

S5200
Analog Data Acquisition Module
User's Manual



SHJ
Sales:shjelectronic@gmail.com
Support:shjsupport@gmail.com

S5200 is a high quality and low cost analog data acquisition module with 10 relay normal open outputs. S5200 has total 8 channels input, each input has lightning and surge protection, has total 10 relay outputs. Output is RS485 BUS with surge protection, to reduce interference by serial port communication, the output is isolated by high speed opto-couplers. The modules are slave devices that can be easily controlled via the RS485 serial interface using the industry standard Modbus protocol.

Highlights:

- Surge-protected analog inputs with 16-bit resolution and 100k sample speed
- Input can be any combination of 0-10V, 0-5V, 4-20mA, NTC 10K thermistor and dry contact
- 0-300Hz pulse input acceptable
- 10 channel normal open relay outputs, each output channel can be set AUTO/OFF/HAND by a 3-states switch
- Surge-protected and isolated RS485 ensure reliability
- The channel number is configurable, can be set up from one channel through eight channels, improve sample rate for small count analog input
- Standard ModBus protocol allows for up to 254 unique devices on one RS485 network
- A lot of spare FLASH can be used to store user's parameters
- Isolated RS485, non-isolated RS485, RS232 for optional
- Can update your firmware via ISP through RS485 network

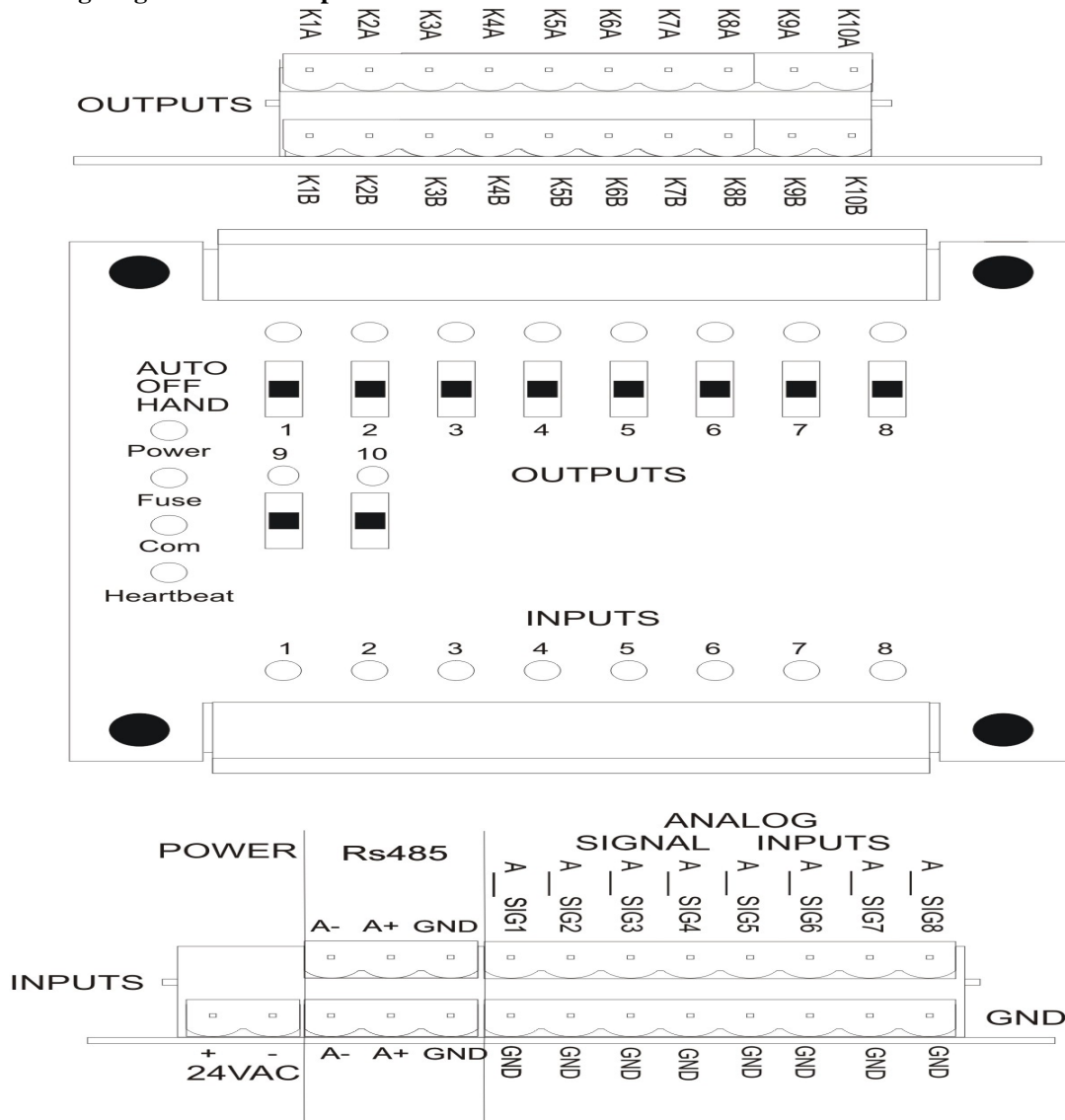
Application:

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

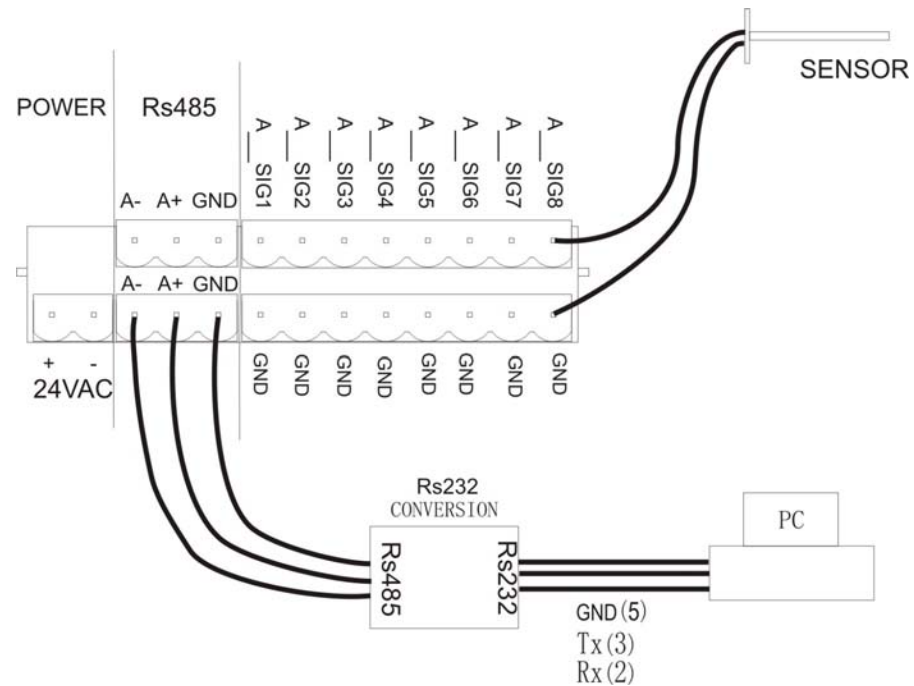
Technical data:

Resolution-----16-bit
 Input channel number----- 8
 Input range-----0~5V, 0~10V, 4~20mA, 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)
 Output channel number-----10
 Outputs-----10 dry-contact outputs*0.5amps@120VAC
 Output BUS-----RS485(opto-couplers isolated)

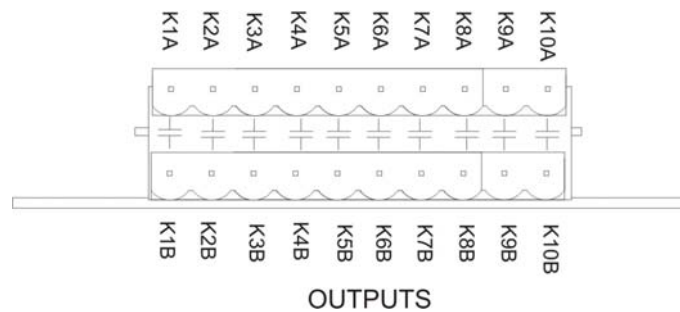
Output Protection-----	Lightning,static
Power input-----	12~24V(AC/DC)
Power consumption-----	<0.6W
Ambient temperature:	
Operation-----	-20~85℃(-13~185°F)
Storage-----	-40~100℃(-40~212°F)
Ambient humidity-----	10%~90%RH
Material,enclosure-----	Flame proof plastic
Enclosure rating-----	IP31
Colour-----	White/Black
Size-----	115*90*43 mm

Wiring diagram and description:

Top view figure



Inputs wiring diagram



Outputs wiring diagram

Inputs

Each input can be jumper-configured in 1 of 4 ways

- ✧ 0-5V signal
- ✧ 0-10V signal
- ✧ 0-20mA signal
- ✧ Dry contact, 10K thermistor

Each input has a corresponding LED which will light up if the value of input is greater than 50% full range of input.

Outputs

The state of each output is determined by its corresponding switch position. The switches have 3 states-‘HAND’, ‘OFF’, and AUTO’. When switched to ‘HAND’, the corresponding relay output will be switched on contacts closed .When switched to ‘OFF’, the relay output will be set to open contact. When switched to ‘AUTO’, relay outputs be determined by the value stored in the corresponding MODBUS register, 0 = open contact and 1 = close contact.

The output registers are stored in RAM, thus the contents of each register will be lost upon power-off. Each output has a corresponding LED which will be light up if the relay is closed.

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	5200	5200	Product model	R																			
8	1	1	255	Hardware version	R																			
9	2	12	1152	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>576</td><td>57600</td></tr><tr><td>1152</td><td>115200</td></tr></table>		Value	Buadrate	12	1200	24	2400	48	4800	96	9600	192	19200	384	38400	576	57600	1152	115200	
				Value		Buadrate																		
				12		1200																		
				24		2400																		
				48		4800																		
				96		9600																		
				192		19200																		
				384		38400																		
				576		57600																		
1152	115200																							
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 110	R/W																			
101	2	0	65535	Channel 2 reading ,the units decided by register 111	R/W																			
102	2	0	65535	Channel 3 reading ,the units decided by register 112	R/W																			
103	2	0	65535	Channel 4 reading ,the units decided by register 113	R/W																			
104	2	0	65535	Channel 5 reading ,the units decided by register 114	R/W																			
105	2	0	65535	Channel 6 reading ,the units decided by register 115	R/W																			

Continue...

Address	Bytes	Value range		Description	Property
		Min	Max		
106	2	0	65535	Channel 7 reading ,the units decided by register 116	R/W
107	2	0	65535	Channel 8 reading ,the units decided by register 117	R/W
108	2	0	1024	Output registers.each bit correspond to one output.Bit0 correspond to output1.0* = open contact,1 = close contact.3-states switch should switch to 'AUTO'.	R/W
109	1	1	255	Enable/disable the corresponding channel,0 = disable,1* = enable.Bit0 correspond to channel 1 and Bit7 correspond to channel 8.For example,enable channel 1,2 and disable channel 3 through 8,write 0x03 to register 109.	R/W
110	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
111	1	0	8	Channel 2 units setting.Parameter same with register 110.	R/W
112	1	0	8	Channel 3 units setting.Parameter same with register 110.	R/W
113	1	0	8	Channel 4 units setting.Parameter same with register 110.	R/W
114	1	0	8	Channel 5 units setting.Parameter same with register 110.	R/W
115	1	0	8	Channel 6 units setting.Parameter same with register 110	R/W
116	1	0	8	Channel 7 units setting.Parameter same with register 110.	R/W
117	1	0	8	Channel 8 units setting.Parameter same with register 110.	R/W
118	1	0	100	Channel 1 Filter factor,0 = no filter,10* is default.	R/W
119	1	0	100	Channel 2 Filter factor,0 = no filter,10* is default.	R/W
120	1	0	100	Channel 3 Filter factor,0 = no filter,10* is default.	R/W
121	1	0	100	Channel 4 Filter factor,0 = no filter,10* is default.	R/W

Continue...

Address	Bytes	Value range		Description	Property
		Min	Max		
122	1	0	100	Channel 5 Filter factor,0 = no filter,10* is default.	R/W
123	1	0	100	Channel 6 Filter factor,0 = no filter,10* is default.	R/W
124	1	0	100	Channel 7 Filter factor,0 = no filter,10* is default.	R/W
125	1	0	100	Channel 8 Filter factor,0 = no filter,10* is default.	R/W
126	2	0	65535	In calibration mode, channel 1 sample data as input 0 volts	R/W
127	2	0	65535	In calibration mode, channel 1 sample data as input is full scale	R/W
128	2	0	65535	In calibration mode, channel 2 sample data as input 0 volts	R/W
129	2	0	65535	In calibration mode, channel 2 sample data as input is full scale	R/W
130	2	0	65535	In calibration mode, channel 3 sample data as input 0 volts	R/W
131	2	0	65535	In calibration mode, channel 3 sample data as input is full scale	R/W
132	2	0	65535	In calibration mode, channel 4 sample data as input 0 volts	R/W
133	2	0	65535	In calibration mode, channel 4 sample data as input is full scale	R/W
134	2	0	65535	In calibration mode, channel 5 sample data as input 0 volts	R/W
135	2	0	65535	In calibration mode, channel 5 sample data as input is full scale	R/W
136	2	0	65535	In calibration mode, channel 6 sample data as input 0 volts	R/W
137	2	0	65535	In calibration mode, channel 6 sample data as input is full scale	R/W
138	2	0	65535	In calibration mode, channel 7 sample data as input 0 volts	R/W
139	2	0	65535	In calibration mode, channel 7 sample data as input is full scale	R/W
140	2	0	65535	In calibration mode, channel 8 sample data as input 0 volts	R/W
141	2	0	65535	In calibration mode, channel 8 sample data as input is full scale	R/W
142	1	2	100	Delay before respond to serial port command, the units is 2.5ms.For example, value 3 will delay (3-1)*2.5ms=5ms	R/W

Address	Bytes	Value Range		Description	Property
		Min	Max		
143	2	0	65535	Show the 3-states switch status for switch 1 to 8. 00 = 'OFF',01='HAND',10='AUTO'.Bit15,bit14 correspond to switch1 ,bit1 and bit0 correspond to switch 8.	R
144	2	0	65535	Show the 3-states switch status for switch 9 and = 'OFF',01='HAND',10='AUTO'.Bit15,bit14 correspond to switch9 ,bit13and bit12 correspond to switch10.	R
145-154	2	0	65535	10 raw data for channel 1 in 100ms	R
155-164	2	0	65535	10 raw data for channel 2 in 100ms	R
165-174	2	0	65535	10 raw data for channel 3 in 100ms	R
175-184	2	0	65535	10 raw data for channel 4 in 100ms	R
185-194	2	0	65535	10 raw data for channel 5 in 100ms	R
195-204	2	0	65535	10 raw data for channel 6 in 100ms	R
205-214	2	0	65535	10 raw data for channel 7 in 100ms	R
215-224	2	0	65535	10 raw data for channel 8 in 100ms	R
225	1	0	1	0 = disable switch ; 1 = enable HOA switch, default is enable HOA switch.	R/W