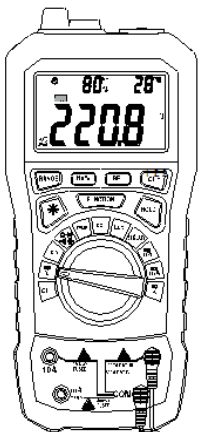


ETHOS 5050 SPECIFICATION

General Specification

Environment condition of using	600V CAT IV and 1000V CAT III
Pollution level	2
Altitude	< 2000 m
Working environment temperature and humidity	0~40°C (<80% RH, <10°C non condensing)
Storage environment temperature and humidity	-10~60°C (<70% RH, remove the battery)
Temperature coefficient	0.1× accuracy /°C (<18°C or >28°C)
Maximum voltage allowed between the measuring terminal and the ground	1000V DC or 750V AC RMS
Fuse protection	mA shift: fuse F400mA/1000V; 10A shift: F10A/1000V
Sampling rate	about 3 times/second
Display	4000 counter readout, temperature and humidity are displayed separately. Automatically display the unit symbols according to the shift of the measurement function
Super range indication	it displays "OL"
Low battery indication	when the battery voltage is lower than the normal working voltage, "⚡" will be displayed
Input polarity indication	automatically display "-"
Power supply	4 x 1.5V AA batteries
Dimension	204(L) × 94(W) × 57(H) mm
Weight	about 410g (including batteries)



VERSION 1 08/17

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Accuracy Specification

The accuracy applies within one year after the calibration. Reference condition: the environment temperature 18°C to 28°C, the relative humidity is no more than 80%, accuracy: \pm (% reading + word).

DC Voltage

Range	Resolution	Accuracy	Input impedance:10M Ω Overload protection: 1000V DC or 750V AC(RMS) Maximum input voltage:1000V DC Note: For small voltage range, if the probe doesn't contact the circuit to be measured, it's normal that there may be bouncing readings which is caused by high sensitivity of the instrument. When the probe is connected to the circuit to be measured, you can obtain the true measurement value.
400mV	0.1mV	\pm (0.7% reading+2)	
4V	0.001V		
40V	0.01V		
400V	0.1V		
1000V	1V		

AC Voltage

Range	Resolution	Accuracy	Input impedance:10M Ω Overload protection: 1000V DC or 750V AC(RMS) Maximum input voltage:750V AC (RMS) Note: For small voltage range, if the probe doesn't contact the circuit to be measured, it's normal that there may be bouncing readings which is caused by high sensitivity of the instrument. When the probe is connected to the circuit to be measured, you can obtain the true measurement value.
400mV	0.1mV	\pm (0.8% reading+3)	
4V	0.001V		
40V	0.01V		
400V	0.1V		
750V	1V	\pm (1.0% reading +3)	

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DC Voltage

Range	Resolution	Accuracy	Overload protection: μ A, mA Range: 400mA/1000V fuse (ultra-speed) 10A range: 10A/1000V fuse (ultra-speed) Maximum input current: mA socket: 400mA 10A socket: 10A
400 μ A	0.1 μ A	$\pm(1.2\%$ reading +3)	
4000 μ A	1 μ A		
40mA	0.01mA		
400mA	0.1mA	$\pm(2.0\%$ reading +10)	
4A	0.001A		
10A	0.01A		

AC Current

Range	Resolution	Accuracy	Overload protection: μ A mA range: 400mA/1000V fuse (ultra-speed fuse) 10A range: 10A/1000V fuse (ultra- speed fuse) Maximum input current: mA socket: 400mA 10A socket: 10A Frequency range: 40~400Hz Response: average value (sinusoidal RMS)
400 μ A	0.1 μ A	$\pm(1.5\%$ reading +5)	
4000 μ A	1 μ A		
40mA	0.01mA		
400mA	0.1mA	$\pm(3.0\%$ reading +10)	
4A	0.001A		
10A	0.01A		

Resistance

Range	Resolution	Accuracy	Overload protection:1000V DC or 750V AC (RMS) The open circuit voltage: about 0.5V
400 Ω	0.1 Ω	$\pm(1.2\%$ reading+2)	
4k Ω	0.001k Ω		
40k Ω	0.01k Ω		
400k Ω	0.1k Ω		
4M Ω	0.001M Ω	$\pm(2.0\%$ reading +5)	
40M Ω	0.01M Ω		


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Connectivity Test

Range	Function	
	The resistance of the measured circuit is less than 50Ω. The buzzer contained in the instrument will sound.	The open circuit voltage is about 0.5V Overload protection: 1000V DC or 750V AC (RMS)

Capacitance

Range	Resolution	Accuracy	
40nF	0.01nF	±(3.0% reading+3)	Overload protection: 1000V DC or 750V AC (RMS) Note: The parameter does not include the errors caused by the capacitor and capacitance substrate (in 40nF range it may be up to a few nF). The user can use the relative value measurement function to reduce the error.
400nF	0.1nF		
4μF	0.001μF		
40μF	0.01μF		
100μF	0.1μF		

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Frequency and Duty

Range	Resolution	Accuracy	
9.999Hz	0.001Hz	$\pm(2.0\%$ reading+5)	Through shift of Hz: 1) Measurement range: 0 ~ 200kHz 2) Input voltage range: 0.5~10V AC (RMS) (the input voltage should be increased with the increase of the measured frequency) 3) Overload protection: 1000V DC or 750V AC (RMS) Through shift of V: 1) Measurement range: 0 ~ 40kHz 2) Input voltage range: 0.5~750V AC(RMS) (the input voltage should be increased with the increase of the measured frequency) 3) Maximum input voltage:1000V DC or 750V AC (RMS) Through shift of μ A, mA, A: 1) Measurement range: 0 ~ 40kHz 2) Input signal range: $\geq \frac{1}{4}$ range (the input current should be increased with the increase of the measured frequency) 3) Input protection: μ A, mA Range: F400mA/1000V; 10A Range: F10A/1000V
99.99Hz	0.01Hz	$\pm(1.5\%$ reading+5)	
999.9Hz	0.1Hz		
9.999kHz	1Hz		
99.99kHz	10Hz	$\pm(2.0\%$ reading+5)	
199.9kHz	100Hz		
>200kHz		Just for reference	
0.1~99.9%	0.1%	$\pm 3.0\%$	

Note:

Compared with the range of measurement by using the "Hz" function of voltage and current shifts, using shift "Hz" to measure the frequency has larger range, however the measurement values exceeding the scope in above table are just for reference.


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Diode Test

Range	Resolution	Function	
	1mV	It displays the approximate forward voltage value of the diode	Forward DC current is about 1mA Reverse DC voltage is about 1.5V Overload protection: 1000V DC or 750V AC (RMS)

Noise (dB)

Range	Resolution	Accuracy	
40-100dB	0.1 dB	± 3.5% dB at 94dB, 1kHz Sine wave	Frequency range: 100 ~ 8000Hz

Illuminance (Lux)

Range	Resolution	Accuracy	Repeatability: ±2%
Lux (4000)	1 Lux	± (5.0% reading+10)	Calibrated under standard incandescent lamp with color temperature 2856k.
×10Lux (40000)	10Lux		

Humidity (RH, shown in humidity display area)

Range	Resolution	Accuracy	Working temperature: 0~40°C Sampling period: about 20s
20 - 95%	0.1%	± 5.0% RH	

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Temperature

Normal temperature (temperature display area)

Range	Resolution	Accuracy		Sampling period: about 20s
°C	0.1°C	0°C to 40°C	± 2°C	
°F	0.1°F	32°F to 104°F	± 4°F	

Temperature measurement by thermocouple (main display area)

Range	Resolution	Accuracy		Overload protection: fuse 400mA/1000V
°C	1°C	-20°C ~ 0°C	± 5.0% reading or ± 3°C	
		0°C ~ 400°C	± 1.0% reading or ± 2°C	
		400°C ~ 1000°C	± 2.0% reading	
°F	1°F	-4°F ~ 32°F	± 5.0% reading or ± 6°F	
		32°F ~ 752°F	± 1.0% reading or ± 4°F	
		752°F ~ 1832°F	± 2.0% reading	

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