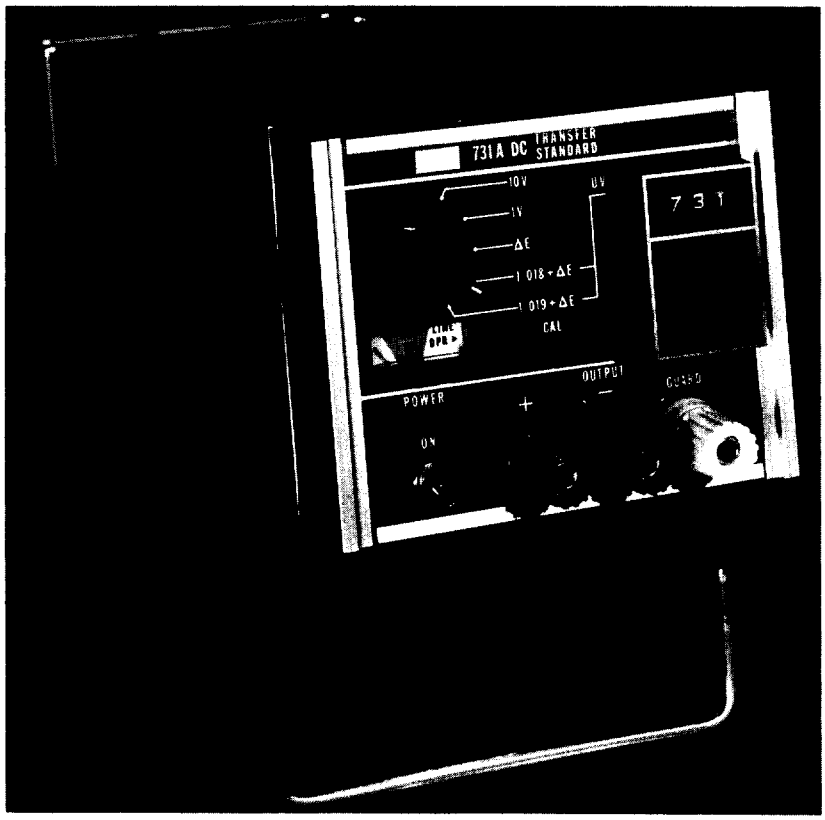
FLUKE®

DC TRANSFER STANDARD



FEATURES

- 2 PPM TRANSFER ACCURACY
- 10 PPM PER MONTH STABILITY
- BATTERY OPERATED
- 3½" PANEL HEIGHT, QUARTER RACK WIDTH

The Fluke 731A is a versatile instrument providing standard cell accuracy in a solid-state D.C. transfer standard. It will furnish a variety of precision voltages with specific voltage outputs of 1.000, (1.018 + ΔE), (1.019 + ΔE), 10.000 and ΔE Volts. It may be used as a 1 volt, or 10 volt standard output, electronic standard cell, or 0 to 1000 uv standard source and a standard cell comparator.

The ΔE control is a precision 10 turn linear potentiometer which has a 3 digit reading dial. The control is equipped with a locking lever which prevents accidental changing of the ΔE setting. The ΔE resolution is 1 uV, thus allowing 1 uV steps (0 - 1000) to be added to the 1.018 or 1.019 outputs by appropriate function selection. The ΔE output may be selected independently as well.

The primary instrument reference is a reference amplifier with precisely known characteristics. This device is a zener diode with active circuitry added to provide a voltage reference with a very low temperature coefficient over a 55°C temperature range. The reference amplifier is the principal contributor to the outstanding stability characteristics of the 731A. Output voltage stability is within 10 PPM per month. Transfer accuracy is 2 PPM between standard cells. To obtain such stability, it is not only necessary to use a reference amplifier, but also stable output dividers that have exactly the same temperature coefficients.

The 731A is powered by its own regulated rechargeable battery pack. The state of charge is indicated on a front panel meter. The batteries are trickle charged during line operation.

The 731A weighs 5 lbs and is packaged in a attractive 3½" high case. Total power consumed is 1 watt, again contributing to the long life and stability of the 731A. The 731A may be quickly and conveniently rack mounted, with the addition of optional brackets, in a standard 19" EIA rack.

SPECIFICATIONS

OUTPUT VOLTAGE: 10.000V, 1.000V, 1.018 + ΔE, 1.019 + ΔE, ΔE

NOTE: ΔE position offers +(0. to 999 uv in 1 uv steps)

TRANSFER ACCURACY: 2 PPM between standard cells.
3 PPM between standard cell and 1V output.
5 PPM between standard cell and 10V output.

ΔE RESOLUTION 1 uv

REFERENCE STABILITY: Better than 10 PPM per month after 30 minutes warm up.

LINE REGULATION: Less than 1 PPM/±10% line variation.

OUTPUT IMPEDANCE: Less than 1.1K Ω

RIPPLE & NOISE: Less than 1 PPM P-P DC to 1 Hz
Less than 20 uv RMS 1 Hz to 1 MHz

COMMON MODE REJECTION: 120 db at DC
100 db at 60 Hz
85 db at 400 Hz

OUTPUT CURRENT: 0.9 Ma to 10 Ma, proportional to output voltage. No instrument damage from shorted output.

ISOLATION: Output may be floated up to 500 VDC between chassis ground and guard.

CALIBRATION ADJUSTMENT: Separate internal adjustments for the 5 output voltages. Front panel adjustment common to all voltages including the 10.000 V output. Calibrate at 90 day intervals. Basic reference adjustments accessible from front panel.

TEMPERATURE RANGE: +0°C to +55°C operating.
−40°C to +60°C non-operating

TEMPERATURE COEFFICIENT: Less than 1 PPM/C°, 10°C to 45°C
Less than 2 PPM/C°, 0°C to 10°C and 45°C to 55°C

SHOCK & VIBRATION: Meets requirements of MIL-T-21200H

TERMINALS: Three five-way binding posts for positive, negative and guard. All terminals are solid copper with gold flash.

BATTERY OPERATION: Rechargeable nickel-cadmium batteries provide at least 30 hours of continuous operation.

INPUT POWER: 115V or 230V ±10 VAC, 50 to 400 Hz single phase or internal battery operation.
6 watts maximum, 120 Ma maximum

SIZE: 3½" high x 4¼" wide x 12" deep. (8.8 x 10.7 x 30.4 cm)

WEIGHT: 5 lbs (2.26 kg)

PRICES: Model 731A: $395.00

Rack Mounting Kits:

Number of 731A's mounted	Kit Number	Price
1.	MO3-201-601	$40
2. (Side-by-side)	M03-201-603	$40
3. (Side-by-side)	M03-206-604	$40
4. (Side-by-side)	M03-205-605	$40