HM8012
4¾-Digit–Multimeter
Technical Data

HAMEG® Instruments
A Rohde&Schwarz Company

Key facts

- 4¾ digit display with 50,000 counts
- Basic accuracy 0.05%
- Automatic and manual range selection
- Max. resolution 10µV, 0.01dBm, 10nA, 10mΩ, 0.1°C/°F
- Offset function/relative value measurement in basicmeasurement functions
- Input impedance ›1GΩ (0.5V and 5V DC range)
- RS-232 interface
- PC software for control and data logging
- Mainframe HM8001-2 required for operation

ROHDE&SCHWARZ

Test & Measurement

Technical Data

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4¾-Digit Multimeter
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Valid at 23 degrees C after a 30 minute warm-up period.

DC voltages		
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 rdg.[1] +0,002% of fs.[2])
	500 mV, 50 V:	± (0,05% of rdg.[1] + 0,004% of fs.[2]))
Overload protection:		
V/Ω/T°/dB/◀ against COM and to chassis:		850 Vp at max.60 Hz or 600 VDC
Low against chassis:		250 Vrms at max. 60 Hz or 250 VDC
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[3]:		≥100 dB (50/60 Hz ± 0,5%)
SMRR[4]:		≥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 fs.[2]
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 rdg.[1] + 0.004% of fs.[2]),
	10 A:	±(0.3% of rdg.[1] + 0.004% of fs.[2])
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:		10µV, 100 µV, 1 mV, 10 mV, 100 mV
Accuracy 0,5 - 50 V:		
40 Hz - 5 kHz:		± (0,4% v.M. + 0,07% v.E.)
20 Hz - 20 kHz:		± (1% v.M. + 0,07% v.E.)
500 V and 600 V:		
40 Hz - 1 kHz:		± (0,4% v.M.1) + 0,07% v.E.2))
20 Hz - 1 kHz:		± (1% v.M.1) + 0,07% v.E.2))
Overload protection:		
V/Ω/T°/dB/◀ against COM and to chassis:		850 Vs at max.60 Hz or 600 VDC
Low against chassis:		250 Vs at max. 60 Hz or 250 VDC
Input impedance		
AC mode:		1 MΩ II 90pF
AC + DC mode:		10 MΩ II 90pF
Bandwidth at -3 dB:		80 kHz typical
dB Mode:		20 Hz - 20 kHz
Accuracy:		±0,2 dBm (–23,8 – 59,8 dBm)
Resolution:		0,01 dB oberhalb 9 mV
CMRR[3]:		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 rdg.[1] +0.07% of fs.[2]) for 40Hz-5kHz
	10 A:	± (1% of rdg.[1] + 0.07% of fs.[2])
AC + DC measurements		
Same as AC + 25 Digits		
Resistance		
Measurement ranges:		500 Ω, 5 kΩ, 50 kΩ, 500 kΩ, 5 MΩ, 50 MΩ
Resolution:		10 mΩ, 100 mΩ, 1Ω, 10Ω, 100Ω, 1 kΩ
Accuracy:	500 Ω bis 500 kΩ:	±(0.05% of rdg.[1]+0.004% of fs.[2]+50mΩ)
	5 MΩ und 50 MΩ:	±(0.3% of rdg.[1]+0.004% of fs.[2])
Input protected to max. 300 Veff		
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:		ca. 1 mA
Display:		in °C, °F
Accuracy:	–200 °C to +200 °C	± 0,4 °C + 0,0005 x T
	+200 °C to +500 °C	± 0,5 °C + 0,0005 x T (T in °C, sensor tolerance not included)
Temperature coefficient		
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-rang	200 ppm/°C
	other ranges	50 ppm/°C
Miscellaneous		
Operating temperature:		+ 5 °C to + 40 °C
Storage temperature:		–20 °C to + 70 °C
Max. relative humidity:		5% to 80% (without condensation)
Power supply (from HM8001-2):		
+ 5 V		300 mA
~26 V		140 mA
Size (W x H x D): (without flat 22-pole connector)		135 x 68 x 228 mm
Weight:		approx. 500g

[1] rdg. = reading; [3] = Common mode rejection ratio;
[2] fs. = full scale;

Included in delivery:
User Manual, HZ14 Interface cable, HZ15 PVC Test Leads

Accessories:

HZ10S/R/B	Silicone Test Leads
HZ812 PT100	Temperature Sensor