

**ELECTRICAL**

All specified accuracies are at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, <70% R.H. for 1 year.

Temperature coefficient:

0.1 x (specified accuracy) per $^{\circ}\text{C}$. (0°C to 18°C , 28°C to 50°C).

All accuracies below are expressed as \pm (percentage of reading + digits)

DC Voltage

Range	Resolution	Input impedance	Accuracy
600mV	0.01mV	10M Ω	0.08% + 5
6V	0.0001V	11M Ω	
60V	0.001V	10M Ω	
600V	0.01V		
1000V	0.1V		

Overload protection: 1000V DC or 750V AC rms

AC Voltage (True RMS)

Range	Resolution	Input impedance	Accuracy				
			HFR1 selected 45 to 60Hz	HFR2 selected			
				45Hz to 500Hz	500Hz to 1kHz	1kHz to 2kHz	
600mV	0.01mV	10MΩ	2.0% + 20	1.0% + 20	1.5% + 20	N/A	
6V	0.0001V	11MΩ				2.0% + 20	N/A
60V	0.001V	10MΩ					
600V	0.01V			2.0% + 20			
750V	0.1V				N/A		

AC coupled true rms AC voltage accuracy is specified from 2% to 100% of range.

Crest factor: 3 at full scale, 6 at half scale

High frequency reject filter -3dB points: HFR1 at 1kHz, HFR2 at 100kHz

Peak hold accuracy (45Hz to 500Hz): 60V to 750V AC ± (3.0% rdg + 500 dgts)

Peak hold response time: 1ms

Overload protection: 1000V DC or 750V AC rms

AC + DC Voltage (True RMS)

Range	Resolution	Input impedance	Accuracy		
			45Hz to 500Hz	500 Hz to 1 kHz	1 kHz to 2 kHz
600mV	0.01mV	10MΩ	1.5% + 30	2.0% + 30	N/A
6V	0.0001V	11MΩ			2.5% + 30
60V	0.001V	10MΩ			
600V	0.01V		2.5% + 30		
750V	0.1V			N/A	



Specification

MM94 TRMS Digital Multimeter

AC coupled true rms AC voltage accuracy is specified from 2% to 100% of range.

Crest factor: 3 at full scale, 6 at half scale

Overload protection: 1000V DC or 750V AC rms

Current

Range	Resolution	Voltage burden	Accuracy		
			DC	AC (true rms)	AC+DC (true rms)
				45 Hz to 1 kHz	
600 μ A	0.01 μ A	500mV	0.5% + 10	1.5% + 20	2.0% + 30
6000 μ A	0.1 μ A	2V			
60mA	0.001mA	500mV			
400mA	0.1mA	2V	1.0% + 10	2.5% + 20	3.0% + 30
20A Note 1	1mA		2.0% + 10		

AC coupled true rms AC current accuracy is specified from 2% to 100% of range.

Crest factor: 3 at full scale, 6 at half scale

Peak hold accuracy on AC current ranges (45Hz to 500 Hz):

$$\pm (3.5\% \text{ rdg} + 500 \text{ dts})$$

Peak hold response time: 1ms

Input protection: 0.5 A/1000 V fast blow ceramic fuse on 600 μ A to 400mA ranges

20A/600V fast blow ceramic fuse on 20 A range

Note 1: Apply currents >10 A for 30 seconds maximum, then allow a 10 minute cooling period.



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MM94 TRMS Digital Multimeter

Resistance

Range	Resolution	Open circuit voltage	Accuracy	
600 Ω	0.01 Ω	-3.0V dc	0.3% + 20	
6k Ω	0.0001k Ω	-1.2V dc		
60k Ω	0.001k Ω			
600k Ω	0.01k Ω			
6M Ω	0.0001M Ω			1.0% + 10
60M Ω	0.001M Ω			3.0% + 20

Overload protection: 600V DC or AC rms

Conductance (6000 counts only)

Range	Resolution	Open circuit voltage	Accuracy
60nS	0.01nS	-0.7V dc	1.0% + 10

Overload protection: 600V DC or AC rms

Capacitance (6000 counts only)

Range	Resolution	Accuracy
6nF	0.001nF	3.0% + 30
60nF	0.01nF	3.0% + 10
600nF	0.1nF	
6 μ F	0.001 μ F	
60 μ F	0.01 μ F	
600 μ F	0.1 μ F	
6mF	0.001mF	5.0% + 10

Overload Protection: 600V DC or AC rms



Specification

MM94 TRMS Digital Multimeter

Frequency

Range	Resolution	Trigger level	Accuracy
60Hz	0.001Hz	>1.5V	0.1% + 10
600Hz	0.01Hz		
6kHz	0.0001kHz		
60kHz	0.001kHz		
600kHz	0.01kHz		
6MHz	0.0001MHz	>2.5V, <5V	
10MHz	0.001MHz		

Minimum input: >6Hz

Minimum pulse width: >100 ns

Duty cycle limits: >30% and <70%

Overload protection: 600V DC or AC rms.

Duty Cycle

Range	Resolution	Resolution	Pulse width	Accuracy (5V logic)
5% to 95%	40Hz to 1kHz	0.1%	>10 μ s	2.0% + 10
10% to 90%	1kHz to 10kHz			
20% to 80%	10kHz to 20kHz			

Overload protection: 600V DC or AC rms

Temperature (Type K Thermocouple)

Range	Resolution	Accuracy
0°C to 400°C	0.1°C	1.0% + 1°C
-50°C to 0°C, 400°C to 1300°C		2.0% + 3°C
32°F to 750°F	0.1°F	1.0% + 2°F
-58°F to 32°F, 750°F to 2372°F		2.0% + 6°F

Overload protection: 30V DC or AC rms

Continuity

Range	Resolution	Response time	Open circuit voltage	Audible indication
600Ω	0.01Ω	100 ms approx.	-3.0V dc	<40Ω

Overload protection: 600V DC or AC rms

Diode Test

Range	Resolution	Test current	Open circuit voltage	Audible indication	Accuracy
2V	0.1 mV	0.5 mA typical	3.0V dc typical	<0.05V dc	2.0% + 10

Overload protection: 600 V DC or AC rms



Specification

MM94 TRMS Digital Multimeter

GENERAL

Display: Liquid crystal display

Digital, 60000 counts, updates 2/sec


Polarity: Automatic, positive implied, '-' for negative polarity indication

Overrange: (OL) or (-OL) is displayed

Bar-graph, 60 segments, updates 20/sec

Power: 9V, PP3 alkaline batteries (IEC 6LR61, NEDA 1604A)

Battery life: 50 hours typical with alkaline

Low battery indication: The LCD will display 

Auto power off: After 30 minutes

Fuses: 0.5 A/1000V 6.3x32mm fast blow ceramic fuse

20 A/600V 10x38mm fast blow ceramic fuse

Dimensions: 198 x 90 x 44mm

Weight: Approx. 400g, including battery

Includes: TL16 test leads, TT1P Type K thermocouple, 9V PP3 battery (installed), instructions

ENVIRONMENTAL

Temperature & Humidity (Operating): 0°C to 50°C <70% R.H.

(Storage): -20°C to 60°C < 80% R.H.

Altitude: up to 2000m

Pollution degree: 2, indoor use

SAFETY

Conforms to BS EN 61010-1, BS EN 61010-2-033, CAT IV 600V, CAT III 1000V

Class II, double insulation

EMC

Conforms to BS EN 61326-1



Specification

MM94 TRMS Digital Multimeter

SPECIFICATION FOR TL16 TEST LEADS

Maximum voltage: 1000V AC/DC

Maximum current: 10A continuous

Connector: 4mm banana plug with fixed shroud

Environmental

Temperature (Operating & Storage): 0°C to 40°C

Altitude: up to 2000m

Pollution degree: 2

Safety

Conforms to BS EN 61010-031,

CAT IV 600V, CAT III 1000V, 10A (Probe tip caps fitted)

CAT II 1000V, 10A (Probe tip caps removed)

Class II, double insulation