

# ETCR016 High Accuracy Clamp Leakage Sensor

## User Manual

Thanks for your purchase of ETCR016High Accuracy Clamp Leakage Sensor of our company. For better use of the product, please make sure:

- To read this user manual in details.
- To abide by the safety regulations and precautions strictly.



- ◆ Under any circumstance, it shall pay special attention on safety in use of this sensor.
- ◆ Pay attention to words and symbols stick on the panel.
- ◆ Keep the pliers clean, maintenance regularly.
- ◆ Stop using the sensor when there is a rupture or break.
- ◆ Please don't keep or store the sensor in the spot with high-temperature and moisture, or condensation, and under direct daylight radiation for a long time.
- ◆ This sensor is only to be used, disassembled, and repaired by qualified personnel with authorization.
- ◆ When it may cause hazard by continuous use for the reason of the sensor itself, it shall immediately stop using it and deposit it at once, leaving it for disposal by authorized agency.
- ◆ For risk of danger icon in manual "⚠", users must perform safety operations strictly in compliance with the manual content.

## I. Introduction

ETCR016High Accuracy Clamp AC Leakage Sensor use double shield technology, with small size, high accuracy, good stability, strong anti-interference ability characteristics.

ETCR016 High Accuracy Clamp AC Leakage Sensor is widely applied in AC current leakage, current, power and energy measurement with high precision and small phase error of electricity, communications, meteorology, railway, oilfield, construction, measurement, scientific and research teaching unit, industrial and mining enterprises, which can be connected to a variety of high precision digital multi-meter and data recorder.

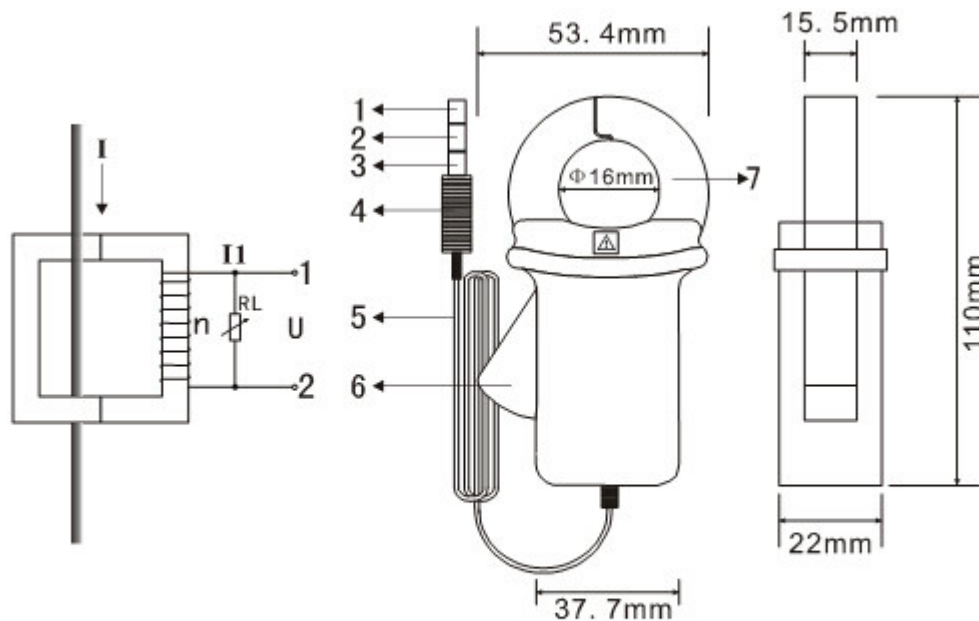
## II. Technical Specifications

Function	AC leakage current, current, high harmonic current, phase, power, power, power factor detection
Range	0.000mA~60.00A AC
Resolution	0.001mA AC
Accuracy	± 1.0% FS (50Hz / 60Hz; 23°C ± 2 °C, 70% RH or less, the wire is in the center of the jaw)
Coils Turn	800:1
Phase Error	≤2°(50Hz/60Hz; 23°C±2°C)
Reference Load	RL: 0-600mA≤300ohm; 0-6A≤30ohm; 0-60A≤3ohm;
Weight	138g
Dimension	110×53.4×22 mm
Current transformer	Around 1A/1mA
Clamp Size	Φ16mm
Detection method	Clamp CT
Dimension	115mm×70mm×33mm
Out put	Current sensing output
Output Interface	3.5mm audio plug(tail plug, banana pin, or BNC pin)
Output line	2-core shielded wire, wire length 2m
Electric Field Interference	About 5mA when the external electric field 100A, 10mm nearby
Current Frequency	45H-60Hz(when measuring big current)
Frequency	10Hz-100kHz

Voltage of circuit	Below AC 600V
Measured Wire Position	Approximately in the geometric center of the hole
Working environment	-20℃～50℃; below 80%rh
Storage environment	-10℃～60℃; below 70%rh
Insulation strength	AC 3700V/rms (between core and shell)
Safety rules	IEC1010-1, IEC1010-2-032, Pollution degree 2、CAT III(600V)
Accessory	Sensor: 1PC

### III. Principle and Structure

The sensor induced output a current  $I_1$ , the current  $I_1$  generate voltage  $U$  on the external sampling load resistance  $R_L$ , so the measured current  $I$  can be calculated by measuring  $I_1$  or  $U$ . Among them,  $I=n \times I_1$ ;  $U=I_1 \times R_L$ .  $n$  is the coils turn (current ratio).



- |                        |                       |
|------------------------|-----------------------|
| 1. Coil tap            | 2. Coil tap           |
| 3. Shielding ground    | 4. Sensor output plug |
| 5. Output wire (2.5mm) | 6. Trigger            |
|                        | 7. Clamp              |

	Clamp live wire or null line separately to measure the current of this line. (Note: single wire)
	Clamp live wire and null line together to measure leakage current of single phase. (Note: 2 wires)
	Clamp earth wire to measure grounding line leakage current of electrical equipment. (Note: single wire)
	Clamp three wires together to measure the leakage current of three phase three wires. (Note: 3 wires)
	Clamp four wires together to measure the leakage current of three phase four wires. (Note: 4 wires)

#### **Manufactured by**

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