



The E-Chart 100 is a field mounted flow computer for custody or non-custody transfer measurements. It is a single bi-directional meter run computer that can be used in gas or liquid applications. Multiple primary elements and density equations are supported. A unique graphical interface allows users to have up to three trend screens with two user selectable parameters per screen. This mimics a chart recorder display and allows users the ability to get at-a-glance information concerning their flow conditions.

The E-Chart 100 is designed to meet the needs of our clients throughout all sectors of the oil and gas industry. After listening to and understanding the needs of our clients, Dynamic Flow Computers designed the E-Chart 100 with a focus on reducing spare parts requirements, reducing the “learning curve” for new users, and an overall reduction in the time and cost of its implementation. Because of this foresight in design we are confident that the E-Chart 100 flow computer will exceed all of your expectations.

The E-Chart 100 calculates all the necessary standard equations (AGA, API, ISO, NIST, etc.) for liquids & gases. Monthly, daily, or hourly reports are stored in flash memory. If you include the E-Chart 100's impressively low power consumption, battery back-up capabilities, solar power options, and built-in wireless communications the E-Chart 100 proves itself to be the number one flow computer for all applications.



### **Features**

- Low operating power (0.3 watts)
- 0.075% accuracy
- 32 bit processor
- 64x128 programmable display
- Min-max charting
- Wireless radio/Modem ready
- Multiple I/O options
- Custody transfer accuracy
- Smart field I/O

### **Communications**

- RS232 Modbus
- RS485 Modbus
- Analog and digital I/O
- Zigbee wireless radio
- FreeWave wireless radio
- Bluetooth

### **Applications**

- Liquid and gas measurement
- Well head measurement and automation
- Custody measurement and control
- Compressor stations
- Well optimization
- PID control
- Field mounted trending
- Multiple primary elements
- Injection index testing

### **Reports**

- Hourly
- Daily
- Monthly
- Monthly day by day
- Calibration and audit
- Data storage in years

### **Alternative Power**

- Battery backup
- Solar power

The E-Chart 100 flow computer has the capacity to measure a single bi-directional gas or liquid measurement train. Multiple equations are included among which are AGA3/API14.3, API14.9, API 5,6, API5.7, API2540, AGA7, AGA9, API21, with more being added continuously. The E-Chart 100 accepts any type of primary element: Venturi, Annubar, Turbine, PD, Ultrasonic, V-Cone, Wedge, Vortex, etc. Additionally, it can carry out density calculations according to the following standards: API12, AGA8; 24A, B, C; NBS for steam, saturated and supersaturated steam, NBS1045 for ethylene, etc. Contact our offices or visit our website for available equation updates. It can also control pneumatic or electrical valves (on-off or variable by means of analog outputs or process PID control).

The E-Chart 100 can have up to three textual display screens with four user-selectable parameters being displayed per screen. In addition, three graphical trend screens can be displayed showing two user-selectable parameters per trend. All screens are scrolled at user-defined intervals.

The input/output assignment, flow equations, historical data storage, and other functions are carried out using Dynamic Flow Computers' DYNACOM® software. This software is Windows based, free of charge, and available for download/update at any time on our website.

**DYNACOM® Software Capabilities:**

- Flow computer diagnostics
- Configure inputs and outputs
- Configure PID control
- Personalize report time and content
- Configure and select the local LCD screen displayed parameters
- Reassign and customize MODBUS® registers and values
- Create and implement custom math and formulas
- Input and output calibration
- Automatic and periodic downloading of flow computer reports
- Obtain historic data for display, saving, exportation, or printing

Historic data is available in the memory of the flow computer for download or display.

**Maximum Report Storage:**

- Hourly reports: 1536 hours\*
- Daily reports: 64 \*
- Daily reports, hour by hour: 64\*
- Monthly reports: 6\*
- Monthly, day by day: 2 months\*
- Calibration reports: 20\*
- Audit reports: 100\*
- Alarm reports: 100\*
- Special reports: HTML, and others

\*The number of reports stored can vary according to application.

**PHYSICAL SPECIFICATIONS**

<b>Electrical/Conduit Connections:</b>	Two 3/4" NPT One 1" NPT
<b>Housing (Flow Computer):</b>	Material: copper free aluminum Painting: epoxy or polyurethane. Classification: NEMA 4X class 1 div. 1 – IP66
<b>Display:</b>	Text - 8 lines x 16 characters Graphics – 64 x 128 pixels
<b>Terminal Blocks:</b>	Easily accessible; removable for easy connection
<b>Certifications:</b>	CSA for class 1, div. 1, groups B, C and D UL for class I, zone 1, AEx d IIB+H2
<b>Temperature Limits:</b>	Operation: -40 to 185 °F (-40 to 85 °C) Storage: -50 to 190 °F (-46 to 87 °C)
<b>Humidity:</b>	100%

**ELECTRICAL SPECIFICATIONS**

<b>Voltage</b>	7 to 24 VDC
<b>Power Consumption</b>	0.3 watt
<b>Temperature</b>	-40 to 185 °F (-40 to 85 °C)
<b>Humidity</b>	100%
<b>Solar Board (Optional)</b>	10/20 watts, 12 volts
<b>UPS (Optional)</b>	7 day operation
<b>Polarity</b>	Reverse polarity protected
<b>Processor</b>	32 bits @ 16.7Mhz
<b>Flash ROM</b>	4 MB @ 70 Nano Seconds
<b>RAM</b>	2 MB @ 70 Nano Seconds
<b>Real Time Clock</b>	Years/Months/Days/Hours/Minutes
<b>Internal Battery</b>	Lithium ion

**INPUT SPECIFICATIONS**

<b>Optic Isolation</b>	Each input is optically isolated with ±250 VDC chassis isolation
<b>Digital/Switch/Frequency Input</b>	One input 5-28 VDC 0.25Amp rating For frequency input - square wave only Frequency range 0 - 6000 HZ Signal must be > 3 volts

**OUTPUT SPECIFICATIONS**

<b>Optic Isolation</b>	Each output is optically isolated with ±250 VDC chassis/ground isolation
<b>Digital/Switch/Pulse Output</b>	Two outputs 5-28 VDC 0.25Amp rating On/Off or pulses (to 125 pulses/sec.)
<b>Analog Output</b>	One output (16 bit) 4-20mA (external power required) For PID control or for data transmission

**COMMUNICATION SPECIFICATIONS**

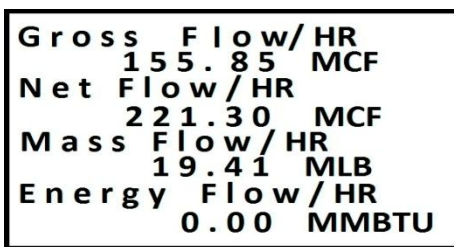
<b>RS232/485</b>	Quantity 1 @ 1200 – 19200 bps
<b>RS232 (w/ Elbow Option)</b>	Quantity 1 @ 1200 – 19200 bps
<b>Protocol</b>	MODBUS® RTU/ASCII
<b>Optional</b>	Modem, Radio, Bluetooth

**DIAGNOSTIC SPECIFICATIONS**

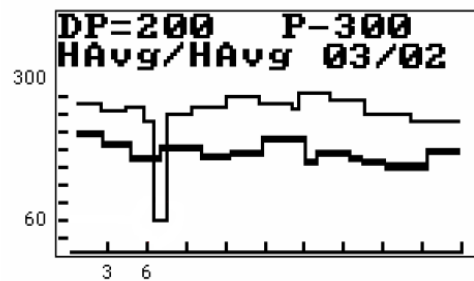
<b>Monitor/Alarm</b>	Multivariable: P, DP, T Analog inputs/outputs Digital/switch inputs Digital/switch outputs Pulse/frequency inputs Internal temperature Battery voltage Internal power supply
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**FLOW COMPUTATION SPECIFICATIONS**

<b>Number of Trains:</b>	One
<b>Flow Calculation:</b>	Gas or liquid
<b>Primary Elements:</b>	<u>Differential:</u> Orifice, V-Cone, Wedge, Annubar, Venturi, etc. <u>Pulse/Frequency:</u> Turbine, PD, Vortex, Ultrasonic, etc.
<b>Units of Engineering:</b>	US and Metric
<b>Base Conditions:</b>	60°F, 14.7 Psia (15°C and 1 Kg. /Cm <sup>2</sup> ) 68°F, 14.7 Psia (20°C and 1 Kg/Cm <sup>2</sup> )
<b>Equations:</b>	AGA8 methods 1, 2, and detailed; 24A,B,C; Steam NBS Others added continuously Consult factory for complete list



Text Display



Graphic / Trend Display

## Optional Accessories

Rosemount® 205 Module



SmartCone®



RS-232 Elbow



Armored RTD Cable



Back-Up Battery



Solar Panel



FreeWave Radio



Zigbee Radio



Bluetooth

