

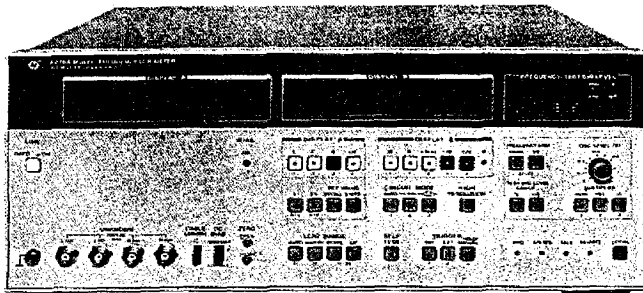


COMPONENT MEASUREMENT

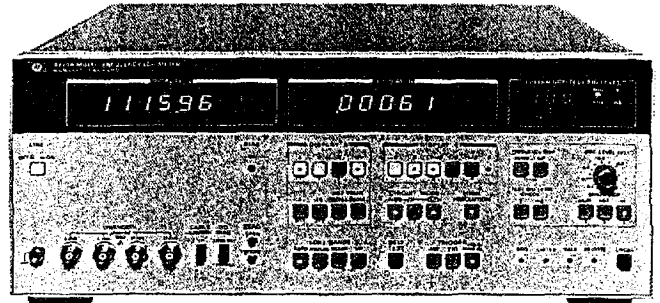
Multi-Frequency LCR Meters

HP 4274A, 4275A

- Test frequencies -- HP 4274A: 100 Hz to 100 kHz
HP 4275A: 10 kHz to 10 MHz
- Test signal level -- HP 4274A: 1 mV to 5 Vrms
HP 4275A: 1 mV to 1 Vrms
- 0.1% basic accuracy
- High resolution -- 5 1/2 digit; D=0.00001
- Measure L/C -- D/Q/ESR/G; |Z| -- e,
R-X/B/L/C; ΔLCRZ, Δ%



HP 4274A



HP 4275A



Description

The HP 4274A and HP 4275A Multi-frequency LCR Meters are microprocessor-based impedance measuring instrumentation. Both instruments offer LCR components, complex components, electronic circuits "tested under actual working conditions," and semiconductor materials. A measurement under conditions similar to the intended use contributes to the improvements in quality and reliability of electronic components, devices, and circuits.

Specifications

(Refer to the HP 4274A & HP 4275A data sheet for details.)

Measurement Parameters and Range

	HP 4274A	HP 4275A
L	100.00 nH to 1000.0 H	100.00 nH to 10.00 H
C	1.0000 pF to 1.00 F	1.0000 pF to 100.00 μF
R, Z , ESR, & X	100.00 m Ω to 10.000 M Ω	1.0000 Ω to 10.000 M Ω
D	0.00001 to 9.9999	0.00001 to 9.9999
Q (1/D)	0.01 to 9900	0.01 to 9900
G & B	1.0000 μS to 100.00 S	1.0000 μS to 10.00 S
e	0 to ±180°	0 to ±180°

Measurement Accuracy

	C-D/Q	L-D/Q
	D-range: 0.00001 to 9.9999 Q-range: 0.01 to 9900 (=1/D) (C & D accuracy apply only when C: full scale and D: ≤ 0.1)	D-range: 0.00001 to 9.9999 Q-range: 0.01 to 9900 (=1/D) (L & D accuracy apply only when C: full scale and D: ≤ 0.1)
HP 4274A	C: 0.1% + 2 D: 0.32% + 0.0007 + 1	L: 0.1% + 3 D: 0.31% + 0.0011 + 1
HP 4275A	C: 0.1% + 2 D: 0.32% + 0.0007 + 1	L: 0.1% + 3 D: 0.31% + 0.0011 + 1

Range: full scale range, accuracy: % of reading + counts (D accuracy: % of reading + absolute D value + count).
(Conditions: Warm-up time ≥ 30 minutes, environment temperature: 23° C ± 5° C).
Refer to technical data sheet for accuracy details.

Measurement frequencies

HP 4274A: 100 Hz to 100 kHz, 11 spots (100 Hz, 120 Hz, 200 Hz, 400 Hz, 1 kHz, 2 kHz, 4 kHz, 10 kHz, 20 kHz, 40 kHz, 100 kHz; ± 0.01%)
HP 4275A: 10 kHz to 10 MHz, 10 spots (10 kHz, 20 kHz, 40 kHz, 100 kHz, 200 kHz, 400 kHz, 1 MHz, 2 MHz, 4 MHz, 10 MHz; ± 0.01%)

Test signal level:

HP 4274A: 4-ranges (1 mVrms to 5 Vrms) continuously variable
HP 4275A: 3-ranges (1 mVrms to 1 Vrms) continuously variable

Test signal level monitor: Standard.

Displays: Dual 5 1/2-digit and single 3-digit; maximum display 19999 (full scale and overrange in high resolution mode), and 4 1/2-digit: maximum display 19999 in normal mode. (Number of digits depends on measurement frequency, test level, and range.)

Circuit modes: Series, parallel, AUTO mode.

Deviation measurement: Difference between recallable stored reference and displayed is deviation value (count or percent)

Ranging: AUTO or MANUAL (UP/DOWN).

Trigger: Internal, external, or manual

Measurement terminals: Four-terminal pair with guard

Auto zero adjustment: Automatic normalization of the readout offset due to residuals of the test fixture by pushbutton operation

Normalization range: C < 20 pF, L < 2000 nH, R < 0.5 Ω, G < 5 μS

Self test: Automatic operational verification check indicates pass or fail condition

General Information

Operating temperature and humidity: 0° C - 55° C, ±95% RH at 40° C

Power: 100, 120, 220V ± 10%, 240V + 5% to 10%, 48 to 66Hz, 135VA max. (HP 4274A); 165VA max. (HP 4275A)

Size: 177 mm H × 425 mm W × 574 mm D (7 in × 16.75 in × 22.6 in)

Weight: 18 kg (39.6 lb)

Accessory Furnished

HP 16047A: Direct coupled test fixture

Special Options

One or two arbitrary test frequencies for each instrument are available. For more details, please contact the nearest HP sales office

Selectable Frequency Range

HP 4274A: 100 Hz to 100 kHz to ± 0.1%. If two frequencies are added, at least one frequency must satisfy the following equation: f = 1200/N kHz where N is an integer from 12 to 12000

HP 4275A: 10 kHz to 10.7 MHz ± 0.1%.

Ordering Information

	Price
HP 4274A Multi-Frequency LCR Meter	\$11,755
Opt W30: Extended repair service. See page 671.	+ \$260
HP 4275A Multi Frequency LCR Meter	\$14,100
Opt W30: Extended repair service. See page 671.	+ \$260
Opt 001: 0 to ± 35 internal dc bias, max resolution; 1 mV steps	+ \$1,045
Opt 002: 0 to ± 99.9 V internal dc bias, resolution: 100 mV steps.	+ \$965
Opt 004: Frequency steps in 1-3-5 sequence	\$0
Accessory Available	
HP 16023B: dc Bias Controller, for control of dc bias	\$350
Opt 001 or 002 Internal Bias Supply.	