

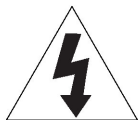
Table of contents

Table of contents	i
1 Safety Information	1
1 IMPORTANT SAFETY INSTRUCTIONS	3
2 Product introduction	4
1 Features	4
2 What's included	4
2.1 What's included in RF10-V	5
2.2 What's included in RF20-V	5
3 At a glance	5
3.1 Front / Rear	6
4 Cable color scheme	6
5 Cable selection	7
3 Installation and external connection	8
1 Installation	8
2 Precautions on installation	9
2.1 If installing on a metal wall	9
2.2 If installing more than one reader side by side or front and back	9
3 External connection	10
3.1 Wiring Diagram	10
4 Initialization	12
1 Basic operations	12
1.1 Initial state (when the power is supplied)	12
1.2 Using the card	12
1.3 LED Control	12
1.4 Buzzer Control	13
5 Output format	14

1	WIEGAND output	14
1.1	Timing Diagram	14
1.2	Data type	14
2	RS-232 output	15
2.1	Output waveform	15
2.2	Data type	15
6	Troubleshooting	16
1	Troubleshooting	16
7	Product specifications	18
1	Product specifications	18
8	RMA Request	19
9	Warranty Policy and Limitation of Liability	21
	Back cover	23

Safety Information

1



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK) NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.



This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

WARNING

1. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
2. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
3. Do not connect multiple controllers to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.
4. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.

5. When installing the controller, fasten it securely and firmly. The fall of controller may cause personal injury.
6. Do not place conductive objects (e.g. screwdrivers, coins, metal parts, etc.) or containers filled with water on top of the controller. Doing so may cause personal injury due to fire, electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
8. If any unusual smells or smoke come from the unit, stop using the product. In such case, immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.
9. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way. (SAMSUNG is not liable for problems caused by unauthorized modifications or attempted repair.)
10. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.

CAUTION

1. Do not drop objects on the product or apply strong blows to it. Keep away from a location subject to excessive vibration or magnetic interference.
2. Do not install in a location subject to high temperature (over 50°C), low temperature (below -30°C), or high humidity. Doing so may cause fire or electric shock.
3. If you want to relocate the already installed product, be sure to turn off the power and then move or reinstall it.
4. Remove the power plug from the outlet when there is a lighting storm. Neglecting to do so may cause fire or damage to the product.
5. Keep out of direct sunlight and heat radiation sources. It may cause fire.
6. Install it in a place with good ventilation.
7. Avoid aiming the controller directly towards extremely bright objects such as sun.
8. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
9. The Mains plug is used as a disconnect device and shall stay readily operable at any time.

1 IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
13. Unplug this apparatus when a card is used. Use caution when moving the cart/apparatus combination to avoid injury from tip-over.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Product introduction

2

1 Features

This model is an elegant-looking proximity reader that can be easily attached to a metal doorframe or the wall. Featured by the epoxy adhesion and aluminium case, RF10-V / RF20-V is shock-resistant with a high level of weather-proofing in any challenging weather conditions. The red and green indicators as well as the Piezo buzzer guarantee a stable and proper operation for you.

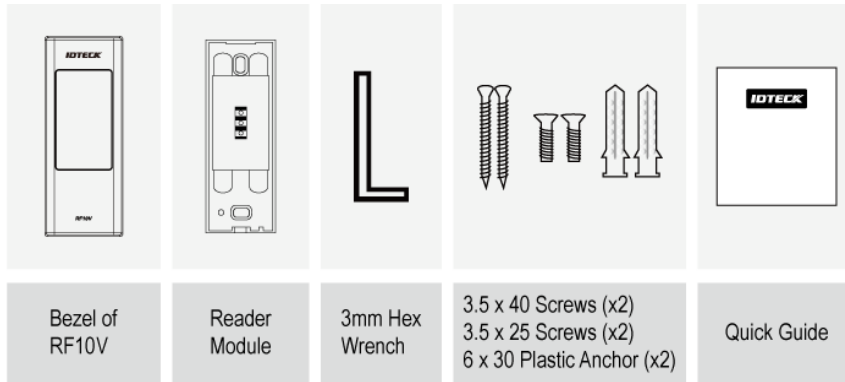
- 125KHz Proximity Reader
- PSK Modulation
- 26 bit Wiegand / RS-232 Output Format
- Control of External LED Indicators
- Control of External Buzzer
- Reverse Polarity Protection
- Weatherproof and Dustproof

2 What's included

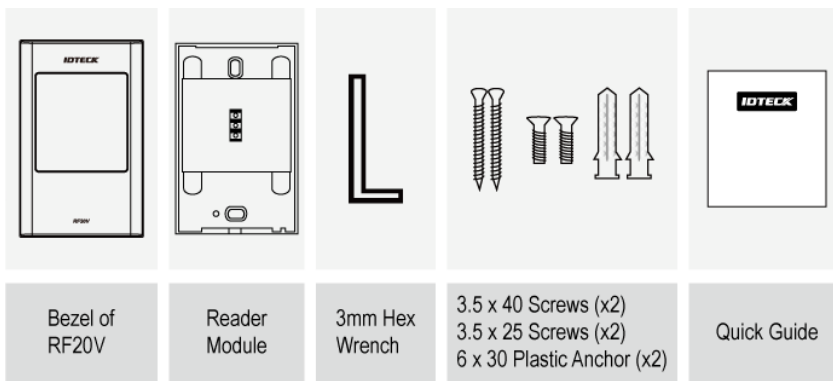
Check if the following items are included in the product package.

2.1 What's included in RF10-V

Figure 2-1 RF10V 구성품



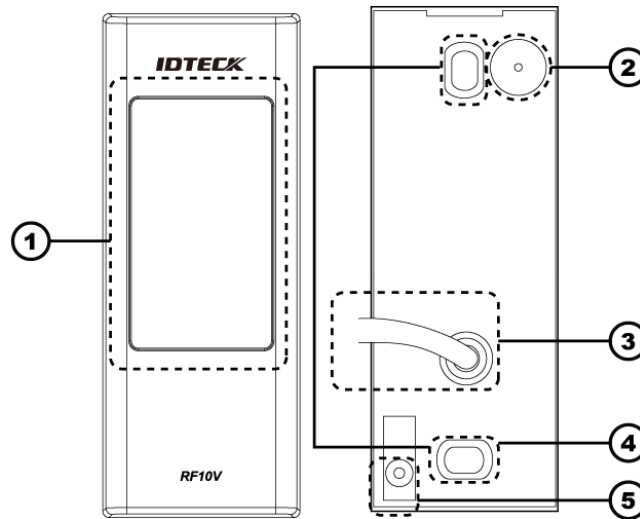
2.2 What's included in RF20-V



3 At a glance

3.1 Front / Rear

Figure 2-2 rf10structure



1. LED	Displays the system operation status using red and green indicators.
2. Buzzer	Piezo buzzer.
3. Connection Cable	Used to connect to the power or I/O cable.
4. Fixing Hole	Fixing hole for wall-mounting.
5. Tamper Switch	A tamper switch to detect falling from the wall.

4 Cable color scheme

Item	Cable color	Signal Line	Description
Power	Red	DC + 12V	DC +12V supplied
	Black	GND	Earth-grounding for power
Input	Blue	Buzzer control	BUZZER control input port
	Yellow	LED control	LED control input port
Output	Green	Out Wiegand 0	Wiegand Data 0 Output Port
	White	Out Wiegand 1	Wiegand Data 1 Output Port
Communication	Brown	RS-232 (TX)	RS-232 Transmission output port
Not used	Orange	NC	Not connected
Tamper	Pink	Tamper output (COM)	Tamper output port

Item	Cable color	Signal Line	Description
	Light yellow	Tamper output (NC)	Tamper output port

5 Cable selection

Item	Cable type
Power (DC12V)	Belden #9409, 18 AWG 2 Conductor, Unshielded
WIEGAND Output	Belden #9512, 22 AWG 4 Conductor, Shielded
Buzzer Control	Belden #9514, 22 AWG 8 Conductor, Shielded
LED Control	
Tamper Output	
RS-232 Cable	Belden #9829, 24 AWG 2-twisted pair, Shielded

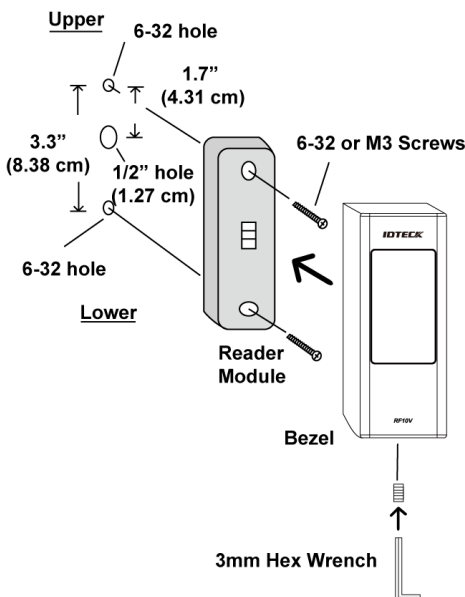
Installation and external connection

3

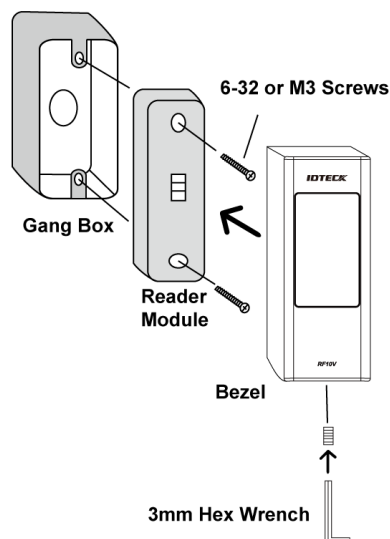
1 Installation

Inserted in the doorframe / attached to the wall

1. Two 6-32 or M3 holes are 3.3" (8.38 cm) away from each other vertically; between the two exists one 1/2" hole through which the reader cables are arranged. The midway hole is located 1.7" (4.31cm) down from the upper hole. (If the product is already installed, you can skip this step.)
2. Insert the reader cables to the midway hole and fix the reader module with two 6-32 or M3 screws.
3. Insert the reader module into the appearance case and tighten the screw (M6x8 mm) using the hex wrench.



**Wall Mount
Mullion Mount**



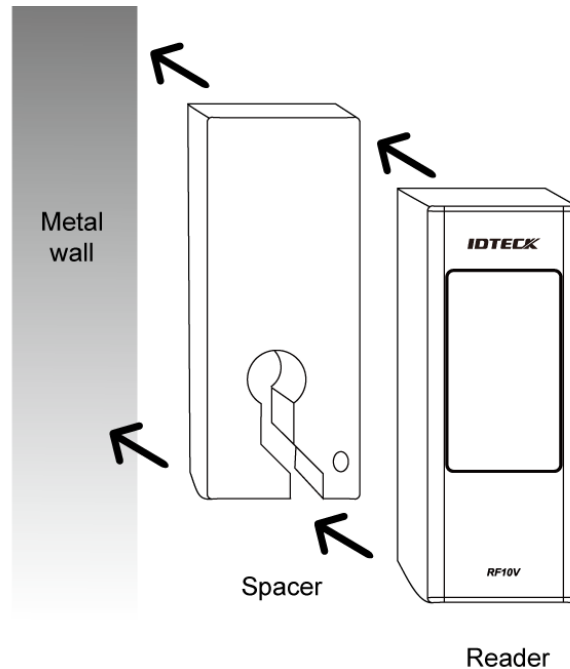
Electric Gang Box Mount

2 Precautions on installation

2.1 If installing on a metal wall

If you install the reader on a metal wall, the read range may be reduced.

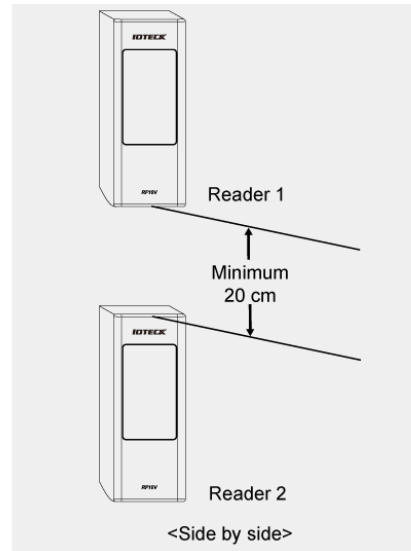
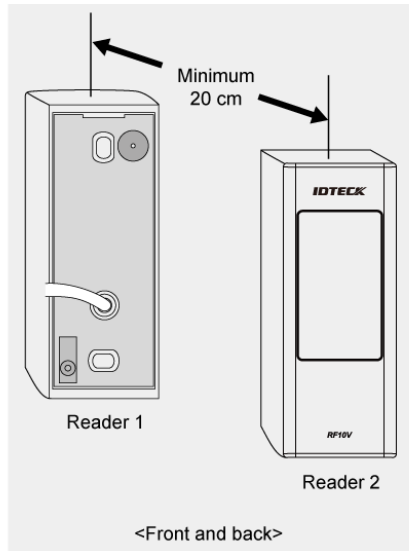
To avoid this problem, it is recommended to insert the spacer between the metal wall and the reader as shown below.



2.2 If installing more than one reader side by side or front and back

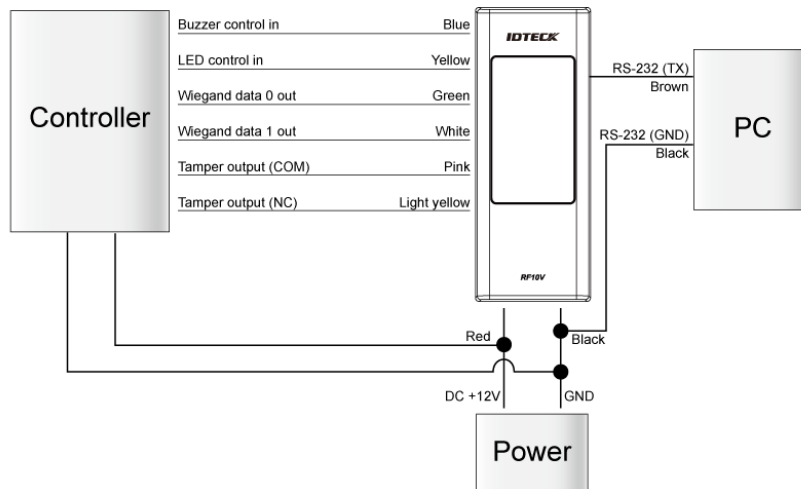
If you install more than one reader side by side or front and back, the read range may be reduced. In this case, if you present a card to one reader, the other reader may recognize the same card, meaning both readers read the same card simultaneously.

To avoid this problem, keep at least 20 cm of space between the two readers.



3 External connection

3.1 Wiring Diagram



Item

Cable Wiring

Power Supply Unit

Connect the DC+12V to the red line.

Connect GND to the black line.

Wiegand Connection

Connect the green line of the product to the Wiegand D0 input port of the controller.

Item	Cable Wiring
	Connect the white line of the product to the Wiegand D1 input port of the controller.
LED Control	To control the LED indicators, connect the yellow line to the output port (relay) of the controller.
Buzzer Control	To control the built-in buzzer, connect the blue line to the output port (relay) of the controller.
RS-232 Connection	Connect to the COM port of the PC. (Connect pin 2 of the DB-9 connector to the brown line; connect the GND (black) line of the device to pin 5 of the DB-9 connector.)
Tamper Connection	Connect the pink line of the product to the GND terminal of the controller. Connect the light yellow wire of the product to the GND terminal of the controller.

1 Basic operations

1.1 Initial state (when the power is supplied)

When you apply power to the reader, it will sound a beep before entering Standby with the red indicator turned on.

1.2 Using the card

Present the card to the reader until you hear a beep and the red indicator turns green.

When the reader has transferred the card data to the controller, it returns to Standby with the red indicator turned on and waits for reading the next card.

1.3 LED Control

You can control the LED indicator of the device at your preference.

Connect the LED control input line (yellow) to the NO port of the controller relay output, and GND to the COM port.

Set the I/O of the controller so that you can change the color of the LED indicators. While the LED control is working, the green indicator stays solid.

This function not only enables you to change the color representing Standby from red to green, but it can be also applied to make various modifications according to the different I/O settings of the controller.

For more information about the I/O settings of the controller, refer to the user manual of the controller.

1.4 Buzzer Control

You can control the buzzer of the device at your preference.

You can configure the I/O settings of the controller so that it sounds a beep. While the buzzer control is working, the product keeps sounding the beep.

The controller can use the I/O settings to set the buzzer control so that it sounds an additional beep for authorized or unauthorized access upon user authentication.

Furthermore, you can make various modifications according to the different I/O settings of the controller.

For more information about the I/O settings of the controller, refer to the user manual of the controller.



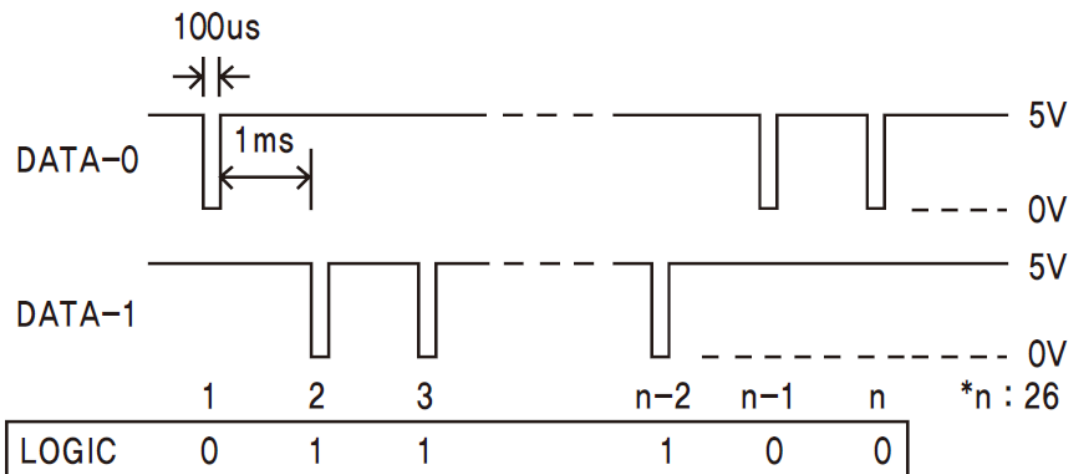
Card reading is not available while the buzzer control is sounding the buzzer.

Output format

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1 WIEGAND output

1.1 Timing Diagram

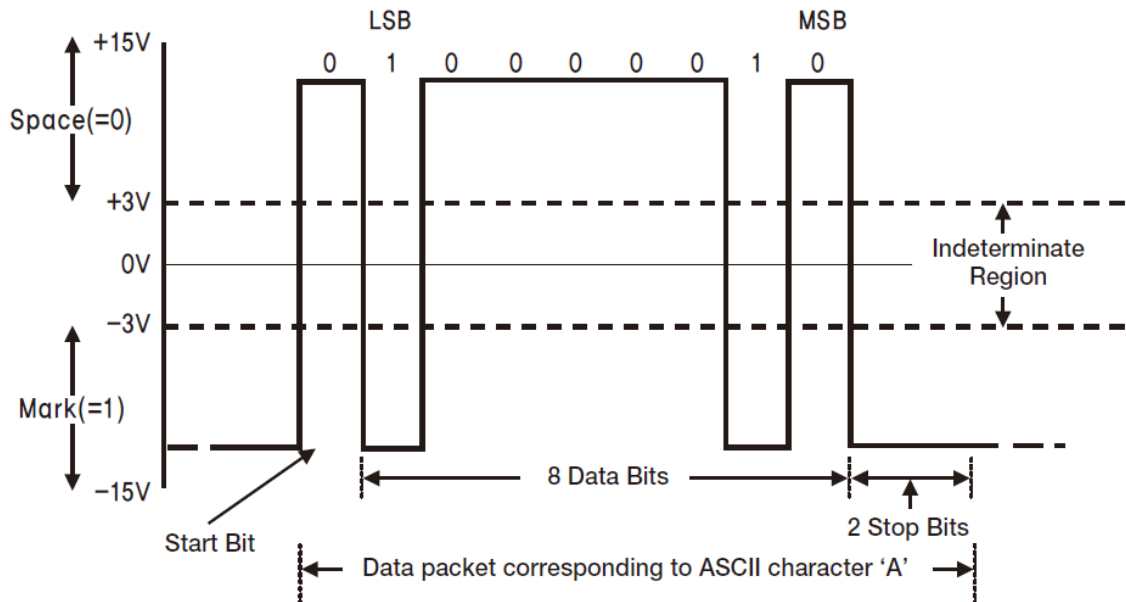


1.2 Data type

- Bit 1 : Even Parity (bit 2 ~ bit 13)
- Bit 2 ~ 9 : Facility Code (000 ~ 255)
- Bit 10 ~ 25 : ID Number (00000 ~ 65,535)
- Bit 26 : Odd Parity (bit 14 ~ bit 25)

2 RS-232 output

2.1 Output waveform



2.2 Data type

Start (0X02H)	Data (8 Char)	End (0x03H)	LRC
START(0X02H)	DATA (1~8 Char)	END (0x03H)	LRC



Check the following settings:

Baud Rate : 9600bps

Data Bit : 8

Parity Bit : None

Stop Bit : 1

LRC: This is the result of XOR operation of each byte from Start to End.

1 Troubleshooting

If the product does not function properly, please see the below for trouble shooting.

Problem	Solution
My card is not read properly.	1) Check the rated voltage specified in the user manual and the catalog. 2) Ensure that the card must comply with the PSK (125 KHz Proximity) format provided by IDTECK. Cards of 125 kHz purchased from other manufacturers may not be supported. 3) If the problem persists, contact the nearest customer service for your assistance.
When I turn on the product, it sounds a beep with dimly turned on indicator.	1) Ensure that you are using a larger-capacity adaptor than specified in the user manual or the catalog, which should cover the rated current consumption of the reader. If you are using multiple readers that are connected to one adaptor, make sure that the adaptor should be large enough to cover the current consumption multiplied by the reader count. 2) Even with a large adaptor enough to supply adequate power, if the power cable is not a dedicated line (such as communication line or UPT cable), or if it's so long to cause power loss, you'd better replace it with a dedicated line or reinforce it. 3) If the problem persists, contact the nearest customer service for your assistance.
The read range (R/R) of the card differs each time the product reads the card.	1) The characteristics of a card are determined by the nature of the coils used and in the manufacturing process engaged by the card manufacturer. So what you do first is to check that the cards in use are made by the same

Problem	Solution
	manufacturer. If you are using cards from different card makers, the read range (R/R) differs by the card, which is the result of normal operation.
	2) If you encounter a different read range (R/R) for each card that is made by the same manufacturer, please contact the nearest customer service.

Product specifications

7

1 Product specifications

Item	RF10V	RF20V
Power / Current	DC 12V / Max.120mA	
Reading Time (Card)	30ms	
Input Port	2ea : External LED Control, External Buzzer Control	
Output Port	26bit Wiegand	
LED Indicator	2 Color LED (Red and Green)	
Beeper	Piezo Buzzer	
Operating Temperature	-30°C to +50°C	
Operating Humidity	10% to 90% relative humidity non-condensing	
Color / Material	Silver with Black/Polycarbonate & Aluminum Die casting	
Dimension (W x H x D(mm))	47.0 x 120.0 x 26.0	75.3 x 120.0 x 26.0
Weight	250g ±10	340g ±10

RMA Request

8

To make the RMA request, the product must be initially registered on IDTECK webpage.

After registering the product, send it to IDTECK RMA Center.

Please follow the instructions below:



1. Please register the RMA request via IDTECK webpage.
: www.idteck.com → “Support & Download” → “Online RMA” → “RMA REQUEST”
(Please refer to the IDTECK webpage for more details.)
2. RMA Code will be issued after the RMA Center reviews the RMA request form.
3. Enclose the product along with the RMA Code and send it to IDTECK RMA Center.
(Product without RMA Code is not accepted.)

If you have any questions or problems regarding the RMA services, please contact us using the contact information below. Friendly representatives at IDTECK are always standing by to provide the best after sales services.

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E-Training Center: <http://www.idtecktraining.com>



The specifications contained in this manual are subject to change without notice at any time.

Warranty Policy and Limitation of Liability

9

IDTECK warrants this product against defects in material and workmanship for the period specified below from the date of purchase under normal customer use. This Warranty doesn't apply: 1) to any product which has been dismantled without authorization of IDTECK or/and has a damaged or detached QC label on its back side; 2) to any losses, defects, or damages caused by improper testing, operation, installation, maintenance, modification, alteration, or adjustment; 3) to any product with a damaged or faded serial number on it; or 4) to any losses, defects, or damages caused by lightning or other electrical discharge, natural disaster, misuse, accident or neglect.

This Limited Warranty is in lieu of all other warranties, obligations, or liabilities on the part of IDTECK, and IDTECK DISCLAIMS ANY AND ALL WARRANTY, WHETHER EXPRESS OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IDTECK does not, and cannot, know who is present, what property is located, where this product will be used; it would be extremely difficult to determine the actual damages that may result from a failure of the product to perform as anticipated; and the low price of this product is based upon the nature of the product provided and the limited liability that IDTECK assumes. IDTECK IS NOT RESPONSIBLE FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR LOSS, DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR OTHER LOSS, AND IDTECK'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT.

To obtain repair or replacement under the terms of this warranty, visit IDTECK's Website (<http://www.idteck.com>) and place an online RMA request. After an RMA code is issued, return the product along with the authorization RMA code.

>> Warranty Period

	Product Category	Warranty Period
1	RF CARDS (ACTIVE TYPE)	1 year
2	FINGERPRINT MODULE / SENSOR	
3	ACCESSORIES	
4	CONTROL PANELS	2 years
5	STANDALONE CONTROLLERS	
6	FINGERPRINT READERS	
7	RF READERS (NON-MOLDING PRODUCT)	Lifetime
8	RF READERS (MOLDING PRODUCT)	
9	RF CARDS (PASSIVE TYPE)	



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