**SASKATE ETCR6640A**

# SASKATE AC Leakage Current Clamp Meter ETCR6640A User Manual

Model: ETCR6640A

## 1. Product Overview

The SASKATE ETCR6640A is an advanced AC Leakage Current Clamp Meter designed for precise measurement of AC leakage current and general AC current. It incorporates unique CT technology and digital integration for accurate and comprehensive functionality in a compact design.

### Key Features:

- **Compact and Accurate:** Utilizes unique CT technology and digital integration for precise measurements.
- **Versatile Functions:** Includes backlight, flashlight, data hold, and Bluetooth communication.
- **Advanced Measurement:** Features true effective value measurement, filtering, maximum, minimum, average value, harmonics, and distortion rate testing.
- **Stable Performance:** Magnetic shielding technology minimizes external electromagnetic interference, ensuring high accuracy and stability.
- **Wide Application:** Suitable for use in power, communication, meteorology, railway, oil field, construction, metrology, scientific research, and industrial sectors.


Figure 1.1: Front view of the ETCR6640A Clamp Meter, showing the display and control buttons.

## 2. Package Contents

Please verify that all items listed below are present in your package:

- 1 x SASKATE ETCR6640A Main Unit
- 1 x User Manual (this document)
- 1 x Carrying Bag


Figure 2.1: The ETCR6640A Clamp Meter shown alongside its protective carrying bag.

## 3. Safety Information

To ensure safe operation and to prevent damage to the meter, please read and follow all safety instructions carefully. This device complies with IEC1010-1, IEC1010-2-032, Pollution 2, CAT III (600V) safety standards.

- Always inspect the meter for any damage before use. Do not use if damaged.
- Do not exceed the maximum input values specified for the meter.
- Ensure the circuit is de-energized before clamping the meter, if possible, or take appropriate safety precautions when working with live circuits.
- Do not operate the meter in wet environments or with wet hands.
- Replace the battery promptly when the low battery indicator appears to ensure accurate readings.
- Remove the battery if the meter will not be used for an extended period.

## 4. Setup

### 4.1 Battery Installation

The ETCR6640A requires one 9V 6LR61 battery (not included).

1. Locate the battery compartment on the back of the meter.
2. Open the battery compartment cover.
3. Insert a new 9V 6LR61 battery, ensuring correct polarity.
4. Close the battery compartment cover securely.


Figure 4.1: Back view of the ETCR6640A, highlighting the battery compartment area and important warning labels.

### 4.2 Powering On/Off

- **To Power On:** Press the **Power** button (⏻) briefly. The display will illuminate.
- **To Power Off:** Press and hold the **Power** button for approximately 3 seconds. The meter also features an automatic power-off function after approximately 5 minutes of inactivity to conserve battery life.

## 5. Operating Instructions

### 5.1 Basic Current Measurement

1. Power on the meter.
2. Press the trigger to open the clamp jaws.

3. Carefully position the wire carrying the AC current to be measured within the center of the clamp jaws. Ensure only one conductor is clamped for accurate leakage current measurement.
4. Release the trigger to close the jaws securely around the conductor.
5. Read the leakage current value displayed on the LCD screen.


Figure 5.1: Angled view of the ETCR6640A, demonstrating the open clamp jaws ready for current measurement.

### 5.2 Function Buttons

- **HOLD Button:** Press briefly to freeze the current reading on the display. Press again to release.
- **Backlight Button:** Press briefly to turn the display backlight on/off.
- **Flashlight Button:** Press briefly to turn the integrated flashlight on/off.
- **MAX/MIN/AVG Button:** Press to cycle through Maximum, Minimum, and Average value display modes. Press and hold for 3 seconds to exit.
- **BPF (Band Pass Filter) Button:** Press to activate or deactivate the filter function. When activated, the meter measures current within 40Hz to 70Hz. When deactivated, it measures 40Hz to 1kHz.
- **THD (Total Harmonic Distortion) / HARM (Harmonics) Button:** Press to display Total Harmonic Distortion (THD) or individual harmonic components (up to 21st harmonic) for currents ≥ 10mA. Press and hold for 3 seconds to exit.
- **Bluetooth Communication:** The meter supports Bluetooth connectivity. Install the dedicated APP on

your mobile phone to view test results and manage data storage (up to 2000 sets).

## 6. Maintenance

### 6.1 Cleaning

Wipe the meter's casing with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure the meter is powered off and disconnected from any circuits before cleaning.

### 6.2 Battery Replacement

When the battery level indicator shows low power, replace the 9V battery as described in Section 4.1. Always dispose of used batteries responsibly.

### 6.3 Storage

Store the meter in its carrying bag in a cool, dry place away from direct sunlight and extreme temperatures. Remove the battery if the meter will not be used for an extended period to prevent leakage.

## 7. Troubleshooting

- **Meter does not power on:** Check battery installation and ensure the battery has sufficient charge. Replace if necessary.
- **Inaccurate readings:** Ensure the wire is centered within the clamp jaws and only one conductor is being measured. Check for external electromagnetic interference. Verify the filter setting (BPF) is appropriate for your measurement.
- **"OL" displayed:** This indicates an overload or out-of-range measurement. The measured current exceeds the meter's maximum range of 300A.
- **Bluetooth connection issues:** Ensure Bluetooth is enabled on your mobile device and the meter. Restart both devices and try reconnecting.

## 8. Specifications

| Parameter | Value |
|---|---|
| Jaw Diameter | Approx. 40mm / 1.57in |
| Measurement Range | 0.00mA to 300A AC |
| Measurement Accuracy (40Hz-70Hz) | 0.00mA to 999mA: ±1.5%Rdg±5dgt<br>1.00A to 300A: ±1.5%Rdg±5dgt<br>*(Note: Error doubled for 71Hz-1KHz or when filter is enabled, or with max position deviation)* |
| Filter Function | ON: 40Hz to 70Hz, OFF: 40Hz to 1kHz |
| Harmonic Detection | 21 times (for current ≥ 10mA) |
| Distortion Rate | Available (for current ≥ 10mA) |
| Data Storage | 2000 sets (via APP) |
| Bluetooth Communication | Yes |
| Auto Power Off | Approx. 5 minutes |

| Parameter | Value |
| --- | --- |
| Battery | 1 x 9V 6LR61 (not included) |
| Battery Level Indicator | 4 Levels display |
| Sampling Rate | 2 Times/second |
| Insulation Strength | AC3700V/rms (between pin and shell) |
| Safety Standard | IEC1010-1, IEC1010-2-032, Pollution 2, CAT III (600V) |
| Material | ABS |
| Item Weight | 280 g |
| Parcel Dimensions | 14 x 12 x 10 cm |

## 9. Warranty and Support

SASKATE products are manufactured to high-quality standards. For warranty information or technical support, please refer to the documentation provided with your purchase or contact your retailer. Keep your purchase receipt as proof of purchase.