# 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 ±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
- ±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
- 4½ digit, ±19,999 count, analog-to-digital converter resolution
- ±99.999 maximum display readout with hi-efficiency red LEDs
- 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 MΩ
- Input Bias Current: < 1nA

#### ANALOG TO DIGITAL CONVERTER
- Type: Integrating, dual slope with auto-zero
- Linearity: ± 0.01% FS ± 1 digit
- FS Accuracy: ± 0.01% FS ±1 digit
- Zero Stability: ± 1µV per °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: ± 15 VDC, ±5%
- Current: 350 mA (max), with short circuit current limit and thermal overload protection.

#### RS-232 OPTION
- 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: ± 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
- 1/8 DIN extruded aluminum housing, w/ shielded front panel switch assembly.

#### CERTIFICATION
- Type: CE
- Certified to: EN61010-1:1993/A2:1995

### Ordering Information

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>SEQ 827A</td>
<td>827A Single Channel controller w/ 8' cable, 15 pin &quot;D&quot; x RJ-45 connector</td>
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</tbody>
</table>

### Individual Cables and Additional Signal Cable Lengths

<table>
<thead>
<tr>
<th>Model Number</th>
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<tbody>
<tr>
<td>SEQ CBL053508</td>
<td>8 ft (STANDARD CABLE)</td>
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<tr>
<td>SEQ CBL053625</td>
<td>25 ft</td>
</tr>
<tr>
<td>SEQ CBL053750</td>
<td>50 ft</td>
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<tr>
<td>SEQ CBL0538100</td>
<td>100 ft</td>
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