

# Manual Supplement

Manual Title: 114,115, 116, and 117 Calibration  
Print Date: September 2006  
Revision/Date: 1, 10/08

Supplement Issue: 7  
Issue Date: 10/16  
Page Count: 3

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This supplement contains information necessary to ensure the accuracy of the above manual.

## Change #1

On page 10, delete step 30.

## Change #2, 543, 572

On page 4, replace **Table 2** with the following:

**Table 2. Accuracy Specifications**

Function	Range	Resolution	Accuracy ± ([% of Reading] + [Counts])		Model
DC millivolts	600.0 mV	0.1 mV	0.5 % + 2		114, 115, 117
DC Volts	6.000 V	0.001 V	0.5 % + 2		114, 115, 117
	60.00 V	0.01 V			
	600.0 V	0.1 V			
			<b>DC, 45 to 500 Hz</b>	<b>500 Hz to 1 kHz</b>	
Auto-V LoZ <sup>(1)</sup> True-rms	600.0 V	0.1 V	2.0 % + 3	4.0 % + 3	114, 117
			<b>45 to 500 Hz</b>	<b>500 Hz to 1 kHz</b>	
AC millivolts <sup>(1)</sup> True-rms	600.0 mV	0.1 mV	1.0 % + 3	2.0 % + 3	114, 115, 117
AC Volts <sup>(1)</sup> True-rms	6.000 V	0.001 V	1.0 % + 3		114, 115, 117
	60.00 V	0.01 V			
	600.0 V	0.1 V			
Continuity	600 Ω	1 Ω	Beeper on < 20 Ω, off > 250 Ω; detects opens or shorts of 500 μs or longer.		114, 115, 117
Ohms	600.0 Ω	0.1 Ω	0.9 % + 2		114, 115, 117
	6.000 kΩ	0.001 kΩ	0.9 % + 1		
	60.00 kΩ	0.01 kΩ	0.9 % + 1		
	600.0 kΩ	0.1 kΩ	0.9 % + 1		
	6.000 MΩ	0.001 MΩ	0.9 % + 1		
	40.00 MΩ	0.01 MΩ	5.0 % + 2		
Diode test	2.000 V	0.001 V	0.9 % + 2		115, 117
Capacitance	1000 nF	1 nF	1.9 % + 2		115, 117
	10.00 μF	0.01 μF	1.9 % + 2		
	100.0 μF	0.1 μF	1.9 % + 2		
	9999 μF	1 μF	100 μF - 1000 μF: 1.9 % + 2 > 1000 μF: 5 % + 20		
Lo-Z Capacitance (Power-up option)	1 nF to 500 μF		10 % + 2 typical		115, 117
AC Amps True-rms <sup>(1)</sup> (45 Hz to 500 Hz)	6.000 A 10.00 A <sup>(3)</sup>	0.001 A 0.01 A	1.5 % + 3		115, 117
DC Amps	6.000 A 10.00 A <sup>(3)</sup>	0.001 A 0.01 A	1.0 % + 3		115, 117

Hz (V or A input) <sup>[2]</sup>	99.99 Hz 999.9 Hz 9.999 kHz 50.00 kHz 99.99 kHz	0.01 Hz 0.1 Hz 0.001 kHz 0.01 kHz 0.01 kHz	0.1 % + 2	115, 117
Notes:				
[1] All ac ranges except Auto-V LoZ are specified from 1 % to 100 % of range. Auto-V LoZ is specified from 0.0 V. Because inputs below 1 % of range are not specified, it is normal for this and other true-rms meters to display non-zero readings when the test leads are disconnected from a circuit or are shorted together. For volts, crest factor of $\leq 3$ at 4000 counts, decreasing linearly to 1.5 at full scale. For amps, crest factor of $\leq 3$ . AC volts is ac-coupled. Auto-V LoZ, AC mV, and AC amps are dc-coupled.				
[2] AC Volts Hz is ac-coupled and specified from 5 Hz to 99.99 kHz. Minimum input required above 50.00 kHz typically is > 1.1 vac sine. Minimum input typical and not specified. AC Amps Hz is dc-coupled and specified from 45 Hz to 5 kHz.				
[3] $\Delta$ >10 A accuracy is unspecified. Duty cycle: >10 A to 20 A, 30 seconds on, 10 minutes off.				

### Change #3

On page 2, under **Safety Information**:

Change: Do not use the Meter around explosive gas or vapor.

To: Do not use the Product around explosive gas, vapor, or in damp or wet environments

### Change #4, 63151, 63405, 543, 238

On page 3, replace Table 1 with:

**Table 1. Electrical Symbols**

Symbol	Description	Symbol	Description
	AC (Alternating Current)		Fuse
	DC (Direct Current)		Double Insulated
	WARNING - RISK OF DANGER. Consult user documentation.		WARNING. RISK OF DANGER
	Battery (Low battery when shown on the display.)		Earth ground
	This product complies with the WEEE Directive marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste. Product Category: With reference to the equipment types in the WEEE Directive Annex I, this product is classed as category 9 "Monitoring and Control Instrumentation" product. Do not dispose of this product as unsorted municipal waste.		
	Conforms to relevant South Korean EMC Standards		
CAT II	Measurement Category II is applicable to test and measuring circuits connected directly to utilization points (socket outlets and similar points) of the low-voltage MAINS installation.		
CAT III	Measurement Category III is applicable to test and measuring circuits connected to the distribution part of the building's low-voltage MAINS installation.		
CAT IV	Measurement Category IV is applicable to test and measuring circuits connected at the source of the building's low-voltage MAINS installation.		
	Certified by CSA Group to North American safety standards.		
	Certified by TÜV SÜD Product Service.		
	Consult user documentation.		

