AMPROBE®
HARD AT WORK SINCE 1948.

AMP-300 Series

Motor Maintenance TRMS Clamp Meters

The Modern Evolution of the Professional Clamp Meter

Amprobe's AMP-300 Series True-RMS Clamp Meters offer a complete range of measuring functions for modern industrial environments, motor testing and HVAC applications. All 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, and a third input jack enables motor rotation and 3-phase sequence testing.

AMP-300 Series Features

- **True-RMS**
- **Motor Testing Capabilities**
  - Motor rotation
  - 3-phase sequence testing
  - Inrush current monitoring during motor start-up
- **HVAC Features**
  - Temperature measurement; User selectable °F or °C
  - DC Microamps for flame sensor testing
  - Capacitance measurement for start and run motor capacitors
- **Amp-Tip Function**
- **Low Pass Filter** for variable frequency drives
- **Safety Rated:**
  CAT III 600 V (AMP-310, AMP-320)
  CAT IV 600 V, CAT III 1000 V (AMP-330)

AMP-310
AC Clamp Meter
HVAC
CAT III 600 V

AMP-320
AC/DC Clamp Meter
Electrical Motor Maintenance
CAT III 600 V

AMP-330
AC/DC 1000 A Clamp Meter
Industrial Motor Maintenance
CAT IV 600 V
CAT III 1000 V

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AMP-300 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
(AMP-310, AMP-320)

CAT IV 600 V
CAT III 1000 V
(AMP-330)

Measurements:

Model	AMP-310	AMP-320	AMP-330
Safety Rating	CAT III 600 V	CAT III 600 V	CAT IV 600 V CAT III 1000 V
Voltage	Up to 600 V AC/DC	Up to 600 V AC/DC	Up to 1000 V AC/DC
AC Current	Up to 600 A	Up to 600 A	Up to 1000 A
DC Current	–	Up to 600 A	Up to 1000 A
Frequency	5 to 999 Hz		
Resistance	0 to 60 kΩ		
Capacitance	0.0 to 2500 µF		
Temperature	•	•	•

AMP-300 Series Applications

- **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.
- **3-phase Motor and Phase Rotation** Tests allow proper connection of a motor to a 3-phase system. Improperly connected motors will spin in a reverse direction, which may destroy the motor or equipment connected to it.
- **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.
- **DC Microamps** output for measurement of flame sensors. Test the proper operation of the flame sensor safety system in gas appliances. A broken sensor in a gas appliance will prevent the safety valve from opening and the appliance will not work.
- **Inrush current measurement** for motor start-up monitoring, allowing users to verify that the motor is receiving the required inrush current to support proper motor start.

AMP-310 AC Clamp Meter HVAC

AMP-320 AC/DC Clamp Meter
Electrical Motor Maintenance

AMP-330 AC/DC 1000 A Clamp Meter
Industrial Motor Maintenance

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AMP-200 and AMP-300

Detailed Specifications

Model	AMP-210	AMP-220	AMP-310	AMP-320	AMP-330
	AC Clamp Meter **Electrical**	AC/DC Clamp Meter **Electrical**	AC Clamp Meter **HVAC**	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
Jaw 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)	**Range:** 0 to 600.0 A **Accuracy:** ±1.8% + 5LSD (50 to 100 Hz) ±2.0% + 5LSD (100 to 400 Hz)		**Range:** 0 to 600.0 A **Accuracy:** ±1.8% + 5LSD (50 to 100 Hz) ±2.0% + 5LSD (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 **Accuracy:** ±1.5% + 5LSD (0.00 to 20.00 A, 40 to 100 Hz) ±2.0% + 5LSD (0.00 to 20.00 A, 100 to 400 Hz) ±3.0% + 5LSD (20.00 to 60.00 A, 40 to 100 Hz) ±3.0% + 5LSD (20.00 to 60.00 A, 100 to 400 Hz)
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% + 5LSD (0.00 to 20.00 A) ±3.0% + 5LSD (20.00 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)	**Range:** 0 to 60.00 A **Accuracy:** ±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 kΩ **Accuracy:** ±1.0% + 5LSD		**Range:** 0.0 to 60.00 kΩ **Accuracy:** ±1.0% + 5LSD		
Capacitance	**Range:** 0.0 to 2500 µF **Accuracy:** ±2.0% + 4LSD		**Range:** 0.0 to 2500 µF **Accuracy:** ±2.0% + 4LSD		
Continuity Beeper	ON ≤ 10 Ω OFF > 250 Ω		ON ≤ 10 Ω OFF > 250 Ω		
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 **Accuracy:** ±1.0% + 5LSD		
Temperature* (Type K thermocouple) *Error does not include Type-K thermocouple errors	–	–	**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)		
3-Phase and Motor Rotation Indication	–	–	Rotation-R for mains supply Rotation-M for motors		
Inrush Current	–	–	•	•	•
Peak Hold (Crest)	–	–	–	–	•
Work Light	–	–	–	–	•

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AMP-200 and AMP-300
General Specifications

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	–	–	•	•	•