HAMEG Instruments

4¾-Digit Programmable Multimeter
HM8012

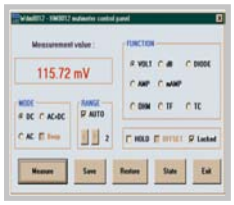
HM8012

inclusive

RS-232

HZ15 (included)

WDM8012 Software (included)



Mainframe HM8001-2 required for operation

- ☑ 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

4¾-Digit Programmable Multimeter HM8012

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

DC voltage

Measurement ranges:	500 mV, 5 V, 50 V, 500 V, 600 V
Resolution:	10 µV, 100 µV, 1 m V, 10 m V, 100 m V
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 pA
Common mode rejection ratio:	≥ 100 dB (50/60Hz ± 0.5 %)
Serial mode rejection ratio:	≥ 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 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...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 digit

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...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)	
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...+500 °C
Resolution:	0.1 °C
Measurement current:	approx. 1 mA
Display:	in °C, °F
Accuracy:	± (0.4 °C +0.0005 x T) from -200 °C...+200 °C ± (0.5 °C +0.0005 x T) from +200 °C...+500 °C (T in °C, sensor tolerance not included)

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:	+5...+40 °C
Storage temperature:	-20...+70 °C
Rel. humidity:	5...80% (non condensing)
Dimensions (W x H x D) **(without 22-pole flat plug):**	
	135 x 68 x 228 mm
Weight:	approx. 0.5 kg

Accessories supplied: Operator's Manual, Interface cable (HZ14), PVC test leads (HZ15), RS-232 Interface, Software CD

Optional 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