

S1-5010

Diagnostic Insulation Tester



- High specification 5 kV tester
- Automatic test sequences
- PC control and display option
- On-board results storage
- Heavy duty, mains/battery operation
- User defined test procedures with software

DESCRIPTION

The Megger® S1-5010 is an advanced insulation tester for measurement of insulation resistance of all types of electrical equipment. The instrument performs automatic tests, enabling consistent operation without operator input, plus stores results and can be operated from a PC. Flexible power supply options and robust, portable construction allow the instrument to be used in a wide variety of applications. It is particularly suitable for analysing the insulation of large machines, HV generators and cables.

MEASUREMENTS

- Insulation resistance measured to $>5 \text{ T}\Omega$
- Also measures voltage, (test) current and capacitance
- Superb guarding circuit for removing surface leakage from the measurement
- Fast measurement circuit, new reading every second
- Test current measurement down to 0,01 nA

OPERATION

- 500 V, 1000 V, 2500 V & 5000 V standard test voltages
- Variable test voltage 25 V to 5000 V
- Test timer up to 90 minutes can be used to stop the test without operator input
- Polarisation index test gives a figure for the amount of moisture & dirt in the insulation

- Step voltage test allows the level of cracks and holes in the insulation to be assessed
- Dielectric discharge test shows up moisture absorbed in the insulation

CONSTRUCTION

- Robust tester for field use
- Weatherproof to IP54
- Safety to IEC 1010-1 for maximum user protection from electric shock

POWER SUPPLY

- Mains and battery powered
- Battery can be charged during testing
- Automatic charge voltage selection
- At least 8 hours testing with a fully charged battery
- Battery voltage is constantly monitored and displayed
- Backup battery for data memory storage

RESULTS ANALYSIS & CONTROL

- Results displayed in digital, analogue and graphic form
- Large, backlit, dot-matrix LCD visible in all light conditions
- Internal storage for up to 75 test results
- Results are numbered and date/time stamped
- Isolated RS232 output

OTHER FEATURES

- Switchable digital filter to remove induced noise
- Interference rejection up to 4 mA
- Coded protection prevents unauthorised use of instrument
- Operation from PC with optional Windows software

Specification

Test Voltages

500, 1000, 2500, 5000 V
25 to 5000 V in 25 V steps

Test Voltage Accuracy

±5% on 10 MΩ load & above
±25V for test voltages <500 V
±12V for test voltages <125 V

Nominal Test Current Limit

2 mA or 5 mA (Selectable)

Charge time:

<5 s per μF at 2 mA
<2.5 s per μF at 5 mA

Measurement Ranges

Digital

Resistance:

10 kΩ to 500 GΩ @ 500 V
10 kΩ to 1 TΩ @ 1000 V
10 kΩ to 2,5 TΩ @ 2500 V
10 kΩ to 5 TΩ @ 5000 V

Voltage:

50 to 1000 V a.c./d.c.
(5000 V when testing)

Current:

0,01 nA to 999 μA

Capacitance:

0,01 μF - 10,0 μF

Analogue

Resistance:

10 kΩ to 1 TΩ

Accuracy (0 to 30°C) (32 to 86°F)

Resistance:

±5% of reading (1 MΩ to 1 TΩ @ 5kV)

d.c. Test Voltage

±2% ±1 V

Current:

±5% ±0,2 nA

Capacitance:

±5% ±0,01 μF

Interference rejection:

4 mA at 50/60 Hz for <5% additional error

Maximum capacitance discharge rating:

20,0 μF

Guard terminal

Guards out parallel resistance down to 250 kΩ
Maximum additional error 5% @ 100 MΩ

Operational supply

95 - 280 V a.c.
12 - 15 V a.c. or d.c.

Test time

15 seconds to 90 minutes

Battery

Internal rechargeable 12 V,
7 Ah lead acid battery

Battery life

At least 8 hours from a fully charged battery

Battery Indicator

Bargraph level indicator

Display

Backlit dot matrix LCD (256 x 128 pixels)

Safety

Conforms to IEC 1010-1 (1995) Voltmeter rated for use on 300 V phase to earth systems, category III

Environmental Protection

IP54 with side door closed

EMC

In accordance with IEC61326 including amendment No.1

Temperature Coefficient

Measured current:

(> 100 nA) 0,2%/°C (0,1%/°F)

Measured voltage:

0,1%/°C (0,05%/°F)

Temperature Range

Operating:

-20°C to 50°C (-4 to +122°F)

Storage:

25°C to 65°C (-13 to 149°F)

Altitude Maximum

2000 m

Humidity Range

90% RH non condensing at 40°C (104°F)

Weight

9 kg (19,8 lbs)

Dimensions

327 x 316 x 196 mm

(12,8 x 12,4 x 7,7 inches)

(+60 mm pouch) (2,4" pouch)

ORDERING INFORMATION

| Item (Qty) | Order No. | Item (Qty) | Order No. |
|------------------------------|-----------|---|-----------|
| Diagnostic Insulation Tester | S1-5010 | Optional Accessories | |
| Included Accessories | | Fused test lead set | 6320-240 |
| 3 x 3m (10 ft) HV leads | 8101-181 | 3 x 8m (25 ft) HV leads | 8101-182 |
| RS232 communication lead | 25955-025 | 3 x 15m (50 ft) HV leads | 8101-183 |
| PC download software | 6220-652 | Shielded test lead set 50 ft (15 m) | 6311-080 |
| Test record cards (5) | 6172-112 | 12 V d.c. automotive charging lead | 6231-584 |
| Accessory pouch | 6420-116 | S1-S1 PC software for remote operation & data storage | 6220-644 |
| User Guide | 6172-283 | CB101, 5 kV Calibration Box | 6311-077 |

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