Agilent 4284A Precision LCR Meter

Manual Change

Change 1

Change "|Z|, |Y|, L, C, R, X, G, and B Accuracy" on page 9-8 as follows:

|Z|, |Y|, L, C, R, X, G, and B Accuracy

|Z|, |Y|, L, C, R, X, G, and B accuracy Ae is given as

$$Ae = \pm[A + (Ka + Kaa + Kb \times Kbb + Kc) \times 100 + Kd] \times Ke \qquad [\%]$$

A: Basic Accuracy (Refer to Figure 9-4 and 9-5.)
Ka: Impedance Proportional Factor (Refer to Table 9-1.)
Kaa: Cable Length Factor (Refer to Table 9-2.)
Kb: Impedance Proportional Factor (Refer to Table 9-1.)
Kbb: Cable Length Factor (Refer to Table 9-3.)
Kc: Calibration Interpolation Factor (Refer to Table 9-4.)
Kd: Cable Length Factor (Refer to Table 9-6.)
Ke: Temperature Factor (Refer to Figure 9-6.)

L, C, X, and B accuracy applies when Dx (measured D value) $\leq$ 0.1.
R and G accuracy applies when Qx (measured Q value) $\leq$ 0.1.

When Dx > 0.1, multiply Ae by $\sqrt{(1 + Dx^2)}$ for L, C, X, and B accuracy.

When Qx > 0.1, multiply Ae by $\sqrt{(1 + Qx^2)}$ for R and G accuracy.

When measured value < 10 mΩ, |Z|, R, and X accuracy Ae is given as

$$Ae = \pm[(Ka + Kaa + Kc) \times 100 + Kd] \times Ke \qquad [\%]$$

Ka: Impedance Proportional Factor (Refer to Table 9-1.)
Kaa: Cable Length Factor (Refer to Table 9-2.)
Kc: Calibration Interpolation Factor (Refer to Table 9-4.)
Kd: Cable Length Factor (Refer to Table 9-6.)
Ke: Temperature Factor (Refer to Figure 9-6.)

X accuracy applies when Dx (measured D value) $\leq$ 0.1.
R accuracy applies when Qx (measured Q value) $\leq$ 0.1.

When Dx > 0.1, multiply Ae by $\sqrt{(1 + Dx^2)}$ for X accuracy.

When Qx > 0.1, multiply Ae by $\sqrt{(1 + Qx^2)}$ for R accuracy.

Change 2

Add the following description to "4284A Calibration Accuracy" on page 9-16.

When measured value < 10 mΩ, calibration accuracy Acal is given as follows:

20 Hz $\leq$ fm $\leq$ 1 kHz: 0.03 [%] *

1 kHz < fm $\leq$ 100 kHz: 0.05 [%] *

100 kHz < fm $\leq$ 1 MHz: $0.05 + 5 \times fm \times 10^{-5}$ [%] *

fm : test frequency [kHz]

* Acal = 0.1% when Hi-PW mode is ON

Change 3

Change "Other Options" on page 9-20 as follows:

Other Options	4284A-002	Bias Current Interface
		Allows the 4284A to control the 42841A Bias Current Source.
	4284A-004	Memory Card
	4284A-006	2 m/4 m Cable Length Operation
	4284A-008	Add Operation Manual (Japanese)
	4284A-009	Delete Operation Manual
	4284A-201	Handler Interface
	4284A-202	Handler Interface
	4284A-301	Scanner Interface
	4284A-907	Front Handle Kit
	4284A-908	Rack Mount Kit
	4284A-909	Rack Flange and Handle Kit
	4284A-910	Extra Operation Manual

Change 4

Add 42030A (1 Ω) to Recommended Model column for Standard Resister in Table 10-1 (page 10-3).

Change 5

Add the following steps to the impedance measurement accuracy test (between step 29 and 30, page 10-17).

a. Set the measurement function to R-X.
b. Connect the 1 Ω standard resistor to the 1 m Test Leads (16048A).
c. Perform Step d through e for all the test listed in Table 10-9-a.
d. Press the TRIGGER key.
e. Confirm the 4284A's reading is within the test limits in Table 10-9-a.

Table 10-9-a. Impedance Measurement Accuracy Test Limits for 1 m Cable Length Operation

Setting			Test Limits (R)
Signal Level	Test Frequency	Measurement Range	1Ω Standard
510 mV	1 kHz	10 Ω	C.V. ± 0.0026 Ω
5.1 V*	1 kHz	1 Ω	C.V. ± 0.0030 Ω

C.V. : Standard's calibration value at DC

* Option 001 only