

**S6133**  
**Ethernet IO Modules**  
**2 Channels Universal AI**  
**12 Channels DI, 2 Channels RO**



**SHJ**

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**S6133** is a high quality and low cost analog data acquisition module with 2 universal analog inputs. Each input can be 0-5V,0-10V,0-20mA,thermistor,dry contact, open-collector input,12 isolated digital input and 2 channels TYPE-C relay output. The digital input can be dry contact, wet contact and open-collector, each input also can be 32-bit counter.S6133 has RS485 and rj45 two type interface,rs485 support standard Modbus RTU protocol and RJ45 support Modbus Tcpip protocol.It can easy integrate with PLC and labview with standard Modbus/Modbus Tcpip protocol

#### Highlights:

- **Surge-protected analog inputs with 12-bit resolution and 100k sample speed**
- **Input can be any combination of 0-5V,4-20mA,0-10V,NTC 10K thermistor, open-collector and dry contact**
- **The channel number is configurable, can be set up from 1 channel through 2 channels, for analog input and set up from 1 to 12 for digital input, improve sample rate for small count input**
- **Isolated digital inputs can be configured as counter input, total 32 bits,1000Hz**
- **Relay output support normal open and normal close**
- **Max 60VDC power input**
- **Isolated 5V and isolated 12V power output, both are 2W power**
- **Standard ModBus TCPIP protocol,easy work with PLC**
- **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**
- **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:

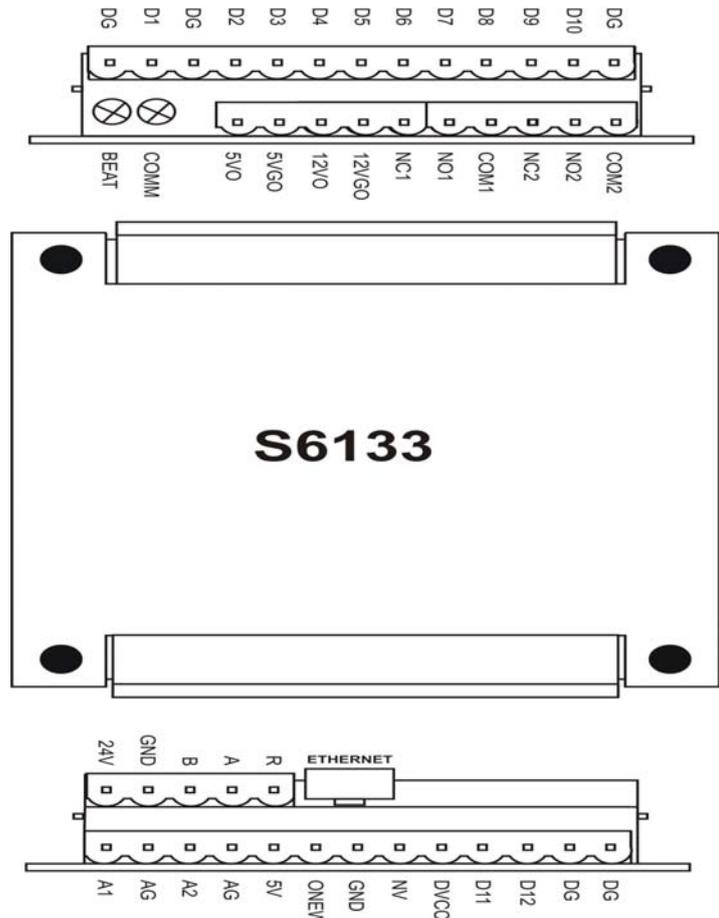
- ✓ Remote data acquisition
- ✓ Process monitoring
- ✓ Industrial process control
- ✓ Energy management
- ✓ Supervisory control
- ✓ Security systems
- ✓ Laboratory automation
- ✓ Building automation
- ✓ Product testing
- ✓ Direct digital control

#### Technical data:

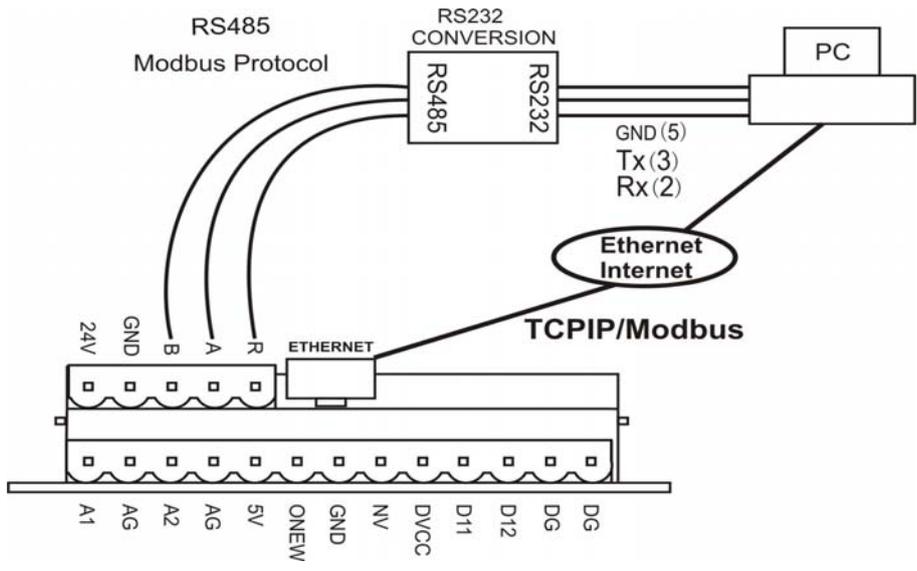
Analog Input Resolution-----12-bit  
 Analog Input Channel Number-----8  
 Analog Input range-----0-5V,0-10v,0-20mA, thermistor, dry contact,open-collector

Analog Input Protection-----	Lightning,static
Analog Input Accuracy-----	±0.1%
Analog Input Zero drift-----	±3uV/°C
Analog Input Sample Rate-----	60 sample/second(8 channels),900 sample/second(1 channel)
Digital Input Channel Number-----	12
Digital Input Range-----	+4V~+36V
Digital Input Signal-----	wet contact, dry contact, open-collector
Digital Input Counter Frequency-----	100Hz@6channels;1000Hz@1channel
Digital Input Counter Length-----	32-bit
Output channel number-----	2
Output load -----	5A@`125VAC
Output BUS-----	Ethernet/RS485
RS232/RS485 protocol-----	MODBUS/RTU
Ethernet protocol-----	MODBUS/TCPIP
Output Protection-----	Lightning,static
Power input-----	12~60VDC
Power consumption-----	<0.6W
Ambient temperature:	
Operation-----	-20~85°C(-4~185°F)
Storage-----	-40~125°C(-40~257°F)
Ambient humidity-----	10%~90%RH
Material,enclosure-----	Flame proof plastic
Enclosure rating-----	IP31
Colour-----	White/Black
Size-----	115*90*43 mm

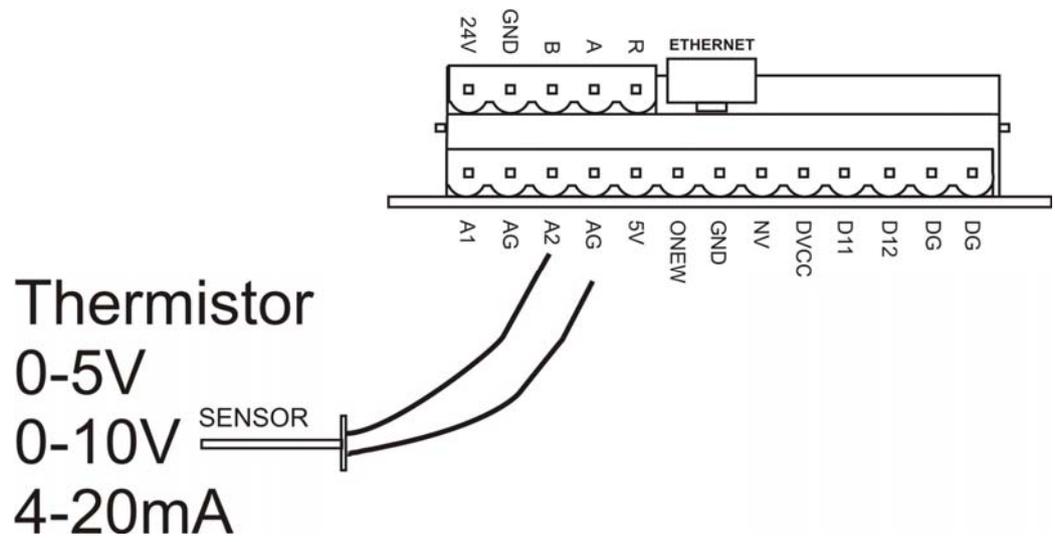
**Wiring diagram and description:**



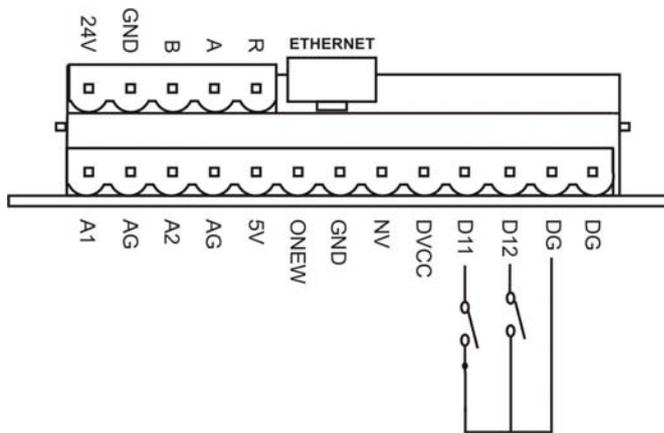
Top view figure



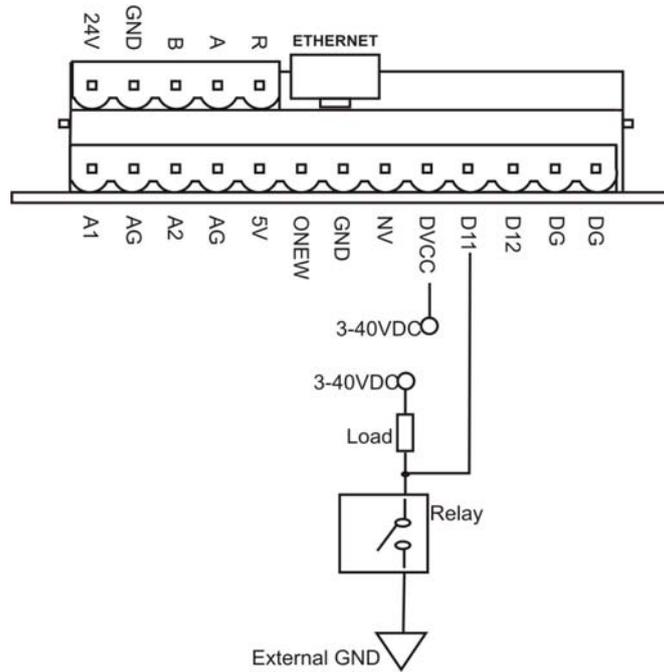
Communication wiring diagram



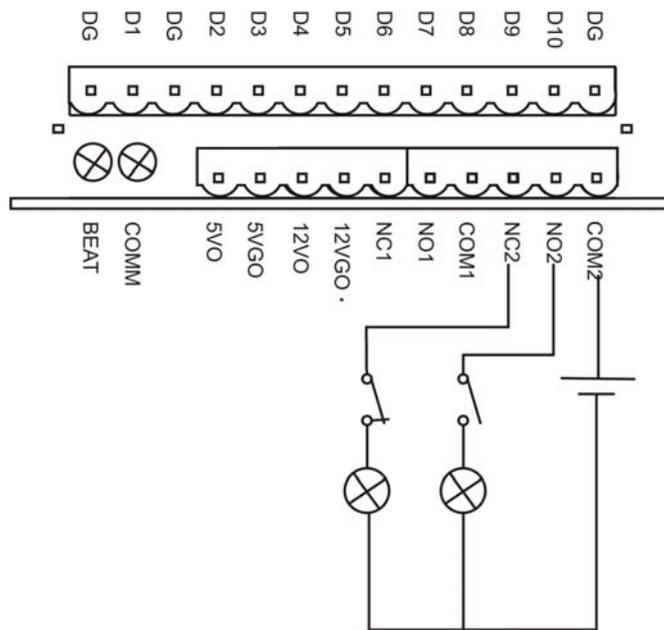
**Analog inputs wiring diagram**



**Dry contact wiring diagram**



**WET contact wiring diagram**



**Relay output,normal open and normal close**

**Inputs**

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

- ✧ 0-5V signal

- ◇ 0-10V
- ◇ 0-20mA
- ◇ Dry contact, thermistor, open-collector. thermistor default is 10K NTC, but can custom according to your sensor type

All digital inputs can be jumper-configured in 1 of 2 ways:

- ◇ Wet contact input
- ◇ Dry contact, open-collector input

#### **PINs and LEDs**

##### Power supply

60VDC: 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

##### Ethernet port

Connect to local Ethernet network through RJ45 cable

##### Inputs

###### Analog:

A1 ~ A2: Analog input 1 through 2

AG: common for analog input 1 through 8, also use for analog output

###### Digital:

DVCC: Power source input for digital input 1 through 12, wet contact input available

D1 ~ D12: Digital input channel 1 through 12

DG: common for digital input 1 through 12, available in dry input mode

##### Outputs

###### Digital:

COM1~COM2: Common end for relay output channel 1 through 2

NO1~NO2: Normal open end for relay output channel 1 through 2

NC1~NC2: Normal close end for relay output channel 1 through 2

###### Power:

5VO: Isolated 5VDC plus output

5VGO: Isolated 5V power output, ground

12VO: Isolated 12VDC plus output

12VGO: Isolated 12V power output, ground

##### 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	6133	6133	Product model	R	
8	1	1	255	Hardware version	R	
9	2	12	1152	Baudrate setting	R	
				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	-	
100-101	2	0	4095	Analog reading for channel input 1 through 2,the units decided by register 105 through 106	R	
102	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	
103	1	0	3	Relay output,0 = active,1 = inactive.Bit0 correspond to output 1,bit1 correspond to channel 2 etc.	R/W	
104	1	0	255	Enable/disable the corresponding channel,0 = disable,1* = enable.Bit0 correspond to channel 1 and Bit1correspond to channel 2.	R/W	

105-106	1	0	8	Channel 1 through 2 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
107-108	1	0	100	Channel 1 through 2 Filter factor, 0 = no filter, 10* is default.	R/W
109, 111	2	0	4095	In calibration mode, channel 1 through 2 sample data as input 0 volts	R/W
110, 112	2	0	4095	In calibration mode, channel 1 through 2 sample data as input is full scale	R/W
113~114	2	0	1000	Analog input 1 through 2 in temperature units, use calibrate temperature by adjust the offset	R/W
115	2	0	65535	High word for digital input1 counter	R/W
116	2	0	65535	Low word for digital input1 counter, value of counter = (115) *65536 + (116)	R/W
117	2	0	65535	High word for digital input2 counter	R/W
118	2	0	65535	Low word for digital input2 counter, value of counter = (117) *65536 + (118)	R/W
119	2	0	65535	High word for digital input3 counter	R/W
120	2	0	65535	Low word for digital input3 counter, value of counter = (119) *65536 + (120)	R/W
121	2	0	65535	High word for digital input4 counter	R/W
122	2	0	65535	Low word for digital input4 counter, value of counter = (121) *65536 + (122)	R/W
123	2	0	65535	High word for digital input5 counter	R/W
124	2	0	65535	Low word for digital input5 counter, value of counter = (123) *65536 + (124)	R/W
125	2	0	65535	High word for digital input6 counter	R/W
126	2	0	65535	Low word for digital input6 counter, value of counter = (125) *65536 + (126)	R/W
127	2	0	65535	High word for digital input1 counter	R/W
128	2	0	65535	Low word for digital input1 counter, value of counter = (127) *65536 + (128)	R/W

129	2	0	65535	High word for digital input2 counter	R/W
130	2	0	65535	Low word for digital input2 counter, value of counter = (129) *65536 + (130)	R/W
131	2	0	65535	High word for digital input3 counter	R/W
132	2	0	65535	Low word for digital input3 counter, value of counter = (131) *65536 + (132)	R/W
133	2	0	65535	High word for digital input4 counter	R/W
134	2	0	65535	Low word for digital input4 counter, value of counter = (133) *65536 + (134)	R/W
135	2	0	65535	High word for digital input5 counter	R/W
136	2	0	65535	Low word for digital input5 counter, value of counter = (135) *65536 + (136)	R/W
137	2	0	65535	High word for digital input6 counter	R/W
138	2	0	65535	Low word for digital input6 counter, value of counter = (137) *65536 + (138)	R/W
139	2	1	30000	Filter time for counter input, the units is 10us and the default is 200us	R/W
140	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
141	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
142	1	0	1	Input status selection.0 = ON/OFF,1 = OFF/ON, default is ON/OFF	R/W
143	1	0	1	Digital input counter will increase at rising edge or falling edge.0 = rising edge,1 = falling edge, default is rising edge	R/W
144	1	1	100	Respond delay for serial communication, the units is ms and default is 10ms	R/W
145-199	-	-	-	reserved	-
200-203	1	0	255	Device local IP address, default is 192.168.0.X	R/W
204-207	1	0	255	Gate way address, default I is 192.168.0.1	R/W
208-211	1	0	255	Subnet address, default is 255.25.255.0	R/W
212-217	1	0	255	MAC address	R/W
218	2	0	65535	Port number, default is 502. Write this register also save value of register 200 to 218.	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 S6133,parameters will go to default settings.