

# 180

## Electrical Safety Analyzer

### Technical Data



The handheld 180 Electrical Safety Analyzer is a lightweight, portable device for testing electrical systems, medical devices, and physiological instrumentation. The device includes the AAMI test load and has 5 jacks for patient applied parts testing.

Small enough to fit in a briefcase, the analyzer works well as a bench-top instrument in the laboratory or a portable testing device in the mobile engineer's toolbox. With its uncomplicated design, the 180 is simple to use. A single master function switch, directly labeled with the test to be performed, leads the user through a complete measurement procedure.

The analyzer uses simple, yet sophisticated, electronics for true RMS measurement of current and voltage. The 180 also performs dual-lead leakage and resistance tests.

#### Key features

- Handheld
- Self-switching 120 V/240 V operation
- 15 A and 20 A capabilities
- FIVE patient applied parts jacks
- Dual-lead testing

## Specifications

<b>Operating mains voltage range</b>	90 V ac to 240 V ac
<b>Current capacity for DUT</b>	Line 90 V to 140 V: 20 A for 5 min, 15 A for 30 min; line over 140 V: 10 A
<b>Line voltage measurement</b>	
<b>Range</b>	90 V to 240 V
<b>Accuracy</b>	± 3 % of reading ± 1 LSD
<b>Load current measurement</b>	
<b>Range</b>	1 A to 19.99 A
<b>Accuracy</b>	± 5 % of reading ± 1 LSD
<b>Leakage current measurement</b>	
<b>Range</b>	0 µA to 1999 µA
<b>Accuracy</b>	DC and 25 Hz to 1 kHz: ± 1 % of reading ± 1 µA; 1 kHz to 100 kHz: ± 2.5 % of reading ± 1 µA; 100 kHz to 1 MHz: ± 5 % of reading ± 1 µA
<b>Measurement type</b>	True-rms
	Input impedance per AAMI ES1-1993
<b>Isolation test</b>	
<b>Isolation source voltage</b>	110 % of mains, ± 5 % of reading
<b>Current limit</b>	1 mA @ 120 V ac
<b>Resistance measurement</b>	
<b>Range</b>	0.01 Ω to 19.99 Ω
<b>Accuracy</b>	± 1 % of reading ± 1 LSD
<b>Resolution</b>	0.01 Ω
<b>Current source</b>	10 mA dc
<b>Environmental requirements</b>	
<b>Operating temperature</b>	15 °C to 40 °C (59 °F to 104 °F)
<b>Storage temperature</b>	-20 °C to 65 °C (-4 °F to 149 °F)
<b>Relative humidity</b>	90 % max
<b>Mains voltage range</b>	90 V to 240 V
<b>General information</b>	
<b>Display</b>	LCD 3.5 digit
<b>Dimensions (LxWxH)</b>	13.3 cm x 18.4 cm x 5.4 cm (5.25 in x 7.25 in x 2.1 in)
<b>Weight</b>	Max weight 1 kg (2.25 lb)

## Ordering information

### Model

ESA180-US 90-265V Electrical Safety Analyzer

### Standard accessories

1751000 Users Manual

600/100FG Test Lead, 8 ft, Black

### Optional accessories

97148 Soft-Sided Vinyl Carrying Case

600/100FG Chassis Cable, Coil Cord, 8 ft Extended

600/101FG Chassis Cable, Coil Cord, 16 ft Extended

600/200FG External Leakage Cable, Coil Cord, 8 ft Extended

600/201 External Leakage Cable, Coil Cord, 16 ft Extended

1800001 North American 220 V Adapter Kit

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Today, biomedical personnel must meet the increasing regulatory pressures, higher quality standards, and rapid technological growth, while performing their work faster and more efficiently than ever. Fluke Biomedical provides a diverse range of software and hardware tools to meet today's challenges.

### Fluke Biomedical Regulatory Commitment

As a medical test device manufacturer, we recognize and follow certain quality standards and certifications when developing our products. We are ISO 9001 and ISO 13485 medical device certified and our products are:

- CE Certified, where required
- NIST Traceable and Calibrated
- UL, CSA, ETL Certified, where required
- NRC Compliant, where required

### Fluke Biomedical.

*Better products. More choices. One company.*

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