

Clamp-On Meter Models 500, 501, 502 & 503



The AEMC® Models 500, 501, 502 and 503 are compact, 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 a professional and reliable measuring tool.

These reliable meters are simple to operate and are Auto-Ranging — always providing the optimum measurement range and resolution. They all measure 400AAC, 600VAC,

600Vdc, Resistance, and Continuity (with beeper). The Models 501 and 502 also add a Frequency function sensed from either current or voltage. The Models 501 and 503 are average sensing for traditional load environments. The Model 502 is a True RMS clamp-on that provides RMS measurements for today's non-linear electrical environments, such as variable speed drives or computers. The Model 503 is a Hall Effect clamp-on that provides both DC and AC current measurements to 400A.

The Models 500, 501, 502 and 503 are compact for comfortable one-handed operation. The tapered, hooked jaw

design facilitates maneuvering in crowded wiring and breaker panels, making it easy to select conductors. The jaw opening accommodates a 500MCM cable. 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.

They include a padded carrying pouch with leads, batteries and user manual — ready to go!

Features

- Compact size — fits into your pocket
- 400AAC or 400AAC/DC current measurements
- 600VAC/DC volts measurements
- TRMS measurements (Model 502)
- Resistance measurements to 400 Ω
- Continuity with beeper below 40 Ω
- Frequency measurements (Models 501 and 502) from V and A
- Hold function to “freeze” readings
- Push-button for easy ADC zeroing (Model 503)
- Large, easy-to-read 4000-count display
- 42-segment analog bargraph
- Includes test leads and soft carrying pouch

Applications

- Industrial, commercial, HVAC and residential troubleshooting
- Power panel, junction box and battery bank monitoring
- Electrical testing and troubleshooting on traditional and non-linear loads, such as adjustable speed drives and computers



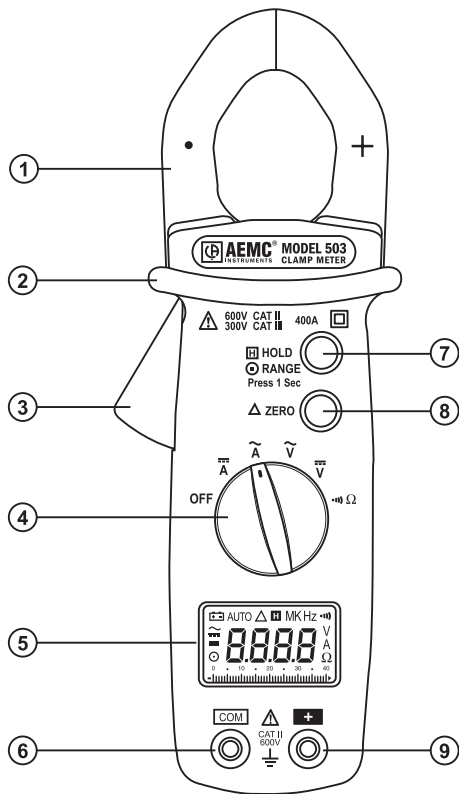
Specifications

MODELS	500 (Average Sensing)	501 (Average Sensing)	502 (TRMS)	503 (Average Sensing)
AC AMPERES (Auto-Ranging)				
Measurement Range	0.05 to 400A	0.05 to 400A	0.05 to 400Arms	0.05 to 400A
Resolution	40A 400A	0.01A 0.1A	0.01A 0.1A	0.01A 0.1A
Accuracy	50 to 60Hz 60 to 500Hz	±2% of Reading ± 5cts ±2.8% of Reading ± 5cts	±1.9% of Reading ± 5cts ±2.5% of Reading ± 5cts	±1.5% of Reading ± 10cts ±2.5% of Reading ± 10cts
Overload Protection	600Arms	600Arms	600Arms	600Arms
AC VOLTS (Auto-Ranging)				
Measurement Range	0.5 to 600V	0.5 to 600V	0.5 to 600Vrms	0.5 to 600V
Resolution	400V 600V	0.1V 1V	0.1V 1V	0.1V 1V
Accuracy	50 to 60Hz 60 to 500Hz	±1% of Reading ± 5cts ±1.5% of Reading ± 5cts	±0.8% of Reading ± 5cts ±1.5% of Reading ± 5cts	±1.5% of Reading ± 5cts ±1.5% of Reading ± 5cts
Input Impedance	1MΩ	1MΩ	1MΩ	10MΩ
Overload Protection	600Vrms	600Vrms	600Vrms	600Vrms
DC AMPERES (Auto-Ranging)				
Measurement Range	–	–	–	0.10 to 400A
Resolution	40A 400A	– –	– –	0.01A 0.1A
Accuracy	–	–	–	±2.5% of Reading ± 10cts
Overload Protection	–	–	–	600Arms
DC VOLTS (Auto-Ranging)				
Measurement Range	–	0.2 to 600V	0.2 to 600V	0.2 to 600V
Resolution	400V 600V	– 1V	0.1V 1V	0.1V 1V
Accuracy	–	±1% of Reading ± 2cts	±1% of Reading ± 2cts	±1% of Reading ± 2cts
Input Impedance	–	1MΩ	1MΩ	10MΩ
Overload Protection	–	600Vrms	600Vrms	600Vrms
RESISTANCE-OHMS (Ω)				
Measurement Range	0.3 to 400Ω	0.2 to 400Ω	0.2 to 400Ω	0.2 to 400Ω
Resolution	0.1Ω	0.1Ω	0.1Ω	0.1Ω
Accuracy	±1.9% of Reading ± 3cts	±1% of Reading ± 2cts	±1% of Reading ± 2cts	±1% of Reading ± 2cts
Max Test Voltage	1.5Vdc	1.5Vdc	1.5Vdc	1.5Vdc
Overload Protection	600Vrms	600Vrms	600Vrms	600Vrms
CONTINUITY (••))				
Beeper Activation	<35Ω	<40Ω	<40Ω	<40Ω
Max. Test Voltage	1.5Vdc	1.5Vdc	1.5Vdc	1.5Vdc
Overload Protection	600Vrms	600Vrms	600Vrms	600Vrms
FREQUENCY (Hz) (Auto-Ranging)				
CURRENT INPUT				
Range	20Hz to 4kHz >4kHz to 10kHz	– 1Hz Resolution 10Hz Resolution	1Hz Resolution 10Hz Resolution	– –
Accuracy	–	±0.1% of Reading ± 1ct	±0.1% of Reading ± 1ct	–
Min Input Signal	–	2Arms	2Arms	–
Input Impedance	–	1MΩ	1MΩ	–
Overload Protection	–	600Arms	600Arms	–
VOLTAGE INPUT				
Range	10Hz to 4kHz >4kHz to 40kHz >40kHz to 400kHz	– 1Hz Resolution 10Hz Resolution 100Hz Resolution	1Hz Resolution 10Hz Resolution 100Hz Resolution	– – –
Accuracy	–	±0.1% of Reading ± 1ct	±0.1% of Reading ± 1ct	–
Min Input Signal	4kHz 40kHz 400kHz	– 5Vrms 5Vrms 5Vrms	5Vrms 5Vrms 5Vrms	– – –
Input Impedance	–	1MΩ	1MΩ	–
Overload Protection	–	600Vrms	600Vrms	–

Specifications

MODELS	500 (Average Sensing)	501 (Average Sensing)	502 (TRMS)	503 (Average Sensing)
GENERAL				
Digital Display	3 ³ / ₄ digits LCD display, 4000-count (max. reading 3999)			
Analog Display	Fast 42-segment analog bargraph display			
Symbol & Scale Range	Automatic according to range and input signal			
Polarity	■ Displayed when negative signal applied to input			
Overload	OL Displayed when input signal exceeds range			
Sample Rate	2 samples/sec for the digital display, 20 samples/sec for the analog bargraph			
Power Source	Two 1.5V AAA batteries			
Auto-Off	30 minutes			
Low Power Indication	⏻ Displayed when the battery is below the required voltage			
Jaw Opening Size Ø	1.1" (28mm) – facilitates 500MCM cable			
Dimension	7.60 x 1.97 x 1.1" (193 x 50 x 28mm)			
Weight	8.11 oz (230g) with batteries			
ENVIRONMENTAL				
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			
SAFETY				
Safety Rating	EN 61010, 600V Cat. II, EN 61010, 300V Cat. III			
Double Insulation <input type="checkbox"/>	Yes			
CE Mark	Yes			

Construction



Function	Model 500	Model 501	Model 502	Model 503
TRMS	-	-	✓	-
400AAC	✓	✓	✓	✓
400Adc	-	-	-	✓
600VAC	✓	✓	✓	✓
600Vdc	-	✓	✓	✓
Resistance	✓	✓	✓	✓
Continuity	✓	✓	✓	✓
Beeper	✓	✓	✓	✓
Frequency	-	✓	✓	-
Bargraph	✓	✓	✓	✓
Hold	✓	✓	✓	✓
Push button DC Zero	-	-	-	✓

- Jaw assembly
- Safety barrier – anti-slip guard
- Lever for jaw opening/closing
- Rotary range selector switch
- LCD display with bargraph
- COM (Black) – input jack
- Positive (Red) + input jack
- DC zero button (Blue) (Model 503 only)
- Jaw assembly

Selection Chart



MODEL	500	501	502	503
Catalog No.	2117.54	2117.21	2117.66	2117.22
Type	AC	AC	AC TRMS	AC/DC
AC Current	0.05 to 400A	0.05 to 400A	0.05 to 400A	0.05 to 400A
AC Voltage	0.5 to 600V	0.5 to 600V	0.5 to 600V	0.5 to 600V
DC Current	-	-	-	0.10 to 400A
DC Voltage	-	0.2 to 600V	0.2 to 600V	0.2 to 600V
Resistance (Ω)	400Ω	400Ω	400Ω	400Ω
Continuity	<35Ω	<40Ω	<40Ω	<40Ω
Frequency (Hz)				
Current	-	20Hz to 10kHz	20Hz to 10kHz	-
Voltage	-	10Hz to 400kHz	10Hz to 400kHz	-
True RMS	-	-	Yes	-
Jaw Size	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)	1.1" (28mm)
Dimension	7.60 x 1.97 x 1.1" 193 x 50 x 28mm	7.60 x 1.97 x 1.1" 193 x 50 x 28mm	7.60 x 1.97 x 1.1" 193 x 50 x 28mm	7.60 x 1.97 x 1.1" 193 x 50 x 28mm



Models 500, 501, 502 & 503 include a pair of test leads and soft carrying case

ORDERING INFORMATION

CATALOG NO.

- Clamp-on Meter Model 500 (AC, 400AAC, 600VAC, Ohms, Continuity) **Cat. #2117.54**
- Clamp-on Meter Model 501 (AC, 400AAC, 600VAC/DC, Ohms, Continuity) **Cat. #2117.21**
- Clamp-on Meter Model 502 (TRMS, 400AAC, 600VAC/DC, Ohms, Continuity) **Cat. #2117.66**
- Clamp-on Meter Model 503 (AC/DC, 400AAC/DC, 600VAC/DC, Ohms, Continuity) **Cat. #2117.22**

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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