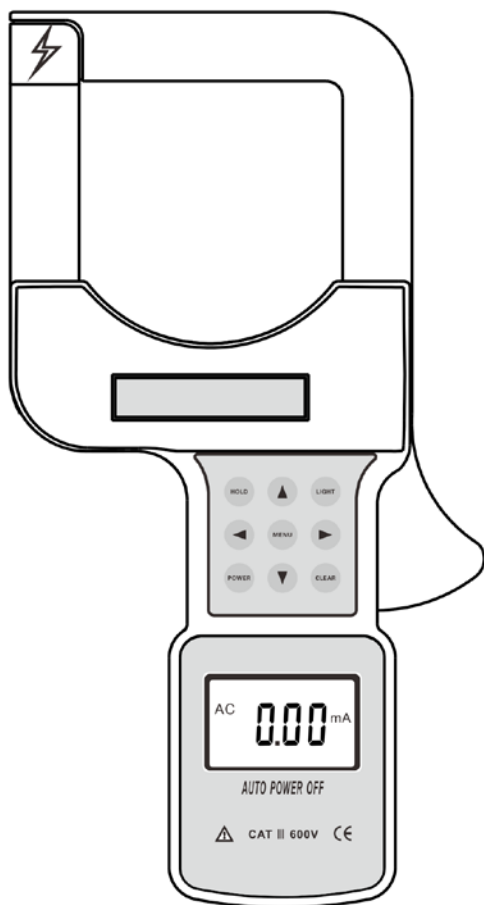


**sisco**

# **LARGE CALIBER LEAKAGE CLAMP METER**

**ETCR7000**



**USER MANUAL**

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## Precaution For Use

Thank you for purchasing our **ETCR7000 series Large Caliber Leakage Current Clamp Meter**, In order to better for use of the product, please be certain:

-- **Read this user manual carefully.**

-- **Comply with the operating cautions in this manual.**

- ◆ Under any circumstance, shall pay special attention on safety in using this meter.
- ◆ The USB interface and the internal circuit of this meter are non-isolated interfaces
- ◆ Pay attention to the text labeled on the panel and backplane of the meter.
- ◆ Keep the clamp clean and maintain regularly.
- ◆ Do not place and store the meter in high temperature and humidity or dewy places and under direct sunlight for a long time.
- ◆ Battery voltage is low, please replace the battery in time.
- ◆ If you not use the meter for a long time, please take out batteries.
- ◆ Replace the battery, please pay attention to the battery polarity
- ◆ In testing with this clamp meter, should try to keep the tested conductor in the center of the clamp.
- ◆ Use, disassembly and maintenance of this leakage current meter shall hand by authorized personnel.
- ◆ Due to the reason of this instrument, if it is dangerous to continue using, should stopped and sealed immediately ,and handled by an authorized institution.
- ◆ The meter manual with the danger mark "", users must follow instructions to operate safely
- ◆ The meter manual with the extremely dangerous mark ", users must in strict follow instructions to operate safely.

## 1. Introduction





ETCR7000 series **Large Caliber Leakage Current Clamp Meter** is specially designed and manufactured for measuring AC leakage current and current, adopts CT technology and digital integration technology, large caliber (80mm×80mm: can clamp  $\phi$ 80mm cable, or 96mm×4mm grounding flat steel, especially suitable for cable leakage current and transformer grounding flat steel leakage current detection.) Automatic, can test one channel leakage current (current), convenient and fast. Widely used in electric power, communications, meteorology, railway, oil field, construction, measurement, scientific research and teaching units, industrial and mining enterprises and other fields.



ETCR7000 series **Large Caliber Leakage Current Clamp Meter** iron core select and make with special alloy, adopts magnetic shielding technology, almost unaffected by the external magnetic field, ensures long time continuous measurement of strong anti-interference ability, ensure high accuracy, high stability and high reliability. The meter with the USB interface, can storage data 99 groups, system software can upload storage data to computer, realize online real-time monitoring and historical query, dynamic display, with historical data reading, saving, printing and other functions. The instrument also has backlight function and data retention function, which is a necessary tool for electrical safety testing.

## 2. Model

Model	Range	Resolution	Storage Data	CT Size	Note
ETCR7000	AC 0.00mA~2000A	0.01mA	99 groups	80X80mm	Measure leakage current
ETCR7000B	AC 0.0A~2500A	0.1A			Measure large current

## 3. Electrical Symbols

	Extremely dangerous! The operator must strictly follow the safety rules, otherwise there would be danger of electric shock, causing personal injury or injury accident.
	Dangerous! The operator must strictly follow the safety rules, otherwise there would be danger of electric shock, causing personal injury or injury accident.
	Warning! Operators must strictly follow safety rules, otherwise personal injury or equipment damage may occur
	Double insulation

	AC
	DC

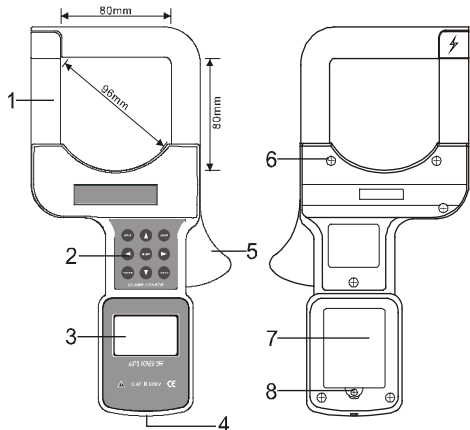
## 4. Technical Specification

<b>Function</b>	Measurement of AC leakage current, current
<b>Power Supply</b>	DC6V Alkaline dry battery (LR6 1.5VX4PCS)
<b>Test Method</b>	Clamp CT, integration method
<b>CT Size</b>	80mmX80mm (an clamp $\phi$ 80mm cable, or 96mmX4mm grounding flat steel)
<b>Measure Accuracy</b> (23°C $\pm$ 70%RH, measured wire at the center of the clamp)	0.00mA~300A: $\pm 1.5\%$ rdg $\pm 3$ dgt
	300A~1200A: $\pm 2\%$ rdg $\pm 3$ dgt
	1200A~2000A: $\pm 3\%$ rdg $\pm 3$ dgt
	2000A~2500A: $\pm 4\%$ rdg $\pm 3$ dgt
<b>Tested Conductor Position</b>	The detected conductor is in the center position of the clamp
<b>Data Storage</b>	99 groups, flash display "FULL" symbol indicate storage full
<b>USB Interface</b>	With USB interface, storage data can be uploaded to computer, convenient to data analyze
<b>Communication Cable</b>	USB communication cable, length: 1.8M
<b>Frequency</b>	50Hz/60Hz(Automatic)
<b>Shift</b>	Automatically
<b>Sampling Rate</b>	2 times/second
<b>Line Voltage</b>	Below AC 600V circuit test
<b>Display Mode</b>	4 digital LCD display, 47mmX28.5mm
<b>Meter Dimension</b>	275mm(L)X145mm(W)X40mm(H)
<b>Backlight</b>	Yes, controlled by <b>LIGHT</b> key

<b>Data Hold</b>	Data hold function: <b>"HOLD"</b> symbol display
<b>Overflow Display</b>	Exceed measure range overflow function: <b>"OL"</b> symbol display
<b>Automatic Shutdown</b>	Start up for about 5 minutes without operation, backlight automatically shut down; After starting up for about 15 minutes without any operation. The meter flash screen about 10s and automatically shuts down to reduce battery consumption. Press any button to cancel the flash screen.
<b>Battery Voltage</b>	While battery voltage is lower than 5.2V. low battery voltage symbol display, remind to replace the battery
<b>Weight</b>	830g
<b>Working Current</b>	Open backlight 50mA; close backlight 25mA
<b>Working Environment</b>	-10°C~40°C; below 80%RH
<b>Store Environment</b>	-10°C~60°C; below 70%RH
<b>Insulation Strength</b>	AC3700V/rms(Between iron core and shell)
<b>Suitable Safe Standard</b>	IEC1010-1, IEC1010-2-032. Pollution2, CAT III(600V)

## 5. Instrument Structure

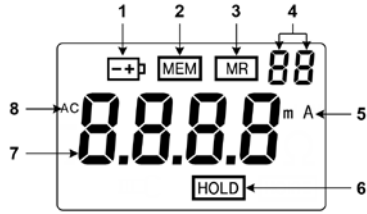
- 5.1. Clamp
- 5.2. Function keys area
- 5.3. LCD display
- 5.4. USB interface, Data upload to computer
- 5.5. Trigger (control clamp open And close)
- 5.6. Outside shell screw (6 pieces)
- 5.7. Battery cover
- 5.8. Battery cover screw (1 piece)



## 6. LCD Display

- 6.1. Low battery voltage symbol
- 6.2. Data storage full symbol
- 6.3. Data access symbol

- 6.4. Storage data serial No.
- 6.5. Current symbol (mA or A)
- 6.6. Data lock symbol
- 6.7. Measurement value display
- 6.9. AC symbol



## 7. Operation Method

### 7.1. Startup & Shutdown

Press **POWER** key to start up, LCD display and enter into test mode; Press the **POWER** key once again to shut down. The meter start up after 15 minutes without any operation will flashes screen 10s and auto shut down. If LCD display is darker after start up, it may the battery voltage too low, please replace batteries.

In data hold mode, firstly press **HOLD** key to cancel data hold function, press **POWER** key to shut down.

### 7.2. Backlight Control

After start up, press **LIGHT** key to control the backlight, suitable for using at dim places and night, default open backlight after start up.

### 7.3. Data Hold/Storage

In test mode, press **HOLD** key to hold displayed data, “**HOLD**” symbol display, press **Hold** key cancel hold function. While hold the data, the instrument will automatically number and store the present hold data. Group Numbers as “01” will be displayed in the upper right corner, the meter can store 200 sets of data. If the storage full, “**FULL**” symbol Continuous flashing and display, it must clear the memory and can storage again

### 7.4. Data Access, Exit

In test mode, press **MENU** key enter into data access mode, display “**MEM**” symbol, Start accessing data from group NO. 01 , press the up arrow key to look up the data as 1 step increasing, press the down arrow key to look up the data as 1 step decreasing, press the right arrow key to look up the data as 10 step increasing , and press the left arrow key to look up the data as 10 step decreasing. Press **MENU** key exit data access mode, and turn back to test mode.

### 7.5. Data Upload



Connecting the meter and computer with USB communication cable. Start up the meter, run software, choose history access, then read, save, report, print history data, etc. The more

data storage, take the longer time to reading. Historical data can be saved in Txt text or Excel format.

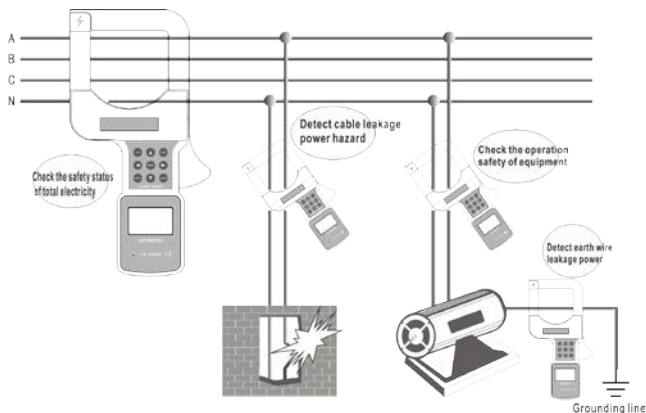
## 7.6. Data Delete

At the test mode, press **CLEAR** key enter into all data delete options, then press “<”or “>” keys to choose “YES” or “NO”. Press **MENU** key to confirm deletion or return to the test mode.

## 7.7. Leakage Current/Current/Voltage Measurement

	<b>Electricity, dangerous! Must be operated by trained and authorized personnel. The operator must strictly follow the safety rules, otherwise there would be danger of electric shock, causing personal injury or injury accident.</b>
	<b>Dangerous! Cannot be used to measure over 600V circuit, otherwise there would be danger of electric shock, causing personal injury or injury accident.</b>
	<b>Leakage current, current test must keep the clamp mouth fully closed.</b>
	<b>The conductor should be in the center of the clamp as far as possible</b>
	<b>Clean the clamp head and maintain the meter after the test</b>
	<b>Clamp live wire and null line together is to measure leakage current of electrical equipment. (Clamp 2 lines)</b>
	<b>Clamp earth wire is to measure grounding line leakage current of electrical equipment. (Clamp single line)</b>
	<b>Clamp 3 phase 4 lines together is measure the total leakage current (Clamp 4 line)</b>
<b>Clamp main line is to measure the current of the main line. (Clamp single line)</b>	


Test reference illustrations:





When testing the current, should try to make the measured conductor in the center of the clamp. If the measured wire deviates from the center of the clamp, the error may increase by 1%~4%.

## 8. Battery Replacement

	<b>Warning! The meter cannot test in the situation of the battery cover plate is not covered properly,, otherwise it is dangerous</b>
	<b>Please pay attention to the polarity of battery, or will damage the leaker.</b>
	<b>Low battery, please replace the battery in time</b>
	<b>If you not use the leaker for a long time, please take out batteries.</b>

8.1. When the battery power is low, the meter display low battery voltage symbol, please replace the battery

8.2. Press **POWER** key to shut down the meter; and confirm the meter is in off state, and then open the battery cover, please attention batter model, and then replace with qualified new battery; cover battery cover plate.

8.3. Press Power key to confirm the battery change if succeed or not, or return to operate the step 2.

## 9. Accessories

Meter	1 PCS
Meter Case	1 PCS
Data Upload Software(CD)	1 COPY
USB Special Communication Cable	1 PCS
User Manual	1 PCS
Guarantee Card	1 PCS
Alkaline dry battery (LR6 1.5V)	4 PCS
Certification	1 PCS



**The company is not responsible for other losses caused by use.  
The contents of this user manual cannot be used as a reason to use the product for special purposes.  
ETCR reserves the rights to change specifications or designs described in this manual without notice and without obligations.**