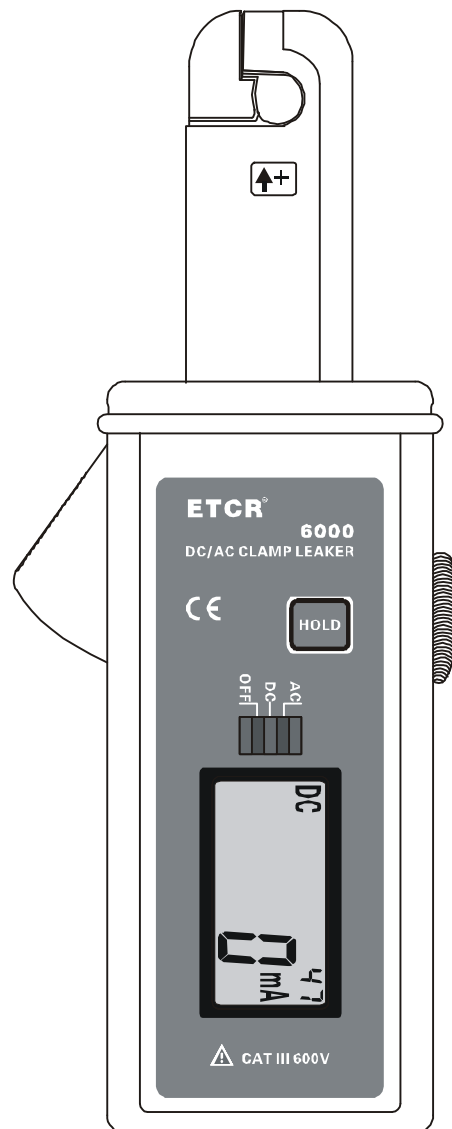


ETCR[®] DC/AC CLAMP LEAKER

ETCR 6000



www.etcrc.com

MANUAL

ETCR Electronic Technology Company

CONTENT



Warning	2
I Introduction	2
II Electrical Signs	3
III Technical Specifications	3
IV Structure	4
V LCD Display	4
VI Operating Method	4
1. Start-up, Shutdown	4
2. Calibration	4
4. Hold, Storage, Access Reading and Deleting	5
5. Data Upload	5
VII How to Change Battery	6
VIII Accessories	6

Warning

Thank you for purchasing our company's **ETCR6000 AC/DC Clamp Leaker**, for better use of this product, please:

——**Read carefully the user's manual.**

——**Follow strictly safety rules and notes listed in this manual.**







- u Under any circumstances, please pay special attention to your safety in the course of using this leaker.
- u Give heed to label texts and symbols on panel and back plate of this leaker.
- u Please be more careful if the line voltage is above 60VDC or 30VAC.
- u After power on, please first calibrate zero before measuring.
- u Put the tested wire through the geometrical center of jaw when measuring AC current, error will increase if deviate the center.
- u Please don't place and store this leaker in hot and humid condition, locations with moisture condensation and under direct sunlight for a long time.
- u In case voltage of battery was low, please replace batteries.
- u In case this leaker would not be used for a long time, please take out batteries.
- u When changing batteries, please pay attention to polarity of battery.
- u Use, disassembly and maintenance of this leaker shall be operated by authorized personnel.
- u In case dangers would have with continues use of this leaker, please stop to use it and seal it for safekeeping immediately; and then, send it for disposal of authorized agency.
- u Users shall carry out operation based on danger signs “  ” on leaker and manual.
- u Users shall carry out safety operation based on instructions listed in this manual, e.g. “  ” and danger signs on this manual.

I Introduction

ETCR6000 AC/DC Clamp Leaker is specially designed for measurement of AC/DC current; by adopting up-to-date CT technology and digital integration technology. The small clamp is suitable for line densely places (electric power measurement system, the high speed rail system, car circuit overhaul, and so on), non-contact measurement, to ensure safe operation. It is a product with relatively small size, high accuracy and perfect function compared with similar leakers in the world. The leaker could be widely applied in those fields as electricity, communications, meteorology, railroad, oilfield, construction, measurement, scientific & research teaching institutes, industrial and mining establishments. It is an essential tool for electrician safety testing.

ETCR6000 AC/DC Clamp Leaker also named: **DC Leakage Current Clamp Meter, Car DC Leakage Current Clamp Meter, AC/DC Clamp Leakage Current Tester**. It has those functions as data holding and data storage. It obtains one RS232 interface, communication cable and software, through which historical data inquiry is available, for reading, saving and printing.

II Electrical Signs

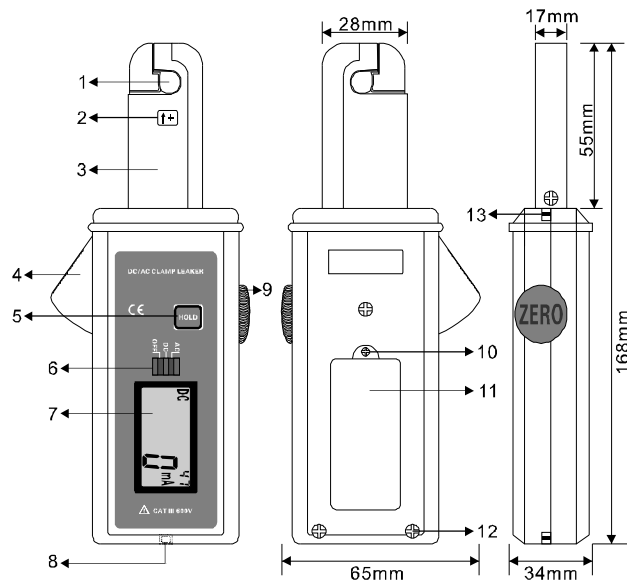
	Extremely dangerous! Operators shall strictly observe safety rules; otherwise there would be dangers of electric shock to cause personal injuries or casualties.
	Dangerous! Operators shall strictly observe safety rules; otherwise there would be dangers of electric shock to cause personal injuries or casualties.
	Warning! Operators shall strictly observe safety rules; otherwise personal injuries or equipment damages might be caused.
	Double insulation
	AC
	DC

III Technical Specifications

Function	Measurement of AC/DC current, leakage current
Power Supply	Zn-Mn dry battery,6F22,9V
Test Mode	Clip-on CT, integral mode
Clamp Size	φ7mm
Measurement Range	0mA-60.0A AC/DC
Resolution	1mA AC/DC
Accuracy	±2%rdg±5dgt (23°C±5°C, below 75%rh)
Display Mode	Four digits LCD display
Dimension	LWH: 168mm×65mm×34mm
LCD Dimension	35mm×21.5mm; display domain: 32mm×15mm
Sampling Rate	2 times/s
Frequency	AC: 45Hz-400Hz
Polarity Indication	DC current auto identified and display“—”
Test Position	Tested wire in the jaw center
Range Shift	Automatically
Line Voltage	AC600V
RS232 Interface	Data stored in the memory of the meter via RS232 upload to PC
Com-Configure	Baud rate:9600, data bit:8, stop bit:1
Data Memory	99units, FULL blinks when the memory is full
Reading Hold	DH indicating the reading is hold
Out of Range	OL indicating the current is out of range
Auto Power-off	5 Minutes after power on, it will power off automatically to lower the power consumption
Battery Voltage	+ Indicating the battery voltage is lower than 7.2V.Then the battery have to be changed
Weight	180g (including the battery)
Working Current	10mA
Consumption	10mW
Working Temperature and Humidity	-10°C-50°C, below 80%rh
Limit Temperature Error	-10°C-0°C and 40°C-50°C, within 2%rdg
Storage Temperature and Humidity	-10°C-60°C, below 70%rh
Insulating Strength	AC2kV/rms (between the alloy of the clamp and the housing)
Applicable safety rules	IEC1010-1, IEC1010-2-032, Pollution level 2, CAT III(600V)

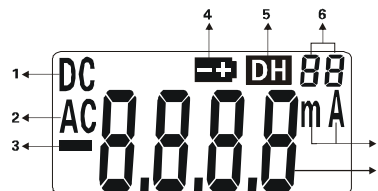
IV Structure

1. Clamp mouth ($\phi 7\text{mm}$)
2. DC current positive input indication
3. Clamp (slender shape)
4. Toroid opening lever
5. **HOLD** key
6. Power / AC&DC switch key
7. LCD display
8. RS232 Interface
9. Adjust zero key
10. Battery cover screw (1 piece)
11. Battery cover
12. Housing screws (3 pieces)
13. Pendant hole



V LCD Display

1. DC indication
2. AC indication
3. Negative polarity indication
4. Low battery symbol
5. Data hold indication
6. Stored data code
7. Current unit
8. Value



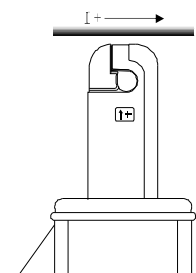
VI Operating Method

1. Start-up, Shutdown

Switch power key to DC or AC gear to start up the tester, LCD will begin to display; and switch the power key to OFF gear, the leaker will shut down. After starting up for 5 minutes, LCD will flicker notes that the leaker will shut down automatically; after flickering for 30s, it will shut down formally to reduce battery consumption. In case you have pressed **HOLD** key when LCD was flickering, the leaker will continue to work for 5 minutes. If the tester power off automatically, the gear should firstly be switched to OFF for power on next time.

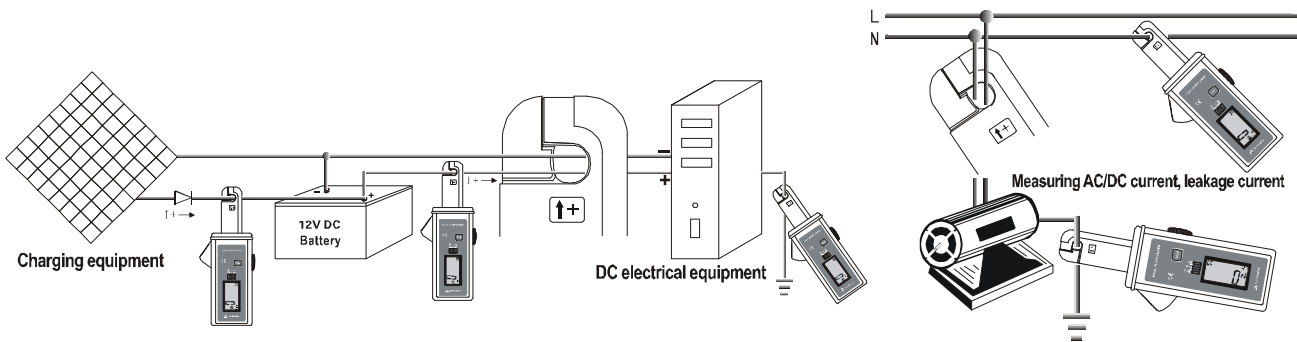
2. Calibration

When measuring, first choose AC or DC gear, adjust ZERO key to reduce the residual magnetism to zero, and then conduct measurement. Rational usage of this adjust zero function will make the results more accurate. For example, after boot, before measurement, we can take the jaw close to the DC current wire (showing as right figure), LCD will show an inductive current (because of external electric field interference). Adjust ZERO key to calibrate, which deduct the inductive value. After measuring big current, calibration is very necessary to clear the residual magnetism.



3. Measurement

- 1) Power on
- 2) Switch AC/DC key to choose the kind of measurement.
- 3) Adjust zero
- 4) Release the toroid lever to open clamp mouth and clamp measured conductors.
- 5) Read LCD display data. In case **OL A** symbol was displayed, it means that current of measured line is beyond the maximum limit of this leaker; with this case, please choose leaker with much higher range limit.



	Clamp positive wire and negative wire together is to measure leakage current of DC circuit. (Note: 2 wires)
	Clamp live wire and null line together is to measure AC leakage current. (Note: 2 wires)
	Clamp earth wire is to measure grounding line leakage current. (Note: single wire)
	Clamp main wire is to measure the current. (Note: single wire)


4. Hold, Storage, Access Reading and Deleting


- 1) Pressing **HOLD** key for a short time in the course of measurement (less than 3 seconds), **DH** symbol will display, the leaker will hold current measuring data and automatically stored in the memory with a code; press **HOLD** key again to release the hold state, and the leaker continues its measuring; in case stored data reached to 60 groups, press **HOLD** key again, the **FULL** symbol will display, which means storage memory is full; press **HOLD** key to cancel **FULL** flickering and return to measuring mode.
- 2) Long press **HOLD** key to enter into data access mode and display Unit 1 storage data automatically; and then press **HOLD** key again to turn the page of stored data; **null** will display when there is no data in stored in the memory, power off the meter to exit data access mode.
- 3) After entering into data access mode, press **HOLD** key for more than 3 seconds will clean up all stored data; when the leaker displaying **del** symbol, it means that it has finished clean up process, and then return to measuring state automatically.

5. Data Upload

Make good connection of computer and the tester with RS232 communication wire, switch on the tester and run monitoring software. If the connection is successful, then it can read the stored historical data, upload to company, preserve and print.


VII How to Change Battery

	Warning! It is dangerous to carry out test when the battery cover plate was not on its position.
	Please pay attention to polarity of battery to avoid damaging the leaker.
	Chang the low battery in time
	If not use the meter for a long time, please get off the battery to storage.

- 1) “  ” symbol means the battery is undercharge and need to be replaced.
- 2) Shut down the leaker; before opening the battery cover, please confirm the leaker is in off position, and then replace with qualified new battery; special attention shall be paid to polarity of battery; at last, cover battery cover plate.

VIII Accessories

Clamp tester	1 pc
RS232 Com cable	1 pc
Software	1 disk
Battery (6F22 9V)	1 pc
User Manual	1 copy
Warranty card / Certification	1 copy

 **Manufactured by**

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