CMS101 Digital Oscilloscope&Multimeter Clamp Meter Specification

Standard conditions: The environment temperature is 18℃ to 28℃,the relative humidity is less than 80%.

Note:

- When measuring AC voltage,AC current, accuracy guarantee range is 10% to 100% of the range.
- When measuring DC voltage, DC current or capacitance, accuracy guarantee range is 5% to 100% of the range.

Multimeter Specification

<table>
<tr><th colspan="2">Function</th><th>Measurement Range</th><th>Resolution</th><th colspan="2">Function</th></tr>
<tr><td rowspan="5">DC Voltage (V)</td><td rowspan="2">mV</td><td>20.000mV</td><td>0.001mV</td><td colspan="2">±（0.1%+20dig）</td></tr>
<tr><td>200.00mV</td><td>0.01mV</td><td colspan="2">±（0.1%+6dig）</td></tr>
<tr><td rowspan="3">V</td><td>2.0000V</td><td>0.0001V</td><td colspan="2" rowspan="3">±（0.1%+5dig）</td></tr>
<tr><td>20.000V</td><td>0.001V</td></tr>
<tr><td>200.00V</td><td>0.01V</td></tr>
<tr><td></td><td>1000.0V</td><td>0.1V</td><td colspan="2">±（0.15%+5dig）</td></tr>
<tr><td rowspan="5">AC Voltage (V)</td><td>mV</td><td>200.00mV</td><td>0.01 mV</td><td rowspan="4">VRMS
Freq range:
40Hz-1000Hz</td><td rowspan="3">±（0.6%+10dig）</td></tr>
<tr><td rowspan="3">V</td><td>2.0000V</td><td>0.0001V</td></tr>
<tr><td>20.000V</td><td>0.001V</td></tr>
<tr><td>200.00V</td><td>0.01mV</td></tr>
<tr><td></td><td>1000.0V</td><td>0.1V</td><td>±（0.8%+10dig）</td></tr>
<tr><td rowspan="3">DC Current (A)</td><td rowspan="3">A</td><td>20.00A</td><td>0.01A</td><td colspan="2">±（2.0%+10dig）</td></tr>
<tr><td>200.0A</td><td>0.1A</td><td colspan="2" rowspan="2">±（2.0%+5dig）</td></tr>
<tr><td>1000A</td><td>1A</td></tr>
<tr><td rowspan="3">AC Current (A)</td><td rowspan="3">A</td><td>20.00A</td><td>0.01A</td><td rowspan="3">VRMS
Freq range:
40Hz-1000Hz</td><td>±（3.0%+10dig）</td></tr>
<tr><td>200.0A</td><td>0.1A</td><td rowspan="2">±（2.5%+5dig）</td></tr>
<tr><td>1000A</td><td>1A</td></tr>
<tr><td rowspan="3">Inrush Current(A)</td><td rowspan="3">A</td><td>20.00A</td><td>0.01A</td><td rowspan="3">VRMS
Freq range:
40Hz-1000Hz</td><td rowspan="3">±（10.0%+10dig）</td></tr>
<tr><td>200.0A</td><td>0.1A</td></tr>
<tr><td>1000A</td><td>1A</td></tr>
<tr><td colspan="2">NCV</td><td colspan="4">Support</td></tr>
<tr><td rowspan="3" colspan="2">Resistance(Ω)</td><td>200.00Ω</td><td>0.01Ω</td><td colspan="2">±（0.8%+10dig）</td></tr>
<tr><td>2.0000kΩ</td><td>0.0001kΩ</td><td colspan="2" rowspan="2">±（0.3%+10dig）</td></tr>
<tr><td>20.000kΩ</td><td>0.001kΩ</td></tr>
</table>

	200.00kΩ	0.01kΩ	
	2.0000MΩ	0.0001MΩ	
	20.000MΩ	0.001MΩ	±（0.5%+5dig）
	100.00MΩ	0.01MΩ	±（5.0%+10dig）
Capacitance(F)	2.000nF	0.001nF	±（5.0%+10dig）
	20.00nF	0.01nF	±（3.0%+10dig）
	200.0nF	0.1nF	
	2.000μF	0.001μF	
	20.00μF	0.01μF	
	200.0μF	0.1μF	
	2.000mF	0.001mF	
	20.00mF[1]	0.01mF	
Frequency [2](Hz)	200.00Hz	0.01Hz	±（0.1%+5dig）
	2.0000kHz	0.0001kHz	
	20.000kHz	0.001kHz	
	200.00kHz	0.01kHz	
	2.0000MHz	0.0001MHz	
	20.000MHz	0.001MHz	
Duty Cycle [3](%)	0.1%-99.9%（Typical: Vrms=1 V, f=100Hz）	0.10%	±（1.2%+3dig）
	0.1%-99.9%（≥1 kHz）		±（2.5%+10dig）
Diode	3.0000V	0.0001V	Open circuit voltage 3.2V
On-Off	0～200.0Ω	0.1Ω	Buzzer limit 50Ω; The measurement value is displayed from 00 to 200.0Ω, and "OL" is displayed if the value exceeds.

[1] When measuring capacitance, for the 20.00mF range, the measuring duration should be over 30 seconds.

[2] When measuring frequency, the typical waveform is Square or Sine. The signal meets the following conditions:

Frequency	Amplitude (rms)
1 Hz – 20 MHz	≥ 1 V

[3] When measuring duty cycle, the typical waveform is Square.

Note: when measuring resistance and capacitance, the influence of the resistance reactance of the pen itself on the measured value should be considered.

Oscilloscope Specification

Characteristics	Instruction
Analog bandwidth	Voltage: 1MHz Current: 1KHz
Sample mode	Real-time sample
Real-time sampling rate	5.0 MSa/s
Channel	1
Input impedance	≥10 MΩ
Maximum input voltage	Maximum peak voltage 1000V
Maximum sample current	Maximum peak current 1000A
Scan speed	2.5 us/div - 10 s/div
Time base accuracy	±(0.01 % + 0.1 div)
Sensitivity	30 mV/div - 500 V/div
Displacement range	±3 grid
Sensitivity accuracy	±(5%+0.2div)
Measurement value	Rms、Freq、Max、Min、PK-PK、Avg
Trigger mode	Auto
Trigger type	Rise、Fall
Bluetooth communication	A smart phone can be used to view the measurement data of the multimeter on the mobile phone side, perform remote control, display data charts, and store the measurement data in CSV format.
Automatic shutdown	When all functions are not used, the meter will automatically shut down in about 10 minutes.(the default is 10 minutes of automatic shutdown when starting, which can be canceled)
True effective value	√
Display mode	DMM or OSC
Return zero	√

measurement	
Input protection	√
Digital hold	√
Power	Single section 18650 3.7V
Low battery display	When the power is low, there will be a low power window, and wait for a period of time to shut down automatically.
Backlight function	√
LCD Size	2.8 inch
Weight	Approx. 0.35kg
Dimension	248mm（L） x 94.5mm（W） x 37.8mm（D）

Interval Period of Adjustment:

One year is recommended for the calibration interval period.

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V1.0.0