

SUPERtrol-I LE

Economical Flow Totalizer, Ratemeter and Batcher

Features

- EZ Setup Feature Speeds Instrument Setup
- Setup Diskette
- Advanced Batching Features, Including Quick Batching Sequence
- Menu Selectable Hardware Features
- Two Line LCD, OLED or VFD Display
- 0-20mA or 4-20mA Analog Output
- Attractive Wall Mount Enclosure Option
- Isolated Pulse Output Standard
- RS-232 Port Standard, RS-485 Optional
- Advanced Printing Capabilities



- Data Logging & Modem Remote Metering Support
- DIN Enclosure with Two Piece Connectors
- DDE Server & HMI Software Available

Description:

The SUPERtrol-I LE Flow Computer satisfies the instrument requirements for a variety of pulse producing flowmeter types in liquid applications.

The alphanumeric display shows measured and calculated parameters in easy to understand format. Single key direct access to measurements and display scrolling is supported. An EZ Setup feature rapidly guides the user through the basic setup.

The SUPERtrol-I LE can be programmed for rate/total indication or batching. The various pulse inputs and outputs can be "soft" assigned to meet a variety of common application needs. The user "soft selects" the usage of each feature while configuring the instrument. A 0-20mA or 4-20mA analog output is standard.

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. An optional RS-485 serial port using Modbus RTU protocol is available.

A Service or Test mode is provided to assist the user during start-up system check out by monitoring inputs and exercising outputs. The system setup can also be printed.

Specifications:

Environmental

Operating Temperature: 0°C to +50°C

Storage Temperature: -40°C to +85 C

Humidity : 0-95% Non-condensing

Materials: U.L. approved

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

Display

Type: 2 lines of 20 characters

Types: Backlit LCD, OLED and VFD ordering options

Character Size: 0.2" nominal

User programmable label descriptors and units of measure

Keypad

Keypad Type: Membrane Keypad with 16 keys

Keypad Rating: Sealed to NEMA 4X / IP65

Enclosure

Depth behind panel: 6.5" including mating connector

Type: DIN

Materials: Plastic, UL94V-0, Flame retardant

Bezel: Textured per matt finish

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 Option: 85 to 127 Vrms, 50/60 Hz

220 VAC Power Option: 170 to 276 Vrms, 50/60 Hz

DC Power Option:

12 VDC (10 to 14 VDC)

24 VDC (14 to 28 VDC)

Flow Inputs:

Pulse Inputs:

Number of Flow Inputs: one (single or quadrature)
Input Impedance: 10 K Ω nominal
Pullup Resistance: 10 K Ω to 5 VDC (menu selectable)
Pull Down Resistance: 10 K Ω 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:
User selectable (as low as 1 pulse/99 seconds)
Maximum Count Speed:
Selectable: 40 Hz, 3000 Hz or 20kHz
Overvoltage Protection: 50 VDC
Linearization: Average K or 16 Point linearization with separate forward and reverse tables

Control Inputs

Number of Inputs: 3
Switch Inputs are menu selectable for Start, Stop, Reset, Lock, Inhibit, Alarm Acknowledge, Print or Not Used.
Control Input Specifications
Input Scan Rate: 10 scans per second
Logic 1: 4 - 30 VDC
Logic 0: 0 - 0.8 VDC
Input Impedance: 100 K Ω
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)

Data Logging

The data logger captures print list information to internal storage for approximately 1000 transactions. This information can be used for later uploading or printing. Storage format is selectable for Comma-Carriage Return or Printer formats.

Batching Features

Quick batching sequence, single or dual stage batching, slow fill, auto-batch restart and batch overrun compensation.

Serial Communication

The serial port can be used for printing, data logging, 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.
Print Out: Custom form length, print headers, print list.
Print Initialization: Print on end of batch, key depression, interval, time of day or remote request.

RS-485: (optional 2nd COM port)

Device ID: 01-247
Baud Rates: 1200, 2400, 4800, 9600, 19200
Parity: None, Odd, Even
Protocol: Modbus RTU (Half Duplex)

Relay Outputs

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

Number of relays: 2 (4 optional)
Contact Style: Form C contacts
Contact Ratings: 5 amp, 240 VAC or 30 VDC

Isolated Pulse output

The isolated pulse output is assigned to Uncompensated Volume 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 100mSec (user selectable)
Pulse output buffer: 256
Fault Protection
Reverse polarity: Shunt Diode

Isolated Analog Output

The analog output is menu assignable to correspond to the Rate or 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 .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

Note: DC powered units are not isolated

Fig. 1: Standard Dimensions

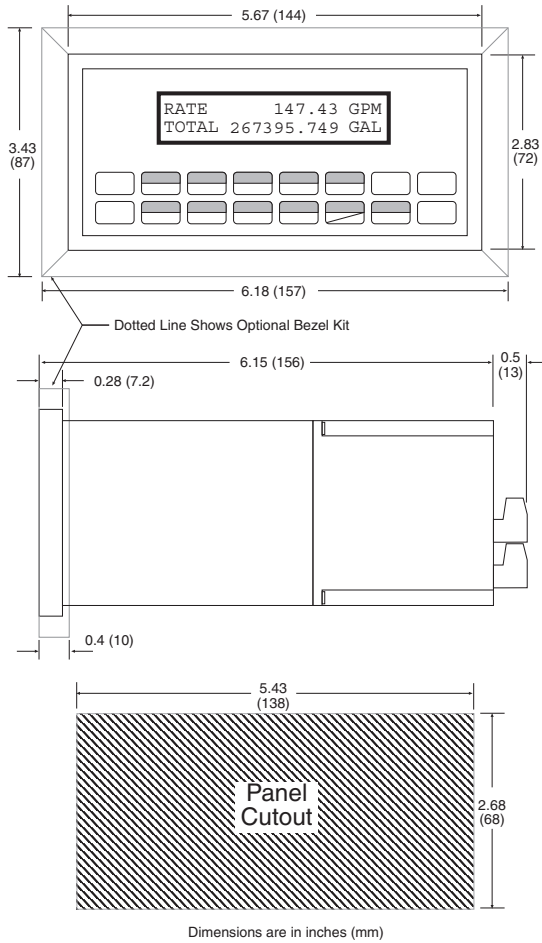
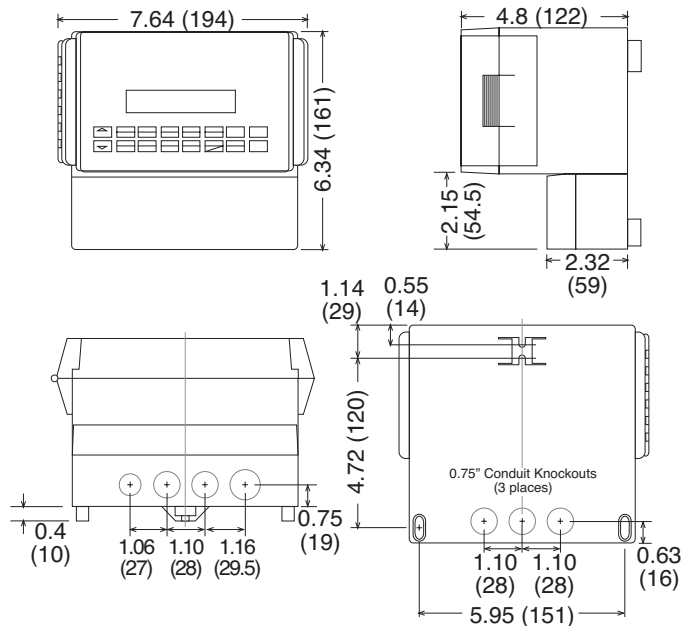


Fig. 2: Wall Mount (“W” mounting option) Dimensions



Terminal Designations

1	DC OUTPUT	23	AC LINE	DC +	POWER IN
2	PULSE IN 1	24	AC LINE	DC -	
3	PULSE IN 2				
4	COMMON				
5	DO NOT USE				
6	DO NOT USE				
7	DO NOT USE				
8	DO NOT USE				
9	CNTR IN 1				
10	CNTR IN 2				
11	CNTR IN 3				
12	COMMON				
13	PULSE OUTPUT +				
14	PULSE OUTPUT -				
15	ANALOG OUTPUT +				
16	ANALOG OUTPUT -				
17	NC	25	COM RLY1	NC	COM RLY3
18	COM RLY1	26	NO	NC	COM RLY3
19	NO	27	COM RLY2	NC	COM RLY4
20	NC	28	NO	NC	COM RLY4
21	COM RLY2	29	COM RLY3	NC	
22	NO	30	COM RLY4	NC	

Ordering Information

Example ST1LE L 1 A 0 P ET

Series: ST1LE = SUPERtrol-I LE

Display Type: L = LCD, O = OLED, V = VFD

Input Type: 1 = 110 VAC, 2 = 220 VAC, 3 = 12 VDC (10 to 14 VDC), 4 = 24 VDC (14 to 28 VDC)

Relays: A = 2 SPDT Relays, B = 4 SPDT Relays

Network Card: 0 = None (STD), 2 = RS485/Modbus (optional 2nd COM port)

Mounting: P = Panel Mount (see Fig. 1), N = NEMA 4 Wall Mount (see MS811), W = NEMA 12/13 Wall Mount w/ Clear Cover (see Fig. 2), E = Explosion Proof (No Button Access) (see XHVD 7/4)

Options: TB = RS485 Terminal Block for Panel Mount Enclosure, ET = Extended Temperature (-4°F to 131°F (-20°C to 55°C)), IM = Internal Modem, M = Modem Power Option

Accessories: OPC/DDE Server for RS232 Port available, see EX5-UCOND-NA00; OPC/DDE Server for Modbus Suite available, see EX5-MDBUS-NA00; Modem Available, see MPP-56KN and MPP-2400N; Serial printer available, see P1000, P295; Ethernet Port Server available, see IEPS; Ethernet Port Server Modbus TCP available, see ADAM4572; RS-422/485 to RS-232 Communication Adapter available, see CA285; RS232 Extender Cable: P/N=13220- \langle length in inches \rangle ; Remote metering and data collection software available, see TROLLink

Flow Instruments
RATEMETERS/TOTALIZERS