

S1-554 and S1-1054

5 kV and 10 kV Insulation Resistance Testers



- **Mains or battery powered**
- **Digital/analogue backlit display**
- **Variable test voltage from 50 to 5000 or 10,000 V**
- **Automatic IR, PI, DAR, SV and DD tests**
- **Measures to 15 T Ω (5 kV) and 35 T Ω (10 kV)**
- **Charge current: 5 mA**
- **4 mA noise rejection and software filtering**
- **RS232 and USB download of results to Megger Download Manager**
- **On board memory for results storage**

DESCRIPTION

The new 5 & 10 kV insulation resistance testers from Megger are designed specifically to assist you with the testing and maintenance of high voltage electrical equipment. IEEE 43-2000 recommends the use of 10 kV for motor windings rated above 12 kV and the Megger S1-1054 facilitates this. The case is incredibly rugged and easy to carry, being made of tough polypropylene and achieving an ingress protection rating of IP65. In addition, the model number is marked on both sides of the case for ease of identification in stores or vehicles.

The instruments have a large easy to read backlit LCD display making it equally suitable for use in both bright sunlight and poorly lit environments. Information displayed includes resistance, voltage, leakage current, capacitance, battery status and time constant. In addition, the elapsed time of the test is displayed constantly, removing the need for separate timers. Adjustable timers and limit alarms are included.

The instrument can test when being powered by the mains or its internal rechargeable battery, a great benefit when site conditions are unknown or long term testing is required.

The controls of the instrument are clear and unambiguous and a "quick start" guide is included in the lid of the instrument removing the need to carry bulky manuals under site conditions.

The instrument is fitted with a guard terminal to enhance accuracy. The guard test lead is included as standard with the instrument.

To further enhance the flexibility of the instruments both have the facility to set the test voltage in steps from 50 V to the maximum output voltage avoiding the expense of several insulation resistance testers to meet your application needs.

These IR instruments are designed to meet the highest safety standards and meets the requirements of EN61010. In addition, the instrument measures the voltage at the terminals and if this is above 50 V then the instrument will display the high voltage warning and inhibit testing. At the end of the test the instrument will automatically discharge the energy transferred to the equipment during the test phase.

These instruments are designed to cope with the highest demands of insulation resistance measurement, providing an industry leading 5 mA of charge current, and also extremely high noise immunity, making them ideal for use in switch yards. In addition, user selectable filtering software allows long period interference to be cancelled out.

The S1-554 and S1-1054 are equally suited to routine testing and diagnostic regimes being pre-programmed with IR, PI, DAR, SV and DD profiles.

SPECIFICATIONS
Voltage input range

85-265 V rms 50/60Hz, 60 VA

S1-554 battery life

6 hours continuous testing at 5 kV

S1-1054 battery life

4 hours continuous testing at 10 kV

S1-554 test voltages

50 V to 1 kV in 10 V steps, 1 kV to 5 kV in 25 V steps

S1-1054 test voltages

50 V to 1 kV in 10 V steps, 1 kV to 10 kV in 25 V steps

S1-554 Accuracy (23°C, 5 kV)
 $\pm 5\%$ to 1 T Ω
 $\pm 20\%$ to 10 T Ω
S1-1054 Accuracy (23°C, 10 kV)
 $\pm 5\%$ to 2 T Ω
 $\pm 20\%$ to 20 T Ω
Guard

 2% error guarding 500 k Ω leakage with 100 M Ω load

Display range

 Digital display (3 digit) 10 k Ω to 15 T Ω (S1-554) to 35 T Ω (S1-1054)

 Analogue display 100 k Ω to 1 T Ω
Short circuit/charge current

5 mA @ 5 kV (S1-554) or 10 kV (S1-1054)

S1-554 Capacitor charge time

 <1.5 seconds per μ F at 5mA to 5 kV

S1-1054 Capacitor charge time

 <3 seconds per μ F at 5mA to 10 kV

S1-554 capacitor discharge time

 <120 ms per μ F to discharge from 5000 V to 50 V

S1-1054 capacitor discharge time

 <250 ms per μ F to discharge from 10000 V to 50 V

Capacitance measurement (above 500 V)

 10 nF to 50 μ F (dependent on measurement voltage)

Capacitance measurement accuracy (23°C)
 $\pm 5\%$ ± 5 nF

Voltage output accuracy (0°C to 30°C)

 +4%, -0% ± 10 V of nominal test voltage at 1 G Ω load

Current measurement range

0.01 nA to 5 mA

Current measurement accuracy (23°C)
 $\pm 5\%$ ± 0.2 nA at all voltages

Interference rejection
S1-554 1 mA per 250 V up to a maximum of 4 mA (selectable)

S1-1054 1 mA per 600 V up to a maximum of 4 mA (selectable)

Filter

10, 30 and 100 second time constants (selectable)

Timer range

Up to 99 minutes and 59 seconds from start of test

 15 second minimum setting for test voltage ≥ 1000 V

30 second minimum setting for test voltage <1000 V

Memory capacity

32 kB

Test regimes

Auto IR, PI, DAR, SV and DD.

Interface

RS232 and USB

Data store

Voltage, test time, leakage current, resistance, PI, DAR, DD, capacitance and time constant

Real time output

Serial, once per second of test voltage, current and resistance

Operating temperature

-10°C to 50°C

Storage temperature

-25°C to 65°C

Ingress protection (lid closed)

IP65

Humidity

90% RH non-condensing at 40°C

Safety

Meets the requirements of EN61010-1:2001 CATIII 300 V

EMC

Meets the requirements of EN61326-1:1998 for use in heavy industrial areas.

Dimensions

305 x 194 x 360 mm (12.7 x 6 x 14.2 inches)

Weight

7.1 kg (16lb) approx.

ORDERING INFORMATION

Item (Qty)	Order Code	Item (Qty)	Order Code
5 kV insulation resistance tester	S1-554	15m lead set	8101-183
10 kV insulation resistance tester	S1-1054	3 m lead set 6 kV insulated clips	6220-820
Included Accessories			
3m lead set	8101-181	3 m lead set 10 kV insulated clips	6220-811
RS232 cable	25955-025	3 m screened lead set (5 kV)	6220-835
USB cable	25970-041	3 m screened lead set (10 kV)	6220-834
User guide on CD-ROM	6172-988	15 m screened lead set (5 kV)	6311-080
Optional Accessories			
3m lead set with straight jaw clamps	6220-797	15 m screened lead set (10 kV)	6220-833
		3 m lead set 1 kV insulated clips	6220-822

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OTHER TECHNICAL SALES OFFICES

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 Mumbai INDIA, Trappes FRANCE,
 Sydney AUSTRALIA and the
 Kingdom of BAHRAIN.

ISO STATEMENT

 Registered to ISO 9001:2000 Cert. no. Q 09250
 Registered to ISO 14001:1996 Cert. no. EMS 61597

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