

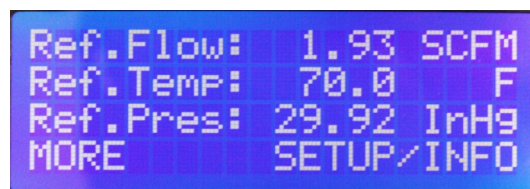
## ECONOCAL AIR FLOW CALIBRATOR FOR AIR SAMPLERS

**A FLEXIBLE CALIBRATOR DESIGN AVAILABLE FOR LABORATORY OR FIELD USE**

### NOTABLE FEATURES:

- Differential Pressure Sensor
- Display of flow in CFM, LPM, m<sup>3</sup>/h, cc/min or m<sup>3</sup>/min by operator selection
- Standard accuracy: ±5% Full Scale
- Flowrates displayed are corrected to a factory settable Reference Temperature and Pressure (4 options available)
 

|                          |             |
|--------------------------|-------------|
| Classical STP            | 0°C, 1 Atm  |
| Normal T and P           | 20°C, 1 Atm |
| Modified Normal T and P  | 70°F, 1 Atm |
| Standard Ambient T and P | 25°C, 1 Atm |
- Display of barometric pressure in metric or English units
- Display of temperature in metric or English units
- NIST traceable calibration certificate
- Ambient or Reference flow is selectable by the operator
- 1 year warranty
- AC or battery powered through two 9V standard rectangular batteries. (NOT INCLUDED)
- Mobile Flow Sensor feature eliminates difficult set up positions during calibrations



### Models Available

Basic Line Power Models

| <b>110 – 120VAC</b>     | <b>220 – 240VAC</b>     | <b>AIR FLOW RANGE</b> |                   |
|-------------------------|-------------------------|-----------------------|-------------------|
| <b><u>MODEL NO.</u></b> | <b><u>MODEL NO.</u></b> | <b><u>CFM</u></b>     | <b><u>LPM</u></b> |
| ECAL-801                | ECAL-801E               | .15 to 1              | 4 to 28           |
| ECAL-802                | ECAL-802E               | .25 to 2              | 7 to 56           |
| ECAL-803                | ECAL-803E               | .4 to 3               | 9 to 85           |
| ECAL-812                | ECAL-812E               | .5 to 4               | 14 to 115         |
| ECAL-828                | ECAL-828E               | 1 to 9                | 28 to 255         |
| ECAL-814                | ECAL-814E               | 2 to 14               | 56 to 400         |
| ECAL-530                | ECAL-530E               | 5 to 30               | 142 to 850        |
| ECAL-540                | ECAL-540E               | 5 to 40               | 142 to 1132       |
| ECAL-550                | ECAL-550E               | 6 to 50               | 170 to 1415       |
| ECAL-870                | ECAL-870E               | 10 to 70              | 283 to 1980       |

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# Digital Air Flow Calibrator: ECONOCAL Series

## 1. MEASUREMENT PRINCIPLE

- 1.1 Flow Sensor: Differential pressure sensor
- 1.2 Standardization: Correction for standard temperature and barometric pressure
- 1.3 Curve linearization: Individually calibrated and software corrected

## 2. MEASUREMENT RANGES

- 2.1 Air flow: See Table on front page
- 2.2 Temperature:  $-17^{\circ} - 122^{\circ} \text{ F}$  ( $-8^{\circ} - 50^{\circ} \text{ C}$ )
- 2.3 Barometric pressure:  $4.43 - 33.96 \text{ inHg}$  ( $112.52 - 862.58 \text{ mmHg}$ )

## 3. MEASUREMENT ACCURACY

- 3.1 Air flow:  $\pm 5\%$  of Full Scale
- 3.2 Temperature (Typical):  $\pm 1.5^{\circ}\text{C}$  over range  $-8^{\circ}\text{C}$  to  $50^{\circ}\text{C}$
- 3.3 Barometric pressure:  $\pm 1.5\%$  over measurement range

## 4. DISPLAY 80 Character LCD Screen (4 Line x 20 Column)

## 5. DISPLAYED PARAMETERS and RESOLUTIONS

|     | Parameter   | Engineering Unit          | Resolution |                         |
|-----|---|---------------------------|------------|-------------------------|
| 5.1 | CFM   | Cubic feet per minute     | 0.01       | CFM                     |
| 5.2 | LPM   | Liter per minute          | .1 or 1    | LPM                     |
| 5.3 | $\text{m}^3/\text{min}$   | Cubic meters per minute   | 0.0001     | $\text{m}^3/\text{min}$ |
| 5.4 | $\text{m}^3/\text{h}$   | Cubic meters per hour     | .001       | $\text{m}^3/\text{h}$   |
| 5.5 | cc/min  | Cubic centimeters per min | 1          | cc/min                  |
| 5.6 | F   | Degree Fahrenheit         | 0.1        | Degree F                |
| 5.7 | C   | Degree Celsius            | 0.1        | Degree C                |
| 5.8 | In-Hg   | Inches of Mercury         | 0.01       | In-Hg                   |
| 5.9 | mm-Hg   | Millimeters of Mercury    | 1          | mm-Hg                   |
| *a  | 0.1 lpm resolution applies to calibrators that have a max flow of 800 lpm |                           |            |                         |

## 6. GENERAL

- 6.1 Power requirements:  $100-240\text{V} \sim 50/60\text{Hz}$ ; 0.2A
- 6.2 Operating temperature:  $-17^{\circ}\text{F} - 122^{\circ}\text{F}$  ( $-8^{\circ}\text{C} - 50^{\circ}\text{C}$ )
- 6.3 Storage temperature:  $-20^{\circ}\text{F} - 158^{\circ}\text{F}$  ( $-29^{\circ}\text{C} - 70^{\circ}\text{C}$ )
- 6.4 Dimension (L×W×H)  $8.00'' \times 7.00'' \times 4.00''$  ( $203 \times 178 \times 102\text{mm}$ )
- 6.5 Weight: 1.60 lbs. (0.73 kgs.)
- 6.6 Installation Category: Pollution Degree 2
- 6.7 Enclosure Rating: IPXO
- 6.8 Battery Requirement: 9V (2 each)

## 7. CALIBRATION Factory calibration is recommended once per year