



## Installation Tester and DMM Kits

### Kit Contents:

<b>Part Number</b>	<b>Kit Contents</b>
<b>FLUKE-1652C-CLAMPKIT</b>	<b>FLUKE 1652C Installation Tester and Fluke 323 Clamp Meter UK Kit</b>
<b>FLUKE-1652C05-CLAMPKIT</b>	<b>FLUKE 1652C Installation Tester and Fluke 323 Clamp Meter EU Kit</b>
<b>FLUKE-1653B-CLAMPKIT/D</b>	<b>FLUKE 1653B Installation Tester and Fluke 324 Clamp Meter UK Kit</b>
<b>FLUKE-1653B02-CLAMPKIT/D</b>	<b>FLUKE 1653B Installation Tester and Fluke 324 Clamp Meter EU Kit</b>
<b>FLUKE-1654B-CLAMPKIT/D</b>	<b>FLUKE 1654B Installation Tester and Fluke 325 Clamp Meter UK Kit</b>
<b>FLUKE-1654B02-CLAMPKIT/D</b>	<b>FLUKE 1654B Installation Tester and Fluke 325 Clamp Meter EU Kit</b>
<b>FLUKE-117/TL175/SB</b>	<b>Fluke 117 Digital Multimeter, TL175 Test Lead Set and SB Bluetooth Speaker</b>

See below for individual parts datasheets.

### Contact Information:

[www.Farnell.co.uk](http://www.Farnell.co.uk)

[www.Newark.com](http://www.Newark.com)

[www.Fluke.com](http://www.Fluke.com)

# FLUKE®

# Fluke 117

## Electrician's Multimeter

with Non-Contact Voltage

## Technical Data



### Compact true-rms meter for commercial applications

The Fluke 117 is the ideal meter for demanding settings like commercial buildings, hospitals and schools. The 117 includes integrated non-contact voltage detection to help get the job done faster.

#### Features include:

- **VoltAlert™ technology** for non-contact voltage detection
- **AutoVolt** automatic ac/dc voltage selection
- LoZ: helps prevent false readings due to ghost voltage
- Large white LED backlight to work in poorly lit areas
- True-rms for accurate measurements on non-linear loads
- Measures 10 A (20 A overload for 30 seconds)
- Resistance, continuity, frequency and capacitance
- Min/Max/Average to record signal fluctuations
- Compatible with optional magnetic hanger (ToolPak™) for hands free operation
- CAT III 600 V safety rated

#### General specifications

Accuracy is specified for 1 year after calibration, at operating temperatures of 18 °C to 28 °C, with relative humidity at 0 % to 90 %.

The accuracy specifications take the form of:  
 $\pm ( [ \% \text{ of reading} ] + [ \text{counts} ] )$

Maximum voltage between any terminal and earth ground	600 V
Surge protection	6 kV peak per IEC 61010-1 600 V CAT III, Pollution Degree 2
Fuse for A input	11 A, 1000 V FAST Fuse (Fluke PN 803293)
Display	Digital: 6,000 counts, updates 4/sec
Bar graph	33 segments, updates 32/sec
Operating temperature	-10 °C to + 50 °C
Storage temperature	-40 °C to + 60 °C
Battery	9 volt Alkaline, NEDA 1604A/IEC 6LR61
Battery life	400 hours typical, without backlight

Actual size



# Accuracy specifications

Measurement	Range	Resolution	Accuracy ± ([% of reading] + [counts])
DC millivolts	600.0 mV	0.1 mV	0.5 % + 2
DC volts	6.000 V	0.001 V	0.5 % + 2
	60.00 V	0.01 V	
	600.0 V	0.1 V	
Auto volts	600.0 V	0.1 V	2.0 % + 3 (dc, 45 Hz to 500 Hz) 4.0 % + 3 (500 Hz to 1 kHz)
AC millivolts <sup>1</sup> true-rms	600.0 mV	0.1 mV	1.0 % + 3 (dc, 45 Hz to 500 Hz) 2.0 % + 3 (500 Hz to 1 kHz)
AC volts <sup>1</sup> true-rms	6.000 V	0.001 V	1.0 % + 3 (45 Hz to 500 Hz) 2.0 % + 3 (500 Hz to 1 kHz)
	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.
Ohms	600.0 Ω	0.1 Ω	0.9 % + 2
	6.000 kΩ	0.001 kΩ	
	60.00 kΩ	0.01 kΩ	
	600.0 kΩ	0.1 kΩ	
	6.000 MΩ	0.001 MΩ	
Ohms	40.00 MΩ	0.01 MΩ	1.5 % + 2
	Diode test	2.000 V	0.001 V
Capacitance	1000 nF	1 nF	1.9 % + 2
	10.00 μF	0.01 μF	
	100.0 μF	0.1 μF	
	9999 μF	1 μF	
	100 μF to 1000 μF		
Capacitance	> 1000 μF		5 % + 20
Lo-Z capacitance	1 nF to 500 μF		10 % + 2 typical
AC amps true-rms (45 Hz to 500 Hz)	6.000 A	0.001 A	1.5 % + 3
	10.00 A	0.01 A	
20 A overload for 30 seconds max.			
DC amps	6.000 A	0.001 A	1.0 % + 3
	10.00 A	0.01 A	
20 A overload for 30 seconds max.			
Hz (V or A input) <sup>2</sup>	99.99 Hz	0.01 Hz	0.1 % + 2
	999.9 Hz	0.1 Hz	
	9.999 kHz	0.001 kHz	
	50.00 kHz	0.01 kHz	

**Notes:**

<sup>1</sup> All ac voltage 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 ≤ 3 at 4000 counts, decreasing linearly to 1.5 at full scale. AC volts is ac-coupled. Auto-V LoZ, and ac mV are dc-coupled.

<sup>2</sup> Frequency is ac coupled, 5 Hz to 50 kHz for ac voltage. Frequency is dc coupled, 45 Hz to 5 kHz for ac current.

## Ordering information

**Fluke-117** Electrician's Multimeter with Non-Contact Voltage

**Included**

TL75 Test leads, holster, User's manual and 9 V battery (installed).



**Fluke.** Keeping your world up and running.™

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**FLUKE®**

# New Fluke TL175 TwistGuard™ Test Leads

## Twist. Test.

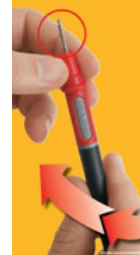
### TL175 TwistGuard™ Test Leads offer:

- Patented TwistGuard™ extendable tip shroud that meets new electrical safety requirements to reduce tip exposure while providing the versatility needed for most measurements
- New WearGuard™ lead wire wear indicator. Each test lead is covered by two layers of silicone insulation; inner contrasting color is exposed when the leads are nicked, scuffed, or otherwise damaged and in need of replacement
- Double insulated silicone leads. TL175 withstands high temperatures and remains flexible in cold temperatures
- Extra-heavy strain relief on both probe-end and plug-end, tested beyond 30,000 bends without failure
- Universal input plugs compatible with all instruments that accept standard 4 mm shrouded banana plugs
- Probes always show correct category rating for tip exposure being used
- TL175E also available. Includes removable 4 mm lantern tips for versatility
- Conforms to EN61010-031:2008
- Ratings: CAT II 1000 V, CAT III 1000 V, CAT IV 600 V, 10 A max., Pollution Degree 2
- Environmental ratings: -20 °C to 55 °C, altitude: 2000 m

The new Fluke TL175 TwistGuard™ Test Leads are the only test leads in the world with adjustable length test tips for use in different measurement environments. By simply twisting the test lead the user can change the exposed probe tip length from 19 mm to 4 mm.



**TwistTest**





## TL175 TwistGuard™ Test Leads



Reduce tip exposure for accurate placement



Extreme strain relief tested to withstand over 30,000 bends



Increase tip exposure for CAT II probing



Universal plugs compatible with all 4 mm shrouded inputs



Reduce tip exposure for CAT III testing



WearGuard™ indicator shows insulation damage

### Regulation requirements

On March 1st 2011 a new European safety standard EN 61010-031 for test leads and accessories has become valid. This new standard affects test leads and accessories, for all kind of test instruments, i. e. multimeter, clamps, insulation testers, ...

Two of the major requirements of this standard are:

- 1.) For CAT III and CAT IV rated accessories the conductive metal parts must be below 4 mm
- 2.) Requirement about duration of the insulation of the test leads, either by a wear indicator or double insulation after lifetime wear

The new test lead Fluke TL175 are fully compliant to this new regulation, and allows you to use the accessory in CAT III and CAT IV environments.

**Fluke.** *Keeping your world up and running.*®

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### Ordering information

**Model**

**TL175** TwistGuard™ Test Leads,  
2mm dia probe tips

**TL175E** TwistGuard™ Test Leads,  
2mm dia probe tips with  
4mm adapters