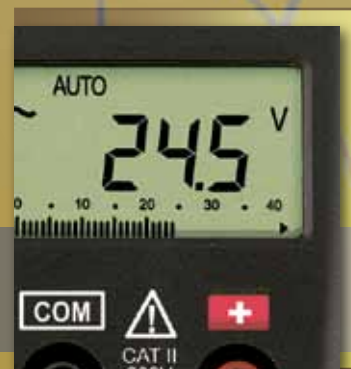


Multi-purpose Clamp-On Meters

**Rugged • Accurate
Dependable • Affordable**

Rugged and professional, our complete line of clamp-on meters offer full functions including: AAC, ADC, VAC, Ohms, Continuity, Frequency, Diode Test, TRMS, %THD, %DF, CF and Peak.

Varying in size and function, our clamp-on meters provide a solution to all power quality measurement needs.



Our products are backed by over 100 years of experience in test and measurement equipment, and encompass the latest international standards for quality and safety.

 **Technical Hotline: (800) 343-1391**
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 **AEMC[®]**
INSTRUMENTS
CHAUVIN ARNOUX GROUP

Rugged & Professional Models 500, 502 & 503



Model 502 monitoring phase current on a power panel.

The AEMC® Models 500, 502 and 503 are compact clamp-on meters that measure up to the toughest professional 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 Model 502 also has a Frequency function sensed from either current or voltage. The Model 503 is 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, 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 500kcmil 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 are supplied in 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 (model dependent)
- ▶ 600VAC/DC volts measurements
- ▶ TRMS measurements (Model 502)
- ▶ Resistance measurements to 400Ω
- ▶ Continuity with beeper below 40Ω
- ▶ Frequency measurements (Model 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
- ▶ Supplied with 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



Models 500, 502 & 503 are supplied with a pair of test leads and soft carrying case

SPECIFICATIONS

MODELS	500	502 TRMS	503
ELECTRICAL			
AC Current (Auto-Ranging)	0.05 to 400A	0.05 to 400Arms	0.05 to 400A
Resolution	0.1A	0.01A and 0.1A	0.01A and 0.1A
Accuracy	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
AC Voltage (Auto-Ranging)	0.5 to 600V	0.5 to 600Vrms	0.5 to 600V
Resolution	0.1V and 1V	0.1V and 1V	0.1V and 1V
Accuracy	1.0% of Reading ± 5cts 1.5% of Reading ± 5cts	1.5% of Reading ± 5cts 1.5% of Reading ± 5cts	0.8% of Reading ± 5cts 1.5% of Reading ± 5cts
Input Impedance	1MΩ	1MΩ	10MΩ
DC Current (Auto-Ranging)	–	–	0.10 to 400A
Resolution	–	–	0.01A and 0.1A
Accuracy	–	–	2.5% of Reading ± 10cts
DC Voltage (Auto-Ranging)	–	0.2 to 600V	0.2 to 600V
Resolution	–	0.1V and 1V	0.1V and 1V
Accuracy	–	1% of Reading ± 2cts	1% of Reading ± 2cts
Input Impedance	–	1MΩ	10MΩ
Resistance-Ohms (Ω)	0.3 to 400Ω	0.2 to 400Ω	0.2 to 400Ω
Resolution	0.1Ω	0.1Ω	0.1Ω
Accuracy	1.9% of Reading ± 3cts	1% of Reading ± 2cts	1% of Reading ± 2cts
Max Test Voltage	-1.6Vdc	1.5Vdc	1.5Vdc
Continuity (•••))	<35Ω	<40Ω	<40Ω
Max Test Voltage	1.5Vdc	1.5Vdc	1.5Vdc
Frequency (Hz) (Auto-Ranging)			
CURRENT INPUT			
Range	20Hz to 4kHz >4kHz to 10kHz	1Hz Resolution 10Hz Resolution	–
Accuracy	–	0.1% of Reading ± 1ct	–
Min Input Signal	–	2Arms	–
Input Impedance	–	1MΩ	–
Overload Protection	–	600Arms	–
VOLTAGE INPUT			
Range	10Hz to 4kHz >4kHz to 40kHz >40kHz to 400kHz	1Hz Resolution 10Hz Resolution 100Hz Resolution	–
Accuracy	–	0.1% of Reading ± 1ct	–
Min Input Signal	4kHz 40kHz 400kHz	5Vrms 5Vrms 5Vrms	–
Input Impedance	–	1MΩ	–
Overload Protection	–	600Vrms	–
Power Source	Two 1.5V AAA batteries (included)		
Power-Off	30 minutes		
Low Power Indication	⚡ Displayed when the battery is below the required voltage		
MECHANICAL			
Jaw Opening Size Ø	1.1" (28mm) – facilitates 500kcmil cable		
Dimensions	7.60 x 1.97 x 1.1" (193 x 50 x 28mm)		
Weight	8.11 oz (230g) with batteries		
DISPLAY			
Digital Display	3½ 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	OL Displayed when input signal exceeds range		
Sample Rate	2 samples/sec for the digital display, 20 samples/sec for the analog bargraph		
ENVIRONMENTAL			
Altitude	2000 m		
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, 300V CAT III		
Double Insulation ☐	Yes		
CE Mark	Yes		

CONSTRUCTION



FUNCTIONS

MODELS	500	502	503
TRMS	-	✓	-
400Aac	✓	✓	✓
400Aac	-	-	✓
600Vac	✓	✓	✓
600Vdc	-	✓	✓
Resistance	✓	✓	✓
Continuity	✓	✓	✓
Beeper	✓	✓	✓
Frequency	-	✓	-
Bargraph	✓	✓	✓
Hold	✓	✓	✓
Push button DC Zero	-	-	✓

General Purpose Models 511, 512 & 514



Model 514 measuring primary current on a machine control system.

The AEMC® Models 511, 512 and 514 are general purpose clamp-on meters that measure up to the toughest professional 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 750kcmil cable or two 350kcmil 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 4000Ω
- ▶ Continuity with beeper below 40Ω
- ▶ Frequency measurements from V and A
- ▶ Diode test
- ▶ 1ms Peak function for fast capture of signals
- ▶ 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



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

SPECIFICATIONS

MODELS	511	512 TRMS	514 TRMS
ELECTRICAL			
AC Current (Auto-Ranging)	0.05 to 1000A	0.05 to 1000Arms	0.05 to 1000Arms
Resolution	0.01A, 0.1A and 1A	0.01A, 0.1A and 1A	0.01A, 0.1A and 1A
Accuracy	50 to 60Hz 60 to 500Hz	1.9% of Reading ± 5cts 1.9% of Reading ± 5cts	1.9% of Reading ± 5cts 2.5% of Reading ± 5cts
Overload Protection	40A 400A 1000A	800Arms 1500Arms 1500Arms	1200Arms 1200Arms 1200Arms
AC Voltage (Auto-Ranging)	0.5 to 750V	0.5 to 750Vrms	0.5 to 750Vrms
Resolution	0.1V and 1V	0.1V and 1V	0.1V and 1Vrms
Accuracy	50 to 500Hz	1.2% of Reading ± 5cts	1.5% of Reading ± 5cts
Input Impedance	10MΩ	10MΩ	10MΩ
Overload Protection	1000Vrms	1000Vrms	1000Vrms
DC Current (Auto-Ranging)	–	–	1 to 1000A
Resolution	–	–	0.01A, 0.1A and 1A
Accuracy	–	–	2.5% of Reading ± 10cts
Overload Protection	–	–	1200Arms
DC Voltage (Auto-Ranging)	0.2 to 1000V	0.2 to 1000V	0.2 to 1000V
Resolution	0.1V and 1V	0.1V and 1V	0.1V and 1Vrms
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
Resistance-Ohms (Ω)	0.2 to 4000Ω	0.2 to 4000Ω	0.2 to 4000Ω
Resolution	400Ω 4000Ω	0.1Ω 1Ω	0.1Ω 1Ω
Accuracy	1% of Reading ± 2cts	1% of Reading ± 2cts	1% of Reading ± 2cts
Max Test Voltage	3Vdc	3Vdc	3Vdc
Overload Protection	600Vrms	600Vrms	600Vrms
Diode Test	0.6mA	0.6mA	1.7mA max
Open Circuit Voltage	3Vdc	3Vdc	3Vdc
Continuity (•••))	<40Ω	<40Ω	<40Ω
Max Test Voltage	3Vdc	3Vdc	3Vdc
Frequency (Hz) (Auto-Ranging)			
CURRENT INPUT			
Range	4kHz 10kHz	1Hz Resolution –	1Hz Resolution 10Hz Resolution
Accuracy	20Hz to 10kHz	0.1% of Reading ± 1ct	0.1% of Reading ± 1ct
Min Input Signal	4kHz 10kHz	2Arms –	2Arms 5Arms
VOLTAGE INPUT			
Range	4kHz 10kHz	1Hz Resolution 10Hz Resolution	1Hz Resolution 10Hz Resolution
Accuracy	10Hz to 10kHz	0.1% of Reading ± 1ct	0.1% of Reading ± 1ct
Min Input Signal	4kHz 10kHz	5Vrms 5Vrms	5Vrms 10Vrms
Power Source	9V Alkaline battery (included)		
Power-Off	30 minutes		
Low Power Indication	⚡ Displayed when the battery is below the required voltage		
MECHANICAL			
Jaw Opening Size Ø	1.575" (40mm) – facilitates 750kcmil cable or two 500kcmil cables		
Dimensions	9.53 x 2.60 x 1.42" (242 x 66 x 36mm)		
Weight	14.10 oz (400g) with batteries		
DISPLAY			
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	OL Displayed when input signal exceeds range		
Sample Rate	2 samples/sec for the digital display, 20 samples/sec for the analog bargraph		
ENVIRONMENTAL			
Altitude	2000 m		
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 III, EN 61010, 1000V CAT II		
Double Insulation <input type="checkbox"/>	Yes		
CE Mark	Yes		

CONSTRUCTION



Model 514

FUNCTIONS

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

Hand-Held & Ergonomic in Design **Model 565**



Measuring leakage current on a ground wire with the TRMS Leakage Current Meter Model 565

The TRMS Clamp-on Meter Model 565 is designed to measure low AC currents, which are typically leakage currents in ground conductors. Low currents are measured on the 60mA and 600mA ranges. Note the high sensitivity of the probe: 10 μ A and 100 μ A. This is possible through special jaw construction and in particular critical shielding of the jaws. At low measurement levels, shielding out noise is critical for low sensitivity, accuracy and stability.

Leakage current may be measured on a ground conductor and through the vector sum on multi-conductors. On a grounded system, clamp around the two or three conducting legs (not the ground conductor). The vector sum of the load currents will cancel out, leaving the leakage current measured.

The user may also use the Model 565 as a standard clamp-on meter to measure up to 100Arms, plus standard V_{AC}, V_{DC} ranges, resistance and continuity with a buzzer. In mA_{AC} and A_{AC}, the user can activate a low-pass filter to ignore all currents other than 50/60Hz. In this mode, only the fundamental signal is measured. The difference between the full frequency signal (WIDE displayed on LCD) and Filtered mode (50/60Hz displayed on LCD) essentially corresponds to the current attributable to Harmonics.

The Model 565 is ergonomic in design and fits well in the hand. Also, one hand operation is possible. The jaw size is compact yet designed to accommodate most known ground conductors up to 1" (26mm) in diameter.

▶ FEATURES

- ▶ Check for leakage and locate insulation breakdowns on live circuits
- ▶ Measures leakage current down to 0.1mA with up to 10 μ A resolution
- ▶ Measures current up to 100Arms
- ▶ Measures voltage up to 600V_{AC/DC}
- ▶ Measures Hz on either V or A inputs
- ▶ Measures Resistance and Continuity
- ▶ Hold feature freezes value
- ▶ Max feature keeps track of highest measured In-rush value
- ▶ Zero button ideal for measuring relative values
- ▶ Filter to isolate 50/60Hz fundamental from harmonics
- ▶ Compatible with VDE 0404
- ▶ Backlight display



Model 565 includes two color-coded 5 ft test leads, batteries, soft carrying case and user manual.

SPECIFICATIONS

MODEL		565	
ELECTRICAL			
mA AC Current (TRMS, Auto-Ranging)			
Measurement Range	0 to 600mA		
Resolution	60mA	0.01mA (10µA)	
	600mA	0.1mA (100µA)	
Accuracy	50 to 60Hz	1.2% of Reading ± 5cts	
	50 to 500Hz	2.5% of Reading ± 5cts	
	500Hz to 3kHz	3.5% of Reading ± 10cts	
AC Current (TRMS, Auto-Ranging)			
Measurement Range	10 to 100A		
Resolution	10A	0.001A (1mA)	
	100A	0.01A (10mA)	
Accuracy	50 to 60Hz	1.2% of Reading ± 5cts	
	50 to 500Hz	2.5% of Reading ± 5cts	
	500Hz to 3kHz	3.5% of Reading ± 10cts	
AC Voltage (TRMS)			
Measurement Range	0 to 600V		
Resolution	0.1V		
Accuracy	50 to 60Hz	1.0% of Reading ± 5cts	
	50 to 500Hz	1.2% of Reading ± 5cts	
	500Hz to 3kHz	2.5% of Reading ± 5cts	
DC Voltage			
Measurement Range	0 to 600V		
Resolution	0.1V		
Accuracy	1.0% of Reading ± 3cts		
Frequency (Auto-Ranging)			
Function	A-Hz	V-Hz	
Resolution	0 to 100Hz	0.1Hz	
	100Hz to 1kHz	1Hz	
Sensitivity	10mArms min		5Vrms min
Accuracy	0.5% of Reading ± 2cts		
Resistance			
Measurement Range	0 to 1kΩ		
Resolution	0.1Ω		
Accuracy	1.0% of Reading ± 3cts		
Continuity			
Measurement Range	0 to 1kΩ		
Resolution	0.1Ω		
Buzzer	<35Ω ± 25Ω		
Overload Protection	660Vrms/150Arms – <i>OL</i> is displayed and buzzer will sound		
Nominal Sample Rate	Two measurements per second (approx.)		
MAX Sample Rate	100ms		
Filter	On (50/60Hz only); Off (Full frequency range)		
In-Rush	Max 100ms sample time		
Power Source	Two 1.5V AAA batteries		
Battery Life	45 hrs (approx.)		
Power-Off	10 min approx with user override		
Low Battery Indication	⚡ is displayed when battery voltage is low		
MECHANICAL			
Dimensions	8.5 x 2.5 x 1.18" (218 x 64 x 30mm)		
Jaw Opening Size Ø	1.10" (28mm)		
Maximum Conductor Size	1" (26mm)		
Weight	10 oz (280g) with batteries		
DISPLAY			
Display Type	Four digit LCD		
Backlight	LED with 180 sec Auto-Off		
ENVIRONMENTAL			
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 (non-condensing)		
SAFETY			
Safety Rating	EN 61010-1 Ed. 2001, EN 61010-2-032 Ed. 2003, 600V CAT III		
Double Insulation <input type="checkbox"/>	Yes		
CE Mark	Yes		

CONSTRUCTION

Jaw opening: 1.10" (28mm)
Conductor size: 1" (26mm)

Safety barrier anti-slip guard

Lever for opening/closing jaw

Data hold button

Rotary range selector switch

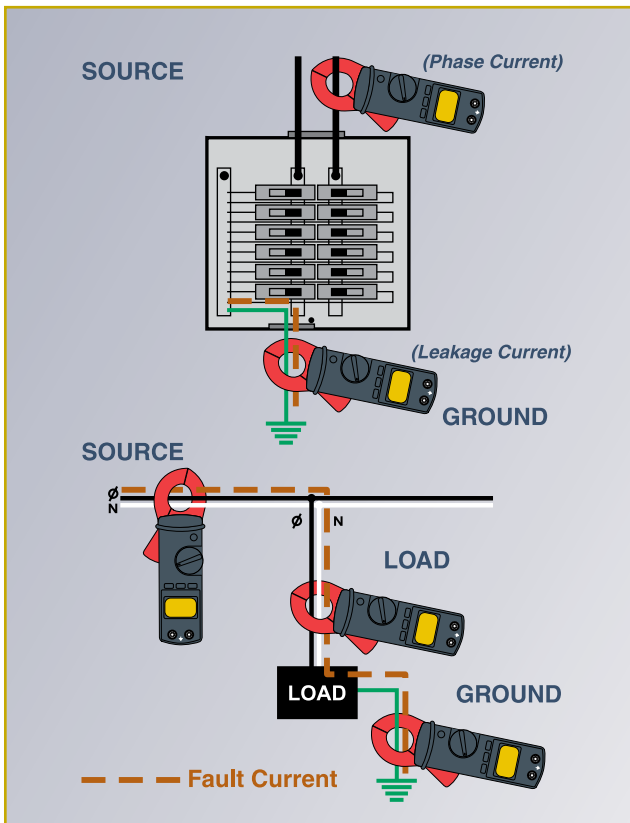
Backlight, Max hold, and Zero buttons

Backlit display

Positive (Red) input terminal jack

COM (Black) input terminal jack

Typical Points for Measuring Leakage Current



On single phase systems, the Model 565 will measure leakage current at the source, the load or the ground.



Model CM605 testing automotive electrical connectors

The Multifunction Clamp-on Meter Model CM605 is an ideal choice for both process and general industrial markets. It is also the perfect instrument for measuring 4 to 20mA process signals, as well as, the higher currents (up to 100A) associated with general industrial monitoring and troubleshooting.

The Model CM605 is a versatile device that is capable of measuring both AC/DC voltages, up to 600V, and AC/DC current. It can also measure resistance up to 10k Ω and includes a continuity buzzer to assist in circuit verification.

For operator convenience, the Model CM605 can also hold the last reading in the display and capture the peak value at the time of the measurement.

▶ FEATURES

- ▶ 0.001 to 10A, 10mA to 100A
- ▶ 10,000-count LCD Display – Excellent Resolution
- ▶ 100AC/DC Ammeter with low 10A Range – 1mA Resolution
- ▶ Tapered Jaws for crowded wiring areas (\varnothing .45" – 12mm Jaw Opening)
- ▶ 600VAC/DC Voltmeter
- ▶ Analog Output in AAC/DC
- ▶ Auto-Ranging & A/Dc Zero Push-button
- ▶ Data HOLD & PEAK Functions
- ▶ Relative Function to Compare Two Measurements
- ▶ Ohm Range & Continuity Test with Beeper
- ▶ AUTO-OFF and Low Battery Indicator
- ▶ IEC/EN 61010 Safety Rated & CE Mark
- ▶ 600Vrms Overload Protection

▶ APPLICATIONS

- ▶ Process loop monitoring
- ▶ Automotive electrical troubleshooting
- ▶ Industrial plant maintenance
- ▶ General AC and DC voltage and current monitoring
- ▶ Continuity checking



Model CM605 includes test leads, soft carrying case and user manual.

SPECIFICATIONS

MODEL	CM605
ELECTRICAL	
AC Current	
Measurement Ranges	2 Ranges: 10A, 100A
Accuracy & Resolution	10A: 2.0% of Reading \pm 10cts - 1mA Resolution 80A: 2.0% of Reading \pm 10cts - 10mA Resolution > 80A: 3.5% of Reading \pm 10cts - 10mA Resolution
Frequency Range	2 Ranges: 50 to 500Hz
DC Current (positive only)	
Measurement Ranges	2 Ranges: 10A, 100A
Accuracy & Resolution	10A: 2.5% of Reading \pm 10cts - 1mA Resolution 80A: 2.5% of Reading \pm 10cts - 10mA Resolution > 80A: 4.5% of Reading \pm 10cts - 10mA Resolution
AC Volts	
Measurement Ranges	600Vrms
Accuracy & Resolution	1.5% of Reading \pm 5cts - 100mV Resolution
Frequency	40 to 500Hz
Input Impedance	10M Ω , < 50pF
DC Volts (positive only)	
Measurement Ranges	600V
Accuracy & Resolution	1.0% of Reading \pm 2cts - 100mV Resolution
Input Impedance	10M Ω
Resistance (Ohms)	
Measurement Ranges	10k Ω (9999 Ω)
Accuracy & Resolution	1.0% of Reading \pm 3cts - 1 Ω Resolution
Test Voltage	< 3.0Voc
Continuity	
Measurement Ranges	Buzzer < 100 Ω \pm 25 Ω
Resolution	1 Ω
Test Voltage	< 3.0Voc
Analog Output	
Output	10mV/Aac & Apc through front banana jacks
Frequency	0 to 20kHz @ \pm 3db
Output Impedance	3k Ω , < 50pF
Other Functions	
Apc Zero & Relative Function	One touch push button (Δ ZERO Button) to Zero Apc, or other readings. Relative function also used in the other ranges to compare two measurements.
HOLD Function	Holds A & V measurements when pressed (HOLD button)
PEAK Function	Captures PEAK (1ms) V or A measurement when activated (PEAK Button)
Auto-Ranging	"AUTO" displayed on LCD
Over Range	"OL" displayed on LCD for all measurements
Auto-Off	Auto-Off after approx 10 minute with Over-Ride
Low Battery	Low Battery indication on LCD
MECHANICAL	
Max. Jaw Opening Size \emptyset	\emptyset 0.60" (15mm)
Max. Conductor Size	\emptyset 0.45" (12mm)
Power Source	Two 1.5V AAA (LR03) batteries (included)
Dimensions & Weight	7.95 x 2.76 x 1.33" (202 x 70 x 34mm) – 6.5 oz (180g)
SAFETY	
Safety Rating	IEC/EN 61010-1 and 2-032 – 600V CAT II and 300V CAT III – Pollution Degree 2
Double Insulation <input type="checkbox"/>	Yes
CE Mark	Yes

CONSTRUCTION

Tapered jaws for crowded wiring or areas (Ø.45" - 12mm)

Safety barrier anti-slip guard

Lever for jaw opening/closing

Data hold and Peak hold buttons

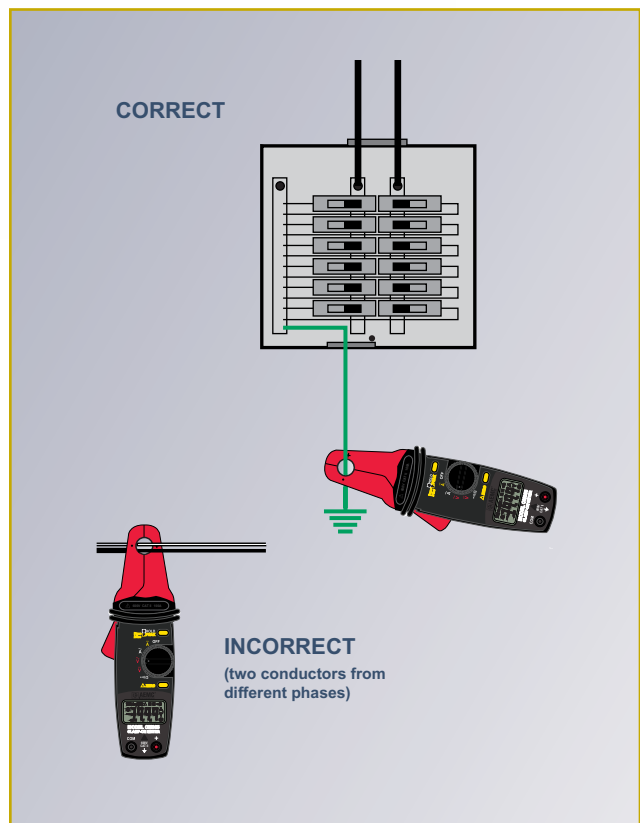
Rotary range selector switch

LCD display

Positive (Red) input terminal jack

COM (Black) input terminal jack

Measuring AC Current



Dual Display Clamp-Ons Models 670 & 675



Model 675 measures both volts and amps and displays results simultaneously.

The AEMC® Models 670 and 675 are general purpose, dual display, professional clamp-on meters that measure up to the toughest standards. These meters offer a complete set of measurement functions (AC Amps, DC Amps [675 only], AC Volts, DC Volts, Ohms, Continuity with beeper, Frequency from V or A Input, and Temperature) and are in compliance with international safety and quality standards to ensure professional and reliable measuring tools.

These meters are designed to measure and display amps and volts at the same time. They are also auto-ranging and provide the best measurement range and resolution for troubleshooting.

The Models 670 and 675 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 750kcmil cable or two 350kcmil cables. The large and easy-to-read 9999-count LCD features comprehensive user information symbols, such as low battery, polarity and overload. Both models are equipped with a Data Hold function that freezes the measurement for later viewing and Min/Max, and Peak function for capture of signals.

The Model 670 and 675 are True RMS clamp-on meters that provide RMS measurements for today's non-linear electrical environments.

▶ FEATURES

- ▶ Dual display
- ▶ Standard size, full function clamp-on meter
- ▶ 1000Aac/bc current measurements (DC Current on Model 675 only)
- ▶ 1400Vdc volt measurements
- ▶ TRMS measurements
- ▶ Resistance measurement to 10,000Ω
- ▶ Continuity with beeper below 35Ω
- ▶ Frequency measurements from V and A inputs
- ▶ 1ms Peak function for fast capture of signals
- ▶ Hold function to “freeze” readings
- ▶ Designed to measure Amps and Volts at the same time
- ▶ Push-button for easy ADC zeroing
- ▶ Large easy-to-read 9999-count backlit LCD display
- ▶ Includes test leads and soft carrying case


▶ 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 non-linear loads, such as adjustable speed drives and computers



The 670 and 675 include meter, set of test leads (red/black with safety needle tips), K-type thermocouple, one 9V battery, soft carrying case and a user manual.

SPECIFICATIONS

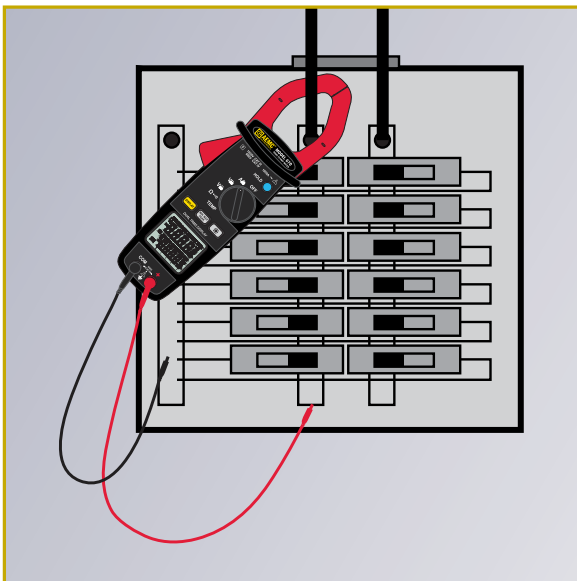
MODELS	670 TRMS			675 TRMS		
ELECTRICAL						
AC Amperes						
Range	100A	1000A	100A	1000A	1000A	1000A
Measuring Range	0.00 to 99.99A	100 to 1000A	0.00 to 99.99A	100.0 to 999.9A	100 to 1000A	100 to 1000A
Resolution	0.01A	0.1A	0.01A	0.1A	0.1A	0.1A
Accuracy	1.5% ± 5cts (50 to 60Hz), 2.0% ± 5cts (50 to 500Hz), 4.5% ± 5cts (500Hz to 3kHz)					
Overload	1000Arms					
DC Amperes						
Range	–	–	100A	1000A	1400A	1400A
Measuring Range	–	–	0.00 to 99.99A	100.0 to 999.9A	1000 to 1400A	1000 to 1400A
Resolution	–	–	0.01A	0.1A	1A	1A
Accuracy	–	–	1.2% ± 5cts	2.5% ± 5cts	2.5% ± 5cts	2.5% ± 5cts
Overload	–	–	1400Acc			
AC Volts						
Range	1000V					
Measuring Range	0.0 to 999.9V					
Resolution	0.1V					
Accuracy	1.0% ± 5cts (50 to 60Hz), 1.2% ± 5cts (50 to 500Hz), 2.5% ± 5cts (500Hz to 3kHz)					
Input Resistance	1MΩ					
Overload	1000Vrms					
DC Volts						
Range	1000V	1400V	1000V	1400V	1400V	1400V
Measuring Range	0.0 to 999.9V	1000 to 1400V	0.0 to 999.9V	1000 to 1400V	1000 to 1400V	1000 to 1400V
Resolution	0.1V	1V	0.1V	1V	1V	1V
Accuracy	1% ± 2cts			1% ± 2cts		
Input Resistance	1MΩ			1MΩ		
Overload	1400Vdc			1400Vdc		
Resistance-Ohms						
Range	1000Ω	10,000Ω	1000Ω	10,000Ω	10,000Ω	10,000Ω
Measuring Range	0.0 to 999.9Ω	1000 to 9999Ω	0.0 to 999.9Ω	1000 to 9999Ω	1000 to 9999Ω	1000 to 9999Ω
Resolution	0.1Ω	1Ω	0.1Ω	1Ω	1Ω	1Ω
Accuracy	1% ± 3cts, 3.3Vdc (Vmax)			1% ± 3cts, 3.3Vdc (Vmax)		
Protection	1000Vrms			1000Vrms		
Continuity (•••))						
Range	•••))					
Beeper Activation	< 35Ω					
Accuracy	1% ± 3cts, 3.3Vdc (Vmax)					
Protection	1000Vrms					
Frequency (Hz)						
Function	A - Hz	V - Hz	A - Hz	V - Hz	A - Hz	V - Hz
Range	1000Hz	10,000Hz	1000Hz	10,000Hz	1000Hz	10,000Hz
Resolution	0.1Hz	1Hz	0.1Hz	1Hz	0.1Hz	1Hz
Sensitivity	3Arms	5Vrms	3Arms	5Vrms	3Arms	5Vrms
Accuracy	1.0% ± 2cts			1.0% ± 2cts		
Temperature (°C/°F)						
Range	1000°C	1200°C	2192°F	1000°C	1200°C	2192°F
Measurement Range	-40 to 999.5°C	1000 to 1200°C	-40 to 2192°F	-40 to 999.5°C	1000 to 1200°C	-40 to 2192°F
Resolution	0.5°C	1°C	1°F	0.5°C	1°C	1°F
Accuracy	1.0% ± 2°C	1.0% ± 2°C	1.0% ± 4°F	1.0% ± 2°C	1.0% ± 2°C	1.0% ± 4°F
MECHANICAL						
Digital Display	3 ¾ digits LCD dual display (max reading 9999)					
Jaw Opening Size Ø	1.65" (42mm)			1.58" (40mm)		
Dimension	10.71 x 3.15 x 1.69" (272 x 80 x 43mm)			10.12 x 3.15 x 1.69" (257 x 80 x 43mm)		
Weight	17 oz (480g) with battery			15.5 oz (440g) with battery		
Power Supply	9V, NEDA 1604 (6F22) Alkaline					
Low Battery Indicator	 is displayed when the voltage supplied by the battery is lower than the operating voltage					
ENVIRONMENTAL						
Altitude	2000 m					
Operating Temperature	* -14° to 122°F (-25° to 50°C) < 80% RH, non-condensing					
Storage Temperature	-14° to 140°F (-25° to 60°C) < 80% RH, battery removed					
Pollution Degree	2					
SAFETY						
Safety Rating	EN 61010-1 Ed.2001; EN 61010-2-032 Ed.2002; 600V CAT IV, 1000V CAT III					
Double Insulation <input type="checkbox"/>	Yes					
CE Mark	Yes					

*Note: If the meter is to be used below 32°F (0°C), we suggest that the battery be replaced to ensure proper results.

CONSTRUCTION



AC Voltage and Current Measurement Simultaneously



- Clamp the jaws around the conductor to be measured.
- Voltage and current measurements will be displayed simultaneously.
- If reading is unstable and is hard to read, push the HOLD button and read measurement.



WARNING: If overload "OL" is displayed, unclamp the meter immediately.

High Performance Clamp-On Power Meters Models F05, F07 & F09



The F series is a high performance line of clamp-on meters built into a rugged compact sized case, with exceptional ergonomic design and extraordinary measurement possibilities. These are definitely not your generic off-the-shelf clamp-on! They are designed to offer professional measurement possibilities rarely seen in a clamp-on meter.

Integrating a fast microprocessor sampling at a high rate, they are completely automatic and perform TRMS measurements on the most distorted waveforms. The Models F05, F07 & F09 offer extraordinary measurement capabilities to the professional engineers and electricians who rely on professional measurement products.

Here are some interesting facts:

- Selected models automatically detect AC or DC in Voltage and Current – Just select the function.
- All models have a V-Live™ function to warn of the use of live circuits or elevated voltages. They also auto-range for the best resolution on a backlit 4000-count display and have Auto-Off to save the battery.
- Models F07 and F09 measure TRMS Voltage and Current and can incorporate the DC component of the signal for the Truest RMS.
- All models measure in-rush AC currents from one cycle up to 10 cycles and frequency
- Models F05 and F09 measure Phase Rotation (using only two leads!), Power Factor and Power. (up to 240kW)
- All models are very ergonomic and can be operated with one hand.
- Other features, based on the model, include Temperature, Min/Max/Peak, AC/DC adaptor input enabling the use of accessories (large clamps, light sensors...)

Models F05, F07 & F09 are designed for the industrial environment and offer enhanced safety specifications. They conform to the demanding international safety standards with a 600V CAT III rating and are CE marked.

▶ FEATURES

- ▶ Hand-held size, ultra practical and ergonomic
- ▶ True RMS measurement through fast sampling - accurate on non-linear waveforms
- ▶ 4kHz Bandwidth
- ▶ 3.5 Crest Factor @ 600Arms and 900Vrms
- ▶ Peak function captures 500µs signals
- ▶ Measure Inrush Current on 0.5, 1, 2.5, 5 and 10 cycles (15 to 70Hz)
- ▶ Min/Max for automatic capture of extreme values on 100ms samples
- ▶ Measure V, A, Ohms, kW, PF, VAR, VA, Hz, Phase Rotation, Temperature, AC + DC (model dependent)
- ▶ Temperature measurement up to 1832°F (1000°C) via standard K thermocouple (model dependent)
- ▶ Continuity at programmable buzzer threshold from 1 to 400Ω (model dependent)
- ▶ Selectable V-Live™ function (buzzer) warns of live circuit
- ▶ Designed for use with variable frequency drives (F05)
- ▶ Battery life displays directly in hours at the push of a button
- ▶ Automatically detects AC or DC and is auto-ranging
- ▶ Automatic DC current zeroing
- ▶ Backlit LCD
- ▶ EN 61010-1, EN 61010-2-032, 600V CAT III



Models F05, F07 and F09 include test leads, soft carrying case and user manual.

SPECIFICATIONS

MODELS	F05	F07	F09
ELECTRICAL			
AC Current (Auto-Ranging)		0.2 to 400A	
AC Voltage (Auto-Ranging)		0.2 to 600V	
DC Current (Auto-Ranging)		0.2 to 400A	
DC Voltage (Auto-Ranging)		0.2 to 600V	
AC + DC Current (Auto-Ranging)	–	0.2 to 400Arms	0.2 to 400Arms
AC + DC Voltage (Auto-Ranging)	–	600Vrms	600Vrms
Resistance		40k Ω	
Diode Test		Yes	
Continuity (Beeper)		Yes (w/adjustable threshold)	
Frequency		20kHz	
Power (W, VA, VAR)	240kW	–	5W to 240kW
Power Factor	-1.00 to 1.00	–	-1.00 to 1.00
Phase Rotation	Yes	–	Yes
Min/Max/Peak		Yes	
Hold		Yes	
Inrush Current		0.5 to 10 cycles selectable	
V-Live™ Hazardous Voltage Indicators ⁽¹⁾		45Vp	
Auto-Off		Yes	
Battery Indicator ⁽²⁾		Yes	
Buzzer for Overrange		Yes	
Power Source		One 9V Alkaline battery (included)	
MECHANICAL			
Max. Jaw Opening Size \emptyset		≤ 1.02 " (26mm)	
Max. Conductor Size		500kcmil cable	
Adapter (AC/DC)	–	0 to 4000mV	–
Dimensions		2.76 x 7.6 x 1.46" (70 x 193 x 37mm)	
Weight		9.17 oz (260g)	
DISPLAY			
Backlight		Yes	
ENVIRONMENTAL			
Temperature (int or ext)	–	-50° to 1832°F (-10° to 1000°C)	–
SAFETY			
Safety Rating		EN 61010-1, EN 61010-2-032, 600V CAT III	
Double Insulation <input type="checkbox"/>		Yes	
CE Mark		Yes	

⁽¹⁾Indicates voltage higher than instrument rating

⁽²⁾Remaining time expressed in hours on Models F05 and F07

CONSTRUCTION

Jaw Opening: $\leq 1.02"$ (26mm)
 Conductor Size: one 500kcmil cable

Anti-slip guard

Rotary function selector

Jaw opening trigger

Hold function + Auto zero DC and lead compensation

MIN, MAX and PEAK functions

Hz button

Liquid crystal display

Access key for functions outlined in yellow around the selector

Backlight function



Recessed safety input terminals








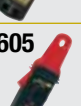



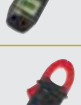



FUNCTIONS

MODELS	F05	F07	F09
TRMS	✓	✓	✓
Measurement	AC, DC	AC, DC, AC+DC	AC, DC, AC+DC
AC/DC Current	✓	✓	✓
AC/DC Voltage	✓	✓	✓
Power (W, VA, var, PF) Single- and 3-Phase	✓	✓	✓
Phase Rotation	✓ (W and PF single-phase only)	-	✓
Motor Start-Up (InRush)	✓	✓	✓
Temperature	-	✓	-
Frequency	✓	✓	✓
Backlit LCD Display	✓	✓	✓
Automatic Switch-Off	✓	✓	✓
Display Hold Function	✓	✓	✓
Battery Level Indicator	✓	✓	✓
Presence of Dangerous Voltage (V-live)	✓	✓	✓
Automatic AC/DC Choice of Automatic/Manual Mode	✓	✓	✓
Automatic Zero DC	✓	✓	✓
Lead Resistance Compensation	✓	✓	✓
Min/Max 100ms	✓	✓	✓
Peak 500 μ s	✓	✓	✓

SELECTION CHART

MODELS	Type	AC Current	AC Voltage	DC Current	DC Voltage	Resistance (Ω)
500 	AC	0.05 to 400A	0.5 to 600V	–	–	400 Ω
502 	AC TRMS	0.05 to 400A	0.5 to 600V	–	0.2 to 600V	400 Ω
503 	AC/DC	0.05 to 400A	0.5 to 600V	0.10 to 400A	0.2 to 600V	400 Ω
511 	AC	0.05 to 1000A	0.5 to 750V	–	0.2 to 1000V	4000 Ω
512 	AC TRMS	0.05 to 1000A	0.5 to 750V	–	0.2 to 1000V	4000 Ω
514 	AC/DC TRMS	0.05 to 1000A	0.5 to 750V	1 to 1000A	0.2 to 1000V	4000 Ω
565 	AC TRMS	0 to 600mA; 10 to 100A	0 to 600V	–	0 to 600V	0 to 1k Ω
CM605 	AC/DC	1mA to 100A	600Vrms	1mA to 100A	600V	0 to 9999 Ω
670 	AC TRMS	0 to 1000A	0 to 1000V	–	1000 to 1400V	1000 to 10,000 Ω
675 	AC/DC TRMS	0 to 1000A	0 to 1000V	0 to 1400A	0 to 1400V	0 to 9999 Ω
F05 	AC/DC TRMS	0.2 to 400A	0.2 to 600V	0.2 to 400A	0.2 to 600V	40k Ω
F07 	AC/DC TRMS	0.2 to 400A	0.2 to 600V	0.2 to 400A	0.2 to 600V	40k Ω
F09 	AC/DC TRMS	0.2 to 400A	0.2 to 600V	0.2 to 400A	0.2 to 600V	40k Ω

MODELS	Continuity	Frequency (Hz)		True RMS	Jaw Size	Dimensions	Catalog No.
		Current	Voltage				
500 	<35Ω	-	-	-	1.1" (28mm)	7.60 x 1.97 x 1.1"	2117.54
502 	<40Ω	20Hz to 10kHz	10Hz to 400kHz	✓	1.1" (28mm)	7.60 x 1.97 x 1.1"	2117.66
503 	<40Ω	-	-	-	1.1" (28mm)	7.60 x 1.97 x 1.1"	2117.22
511 	<40Ω	20Hz to 10kHz	10Hz to 10kHz	-	1.58" (40mm)	9.53 x 2.60 x 1.42"	2117.67
512 	<40Ω	20Hz to 10kHz	10Hz to 10kHz	✓	1.58" (40mm)	9.53 x 2.60 x 1.42"	2117.68
514 	<40Ω	20Hz to 10kHz	10Hz to 10kHz	✓	1.58" (40mm)	9.53 x 2.60 x 1.42"	2117.70
565 	0 to 1kΩ	0 to 1kHz	0 to 1kHz	✓	1.1" (28mm)	8.5 x 2.5 x 1.18"	2117.56
CM605 	Buzzer <100Ω ± 25Ω	50 to 500Hz	40 to 500Hz	-	0.60" (Ø 15mm)	7.95 x 2.76 x 1.33"	7000.02
670 	<35Ω	1000Hz	10,000Hz	✓	1.65" (42mm)	10.71 x 3.15 x 1.69"	2117.49
675 	<35Ω	1000Hz	10,000Hz	✓	1.58" (40mm)	10.12 x 3.15 x 1.69"	2117.50
F05 	Yes (w/adjustable threshold)	20kHz	20kHz	✓	≤1.02" (26mm)	2.76 x 7.6 x 1.46"	2129.53
F07 	Yes (w/adjustable threshold)	20kHz	20kHz	✓	≤1.02" (26mm)	2.76 x 7.6 x 1.46"	2129.54
F09 	Yes (w/adjustable threshold)	20kHz	20kHz	✓	≤1.02" (26mm)	2.76 x 7.6 x 1.46"	2129.50

ORDERING INFORMATION

DESCRIPTION	CATALOG NO.
Clamp-On Meter Model 500 (AC, 400AAC, 600VAC, Ohms, Continuity)	Cat. #2117.54
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
Clamp-On Meter Model 511 (AC, 1000AAC, 750VAC/1000VDC, Ohms, Continuity, Hz)	Cat. #2117.67
Clamp-On Meter Model 512 (TRMS, 1000AAC, 750VAC/1000VDC, Ohms, Continuity, Hz)	Cat. #2117.68
Clamp-On Meter Model 514 (AC/DC, TRMS, 1000AAC/DC, 750VAC/1000VDC, Ohms, Continuity, Hz)	Cat. #2117.70
Leakage Current Meter Model 565 (TRMS, 10AAC, 100AAC, 600VAC/DC, Hz, Ohms, Continuity)	Cat. #2117.56
Clamp-On Meter Model CM605 (100AAC/DC, 600VAC/DC, Hz, Ohms, Continuity)	Cat. #7000.02
Clamp-On Meter Model 670 (Dual Display, TRMS, AC Amps, AC/DC Volt s, Ohms, Continuity, Frequency & Temperature)	Cat. #2117.49
Clamp-On Meter Model 675 (Dual Display, TRMS, AC/DC Amps & Volts, Ohms, Continuity, Frequency & Temperature)	Cat. #2117.50
Clamp-On Meter Model F05 (TRMS, 400AAC/DC, 600AC/DC, Hz, Power (kW), Phase Rotation, Ohms, Continuity)	Cat. #2129.53
Clamp-On Meter Model F07 (TRMS, 400AAC/DC, 600AC/DC, Hz, Ohms, Continuity, Temperature)	Cat. #2129.54
Clamp-On Meter Model F09 (TRMS, 400AAC/DC, 600AC/DC, Hz, Power (kW, kVA, kVAR), Phase Rotation, Ohms, Continuity)	Cat. #2129.50

TRAINING SEMINARS

AEMC® offers one-day training seminars throughout the USA on Ground Resistance Testing, Insulation Resistance Testing and Power Quality. Public and private courses are available.

For the schedule of upcoming training seminars contact seminars@aemc.com, visit our website at www.aemc.com or call (800) 343-1391.



Understanding Ground Resistance Testing

For field engineers, technicians, utility engineers, supervisors, electricians and inspectors who need or have an interest in testing and certifying electrical power grounding systems.

Key topics covered include:

- Soil Resistivity
- Ground Resistance
- 3-Point Measurements
- 4-Point Measurements
- Clamp-On Measurements
- Step and Touch Potential Measurements



Understanding Insulation Resistance Testing (Future)

For field engineers, technicians, supervisors, electricians, plant maintenance personnel and inspectors who need or have an interest in insulation resistance testing on motors, cables and transformers.

Key topics covered include:

- Motor Theory
- Spot Testing
- Timed Tests
- Polarization Index
- Dielectric Discharge Testing
- Temperature correction of test results



Understanding Power Quality (Future)

For field engineers, technicians, supervisors, electricians, plant maintenance personnel and inspectors who need or have an interest in monitoring, recording and analyzing power quality.

Key topics covered include:

- Why power quality is important to you
- Symptoms and problems associated with poor power quality
- Types of disturbances and how to tell them apart
- Harmonic analysis - what, why and how to measure
- THD - what is it and how much is too much
- Power Factor - what is it, why know it and how to measure it

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