

VOLTCRAFT

VOLTCRAFT – TOP PERFORMANCE IN EVERY WAY

For more than 40 years, our product range has been dynamically adapting to the constant changes in the industry. We commit to offering first-class quality to our customers while delivering an excellent cost-performance ratio. This philosophy remains the cornerstone of Voltcraft's success.

VC191 DIGITAL MULTIMETER



Item no. 2446475

A robust CAT III 600 V digital multimeter for professional, industrial and do-it-yourself applications.

FEATURES

- AC/DC voltage measurement
- AC/DC current measurement up to 10 A
- Duty cycle
- Diode test
- Acoustic continuity tester
- Hold function
- Auto power off
- Backlight
- Peak reading (PEAK)
- 6000 counts
- True RMS
- Auto range
- 600 V high performance fuses
- CAT III 600 V measuring category
- Torch



TECHNICAL DATA

Intended use	Indoors
Voltage supply	9 V block battery (6F22, NEDA 1604 or same)
Operating time/battery	approx. 35 h (backlight always on, torch off, buzzer off)
Measuring impedance	approx. 10 M Ω (600 mV: \geq 100 M Ω)
Display range	6000 counts (characters)
Refresh rate	2-3x per sec
Temperature measurement	-40 to +400 °C (-40 to 752 °F)
Measuring method AC	True RMS
Measuring line length	each approx. 90 cm
Low battery indicator	\leq 6 V \pm 0.2 V
Measuring jacks distance	19 mm (COM-V)
Auto power off	approx. 15 minutes
Data hold	approx. 15 minutes
Measuring category	\leq CAT III 600 V
Degree of contamination	2
Direct voltage	max. 600.0 V / DC
Alternating voltage	max. 600.0 V / AC
Direct current	max. 10.00 A / DC
Alternating current	max. 10.00 A / AC
Resistance	max. 60 M Ω
Capacitance	max. 60 mF
Operating temperature	0 to 40 °C
Storage temperature	-10 to +50 °C
Operating/storage humidity	0 °C to 30 °C: \leq 75 % RH (non-condensing) 30 °C to 40 °C: \leq 50 % RH (non-condensing)
Operating altitude	max. 2000 m (above sea level)
Dimensions (W x H x D):	76.5 x 157.5 x 40 mm
Weight	approx. 262 g (without battery)
F1 Fuse	\varnothing 6 x 32 mm, FF 10 A, H 600 V, Breaking capacity: 10 KA Input terminal protection (A)
F2 Fuse	\varnothing 5 x 20 mm, FF 600 mA, H 600 V, Breaking capacity: 500 A min. Input terminal protection (μ A, mA)

Capacitance measurement

Range	Resolution	Accuracy
6.000 nF	0.001 nF	\pm (5.0 % + 10)
60.00 nF	0.01 nF	\pm (3.5 % + 9)
600.0 nF	0.1 nF	\pm (3.5 % + 5)
6.000 μ F	0.001 μ F	
60.00 μ F	0.01 μ F	
600.0 μ F	0.1 μ F	\pm (5.0 % + 5)
6.000 mF	0.001 mF	
60.00 mF	0.01 mF	\pm (8.0 % + 5)
Overload protection: 600 V		

Continuity (∩) and diode (▶) test

Range	Resolution	Remark
∩)	0.1Ω	Open circuit: Resistance >100 Ω, no beep. Circuit with a good connection: Resistance ≤10 Ω, consecutive beeps.
▶	1 mV	Open circuit voltage: Approx. 3.2 V Silicon PN junction voltage: Approx. 0.5 to 0.8 V
Overload protection: 600 V		

DC voltage measurement

Range	Resolution	Accuracy
600.0 mV	0.1 mV	± (1.0 % + 8)
6.000 V	0.001 V	± (1.0 % + 5)
60.00 V	0.01 V	± (1.0 % + 5)
600.0 V	0.1 V	
<ul style="list-style-type: none"> Input impedance: ≥100 MΩ for mV range (short circuit allows ≤5 digits), approx 10 MΩ for other ranges. Input voltage: max. 600 V 		

AC voltage measurement

Range	Resolution	Accuracy
600.0 mV	0.1m V	± (1.5 % + 5)
6.000 V	0.001 V	± (1.3 % + 4)
60.00 V	0.01 V	± (1.3 % + 4)
600.0 V	0.1 V	± (1.3 % + 4)
LoZ ACV 600.0 V	0.1 V	± (2.6 % + 4)
LPF ACV 600.0 V	0.1 V	± (2.5 % + 6)
<ul style="list-style-type: none"> Input impedance: approx. 10 MΩ. True RMS display. Frequency response: 40 - 400 Hz. LPF frequency response: 40 - 200 Hz. After using the LoZ function, please cool down the meter for 1 minute. Accuracy guarantee range: 5~100% of range, short circuit allows least significant digit <5. The AC crest factor is ≤2.5 when measured at 4000 counts. The full range AC crest factor of 6000 counts is ≤1.8. Non-sinusoidal waveforms: <ul style="list-style-type: none"> - When the crest factor is 1.0 to 2.0, the accuracy must be increased by 4.0 %. - When the crest factor is 2.0 to 2.5, the accuracy must be increased by 5.0 %. - When the crest factor is 2.5 to 3.0, the accuracy must be increased by 7.0 %. Input voltage: max. 600 Vrms. 		

Resistance measurement (Ω)

Range	Resolution	Accuracy
600.0 Ω	0.1 Ω	± (1.3 % + 3)
6.000 kΩ	1 Ω	± (1.0 % + 3)
60.00 kΩ	10 Ω	
600.0 kΩ	100 Ω	
6.000 MΩ	1 kΩ	± (1.6 % + 4)
60.00 MΩ	10 kΩ	± (3.0 % + 5)
Overload protection: 600 V		

Frequency / duty ratio measurement

Range	Resolution	Accuracy
10.00 Hz - 1.00 MHz	0.01 Hz - 0.0001 MHz	$\pm (0.1 \% + 6)$
0.1 % - 99.9 %	0.1 %	$\pm (2.5 \%)$

- Overload protection: 600 V
- Input amplitude a: (DC level = 0)
 ≤ 100 kHz: $200 \text{ mVrms} \leq a \leq 20 \text{ Vrms}$
 > 100 kHz - 1 MHz: $600 \text{ mVrms} \leq a \leq 30 \text{ Vrms}$
- Duty ratio measurement is applicable to zero-crossing square waves with frequency ≤ 10 kHz.
 $1 \text{ Vpp} \leq \text{Input amplitude} \leq 30 \text{ Vpp}$.
Frequency ≤ 1 kHz, duty ratio: 10.0 % to 90.0 %.
Frequency > 1 kHz, duty ratio: 30.0 % to 70.0 %

DC current measurement

Range	Resolution	Accuracy
μA	600.0 μA	0.1 μA
	6000 μA	1 μA
mA	60.00 mA	10 μA
	600.0 mA	0.1 mA
A	6.000 A	1 mA
	10.00 A	10 mA

$\pm (1.0 \% + 4)$

$\pm (1.3 \% + 4)$

$\pm (1.5 \% + 6)$

- When the measured current is > 5 A, each measurement time should be ≤ 30 s and the rest interval should be ≥ 15 minutes.
- Overload protection:
 - F1 Fuse: $\Phi 6 \times 32$ mm, FF 10 A, H 600 V, Breaking capacity: 10 KA
 - F2 Fuse: $\Phi 5 \times 20$ mm, FF 600 mA, H 600 V, Breaking capacity: 500 A min.

Temperature measurement

Range	Resolution	Accuracy
$^{\circ}\text{C}$	-40 to +300 $^{\circ}\text{C}$	0.1 to 1 $^{\circ}\text{C}$
	300 to 400 $^{\circ}\text{C}$	
$^{\circ}\text{F}$	-40 to +572 $^{\circ}\text{F}$	0.2 to 2 $^{\circ}\text{F}$
	572 to 752 $^{\circ}\text{F}$	

$\pm (1.4 \% + 3 \text{ }^{\circ}\text{C})$

$\pm (1.4 \% + 5.4 \text{ }^{\circ}\text{F})$

- Overload protection: 600 V
- The K-type thermocouple is only suitable for measuring temperatures $< 400 \text{ }^{\circ}\text{C}$ (752 $^{\circ}\text{F}$).

AC current measurement

Range	Resolution	Accuracy
μA	600.0 μA	0.1 μA
	6000 μA	1 μA
mA	60.00 mA	10 μA
	600.0 mA	0.1 mA
A	6.000 A	1 mA
	10.00 A	10 mA

$\pm (1.3 \% + 4)$

$\pm (1.6 \% + 4)$

$\pm (1.8 \% + 6)$

- When the measured current is > 5 A, each measurement time should be ≤ 30 s and the rest interval should be ≥ 15 minutes.
- True RMS display.
- Frequency response: 40 - 400 Hz.
- Accuracy guarantee range: 5 - 100 % of range, open circuit allows least significant digit < 5 .
- The AC crest factor is ≤ 2.5 when measured at 4000 counts. The full range AC crest factor of 6000 counts is ≤ 1.8 .
- Non-sinusoidal waveforms:
 - When the crest factor is 1.0 - 2.0, the accuracy must be increased by 4.0 %.
 - When the crest factor is 2.0 - 2.5, the accuracy must be increased by 5.0%.
 - When the crest factor is 2.5 - 3.0, the accuracy must be increased by 7.0%.
- Overload protection:
 - F1 Fuse: $\Phi 6 \times 32$ mm, FF 10 A, H 600 V, Breaking capacity: 10 KA
 - F2 Fuse: $\Phi 5 \times 20$ mm, FF 600 mA, H 600 V, Breaking capacity: 500 A min.

PACKAGE CONTENTS

Digital multimeter // Test leads (pair) // Point contact temperature probe // 9 V block battery // Operating instructions