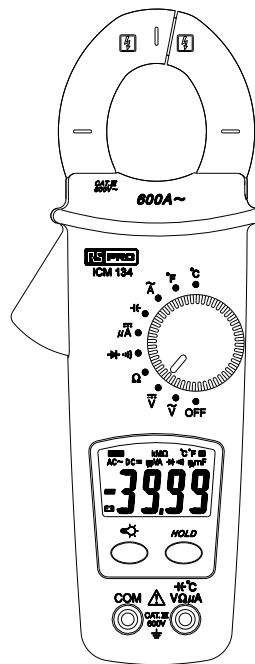




Instruction Manual
ICM 134
Clamp Meter

EN DE ES IT FR



⚠ Safety Information

Read and understand this Instruction Manual completely before using this instrument. Failure to observe the warnings and cautions in this Instruction Manual may result in injury or death, or damage to the instrument and other equipment or property.

If this instrument is used in a manner not specified in these instructions, the protection provided by the instrument may be impaired.

⚠ WARNING











- Examine the instrument and probes and leads before use. Do not use the instrument if it is wet or damaged, or if you suspect it is not operating correctly.
- When using the instrument, test leads or probes, keep your fingers behind the finger guards.
- Remove the test lead from the instrument before opening the battery cover or instrument case.
- Always use the correct terminals, switch position and range for measurements.
- Verify the instrument is operating correctly by measuring a known voltage before use. If in doubt, have the instrument serviced.
- Do not apply more than the rated voltage as marked on the instrument between terminals, or between any terminal and earth ground.
- Use caution when measuring voltages above 30 Vac rms or 60 Vdc. These voltages pose a shock hazard.
- To avoid incorrect readings that can lead to electric shock, replace the battery as soon as low battery indicator ▷ appears in the display.
- Disconnect the circuit power and discharge all high-voltage capacitors before making resistance, continuity, or diode measurements.
- Do not use the instrument in a Hazardous Area or around explosive gasses or vapours.

- Wear suitable Personal Protective Equipment when working around or near hazardous Live conductors which could be accessible.
- Do not use the thermocouple to measure the temperature of Hazardous Live conductors or equipment.

⚠ Caution

- Disconnect the test leads from the test points before changing the position of the function rotary switch.
- Never connect the instrument to a source of voltage with the function rotary switch in Ω / \rightarrow / \leftarrow / \equiv / \sim A position.
- If possible, do not work alone, so assistance can be given if required.
- Do not expose the instrument to extremes of temperature or high humidity.
- If this instrument is used in the vicinity of equipment which generates electro magnetic interference, the display may become unstable or the measurements may be subject to large errors.

The following symbols may appear on the instrument and in this Instruction Manual:

	Risk of electric shock
	Refer to Instruction Manual
	Direct Current (dc)
	Alternating Current (ac)
	Battery
	Earth
	Equipment protected throughout by double or reinforced insulation
	Conforms to EU directives
	Dispose of this equipment in accordance with local regulations.
	Application around and removal from hazardous Live conductors is permitted.

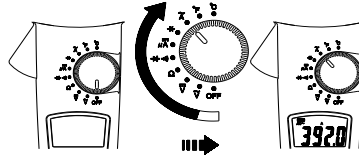
Maintenance

Do not attempt to repair this Instrument. It contains no user-serviceable parts. Repair or servicing should only be performed by qualified personnel. This instrument should be calibrated yearly, or more frequently if used in harsh conditions or if it is suspected of being inaccurate. For calibration and repair contact RS Components - the address is given at the end of these instructions.

Cleaning

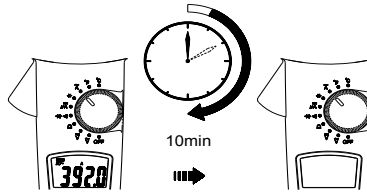
Periodically wipe the case with a damp cloth and detergent. Do not use abrasives or solvents.

Power On / Off

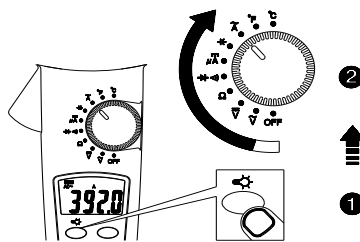


Auto Power Off

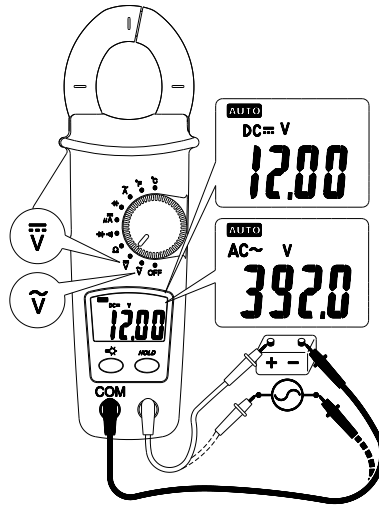
To conserve battery power, the Auto Power-off function will turn the instrument off approximately 10 minutes after the last operation.



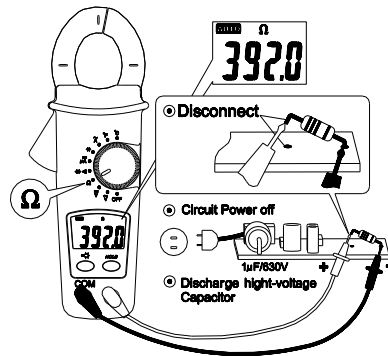
To disable the Auto Power-off function:
Turn the instrument off, press and hold the “Backlight” button and turn the rotary switch to the required function. The auto Power-off is disabled until the next time the instrument is turned off and on again.



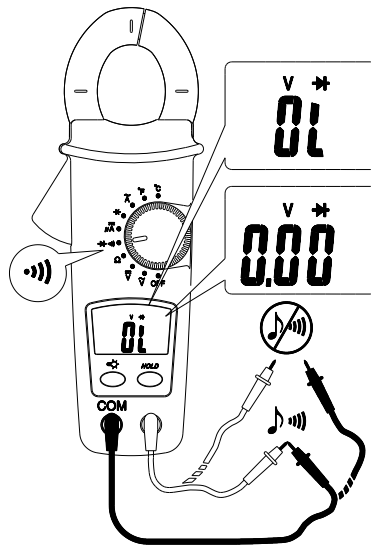
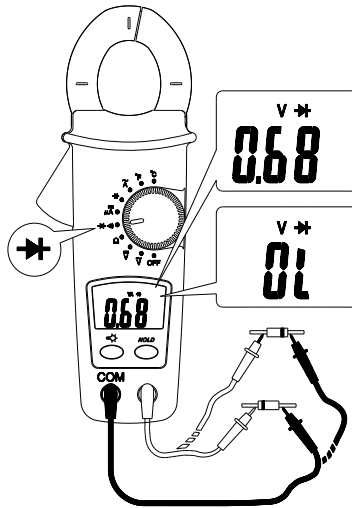
ACV / DCV



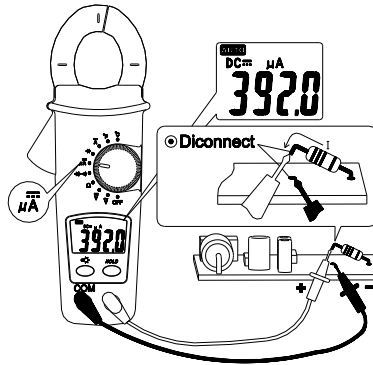
Resistance



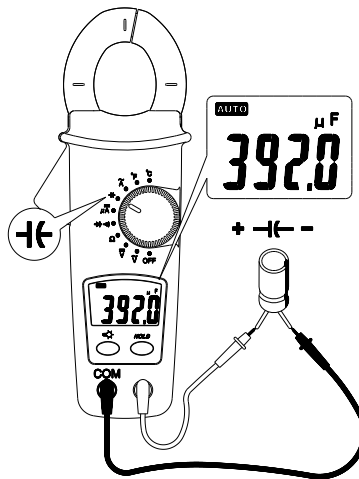
Diode / Continuity



DC μ A



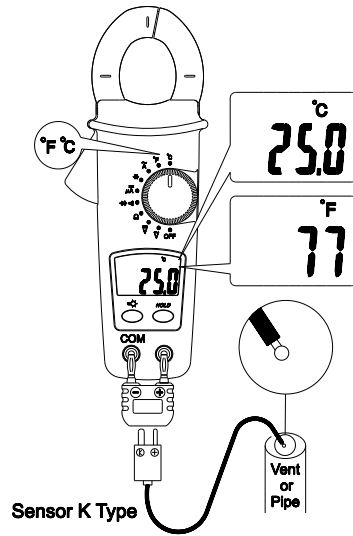
Capacitance



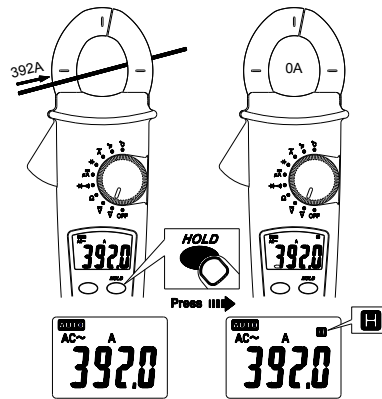
Note – To improve the measurement accuracy of a small value capacitor, record the reading with the test leads open circuit, then subtract the residual capacitance of the Instrument and leads from the final measurement.

$$C_{\text{UNKNOWN}} = C_{\text{MEASUREMENT}} - C_{\text{RESIDUAL}}$$

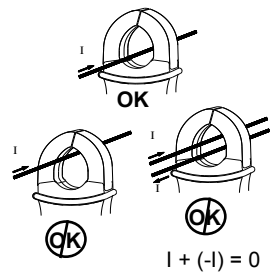
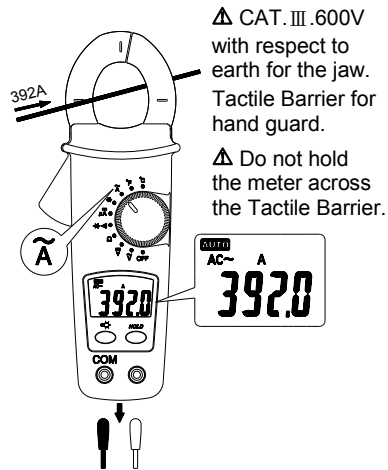
Temperature



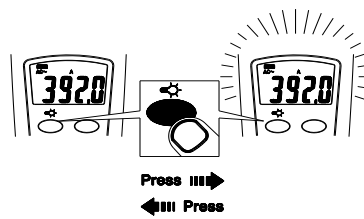
Data Hold



ACA



Back Light



Specifications

1-1 General Specifications

LCD display digits :

3 ³/₄ digit large scale Liquid Crystal Display.

Display resolution : 4000 counts.

Measurement rate : 1.5 times / sec.

Overrange display :

"OL" is displayed for "Ω" functions,
The real value is shown for the "A", "V" and
"°C/°F" function.

Automatic power-off time : Approximately
10 minutes after last operation.

Low battery indicator :  is displayed.

Power requirement : 9V battery Type
6LR61, IEC6F22 or equivalent)

Battery life : Approximately 200 hours with
Alkaline battery.

1-2 Environmental Conditions

Indoor Use only.

Calibration : One year calibration cycle.

Operating temperature :

0°C to 30°C (32°F to 86°F) @ ≤ 80% RH

30°C to 40°C (86°F to 104°F) @ ≤ 75% RH)

40°C to 50°C (104°F to 122°F) ≤ 45%RH

Storage temperature : -20 to + 60°C

(-4°F to 140°F) @ 0 to 80% RH with
batteries removed from the instrument.

**Measurement Category (Installation
Category) :**

per IEC 61010-1:2001: CAT. III 600V

Pollution Degree 2

Measurement Category I is for measure-
ments performed on circuits not directly
connected to mains. Examples include :
Measurements on battery powered equip-
ment and specially protected (internal)
mains-derived circuits.

Measurement Category II is for measure-
ments on circuits directly connected to the
low voltage installation. Examples include :
Household appliances, portable tools and
similar equipment.

Measurement Category III is for measurements performed in the building installation. Examples include measurements on distribution boards, junction boxes, socket-outlets and wiring and cables in the fixed installation.

Measurement Category IV is for measurements performed at the source of the low-voltage installation. Examples include measurements on primary overcurrent protection devices and electricity meters.

Operating altitude : 2000m (6562 ft)

Conductor Size : 32mm diameter.

EMC : EN 61326-1

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

Drop Protection : 1 metre drop onto hardwood or concrete floor.

1-3 Electrical Specifications

Accuracy is \pm (% reading + number of digits) at 23°C (73.4°F) \pm 5°C (\pm 9°F)
< 80%RH.

Temperature coefficient :

Add 0.2 x (Specified accuracy) / °C (1.8°F),
< 18°C > 28°C (< 64.4°F > 82.4°F).

DC / AC Volts

Range	DC Accuracy	AC Accuracy
4.000V	$\pm(0.9\% + 2\text{dgt})$	$\pm(1.5\% + 5\text{dgt})$ 50Hz ~ 500Hz
40.00V		
400.0V		
DC1000V AC750V		

Over voltage protection :

DC 1000 V or AC 750 V

Input Impedance :

10M Ω // less than 100pF.

CMRR / NMRR :

(Common Mode Rejection Ratio)

(Normal Mode Rejection Ratio)

V_{AC} : CMRR > 60dB at DC, 50Hz / 60Hz

V_{DC} : CMRR > 100dB at DC, 50Hz / 60Hz

NMRR > 50dB at DC, 50Hz / 60Hz

AC Conversion Type :

Average sensing rms indication.

Resistance

Range	Accuracy
400.0 Ω *2	$\pm(1.0\% + 2\text{dgt})$
4.000 K Ω	$\pm(0.7\% + 2\text{dgt})$
40.00 K Ω	
400.0 K Ω	
4.000M Ω	$\pm(1.0\% + 2\text{dgt})$
40.00 M Ω *1	$\pm(1.5\% + 2\text{dgt})$

Overload protection : 600Vrms

Open circuit Voltage : -1.3V approx.

* 1 < 100 dgt rolling.

* 2 < 10 dgt rolling.

Diode Check and Continuity

Resolution	Accuracy
10 mV	$\pm(1.5\%+5 \text{ dgt})^*$

* For 0.4V ~ 0.8V

Max. Test Current : 1.5mA

Max. Open Circuit Voltage : 3V

Overload Protection : 600Vrms

Continuity : The built-in buzzer sounds when the resistance is less than approximately 100Ω. The response time is approximately 100 msec.

DC μ A

Range	Accuracy
400.0 μ A	$\pm(1\%+2 \text{ dgt})^*$
4000 μ A	

Voltage burden : < 5mV / μ A

Overload Protection : 600Vrms

Capacitance

Range	Accuracy
4.000nF	$\pm(3.0\% + 20 \text{ dgt})$
40.00nF	$\pm(2.0\% + 8 \text{ dgt})$
400.0nF	
4.000 μ F	
40.00 μ F	
400.0 μ F	
4.000mF *	

Overload Protection : 600Vrms

* < 50 dgt of reading rolling.

AC Current

Function	Range	Accuracy
A_{\sim} (50~60Hz)	0.0 ~399.9A	$\pm(1.9\% + 5 \text{ dgt})$
	400~600A	

Overload protection : 600 Arms

AC Conversion Type :

Average sensing rms indication.

Position Error : $\pm 1.5\%$ of reading.

Temperature

Function	Range	Accuracy
°C	-40.0 °C ~ 0.0°C	1% ± 4 °C
	0.0 °C ~ 400.0 °C	1% ± 3 °C
°F	-40 °F ~ 32 °F	1% ± 8 °F
	32 °F ~ 750 °F	1% ± 6 °F
	750 °F ~ 1000 °F	2% ± 8 °F

Overload Protection : 600Vrms

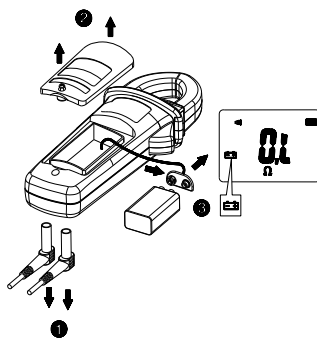
Battery Replacement

When the low battery indicator "⚡" appears on the LCD, replace the batteries with the type given in the specifications.

⚠ WARNING

Disconnect the test leads from the circuit and the instrument before removing the battery cover.

Refer to the following figure to replace the batteries :

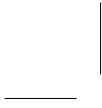


Limited Warranty

This instrument is warranted to the original purchaser against defects in material and workmanship for 3 year from the date of purchase. During this warranty period, RS Components will, at its option, replace or repair the defective unit, subject to verification of the defect or malfunction.

This warranty does not cover 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. RS Components 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. For full terms and conditions, refer to the current RS Catalogue.



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