

Title: Calibration Of Megger PAT 101 Portable Appliance Tester

Scope

Work Instruction for the internal calibration of Megger PAT 101 Portable Appliance Tester. To be used in the absence of a manufacturers calibration instruction.

Preparation

Calibration must be carried out using Category A Master instruments as required.

Equipment required;-

- 1.1 Test Box.
- 1.2 Test Box.
- 1.3 45° Instrument Balance Stand.
- 1.4 Constant Voltage Transformer and "Variac".
- 1.5 Fluke 8842A DMM.
- 1.6 5kV Electrostatic Voltmeter.
- 1.7 Flash Test Lead.
- 1.8 Flash Test Lead.
- 1.9 Special extension Lead.
- 1.10 Clampmeter.

Method

- 2.1 All calibration results must be entered on the results sheets (see appendix A).
- 2.2 Note the lab temp / relative humidity and enter on calibration results sheet.
- 2.3 Carry out test 1 and 2 and note the results.
- 2.4 Carry out test 3 using equipment 1.4.
- 2.5 Carry out tests 4 using equipment 1.1. and 1.4.
- 2.6 Carry out tests 5 to 7 using equipment 1.2. and 1.4.
- 2.7 Carry out tests 8 and 9 using 1.2, 1.4 and 1.5.
- 2.8 Carry out test 10 using equipment 1.4, 1.6 and 1.7.
- 2.9 Carry out test 11 using equipment 1.4, 1.6 and 1.8.
- 2.10 Carry out test 12 using equipment 1.5, 1.9 and 1.10.
- 2.11 Complete the results sheet header and enter Pass / Fail.

- All records must be kept for audit purposes

References

Appendix A Calibration Results for Megger PAT 101 Portable Appliance Tester

Title: Calibration Of Megger PAT 101 Portable Appliance Tester

Appendix A

Calibration Results for Megger PAT 101 Portable Appliance Tester

Model Serial No
Date Result
Lab Temp / RH Operator
User Location Certificate No

Accuracies quoted by the manufacturer are given as $\pm 6\%$ about supply volts of 240v.

Test No		Result
1	Is the pointer on zero? – instrument horizontal	Pass / Fail
2	Instrument balance $\pm \frac{1}{16}$ " AT 45° all planes	Pass Fail
Note: for test 3 to 11 PAT 101 supply must be from the mains via a CVT and Variac. The output from the Variac must be set at 240 volt.		
3	PAT 101 Earth Test – Plug PAT 101 into Variac and connect 25A test point on PAT 101 to earth of mains supply using earth bond lead – switch to test 1 and press test button: Does the instrument indicate less than 0.2 ohm?	Pass / Fail
4	PAT 101 Earth Leakage Test - Insert plug of test box into upper socket on PAT 101 front panel. Set PAT 101 switch to test 5 "earth leakage" and press test button. Does the instrument read $10\text{mA} \pm \frac{1}{16}$ "?	Pass / Fail
5.	Insert test box "plug 1" into PAT 101 "upper" socket on PAT 101 front panel and connect 25A test point on PAT 101 to TPI on test box. Set PAT 101 switch to test 1 and press test button. Does the instrument indicate $0.1 \text{ ohm} \pm \frac{1}{16}$ "?	Pass / Fail
6	Leave test box "Plug 1" connected to PAT 101 and set PAT 101 switch to test 2. Connect 4A test point on PAT 101 to TPI on test box. Press test button. Does instrument indicate $0.1 \text{ ohm} \pm \frac{1}{16}$ "?	Pass / Fail
7	Insert test box "plug 2" into PAT 101 upper socket on front panel and set PAT 101 switch to test 3. Press test button. Does the instrument indicate $2 \text{ Mohm} \pm \frac{1}{16}$ "?	Pass / Fail
8	Insert test box "plug 3" into PAT 101 lower socket on front panel and set PAT 101 switch to test 6. Select the 20mA A.C. range on the Fluke 8842A and connect to blue sockets on top of the test box. Press the test button and using pot on test box set current as indicated by the Fluke DMM to 4 mA. Does PAT 101 indicate $4\text{mA} \pm \frac{1}{16}$ "?	Pass / Fail
9	Insert test box "plug 5" into PAT 101 upper socket on PAT 101 front panel and set PAT 101 switch to test 3. Select the 1000v D.C. range on Fluke DMM and connect to green / black sockets on test box. Press test button	

Fluke Reading	Allowed Limits	Result
	470 - 530	Pass / Fail