

The M890G digital multimeter

The M890G digital multimeter is a great buy for the hobbyist, technician or auto mechanic. Measures DC Volts and AC Volts at 10Mohm input impedance, DC and AC current, resistance up to 20M ohm, capacitance up to 20uF, frequency up to 20KHz, and temperature all the way up to 1000°C.

Includes a dedicated transistor socket for NPN and PNP transistor testing, auto power off to save batteries, audible continuity and diode testing, and a big display. Comes with standard test leads and a temperature test probe (K type thermocouple).

The popular 890 multimeter family includes many models: M890B+, M890D, M890C+, M890F, M890G, DT-890G and many more, all using the robust [ICL7106 2000 count IC](#).



Technical specifications

Note: The following values can differ slightly from model to model; consult your user manual for your meter's technical specifications.

DC Volts

Input impedance: 10MΩ

Range	Resolution	Accuracy
200mV	0.1mV	± 0.5% of rdg ± -1 digit
2V	1mV	± 0.5% of rdg ± 1 digit
20V	10mV	± 0.5% of rdg ± 1 digit
200V	100mV	± 0.5% of rdg ± 1 digit
1000V	1V	± 0.8% of rdg ± 2 digits

AC Volts

Input impedance: 10MΩ at all ranges.

Frequency Response: 40Hz - 200Hz (40Hz-100Hz for the 200V and 700V range).

Overload Protection:

- 200mV: max. 15 seconds at a voltage of 300V AC
- all other ranges: 750V AC or 1000V DC.

Range	Resolution	Accuracy
200 mV	0.1mV	± 1.2% of rdg ± 3 digits
2V	1 mV	± 0.8% of rdg ± 3 digits
20V	10 mV	± 0.8% of rdg ± 3 digits
200V	100 mV	± 0.8% of rdg ± 3 digits
700V	1V	± 1.2% of rdg ± 3 digits

DC Amps

Overload protection: 0.2A / 250V fuse

The 20A range is unfused. Maximum input current: 20 A for 15 seconds.

Range	Resolution	Accuracy
2mA	1 μ A	$\pm 0.8\%$ of rdg ± 1 digit
20mA	10 μ A	$\pm 0.8\%$ of rdg ± 1 digit
200mA	100 μ A	$\pm 1.2\%$ of rdg ± 1 digit
20A	10mA	$\pm 2.0\%$ of rdg ± 5 digits

AC Amps

Overload protection: 0.2A / 250V fuse

The 20A range is unfused. Maximum input current: 20 A for 15 seconds.

Range	Resolution	Accuracy
200mA	100 μ A	$\pm 2.0\%$ of rdg ± 3 digits
20A	10mA	$\pm 3.0\%$ of rdg ± 7 digits

Note: some models have a 20mA range with a resolution of 10 μ A and $\pm 1,2\% \pm 3$ digits accuracy.

Resistance (Ohms)

Range	Resolution	Accuracy
200 Ω	0,1 Ω	$\pm 0.8\%$ of rdg ± 3 digits
2k Ω	1 Ω	$\pm 0.8\%$ of rdg ± 1 digits
20 k Ω	10 Ω	$\pm 0.8\%$ of rdg ± 1 digits
200 k Ω	100 Ω	$\pm 0.8\%$ of rdg ± 1 digits
2M Ω	1k Ω	$\pm 0.8\%$ of rdg ± 1 digits
20M Ω	10k Ω	$\pm 1\%$ of rdg ± 2 digits
200M Ω (a few models only)	100 k Ω	$\pm 5\%$ of rdg ± 10 digits

Capacitance

Range	Resolution	Accuracy
2000pF	1pF	$\pm 2.5\%$ of rdg ± 5 digits
20nF	10pF	$\pm 2.5\%$ of rdg ± 5 digits
200nF	100pF	$\pm 2.5\%$ of rdg ± 5 digits
2 μ F	1nF	$\pm 2.5\%$ of rdg ± 5 digits
20 μ F	10nF	$\pm 2.5\%$ of rdg ± 5 digits

Frequency

Range	Resolution	Accuracy
20kHz	10Hz	$\pm 1\%$ of rdg ± 1 digits

Transistor hFE test

hFE range: 0-1000

I_b: $\sim 10\mu\text{A}$

U_{ce}: $\sim 2,8\text{V}$.

Temperature

"K" type thermocouple

Range	Resolution	Accuracy
-50°C - 400°C	1°C	$\pm 0.75\%$ of rdg ± 3 digits
400°C-1000°C	1°C	$\pm 1.5\%$ of rdg ± 15 digits

Diode and conductivity test

Diode test forward current: $\sim 1\text{mA}$.

Voltage: $\sim 2.8\text{V}$

The built-in buzzer will sound, if the resistance under test is less than about 30 ohms.