

HIOKI

CT6873 CT6873-01

AC/DC CURRENT SENSOR

Instruction Manual

EN

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CT6873A961-00 21-12H



HIOKI

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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 CT6873, CT6873-01 AC/DC Current Sensor. 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.

Intended audience

This manual has been written for use by individuals who use the product or provide information about how to use the product. In explaining how to use the product, it assumes electrical knowledge (equivalent of the knowledge possessed by a graduate of an electrical program at a technical high school).

Troubleshooting

- If the device seems to be malfunctioning, contact your authorized Hioki distributor or reseller.
- Store the device packaging material after opening the device. When shipping the device, use the box and packaging materials in which it was originally shipped.

Safety Information

⚠ DANGER

- If the cable melts, metal parts could be exposed, posing a hazard. Keep the cable away from sources of heat.
- Connect the device to the secondary side of a distribution panel. If a short-circuit occurs on the secondary side of the distribution panel, the panel will interrupt the short-circuit current. Do not connect the device to the primary side of the distribution panel because an unrestricted current flow can damage the device and facilities if a short-circuit occurs.

Do not use the device to measure bare conductors to which a voltage that exceeds the maximum rated line-to-ground voltage is being applied. Doing so could damage the device and cause bodily injury. If the voltage exceeds the maximum rated line-to-ground voltage, measure it using an insulated wire with the appropriate level of insulation for the voltage in question.

⚠ 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

- To prevent cable damage, do not step on cables or pinch them between other objects. Do not bend or pull on cables at their base.
- Do not place the device on an unstable table or uneven surface. Doing so could cause the device to fall or turn over, causing bodily injury or damage to the device.
- The cable is hardened in freezing temperatures. Do not bend or pull it to avoid tearing its shield or causing a break.
- When the power to lines to be measured is turned on or off, a current flowing through the lines can exceed considerably the maximum allowable current of the device. This could result in damage to the device. Make sure that there is not any over-current.
- Do not apply current to the lines to be measured while the device turned off. This could result in damage to the device.

Overview

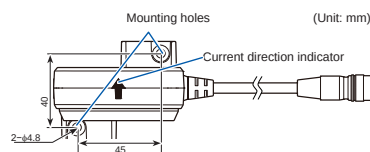
This pull-through current sensor has excellent frequency characteristics (amplitude, phase) and temperature characteristics (sensitivity, offset), which enables high-precision power measurement as well as current measurement.

Use with Other Hioki Products

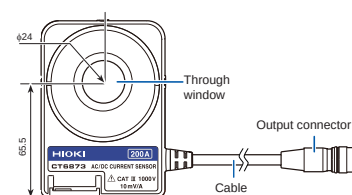
This device is used in connection with a dedicated instrument (Hioki product). Refer to combined accuracy and conditions specified in the specifications for details.

Name of Each Part

Top view



Front view



Measurement Procedure

For correct measurement, connect the device to a measuring instrument with an input impedance of 1 MΩ ±10%.

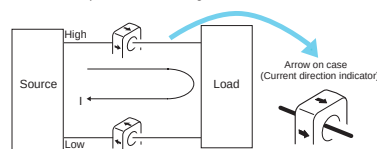
Inspection Before Use

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

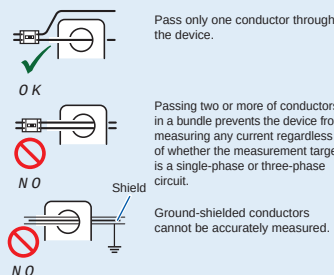
Check Items	Remedy
Is the device cracked or damaged?	If there is any damage, electric shock may result. Discontinue use and contact your authorized Hioki distributor or reseller.
Is the cable insulation torn?	Broken connections will make proper measurement impossible. Discontinue use and contact your authorized Hioki distributor or reseller.
Is the cable broken at the base (of the connector or the sensor)?	Broken connections will make proper measurement impossible. Discontinue use and contact your authorized Hioki distributor or reseller.

Wiring

Make sure the direction of the arrow on the case matches the direction of the current flow, as shown in the figure below. If they are oriented incorrectly, the output signal from the sensor will be reversed. When using the device in combination with a power meter, conform to the power meter's wiring method.



IMPORTANT



- Arrange the conductor as close to the center of the through window as possible. For a current to be measured of frequency 1 kHz or more, the conductor position could cause increase in measured value error or distortion of output-signal waveforms.
- If a conductor not being measured carries a current of frequency 1 kHz or more, keep such conductor at least 100 mm away from the device. Failure to observe this could cause increase in measured value error or distortion of output signal waveforms.
- Use the device with its surface temperature of 105°C or less.

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. Please check Hioki's website for the latest information.

CT9901 Conversion Cable

Connecting the CT9901 enables the device to connect to an instrument that does not support direct connection with the device (No accuracy is affected).

CT9902 Extension Cable

- Connecting a CT9902 enables the device cable to be extended by 5 m (max. 10 m).
- Up to two of the Extension Cable are connected to the device, its performance is not guaranteed.)
- Add the following to the sensor accuracy for each cable used:
Amplitude accuracy: ± 0.1% of reading (DC ≤ f ≤ 1 kHz)
: ±(0.1 + 0.01 × f)% of reading (1 kHz < f)
Phase accuracy: ±(0.03 × f)° (1 kHz < f)
*: frequency

Phase Compensation Values

Enter the following compensation values (representative values) when performing phase compensation on the PW6001 or PW3390.
CT6873: 100 kHz, -0.75°
CT6873-01: 100 kHz, -2.10°

Specifications

Accuracy

Reading (displayed value):
Indicates the value displayed by the instrument. Limit values for reading errors are expressed as a percentage of the reading ("%" of reading" or "% rdg").
Range:
Indicates the instrument's range. Limit values for range errors are expressed as a percentage of the range ("%" of range" or "% rng").
Full scale (rated current):
Indicates the rated current. Limit values for full-scale errors are expressed as a percentage of full scale ("%" of full scale" or "% f.s.").

