

## INTRODUCTION

The Fives North American Combustion, Inc. Flow Totalizer offers a wide range of capabilities for flow computations, totalizing, display, and interface with PC and /or PLC control systems. This compact panel-mounted instrument relieves other system components of specialized calculations and delivers accurate results for control functions. Internally stored flow totals simplify verification in custody transfer situations even after a long outage.



## FEATURES

- Computation of mass flow of virtually any gas or liquid fuel
- Square law or linear flow meter types
- Total and grand total flow accumulation
- Display of any inputs and calculations
- Analog or pulse flow input
- Isolated pulse and analog outputs
- Alarm and trigger relay outputs
- Straightforward setup via keyboard or PC
- Two-level password protection
- NEMA 4 faceplate
  - Clear 2-line alphanumeric display
  - 14-button keypad
- CE compliant
- OPC/DDE server software option

The 8126 Flow Computer Totalizer performs compensated flow calculations and accumulations for data acquisition, control, and display purposes. Computed totals are displayed on the faceplate and stored in non-volatile memory to avoid loss in case of power failure. The data may also be networked with other devices with OPC or DDE access via RS-485 or RS-232.

The fluid can be gaseous or liquid. Besides gas or oil calculations, another suggested use is for oxygen flow and consumption. Most parameters of the flow equation already reside in the unit. If the material to be monitored is unusual, its flow characteristics can be loaded. Calculations then proceed using the appropriate data.

Setup can be performed by a user via the display and membrane keypad or by PC through the RS-232 or RS-485 communications port. If a PC is to be used, all the setup can be done without the instrument and downloaded to it at a later time.

Any of the input variables or computed results can be displayed by changing the display parameters in the setup mode. Accumulated totals can be reset by an operator with level 1 password access. Grand totals can only be reset by a supervisor with level 2 password.

Specialized flow computations can be performed in situations requiring high turndown. For example, two transmitters, one for normal flow and another for low flow can be connected across the same orifice plate. When flow drops to some low preset, the computer switches automatically to the low flow transmitter using a separate flow equation.

The instrument has an internal power supply for flow and pressure transmitters and for milliamp and pulse outputs. In many cases this obviates the need for an external supply. It is flexible enough that power can be derived from an external source if the system design calls for it.

**NOTE: Resistance thermal device R894-0481 must be ordered with this device since it uses RTD for temperature compensation instead of thermocouple.**

# SPECIFICATIONS

## Environmental

Operating temperature 32 to 122 F (0 to 50 C)  
 Storage temperature -40 to 185 F (-40 to 85 C)  
 Humidity 0-95% non-condensing

## Display

Type Two lines of 20 characters  
 Types Backlit LCD  
 Character size 0.3" nominal

## Keypad

Keypad type Membrane keypad  
 Keypad rating Sealed to NEMA 4

## Enclosure

1/8 DIN

## Power Input

85 to 276 V ac, 50/60 Hz

Power consumption 6.5 VA

## Flow Meter Types

Linear Vortex, turbine, magnetic, and others  
 Square law Orifice, venturi, nozzle, and others  
 Multi-point linearization 16 point

## FLOW INPUTS

### Analog Inputs

Accuracy 0.01% FS at 68 F (20 C)  
 Ranges:  
   Voltage 0-10 V dc, 0-5 V dc, 1-5 V dc  
   Current 4-20 mA, 0-20 mA,  
           4-20 mA stacked, 0-20 mA stacked  
 Basic measurement res. 16 bit  
 Update rate 4 updates/sec.  
 Automatic fault detection

### Pulse Inputs

Input impedance 10 kΩ nominal  
 Trigger level (menu selectable)  
   High level input  
     Logic On: 2.5 to 30 V dc  
     Logic Off: 0 to 2 V dc  
   Low level: 10 and 100 mV  
 Minimum count speed 0.25 Hz (to maintain rate display)  
 Maximum count speed Selectable: 1 to 50 kHz

## TEMPERATURE, PRESSURE, DENSITY, INPUTS

Accuracy 0.01% FS at 68 F (20 C)  
 Basic measurement res. 16 bit  
 Update rate 2 updates/sec. minimum  
 Automatic fault detection

### Available input ranges

Current 4-20 mA, 0-20 mA  
 Resistance 100 ohm (DIN 43-760, BS 1904)  
 Three wire lead compensation  
 Temperature resolution 0.02 F (0.01 C)

### Excitation Voltage

24 V dc at 100 mA (fault protected)

### Relay Outputs

Number of relays 2  
 Contact style Form C contacts  
 Contact ratings 240 V, 5 amp

### Analog Outputs

Number of outputs 2  
 Available ranges 0-20 mA, 4-20 mA (menu selectable)  
 Resolution 16 bit  
 Accuracy 0.05% FS at 68 F (20 C)  
 Update rate 5 updates/sec.  
 Maximum load 1000 ohms

### Listing

CE Approved

### Serial Communication

RS-232 Device ID: 01-99  
 Baud rates: 300, 600, 1200, 2400,  
 4800, 9600, 19200  
 RS-485 Device ID: 01-247  
 Baud rates: 300, 600, 1200, 2400,  
 4800, 9600, 19200

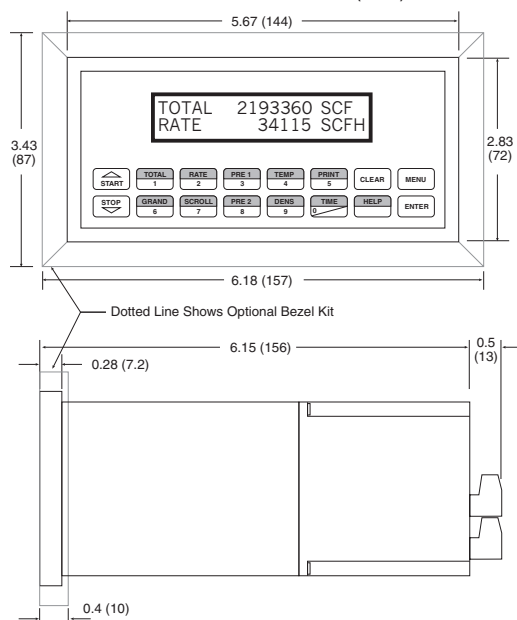
### Data Logging

Approximately 1000 transactions for later uploading or printing.

### Isolated Pulse Output

Menu assignable  
 Pulse output form (menu selectable)  
 Open collector NPN or 24 V dc voltage pulse

## Dimensions in inches (mm)



DIMENSIONS SHOWN ARE SUBJECT TO CHANGE. PLEASE OBTAIN CERTIFIED PRINTS FROM FIVES NORTH AMERICAN COMBUSTION, INC.  
 IF SPACE LIMITATIONS OR OTHER CONSIDERATIONS MAKE EXACT DIMENSION(S) CRITICAL.

## Terminal Designations

1	DC OUTPUT		
2	PULSE IN	Vin (+)	FLOW IN
3	-----	lin (+)	
4	COMMON		
5	RTD EXCIT (+)		TEMPERATURE
6	RTD SENS (+)		IN
7	RTD SENS (-)	lin (+)	
8	DC OUTPUT		
9	RTD EXCIT (+)		PRESSURE (TEMP 2)
10	RTD SENS (+)		IN
11	RTD SENS (-)	lin (+)	
12	PULSE OUTPUT (+)		
13	PULSE OUTPUT (-)		
14	ANALOG OUTPUT 1 (+)		
15	ANALOG OUTPUT 2 (+)		
16	ANALOG OUTPUT COMMON (-)		
17	NO		
18	COM RLY1		
19	NC		
20	NC		
21	COM RLY2		
22	NO		
23	AC LINE	DC (+)	POWER IN
24	AC LINE	DC (-)	

**WARNING:** Situations dangerous to personnel and property may exist with the operation and maintenance of an combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American urges compliance with National Safety Standards and insurance Underwriters recommendations, and care in operation.

## Fives North American Combustion, Inc.

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