

Questions and Answers

ESA615 Electrical Safety Analyzer FAQ

Question: How is the ESA615 different from the ESA612?

Answer: The ESA 615 is an automated electrical safety that has:

- **Built-in automation that allows automatic testing to ANSI/AAMI ES-1 (NFPA-99), IEC62353 (VDE751), IEC60601-1 (2nd, 3rd edition), or AN/NZS 3551.**
- **Removable memory card with capacity for a minimum of hundreds of test sequences and thousands of test results**
- **Quick data entry options through plug 'n' play keyboard, barcode scanner or on-board data entry interface**
- **Wireless data communication that makes remote operation and data archival fast and simple**
- **Custom language selections include English, French, German, Spanish, Italian and Portuguese**
- **An integrated handle that makes the unit easy to carry**

Question: Which test sequences come standard with the unit?

Answer: The following test sequences are included with the ESA615:

- **IEC60601-1 3rd Edition: Patient Monitor, Defibrillator, Infusion Pump, Ultrasound Device, Generic Device and System**
- **IEC62353: Patient Monitor, Defibrillator, Infusion Pump, Ultrasound Device and Generic Device**
- **NFPA-99 (Hospital): Patient Monitor, Defibrillator, Infusion Pump, Ultrasound Device and Generic Device**
- **ANSI/AAMI ES1: Patient Monitor, Defibrillator, Infusion Pump, Ultrasound**

Question: Are the test sequences customizable?

Answer: Yes, test sequences can be created and modified per user needs.

Question: Does this unit have universal power configuration?

Answer: Yes, it has a power supply that can accept both 120 V and 220 V; however the test receptacle is configured for one or the other.

Question: What is meant by “limited compliance to IEC60601?”

Answer: ESA615 has the IEC60601 test load that can be selected by choosing this standard in the menu. However, it has the following limitations that do not allow for a fuller compliance with IEC60601:

- **For Mains on Applied Part (MAP) testing, source voltage applied is only 100 % of Mains input voltage**



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- PE test current is 200 mA not 25 A

Question: Does the ESA615 test to IEC60601-2005 3rd edition?

Answer: Yes, except the limitations mentioned above (MAP source voltage 100 % of mains input and PE test current of 200 mA), the ESA615 tests according to IEC60601 2nd and 3rd editions.

Question: Is the ESA615 a replacement for the medTester 5000C?

Answer: The ESA615 has built-in test sequences for automatic electrical safety testing. These test sequences provide automatic pass/fail indication to NFPA-99 and other international standards. The unit guides you through the test steps quickly and accurately. Customizable test sequences cover ANSI/AAMI ES-1 (NFPA-99), IEC62353 (VDE751), IEC60601-1 (2nd, 3rd edition), or AN/NZS 3551. The ESA615 does not automate other test devices; however, it can be tethered to other test tools using Ansur automation software.

Question: Does the ESA615 offer the option to test ground wire (protective earth) resistance using a 4-wire, like the ESA620 and 232D?

Answer: No. The ESA615 does not have the ability to use a 4-wire method to measure earth conductor integrity. If this method is required, we recommend the ESA620.

Question: What are the differences using the 2-wire method that the ESA615 does versus the 4-wire method these other units offer?

Answer: When using the 4-wire method, you are required to null the test lead resistance of your test lead; there is also a slight improvement in test accuracy when the 4-wire method is used. See specifications for detailed comparison.

Question: What is the importance of reading leakages in AC only, DC only, and True RMS?

Answer: The IEC60601-1:2005 standard refers to patient and patient auxiliary leakage readings in both AC and DC parameters. If a safety analyzer only displays True RMS, they are not documenting all the results needed.

Question: What benefit does a leakage range up to 10,000 μ A offer?

Answer: The IEC60601-1:2005 standard now specifies earth leakage limit of 10,000 μ A. Test equipment must be capable of measuring results throughout this range for equipment that is in the upper range.

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Question: Can I use any SD card with ESA615?

Answer: Many SD cards are compatible, but only the 512MB Industrial Grade SD card that ships with ESA615 has been tested and fully validated. Fluke Biomedical strongly encourages you to use the SD card supplied with the instrument. Additional SD cards are available at a minimal cost.

Question: Something went wrong with my SD card, how do I fix it?

Answer:

1. Put the SD card into any USB memory card reader (not included).
2. Save any test results (.DTA) files you wish to retain.
3. Download the latest ESA615 Firmware Update from www.flukebiomedical.com under Support > Software Downloads.
4. Verify your ESA615 firmware is up to date (look for it on power up or under Setup > Instrument Information). Update your firmware using the firmware update instructions, if needed.
5. With the SD card installed on a Windows PC, follow the firmware update instructions to “Update SD card with new factory image”. For firmware version 2.05, it is steps 13 to 25 in the firmware update instructions.

Question: My SD card still doesn't work after using the factory image!

Answer: Be careful not to run automated tests from old firmware versions. You need to recreate any custom test sequences after updating to the latest firmware to receive all the benefits from the update.

- Avoid using Windows ReadyBoost. It will cause problems when the SD card is installed in an ESA615.
- Try using the ESA615 without a USB device (keyboard or barcode reader) plugged in. The firmware limits the affect, but occasionally some USB devices can interfere with the SD card operations in ESA615.

Question: My ESA615 says “Failed to open file on SD Card” when I power it up. What should I do?

Answer: The ESA615 will attempt to load the last test sequence used on power up. If you have deleted it, for instance by reimaging your card, you will need to select a test sequences from the test library. Push F4 to say “OK” and then push F3 for “Test Library” and either select a test sequence or create a new one to resolve this error.

Question: Why does the ESA615 change the name of a test when I use less than 8 characters to name it?

Answer: This is a limitation of the file system on the SD card (FAT16/FAT32). You can avoid this behavior by naming your test with more than 8 characters.