



## Model 827A Single Channel Mass Flow Digital Controller / Readout



### Description

The MATHESON Model 827A is a state-of-the-art, microprocessor-based, high performance readout for mass flow meters & controllers. The 827A has an integral  $\pm 15$  VDC @350 mA power supply for sensor power. It accepts a 5 VDC input signal that can be digitally calibrated and displayed in engineering units for flow, i.e. sccm / slpm. Calibration can be performed using the front panel membrane switches or via the optional RS-232 serial communication port.

The 827A has (4) digital alarm set points, (2) high and (2) low alarms, with open collector outputs that can be used to drive (4) relays. The alarm set point status is indicated by (4) annunciator LEDs on the front panel.

The RS-232 option provides bi-directional RS-232 communications for setting all parameters and monitoring the displayed readings. Baud rate and parity are user selectable.

The Set point option is used with flow controllers to generate an analog control signal. A 0-5 VDC user selectable set point signal is generated, scaled proportionally to the full scale CAL value. The user simply sets the StPt value, manually via the front panel or using the serial RS-232 port, and the 827A does the rest.

### Features & Benefits

- Microprocessor-based smart readout, power supply and controller
- Designed for use with Mass Flowmeters, Mass Flow Controllers
- $\pm 15$  VDC @ 350 mA (max) from an integral, linear power supply provides clean, current limited, thermal overload protected, sensor power
- Accepts 5 VDC input signal
- $4\frac{1}{2}$  digit,  $\pm 19,999$  count, analog-to-digital converter resolution
- $\pm 99,999$  maximum display readout with hi-efficiency red LEDs

### Ordering Information

Model Number	Description
SEQ 827A	827A Single Channel controller w/ 8' cable, 15 pin "D" x RJ-45 connector

### Individual Cables and Additional Signal Cable Lengths 15 PIN "D" x RJ-45 TRANSDUCER CONNECTOR

Model Number	Cable Length
SEQ CBL053508	8 ft (STANDARD CABLE)
SEQ CBL053625	25 ft
SEQ CBL053750	50 ft
SEQ CBL0538100	100 ft

- Simple push button ZERO and FULL SCALE calibration to display flow in engineering units
- (4) alarm setpoints with open collector outputs and front panel LED annunciators
- Optional RS-232 serial communication
- Optional 0-5 VDC or 0-10 VDC user selectable analog Command Setpoint (StPt) control signals
- Rugged, 1/8 DIN panel mountable, extruded aluminum case
- 100/115/230 VAC, 50-60 Hz, internal jumper selectable ac power input

### Specifications

#### INPUT

Input Signal	5 VDC Full Scale
Input Impedance	> 1 M $\Omega$
Input Bias Current	< 1nA

#### ANALOG TO DIGITAL CONVERTER

Type	Integrating, dual slope with auto-zero
Linearity	$\pm 0.01\%$ FS $\pm 1$ digit
FS Accuracy	$\pm 0.01\%$ FS $\pm 1$ digit
Zero Stability	$\pm 1\mu$ V per $^{\circ}$ C
Conversion rate	2.5 conversions per second

#### READOUT

Display Type	(5) 0.4" high efficiency red LEDs
Annunciators	(6) ZERO, CAL, H1, H2, L1, L2, red LEDs
Polarity	Minus sign displayed for negative readings. No sign for positive readings.
Decimal Points	Selectable via front panel switches or via optional RS-232 communication port
Overrange Display	Flashing display indicates input > 10VDC
No Sensor Indication	The display will flash overrange when sensor is not connected.

#### TRANSDUCER POWER SUPPLY

Voltage	$\pm 15$ VDC $\pm 5\%$
Current	350 mA (max), with short circuit current limit and thermal overload protection.

#### RS-232 OPTION

RS-232	Bi-directional RS-232 serial communications
Baud Rate	2400 and 9600, user selectable
Parity	even or none (7 data bits for even and 8 data bits for none) user selectable

#### SETPOINT OPTION

Setpoint	0-5 VDC or 0-10 VDC, user selectable
Accuracy	$\pm 0.1\%$ FS

#### FUSE

100-120V~ input	250 V~, 500 mA, slow blow 5mm fuse
220-240V~ input	250 V~, 250 mA, slow blow 5mm fuse

#### PACKAGE

Type	1/8 DIN extruded aluminum housing, w/ shielded front panel switch assembly.
Size	
Cutout	45 mm(1.77")H x 92 mm(3.62")W
Front Panel	48 mm(1.89")H x 96 mm(3.78")W
Case	45 mm(1.77")H x 92 mm(3.62")W x 141 mm (5.55")D

#### CERTIFICATION

Type	CE
Certified to:	EN610101:1993/A2:1995