

4³/₄ - Digit Multimeter HM8010



4³/₄-digit display with 50,000 counts, basic accuracy 0.05 %

Automatic and manual range selection

Max. resolution 10 μ V, 0.01 dBm, 10 nA, 10 m Ω , 0.1 $^{\circ}$ C/ $^{\circ}$ F

Offset function / relative value measurement in basic measurement functions

Input impedance >1 G Ω (0.5V and 5V DC range)

Mainframe HM8001-2 or HM8003 required for operation

Temperature Sensor HZ812



HZ15 (included)



Mainframe HM8001-2



4 3/4 -Digit Multimeter HM 8010

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_p at max. 60 Hz or 600 V_{DC}

COM against chassis: 250 V_{rms} at max. 60 Hz or 250 V_{DC}

Input resistance:

50 V, 500 V, 600 V: 10 MΩ || 90 pF

500 mV, 5 V: > 1 GΩ || 90 pF

Input current: 10 A

CMRR¹⁾: ≥ 100 dB (50/60 Hz ± 0.5 %)

SMRR²⁾: ≥ 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 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_p at max. 60 Hz or 600 V_{DC}

COM against chassis: 250 V_{rms} at max. 60 Hz or 250 V_{DC}

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

CMRR¹⁾: ≥ 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_{rms}

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, 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

¹⁾ Common mode rejection ratio

²⁾ 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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