



Specification  
MM68  
Digital Multimeter



**ELECTRICAL**

All specified accuracies are at 23°C ± 5°C, <75% RH for 1 year.  
**Temperature Coefficient:** 0.1 x (specified accuracy) per °C. (0°C to 18°C, 28°C to 50°C)

**DC VOLTS**

**Ranges:** 220mV, 2.2V, 22V, 220V, 1000V  
**Resolution:** 0.01mV, 0.0001V, 0.001V, 0.01V, 0.1 V  
**Accuracy:** ± (0.05% of rdg + 5 dgts)  
**Input impedance:** 220mV: >100MΩ; 2.2V: 10 MΩ; 22V to 1000V: 9.1MΩ.  
**Overload protection:** 1000V DC or 750 AC rms.

**TRUE RMS AC VOLTS**

**Ranges:** 220mV, 2.2V, 22V, 220V, 750V  
**Resolution:** 0.01mV, 0.0001V, 0.001V, 0.01V, 0.1V  
**Accuracy:** 220mV range (50 Hz to 500 Hz) ± (1.2% of rdg + 10 dgts)  
2.2V to 220V ranges (50 Hz to 500 Hz) ± (1.2% of rdg + 10 dgts)  
(500 Hz to 2 kHz) ± (2.0% of rdg + 20 dgts)  
750V range (50 Hz to 500 Hz) ± (2.0% of rdg + 20 dgts)  
AC coupled true rms specified from 5% to 100% of range  
**Crest factor:** ≤ 3  
**Input impedance:** 220mV: >100MΩ; 2.2V: 10MΩ; 22V to 750V: 9.1MΩ  
**Overload protection:** 1000V DC or 750 AC rms



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**DC CURRENT**

**Ranges:** 220μA, 2200μA, 22mA, 220mA, 10A \*  
**Resolution:** 0.01μA, 0.1μA, 0.001mA, 0.01mA, 0.001A  
**Accuracy:** 220μA to 22mA ranges ± (0.5% of rdg + 10 dgts)  
220mA range ± (1.0% of rdg + 10 dgts)  
10A range ± (2.0% of rdg + 10 dgts)  
\* Current on 10 A range applied for 60 seconds max followed by a 10 minute cooling period  
**Input protection:** 0.5A/500V fast blow ceramic fuse  
10A/500V fast blow ceramic fuse

**TRUE RMS AC CURRENT**

**Ranges:** 220μA, 2200μA, 22mA, 220mA, 10A \*  
**Resolution:** 0.01μA, 0.1μA, 0.001mA, 0.01mA, 0.001 A  
**Accuracy:** 220μA to 220mA (50 Hz to 1 kHz) ± (1.5% of rdg + 5 dgts)  
10A range (50 Hz to 1 kHz) ± (2.5% of rdg + 5 dgts)  
\* Current on 10 A range applied for 60 seconds max followed by a 10 minute cooling period  
AC coupled true rms specified from 5% to 100% of range  
**Crest factor:** ≤ 3  
**Input protection:** 0.5A/500V fast blow ceramic fuse  
10A/500V fast blow ceramic fuse.

**RESISTANCE**

**Ranges:** 220Ω, 2.2kΩ, 22kΩ, 220kΩ, 2.2MΩ, 22MΩ, 220MΩ  
**Resolution:** 0.01Ω, 0.0001kΩ, 0.001kΩ, 0.01kΩ, 0.0001MΩ, 0.001MΩ, 0.1MΩ  
**Accuracy:** 220Ω to 220kΩ ranges ± (0.5% of rdg + 10 dgts)  
2.2MΩ range ± (1.0% of rdg + 10 dgts)  
22MΩ range ± (2.0% of rdg + 10 dgts)  
220MΩ range ± (5.0% of rdg + 10 dgts)



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**Open circuit voltage:** -0.45 V DC (-1.2 V DC on 220 Ω range)  
**Overload protection:** 500 V DC or AC rms

**CAPACITANCE**

**Ranges:** 22nF, 220nF, 2.2μF, 22μF, 220μF, 2.2mF, 22mF  
**Resolution:** 0.001nF, 0.01nF, 0.0001μF, 0.001μF, 0.01μF, 0.0001mF, 0.001mF  
**Accuracy:** 22nF range ± (3.0% of rdg + 80 dgts)  
220nF to 220μF ranges ± (3.0% of rdg + 5 dgts)  
2.2mF to 22mF range ± (5.0% of rdg + 20 dgts)  
**Overload protection:** 500 V DC or AC rms

**FREQUENCY**

**Ranges:** 22Hz, 220Hz, 22kHz, 220kHz, 2.2MHz, 22MHz  
**Resolution:** 0.01Hz, 0.1Hz, 0.001kHz, 0.01kHz, 0.0001MHz, 0.001MHz  
**Accuracy:** ± (0.1% of rdg + 3 dgts)  
**Input sensitivity:** 2Hz ~ 2.2MHz: >2.5Vrms. 2.2MHz ~ 22MHz: >2.5Vrms and <5Vrms  
**Minimum input:** 22Hz range > 2Hz. 220Hz range > 20Hz  
**Minimum pulse width:** > 25ns  
**Duty cycle limits:** > 30% and < 70%  
**Overload protection:** 500VDC or AC rms

**DUTY CYCLE**

**Range:** 10% to 95%  
**Resolution:** 0.01%  
**Pulse width:** >10us  
**Frequency range:** 10% to 95% (40Hz to 20kHz)  
**Accuracy:** (5V logic) ± (2.0% rdg + 5 dgts)  
**Overload protection:** 500V DC or AC rms



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**CONTINUITY**

**Audible indication:** < 30Ω  
**Response time:** 500ms  
**Overload protection:** 500V DC or AC rms

**DIODE TEST**

**Test current:** 1.2mA approx  
**Resolution:** 0.1mV  
**Accuracy:** ± (2.0% rdg + 5 dgts)  
**Audible indication:** <0.25V  
**Open circuit voltage:** 3.0V DC typical  
**Overload protection:** 500V DC or AC rms

**GENERAL**

**Display:** 4½ digit liquid crystal display with a maximum reading of 22000.  
**Analog bargraph:** 22 segments with measurement 20 times per second.  
**Polarity:** Automatic, positive implied, negative polarity indication  
**Overrange:** (OL) or (-OL) is displayed  
**Zero:** Automatic  
**Low battery indication:**  symbol is displayed when the battery voltage drops below the operating level  
**Measurement rate:** 3 times per second, nominal  
**Auto power off:** After approx 30 minutes  
**Operating environment:** 0°C to 50°C at < 70% RH  
**Storage temperature:** -20°C to 60°C at < 80% RH  
**Altitude:** Up to 2000m  
**Power:** Single standard 9 volt battery, NEDA 1604, JIS006P, IEC 6F22.  
**Battery Life:** 150 hours typical with carbon-zinc



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**Dimensions:** 165mm (H) x 78mm (W) x 42.5mm (D)

**Weight:** Approx. 285g

**Includes:** TL16 test leads, 1 x spare fuse, 9V battery (installed) and instructions

**SAFETY:**

Conforms to BS EN 61010-1, CAT III 600 V, CAT II 1000V

Class II Double Insulation

Pollution Degree: 2 for indoor use

TL16 test leads conform to BS EN 61010-031, CAT III 1000V, CAT IV 600V, 10A.

**EMC:** Conforms to BS EN 61326.

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