

				<b>ALTEK MODEL 235 FIELD CALIBRATION PROCEDURE</b>				DOCUMENT NO. 1-208		REV. A	
Created by: P.B.GARELICK						Date: 26 FEB 86			Sheet 1 of 3		

Rev	Date	Appd	DCN								
A	8-11-00		10407								

**SUGGESTED EQUIPMENT:**

4 ½ Digit voltmeter ( $\pm 0.025\%$  of reading or better)  
Voltage source, 0 to 20 VDC (Altek Model 235 or equivalent)

Before any adjustments to Model 235 are made, fresh batteries (Alkaline, Duracell MN1604 are recommended) should be placed in unit. Connect the voltmeter to output leads of the unit being calibrated.

**SOURCE MODE**

**MILLIVOLT RANGE**

Set POWER switch to SOURCE.  
Set RANGE switch to 0-100mV  
Set QUICK-CHECK switch to DIAL

Set output voltage using the large 10-turn knob to produce a voltmeter reading of 160.00mV  $\pm 0.02\text{mV}$ .

Using the Millivolt Range Pot (pot 1 on Diagram 1) adjust the 235 to read 160.0.

**PERCENT RANGE**

Set RANGE switch to Percent (%).

Set output voltage using the large 10-turn knob to produce a voltmeter reading of 1.000 V  $\pm 0.001\text{V}$

Using the 0% pot (pot 2 on Diagram) adjust the 235 to read 00.0.

Set output voltage using the large 10-turn knob to produce a voltmeter reading of 5.000 V  $\pm 0.001\text{V}$

Using the 100% pot (pot 3 on Diagram) adjust the 235 to read 100.0.

Check and readjust the 0% and 100% adjustments pots as necessary to obtain desired accuracy.

**VOLTAGE RANGE**

Set RANGE switch to 0 to 10 V

Set output voltage using the large 10-turn knob to produce a Voltmeter read of 16.000 V  $\pm 0.002\text{V}$

Using the Voltage Range pot (pot 4 on Diagram 1) adjust the 235 to read 16.00.

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### QUICK CHEKS

Both HI and LO Quik Cheks should be adjusted to ensure proper operation. At this time the HI and LO (Pots 5 and 6 on Diagram 1) may be set to any required values (Factory settings are 1.000 V (0.0%) and 5.000 V (100.0%).

Connect a voltage source in parallel with voltmeter and Model 235 being tested (see Diagram 2).

### MILLIVOLT RANGE

Set POWER switch to READ.  
Set RANGE switch to 0-100mV.

Adjust voltage source to obtain a value of 190.00 mV ( $\pm 0.02$  mV) on voltmeter. The Model 235 **MUST** display 190.0  $\pm 0.1$ .

### PERCENT RANGE

Set RANGE switch to percent (%).

Adjust voltage source to obtain a value of 4.800 V ( $\pm 0.02$  V) on voltmeter. The Model 235 **MUST** display 95.0  $\pm 0.1$ .

### VOLTAGE RANGE

Set RANGE switch to 0 to 10 V.

Adjust voltage source to obtain a value of 19.000 V ( $\pm 0.002\frac{1}{2}V$ ) on voltmeter. The Model 235 **MUST** display 19.00  $\pm 0.01$ .

### AUTO-ZERO

Disconnect voltmeter and short the leads of the 235 being tested. The 235 will display as follows:

**0 TO 100 mV RANGE:**        00.0 ( $\pm 0.1$ )

**PERCENT 1 TO 5 RANGE:** -25.0 ( $\pm 0.1$ )

**0 TO 10 V RANGE:**        0.00 ( $\pm 0.01$ )

If component replacement is required, save and replace the insulating material on the underside of the printed circuit board.

If the unit fails to meet any of its stated specifications after recalibration, it should be returned to the factory for repair.

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