



Mastech M9704

Dual Display 29-Range 2-in-1 Analog Multimeter with Digital Readout

DC Voltage

Range	Resolution	Digital Display Accuracy	Analogue Gauge	
			Accuracy	Read
200 mV	0.1 mV	$\pm (0.5 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 1 \text{ mV}$
2 V	1 mV	$\pm (0.5 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 0.01 \text{ V}$
20 V	10 mV	$\pm (0.5 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 0.1 \text{ V}$
200 V	100 mV	$\pm (0.5 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 1 \text{ V}$
600 V	1 V	$\pm (0.8 \% \text{ of rng} + 2 \text{ digit})$	$\pm 5 \% \text{ of arc}$	Reading of black scale $\times 10 \text{ V}$

Input impedance: 10 M Ω

Overload Protection: 200 mV range 250 V DC or rms AC

2 V - 600 V DC or 600 V rms AC (sine)

AC Voltage

Range	Resolution	Digital Display Accuracy	Analogue Gauge	
			Accuracy	Read
200 mV	0.1 mV	$\pm (1.2 \% \text{ of rng} + 3 \text{ digits})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 1 \text{ mV}$
2 V	1 mV	$\pm (0.8 \% \text{ of rng} + 3 \text{ digits})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 0.01 \text{ V}$
20 V	10 mV	$\pm (0.8 \% \text{ of rng} + 3 \text{ digits})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 0.1 \text{ V}$
200 V	100 mV	$\pm (0.8 \% \text{ of rng} + 3 \text{ digits})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 1 \text{ V}$
600 V	1 V	$\pm (1.2 \% \text{ of rng} + 3 \text{ digits})$	$\pm 5 \% \text{ of arc}$	Reading of black scale $\times 10 \text{ V}$

Input impedance: 10 M Ω

Overload Protection: 200 mV range 250 V DC or rms AC

2 V - 600 V DC or 600 V rms AC (sine)

Frequency range: 40 to 400 Hz

Test On 60 Hz/50 Hz

Response: Average calibrated in rms of sine wave

DC Current

Range	Resolution	Digital Display Accuracy	Analogue Gauge	
			Accuracy	Read
2 mA	1 μA	$\pm (0.8 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 0.01 \text{ mA}$
20 mA	10 μA	$\pm (0.8 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 0.1 \text{ mA}$
200 mA	100 μA	$\pm (1.5 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 1 \text{ mA}$

Overload Protection: F 200 mA/ 250 V fuse

Voltage Drop: 200 mV

AC Current

Range	Resolution	Digital Display Accuracy	Analogue Gauge	
			Accuracy	Read
2 mA	1 μA	$\pm (1 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 0.01 \text{ mA}$
20 mA	10 μA	$\pm (1 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 0.1 \text{ mA}$
200 mA	100 μA	$\pm (1.8 \% \text{ of rng} + 1 \text{ digit})$	$\pm 5 \% \text{ fs}$	Reading of black scale $\times 1 \text{ mA}$

Overload Protection: F 200 mA/ 250 V fuse

Voltage Drop: 200 mV

Frequency range: 40 to 400 Hz

Test On 60 Hz/50 Hz

Response: Average calibrated in rms of sine wave

Resistance	Range	Resolution	Digital Display Accuracy	Analogue Gauge	
				Accuracy	Read
	200 Ω	0.1 Ω	\pm (0.8 % of rng +3 digit)	\pm 5 % arc	Reading of red scale \times 1 Ω
	2 k Ω	1 Ω	\pm (0.8 % of rng +1 digit)	\pm 5 % arc	Reading of red scale \times 0.01 k Ω
	20 k Ω	10 Ω	\pm (0.8 % of rng +1 digit)	\pm 5 % arc	Reading of red scale \times 0.1 k Ω
	200 k Ω	100 Ω	\pm (0.8 % of rng +1 digit)	\pm 5 % arc	Reading of red scale \times 1 k Ω
	2 M Ω	1 k Ω	\pm (0.8 % of rng +1 digit)	\pm 5 % arc	Reading of red scale \times 0.01 M Ω
	20 M Ω	10 k Ω	\pm (1.0 % of rng +2 digit)	\pm 5 % arc	Reading of red scale \times 0.1 M Ω

Open Circuit Voltage: 1.2 V

Overload Protection: 250 V DC or rms AC

Capacitance	Range	Resolution	Digital Display Accuracy	Analogue Gauge	
				Accuracy	Read
	2 nF	1 pF	\pm (4 % of rng +3 digit)	\pm 6 % arc	Reading of black scale \times 0.01 nF
	20 nF	10 pF	\pm (4 % of rng +3 digit)	\pm 6 % arc	Reading of black scale \times 0.1 nF
	200 nF	0.1 pF	\pm (4 % of rng +3 digit)	\pm 6 % arc	Reading of black scale \times 1 nF
	2 μ F	1 nF	\pm (4 % of rng +3 digit)	\pm 6 % arc	Reading of black scale \times 0.01 μ F
	20 μ F	10 nF	\pm (4 % of rng +3 digit)	\pm 6 % arc	Reading of black scale \times 0.1 μ F

Frequency	Range	Resolution	Digital Display Accuracy	Analogue Gauge	
				Accuracy	Read
	20 kHz	10 Hz	\pm (1.5 % of rng +5 digit)	\pm 5 % fs	Reading of black scale \times 0.1 kHz

Temperature	Range	Resolution	Digital Display Accuracy	Analogue Gauge	
				Accuracy	Read
	- 20 $^{\circ}$ C to 1000 $^{\circ}$ C	1 $^{\circ}$ C	- 20 $^{\circ}$ C to 0 $^{\circ}$ C \pm (4 % of rng +4 digit)	\pm 6 % arc	Reading of black $^{\circ}$ C scale \times 1 $^{\circ}$ C
			0 $^{\circ}$ C to 400 $^{\circ}$ C \pm (2 % of rng +3 digit)		
			400 $^{\circ}$ C to 1000 $^{\circ}$ C \pm (1 % of rng +3 digit)		

Diode	Resolution	Test Current	Digital Display	Analogue Gauge Read
	1 mV	1 mA		Reading of black scale \times 0.01 V

Open Circuit Voltage: 2.8 V

Continuity	Function
	Built-in buzzer will sound, if resistance is lower than 70 Ω

Transistor h_{FE}	Range	Base Current	V_{ce}	Digital Display	Analogue Gauge Read
	1 to 1000 β	10 μ A	2.8 V		Reading of black scale \times 0.01 V