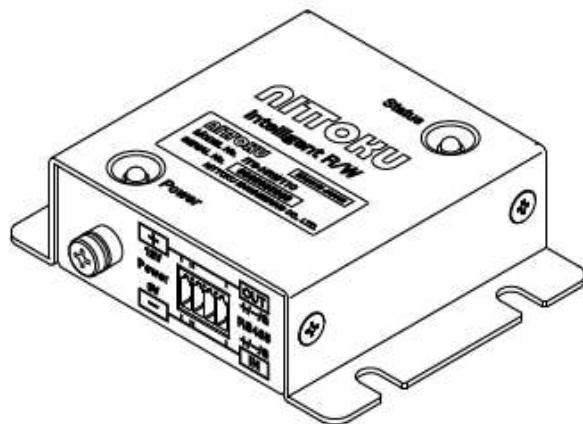


# Intelligent R/W

MODEL: ITS-HRW110

## Instruction Manual



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Thank you for your purchase.

For proper use, please read this manual carefully.

Please keep it properly after reading.

Please refer to the user manual for more information.

Please let the experts with electrical knowledge operate this machine.

## Safety precautions

Make sure to read before use.

For safety reasons, be sure to observe the following items.

- ① Please disconnect the power supply of the R/W body when loading and unloading the power supply, signal line wiring, connector and antenna.
- ② Please do not use it in places that produce flammable and explosive gases.
- ③ During installation, please make sure to tighten the screws (recommended torque: 0.6 N/m).
- ④ In order to ensure the safety of operation and maintenance, please install it away from high-voltage equipment and power equipment.
- ⑤ Please do not put foreign matters including water and metal, etc. into the gap of the box. It may cause fire and electric shock.
- ⑥ Please do not disassemble, repair or modify this product.
- ⑦ Please treat it as industrial waste when it is discarded.
- ⑧ Please pay attention to ventilation when installing.
- ⑨ Please do not install near equipment that generates a lot of heat (heater, transformer, large capacity resistor and amplifier, etc.).
- ⑩ When you feel that the product is abnormal, please stop using it immediately, turn off the power supply and contact the branch of the Company.

# Precautions for use

Make sure to read before use.

## 1. Storage environment

- ① Please pay attention to the ambient temperature and humidity of the storage place during storage.

## 2. Installation

- ① Please avoid direct sunlight during installation.
- ② Please avoid corrosive gas, dust, metal powder and salt during installation.
- ③ Please avoid water, oil and chemical droplets during installation.
- ④ Please avoid places with large temperature changes during installation.
- ⑤ Please install in a place with low humidity and no condensation.
- ⑥ Please avoid places where the use temperature exceeds the specification range during installation.
- ⑦ Please avoid the place where vibration or impact is directly transmitted to the main engine.

## 3. Installation

- ① This product uses 13.56MHz frequency band to communicate with ID tag. Some transceivers, motors, monitoring equipment, power supplies (power IC), etc. produce radio waves (noise) that affect communication with ID tags. If you use it near equipment that may produce noise, please check the impact in advance.

## 4. Wiring work

- ① Do not carry out reverse connection of + and - power terminals.
- ② Please use it at the voltage specified in this manual.
- ③ Please do not use the same wiring path as high voltage wire or power wire.
- ④ In order to prevent electrostatic damage, when contacting the signal wire inside the terminal part or connector, antistatic measures such as wrist overlap should be taken before working.
- ⑤ When installing or disassembling the antenna, please do not apply too much load to the connector.
- ⑥ Please use the correct antenna conforming to R/W.

## 5. Power supply and grounding wire

- ① Grounding terminal (frame grounding) terminal must adopt Class D grounding, because the above matter will lead to performance degradation.

## 6. Cleaning

- ① Please use commercially available alcohol when cleaning.
- ② Because organic solvents including diluent, benzin, benzene and acetone, etc. will peel off the resin part and coating, please do not use them.

# Precautions for use (continued)

Make sure to read before use.

## 7. Communication performance

- ① Because the communication performance will change according to the factors including metal, noise and temperature, etc. at the antenna setting place, please confirm in the actual use environment.
- ② Because the communication area will change according to the ID tag, please leave enough space when designing.

## 8. Screw fastening glue

- ① The screw fastening glue (screw lock) should not be used in the screw of the deteriorated resin portion with possibility of cracking or the resin-made washer portion.

## 9. Communicate with the host

- ① After confirming the start of this product, please communicate with the host. In addition, please perform processing such as clearing the reception buffer of the device at initial startup because the host interface may send out uncertain signals when starting this product.

## 10. Precautions for product startup

- ① Because of the risk of product failure, please do not turn off the power supply immediately after turning on the power supply, or when mode switching, or when the product is started by reset, etc.

## 11. RFID tag

- ① This machine communicates with ISO15693 tag.
- ② Regarding the failure of the tag, it is difficult to assume the guarantee responsibility.

# Introduction

The only dedicated antenna connected to this product is the following antenna made by NITTOKU.

- ITS-HAN10R

Must be installed by a professional on this product.

## Rating value

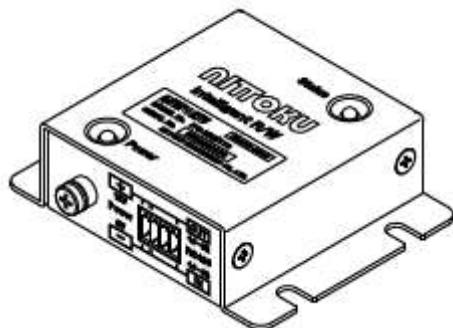
Model No	ITS-HRW110
Power supply Voltage	DC12V +10%, -20%
Power supply Current	Maximum 0.15A at DC12V
Indication	LED 2pcs (Power, Status)
Frequency	13.56MHz
Host communication	RS-485 (Half duplex)
Host protocol	Original command
RS485 Interface	
Communication Speed	9600,19200,38400,57600,115200 bit per sec
Data length	7 or 8 bit
Stop bit	1 or2 bit
Parity	None, even, odd
Number of connected	Up to 31device
Connected Cable	Awg20 ~ AWG26
Total length of cable	Up to 600 meter ( AWG20)
Dimension	70.8mm(W)×55mm(H)×20mm(D) ( excluding protruding parts)
Weight	66g
Ground	Earth terminal to 100 Ω or less
Case material	Black alumite
Antenna	Can be connected a ITS-HAN10R by professional Installing.
Output of Antenna	Typical 200mW

## Rating value

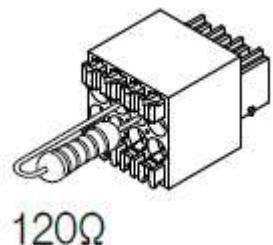
Operating Ambient temperature	0 ~ +60°C (Attached to a metal surface when used at + 55 ° C or higher)
Storage Ambient temperature	-25 ~ +65 °C (with no icing)
Ambient humidity	Operating 35 ~ 85%RH
Indication	Storage 35 ~ 85%RH (with no condensation)
Protection rating	IP40
Vibration resistance	10Hz ~ 150Hz 0.2mm p-p acceleration 15m/s <sup>2</sup> , 8 minutes each XYZ directions and 10 sweeps
Shock resistance	500m/s <sup>2</sup> , 3times each in 6 directions
Ground	Earth terminal to 100 Ω or less
Available tag	ISO15693 tag

## ●Components

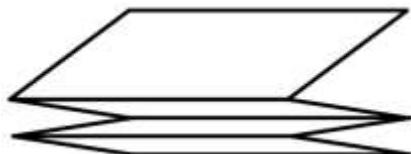
- Please check the contents included with the product.



ITS-LRW110 main unit



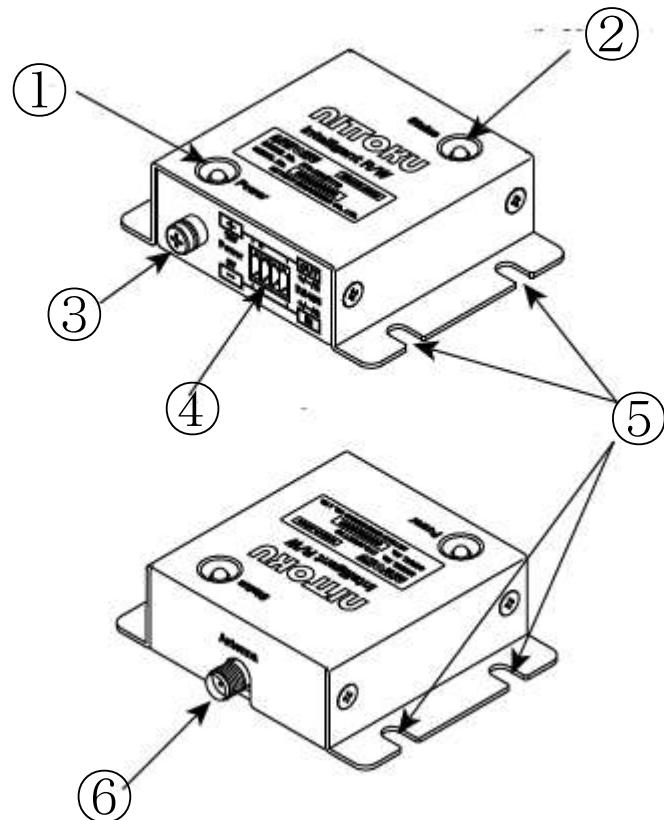
Wiring connector  
with termination resistor



Instruction manual (this document)

- ITS LRW-110 main unit
- Power and RS485 connector
- User manual

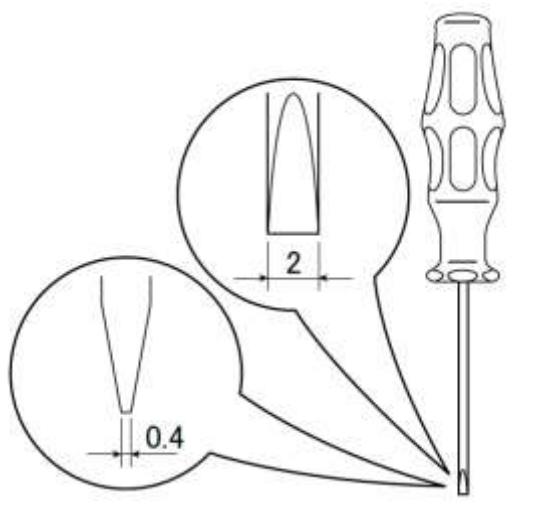
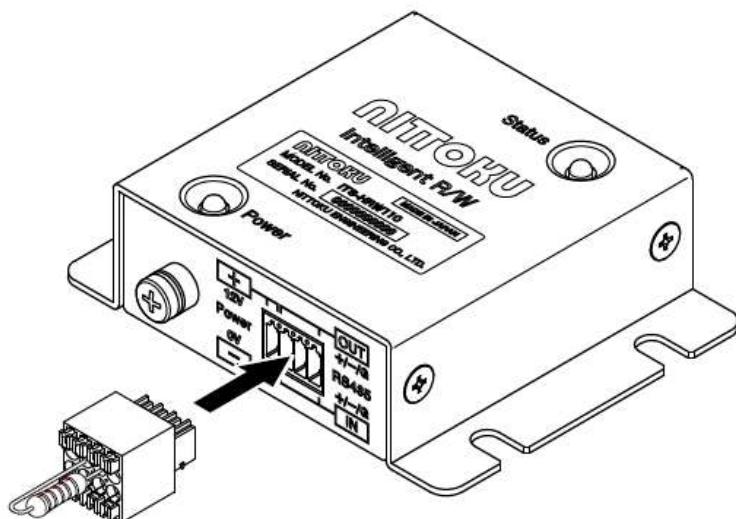
- Names of the components



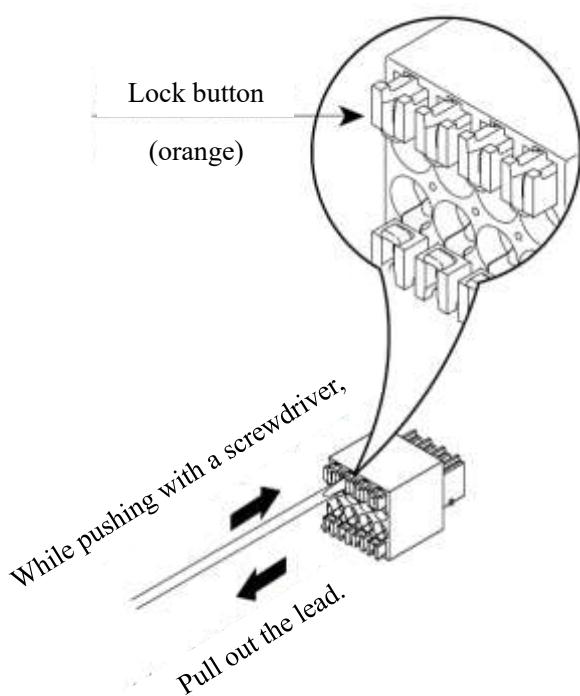
- ①: Powe LED (Power supply)
- ②: Status LED (Communication Staus)
- ③: Grounding terminal
- ④: Power and RS485 connector jack (DC12V, RS-485)
- ⑤: Mounting slit
- ⑥: Antenna port

## ● Preparation

- Please insert wiring connector into a Power and RS485 jack of the main unit.
- When connecting additional devices, remove the terminating resistor before wiring.
- Please disconnect wiring cable or terminal resister by a dedicated driver or equivalent while pressing the lock button on the wiring connector.

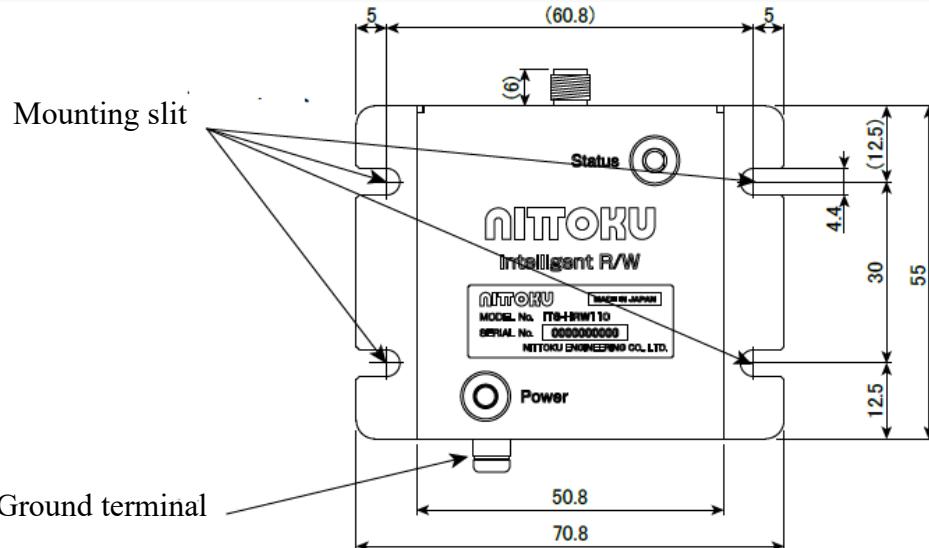


Phoenix Contact-made  
Dedicated driver  
(szs0,4x2,0-1205202)



## ● Installation

- Use four M4 screws to fix it in the dedicated mounting slit.

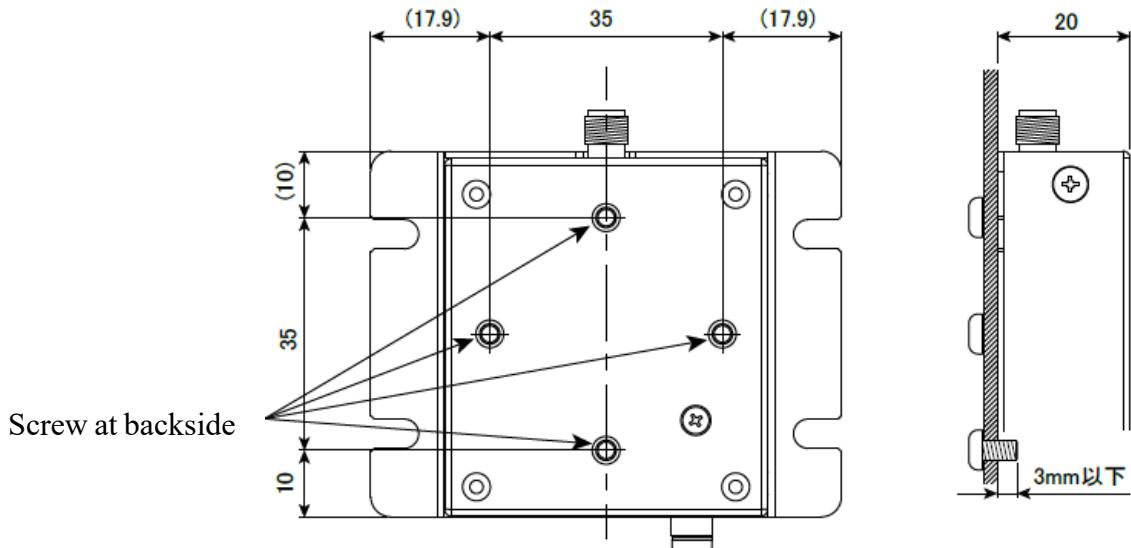


Caution :

Please ensure that the ground terminal is grounded to prevent malfunction and faults caused by surges.

- When installing from the back side

Please fix the 4 positions in the special mounting holes at the back side of the main unit with M3 screws.



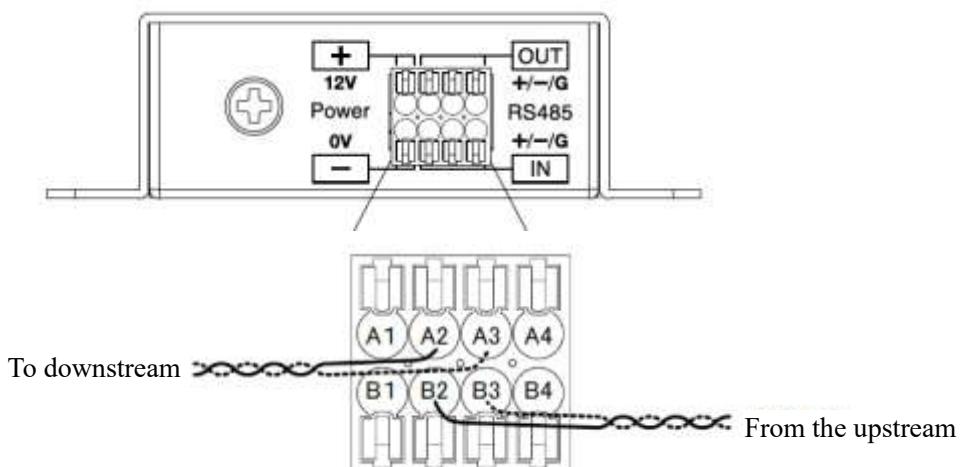
Caution:

Make sure that the distance from the mounting plate to the inside of the main body is not more than 3 mm.

## ● Wiring

- Please carry out wiring of the power and signal wires according to the pin configuration diagram in the figure below.
- Make sure to use twisted pair wiring.
- It is recommended to use rod terminals at the tip of the wire.

	Phoenix Contact-made
	Rodless sleeve terminal – AI0.25-8-YE-3203037 · · · AWG26-24
	Rodless sleeve terminal – A0.25-7-3202478 · · · AWG26-24
	Rodless sleeve terminal – A0.34-7-3009202 · · · AWG22
	Single wire-AWG26-20
	Stranded wire -AWG26-20

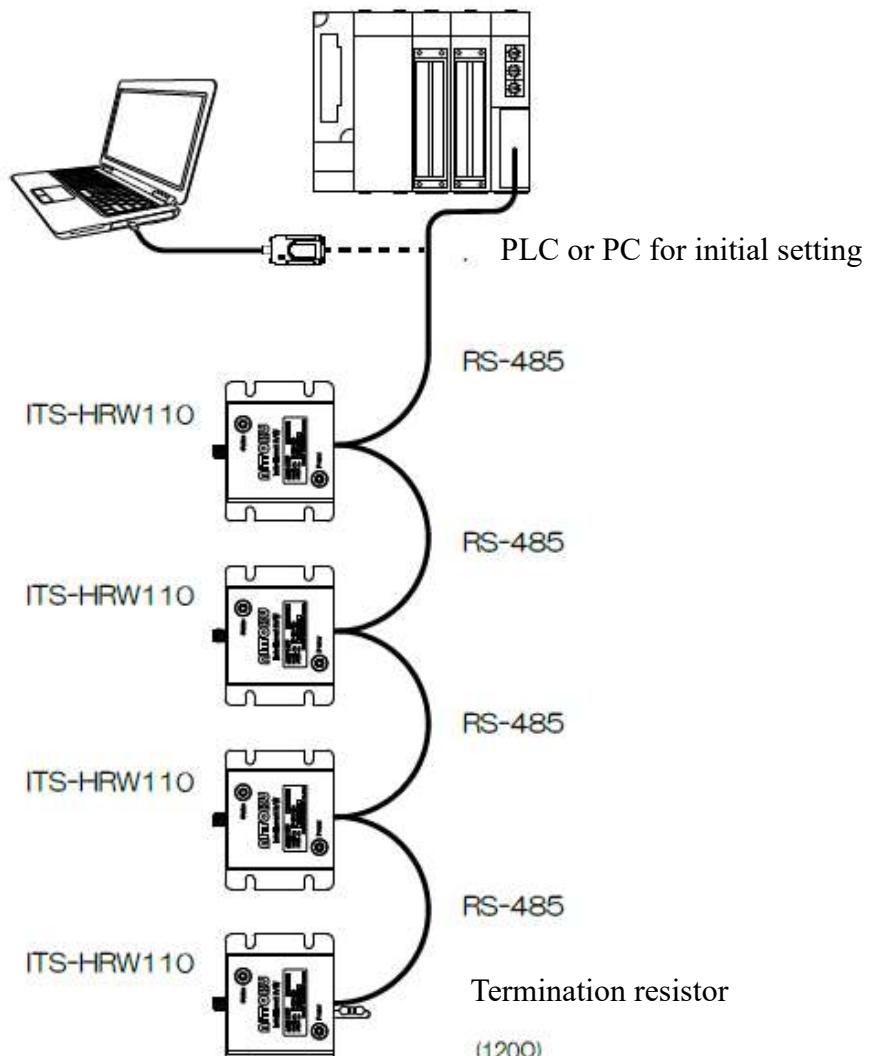


Pin configuration	A1: Power supply DC+12V Input	If RS-485 communication is not used, no connection is required.
	B1: Supply GND (0V)	
	A2: + IN RS-485 daisy chain connection output +	
	A3: – OUT RS-485 daisy chain connection output -	
	A4: SG ground (bus side)	
	A2: + IN RS-485 daisy chain connection input +	
	A3: – IN RS-485 daisy chain connection input -	
	A4: SG ground (bus side)	

※ Please use RS-485 ground A4 and B4 as required.

The RS-485 communication unit is isolated from internal circuits.

- System configuration



It is necessary to set the device ID for each device.  
Factory default device ID is set to "0"

## ● Regulation

### 1. The United States

FCC ID	Reader/Writer	Antenna
2A29TITSHRW110S2109	ITS-HRW110	ITS-HAN10R

#### FCC Note

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### FCC CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# Guarantee provisions

## 1 Warranty terms

### 1) Guarantee period

The warranty period of this product is one year after purchase or delivery to the designated place.

It should be noted that the warranty period of the repaired products will not exceed the warranty period before the repair.

Furthermore, regardless of the warranty period, the price of the Company's products does not include service fees such as technical personnel dispatch.

### 2) Scope of guarantee

If this product fails during the above warranty period, the Company will provide free replacement products or repair the faulty products at the place where the products are purchased.

However, if the cause of the failure is the following (a-h), it is not included in this warranty..

- a. Regarding use relating to conditions, environments and handling conditions other than those recorded in the operating instructions, user manuals and main unit attention labels
- b. In case of reasons other than this product
- c. In case of renovation or repair by a party except the Company or a service company commissioned by the Company
- d. In case of uses other than the original purpose
- e. In case of application in equipment, production lines or systems that do not conform to or do not abide by the regulations, safety and industry standards
- f. In the event that the scientific and technical level at the time of shipment from the Company can't be predicted.
- g. Other reasons other than the Company's responsibility, such as natural disasters or disasters.

The warranty here refers to a single warranty for the Company's single products, and the damage caused by the failure of the Company's products is not included in the scope of guarantee.

# Guarantee provisions (continued)

## 2 Limitation of liability

- 1) No matter whether it is within the warranty period or not, the Company shall not be liable for any damage caused by reasons not attributable to the Company, the Company shall not be responsible for the opportunity loss and profit loss caused to customers due to the failure of this product, the damage caused by special circumstances foreseen or unforeseen by the Company, secondary damage and accident compensation, the damage caused by products other than this product and the compensation for other businesses.
- 2) The Company does not assume any responsibility for the consequences arising from the program of this product.
- 3) Customer shall confirm the compatibility of this product with the systems, machines and equipment used. Otherwise, the Company is not responsible for the compatibility of this product.

## 3 Terms and Conditions

- 1) This product is used under such conditions that even if this product fails or nonconformity occurs, the application will not cause serious accidents, and in the event of a failure or failure, backup and fail-safe functions will be systematically performed outside the device.
- 2) The Company's products are designed and manufactured as general products for general industrial applications. Therefore, the Company's products are not suitable for applications requiring special quality assurance systems, such as applications that may cause serious risks to life or property. However, even if oriented to these purposes, the products can be applied if the customer agrees not to require special quality under the condition of limited use.
- 3) The application instances recorded in the catalog, etc. are for reference only, therefore, please confirm the functions and safety of the machines and devices before using them.

## 4 Specification changes

The product specifications and accessories described in the Company's website, catalog, user manual, and user manual may be changed as necessary due to improvement or other reasons. Please consult your supplier for the actual specifications of our products.