

S7206

Analog Data Acquisition Module

User's Manual



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S7206 zigbee analog input, relay output module is a high quality and low cost analog data acquisition module. S7206 has total 4 channels input, 2 channels relay output and 1 channel 0-5V analog output. Each input has lightning and surge protection, the inputs can be any combination of 0-5V,0-10V,4-20mA,dry contact and NTC 10K thermistor. Output use RS232 or ZIGBEE wireless. Zigbee can realize the point-to-point, point-to-multipoint, multipoint-to-multipoint data transmission, can form a star, peer to peer and mesh network structure. Both of Rs232 and Zigbee using the industry standard Modbus protocol.

Highlights:

- Surge-protected analog inputs with 16-bit resolution and 100k sample speed ADC
- Input can be any combination of 0-10V,0-5V,4-20mA,NTC 10K thermistor and dry contact
- Reliable Zigbee can up to 2000 meters communication
- The channel number is configurable, can be set up from 1 channel through 4 channel, improve sample rate for small count analog input
- Standard ModBus/RTU protocol allows for up to 254 unique devices on one network
- A lot of spare FLASH can be used to store user's parameters
- RS232 or ZIGBEE for optional
- Can detect RS232 or ZIGBEE automatically, no need jumper
- You can tell us your requirement. we will update our firmware even after you received the modules ,you can update your modules through Zigbee or RS232 .

Application:

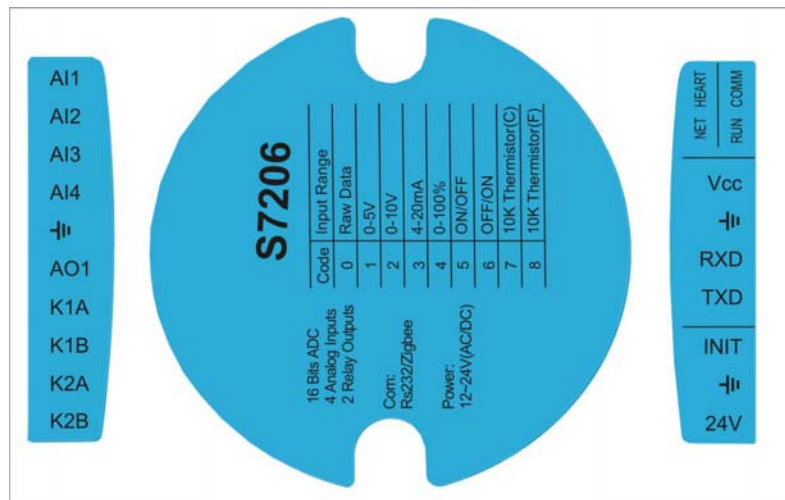
- ✓ Remote data acquisition
- ✓ Process monitoring
- ✓ Industrial process control
- ✓ Energy management
- ✓ Supervisory control
- ✓ Security systems
- ✓ Laboratory automation
- ✓ Building automation
- ✓ Product testing
- ✓ Direct digital control

Technical data:

Resolution-----16-bit
 Input channel number-----4
 Input range-----0~5V,0~10V,4~20mA,10K thermistor, dry contact
 Input protection-----Lightning, static
 Accuracy-----±0.1%
 Zero drift-----±3uV/°C
 Sample rate-----95 sample/second(8 channels),710 sample/second(1 channel)
 Relay output number-----2
 Relay outputs-----2 dry-contact [outputs*5amps@120VAC](#)

Analog output number-----1
 Analog outputs-----0-5V($\pm 3\%$)
 Output BUS-----RS232/Zigbee(detect automatically)
 Output Protection-----Lightning,static
 Power input-----12~24V(AC/DC)
 Power consumption-----<0.6W
 Ambient temperature:
 Operation-----0~70℃(32~158°F)
 Storage-----20~85℃(-4~185°F)
 Ambient humidity-----10%~90%RH
 Material,enclosure-----Flame proof plastic
 Enclosure rating-----IP31
 Colour-----Ice Blue
 Size-----100*69*25 mm

Wiring diagram and description:



1、Input wiring

AI1:Channel 1 signal input

AI2:Channel 2 signal input

AI3:Channel 3 signal input

AI4:Channel 4 signal input

GND: common for all signal, connect together internal

2、Analog output wiring

AO1:0-5V analog output

3、Relay output

K1A,K1B:Relay 1 output

K2A,K2B:Relay 2 output

4、 Power wiring

DC: 24V, positive end
 GND, negative end
 AC: 24V, hot line
 GND, neutral line

5、 RS232 wiring, here is TTL level, we will provide RS232 to TTL cable

TXD:TXD of MCU,TTL

RXD:RXD of MCU,TTL

GND: System ground

VCC: 5V power supply for Rs232 cable, can provide 100mA current for user sensor.

6、 Reset parameter to default

Put the jumper between GND and INIT ,the following parameters back to default.

- Address of device: 254
- Baudrate:19200
- Filter coefficient:10

7、 LEDs indication

Heart: Flashing when the system is working

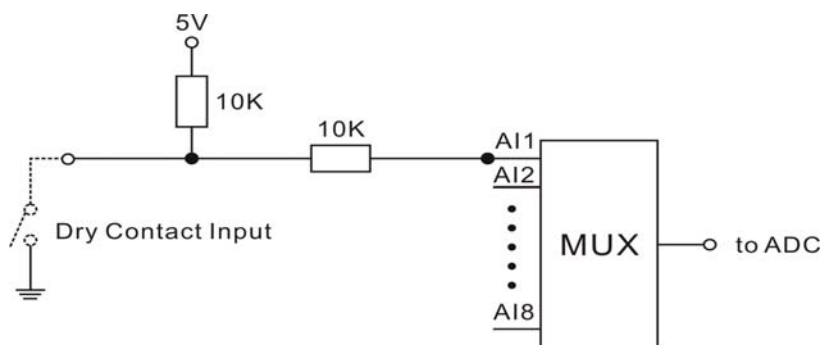
Comm: Flashing when serial port communication

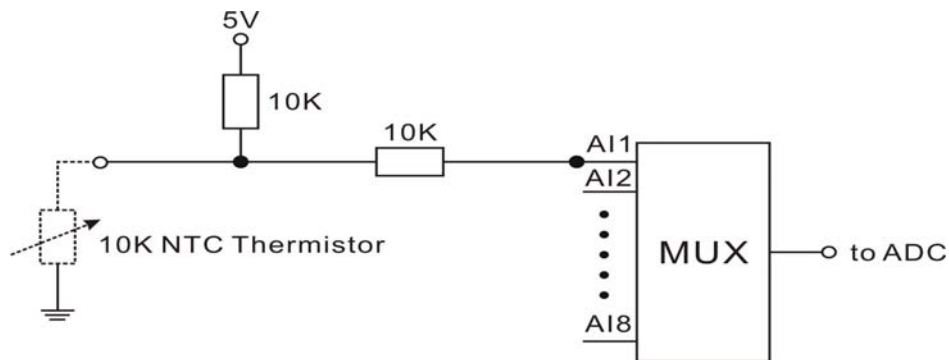
NET: Will flash in Configuration mode, keep lighting when enter a wireless network successfully

RUN: Will flash in Configuration mode. Will flash when Zigbee module in working mode.

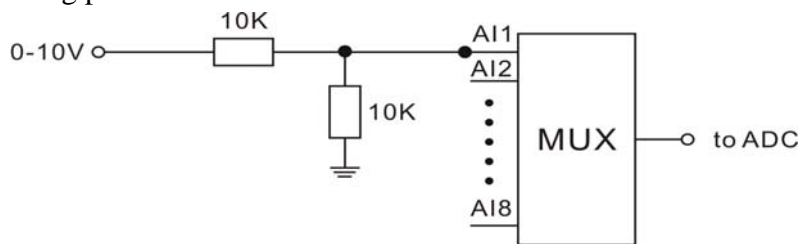
Jumpers Description:

A: Jumpers set at 0-5V ,the input can be pulse ,frequency, dry contact , open-collector output, and NTC 10k thermistor, internal schematic refer to the following picture,.Water meter with reed and hall output signal can attach on input.

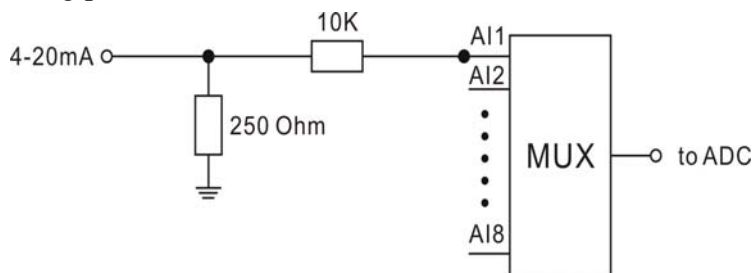




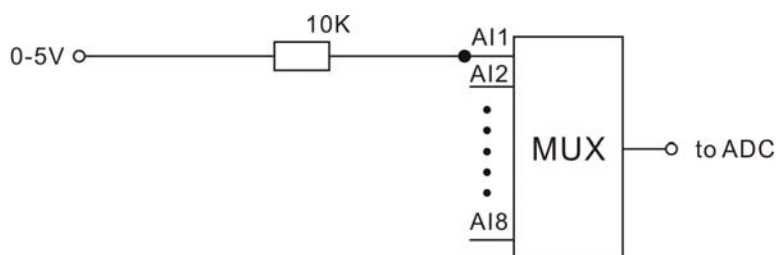
B: Jumpers set at 0-10V, the input can be 0 to 10V voltage input, refer to the following picture.



C: Jumpers set at 4-20mA, the input can be 4 to 20mA current input, see the following picture.



D: No jumpers, input is 0 to 5V voltage input, the input resistance can up to 1.2M ohms.



Modbus register list: **Note: * means default value**

Address	Bytes	Value range		Description	Property																		
		Min	Max																				
0-3	4	1	4294967295	Serial number,unique for each product	R																		
4-5	2	100	65535	Firmware version number	R																		
6	1	1	254	Device address	R/W																		
7	2	7206	7206	Product model	R																		
8	1	1	255	Hardware version	R																		
9	2	12	384	Baudrate setting	R																		
				<table><tr><th>Value</th><th>Buadrate</th></tr><tr><td>12</td><td>1200</td></tr><tr><td>24</td><td>2400</td></tr><tr><td>48</td><td>4800</td></tr><tr><td>96</td><td>9600</td></tr><tr><td>192</td><td>19200</td></tr><tr><td>384</td><td>38400</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>		Value	Buadrate	12	1200	24	2400	48	4800	96	9600	192	19200	384	38400				
				Value		Buadrate																	
				12		1200																	
				24		2400																	
				48		4800																	
				96		9600																	
				192		19200																	
				384		38400																	
For example:write 96 to register 9 to set the baudrate 9600.																							
10-99	-	-	-	Reserved	-																		
100	2	0	65535	Channel 1 reading ,the units decided by register 109	R/W																		
101	2	0	65535	Channel 2 reading ,the units decided by register 110	R/W																		
102	2	0	65535	Channel 3 reading ,the units decided by register 111	R/W																		
103	2	0	65535	Channel 4 reading ,the units decided by register 112	R/W																		
104	1	0	3	Output registers. Each bit correspond to one output.Bit0 correspond to output1.Bit1 correspond to output 2.0 = open contact,1 = close contact.	R/W																		
105	2	0	500	Analog output,0 means 0V output and 500 means 5V output.	R/W																		
106	1	0	15	Enable/disable the corresponding channel, 0 = disable,1 = enable.Bit0 correspond to channel 1 and Bit3 correspond to channel 4.	R/W																		

Continue...

Address	Bytes	Value range		Description	Property
		Min	Max		
107	1	0	8	Channel 1 units setting.0* = raw AD sample reading,1 = 0~5V(real value = the current reading / 100,for example, the current reading is 288,the real voltage is 288/100 = 2.88V),2 = 0~10V(real value = current reading / 100),3 = 4~20mA(real value = the current reading / 100),4 = 0~100%,5 = ON/OFF,6 = OFF/ON,7 = 10K thermistor, Celsius(real value = current reading / 10),8 = 10K thermistor, Fahrenheit(real value = current reading / 10).	R/W
108	1	0	8	Channel 2 units setting. Parameter same with register 107.	R/W
109	1	0	8	Channel 3 units setting. Parameter same with register 107.	R/W
110	1	0	8	Channel 4 units setting. Parameter same with register 107.	R/W
111	1	0	100	Channel 1 Filter factor,0 = no filter,10* is default.	R/W
112	1	0	100	Channel 2 Filter factor,0 = no filter,10* is default.	R/W
113	1	0	100	Channel 3 Filter factor,0 = no filter,10* is default.	R/W
114	1	0	100	Channel 4 Filter factor,0 = no filter,10* is default.	R/W
115	2	0	65535	In calibration mode, channel 1 sample data as input 0 volts	R/W
116	2	0	65535	In calibration mode, channel 1 sample data as input is full scale	R/W
117	2	0	65535	In calibration mode, channel 2 sample data as input 0 volts	R/W
118	2	0	65535	In calibration mode, channel 2 sample data as input is full scale	R/W
119	2	0	65535	In calibration mode, channel 3 sample data as input 0 volts	R/W
120	2	0	65535	In calibration mode, channel 3 sample data as input is full scale	R/W
121	2	0	65535	In calibration mode, channel 4 sample data as input 0 volts	R/W
122	2	0	65535	In calibration mode, channel 4 sample data as input is full scale	R/W
123	1	1	100	Serial port respond delay, the units 2.5ms.default is 2.	R/W
124	2	0	65535	Zigbee module address	R/W
125	1	0	255	Net ID, the default is 255	R/W

Continue...

Address	Bytes	Value range		Description	Property
		Min	Max		
126	1	1	7	Net type,01 = mesh network, 02 = star network, 07 = peer to peer network.. default is 02.	R/W
127	1	1	4	Module type,01 = center module, 03 = router module, 04 = terminal module. The default is router module.	R/W
128	1	1	3	Transfer mode. 01 = broadcast, 02 = master-slave, 03 = peer to peer. Default is 02.	R/W
129	1	0	15	Signal channel, recommend is 4,9,14,15.	R/W
130	1	0	1	Send parameters to Zigbee module.1 = send.	R/W
131	1	0	1	Get parameters from Zigbee module. 1 = get.	R/W
132	2	0	65535	High word for input 1 pulse counter	R/W
133	2	0	65535	low word for input 1 pulse counter	R/W
134	2	0	65535	High word for input 2 pulse counter	R/W
135	2	0	65535	low word for input 2 pulse counter	R/W
136	2	0	65535	High word for input 3 pulse counter	R/W
137	2	0	65535	low word for input 3 pulse counter	R/W
138	2	0	65535	High word for input 4 pulse counter	R/W
139	2	0	65535	low word for input 4 pulse counter	R/W
140	2	200	10000	Frequency for input1,resolution is 0.1Hz.2000 means 200.0Hz	R
141	2	200	10000	Frequency for input2,resolution is 0.1Hz.2000 means 200.0Hz	R
142	2	200	10000	Frequency for input3,resolution is 0.1Hz.2000 means 200.0Hz	R
143	2	200	10000	Frequency for input4,resolution is 0.1Hz.2000 means 200.0Hz	R