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

2   Product summary

SL130 is the UHF integrated reader which developed by our company. It can read UHF tags or cards compatible with the protocol of ISO18000-6B/C, EPC CLASS1 GEN2, which can be used in vehicle management, ETC, Personnel access control, electronic anti-counterfeiting, logstic monitor, production auto management system and so on.

2.1   Shape and interface

The appearance of SL130 shows as the follow photo. 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 SL130, the details of the cable as follow:

Red	Black	Blue	yellow	Grey	Light blue
+9/12V	Power GND	Wiegand_Data1	Wiegand_Data0	Trigger input	Relay1
Purple	Orange	Brown	Dark green	White	Pink
485+	485-	Signal GND	232Tx	232Rx	Relay2

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
 canconnect 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)。

D.   I/O port

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

◆ 1 Wiegand port: it usually used for tansmit ID number of the tag in
    access control system.

Wiegand port: WDATA0(yellow)、WDATA1(blue)

◆ 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 counry and
      region)

（3） Work type: FHSS or fixed frequency emmision

（4） Output power:20～30dBm(Slight different in different counry and
      region)

（5） Read/writedistance: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:averate power<5W.

（10） Work temperature:-10℃~+55℃.

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 Euipment installation

3.1 Connection

In application system, the connection between reader, antenna, tag and the controller (PC) as follow graphic shows:
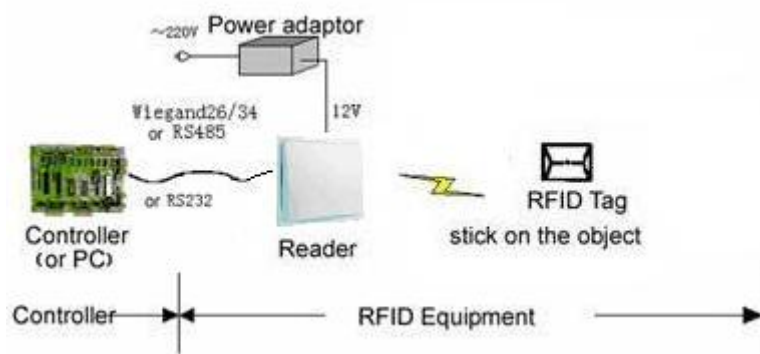
Graphic 3-1 Euipment connection

3.2 Connect reader and controller

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

(1) Wiegand port

With wiegand communication, you need to connect 3 lead pin of Data0 (WDATA1-1 and WDATA2-1), GND with 3 correspondence lead pin in controller. The wiegand port can only send the data.
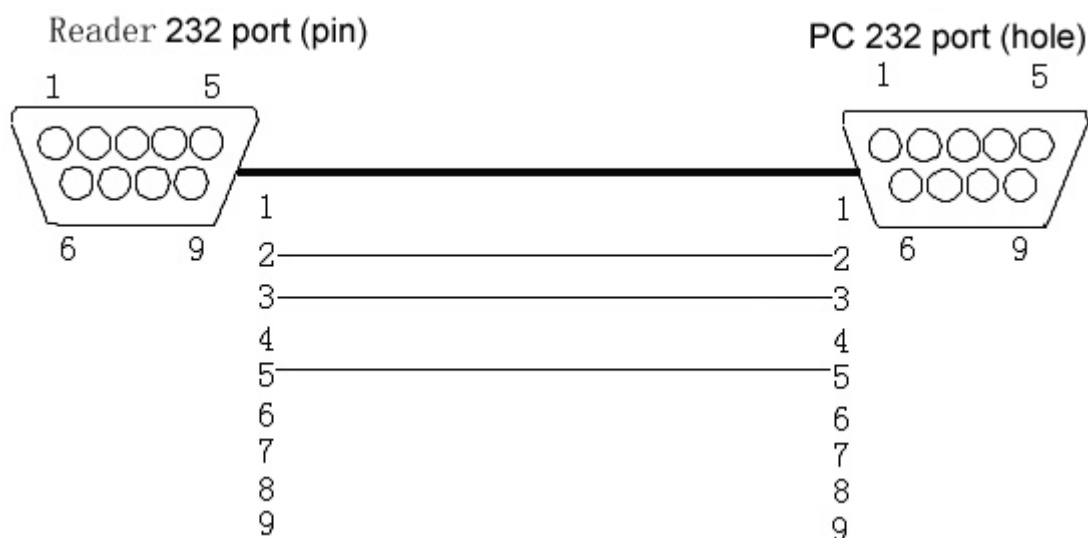
(2) RS485 port

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 porive the power.we will provide relevant power adaptor together with the reader. Connection as follow steps:

(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   Euipment 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 continuting 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 identifided object and then move the tag.if the reader can get the information of the tag,the buit-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