Manual Supplement

Manual Title:	1652C/1653B/1654B Calibration Supplement	Issue:	**4**
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This supplement contains information necessary to ensure the accuracy of the above manual.

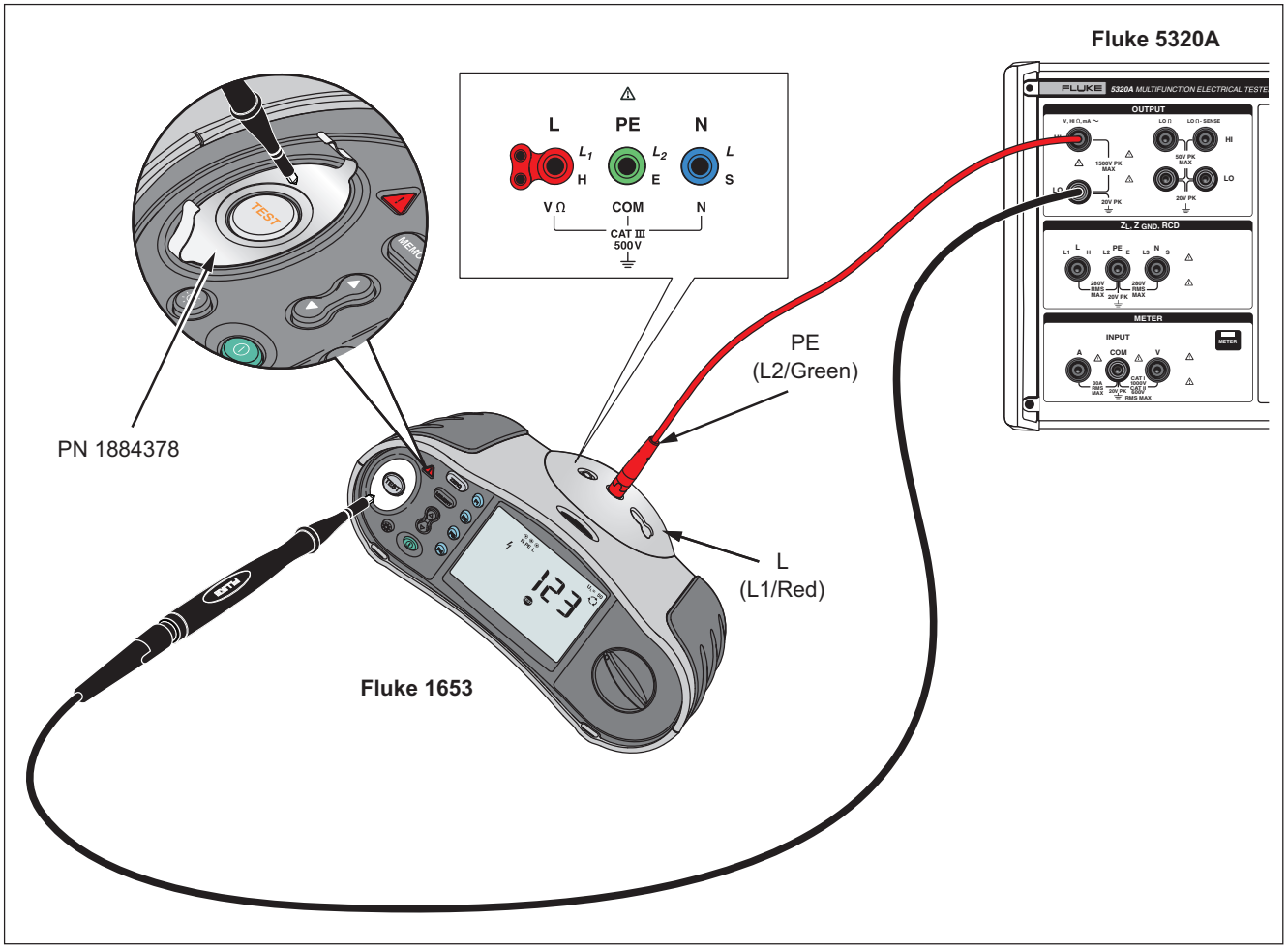
FLUKE®

Change #1

On page 20, replace step 4 with:

4. Place PN 1884378 on the touch pad, then touch with the probe as shown in Figure 4.

On page 21, replace Figure 4 with:



gad002.eps

Figure 4. Touch Pad Sense Test

Change #2

On page 15, add the following to Table 2:

Touch plate	FLUKE-165X-8006,TOUCH PLATE	Fluke P/N 1884378

On page 25, replace steps 1 through 8 with:

1. Set the UUT rotary switch to **LOOP Z_I NO TRIP** function.
2. Using (F1), set the UUT for L-PE test.
3. Connect test leads to the UUT L-PE-N input jacks. Short the far end of the test leads together with a Zero Adapter (Fluke P/N 3301338). See Figure 8.
4. Press and hold (ZERO) for approximately three seconds until the UUT ZERO Ø annunciator appears.

On page 27, replace steps 1 through 7 with:

1. Set the UUT rotary switch to LOOP Z_I HI CURRENT function.
2. Connect test leads to the UUT L-PE-N input jacks. Short the far end of the test leads together with a Zero Adapter (Fluke P/N 3301338). See Figure 8.
3. Press and hold (ZERO) for approximately three seconds until the UUT ZERO Ø annunciator appears.

On page 28, replace step 7 with:

7. Using the 5320A cursor keys or keypad, set the 5320A Nominal R Value to the nearest value to those in Table 6 that the 5320A will source. For Steps 1 and 8, take the first value that is ≥0.2 Ω.

On page 28, replace Table 6 with:

Table 6. Loop Z_I Hi Current Accuracy Test

Step	UUT Function	UUT(F1) Setting	5320A Nominal R Value	5320A Residual Impedance Correction Type	Recorded 5320A Displayed Output Z Value	UUT Accuracy Spec. ±(% + dig)	UUT Res.	Calculated UUT Display Limits	
								Lower	Upper
1	Loop Z_I Hi Current	L-PE	0.2 Ω	Comp		+ (2 % + 4)	0.01 Ω		
2			1.8 Ω						
3			18 Ω						
4			50 Ω			+2 %	0.1 Ω		
5			180 Ω						
6			500 Ω			+6 %	1 Ω		
7			1800 Ω						
8		L-N	0.2 Ω			+(2 % + 4)	0.01 Ω		
9			1.8 Ω						
10			18 Ω						
11			50 Ω			+2 %	0.1 Ω		
12			180 Ω						
13			500 Ω			+6 %	1 Ω		
14			1800 Ω						

Change #3, 121

On page 33, Table 10, add the MP12:

MP12	Battery Holder	1676850	1

Change #4 593

On page 10, replace the ***Test Signals*** table with:

Test Signals

RCD Type	Test Signal Description
AC (sinusoidal)	The waveform is a sinewave starting at zero crossing, polarity determined by phase selection (0 ° phase starts with low to high zero crossing, 180 ° phase starts with high to low zero crossing). The magnitude of the test current is $I_{\Delta}n$ x Multiplier for all tests.
A (half wave)	The waveform is a half wave rectified sinewave starting at zero, polarity determined by phase selection (0 ° phase starts with low to high zero crossing, 180 ° phase starts with high to low zero crossing). The magnitude of the test current is 0.7 x $I_{\Delta}n$ (rms) x Multiplier for all tests where the multiplier is x0.5 (x1/2). The magnitude of the test current is 2.0 x $I_{\Delta}n$ (rms) x Multiplier for all tests where both the multiplier is ≥ x1 and $I_{\Delta}n$ = 0.01A. The magnitude of the test current is 1.4 x $I_{\Delta}n$ (rms) x Multiplier for all tests for all other settings.
B (DC)	This is a smooth DC current according to EN61557-6 Annex A