

## SECTION 1.0 GENERAL DESCRIPTION

The Ces 209 Flow Indicator and Totalizer simultaneously displays the flow rate and volume of an input flow. The totalizing display is a 4 digit .6" high LED display capable of measuring the volume of individual flow pulses. The flow indicator is a 4 1/2 digit .6" LED display that will display the flow rate being observed.

## SPECIFICATIONS

Flow Rate: .3 -100 milliliters per second.(others available upon request.)

Resolution: .01 milliliters

Linearity: .5%

Totalizer Capacity: 99.99 milliliters(others available upon request.)

## CONTROLS

Power: Alternate Action push button located on front panel, used to turn the power on/off.

Run/Hold: Located on the front panel. In the run position, the totalizing display will be updated as new data is generated. In the hold position, the displayed reading is held.

Totalizer Span: Located behind the readout lens of the Totalizer readout on the front panel. Used to correlate the flow with the displayed displacement.

Zero: A ten turn locking knob located on the front panel. Used to set the no flow condition on the flow rate indicator.

ENCLOSURE: 17.2" W X 5.22" H X 12.79" D(Standard)

ENCLOSURE: 8.59" W X 6.97" H X 16.79" D(Space Efficient)

## OPERATING INSTRUCTIONS FOR CES 209 FLOW AND TOTALIZER

### (NO CALIBRATION NECESSARY)

1. Place instrument on level surface or on surface at which test will take place. (Instrument is sensitive to relative position of diaphragm in flow sensing transducer.) Whenever instrument is moved, the zero will need re-adjustment.
2. Power up instrument and allow to warm up time of 10-15 minutes.
3. Temporarily connect pneumatic signal to instrument.  
CAUTION: Do not connect air pressure to the vacuum port or vacuum pressure to vacuum port as this will cause damage to flow sensing element. (Instrument can measure vacuum flow by connecting vacuum to vacuum port and may also be used to measure positive flow by connecting air pressure to pressure port.)
4. Cycle thru 3-5 test sequences to exercise diaphragm in flow sensing transducer.
5. Once diaphragm exercises are complete shut off or remove pneumatic signal.
6. Adjust "zero" control (front panel, center right) until "milliliters per second" meter (lower meter) reads zero. (Flashing minus sign is desirable.)
7. Place Mode selector switch (front panel, upper right) in "run" position and begin tests. At the end of each cycle (Puff) the totalized milliliters (upper meter) will be displayed. This reading will remain until another cycle is initiated. To hold reading for an indefinite period, regardless of these cycles run, place Mode selector switch to "hold" position. This displayed value will be held until either power is turned off or Mode selector switch is returned to the "run" position. Once tests are complete the instrument may be turned off, or left on, depending on the user's preference.