

This manual describes the safety precautions for using the clamp-on probe and the clamp-on probe specifications. To ensure correct use, please read this manual thoroughly. After reading this manual, keep it in a safe place. Please read this manual together with the user's manual of the measuring instrument that you are using.

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IM 720930-01EN  
1st Edition

### Checking the Contents of the Package

Unpack the box, and check the following before operating the instrument. If the wrong items have been delivered, if items are missing, or if there is a problem with the appearance of the items, contact your nearest YOKOGAWA dealer.

#### Instrument

Check that the product that you received is what you ordered by referring to the model name and suffix code given on the name plate.

MODEL	Specifications
720930	Clamp-on Probe 50A
720931	Clamp-on Probe 200A

#### Standard Accessories

Item	Model/Part No.	Quantity	Notes
Cable marker	—	8	4 types x 2
Manuals	IM 720930-01EN	1	This manual.
	IM 720930-92Z1	1	A manual for China.
	PIM 113-01Z2	1	List of worldwide contacts.

\* The "-EN" in the manual number is the language code.

### Conventions Used in This Manual

The notes and cautions in this manual are categorized using the following symbols.



Improper handling or use can lead to injury to the user or damage to the instrument. This symbol appears on the instrument to indicate that the user must refer to the user's manual for special instructions. The same symbol appears in the corresponding place in the user's manual to identify those instructions. In the manual, the symbol is used in conjunction with the word "WARNING" or "CAUTION."

#### WARNING

Calls attention to actions or conditions that could cause serious or fatal injury to the user, and precautions that can be taken to prevent such occurrences.

#### CAUTION

Calls attention to actions or conditions that could cause light injury to the user or damage to the instrument or user's data, and precautions that can be taken to prevent such occurrences.

#### French



Une manipulation ou une utilisation incorrectes risquent de blesser l'utilisateur ou d'endommager l'instrument. Ce symbole apparaît sur l'instrument pour indiquer à l'utilisateur qu'il doit se reporter au manuel de l'utilisateur afin d'y lire les instructions spécifiques correspondantes. Ce même symbole apparaît à la section correspondante du manuel de l'utilisateur pour signaler lesdites instructions. Dans le manuel de l'utilisateur, ce symbole est accompagné des termes AVERTISSEMENT et ATTENTION.

#### AVERTISSEMENT

Attire l'attention sur des gestes ou des conditions susceptibles de provoquer des blessures graves (voire mortelles), et sur les précautions de sécurité pouvant prévenir de tels accidents.

#### ATTENTION

Attire l'attention sur des gestes ou des conditions susceptibles de provoquer des blessures légères ou d'endommager l'instrument ou les données de l'utilisateur, et sur les précautions de sécurité susceptibles de prévenir de tels accidents.

#### Note

Calls attention to information that is important for the proper operation of the instrument.

### Safety Precautions

This product is designed to be used by a person with specialized knowledge. The general safety precautions described herein must be observed during all phases of operation. If the instrument is used in a manner not specified in this manual, the protection provided by the instrument may be impaired. This manual is part of the product and contains important information. Store this manual in a safe place close to the instrument so that you can refer to it immediately. Keep this manual until you dispose of the instrument. YOKOGAWA assumes no liability for the customer's failure to comply with these requirements. The following symbols are used on this instrument.



Warning: handle with care. Refer to the user's manual or service manual. This symbol appears on dangerous locations on the instrument which require special instructions for proper handling or use. The same symbol appears in the corresponding place in the manual to identify those instructions.



Indicates an Instrument with double or reinforced insulation.



Indicates that this instrument can clamp on bare conductors.



Alternating current

#### French



Avvertissement : À manipuler délicatement. Toujours se reporter aux manuels d'utilisation et d'entretien. Ce symbole a été apposé aux endroits dangereux de l'instrument pour lesquels des consignes spéciales d'utilisation ou de manipulation ont été émises. Le même symbole apparaît à l'endroit correspondant du manuel pour identifier les consignes qui s'y rapportent.



Équipement protégé par une double isolation ou une isolation renforcée.



Indique que cet instrument peut être serré sur des conducteurs nus.



Courant alternatif



#### WARNING

- This instrument is designed to measure the current. Do not use this instrument for anything other than as current measuring instrument.
- 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 AC 150 V in the measurement category IV and AC 300 V in the measurement category III using the 720930.
- Never make measurement on a circuit in which the electrical potential exceeds AC 300 V in the measurement category IV and AC 600 V in the measurement category III using the 720931.
- Do not operate the instrument in the presence of flammable gases or vapors. Doing so is extremely dangerous.
- 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 use the instrument if the instrument or your hands are wet. Otherwise, electrical shock accident may occur.
- 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.
- Always keep your fingers and hands behind the barrier on the instrument to avoid the possible shock hazard.
- Use insulated protective gears, such as insulated gloves, for your safety when using this instrument.
- Only qualified YOKOGAWA personnel may remove the covers and disassemble or alter the instrument. The inside of the instrument is dangerous because parts of it have high voltages.
- Do not install or use the instrument outdoors or in locations subject to rain or water.



#### 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.
- 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.

#### French

#### AVERTISSEMENT

- L'instrument est conçu pour mesurer l'intensité. Ne pas utiliser cet instrument à d'autres fins que celles de mesure de l'intensité.
- Ne pas utiliser l'instrument si son intégrité physique semble être compromise.
- Ne jamais effectuer de mesure de l'intensité sur un circuit dans lequel le potentiel électrique dépasse 150 V CA dans la catégorie de mesure IV et 300 V CA dans la catégorie de mesure III utilisant 720930.
- Ne jamais effectuer de mesure de l'intensité sur un circuit dans lequel le potentiel électrique dépasse 300 V CA dans la catégorie de mesure IV et 600 V CA dans la catégorie de mesure III utilisant 720931.
- Ne pas utiliser l'instrument en présence de gaz ou de vapeurs inflammables. Cela pourrait être extrêmement dangereux.
- Ne pas effectuer de mesure lorsque le tonnerre gronde. Si l'instrument est en cours d'utilisation, arrêter immédiatement la mesure et retirer l'instrument de l'objet mesuré.
- Ne pas utiliser l'instrument s'il est mouillé ou si vos mains sont mouillées. Sinon, un choc électrique peut se produire.
- Les mâchoires du transformateur sont composées de métal et leurs embouts ne sont pas totalement isolés. Il faut être particulièrement attentif à l'éventuelle réduction à laquelle l'objet mesuré a exposé les pièces métalliques.
- Les mains et les doigts doivent toujours rester derrière la barrière de l'instrument afin d'éviter un éventuel choc.
- Utiliser des équipements de protection isolés, tels que des gants isolés, pour votre sécurité lors de l'utilisation de cet instrument.
- Seul le personnel YOKOGAWA qualifié est habilité à retirer le capot et à démonter ou modifier l'instrument. Certains composants à l'intérieur de l'instrument sont à haute tension et par conséquent, représentent un danger.
- Ne pas installer, ni utiliser l'instrument à l'extérieur ou dans des lieux exposés à la pluie ou à l'eau.

#### ATTENTION

- Ne pas marcher sur le cordon et ne pas le pincer afin d'éviter que la gaine du cordon ne soit endommagée.
- Le connecteur de sortie doit être retiré ou raccordé sans serrer un conducteur. Si cette condition n'est pas respectée, cela risque de générer une défaillance.
- Ne pas exposer l'instrument aux rayons directs du soleil, à des températures élevées, à l'humidité ou à la rosée.
- Ne jamais faire de chocs, tels que des vibrations ou des chutes, qui risqueraient d'endommager l'instrument.
- Utiliser un chiffon humide et du détergent pour nettoyer l'instrument. Ne pas utiliser de produits abrasifs ou de solvants.

## Waste Electrical and Electronic Equipment



Waste Electrical and Electronic Equipment  
(This directive is valid only in the EU.)  
This product complies with the WEEE directive marking requirement. This marking indicates that you must not discard this electrical/electronic product in domestic household waste.

### Product Category

With reference to the equipment types in the WEEE directive, this product is classified as a "Monitoring and control instruments" product.  
Do not dispose in domestic household waste. When disposing products in the EU, contact your local Yokogawa Europe B. V. office.

## Authorized Representative in the EEA

Yokogawa Europe B.V. is the authorized representative of Yokogawa Meters & Instruments Corporation for this product in the EEA. To contact Yokogawa Europe B. V., see the separate list of worldwide contacts, PIM 113-0122.

## Measurement Category

To ensure safe operation of measuring instruments, IEC 61010 establishes safety standards for various electrical environments, categorized as O to IV, and called measurement categories.

### Measurement category O (Other)

Applies to measurement of circuits that are not directly connected to a main power source. This category applies to measurement of secondary electric circuits in equipment across a transformer.

### Measurement category II

Applies to measurement of circuits, such as household electric appliances and portable electric tools, that are connected to low-voltage installations.

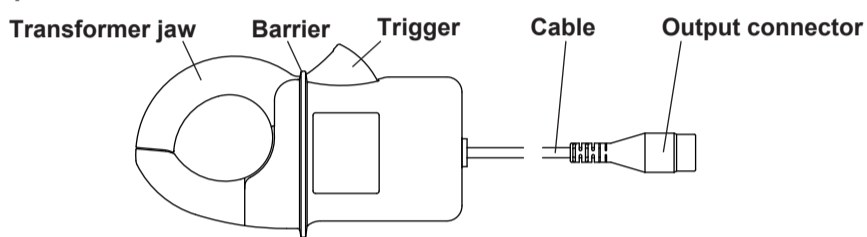
### Measurement category III

Applies to measurement of facility circuits, such as distribution boards and circuit breakers.

### Measurement category IV

Applies to measurement of power source circuits, such as entrance cables to buildings and cable systems, for low-voltage installations.

## Component Names

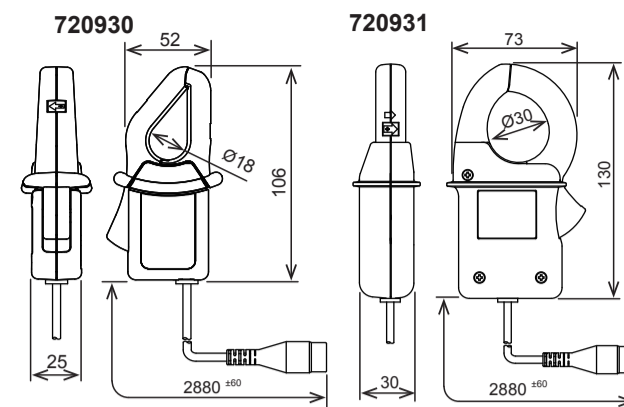


## Specifications

Measurable conductor size	720930: Max. $\phi$ 18 mm, 720931: Max. $\phi$ 30 mm
Measuring range	720930: AC 0 to 50 Arms, 720931: AC 0 to 200 Arms (300 Apeak)
Output voltage	720930: AC 0 to 500 mVrms (10 mV/A) 720931: AC 0 to 500 mVrms (2.5 mV/A)
Accuracy (sine wave input)	Bandwidth
	Phase
Accuracy-guaranteed temperature and humidity	23 $\pm$ 5°C, Humidity: 85%RH or less (no condensation)
Rated voltage between circuit and ground	720930: AC 300 Vrms max. 720931: AC 600 Vrms max.
Operating temperature & humidity range	0 to 50°C, 85%RH or less (no condensation)
Storage temperature & humidity range	-20 to 60°C, 90%RH or less (no condensation)
Temperature coefficient	0.05% f.s./°C (0 to 50°C)
Maximum allowable input	720930: AC 130 Arms continuous (50/60 Hz) 720931: AC 250 Arms continuous (50/60 Hz)
Influence of the conductor location	720930: Within $\pm$ 0.5% rdg (1 to 50 A, 45 Hz to 1 kHz) 720931: Within $\pm$ 0.5% rdg (20 to 200 A, 45 Hz to 1 kHz)
Influence of the external magnetic field	720930: Equivalent to 0.1 A or less (400 A/m, 50/60 Hz) 720931: Equivalent to 0.1 A or less (400 A/m, 50/60 Hz)
Output impedance	720930: Approx. 18 $\Omega$ , 720931: Approx. 6 $\Omega$
Withstand voltage	720930 AC 3.7 kVrms / 1 minute Between jaw and case, case and output terminal, output terminal and jaw. 720931 AC 5.4 kVrms / 1 minute Between jaw and case, case and output terminal, output terminal and jaw.
Environmental conditions	Altitude up to 2000 m, in-door use
Recommended calibration period	1 year
External dimensions	720930: 52 (W) $\times$ 106 (H) $\times$ 25 (D) mm (excluding protrusions) 720931: 73 (W) $\times$ 130 (H) $\times$ 30 (D) mm (excluding protrusions)
Cable length	Approx. 2.8 m
Output terminal	BNC connector (isolated)
Weight	720930: Approx. 210 g, 720931: Approx. 280 g
Standard accessories	Instruction manual, cable marker
Safety standards	Compliant standards: EN 61010-1, EN 61010-2-032 Measurement category 720930: Measurement category III (rated voltage between circuit and ground: 300 Vrms) Measurement category IV (rated voltage between circuit and ground: 150 Vrms) 720931: Measurement category III (rated voltage between circuit and ground: 600 Vrms) Measurement category IV (rated voltage between circuit and ground: 300 Vrms) Pollution degree 2*
EMC standards	Compliant standard: EN 61326-1 Influence in the immunity testing environment (criteria A) 720930: Equivalent to 10 A or less 720931: Equivalent to 40 A or less
Environmental standards	Compliant standard: EN 50581 Monitoring and control instruments including industrial monitoring and control instruments

\* Pollution Degree applies to the degree of adhesion of a solid, liquid, or gas that deteriorates withstand voltage or surface resistivity. Pollution degree 2 applies to normal indoor atmospheres (with only non-conductive pollution).

## External Dimensions



Unit: mm

Unless otherwise specified, tolerances are  $\pm$ 3% (however, tolerances are  $\pm$ 0.3 mm when below 10 mm).

## Measurement

### WARNING

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, the 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 as follows.  
720930: 18 mm in diameter  
720931: 30 mm in diameter
- Hold the inserting part (not the cable), and disconnect the output connector from the measuring instrument so as not to break the cord.

## French

### AVERTISSEMENT

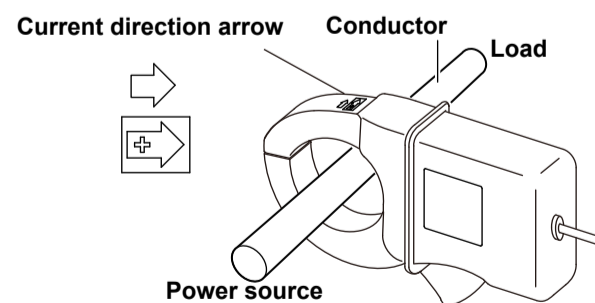
Les mâchoires du transformateur sont composées de métal et leurs embouts ne sont pas totalement isolés. Il faut être particulièrement attentif à un éventuel court-circuit là où l'objet mesuré possède des parties métalliques exposées.

### ATTENTION

- Procéder avec suffisamment de soin pour éviter les chocs, les vibrations ou une force excessive lors de la manipulation de l'instrument. Si cette condition n'est pas respectée, les mâchoires du transformateur ajustées avec précision seront endommagées.
- Si les mâchoires du transformateur ne ferment pas totalement, ne jamais essayer de les fermer en forçant, mais les laisser libres et réessayer. Si une substance étrangère est bloquée dans les extrémités de la mâchoire, la retirer.
- Lors de la prise de mesures d'intensité, maintenir les mâchoires du transformateur entièrement fermées. Si cette condition n'est pas respectée, il est impossible d'effectuer des mesures précises.  
La taille maximale du conducteur est la suivante.  
Modèle 720930: 18 mm de diamètre  
Modèle 720931: 30 mm de diamètre.
- Maintenir la partie d'insertion (excepté pour le câble) et débrancher le connecteur de sortie de l'instrument de mesure afin de ne pas entraîner une rupture au niveau du cordon.

## Measurement procedures

- Connect the output connector to the Input terminal of the measuring instrument.
- Press the trigger to open the transformer jaws and clamp onto one conductor. The measured conductor shall be at the center of the jaws.  
When connecting a sensor with a power meter, match the arrow mark (power source to load), which is indicated on the transformer jaws, with the current flowing direction in order to synchronize the phases of measured current and output voltage.
- Ensure that the tips of transformer jaws are firmly closed.



## Disposing of the Instrument

When disposing of this instrument, follow the laws and ordinances of the country or region where the product will be disposed of.