DS-K1107 Series Card Reader

User Manual

User Manual

About this Manual

This Manual is applicable to DS-K1107 series card reader

Please use this user manual under the guidance of professionals.

Trademarks

Legal Disclaimer

THE POSSIBILITY OF SUCH DAMAGES.

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Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into **Warnings** and **Cautions**:

Warnings: Neglecting any of the warnings may cause serious injury or death.

Cautions: Neglecting any of the cautions may cause injury or equipment damage.

	
Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

Warnings

All the electronic operation should be strictly compliance with the electrical safety regulations, fire prevention regulations and other related regulations in your local region.

Please use the power adapter, which is provided by normal company. The power consumption cannot be less than the required value.

Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.

Please make sure that the power has been disconnected before you wire, install or dismantle the device.

When the product is installed on wall or ceiling, the device shall be firmly fixed.

If smoke, odors or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the device yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

Cautions

Do not drop the device or subject it to physical shock, and do not expose it to high electromagnetism radiation. Avoid the equipment installation on vibrations surface or places subject to shock (ignorance can cause equipment damage).

Do not place the device in extremely hot (refer to the specification of the device for the detailed operating temperature), cold, dusty or damp locations, and do not expose it to high electromagnetic radiation. The appropriate temperature is -20℃ to 65℃.

The device cover for indoor use shall be kept from rain and moisture.

Exposing the equipment to direct sun light, low ventilation or heat source such as heater or radiator is forbidden (ignorance can cause fire danger).

Do not aim the device at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor at the same time.

Please use the provided glove when open up the device cover, avoid direct contact with the device cover, because the acidic sweat of the fingers may erode the surface coating of the device cover.

Please use a soft and dry cloth when clean inside and outside surfaces of the device cover, do not use alkaline detergents.

Please keep all wrappers after unpack them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and lead to additional costs.

Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Preventive and Cautionary Tips

To guarantee the card reader works properly, please read and obey the notes below.

If the card reader is powered by the controller, the power supply distance is recommended to be no longer than 100m.

If the distance is longer than 100m, you are advised to power the card reader by external 12V (range: -%10 ~ +%10) DC power supply, which is nonswitched and linear.

To guarantee the communication between the controller and the card reader, you must use RVVP cable above 0.5 to connect them.

If the card reader is installed outside or in environment easy to permeable, it is advisable to install a waterproof shield.

If you need to install several card readers, the distance among them must over 30cm.

To reduce the noise in long distance transmission, the shield of cable should connect to the GND of both controller and card reader terminal.

Please take care of your card and report card loss in time when card is lost.

If you require a higher security level, use multiple authentication modes.

Multiple card types are supported. Please select an appropriate card type according to the card performance and the usage scenarios.

Content

Chapter 1 Introduction

1.1 Over View

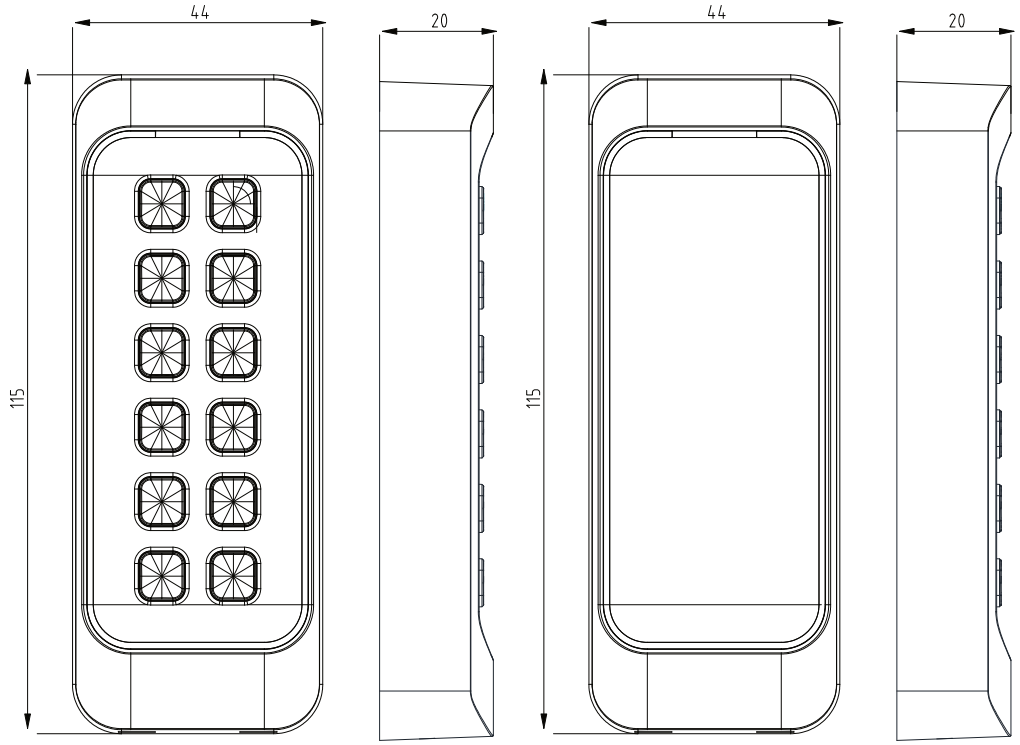


Figure 1-1 DS-K1107 Series Card Reader

DS-K1107 series card reader is a kind of high-performance product, with a 32 bit high-speed processor. It communicates with access controller via either RS-485 protocol (AES encrypted) or Wiegand protocol. And a build-in tamper-proof module helps to protect card reader from malicious damage. As to the physical appearance, the PC+ABS material makes water proof and dust proof possible in poor environment.

1.2 Indicator and Component

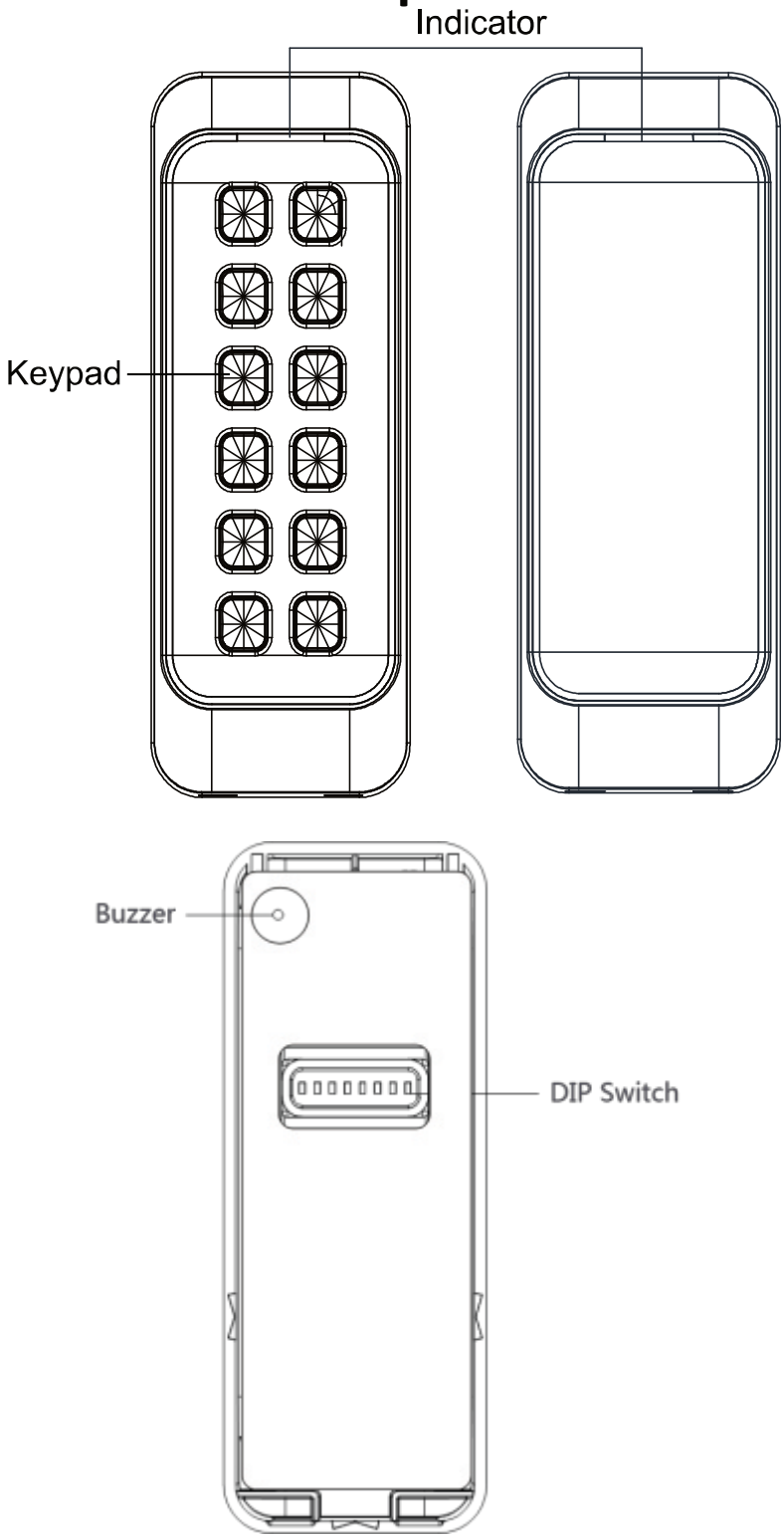
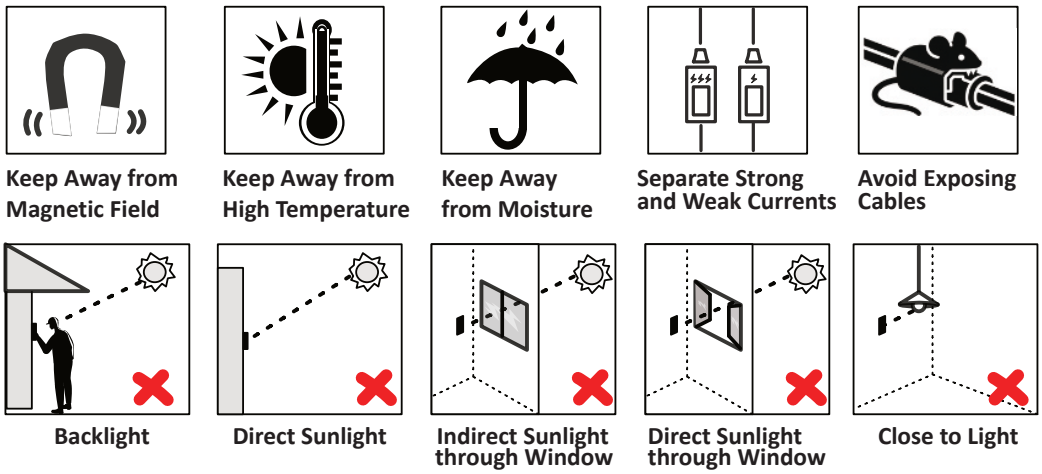


Figure 1-2 Indicator and Component

Chapter 2 Installation



2.1 Introduction for DIP Switch

The DIP switch module is shown below. The No. of DIP switch

from left to right is 1 ~ 8.

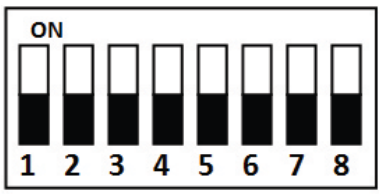


Figure 2-1 DIP Switch Module

Table 2-1 Description of DIP Switch

Icon	Description
	Represent 1 in binary mode
	Represent 0 in binary mode

For example, binary value of the following status is: 0000 1100.

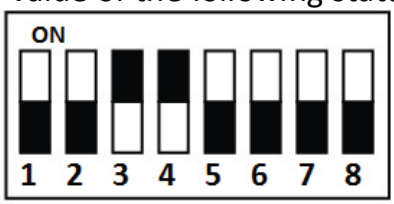


Figure 2-2 DIP Switch Module

Table 2-2 Description of DIP Switch

No.	Description	DIP Switch Status
1 ~ 4	Address of RS-485	1: 1 0: 0
5	Card Security ***Note:*** Only available when Wiegand is enabled.	1 Enable M1 card encryption function, enable non-M1 card Recognition function, disable door open via NFC card. 0: Disable M1 card encryption function, disable non-M1 card Recognition function, enable door open via NFC card.
6	Wiegand protocol or RS-485 protocol.	1: Wiegand protocol; 0: RS-485 protocol.
7	Wiegand Protocol (available when No. 6 is 1)	*1: Wiegand protocol of 26-bit;* *0: Wiegand protocol of 34-bit.*
8	Matched Resistance (available for RS-485 protocol)	1: Enable; 0: Disable.

Note: M1 cards cannot prevent NFC devices from copying card numbers and keys. It is recommended to use CPU card readers or multiple authentication in high-security places.

2.2 Definition of Cable

The description of 10 cables is shown below.

Table 2-3 Description of Cable

Color	Description
Orange	Red LED Control (available for Wiegand Protocol)
White	Wiegand W1 (available for Wiegand Protocol)
Green	Wiegand W0 (available for Wiegand Protocol)
Blue	RS-485-
Yellow	RS-485+
Red	PWR (+12 VDC)
Black	GND
Gray	TAMPER (available for Wiegand Protocol)
Purple	Beep Control (available for Wiegand Protocol)
Brown	Green LED Control (available for Wiegand Protocol)

2.3 Wiring Cables

Purpose:

Wire the cables between controller and card reader, thus to establish the communication between them.

Cable Size	18 AWG	15 AWG	12 AWG
Power Supply	12 V Switched-mode	12 V Switched-mode	12 V Switched-mode
Distance Between Power Supply and Device	≤ 20 m	≤ 30 m	≤ 40 m

Cable Requirements

Steps for RS-485 communication mode:

1. Set the DIP switch of No. 6 as 0.
2. Set the DIP switch of No. 1 ~ 4 for RS-485 address. For details, please refer to *2.1 Introduction for DIP Switch*.
3. Wire the cable between controller and card reader as shown below.

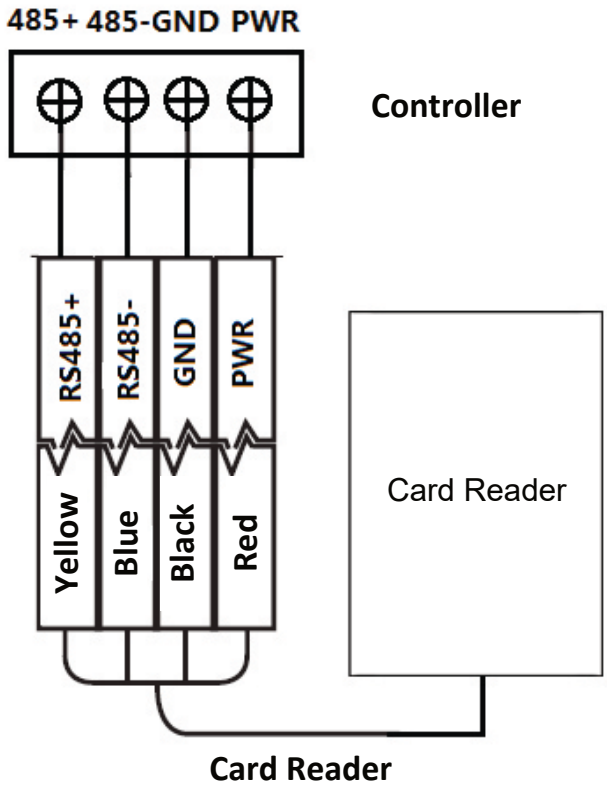


Figure 2-3 Wiring for RS-485 Communication Mode

Steps for Wiegand communication mode:

1. Set the DIP switch of No. 6 as 1.
2. Set the DIP switch of No. 5 and 7 for reading card mode and Wiegand protocol. For details, please refer to *2.1 Introduction for DIP Switch*.
3. Wiring the cable between controller and card reader as shown below.

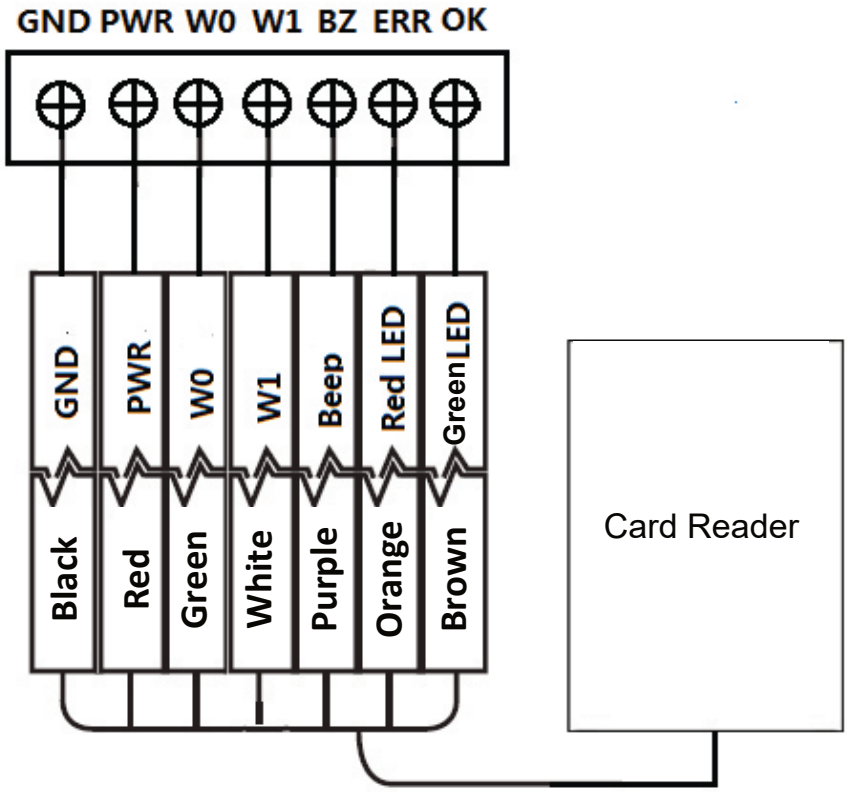


Figure 2-4 Wiring for Wiegand Communication Mode

2.4 Installing Card Reader

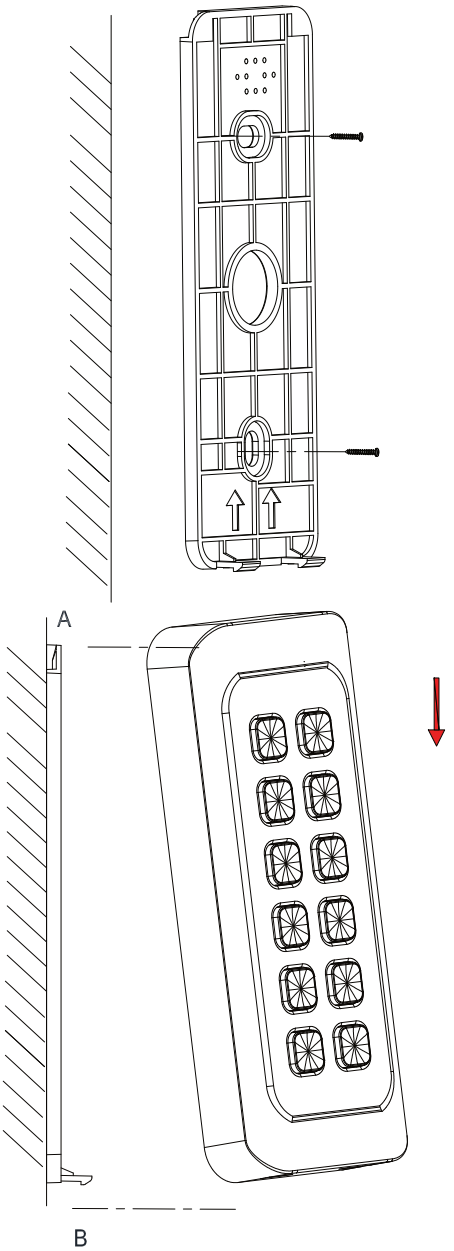
Before you start:

Set the DIP switch. For details, refer to *2.1 Introduction for DIP Switch*.

Installation for DS-K1107 series card reader

Steps:

1. Fix the plate on the wall or other places by using two screws (PA4×25-SUS). Make sure the arrows on the plate are upwards.
2. Check whether the plate is fixed and in the right direction.
3. Slide the card reader from the direction A to B along the plate side until the bottom matches the joint. Make sure the card reader is tightly on the wall or other places.
4. Drag and move the card reader to make sure it is fixed.



Chapter 3 Sound Prompt and Indicator

After the card reader is powered on, LED status indicator will turn green and flashing for 1 time. Then it will turn red and flashing for 3 times. At last the buzzer will send out a beep sound indicating the starting up process is completed.

When using the card reader, it will send out different sounds prompt and the LED indicator to indicate different statuses. You can refer to tables below for detailed information.

Table 1-1 Description of Prompt Sound

Sound Prompt	Description
One beep	Swiping card prompt
	Pressing keys prompt
	Prompt for too long card No. input by pressing keys.
	Time out prompt for pressing keys or swiping card.
	For Card + Fingerprint authentication: prompt for pressing the fingerprint after swiping the card.
Two rapid beeps	The operation of pressing keys or swiping card is valid.
Three slow beeps	The operation of pressing keys or swiping card is invalid.
Rapidly continuous beeps	Prompt for tamper-proof alarm.
	Prompt for buzzer alarm.
Slowly continuous beeps	The card reader is unencrypted.

Table 1-2 Description of LED Indicator

LED Indicator Status	Description
Green (flashing for 1 time), and red (flashing for 3 times)	The card reader is power on.
Flashing green	For Card + Password authentication: prompt for entering the password after swiping the card.
	The operation of configuring the fingerprint.
Solid green for 2s	The operation of pressing keys or swiping card is valid.
Solid red	Card reader is working normally.
Flashing red for 3 times	The operation of pressing keys or swiping card is invalid.
Flashing red	For RS-485 protocol: Registering failed or card reader is offline.

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