

**FLUKE**®

Biomedical

# Electrical Safety Analyzers

Automated global compliance and safety testing



Complete electrical safety testing from an ISO 13485 medical device company.

# New! ESA609 Electrical Safety Analyzer

**Rugged, portable and easy-to-use  
analyzer designed for general electrical  
safety testing**

The ESA609 integrates all functions needed to test medical devices when patient lead testing is not required, including: line (mains) voltage, ground wire (protective earth) resistance, equipment current, leakage current and point-to-point tests. Versatile to global electrical safety standards of choice, the ESA609 tests to ANSI/AAMI ES1, NFPA-99, and parts of IEC62353 and IEC60601-1.

- Rugged
- Portable
- User-friendly



**ELSO**

riešenia na presné meranie

<http://www.else.sk>

## Rugged

Engineered for on-the-go technicians, the ESA609 is one of the most rugged electrical safety analyzers in its class

- A rubberized case prevents damage if accidentally dropped
- Ingress Protection rating of IP30 keeps out dirt and dust
- Rigorous safety and quality testing ensures it's as tough as necessary



## Portable

Effortlessly transport the ESA609 from one location to another

- Featherweight (1.5lb) design
- Functional strap for easy hand-held operation
- Tilt stand allows for easy set-up
- Carrying case conveniently organizes cables and lead kits

Standard: <b>AAMI ES1/NFPA99</b>	
Test: <b>Line Voltage</b>	
Live to Neutral	<b>124.0V</b>
Live to Earth	<b>121.9V</b>
Neutral to Earth	<b>2.1V</b>
Polarity: <b>Normal</b>	Earth: <b>Closed</b>
<b>Standard</b>	

Standard: <b>AAMI ES1/NFPA99</b>	
Test: <b>Chassis Leakage</b>	
<b>8.3 <math>\mu</math>A</b>	
Earth: <b>Open</b>	
<b>Closed</b>	<b>Gnd Lkg</b>
<b>Standard</b>	

## User-friendly

Easy-to-use interface ensures complete basic testing in minutes

- Simple design requires no training to use
- Quick push-button operation for rapid testing
- Measurements shown clearly on large screen
- Removable memory card for fast and convenient data storage and exchange

Normas internacionais de seguridad

Normes de sécurité internationales





## ESA612 Electrical Safety Analyzer

**The combined power of a simulator, multimeter and electrical safety analyzer in a single, portable device.**

- Small, lightweight and easy to use
- One-button access to most applications
- Multipurpose simulator, multimeters and safety analyzer
- Replaceable mains fuses keep device in the field and out of the shop

## ESA615 Electrical Safety Analyzer

**The automated ESA615 Electrical Safety Analyzer performs all primary electrical safety tests, ECG simulation, point-to-point voltage, leakage and resistance tests to the latest electrical safety standards.**

- Automation inside
- Newest standards compliance
- Data management made easy
- Simple, multi-language user interface



# ESA620

## Electrical Safety Analyzer

**Comprehensive electrical safety testing to global standards: the preferred test tool for IEC60601-1 compliance.**

- 25 A test capability for IEC60601-1 compliance
- 10 Safety-enhanced insulated applied parts connections
- Optional Ansur software automates testing, standardizes test procedures, streamlines reporting and communicates results to CMMS systems
- Expanded leakage ranges through 10,000  $\mu$ A
- Compliance with multiple global standards



Insulated applied parts connections

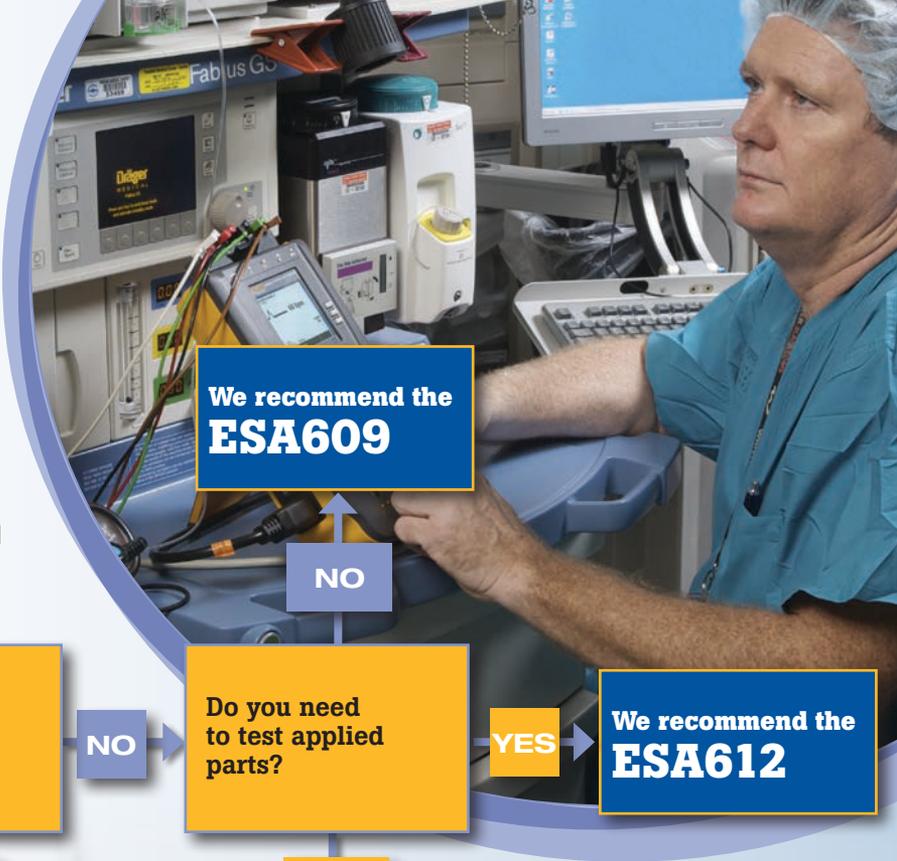


# Compare and decide

## Selecting the right tool for you

Three questions to ask when choosing your new analyzer.

Selecting the right analyzer for your testing needs can be daunting, but most electrical safety analyzer selections come down to these simple questions.



We recommend the **ESA609**

NO

Do you need 25A PE test current capability?

NO

Do you prefer an analyzer with on-board automation?

NO

Do you need to test applied parts?

YES

We recommend the **ESA612**

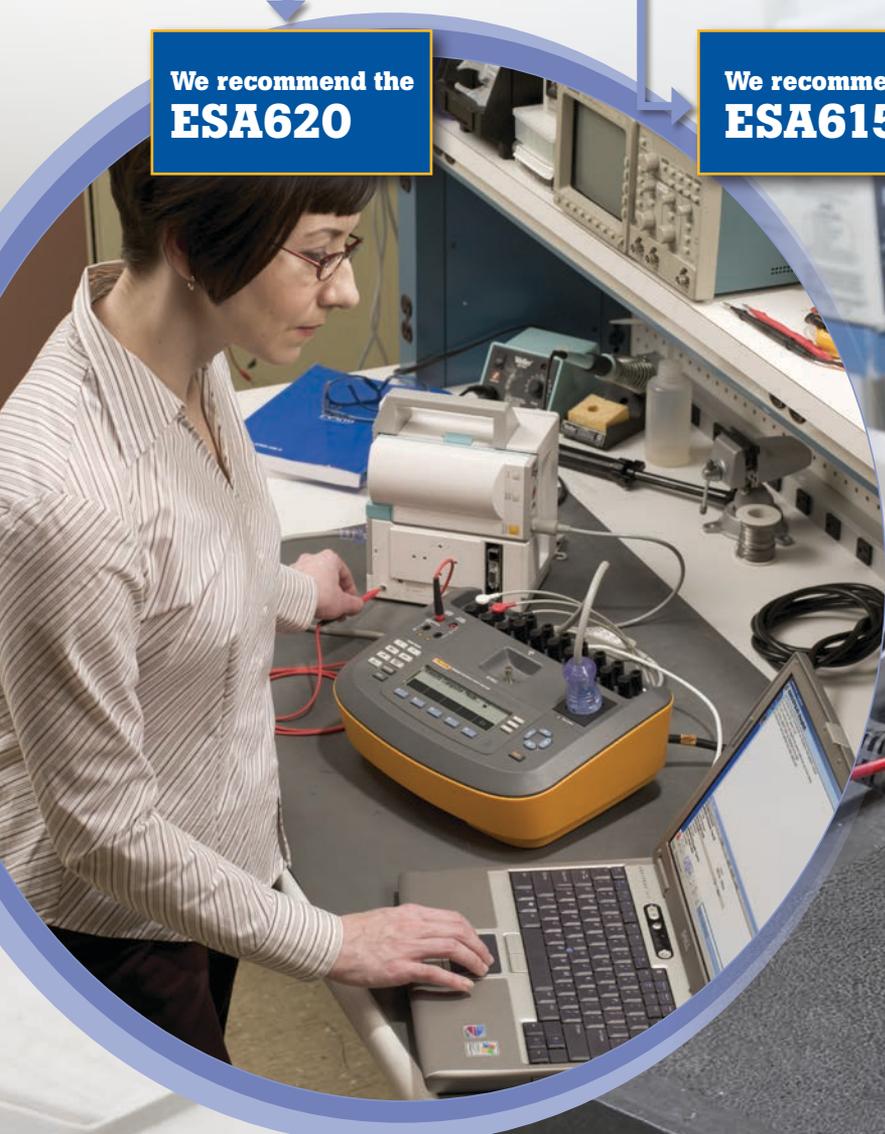
YES

We recommend the **ESA620**

YES

We recommend the **ESA615**

YES



	ESA609	ESA612	ESA615	ESA620	601 Pro SeriesXL
<b>Basic overview</b>					
Preferred analyzer for which standard?	ANSI/AAMI IEC62353	IEC62353, ANSI/AAMI (NFPA-99)	IEC62353, ANSI/AAMI (NFPA-99)	IEC60601-1 2nd, 3rd edition, IEC62353 and ANSI/AAMI (NFPA-99)	IEC60601-1 2nd edition
Automation inside			•		•
Ansur compatible		•	•	•	
On-board memory		•	•		•
ECG simulation		•	•	•	•
Multi-language selection			•		•
Wireless communication			•		
Handheld	•	•	•		
Removable memory card			•		
GFCI protection		•	•	•	
DUT load current	•	•	•	•	•
20 A test capability	•	•	•	•	•
25 A test capability				•	•
<b>Detailed comparison</b>					
Test modes	Manual	Manual Ansur-automatable	Automated Manual if preferred	Manual Ansur-automatable	Automated (limited; manual testing required to meet newest standards)
Test loads	ANSI/AAMI ES1 IEC6060-1	AAMI IEC60601-1	AAMI IEC60601-1	AAMI IEC60601-1 IEC61010	AAMI IEC60601-1 IEC61010
Mains voltage measurement	All lines	All lines	All lines	All lines	All lines
PE Test current	>200 mA dc	200 mA ac	200 mA ac	200 mA ac 25 A ac	1 A ac 10 A ac 25 A ac
Leakage results parameters	True-rms	True-rms ac only dc only	True-rms ac only dc only	True-rms ac only dc only	True-rms dc only
Leakage range	0.0 $\mu$ A to 1999.9 $\mu$ A	0 $\mu$ A to 10,000 $\mu$ A 0 $\mu$ A to 20 mA (differential only)	0 $\mu$ A to 10,000 $\mu$ A 0 $\mu$ A to 20 mA (differential only)	0 $\mu$ A to 10,000 $\mu$ A 0 $\mu$ A to 20 mA (differential or 61010 only)	0 $\mu$ A to 8000 $\mu$ A to 16,000 $\mu$ (61010 only)
Patient auxiliary leakage lead selections	N/A	Any 1 to all	Any 1 to all	Any 1 to all RA-LL-LL-LA RA-LA	Any 1-5 to all V1-16 to all
MAP test voltage	N/A	100 % of mains	100 % of mains	110 % Or 100 % of mains, pending standard selected	110 % of mains
Power supply (V ac)	90 to 264	120 or 230	120 or 230	120 or 230	120 or 230
Applied parts connections	N/A	5 banana safety jacks Bj2ECG adapter 1-to-10 Expander	5 banana safety jacks Bj2ECG adapter 1-to-10 Expander	10 insulated posts	10 banana safety jacks
Language selection	English	English	English, French, German, Spanish, Italian, Portuguese	English	English, French, German, Italian
Communication options	N/A	Wired	Wireless Wired if preferred	Wired	Wired
Data entry options	N/A	Onboard keypad	Onboard keypad USB compatible keyboard Barcode scanner	N/A	Onboard keypad PS/2 keyboard Barcode scanner
Printer port	N/A	Available via Ansur	Available via Ansur	Available via Ansur	Parallel
Dual lead testing	$\mu$ A/mV, and $\Omega$	$\mu$ A/mV, V and $\Omega$	$\mu$ A/mV, V and $\Omega$	$\mu$ A/mV, V and $\Omega$	$\mu$ A/mV and V
Connectivity	N/A	USB	USB	USB	RS-232, parallel printer
Power cord	Removable	Removable	Removable	Removable	Removable
Weight	0.7 kg (1.5 lb)	1.6 kg (3.5 lb)	1.6 kg (3.5 lb)	4.7 kg (10.25 lb)	7.7 kg (17 lb)
Dimensions (L x W x H)	22.9 cm x 17.8 cm x 6.4 cm (9 in x 7 in x 2.5 in)	17.6 cm x 8.4 cm x 28.5 cm (6.9 in x 3.3 in x 11.2 in)	17.6 cm x 8.4 cm x 28.5 cm (6.9 in x 3.3 in x 11.2 in)	31 cm x 23 cm x 10 cm (12.2 in x 9.1 in x 3.9 in)	31 cm x 23 cm x 10 cm (12.2 in x 9.1 in x 3.9 in)

# Lifetime electrical safety testing support

Only from Fluke Biomedical

## No-cost online educational opportunities

Get the most from your investment with self-paced training modules, educational tutorials, and electrical safety testing support materials available on the Fluke Biomedical website.

- Learn more about electrical safety standards and practices
- View comprehensive device/testing tutorials
- Sample PM procedures and checklists

## CarePlan packages

CarePlan packages offer priority services at value prices to keep you up and running.

- Fastest turnaround and expedited shipping
- Extended warranties and reminder notifications
- Loaners and discounts
- VIP technical support
- Productivity consultation services

For more information visit

[www.flukebiomedical.com/ESA](http://www.flukebiomedical.com/ESA)



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