

# AMP-200 Series TRMS Clamp Meters

#### The Modern Evolution of the Professional Clamp Meter

Amprobe's AMP-210 and AMP-220 600 A TRMS Clamp Meters offer a complete range of measuring functions for today's modern electrical environments. Both models feature True-RMS sensing, low pass filters and fast response processors for quick, error-free measurements. The Amp-Tip function allows for precise measurement of current down to the tenth of an Amp, enabling accurate current measurement of both large and small diameter wires.

# AMP-200 Series Features

- True-RMS
- Low Pass Filter
- Amp-Tip Functions
- Non-Contact Voltage Detection (NCV)
- Audible Continuity and Diode Test
- Data Hold, Relative Zero
- Large LCD Backlit Display
- Safety Rated: CAT III 600 V













### **AMP-200 Series Product Details**

**True-RMS** for accurate voltage measurements in noisy environments.

#### Low pass filter

for current and voltage measurements on variable frequency drives.

#### **Amp-Tip function**

for precise low current measurement of small diameter wires down to 0.1 Amp to help with electrical system troubleshooting.

Non-contact voltage detection (NCV)

**Audible continuity and** diode test

Data hold, relative zero, MAX/MIN/AVG mode

Large LCD backlit display

**Safety rated** CAT III 600 V



**Measurements:** 

Voltage

Up to 600 V AC/DC

**AC current** Up to 600 A

**DC Current** Up to 600 A (AMP-220 only)

**Frequency** 5.00 to 999.9 Hz

Resistance Up to  $60.00 \text{ k}\Omega$ 

Capacitance **Up to 2500** μF





## **AMP-200 Series Applications**



AMP-210 AC Clamp Meter

- Accurate measurement of current, voltage and frequency on all electrical systems including distorted, non-sinusoidal signals (True-RMS function) and variable frequency drives (low-pass filter).
- Capacitance measurement for start and run motor capacitors.
- Resistance and continuity functions to verify quality of electrical connections and to check if motor and transformer coils are working properly.



AMP-220 AC/DC Clamp Meter

• Low pass filter allows measurement of current and voltage on variable frequency drives (motors with speed controlled by frequency). Without this feature, the meter would provide erroneous readings when measuring voltage and current.



# AMP-200 and AMP-300 Detailed Specifications

Detailed Specification								
Model	AMP-210	AMP-220	AMP-310	AMP-320	AMP-330			
	AC Clamp Meter <b>Electrical</b>	AC/DC Clamp Meter Electrical	AC Clamp Meter <b>HVAC</b>	AC/DC Clamp Meter Electrical Motor Maintenance	AC/DC 1000 A Clamp Meter Industrial Motor Maintenance			
Safety Rating	CAT III 600 V	CAT III 600 V	CAT III 600 V	CAT III 600 V	CAT IV 600 V, CAT III 1000 V			
law Opening	1.18 in (30 mm)	1.37 in (35 mm)	1.18 in (30 mm)	1.37 in (35 mm)	2.0 in (51 mm)			
AC Voltage (True-RMS)	Range: 0 to 600.0 V Accuracy: ±1.0% + 5LSD (50 to 60 Hz)		Range: 0 to 600.0 V Accuracy: ±1.0% + 5LSD (50 to 60 Hz)		Range: 0 to 1000 V  Accuracy: ±0.8% + 5LSD (50 to 60 Hz)  ±1.5% + 5LSD (20 to 200 Hz)  ±10% + 5LSD (200 to 400 Hz)			
DC Voltage	Range: 0 to 600.0 V Accuracy: ±1.0% + 5LSD		Range: 0 to 600.0 V Accuracy: ±1.0% + 5LSD		Range: 0 to 1000 V Accuracy: ±0.8% + 5LSD			
AC+DC Voltage	-	Range: 0 to 600.0 V Accuracy: 1.2% ± 7LSD (DC, 50 to 60 Hz)	-	Range: 0 to 600.0 V Accuracy: 1.2% ± 7LSD (DC, 50 to 60 Hz)	Range: 0 to 1000 V  Accuracy: ±1.0% + 7LSD (50 to 60 Hz)  ±1.8% + 7LSD (DC, 40 to 200 Hz)  ±12% + 7LSD (200 to 400 Hz)			
AC Current (True-RMS)	Accuracy: ±1.8% -	0 to 600.0 A + 5LSD (50 to 100 Hz) O (100 to 400 Hz)	Accuracy: ±1.8%	0 to 600.0 A + 5LSD (50 to 100 Hz) D (100 to 400 Hz)	Range: 0 to 1000 A Accuracy: ±1.8% + 5LSD (40 to 100 Hz) ±2.2% + 5LSD (100 to 400 Hz)			
DC Current	-	Range: 0 to 600.0 A Accuracy: ±2.0% + 5LSD	-	Range: 0 to 600.0 A Accuracy: ±2.0% + 5LSD	Range: 0 to 1000 A Accuracy: ±1.8% + 5LSD			
AC+DC Current	-	Range: 0 to 600.0 A Accuracy: ±2.2% + 7LSD (DC, 50 to 100 Hz) ±2.7% + 7LSD (100 to 400 Hz)	-	Range: 0 to 600.0 A Accuracy: ±2.2% + 7LSD (DC, 50 to 100 Hz) ±2.7% + 7LSD (100 to 400 Hz)	Range: 0 to 1000 A Accuracy: ±2.2% + 7LSD (DC, 40 to 100 Hz) ±2.5% + 7LSD (100 to 400 Hz)			
Precise Low Current AC	Range: 0 to 60.00 A Accuracy: ±1.5% + 5LSD (50 to 60 Hz)		Range: 0 to 60.00 A Accuracy: ±1.5% + 5LSD (50 to 60 Hz)		Range: 0 to 60.00 A			
Precise Low Current DC	-	Range: 0 to 60.00 A Accuracy: ±2.0% + 5LSD	-	Range: 0 to 60.00 A Accuracy: ±2.0% + 5LSD	Range: 0 to 60.00 A  Accuracy: ±1.5% + 5L5D (0.00 to 20.00 A) ±3.0% + 5L5D (20.00 to 60.00 A)  Range: 0 to 60.00 A			
Precise Low Current AC+DC	-	Range: 0 to 60.00 A Accuracy: ±2.0% + 5LSD (DC, 50 to 60 Hz)	-	Range: 0 to 60.00 A Accuracy: ±2.0% + 5LSD (DC, 50 to 60 Hz)	#2.0% + 7LSD (0.00 to 20.00 A, DC, 40 to 100 Hz)  ±2.2% + 7LSD (0.00 to 20.00 A, 100 to 400 Hz)  ±3.0% + 7LSD (20.00 to 60.00 A, DC, 40 to 100 Hz)  ±3.0% + 7LSD (20.00 to 60.00 A, 100 to 400 Hz)			
Frequency	Range: 5.00 to 999.9 Hz Accuracy: ±1.0% + 5LSD (600 V range) Range: 50.0 to 400.0 Hz Accuracy: ±1.0% + 5LSD (600 A range)		Range: 5.00 to 999.9 Hz Accuracy: ±1.0% + 5LSD (600 V range) Range: 50.0 to 400.0 Hz Accuracy: ±1.0% + 5LSD (600 A range)		Range: 5.00 to 999.9 Hz Accuracy: ±1.0% + 5LSD (1000 V range) Range: 40.0 to 400.0 Hz Accuracy: ±1.0% + 5LSD (1000 A range)			
Resistance	Range: $0.0$ to $60.00$ k $\Omega$ Accuracy: $\pm 1.0\% + 5$ LSD		Range: 0.0 to 60.00 kΩ Accuracy: ±1.0% + 5L5D					
Capacitance	<b>Range</b> : 0.0 to 2500 μF <b>Accuracy</b> : ±2.0% + 4LSD		<b>Range</b> : 0.0 to 2500 μF <b>Accuracy</b> : ±2.0% + 4LSD					
Continuity Beeper	ON ≤ 10 Ω OFF > 250 Ω		ON ≤ 10 $\Omega$ OFF > 250 $\Omega$					
Non-Contact Voltage	10V to 1000V AC, 50/60Hz			10V to 1000V AC, 50	/60Hz			
True-RMS	•	•	•	•	•			
Low Pass Filter	•	•	•	•	•			
Autoranging	•	•	•	•	•			
Relative Zero	•	•	•	•	•			
MAX/MIN/AVG	•	•	•	•	•			
Diode Test	•	•	•	•	•			
Data Hold	•	•	•	•	•			
Backlight	•	•	•	•	•			
Auto Power Off	•		•	•	•			
300 Series: DC Microamps	-	-	Range: 0.0 to 2000 μA					
Temperature* (Type K thermocouple) *Error does not include Type-K thermocouple errors 3-Phase and	-	-	Accuracy: ±1.0% + 5LSD  Range: -40.0 to 752°F, -40.0 to 400°C  Accuracy: -40.0 to 14.0°F (±1.0% +3.0°F), >14.0 to 99.9°F (±1.0% +1.5°F)  100 to 752°F (±1.0% +2°F), -40.0 to -10.0°C (±1.0% +1.5°C)  >-10.0 to 99.9°C (±1.0% +0.8°C), 100 to 400°C (±1.0% + 1°C)					
Motor Rotation Indication	-	-	Rotation-R for mains supply Rotation-M for motors					
Inrush Current	-	-	•	•	•			
Peak Hold (Crest)	-	-	-	-	•			
Work Light	_	-	-	_	•			
<b>J</b> -				L	I			













Model	AMP-210	AMP-220	AMP-310	AMP-320	AMP-330
Display	3-5/6 digits 6000 counts	3-5/6 digits 6000 counts	3-5/6 digits 6000 counts	3-5/6 digits 6000 counts	3-5/6 digits 6000 counts
Polarity	Automatic	Automatic	Automatic	Automatic	Automatic
Update Rate	5 per second nominal	5 per second nominal	5 per second nominal	5 per second nominal	5 per second nominal
Operating Temperature	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	32 to 104°F (0 to 40°C)	14 to 122°F (-10 to 50°C)
Relative Humidity	80% at 30°C, 50% at 40°C	80% at 30°C, 50% at 40°C	80% at 30°C, 50% at 40°C	80% at 30°C, 50% at 40°C	Non condensing at ≤10°C 90% at 10 to30°C 75% at 30 to 40°C 45% at 40 to 50°C
Operating Altitude	0 to 2000 m	0 to 2000 m	0 to 2000 m	0 to 2000 m	0 to 2000 m
Pollution Degree	2	2	2	2	2
Storage Temperature	-4 to 140°F (-20°C to 60°C), < 80% RH	-4 to 140°F (-20°C to 60°C), < 80% RH	-4 to 140°F (-20°C to 60°C), < 80% RH	-4 to 140°F (-20°C to 60°C), < 80% RH	-4 to 140°F (-20°C to 60°C), < 80% RH
Temperature Coefficient	Nominal 0.15 x (specified accuracy)/ °C @ (0°C to 18°C or 28°C to 40°C)	Nominal 0.15 x (specified accuracy)/ °C @ (0°C to 18°C or 28°C to 40°C)	Nominal 0.15 x (specified accuracy)/ °C @ (0°C to 18°C or 28°C to 40°C)	Nominal 0.15 x (specified accuracy)/ °C @ (0°C to 18°C or 28°C to 40°C)	Nominal 0.10 x (specified accuracy)/ °C @ (0°C to 18°C or 28°C to 50°C)
Battery	Two AAA 1.5 V battery	Two AAA 1.5 V battery	Two AAA 1.5 V battery	Two AAA 1.5 V battery	Two AA 1.5 V battery
EMC	Meets EN 61326-1:2006	Meets EN 61326-1:2006	Meets EN 61326-1:2006	Meets EN 61326-1:2006	Meets EN 61326-1:2006
Safety Compliance	UL/IEC/EN 61010-1 ed. 3.0, IEC/EN 61010-2-033 ed. 1.0, CAN/CSA C22.2 NO. 61010-1 ed. 3.0, IEC/EN 61010-2-032 ed. 3.0 & IEC/EN 61010-031 ed. 1.1	UL/IEC/EN 61010-1 ed. 3.0, IEC/EN 61010-2-033 ed. 1.0, CAN/CSA C22.2 NO. 61010-1 ed. 3.0, IEC/EN 61010-2-032 ed. 3.0 & IEC/EN 61010-031 ed. 1.1	UL/IEC/EN 61010-1 ed. 3.0, IEC/EN 61010-2-033 ed. 1.0, CAN/CSA C22.2 NO. 61010-1 ed. 3.0, IEC/EN 61010-2-032 ed. 3.0 & IEC/EN 61010-031 ed. 1.1	UL/IEC/EN 61010-1 ed. 3.0, IEC/ EN 61010-2-033 ed. 1.0, CAN/CSA C22.2 NO. 61010-1 ed. 3.0, IEC/ EN 61010-2-032 ed. 3.0 & IEC/EN 61010-031 ed. 1.1	UL/IEC/EN 61010-1 ed. 3.0, IEC/EN 61010-2-033 ed. 1.0, CAN/CSA C22.2 NO. 61010-1 ed. 3.0, IEC/EN 61010-2-032 ed. 3.0 & IEC/EN 61010- 031 ed. 1.1
Certification	UL (c/us) and CE	UL (c/us) and CE	UL (c/us) and CE	UL (c/us) and CE	UL (c/us) and CE
Dimensions (L x W x H):	8.62 x 3.03 x 1.46 in (219 x 77 x 37 mm)	8.82 x 3.03 x 1.46 in (224 x 77 x 37 mm)	8.62 x 3.03 x 1.46 in (219 x 77 x 37 mm)	8.82 x 3.03 x 1.46 in (224 x 77 x 37 mm)	10.16 x 3.70 x 1.73 in (258 x 94 x 44 mm)
Weight:	208 g (0.46 lb)	254 g (0.56 lb)	208 g (0.46 lb)	254 g (0.56 lb)	420 g (0.93 lb)

Accessories Included:					
User's Manual	•	•	•	•	•
Test Leads	•	•	•	•	•
Carrying Case	•	•	•	•	•
Batteries	AAA (2)		AAA (2)		AA (2)
Alligator Clip Set	-	-	•	•	•
Banana plug K-type Thermocouple	-	-		•	•

Amprobe° info@amprobe.com Fluke Corporation, Everett, WA 98203 Tel: 877-AMPROBE (267-7623)

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