

# SAFEMEDIC

## Comprehensive IEC/EN 60601 Medical Electrical Safety Analyser



The SafeMedic provides a comprehensive suite of test functions designed to enable the user to perform full compliance testing in accordance with a wide range of test requirements (EN 60601/ IEC 60601).

It can be operated manually, where the user selects individual tests. Or it can be configured to run automatic tests of a predetermined selection.

Tests are applied and results are recorded within the instrument's internal memory. This high-precision instrument can simulate a wide range of fault conditions, measure the full range of leakage current requirements and apply both high current testing and high voltage hi pot / flash tests.

An optional extra is a high energy defibrillator module, which enables users to confirm the high voltage defibrillator proof testing.

SafeMedic is ideal for a wide range of applications including type test and conformance laboratories, design and development laboratories and environments where medical electrical equipment is manufactured. A clear, intuitive graphics interface helps the user to select and record test information the additional facility of controlling an instrument by remote PC.

The unit can be used either as a stand alone system or part of an applications specific test station.

### Key Features

- Earth / Ground Bond Current up to 40A
- Hipot / Flash Test for patient connection cables
- Defibrillation proof test
- Powered Leakage Tests
- 110 / 240V operation
- Optional PC control
- Automatic scan through up to 12 applied parts connections
- All Tests fully compliant with the requirements of EN 60601
- Internal memory stores up to 4,000 sets of results



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### Clare

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## SPECIFICATIONS

### AC Flash / Hipot Test

Method	Isolated switched mode Voltage
Programmable	100 – 5000V rms.
Ramp Up Time Programmable	0.0 – 255.0s
Hold Time Programmable	0.0 – 255.0s
Ramp Down Time Programmable	0.0 – 255.0s
Voltage Accuracy	+/- 2% +/- 2 digits of set value
Maximum Current	100mA rms.
Current Accuracy	+/- 2% +/- 2 digits of displayed value
Resolution	0.01mA
Phase Angle	-90 to + 90 degrees or -1.0 to 1.0 or resistive component only
Arc Detection	Selectable 0 – 9

### DC Flash / Hipot Test

Method	Isolated switched mode
Voltage Programmable	100 – 6000Vdc
Ramp Up Time Programmable	0.0 – 255.0s
Hold Time Programmable	0.0 – 255.0s
Ramp Down Time Programmable	0.0 – 255.0s
Voltage Accuracy	+/- 2% +/- 2 digits of set value
Maximum Current	10mA DC
Current Accuracy	+/- 2% +/- 2 digits of displayed value
Resolution	0.01mA
Arc Detection Selectable	0 – 9

### DC Insulation Resistance

Voltage	Selectable 350V/500 V DC @2mA.
Maximum O/C Voltage	600V
Range	100K - 20 M $\Omega$ +/- 5% +/-2 digits 20M – 100M $\Omega$ +/-10% +/-2 digits
Resolution	0.01m $\Omega$

### Earth / Ground Bond Test

Current Programmable	1 to 30A AC Constant Current into 0.2 $\Omega$ . Up to 40A into 0.1 $\Omega$
Max No Load Voltage	6V rms. o/c
Range	0.000 – 1.000 $\Omega$
Pass/Fail	Programmable, factory default set to 0.1 $\Omega$
Accuracy	+/- 5% of value, +/- 2 digits
Resolution	1m $\Omega$

### Earth Leakage

Selectable	between EN 60601, AAMI True rms, able to measure AC & DC separately for IEC601/AAMI standards.
Input Impedance	>1M $\Omega$
Frequency Response	DC to 1 MHz (5%) (IEC601/AAMI only)
Range	0 – 20mA
Accuracy	+/- 5%, +/- 2 digits

## Optional Extras

### Hardware

194A922	Barcode Scanner
312A950	Desk Test n Tag Printer

### Service

Onsite or return to base
Service
Calibration

### Order Number

460A910	Comprehensive Electrical Safety Tester
460A912	Comprehensive Electrical Safety Tester including Defibrillator module



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### Enclosure Leakage

Method As described in IEC601.1 clause 19, fig 18

### Applied Parts Leakage

Selectable Between EN 60601-1 and AAMI/NFPA  
Testing Class I and Class II equipment, Mains on applied part, patient auxiliary AC and DC Testing type B, BF, and CF

### Patient Auxiliary Current

Selectable between EN 60601-1 and NFPA

### Power / Run / Load Test

Frequency 50 & 60 Hz  
Power 0.1kVA – 4kVA  
Current 0.0A – 16A  
Accuracy +/- 5% of value, +/- 2 digits

### Defibrillator Options

Method As described in IEC 60601.1 Clause 8.5.5 Figures 9 & 10  
Voltage min 5kV DC

### Supplied With

Earth Bond Probe  
Applied Parts / Patient Connection Probe  
Comprehensive User Manual



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