UNI-T UT-CS06A 400A AC Current Clamp Sensor User Manual

Contents

UNI-T UT-CS06A 400A AC Current Clamp Sensor

Overview

UT-CS06A is an AC current sensor with high reliability and high safety, serving as a supporting device for current measurement of multimeter. The clamp is applied in conjunction with multimeter, it measures current by the sensor and converts the measured current into voltage, then transfer the voltage to the multimeter via transmission cable, thus the corresponding voltage is displayed on the multimeter. UT-CS06A has the ability to measure AC current up to 400A. Reliable measurement accuracy and unique exterior design make it a practical tool in supporting electrical meters to collect current.

Features

1. Light weight to enable one-handed and aerial operations.
2. Compact, small, easy to carry.
3. Applicable to measure multiple types of cables, able to measured cable of maximum 28 mm in diameter.
4. Using along with multimeter allows for obtaining accurate reading without interrupting circuit.
5. The ability to measure AC current up to 400A; frequency response to reach 50Hz~400Hz.
6. Achieving fast readout under the output of 1mV/A.
7. Category rating: CAT II 600V, CAT III 300V

Please read the contents related with “Safety” and “Warning” in the user manual, and follow all warnings and precautions strictly.
Warning: Please read the “Safety Information” carefully before use.

Accessories
Please contact with the supplier if any accessory in the package is missing or damaged.
User manual: 1 pc

Safety Information

Note the “Warning labels and sentences”. A Warning identifies conditions and procedures that are dangerous to the user and that can cause damage to the Product or the equipment under test. The product is designed in accordance with IEC/EN61010-1, 61010-2-032, Electromagnetic Radiation EN61326-1 Standard, and conforms to Double Insulation, Overvoltage CAT || 600V, CAT III 300V and Pollution Class 2, applicable for indoor use. Failure to follow operating instructions can impair the protection provided by the product.

1. Please check if cracked or exposed cable, damage casing or loose parts occurs before use.
2. Keep fingers behind the finger guard.
3. Use caution when working in environments with bare conductors, contact with conductor can cause electric shock.
4. It is forbidden to use without the cover set in place. Otherwise it may cause electric shock.
5. Do not make contact with exposed wire, connector, output terminal or circuit during measurement.
6. It is forbidden to measure current over the value specified at the clamp.
7. Do not measure voltage over 600V (CAT I| 600V) or frequency higher than 400Hz.
8. Use caution when working with voltage over AC/DC 30V.
9. Make sure the plug of transmission cable correctly connects with the voltage input terminal of multimeter.
10. Do not keep or use the product in environments with high temperature, high humidity, strong electromagnetic field, or in inflammable and explosive environments.
11. Do not alter the internal wiring to avoid product damage and safety hazard.
12. According to the national safety regulations, please wear protective gear to prevent electric shock, arc discharge and other hazards when performing measurement in environment with exposed live conductors.
13. Measure a known voltage before use to check if the product can work normally.
14. Do not measure circuit with frequency over the rated frequency specified by the product.

Electrical Symbols

Symbol	Description	Symbol	Description
	Risk of high voltage		Double insulated
	AC (Alternating Current)		UKCA certification mark
	Warning		Conform to European Union standards
	Do not place equipment and its accessories in the trash. Please dispose properly according to the local regulation.		
CAT II	Applicable to test and measure the circuit directly connected with utility point (outlet or similar points) in low-voltage MAINS installation.		
CAT III	Applicable to test and measure the circuit connected with the power distribution part of building’s low-voltage MAINS installation.		

General Characteristics

1. Maximum overload protection current: 400A
2. Error caused by testing area: Failure to center the measured object at the clamp jaws can produce a reading error of + (1.5%+0.1A).

3. Drop proof: 1 m
4. Operating temperature: 0°C~40°C (32°F~104°F)
5. Storage temperature: -10°C~50°C (14°F~122°F)
6. Relative humidity: ≤75% (0°C~30°C below); ≤50% (30°C~40°C)
7. Operating altitude: ≤2000 m
8. Dimensions: 158 mm × 65 mm × 33 mm
9. Maximum jaw opening: 28 mm
10. Transmission cable length: 1.1m
11. Weight: 215.3 g
12. Category rating: IEC 61010-1: CAT || 600V/CAT III 300V
13. Pollution Class 2
14. EMC: If radio frequency field of 1V/m, overall accuracy = specified accuracy + 5% of range; if over 1V/m, there is no specified specification.

External Structures

1. Clamp jaw
2. Geometric center marking
3. Finger guard
4. Trigger: press to open the jaw
5. Current signal output: The plug is the output signal terminal of AC voltage converted by the AC current sensor.

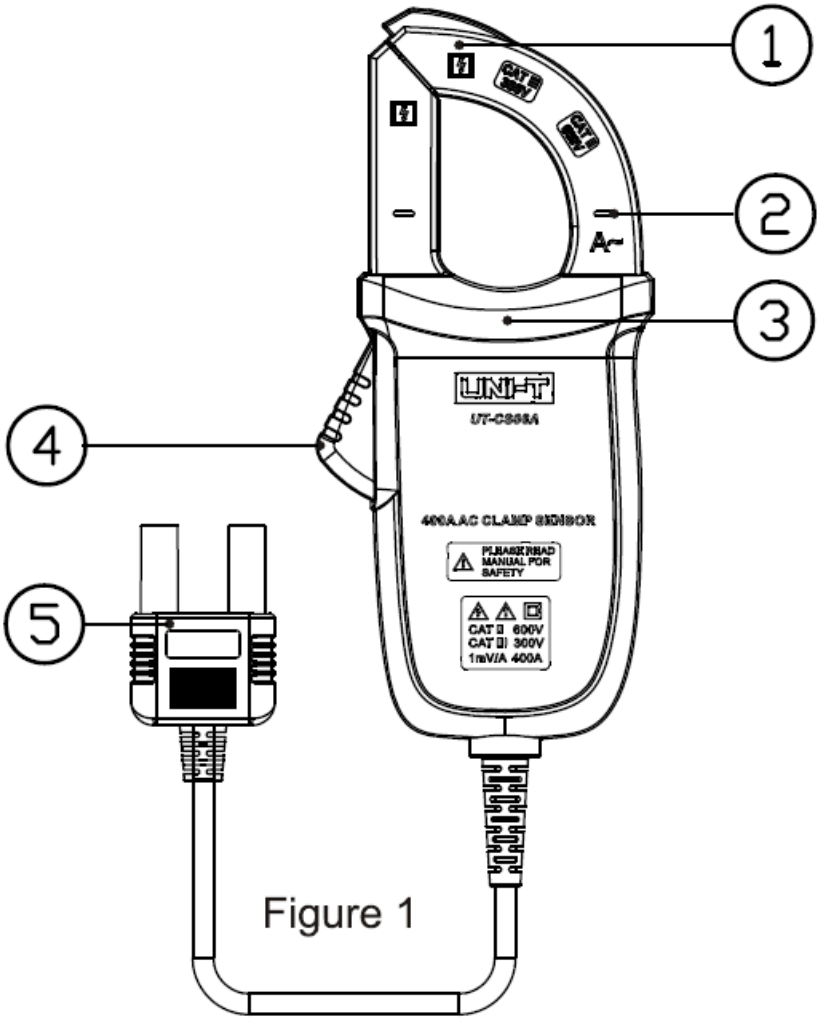

Figure 1

Operating Instructions

The symbol near the terminal warns that the measured voltage cannot exceed the specified voltage.

AC Current Measurement

1. Connect the plug of transmission cable with the voltage input terminal and common input terminal of the multimeter, power on the multimeter, then select AC millivolt measurement range (Figure 2).

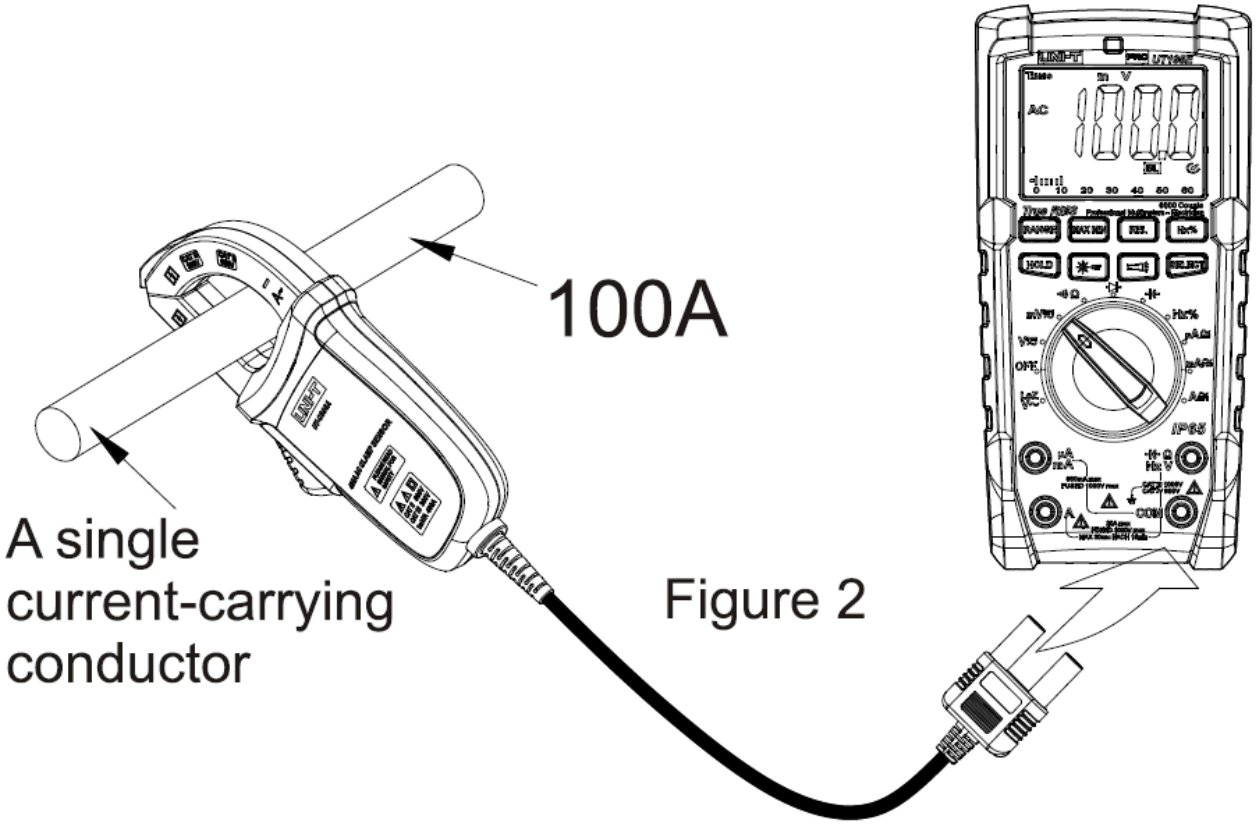

Figure 2

2. Alternatively, connect the plug of transmission cable with the AC current sensing input terminal at the multimeter, power on the multimeter, then select AC sensor measurement range and select the 1mVIA output ratio (Figure 3).

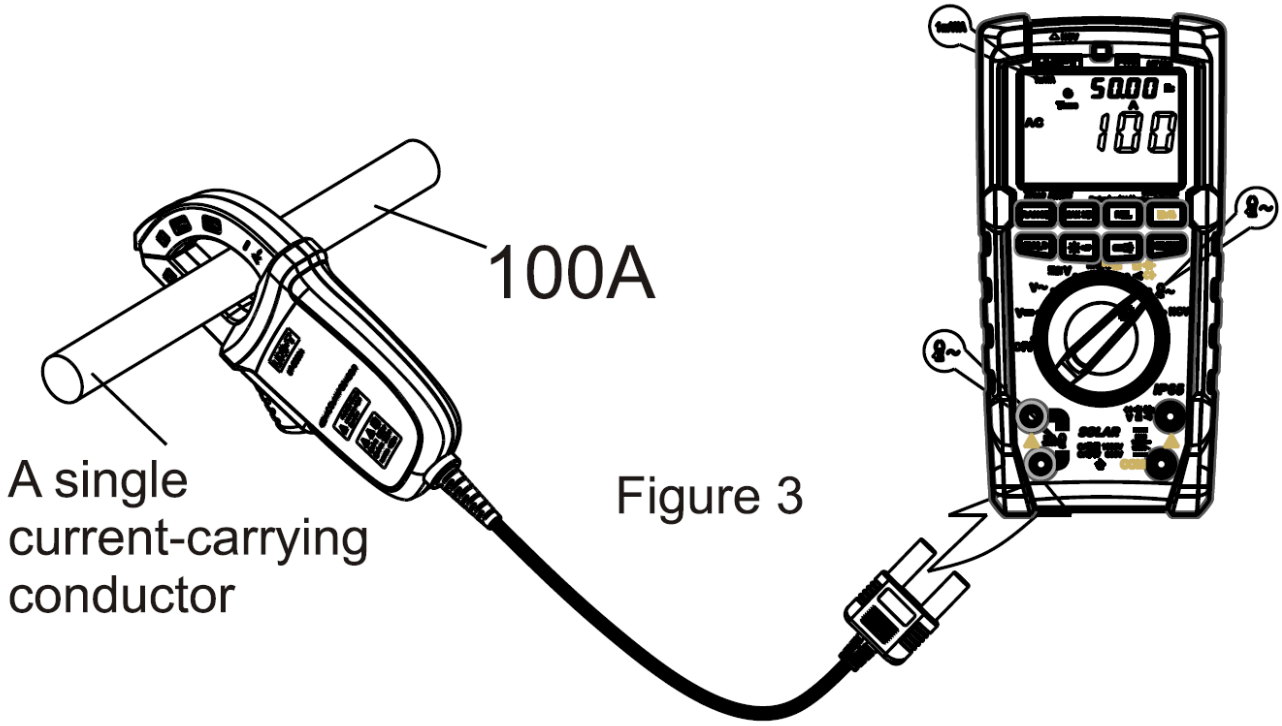

Figure 3

3. Open the clamp jaws, clamp one conductor, then place the conductor at the center of the clamp jaws. The clamp jaws shall be closed in placed.
4. The clamp can only measure a conductor at a time, the measurement result is incorrect if measuring two or more conductors at the same time.

Note

- Please perform current measurement under temperature between 0°C and 40°C. Do not release the trigger abruptly, the clamp is sensitive with mechanical stress to some extents, impact can cause reading variation in a short time.
- Please place the measured conductor at the center of the clamp jaws, otherwise it can cause an error of + (1.5%+0.1A).
- Keep away from other live conductors and maintain the measured conductor in vertical state.
- The output ratio of the current sensor is 1mV/A, that is, the displayed voltage on the multimeter is 1mV when measuring current of 1A.
- The current measurement range of the product is 1A~400A, the measurement accuracy cannot be ensured when measuring current below 1A.
- Do not measure current over AC 400A for a long time, otherwise it may damage the clamp.
- Keep fingers behind the finger guard during measurement to avoid electric shock or personal injury.
- The applied multimeter supporting the AC current sensor or other AC millivolt measurement devices shall meet or be designed with:
  A: The AC millivolt range is ≥ 400mV (when measured as Figure 2); the AC current sensor range is ≥ 400A (when measured as Figure 3).
  B: An input accuracy of 2.5% or higher to ensure the accuracy of the product.
  C: Standard voltage input terminal, with which the transmission cable connects.
  D: Input impedance: > 1MO.

Technical Specifications

- Accuracy: ≤ (a% of reading + b digits), one-year warranty period Ambient temperature: 23°C+5°C (73.4°F+41°F)
- Relative humidity: < 75RH
  For current measurement, please place the measured conductor at the geometric center of the clamp jaws.
- AC current measurement range: 1A~400A
- Resolution: 0.1A
- Accuracy: ≤ (2.5% + 0.5A), 50-60Hz; ‡ (2.8% + 0.5A), 60~400Hz
- Output: 1mV/A
- Effect of the testing area at which the conductor is placed: ‡ (1.5% + 0.1A)
- Effect of adjacent conductors: < 6mA/A
- Input impedance: > 1MQ, < 100pF
- Range to ensure accuracy: 1%~100%

Note: The temperature condition of accuracy is 18°C-28°C, the fluctuation range of ambient temperature keeps within $1°C. If the temperature is < 18°C or >28°C, the additional error of temperature coefficient is “0.1 * (specified accuracy)/°C”.

Maintenance

Please clean the casing with wet cloth and mild detergent, do not use abrasive or solvent. If the product behaves abnormally, please stop use and sent it for maintenance.
The calibration or maintenance must be performed by qualified professional repair personnel or designated maintenance department.

Documents / Resources

	UNI-T UT-CS06A 400A AC Current Clamp Sensor [pdf] User Manual UT-CS06A 400A AC Current Clamp Sensor, UT-CS06A, 400A AC Current Clamp Sensor, Current Clamp Sensor, Clamp Sensor

References

- User Manual