

SONEL MIC-5010/MIC-05s1

Insulation Resistance Tester 5 kV class

CAT III
1000V

CAT IV
600V

COMPREHENSIVE MEASUREMENTS

- » Measurements to 15 TΩ (MIC-5010), to 20 TΩ (MIC-05s1)
- » Test voltage is selectable from 50 to 1000 V in 10 V increments and from 1000 to 5000 V in 25 V increments with indication of test voltage during measurement
- » Continuous indication of measured insulation resistance or leakage current
- » Selectable test current at 1.2 mA or 3 mA (5 mA MIC-05s1)
- » Audio beeps at 5 second intervals to time the testing process
- » Measuring time selectable up to 99 minutes 59 seconds
- » User-selection of 3 test time intervals (T1, T2, T3) from 1 to 600 seconds each for measuring absorption coefficient
- » Measurement of Polarization Index, Dielectric Absorption Ratio, Capacitance, and Dielectric Discharge
- » Stepped voltage or continuous measurement modes
- » 2 lead or 3 lead measurement methods



Sonel MIC-05s1

SAFETY

- » Automatic discharge of measured object capacitance voltage after completion of resistance measurement
- » Protection against measuring live objects
- » CAT III 1000 V / CAT IV 600V rated

A COMPLETE FIELD TOOL

- » Portable rugged case rated to IP 67 / NEMA 6 for outdoor use
- » 10 ft. long test leads and all test clips provided
- » Easy to use, clearly-labeled panel buttons
- » Backlit digital display (MIC-5010), backlit graphic display (MIC-05s1)
- » Wide operating temperature range: -4 °F to 122 °F (-20 °C to + 50 °C)

SYSTEM SMARTS

- » Digital filters for high noise immunity in induced environments up to 1550V
- » Internal memory stores 10,000 records
- » USB connection to PC
- » Bluetooth wireless connection (MIC-05s1)
- » Battery or power supply operation
- » Fast-charger for battery



Sonel MIC-5010

SPECIFICATIONS

Insulation Resistance Measurement

Measurements made according to IEC 61557-2

Range	Resolution	Accuracy
0 to 999 kΩ	1 kΩ	
1.00 to 9.99 MΩ	0.01 MΩ	
10.0 to 99.9 MΩ	0.1 MΩ	
100 to 999 MΩ	1 MΩ	(± 3% m.v. + 10 digits)
1.00 to 9.99 GΩ	0.01 GΩ	
10.0 to 99.9 GΩ	0.1 GΩ	
100 to 999 GΩ	1 GΩ	±(3.5% m.v. + 10 digits)
1.00 to 9.99 TΩ	0.01 TΩ	±(7.5% m.v. + 10 digits)
10.0 to 15.0 TΩ	0.1 TΩ	±(12.5% m.v. + 10 digits)
MIC-05s1 only		
10.0 to 20.0 TΩ	0.1 TΩ	±(12.5% m.v. + 10 digits)



Test Voltage vs. Resistance Measurement

Test Voltage Range	Insulation Measurement Range
250 V	500 GΩ
500 V	1.00 TΩ
1000 V	2.00 TΩ
2500 V	5.00 TΩ
5000 V	15.0 TΩ (MIC-5010) 20.0 TΩ (MIC-05s1)



Insulation Resistance Measurement in Step Voltage Mode

Test Range	Voltage Steps
1 kV	200, 400, 600, 800, 1000 V
2.5 kV	0.5, 1, 1.5, 2, 2.5 kV
5 kV	1, 2, 3, 4, 5 kV

Duration of each "step" adjustable from 30 seconds to 5 minutes

Measurement results for each voltage step is stored in memory

Continuity Measurement of Protective Connections and Equipotential Bonding (with 200 mA current)

Range	Resolution	Accuracy
0.00 to 19.99 Ω	0.01 Ω	±(2% w.m. + 3 digits)
20.0 to 199.9 Ω	0.1 Ω	
200 to 999 Ω	1 Ω	±(4% w.m. + 3 digits)

Voltage on open terminals: 4 to 24 V

Output current at $R < 15 \Omega$: min. = 200 mA (short current: 200 to 250 mA)

Compensation of test lead resistance included

Current flowing in both directions, mean value of resistance is displayed

Leakage Current Measurement

Range	Resolution	Accuracy
0 to 1.2 mA*	Derived from the measurement range of individual insulation resistance	Calculated based on resistance measurements
0 to 3 mA*		

* - depending on the setting

Capacitance Measurement

(displayed after the R_{ISO} measurement)

Display Range	Resolution	Accuracy
0 to 999 nF	1 nF	$\pm(5\% \text{ m.v.} + 5 \text{ digits})$
1 μF to 49.99 μF	0.01 μF	

DC and AC Voltage Measurement

(Frequency range: 45 to 65Hz)

Range	Resolution	Accuracy
0.0 to 29.9 V	0.1 V	$\pm(2\% \text{ m.v.} + 20 \text{ digits})$
30.0 to 299.9 V	0.1 V	$\pm(2\% \text{ m.v.} + 6 \text{ digits})$
300 to 750 V	1 V	$\pm(2\% \text{ m.v.} + 2 \text{ digits})$

SPECIFICATIONS

Safety	CAT IV 600V / CAT III 1000V Double-insulated construction to IEC 61010-1 and IEC 61557
Power Supply	90 - 260 VAC 50/60 Hz Internal rechargeable battery ~9h hours operation on full charge
Weight	14.5 lbs / 7 kg
Size	15.4 x 12.2 x 6.7 in (390 x 310 x 170 mm)
Operating temperature	-4°F to 122°F (-20°C to + 50°C)
Storage temperature	-13°F to 158°F (-25°C to + 70°C)
Humidity	20% to 80% (non-condensing)
Open case rating	IP40 / NEMA 2
Close case rating	IP67 / NEMA 6
Display	5.6" (LCD Segment MIC-5010, LCD Graphic MIC-05s1)
Internal memory storage	10,000 records

STANDARD ACCESSORIES INCLUDED:

- » 3 test leads with banana plugs 11 kV rated: 10 ft. (3 m) red, blue, black (shielded)
- » 3 „Crocodile“ clips: red, blue, black
- » 2 Pin probes with banana connector: red, black
- » USB cable
- » Carrying case L4 for accessories
- » Power cord
- » Battery pack (built-in)
- » "SONEL Reader" PC software





