

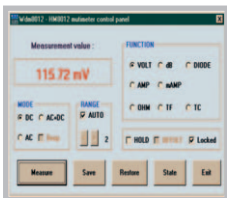
## 4<sup>3</sup>/<sub>4</sub> - Digit Programmable Multimeter HM8012



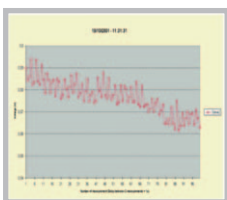
HZ15 (included)



WDM8012 Software  
(included)



WDM8012 Software  
(included)



4<sup>3</sup>/<sub>4</sub>-digit display with 50,000 counts

Basic accuracy 0.05 %

Automatic and manual range selection

Max. Resolution: 10  $\mu$ V, 0.01 dBm, 10 nA, 10 m $\Omega$ , 0.1  $^{\circ}$ C/ $^{\circ}$ F

Offset function / relative value measurement  
in basic measurement functions

Input impedance >1 G $\Omega$  (0.5 V and 5 V DC range)

RS-232 Interface

PC software for control and data logging

Mainframe HM8001-2 required for operation



## 4½-Digit Programmable Multimeter HM8012

Valid at 23 °C after a 30 minute warm-up period

### DC voltage

**Measurement ranges:** 500 mV, 5 V, 50 V, 500 V, 600 V  
**Resolution:** 10 µV, 100 µV, 1 mV, 10 mV, 100 mV

**Accuracy:**  
5 V, 500 V, 600 V: ±(0.05 % of reading + 0.002 % of full scale)  
500 mV, 50 V: ±(0.05 % of reading + 0.004 % of full scale)

**Overload protection:**  
V/Ω/T°/dB/ → to COM and to chassis:  
850 V<sub>p</sub> at max. 60 Hz or 600 V<sub>DC</sub>  
COM against chassis: 250 V<sub>rms</sub> at max. 60 Hz or 250 V<sub>DC</sub>

**Input resistance:**  
5 V, 500 V, 600 V: 10 MΩ || 90 pF  
500 mV, 50 V: > 1 GΩ || 90 pF

**Input current:** 10 A  
**Common mode rejection ratio:** ≥ 100 dB (50/60 Hz ± 0.5 %)  
**Serial mode rejection ratio:** ≥ 60 dB (50/60 Hz ± 0.5 %)

### dB Mode

**Accuracy:** ±(0.02 dB + 2 digits) [display > -38.7 dBm]  
**Resolution:** 0.01 dB above 18 % of rating

### DC current

**Measurement ranges:** 500 µA, 5 mA, 50 mA, 500 mA, 10 A  
**Resolution:** 10 nA, 100 nA, 1 µA, 10 µA, 1 mA

**Accuracy:**  
0.5-500 mA: ±(0.2 % of reading + 0.004 % of full scale)  
10 A: ±(0.3 % of reading + 0.004 % of full scale)

**Voltage drop:**  
10 A range: 0.2 V max.  
500 mA range: 2.5 V max.  
other ranges: 0.7 V max.

### AC voltage

**Measurement ranges:** 500 mV, 5 V, 50 V, 500 V, 600 V  
**Resolution:** 10 µV, 100 mV, 1 mV, 10 mV, 100 mV

**Accuracy 0.5-50 V:**  
40 Hz-5 kHz: ± (0.4 % of reading + 0.07 % of full scale)  
20 Hz-20 kHz: ± (1 % of reading + 0.07 % of full scale)

**Accuracy 500 V and 600 V:**  
40 Hz-1 kHz: ± (0.4 % of reading + 0.07 % of full scale)  
20 Hz-1 kHz: ± (1 % of reading + 0.07 % of full scale)

**Overload protection:**  
V/Ω/T°/dB/ → to COM and to chassis:  
850 V<sub>p</sub> at max. 60 Hz or 600 V<sub>DC</sub>  
COM against chassis: 250 V<sub>rms</sub> at max. 60 Hz or 250 V<sub>DC</sub>

**Input impedance**  
AC mode: 1 MΩ || 90 pF  
AC + DC mode: 10 MΩ || 90 pF

**Bandwidth at -3 dB:** 80 kHz typical  
**dB mode:** 20 Hz - 20 kHz

**Accuracy**  
-23.8 dBm to 59.8 dBm: ±0.2 dBm

**Resolution:** 0.01 dB above 9 mV  
**CMRR<sup>1)</sup>:** ≥ 60 dB (50/60 Hz ± 0.5 %)  
**Crest factor:** 7 max.

### AC current

**Measurement ranges:** 500 µA, 5 mA, 50 mA, 500 mA, 10 A  
**Resolution:** 10 nA, 100 nA, 1 µA, 10 µA, 1 mA

**Accuracy:**  
0.5 - 500 mA: ±(0.7 % of reading + 0.07 % of f.s.) 40 Hz - 5 kHz  
10 A: ±(1 % of reading + 0.07 % of full scale)

### AC + DC measurements

As shown for AC + 25 digits

### Resistance

**Measurement ranges:** 500 Ω, 5 kΩ, 50 kΩ, 500 kΩ, 5 MΩ, 50 MΩ  
**Resolution:** 10 mΩ, 100 mΩ, 1 Ω, 10 Ω, 100 Ω, 1 kΩ

**Accuracy:**  
500 Ω to 500 kΩ: ±(0.05 % of reading + 0.004 % of f.s.+50 mΩ)  
5 MΩ to 50 MΩ: ±(0.3 % of reading + 0.004 % of full scale)

Input protection max. 300 V<sub>rms</sub>  
**Measurement current:**  
500 Ω-5 kΩ range: 1 mA  
50 kΩ range: 100 µA  
500 kΩ range: 10 µA  
5-50 MΩ range: 100 nA

**Measurement voltage:** 10 V typical for open inputs, depending on the value of resistance to be measured. Negative polarity of measurement voltage is across common terminal.

### Temperature

**2-wire resistance measurement** with linearization for PT100 sensors as per standard EN60751

**Range:** -200 °C to +500 °C  
**Resolution:** 0.1 °C  
**Measurement current:** approx. 1 mA  
**Display:** in °C, °F  
**Accuracy:** ± (0.4 °C + 0.0005 x T) from -200 °C to +200 °C  
± (0.5 °C + 0.0005 x T) from +200 °C to +500 °C  
(T in °C, sensor tolerance not included)

### Temperature coefficient: (reference 23°C)

V = 500 mV, 50 V 30 ppm/°C  
600 V range 80 ppm/°C  
other ranges 20 ppm/°C  
V ~ 600 V range 80 ppm/°C  
other ranges 50 ppm/°C  
mA all ranges 200 ppm/°C  
mA-all ranges 300 ppm/°C  
Ω 5 MΩ, 50 MΩ ranges 200 ppm/°C  
other ranges 50 ppm/°C

### Miscellaneous

**Power supply (from mainframe):**  
+5 V 300 mA  
-26 V 140 mA

**Operating temperature:** +10 °C to +40 °C  
**Max. relative humidity:** 80 % (without condensation)

**Dimensions ( W x H x D ) (without 22-pole flat plug):**  
135 x 68 x 228 mm

**Weight:** approx. 0.5 kg

**Accessories supplied:** Operator's Manual, HZ15 PVC test leads, Software CD and interface cable

**Optional accessories:**  
HZ10S/R Silicone test lead  
HZ812 PT100 Temperature probe

www.hameg.com