

KYL-816 Analog Wireless Acquisition module Use Manual



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KYL-816 Analog Wireless Acquisition Module has the function for analog acquisition and wireless transmission, do not re-empolder, it can achieve the function for wireless remote controlling and collecting data with a low cost. It is industrial design and has a wide work temperature so that can meet client's requirement for whole day using. Besides, the RF adopts narrowband FM and has high anti-jamming. Accord with EN300220.

I、 Feature:

- 1、 Analog: two channels 0-5V voltage input and two channels 0-5V voltage output
- 2、 Power supply: 12-14V, providing protection for power supply in reverse
3. There are power monitor circuit and watch dog circuit for the CPU, and ensure that this module can operate at adverse circumstances.
- 4、 With the indicator light of power supply, operation, receive and transmit.
- 5、 Can work by Modbus RTU protocol.

II、 Technical parameters

- 1、 Analog: 12BIT ADC; Precision: 0.5% ; input type: voltage 0—5V.
- 2、 Impedance Input: 20M Ω .
- 3、 Frequency: 433MHz
- 4、 Modulation: FSK
- 5、 Output power: \leq 500mW
- 6、 Transmit current: $<$ 350mA
- 7、 Receive sensitive: -123dBm (1200bps)
- 8、 Receive current: $<$ 50mA
- 9、 Antenna impedance: 50 Ω
- 10、 Communication distance: Above 3Km (BER=10-5@1200bps, in the open air)

11、 Work temperature: $-35^{\circ}\text{C} \sim +75^{\circ}\text{C}$ (industrial)

12. Size: 13.8*9.0*4.0CM

III、 Instruction of the indicator light

- 1、 Indicator light for the power supply: power supply indication;
- 2、 Indicator light for working: indication for the equipment working in gear, the bicker period is 2S when the equipment work in gear.
- 3、 Indicator light for transmit: indication for data transmitting.
- 4、 Indicator light for receive: indication for data receiving.

IV、 Use method

1、 The use method of KYL-816

1)、 point to point transmission mode initiatively:

The transmission equipment will acquisition voltage analog signal for 0-5V timing, code and wireless transmit; and the receiving equipment receive, code and output voltage analog signal for 0-5V. That is the input voltage from the receiving equipment will be changed with the output voltage from the transmission equipment.

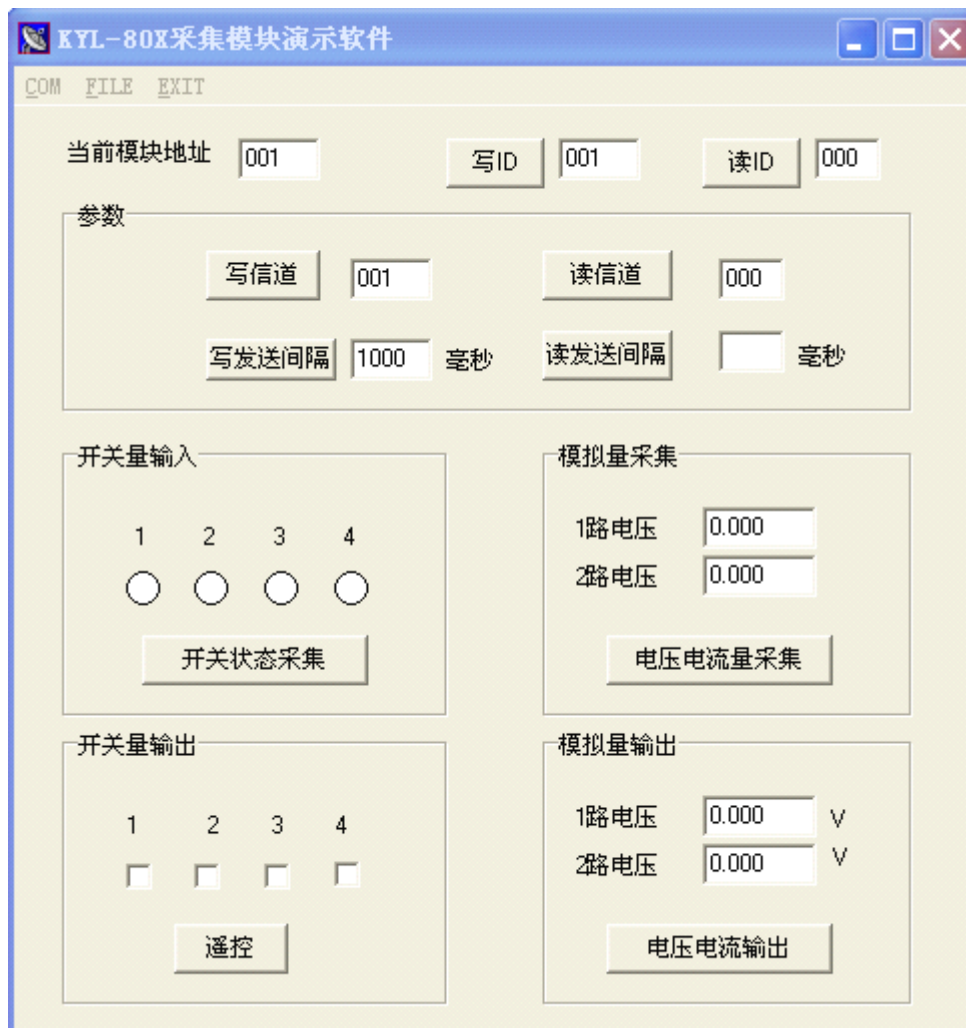
The timing transmission interval can set from 10mS to 60S. When it is set as "000", KYL-816 acquisition module just as a receiving equipment, it will not transmit any data; When it is not set as "0", KYL-816 acquisition module as transmission equipment, it will transmit acquisition data according to the time interval which has been set. But the minimum transmission interval is relative with the transmitting distance, so please make out before order.

2)、 Principal and subordinate acquisition mode.

When the receive equipment don't need show the input voltage from the transmission equipment, but need transmit the acquisition data to the PC or other terminal equipment, now the system will use the Principal and subordinate mode. The

Principal equipment will be the PC or other terminal equipment which will connect with a wireless transceiver module(such as KYL-320I); And the subordinate equipment will be a acquisition unit which have a address code with the number of 0-255(the timing transmission interval for the KYL-816 set as"0").Under this mode, the wireless transceiver module will transmit acquisition command so that the principal equipment will charge 255 acquisition module .

2、Parameters setting



Picture one : Software for setting parameter

As the above picture shows:

Clients can set some parameters by the KYL-80X software, including the below parameters:

- 1) Module address: from 000 to 255;
- 2) Channel: total eight channels, each channel have different frequency;
- 3) Transmission interval: it will be in effect only for the module under the point to point transmission mode. The minimum interval will be different from the baud rate of the module. When it set as “000”,the module work at the subordinate mode and will receive or output data.

3、 Use of the software

- 1) Connect the module with the PC and open the software of KYL-80X, then choose the right port.
- 2) Electrify, if connect success, the software will show “ read success”. Then “read ID”, read success, then can change the parameter.

Note:

- 1) When set or read parameter, first need input the appointed ID that is the current module address; also can know the current module address by “read ID”, the “ write ID” command can change the current module address.
- 2) When set the channel, it can't exceed the max number channel for eight channels. And the two module will be set the some channel, or they will not communicate.
- 3) Also can change the parameter by wireless. Connect the wireless data module with the PC by UART port(not the UART port of the KYL-816),then can change the parameter of the KYL-816.
- 4) Under the point to point mode, many double equipment work at the same time, different double equipment should be set different channel.



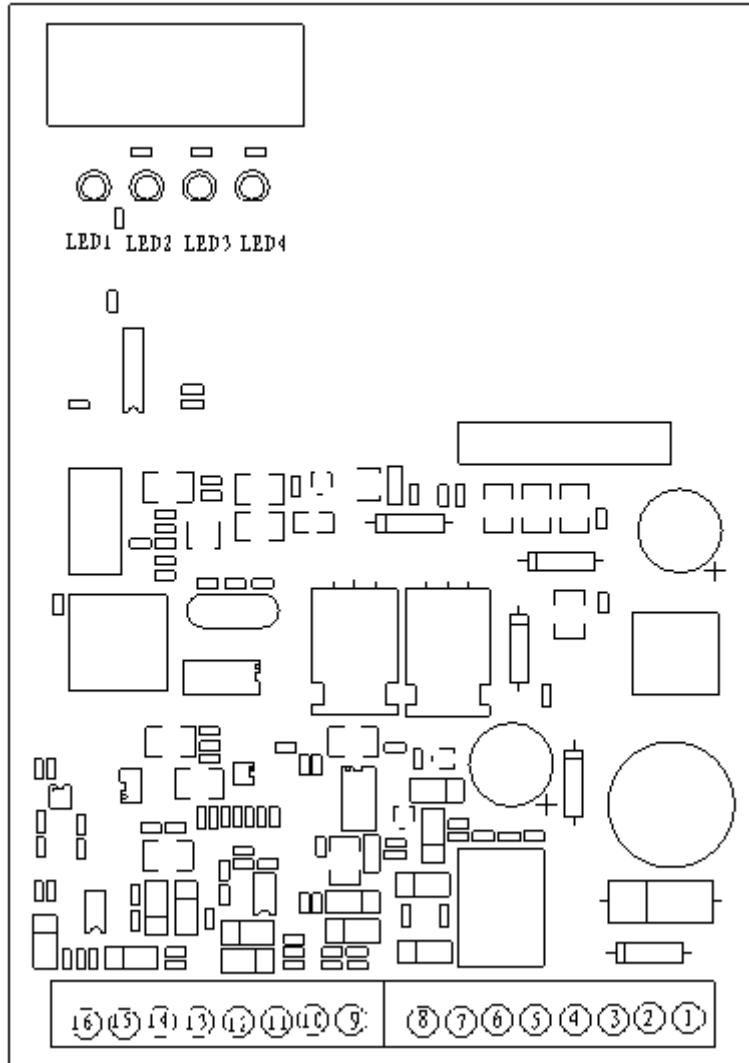
Picture two: connection for setting parameter

V: Connection Definition

1、Pin Definition

Pin No.	Function	Definition	Remarks
1	VCC (Power supply input)	DC: 12-24V	
2	GND	Grounding of power supply	
3	ON-OFF output	power controlling output	
4	GND	(5V) Signal Ground	
5	Relay no power output		
6	Relay no power output		
7	NC	-	
8	GND	Signal Ground	
9	Second channel analog voltage		
10	GND	Signal Ground	
11	First channel analog voltage input		
12	GND	Signal Ground	
13	Second channel analog voltage		
14	GND	Signal Ground	
15	First channel analog voltage		
16	GND	Signal Ground	

六、 Connection sketch map



Picture three: Connection sketch map