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.
- Input 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

Ordering Information

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<th>Model</th>
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<tbody>
<tr>
<td>BCL1-P</td>
<td>Flow Totalizer, Ratemeter and Batch Controller Panel Mount</td>
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<tr>
<td>BCL1-W</td>
<td>Flow Totalizer, Ratemeter and Batch Controller Wall Mount</td>
</tr>
<tr>
<td>BCL1-WB</td>
<td>Flow Totalizer, Ratemeter and Batch Controller Wall Mount With Buttons</td>
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