



601 Pro Series_{XL} **Electrical Safety Analyzer**

One-touch test selection or fully-automated testing. Many test standards to choose from.

The 601 Pro Series_{XL} is the most advanced Electrical Safety Analyzer on the market. The One-Touch-Testing user interface is an industry exclusive that allows the user to perform rapid tests on various medical devices without having to maneuver around cumbersome menus. This full-featured safety analyzer combines the IEC601-1, IEC1010-1, and ANSI/AAMI ES1 standard test loads into one device, so you can do all your testing at once.

New product enhancements reduce your data entry, making your electrical-safety testing faster and easier!

- Save the protective-earth test current at the default value you prefer, whether it is 1 A, 10 A, or 25 A. You are no longer limited to the 1 A default.
- Added Templates feature minimizes repetitive data entry. When multiple devices use the same test parameters, create a template that can be used again and again. At the end of the test, store the record with a unique control number and technician's name (serial number, device location, and comments are optional).
- The new scroll feature allows you to easily find the template or device record needed for testing.
- The selection to pause before powering off is now programmed individually within each device record or template. This feature will save you time on all the tests that do not require a pause before powering off.

Features:

- IEC601-1, IEC1010-1, and ANSI/AAMI ES1 test loads, user selectable
- Multiple enclosure-leakage points
- Multiple patient-applied-part types
- Power ON/OFF delays
- DC-only current for patient- and auxiliary-leakage tests
- User-programmable test sequences
- Manual, auto, step, and computer-control modes
- 1 A, 10 A, or 25 A protective-earth-resistance test circuit
- Improved data transfer
- Memory for up to 1000 device-information records
- Integrated printer

Fluke Biomedical.
*Better products.
More choices.
One company.*

Operational Description

Voltage (Single and Dual Lead)

Use this mode of operation to troubleshoot electrical systems or as a Digital Volt Meter to verify the proper installation of power systems. While in the IEC1010 standard, a modified version of the dual-lead measurement is performed with all measurements referenced to Earth and the red lead used as a probe. The outlet powering the 601 Pro Series_{XL} is analyzed on startup; error messages are displayed to notify you of the outlet-power status.

Insulation Resistance

Select between Mains or Applied Part insulation-resistance testing. 500 VDC is applied for a minimum of 5 seconds in Auto mode and a maximum of 1 minute in Step and Manual modes. Measured values are displayed in MΩ.

Protective Earth Resistance

Test current can be selected by you, stored in the device record or template, or left at the default value. Choose between 1 A, 10 A, or 25 A to comply the IEC601-1 standard. Measured values are displayed in Ω along with the actual current applied.

Earth and Enclosure Leakage

No additional connections are required when the Earth Leakage test is selected; the 601 Pro Series_{XL} automatically inserts the measuring device into the circuit allowing you to perform single fault conditions. Enclosure-Leakage test can be performed with or without the applied parts grounded.

Patient/Patient Auxiliary/Mains on Applied Part

Define the number of applied parts (0 to 5, or all) and the type of each (B, BF, or CF). These selections can be made prior to each test or stored in a device record. Leakage measurements are displayed in RMS microamps with the option of DC-only readings. Mains on Applied Part uses an isolated AC voltage that is at least 110% of mains voltage.

Auto Mode of Operation

Utilize the standard-specific autosequences by selecting the auto mode. If you enter a control number that is resident in the memory, the 601 Pro Series_{XL} will initiate a test based on the settings associated with that stored control number. (Without a control number, the test progresses, but data is not stored in memory.) All tests are compared to a preset table of limits and pass/fails are applied.

Step Mode of Operation

This mode will progress through an autosequence but requires interaction to move from test to test.

Manual Mode of Operation

This mode allows for the most flexible testing sequence. You can decide to perform or skip any test available in a particular standard. No data is stored in this mode, but limits do apply for printing purposes.

Computer Control Mode of Operation

This mode allows you to run all manual tests and receive results using computer commands.

Specifications

Voltage (Single and Dual Lead)

Range: 0 to 300 V
Accuracy: DC to 100 Hz $\pm 1.5\%$ of reading ± 1 LSD

Insulation Resistance

Range: 0.5 to 400 MΩ
Accuracy: $\pm 5\%$ of reading ± 2 LSD

Protective Earth Resistance

Range: 0 to 2.999
Accuracy: $\pm 5\%$ of reading ± 4 mΩ (1 A, 10 A, and 25 A test currents)*

*For additional specifications qualifying the varying effects on accuracy, please contact us.

Current Consumption

Range: 0 to 15 A
Accuracy: $\pm 5\%$ of reading ± 2 LSD

IEC601-1 and AAMI Leakage Current

Range: 0 to 8000 μA True RMS or DC
Accuracy: (per IEC601-1 or AAMI)
DC to 1 kHz $\pm 1\%$ of reading ± 1 μA
1 to 100 kHz $\pm 2\%$ of reading ± 1 μA
100 kHz to 1 MHz $\pm 5\%$ of reading ± 1 μA

IEC1010-1 Leakage Current

Range: 0 to 16000 μA True RMS or DC
Accuracy: (per IEC 1010-1 Fig. A.1 filter)
DC to 1 kHz $\pm 2\%$ of reading ± 1 μA
1 to 100 kHz $\pm 4\%$ of reading ± 2 μA
100 kHz to 1 MHz $\pm 10\%$ of reading ± 10 μA

Mains on Applied Part

Applied Voltage: 110% of mains voltage
Range: 0 to 8000 μA True RMS or DC
Accuracy: $\pm 2\%$ of reading ± 6 μA

Waveform Simulation

Normal Sinus Rhythm: 30, 60, 120, 180, 240 BPM
Performance Pulse: 30, 60 BPM
Sine: 10, 40, 50, 60, 100 Hz
Square: 0.125, 2 Hz (50% duty cycle)
Triangle: 2 mV, 2 Hz
Arrhythmia: Atrial Fibrillation, Atrial Flutter, Atrial Tachycardia, Idioventricular, PVC1, R-on-T, Run, Ventricular Fibrillation, Ventricular Tachycardia
Performance: $\pm 2\%$ of reading for rate of $\pm 5\%$ of reading for amplitude, fixed at 1 mV peak on a Lead II ECG connection (except for Triangle Wave, which is 2 mV peak to peak)

Power

Autoswitching, 90 to 265 VAC

Dimensions

42.2 cm L x 30 cm W x 14.1 cm H
(16.62" L x 11.75" W x 5.56" H)

Weight

7.7 kg (17 lb)

Ordering Information

Models

- 601 Pro Series_{XL} – SHKP:** Schuko receptacle, English overlay, with internal printer (2250323)
- 601 Pro Series_{XL} – SHK:** Schuko receptacle, English overlay, without internal printer (2250314)
- 601 Pro Series_{XL} – UKP:** UK receptacle, English overlay, with internal printer (2250361)
- 601 Pro Series_{XL} – UK:** UK receptacle, English overlay, without internal printer (2250350)
- 601 Pro Series_{XL} – AUSP:** Australian receptacle, English overlay, with internal printer (2250306)
- 601 Pro Series_{XL} – AUS:** Australian receptacle, English overlay, without internal printer (2250298)
- 601 Pro Series_{XL} – USP:** US receptacle, English overlay, with internal printer (2250389)
- 601 Pro Series_{XL} – US:** US receptacle, English overlay, without internal printer (2250377)
- 601 Pro Series_{XL} – GP:** Schuko receptacle, German overlay, with internal printer (2250345)
- 601 Pro Series_{XL} – G:** Schuko receptacle, English overlay, without internal printer (2250338)

Standard Accessories

Operator's manual (2234222)
Black test-lead set (2391723)
Red test-lead set (2391738)

Optional Accessories

External parallel printer port (2248899)
Compact keyboard (2245061)
Carrying case (2234065)
RS232 cable (2238659)
Barcode scanner (optical) (2245092)
Parallel printer cable, D25M-C36M (2238072)
120 VAC adapter (2235375)
220 VAC adapter (2235382)

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Contact us for additional information about the 601 Pro Series_{XL} or to receive our full product catalog.

1-800-648-7952

1-775-883-3400

www.flukebiomedical.com