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Instruction for use

■ HC series and HD series current sensors

1) When the frequency of the input current is high, the core generates an unusual amount of heat due to core loss, and this heat may damage the internal circuits. The amount of heat generated is influenced by the frequency and amount of the input current and differs depending on the type of sensor, so check the performance on the actual machine.
We are able to produce heat generation countermeasure products which use different core materials. Please

2) Since the output varies depending on the size of the load resistance, use with the specified resistance. (The size of the load resistance can be specified by the user.)

3) The signal output driver of the HD Series uses a C-MOS IC. Be careful when handling and avoid direct contact.

4) Output terminal pins 9 and 10 of the HD Series are analog output terminals for small signal input.
Do not connect them to the lead wire or they will be affected by the data and clocking signal.

■ HS series and HM series current sensors

1) Use a resistance which has good accuracy and temperature characteristics for the load resistance which is connected to current output type sensors.

2) Prepare a control power supply the capacity of which is at least twice the rated output current.

3) If the connector is inserted or removed while the control power is being applied, residual magnetism may occur in the core due to the terminal contact timing becoming out of sequence, and the residual voltage may be affected. In addition to turning the power supply on and off while the connector is connected, ensure that the + side and - side of the power supply are matched.

4) In inputting current above rating, note that some models specify energization time.
If the product is used in excess of this time, internal circuit may fail.

5) When current exceeding saturation current is input, magnet compensation will not work, and residual output will cause displacement, therefore, use the product always at current below saturation current.

6) Demagnetize the sensors without applying electric power.

■ Common instruction for all series

1) Erroneous connection of the control terminals will cause the internal circuits to be instantaneously destroyed. Pay sufficient attention to the connection.

2) If static electricity or surge voltage is applied, the residual voltage may be increased.

3) In addition to making the control wiring as short as possible to protect it from outside noise, use twisted wire or shielding wire.

4) Connect a capacitor of approximately 0.1μF between the control power supply and GND.

5) Attach PCB mounting type current sensors firmly to the installation board so that they are not separated from it by more than 0.5mm.
Furthermore, perform the soldering under the following conditions.

	Flow solder: Solder temperature approx. 250 degrees C, within 5 seconds
	Hand solder: Solder temperature approx. 280～300 degrees C, within 3 seconds
<Pb-free>	Flow solder: Solder temperature approx. 260 degrees C, within 5 seconds
	Hand solder: Solder temperature approx. 340 degrees C, within 4 seconds

6) The current sensor may be corroded under corrosive gas atmosphere. Make sufficient confirmation under actual service environmental conditions before use.

7) Do not store the sensors in hot or humid environments.

■ Usage limitations for current sensors

The products listed in our catalog are intended for use in general equipments (business machines, measuring equipments, industrial equipments, and home appliances, etc.), not for use under circumstances which may involve human life. They are not intended for use in special applications wherein high quality and reliability are required and the failure or malfunction of the product may cause danger to human body, such as nuclear power stations, transportation apparatuses (automobile, trains, ships, etc.), medical equipments for life support, or safety systems. If you need to use any of our products in one of the above mentioned special applications, please notify us or our agent beforehand for assistance.

■ Export limitations for Foreign Exchange and Foreign Trade Law

A product designated as 'strategic item' is controlled under the Foreign Exchange and Foreign Trade Law and WMD catchall and requires permission from the Japanese Government prior to export. If you are unsure whether a product is controlled, please contact us or our agent for assistance.

■ Concern for safety

While we constantly strive to improve quality and reliability and use materials compliant with safety guidelines, even though unlikely, current sensors can sometimes fail or malfunction. We caution the designer to respect all aspects of safety in order to protect life, prevent injury and prevent property damage should our product accidentally fail or malfunction.