

CWT-MB318F

Modbus I O Module

manual

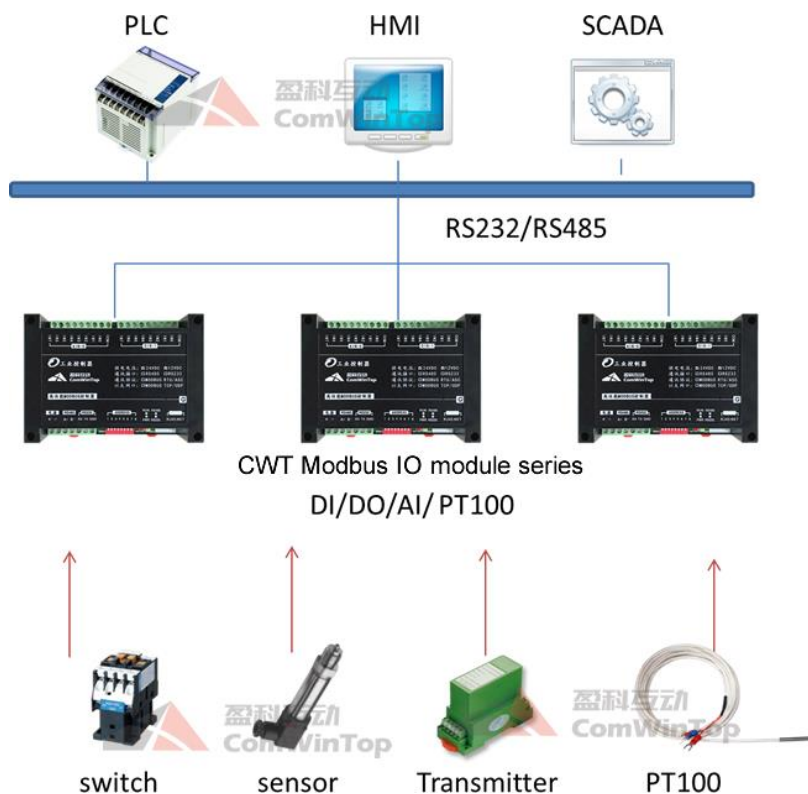
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1 OVERVIEW

Model	Options	IO Port	Communication Port	Protocol
CWT-MB318F	I-V-E-485	4PT + 4AI (4-20mA/0-10V) + 2AO + 8DI + 6DO	Ethernet+RS485	Modbus TCP, Modbus RTU

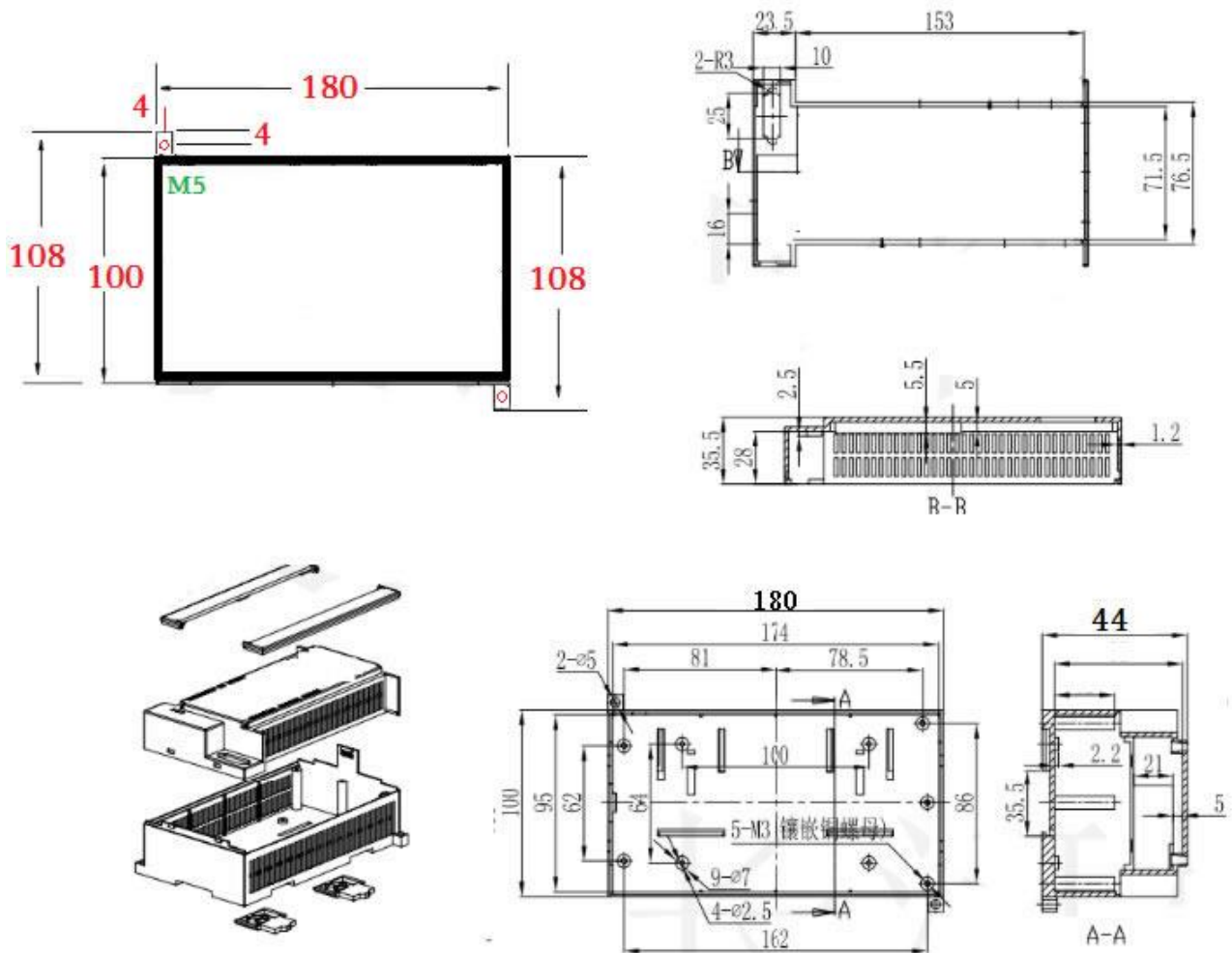


1.1 System Parameter

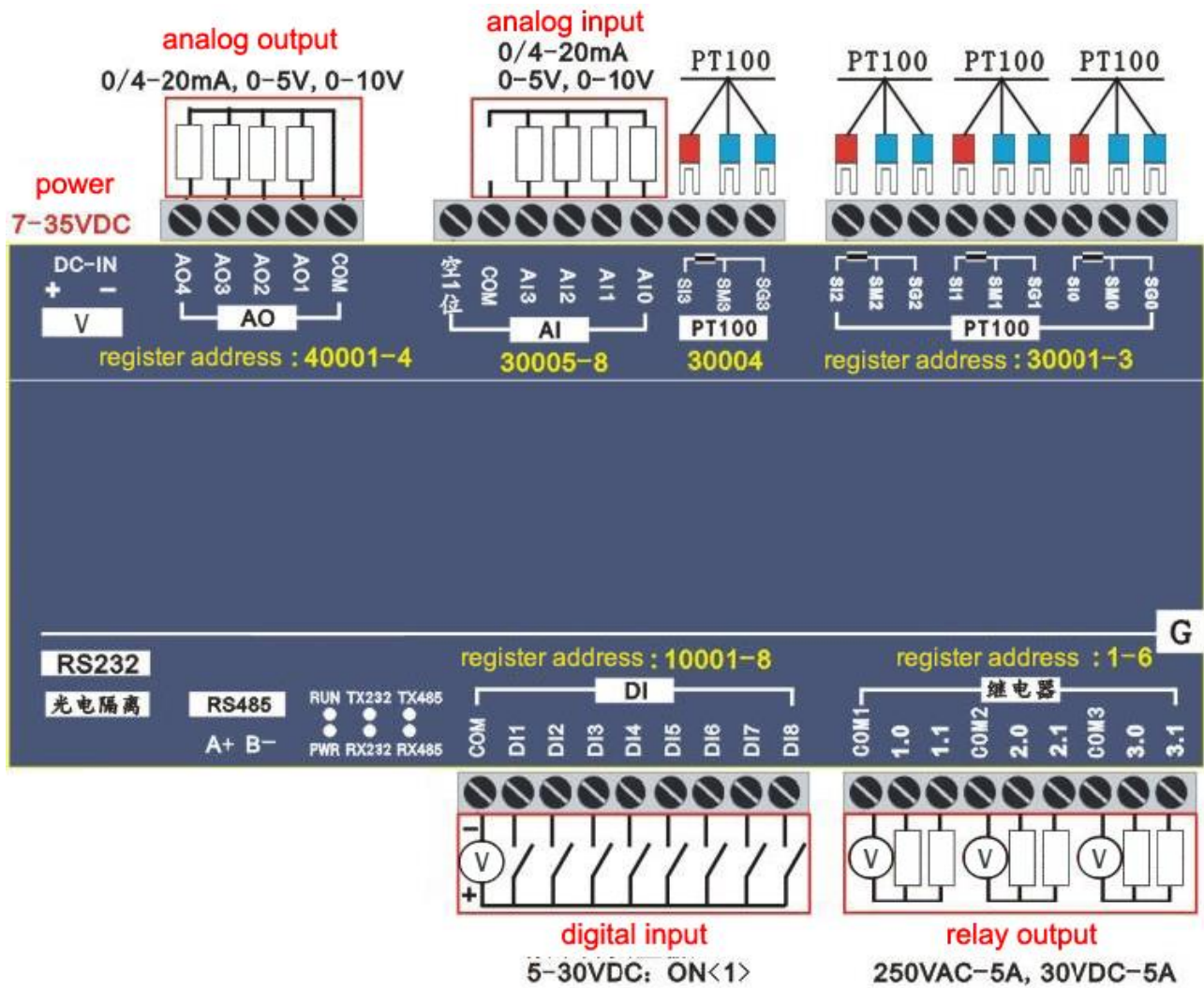
CPU	32-bit ATMEL ARM, 72MHZ
OS	GCOS, 10ms scheduling mechanism
Power	7-35VDC @2W, power supply reverse protection, isolation design
Installation	DIN rail mounting or screw fixing 
Working Environment	-40℃~85℃, 5%~95%RH(non-condensing)
Protection	IP20
Watchdog	1.5m guard

2 INSTALL

2.1 size



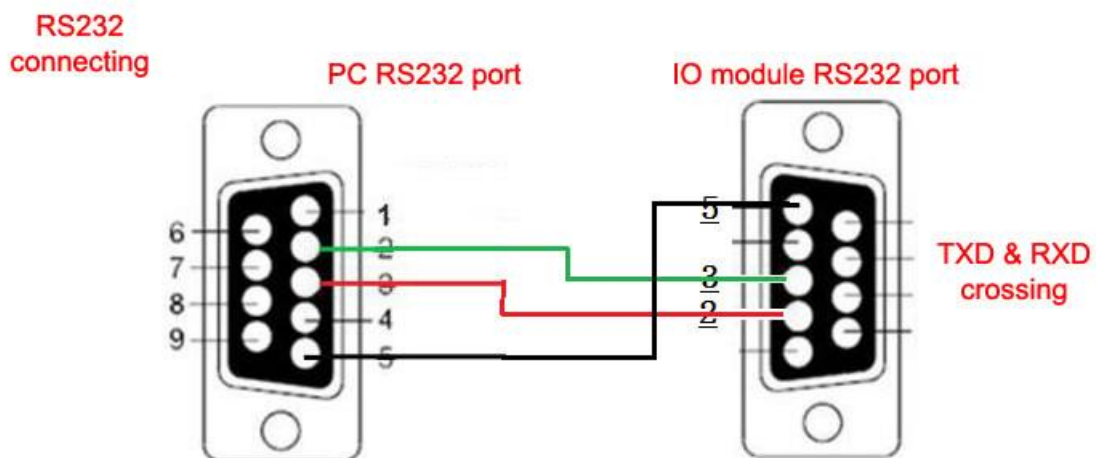
2.2 wiring



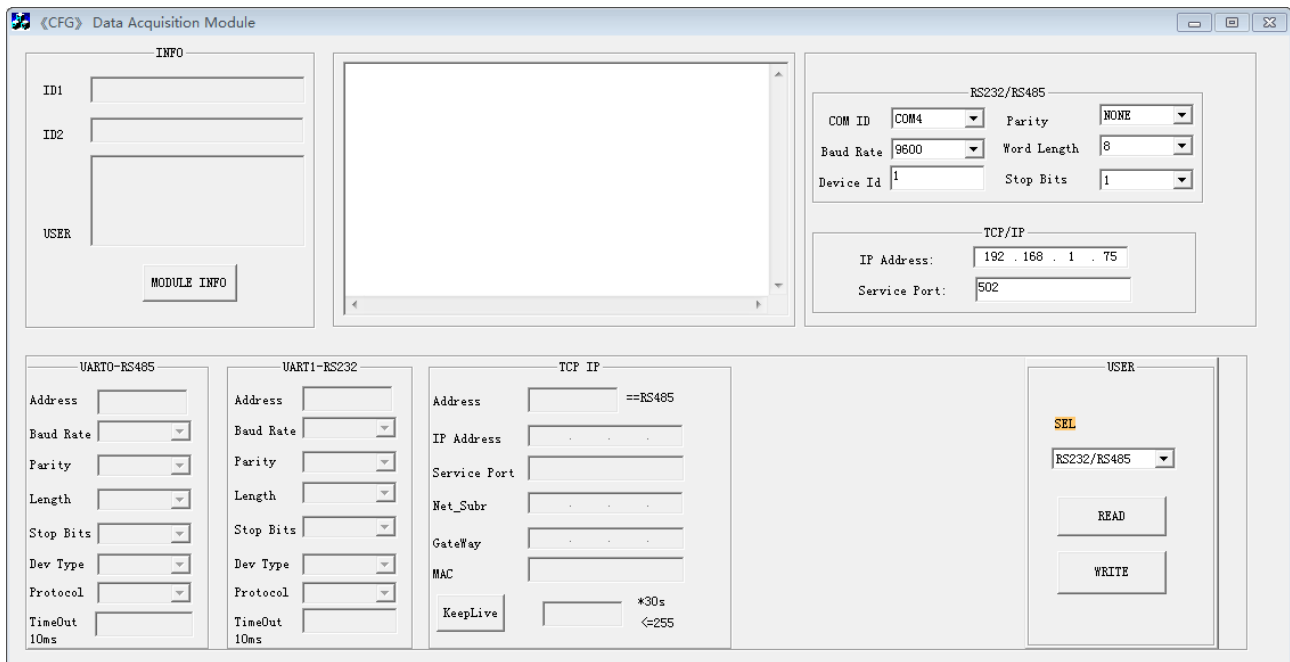
3 CONFIGURATION

3.1 RS232/RS485

Port type	1RS485 & 1RS232
Protection	DCDC isolation design, 2500V lightning protection, ESD, overvoltage, overcurrent protection
Baud rate	1200~115200, default 9600
Parity	Even, Odd, None
start bit	1 bit
data bits	8 bit
Stopbits	1,2bits
Protocol	MODBUS RTU
default	9600.N.8.1, slave id is 1



3.2 Configuration software



The screenshot shows the 'Data Acquisition Module' configuration window. It includes sections for 'INFO' (ID1, ID2, USER, MODULE INFO), 'RS232/RS485' (COM ID, Parity, Baud Rate, Word Length, Device Id, Stop Bits), 'TCP/IP' (IP Address, Service Port), 'UART0-RS485', 'UART1-RS232', and 'TCP IP' (Address, IP Address, Service Port, Net_Subr, GateWay, MAC, KeepLive). A 'USER' section on the right has a 'SEL' dropdown set to 'RS232/RS485' and 'READ'/'WRITE' buttons.

Set salve ID, default is 1

3.3 Ethernet

Port type	RJ45
Communicate protocol	MODBUS TCP、MODBUS UDP
Communicate rate	1000 times/s
bandwidth	10M/100Mbps
IP address	192.168.1.75
Port	502

4 DESCRIPTION OF IO CHANNEL

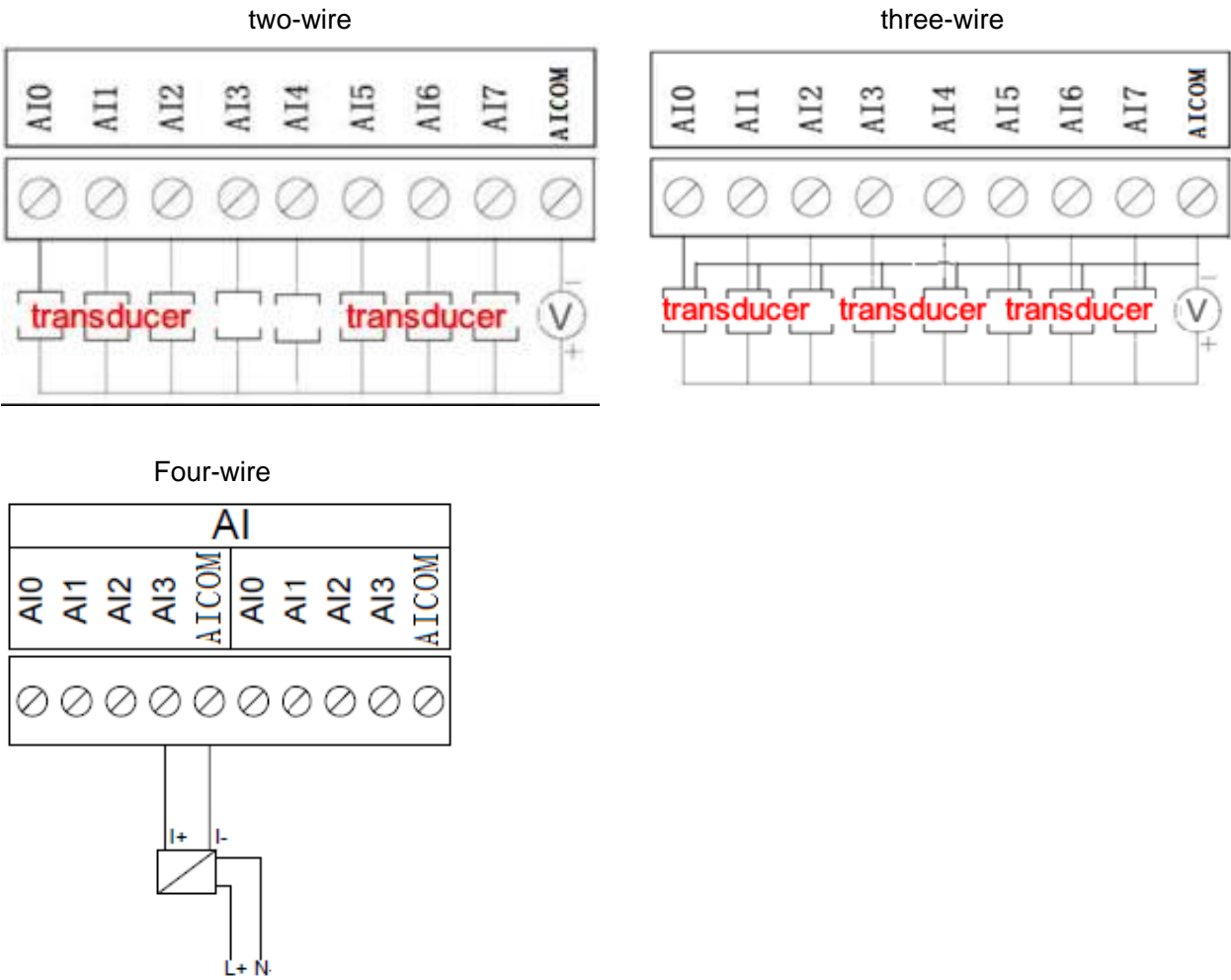
4.1 Analog input

Input type	4~20mA<default>, support: 0~20mA/0~5/1~5/0~10V (need open housing to jumper)
Precision	0.1%, 16 bit
Refresh rate	0.01m

Modbus Register map

channel	Register address	Function code	Format	Scaling	
AI0-AI3	30005-30008	04	UINT16	0.0004	4-20mA
				0.0004	0-20mA
				0.0001	0-5V
				0.0002	0-10V

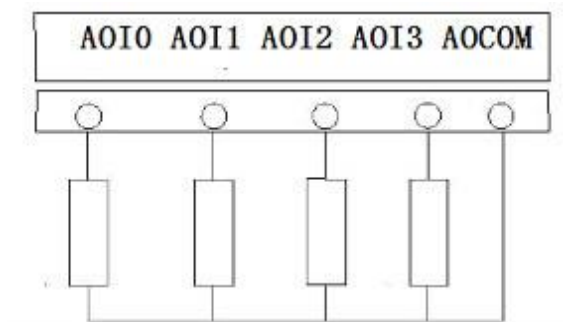
AI wiring diagram



4.2 Analog output

Modbus address	40001 ~ 40004 Function code: -- Write multiple: 16 -- Write single: 06 -- read multiple: 03
Output type	Current: 4~20mA/0~20mA <default> Option (need to open housing to jumper): Voltage: 0~5V/1~5V/0~10V
Output Precision	0.2%, 12 bit
Isolation	2500V, High speed Opt coupler isolation
Load resistor	current output: load $R \leq 750 \Omega$ voltage output: load $R \geq 2K \Omega$
Range	4~20mA corresponding 10000~50000 <unsigned 16-bit integer> 0~20mA corresponding 00000~50000 0~5V corresponding 00000~25000 0~10V corresponding 00000~50000
Calculation	4~20mA : register value * (50000 / 20) 0~20mA : register value * (50000 / 20) 0~5V : register value * (50000 / 10) 0~10V : register value * (50000 / 10) E.g. Output 6mA register value = 6mA * (50000 / 20) = 15000

AO wiring diagram



4.3 Digital input

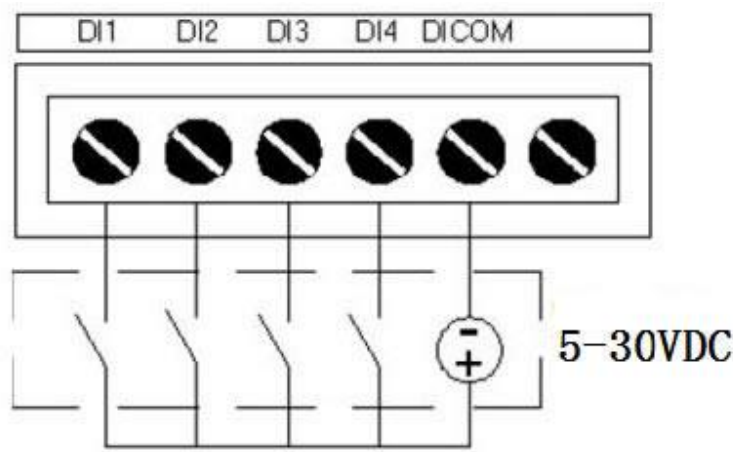
ON signal level	5-30VDC, 6mA@24VDC
OFF signal level	0-3VDC
Protection	opt coupler isolation, 2500V lightning protection, overvoltage, overcurrent protection
Sample rate	0.01m

Modbus Register map

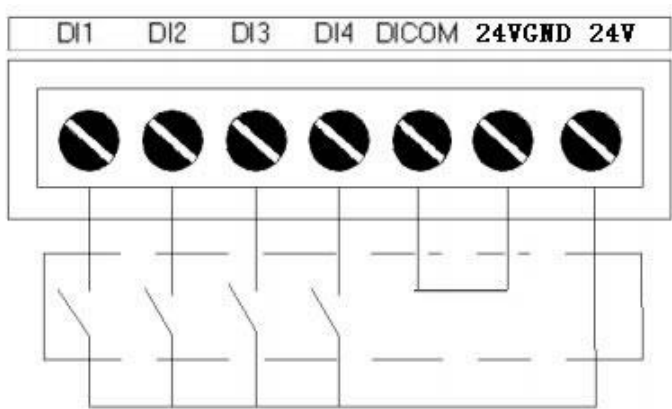
channel	Register address
DI0-DI7	10001-10008

DI wiring diagram

Wet contact wiring



Dry contact wiring



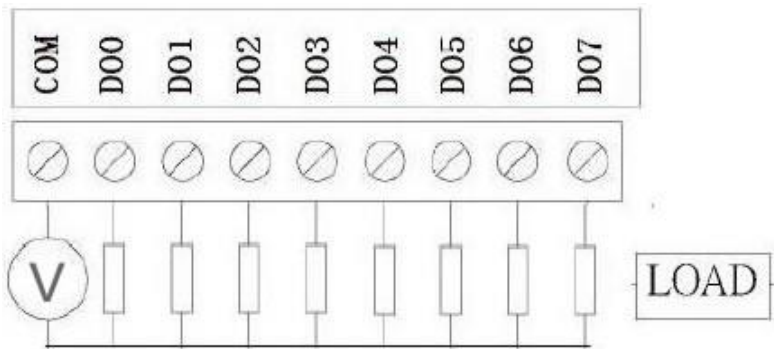
4.4 Digital output

Output type	normal open relay output
Isolation	opt coupler isolation& relay isolation
Resistive load	5A/250VAC, 5A/30VDC
Response time	≤0.01s

Modbus Register map

channel	Register address
Do0-Do5	00001-00006

DO wiring diagram



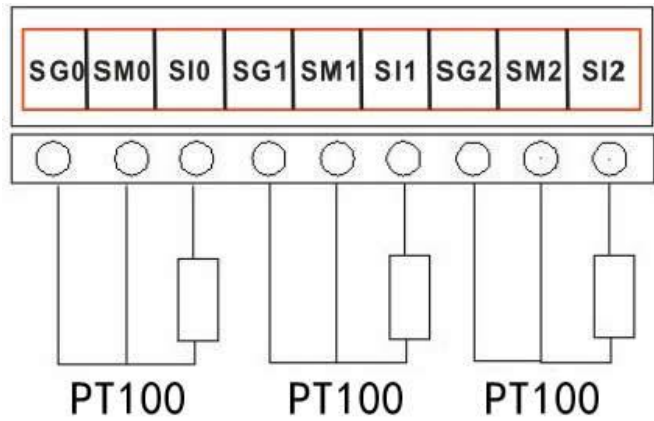
4.5 PT100 Input

Input type	PT100
Precision	0.1°C
Measurement range	-200°C~220°C

Modbus Register map

channel	Register address	Function code	Format	Scaling
PT0-PT3	30001-30004	04	signed UINT16	0.1

Three wire



Two wire

