

# **S3302I**

## **16 Channels Isolated Digital Input Module**

### **User's Manual**



**SHJ**

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**S3302I** has total 16 channels isolated wet contact or dry contact or open-collector input, Each input channel also can work as 32-bit counter input, the maximum frequency is 100Hz for total 16 channels and 1000Hz for only one channel. Output BUS is RS485 with has surge protection, to reduce interference by serial port communication, the output 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:

- Isolated digital inputs can be configured as counter input, total 32 bits
- Static and lightning protection for each input
- The input channel number is configurable, can be set up from 1 channel through 16 channels, improve frequency for small count input
- Surge-protected and isolated Rs485 ensure reliability
- 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
- You can tell us your requirement. we will update our firmware even after you received the modules ,you can update your modules via ISP through RS485 BUS.

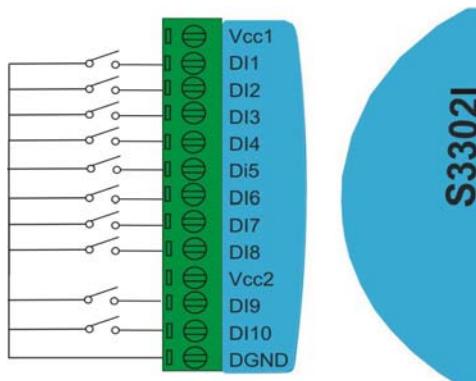
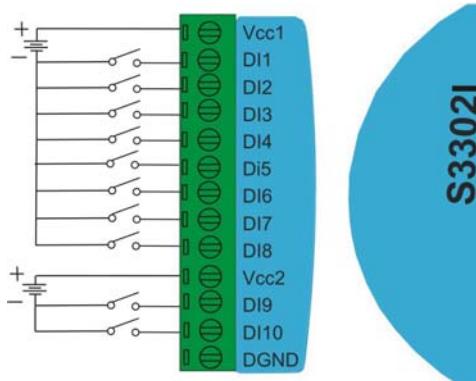
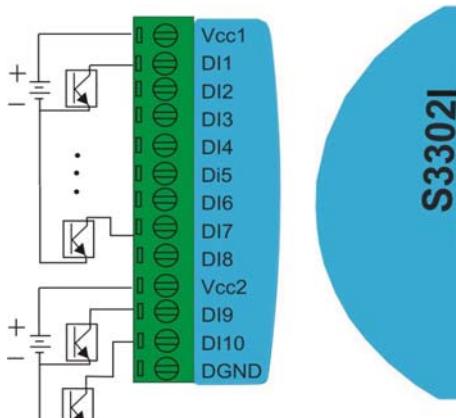
#### Application:

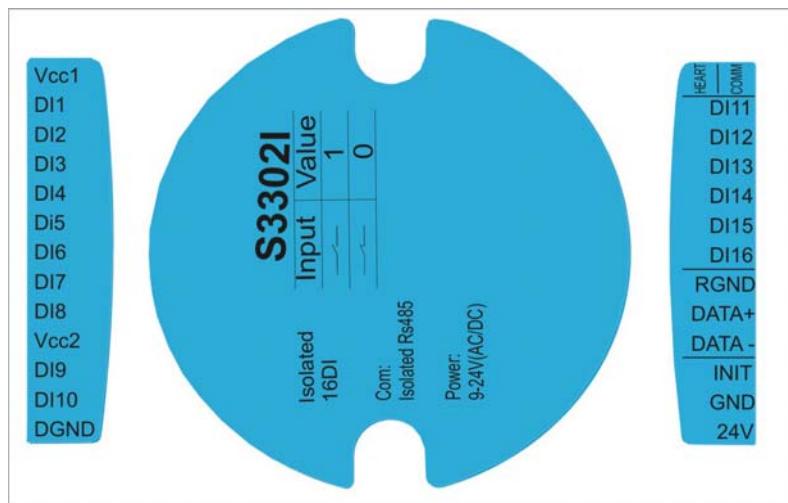
- ✓ Remote data acquisition
- ✓ Process monitoring
- ✓ Industrial process control
- ✓ Energy management
- ✓ Supervisory control
- ✓ Security systems
- ✓ Laboratory automation
- ✓ Building automation
- ✓ Product testing
- ✓ Direct digital control

#### Technical data:

Input channel number-----	16
Input range-----	+4V~+36V
Input signal-----	wet contact, dry contact, open-collector
Counter frequency-----	100Hz@16channels;1000Hz@1channel
Counter length-----	32-bit
Output BUS-----	RS485 with Standard Modbus protocol
Output Protection-----	Lightning,static
Power input-----	9~24V(AC/DC)
Power consumption-----	<0.6W
Ambient temperature:	
Operation-----	0~70°C(32~158°F)
Storage-----	-20~85°C(-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:****Figure 1 Dry contact input****Figure 2 wet contact input****Figure3 open-collector input**



**Figure 4 terminal definition**

#### 1、 Input wiring

Vcc1: Power source input for digital input 1 through 8

DI1 ~ DI8: Digital input channel 1 through 8

Vcc2: Power source input for digital input 9 through 16

DI9~DI16: Digital input channel 9 through 16

DGND: common for digital input 1 through 16, available in dry input mode

#### 2、 Power wiring

DC: 24V, positive end

GND, negative end

AC: 24V, hot line

GND, neutral line

#### 3、 RS485 wiring

DATA+: connect to A end of RS485

DATA-: connect to B end of RS485

RGND: connect to earth if necessary

#### 4、 Reset parameter to default

Put the jumper at INIT ,the following parameters back to default.

- Address of device: 254
- Baudrate: 19200
- Channel: enable all channels
- Filtering: 200us for frequency input

## 5、 LEDs indication

Heart: Flashing when the system is working

Comm: Flashing when serial port communication is working

**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	3302	3302	Product model	R													
8	1	1	255	Hardware version	R													
9	2	12	1152	Baudrate setting	R													
				<table border="1"> <thead> <tr> <th>Value</th> <th>Baudrate</th> </tr> </thead> <tbody> <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> </tbody> </table>		Value	Baudrate	12	1200	24	2400	48	4800	96	9600	192*	19200	384
Value	Baudrate																	
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.																		
Reserved																		
Status for digital input channel 1 through 16, 0 = contact active,1 = contact inactive.Bit0 correspond to channel 1,bit1 correspond to channel 2 etc.																		
High word for counter input 1	R/W																	
Low word for counter input 1,value of counter = (101)*65536 + (102)	R/W																	
High word for counter input 2	R/W																	
Low word for counter input 2,value of counter = (103)*65536 + (104)	R/W																	

Continue...

Address	Bytes	Value range		Description	Property
		Min	Max		
105	2	0	65535	High word for counter input 3	R/W
106	2	0	65535	Low word for counter input 3,value of counter = (105) *65536 + (106)	R/W
107	2	0	65535	High word for counter input 4	R/W
108	2	0	65535	Low word for counter input 4,value of counter = (107) *65536 + (108)	R/W
109	2	0	65535	High word for counter input 5	R/W
110	2	0	65535	Low word for counter input 5,value of counter = (109) *65536 + (110)	R/W
111	2	0	65535	High word for counter input 6	R/W
112	2	0	65535	Low word for counter input 6,value of counter = (111) *65536 + (112)	R/W
113	2	0	65535	High word for counter input 7	R/W
114	2	0	65535	Low word for counter input 7,value of counter = (113) *65536 + (114)	R/W
115	2	0	65535	High word for counter input 8	R/W
116	2	0	65535	Low word for counter input 8,value of counter = (115) *65536 + (116)	R/W
117	2	0	65535	High word for counter input 9	R/W
118	2	0	65535	Low word for counter input 9,value of counter = (117) *65536 + (118)	R/W
119	2	0	65535	High word for counter input10	R/W
120	2	0	65535	Low word for counter input 10,value of counter = (119) *65536 + (120)	R/W
121	2	0	65535	High word for counter input 11	R/W
122	2	0	65535	Low word for counter input 11,value of counter = (121) *65536 + (122)	R/W
123	2	0	65535	High word for counter input 12	R/W
124	2	0	65535	Low word for counter input 12,value of counter = (123) *65536 + (124)	R/W
125	2	0	65535	High word for counter input 13	R/W
126	2	0	65535	Low word for counter input 13,value of counter = (125) *65536 + (126)	R/W
127	2	0	65535	High word for counter input 14	R/W

128	2	0	65535	Low word for counter input 14,value of counter = ( 127) *65536 + ( 128)	R/W
129	2	0	65535	High word for counter input 15	R/W
130	2	0	65535	Low word for counter input 15,value of counter = ( 129) *65536 + ( 130)	R/W
131	2	0	65535	High word for counter input 16	R/W
132	2	0	65535	Low word for counter input 16,value of counter = ( 131) *65536 + ( 132)	R/W
133	1	1	100	Respond delay for serial communication, the units is ms and default is 10ms	R/W
134	1	1	255	Filter time for counter input, the units is 10us and the default is 200us	R/W
135	1	0	255	Disable/enable input,0 = disable and 1 = enable.Bit0 correspond to input1, Bit1 correspond to input 2 and so on.	R/W
136	1	0	255	Disable/enable input,0 = disable and 1 = enable.Bit0 correspond to input9, Bit1 correspond to input 10 and so on.	R/W