HAMEG®
Instruments

4¾ - Digit Multimeter
HM8010

Temperature Sensor HZ812

4¾-digit display with 50,000 counts, basic accuracy 0.05 %

Automatic and manual range selection

Max. resolution 10 µV, 0.01 dBm, 10 nA, 10 mΩ, 0.1 °C/°F

Offset function / relative value measurement in basic measurement functions

HZ15 (included)

Input impedance ›1 GΩ (0.5 V and 5 V DC range)

Mainframe HM8001-2 required for operation

Mainframe HM8001-2

4¾ -Digit Multimeter HM8010
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 II 90 pF
500 mV, 5 V:	› 1 GΩ II 90 pF
Input current:	10 A
CMRR[1]:	≥ 100 dB (50/60Hz ± 0.5 %)
SMRR[2]:	≥ 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_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 II 90 pF
AC + DC mode:	10 MΩ II 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[1]:	≥ 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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