

CWT-MB308P

Modbus I O Module

manual

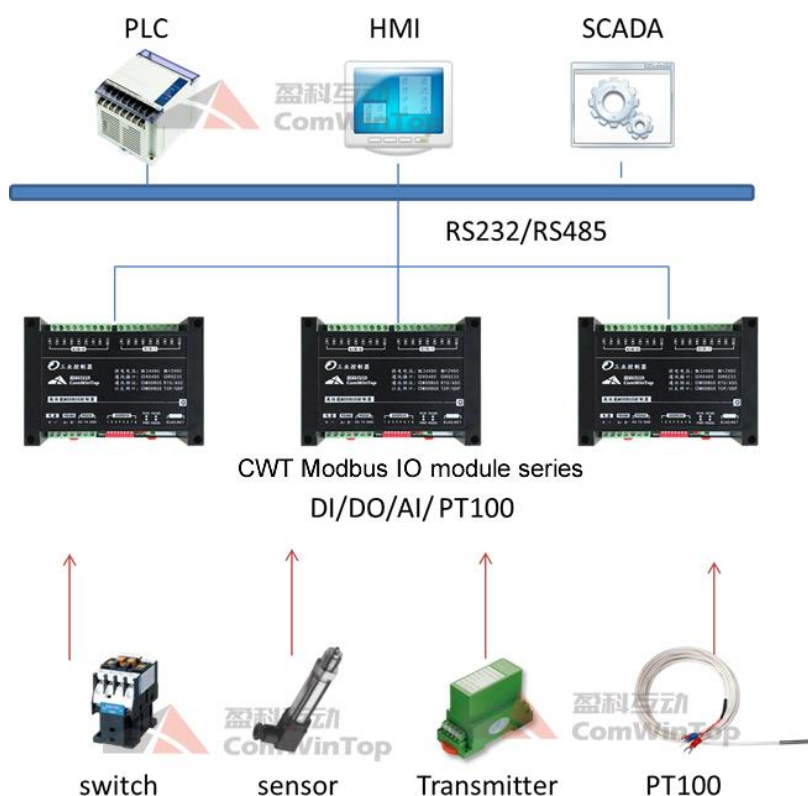
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1 OVERVIEW

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

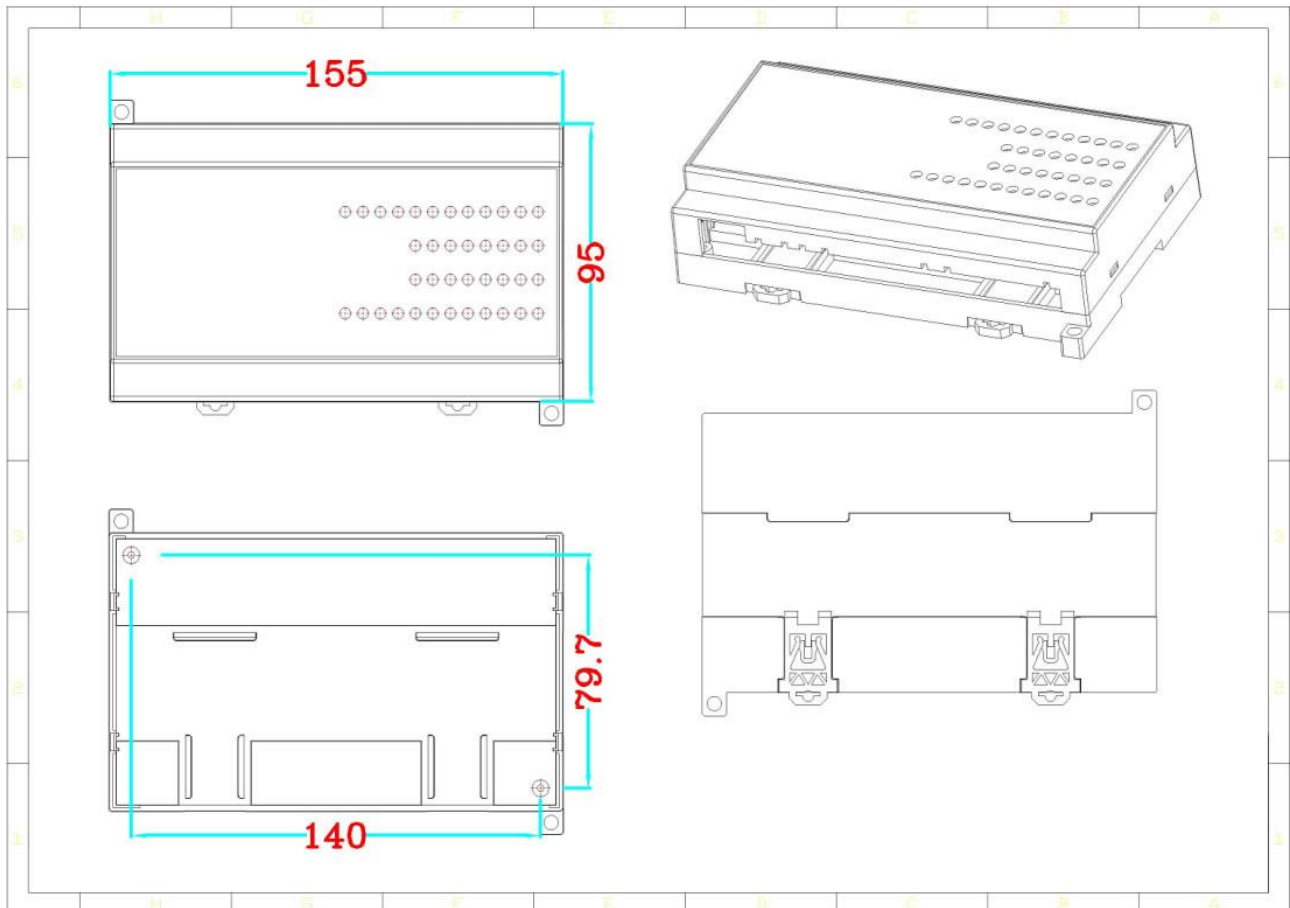


1.1 System Parameter

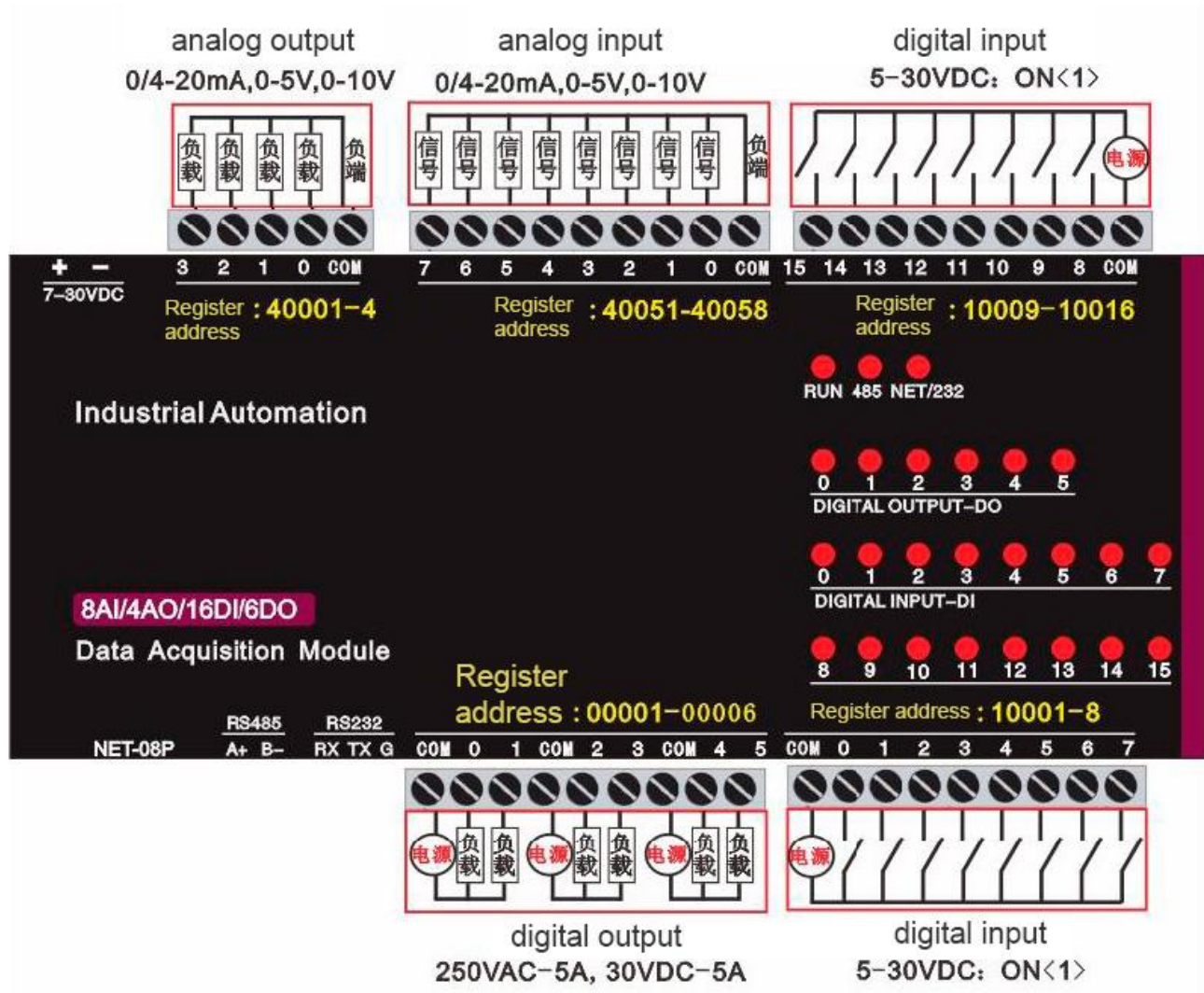
| | |
|---------------------|--|
| CPU | 32-bit ATMEL ARM, 72MHZ |
| OS | GCOS, 10ms scheduling mechanism |
| Power | 7-35VDC @2W, power supply reverse protection, isolation design |
| Installation | DIN rail mounting or screw fixing  |
| Working Environment | -40℃～85℃, 5%～95%RH(non-condensing) |
| Protection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

2 INSTALL

2.1 size



2.2 wiring



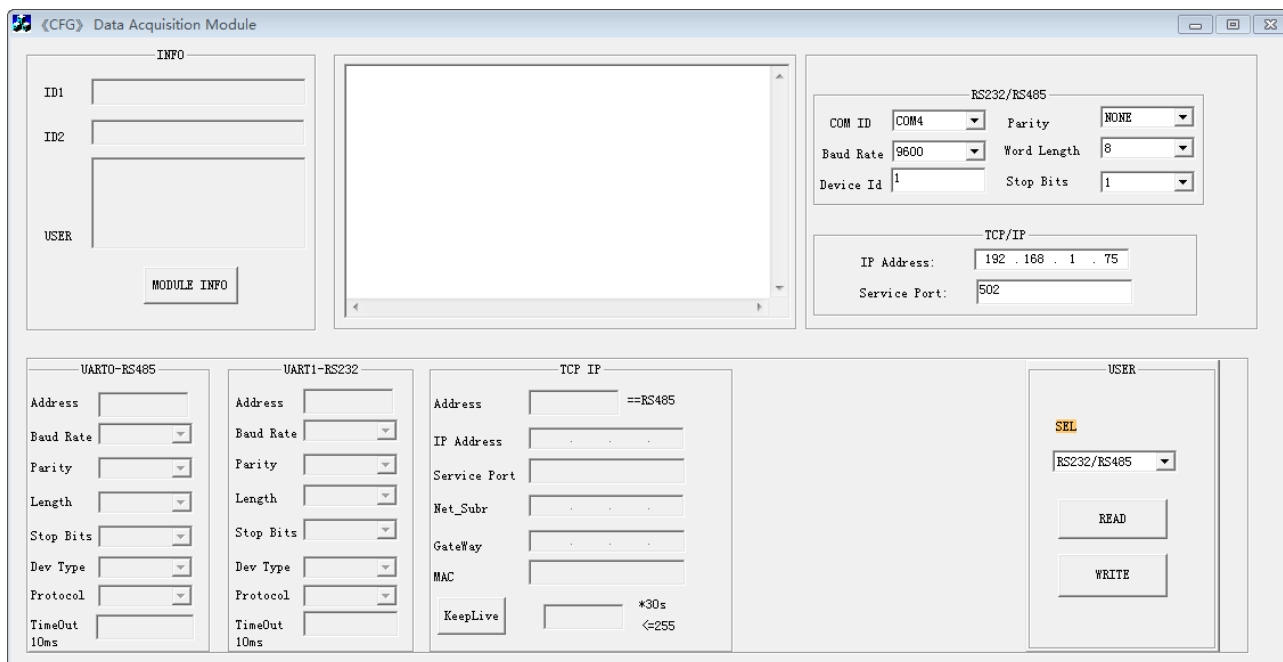
3 CONFIGURATION

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, *30s, <=255). A 'USER' section on the right has a 'SEL' button, a dropdown menu set to 'RS232/RS485', and 'READ' and '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

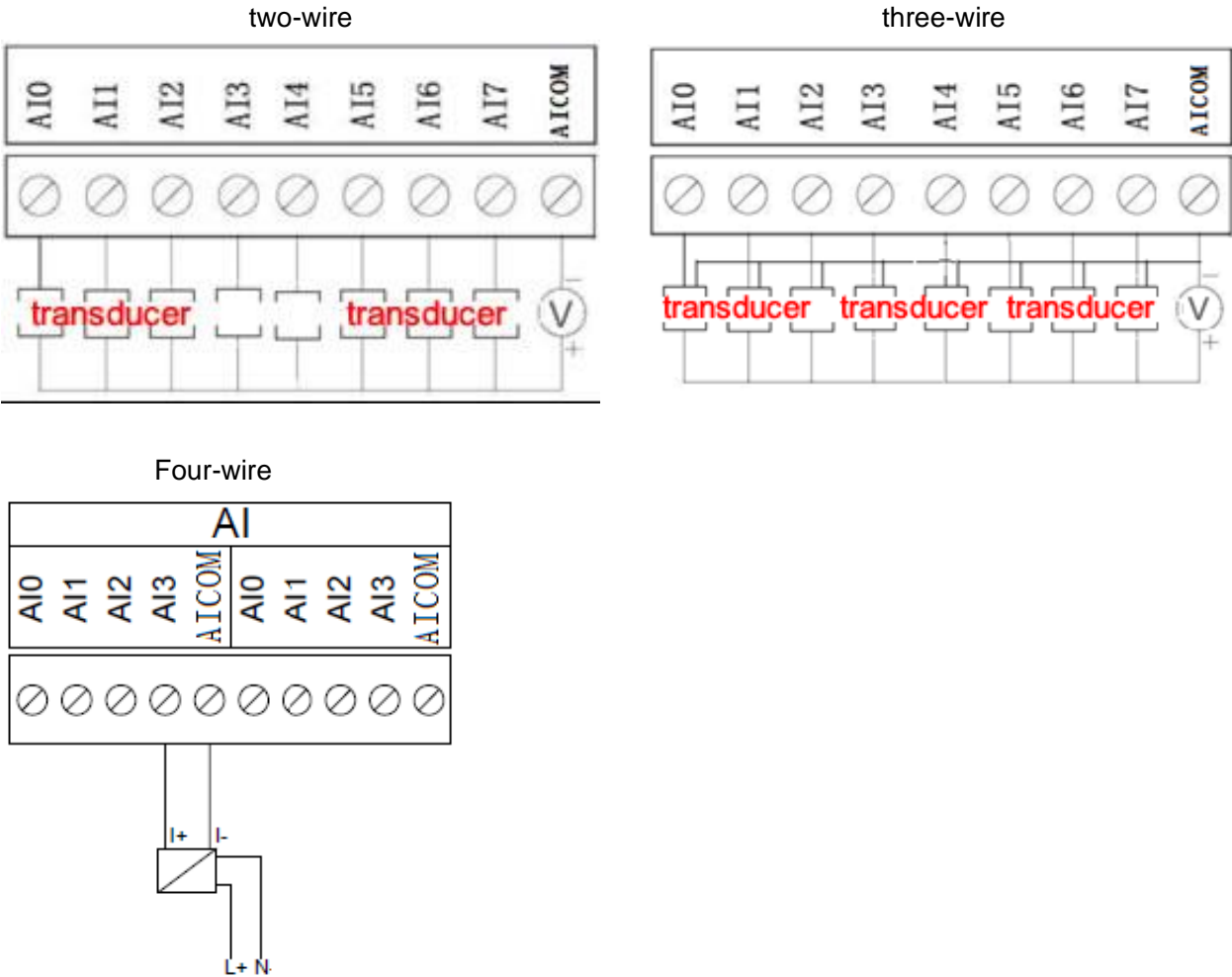
4.1 Analog input

| | |
|--------------|---|
| 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-AI7 | 40051-40058 | 03 | UINT16 | 0.001 |

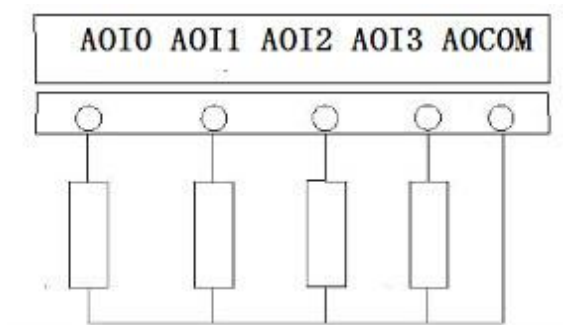
AI wiring diagram



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 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 4000~20000 <unsigned 16-bit integer> 0~20mA corresponding 00000~20000 0~5V corresponding 00000~10000 0~10V corresponding 00000~20000 |
| Calculation | 4~20mA : register value * 1000 0~20mA : register value * 1000 0~5V : register value * 2000 0~10V : register value * 2000 E.g. Output 6mA register value = 6mA * 1000 = 6000 |

AO wiring diagram



4.3 Digital input

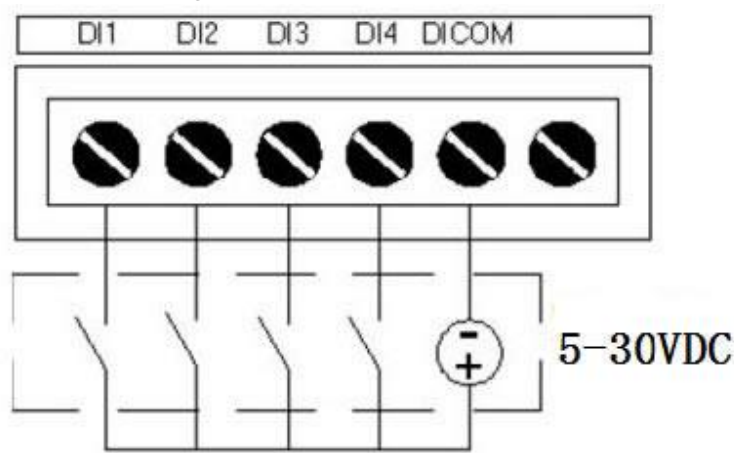
| | |
|------------------|--|
| ON signal level | 5-30VDC, 6mA@24VDC |
| OFF signal level | 0-3VDC |
| Protection | opt coupler isolation, 2500V lightning protection, overvoltage, overcurrent protection |
| Sample rate | 0.01m |

Modbus Register map

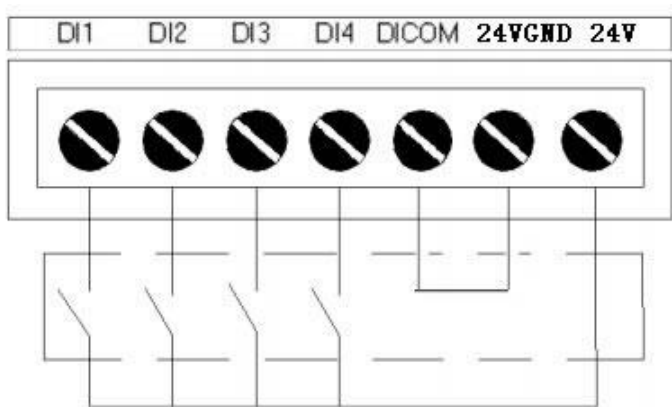
| | |
|----------|------------------|
| channel | Register address |
| DI0-DI15 | 10001-10016 |

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

