

# Clamp-On Meter Models 511, 512 & 514

Fast 1ms Peak  
capture of  
inrush current



The AEMC® Models 511, 512 and 514 are general purpose professional clamp-on meters that measure up to the toughest standards. They are built into a rugged mechanical case and are designed using quality polycarbonate materials. These meters offer a complete set of measurement ranges and are in compliance with international safety and quality standards to ensure professional and reliable measuring tools. The Models 511 and 512 are Auto-Ranging and provide the best measurement range and resolution for troubleshooting. They also have a high resolution 40A range.

They measure AC Amps, AC Volts, as well as DC Volts, Ohms, Continuity (with beeper), Frequency (from V or A)

and have a Diode Test function. The Model 514 also uses Hall Effect sensor technology that provides both DC and AC current measurements to 1000A.

The Models 511, 512 and 514 are sized for comfortable, one-handed operation. The tapered and hooked jaw design facilitates maneuvering in crowded wiring and breaker panels, making it easy to select conductors. The jaw opening accommodates one 750MCM cable or two 350MCM cables. The large and easy-to-read 4000-count LCD features comprehensive user information symbols, such as low battery, polarity, overload, and an analog bargraph for easy trend readings. All models are equipped with a Data Hold function that freezes the measurement

for later viewing, Min/Max, and a fast 1ms Peak Hold function for capture of signals.

The Model 511 is average sensing and designed for traditional average responding electrical systems. The Models 512 and 514 are True RMS clamp-ons that provide RMS measurements for today's non-linear electrical environments.

All models include a pair of test leads (red/black with probe tips), 9V battery, soft carrying pouch and a user manual — ready to go!

## Features

- Standard size, full function clamp-on meters
- 1000AAC or 1000AAC/DC current measurements
- 750VAC or 1000VDC volt measurements
- TRMS measurements (Models 512 and 514)
- Resistance measurements to 4000 $\Omega$
- Continuity with beeper below 40 $\Omega$
- Frequency measurements from V and A
- Diode test
- 1ms Peak function for fast capture of signals
- Ideal for inrush measurement
- Hold function to “freeze” readings
- Push-button for easy ADC zeroing
- Large, easy-to-read 4000-count display
- 42-segment analog bargraph
- Supplied with test leads and soft carrying pouch

## Applications

- Commercial, industrial, residential and HVAC troubleshooting
- Power panel, junction box and battery bank monitoring
- AC or DC motor testing
- Power plant troubleshooting
- Electrical testing and troubleshooting on traditional and non-linear loads, such as adjustable speed drives and computers



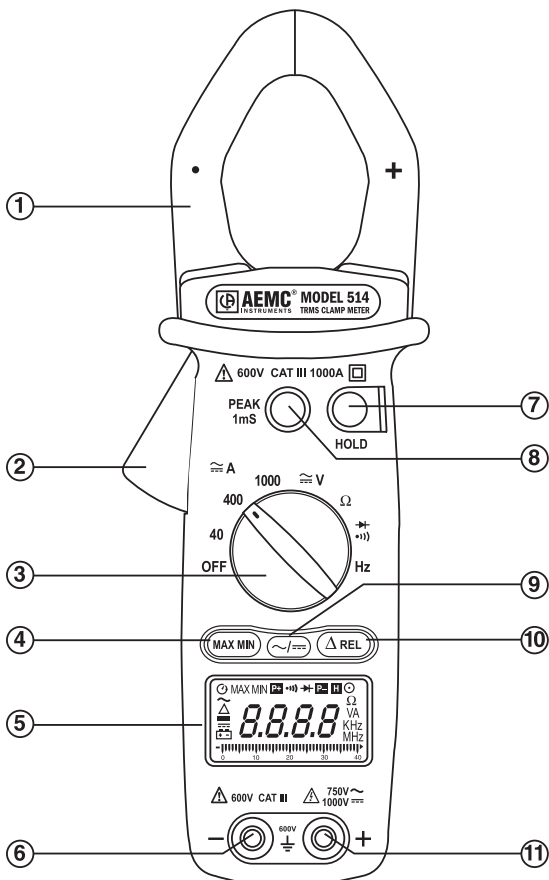
# Specifications

MODELS	511 (Average Sensing)	512 (TRMS)	514 (TRMS)
<b>AC AMPERES (Auto-Ranging)</b>			
Measurement Range	0.05A to 1000A	0.05A to 1000Arms	0.05A to 1000Arms
Resolution	0.01A	0.01A	0.01A
40A	0.1A	0.1A	0.1A
400A	1A	1A	1A
1000A			
Accuracy	±1.9% of Reading ± 5cts	±1.9% of Reading ± 5cts	±1.9% of Reading ± 5cts
50 to 60Hz	±1.9% of Reading ± 5cts	±1.9% of Reading ± 5cts	±2.5% of Reading ± 5cts
60 to 500Hz			
Overload Protection	800Arms	800Arms	1200Arms
40A	1500Arms	1500Arms	1200Arms
400A	1500Arms	1500Arms	1200Arms
1000A			
<b>AC VOLTS</b>			
Measurement Range	0.5V to 750V	0.5V to 750Vrms	0.5V to 750Vrms
Resolution	0.1V	0.1V	0.1V
400V	1V	1V	1V
750V			
Accuracy	±1.2% of Reading ± 5cts	±1.2% of Reading ± 5cts	±1.5% of Reading ± 5cts
50 to 500Hz			
Input Impedance	10MΩ	10MΩ	10MΩ
Overload Protection	1000Vrms	1000Vrms	1000Vrms
<b>DC AMPERES</b>			
Measurement Range	–	–	1A to 1000A
Resolution	–	–	0.01A
40A	–	–	0.1A
400A	–	–	1A
1000A	–	–	
Accuracy	–	–	±2.5% of Reading ± 10cts
Overload Protection	–	–	1200Arms
<b>DC VOLTS</b>			
Measurement Range	0.2V to 1000V	0.2V to 1000V	0.2V to 1000V
Resolution	0.1V	0.1V	0.1V
400V	1V	1V	1V
1000V			
Accuracy	±0.75% of Reading ± 2cts	±0.75% of Reading ± 2cts	±1% of Reading ± 2cts
Input Impedance	10MΩ	10MΩ	10MΩ
Overload Protection	1200Vrms	1200Vrms	1000Vrms
<b>RESISTANCE-OHMS (Ω)</b>			
Measurement Range	0.2Ω to 4000Ω	0.2Ω to 4000Ω	0.2Ω to 4000Ω
Resolution	0.1Ω	0.1Ω	0.1Ω
400Ω	1Ω	1Ω	1Ω
4000Ω			
Accuracy	±1% of Reading ± 2cts	±1% of Reading ± 2cts	±1% of Reading ± 2cts
Max. Test Voltage	3Vdc	3Vdc	3Vdc
Overload Protection	600Vrms	600Vrms	600Vrms
<b>DIODE</b>			
Test Current	0.6mA	0.6mA	1.7mA max
Overload Protection	600Vrms	600Vrms	600Vrms
Open Circuit Voltage	3Vdc	3Vdc	3Vdc
<b>CONTINUITY</b>			
Beeper Activation	<40Ω	<40Ω	<40Ω
Max. Test Voltage	3Vdc	3Vdc	3Vdc
Overload Protection	600Vrms	600Vrms	600Vrms
<b>FREQUENCY (Hz)</b>			
CURRENT INPUT Range	1Hz Resolution	1Hz Resolution	1Hz Resolution
4kHz	–	–	10Hz Resolution
10kHz			
Accuracy	±0.1% of Reading ± 1ct	±0.1% of Reading ± 1ct	±0.1% of Reading ± 1ct
20Hz to 10kHz			
Min. Input Signal	2Arms	2Arms	2Arms
4kHz	–	–	5Arms
10kHz			
VOLTAGE INPUT Range	1Hz Resolution	1Hz Resolution	1Hz Resolution
4kHz	10Hz Resolution	10Hz Resolution	10Hz Resolution
10kHz			
Accuracy	±0.1% of Reading ± 1ct	±0.1% of Reading ± 1ct	±0.1% of Reading ± 1ct (10 to 10kHz)
20Hz to 10kHz			
Min. Input Signal	5Vrms	5Vrms	5Vrms
4kHz	5Vrms	5Vrms	10Vrms
10kHz			

# Specifications

MODELS	511 (Average Sensing)	512 (TRMS)	514 (TRMS)
<b>GENERAL</b>			
Digital Display	3¾ digits LCD display, 4000-count (max. reading 3999)		
Analog Display	Fast 42-segment analog bargraph display		
Symbol and Scale Range	Automatic according to range and input signal		
Polarity	■ Displayed when negative signal applied to input		
Overload	⊖⊖ Displayed when input signal exceeds range		
Sample Rate	2 samples/sec for the digital display, 20 samples/sec for the analog bargraph		
Power Supply	9V, NEDA 1604 or 6F22 or 006P		
Auto-Off	30 minutes		
Low Power Indication	⊖⊖ Displayed when the battery is below the required voltage		
Jaw Opening Size Ø	1.575" (40mm) – facilitates 750MCM cable or two 500MCM cables		
Dimension	9.53 x 2.60 x 1.42" (242 x 66 x 36mm)		
Weight	14.10 oz (400g) with batteries		
<b>ENVIRONMENTAL</b>			
Altitude	2167 ft (2000m) max.		
Operating Temperature	32° to 104°F (0° to 40°C), <80% RH, non-condensing		
Storage Temperature	14° to 140°F (-10° to 60°C), <70% RH, battery removed		
Pollution Degree	2		
<b>SAFETY</b>			
Safety Rating	EN 61010, 600V, Cat. III, EN 61010, 1000V, Cat. II		
CE Mark	Yes		

# Construction



Model 514

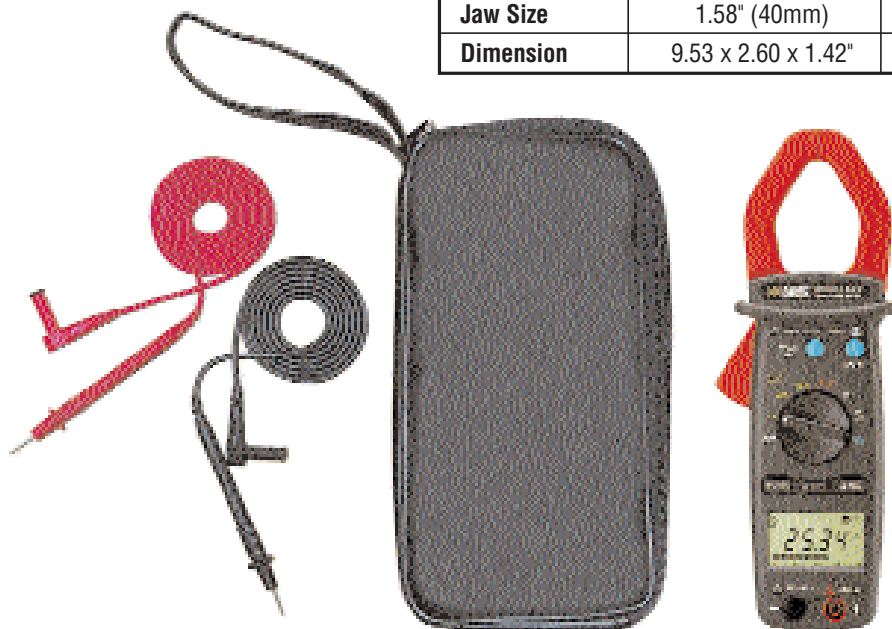
Function	Model 511	Model 512	Model 514
TRMS	–	✓	✓
1000Aac	✓	✓	✓
1000Adc	–	–	✓
750Vac	✓	✓	✓
1000Vdc	✓	✓	✓
Resistance	✓	✓	✓
Diode	✓	✓	✓
Continuity	✓	✓	✓
Beeper	✓	✓	✓
Frequency	✓	✓	✓
Bargraph	✓	✓	✓
Hold	✓	✓	✓
Min/Max	✓	✓	✓
1ms Peak	✓	✓	✓
Push button DC Zero	–	–	✓

1. Data hold button
2. 1ms Peak hold button
3. AC/DC select button  
(Model 514)  
Range button  
(Models 511 and 512)
4. Relative button and  
ADC zero
5. Positive (Red) + input jack
6. COM (Black) – input jack
7. LCD display
8. Maximum/Minimum  
button
9. Rotary range selector  
switch
10. Lever for jaw opening/  
closing
11. Jaw assembly

# Selection Chart



MODEL	511	512	514
Catalog No.	2117.67	2117.68	2117.70
Type	AC	AC TRMS	AC/DC TRMS
AC Current	0.05 to 1000A	0.05 to 1000A	0.05 to 1000A
AC Voltage	0.5 to 750V	0.5 to 750V	0.5 to 750V
DC Current	–	–	1A to 1000A
DC Voltage	0.2 to 1000V	0.2 to 1000V	0.2 to 1000V
Resistance ( $\Omega$ )	4000 $\Omega$	4000 $\Omega$	4000 $\Omega$
Continuity	<40 $\Omega$	<40 $\Omega$	<40 $\Omega$
Frequency (Hz)			
Current	20Hz to 10kHz	20Hz to 10kHz	20Hz to 10kHz
Voltage	10Hz to 10kHz	10Hz to 10kHz	10Hz to 10kHz
True RMS	–	Yes	Yes
Jaw Size	1.58" (40mm)	1.58" (40mm)	1.58" (40mm)
Dimension	9.53 x 2.60 x 1.42"	9.53 x 2.60 x 1.42"	9.53 x 2.60 x 1.42"



Models 511, 512 & 514 are supplied with a pair of test leads and soft carrying case

## ORDERING INFORMATION

## CATALOG NO.

- Clamp-on Meter Model 511 (AC, 1000A<sub>AC</sub>, 600V<sub>AC/DC</sub>, Ohms, Continuity) . . . . . **Cat. #2117.67**  
 Clamp-on Meter Model 512 (TRMS, 1000A<sub>AC</sub>, 600V<sub>AC/DC</sub>, Ohms, Continuity) . . . . . **Cat. #2117.68**  
 Clamp-on Meter Model 514 (AC/DC, TRMS, 1000A<sub>AC/DC</sub>, 600V<sub>AC/DC</sub>, Ohms, Continuity) . . . . . **Cat. #2117.70**

All clamp-on meters are supplied with a pair of test leads (red/black with probe tips), batteries, soft carrying case and a user manual



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