


# Portable Power Monitor ZN-CTX/-CTM

CSM\_ZN-CTX\_-CTM\_DS\_E\_3\_2

## Easy and Quick “Checking Power” at the Worksite

- Display and record power consumption without stopping the power supply.
- Battery driven, mounted with a magnet, and super thin.
- Easy installation with only a CT to install.
- Special PC software included to easily graph total power consumption.




 Refer to the *Safety Precautions* on page 3.








## Ordering Information

### Portable Power Monitor

#### Logging unit

Appearance	Product name	Model	Power supply
	Logging unit	ZN-CTX21-A	Battery/DC cable

#### Dedicated CT unit (Branch type)

Appearance	Product name	Model
	Branch cable (cable length 1.3 m)	ZN-CTM11-C
	Split type CT Connector: For connecting the branch cable Cable length: 0.2 m	ZN-CTM11-5A
		ZN-CTM11-50A
		ZN-CTM11-100A
		ZN-CTM11-200A
		ZN-CTM11-400A
	Clamp type CT Connector: For connecting the branch cable Cable length: 0.2 m	ZN-CTM51-200A





## Guideline for selecting dedicated CT unit

Applicable circuits	Model	Branch cable ZN-CTM11-C	CT exclusive for branch type ZN-CTM□-□A*
Single-phase 2-wire		1	1
Single-phase 3-wire		1	2
Three-phase 3-wire		1	2
Three-phase 4-wire		1	3

(Necessary quantity is indicated in the table)

\* You can connect up to three Branch-type CT Units to the Branch Cable.  
Be sure, however, not to connect a CT of different rated current. Correct measurement will be blocked.

## Optional

Appearance	Product name	Model
	Mounting magnet	ZN9-EM01-S
	DC cable Connector: Straight type Cable length: 2 m (A set is attached to Model ZN-CTX21-A.)	ZN9-ED01-S
	DC cable Connector: Right angle type Cable length: 2 m	ZN9-ED02-S
	Environmental Visualization Software *1*2 Wave Inspire ES *3	ZN-SW11-S

- \*1. This software has the following merits.
- Real-time monitoring of waveforms is available.
  - Monitoring is synchronized with temperature/humidity sensors and other environmental sensor series units
  - Data is displayed on layout drawings.
- \*2. Operating environment/OS: Windows XP/Windows Vista/Windows 7 (64-bit is supported for Windows 7 alone)  
CPU: Intel convertible processor 1 GHz minimum  
Memory: 1 GB minimum (2 GB or greater is recommended)
- \*3. Supportable version is Ver. 2.20 or later.

## Ratings and Specifications

### Logging unit (rating)

Item	Model	ZN-CTX21-A
Connectable sensor		ZN-CTM□1-□A
Display		7-seg. 5-digit 2-step LCD display, auxiliary information indicator displays
Recording Interval		1 s, 2 s, 5 s, 10 s, 20 s, 30 s, 1 min. *1
Calculation functions *2		Momentary power, Integrated power consumption
Measurement Mode		Normal mode, Sleep mode *3, High-speed logging mode *4
Recording Mode		Continue mode *5, Ring mode *6
External Output		Alarm output (Photocoupler output) *7
Internal storage device		Internal memory: approx. 6500 data items
External storage device		SD card (to save measured values and to save/read set values), Recommended SD card: HMC-SD291 (manufactured by OMRON) *8
Power Supply		DC input: 24 VDC ±10%; Batteries: Two AAA batteries *9
Current Consumption		80 mA max.
Battery Life *10		Approx. 1 week *11
Operating Temperature		Battery Supply: -10°C to 60°C (no condensation or icing)
Operating Humidity		20% to 85% (no condensation or icing)
Storage Humidity/ Temperature		-15°C to +60°C, 20% to 85% (no condensation or icing)
Insulation Resistance		20 MΩ (500 VDC)
Withstand Voltage		1000 VAC, 50/60 Hz, 1 min.: Between the case and current input circuit
Vibration Resistance		With mounting screws: 10 to 150 Hz, 0.7 mm double amplitude, acceleration: 50 m/s <sup>2</sup> for each in X, Y and Z directions for 80 min. With mounting magnets: 10 to 55 Hz, 0.3 mm double amplitude, acceleration: 20 m/s <sup>2</sup> for each in X, Y and Z directions for 50 min.
Shock Resistance		150 m/s <sup>2</sup> in 6 directions (+/-X, +/-Y, and +/-Z directions), 3 times each *12
Material		ABS
Degree of Protection		IP30
Mounting		Magnet mounting, screw mounting, hook
Weight (in Package)		Approx. 500 g
Accessories		Instruction Sheet, Startup Guide, Utility Disk (CD-ROM) *13 Mounting Magnets *14, Alarm Output Connector *15, DC Cable, and Ferrite Core

- \*1. In high-speed logging mode, data is recorded in 83 ms at 60 Hz and in 100 ms at 50 Hz.
- \*2. Momentary power and integrated power values are converted from the measured current. Correctly specify the number of used channels, application circuit, CT type, frequency, voltage, and power factor.
- \*3. The display turns OFF after 10 seconds of no user operation and recovers by a key operation when SLEEP mode is specified LAN cannot be used when sleep mode is specified
- \*4. Ethernet cannot be used during high-speed logging.
- \*5. Automatically writes the data to the SD memory card when the internal memory reaches its capacity and continues recording until the SD card memory capacity reaches its limit. The unit stops operation if there is no SD memory card inserted when the internal memory reaches its capacity. (Recording can be resumed after inserting an SD memory card and outputting the data to it at a press of button.)
- \*6. Continues the recording of the latest measured values until the internal memory reaches its capacity. (If the internal memory capacity exceeds the capacity, data is overwritten from the oldest one in the memory.)
- \*7. Output when the integrated power upper limit specified in THR mode is exceeded. An alarm output is not available in SLEEP mode.
- \*8. You can temporarily read and write data with an SD card that complies with SD/SDHC card standards and was made by another company, but the SD card may suddenly not be recognized, preventing you from accessing the data.
- \*9. Nickel-metal hydride cells or alkaline dry cells can be used. Manganese battery cells cannot be used.
- \*10. Battery life varies depending on the measurement environment, recording interval, operation mode as well as the battery type and performance.
- \*11. Conditions: Two AAA nickel-metal hydride cells; Sleep mode; Continue mode; Recording interval: 1 s; SD memory card: HMC-SD291; Operation temperature: 23°C ; and Automatic range selection off
- \*12. The installation place must be free from physical shock when using mounting magnets.
- \*13. The Utility Disc includes SD Viewer software, Energy Viewer software and manual pdf. The provided software operating environment/OS: Windows XP / Windows Vista / Windows 7; CPU: Intel-compatible processor 1.5GHz or higher; Memory: 1 GB or more (Recommended: 2 GB or more)  
Windows is a registered trademark of Microsoft Corporation in the United States and other countries.
- \*14. Already installed on the product by factory default.
- \*15. OMRON's XW4B-02B1-H1 connector.

**Logging unit (rating)**

Item	Model	ZN-CTX21-A
Primary side rated current		Dedicated CT (5 A/50 A/100 A/200 A/400 A)
Primary side allowable input current		120% of rated current (Continue)
Accuracy		$\pm 2.0\%FS \pm 1$ digit (Ambient temperature 23°C, rated input, rated frequency) *
Measurement target frequency		50 Hz/60 Hz
Recording values		Current value, instantaneous power, integrated power consumption
Applicable circuit		Single phase two-wire, single phase three-wire, three-phase three-wire, three-phase four-wire

\* An error of the dedicated CT is not included.

**Dedicated CT unit (rating and performance)**

Item	Model	ZN-CTM11-5A	ZN-CTM11-50A	ZN-CTM11-100A	ZN-CTM11-200A	ZN-CTM11-400A	ZN-CTM51-200A
Primary side rated current		5A	50A	100A	200A	400A	200A
Secondary winding		3,000 turns				6,000 turns	3,000 turns
Applicable frequency		10 Hz to 5 kHz					
Insulation resistance		Between output terminal and case: 50 MΩ minimum (500 VDC megohms)					
Withstand voltage		Between output terminal and case: 2,000 VAC 1 minute					
Protection element		7.5 V clamp element					
Allowable frequency of disconnection		100 times					5,000 times
Applicable wire diameter *		7.9 mm dia. maximum	9.5 mm dia. maximum	14.5 mm dia. maximum	24.0 mm dia. maximum	35.5 mm dia. maximum	23.0 mm dia. maximum
Operating temperature and humidity range		-20°C to +60°C 85% maximum (no condensdion or icing)					
Storage temperature and humidity range		-30°C to +65°C 85% maximum (no condensdion or icing)					
Voltage of circuit used		480 VAC maximum					

\* If you use a flat cable, select the cable based on the dimensions of the CT.

**Safety Precautions**

**⚠ WARNING**

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



The sensor head connector and the CT input circuit of the Portable Power Monitor ZN-CTX21 are not isolated. Extensive property damage, minor or moderate injury may be caused by the electrical flow through the product. Do not connect the dedicated connection cable to AC or DC power supplies.

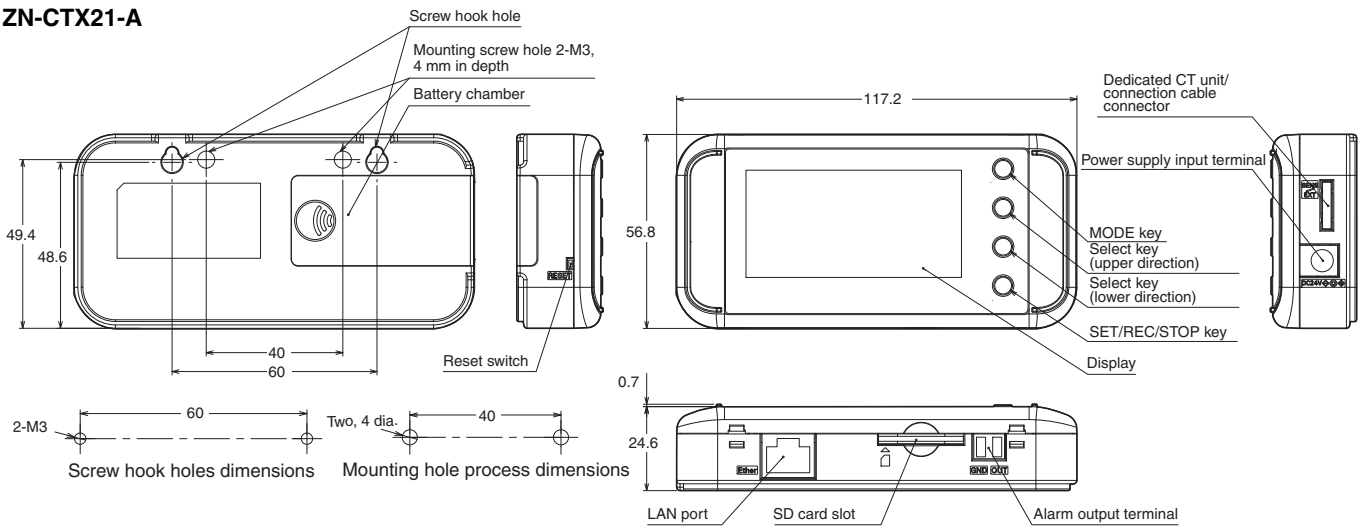


For technical information and product FAQs, refer to the “Technical Guide” on your OMRON website.

# Dimensions

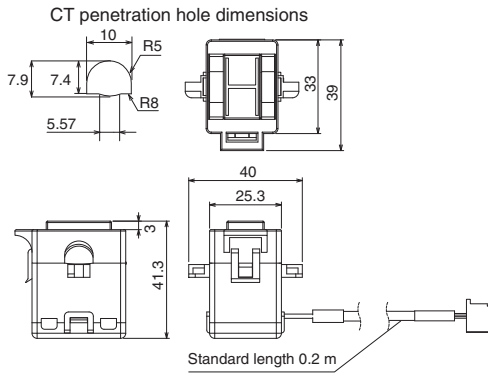
## Logging unit

### ZN-CTX21-A

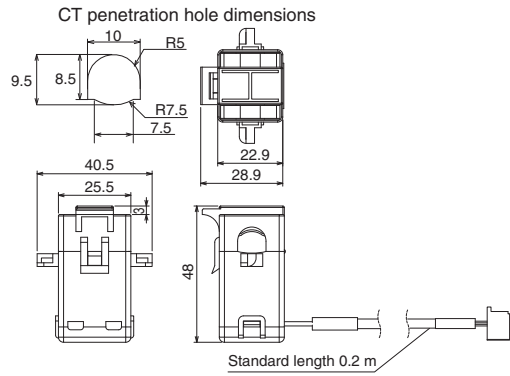


Dedicated CT unit (Branch type)

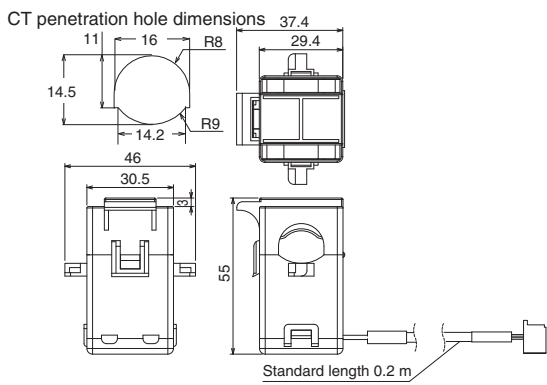
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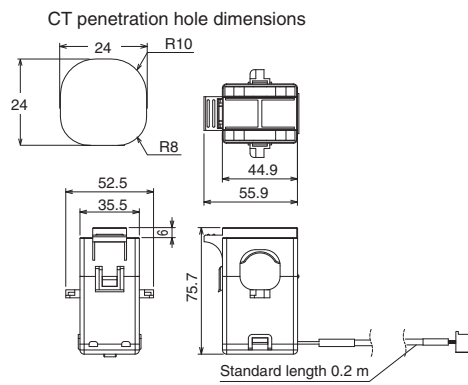
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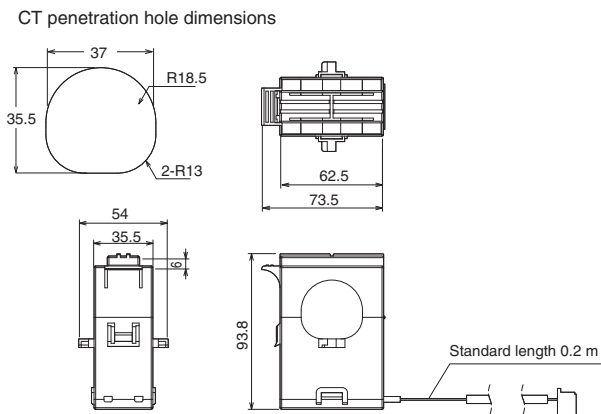
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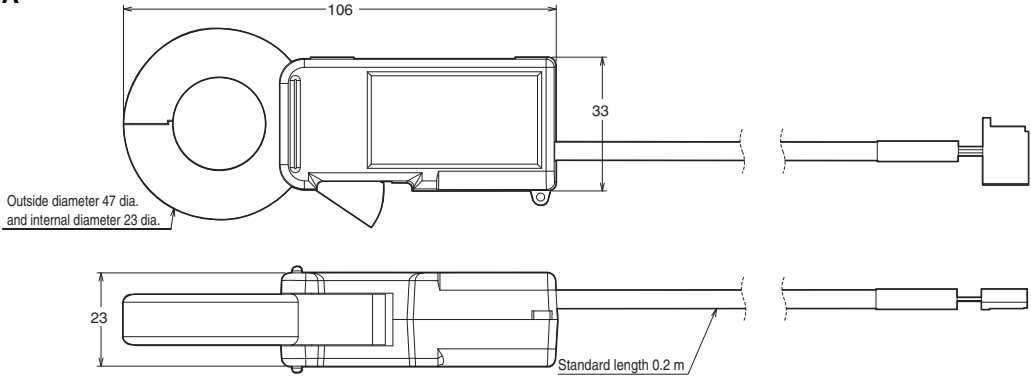
ZN-CTM11-200A



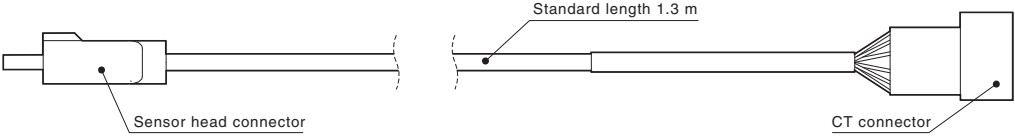
ZN-CTM11-400A



ZN-CTM51-200A



ZN-CTM11-C



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