, Mass Rate, Temperature, Density, Volume Total, Corrected Volume Total or Mass Total.

Type: Isolated Current Sourcing

Available Ranges: 4-20 mA, 0-20 mA

Resolution: 12 bit

Accuracy: 0.05% FS at 20° C

Update Rate: 1 update/sec minimum

Temperature Drift: Less than 200 ppm/°C

Maximum Load: 1000 ohms (at nominal line voltage)

Compliance Effect: Less than 0.05% Span

60 Hz rejection: 40 dB minimum

Calibration: Operator assisted Learn Mode

Averaging: User entry of damping constant to cause a smooth control action

Isolated Pulse output

The isolated pulse output is menu assignable to Uncompensated Volume Total, Compensated Volume Total or Mass Total

Pulse Output Form: Photomos Relay

Maximum On Current: 25 mA

Maximum Off Voltage: 30 VDC

Saturation Voltage: 1.0 VDC

Maximum Off Current: 0.1 mA

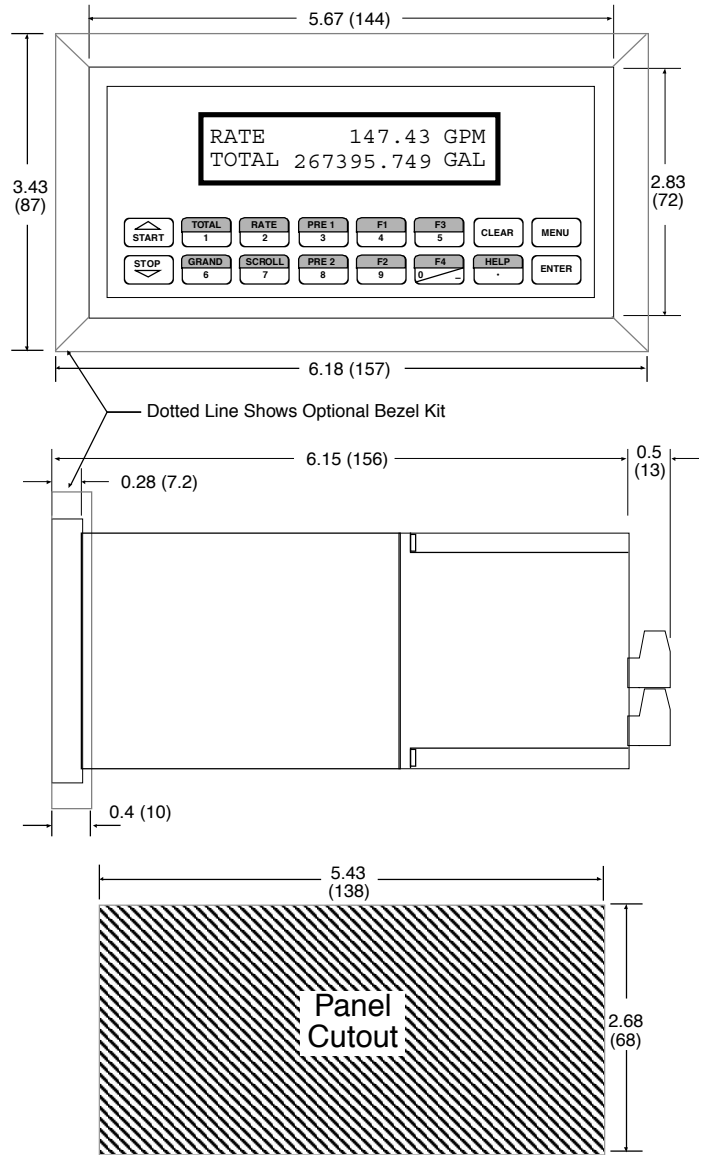
Pulse Duration: 10 mSec or 100 mSec (user selectable)

Pulse output buffer: 256

Fault Protection

Reverse polarity: Shunt Diode

Standard Dimensions



Dimensions are in inches (mm)

Ordering Information

Model	Description
BCL1-P	Flow Totalizer, Ratemeter and Batch Controller Panel Mount
BCL1-W	Flow Totalizer, Ratemeter and Batch Controller Wall Mount
BCL1-WB	Flow Totalizer, Ratemeter and Batch Controller Wall Mount With Buttons