

ALTEK

DC MILLIVOLT/VOLTAGE SOURCES

- **THREE MODELS**
 135-0.1 1-100 millivolts
 135-1 0-1 volt
 135-10 0-10 volts
- **DIGITAL ADJUSTMENT**
 Continuous...0-100%=0.00 to Full Scale
- **POCKET SIZED**
 2-1/8 x 4 x 2-1/4 inches
- **"QUIK-CHEK®" SWITCH**
 Selects "00.0%," "Dial" and "100%"
- **BUILT-IN BATTERIES**
 High Efficiency design



GENERAL DESCRIPTION

ALTEK's family of **Precision Voltage Sources**, Series 135, provide DC voltage outputs into a wide variety of receivers.

Built-in batteries provide continuously adjustable voltage output from 0 to 100% of range. Optional 120 VAC or 240 VAC adapters allow full-time bench use.

In addition to the 0.1% accurate digital dial adjustments, switch selected signals are provided at 00.0% and 100% for "QUIK-CHEK" zero and full scale settings.

Pocket sized and lightweight, the ALTEK Model 135 is ideal for use in the field, control room and shop. Small size is made possible through up-to-date design including a precision reference, ultra stable amplifier and high current power output. Accuracy, stability and low power consumption are combined through the use of the latest microcircuitry.

Continuous adjustability with memory lock assures fast, precise settings of meter circuits, voltage trips, recorders, data loggers, controllers, computers and final control elements. Built-in long life batteries allow complete portability for checkout and calibration of all voltage input devices.

ALTEK brings you the handy Model 135 voltage Sources at a cost low enough for every bench and toolbox.

| OUTPUT VOLTAGE | | | |
|----------------|---------|-------|--------|
| Dial Setting | 135-0.1 | 135-1 | 135-10 |
| % | 0-100mV | 0-1V | 0-10V |
| 00.0 | 00.0 | 00.0 | 00.0 |
| 05.0 | 05.0 | .050 | 0.50 |
| 10.0 | 10.0 | .100 | 1.00 |
| 15.0 | 15.0 | .150 | 1.50 |
| 20.0 | 20.0 | .200 | 2.00 |
| 25.0 | 25.0 | .250 | 2.50 |
| 30.0 | 30.0 | .300 | 3.00 |
| 35.0 | 35.0 | .350 | 3.50 |
| 40.0 | 40.0 | .400 | 4.00 |
| 45.0 | 45.0 | .450 | 4.50 |
| 50.0 | 50.0 | .500 | 5.00 |
| 55.0 | 55.0 | .550 | 5.50 |
| 60.0 | 60.0 | .600 | 6.00 |
| 65.0 | 65.0 | .650 | 6.50 |
| 70.0 | 70.0 | .700 | 7.00 |
| 75.0 | 75.0 | .750 | 7.50 |
| 80.0 | 80.0 | .800 | 8.00 |
| 85.0 | 85.0 | .850 | 8.50 |
| 90.0 | 90.0 | .900 | 9.00 |
| 95.0 | 95.0 | .950 | 9.50 |
| 00.0 | 100 | 1.00 | 10.0 |

Note: decimal point not shown on dial.

SPECIFICATIONS

(Unless otherwise indicated, specifications are in % of Span @ 25 Degrees C)

CALIBRATED ACCURACY: $\pm 0.1\%$ from 1% to 99%
 "QUIK-CHEK": $\pm 0.08\%$ at 0.00% and 100.0%
 RESOLUTION: 0.02%
 BUILT-IN BATTERIES: 1 or 2 - 9 Volt Alkaline
 AC ADAPTER: 28-0120, 28-0240 for 120 or 240V 50/60 Hz
 MINIMUM LOAD RESISTANCE: (For 0.1% Load Effect)
 135-01. 100 OHMS
 135-1 100 OHMS
 135-10 500 OHMS
 NOMINAL OUTPUT IMPEDANCE:
 135-0.1 0.1 OHMS
 135-1 0.1 OHMS
 135-10 0.5 OHMS
 BATTERY LIFE:
 CONTINUOUS OUTPUT:
 500 Hours into high impedance loads

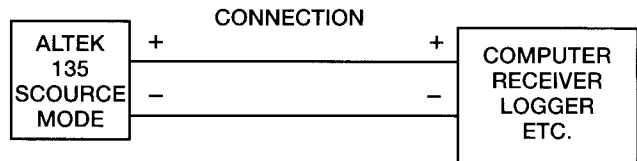
POWER SUPPLY EFFECT: 0.005%/Volt
 BATTERY CHECK: momentary switch positions causes lamp glow
 OPERATING AMBIENT TEMPERATURE: Minus 10 to plus 140 degrees F (Minus 25 to plus 60 degrees C)
 TEMPERATURE EFFECT: $\pm 0.01\%$ /degree C
 STORAGE TEMPERATURE LIMITS: Minus 40 to plus 160 degrees F (Minus 40 to plus 70 degrees C). Remove batteries if stored for extended period.
 WARM-UP TIME: 2 seconds to rated accuracy
 SIZE: 2-1/8 x 4 x 2-1/4 inches (54 x 102 x 55mm)
 WEIGHT: 11 ounces (0.3 kg)
 CARRYING CASE: Optional, zippered with belt loop
Specifications subject to change without notice

OPERATING INSTRUCTIONS

Disconnect any existing input wires from the device to be checked or calibrated. Turn the selector switch (left side) to the "ON" position.

Connect the red plus (+) lead to the plus input of the device to be checked or calibrated. Connect the black minus (-) lead to the minus terminal.

"00.0%," "Dial" adjustment and "100%" are selected with the right hand switch. Fast zero and full scale checks can be made by means of the "00.0%" and the "100%" positions. A third Quik Chek position may be established by adjusting the digital dial to the desired percent value and locking it in place. The continuous adjustment digital dial reads directly in percent of the signal. For example, a dial setting of 500 is 50% of span. Complete the adjustments and turn the ALTEK Model 135 off. Reconnect any wires removed for check out.



WARRANTY

Our equipment is guaranteed against defective material and workmanship (excluding batteries) for a period of three years from date of shipment. Claims under guarantee can be made by returning the equipment prepaid to our factory. The equipment will be replaced, repaired or adjusted at our option. The liability of Altek is restricted to that given under our guarantee. No responsibility is accepted for damage, loss or other expense incurred through sale or use of our equipment. Under no condition shall Altek be liable for any special, incidental or consequential damage.

| ORDERING INFORMATION | Part No. |
|----------------------|------------------|
| Model 135 | 0-100mV Source |
| | 0-1V Source |
| | 0-10V Source |
| Carrying Case | |
| AC Adapter | 120 VAC 50/60 Hz |
| AC Adapter | 240 VAC 50/60 Hz |
| | 135-0.1 |
| | 135-1 |
| | 135-10 |
| | 09-3781 |
| | 28-0120 |
| | 28-0240 |

OTHER PRODUCTS

Altek designs and manufactures fast, accurate instruments for measurement, generation and simulation of virtually every process control signal. Consult our factory directly or contact your local stocking representative to order precise, low cost Milliamp Calibrators, Voltage Sources, Direct Thermocouple Sources, RTD Simulators and Frequency Sources. Altek also produces calibrators for custom ranges and unique applications. Additional models and ranges are frequently added to the Altek instrument family to meet all of your critical calibration requirements. Altek products are made in the USA.

AVAILABLE FROM: