

## 4¾-Digit Programmable Multimeter HM8012

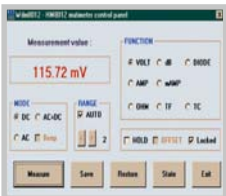
HM8012



HZ15 (included)



WDM8012 Software  
(included)



- 4¾-Digit Display with 50,000 Counts
- Basic Accuracy 0.05%
- Max. Resolution: 10µV, 0.01dBm, 10nA, 10mΩ, 0.1°C
- Offset Function/Relative Value Measurement
- RS-232 Interface and Software included

Mainframe HM8001-2  
required for Operation

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

All data valid at 23 °C after 30 minutes warm-up.

### DC voltage

<b>Measurement ranges:</b>	500 mV, 5V, 50V, 500V, 600V
<b>Resolution:</b>	10 µV, 100 µV, 1 mV, 10 mV, 100 mV
<b>Accuracy:</b>	
5V, 500V, 600V	±(0.05% of reading + 0.002% of full scale)
500 mV, 50V	±(0.05% of reading + 0.004% of full scale)
<b>Overload protection:</b>	
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>
<b>Input resistance:</b>	
50V, 500V, 600V	10 MΩ    90 pF
500 mV, 5V	>1 GΩ    90 pF
<b>Input current:</b>	10 pA
<b>Common mode rejection ratio:</b>	≥100 dB (50...60 Hz ±0.5%)
<b>Serial mode rejection ratio:</b>	≥60 dB (50...60 Hz ±0.5%)

### dB Mode

<b>Accuracy:</b>	±(0.02 dB + 2 digits) (display >-38.7 dBm)
<b>Resolution:</b>	0.01 dB above 18% of rating

### DC current

<b>Measurement ranges:</b>	500 µA, 5 mA, 50 mA, 500 mA, 10 A
<b>Resolution:</b>	10 nA, 100 nA, 1 µA, 10 µA, 1 mA
<b>Accuracy:</b>	
0.5...500 mA	±(0.2% of reading + 0.004% of full scale)
10 A	±(0.3% of reading + 0.004% of full scale)
<b>Voltage drop:</b>	
10 A range	0.2 V max.
500 mA range	2.5 V max.
other ranges	0.7 V max.

### AC voltage

<b>Measurement ranges:</b>	500 mV, 5V, 50V, 500V, 600V
<b>Resolution:</b>	10 µV, 100 µV, 1 mV, 10 mV, 100 mV
<b>Accuracy 0.5...50V:</b>	
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)
<b>Accuracy 500V and 600V:</b>	
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)
<b>Overload protection:</b>	
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>
<b>Input impedance</b>	
AC mode	1 MΩ    90 pF
AC + DC mode	10 MΩ    90 pF
<b>Bandwidth at -3 dB:</b>	80 kHz typical
<b>dB mode:</b>	20 Hz...20 kHz
<b>Accuracy</b>	
-23.8...59.8 dBm	±0.2 dBm
<b>Resolution:</b>	0.01 dB above 9 mV
<b>CMRR:</b>	≥60 dB (50...60 Hz ±0.5%)
<b>Crest factor:</b>	7 max.

### AC current

<b>Measurement ranges:</b>	500 µA, 5 mA, 50 mA, 500 mA, 10 A
<b>Resolution:</b>	10 nA, 100 nA, 1 µA, 10 µA, 1 mA
<b>Accuracy:</b>	
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

<b>Measurement ranges:</b>	500 Ω, 5 kΩ, 50 kΩ, 500 kΩ, 5 MΩ, 50 MΩ
<b>Resolution:</b>	10 mΩ, 100 mΩ, 1 Ω, 10 Ω, 100 Ω, 1 kΩ
<b>Accuracy:</b>	
500 Ω...500 kΩ	±(0.05% of reading + 0.004% of f.s. + 50 mΩ)
5...50 MΩ	±(0.3% of reading + 0.004% of full scale)
<b>Overload Protection:</b>	max. 300 V <sub>rms</sub>
<b>Measurement current:</b>	
500 Ω...5kΩ range:	1 mA
50 kΩ range:	100 µA
500 kΩ range:	10 µA
5...50 MΩ range:	100 nA
<b>Measurement voltage:</b>	10V typical for open inputs, depending on the value of resistance to be measured. Negative polarity of measurement voltage is across common terminal.

### Temperature

<b>2-wire resistance measurement:</b>	with linearization for PT100 sensors as per standard EN60751
<b>Range:</b>	-200...+500 °C
<b>Resolution:</b>	0.1 °C
<b>Measurement current:</b>	approx. 1 mA
<b>Display:</b>	in °C, °F
<b>Accuracy:</b>	±(0.4 °C + 0.0005 x T) from -200...+200 °C ±(0.5 °C + 0.0005 x T) from +200...+500 °C (T in °C, sensor tolerance not included)

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

V = 500 mV, 50V	30 ppm/°C
600V range	80 ppm/°C
other ranges	20 ppm/°C
V ~ 600V 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

<b>Power supply (from mainframe):</b>	
+5V	300 mA
-26V	140 mA
<b>Operating temperature:</b>	+5...+40 °C
<b>Storage temperature:</b>	-20...+70 °C
<b>Rel. humidity:</b>	5...80% (non condensing)
<b>Dimensions (W x H x D)</b>	
<b>(without 22-pole flat plug):</b>	135 x 68 x 228 mm
<b>Weight:</b>	approx. 0.5 kg

**Accessories supplied:** Operating manual, Interface cable (HZ14), PVC test leads (HZ15), CD, Software

### Recommended accessories:

HZ10S	5 x silicone test lead (measurement connection in black)
HZ10R	5 x silicone test lead (measurement connection in red)
HZ10B	5 x silicone test lead (measurement connection in blue)
HZ812	PT100 Temperature probe