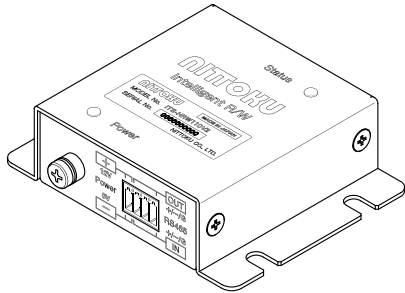


# Intelligent R/W

## MODEL : ITS-HRW110V2

### Instruction Manual



**NITTOKU CO., LTD.**

2-292-1 Azuma-cho, Omiya-ku, Saitama-shi, Saitama-ken, 330-0841

TEL: (+81) 48-615-2117 (direct dial call)

Thank you for your purchase. Please read this manual carefully for proper use.  
Keep this manual in a safe place after reading.

### Read Before Use

- Please read before use
- Ⓔ If the failure is caused by a mistake in the operation method, it may be treated for a fee, even during the warranty period.
  - Ⓕ This product uses a module that has received an inductive read-write communication machine type designation as stipulated in the Radio Act. Remodeling is prohibited by law.
  - Ⓖ Since this product is a wireless machine using radio waves, there is a risk of affecting medical devices when it is installed and operated.

### Safety Precautions (Be sure to read)

For safe and proper use of this unit, please take the following precautions.

- Danger** Indicates information that, if used incorrectly, may result in imminent danger of death or serious injury.
- Warning** Indicates information that, if used incorrectly, may result in death or serious injury.
- Caution** Indicates content that, if used incorrectly, may result in personal injury or property damage.
- Prohibited actions** (e.g., do not disassemble)
- This is a caution that must be followed.**

### DANGER

- DANGER**
  - Do not use in railway facilities, medical equipment, safety equipment, or equipment intended to protect human life.
  - Do not install, use, or leave near fire or in areas subject to high temperatures such as under direct sunlight.
  - Do not soak in water or sea water or let it get wet.
  - Do not use in places where flammable gases are generated.
  - Do not pierce with nails, hit with a hammer, or step on it.
  - Do not subject to a strong impact or throw it.

### Warning

- Do not disassemble or modify the product. It may cause accidents such as injury or malfunction. If there is smoke or a strange smell, turn off the power immediately.
- The above can result in fire or malfunction. Please contact the dealer from whom you purchased the product or our sales office / service for repair.
- In systems that affect human life, such as the management of medical supplies, please be careful to ensure that even if the data is incorrect, there is no possibility of affecting human life.

### Caution

- Do not use near strong radio waves, such as radio equipment. Otherwise, the equipment may malfunction.
- Don't get wet. The unit is not waterproof. If it gets wet, wipe it off with a soft cloth immediately.

### Notes on the Radio Law in Japan

The ITS-HRW110V2 uses the ITSHRW110V2, which has been type-approved by The Minister for Internal Affairs and Communications.

- Regulation** : Article 46-2 of the Ordinance for Enforcement of the Radio Act Inductive write communication machine
- Standard** : ARB STD-T82 Inductive read-write communication machine
- Ministry of Internal Affairs and Communications type designation number: No. AC 23028

### Rating

Operating frequency: 13.56MHz (ASK)  
Applicable standards: ISO15693  
Communication interface: RS-485  
Operating temperature range: 0 ° C to + 60 ° C (mounted on metal above 55 ° C)  
Source voltage: 12 VDC + 10%, -20%  
Consumption current: 150 mA or less  
Body Dimensions: Width 70.8 x Length 55 x Thickness 20 mm (Excluding Protrusions)  
Body Weight: Approx. 65g

※ This rating is subject to change for performance improvement without prior notice.

### Warranty

- The warranty period is 1 year from the date of purchase. If a failure occurs during the warranty period and under normal operating conditions according to the instruction manual, we will undertake the repair free of charge.
- If a failure occurs after the warranty period has expired, contact your dealer. If the function can be maintained through repair, we will repair it for a fee.

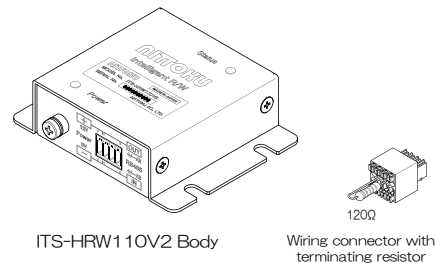
|                 |                                                      |   |   |
|-----------------|------------------------------------------------------|---|---|
| Model           | ITS-HRW110V2                                         |   |   |
| Serial No.      |                                                      |   |   |
| Period          | 1 year from date of purchase                         |   |   |
| ※ Purchase Date | Y                                                    | M | D |
| ※ Buyer         | Address _____<br>Name _____<br>Phone No. ( ) - _____ |   |   |
| ※ Seller        | Address • Name _____<br>Phone No. ( ) - _____        |   |   |

Contact Info  
Seller **NITTOKU CO., LTD.**  
2-292-1 Azuma-cho, Omiya-ku, Saitama-shi, Saitama-ken 330-0841  
TEL (+81)48-615-2117(direct dial call)

To retailers: Please be sure to fill in the fields marked with \* before handing over the product.

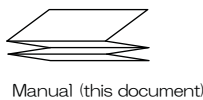
### Component

- Please check the contents of the product.



ITS-HRW110V2 Body

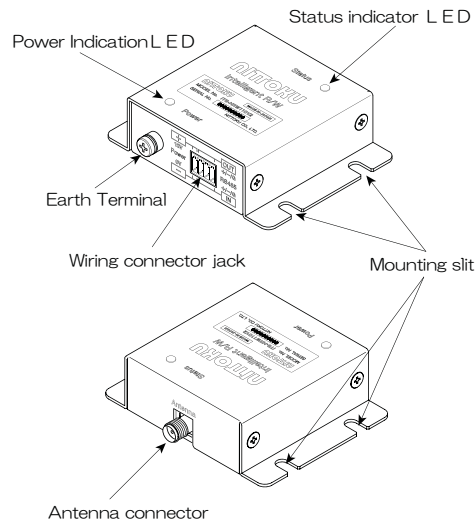
Wiring connector with terminating resistor



Manual (this document)

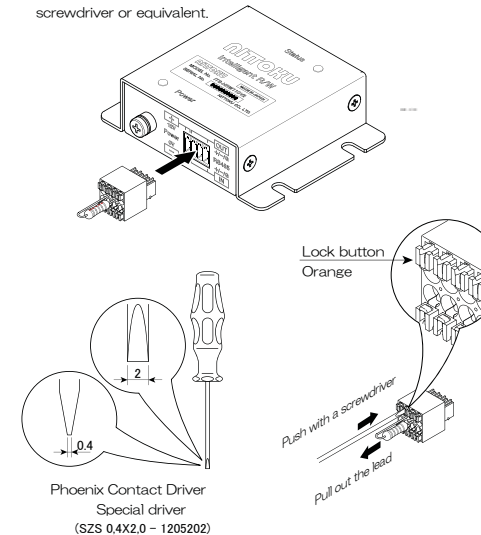
- ITS-HRW110V2 Body
- Wiring connector with terminating resistor
- Instruction manual

### Part Names



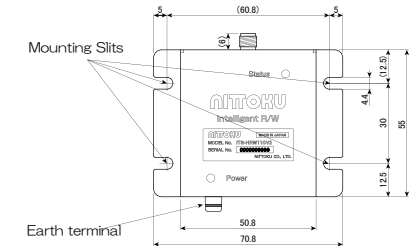
### Preparation

- Insert the wiring connector into the body.
- For daisy-chain connection, remove the terminating resistor and connect the wiring.
- When removing the terminating resistor or wiring, pull it out while pressing the lock button of the connector using a dedicated screwdriver or equivalent.

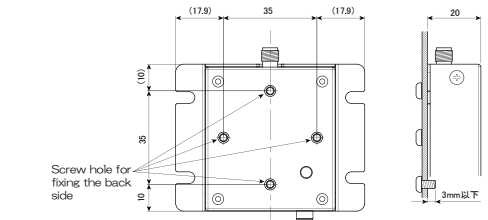


### Installation

- Use the four M4 screws, Length 5 to 6 mm to secure to the dedicated mounting slit.



- Caution** Be sure to use the grounding terminal to prevent malfunction and failure due to surge.
- When fixing from the back, use 4 M3 screws. Length 2 to 3 mm to fix.



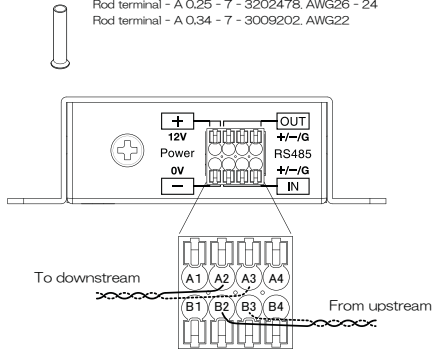
- Caution** Do not allow the mounting plate to protrude more than 3 mm into the body. It may damage the internal parts.

## ● Wiring

- Connect the power and signal wires according to the pin wiring diagram below.
- Be sure to use twisted pair wire for wiring.
- It is recommended to use rod terminals at the tip of the wiring.

Made by Phoenix Contact

Rod terminal - A 0.25 - 7 - 3202478, AWS26 - 24  
Rod terminal - A 0.34 - 7 - 3009202, AWS22



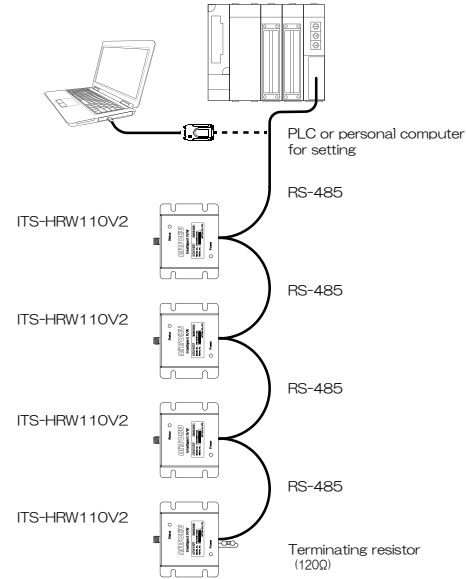
Pin Layout

- A1: Power supply DC + 12 V Input
- B1: Power supply GND (0 V)
- A2: + OUT RS485 daisy-chained output +
- A3: - OUT RS485 daisy-chained output -
- A4: SG ground (bus side)
- B2: +IN Daisy chain input of RS485 +
- B3: -IN Daisy chain input of RS485 -
- B4: SG ground (bus side)

Use grounds A4 and B4 of RS485 as required.  
The RS485 communication part is insulated from the internal circuit.

- 9 -

## ● Example of system configuration



A device ID must be set for each unit.  
(The equipment ID is set to 0 at the time of shipment.)

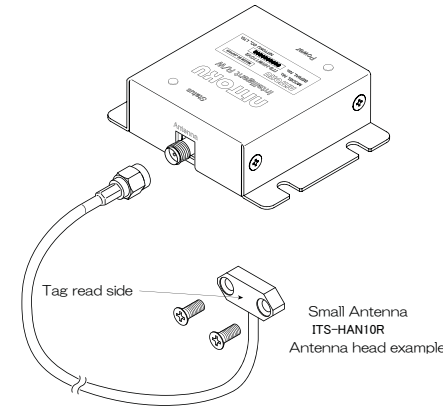
- 10 -

## ● Installing the Antenna

- Connect the specified antenna to the antenna connector.  
Be sure to tighten with a torque wrench for SMA (0.6 ~ 1.0 Nm).



- The antenna connector of the main body may be damaged if tightened with a spanner for machinery.



- Follow the instructions for each antenna to secure the antenna head.



- When fixing the coaxial cable of the antenna, do not tighten it so much that the coaxial cable is deformed.  
(This may affect the characteristics.)

- 11 -

## ● LED Display

- The LED display during operation indicates the status as shown in the table below.

| Reader/Writer status |                             |                     | Power LED | Status LED          |
|----------------------|-----------------------------|---------------------|-----------|---------------------|
| Power Off            |                             |                     | Off       | Off                 |
| Starting             |                             |                     | Red       | Green               |
| Normal Startup       | Awaiting Command            | Initial state       | Red       | Off                 |
|                      |                             | Other (*2)          | Red       | previous state (*4) |
|                      | Processing Command Complete | All commands        | Red       | Orange (*1)         |
|                      |                             | Tag command com. OK | Red       | Green               |
|                      |                             | Tag command com. NG | Red       | Red                 |
|                      |                             | System command (*3) | Red       | previous state (*4) |

(\*1) The status display is a two-color LED, so when green and red light up at the same time, it will turn orange.  
I can see it.

(\*2) When waiting for a command (other than the initial state), the previous state is maintained.

(\*3) System commands are not subject to display of execution results.  
(Protocol settings, processing time acquisition, RSSI acquisition, etc.)

(\*4) The previous state is the communication result of tag-related commands and follows the retention period set in EEPROM.

- Set in the parameter "Tag communication result LED status display retention time".
- The communication result display will turn off after the retention period has elapsed.

- 12 -

## ● Intelligent reader / writer initialization software

- To set up the reader/writer initially, use the following PC software.  
The device ID is set using this software. For detailed operating instructions, refer to the "Intelligent Reader/Writer User's Manual."



ITS\_INIT.exe



- 13 -

## ● Intelligent Reader/Writer Monitor Software

- Use the following PC software to perform communication tests for tags that comply with ISO15693. For detailed operating instructions, refer to the "Intelligent Reader/Writer User's Manual."



ITS\_MON.exe



This unit (ITS-HRW110V2) cannot be used with ISO14443 compliant tags.

- 14 -

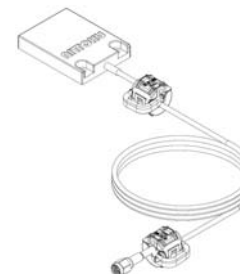
## ● About the Antenna

### ● Small antenna (ITS-HAN10R)

- An angled relay adapter can be inserted into this antenna.



### ● Medium-sized planar antenna (ITS-HAN60S)



- 15 -



- Do not connect any antenna other than that specified, as this may cause a malfunction.

## ● About the tag

ISO15993 compliant tags can be used.

- Our ITS Series Tags
  - ITS-HTG21F52K
  - ITS-HTG61F52K

- 16 -