

ETCR040 High Accuracy Clamp AC Leakage Sensor

User Manual

Thanks for your purchase of ETCR040 High Accuracy Clamp AC 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.



- u Under any circumstance, it shall pay special attention on safety in use of this sensor.
- u Pay attention to words and symbols stick on the panel.
- u Keep the pliers clean, maintenance regularly.
- u Stop using the sensor when there is a rupture or break.
- u 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.
- u This sensor is only to be used, disassembled, and repaired by qualified personnel with authorization.
- u 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.
- u For risk of danger icon in manual , users must perform safety operations strictly in compliance with the manual content.

I . Introduction

ETCR040 High Accuracy Clamp AC Leakage Sensor is used for measurement of high accuracy AC current, leakage current, high order harmonic current, phase, power energy, power, power factor. Adopt the latest CT technology. It is portable, clamp design, no need to disconnect the measured circuits, non-contact, safe and fast. It can be connected with phase detection analyzer, industrial control equipment, data recorder, oscilloscope, harmonic analyzer, electric power quality analyzer, high precision digital multi-meter, etc. Widely applied in electricity, communication, meteorology, railway, oilfield, construction, measurement, scientific and research teaching unit, industrial and mining enterprises.

ETCR040 High Accuracy Clamp AC Leakage Sensor's clamp core is made of special alloy, adopt the double magnetic shielding techniques, can almost shield the influence from external magnetic field, to ensure the high precision, high stability and high reliability of perennial uninterrupted measurement.

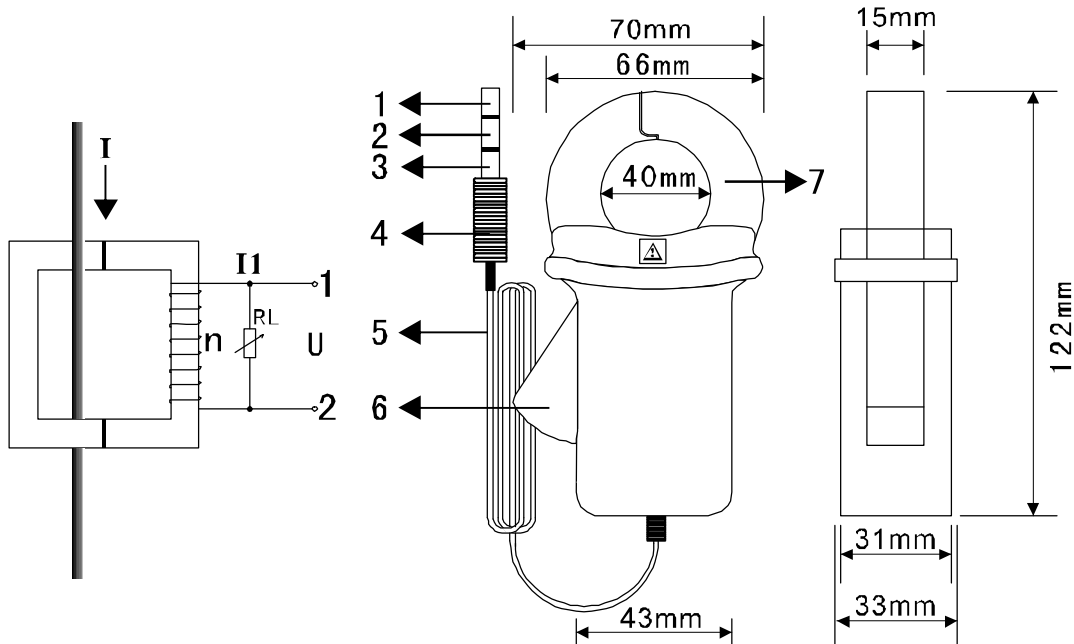
II . Technical Specifications

Function	Measurement of AC current, leakage current, high order harmonic current, phase, power energy, power, power factor
Test mode	Clamp CT
Clamp Size	35mm×40mm
Range	0-300A AC
Resolution	0.01mA AC
Accuracy	±1.0%FS(50Hz/60Hz; 23℃±2℃, below 70%RH, keep the wire be in the center of clamp)
Coils Turn	1: 2500
Phase Error	≤2°(50Hz/60Hz; 23℃±2℃)
Reference Load	RL: 0-300mA≤500ohm; 0-3A≤50ohm; 0-30A≤5ohm; 0-300A≤0.5ohm
Output Mode	Current induction output
Output Interface	3.5mm audio plug
Output Wire Length	2m
Electric Field Interference	About 10mA when the external electric field 100A, 10mm nearby
Measured Wire Position	Approximately in the geometric center of the clamp
Current Frequency	45H-60Hz(when measuring big current)

Frequency Characteristics	10H-100kHz
Dimension	120mm×70mm×33mm
Weight	190g
Working Environment	-20℃-50℃; below 80%rh
Storage Environment	-10℃-60℃; below 70%rh
Insulation Strength	AC3700V/rms (between core and shell)
Safety Rules	IEC1010-1, IEC1010-2-032, Pollution degree 2, CAT III(600V)

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 (3.5mm audio plug)
5. Output wire (2.5mm) 6. Trigger (open and close the clamp) 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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