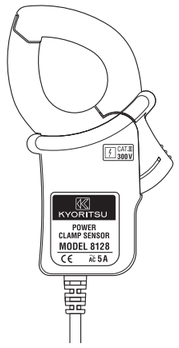
INSTRUCTION MANUAL



POWER CLAMP SENSOR

POWER CLAMP SENSOR Series

MODEL 8128

KYORITSU ELECTRICAL
INSTRUMENTS WORKS, LTD.

DISTRIBUTOR

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1. Safety warnings

○This instrument has been designed, manufactured and tested according to IEC 61010: Safety requirements for Electronic Measuring apparatus, and delivered in the best condition after passing quality control tests. This instruction manual contains warnings and safety rules which have to be observed by the user to ensure safe operation of the instrument and to maintain it in safe condition. Therefore, read through these operating instructions before using the instrument.

⚠ WARNING

- ●Read through and understand instructions contained in this manual before using the instrument.
- ●Keep the manual at hand to enable quick reference whenever necessary.
- ●The instrument is to be used only in its intended applications.
  The operating instructions described in the manual must be observed.
- ●Understand and follow all the safety instructions contained in the manual. It is essential that the above instructions are adhered to. Failure to follow the above instructions may cause injury and or instrument damage.

Kyoritsu is by no means liable for any damage resulting from the instrument in contradiction to this cautionary note.

○The symbol ⚠ indicated on the instrument, means that the user must refer to the related parts in the manual for safe operation of the instrument. It is essential to read the instructions wherever the ⚠ symbol appears in the manual.

⚠ DANGER	is reserved for conditions and actions that are likely to cause serious or fatal injury.
⚠ WARNING	is reserved for conditions and actions that can cause serious or fatal Injury.
⚠ CAUTION	is reserved for conditions and actions that can cause minor injury or instrument damage.

⚠ DANGER

- ●Never make measurement on a circuit in which the electrical potential exceeds AC300V.
- ●Do not make measurement when thunder 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.
- ●The transformer jaws are made of metal and their tips are not completely insulated. Be especially careful about the possible shorting where the measured object has exposed metal parts.
- ●Never attempt to use the instrument if it's surface or your hand are wet.
- ●Do not exceed the maximum allowable input of any measuring range.
- ●Use insulated protective gears, such as insulated gloves, for your safety when possible electric shock hazards are concerned.
- ●Keep your fingers and hands behind the barrier during a measurement.

⚠ WARNING

- ●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. Return the instrument to the distributor from who you purchased this instrument for repair or re-calibration in case of suspected faulty operation.
- ●Always keep your fingers and hands behind the barrier on the instrument to avoid the possible shock hazard.

⚠ CAUTION

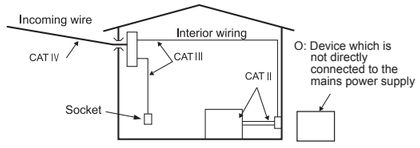
- ●Do not step on or pinch the cord to prevent the jacket of cable from being damaged.
- ●The output connector shall be removed or connected without clamping a conductor. Otherwise, it may cause a failure.
- ●Do not expose the instrument to direct sunlight, high temperatures, humidity or dew.
- ●Never 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.

Safety symbols

⚠	Refer to the instructions in the manual.
⧈	Indicates a Instrument with double or reinforced insulation
⚡	Indicates that this instrument can clamp on bare conductors.
~	Indicates AC

○Measurement categories(Over-voltage categories)
To ensure safe operation of measuring instruments, IEC 61010 establishes safety standards for various electrical environments, categorized as o to CAT IV, and called measurement categories. Higher-numbered categories correspond to electrical environments with greater momentary energy. So a measuring instrument designed for CAT III enviroments can endure greater momentary energy than one desined for CAT II.

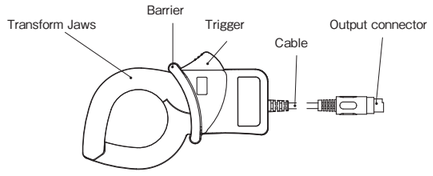
O(None, Other): Circuits which are not directly connected to the mains power supply.
CAT Ⅱ: Primary electrical circuits of equipment connected to an AC electrical outlet by a power cord.
CAT Ⅲ: Primary electrical circuits of the equipment connected directly to the distribution panel, and feeders from the distribution panel to outlets.
CAT Ⅳ: The circuit from the service drop to the service entrance, and to the power meter and primary overcurrent protection device (distribution panel).



2. Features

- ●This is a clamp sensor for our Power meter.
- ●Designed to international safety standard
  IEC 61010-2-032
  CAT Ⅲ 300V (Pollution Degree 2)

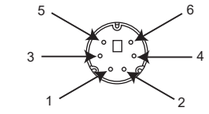
3. Instrument layout



Barrier : It is a part providing protection against electrical shock and ensuring the minimum required air and creepage distances.

4. Din plug pin assignment

3: GND pin
5: Output signal pin
6: Sensor signal pin
(Resistance between 3Pin and 6Pin : 91kΩ)
1, 2 and 4: No use



*Above figure shows the pin assignment seeing the Clamp sensor from output connector part. The figure of the pin assignment of connection terminal is symmetrical to above figure.

5. Specifications

Model	8128
Rated voltage	AC5A
Output voltage	10mV/A (AC 50mV/AC 5A) (AC500mV/AC50A)
Measuring range	AC0 ～ 50Arms(70.7Apeak)
Accuracy (Input: sine wave)	± 0.5%rdg ± 0.1mV (50/60Hz) ± 1.0%rdg ± 0.2mV (40 ～ 1kHz)
Phase characteristics	± 2deg within(at 0.5 ～ 50A / 45 ～ 65Hz)
Temperature & humidity range (Guaranteed accuracy)	23 ± 5℃, relative humidity: 85% or less (no condensation)
Operating temperature range	0 ～ 50℃, relative humidity: 85% or less (no condensation)
Storage temperature range	-20 ～ 60℃, relative humidity: 85% or less (no condensation)
Maximum permissible input	AC50Arms continuous(50/60Hz)
Output impedance	Approx. 19 Ω
Location for use	Altitude up to 2000m, Indoors
Applicable standards	IEC 61010-1, IEC 61010-2-032 Measurement CAT III (300Vrms) Pollution degree 2 IEC 61326-1 (EMC)
Environmental standards	EU RoHS Directive compliant
Withstand voltage	AC3540Vrms (50/60Hz) for 5 sec. between Jaw and enclosure between enclosure and output terminal between Jaw and output terminal
Insulation resistance	50M Ω or greater at 1000V between Jaw and enclosure between enclosure and output terminal between Jaw and output terminal
Conductor Size	Approx.24mm in diameter (max.)
Dimension	100 x 60 x 26mm
Cable length	Approx. 3m
Output terminal	MINI DIN 6PIN
Weight	Approx. 160g
Accessories	Cable marker Instruction manual
Accessories	MODEL 7146 (Banana F4 adjuster plug) MODEL 7185 (Extension cable)

6. Operating instructions

⚠ DANGER

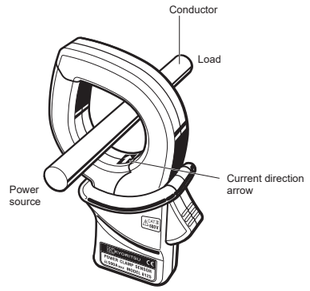
- ●Never make measurement on a circuit in which the electrical potential exceeds AC300V in order to avoid possible shock hazard.
- ●The transformer jaws are made of metal and their tips are not completely insulated. Be especially careful about the possible shorting where the measured object has exposed metal parts.

⚠ CAUTION

- ●Take sufficient care to avoid shock, vibration or excessive force when handling the instrument. Otherwise, precisely adjusted transformer jaws will be damaged.
- ●When transformer jaws do not fully close, never try to close them by force, but make them free to move and try again. If a foreign substance is stuck in the jaw tips, remove it.
- ●When making current measurements, keep the transformer jaws fully closed.
  Otherwise, accurate measurements cannot be taken. Maximum conductor size is 24mm in diameter.
- ●Hold the inserting part (except for the cable) and disconnect the Output connector from the measuring instrument so as not to cause a break in the cable.

6-1 Measurement procedures

(1) Connect the Output connector to the Input terminal of the measuring instrument.
(2) Press the Trigger to open the transformer jaws and clamp onto one conductor. In this case, the measured conductor shall be at the center of the jaws.
When connecting a sensor with a Power meter (our Power meter, MODEL6300, etc.) match the arrow mark (Power source to load), which is indicated on the transformer jaws, with the current flowing direction in 0order to synchronize the phases of measured current and output voltage.
(3) Ensure that the tips of transformer jaws are firmly closed.



6-2 Setting for MODEL6300 Power meter
(MODEL 6300 is a discontinued product.)

Refer to the table below when using these clamp sensors with MODEL6300, It shows the settings for clamp sensor and available current ranges on MODEL6300.
For further details on the settings, see the instruction manual for MODEL6300.

MODEL	Setting for MODEL6300	
	Type of Clamp sensor	Current range
MODEL8128	**50A**	**5 ／ 10 ／ 20 ／ 50A**

This instrument satisfies the marking requirement defined in the WEEE Directive (2002/96/EC). This symbol indicates separate collection for electrical and electronic equipment.