

AMPROBE®

ACD-14, ACD-14 TRMS Digital Clamp-On Multimeter



Patent # D472,482



The ACD 14 clamps double up on displays and capability. View amperage and voltage simultaneously. When upgraded to TRMS capability the results are accuracy, reliability and professionalism.

- TRMS Measurement (ACD-14 TRMS only)
- AC and DC Voltage to 600V
- AC Current to 400A
- Resistance to 40M with Continuity Buzzer
- Capacitance to 3000 μ F
- Frequency measurement
- Diode test
- Hold and Maximum reading functions
- Temperature measurement
- Dual Display
- Accommodates conductors up to 1.02" (26mm) in diameter
- Auto ranging
- Auto power off and low battery indication
- Rubber over-molded case
- Overload protected
- Safety: CE, UL
- CAT III 600V
- In rush current

FEATURES	ACD-14	ACD-14 TRMS	ACCURACY
TRMS Measurement	N/A	•	
AC Voltage	4.000V, 40.00V, 400.0V, 600 V		$\pm 1.5\%$ Rdg + 5 LSD @ (4.000V, 40.00V, 400.0V)**
DC Voltage	0-400.0 mV, 4.000V, 40.00V, 400.0V, 600V		$\pm 0.5\%$ Rdg + 3 LSD @ (4.000V, 40.00V, 400.0V)**
AC Current	0-40.00A, 400.0A		$\pm 1.9\%$ Rdg + 8 LSD**
AC/DC Micro Amps (Using Test Leads)	400 μ A, 2000 μ A		DC: $\pm 1.5\%$ Rdg + 4 LSD** AC: $\pm 2.0\%$ Rdg + 5 LSD**
Resistance with Continuity Buzzer	0-400.0 Ω , 4.000 k Ω , 40.00 k Ω , 400.0 k Ω , 0-4.000M Ω , 40.00 M Ω /2		$\pm 0.6\%$ Rdg + 4 LSD @ (4.000k Ω , 40.00k Ω ,400.0k Ω)***
Capacitance	500.0nF, 5.000 μ F, 50.00 μ F, 500.0 μ F, 3000 μ F		$\pm 3.5\%$ Rdg + 6 LSD
Frequency (Using Jaw or Test Leads)	10Hz to 100kHz		$\pm 0.5\%$ Rdg + 4 LSD
Temperature	-4°F to 572°F (-20°C to 300°C)		$\pm 2.0\%$ Rdg + 6°F

**For other ranges see website (<http://www.AMPROBE.com>)

OPTIONAL ACCESSORIES	PART NUMBER
Line splitter (Energizer)	A47L
5000A Clamp-on Current Transformer (50 to 1)	CT50-1
3000A Clamp-on Current Transformer (50 to 1)	CT50-2
600A Clamp-on Current Transformer (10 to 1)	A50-1
3000A AC Flexible Clamp-On Attachment	ACF-3000AK
Temperature Adapter	TMA-K
Alligator Clips (For test leads)	VRC-320

REPLACEMENT PARTS	PART NUMBER
<i>(supplied with product)</i>	
Test leads with set of alligator clips (alligator clips are not supplied with product)	MTL-90B
Carrying case	SV-U
Bead Type-K Thermocouple (with banana plugs for ACD-14 only)	TPK-59
Instruction Manual	www.AMPROBE.com



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GENERAL SPECIFICATIONS

Display: 3-3/4 digits 4000 counts, dual LCD displays
Update Rate: 3 per second nominal
Polarity: Automatic
Low Battery Indication: Below approx. 2.4V
Operating Temperature: 32°F to 104°F (0°C to 40°C)
Relative Humidity: Maximum relative humidity 80% for temperatures up to 88°F (31°C) decreasing linearly to 50% relative humidity at 104°F (40°C)
Altitude: Operating below 6,562 ft (2000m)
Storage Temperature: -4°F to 140°F (-20°C to 60°C), < 80% R.H. (with battery removed)
Temperature Coefficient: Nominal 0.15 x (specified accuracy)/°F @ 32°F -64°F or 82°F - 104°F (0°C - 18°C or 28°C - 40°C), or otherwise specified
Sensing: Average sensing for ACD-14; True RMS for ACD-14 TRMS
Power Supply: Two 3V alkaline button batteries (ANSI/NEDA-5004LC, IEC-CR2032).

Battery Life: 95 hours approx. (in DCV mode)
Power Consumption: 2.5 mA typical for ACD-14; 2.9mA typical for ACD-14 TRMS
Low Battery Indication: Below approx. 2.4V (battery symbol appears in upper right)
Auto Power Off: After being idle for 30 minutes
APO Consumption:
 ACD-14 : 0.8µA typical except 25µA typical for temperature function
 ACD-14 TRMS : 10µA typical except 25µA typical for temperature function
Safety: Meets IEC61010-2-032(1994), EN61010-2-032(1995), UL3111-2-032(1999)./ Category III 600 Volts AC & DC/ CE Approved / UL Listed
Transient Protection: 6.5kV (1.2/50µs surge) for all models
Pollution Degree: 2
E.M.C.: Meets EN61326(1997, 1998/A1), EN61000-4-2(1995), & EN61000-4-3 (1996)
In an RF field of 3V/m: Capacitance function is not specified

µA Function: Total Accuracy = Specified Accuracy + 65 digits
Other Function Ranges: Total Accuracy = Specified Accuracy + 45 digits Performance above 3V/m is not specified
Overload Protections:
 ACA Clamp-on jaws: AC 400A RMS continuous
 "+" & "COM" terminals (all functions): 600VDC/VAC RMS
Dimension: L 7.48" X W 2.48" X H 1.25" (L190mm X W 63mm X H 32mm)
Weight: 0.450 Lb approx. (204 g)
Jaw opening & Conductor diameter: 1.02" max (26mm)
Electrical Specifications: Accuracy is ±(% reading digits + number of digits) or otherwise specified, at 73°F ± 9°F (23°C ± 5°C) & less than 75% R.H. True RMS Model ACD-14 TRMS ACV, ACmA & ACA clamp-on accuracies are specified from 5% to 100% of range or otherwise specified. Maximum Crest Factor are < 1.96 at full scale & < 3.92 at half scale, and with frequency spectrums, besides fundamentals, fall within the meter specified AC bandwidth for non-sinusoidal waveforms.

DC Voltage	
RANGE	Accuracy
400.0 mV	0.3% + 4d
4.000V, 40.00V, 400.0V	0.5% + 3d
600V	1.0% + 4d
NMRR: >50dB @ 50/60Hz CMRR: >120dB @ DC, 50/60Hz, Rs=1k Input Impedance: 10M , 30pF nominal (1000M for 400.0mV range)	

AC Voltage	
RANGE	Accuracy
50Hz -- 500Hz	
4.000V, 40.00V, 400.0V	1.5% + 5d
600V	2.0% + 5d
CMRR: >60dB @ DC to 60Hz, Rs=1k Input Impedance: 10M , 30pF nominal	

ACA Current (Clamp-on)	
RANGE	Accuracy
50Hz / 60Hz	
40.00A	1.9% + 8d
400.0A	1.9% + 8d*
600A**	unspecified

*Accuracy specified to 350A continuous, and 400A for 60-second max with 5 minutes cool down interval.

**Added range to indicate instantaneous over-range current values TRMS model ACD-14 TRMS accuracy is specified from 10% to 100% of range.

Max Hold (where applicable)

Specified accuracy ± 50 digits for changes > 25ms in duration

Audible Continuity Tester

Audible threshold: between 10W and 120W.

Ohms	
RANGE	Accuracy
400.0	0.8% + 6d
4.000k , 40.00k , 400.0k	0.6% + 4d
4.000M	1.0% + 4d
40.00M	2.0% + 4d
Open Circuit Voltage: 0.4VDC typical	

Capacitance	
RANGE*	Accuracy**
500.0nF, 5.000µF, 50.00µF, 500.0µF, 3000µF	3.5%*** + 6d

*Additional 50.00nF range accuracy is not specified

**Accuracies with film capacitor or better

***Specified with battery voltage above 2.8V (approximately half full battery). Accuracy decreases gradually to 12% at low battery warning voltage of approximately 2.4V

DC µA	
RANGE	Accuracy Burden Voltage
400.0µA	1.5% + 4d 2.8mV/µA
2000µA	1.2% + 3d 2.8mV/µA

AC µA	
RANGE	Accuracy Burden Voltage
50Hz -- 500Hz	
400.0µA	2.0% + 5d 2.8mV/µA
2000µA	1.5% + 5d 2.8mV/µA

Hz Frequency		
Function	Sensitivity (Sine RMS)	Range
400.0mV	300mV	10Hz -- 2kHz
4.000V	4V	5Hz -- 40kHz
40.00V	28V	5Hz -- 100kHz
400.0V	100V	5Hz -- 100kHz
600V	500V	5Hz -- 5kHz
400.0µA	500µA	10Hz -- 30kHz
2000µA	500µA	10Hz -- 30kHz

Display counts: 5000

Best resolution: 0.001Hz

Accuracy: 0.5%+4d

Diode Tester	
Open Circuit Voltage	Test Current (Typical)
< 1.6 VDC	0.25mA

Type-K Temperature	
RANGE	Accuracy*
-20°C TO 300°C	2% + 3°C
-4°F TO 572°F	2% + 6°F

*Type-K thermocouple range & accuracy not included