FLUKE®

15B+/17B+/18B+

Digital Multimeter

Calibration Manual

April 2016

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Introduction

The Fluke 15B+/17B+/18B+ Digital Multimeters (the Product or UUT) are 4000-count instruments. The Product is battery powered with a digital display.

Except where noted, the descriptions and instructions in this manual apply to all models.

Unless otherwise identified, all illustrations show the 17B+.

See the *Users Manual* for user-replaceable parts.

How to Contact Fluke

To contact Fluke, call one of the following telephone numbers:

- Technical Support USA: 1-800-44-FLUKE (1-800-443-5853)
- Calibration/Repair USA: 1-888-99-FLUKE (1-888-993-5853)
- Canada: 1-800-36-FLUKE (1-800-363-5853)
- Europe: +31 402-675-200
- Japan: +81-03-6714-3114
- Singapore: +65-6799-5566
- Mainland China: +86-400-810-3435
- Anywhere in the world: +1-425-446-5500

Or, visit Fluke's website at www.fluke.com

To register your product, visit http://register.fluke.com.

To see, print, or download the latest manual supplement, visit http://us.fluke.com/usen/support/manuals.

Safety Information

A **Warning** identifies conditions and procedures that are dangerous to the user. A **Caution** identifies conditions and procedures that could cause damage to the Product or the equipment under test.

Table 1 is a list of the international electrical symbols used on the Product and in this manual.

Review the safety information and comply with the safe working practices.

⚠⚠ Warning

To prevent possible electrical shock, fire, or personal injury:

- **Carefully read all instructions.**
- **Read all safety information before you use the Product.**
- **Use the Product only as specified, or the protection supplied by the Product can be compromised.**
- **Do not use the Product around explosive gas, vapor, or in damp or wet environments.**
- **Examine the case before you use the Product. Look for cracks or missing plastic. Carefully look at the insulation around the terminals.**
- **Do not use the Product if it is damaged.**
- **Do not use the Product if it operates incorrectly.**
- **Comply with local and national safety codes. Use personal protective equipment (approved rubber gloves, face protection, and flame-resistant clothes) to prevent shock and arc blast injury where hazardous live conductors are exposed.**
- **Use only correct measurement category (CAT), voltage, and amperage rated probes, test leads, and adapters for the measurement.**
- **Do not use test probes in CAT III environments without the protective cap installed. The protective cap decreases the exposed probe metal to <4 mm. This decreases the possibility of arc flash from short circuits.**
- **Measure a known voltage first to make sure that the Product operates correctly.**
- **Limit operation to the specified measurement category, voltage, or amperage ratings.**
- **Do not apply more than the rated voltage, between the terminals or between each terminal and earth ground.**
- **Do not touch voltages > 30 V ac rms, 42 V ac peak, or 60 V dc.**
- **Do not use test leads if they are damaged. Examine the test leads for damaged insulation and measure a known voltage.**

- **Keep fingers behind the finger guards on the probes.**
- **Remove all probes, test leads, and accessories before the battery door is opened.**
- **Do not exceed the Measurement Category (CAT) rating of the lowest rated individual component of a Product, probe, or accessory.**
- **Remove the batteries if the Product is not used for an extended period of time, or if stored in temperatures above 50 °C. If the batteries are not removed, battery leakage can damage the Product.**
- **Replace the batteries when the low battery indicator (🪫) shows to prevent incorrect measurements.**
- **Use the correct terminals, function, and range for measurements.**
- **Disconnect all test leads from any hazardous voltage before switching to the LED TEST function. Refer to the LED TEST section for proper measurement technique and interpretation of results (for 18B+ only).**
- **The battery door must be closed and locked during verification.**
- **Do not operate the Product with covers removed or the case open. Hazardous voltage exposure is possible.**
- **Do not apply hazardous voltages during the calibration procedure.**

Table 1. Symbols

Symbol	Description	Symbol	Description
~	AC (Alternating Current)	⏚	Earth Ground
⎓	DC (Direct Current)		Fuse
	Diode		Capacitance
	WARNING. HAZARDOUS VOLTAGE. Risk of electrical shock.		Battery
	WARNING. RISK OF DANGER.		Consult user documentation.
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 IV**	Measurement Category IV is applicable to test and measuring circuits connected at the source of the building's 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.		Conforms to relevant North American Safety Standards.
CE	Conforms to European Union directives.		Conforms to relevant Australian Standards.
	Conforms to relevant South Korean EMC Standards		
	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.		

General Specifications

Maximum voltage between any Terminal and Earth Ground: 1000 V

Display (LCD) ..... 4000 counts, updates 3/sec

Battery Type ..... 2 AA, IEC LR6

Battery Life ..... 500 hours minimum (50 hours in LED Test mode without load. The hours with load depends on the type of LED under test.)

Temperature

Operating ..... 0 °C to 40 °C

Storage ..... -30 °C to 60 °C

Relative Humidity

Operating Humidity ..... Non-condensing (<10 °C); ≤90 % RH from 10 °C to 30 °C; ≤75 % RH at 30 °C to 40 °C

Operating Humidity, 40 MΩ Range ..... ≤80 % RH at 10 °C to 30 °C; ≤70 % RH at 30 °C to 40 °C

Altitude

Operating ..... 2000 m

Storage ..... 12 000 m

Temperature Coefficient ..... 0.1 X (specified accuracy) / °C (<18 °C or >28 °C)

Fuse protection for current inputs ..... 440 mA, 1000 V, IR 10 kA min
11 A, 1000 V, IR 20 kA min

Size (HxWxL) ..... 183 mm x 91 mm x 49.5 mm

Weight ..... 455 g

Ingress Protection ..... IEC 60529: IP40 non-operating

Safety ..... IEC 61010-1: Pollution degree 2
IEC 61010-2-033: CAT III 600 V, CAT II 1000 V

Electromagnetic Compatibility

International ..... IEC 61326-1: Basic Electromagnetic Environment: IEC 61326-2-2

CISPR 11: Group 1, Class A

Group 1: Equipment has intentionally generated and/or use conductively coupled radio-frequency energy which is necessary for the internal functioning of the equipment itself.

Class A: Equipment is suitable for use in all establishments other than domestic and those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes. There may be potential difficulties in ensuring electromagnetic compatibility in other environments, due to conducted and radiated disturbances.

Korea (KCC) ..... Class A Equipment (Industrial Broadcasting & Communication Equipment)

Class A: Equipment meets requirements for industrial electromagnetic wave equipment and the seller or user should take notice of it. This equipment is intended for use in business environments and not to be used in homes.

USA (FCC)..... 47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103.

Accuracy Specifications

Accuracy is specified for 1 year after calibration, at operating temperatures of 18 °C to 28 °C, relative humidity at 0 % to 75 %. Accuracy specifications take the form of: ±([% of Reading] + [Number of Least Significant Digits]).

AC and DC Voltage

Function	Range	Resolution	Accuracy		
			15B+	17B+	18B+
AC Volts (40 Hz – 500 Hz)[1] V~	4.000 V 40.00 V 400.0 V 1000 V	0.001 V 0.01 V 0.1 V 1 V	1.0 % + 3	1.0 % + 3	1.0 % + 3
AC Millivolts mV~	400.0 mV	0.1 mV	3.0 % + 3	3.0 % + 3	3.0 % + 3
DC Millivolts mV⎓	400.0 mV	0.1 mV	1.0 % + 10	1.0 % + 10	1.0 % + 10
DC Volts V⎓	4.000 V 40.00 V 400.0 V 1000 V	0.001 V 0.01 V 0.1 V 1 V	0.5 % + 3	0.5 % + 3	0.5 % + 3

[1] All ac, Hz, and duty cycle are specified from 1 % to 100 % of range. Inputs below 1 % of range are not specified.

AC and DC Current

Function	Resolution	Accuracy		
		15B+	17B+	18B+
AC Current µA (40 Hz – 400 Hz) µA~	0.1 µA 1 µA	1.5 % + 3	1.5 % + 3	1.5 % + 3
AC current mA (40 Hz – 400 Hz) mA~	0.01 mA 0.1 mA	1.5 % + 3	1.5 % + 3	1.5 % + 3
AC current A[1] (40 Hz – 400 Hz) A~	0.001 A 0.01 A	1.5 % + 3	1.5 % + 3	1.5 % + 3
DC current µA µA⎓	0.1 µA 1 µA	1.5 % + 3	1.5 % + 3	1.5 % + 3
DC current mA mA⎓	0.01 mA 0.1 mA	1.5 % + 3	1.5 % + 3	1.5 % + 3
DC current A[1] A⎓	0.001 A 0.01 A	1.5 % + 3	1.5 % + 3	1.5 % + 3

Diode Test, Temperature, Resistance, Capacitance, Frequency, and Duty Cycle

Function	Range	Resolution	Accuracy		
			15B+	17B+	18B+
Diode Test[1]	2.000 V	0.001 V	10 %		
Temperature	50.0 °C – 400.0 °C 0 °C – 50.0 °C -55.0 °C – 0 °C	0.1 °C	–	2 % +1 °C 2 °C 9 % +2 °C	–
Resistance (Ohms) Ω	400.0 Ω 4.000 kΩ 40.00 kΩ 400.0 kΩ 4.000 MΩ 40.00 MΩ	0.1 Ω 0.001 kΩ 0.01 kΩ 0.1 kΩ 0.001 MΩ 0.01 MΩ	0.5 % + 3 0.5 % + 2 0.5 % + 2 0.5 % + 2 0.5 % + 2 1.5 % + 3	0.5 % + 3 0.5 % + 2 0.5 % + 2 0.5 % + 2 0.5 % + 2 1.5 % + 3	0.5 % + 3 0.5 % + 2 0.5 % + 2 0.5 % + 2 0.5 % + 2 1.5 % + 3
Capacitance[2]	40.00 nF 400.0 nF 4.000 µF 40.00 µF 400.0 µF 1000 µF	0.01 nF 0.1 nF 0.001 µF 0.01 µF 0.1 µF 1 µF	2 % + 5 2 % + 5 5 % + 5 5 % + 5 5 % + 5 5 % + 5	2 % + 5 2 % + 5 5 % + 5 5 % + 5 5 % + 5 5 % + 5	2 % + 5 2 % + 5 5 % + 5 5 % + 5 5 % + 5 5 % + 5
Frequency[3] (10 Hz – 100 kHz) **Hz**	50.00 Hz 500.0 Hz 5.000 kHz 50.00 kHz 100.0 kHz	0.01 Hz 0.1 Hz 0.001 kHz 0.01 kHz 0.1 kHz	_	0.1 % + 3	0.1 % + 3
Duty Cycle[2]	1 % to 99 %	0.1 %	_	1 % typical [4]	1 % typical[4]

[1] Typically, open circuit test voltage is 2.0 V and short circuit current is <0.6 mA.
[2] Specifications do not include errors due to test lead capacitance and capacitance floor (may be up to 1.5 nF in the 40 nF range).
[3] All ac, Hz, and duty cycle are specified from 1 % to 100 % of range. Inputs below 1 % of range are not specified.
[4] Typical means when the frequency is at 50 Hz or 60 Hz and the duty cycle is between 10 % and 90 %.

LED Test and Continuity Threshold

Function	Illumination Range	Measurement Range	Resolution	Accuracy
LED V_F Test [1] (LED Test Socket)	1.00 V to 6.00 V	NA	NA	NA
LED V_F Test [2] (Test Leads)	1.00 V to 6.00 V	1.00 V to 6.00 V	0.01 V	10 % [3]
Continuity Threshold	NA	NA	NA	70 Ω

[1] Open circuit test voltage is ±12 V and short-circuit current is <±5 mA (typical).
[2] Open circuit test voltage is ±12 V and short-circuit current is <±3 mA (typical).
[3] VF measurement with driving current under 2.2 mA ±0.4 mA.

Input Characteristics

Function	Overload Protection	Input Impedance (Nominal)	Common Mode Rejection Ratio	Normal Mode Rejection Ratio
AC Volts	1000 V [1]	>10 MΩ, <100 pF	>60 dB at dc, 50 Hz or 60 Hz	–
AC Millivolts	400 mV	>1 MΩ, <100 pF	>80 dB at dc, 50 Hz or 60 Hz	–
DC Volts	1000 V [1]	>10 MΩ, <100 pF	>100 dB at dc, 50 Hz or 60 Hz	>60 dB at 50 Hz or 60 Hz
DC Millivolts	400 mV	>1 MΩ, <100 pF	>80 dB at dc, 50 Hz or 60 Hz	–

[1] 10^6 V Hz Max

Static Awareness

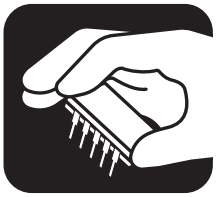
Semiconductors and integrated circuits can be damaged by electrostatic discharge during handling. This notice explains how to minimize damage to these components.

1. Understand the problem.
2. Learn the guidelines for proper handling.
3. Use the proper procedures, packaging, and bench techniques.

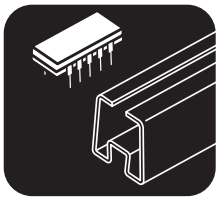
Follow these practices to minimize damage to static sensitive parts.

⚠ Warning

To prevent electric shock or personal injury. De-energize the product and all active circuits before opening a product enclosure, touching or handling any PCBs or components.



- Minimize handling.
- Handle static-sensitive parts by non-conductive edges.
- Do not slide static-sensitive components over any surface.
- When removing plug-in assemblies, handle only by non-conductive edges.
- Never touch open-edge connectors except at a static-free work station.



- Keep parts in the original containers until ready for use.
- Use static shielding containers for handling and transport.
- Avoid plastic, vinyl, and Styrofoam® in the work area.

- Handle static-sensitive parts only at a static-free work station.
- Put shorting strips on the edge of the connector to help protect installed static-sensitive parts.
- Use anti-static type solder extraction tools only.
- Use grounded-tip soldering irons only.

Disassembly

⚠⚠ Warning

To prevent false readings, which could lead to possible electric shock or personal injury, replace the batteries as soon as the low battery indicator (🔋) appears.

To prevent damage or injury:

- **Install ONLY replacement fuses with the specified amperage, voltage, and interrupt ratings.**
- **Disconnect test leads before opening the case or the battery door.**

To remove the battery door and battery for adjustments and calibration, see Figure 1.

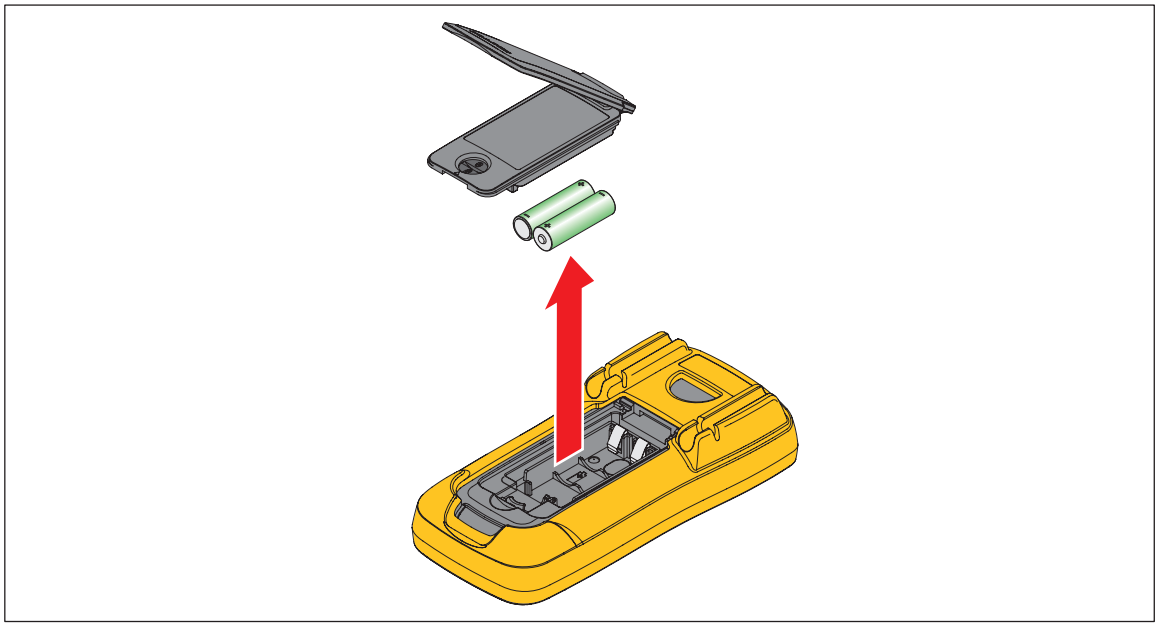


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Figure 1. Remove the battery

Performance Tests

Use the performance tests to make sure the UUT is operating properly and to make sure the UUT is accurate. If the UUT fails any part of the performance test, repair and/or calibration adjustment are required. See the Calibration sections for calibration adjustment. If the UUT still fails to meet the range indicated, see *How to Contact Fluke.*

Table 2 lists the equipment required for the performance tests.

Table 2. Required Equipment for Performance Test 15B+ and 17B+

Equipment	Recommended Model
Calibrator	FLUKE 5522A

Performance Tests for the 15B+ and 17B+

Before doing the performance test, make sure to warm up the calibrator.

To test each function and operating ranges:

1. For each step in Table 3, set the UUT to the specified function and range.
2. Connect the source to the input jacks on the UUT.
3. Apply the output from the source.
4. Make sure the readings on the UUT display are within the limits in Table 3.

Table 3. Performance Specifications for 15B+ and 17B+

Step	Function	Calibrator output		15B+	17B+	UUT reading limit	
		Value	Frequency or Amplitude			Lower Limit	Upper Limit
1	**VAC**	3.5 V	50 Hz	√	√	3.462	3.538
2		35 V	50 Hz	√	√	34.62	35.38
3		35 V	500 Hz	√	√	34.62	35.38
4		350 V	50 Hz	√	√	346.2	353.8
5		1000 V	50 Hz	√	√	986	1014
6	**VAC/Freq.**	45 Hz	1 V	X	√	44.92	45.08
7		5 KHz	1 V	X	√	4.992	5.008
8		100 KHz	3 V	X	√	99.6	100.4
9	**VAC/Duty**	50 Hz	3 V (Square Wave)	X	√	49.5	50.5
10	**VDC**	3.5 V	0 Hz	√	√	3.480	3.520
11		35 V	0 Hz	√	√	34.80	35.20
12		350 V	0 Hz	√	√	348.0	352.0
13		-1000 V	0 Hz	√	√	-1008	-992
14	**mVDC**	350 mV	0 Hz	√	√	345.4	354.6
15	**mVAC**	350 mV	500 Hz	√	√	339.2	360.8

Table 0-3. Performance Specifications for 15B+ and 17B+ (cont.)

Step	Function	Calibrator output		15B+	17B+	UUT reading limit	
		Value	Frequency or Amplitude			Lower Limit	Upper Limit
16	**OHM**	0 Ω	Ω	√	√	-0.3	0.3
17		350 Ω	Ω	√	√	348.0	352.0
18		3.5 kΩ	Ω	√	√	3.480	3.520
19		35 kΩ	Ω	√	√	34.80	35.20
20		350 kΩ	Ω	√	√	348.0	352.0
21		3.5 MΩ	Ω	√	√	3.480	3.520
22		10 MΩ	Ω	√	√	9.82	10.18
23	**BEEPER ON**	40 Ω	Ω	√	√	X	X
24	**DIODE**	0.7 V	0 Hz	√	√	0.622	0.778
25	**CAP**	35 nF	Ω	√	√	34.24	35.76
26		350 nF	Ω	√	√	342.4	357.6
27		3.5 µF	Ω	√	√	3.320	3.680
28		35 µF	Ω	√	√	33.20	36.80
29		350 µF	Ω	√	√	332.0	368.0
30	**ADC**	3.5 A	0 Hz	√	√	3.444	3.556
31		-10 A	0 Hz	√	√	-10.18	-9.82
32	**AAC**	3.5 A	50 Hz	√	√	3.444	3.556
33		10 A	400 Hz	√	√	9.82	10.18
34	**mADC**	35 mA	0 Hz	√	√	34.44	35.56
35		-350 mA	0 Hz	√	√	-355.6	-344.4
36	**mAAC**	35 mA	400 Hz	√	√	34.44	35.56
37		350 mA	50 Hz	√	√	344.4	355.6
38	**µADC**	350 µA	0 Hz	√	√	344.4	355.6
39		-3500 µA	0 Hz	√	√	-3556	-3444
40	**µAAC**	350 µA	40 Hz	√	√	344.4	355.6
41		3500 µA	400 Hz	√	√	3444	3556
42	**Temp**	-50 °C	X	X	√	-56.4	-43.6
43		35 °C	X	X	√	33.0	37.0
44		400 °C	X	X	√	391.0	409.0

Performance Test for 18B+

Before doing the performance test, make sure to warm up the calibrator.

To test each function and operating ranges:

1. For each step in Table 4, set the UUT to the specified function and range.
2. Connect the source to the input jacks on the UUT.
3. Apply the output from the source.
4. Make sure the readings on the UUT display are within the limits in Table 4.
5. For the LED test, put the LEDs as shown in Figure 2. The test passes if the LED lights.

Table 4. Performance Specifications for 18B+

Step	Function	Calibrator Output		UUT reading limit	
		Value	Frequency or Amplitude	Lower Limit	Upper Limit
1	**VAC**	3.5 V	50 Hz	3.462	3.538
2		35 V	50 Hz	34.62	35.38
3		35 V	500 Hz	34.62	35.38
4		350 V	50 Hz	346.2	353.8
5		1000 V	50 Hz	986	1014
6	**VAC/Freq.**	45 Hz	1 V	44.92	45.08
7		5 KHz	1 V	4.992	5.008
8		100 KHz	3 V	99.6	100.4
9	**VAC/Duty**	50 Hz	3 V (Square Wave)	49.5	50.5
10	**VDC**	3.5 V	0 Hz	3.480	3.520
11		35 V	0 Hz	34.80	35.20
12		350 V	0 Hz	348.0	352.0
13		-1000 V	0 Hz	-1008	-992
14	**mVDC**	350 mV	0 Hz	345.4	354.6
15	**mVAC**	350 mV	500 Hz	339.2	360.8

Table 4. Performance Specifications for 18B+ (cont.)

Step	Function	Calibrator Output		UUT reading limit	
		Value	Frequency or Amplitude	Lower Limit	Upper Limit
16	**OHM**	0 Ω	Ω	-0.3	0.3
17		350 Ω	Ω	348.0	352.0
18		3.5 kΩ	Ω	3.480	3.520
19		35 kΩ	Ω	34.80	35.20
20		350 kΩ	Ω	348.0	352.0
21		3.5 mΩ	Ω	3.480	3.520
22		10 mΩ	Ω	9.82	10.18
23	**BEEPER ON**	40 Ω	Ω	X	X
24	**DIODE**	0.7 V	0 Hz	0.622	0.778
25	**CAP**	35 nF	Ω	32.75	37.25
26		350 nF	Ω	342.4	357.6
27		3.5 µF	Ω	3.320	3.680
28		35 µF	Ω	33.20	36.80
29		350 µF	Ω	332.0	368.0
30	**ADC**	3.5 A	0 Hz	3.444	3.556
31		-10 A	0 Hz	-10.18	-9.82
32	**AAC**	3.5 A	50 Hz	3.444	3.556
33		10 A	400 Hz	9.82	10.18
34	**mADC**	35 mA	0 Hz	34.44	35.56
35		-350 mA	0 Hz	-355.6	-344.4
36	**mAAC**	35 mA	400 Hz	34.44	35.56
37		350 mA	50 Hz	344.4	355.6
38	**µADC**	350 µA	0 Hz	344.4	355.6
39		-3500 µA	0 Hz	-3556	-3444
40	**µAAC**	350 µA	40 Hz	344.4	355.6
41		3500 µA	400 Hz	3444	3556
42	**LED**	-5.5 V	0 Hz	-6.05	-4.95
43		5.5 V	0 Hz	4.95	6.05

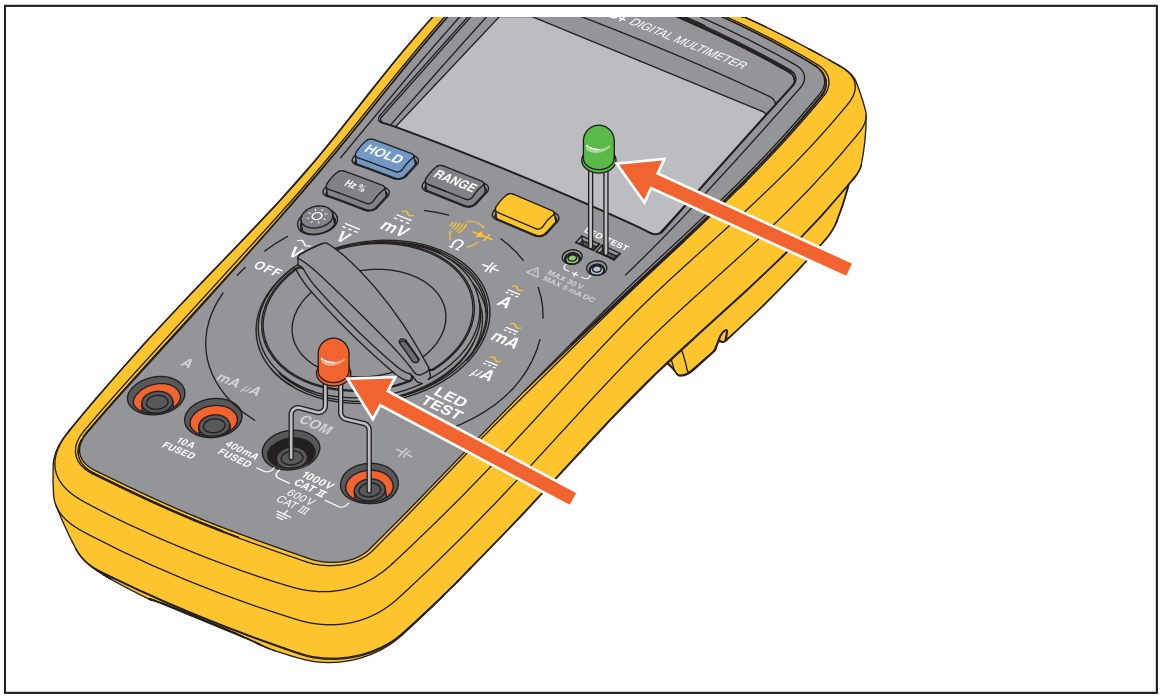

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Figure 2. LED Test

Calibration Procedures

Table 5 list equipment that is required to calibrate the Product.

Table 5. Required Equipment for Calibration

Equipment	Required Characteristics	Recommended Model
Calibrator		FLUKE 5522A
Potentiometer (17B+)	Manually adjustable	

To enter calibration mode:

1. Remove the battery door and battery. See Figure 1.
2. Remove the calibration sticker. See Figure 3.

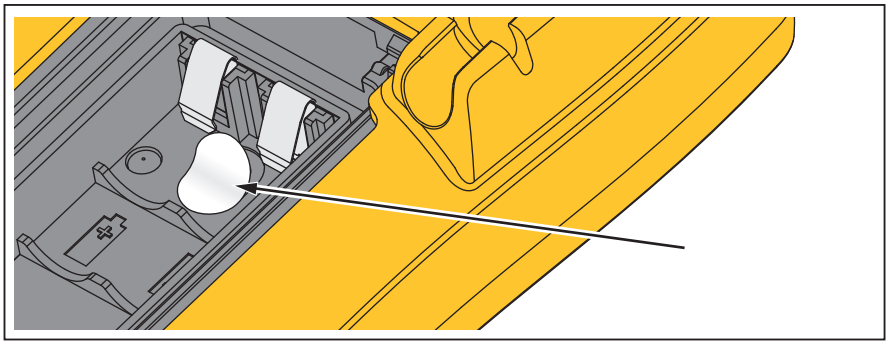

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Figure 3. Remove Calibration Sticker

3. See Figure 4 to make the connections to power and a calibrator:
   - Use a contact spring to connect to a 3 V dc power supply.

- Connect the UUT signal input terminal to the calibrator (5522A or other calibrator.)

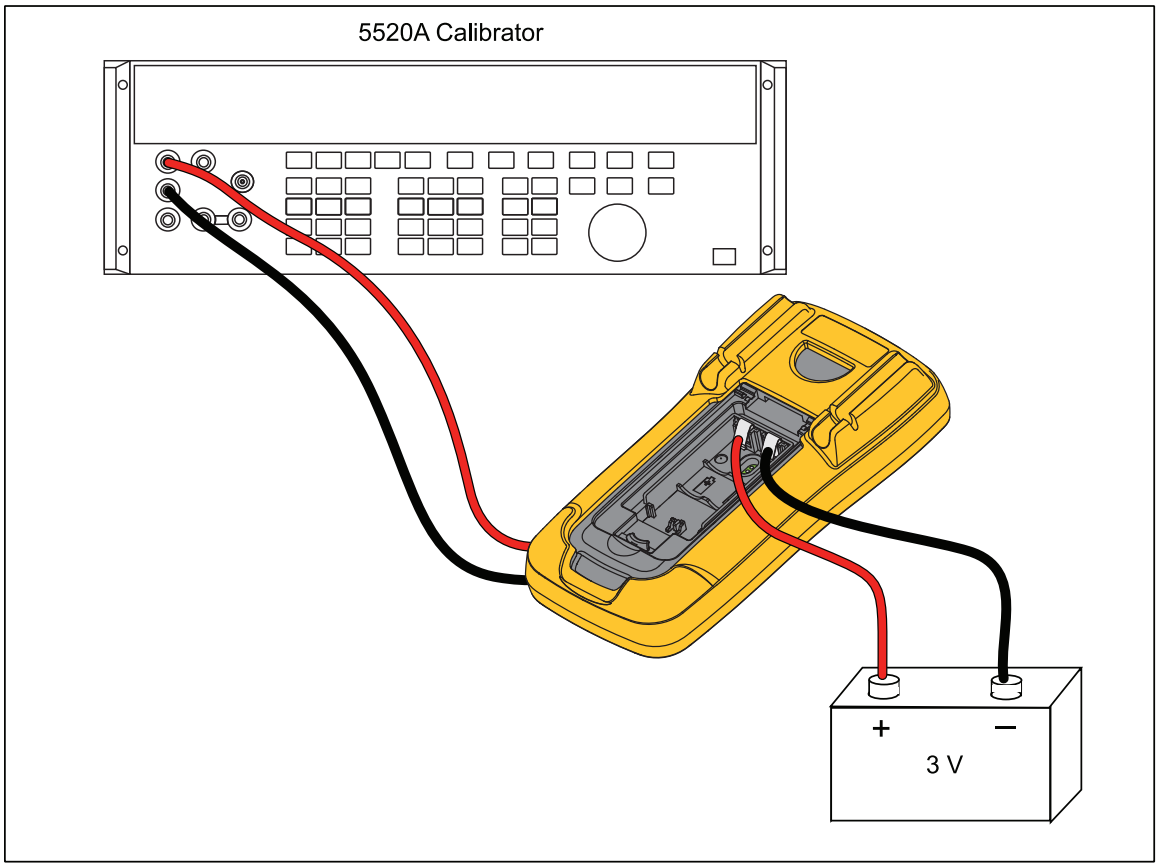

Figure 4. Calibration Connections

4. To put the UUT in calibration mode, use a small probe to push the calibration button (CAL1) See Figure 5 for 15B+ and 17B+ and Figure 7 for 18B+.

Calibration for 15B+ and 17B+

For each function in Table 7:

1. Turn the rotary selection knob to the function to be calibrated.
2. Set calibrator output for the appropriate signal.
3. Wait 4 seconds for the reading to stabilize then push HOLD to confirm and forward next step.
4. On the PCB, short CAL1 and WP6 together. See Figure 5.

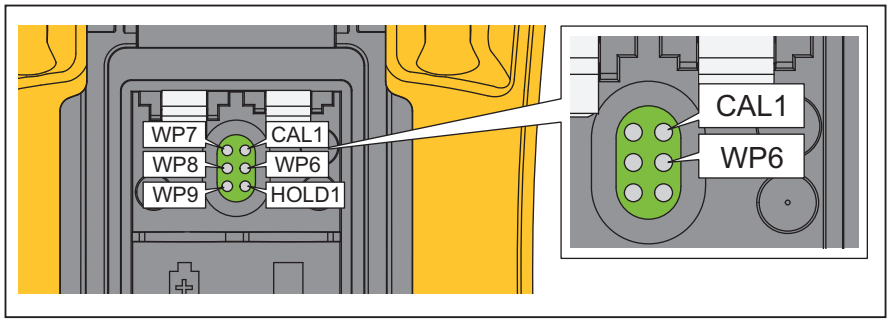

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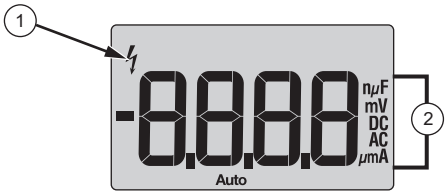
Figure 5. Calibration Adjustment for 15B+ and 17B+

5. Enter the calibration values on the calibrator.
6. For each function, push HOLD to confirm.

   The display shows the function and the high voltage mark. See Table 6.

Table 6. LCD Indications



icr02.eps

①	High voltage mark
②	Function

7. For the 17B+ temperature calibration:
   a. Use an adjustable potentiometer to make a manual adjustment. See Figure 6.
   b. Adjust to 0.1 °C to 0.3 °C at 0 °C input.
8. When calibration is complete, turn off the UUT.

Table 7. All Functions Adjustments 15B+ and 17B+

Function	Step	Display	15B+	17B+	Calibrator Output
VAC	1	High voltage mark (ϟ) flickers	√	√	3 V,50 HZ
VDC	1	High voltage mark (ϟ) flickers	√	√	3 V,0 Hz
Cap	1	High voltage mark (ϟ) flickers	√	√	100 µF
ADC	1	High voltage mark (ϟ) flickers	√	√	3 A,0 Hz
mADC	1	High voltage mark (ϟ) flickers	√	√	30 mA,0 Hz
Temperature	1	Temperature	X	√	0 °C

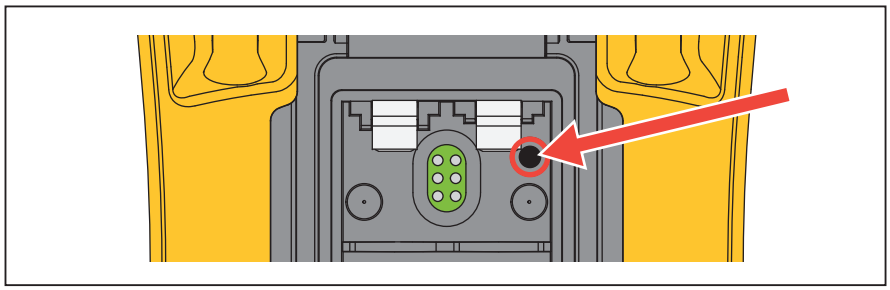


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Figure 6. Temperature Adjustment for 17B+

Calibration for 18B+

For each function in Table 8:

1. Turn the rotary selection knob to the function to be calibrated.
2. On the PCB, short CAL1 and WP6 together. See Figure 7.

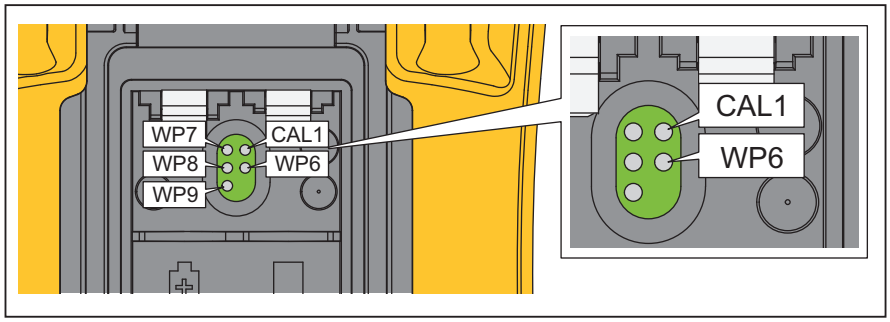

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Figure 7. Calibration Adjustment 18B+

3. Connect the UUT signal input terminal to the calibrator (F5522A or other calibrator.)
4. Enter the calibration values on the calibrator.
5. For each function, push HOLD to confirm.
6. When calibration is complete, turn off the UUT.

Table 8. All Functions Adjustment 18B+

Function	Step	Display	Calibrator Output
VAC	1	High voltage mark (ϟ) flickers	3 V, 50 Hz
VDC	1	High voltage mark (ϟ) flickers	3 V, 0 Hz
Cap	1	High voltage mark (ϟ) flickers	100 µF
ADC	1	High voltage mark (ϟ) flickers	3 A, 0 Hz
mADC	1	High voltage mark (ϟ) flickers	30 mA, 0 Hz