

S7312

Zigbee IO Modules

12 Channels DI

12 Channels RO



SHJ

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S7312 digital input module has total 12 channels isolated wet contact or dry contact or open-collector input, input channel 1 to 12 also can work as 32-bit counter input, the maximum frequency is 500Hz for total 12 channels and 5000Hz for only one channel. And has total 12 channels normal open relay output. S7312 has RS485 and Zigbee wireless two type interface, RS485 and Zigbee both support standard Modbus RTU protocol. It can easily integrate with PLC and LabVIEW with standard Modbus RTU protocol. 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.

Highlights:

- **Isolated digital inputs can be configured as counter input, total 32 bits, 5000Hz**
- **Can measure frequency from 0 to 1000Hz, 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 12 channels, improve frequency for small count input**
- **Surge-protected RS485 ensure reliability**
- **Relay output support normal open**
- **Reliable Zigbee can up to 2000 meters communication, line of sight**
- **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**
- **A lot of spare FLASH can be used to store user's parameters**
- **Can update your firmware via ISP through RS485 network, can provide any hex file to help you finish some logic control**
- **DIN support available**

Application:

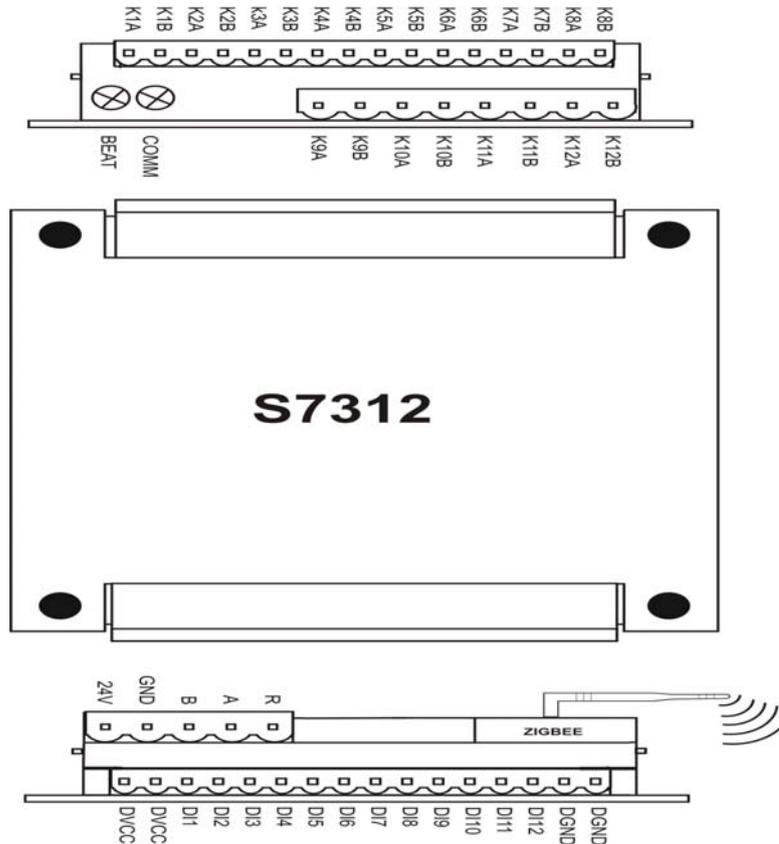
- ✓ Remote data acquisition
- ✓ Process monitoring
- ✓ Industrial process control
- ✓ Energy management
- ✓ Supervisory control
- ✓ Security systems
- ✓ Laboratory automation
- ✓ Building automation
- ✓ Product testing
- ✓ Direct digital control

Technical data:

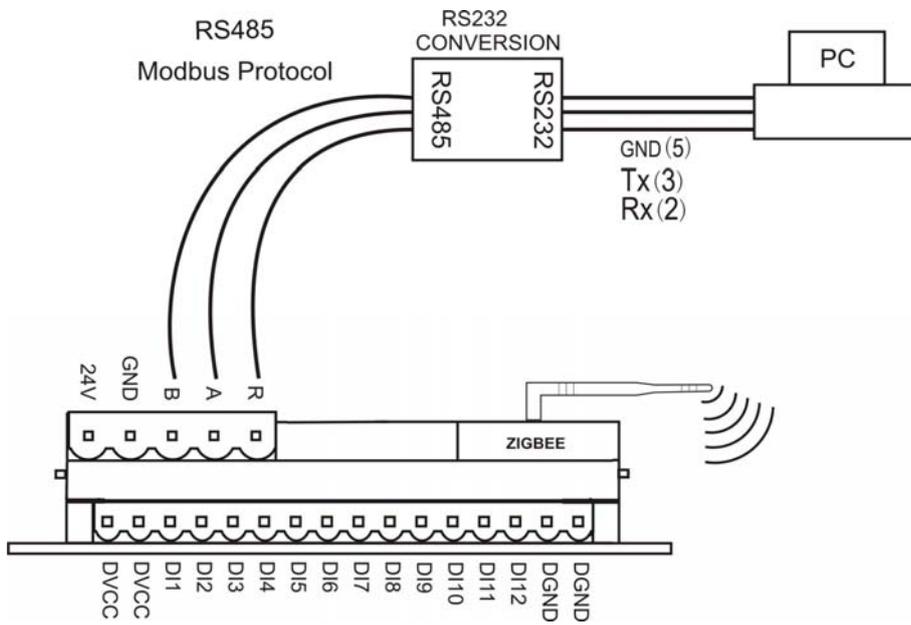
Input channel number----- 12
 Input range-----0V~+36V
 Input signal-----wet contact, dry contact, open-collector
 Counter frequency-----500Hz@12channels;5000Hz@1channel

Counter length-----	32-bit
Output channel number-----	12
Output load -----	0.5A@`125VAC
Output BUS-----	Zigbee/RS485
RS485 protocol-----	MODBUS/RTU
Zigbee protocol-----	MODBUS/RTU
Output Protection-----	Lightning,static
Power input-----	12~24V(AC/DC)
Power consumption-----	<0.6W
Ambient temperature:	
Operation-----	-20~85℃(-4~185°F)
Storage-----	-40~125℃(-40~257°F)
Ambient humidity-----	10%~90%RH
Material,enclosure-----	Flame proof plastic
Enclosure rating-----	IP31
Colour-----	White/Black
Size-----	115*90*43 mm

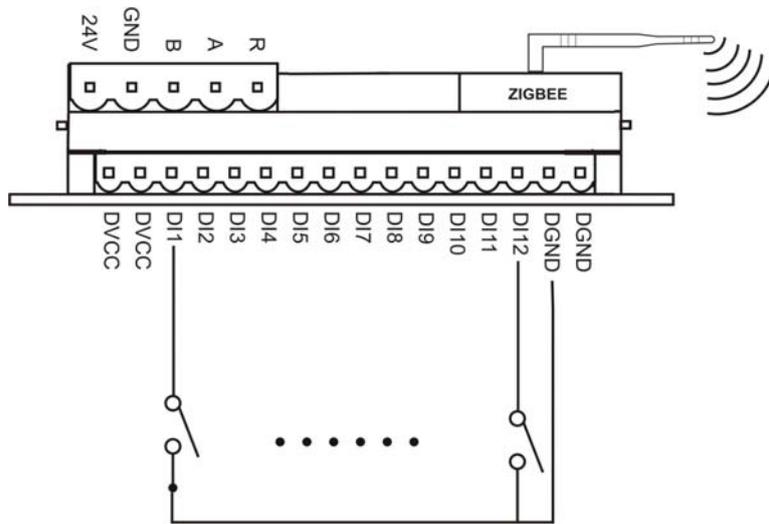
Wiring diagram and description:



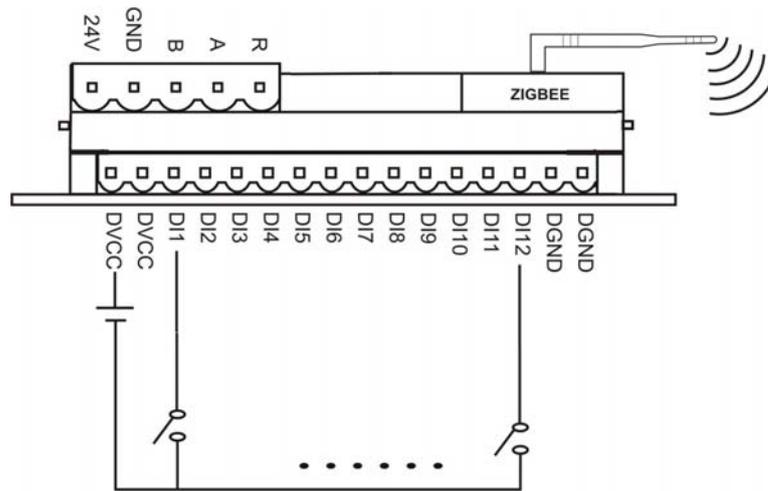
Top view figure



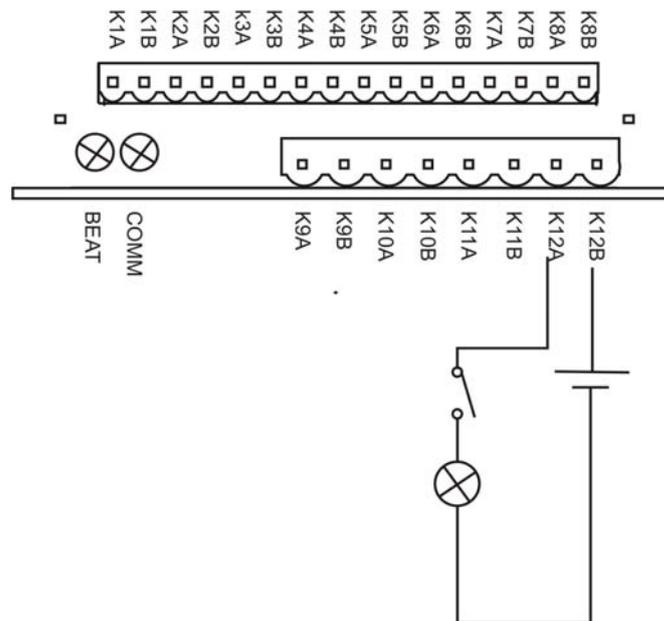
Communication wiring diagram



DRY contact inputs wiring diagram



WET contact input



Relay output,normal open

PINs and LEDs

Power supply

24VDC: power supply positive input, has reverse protection

- : Power supply negative input

RS485 Port

B: Connect to B of RS485

A: Connect to A of RS485

R: Connect to GND for RS485

Zigbee port

Connect to Zigbee network through 2.4GHz

Inputs

DVCC: Power source input for digital input 1 through 12

DI1 ~ DI12: Digital input channel 1 through 12

DGND: common for digital input 1 through 40, available in dry input mode

Outputs

RELAY:

KA1~KA12: Normal open end for relay output channel 1 through 12

KB11~KB12: Normal open end for relay output channel 1 through 12

Leds

BEAT: Will flash when system is working

Comm: Will flash when RS485 serial port communication

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,default is 254*	R/W
7	2	7312	7312	Product model	R
8	1	1	255	Hardware version	R

9	2	12	1152	Baudrate setting		R/W
				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.						
10-99	-	-	-	Reserved		-
100	2	0	4095	Relay output,0 = active,1 = inactive.Bit0 correspond to output 1,bit1 correspond to channel 2 etc.		R/W
101	2	0	4095	Status for digital input channel 1 through 12, 0 = contact active,1 = contact inactive.Bit0 correspond to channel 1,bit1 correspond to channel 2 etc.		R
102	2	0	65535	High word for counter input 1		R/W
103	2	0	65535	Low word for counter input 1,value of counter = (101) *65536 + (102)		R/W
104	2	0	65535	High word for counter input 2		R/W
105	2	0	65535	Low word for counter input 2,value of counter = (103) *65536 + (104)		R/W
106	2	0	65535	High word for counter input 3		R/W
107	2	0	65535	Low word for counter input 3,value of counter = (105) *65536 + (106)		R/W
108	2	0	65535	High word for counter input 4		R/W
109	2	0	65535	Low word for counter input 4,value of counter = (107) *65536 + (108)		R/W
110	2	0	65535	High word for counter input 5		R/W
111	2	0	65535	Low word for counter input 5,value of counter = (109) *65536 + (110)		R/W
112	2	0	65535	High word for counter input 6		R/W
113	2	0	65535	Low word for counter input 6,value of counter = (111) *65536 + (112)		R/W
114	2	0	65535	High word for counter input 7		R/W
115	2	0	65535	Low word for counter input 7,value of counter = (113) *65536 + (114)		R/W

116	2	0	65535	High word for counter input 8	R/W
117	2	0	65535	Low word for counter input 8,value of counter = (115) *65536 + (116)	R/W
118	2	0	65535	High word for counter input 9	R/W
119	2	0	65535	Low word for counter input 9,value of counter = (117) *65536 + (118)	R/W
120	2	0	65535	High word for counter input10	R/W
121	2	0	65535	Low word for counter input 10,value of counter = (119) *65536 + (120)	R/W
122	2	0	65535	High word for counter input 11	R/W
123	2	0	65535	Low word for counter input 11,value of counter = (121) *65536 + (122)	R/W
124	2	0	65535	High word for counter input 12	R/W
125	2	0	65535	Low word for counter input 12,value of counter = (123) *65536 + (124)	R/W
126	1	1	100	Respond delay for serial communication, the units is ms and default is 10ms	R/W
127	2	1	30000	Filter time for counter input, the units is 10us and the default is 200us	R/W
128	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
129	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
130	1	0	1	Input status selection.0 = ON/OFF,1 = OFF/ON, default is ON/OFF	R/W
131	1	0	1	Rising edge or falling edge detect the input, default is raising edge	R/W
132	1	0	1	Write 1 to this register will reset all counter to zero	R/W
134-199	-	-	-	Reserved	-
200	2	0	65535	Zigbee module address	R/W
201	1	0	255	Net ID, the default is 255	R/W
202	1	1	7	Net type,01 = mesh network, 02 = star network, 07 = peer to peer network.. default is 02.	R/W
203	1	1	4	Module type,01 = center module, 03 = router module, 04 = terminal module. The default is router module.	R/W

204	1	1	3	Transfer mode. 01 = broadcast, 02 = master-slave, 03 = peer to peer. Default is 02.	R/W
205	1	0	15	Signal channel, recommend is 4,9,14,15.	R/W
206	1	0	1	Send parameters to Zigbee module. 1 = send.	R/W
207	1	0	1	Get parameters from Zigbee module. 1 = get.	R/W

Default Settings:

Device ID: 254, 255 is broadcast address

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

Baudrate: 19200

There are a INIT jumper inside the board, short INIT then power on S7312, parameters will go to default settings.