

MD 9040 TRMS Industrial Digital Multimeter

CAT IV / 1000 V overvoltage category and TRMS measurement of AC current and voltage are key features of the MD 9040. That's why it is particularly suitable for performing measurements on power supply sources in the most demanding applications in the industrial sector. Its high accuracy, 2-line LCD display, diverse measurement functions, fast one-handed operation and outstanding value for money open up a wide range of possible uses.

MEASURING FUNCTIONS:

- TRMS AC, DC voltage measurement.
- TRMS AC, DC current measurement.
- Capacitance measurement.
- Resistance measurement.
- Diod test.
- Mains supply frequency measurement.
- Frequency of digital signals measurement.
- Continuity test (acoustic signalling).

KEY FEATURES:

- **TRMS:** accurate readings on sinusoidal and non-sinusoidal signals.
- **Lead alert:** incorrect lead connection alert.
- **Auto-ranging:** user can switch between auto and manual ranging.
- **Relative zero mode:** relative function for comparing the difference between signals or removing background noise.
- **MAX/MIN/AVG:** recording of maximum, minimum and average values.
- **Data Hold:** data hold feature freezes the display for later view.
- **PC Link:** test results can be downloaded to the computer via the optional PC software.
- **Frequency measurement:** up to 1 MHz.
- **Safety:** CAT IV / 1000 V overvoltage protection.
- **Easy to read:** large bright 4 digits 9999 counts dual LCD display.

APPLICATION:

- High level industrial testing.
- High level electronic fault finding.
- Field servicing.
- Heavy duty electrical testing.

STANDARD SET:

- Multimeter MD 9040 with rubber holster
- Test lead with probe, 2 pcs
- 9 V battery
- Instruction manual
- Warranty



TECHNICAL SPECIFICATION:

Function	Range	Accuracy
TRMS AC voltage (40 Hz ... 20 kHz)	60.00 mV ... 999.9 V	from $\pm(0.5\%$ of reading + 3 digits) to $\pm(3.0\%$ of reading + 4 digits)
DC voltage	60.00 mV ... 999.9 V	from $\pm(0.06\%$ of reading + 2 digits) to $\pm(0.12\%$ of reading + 2 digits)
DC current	600.0 μ A ... 10.00 A	$\pm(0.2\%$ of reading + 4 digits)
TRMS AC current (40 Hz ... 1 kHz)	600.0 μ A ... 10.00 A	from $\pm(0.6\%$ of reading + 3 digits) to $\pm(1.0\%$ of reading + 4 digits)
Diode test	2.000 V	$\pm(1.0\%$ of reading + 1 digit)
	Open-circuit voltage	$<3.5 V_{bc}$, Test current 0.4 mA
Resistance	600.0 Ω ... 60.00 M Ω	from $\pm(0.1\%$ of reading + 3 digits) to $\pm(1.5\%$ of reading + 5 digits)
Mains frequency	15.00 Hz ... 50.00 kHz	$\pm(0.04\%$ of reading + 4 digits)
Frequency of digital equipment	5.00 Hz ... 1.000 MHz	$\pm(0.004\%$ of reading + 4 digits)
Capacitance	60.00 nF ... 25.00 mF	from $\pm(0.8\%$ of reading + 3 digits) to $\pm(6.5\%$ of reading + 5 digits)
Power supply	9 V battery (NEDA1604G, JIS006P, or IEC6F22)	
Overvoltage category	CAT IV / 1000 V	
Dimensions	208 x 103 x 64.5 mm	
Weight	635 g	

General testing up to high level industrial testing, electronic fault finding, field servicing & heavy TRMS AC, DC voltage / current; Capacitance; Resistance; Diode test...

Digital Multimeters / Clamp Meters



GENERAL FEATURES

- **PC Link** software enables downloading test results to the computer;
- **Lead alert** indicates incorrect lead connection;
- **Temperature measurement** measures T1, T2 and T1 + T2 temperature in Celsius and in Fahrenheit;
- **MAX/MIN/HOLD** mode, displays maximum, minimum or average measured value;
- **Non-contact** and probe contact electric field detection;
- **Inductive pickup clip** accessory for IP-RPM Function;
- **4 Selectable Trigger-Levels** for IPRPM, IG-RPM, Dwell, %-Duty and ms Functions;
- **Selectable Cylinders** 1, 2, 3, 4, 5, 6, 8, 10 or 12 Cylinders for Dwell and IGRPM functions;
- **Selectable Trigger** positive (+) or Negative (-) Trigger for %-Duty and ms Functions.

ADVANTAGES

- **Relative zero mode** function for comparing the difference between signals or removing background noise;
- **100 kHz** Voltage Bandwidth;
- **Large 2-line** 500.000 counts LCD display;
- **Automatic detection** of AC voltage, DC voltage or resistance;
- **Frequency measurement** up to 1 MHz.

APPLICATIONS

- High, Mid and Low level industrial testing.
- High, Mid and Low level electronic fault finding.
- HVAC (heating, ventilation and air conditioning) troubleshooting.
- Demanding measurement tasks in the laboratories.
- Everyday repair and maintenance practice.
- Heavy duty electrical testing.
- Field servicing.
- Automotive industry.
- Hobby work.
- Working in small enclosures.
- General purpose.

duty electrical testing
Selection Guide

FEATURES	Description	MD 9070 NEW	MD 9060	MD 9050	MD 9040	MD 9035	MD 9030	MD 9020	MD 9016	MD 9010
MEASURING METHOD AC - MEASUREMENTS	True RMS	•	•	•	•	•	•	•	•	•
	Current		0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 8 A	0.1 uA ... 2 mA
	Voltage	1 mV ... 1000 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	1 mV ... 600 V
	Frequency	•	•	•	•	•	•	•	•	•
	Frequency of digital signals	•	•	•	•	•	•	•	•	•
DC - MEASUREMENTS	100 kHz Voltage bandwidth									
	Current		0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 10 A	0.1 uA ... 8 A	0.1 uA ... 2 mA
AUTOMOTIVE MEASUREMENTS	Voltage	1 mV ... 1000 V	0.1 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	0.01 mV ... 999.9 V	1 mV ... 600 V
	IP-RPM (Inductive pickup type)									
	IG-RPM (Contact signal type)									
	Line-Level Hz (ACV, DCV)									
	Inductive pickup clip for IP-RPM									
	Dwell - Angle function									
	Selectable Cylinders (1 ... 12)									
	% - Duty Cycle Function									
	Fuel injection - ms detector									
	Resistance	•	•	•	•	•	•	•	•	•
OTHER MEASUREMENTS	Acoustic continuity	•	•	•	•	•	•	•	•	•
	Capacitance	•	•	•	•	•	•	•	•	•
	Diode	•	•	•	•	•	•	•	•	•
	Temperature T1 / T1 & T2		•/•	•/•		•/ -	•/ -	•/ -	•/ -	
	Earth continuity test	•								
	Insulation resistance	•								
	Insulation resistance compare	•								
	PI / DAR	•								
	EF (Electric field detection)			•						
	Conductance		•	•						
OTHER FUNCTIONS	VFD (Variable frequency drive)	•	•							
	Autocheck (VAC-DC; Ω) / (VAC-DC; AAC)			•						
	Data hold	•	•	•	•	•	•	•	•	•
	MAX hold	•	•	•			•	•		
	MAX/MIN/AVG (recording)	•	•	•	•					
	Auto ranging	•	•	•	•	•	•	•	•	•
	Relative zero mode	•	•	•	•	•	•	•	•	
	Analogue bargraph	•	•	•	•	•			•	
	Lead alert	•	•	•	•	•	•	•		
	Count	6000	50.000 / 500.000	6000 / 9999	6000 / 9999	6000	4000	4000	6000	6000
TECHNICAL DATA	Backlight	•	•	•		•	•			
	IP protection	40	54	54	54	40	40	40	40	40
COMMUNICATION OVERVOLTAGE CATEGORY	PC Link	•	•	•	•				•	
	CAT IV / 1000 V		•	•	•					
	CAT IV / 600 V	•	•	•	•					
	CAT IV / 300 V		•	•	•				•	
	CAT III / 1000 V	•								
	CAT III / 600 V		•	•	•				•	
	CAT III / 300 V		•	•	•				•	
	CAT II / 600 V		•	•	•	•	•	•	•	•
	CAT II / 1000 V		•	•	•	•	•	•	•	

Digital multimeters

Selection Guide for Multimeters

Part No.:	MD 9070 Digital multimeter NEW	MD 9060 Digital multimeter	MD 9050 Digital multimeter	MD 9040 Digital multimeter
				
True RMS	•	•	•	•
DC current range (A)		10	10	10
Basic accuracy (%)		0.15	0.2	0.2
Maximum resolution (µA)		0.1	0.1	0.1
AC current range (A)		10	10	10
Basic accuracy (%)		0.5	0.6	0.6
Maximum resolution (µA)		0.1	0.1	0.1
DC voltage range (V)	1000 V	1000	1000	1000
Basic accuracy (%)	0.2	0.02	0.06	0.06
Maximum resolution (µV)	1000	10	10	10
AC voltage range (V)	1000 V	1000	1000	1000
Basic accuracy (%)	1	0.3	0.5	0.5
Maximum resolution (µV)	1000	10	10	10
Resistance measurement (MΩ)	60	50	60	60
Basic accuracy (%)	0.9	0.07	0.1	0.1
Maximum resolution (mΩ)	100	100	100	100
Acoustic continuity test	•	•	•	•
Diode test	•	•	•	•
Capacitance		•	•	•
Frequency measurement	•	•	•	•
Frequency of digital signals		•	•	•
Temperature measurement (Type K sensor)		T1 & T2 (temperature comparison)	T1 & T2 (temperature comparison)	
Earth continuity test	•			
Insulation resistance	•			
Insulation resistance compare	•			
PI / DAR	•			
Autocheck* V / Ω			•	
Conductance (nS)		•	•	
IP-RPM (Inductive pickup type)				
IG-RPM (Contact signal type)				
Dwell – Angle function				
% - Duty Function				
Fuel injection – ms detector				
100 kHz Voltage Bandwidth		•		
Variable frequency drive	•	•		
Dual data display	•			
Count	6000 (MV, µM/A, Ω , F)	50.000 (fast mode) 500.000 (DCV) 99.999 (Hz)	9999 (AC/DCV, Hz, nS) 6000 (mV, µM/A, Ω , F)	9999 (AC/DCV, Hz, nS) 6000 (mV, µM/A, Ω , F)
Backlight	•	•	•	
Analogue bar-graph	•	41 segment	41 segment	41 segment
IR, RS232 interface		•	•	•
Automatic and manual range selection	•	•	•	•
Automatic switch off	•	•	•	•
Non-contact electrical field detection (EF)			•	
MAX hold		•		
Peak hold		•	•	
Data hold	•	•	•	•
Recording (MAX / MIN / AVG)	•	•	•	•
Relative value		•	•	•
Compensation for test leads			•	•
Overvoltage category	CAT IV / 600 V CAT III / 1000 V	CAT IV / 1000 V	CAT IV / 1000 V	CAT IV / 1000 V
Dimensions with holster (mm)	208 x 103 x 64.5	208 x 103 x 64.5	208 x 103 x 64.5	208 x 103 x 64.5
Weight with holster (g)	635	635	635	635
IP	IP 40	IP 54	IP 54	IP 54
CE mark	•	•	•	•

MD 9035 Digital multimeter	MD 9030 Digital multimeter	MD 9020 Digital multimeter	MD 9016 Digital multimeter	MD 9010 Digital multimeter
				
10	•	10	8	0.002
0.7	1.2	1.2	0.5	1.2
0.1	0.1	0.1	0.1	0.1
10	10	10	8	0.002
2.2	1.5	1.5	1.0	1.5
0.1	0.1	0.1	0.1	0.1
1000	1000	1000	1000	600
0.4	0.3	0.3	0.4	0.5
10	100	100	10	1000
1000	1000	1000	1000	600
2.0	1.5	1.5	1.0	1.5
10	100	100	10	1000
60	40	40	60	6
0.5	0.6	0.6	0.5	1
100	100	100	100	100
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
•	•	•	•	•
T1	T1	T1	T1	
				•
•				
•				
•				
•				
•				
•				
6000	4000	4000	6000	6000
•	•			
24 segment			24 segment	
•	•	•	•	Auto
•	•	•	•	•
•	•	•	•	•
	•	•	•	
•	•	•	•	
	•	•	•	
CAT II / 1000 V	CAT IV / 300 V CAT III / 600 V CAT II / 1000 V	CAT IV / 300 V CAT III / 600 V CAT II / 1000 V	CAT IV / 300 V CAT III / 600 V CAT II / 1000 V	CAT III / 300 V CAT II / 600 V
161 x 80 x 50	198 x 97 x 55	198 x 97 x 55	161 x 80 x 50	113 x 53 x 10.2
340	396	396	340	78
IP 40	IP 40	IP 40	IP 40	IP 40
•	•	•	•	•