

HDM3055 Series True-RMS Digital Multimeter 5 ½ digit



5 1/2 reading multimeter with 1 μ V high resolution; 30 kS/s high-speed sampling frequency, which makes it easy to capture transient signals; Two sets of input interfaces front and rear, which provides convenience to arrange wires; Standard with bar chart, histogram, trend chart and data statistics functions; Double-display measurement function, displaying voltage and frequency synchronously; A variety of measurement functions: DC voltage, AC voltage, DC current, AC current, 2-line resistance, 4-line resistance, capacitance, diode, connectivity, frequency, period, temperature; 4.3-inch color LCD screen; Simple operations, abundant measurement interfaces.

- 5 1/2 reading multimeter with 1 μ V high resolution
- 30 kS/s high-speed sampling frequency, which makes it easy to capture transient signals
- Two sets of input interfaces front and rear, which provides convenience to arrange wires
- Standard with bar chart, histogram, trend chart and data statistics functions
- Double display measurement function, displaying voltage and frequency synchronously
- True RMS of AC voltage and true RMS of AC current measurements
- 0.1 μ V resolution, simple operation, flexible parameter setting
- A variety of measurement functions: DC voltage, AC voltage, DC current, AC current, 2-line resistance, 4-line resistance, capacitance, diode, connectivity, frequency, period, temperature, with the current range reaching 10 A
- 4.3-inch color LCD screen
- Safety standard: CAT II 300 V
- Support SCPI remote control command, compatible with the mainstream multimeter command set in the market, standard with upper computer control software
- Configuration interfaces: USB Device, USB Host, LAN (HDM3055B), GPIB (HDM3055H)

◆ Product model

Model	HDM3055H	HDM3055B	HDM3055A	HDM3055S	HDM3055
Resolution bit	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2
DCV basic precision	150 ppm	150 ppm	150 ppm	150 ppm	150 ppm

Maximum reading rate	30,000 rdgs/s	30,000 rdgs/s	30,000 rdgs/s	30,000 rdgs/s	30,000 rdgs/s
Memory	10,000 readings	10,000 readings	10,000 readings	10,000 readings	10,000 readings
Double-display measurement function	√	√	√	√	√
Statistical graph	Histogram, bar graph, trend graph	Histogram, bar graph, trend graph	Histogram, bar graph, trend graph	Histogram, bar graph, trend graph	Histogram, bar graph, trend graph
Interface					
USB	√	√	√	√	√
232/485	√	√	√	√	√
LAN	√	√	×	×	×
GPIB	√	×	×	×	×
Front-panel input terminal	√	√	√	×	√
Rear-panel input terminal	√	√	√	√	×

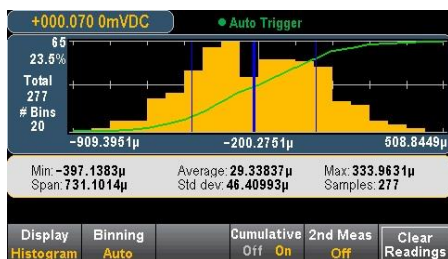
4.3-inch color LCD screen



Two sets of input interfaces front and rear, which provides convenience to arrange wires



A histogram with statistical information and a trend graph



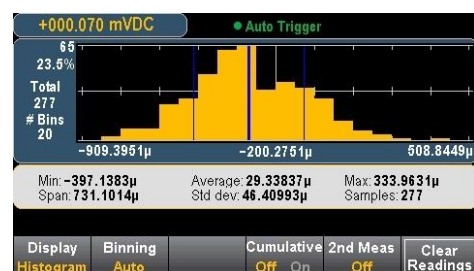
A histogram with a trend graph



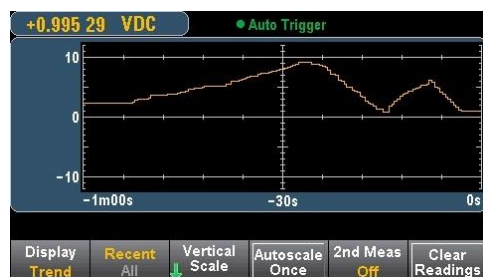
5 1/2 bit reading resolution



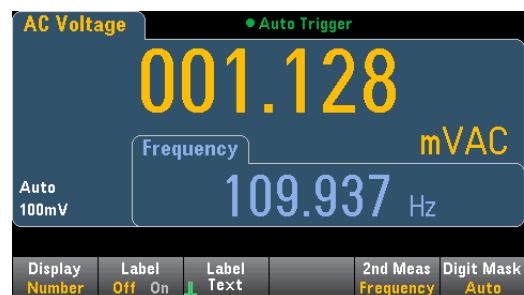
A histogram with statistical information



Trend chart



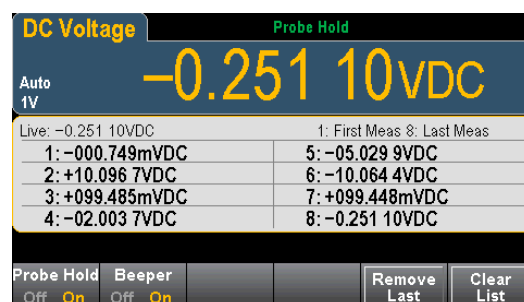
Auxiliary measurement function



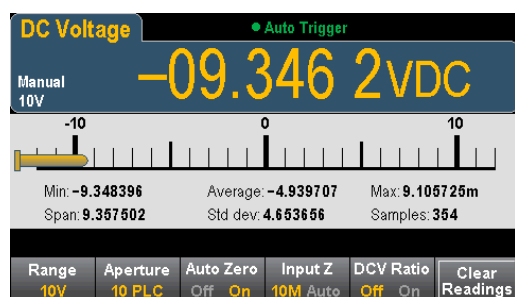
Mathematical statistical function



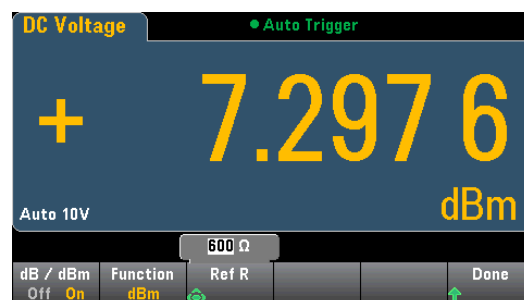
Hold measurement function



Bar table



Mathematical operations-dB/dBm measurement



Technical specification

DC precision technical index: $\pm$ (% reading + % range)

Range ¹ /Frequency	Test current or Load voltage	Input impedance	1 year	Temperature coefficient/°C
DC voltage			23°C $\pm$ 5 °C	0 °C-18 °C
100 mV	—	10 MΩ or>10 GΩ	0.018 + 0.008	28 °C-55 °C
1 V	—	10 MΩor>10 GΩ	0.015 + 0.005	0.0015 + 0.0008
10 V	—	10 MΩ	0.015 + 0.005	0.0020 + 0.0008
100 V	—	10 MΩ	0.015 + 0.005	0.0020 + 0.0008
1000 V	—	10 MΩ	0.015 + 0.005	0.0020 + 0.0008
resistance ²				
100 Ω	1 mA	—	0.050 + 0.008	0.0060 + 0.0008
1k Ω	1 mA	—	0.050 + 0.008	0.0060 + 0.0005

10 kΩ	100 μA	—	0.050 + 0.005	0.0060 + 0.0005
100 kΩ	10 μA	—	0.050 + 0.005	0.0060 + 0.0005
1 MΩ	5 μA	—	0.060 + 0.005	0.0060 + 0.0005
10 MΩ	500 nA	—	0.250 + 0.005	0.0250 + 0.0005
100 MΩ	500 nA 10 MΩ	—	2.000 + 0.005	0.3000 + 0.0005
DC				
100 μA	<0.02 V	—	0.050 + 0.015	0.007 + 0.0015
1 mA	<0.2 V	—	0.050 + 0.007	0.007 + 0.0010
10 mA	<0.02 V	—	0.050 + 0.015	0.008 + 0.0015
100 mA	<0.2 V	—	0.050 + 0.007	0.008 + 0.0010
1 A	<0.1 V	—	0.100 + 0.015	0.012 + 0.0015
3 A	<0.3 V	—	0.250 + 0.007	0.015 + 0.0010
10 A	<0.02 V	—	0.250 + 0.007	0.015 + 0.0010
Breakover ³				
1 kΩ	1 mA	—	0.100 + 0.100	0.005 + 0.005
Diode test ⁴				
5 V	1 mA	—	0.05 + 0.03	0.005 + 0.005
ACprecision technical index: ± (% reading + % range)				
True RMS AC voltage ^{5,6}	Test current or Load voltage	Input impedance	1 year	Temperature coefficient/°C
			23 °C± 5 °C	0 °C-18 °C
				28 °C-55 °C
100 mV Range				
20 Hz-45 Hz	—	—	1.00 + 0.10	0.02 + 0.02
45 Hz-10 kHz	—	—	0.20 + 0.10	0.02 + 0.02
10 kHz-30 kHz	—	—	1.50 + 0.30	0.05 + 0.02
30 kHz-100 kHz ⁷	—	—	3.00 + 0.30	0.10 + 0.02
Range: 1 V, 10 V, 100 V and 750 V				

20 Hz-45 Hz	—	—	1.00+0.10 ⁸	0.02+0.02
45 kHz-10 kHz	—	—	0.20+0.10	0.02+0.02
10 kHz-30 kHz	—	—	1.50+0.30	0.05+0.02
30 kHz-100 kHz ³	—	—	3.00+0.30 ⁹	0.10+0.02
True RMS AC current ²				
Range: 100 uA-10 A				
20Hz-45 Hz	—	—	1.50 + 0.10	0.02+0.02
45Hz-1 kHz	—	—	0.50 + 0.10	0.02+0.02
1 kHz-10 kHz ¹⁰	—	—	2.00 + 0.20	0.02+0.02
Frequency: technical index ±(% reading+3 counts)				
Frequency range ¹¹ : 100 mV,1 V,10 V,100 V and 750 V				
20 Hz – 300 kHz ¹²	—	—	0.02+3	0.005
Frequency resolution	Frequency		Resolution	
Range ¹³ : 100 mV,1 V,10 V,100 V and 750 V	119.999 Hz		0.001 Hz	
	1.19999 kHz		0.00001 kHz	
	11.9999 kHz		0.0001 kHz	
	119.999 kHz		0.001 kHz	
	1.00000 MHz		0.00001 MHz	
Capacitance ¹	Test current or probe type	Input impedance	1 year	Temperature coefficient/°C
			23 °C± 5 °C	0 °C-18 °C
				28 °C-55 °C
1.000 nF	5 µA	—	1. + 0.5	0.02 + 0.001
10.00 nF	5 µA	—	1 + 0.5	0.02 + 0.001
100.0 nF	10 µA	—	1 + 0.5	0.02 + 0.001
1.000 µF	100 µA	—	1 + 0.5	0.02 + 0.001
10.000 µF	1 mA	—	1 + 0.5	0.02 + 0.001
100.00 µF	1 mA	—	1 + 0.5	0.02 + 0.001

Technical indicators are valid in the following cases: preheating for 90 minutes, setting integral time to 10 or 100NPLC, enabling automatic zero. The temperature for the calibration should be within 18°C-28°C.

1. Except for 1000DCV and 3A/10ADC, all ranges have a 20% overrange.
2. Technical indicators are suitable for 4-wire or 2-wire resistance measurement. However, if not pressing the "Null" key ahead of time to eliminate the offset, 2-wire resistance measurement will increase 0.2Ω additional error.
3. Continuous threshold value is fixed less than 10 Ω and only available in the fast measurement mode.
4. Technical indicators are only suitable for the voltage measured at the input terminal and only available in the fast measurement mode.
5. Except for 750VAC and ACI 3A/10A, all ranges have a 20% overrange.
6. If the measuring range is not 750 V, technical indicators are valid only if the input signal is a sinusoidal signal and the amplitude of it >5% of the current measuring range.

When adopting the 750 V range, the input signal must be greater than 50 Vrms.

7. When the input signal frequency > 30 kHz and the input signal amplitude < 10% of the current measuring range, an additional error will occur. If the frequency is 30 kHz ~ 100 kHz, each 1kHz will increase the additional error by 0.003% of the range.
8. Input < 200Vrms
9. Input < 300Vrms
10. The technical indicators are suitable when frequency < 5 kHz. The frequency which ≥ 5KHz is a typical value.
11. Frequencies up to 1 MHz can be measured when 0.5Vrms signal inputs at the 100 mV / 1 V gear.
12. Technical Indicators are suitable for all gears when input signal > 10% of the range except for specially specified gears. The technical indicators for 100 mV range can only be applied when the input signal is between 100 mV to 120 mV. When the input signal is between 10 mV and 100 mV, the indicator number should be multiplied by 10.
13. Frequency up to 1 MHz can be measured when 0.5Vrms signal input is at the 100 mV / 1 V gear.