

Application note

The best 10 new features of the Fluke 5322A Electrical Safety Tester Calibrator

The 5322A is Fluke's newest electrical safety tester calibrator. It facilitates compliance with the verification/ calibration regulations for various electrical testers. The 5322A combines multiple functions into a single instrument, enabling the user to calibrate insulation resistance meters, continuity testers, multifunction installation testers, portable appliance testers (PATs), earth resistance testers, loop/line impedance testers, ground bond testers, RCD testers, leakage current testers and hipot testes.

Here are the 10 best new features of the 5322A.

1. **New 5 kV High Resistance Source option (5322A-5) continuously adjustable from 10 kΩ to 100 GΩ**

This option enables the direct calibration of 2- and 3-terminal insulation testers and hand-cranked megohmmeters up to 5 kV. This solves the problem that 2-terminal >1.5 kV testers could not be calibrated using the HV Divider/ R-Multiplier box accessory. The standard high resistance source goes up to 1.5 kV, 10 kΩ to 10 GΩ continuously adjustable and 100 GΩ fixed value.

2. **High resistance source hot-switching to 3 kV**

This allows you to adjust the resistance value (slewing) with the output energized and is particularly useful for the calibration of the analog insulation testers by allowing the device under test to be set to read specific scale values



3. **New 4-wire connection for Ground Bond Resistance (GBR ZGND) Source**

The Ground Bond tester and HiPot tester ground bond function calibration has been improved. The user can select 2 or 4-wire connection as required, thus ensuring a better accuracy for 4-wire UUTs.

4. **Additional voltmeter high voltage range (up to 5 kV rms) and high voltage (HV) input terminal**

You can measure directly high voltage up to 5 kV DC and AC rms, without the use of high voltage probes with a better measurement specification than the measurement with a high voltage probe.



5. Maintain output ON when ZL resistance value changed

This feature helps avoiding the mains powered UUTs resetting and losing displayed measurement value if operator changes ZL output value and the calibrator output switches to STBY.

6. New RCD function user-selectable output on auto-reconnection after tripping

The calibrator output reverts to OPERATE mode 2 seconds after entering STBY (tripping), reconnecting power to the UUT and readying the calibrator to detect a subsequent trip stimulus current event from the UUT. This feature simplifies the calibration of UUTs with only auto-sequenced RCD tests that otherwise require repeated rapid user-interventions (i.e. UUTs without individual test current/phase selections, including some PAT testers with RCD functions).



7. New PAT RCD mode

This mode employs differential L-N UUT test (trip) current detection and makes the 5322A RCD function compatible with PAT tester RCD test stimulus current generation topologies used by some models that otherwise prevents correct calibrator tripping (e.g. Fluke 6500-2 PAT).

8. New Flash Test output voltage and leakage current calibration modes

The 5322A can measure PAT testers under Class II Flash test conditions (3 kV differential, 1.5 kV common mode), now fully addressing the PAT tester workload calibration requirements.

9. New 10 kV R-Multiplier and 10 kV HV Divider

These are supplied as standard, replacing the previous dual-purpose R-Multiplier/HV Divider box. The R-multiplier extends standard 1.5 kV and optional 5 kV HVR functions to 10 kV. The HV divider extends METER voltmeter range up to 10 kV. As single purpose devices, they simplify connections, avoiding user issues with the previous dual-purpose design.



10. New PAT RCD and PAT Load Power Test adapter leads

These new adapter leads simplify interconnections, reduce complexity, avoid safety issues, prevent mistakes, and reduce opportunity for error when calibrating PAT testers.

Fluke Calibration.

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