

Field Adjustment of VELOCICALC[®] Air Velocity Meters Models 8345, 8346, 8347 and the VELOCICALC[®] Plus Air Velocity Meters Models 8384, 8385, and 8386

Application Note TI-101B

All versions of the VELOCICALC[®] Models 8345, 8346, and 8347 as well as the VELOCICALC[®] Plus Models 8384(A), 8385(A), and 8386(A) have field adjustment capability. This allows you to adjust the velocity, temperature, pressure, and humidity calibrations of the instrument. These adjustments will be saved in the instrument's calibration EEPROM. This change is permanent until it is changed again. By changing these corrections back to 0.00, you can return to the original factory calibration settings.

These field adjustments are intended to make minor changes in calibration to match a user's calibration standards. These are simple linear multipliers or offset adjustments, and they do **NOT** permit multiple-point calibrations. The field adjustment is **NOT** intended as a complete calibration capability. For complete, multiple-point calibration and certification, the instrument must be returned to the factory.

Field Calibration Procedure

1. Set Unit to "Calibration Adjust" Mode

NOTE: If you will be calibrating pressure, press and hold the "PRESSURE Hold to Zero" button to zero the pressure transducer before you begin any calibration adjustments.

With the POWER OFF, remove the batteries and push DIP switch 7 to ON. Reinstall the batteries and the battery cover. Turn the instrument ON.

When the instrument is in the "CALIBRATION ADJUST" mode, the display alternates between the velocity (or temperature, or pressure or humidity reading) and the adjustment factor. As a warning, a beeper will sound every two seconds. This beeper cannot be disabled.

2. Velocity Calibration Adjust

The percentage adjustment factor for velocity multiplies all velocity reading by the same amount. The adjustment range is ± 12 percent.

When the instrument is first turned on in the "CALIBRATION ADJUST" mode, it will be in the VELOCITY calibration mode. The display will alternate between "CAL" and the adjustment factor. To change the adjustment factor, press the \uparrow or \downarrow key. When the desired calibration adjustment factor is shown, press the ENTER key. The instrument will continue to alternate between showing "CAL" and the percentage adjustment factor. Repeat this procedure if necessary. To erase the calibration adjustment and return to the factory setting, set the percentage adjustment factor to 0.00.

3. Temperature Calibration Adjust

The temperature calibration adjustment adds or subtracts a constant number of degrees Fahrenheit ($^{\circ}\text{F}$) or degrees Centigrade ($^{\circ}\text{C}$) from the displayed reading. The adjustment range is ± 9.99 $^{\circ}\text{F}$ or ± 5.55 $^{\circ}\text{C}$. Temperature calibration can be done in either the $^{\circ}\text{F}$ or $^{\circ}\text{C}$ mode.

With the instrument is in the "CALIBRATION ADJUST" mode (step 1), press and hold the TEMP key until the instrument goes into the temperature mode. The digits will alternate between "CAL" and the adjustment number.

To change the adjustment number, press the \uparrow or \downarrow key. When the desired calibration adjustment number is shown, press the ENTER key. The instrument will then alternate between temperature and the adjustment number. Repeat this procedure if necessary. To erase the calibration adjustment and return to the factory setting, set the adjustment number to 0.00.

<p>CAUTION: Do not allow the sensor to get wet. Exposure to liquids could damage the sensors. If your temperature calibration medium is a liquid, then provide a protective barrier (such as a plastic bag) for the probe to keep the sensors completely dry.</p>

4. Pressure Percentage Calibration Adjust (Models 8385(A)/8386(A) only)

<p>NOTE: It is important to "zero" the pressure function before adjusting the calibration. If you have not already set the pressure function to "zero," you need to turn off the instrument, flip DIP switch #7 OFF, turn the instrument ON and press and hold the PRESSURE key until you hear a double-beep. Then turn the instrument OFF and flip DIP switch #7 to ON and then continue.</p>
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The percentage adjustment factor for pressure multiplies all pressure readings by the same amount. The adjustment range is ± 12 percent. When changing the pressure adjustment factor, the "hold to zero" function is disabled.

With the instrument in the "CALIBRATION ADJUST" mode (step 1), press and hold the PRESSURE key until the instrument goes into pressure mode. The display will alternate between "CAL" and the percentage adjustment factor. To change the adjustment factor, press the \uparrow or \downarrow key. When the desired calibration adjustment factor is shown, press the ENTER key. The instrument will

then alternate between showing pressure and the percentage adjustment factor. Repeat this procedure if necessary. To erase the calibration adjustment and return to the factory setting, set the percentage adjustment factor to 0.00.

5. Relative Humidity Calibration Adjust (Models 8347(A) and 8386(A) only)

The humidity adjustment adds or subtracts a constant percentage of relative humidity to the displayed reading. The adjustment range is ± 12 percent RH.

With the instrument in the "CALIBRATION ADJUST" mode (step 1), press and hold the HUMIDITY key until the instrument goes into humidity mode. The display will alternate between the "CAL" and the percentage adjustment number. To change the adjustment number, press the \uparrow or \downarrow key. When the desired calibration adjustment number is shown, press the ENTER key. The instrument will then alternate between the "CAL" and the percentage adjustment number. Repeat this procedure if necessary. To erase the calibration adjustment and return to the factory setting, set the percentage adjustment number to 0.00.

6. Save Calibration Settings and Return Instrument to Normal Operation

Turn the instrument OFF and remove the batteries. Move DIP switch 7 back to the OFF position. Reinstall the batteries and the battery cover. The instrument is now ready for normal operation.

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