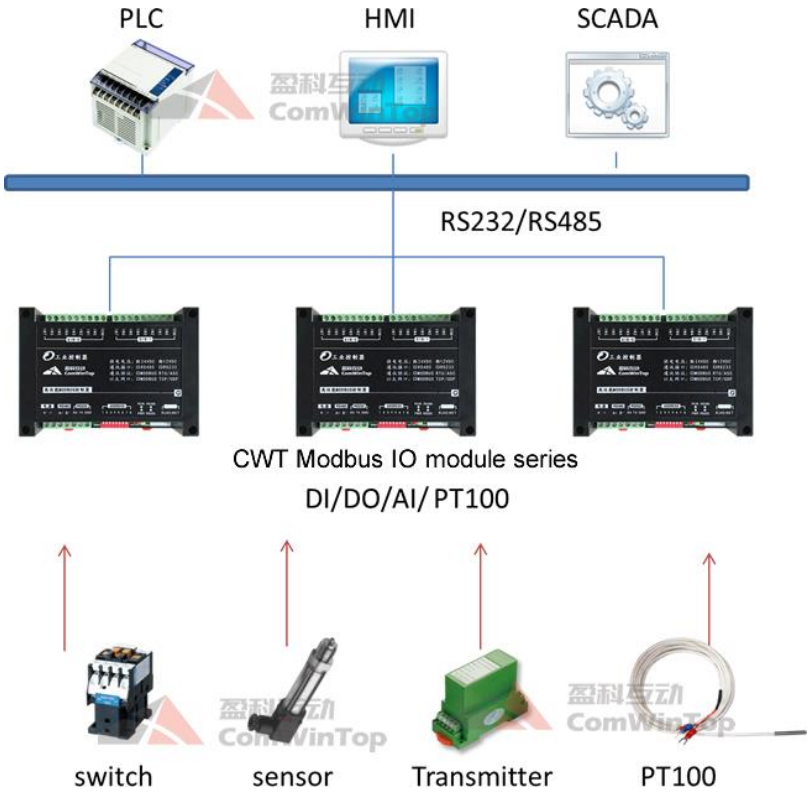
CWT-MB308P
Modbus I O Module
manual

CONTENTS

1 OVERVIEW

Model	Options	IO Port	Communication Port	Protocol
CWT-MB308P	I-V-485-232	8AI (4-20mA/0-10V) + 4AO + 16DI + 6DO	RS485+RS232	Modbus RTU
	I-V-E-485-232	8AI (4-20mA/0-10V) + 4AO + 16DI + 6DO	Ethernet+RS485+RS232	Modbus TCP, Modbus RTU

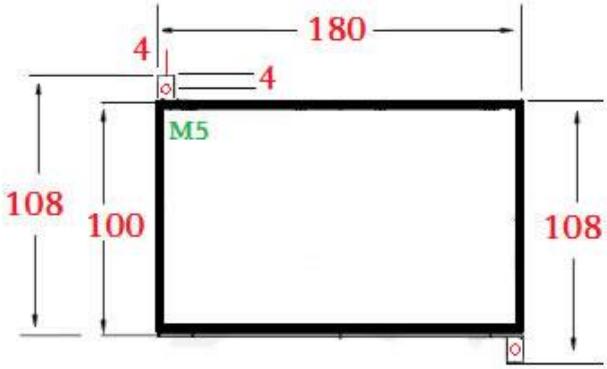


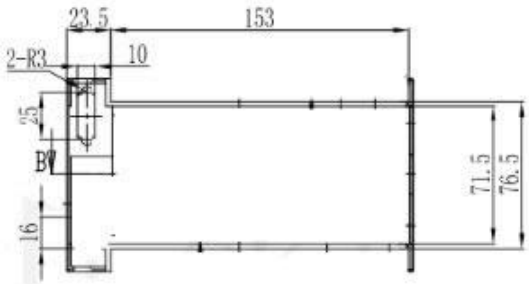
1.1 System Parameter

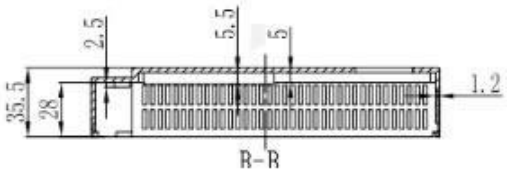
CPU	32-bit ATMEL ARM, 72MHZ
OS	GCOS，10ms scheduling mechanism
Power	7-35VDC @2W, power supply reverse protection, isolation design
Installation	DIN rail mounting or screw fixing 
Working Environment	-40℃～85℃，5%～95%RH(non-condensing)
Protection	IP20
Watchdog	1.5m guard

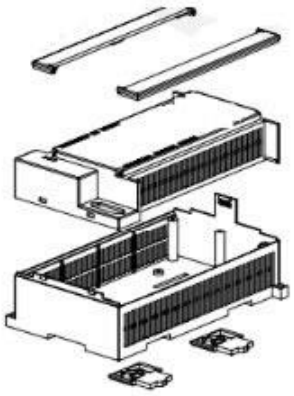
2 INSTALL

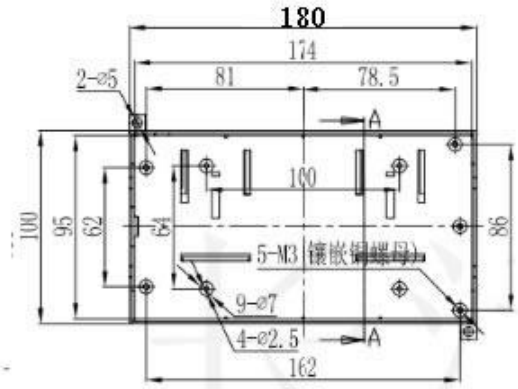
2.1 size

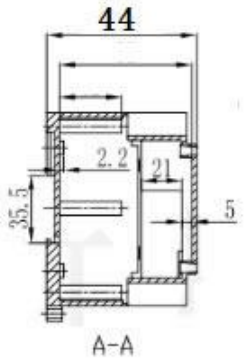




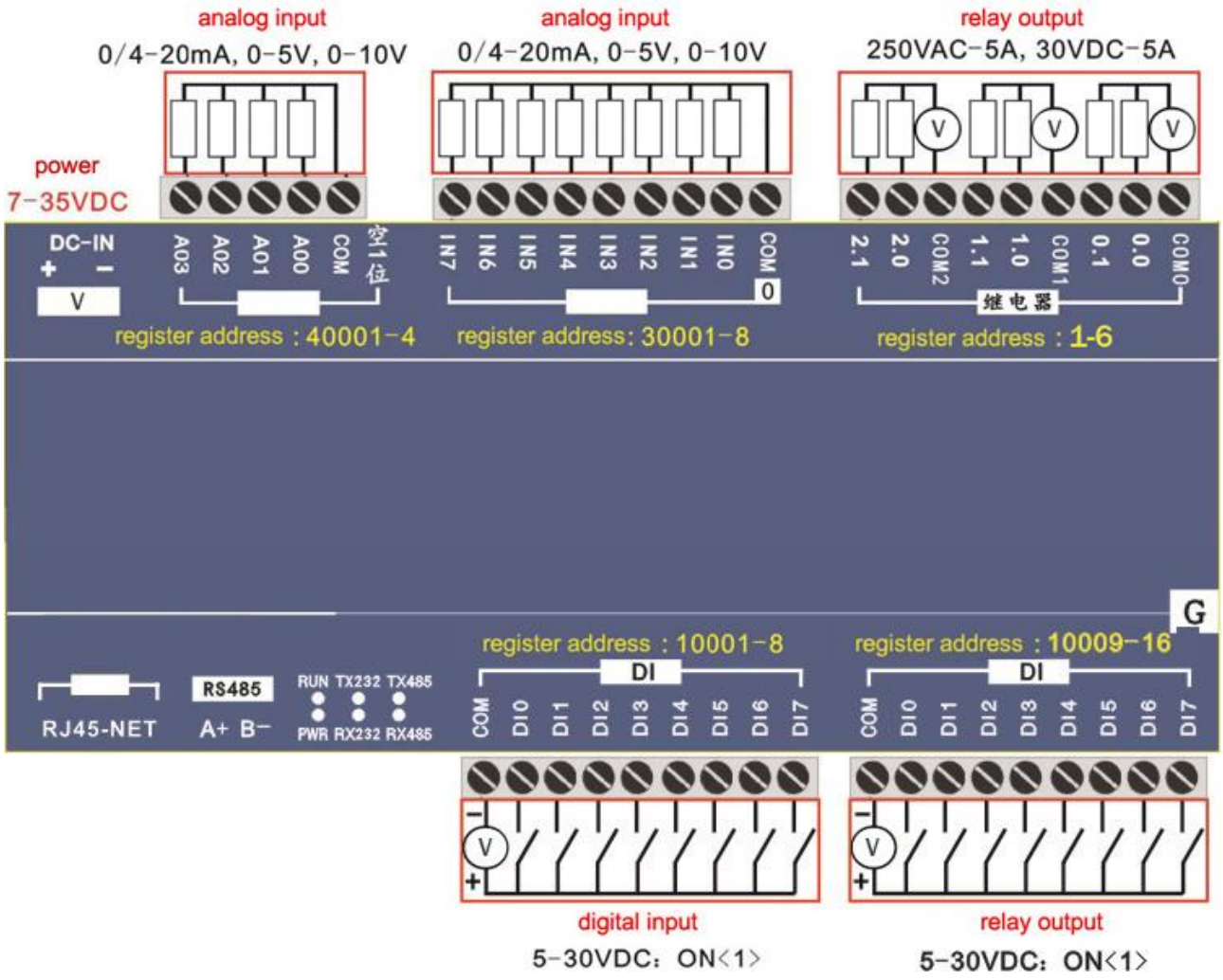








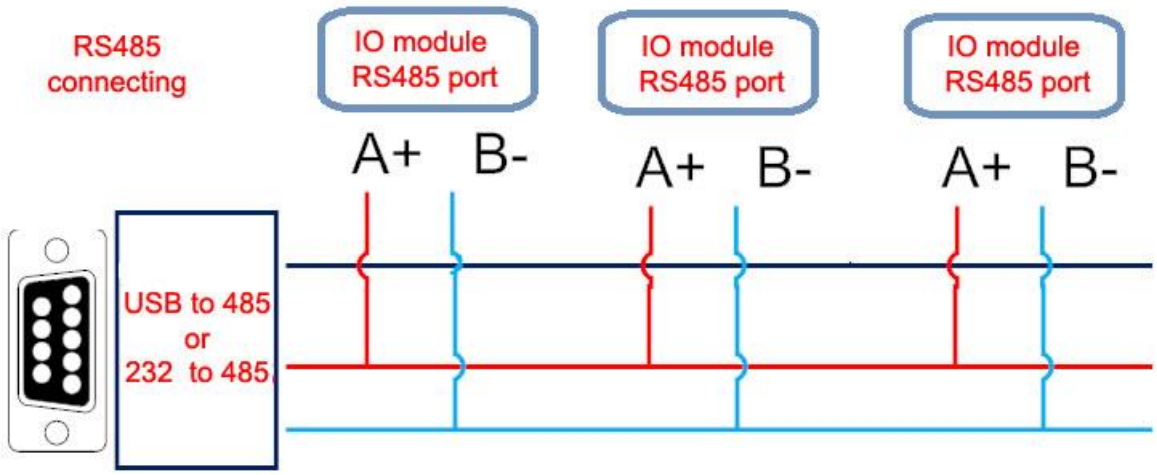
2.2 wiring

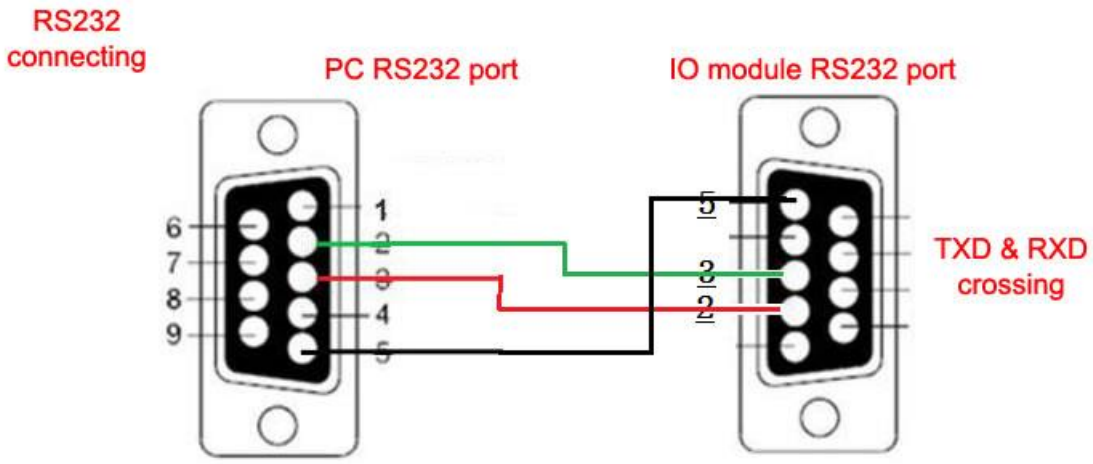

analog input
0/4-20mA, 0-5V, 0-10V
analog input
0/4-20mA, 0-5V, 0-10V
relay output
250VAC-5A, 30VDC-5A
power
7-35VDC
DC-IN
+ -
V
A03 A02 A01 A00 COM 空1位
register address : 40001-4
IN7 IN6 IN5 IN4 IN3 IN2 IN1 IN0 COM
0
register address: 30001-8
2.1 2.0 COM2 1.1 1.0 COM1 0.1 0.0 COM0
继电器
register address : 1-6
G
RJ45-NET
RS485
A+ B-
RUN TX232 TX485
PWR RX232 RX485
register address : 10001-8
DI
COM DI0 DI1 DI2 DI3 DI4 DI5 DI6 DI7
register address : 10009-16
DI
COM DI0 DI1 DI2 DI3 DI4 DI5 DI6 DI7
digital input
5-30VDC：ON<1>
relay output
5-30VDC：ON<1>

3 CONFIGURATION

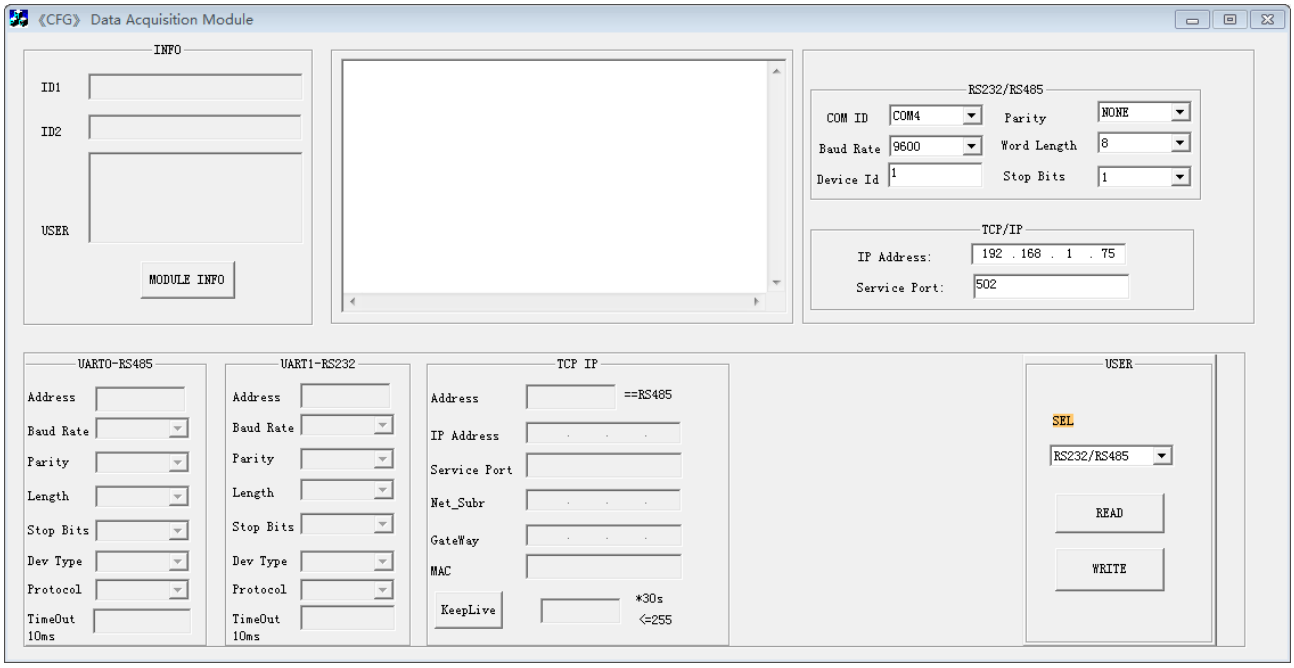
3.1 RS232/RS485

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



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

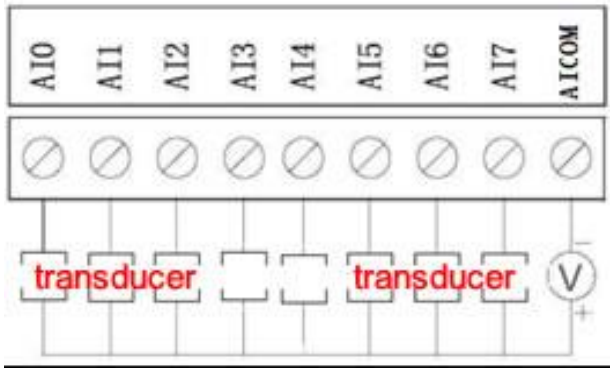
Input type	**4～20mA<default>**， support: 0～20mA/0～5/1～5/0～10V **(need open housing to jumper)**
Precision	0.1%，16 bit
Refresh rate	0.01m

Modbus Register map

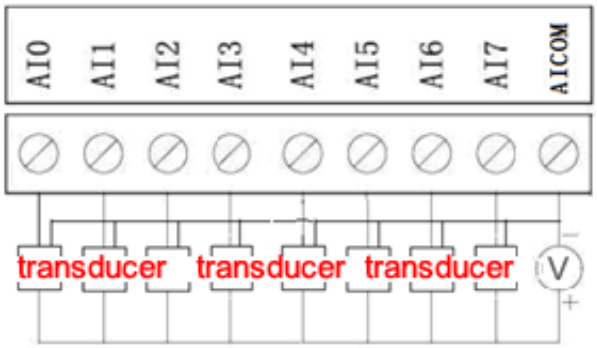
channel	Register address	Function code	Format	Scaling	
AI0-AI7	30001-30008	04	UINT16	0.0004	4-20mA
				0.0004	0-20mA
				0.0001	0-5V
				0.0002	0-10V

AI wiring diagram

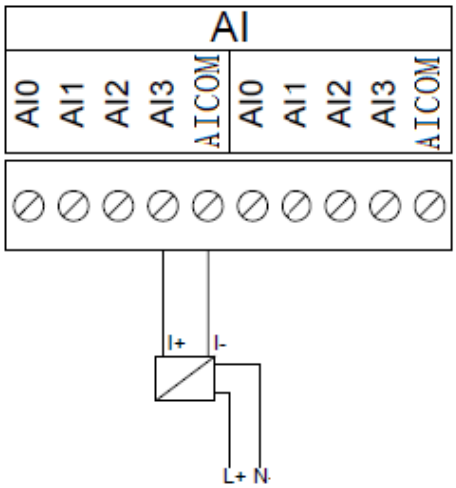
two-wire



three-wire



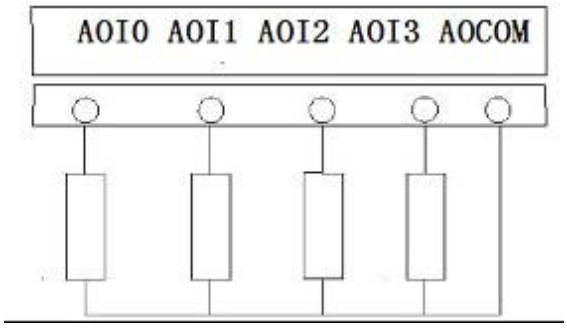
Four-wire



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 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≤750Ω voltage output: load R≥2KΩ
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

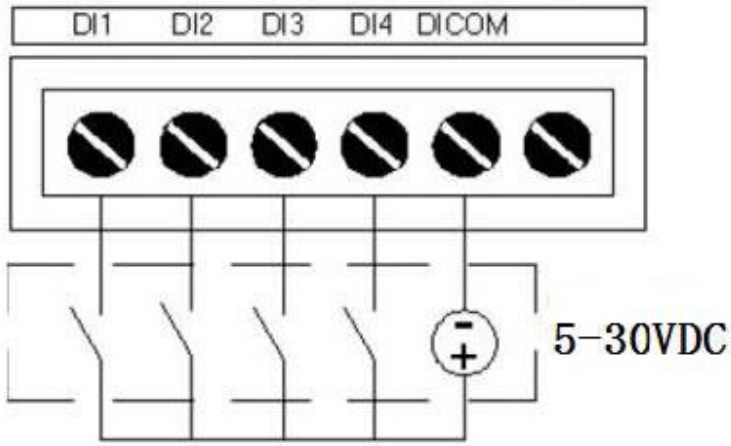
ON signal level	5-30VDC，6mA@24VDC
OFF signal level	0-3VDC
Protection	opt coupler isolation, 2500V lightning protection, overvoltage, overcurrent protection
Sample rate	0.01m

Modbus Register map

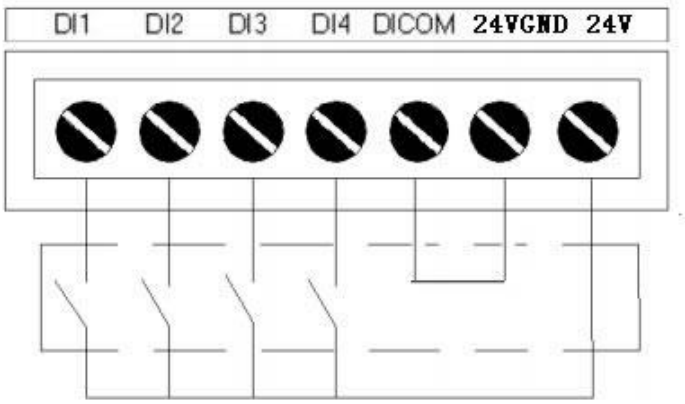
channel	Register address
DI0-DI15	10001-10016

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