

DOBLE OFF-LINE TESTING & ASSESSMENT

M4100 4TH GEN

High Voltage Apparatus Tester

THE INDUSTRY STANDARD
FOR COMMISSIONING,
DIAGNOSTIC & SCHEDULED
MAINTENANCE TESTING

The M4100 is the industry standard for power apparatus and insulation testing. Its unique combination of test capabilities and artificial intelligence analysis software makes it the power industry's most trusted Power Factor/Tan-Delta instrument. These instruments are used around the globe thanks to their comprehensive testing options, safety features and measurement accuracy.

FEATURES

- Power Factor/Tan-Delta testing to confirm insulation integrity and quality
- Capacitance testing to measure physical changes that may have occurred to the apparatus
- HV turns ratio testing to detect shorted turns or winding damage
- Leakage reactance/short circuit impedance testing to evaluate winding deformation
- Single phase excitation current testing to evaluate transformer magnetizing circuit
- Capacitor bank testing to detect deteriorating or failed capacitors within a bank
- Generates its own precise sine wave test signal
- Self-calibrating in the field
- Easy and accurate testing with Doble Test Assistant software (DTA)

BENEFITS

- Safety is our priority with dual safety switches, power strobes and ground earth relay interlocks
- Eliminates the effect of varying electrostatic interference with patented Line Frequency Modulation, which makes measurements at a frequency above and below the system frequency
- Reliability & Accuracy—generates its own clean test signal using an internal waveform generator for reliable results and stable readings
- Software firmware system senses abnormal current, temperature and voltage operation even before a user would notice
- Instantly analyze your test results, providing clear recommendations and explanations with FRANK™, the First Response Analytics Knowledgebase



M4100 4TH GEN TECHNICAL SPECIFICATIONS

| TECHNICAL SPECIFICATIONS | |
|---------------------------------------|--|
| Operating Temperature | -20° to 50°C / -4° to 122°F |
| Dry Heat | IEC 60068-2-2 |
| Cold | IEC 60068-2-1 |
| Shock & Vibration | IEC 60068-2-27, IEC 60068-2-7 & ASTM D999.75 |
| Drop Test | EC 60068-2-6 |
| Weight | 95 lb / 43 kg |
| Dimensions | 10.3 H x 20 W x 25.3 D (in) 26 H x 50.8 W x 64.1 D (cm) |
| Software | DTA6 Basic |
| Power Input | 95-264 VAC, Auto Sensing 47 to 63 Hz Accommodates Inverter and Portable Generators 16 A max at 110 V 10 A max at 220 V Accommodates GFIC/RCBO Class A & B |
| Field Verification & Calibration | Integrated Self-Calibration & Verification Module 3 Resistive Standards Amplifier Test Range: 7-All Nominal Test Ranges Coverage: Watts, Amps, PF/Tan-Delta, Internal Source Loss, HV Cable, LV Cable(s) |
| Safety Features | Open Ground Detection Circuit Abnormal Current Sensing System with continuous temperature compensation Safety Switches: 2-Deadman Safety Strobe |
| Source Output | 3 kVA 25 V to 12 kV Output Current: Continuous @ 100 mA at 10 kV 30 minutes @ 200 mA at 10 kV 4 minutes @ 300 mA at 10 kV |
| Power Factor/Tan-Delta Measurement | Range: 0 to ±100.00% Resolution: 0.01% (0.0001) Typical Accuracy: ± 0.005% |
| Capacitance Measurement | Range: 0 to 100 µF Resolution: 0.01 pF |
| Inductance Measurement | Range: 6 H to 10 MH Resolution: 0.01 H |
| Watts Measurement | Range: 0 to 2 kW, actual power Resolution: 0.5 mW |

ORDERING INFORMATION

| PART # | PRODUCT |
|----------------------|--|
| M4K60 | M4100 with cables, strobe, T/H Sensor, safety switches(2), DTA6 Basic software, M4151 Field Calibration Module & 65' HV Cable. |
| M4K100 | Includes all of the above with 100' HV Cable instead of 65' HV Cable. |
| INCLUDED ACCESSORIES | |
| 02D-0024-02 | HV Cable 65' with Hook (included with M4K60) |
| 02D-0024-01 | HV Cable 100' with Hook (included with M4K100) |
| 02B-0020-03 | Lead, Low Voltage Red 65' |
| 02B-0020-02 | Lead, Low Voltage Blue 65' |
| 020-0048-01 | 1 Set Hot Collars (5 at different lengths) |
| 02B-0026-02 | 5' Copper Bare Copper Jumper |
| 03B-1137-01 | C2 Tap Adapters, ASEA GO Types |
| 02B-0089-01 | C2 Tap Adapters, Westinghouse type O "hockey stick" |
| 212-0416 | C2 Tap Adapters, Westinghouse type O Plus |
| 02B-0012-01 | C2 Tap Adapters, Westinghouse type OS, S |
| 03C-1318-02 | Temperature/Humidity Sensor |
| 05B-0493-01 | Temperature/Humidity Sensor Cable |
| 2FA-0280-01 | Hook M2 Cable 3-inch, M Series |
| 09C-0613-01 | Safety Strobe Light |
| 05B-0492-01 | Safety Strobe Light Cable |
| OPTIONAL ACCESSORIES | |
| M4300 | M4300 Field Transporter for M4100 |
| 903-0031 | M4100 Transportation Case |
| 903-0034 | M4300 Field Transporter Transportation Case |
| 02C-5200-01 | MFL (M-Oil) Liquid Insulation Test Cell and carrying case |
| 010-0105-01 | M4110 Leakage Reactance Interface (includes cables) |
| 030-1684-01 | M4140 CapBank Kit |
| 03D-2010-01 | Doble Universal Controller™, Tablet PC Controller |
| 03B-0706-01 | doble TTR Capacitor and Carry Case |



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Specifications are subject to change without notice.
Doble is an ISO 9001 & ISO/IEC 17025 & 17034 Certified Company.
Doble is an ESCO Technologies Company.
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