

User's Manual

Models CTW10, CTW20, CTW100,
and CTW130
Clamp-on Current Transformers

Please read this user's manual thoroughly to ensure correct use of the instrument. Carefully store this manual for future reference.

YOKOGAWA
Yokogawa Electric Corporation

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1. Cautionary Notes for Safe Use of the Products

The following symbol is indicated on the instrument and in this manual to ensure safe use.



This symbol is indicated where the operator must refer to instructions in the manual in order to protect both personnel and the instrument. This symbol on the product indicates that the operator must refer to an explanation in the user's manual in order to avoid the risk of injury or death of personnel and damage to the instrument. The manual describes how the operator should exercise special care to avoid electric shock or other dangers that may in injury or loss of life.

The purpose of the following conventional symbol in this manual is:



NOTE

Draws attention to information essential for understanding the operation and features.

2. Handling Precautions and Installation Location



NOTE

- Note that these current transformers are designed for use with general-purpose instruments and have not yet gained any official certification. They cannot therefore be used for the purpose of ascertaining wattage or other electric parameters.
- Use each current transformers under a load no greater than its rated level. When calculating the load, you must calculate the sum of the load given by the instruments to be connected to the transformer and the load given by the lead-wire of the secondary-stage cable.
- The inner-walls of the clamp are treated with rust preventive. But if rusted, remove the rust with CRC-5-56 (goods on the market) and spray rust preventive on the inner-walls again for recovery.

Avoid installing the current transformers in locations subject to: ambient temperatures outside the specified range of -20 °C to 50 °C, where condensation is likely; ambient humidity exceeding 80 % RH, where condensation is likely; relatively large amounts of flammable or explosive gas, saline substance, lampblack or dust; splashes of water, oil or solvent; radioactive rays or intense electric or magnetic fields; frequent mechanical vibration or shock; or direct sunlight.

3. Installation



WARNING

Since there is a risk of electric shock during installation, be sure to observe the following.

- Before connecting the transformer to any other equipment, make sure the circuit is not receiving any power in order to prevent electric shock.
- Fasten the connecting terminals securely so they will not loosen readily.
- Do not touch the terminals or any other part of the transformer when the circuit is live.
- Do not use the transformer under a circuit current greater than the level specified for that model.
- Do not use the transformer under a circuit voltage greater than 500 V AC.

Cross-check the Model

Make sure the model and suffix codes shown on the data plate attached to the transformer are the same as specified in your purchase order.

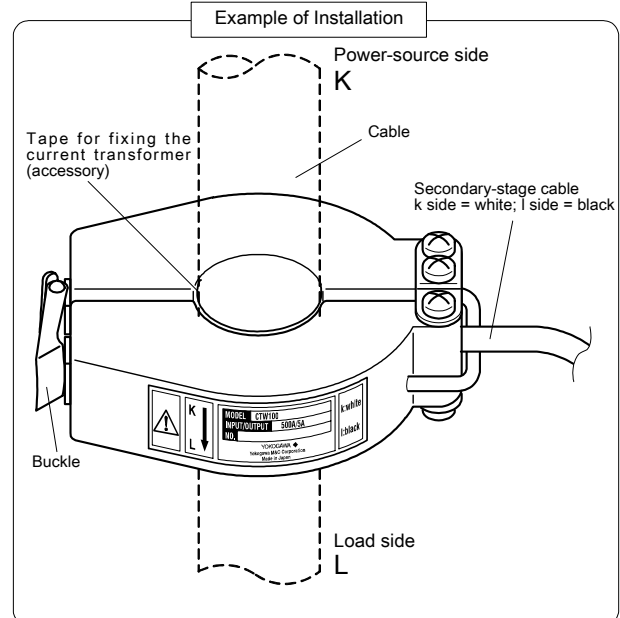
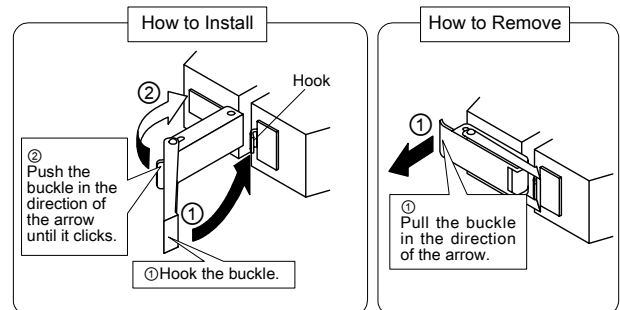
Models	Names
CTW10	Clamp-on Current Transformer (for 100 A / 1 A) Applicable cable diameter: less than $\Phi 24$ mm
CTW20	Clamp-on Current Transformer (for 200 A / 1 A) Applicable cable diameter: less than $\Phi 24$ mm
CTW100	Clamp-on Current Transformer (for 500 A / 5 A) Applicable cable diameter: less than $\Phi 36$ mm
CTW130	Clamp-on Current Transformer (for 800 A / 5 A) Applicable cable diameter: less than $\Phi 36$ mm



NOTE

The CTW contains a device for suppressing hazardous voltages that may arise when the secondary line is open-circuited.

Install the transformer referring to the following figures.



- Attach the transformer to the cable according to the orientation of the K and L symbols, as shown in the figure.
- Cut the tape for fixing the current transformer (accessory) into the appropriate length and wind the tape around the cable until the cable becomes the thickness required to fit the inside diameter of the current transformer.
- Be careful not to make a gap between the inner-walls of the clamp.
- Be careful not to trap any dust between the inner-walls of the clamp.
- Make sure the wound tape is not caught between the flat parts of the clamp, and then securely fasten the clamp using the buckle.
- Use a crimp-on terminal for 0.75 mm² cables to connect the secondary-stage cable.
- The wires of the secondary-stage cable are color-coded as follows. k side=white; l side=black



NOTE

When extending secondary-stage cable of the current transformer, use a covered ring-sleeve or the like and a cable of 1.25 to 2 mm². The standard cable length is as follows.

When secondary-stage current is 5 A:

Up to 2.6 m for 1.25 mm², and up to 4.6 m for 2 mm²

When secondary-stage current is 1 A:

Up to 8.3 m for 1.25 mm², and up to 15 m for 2 mm²

4. Disposal

These current transformers, when no longer serviceable, must be disposed of as industrial refuse.

5. Specifications

5.1 General

The CTW series are clamp-on current transformers that can be installed much easier than conventional current transformers, whereby saving labor. These transformers are particularly useful when expanding existing system since you can attach them to a cable without having to cut it.

5.2 Characteristic Specifications

Rated primary current (In) / Rated secondary current:

CTW10= 100A / 1A

CTW20= 200A / 1A

CTW100= 500A / 5A

CTW130= 800A / 5A

Rated frequency: 50 / 60 Hz

Rated burden:

CTW10, CTW20 = 0.5VA

CTW100, CTW130 = 2.5VA

Accuracy / Linearity: $\pm 1.0\%$ against rated primary current In

Phase difference: Within $\pm 2^\circ$ against rated primary current In

Operating circuit voltage: Within 500 V AC

Insulation resistance: 100 M Ω or more at 500 V DC (across core and output)

Withstand voltage: 2000 V AC for one minute (across core and output)

Operating temperature range: -20 to 50°C (no condensation)

Operating conditions: Indoor location

Weight:

CTW10= Approx. 220 g

CTW20= Approx. 220 g

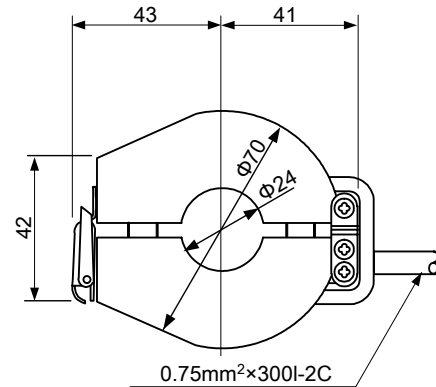
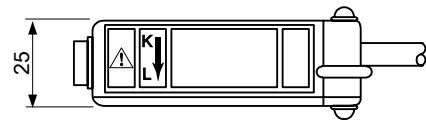
CTW100= Approx. 350 g

CTW130= Approx. 380 g

6. External Dimensions

Unit: mm

6.1 CTW10 and CTW20



6.2 CTW100 and CTW130

