

# CT6845A

## AC/DC CURRENT PROBE

### Instruction Manual

EN

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CT6845E961-00 22-02H



# HIOKI

www.hioki.com/



All regional contact information

**HEADQUARTERS**  
81 Koizumi  
Ueda, Nagano 386-1192 Japan

**HIOKI EUROPE GmbH**  
Helfmann-Park 2  
65760 Eschborn, Germany  
hioki@hioki.eu

2111 EN

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### Warranty

Warranty malfunctions occurring under conditions of normal use in conformity with the Instruction Manual and Product Precautionary Markings will be repaired free of charge. This warranty is valid for a period of three (3) years from the date of purchase. Please contact the distributor from which you purchased the product for further information on warranty provisions.

### Introduction

Thank you for choosing the Hioki CT6845A AC/DC Current Probe. To ensure your ability to get the most out of this device over the long term, please read this manual carefully and keep it available for future reference. Carefully read the separate document entitled "Operating Precautions" before use.

### Inspection

When you open the package, carefully inspect the device to ensure that everything is in good condition, and that no damage occurred during shipping. If the device seems to have been damaged or does not work as specified, contact your authorized Hioki distributor or reseller.

### Overview

The CT6845A is an openable clamp current sensor designed to measure AC and DC currents of up to 500 A at a high level of precision. This, which has excellent frequency characteristics (amplitude, phase) and temperature characteristics (sensitivity, offset voltage), can be used to measure power with high precision as well as current.

### Precautions for Use

Observe the following precautionary information to ensure that the device can be used safely and in a manner that allows it to perform as described in its specifications.

### ! DANGER

Do not perform measurement around a bare conductor. Doing so may result in a short-circuit or an electric shock. Take measurements at a location on an insulated wire with sufficient insulation for the circuit voltage.

The maximum measurement current varies with the frequency, and the current that can be measured continuously is limited. Do not measure currents in excess of the derating curve. Damage to the device or overheating can malfunction, a fire, or burn.

### ! WARNING

Do not place the cable in contact with the measured line. Any contact can cause the device to malfunction and lead to a short-circuit or electric shock.

### ! CAUTION

- Do not place any foreign object between the jaw tips or insert any foreign object into the gap of the jaws. Doing so may worsen the performance of the sensor or the opening-closing operation of the sensor head.
- Do not apply current to the device when the instrument connected with the device has been turned off. Doing so could damage the device.
- Do not plug/unplug the connector to/from a measuring instrument left turned on. Doing so will damage the device and instrument.
- Avoid stepping on or pinching the cable, which could damage its insulation.
- Do not drop the device or subject the device to impact. Doing so could damage the jaws' facing core surfaces, adversely affecting measurement.
- Do not touch the cores with the jaw opened. If the cores are subject to static electricity, the device may be damaged.
- Do not leave the carrying case in an area exposed to direct sunlight or high temperatures, for example, in a vehicle. Leaving the case under a high-temperature environment can deform its interior.

- Keep the jaw closed when the device is not in use. Leaving the jaw open can cause dust or dirt lying on the facing core surfaces, damaging the device.
- The current flowing through the line to be measured can considerably exceed the maximum allowable current of the device when it is turned on and off. Make sure that there is no risk of overcurrent that could damage the device.
- Disengage the lock, then unplug the connector while gripping the connector's shell (i.e., do not pull on the cable) to avoid damaging the connector.
- The cable is hardened in freezing temperatures. Do not bend or pull it to avoid tearing its shield or causing a break.

### Symbol on the device

Indicates that the device can only be used at a location on an insulated wire with sufficient insulation for the circuit voltage.

### Shipping precautions

During shipment of the device, handle it carefully so that it is not damaged due to a vibration or shock.

### Maintenance and Service

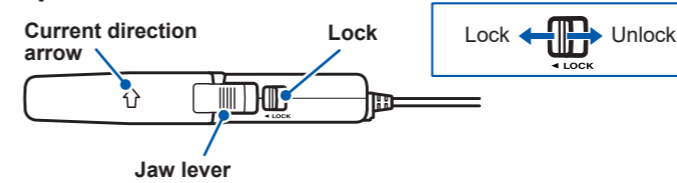
If the device becomes dirty, wipe the device softly with a soft cloth moistened with water or a neutral detergent.

**IMPORTANT**  
Never use solvents such as benzene, alcohol, acetone, ether, ketone, thinners or gasoline. Doing so could deform and discolor the device.

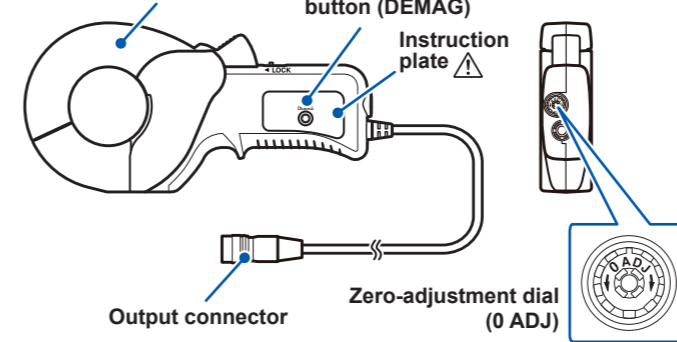
Measurements are degraded by dirt on the jaws' facing core surfaces, so keep the surfaces clean by gently wiping them with a soft, dry cloth.

### Part Names

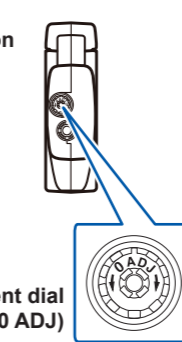
#### Top



#### Side



#### Bottom



### Options

The options listed below are available for the device. To order an option, please contact your authorized Hioki distributor or reseller. Options are subject to change. Check Hioki's website for the latest information.

#### CT9901 Conversion Cable

This cable can connect the device to a product that does not support a direct connection. (No accuracy reduced)

#### CT9902 Extension Cable (5 m)

- This one cable can extend the device's output cable by 5 m (up to 10 m).
- Up to two extension cable is connectable. (The device's performance is not assured with three or more extension cables connected.)
- Add the following values to the accuracy per cable:  
Amplitude accuracy:  $\pm 0.1\%$  of reading ( $DC \leq f \leq 1 \text{ kHz}$ )  
 $\pm(0.5 + 0.01 \times f)$  percent of reading ( $1 \text{ kHz} < f$ )
- Phase accuracy:  $\pm(0.1 \times f \pm 0.1 \times f)$  degrees ( $1 \text{ kHz} < f$ )  
f: frequency (kHz)

### Phase Compensation Values

For phase compensation of the PW6001 and PW3390, enter the following compensation values (typical):  
Frequency: 10.0 kHz, phase difference:  $-0.94^\circ$   
The PW8001, which can automatically set the phase compensation values, requires no entry.

### Measuring Current

#### Inspecting the device before use

Check the device for any damage that may have occurred during storage or shipping, and perform functional checks before use. If you find any damage to the device, contact your authorized Hioki distributor or reseller.

Inspection item	Remedy
Any parts of the cable sheath have no damage.	If you find any damage, request the repair without use.
The jaws have no crack or damage.	Failure to do so could cause an electric shock.

### ! CAUTION

- Do not place any conductors, around which the device is not clamped, near the jaws if they carry currents having a frequency of 10 kHz or higher.
- Current flowing through nearby conductors may cause self-heating of the jaws, damaging the device.

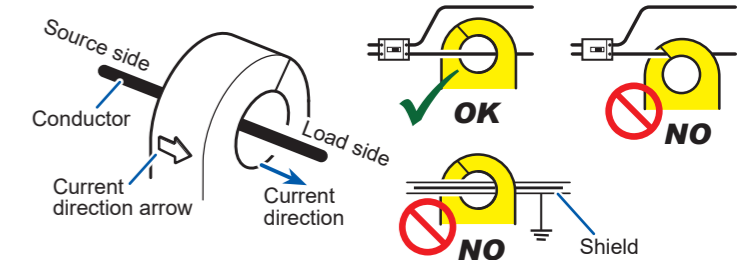
The device's signal output circuit includes a protective resistance (output resistance). Use a measuring instrument, including a digital multimeter, with high input resistance to monitor the output signal. (1 MΩ or more is recommended.)

### Procedure

- 1 Connect the device to an measuring instrument that has been turned off.
- 2 Turn the instrument on.
- 3 Perform demagnetization (DEMAG) and zero adjustment (0 ADJ) (if needed).  
See "Demagnetization (DEMAG) and zero adjustment (0 ADJ)."
- 4 Unlock the jaw.
- 5 Press the jaw lever to open the jaw.
- 6 Clamp the device around one conductor only, then close the jaw.

**IMPORTANT**  
Clamp the sensor around only one conductor. Clamping the sensor around two or more of conductors in a bundle prevents the instrument from measuring any current regardless of whether the measurement target is a single-phase or three-phase circuit.

- Check that the jaws' tips engage fully with each other.
- Clamping the device with its current direction arrow pointing to the source side will reverse the output signal's polarity.

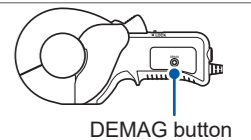


- 7 Lock the jaw.
- 8 Start measurement.
- 9 Remove the device from the conductor after measurement have finished.
- 10 Turn the instrument off.
- 11 Disconnect the device from the instrument.

### Demagnetization (DEMAG) and zero adjustment (0 ADJ)

Immediately after the device is turned on or if an over-current exceeding the rated current is input, the device will output an offset voltage. Because the offset voltage becomes an error for DC current measurement, perform demagnetization and zero adjustment as follows:

- 1 Press the DEMAG button while opening the jaw.



- 2 Open and close the jaw several times, then check if the outputted offset voltage displayed on the measuring instrument's screen has been stabilized.

- 3 Lock the jaw.

- 4 Turn the zero-adjust dial (0 ADJ) to zero the outputted offset voltage displayed on the instrument's screen.

