

User's Manual 96095 AC/DC Clamp-on Probe

Thank you for purchasing our AC/DC Clamp-on Probe.

The following manuals, including this one, are provided as manuals for the 96095. Please read all manuals.

IM 96095-EN:	User's Manual (this manual)
IM 00C01C01-01Z1:	Safety manual (European languages)
IM 96095-S01-EN:	Disposing the Battery (Batteries and Waste Batteries)
IM 96095-93Z2:	Document for Korea

Contact information of Yokogawa offices worldwide is provided on the following sheet.

PIM 113-01Z2:	Inquiries List of worldwide contacts
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Store this manual in an easily accessible place for quick reference.

YOKOGAWA IM 96095-EN
Yokogawa Test & Measurement Corporation 6th Edition
October 2021 (YMI)

Regulations and Sales in Various Countries and Regions

Waste Electrical and Electronic Equipment (WEEE)

(EU WEEE Directive valid only in the EEA* and UK WEEE Regulation in the UK)

This product complies with the WEEE marking requirement. This marking indicates that you must not discard this electrical/electronic product in domestic household waste.

When disposing of products in the EEA or UK, contact your local Yokogawa office in the EEA or UK respectively.

(*EEA: European Economic Area)

Batteries and Waste Batteries

Batteries and waste batteries are described in IM 96095-S01-EN.

Authorized Representative in the EEA

Yokogawa Europe B.V. is the authorized representative of Yokogawa Test & Measurement Corporation for this product in the EEA.

To contact Yokogawa Europe B.V., see the separate list of worldwide contacts, PIM 113-01Z2.

For the Pollution Control of Electronic and Electrical Products of the People's Republic of China

They are applicable only in China.

产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
电流探头 (夹子)	×	○	○	○	○	○

○: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。
×: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

环保使用期限: 该标识适用于 SJ/T 11364 中所述, 在中华人民共和国销售的电子电气产品的环保使用期限。只要您遵守该产品相关的安全及使用注意事项, 在自制造日起算的年限内, 则不会因产品中有害物质泄漏或突变变异, 而造成对环境的污染或对人体及财产产生恶劣影响。
注) 该年数为“环保使用期限”, 并非产品的质量保证期。零件更换的推荐周期, 请参照使用说明书。

1. Safety Precautions

This product is designed to be used by a person with specialized knowledge. When operating the instrument, be sure to observe the cautionary notes given below to ensure correct and safe use of the instrument. If you use the instrument in any way other than as instructed in this manual, the instrument's protective measures may be impaired. This manual is an essential part of the product; keep it a safe place for future reference.

YOKOGAWA is by no means liable for any damage resulting from use of the instrument in contradiction to these cautionary notes.

The following safety symbols are used on the instrument and in this manual.

⚠ WARNING

Indicates a hazard that may result in the loss of life or serious injury of the user unless the described instruction is abided by.

⚠ CAUTION

Indicates a hazard that may result in an injury to the user and/or physical damage to the product or other equipment unless the described instruction is abided by.

	Danger! Handle with Care. This mark indicates that operator must refer to an explanation in the instruction manual in order to avoid risk of injury or death of personnel or damage to the instrument.
	This symbol indicates that this instrument designed to be applied around or removed from HAZARDOUS LIVE conductors provided if the RATED circuit-to-earth voltage does not exceed the value indicated in the measurement category.
	Double Insulation This symbol indicates double insulation.
	Alternating Current This symbol indicates AC voltage/current.
	Direct Current This symbol indicates DC voltage/current.

⚠ CAUTION

Using this instrument is limited to under residential, commercial and light-industrial environment.

This instrument may not be able to measure accurately if it is near other equipment generating strong electromagnetic interference or a strong magnetic field caused by large current.

4. Battery Replacement

⚠ WARNING

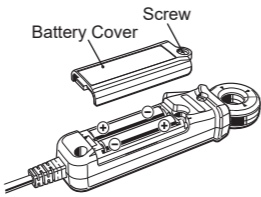
Do not try to replace the batteries when making a measurement to avoid electrical shock hazard.

⚠ CAUTION

- Do not mix new and old batteries.
- Make sure to install batteries in correct polarity as indicated in the battery compartment.

Replace the batteries when a low battery indicator (red LED) flashes.

- Press the Power Switch and power off the instrument.
- Loosen the screw at the bottom side of the instrument to remove the Battery Cover.
- Replace the batteries with new ones. (size AAA alkaline battery : LR03 × 2 pcs.)
- Install the Battery Cover and tighten the screw.



⚠ WARNING

- This instrument is for measuring current (clamping sensor). Do not use this instrument for other purpose.
- Do not use the instrument if there is a problem with its physical appearance.
- Never make measurement on a circuit in which the electrical potential exceeds 300 V in order to avoid possible shock hazard.
- Do not make measurement when thunder is rumbling. If the instrument is in use, stop the measurement immediately and remove the instrument from the measured object.
- Do not attempt to make measurement in the presence of flammable gasses. Otherwise, the use of the instrument may cause sparking, which can lead to an explosion.
- Put insulated protective gears when there is a danger of electrical shock hazard.
- The tip of the transformer jaw is constructed so that it will not short the equipment under test, but when measuring an uninsulated conductor, be careful not to short the measured object with the transformer jaw.
- Never attempt to use the instrument if it is surface or your hand is wet. Otherwise, electrical shock accident may occur.
- Do not exceed the maximum allowable input of any measuring range.
- Never open the battery cover and the instrument case when making a measurement.
- The instrument is to be used only in its intended applications or conditions. Otherwise, safety functions equipped with the instrument will not work, and instrument damage or serious personal injury may be caused.
- Never attempt to make any measurement, if any abnormal conditions are noted, such as broken case, and exposed metal parts.
- Do not install substitute parts or make any modification to the instrument. If you need repairing, please contact the vendor from which you purchased the instrument.
- Always keep your fingers and hands behind the barrier on the instrument to avoid the possible shock hazard.
- Do not try to replace batteries if the surface of the instrument is wet. Power off the instrument before opening the battery compartment cover for a battery replacement.

5. Specifications

Model	96095	
Measurement range	AC 0.1 to 130 Arms	DC 0 to 180 A
Output voltage	AC/DC 10 mV/A	
Accuracy (Input: sine wave) (*1)	50/60 Hz: ±(1.2% rdg + 0.4 mV) 40 Hz to 1 kHz: ±(2.5% rdg + 0.4 mV)	±(1.2% rdg + 0.4 mV) (*2)
Temperature and humidity range (Guaranteed accuracy)	23 ± 5°C, relative humidity 85% or less (no condensation)	
Operating temperature and humidity range	-10 to 55 °C, relative humidity 85% or less (no condensation)	
Storage temperature and humidity range	-30 to 70 °C, relative humidity 85% or less (no condensation) (*3)	
Temperature coefficient	(Accuracy at 23±5°C × ±0.1%rdg)/°C should be added. (Temperature ranges: -10 to 18°C and 28 to 55°C)	
Output impedance	Approx. 10 Ω or less	
Location for use	Altitude 2000 m or less, indoor use	
Applicable standards	EN 61010-1 Measurement category III 300 V, Pollution degree 2 EN 61010-2-032 EN 61326-1 Class B Table 1, EN 61326-2-2, EN 55011 Class B Group 1 EMC Regulatory Arrangement in Australia and New Zealand Korea Electromagnetic Conformity Standard (한국 전자파적합성기준) Environmental standards: EU RoHS Directive compliant (*5)	
Withstand voltage	AC 3540 V (RMS 50/60 Hz) for 5 sec (Between jaw and enclosure, between enclosure and output terminal between jaw and output terminal)	
Insulation resistance	10 MΩ or more/1000 V (Between jaw and enclosure, between enclosure and output terminal between jaw and output terminal)	
Power source	DC 3 V(size AAA alkaline battery LR03×2 pcs)	
Auto-power-off	20±8 min after powering on the instrument	
Low battery warning	2.2±0.2 V or less (*4) Red LED flash	
Current consumption	25 mA or less (at battery voltage 3 V)	
Continuous use	Approx. 35 hours (till a low battery indicator flashes) Approx. 5 hours (from low battery till power off)	
Conductor size	Max. φ 12 mm	
Cord length	Approx. 120 cm	
Dimensions	127 (L) × 42 (W) × 22 (D) mm	
Weight	Approx. 140 g	
Accessories	User's manual, batteries, soft case	

- (*1) Under the EMC environment, the instrument temporarily reads errors due to the influences of electrical magnetic fields (about 15 mV at 3 V/m). Declared accuracy is guaranteed when a conductor under test is at the center of the transformer jaws.
(*2) This instrument does not have Zero Adjustment Function. This accuracy is defined after a zero-adjustment by using the device connected with this instrument.
(*3) Without batteries
(*4) Powers off automatically at 1.9±0.2 V or less. Instrument works properly even while low battery indicator is flashing.
(*5) For conformity to environmental regulations and/or standards other than EU, contact your nearest YOKOGAWA office (PIM113-01Z2).

⚠ CAUTION

- Do not step on or pinch the cord to prevent the jacket of cord from being damaged.
- The output connector shall be removed or connected without clamping a conductor. Otherwise, it may cause a failure.
- Do not expose the instrument to direct sunlight, high temperatures, humidity or dew.
- Do not use this instrument in dusty place and where the instrument is likely to get wet.
- Power off the instrument after use. Remove the batteries if the instrument is to be stored and will not be in use for a long period.
- Never give shocks, such as vibration or drop, which may damage the instrument.
- Use a damp cloth and detergent for cleaning the instrument. Do not use abrasives or solvents.
- Take sufficient care to avoid shock, vibration or excessive force when handling the instrument. Otherwise, precisely adjusted the transformer jaws will be damaged.
- When the transformer jaws do not close fully, never try to close them by force, but make them free to move and try again. If any foreign substance is stuck in the jaw tips, remove it.
- Do not open the jaws by force when the transformer jaws are frozen.
- Hold the inserting part (except for the cord) and disconnect the output connector from the measuring instrument so as not to cause a break in the cable.

■ Measurement category

⚠ WARNING

The 96095 is designed for measurement category III. Do not use the 96095 for measurements in location that fall under measurement category IV.

Measurement category	Description	Remarks
O [None/Other]	Other circuits that are not directly connected to MAINS.	Circuits not connected to a mains power source.
CAT II	For measurements performed on circuits directly connected to the low voltage installation.	Appliances, portable equipment, etc.
CAT III	For measurements performed in the building installation.	Distribution board, circuit breaker, etc.
CAT IV	For measurements performed at the source of the low-voltage installation.	Overhead wire, cable systems, etc.

6. Measurement

- Press the Power Switch to power on the instrument. The green LED lights up. (*5)
- Connect the output terminal to the input terminal of the measuring instrument.
- Press the trigger to open the transformer jaws, and clamp onto a conductor.
- Confirm that the tips of the transformer jaws are surely closed.
- Start the measurement. The measured conductor should be located at the center of the jaws. (*6)
- The measured result is displayed on the connected measuring instrument.

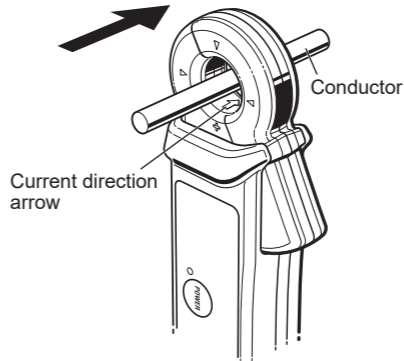
(*5) Keep the Power Switch pressed down at least 3 seconds and power on the instrument to disable the Auto-power-off Function. In this case, the red LED lights up after powering on the instrument.

(*6) Triangle marks on the transformer jaws showing the center of the jaws.

* Currents flowing from the top side (side with the Power Switch) to the bottom side (Battery Cover) are positive, the ones flowing from the bottom side to the top side is negative.

* Conductor size for the 96095 is maximum φ 12 mm. Accurate measurements cannot be taken on conductors thicker than above size since the transformer jaws won't close fully.

* Do not give big shocks, when opening/closing transformer jaws.



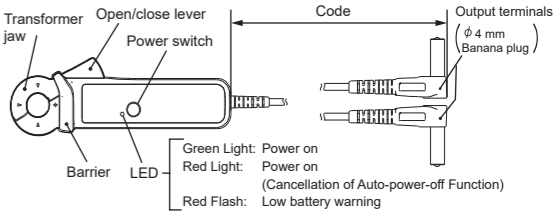
⚠ CAUTION

Using this instrument is limited to under residential, commercial and light-industrial environment. This instrument may not be able to measure accurately if it is near other equipment generating strong electromagnetic interference or a strong magnetic field caused by large current.

2. Features

- Clamp sensor for AC/DC current measurements
- Designed to meet the international safety standard EN 61010-2-032 CAT III 300 V, Pollution degree 2

3. Components



<Power on/ off>

One press of the Power Switch powers on the instrument and the green LED lights up. Another press of the Power Switch powers off the instrument. The instrument is automatically powered off in about 20 minutes after the last switch operation. (Auto-power-off Function)

<When the Auto-power-off Function is not used>

Cancellation of the Auto-power-off Function
Keep the Power Switch pressed down at least 3 seconds and power on the instrument. Then the red LED lights up and the Auto-power-off Function does not activate when 20 minutes pass after the last switch operation.

<Recovering the Auto-power-off Function>

Turn off the power.
Turn on the power.
(This enables the Auto-power-off Function to recover.)

When connecting to Digital Multimeter

⚠ WARNING

- Be sure to read the manual of the Digital Multimeter.
- Before starting the measurement, make sure that the position of function switch and the input terminals for connecting the testing leads are appropriate for the desired mode of measurement.
- Make sure that the RANGE (input voltage value) of the Digital Multimeter.

The output voltage (AC/DC 10 mV/A) of the instruments (Clamp-on Probe) is measured with the Digital Multimeter.

<When using Model TY520, TY530>

The sub display of the Digital Multimeter shows the output voltage of the Clamp-on Probe. The main display shows the current values (based on the present setting of conversion with the setup function) detected by the Clamp-on Probe.

<NOTE>

- The SENSOR mode for Model TY520 and TY530 is 600 mV RANGE.
- Before making measurements, you need to set up the appropriate conditions by using the Set-up Function.

Connection Diagram	Display Example

For detailed information, please refer to the following section in the User's Manual of Digital Multimeter

4.3.3 Measurements with SENSOR (SENSOR)

4.6 Set-up Function

<input, display and unit setting of SENSOR mode>