

OMRON

Model ZN-CTM51-□A

Clamp-on CT for Portable Power Monitor

INSTRUCTION SHEET

Thank you for selecting OMRON product. This sheet primarily describes precautions required in installing and operating the product.
Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product. For your convenience, keep the sheet at your disposal.



Dispose in accordance with applicable regulations.



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PRECAUTIONS ON SAFETY

● Meanings of Signal Words

WARNING Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.

CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

● Meaning of Precaution Symbols

	● Prohibition Indicates general prohibition.
	● Electric Shock Warning Warns against an electric shock under specific conditions.
	● Disassembly Prohibition Indicates the possibility of accidents such as an electric shock caused by unit disassembly.

CAUTION

A minor or moderate injury or property damage may occur due to explosion. Do not use the product in an environment containing an inflammable or explosive gas.

An electric shock may occur. Make sure that the power of a conductor to be measured is turned OFF before clamping or detaching the unit to/from the conductor. Or wear insulating gloves if the power is not turned OFF.

An electric shock may occur. Do not touch the terminal sections of the unit and the conductor to be measured when the unit is clamped to the conductor.

An electric shock may occur. Be sure to use the covered wire with at least 600 V basic insulation for the primary side wire. Do not use it for busbar.



An electric shock or minor injury as well as fire or unit malfunction may occur. Do not attempt to disassemble, repair or modify the product.



PRECAUTIONS FOR SAFE USE

Observe the following precautions to ensure safe operation.

- Do not install the product in the places subject to exposure to water, oil, or chemical splashes.
- Dispose of the product as industrial waste.
- Do not let the product drop or subject it to a shock, which may cause its damage or malfunction. Stop using the product if it has been applied with a strong impact.
- The product cannot be used for measurement of the secondary circuit of an inverter.

The applicable voltage is 480 V max. Do not use the product with the covered wire with 480 V or higher.

PRECAUTIONS FOR CORRECT USE

1. Avoid installing the product in the following places:
 - Places exceeding the rated ambient temperature
 - Places exposed to extreme temperature changes (where condensation occurs)
 - Places subject to relative humidity exceeding the rated humidity range
 - Places subject to corrosive or flammable gases
 - Places subject to mist, droplets, coarse particles, fiber, salt, metal dust, or large amount of particles
 - Places subject to direct shock or vibration
 - Places subject to direct sunlight
 - Places subject to exposure to water, oil, or chemical splashes
 - Places subject to strong magnetic field or electric field
 - Outdoors
2. Wiring
 - Wire the product cable separately from high-voltage or power lines. Placing them in the same wiring or the same duct may cause induction, resulting in the product malfunction or damage.
 - Make sure that the I/O terminals are inserted or removed with the power turned OFF. Doing this with the power ON may result in a failure.

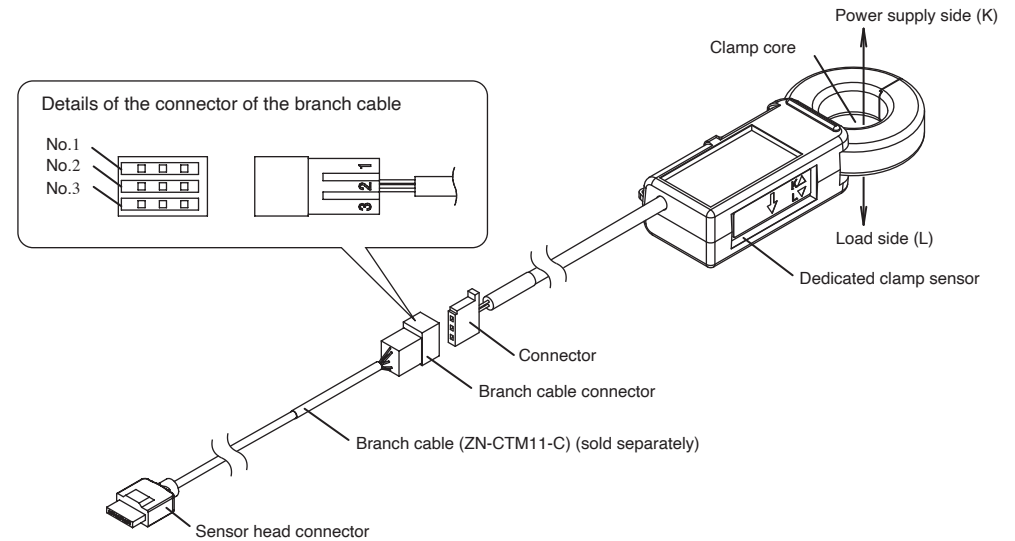
3. Clamping to measured conductor
 - Check the direction of the power supply side (K) and load side (L) before placing the clamp. Placing the clamp in wrong direction will result in measurement error.
 - Do not remove/insert the sensor head connector with the measured conductor clamped. Doing so may result in failure of the main unit and dedicated clamp sensor.
 - Do not place the clamp on the measured conductor with the power supply of the main unit OFF. Doing so may result in failure of the main unit and dedicated clamp sensor.

4. Others
 - When carrying the CT mounted with the Portable Power Monitor (ZN-CTX21-□), hold the unit to prevent an excessive force from being applied to the crimp terminal.
 - Do not ground CTs. Doing so may result in failure.
 - Do not place a foreign object at the tip of the clamp core or insert an object into the gap. Doing so may result in deterioration of characteristics or open/close operation failure.
 - Close the clamp core when you do not use the product. Leaving it open may result in failure.
 - When performing measurement using multiple CTs, a Portable Power Monitor (ZN-CTX21-□) and branch cable (ZN-CTM11-C) (sold separately) are required. To check your current version and information on version upgrade, visit the following website:
<http://www.fa.omron.co.jp/member/product/tool/245/zn/index.htm>
 - Do not connect clamp-on CT (ZN-CTM51-□A) and split-core CT (ZN-CTM11-□A) at the same time to one Portable Power Monitor. Doing so may result in measurement error.

Ratings

Model	
Item	ZN-CTM51-200A
Primary side rated current	200 A
Secondary winding	3,000 turns
Applicable frequency	10 Hz to 5 kHz
Insulation resistance	Between output terminal and case: 50 MΩ min. (500 VDC)
Withstand voltage	Between output terminal and case: 2,000 VAC for 1 minute
Protection device	7.5 V clamp device
The number of detach operations allowed	5,000 times
Internal diameter (mm)	23 dia.
Operating temperature/humidity	-20 to 60°C 85% max. (no icing or condensation)
Storage temperature/humidity	-30 to 65°C 85% max. (no icing or condensation)
Used circuit voltage	480 V max.

Nomenclature



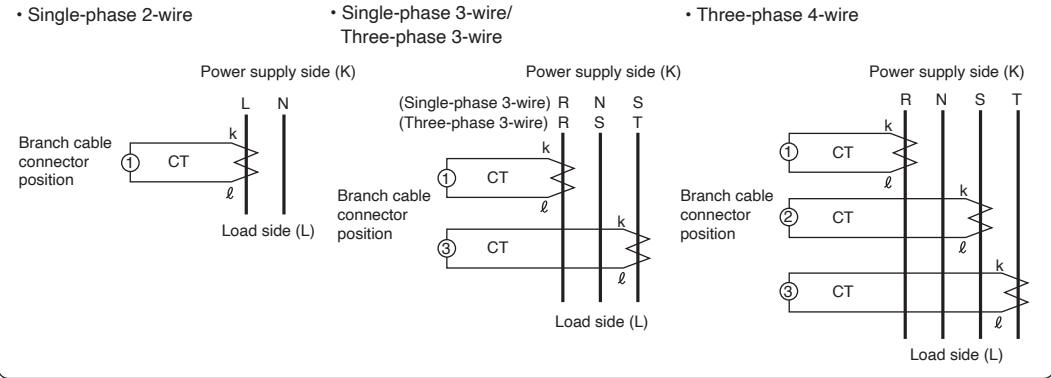
■ Procedure of Clamping to Measured Conductor

1. Connect the CT connector and branch cable connector.*1
2. Connect the Portable Power Monitor (ZN-CTX21-□) and sensor head connector.
3. Turn ON the power of the Portable Power Monitor.
4. Set the Portable Power Monitor CT setting to 200A.
5. Check the direction of the power supply side (K) and load side (L) and then place the clamp. Placing the clamp in wrong direction will result in measurement error.

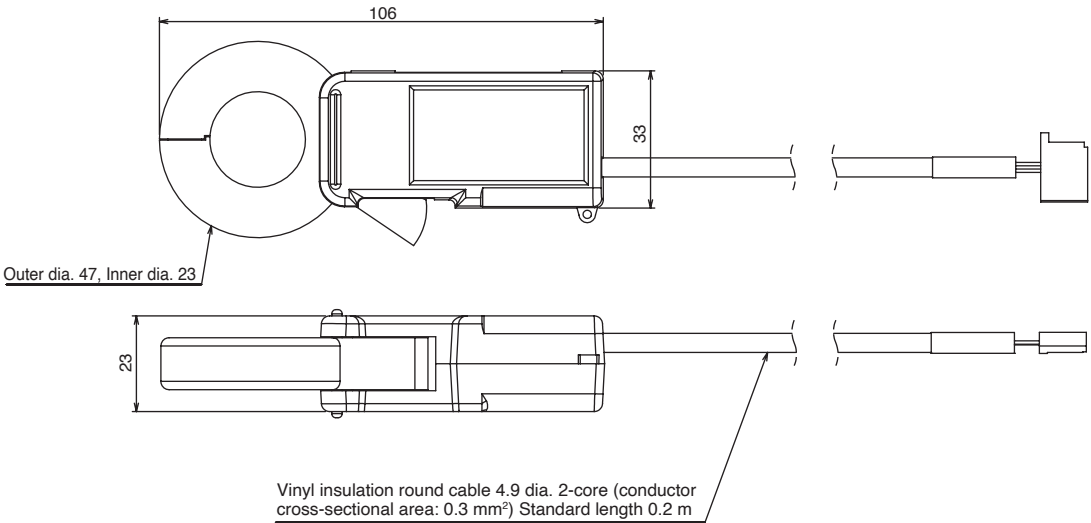
*1: When using multiple CTs, the type of all the CTs to be used must be the same. Correct measurement is not possible if CTs with different primary side rated currents are used concurrently.

■ Precautions when Detaching CT from Measured Conductor

- Do not place the clamp on the measured conductor without turning ON the power of the Portable Power Monitor. Be sure to turn OFF the power of the main unit after removing it from the measured conductor.
- Do not insert/remove the connector and sensor head connector of the branch cable when the power of the Portable Power Monitor is ON or CT is clamped to the measured conductor.



■ Dimensions



(Unit: mm)

Suitability for Use

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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