



## DM-III MULTITEST Power Quality Recorder

Amprobe's full-featured Three-Phase Power Quality Recorders provide the essential functions and capabilities required to operate accurately and effectively in today's demanding electrical environments.

### ■ POWER QUALITY ANALYZER/DATA LOGGER

- True RMS (TRMS)
- Measures & Records Broad Spectrum of Power Quality Parameters
  - AC Current
  - AC Voltage to 600 V
  - Sags and Surges
  - Harmonics
  - Active, Reactive and Apparent
  - Power
  - Peak Demand
  - Power Factor
  - Frequency
  - Phase Sequence
- Compatible with wide range of current transducers
- Works with single and three phase
- Detects & records Sags and Surges
- Displacement power factor for power factor correction determination
- Built in scope displays waveforms
- Phase sequence indication
- Records up to 64 parameters
- Selectable fundamental frequency
- Special data compression system
- Download capabilities, Windows compatible
- A complete kit: 1000A Clamp, Voltage Leads, Ground Probes & Leads, PC software & cable

### No hassle warranty

*No waiting.*

*No shipping  
charges.*



Our commitment to high-quality products and customer service is demonstrated by our industry exclusive "No Hassle" warranty. In the unlikely event that an Amprobe Test Tool requires warranty service, any of our local dealers are authorized to replace it, on the spot.

(note: \$500 MSLP limit)

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### ■ INSULATION TESTER FUNCTIONS:

- Tests insulation integrity of wires, cables, transformers & electrical motors
- Selectable test voltages up to 1000 V
- Programmable timer to perform the Dielectric Absorption Ratio Test
- Sensitive Ohmmeter for checking resistance of motor windings
- Selectable polarization of ohmmeter for checking grounding continuity
- Automatic voltmeter protects against misuse on hazardous energized systems

### ■ GROUND RESISTANCE & RESISTIVITY FUNCTIONS:

- Three measuring modes:
  - 2 point continuity/resistance test
  - 3 point Fall of Potential test
  - 4 point Earth Resistivity measurement
- Automatic voltage measurement prevents false measurements
- Automatically applies three testing frequencies for the most accurate readings
- Detects faulty test conditions such as poor soil conditions and input noise

### ■ PHASE SEQUENCE

- Phase sequence indication
- Frequency measurement
- Phase-to-Phase voltage measurement



**DM-III MULTITEST Power Quality Recorder**
**Specifications**

Supplied Current Transducer	DM-CT-DMA; 1000A Standard CT, 2" internal diameter CT
Input accuracy	±(0.5% Rdg + 2 LSD)
AC Current	DM-CT-100: 0.5A to 100A DM-CT-HTA: 5 – 1000A AM-FLEX33: Selectable: 5 – 1000A or 15 – 3000A
AC Voltage including Sags and Surges	0 – 600V
Harmonics	THD, DC and individual up to 49th
Power	Working (W), Reactive (VAR) and Apparent (VA) ±(1.0% Rdg + 2 LSD)
Energy	Working (kWh), Reactive (VARh) and Apparent (VAh) ±(1.0% Rdg + 2 LSD)
Peak Demand	KW ±(1.0% Rdg + 2 LSD)
Power Factor	0.00 – 1.00
Frequency measurement	57 to 63.6 Hz at 60Hz fundamental; 47 to 53 Hz at 50Hz fundamental; ±(1.0% Rdg + 2 LSD)
Phase sequence	1 - 2 - 3
Co-generation	Computes incoming and outgoing energy
Selectable Fundamental Frequencies	50/60 Hz
Available Recording Time	Several hours to several years depending on setup

Megohmmeter	Range	Accuracy
Insulation resistance with 50 VDC test voltage	0.01 – 19.99, 49.9	± (2% Reading + 2 digits)
	49.9 – 99.9MΩ	± (5% Reading + 2 digits)
Insulation resistance with 100 VDC test voltage	0.01 – 19.99, 99.9	± (2% Reading + 2 digits)
	99.9 – 199.9MΩ	± (5% Reading + 2 digits)
Insulation resistance with 250 VDC test voltage	0.01 – 19.99, 199.9, 249	± (2% Reading + 2 digits)
	249 – 499 MΩ	± (5% Reading + 2 digits)
Insulation resistance with 500 VDC test voltage	0.01 – 19.99, 199.9, 499	± (2% Reading + 2 digits)
	499 – 999 MΩ	± (5% Reading + 2 digits)
Insulation resistance with 1000 VDC test voltage	0.01 – 19.99, 199.9, 999	± (2% Reading + 2 digits)
	999 – 1999 MΩ	± (5% Reading + 2 digits)
Low Resistance (without timer)	0.01 – 19.99, 99.9Ω	± (2% Reading + 2 digits)
Low Resistance (with timer)	0.01 – 9.99Ω	± (2% Reading + 2 digits)

Ground Resistance	Range	Accuracy
Ground resistance	0 – 19.99, 199.9, 1999 Ω	± (5% Reading + 3 digits)
Ground resistivity	0.6 – 125.6 Ωm	± (5% Reading + 3 digits)
	0.125 – 1.256, 19.99, 199.9 kΩm	± (5% Reading + 3 digits)

**LowΩ: 200mA Continuity Test (AUTO, RT+, RT- Mode)**

Range [Ω]	Resolution [Ω]	Accuracy(*)
0.01 – 9.99	0.01	±(2% Reading + 2 digit)
10.0 – 99.9	0.1	±(2% Reading + 2 digit)
(*) After Test leads calibration		
Test Current	> 200mA DC per R≤5Ω (Test leads included)	
Resolution for Test current	1mA	
Open Circuit Voltage	4V ≤ V0 ≤ 24V	

## DM-III MULTITEST Power Quality Recorder

### Specifications (continued)

Insulation Test			
Test Voltage [V]	Range [MΩ]	Resolution [MΩ]	Accuracy
50	0.01 – 9.99	0.01	±(2% Reading + 2 digit)
	10.0 – 49.9	0.1	±(2% Reading + 2 digit)
	50.0 – 99.9	0.1	±(5% Reading + 2 digit)
100	0.01 – 9.99	0.01	±(2% Reading + 2 digit)
	10.0 – 99.9	0.1	±(2% Reading + 2 digit)
	100.0 – 199.9	0.1	±(5% Reading + 2 digit)
250	0.01 – 9.99	0.01	±(2% Reading + 2 digit)
	10.0 – 199.9	0.1	±(2% Reading + 2 digit)
	200 – 249	1	±(2% Reading + 2 digit)
	250 – 499	1	±(5% Reading + 2 digit)
500	0.01 – 9.99	0.01	±(2% Reading + 2 digit)
	10.0 – 199.9	0.1	±(2% Reading + 2 digit)
	200 – 499	1	±(2% Reading + 2 digit)
	500 – 999	1	±(5% Reading + 2 digit)
1000	0.01 – 9.99	0.01	±(2% Reading + 2 digit)
	10.0 – 199.9	0.1	±(2% Reading + 2 digit)
	200 – 999	1	±(2% Reading + 2 digit)
	1000 – 1999	1	±(5% Reading + 2 digit)
Open circuit Test Voltage	<1.3 x Nominal Test Voltage		
Short Circuit Current	<6.0mA with 500V Test Voltage		
Nominal Test Current	500V: >2.2mA with 230kΩ; other: >1mA with 1kΩ*Vnom		
Frequency Measurement			
Range [Hz]	Resolution [Hz]	Accuracy	
47.0 – 63.6	0.1	±(0.1%Reading+1 digit)	
RCD and LOOP function are active only for 50Hz ± 0.5Hz frequency			
Phase Rotation: Voltage Measurement			
Range [V]	Resolution [V]	Accuracy	
0 – 460V	1	±(3%Reading + 2 digit)	
Ground Test: Resistance Measurement With Earth Rods			
Range RE [Ω]	Resolution [Ω]		
0.01 – 19.99	0.01		
20.0 – 199.9	0.1		
200 - 1999	1		
Accuracy	±(5% Reading + 3 digit)		
Test Current	<10mA – 77.5Hz		
Open circuit Test Voltage	<20V RM		

**DM-III MULTITEST Power Quality Recorder**
**Specifications** (continued)

**Ground Test: Resistivity Measurement**

Range p	Resolution
0.60 – 19.99 Ωm	0.01 Ωm
20.0 – 199.9Ωm	0.1Ωm
200 – 1999Ωm	1 Ωm
2.00 – 99.99kΩm	0.01 kΩm
100.0 – 125.6kΩm(*)	0.1 kΩm
	(*) setting distance = 10m
<b>Accuracy</b>	±(5% Reading + 3 digit)
<b>Test Current</b>	<10mA – 77.5Hz
<b>Open circuit Test Voltage</b>	<20V RMS

**Voltage Measurement – (Autorange)**

Range [V]	Resolution [V]
15 – 310V	0.2V
310 – 600V	0.4V
<b>Accuracy</b>	±(0.5% Reading+2digit)

**Voltage Sag And Surge Detection –(Manual Range)**

Range [V]	Resolution (Voltage)
15 – 310V	0.2V
30 – 600V	0.4V
<b>Resolution (Time)</b>	10ms (_ period)
<b>Accuracy (Voltage)</b>	±(1.0% Reading+2digit)
<b>Accuracy (Rif. 50hz) (Time)</b>	10ms (_ period)
<b>Input Impedance</b>	300kΩ (Phase-Neutral); 300kΩ (Phase-Phase)

**Current Measurement – STD & FlexEXTclamps**

Range [V]	Resolution [Mv]
0.005 – 0.26V	0.1
0.26 – 1V	0.4
<b>(*): Example: with a 1000A/1V full scale clamp, the instrument detect only current higher than 5A</b>	
<b>Accuracy</b>	±(0.5% Reading+2digit)
<b>Input Impedance</b>	200kΩ
<b>Overload Protection</b>	5V

**Current Measurement – FlexINT clamp – 1000A Range**

Current Range	Input Voltage Range	Resolution	Accuracy
5.00 – 20.00A	425µV – 1.7mV	0.850µV	± (4.0% rdg + 8.5µV)
20.00 – 99.99A	1.7mV – 8.499mV	0.850µV	± (1.0% rdg + 8.5µV)
100.0 – 999.9A	8.5mV – 84.99mV	8.5µV	± (1.0% rdg + 85µV)
<b>Input Impedance</b>	9.166kΩ		
<b>Overload Protection</b>	5V		

## DM-III MULTITEST Power Quality Recorder

### Specifications (continued)

#### Current Measurement – FlexINT clamp – 3000A Range

Current Range	Input Voltage Range	Resolution	Accuracy
15.00 – 99.99A	1.27mV – 8.499mV	0.850μV	± (1.0% rdg + 8.5μV)
100.0 – 270.0A	8.5mV – 22.75mV	8.5μV	± (1.0% rdg + 42.5uV)
270.0 – 999.9A	22.75mV – 84.99mV	8.5μV	± (1.0% rdg + 85uV)
1.00 – 3.00kA	85mV – 255mV	850μV	± (0.5% rdg + 8.5mV)
Input Impedance	9.7kΩ		
Overload Protection	5V		

#### Power Measurement – (Autorange)

Quantity	Range	Resolution
Active Power	0 – 999.9W	0.1W
	1 – 999.9kW	0.1kW
	1 – 999.9MW	0.1MW
	1000 – 9999MW	1MW
Reactive Power	0 – 999.9VAR	0.1VAR
	1 – 999.9kVAR	0.1kVAR
	1 – 999.9MVAR	0.1MVAR
	1000 – 9999MVAR	1MVAR
Apparent Power	0 – 999.9VA,	0.1VA
	1 – 999.9kVA,	0.1kVA
	1 – 999.9MVA	0.1MVA
	1000 – 9999MVA	1MVA
Active Energy (Classe2 EN61036)	0 – 999.9Wh,	0.1Wh
	1 – 999.9kWh,	0.1kWh
	1 – 999.9MWh	0.1MWh
	1000 – 9999MWh	1MWh
Reactive Energy (Classe3 IEC1268)	0 – 999.9VARh,	0.1VARh
	1 – 999.9kVARh,	0.1kVARh
	1 – 999.9MVARh	0.1MVARh
	1000 – 9999MVARh	1MVARh
Accuracy	±(1.0%Reading+2digit)	

#### Cos j Measurement

Cos J	Accuracy [°]
1.00 – 0.80	0.6
0.80 - 0.50	0.7
0.50 – 0.20	1.0
Resolution	0.01

#### Voltage and Current Harmonics Measurement

Range	Accuracy
DC – 25H	±(5% + 2 digit)
26H – 33H	±(10% + 2 digit)
34H – 49H	±(15% + 2 digit)
Resolution	0.1V / 0.1A

Harmonics values are null under fixed threshold:

- DC: its values is null if it is < 2% of Fundamental or is < 2% of Full Scale clamp
- 1st Current Harmonic: its values is null if it is < 0.2% Full Scale clamp
- 2nd – 49th: its values is null if it is < 0.5% of fundamental or is < 0.1% of Full Scale clamp

## DM-III MULTITEST Power Quality Recorder

### Technical Data – General Information

<b>General</b>	
Safety	EN 61010-1 + A2 (1997)
Protection Classification	Class 2 - Double Insulation
Pollution Degree	2
Degree of Protection	IP50
Over-Voltage Category	CAT II 600V
Usage	Indoor; max height 2000m
EMC	EN61326-1 (1997) + A1 (1998) The Instrument complies with European Guidelines for CE mark
<b>Safety Test</b>	
Low½ (200mA)	IEC 61557-4
Insulation Test	IEC 61557-2
Phase Sequence	IEC 61557-7
Ground Test	IEC 61557-5
<b>Power Quality</b>	
Voltage Sag and Surge	EN50160
Alternating Current Static Watt-hour meters for Active Energy	EN61036 (CLASS 2)
Alternating Current Static VAR-hour Meters for Reactive Energy	IEC1268 (CLASS 3)
<b>General Specifications</b>	
<b>Mechanical Data</b>	
Dimensions	225 (L)x165 (W) x 105 (H)mm
Weight	1,2Kg approx
Power Supply	6 x 1.5-LR6-AA-AM3-MN 1500 batteries
<b>Battery Life</b>	
Low½	~ 800 test
Insulation Test	~ 500 test
Ground Test	~ 1000 test
Phase Sequence	~ 1000 test
Power Quality (recording)	~20 hours
External Power Supply Adapter Code	DMT-EXTPS (only for POWER QUALITY function)
<b>Display</b>	
Display Type	Graphic with Backlight
Resolution	128x128
Visible Area	73mmx73mm
<b>Memory</b>	
Safety Test Memory	999 measurement
Power Quality	2MByte (with 63 channels select and Integration Period = 15min -> more than 30 days).
<b>Environment</b>	
Reference Temperature	23° ± 5°C
Working Temperature Range	0° – 40°C
Working Humidity	< 80%
Storage Humidity Range	-10 – 60°C
Storage Humidity	< 80%



Includes Amprobe's Download Suite Software

### Replacement Parts (supplied with product)

DM-CT-HTA	1000A Clamp
HW1254A	Soft Carrying case
DMT-EXTPS	External power supply 12VDC
MTL-VOLT	Complete set of voltage and megohmmeter test leads and alligator clips
MTL-EARTH	Carrying case containing: 4 earth rods and 4 test leads (banana – alligator clip)
C-2001	Special RS-232 Computer Cable
www.amprobe.com	PC Software
www.amprobe.com	Instruction Manual

### Optional Accessories

AM-FLEX33	3000A Flexible CT
DM-CT-100	100A Compact Clamp (0.5A to 100A)
RS-USB	USB-RS-232 Adapter
CC-DM-III	Hard Case

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