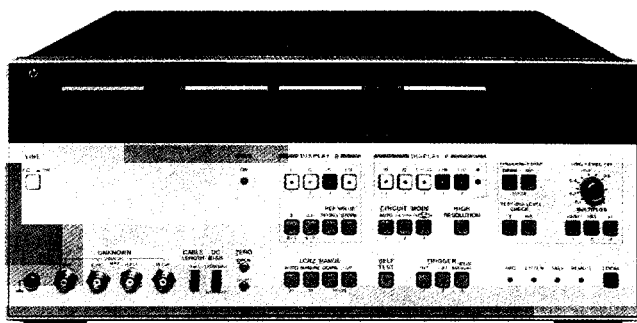


# COMPONENT MEASUREMENT

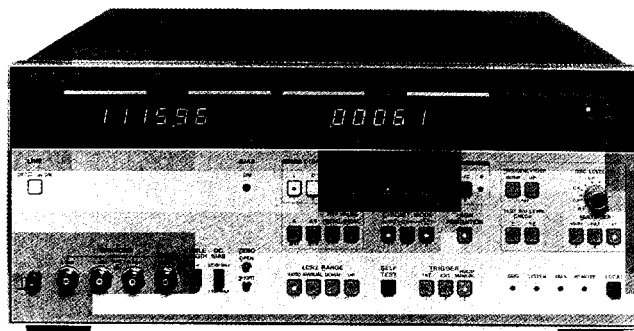
## Multi-Frequency LCR Meters

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 – 5½ 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 5½-digit and single 3-digit; maximum display 199999 (full scale and overrange in high resolution mode), and 4½-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)

**Range:** 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

Item	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.

☎ For off-the-shelf shipment, call 800-452-4844.