KYL-813 wireless switch input and output module user manual

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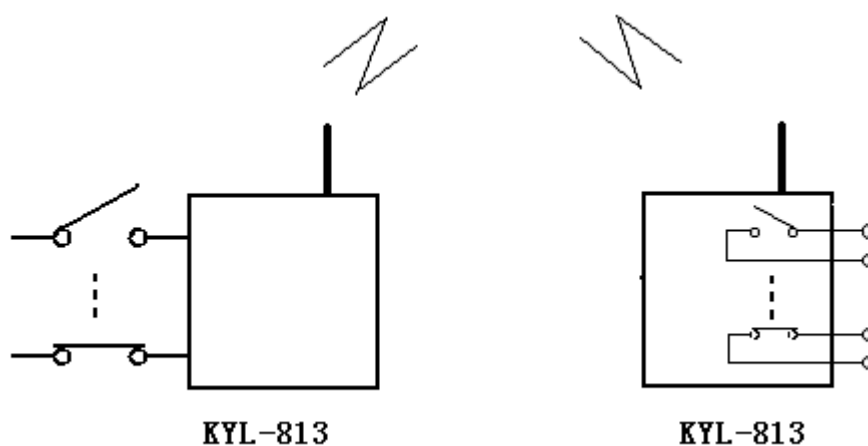**E_mail:**   sales01@rf-data.com
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KYL-813 wireless ON-OFF input and output module is a wireless transmission equipment with four 2-channel DI and 2-channel relay DO.

（Ⅰ）Function

2 channel ON-OFF DI and DO transmitting timely. The 2 channel switching condition for the transmitting equipment can be output timely at the receiver equipment. That is the switching condition for the transmitting equipment is shut down, while the switching condition will be shut down at the receiver equipment; and the transmitting equipment is disconnect, while the receiver equipment will disconnect. The following is the schematic diagram of the ON-OFF transmission.

KYL-813   KYL-813

Schematic diagram

(Ⅱ)Performance Index

Characteristic	Range	Typical value	Remarks
Power supply	9-15V	12V	Output current>=500mA
Transmission distance	1-3km	_	Open line- of- sight
Output No.	-	2 output	-
Input type1	-	Dry contact	-
Input typeⅡ	DC0-24V	Low voltage<1V	Low voltage -switch on
		High voltage>4.5V	High voltage-switch off
Transmission current	_	300mA	-
Receiving current	-	30mA	-
Size	-	100mm*58mm*40mm	-

（Ⅲ）**Feature:**

1、 2-channel coupler isolated inputs, high reliability and stability.

2、 2-channel relay dry contact output, contact current is 30V 1A.

3、 collocate wireless data transmission module with 2-3km.
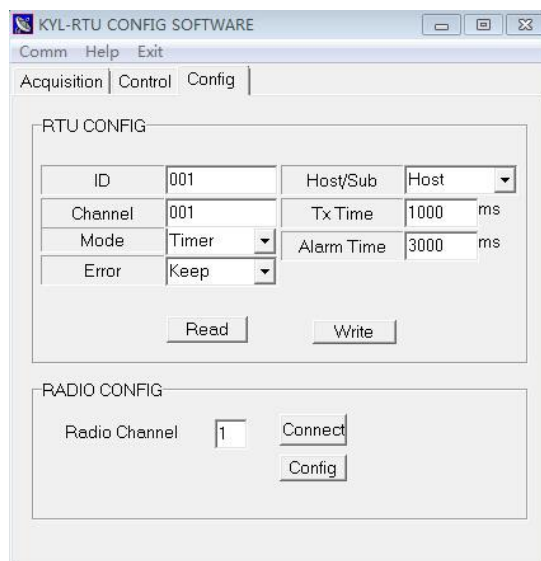
Working frequency 433MHz(400-470MHz);

RF power: 500mW;

Receive sensitivity: -123dBm

4、 Receive current: 30mA; transmitting current: 300mA

5、 Power supply: DC 12V

6、 Feature of the output contact as below follows: (the parameters

of the relay inside):

Rating	Nominal switching capacity (resistive load)	1 A 30 V DC 0.5 A 125 V AC	1 A 30 V DC
	Max. switching power (resistive load)	30 W, 62.5 V A	30 W
	Max. switching voltage	110 V DC, 125 V AC	110 V DC
	Max. switching current	1 A	
	Min. switching capacity ※1	10 µA 10 mV DC	
Nominal operating power	Single side stable	140 mW (3 to 12 V DC) 200 mW (24 V DC) 300 mW (48 V DC)	280 mW (3 to 24 V DC) 400 mW (48 V DC)	200 mW
	1 coil latching	100 mW (3 to 12 V DC) 150 mW (24 V DC)	200 mW	—
	2 coil latching	200 mW (3 to 12 V DC) 300 mW (24 V DC)	400 mW	—
Expected life (min. operations) (1 A 30 V DC resistive)	Mechanical (at 180 cpm)	10^8	10^7
	Electrical (at 20 cpm)	1 A 30 V DC resistive	2×10^5	10^5
		0.5 A 125 V AC resistive	10^5	—

（Ⅲ）Parameter Setting

Pic 1, parameter setting software

As the picture shows:

User can set paramenter via this software. The programmable parameter

includes:

1) module's ID: from 000-255

2) Working channel: there are 16 channel default. Each channel corresponds to different frequency.

3) work mode: Timer/Triggered/acquisit mode.

4)Host/Slave: it's affective under Timer mode,host sends data according to the set interval,slave receives data and feedbacks to host.
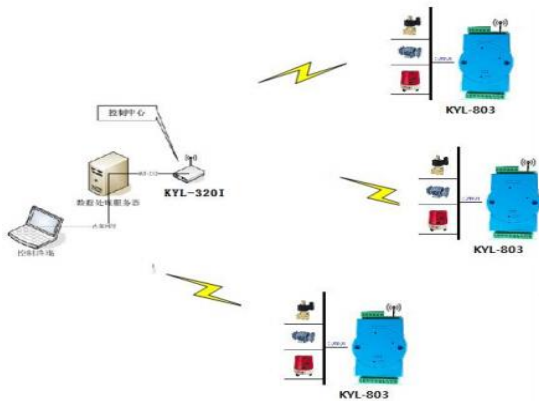
（Ⅴ）How to use the software

1) connect the module with PC, activate the software KYL-81X. Exe to choose correct COM.

2) power supply for the module. If everything OK, module shows connect OK. Then user can change parameter according to requirements.

（Ⅵ）How to use the software

1)assemble the module with antenna;

2)set the communication parameter through our standard program cable according to requirements,including:

A. work mode:when it's one-to-one use,please choose timer mode or triggered mode.

B.work channel:set the same channel for the modules that communicate with each other,channels 1-16 are available to set.

C. Module ID. When it's one-to-one use,ID of two module that communicate with each other must be the same;when it's acquisition mode, different module must be set different ID,the host can query different module according to ID.

D. When it's timer mode, you still need to set Host/Sub,Tx Time,Error，Alarm time.

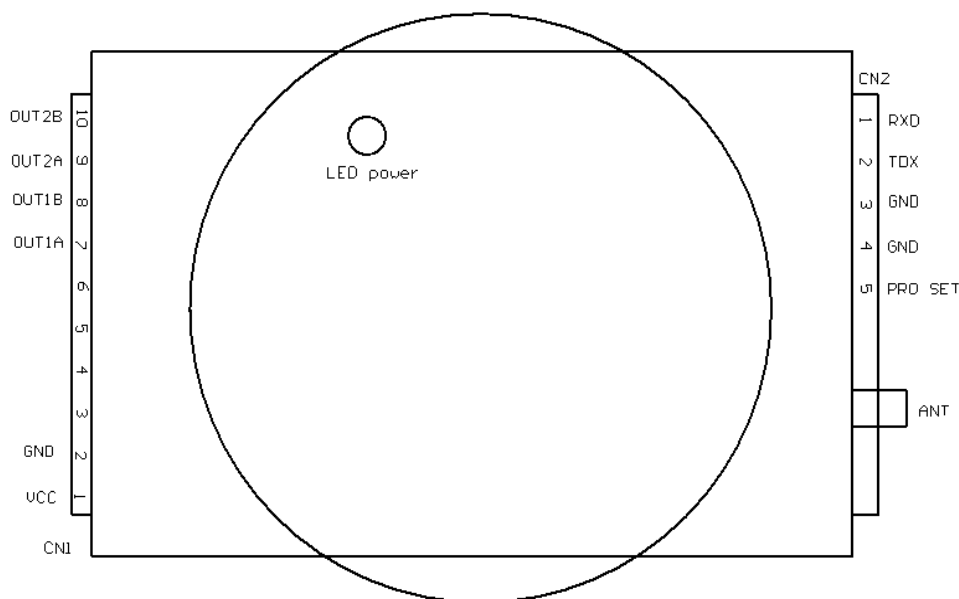3)disconnect the program cable,connect the KYL-813,input switch and output switch devices.

4)Connect power (9-15v)and turn on the power switch,the output current must be at least 500mA.

5)If KYL-813 is under acquisition mode, then user host only needs to connect 1 wireless module,then send acquisition command through wireless module,as the following picture shows. Under acquisition mode, users can revise the parameter of KYL-813 through wireless sending command.

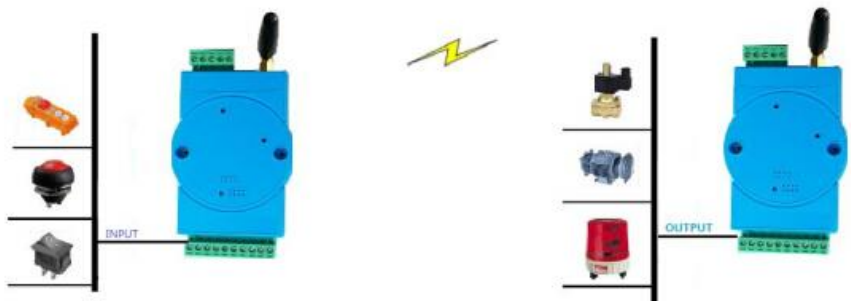6)Wireless remote acquisit and control test.

（Ⅷ）**Exterior sketch map**

(Ⅸ)Connection Definition

Connection name	Pin No.	Definition	Remarks
CN1			
1	VCC	DC 12V (9-15V)	
2	GND	Power supply	
3	GND		
4	INT1		
5	GND		
6	INT2		
7	OUT1A	First channel relay output A contact	When the relay shutting，A and B connected
8	OUT1B	First channel relay output B contact	
9	OUT2A	Second channel relay output A contact	When the relay shutting，A and B connected
10	OUT2B	Second channel relay output B contact	
CN2			
1	RXD	Receiving data	Enter the setting mode for the module, and the function of the interface will be effective
2	TXD	Transmitting data	
3	GND	Ground of the signal	
4	GND	Ground of the signal	Programme controlling，low level.Connect the signal ground, then will enter the programme controlling mode
5	PRO SET	Programme controlling	
6	NC		
ANT	ANT	Antenna port	

(Ⅹ) Application Example

1,One to one transmitting

1)work mode set Timer or triggered mode, 1 set switch/button can control alert light or engine several miles away.

2)Sending input signal can be 1 set dip switch,button or high/low level voltage

3)Receiving output signal can drive alert light,moter,engine,electromagnetic valve or PLC.

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4)Two KYL-813 communicate with each other,its ID and work channel must be the same.
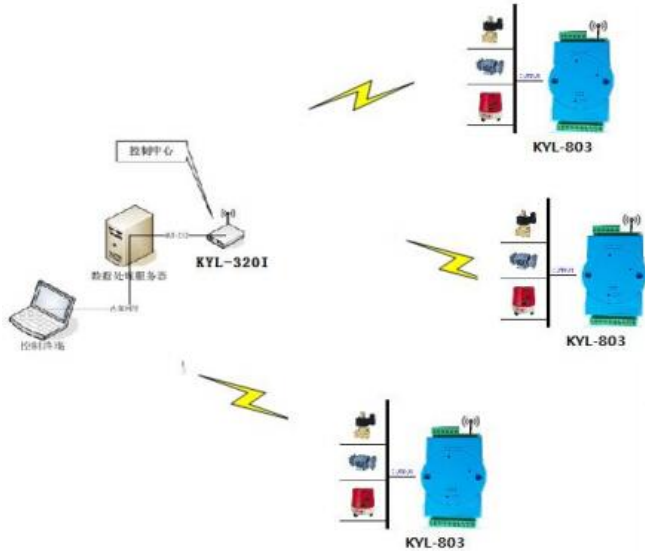
2,Modbus host/slave networking mode

1)slave KYL-813 set acquisition mode,

2)Host is a PC or a touch screen that connects wireless transmission module
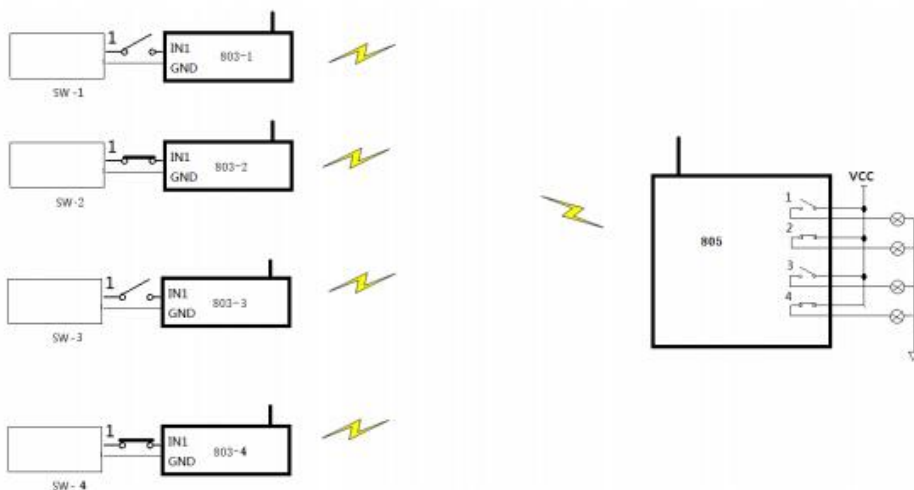
3)Host and KYL-813 use the same Modbus RTU protocol

4)Host must have the same work channel as KYL-813

The above picture is acquisition mode networking schematic diagram

(Ⅺ) Other Applications of KYL-813

Except ont-to-one transmission and one host to several slaves control under acquisition mode,KYL-813 with other switch transmission modules(KYL-815 and KYL-818) can achieve centralized control and centralized output etc.(those functions must be assigned before purchasing)

The above picture shows 4pcs KYL-813(803) control 1pc KYL-815(805)