



# 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 40MΩ with Continuity Buzzer
- Capacitance to 3000 μF
- 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		± 1.5% Rdg + 5 LSD @ (4.000V, 40.00V, 400.0V)**
DC Voltage	0-400.0 mV, 4.000V, 40.00V, 400.0V, 600V		± 0.5% Rdg + 3 LSD @ (4.000V, 40.00V, 400.0V)**
AC Current	0-40.00A, 400.0A		± 1.9% Rdg + 8 LSD**
AC/DC Micro Amps (Using Test Leads)	400μA, 2000μA		DC: ± 1.5% Rdg + 4 LSD** AC: ± 2.0% Rdg + 5 LSD**
Resistance with Continuity Buzzer	0-400.0 1/, 4.000 k1/, 40.00 k1/, 400.0 k1/, 0-4.000M1/, 40.00 M1/2		± 0.6% Rdg + 4 LSD @ (4.000k1/, 40.00k1/,400.0k1/)**
Capacitance	500.0nF, 5.000μF, 50.00μF, 500.0μF, 3000μF		± 3.5% Rdg + 6 LSD
Frequency (Using Jaw or Test Leads)	10Hz to 100kHz		± 0.5% Rdg + 4 LSD
Temperature	-4°F to 572°F (-20°C to 300°C)		± 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	<a href="http://www.AMPROBE.com">www.AMPROBE.com</a>



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

### 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=1kΩ Input Impedance: 10MΩ, 30pF nominal (1000MΩ 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=1kΩ Input Impedance: 10MΩ, 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
400.0Ω	0.8% + 6d
4.000kΩ, 40.00kΩ, 400.0kΩ	0.6% + 4d
4.000MΩ	1.0% + 4d
40.00MΩ	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



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