

FIELD CALIBRATION PROCEDURE
FOR ALTEK MODEL 234

DOCUMENT#: 1-171 REVISION: A
APPROVED BY: P.B-GARELICK DATE: 8 APRIL 85

SUGGESTED EQUIPMENT:

1. 4 1/2 Digit Voltmeter ($\pm 0.05\%$ of reading or better) With a 250 Ω Resistor ($\pm 0.05\%$ or better). As an alternative, a DC milliampmeter ($\pm 0.05\%$ of reading) may be used directly which eliminates the 250 Ω resistor.
2. A 20 mA current source (ALTEK MODEL 134, 234 or equivalent).

SOURCE MODE:

Before any adjustments to the Model 234 are made, fresh batteries (Alkaline, Duracell MN1604 are recommended) should be placed in unit. Connect test equipment as shown in Diagram 1. Set POWER switch to MILLIAMP, MODE switch to SOURCE and QUIK-CHEK switch to DIAL. Adjust the output current using the large 10 turn knob to produce a meter reading of 4.000 Volts ± 0.001 VDC. Using the FULL SCALE ADJUST pot (pot 1 in diagram 2) adjust the 234 to read 16.00.

Move the QUIK-CHEK switch to 4 mA. Adjust output current using pot 2 so the meter reads 1.000 ± 0.001 VDC. Move the QUIK-CHEK switch to 20 mA and adjust output using pot 3 so that the DVM reads 5.000 ± 0.001 VDC.

Move the POWER switch to PERCENT and the QUIK-CHEK switch to 0.0% and adjust the 234 display to 0.00% using the 0% DISPLAY ADJUSTMENT pot, #4 on Diagram 2.

Move the QUIK-CHEK switch to the 100% position and adjust display to read 100.0% by using the 100% DISPLAY ADJUSTMENT pot #5 on the Diagram. Check and readjust the 0% and 100% display adjustment pots as necessary to obtain desired accuracy.

THE REMAINDER OF THE PROCEDURE IS FUNCTIONAL CHECK

READ MODE CHECK:

Place the mA Source in series with the Model 234 as shown in Diagram 3. Set MODE switch to READ and POWER switch to MILLIAMP. Adjust the current source using the values from the table below to obtain the desired reading on the Meter. Verify the correct display of the Model 234 as shown in the table.

mA Source	METER	MILLIAMP	PERCENT
4.00	1.000	4.00	00.0
8.00	2.000	8.00	25.0
12.00	3.000	12.00	50.0
16.00	4.000	16.00	75.0
20.00	5.000	1 .	100.0
	(± 0.001 VDC)	(± 0.01 mA)	($\pm 0.1\%$)

2 WIRE SIMULATOR MODE: Set the current source for 20 mA (or higher). Set the MODE switch to 2 WIRE and the other Switches as shown in the table below.

QUIK-CHEK SWITCH	POWER SWITCH		
	METER	MILLIAMP	PERCENT
100% (20mA)	5.000	1 .	100.0
0.0% (4mA)	1.000	4.00	0.0
	(± 0.001 VDC)		

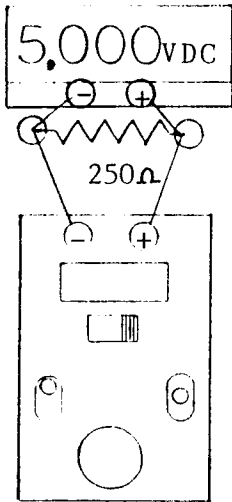


DIAGRAM 1

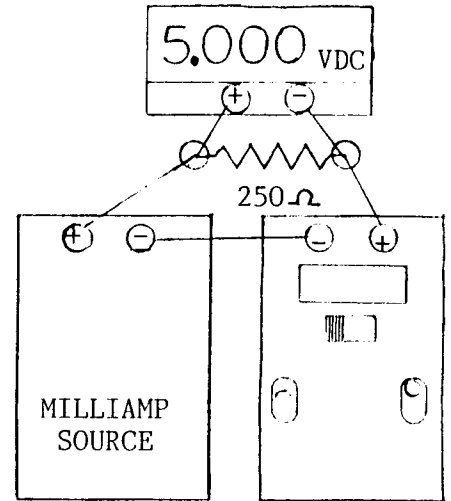


DIAGRAM 3

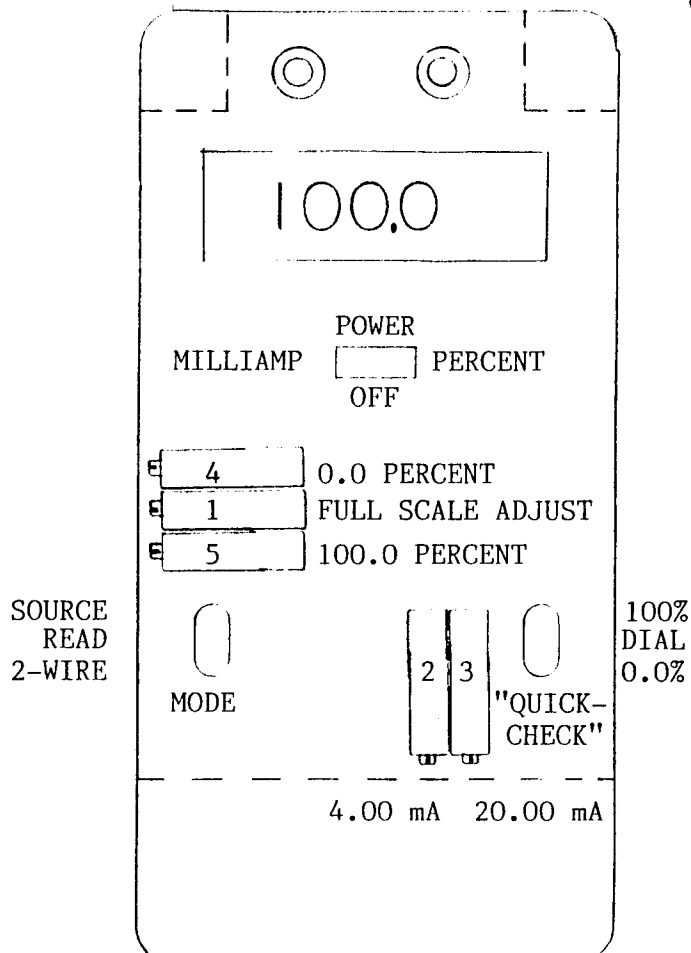


DIAGRAM 2

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.

Serial Number:	Model Number:234	Order Number:
Calibrated By:	Description:20 mA SIGNAL ANALYZER	Date:
Received From:		

Function Parameter Tested	Low Limit	As Received	High Limit	Adjusted
mA SOURCE QUIK-CHEK				
20.00mA	4.9948V		5.0053V	
4.00mA	0.9948V		1.0053V	
% SOURCE, QUIK-CHEK				
100.0%	4.9940V		5.0060V	
0.0%	0.9940V		1.0060V	
mA SOURCE, DIAL				
8.00mA	1.9948V		2.0053	
12.00mA	2.9948V		3.0053V	
16.00mA	3.9948V		4.0053V	

Assets	Serial No.	Last Cal'd	Cal Due
250Ω Resistor ±.01%			