

S1-5005

5 kV Insulation Tester



- **Timer -controlled tester measures up to 5 TΩ**
- **Heavy duty current for capacitive tests**
- **Robust, field tester weatherproofed to IP54**

DESCRIPTION

The Megger[®] S1-5005 is an automatic 5 kV insulation tester with a high output current and real-time RS232 download. Several diagnostic insulation test procedures are pre-programmed to allow automatic safe operation. A large, analogue/digital LCD shows resistance values up to 5 TΩ and incorporates a timer and other test information. The output current, of up to 5 mA, speeds up testing by charging capacitive loads quickly. Test voltages and times can also be selected to a wide range of values allowing automatic operation. High safety is provided by the locking test leads, automatic discharge circuit and displaying high voltage warnings.

Test types

- Insulation resistance measured to >5 TΩ allows trends of good insulation to be monitored
- Test current measured down to 0.01 nA enables very high resistance to be calculated
- Polarisation Index gives a figure for the amount of dirt and moisture on the insulation
- Step Voltage test gradually stresses the insulation more to show up cracks or holes
- Dielectric Discharge gives a figure for the absorbed moisture from the discharge characteristics

Measurement

- Conductor voltage measurement to 1000 V alerts the operator to live circuits
- Capacitance of test sample measured up to 10 μF

- Guard terminal for removing surface leakage from the measurement
- High test current minimises charging times on capacitive insulation

Operation

- 500, 1000, 2500 & 5000 V standard test voltages quickly selectable
- Variable test voltage 25 to 5000 V allows testing to manufacturers specification
- Test timer up to 90 minutes can be used to stop the test without operator input
- Results displayed in digital and analogue form
- RS232 output for real-time download to PC
- Communication software and lead supplied as standard

Power Supply

- Battery powered, rechargeable from an a.c. or d.c. source
- At least 8 hours testing with a fully charged battery
- Battery voltage is constantly monitored and displayed

Construction

- Robust tester case with accessory storage, weatherproof to IP54
- Instrument safety IEC1010-1
- Dual warning of presence of HV by LED and flashing LCD arrows

SPECIFICATION

Test Voltages d.c.

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

Accuracy (20°C) (68°F)
±5% on 100 MΩ load
±25 V for test voltages <500 V

Insulation resistance range
Digital:

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 @ 5 kV Digital

Analogue:

100 kΩ to 1 TΩ @ all voltages

Basic accuracy:

±5% of reading 1 MΩ to 1 TΩ @ 5 kV (0 to 30°C) (32 to 86°F)

Short circuit current

5 mA nominal

Voltage range

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

Accuracy (20°C) (68°F)

±2%, ±1 V

Display

Analogue (40 segment arc)

Digital

(3 digits)

Interference rejection

1 mA r.m.s. per kV to a maximum 2 mA

Capacitor charging time

<2,5 seconds per μF to charge to 5 kV

Capacitor discharge time

<2 s per μF to discharge from 5000 V to 50 V

Leakage current measurement

0,01 nA to 999 μA

Accuracy

±5% ±0,2 nA

Capacitance measurement

0,01 - 10,0 μF (displayed at end of test)

Accuracy

±15% ±0,03 μF

Timer

User selectable 0 to 90 minutes

Test is terminated at end of preset time

Temperature/Humidity

Temperature range

Operating:

-20°C to +50°C (-4 to +122°F)

Storage:

-25°C to +65°C (-13 to +149°F)

Temperature coefficient:

(Applies over range 0 to 30°C)

(32 to 86°F) 0,2% per °C

(0,1%/°F) for test currents >100 nA

0,1% per °C (0,05%/°F) for test voltage

Humidity range:

90% RH @ 40°C max. (104°F)

Safety

IEC1010-1 (1995), EN61010 (1995) to installation category III, 300 V, phase to earth, 500 V phase to phase

Altitude

2000 m maximum

Dimensions

327 x 316 x 196 mm

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

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

Weight

6 kg (13,2 lbs)

Power Supply

4 Ah battery rechargeable from

95-265 V a.c. 50/60 Hz

ORDERING INFORMATION

Item (Qty)	Order No.	Item (Qty)	Order No.
5 kV Insulation Tester	S1-5005	Optional Accessories	
Included Accessories		3 x 8m HV leads	8101-182
User Guide	6172-374	3 x 15m HV leads	8101-183
3 x 3m HV leads	8101-181	5 kV Calibration Box CB101	6311-077
Accessory Pouch	6420-116	5 kV Shielded lead set 15 m long	6311-080
9 way 'D' female to 9 way 'D' female connector lead 1,8 m long	25955-025	12 V d.c. charging lead with automotive cigarette lighter plug, 3 m long	6231-584
Download 3 1/2 inch diskette	6139-085	Test record card (pack of 20)	6111-217
Mains (line) power cord (for recharging battery)		Publications	
		'A Stitch in Time'	AVTM21-P8B

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