

ข้อมูลด้านเทคนิค

Fluke 1587 FC Insulation Multimeter



คุณลักษณะสำคัญ

- Safety first. Connect the insulation tester then keep yourself out of harm's way by monitoring your test measurements remotely.
- Prove your job is done right by quickly seeing and sharing insulation resistance test results wirelessly with your smartphone.
- Quickly find problems by saving and comparing measurements over time on a wireless device.

ภาพรวมผลิตภัณฑ์: Fluke 1587 FC Insulation Multimeter

Keep yourself safe. Find hidden problems faster. Put the paperwork down.

Fluke Connect + Fluke's 1587 FC Insulation Multimeter helps you identify tough problems, fix, and wirelessly communicate your work quickly and easily - all at a safe distance.

Add diagnostics with Fluke Connect

The Fluke 1587 FC is Fluke Connect-enabled so you can download the free Fluke Connect® Measurements app to your smartphone and gain additional functions, including:

- Safety first. Keep yourself out of harm's way by monitoring your test measurements remotely.
- Prove your job is done right by quickly seeing and sharing measurement results wirelessly with your smartphone.
- Quickly find problems by saving and comparing measurements over time on a wireless device.
- PI/DAR timed ratio tests with TrendIt™ graphs to identify moisture and contaminated insulation problems faster

- Memory storage through Fluke Connect that saves measurements to your phone or the cloud and eliminates the need to write down results. Reduces errors and saves data for historical tracking over time
- Temperature compensation to establish accurate baselines and relevant historical comparisons
- Historical tracking and trending of assets to identify insulation degradation over time and allow real-time decisions to be made in the field with Fluke Connect® Assets (sold separately)
- Provides memory storage through Fluke Connect Measurements to eliminate the need to write down results
- Includes live circuit detection to prevent insulation test if voltage >30 V is detected
- Provides automated temperature compensation to establish accurate baselines
- Supports historical tracking and asset trending of assets to identify degradation over time with Fluke Connect® Assets (sold separately)
- Incorporates VFD low-pass filter for accurate variable frequency motor drive measurements
- Includes auto-discharge of capacitive voltage for added user protection
- Measures ac/dc voltage, dc millivolts, ac/dc milliamps, resistance, and continuity
- Includes capacitance, diode test, temperature, min/max, frequency measurements and insulation test smoothing reading
- Automatically powers off to save battery power
- Comes with remote probe, test leads, alligator clips, K-type thermocouple, hard case, and three-year warranty.

[Useful resources and rugged tools for Solar professionals](#)

ข้อมูลจำเพาะ: Fluke 1587 FC Insulation Multimeter

Electrical Specifications		
AC voltage measurement		
Range		
600.0 mV	Resolution	0.1 mV
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (1% + 3)
	Accuracy 60 Hz to 5000 Hz \pm (% of Rdg + Counts)	\pm (2% + 3)
6.000 V	Resolution	0.001 V
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (1% + 3)
	Accuracy 60 Hz to 5000 Hz \pm (% of Rdg + Counts)	\pm (2% + 3)
60.00 V	Resolution	0.01 V
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (1% + 3)
	Accuracy 60 Hz to 5000 Hz \pm (% of Rdg + Counts)	\pm (2% + 3)
600.0 V	Resolution	0.1 V
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (1% + 3)
	Accuracy 60 Hz to 5000 Hz \pm (% of Rdg + Counts)	\pm (2% + 3) ¹

1000 V	Resolution	1 V
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (2% + 3)
	Accuracy 60 Hz to 5000 Hz \pm (% of Rdg + Counts)	\pm (2% + 3) ¹
1 1 kHz bandwidth		
Low-Pass Filter Voltage		
Range		
600.0 mV	Resolution	0.1 mV
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (1% + 3)
	Accuracy 60 Hz to 400 Hz \pm (% of Rdg + Counts)	+(2% + 3), -(6% - 3)
6.000 V	Resolution	0.001 V
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (1% + 3)
	Accuracy 60 Hz to 400 Hz \pm (% of Rdg + Counts)	+(2% + 3), -(6% - 3)
60.00 V	Resolution	0.01 V
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (1% + 3)
	Accuracy 60 Hz to 400 Hz \pm (% of Rdg + Counts)	+(2% + 3), -(6% - 3)
600.0 V	Resolution	0.1 V
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (1% + 3)
	Accuracy 60 Hz to 400 Hz \pm (% of Rdg + Counts)	+(2% + 3), -(6% - 3)
1000 V	Resolution	1 V
	Accuracy 50 Hz to 60 Hz \pm (% of Rdg + Counts)	\pm (2% + 3)
	Accuracy 60 Hz to 400 Hz \pm (% of Rdg + Counts)	+(2% + 3), -(6% - 3)
DC Voltage Measurement		
Range	Resolution	Accuracy \pm(% of Rdg + Counts)
6.000 V dc	0.001 V	\pm (0.09% + 2)
60.00 V dc	0.01 V	\pm (0.09% + 2)
600.0 V dc	0.1 V	\pm (0.09% + 2)
1000 V dc	1 V	\pm (0.09% + 2)
Input impedance	10 M Ω (nominal), <100 pF	

Normal mode rejection ratio	>60 dB @ 50 Hz or 60 Hz	
Common mode rejection ratio	>120 dB @ dc, 50 Hz or 60 Hz (1 k unbalance)	
Accuracies apply to $\pm 100\%$ of range		
DC Millivolts Measurement		
Range	Resolution	Accuracy \pm(% of Rdg + Counts)
600.0 mVdc	0.1 mV	$\pm(0.1\% + 1)$
DC and AC Current Measurement		
AC 45 Hz to 1000 Hz		
Range	400 mA	
Resolution	0.1 mA	
Accuracy \pm (% of Rdg+Counts)	$\pm(1.5\% + 2)^1$	
Burden voltage (Typical)	2 mV/mA	
Range	60 mA	
Resolution	0.01 mA	
Accuracy \pm (% of Rdg+Counts)	$\pm(1.5\% + 2)^1$	
Burden voltage (Typical)	2 mV/mA	
DC		
Range	400 mA	
Resolution	0.1 mA	
Accuracy \pm (% of Rdg+Counts)	$\pm(0.2\% + 2)$	
Burden voltage (Typical)	2 mV/mA	
Range	60 mA	
Resolution	0.01 mA	
Accuracy \pm (% of Rdg+Counts)	$\pm(0.2\% + 2)$	
Burden voltage (Typical)	2 mV/mA	
Overload	600 mA for 2 minutes maximum	
Fuse protection for mA input	0.44 mA, 1000 V, IR 10 kA	
AC conversion	Inputs are ac-coupled and calibrated to the rms value of sine wave input	
Conversions are true-rms responding and specified from 5% to 100% of range. Input signal crest factor can be up to 3 up to 300 mA, decreasing linearly to crest factor ≤ 1.5 at 600 mA. For non-sinusoidal waveforms add $+(2\% \text{ reading} + 2\% \text{ FS})$ typical, for a crest factor up to 3.		
¹ 1 kHz bandwidth		
Ohms Measurement		
Range	Resolution	Accuracy \pm(% of Rdg+Counts)¹
600.0 Ω	0.1 Ω	$\pm(0.9\% + 2)$
6.000 k Ω	0.001 k Ω	$\pm(0.9\% + 2)$

60.00 k Ω	0.01 k Ω	$\pm(0.9\% + 2)$
600.0 k Ω	0.1 k Ω	$\pm(0.9\% + 2)$
6.000 M Ω	0.001 M Ω	$\pm(0.9\% + 2)$
50.0 M Ω ²	0.01 M Ω	$\pm(1.5\% + 3)$
Overload protection	1000 V rms or dc	
Open circuit test voltage	<8.0 V dc	
Short circuit current	<1.1 mA	
¹ Accuracies apply from 0% to 100% of range ² Up to 80% relative humidity		
Diode Test		
Diode test indication	Display voltage drop: 0.6 V at 1.0 mA nominal test current:	
Accuracy	$\pm(2\% + 3)$	
Continuity Test		
Continuity indication	Continuous audible tone for test resistance below 25 Ω and off above 100 Ω . Maximum Reading; 1000 Ω	
Open circuit voltage	<8.0 V	
Short circuit current	1.0 mA typical	
Overload protection	1000 V rms	
Response time	>1 m sec	
Frequency Measurement		
Range	Resolution	Accuracy $\pm(\%$ of Rdg+Counts)
99.99 Hz	0.01 Hz	$\pm(0.1\% + 1)$
999.9 Hz	0.1 Hz	$\pm(0.1\% + 1)$
9.999 kHz	0.001 kHz	$\pm(0.1\% + 1)$
99.99 kHz	0.01 kHz	$\pm(0.1\% + 1)$
Frequency Counter Sensitivity		
600.0 mV ac	V ac Sensitivity (RMS Sine Wave) ¹ 5 Hz to 20 kHz	100.0 mV
	V ac Sensitivity (RMS Sine Wave) ¹ 20 kHz to 100 kHz	150.0 mV
	DC Trigger Levels ¹ to 20 kHz ²	NA
6.0 V	V ac Sensitivity (RMS Sine Wave) ¹ 5 Hz to 20 kHz	1.0 V
	V ac Sensitivity (RMS Sine Wave) ¹ 20 kHz to 100 kHz	1.5 V
	DC Trigger Levels ¹ to 20 kHz ²	-400.0 mV and 2.5 V

60.0 V	V ac Sensitivity (RMS Sine Wave) ¹ 5 Hz to 20 kHz	10.0 V
	V ac Sensitivity (RMS Sine Wave) ¹ 20 kHz to 100 kHz	36.0 V
	DC Trigger Levels ¹ to 20 kHz ²	1.2 V and 4.0 V
600.0 V	V ac Sensitivity (RMS Sine Wave) ¹ 5 Hz to 20 kHz	100.0 V
	V ac Sensitivity (RMS Sine Wave) ¹ 20 kHz to 100 kHz	-
	DC Trigger Levels ¹ to 20 kHz ²	12.0 V and 40.0 V
1000.0 V	V ac Sensitivity (RMS Sine Wave) ¹ 5 Hz to 20 kHz	300.0 V
	V ac Sensitivity (RMS Sine Wave) ¹ 20 kHz to 100 kHz	-
	DC Trigger Levels ¹ to 20 kHz ²	12.0 V and 40.0 V

¹ Maximum input for specified accuracy = 10x range (1000 V max). Noise at low frequencies and amplitudes may affect accuracy

² Usable to 100 kHz with full scale input

Capacitance

Range	Resolution	Accuracy ±(% of Rdg+Counts)
1000 nF	1 nF	±(1.2% + 2)
10.00 µF	0.01 µF	±(1.2% + 2)
100.0 µF	0.1 µF	±(1.2% ±90 counts)
9999 µF	1 µF	±(1.2% ±90 counts)

Temperature Measurement

Range	Resolution	Accuracy ±(% of Rdg+Counts) ¹
-40 °C to 537 °C	0.1 °C	±(1% + 10 counts)
-40 °F to 998 °F	0.1 °F	±(1% + 18 counts)

¹ Accuracies apply following 90 minutes settling time after a change in the ambient temperature of the instrument

Insulation Specifications

Measurement range	0.01 MΩ to 2 GΩ
Test voltages	50, 100, 250, 500, 1000 V
Test voltage accuracy	+20%, -0%
Short-circuit test current	1 mA nominal
Auto discharge	Discharge time <0.5 second for C = 1 µF or less
Live circuit detection	Inhibit test if terminal voltage > 30 V prior to initialization of test
Maximum capacitive load	Operable with up to 1 µF load

Output Voltage

50 V (0% to +20%)	Display range	0.01 to 6.00 M Ω
	Resolution	0.01 M Ω
	Test current	1 mA @ 50 k Ω
	Resistance accuracy \pm (% of Rdg + Counts)	\pm (3% + 5 counts)
	Display range	6.0 to 50.0 M Ω
	Resolution	0.1 M Ω
	Test current	1 mA @ 50 k Ω
	Resistance accuracy \pm (% of Rdg + Counts)	\pm (3% + 5 counts)
100 V (0% to +20%)	Display range	0.01 to 6.00 M Ω
	Resolution	0.01 M Ω
	Test current	1 mA @ 100 k Ω
	Resistance accuracy \pm (% of Rdg + Counts)	\pm (3% + 5 counts)
	Display range	6.0 to 60.0 M Ω
	Resolution	0.1 M Ω
	Test current	1 mA @ 100 k Ω
	Resistance accuracy \pm (% of Rdg + Counts)	\pm (3% + 5 counts)
	Display range	60 to 100 M Ω
	Resolution	1 M Ω
	Test current	1 mA @ 100 k Ω
	Resistance accuracy \pm (% of Rdg + Counts)	\pm (3% + 5 counts)
250 V (0% to +20%)	Display range	0.1 to 60.0 M Ω
	Resolution	0.1 M Ω
	Test current	1 mA @ 250 k Ω
	Resistance accuracy \pm (% of Rdg + Counts)	\pm (1.5% + 5 counts)
	Display range	60 to 250 M Ω
	Resolution	1 M Ω
	Test current	1 mA @ 250 k Ω
	Resistance accuracy \pm (% of Rdg + Counts)	\pm (1.5% + 5 counts)

500 V (0% to +20%)	Display range	0.1 to 60.0 MΩ
	Resolution	0.1 MΩ
	Test current	1 mA @ 500 kΩ
	Resistance accuracy ±(% of Rdg + Counts)	±(1.5% + 5 counts)
	Display range	60 to 500 MΩ
	Resolution	1 MΩ
	Test current	1 mA @ 500 kΩ
	Resistance accuracy ±(% of Rdg + Counts)	±(1.5% + 5 counts)
1000 V (0% to +20%)	Display range	0.1 to 60.0 MΩ
	Resolution	0.1 MΩ
	Test current	1 mA @ 1 MΩ
	Resistance accuracy ±(% of Rdg + Counts)	±(1.5% + 5 counts)
	Display range	60 to 600 MΩ
	Resolution	1 MΩ
	Test current	1 mA @ 1 MΩ
	Resistance accuracy ±(% of Rdg + Counts)	±(1.5% + 5 counts)
	Display range	0.6 to 2.0 GΩ
	Resolution	100 MΩ
	Test current	1 mA @ 1 MΩ
	Resistance accuracy ±(% of Rdg + Counts)	±(10% + 3 counts)
General Specifications		
Maximum voltage applied to any terminal and common	1000 V	
Storage temperature	-40 °C to 60 °C (-40 °F to 140 °F)	
Operating temperature	-20 °C to 55 °C (-4 °F to 131 °F)	
Temperature coefficient	0.05 x (specified accuracy) per °C for temperatures <18 °C or >28 °C (<64 °F or >82 °F)	
Relative humidity	Noncondensing	
	0% to 95% @ 10 °C to 30 °C (50 °F to 86 °F)	
	0% to 75% @ 30 °C to 40 °C (86 °F to 104 °F)	
	0% to 40% @ 40 °C to 55 °C (104 °F to 131 °F)	
Vibration	Random, 2 g, 5-500 Hz per MIL-PRF-28800F, Class 2 instrument	
Radio frequency communication	2.4 GHz ISM Band	

Radio frequency certification	FCC: T68-FBLE, IC: 6627A-FBLE	
Electromagnetic Compatibility		
International	IEC 61326-1:Portable Electromagnetic Environment; IEC 61326-2-2 CISPR 11: Group 1, Class A	
	Group 1: Equipment has intentionally generated and/or uses conductively-coupled radio frequency energy that is necessary for the internal function 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 that supplies buildings used for domestic purposes. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted and radiated disturbances.	
	Emissions that exceed the levels required by CISPR 11 can occur when the equipment is connected to a test object. The equipment may not meet the immunity requirements of this standard when test leads and/or test probes are connected.	
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.	
Enclosure protection	IEC 60529: IP40 (non-operating)	
Safety		
IEC 61010-1	Pollution Degree 2	
IEC 61010-2-033	CAT IV 600 V / CAT III 1000 V	
Batteries	Four AA batteries (IEC LR6)	
Battery life	Meter use 1000 hours; Insulation test use: Meter can perform at least 1000 insulation tests with fresh alkaline batteries at room temperature. These are standard tests of 1000 V into 1 M Ω with a duty cycle of 5 seconds on and 25 seconds off.	
Size (H x W x L)	5.0 x 10.0 x 20.3 cm (1.97 x 3.94 x 8.00 in)	
Weight	550 g (1.2 lb)	
Altitude	Operating	2000 m
	Storage	12,000 m
Over-range capability	110% of range except for capacitance which is 100%	
Frequency overload protection	<107 V Hz	
Fuse protection for mA input	0.44A, 1000 V, IR 10 kA	

รุ่น



FLK-1587-FC

Fluke 1587 FC Insulation Multimeter

Includes:

- Remote probe
- Test leads
- Alligator clips
- K-type thermocouple
- Soft case
- User documentation



การบำรุงรักษาเชิงป้องกันซับซ้อนน้อยลง กำจัดงานซ้ำ

แบบไร้สายโดยใช้ระบบ Fluke Connect

- จัดข้อผิดพลาดจากการป้อนข้อมูลโดยบันทึกค่าวัดจากเครื่องมือโดยตรงและเชื่อมโยงค่าวัดกับคำสั่งงาน รายงาน หรือบันทึกสินทรัพย์
- เพิ่มระยะเวลาการทำงานให้สูงสุดและทำการตัดสินใจด้านการบำรุงรักษาอย่างมั่นใจด้วยข้อมูลที่รวดเร็วและตรวจสอบได้
- ไม่ต้องยุ่งกับคลิปปอร์ด สมุดจดบันทึก และสเปรดชีตหลายแผ่นด้วยการถ่ายโอนการวัดแบบไร้สายด้วยขั้นตอนเดียว
- เข้าถึงค่าวัดบรรทัดฐาน ค่าวัดในอดีต และค่าวัดปัจจุบันตามสินทรัพย์
- แบ่งปันข้อมูลการวัดของคุณโดยใช้การสนทนาทางวิดีโอและอีเมลของ ShareLive™

ดูข้อมูลเพิ่มเติมได้ที่ flukeconnect.com



เครื่องหมายการค้าทั้งหมดเป็นกรรมสิทธิ์ของผู้ที่เป็นเจ้าของ จำเป็นต้องมี WiFi หรือบริการโทรศัพท์มือถือในการแบ่งปันข้อมูล การให้บริการไร้สายและข้อมูลผ่านสมาร์ตโฟนไม่รวมอยู่ในการสั่งซื้อ พื้นที่เก็บข้อมูล 5GB แรกให้บริการฟรี.

การให้บริการไร้สายและข้อมูลผ่านสมาร์ตโฟนไม่รวมอยู่ในการสั่งซื้อ Fluke Connect อาจไม่มีให้บริการในบางประเทศ

Fluke. ทั่วโลกของคุณ คงอยู่แค่ก้าวต่อไป

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