

# 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<sup>®</sup> 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	<b>Optional Accessories</b>	
<b>Included Accessories</b>		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

**UK**  
Archcliffe Road Dover  
CT17 9EN England  
T +44 (0) 1304 502101  
F +44 (0) 1304 207342

**UNITED STATES**  
4271 Bronze Way  
Dallas TX 75237-1088 USA  
T 800 723 2861 (USA only)  
T +1 214 333 3201  
F +1 214 331 7399

**OTHER TECHNICAL SALES OFFICES**  
Norristown USA, Toronto CANADA,  
Mumbai INDIA, Trappes FRANCE,  
Sydney AUSTRALIA, Madrid SPAIN  
and the Kingdom of BAHRAIN.

Registered to ISO 9001:2000 Reg no. Q 09290  
Registered to ISO 14001 Reg no. EMS 61597

**S1\_5010\_DS\_en\_V12**

**www.megger.com**  
Megger is a registered trademark