

# OW Series Digital Multimeter Technical Specifications

All these specifications apply to the multimeter unless otherwise explanation.

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

**Note:** When measuring AC voltage/current or capacitance, accuracy guarantee range is 5% to 100% of the range.

## OW18D/OW18E multimeter

Function		Measurement Range	Resolution	Function			
DC Voltage (V)	mV <sup>[1]</sup>	20.000mV	0.001mV	±(0.05%+10dig)			
		200.00mV	0.01mV				
	V	2.0000V	0.1mV	±(0.1%+2dig)			
		20.000V	1 mV				
		200.00V	10mV				
	1000.0V	0.1V	±(0.15%+5dig)				
AC Voltage (V)	mV <sup>[1]</sup>	20.000mV	0.001mV	VRMS Freq range: 40Hz-1000Hz			
		200.00mV	0.01mV				
	V	2.0000V	0.1mV			±(0.5%+10dig)	
		20.000V	1mV				
		200.00V	10mV				
		750.0V	0.1V			±(0.8%+10dig)	
DC Current (A)	μA	200.00μA	0.01μA	±(0.5%+10dig)			
	mA	2.0000mA	0.1μA				
		20.000mA	1μA				
		200.00mA	10μA				
	A	20.000A <sup>[2]</sup>	1mA	±(2.0%+10dig)			
AC Current (A)	μA	200.00μA	0.01μA	VRMS Freq range: 40Hz-1000Hz			
	mA	2.0000mA	0.1μA			±(0.8%+10dig)	
		20.000mA	1μA				
		200.00mA	10μA				
	A	20.000A <sup>[2]</sup>	1mA			±(2.5%+10dig)	
Resistance (Ω)		200.00Ω	0.01Ω	±(0.5%+10dig)			
		2.0000kΩ	0.1Ω	±(0.3%+3dig)			
		20.000kΩ	1Ω	±(0.3%+1dig)			
		200.00kΩ	10Ω				
		2.0000MΩ	100Ω				

	20.000M $\Omega$	1k $\Omega$	$\pm(0.5\%+1\text{dig})$
	200.00M $\Omega$	10k $\Omega$	$\pm(5.0\%+10\text{dig})$
<b>Capacitance (F)</b>	2.0000nF	0.1pF	$\pm(3.0\%+10\text{dig})$
	20.000nF	1pF	
	200.00nF	10pF	
	2.0000 $\mu$ F	100pF	
	20.000 $\mu$ F	1nF	
	200.00 $\mu$ F	10nF	
	2.0000mF	100nF	
	20.000mF <sup>[3]</sup>	1 $\mu$ F	
<b>Frequency <sup>[4]</sup> (Hz)</b>	200.00Hz	0.01Hz	$\pm(0.1\%+4\text{dig})$
	2.0000kHz	0.1Hz	
	20.000kHz	1Hz	
	200.00kHz	10Hz	
	2.0000MHz	0.1kHz	
	20.000MHz	1kHz	
<b>Duty Cycle <sup>[5]</sup> (%)</b>	0.1% - 99.9% (Typical: V <sub>rms</sub> =1 V, f=1 kHz)	0.1%	$\pm(1.2\%+3\text{dig})$
	0.1% - 99.9%( $\geq 1$ kHz)		$\pm(2.5\%+3\text{dig})$
<b>Temperature (<math>^{\circ}</math>C/<math>^{\circ}</math>F)</b>	-50 $^{\circ}$ C to 400 $^{\circ}$ C	0.1 $^{\circ}$ C	$\pm(1.0\%+3^{\circ}$ C)
	-58 $^{\circ}$ F to 752 $^{\circ}$ F	0.1 $^{\circ}$ F	$\pm(1.2\%+6^{\circ}$ F)

[1] The rotary switch position  $\approx \text{mV}$  is only for specific models.

[2] When measuring current, for 10 A to 15 A, the measuring duration should not be over 2 minutes within 10 minutes, and in this 10 minutes, no other current should flow through except within the measuring duration; for 15 A to 20 A, the measuring duration should not be over 10 seconds within 15 minutes, and in this 15 minutes, no other current should flow through except within the measuring duration.

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

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

Frequency	Amplitude
1 Hz – 4 MHz	$\geq 100$ mV

[5] 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.**

### OW18A/OW18B multimeter

Function		Measurement Range	Resolu-tion	Function
<b>DC Voltage</b>	mV <sup>[1]</sup>	60.00mV/600.0mV	0.01mV	$\pm(0.5\%+2\text{dig})$

<b>(V)</b>	V	600.0mV/6.000V/60.00V/600.0V	0.1mV	
	V	1000V	1V	±(0.8%+2dig)
<b>AC Voltage (V)</b>	mV <sup>[1]</sup>	600.0mV	0.01mV	±(0.8%+3dig)
	V	600.0mV	0.1 mV	±(2%+5dig)
	V	6.000V/60.00V/600.0V	1mV	±(0.8%+3dig)
	V	750V	1V	±(1%+3dig)
<b>DC Current (A)</b>	μA	600.0μA/6000μA	0.1μA	±(0.8%+2dig)
	mA	60.00mA/600.0mA	0.01mA	±(0.8%+2dig)
	A	20.00A <sup>[2]</sup>	0.01A	±(1.2%+3dig)
<b>AC Current (A)</b>	μA	600.0μA/6000μA	0.1μA	±(1%+3dig)
	mA	60.00mA/600.0mA	0.01mA	±(1%+3dig)
	A	20.00A <sup>[2]</sup>	0.01A	±(1.5%+3dig)
<b>Resistance (Ω)</b>		600.0Ω/6.000kΩ/60.00kΩ/ 600.0kΩ/6.000MΩ	0.1Ω	±(0.8%+2dig)
		60.00MΩ	0.01 MΩ	±(2%+3dig)
<b>Capacitance (F)</b>		60.00nF/600.0nF/6.000μF/ 60.00μF	0.01nF	±(3%+3dig)
		600.0μF/6.000mF/60.00mF <sup>[3]</sup>	0.1μF	±(3%+5dig)
<b>Frequency <sup>[4]</sup> (Hz)</b>		9.999Hz/99.99Hz/999.9Hz/ 9.999kHz/99.99kHz/999.9kHz/ 9.999MHz	0.001Hz	±(0.8%+2dig)
<b>Duty Cycle <sup>[5]</sup> (%)</b>		0.1% - 99.9% (Typical: V <sub>rms</sub> =1 V, f=1 kHz)	0.1%	±(1.2%+3dig)
		0.1% - 99.9%(≥1 kHz)		±(2.5%+3dig)
<b>Temperature (°C/°F)</b>		-50 °C to 400 °C	1 °C	±(2.5%+3dig)
		-58 °F to 752 °F	1 °F	±(4.5%+5dig)

[1] The rotary switch position  $\tilde{mV}$  is only for specific models.

[2] When measuring current, for 10 A to 15 A, the measuring duration should not be over 2 minutes within 10 minutes, and in this 10 minutes, no other current should flow through except within the measuring duration; for 15 A to 20 A, the measuring duration should not be over 10 seconds within 15 minutes, and in this 15 minutes, no other current should flow through except within the measuring duration.

[3] When measuring capacitance, for the 60.00mF range, the measuring duration should be over 30 seconds.

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

Frequency	Amplitude (rms)
1 Hz – 5 MHz	≥ 700 mV

[5] 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.

Characteristics	Instruction	
Display	OW18A,OW18B	5999
	OW18D,OW18E	19999
Frequency Response (Hz)	(40 - 1000) Hz	
Sample rate for digital data	3 times/second	
Bluetooth	OW18D. OW18A	Without
	OW18E. OW18B	√
Auto ranging	√	
True RMS	√	
Diodes Test	√	
Sleep Mode	√	
Continuity Test	√	
NCV function	√	
Flashlight	√	
Low battery indication	√(The "⊖+" is displayed when the battery is under the proper operation range.)	
Data Hold	√	
Relative Measurement	√	
LCD Backlight	√	
Input Protection	√	
Input Impedance	≥ 10 MΩ	
Battery	9V battery (6F22)	
LCD Size	69 mm * 52 mm	
Weight (without package)	0.32 kg	
Dimension	190 mm * 90 mm * 56 mm	
Working temperature	0°C to 40°C	
Storage temperature	-10°C to 60°C	
Relative Humidity	≤ 80%	
Altitude	Operating: 3,000 meters Non-operating: 15,000 meters	

**Interval Period of Adjustment:**

One year is recommended for the calibration interval period.

V1.3.4



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