

# M4100



## Technical Specifications

The M4100 unit is the foundation of the M4000 Diagnostic Test System for Condition Assessment of Power Apparatus

*Note: A personal computer is required to operate the M4100*

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### Power Specifications:

**Output Voltage:** 0 to 12 kV AC

**Output Current:** 100 mA continuous at 10 kV  
200 mA > 30 minutes at 10 kV  
300 mA > 4 minutes at 10 kV

Operating time period based on 50°C operating temperature. Longer durations at high currents will be realized at lower operating temperatures

**Output Power:** 3 kVA

Sinusoidal output signal internal generated independent of input supply, No loss in performance when used with portable generator

**A.C. Input:** 95-264 V AC 47 to 63 Hz  
20 A max at 110 V, 10 A max at 220 V

### Measurement, Accuracy and Range Test Frequency:

#### Test Frequency:

**Range:** 45 to 70 Hz independent of input signal

**Resolution:** 0.1 Hz

**Accuracy:**  $\pm 1\%$  of reading

#### Test Voltage:

**Range:** 25 V to 12 kV

**Resolution:** 1 V

**Accuracy:**  $\pm 1\%$  of reading,  $\pm 1$  V

#### Test Current:

**Range:** 0 to 5.0 A

**Resolution:** 0.1  $\mu$ A

**Accuracy:**  $\pm 1\%$  of reading,  $\pm 1$   $\mu$ A

### Capacitance:

**Range:** 0 to 5.0  $\mu$ F

**Resolution:** 0.01  $\mu$ F

**Accuracy:**  $\pm 0.5\%$  of reading,  $\pm 1$   $\mu$ F

### Inductance:

**Range:** 6 H to 10 MH

**Resolution:** 0.01 H

**Accuracy:**  $\pm 0.5\%$  of reading

### Watts:

**Range:** 0 to 2 kW, actual

**Resolution:** 0.5 mW

**Accuracy:**  $\pm 2\%$  of reading at 10 kV,  
 $\pm 0.03\%$  of VA,  $\pm 0.5$  mW

### Dissipation Factor:

#### Range:

**%PF** 0 to  $\pm 100.00\%$

**PF** 0 to  $\pm 1.0000$

**% Tan  $\delta$**  0 to  $\pm 999.99\%$

**Tan  $\delta$**  0 to  $\pm 9.9999$

**mW/Var** 0 to  $\pm 9999.9$

**Resolution:** 0.01% / 0.0001

**Accuracy:**  $\pm 0.5\%$  of reading, typical  
 $\pm 0.04\%$  PF/Tan  $\delta$   
 $\pm 0.0004$  PF/Tan  $\delta$



## Temperature Measurement:

**Range:** -20 °C to +50 °C

**Resolution:** 0.1 °C

**Accuracy:** ±4 °C

Requires optional temperature probe

## ENVIRONMENTAL

### Temperature:

**Operating:** -20 °C to +50 °C

**Storage:** -40 °C to +70 °C

**Humidity:** 90% non-condensing

**Electrostatic Discharge:** Meets IEC 801-2 (1984)

### Surge Withstand

**Capability:** Meets ANSI/IEEE C 37.90.1

**Shock and Vibration:** ASTM D 999.75  
transport shock test

## DIMENSIONS

**Instrument:** 10-1/4 in. H x 20 in. W  
x 25-1/4 in. D  
26 cm H x 50.8 cm W  
x 64.1 cm D

**High Voltage Cable:** 60 ft./18 mt (other lengths available as options)

### Weights

**Instrument:** 100 lbs/45.5 kg

## MAXIMUM INTERFERENCE CONDITIONS AT LINE

### Frequency

**Electrostatic:** 15 mA rms of interference current into any lead or cable with no loss of measurement accuracy. Applicable to a maximum ratio of interference current to specimen current of 20:1.

**Electromagnetic:** 500  $\mu$ T, at 50 Hz in any direction

*Specifications are subject to change without notice.*



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For more information, contact  
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**Doble is certified ISO 9001:2000**

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