

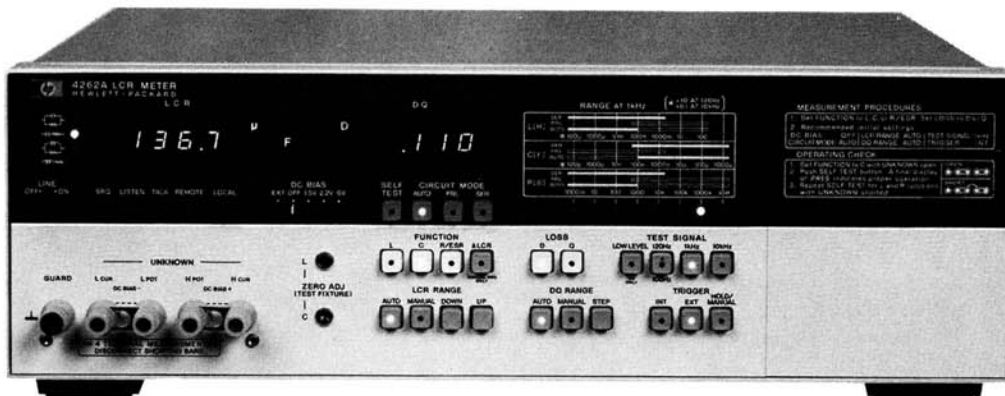


COMPONENT MEASUREMENT

Digital LCR Meters

Models 4261A and 4262A

- Automatic balancing, ranging & circuit mode selection
- Test frequencies: HP 4261A, 120 (100) Hz and 1 kHz
 HP 4262A, 120 (100) Hz, 1 kHz and 10 kHz
- Versatile accessories and options
- High reliability



HP 4262A



HP 4261A

Description

The HP 4261A and HP 4262A are 3½ digit LCR meters that meet today's requirements for component measurements. Both instruments feature fully automatic operation over wide measuring ranges. Simply select the measuring functions and one of the test frequencies, then insert the device to be measured. The instrument does the rest—automatically selecting the proper measuring range and equivalent circuit mode. The HP 4261A and HP 4262A basic features are summarized in the table below.

	HP 4261A	HP 4262A
Test Frequency	120 (100) Hz, 1 kHz	120 (100) Hz, 1 kHz, 10 kHz
Signal Level	1 V, 50 mV (Cp)	1 V, 50 mV (Cp)
Parameters Measured	C-D L-D R	C-D • Q L-D • Q R (ESR) Δ (Deviation)
HP-IB	No	Yes (opt.)
Digital Comparison	No	Yes (opt.)
BCD Output	Yes (opt.)	Yes (opt.)

In addition to automatic measurements, the HP 4261A and HP 4262A provide high accuracy (0.2% reading), internal dc bias, and series and parallel equivalent circuit modes.

These relatively low cost and easy-to-use LCR meters are capable of a wide range of applications—measuring electrolytic/ceramic capacitors, filter coils, pulse transformers, internal resistance of dry cells and semiconductor junction capacitance, as well as ordinary LCR components. Extended features of these reliable instruments include optionally available HP-IB (HP 4262A) and BCD (HP 4261A) data output capabilities and a comparator option which is convenient for production line applications.

Specifications (refer to data sheet for complete specifications) Measurement ranges and accuracies: see table on next page. Accuracy applies over a temperature range of 23°C ± 5°C (at 0° to 55°C, error doubles). 10 kHz and Q specifications are given only for the HP 4262A.

	HP 4261A	HP 4262A
Parameters measured	L-D, C-D R	L-D • Q, C-D • Q R (ESR), Δ LCR
Display	3½ digits max. display 1900	3½ digits max. display 1999
Test frequency	120 (100) Hz, 1 kHz ±3%	120 (100) Hz, 1 kHz 10 kHz ±3%
Test signal level (typical)	1 V, 50 mV (Cp mode only)	
DC bias	Int	1.5 V, 2.2 V, 6 V ±5%, selectable
	Ext	0 to +30 V
Equivalent circuit modes	auto, parallel, series	
Ranging modes	LCR	auto, manual
	DQ	D only — fixed
Trigger	internal, external, manual	
Measuring terminal	5-terminal configuration	

Deviation measurement (HP 4262A): displays the difference between a stored value (that is, measured value when Δ LCR switch is depressed) and subsequent measured data.

Offset adjustments (HP 4262A): front panel adjustments to compensate for stray capacitance and residual inductance of the test fixture.

C: 0 to 10 pF **L:** 0 to 1 μH

Self-test (HP 4262A): automatically checks the HP 4262A's basic functions.

General

Measuring time (typical): for a 1000 count measurement on a low loss component on a fixed range:

1 kHz, 10 kHz: C/L 220-260 ms, R 120-160 ms

120 (100) Hz: C/L 900 ms, R 700 ms

Ranging Time

1 kHz, 10 kHz: 180 ms/range step

120 (100) Hz: 670 ms/range step

Reading rate: INT (internal trigger) approximately 30 ms between end of measurement cycle and start of the next cycle. EXT (external trigger) measuring cycle is initiated by a remote trigger input.



C-D/C-Q Measurement

Range	C	120 (100) Hz 1 kHz 10 kHz	1000 pF 100.0 pF 10.00 pF	10.00 nF 1000 pF 100.0 pF	100.0 nF 10.00 nF 1000 pF	1000 nF 100.0 nF 10.00 nF	10.00 μF 1000 nF 100.0 nF	100.0 μF 10.00 μF 1000 nF	1000 μF 100.0 μF 10.00 μF	10.00 mF 1000 μF 100.0 μF
		D	0.001 to 1.900 (HP 4261A), 0.001 to 19.9 (HP 4262A)							
	Q ^{*1}	0.050 to 1000 (4 ranges, HP 4262A)								
C Accuracy ^{**2}		0.2% + 1 ^{**3}								
		At 120 (100) Hz, 1 kHz			0.3% + 2			0.5% + 2		1% + 2 ^{**4}
		At 10 kHz						1% + 2		5% + 2
D (1/Q) Accuracy ^{**2}		0.2% + (2 + 200/Cx)						At 120 (100) Hz, 1 kHz		
		0.5% + (2 + 200/Cx)						At 10 kHz		
		At 120 (100) Hz, 1 kHz			0.3% + (2 + Cx/500)			1% + (5 + $\frac{Cx}{500}$)		
		At 10 kHz			0.5% + (2 + Cx/500)			1% + (5 + $\frac{Cx}{500}$)		5% + (5 + $\frac{Cx}{500}$)

^{*1}Calculated as the reciprocal of D.
^{**2}±(% of reading + number of counts), Cx is capacitance readout in counts. Accuracies in this table apply when D < 1.900.
^{**3}Add 0.2 pF for HP 4261A.
^{**4}(5% + 2 counts) at 1 kHz.

L-D/L-Q Measurement

Range	L	120 (100) Hz 1 kHz 10 kHz	1000 μH 100.0 μH 10.00 μH	10.00 mH 1000 μH 100.0 μH	100.0 mH 10.00 mH 1000 μH	1000 mH 100.0 mH 10.00 mH	10.00 H 1000 mH 100.0 mH	100.0 H 10.00 H 1000 mH	1000 H 100.0 H 10.00 H
		D	0.001 to 1.900 (HP 4261A), 0.001 to 19.9 (HP 4262A)						
	Q ^{*1}	0.050 to 1000 (4 ranges, HP 4262A)							
L Accuracy ^{**2}		At 120 (100) Hz, 1 kHz			0.3% + 2			1% + 2	
		At 10 kHz						1% + 2	
		0.3% + 2			0.2% + 2 ^{**3}			At 120 (100) Hz, 1 kHz	
D (1/Q) Accuracy ^{**2}		At 120 (100) Hz, 1 kHz			0.3% + (3 + Lx/500)			1% + (3 + Lx/500)	
		At 10 kHz			0.5% + (3 + Lx/500)			1% + (3 + Lx/500)	
		0.2% + (3 + 200/Lx)			At 120 (100) Hz, 1 kHz				
		0.5% + (3 + 200/Lx)			At 10 kHz			5% + (5 + $\frac{Lx}{500}$)	

^{*1}Calculated as the reciprocal of D.
^{**2}±(% of reading + number of counts), Lx is inductance readout in counts. Accuracies in this table apply when test signal level is 1 V and D < 1.900.
^{**3}Add 0.2 μH for HP 4261A.

R (ESR)^{1} Measurement**

Range	120 (100) Hz 1 kHz 10 kHz	1000 mΩ	10.00 Ω	100.0 Ω	1000 Ω	10.00 kΩ	100.0 kΩ	1000 kΩ	10.00 MΩ
Accuracy ^{**2}		0.2% + 1				0.3% + 2 ^{**3}			

^{**1}ESR measuring range is from 1 mΩ to 19 kΩ (typical). These values vary depending on the series capacitance or inductance value of the device under test.
^{**2}±(% of reading + number of counts).
^{**3}±(5% + 2 counts) on 10.00 MΩ range at 10 kHz.

	HP 4261A	HP 4262A
Operating temperature and humidity	0°C to 55°C ≤95% RH at 40°C	
Power requirements	100/120/220/240 V ± 10% 48-66 Hz	100/120/220 V ± 10%, 240 V + 5% -10%, 48-66 Hz
Power consumption	≤25 VA	
Size	134 H x 213 W x 422 mm D (5 • 3/4" x 8 • 3/8" x 16 • 3/4")	147 H x 426 W x 345 mm D (5 • 3/4" x 16 • 3/4" x 13 • 3/4")
Weight (approx.)	7.5 kg (16.51 lb)	8 kg (17.51 lb)

Options Available

Option	HP 4261A ^{**1}	HP 4262A ^{**2}
001	BCD data output (L/C/R and D simultaneously)	BCD data output
002	BCD data output (L/D, C/D, R alternately)	—
003	BCD remote control	—
004	—	Digital comparator
101	—	HP-IB

^{**1}Options 001 and 002 are mutually exclusive.
^{**2}Option combinations 101/001 and 101/004 cannot be ordered.

Accessories available: **HP 16061A:** test fixture, direct couple, 5-terminal; **HP 16062A:** test leads with alligator clips, 4-terminal (for low impedance measurements); **HP 16063A:** test leads with alligator clips, 3-terminal (for high impedance measurements).

Ordering Information (4261A)

HP 16061A Test Fixture, Radial/Axial lead devices	\$200 ☎
HP 16062A Test Leads, 4-wire	\$120 ☎
HP 16063A Test Leads, 3-wire	\$110 ☎
Opt 001: BCD Output (Simultaneous)	\$230
Opt 002: BCD Output (Alternately)	\$200
Opt 003: BCD Remote Control	\$105
Opt 010: 100 Hz Test Frequency	N/C
Opt 910: Extra Manual	\$23
HP 4261A Digital LCR Meter	\$2,900

☎ Fast-Ship product -- see page 766.

Ordering Information (HP 4262A)

Opt 001: BCD Output	\$400
Opt 004: Digital Comparator	\$960
Opt 010: 100 Hz Test Frequency	N/C
Opt 101: HP-IB Interface	\$650
Opt 907: Front Handle Kit	\$55
Opt 908: Rack Flange Kit	\$32.50
Opt 909: Rack/Handle Kit	\$80
Opt 910: Extra Manual	\$29
HP 16061A Test Fixture for Radial/Axial Lead Devices	\$200 ☎
HP 16062A Test Cables, 4-wire	\$120 ☎
HP 16063A Test Cables, 3-wire	\$110 ☎
HP 4262A Digital LCR Meter	\$4,000

☎ Fast-Ship product -- see page 766.