

# ETCR040K Split Type High Accuracy Leakage current sensor

## User Manual

Thanks for your purchase of Split Type DC Leakage current 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 open mouth 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

**ETCR040K Split Type High Accuracy Leakage current 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, large 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.

**ETCR040K Split Type High Accuracy Leakage current Sensor's** 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.

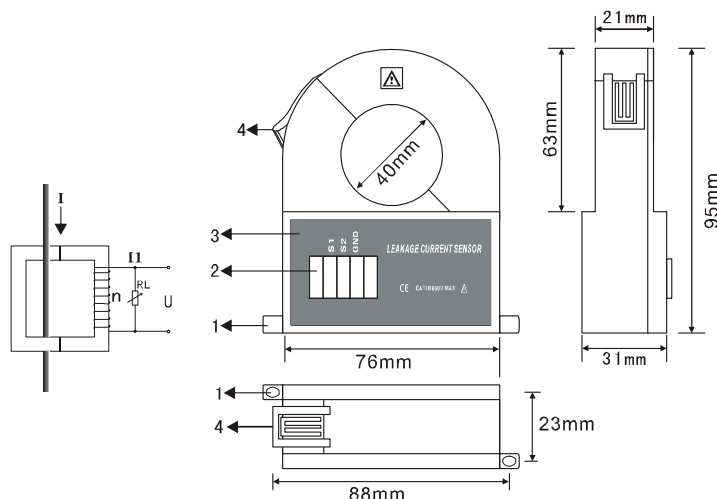
## II. Technical Specifications

<b>Function</b>	Measurement of AC current, leakage current, high order harmonic current, phase, power energy, power, power factor
<b>Test mode</b>	Split Type CT
<b>CT Size</b>	Φ40mm((Through the heart of wires by 40mm)
<b>Range</b>	0.00mA~60A (AC)
<b>Resolution</b>	0.01mA (AC)
<b>Accuracy</b>	±1.0%FS(23℃±2℃, below 70%RH, keep the wire be in the center of clamp)
<b>Coils Turn</b>	Standard 800:1(Customize is allowed)
<b>Phase Error</b>	≤2℃(50Hz/60Hz; 23℃±2℃)
<b>Reference Load</b>	RL: 0~100mA≤500 Ω ; 0-1A≤50 Ω ; 0-10A≤5 Ω ; 0~60A≤0.5 Ω
<b>Shield</b>	Double shielded, for complex interference environment
<b>Output Mode</b>	Current induction output(Take the voltage can be an external load resistance (RL)
<b>Output Interface</b>	Output terminals (S1, S2 coil tap end, GND screen)
<b>Output Wire Length</b>	2m(Customize is allowed)
<b>Electric Field Interference</b>	About 5mA when the external electric field 100A, 10mm nearby
<b>Measured Wire Position</b>	Approximately in the center of the closed core
<b>Current Frequency</b>	45HZ-60Hz(when measuring big current)
<b>Frequency Feature</b>	10Hz~100kHz

<b>Voltage of circuit</b>	Below AC 600V
<b>Dimension</b>	95mmx98mmx31mm
<b>Weight</b>	About 200g
<b>Working Environment</b>	-20℃ ~ 50℃; below 80%rh
<b>Storage Environment</b>	-10℃ ~60℃; below 70%rh
<b>Insulation Strength</b>	AC 2KV/rms.(between the core and shell)
<b>Safety Rules</b>	IEC1010-1,IEC1010-2-032,Pollution degree:2 CAT III(600V)

### III. Principle and Structure

The sensor induced output a current I1, the current I1 generate voltage U on the external sampling, load resistance RL, so the measured current I can be calculated by measuring I1 or U. Among them,  $I=n \times I_1$ ;  $U=I_1 \times R_L$ . n is the coils turn (current ratio).



1. Installation Holes ( $\Phi 4\text{mm} \times 6\text{mm}$ )
2. Sensor output terminals (S1, S2 Coil tap output; GND shield)
3. Panel Stick
4. Snap-bit

	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)

### **Manufactured by**

ETCR Electronic Technology Company

Address: F-3F, No.4 Pengshang Zhifu Road, Jiahe, Baiyun District, Guangzhou, Guangdong, China

Tel: (86-20)62199556

Fax: (86-20) 61100822 E-mail: info@etcr.cc

Website: [www.etcr.cc](http://www.etcr.cc) Post Code: 510440