

S3302

16 Channels Isolated Digital Input Module

User's Manual



SHJ

Sales: Michael@shjelectronic.com

Support: support@shjelectronic.com

S3302 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 200Hz 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,1000Hz
- 32-bit counter be stored into FLASH when power off
- Can measure frequency from 0 to 200Hz, the resolution is 0.1Hz
- Accept reed and hall sensor output from water meter or other meters
- 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
- You can tell us your requirement. we will update our firmware even 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-----	63mA@24VDC
Ambient temperature:	
Operation-----	-20~85°C(-13~185°F)
Storage-----	-40~100°C(-40~212°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:

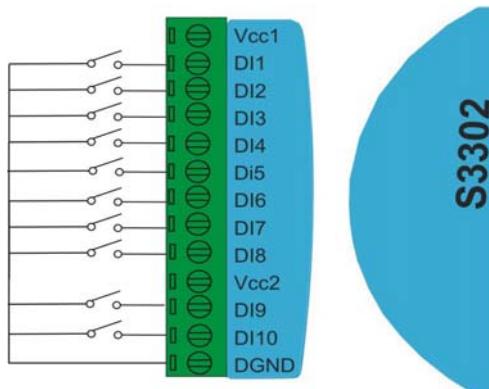


Figure 1 Dry contact input

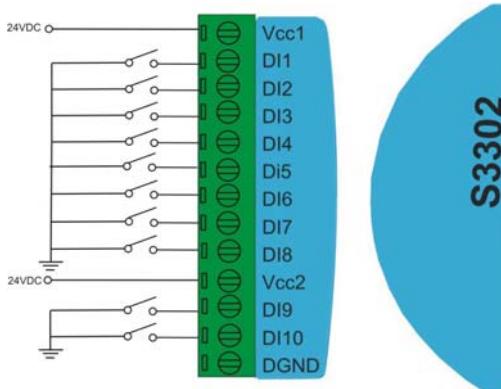


Figure 2 wet contact input

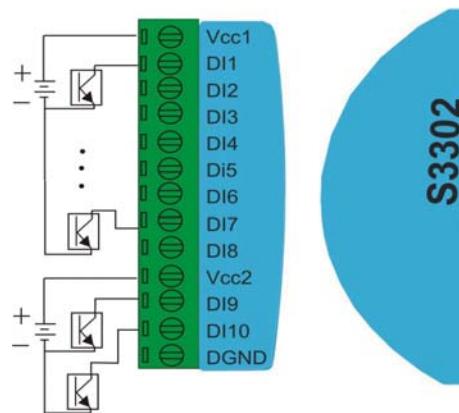


Figure3 open-collector input

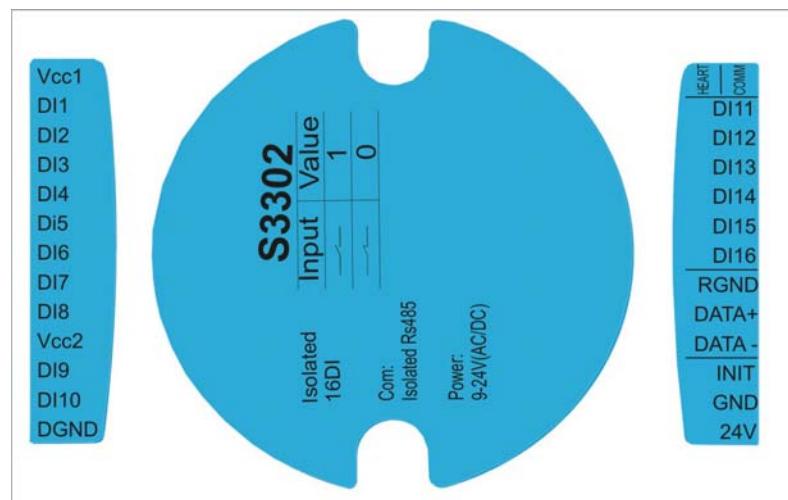


Figure 4 terminal definition

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 between GND and 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

03 command for read and 06 command for write.

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
				Value	
				12	
				24	
				48	
				96	
				192*	
				384	
				576	
				1152	
For example:write 96 to register 9 to set the baudrate 9600.					
10-99	-	-	-	Reserved	-

100	2	0	65535	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.	R
101	2	0	65535	High word for counter input 1	R/W
102	2	0	65535	Low word for counter input 1, value of counter = (101) *65536 + (102)	R/W
103	2	0	65535	High word for counter input 2	R/W
104	2	0	65535	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 input 10	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	2	1	30000	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
137	1	0	1	Input status selection.0 = ON/OFF,1 = OFF/ON, default is ON/OFF	R/W
138	1	0	1	0,digital detect on fall edge;1, digital detect on raise edge. default is0	R/W
139	1	0	1	Write 1, reset all counter	R/W
140	1	0	1	Write 1, enable store counter when power off. default is 0.	R/W

02 command for read digital input status.

Address	Bytes	Value range		Description	Property
		Min	Max		
0-99	1	0	0	Reserved	R
100-115	1	0	1	Input 1 through 16 status,1 = contact not close,0 = contact closed	R
116-65535	1	0	0	Reserved	R

Default Settings:

Device ID: 254, 255 is broadcast address

Data Format: 1 start bit, 8 data bit, 1 stop bit, none parity

Baudrate: 19200

Short INIT to GND then power on S3302,parameters will go to default settings.