ATK-2040

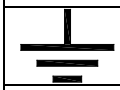
AC/DC TRMS Watt Clamp Meter

Users Manual

www.tmatlantic.com

EN 61010-2-032
CAT II 600V, CAT III 300V
Pollution Degree 2

SYMBOLS showed on the clamp meter or in this manual:

	Caution, risk of danger. Refer to accompanying documents
	Caution, risk of electric shock.
	Double Insulation
	Application around and removal from HAZARDOUS LIVE conductors is permitted.
	Earth (ground)
	AC (Alternating Current)
	DC (Direct Current)
	Both direct and alternating current
	Conforms to relevant European Union directives.
	Do not dispose of this clamp meter as unsorted municipal waste. Contact a qualified recycler for disposal.

Overvoltage Category I (CAT I):
Equipment for connection to circuits in which measures are taken to limit the transient overvoltages to an appropriate low level.
Overvoltage Category II (CAT II):
Energy-consuming equipment to be supplied from the fixed installation.
Overvoltage Category III (CAT III):
Equipment in fixed installations.

SAFETY INFORMATION: (Read First Before Operation)

Please follow the following instructions carefully for safe operation.

- NEVER use the clamp meter for Voltages higher than 600V.
- DO NOT hold the clamp meter beyond its tactile barrier.
- DO NOT use the clamp meter and accessories if they look damaged.
- USE CAUTION when working with high voltages.
- USE CAUTION when measuring the voltages higher than 30VAC rms or 60VDC. These voltages pose a shock hazard.
- USE EXTREME CAUTION when working around bare conductors or bus bars.
- ALWAYS use the clamp meter as the instructions in the manual.

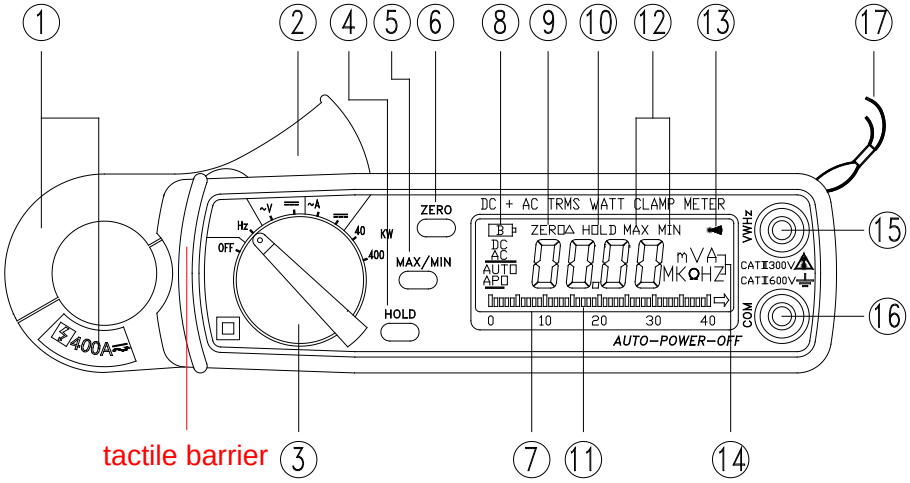
WARNING: If the clamp meter is used in a manner not specified by the manufacturer, the protection provided by the clamp meter may be impaired.

TABLE OF CONTENTS

I. Features

1. Accurate DC/AC digital clamp meter for current measurement.
2. One touch zero for DCA adjustment.
3. AC+DC 240K Watt Measurement
4. Large 3 3/4 digits LCD
5. Fast bargraph display (30 times/sec.) for transient observation.
6. Frequency measurements.
7. Max/Min and Data Hold functions.
8. Easy single rotary switch for any function selection.
9. Ideal for works in crowded switch box or cable areas.

II. Panel Description



1. Transformer Jaw

This is used to pick up current signal. To measure DC/AC current or Power/Watt, conductor must be enclosed by the jaw completely. No gap is allowed.

2. Transformer Trigger

This is used to open the jaw.

3. Function Selector and On/Off Switch

This is used to select the function user desired, such as DCA, ACA, DCV, ACV, Hz, Ohm and Continuity.

4. Data Hold Button

Once this button is pushed, reading shall be held on the LCD. Press again to release it. This button is also used to recover from auto-power-off. Press this button to turn the power back on after auto-power-off.

5. Max/Min Hold Button

This button is used to enable the maximum or minimum value to be displayed and updated during measurement. Press once, minimum value shall be displayed and updated. Press again, maximum value shall be displayed and updated. The Zero/Relative function will be disabled if Max/Min function is enabled. This button is not available in Hz function.

6. Zero/Relative Button

Once this button is pressed, the current reading shall be set to zero and be used as a zero reference value for all other subsequent measurement. The function is also used to remove offset value caused by the residual magetism remained in the core for the DC current measurement. The Zero/Relative function will be disabled if the MAX/MIN button is pressed. This button is not available in Hz function.

7. LCD

This is a 3 3/4 digit Liquid Crystal Display with maximum indication of 3999. Function symbols, units, bargraph, sign, decimal points, low battery symbols, max/min symbols, and zero symbol are included.

8. Low Battery Symbol

When this symbol appears, it means the battery voltage drops below the minimum required voltage. Refer to Section V for battery replacement.

9. Zero/Relative Symbol

When this symbol appears, it means a reference value has been subtracted from the actual reading. The reading shown is a offseted value. Press the zero button again to return to normal mode.

10. Data Hold Symbol

Once the hold button is pressed, this symbol appears on LCD.

11. Bargraph

Bargraph has forty segments. It displays segments proportional to the actual reading. Each segment represent one count.

12. Max/Min Hold Symbol

Once the max/min button is pressed, either MAX or MIN shall be displayed on LCD

13. Continuity Symbol

If ohm and continuity function is selected, this symbol shall appears on LCD.

14. Units Symbols

Once a function is selected, corresponding unit (V, Ω, A, or Hz) shall be displayed on LCD.

15. V/Hz Input Terminal

This terminal is used as input for voltage, or frequency measurements.

16. COM Terminal

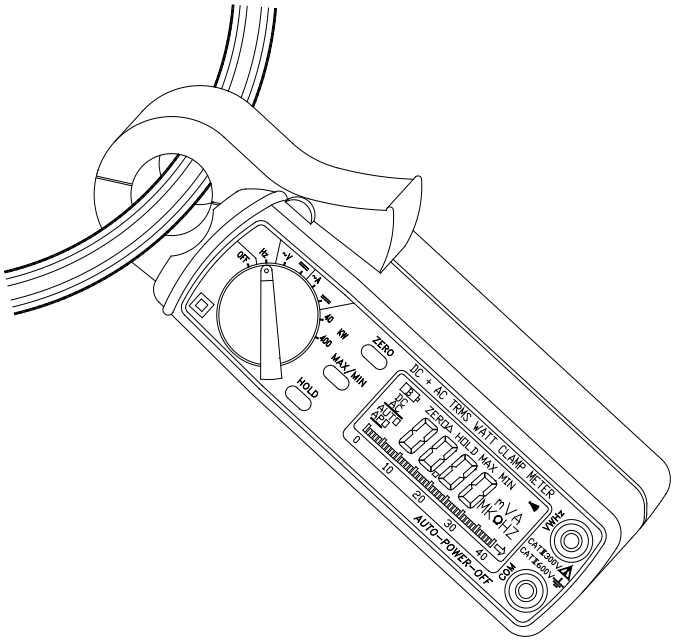
This terminal is used as common reference input.

17. Hand Strap

Put your hand through the hole of hand strap to avoid accidental drop of the clamp meter.

III. Operation Instructions

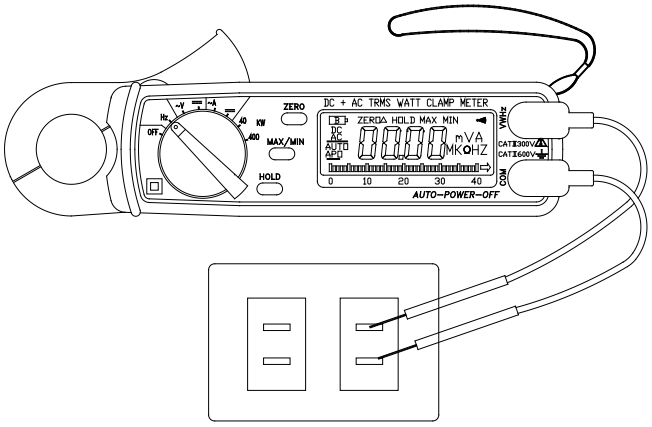
A. DC/AC Current Measurements



WARNING: Make sure that all the test leads are disconnected from the meter's terminals for current measurement.

1. DC Current
   a. Set the rotary switch at 400A DC.
   b. Push the zero button to adjust the reading to zero.
   c. Press the trigger to open the jaw and fully enclose the conductor to be measured. No air gap is allowed between the two half jaws.
   d. Read the measured value from the LCD display.
2. AC Current
   a. Set the rotary switch at 400A AC
   b. Press the trigger to open the jaw and fully enclose the conductor to be measured. No air gap is allowed between the two half jaws.
   c. Read the measured value from the LCD display.

B. DC/AC Voltage Measurements

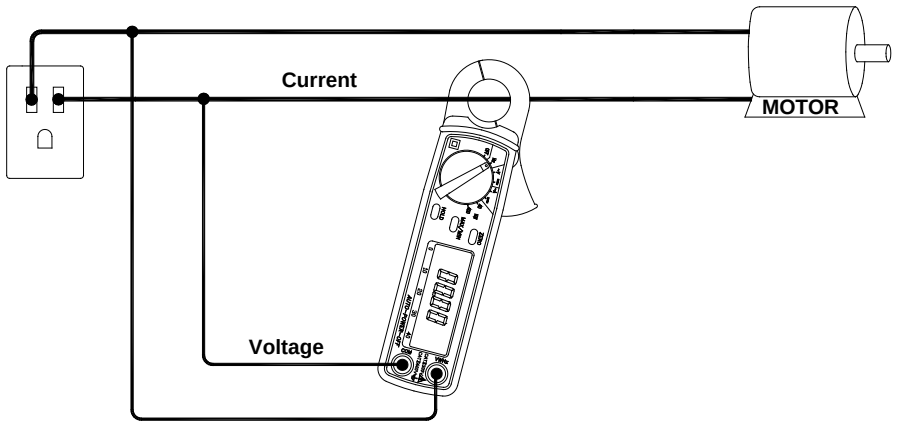


WARNING: Maximum input for DC V is 600, and for AC V is 600. Do not attempt to take any voltage measurement that exceeds the limits. Exceeding the limits could cause electrical shock and damage to the clamp meter.

1. DC Voltage
   a. Set the rotary switch at V DC.
   b. Insert the test leads into the input jack.
   c. Connect the test prods of the test leads in PARALLEL to the circuit to be measured.
   d. Read the measured value from the LCD display.
2. AC Voltage
   a. Set the rotary switch at V AC
   b. Insert the test leads into the input jack.
   c. Connect the test prods of the test leads in PARALLEL to the circuit to be measured.
   d. Read the measured value from the LCD display.

WARNING: Before taking any in-circuit resistance measurement, remove power from the circuit being tested and discharge all the capacitors.

C. AC+DC Power/Watt Measurement



1. Connect the test leads to the voltage source in parallel with the load.
2. Clamp on one of the wire to the load.
3. Select the range to Voltage AC or DC, and check the voltage reading.
4. Select the range to Current AC or DC, and check the current reading.
5. Select appropriate Watt range 40KW (0 - 250V, 0 - 400A) or 240KW (0 - 600V, 0 - 400A).
6. Read the value shown on LCD in KW (AC+DC).

D. Frequency (Hz) Measurement

1. Set the rotary switch at Hz.
2. Insert the test leads into the input jack.
3. Connect the test prods of the test leads in PARALLEL to the signal or circuit to be measured.
4. Read the measured value from the LCD display.

E. Relative Reading Measurements

The zero button also can be used to make a relative measurement. Once the button is pushed, the current reading is set to zero and a zero symbol shall be displayed on LCD. All the subsequent measurement shall be displayed as a relative value with respect to the value being zeroed. Press the zero button again to return to normal mode. But this

function is disabled if MAX/MIN function is enabled. Please watch for symbol displayed on LCD.

NOTE:
1. The ZERO button is disabled if Hz function is selected.
2. LCD displays relative numerical value without bargraph.

F. Holding the LCD Reading

Press the HOLD button, then the reading shall be hold and kept on LCD.

G. Finding the MAX/MIN Value

Press the MAX/MIN button to enable the maximum and minimum values to be recorded and updated during measurement. Push the button once, the maximum value shall be displayed and updated. The LCD display toggles between the MAX and MIN values. To exit MAX/MIN function, press and hold the MAX/MIN button for more than 2 seconds. If MAX/MIN button is pressed, the ZERO function will be disabled and the ZERO symbol will disappear from LCD.

NOTE: The MAX/MIN button is disabled if Hz function is selected.

H. To Recover from Auto-Power-Off

The meter will turn itself off 15 minutes after power-on (A symbol of APO is displayed in LCD). To turn it on again, user can either press any button or turn the rotary switch. Also pressing any button or turning the rotary switch will reset the 15 minute timer.

To disable the Auto-Power-Off function, hold the HOLD button while turning on power.

IV. Specifications(23◦C±5◦C)

AC+DC Watt

Range	Resolution	Accuracy	Remarks
AC 40KW	10W	±1.5%±3dgts	1-250V, 1-400A, PF 0.6 -1, **50/60Hz**, Vpeak < 360V
AC 240KW	100W	±1.5%±3dgts	1-600V, 1-400A, PF 0.6-1, **50/60Hz**, Vpeak < 850V
AC 40KW	10W	±2.5%±3dgts	1-250V, 1-400A, PF 0.6 -1, **40-100Hz**, Vpeak < 360V
AC 240KW	100W	±2.5%±3dgts	1-600V, 1-400A, PF 0.6-1, **40-100Hz**, Vpeak < 850V
DC 40KW	10W	±1.5%±3dgts	1-250V, 1-400A
DC 240KW	100W	±1.5%±3dgts	1-600V, 1-400A

DC Current

Range	Resolution	Accuracy	Overload Protection
400A	100mA	±1.5%±3dgts	DC 600A

AC Current (True RMS, Crest Factor < 4)

		Accuracy		Overload Protection
Range	Resolution	50/60 Hz	40 - 100Hz	
400A	100mA	±1.5%±3dgts	±2.5%±4dgts	AC 600A

DC Voltage: (Input Impedance: 10MΩ)

Range	Resolution	Accuracy	Overload Protection
400V	0.1V	±1.0%±2dgts	DC 800V

AC Voltage: (Input Impedance: 10MΩ, True RMS, Crest Factor < 4)

		Accuracy		Overload Protection
Range	Resolution	50/60 Hz	40 - 1KHz	
600V	1V	±1.5%±2dgts	±2.0%±4dgts	AC 800V

Frequency (Auto range):

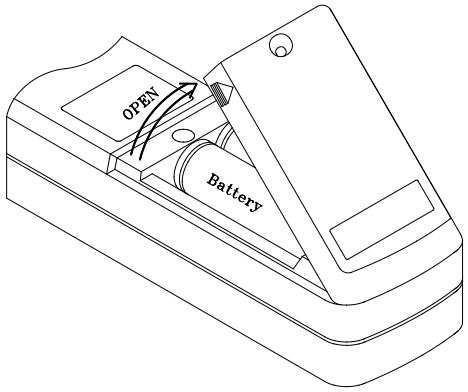
Range (Hz)	Resolution (Hz)	Accuracy	Sensitivity	Overload Protection
1-100K	0.001 - 100	±0.8%±2dgts	10V	AC 600V

Indoor Use

Conductor Size:	23mm max. (approx.)
Battery Type:	two 1.5V SUM-3
Display:	3 3/4 LCD with 40 seg. bargraph
Range Selection:	manual
Overload Indication:	OL
Power Consumption:	10 mA (approx.)
Low battery Indication:	
Auto-Power-Off:	15 minutes after power-on
Sampling Time:	3 times/sec. (display)
	30 times/sec. (bargraph)
Operating Temperature:	-10◦C to 50◦C
Operating Humidity:	less than 85% relative
Altitude :	up to 2000M
Storage Temperature:	-20◦C to 60◦C
Storage Humidity:	less than 75% relative
Dimension:	183mm (L) x 61.3mm (W) x 35.6mm (H)
	7.2" (L) x 2.5" (W) x 1.4" (H)

Weight:	190g (battery included)
Accessories:	Carrying bag x 1
	Users manual x 1
	1.5V battery x 2

V. Battery Replacement



When the low battery symbol is displayed on the LCD, replace the old batteries with two new batteries.

A. Turn the power off and remove the test leads from the clamp meter.
B. Remove the screw of the battery compartment.
C. Lift and remove the battery compartment.
D. Remove the old batteries.
E. Insert two new 1.5V SUM-3 batteries.
F. Replace the battery compartment and secure the screw.

VI. Maintenance & Cleaning

Servicing not covered in this manual should only be performed by qualified personnel. Repairs should only be performed by qualified personnel.

Periodically wipe the case with a damp cloth and detergent; do not use abrasives or solvents.