

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

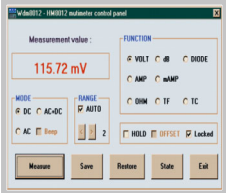
HM8012



HZ15 (included)



WDM8012 Software  
(included)



- 4<sup>3</sup>/<sub>4</sub>-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

## 4½-Digit Programmable Multimeter HM8012

All data valid at 23 °C after 30 minute 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)<br>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:<br>850 V <sub>p</sub> at max. 60 Hz or 600 V <sub>DC</sub><br>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<br>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)<br>10 A: ±(0.3 % of reading + 0.004 % of full scale) |
| <b>Voltage drop:</b>       | 10 A range: 0.2 V max.<br>500 mA range: 2.5 V max.<br>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)<br>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)<br>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:<br>850 V <sub>p</sub> at max. 60 Hz or 600 V <sub>DC</sub><br>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<br>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 dBm...59.8 dBm: ±0.2 dBm  |
| <b>Resolution:</b>             | 0.01 dB above 9 mV  |
| <b>CMRR<sup>1)</sup>:</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<br>10 A: ±(1 % of reading + 0.07 % of full scale) |

### AC + DC measurements

As shown for AC + 25 digit

### 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)<br>5 MΩ...50 MΩ: ±(0.3 % of reading + 0.004 % of full scale)<br>Input protection max. 300 V <sub>rms</sub> |
| <b>Measurement current:</b> | 500 Ω...5 kΩ range: 1 mA<br>50 kΩ range: 100 µA<br>500 kΩ range: 10 µA<br>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

|                             |  |
|-----------------------------|--|
| <b>Range:</b>               | -200 °C...+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 °C...+200 °C<br>± (0.5 °C + 0.0005 x T) from +200 °C...+500 °C<br>[T in °C, sensor tolerance not included] |

### Temperature coefficient: [reference 23°C]

|                      |            |
|----------------------|------------|
| V = 500 mV, 50V      | 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

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

**Accessories supplied:** Operator's Manual, HZ15 PVC test leads, Software CD and interface cable HZ14

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

www.hameg.com