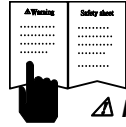




A12 / 12R
Clamp Meter

Instruction
Card



Read First



⚠ Safety Information

To ensure safe operation and service of the Meter, follow these instructions. Failure to observe warnings can result in severe **injury** or **death**.

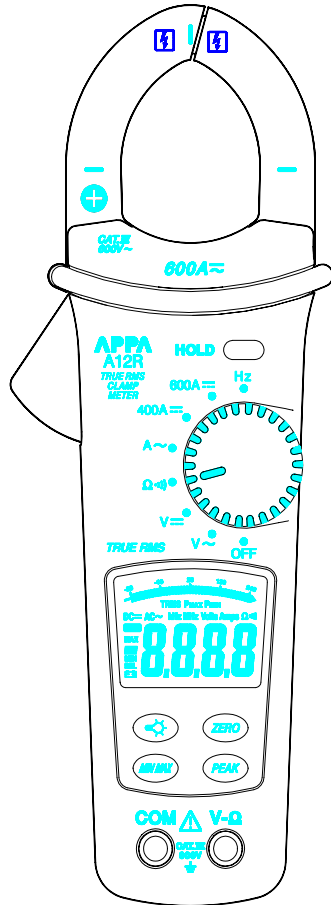
- Avoid working alone so assistance can be rendered.
- Do not use test leads or the Meter if they look damaged.
- Do not use the Meter if the Meter is not operating properly or if it is wet.
- Use the Meter only as specified in the Instruction card or the protection by the Meter might be impaired.
- Use extreme caution when working around bare conductors or bus bar. Contact with the conductor could result in electric shock.
- Use caution with voltages above 30 V ac rms, or 60 V dc. These voltages pose a shock hazard.

Symbols as marked on the Meter and Instruction card

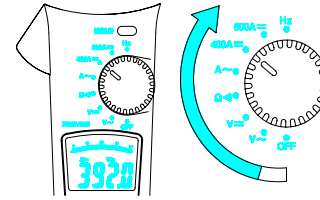
	Risk of electric shock
	See instruction card
	DC measurement
	Equipment protected by double or reinforced insulation
	Battery
	Earth
	AC measurement
	Conforms to EU directives

⚠ Caution

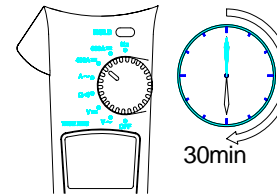
If the meter is used in the vicinity of equipment which generates electromagnetic interference, the display may become unstable or the measurements show may be subject to large errors.



Off / On



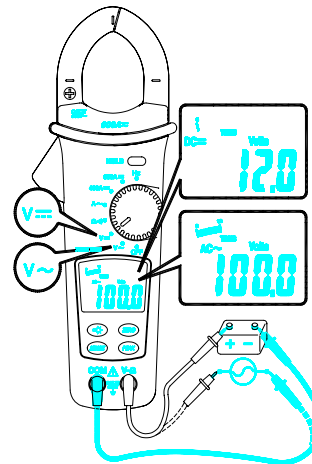
Auto Power Off



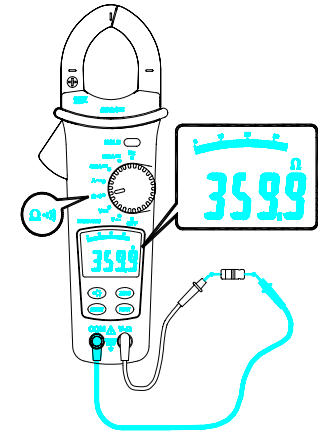
Auto Power Off disable :

Press buttons (except Hold button) than switch the rotary knob to power on the Meter.

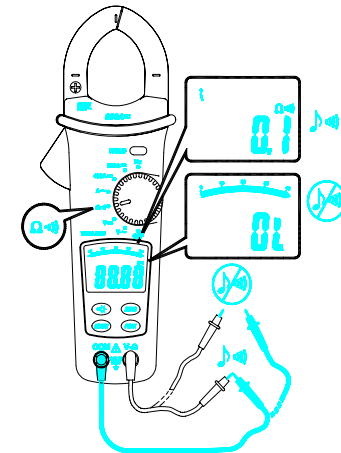
AC V / DC V



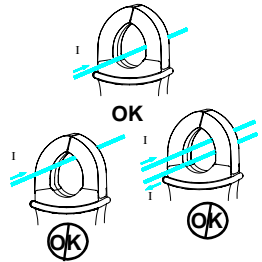
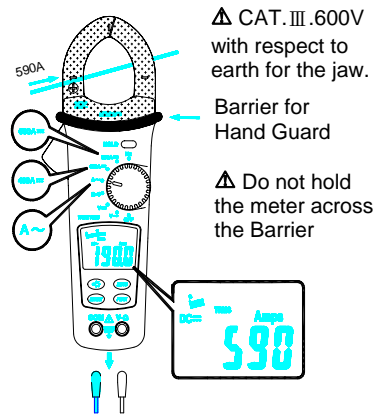
Resistance



Continuity

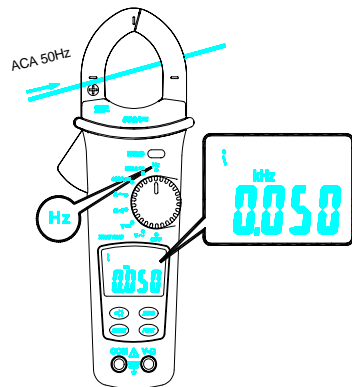


ACA / DCA

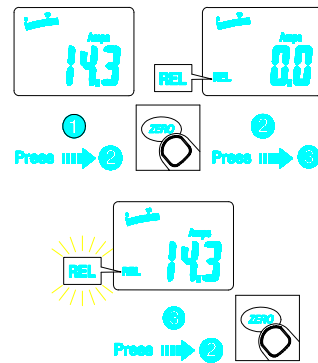


I + (-) = 0

Hz

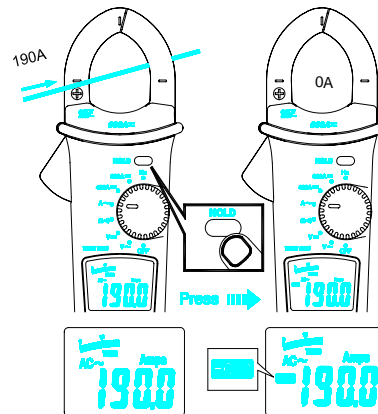


Zero

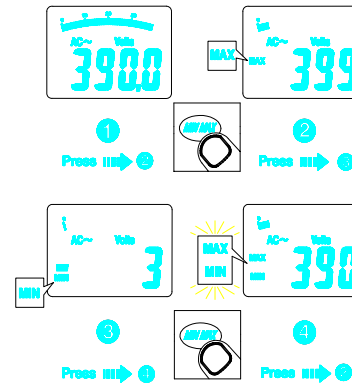


- ② REL: Meter save the displayed offset value after press the ZERO button first time. The LCD is displaying the relative value.
- ③ REL (flashing): Meter saved the offset value. Present value is displaying
- ① Normal : Press and hold ZERO for ≥ 2 sec to return to normal operation and cancel the offset value.

Data Hold

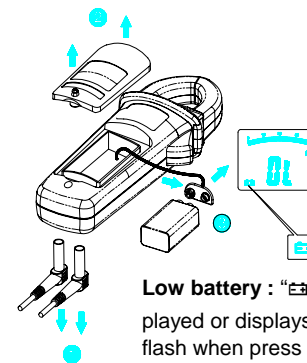


Min / Max Hold



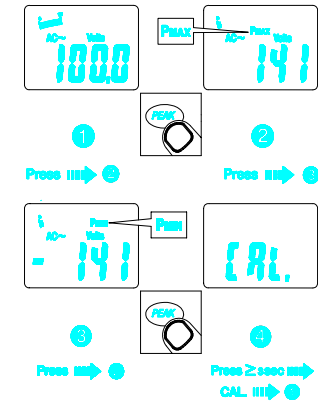
- ② MAX: Meter is saving the maximum and minimum value. Maximum value is displayed.
- ③ MIN: Meter is saving the maximum and minimum value. Minimum value is displayed.
- ④ MAX MIN (flashing): Meter is saving the maximum and minimum values. Present value is displayed.
- ① Normal : Press and hold MIN MAX to return to normal operation.

Battery Replacement



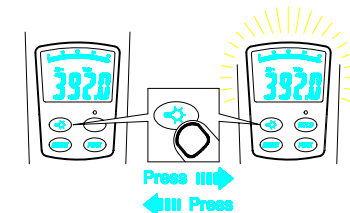
Low battery : "⚡" is displayed or displays "⚡" a flash when press button.

Peak Hold



- ② P_{MAX}: Meter is saving the peak maximum and minimum value. Peak maximum value is displayed.
- ③ P_{MIN}: Meter is saving the peak maximum and minimum value. Peak minimum value is displayed.
- ④ CAL : Press and hold PEAK button ≥ 3 sec to **calibrate** the Meter itself for accurate measurement.
- ① Normal : Press and hold PEAK button to return to normal operation.

Back Light



Back light Automatic off after 60 seconds.

Specifications

1-1 General Specifications

LCD display digits :

3 3/4 digit large scale LCD readout.

Display count : 4000 counts.

Measuring rate : 1.5 times / sec.

Overrange display :

“OL” is displayed for “Ω” functions, shows the real value for “A” and “V” function.

Automatic power off time :

Approximately 30 minutes after power on.

Low battery indicator :

⚡ is displayed. Replace the battery when the indicator ⚡ appears in the display.

Power requirement : 9V battery.

Battery life : ALKALINE 9V 200 hours.

1-2 Environmental Conditions

Indoor Use.

Calibration :

One year calibration cycle.

Operating temperature :

0°C ~ 30°C (≤80% RH)

30°C ~ 40°C (≤75% RH)

40°C ~ 50°C (≤45%RH)

Storage temperature :

-20 to +60°C, 0 to 80% RH (batteries not fitted).

Overvoltage category :

IEC 61010-1 600V CAT. III.

CAT. III equipment is designed to protect against the transients in the equipment in fixed installations, such as distribution panels, feeders and short branch circuits and lighting systems in large buildings.

Operating altitude : 2000m (6562 ft)

Conductor Size : 35mm diameter.

Pollution degree : 2

EMC : EN 61326-1

Shock vibration :

Sinusoidal vibration per MIL-T-28800E (5 ~ 55 Hz, 3g maximum).

Drop Protection : 4 feet drop to hardwood on concrete floor.

1-3 Electrical Specifications

Accuracy is ±(% reading + number of digits) at 23°C ± 5°C < 80%RH.

Temperature coefficient :

0.2 x (Specified accuracy) / °C, < 18°C, > 28°C .

Voltage

Function	Range	Accuracy
V~	0~400.0Vrms 400~600Vrms	±(1.0%+ 5 dgt) 50Hz ~ 500Hz
V=	0~400.0 V 400~600 V	±(0.7%+ 2 dgt)

Overload protection : 600 Vrms

Input impedance : 1MΩ // less than 100pF.

AC Conversion Type :

A12 : AC Conversion are average sensing rms indication calibrated to the rms value of a sine wave input.

A12R :

AC Conversions are ac-coupled, true rms responding, calibrated to the rms value of a sine wave input. Accuracies are given for sine wave at full scale and non-sine wave below half scale. For non-sine wave add the following Crest Factor corrections :

For Crest Factor of 1.4 to 2.0, add 1.0% to accuracy.

For Crest Factor of 2.0 to 2.5, add 2.5% to accuracy.

For Crest Factor of 2.5 to 3.0, add 4.0% to accuracy.

CF 3 @ 400A, 400V

2 @ 600A, 600V

Resistance & Continuity

Function	Range	Accuracy
Ω	400.0Ω	±(1%+ 3 dgt)

Overload protection : 600 Vrms

Max. open circuit voltage : 3V

Continuity check : Internal sounds activates if the resistance of the circuit under test is less than 30Ω approximately.

AC Current

Function	Range	Accuracy
A~ (50~60Hz)	0~60.0A	±(1.9%+ 7 dgt)
	60.0~400.0A	±(1.9%+ 5 dgt) *1
	400~600A	±(2.5%+ 5 dgt)
A~ (61~400Hz)	0~60.0A	±(2.5%+ 7 dgt)
	60.0~400.0A	±(2.5%+ 5 dgt) *1
	400~600A	±(2.9%+ 5 dgt)

*1 : Over 80% of full scale (4000 digits) add ±1.6%

Overload protection : 600 Arms
AC Conversion Type and additional accuracy is same as AC Voltage.

Position Error : ±1% of reading.

DC Current

Function	Range	Accuracy
A=	0~60.0A	±(1.5%+ 10 dgt)
	60.0~400.0A	±(1.9%+ 5 dgt)
	400A~600A	±(1.9%+ 10 dgt)

Overload protection : 600 Arms

Position Error : ±1% of reading.

Addition error according to remanence : 1% max. of current crest.

Auto Power Off (APO)

The meter will automatically shut itself off after approximately 30 minutes after power on.

Frequency : Hz

Range	Resolution	Accuracy
20~400Hz	1HZ	±(0.1%+ 2 dgt)

Overload protection : 600 Arms.

Sensitivity : 3 Arms for ACA (A~)
(>400Hz Unspecified)

Peak Hold : ± (3% + 15dgt)

*>600Vpeak Unspecified.

*>600Apeak Unspecified.

Min/Max Hold : add ± 15 dgt to accuracy for ACA / DCA.

* Automatically switch to the low resolution range at Peak Hold and MIN MAX Hold.

Maintenance

Do not attempt to repair this Meter. It contains no user-serviceable parts. Repair or serving should only be performed by qualified personal.

Cleaning

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

Limited Warranty

This Meter is warranted to the original purchaser against defects in material and workmanship for 1 year from the date of purchase. During this warranty period, manufacturer will, at its option, replace or repair the defective unit, subject to verification of the defect or malfunction.

This warranty does not cover fuses, disposable batteries, or damage from abuse, neglect, accident, unauthorized repair, alteration, contamination, or abnormal conditions of operation or handling.

Any implied warranties arising out of the sale of this product, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the above. The manufacturer shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expense or economic loss. Some states or countries laws vary, so the above limitations or exclusions may not apply to you.

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