



# MCE™ Product Information

## M-Series 5kV Electric Motor Analyzer



- Portable and battery powered
- Monitors Power Circuit, Insulation, Stator, Rotor, and Air Gap
- Variable test voltage from 250 to 5000V
- Automatic IR, PI, DAR, and Step Voltage Tests
- Measures insulation resistance to 3 TΩ
- Precision resistance with resolution to 10 μΩ using a 4-wire bridge test measurement
- Measures capacitance (pF) and inductance (mH)

## Description

The MCE™ Motor Circuit Evaluation test equipment offers the most versatile approach to troubleshooting and trending de-energized electric motors on the market today.

It is equipped with a fully functional laptop computer and loaded with MCEGold, the gold standard in motor management software.

With MCEGold the entire test history of your electric motor along with the latest in acceptance criteria from IEEE and NEMA is at your fingertips. Immediately following the test, Red or Yellow color-coded alarms identify any test data that is outside the acceptance criteria.

The case is made of ultra high impact ABS material for ruggedness. It is easy to carry and no AC power is required, making tough to reach motors or starters easier to test.

### Data Includes:

- Phase-to-Phase Resistance
- Phase-to-Phase Inductance
- Balance of Resistance
- Balance of Inductance
- Ground Capacitance
- Polarization Index
- Dielectric Absorption Ratio
- Measured Ground Resistance
- Corrected Ground Resistance
- Rotor Influence check
- DC Field Inductance
- DC Field Resistance
- DC Field Capacitance
- DC Field Ground Resistance
- DC Armature Tests
- Commutator Bar-to-Bar Tests
- AC Induction Motor Tests
- Synchronous Motor Tests
- Wound Rotor Motor Tests

**Ground Resistance Test Voltages:**

250-5000 V in 50 V steps  
\*250-1000 V in 50 V steps

Range (Accuracy):

- 20 K $\Omega$  to 100 M $\Omega$  @250-500v ( $\pm 2\%$ )
- 100 M $\Omega$  to 1 G $\Omega$  @250-5000v ( $\pm 2.5\%$ )
- 1 G $\Omega$  to 220 G $\Omega$  @500-5000v ( $\pm 5\%$ )
- 220 G $\Omega$  to 1000 G $\Omega$  @1kV-5kV ( $\pm 5\%$ )
- 1 T $\Omega$  to 3 T $\Omega$  @1kV-5kv ( $\pm 20\%$ )

Short circuit/charge current:

2 mA

**Capacitance Measurement:**

Range (Accuracy):

- 1000 to 220,000 pF @1200 Hz ( $\pm 5\%$ )
- 220,000 to 1,000,000 pF @300 Hz ( $\pm 5\%$ )

Resolution:

250 pF

**Inductance Measurement:**

Range (Accuracy@1200 Hz):

.05mH to 250mH ( $\pm 1\%$ )

Range (Resolution):

- .05mH to <50mH (.01mH)
- 50mH to <100mH (.05mH)
- 100mH to 250mH (.1mH)

Range (Accuracy @300 HZ):

- 220mH to <700mH ( $\pm 1\%$ )
- 700mH to 2000mH ( $\pm 2\%$ )
- >2000mH to 5000mH ( $\pm 5\%$ )

Resolution:

.1mH to 25mH

**Resistance Measurement:**

Range (Accuracy):

100  $\mu\Omega$  to 2000  $\Omega$  ( $\pm 1\%$ )

Range (Resolution):

- .00010 $\Omega$  to .02000 $\Omega$  (.00001 $\Omega$ )
- .0200 $\Omega$  to 2.000 $\Omega$  (.0001 $\Omega$ )
- 2.00 $\Omega$  to 50.0 $\Omega$  (.001 $\Omega$ )
- 50.00 $\Omega$  to 1000.00 $\Omega$  (.01 $\Omega$ )
- 1000.0 $\Omega$  to 2000.0 $\Omega$  (.1 $\Omega$ )

**Dimension:**

18.5x14.5x6 in. (46.99x36.83x15.24 cm)

**Weight:**

26 lbs (11.79 kg)

**Test Lead set:**

10 ft. (3.05 m.)

**Computer Voltage input:**

AC 100-240 V, 50/60 Hz

**Environmental**

**Operating temperature:**

32°F to 95°F (0°C to 35°C)

**Storage temperature:**

-40°F to 149°F (-40°C to 65°C)

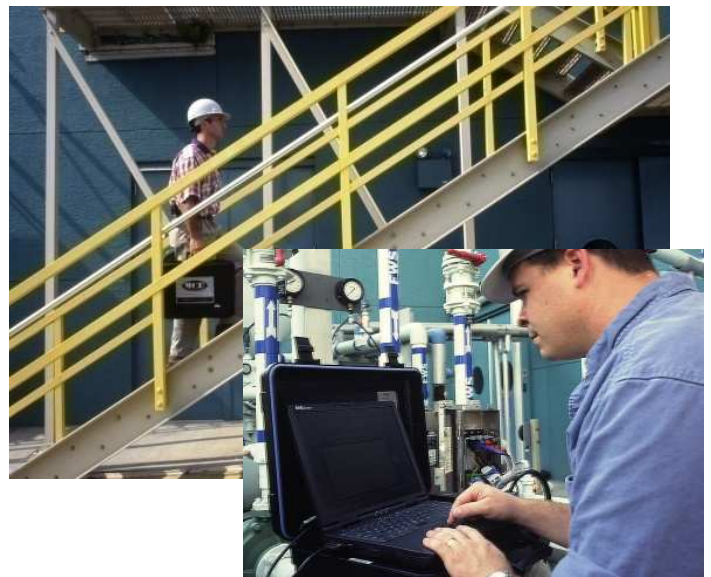
**Operating Humidity:**

10% - 90% (non-condensing)

**Storage Humidity:**

5% - 95% (non-condensing)

Accuracies to within the specified +/- % accuracy or +/- two resolution steps whichever is greater. Note: Lowest range Inductance/Resistance (+/- 1 %) or Inductance (+/- 50 $\mu$ H)/Resistance (+/- 4 $\mu\Omega$ ), whichever is greater.



Lightweight Portable Electric Motor Analyzer