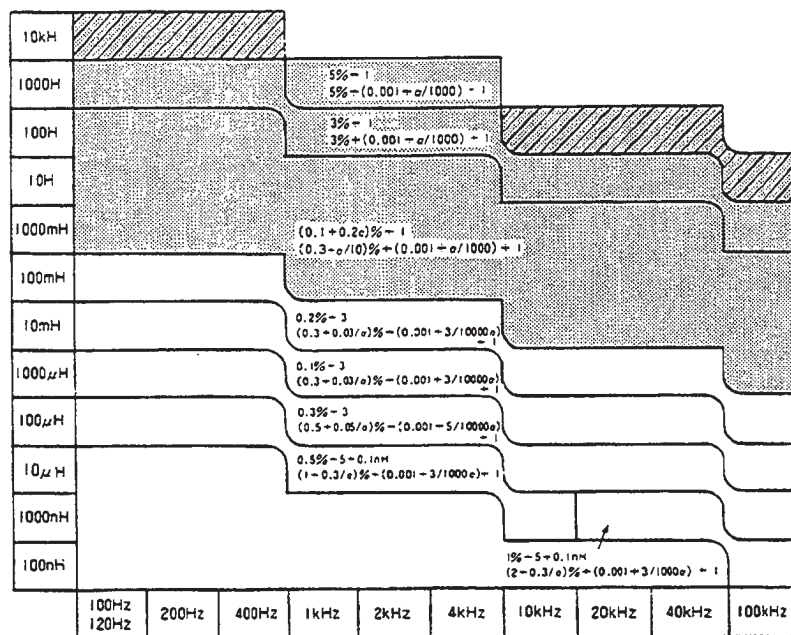


Table 1-1. Specifications (Sheet 4 of 8).

L-D, L-Q MEASUREMENTS



Equations in table represent:

Inductance accuracy
Dissipation factor accuracy

1. accuracies only apply when $D < 0.1$.

When $0.1 < D < 1$, add the following number to L accuracy: $D/10\%$



For higher D values, refer to General Information.

α , $1/\alpha$: See Figure A Accuracy Coefficients Graph.

D measurement range: 0.0001 - 9.9999

Q measurement range: 0.01 - 9900, (0.01 - 1200 in normal mode) calculated as reciprocal number of D.


Display count for L (normal mode):

Range		
3 digit	*60 - 1999	*80 - 1999 (D ≤ 1)
4 digit	0 - 19999	0 - 19999

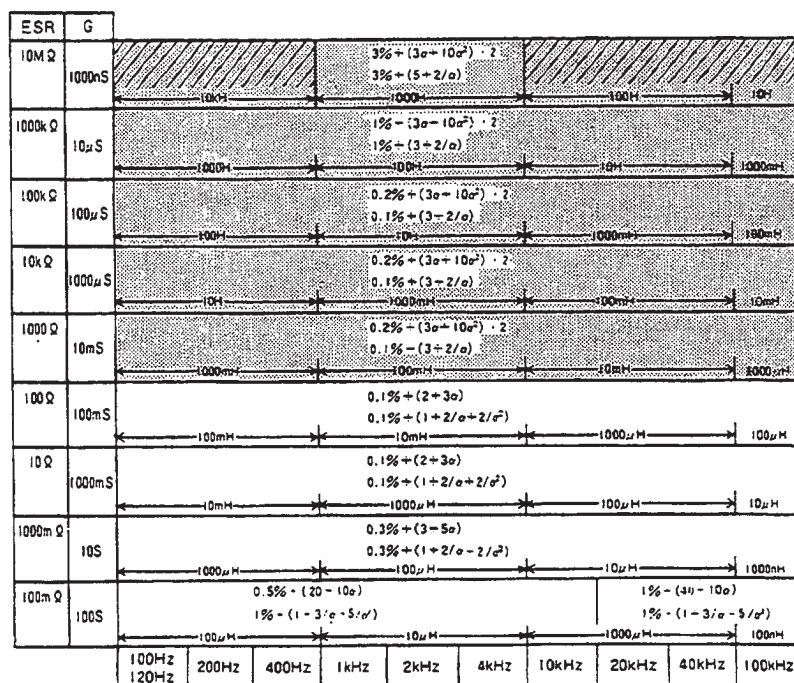
*Approximate value (unspecified).

L accuracies apply to L-ESR, L-G and R-L measurements.

Number of significant digits displayed for L depend on test signal level, range and frequency (5 digits max.).

Accuracies in lined areas  are unspecified.

L-ESR, L-G MEASUREMENTS



Equations in table represent:

Equivalent series resistance	
accuracy	
Conductance accuracy	

Inductance accuracies are same as for L-D, L-Q measurements.

α , α^2 , $1/\alpha$, $1/\alpha^2$: See accuracy coefficients graph (Figure A).

Display counts for ESR and G (normal mode).

ESR		G	
3 digit	*50 - 1999 (D ≤ 1)	4 digit	0 - 19999 **(0 - 10000)
4 digit	0 - 19999	3 digit	*25 - 1999 (D ≤ 1)

*Approximate value (unspecified)

**At frequencies of 400Hz, 4KHz and 40KHz.

Number of significant digits displayed for ESR and G depend on test signal level, range and frequency (5 digits max.).

Accuracies in lined areas  are unspecified.

Table 1-1. Specifications (Sheet 5 of 8).

R-X/B, R-L/C MEASUREMENTS

R	X	B
10M	10M	1000r
1000k	1000k	10μ
100k	100k	100μ
10k	10k	1000μ
1000	1000	10m
100	100	100m
10	10	1000m
1000m	1000m	10
100m	100m	100
100Hz 120Hz	200Hz	400Hz
1kHz	2kHz	4kHz
10kHz	20kHz	40kHz
100kHz		

Equations in table represent:

Resistance accuracy
Reactance accuracy
Susceptance accuracy

R accuracies apply only when $Q \leq 0.1$ ($D \geq 10$). For higher Q values, refer to General Information.

α , α^2 , $1/\alpha$, $1/\alpha^2$: See Figure A Accuracy Coefficients Graph.

γ : $\frac{X \text{ rdg}}{10000}$ (normal mode)

$\frac{X \text{ rdg}}{100000}$ (high resolution mode)

(X rdg = reactance reading in counts).

L accuracies are same as for L-D, L-Q measurements.

C accuracies are same as for C-D, C-Q measurements.

Number of significant digits displayed for R, X and B depend on test signal level, range and frequency (5 digits max.).

(normal mode):

	3 digit	4 digit
Rs	*36 - 1999	0 - 19999
X		
Rp	*50 - 1999 (Q < 1)	0 - 19999
L	*56 - 1999	0 - 19999 (D < 2)

	4 digit	3 digit
B	0 - 19999	*36 - 1999
C	0 - 1999 (3 digit)	*56 - 1999 **(140 - 1999)

*Approximate value (unspecified).
**At frequencies of 400Hz, 4kHz, and 40kHz

Subscripts s and p signify series and parallel modes, respectively.

Table 1-1. Specifications (Sheet 6 of 8).

 $|Z|$ - θ MEASUREMENTS

10M Ω	5% - 1 0.1° - (0.1/e)°									
1000k Ω	3% - 1 0.05° - (0.1/e)°									
100k Ω	(0.1 - 0.2e)% - 1 0.05° - (0.05/e)°									
10k Ω										
1000 Ω										
100 Ω	0.1% - 3 0.05° - (0.05/e)°									
10 Ω										
1000m Ω	0.3% - 5 0.05° - (0.05/e)°									
100m Ω	0.5% - 20 0.3° - (0.3/e)°					1% - 40 0.3° - (0.3/e)°				
	100Hz 120Hz	200Hz	400Hz	1kHz	2kHz	4kHz	10kHz	20kHz	40kHz	100kHz

Equations in table represent:

Impedance accuracy
Phase angle accuracy

 α , $1/\alpha$: See Figure A Accuracy Coefficients Graph. θ measurement range:

-180.000° - +180.000°

Display counts for $|Z|$ and θ (normal mode):

Ranges	$ Z $	θ
	*36 - 1999	0 - 18000
	0 - 19999	0 - 18000

*Approximate value (unspecified).

Number of significant digits displayed for $|Z|$ and θ depend on test signal level, range and frequency (5 digits max.).

OPTIONS

Option 001: Internal dc bias source remotely controllable from 0V to $\pm 35V$ in 1mV (minimum) steps.

Bias control range and accuracy:

Range	step	Accuracy
$\pm(0.000 - .999)V$	1mV	$\pm(0.5\% \text{ of rdg} + 2mV)$
$\pm(1.00 - 9.99)V$	10mV	$\pm(0.5\% \text{ of rdg} + 4mV)$
$\pm(10.0 - 35.0)V$	0.1V	$\pm(0.5\% \text{ of rdg} + 20mV)$

*Accuracies apply when DC BIAS switch is set to: INT 35V/100V ($\leq .1\mu F$) position. In INT 35V/100V ($\leq 2F$) position, $\pm(2\% \text{ of setting} + 20mV)$ on all ranges.

Bias output characteristics:

170 $\Omega \pm 10\%$, 40mA max. ($C \leq 0.1\mu F$)
 1000 $\Omega \pm 10\%$, 10mA max. ($C \leq 2F$)

Control: Remote control by HP 16023B DC Bias Controller or by HP-IB controller.

Control input: 24 pin connector input for 16023B or HP-IB connector. Mating connector: HP part number 1251-0292, AMPHENOL 57-40240.

Option 002: Internal dc bias source remotely controllable from 0V to $\pm 99.9V$ in 0.1V (minimum) steps.Bias control range: $\pm(00.0V - 99.9V)$, 0.1V steps.Accuracy: $\pm(2\% \text{ of setting} + 40mV)$

Bias output characteristics:

50k $\Omega \pm 10\%$, 2mA max.

Control: same as Option 001.

Control input: same as Option 001.