

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



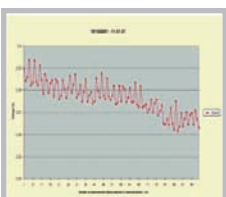
HZ15 (included)



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



## 4 1/2 -Digit programmable Multimeter HM8012

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

### DC voltage

**Measurement ranges:** 500 mV, 5V, 50V, 500V, 600V

**Resolution:** 10 µV, 100 µV, 1 mV, 10 mV, 100 mV

#### Accuracy:

5V, 500V, 600V: ±(0.05 % of reading + 0.002 % of full scale)

500 mV, 50V: ±(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:

50V, 500V, 600V: 10 MΩ || 90 pF

500 mV, 5V: > 1 GΩ || 90 pF

#### Input current:

10 A

**CMRR<sup>1)</sup>:** ≥ 100 dB (50/60 Hz ± 0.5 %)

**SMRR<sup>2)</sup>:** ≥ 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, 5V, 50V, 500V, 600V

**Resolution:** 10 µV, 100 µV, 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:** ± 0.1° C from - 200° C to + 200° C

± 0.2° C from 200° C to 500° C

(exception: sensor tolerance)

### 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

#### Power supply (from mainframe):

+ 5V 300 mA

-26V 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

<sup>1)</sup> Common mode rejection ratio

<sup>2)</sup> Serial mode rejection ratio

**Accessories supplied:** Operator's Manual, HZ15 PVC test leads, HM8012: + Software CD and interface cable

**Optional accessories:** HZ10 Silicone test leads, HZ812 PT100 Temperature Sensor

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