

SL130

RFID Integrated Reader

Product information guidance

- We have the revise authority about product hardware, software and the manual. The manual modified without notice
- The model and power of equipment is subject to the origin country, Please confirm the voltage and read relevant safety attentions, especially in outdoor Installation

1 Content

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2 Product summary

is the latest integrated reader which developed by our company. It can read the tag or card which according to the protocol of ISO 18000-6B, EPC CLASS 1 G2. It can be used in vehicle management, ETC, Personnel access control, electronic anti-counterfeiting, logistic monitor, production auto management system and so on.

2.1 Shape and interface

The appearance of as the follow photo shows. With ABS case, it can be installed in indoor environment or outdoor environment where has good ventilation, dust-proof and rain-proof conditions.



There is a feeder interface at the bottom of , the details of the cable as follow shows:

| | | | | | |
|--------|--------------|------------|------------|-------|------------------|
| Red | Black | yellow | Light blue | Pink | Blue |
| +9/12V | Power GND | CM1 | NO1 | NC1 | GND |
| Purple | Orange | Brown | Dark green | White | Grey |
| 485+ | 485- | Signal GND | 232Tx | 232Rx | Trigger input |

2-1-2

The features of the communication interface in the table 2-1-2:

A. RS232 communication interface:

1 RS232 port(DB9 socket:RxD receive、TxD send、signal GND)—it can connect with PC

B. Buzzer: built-in buzzer, it will alarm when the reader read the tags.

C. Power interface:+9/12V DC socket(red and black)。

◆ 1 RS485 port(485+(purple)、485-(orange)differential signal)— used for long range signal transmission

◆ Signal ground(Brown): it is for Wiegand port and RS232 port

◆ 1 trigger signal input port: FIN1(grey), Low level trigger.

When the reader in trigger model, if connect this port to Low level, the reader will read tag automatically until it recover to high level.

2.2 Performance index

- (1) Read/write tag: ISO18000-6B、EPC CLASS1 G2 tag
- (2) Frequency:865 ~ 956MHz(Slight different in different country and region)
- (3) Work type: FHSS or fixed frequency emission
- (4) Output power:20 ~ 30dBm(Slight different in different country and region)
- (5) Read/write distance:read distance>8m,write distance>1m(depend on tags)
- (6) Read speed: 32bits/6ms.
- (7) Write distance:32bits/50ms

- (8) Power supply: +9/12V DC.
- (9) Power: average power < 5W.
- (10) Work temperature: -10°C ~ +55°C.

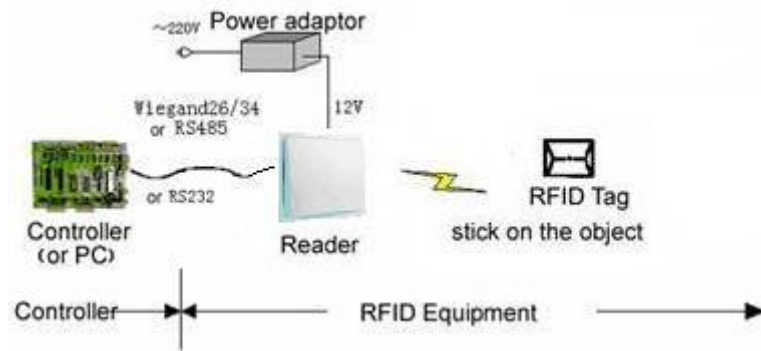
2.3 Function

- (1) Read/Write tag: ISO18000-6B、EPC Class1 Gen 2 tag
- (2) It can read many different length EPC number(16、32、48、64、80 or 96bits) at the same time
- (3) It can read selected EPC number of the tag
- (4) It can read selected data of the tag in user memory
- (5) It can read selected data of the tag in TID memory
- (6) It can read the visit password and the kill password of the tag(both are 32 bits)
- (7) It can write different length EPC number(16、32、48、64、80 or 96bits)
- (8) It can write the data of the user memory
- (9) It can change the visit password and kill password of the tag(both are 32 bits)
- (10) There is write-protect function for EPC、TID and user memory
- (11) There are read and write-protect function for password memory
- (12) It can Kill the tag

3 Equipment installation

3.1 Connection

In application system, the connection between reader, antenna, tag and the controller (PC) as follow graphic shows:



Graphic 3-1 Equipment connection

3.2 Connect reader and controller

reader can connect with controller (PC) through TCP/IP, RS485 or RS232 port, then receive and send the data.

(1) TCP/IP port

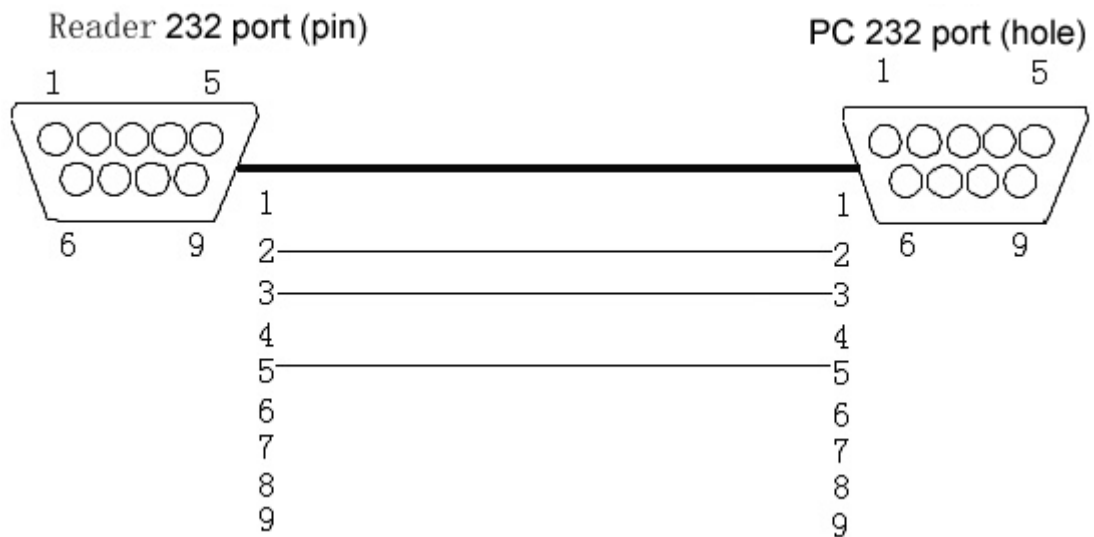
Input device TCP/IP communication port and IP to open device and close device. Default IP:192.168.1.190 ,port:6000

(2) RS485 port

With RS485 communication, you need to connect 2 lead pin of RS485+/RS485- in reader with 2 corresponding lead pin in controller.

(3) RS232 port

With the assorted cable, you can connect RS232 port directly with PC, the length of the cable should less than 10m in construction work. The connection as follow graphic shows:



Graphic 3-2-2 Reader RS232 connect with PC

3.3 Connect the power supply

Reader A/N use +9/12V/3A DC to provide the power. We will provide relevant power adaptor together with the reader. Connection as follows:

- (1) Check and confirm the voltage and the frequency of the A.C. source, if they meet the requirement of AC 100-240V/50Hz.
- (2) Connect the DC output connector plug with +9/12V DC input port in reader.
- (3) Connect 220V AC input plug of the adaptor to AC circuit.
- (4) The indicator light up, it shows power supply input normally.

3.4 Equipment adjustment

Key factor for adjustment: adjust the height, direction angle, angle of inclination of the antenna until the reader can read the tag in expected area.

Steps as follows:

- (1) Open the reader power supply, set as continuing work model, close the program and disconnection of the reader with PC.
- (2) Disconnect the power supply and then connect, the reader will work

under continuing work model.

- (3) For different material of identified object, it needs to use different tags. So when adjusting, you need to put the tag near the identified object and then move the tag. If the reader can get the information of the tag, the built-in buzzer will alarm and the green LED will light.
- (4) Adjust the height and angle of the antenna carefully and find an optimal read coverage.

Note: The reader only send the microwave power when read and write tags. It can meet the American FCC RF items requirement when there is 30cm distance between adjustment engineer and the antenna.

3.5 Stick the tag

In the application of RFID system, sticking the tag is the common work. The notice we need to do as follows:

- (1) Use the glue we recommend.
- (2) For the tag used in metal surface, use special glue.
- (3) It needs to do the test to find a suitable place and ensure the ideal read/write effect.

Note: we provide 2 kinds of ISO18000-6B tags:

- (1) Air medium. can use directly in hand; it can also use together with the Cassette we developed. it can insert the card directly in the cassette.
- (2) Glass medium. it need to stick on the glass (with the Insoluble glue)

4 Common malfunction

Table 4-1 common malfunction and solutions

| Malfunction phenomenon | Possible reason | Solutions |
|----------------------------|---|---|
| Can not detect the tag | Antenna not connect well | Check the antenna connection |
| | Exceed the read coverage | Move the tag to the antenna |
| | Antenna damaged | Change antenna |
| | RF Power is too low | Restore the factory parameter |
| | Tag damaged | Change tags |
| | Reader damaged | Contact with the technician |
| Can not connect the reader | No power supply | Check the connector and the adaptor of the power supply |
| | Com port occupied or damaged | Check if the com port is occupied through the software and test if the port can communicate |
| | Baud rate is not unanimous | Set the unanimous Baud rate through the software |
| | Reader damaged | Contact with the technician |
| Short read distance | Antenna not connect well | Check the antenna connection |
| | RF Power is too low | Restore the factory parameter |
| | The polarization of the tag is not unanimous with the antenna | Rotation 90° of the tag |
| | Reader damaged | Contact with the technician |
| | Tag damaged | Change tags |