

ALTEK MODEL 334 CALIBRATION PROCEDURE

Drawing #1-530 Rev C

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SUGGESTED EQUIPMENT:

1) 5½ Digit Voltmeter (Accuracy of $\pm 0.01\%$ of reading or better) with a 250Ω resistor ($\pm 0.015\%$ or better). As an alternative, a DC milliammeter ($\pm 0.015\%$ or better) may be used, which eliminates the 250Ω resistor.

2) A 20mA current source with maximum voltage output compliance of 100 VDC (Altek Model 134, 156, 234, 334 or equivalent). A 50mA current source is suggested for an optional check only (Altek Model 156 or equivalent).

3) An adjustable DC Power Supply, 0 to 100 VDC

Before any adjustments to the Model 334 are made, fresh batteries (three 9 Volt Alkaline preferred) should be placed in the unit. Connect the test equipment as shown in Diagram 1.

SOURCE MODE, MILLIAMP RANGE: (Precision 250Ω Resistor method)

Set the POWER switch to mA, the MODE switch to SOURCE and the "QUIK-CHEK" switch to 20.00mA.

Adjust R2 (see Diagram 2) so that the LCD reads 20.00
Adjust R23 so that the DVM displays 5.0000 ± 0.0020 VDC

Move the "QUIK-CHEK" switch to 4.00mA

Adjust R5 so that the LCD displays 4.00
Verify that the DVM reads 1.0000 ± 0.0014 VDC

SOURCE MODE, PERCENT RANGE:

Move the POWER switch to (% 4 to 20 mA)
(The MODE switch should still be in SOURCE and the "QUIK-CHEK" switch should still be at 4.00mA/0.0%)

Adjust R10 so that the LCD displays 00.0

Move the "QUIK-CHEK" switch to 100.0%

Adjust R27 so that the LCD displays 100.0

Check and readjust the 00.0% and 100.0% adjustments as necessary to obtain desired readings.

READ VDC RANGE:

Connect the Model 334 and the DVM across the adjustable power supply as in Diagram 3. Move the POWER switch to READ VDC and the MODE switch to READ. Adjust the power supply so the DVM reads 95.000 VDC.

Adjust R31 so that the LCD displays 95.00

Check additional points from the table below to verify proper operation.

	DVM	334
	50.000	50.00± 0.04V
	25.000	25.00± 0.02V
	5.000	5.00± 0.01V

The remainder of this procedure is a functional check

READ MODE CHECK:

Place the mA Source in series with the Model 334 as shown in Diagram 4. Move the MODE switch to READ and toggle the POWER between mA and % 4 to 20mA as indicated in the table below. Adjust the mA Source to obtain the readings on the DVM and compare the readings on the Model 334.

mA Source	Ranges on 334		
	DVM	Milliamp	Percent
4.00	1.0000	4.00 ±0.01	00.0 ±0.1
8.00	2.0000	8.00 ±0.01	25.0 ±0.1
12.00	3.0000	12.00 ±0.02	50.0 ±0.1
16.00	4.0000	16.00 ±0.02	75.0 ±0.2
20.00	5.0000	20.00 ±0.02	100.0 ±0.2
Optional check			
50.00	12.500	50.00 ±0.04	287.5 ±0.3

2-WIRE MODE CHECK:

This check uses the same hookup as the READ MODE check above (Diagram 4). Set the mA Source to full output (greater than 20mA). Move the MODE switch to 2 WIRE TRANSMITTER SIMULATOR position. Use the "QUIK-CHEK" switch and check that both the DVM and the Model 334 display as in the table below.

Ranges on 334

Milliamp	DVM	Percent	DVM
4.00	1.0000± 0.0028	00.0	1.0000± 0.0043
20.00	5.0000± 0.0040	100.0	5.0000± 0.0055

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.

