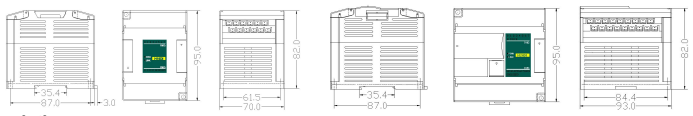
1.Product Model List

Model	Power Consumption	Dimension	Model	Power Consumption	Dimension
S04AI	1.8 VA	70×95×82mm	S08AI	2.1 VA	93×95×82mm
S04AO	3.6 VA		S08AO	6.5 VA	
S04XA	2.4 VA		S08XA	4.5 VA	
H04RC	1.5 VA		H08RC	1.8 VA	
H04TC	1.5 VA				
H08TC	1.8 VA				



2. Indicator Description

①POW: Power indicator, green. Continuous ON - Power good; Continuous OFF - Power error.

②LINK: Communication indicator, contains 4 different colors: green, flashing yellow, flashing red and continuous red, users should take different actions accordingly.

State of the LINK Indicator		Indication Information	Actions to Take
Green	Continuous OFF	Module was not identified by host, no communication	Nothing
	Continuous ON	Module was identified by host, no communication	
	Fast-jitter	Serial port or parallel port is communicating	
Yellow	Flashing light and dark	No serial/parallel port communication	No external power source
	Alternating dark and jitter	Serial port or parallel port is communicating	
Red	Flashing light and dark	No serial/parallel port communication	Firmware incomplete
	Alternating dark and jitter	Serial port or parallel port is communicating	
	Continuous ON	No serial/parallel port communication	Return to depot
	Fast-jitter	Serial port or parallel port is communicating	
Note: Jitter-30ms ON follow with 30ms OFF Flashing-0.5s ON follow with 0.5s OFF Alternate-0.5s OFF follow with 0.5s jitter			

3. Power Supply Specification

Item	DC Power Supply
Power Supply Voltage	DC24V -15%~+20%
Power Supply Frequency	——
Instantaneous Surge	MAX 20A 1.5ms @24VDC
Power Loss Time	10ms or less
Fuse	0.3A，250VAC
24V Output Voltage (for output and extension)	None
Insulation Type	No Electrical isolation
Power Protection	DC input power polarity reverse, over voltage

4. Environmental specifications for Product

Item	Environment Specification
Temperature/Humidity	Operating temperature:0~+55℃ Storage temperature:-25~+70℃ Humidity: 5~95%RH, No condensation
Vibration Resistance	10~57 HZ, amplitude=0.075mm, 57HZ~150HZ acceleration=1G, 10 times each for X-axis, Y-axis and Z-axis
Impact Resistance	15G, duration=11ms, 6 times each for X-axis, Y-axis and Z-axis
Interference Immunity	DC EFT:±2500V Surge:±1000V
Over Voltage Resistance	1500VAC/1min between AC terminal and PE terminal, 500VAC/1min between DC terminal and PE terminal
Insulation Impedance	≧5MΩbetween AC terminal and all input/output points to PE terminal @500VDC
Operating environment	Avoid dust, moisture, corrosion, electric shock and external shocks

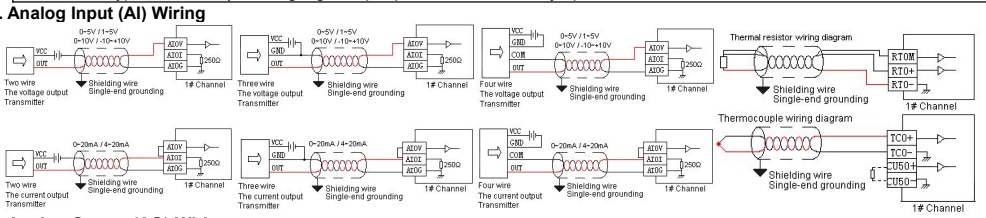
5. Analog Input (AI)Specification

Item	Input Voltage	Input Current	Thermal Resistor Type	Thermocouple Type
Input Range	-10V~+10V、0V~+10V、0V~+5V、1V~+5V	0~20mA 4~20mA	Pt100、Pt1000 Cu50、Cu100	S、K、T、E、J、B、N、R、Wre3/25、Wre5/26、[0,20]mV、[0,50]mV、[0,100]mV
Resolution	5mV 、 2.5mV 、 1.25mV、1.25mV	5uA	0.1 degrees Celsius	0.1 degrees Celsius
Input Impendence	6MΩ	250Ω	6MΩ	6MΩ
Max Input	±13V	±30mA		±5V
Response Time	5ms/4 channels		560ms/4 channels	
Conversion Range	12 bits, code value range: 0~32000		16 bits, code value range: 0~32000	
Measurement Accuracy	0.2% F.S		0.1% F.S	
Input indicator	ON-connected, OFF-disconnected			
Insulation Type	Analog/digital input points are isolated by optoelectronic isolation. No isolation between channels.			

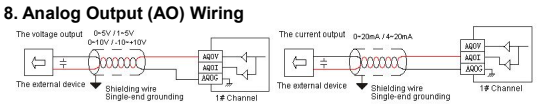
6. Analog Output (AQ) Specification

Item	Output(Voltage type)				Output(Current type)	
Output Range	-10V~+10V	0V~ +10V	0V~+5V	1V~+5V	0~20mA	4~20mA
Resolution	5mV	2.5mV	1.25mV	1.25mV	5uA	5uA
load Impedance	≥1KΩ@10V		≥500Ω@ 5V		≤500Ω	
Indicator	ON-Normal					
Drive Capability	10mA					
Response Time	3ms					
Conversion Range	12 bits, code value range: 0~32000					
Measurement Accuracy	0.2% F.S					
Insulation Type	Analog/digital input points are isolated by optoelectronic isolation. No isolation between channels.					

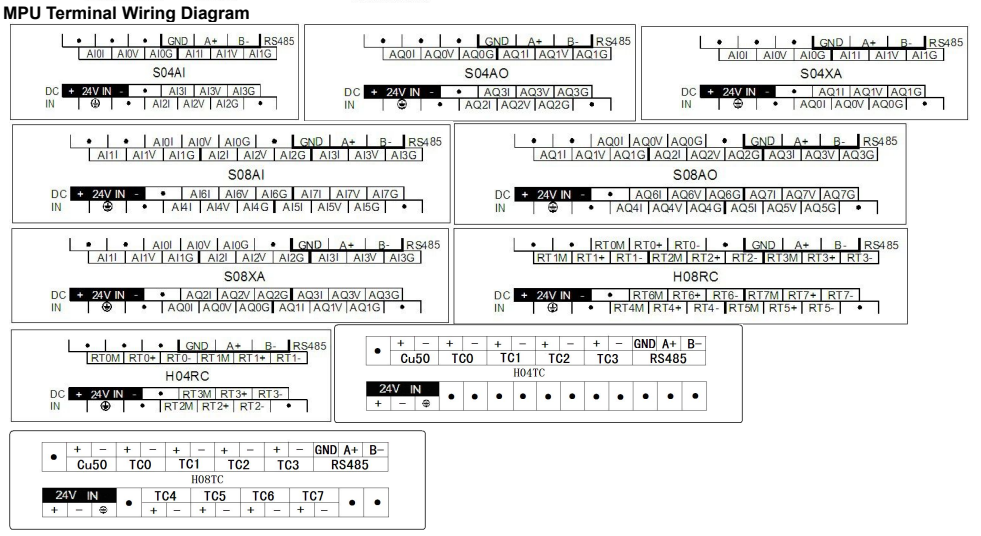
7. Analog Input (AI) Wiring



8. Analog Output (AO) Wiring



9. MPU Terminal Wiring Diagram



10. Analog Module Parameter List (Note: CR represents corresponding Modbus register address, CH1 means #1 Channel)

CR	S04AI	S04AO	S04XA	S08AI	S08AO	S08XA	H04RC	H08RC	H04TC	H08TC
00H	Low byte-Module designation; High byte-Module version number									
01H	Corresponding Address									
02H	Communication protocol, low 4 bits in low byte:0 - N,8,2 For RTU，1 - E,8,1 For RTU，2 - O,8,1 For RTU，3 - N,7,2 For ASCII，4 - E,7,1 For ASCII，5 - O,7,1 For ASCII，6 - N,8, 1 For RTU High 4 bits in low byte:0 – 2400，1 – 4800，2 – 9600，3 – 19200，4 – 38400，5 – 57600 6 - 115200									
03H~0EH	03H~08H: Module Name 09H~0EH:Factory Version									
0FH	Error Code: 0-Normal,1-Illegally firmware, 2-Firmware Incomplete, 3-Abnormal System Data Accessing, 4-No Power Supply									
10H	Input Value of CH1	Output Value of CH1	Input Value of CH1	Input Value of CH1	Output Value of CH1	Input Value of CH1	Input Value of CH1	Input Value of CH1	Input Value of CH1	Input Value of CH1
11H	Input Value of CH2	Output Value of CH2	Input Value of CH2	Input Value of CH2	Output Value of CH2	Input Value of CH2	Input Value of CH2	Input Value of CH2	Input Value of CH2	Input Value of CH2
12H	Input Value of #3 Channel	Output Value of #3 Channel	CH1, Input Signal Type ②	Input Value of CH3	Output Value of CH3	Input Value of CH3	Input Value of CH3	Input Value of CH3	Input Value of CH3	Input Value of CH3
13H	Input Value of CH4	Output Value of CH4	CH2, Input Signal Type	Input Value of CH4	Output Value of CH4	Input Value of CH4	Input Value of CH4	Input Value of CH4	Input Value of CH4	Input Value of CH4
14H	CH1,Signal Type ②	CH1, Signal Type ②	Symbol of Engineering Value	Input Value of CH5	Output Value of CH5	CH1, Input Signal Type ②	CH1, Signal Type ③	Input Value of CH5	CH1, Signal Type ④	Input Value of CH5
15H	CH2, Signal Type	CH2, Signal Type	CH1,Input EngineeringValue MIN	Input Value of CH6	Output Value of CH6	CH2, Input Signal Type	CH2, Signal Type	Input Value of CH6	CH2, Signal Type	Input Value of CH6
16H	CH2, Signal Type	CH2, Signal Type	CH2,Input EngineeringValue MIN	Input Value of CH7	Output Value of CH7	CH3, Input Signal Type	CH3, Signal Type	Input Value of CH7	CH3, Signal Type	Input Value of CH7
17H	CH4, Signal Type	CH4, Signal Type	CH1,Input EngineeringValue MAX	Input Value of CH8	Output Value of CH8	CH4, Input Signal Type	CH4, Signal Type	Input Value of CH8	CH4, Signal Type	Input Value of CH8
18H	EngineeringValue Symbol⑥	EngineeringValue Symbol⑥	CH2,Input EngineeringValue MAX	CH1, Signal Type ②	CH1, Signal Type ②	EngineeringValue Symbol⑥	EngineeringValue Symbol⑥	CH1, Signal Type ③	EngineeringValue Symbol⑥	CH1, Signal Type ④
19H	CH1,EngineeringValue MIN	CH1,EngineeringValue MIN	CH1,Input Sampling Times ①	CH2, Signal Type	CH2, Signal Type	CH1, Input EngineeringValue MIN	CH1,EngineeringValue MIN	CH2, Signal Type	CH1,EngineeringValue MIN	CH2, Signal Type
1AH	CH2,EngineeringValue MIN	CH2,EngineeringValue MIN	CH2,Input Sampling Times	CH3, Signal Type	CH3, Signal Type	CH2, Input EngineeringValue MIN	CH2,EngineeringValue MIN	CH2, Signal Type	CH2,EngineeringValue MIN	CH3, Signal Type
1BH	CH3,EngineeringValue MIN	CH3,EngineeringValue MIN	CH1,Zero Corrected Value	CH4, Signal Type	CH4, Signal Type	CH3, Input EngineeringValue MIN	CH3,EngineeringValue MIN	CH4, Signal Type	CH3,EngineeringValue MIN	CH4, Signal Type
1CH	CH4,EngineeringValue MIN	CH4,EngineeringValue MIN	CH2,Zero Corrected Value	CH5, Signal Type	CH5, Signal Type	CH4, Input EngineeringValue MIN	CH4,EngineeringValue MIN	CH5, Signal Type	CH4,EngineeringValue MIN	CH5, Signal Type
1DH	CH1,EngineeringValue MAX	CH1,EngineeringValue MAX	CH1-2,DissconnectAlarm⑤	CH6, Signal Type	CH6, Signal Type	CH1, Input EngineeringValue MAX	CH1,EngineeringValue MAX	CH6, Signal Type	CH1,EngineeringValue MAX	CH6, Signal Type
1EH	CH2,EngineeringValue MAX	CH2,EngineeringValue MAX	Output Value of CH1	CH7, Signal Type	CH7, Signal Type	CH2, Input EngineeringValue MAX	CH2,EngineeringValue MAX	CH7, Signal Type	CH2,EngineeringValue MAX	CH7, Signal Type
1FH	CH3,EngineeringValue MAX	CH3,EngineeringValue MAX	Output Value of CH2	CH8, Signal Type	CH8, Signal Type	CH3, Input EngineeringValue MAX	CH3,EngineeringValue MAX	CH8, Signal Type	CH3,EngineeringValue MAX	CH8, Signal Type
20H	CH4,EngineeringValue MAX	CH4,EngineeringValue MAX	CH1, Output Signal Type	EngineeringValue Symbol⑥	EngineeringValue Symbol⑥	CH4, Input EngineeringValue MAX	CH4,EngineeringValue MAX	EngineeringValue Symbol⑥	CH4,EngineeringValue MAX	EngineeringValue Symbol⑥
21H	CH1,InputSamplingTimes①	Power Cut Symbol ⑧	CH2, Output Signal Type	CH1, EngineeringValue MIN	CH1, EngineeringValue MIN	CH1,InputSamplingTimes①	CH1,InputSamplingTimes①	CH1,EngineeringValue MIN	CH1,InputSamplingTimes①	CH1,EngineeringValue MIN
22H	CH2,InputSamplingTimes	CH1,PowerCut OutputValue	EngineeringValue Symbol⑥	CH2, EngineeringValue MIN	CH2, EngineeringValue MIN	CH2,InputSamplingTimes	CH2,InputSamplingTimes	CH2,EngineeringValue MIN	CH2,InputSamplingTimes	CH2,EngineeringValue MIN
23H	CH3,InputSamplingTimes	CH2,PowerCut OutputValue	CH1,OutputEngineeringValue MIN	CH3, EngineeringValue MIN	CH3, EngineeringValue MIN	CH3,InputSamplingTimes	CH3,InputSamplingTimes	CH3,EngineeringValue MIN	CH3,InputSamplingTimes	CH3,EngineeringValue MIN
24H	CH4,InputSamplingTimes	CH3,PowerCut OutputValue	CH2,OutputEngineeringValue MIN	CH4, EngineeringValue MIN	CH4, EngineeringValue MIN	CH4,InputSamplingTimes	CH4,InputSamplingTimes	CH4,EngineeringValue MIN	CH4,InputSamplingTimes	CH4,EngineeringValue MIN
25H	CH1,Zero Corrected Value	CH4,PowerCut OutputValue	CH1,OutputEngineeringValue MAX	CH5, EngineeringValue MIN	CH5, EngineeringValue MIN	CH1,Zero Corrected Value	CH1,Zero Corrected Value	CH5,EngineeringValue MIN	CH1,Zero Corrected Value	CH5,EngineeringValue MIN
26H	CH2,Zero Corrected Value	State of Channel Indicator	CH2,OutputEngineeringValue MAX	CH6, EngineeringValue MIN	CH6, EngineeringValue MIN	CH2,Zero Corrected Value	CH2,Zero Corrected Value	CH6,EngineeringValue MIN	CH2,Zero Corrected Value	CH6,EngineeringValue MIN
27H	CH3,Zero Corrected Value	Reserved	Power Cut Symbol ⑧	CH7, EngineeringValue MIN	CH7, EngineeringValue MIN	CH3,Zero Corrected Value	CH3,Zero Corrected Value	CH7,EngineeringValue MIN	CH3,Zero Corrected Value	CH7,EngineeringValue MIN
28H	CH4,Zero Corrected Value		CH1,PowerCut OutputValue	CH8, EngineeringValue MIN	CH8, EngineeringValue MIN	CH4,Zero Corrected Value	CH4,Zero Corrected Value	CH8,EngineeringValue MIN	CH4,Zero Corrected Value	CH8,EngineeringValue MIN
29H	CH1-4,DissconnectAlarm⑤		CH2,PowerCut OutputValue	CH1, EngineeringValue MAX	CH1, EngineeringValue MAX	CH1-4,DissconnectAlarm⑤	CH1-4,DissconnectAlarm⑤	CH1,EngineeringValue MAX	CH1-4,DissconnectAlarm⑤	CH1,EngineeringValue MAX
2AH	Reserved		State of Output Channel Indicator	CH2, EngineeringValue MAX	CH2, EngineeringValue MAX	Output Value of CH1	Reserved	CH2,EngineeringValue MAX	Reserved	CH2,EngineeringValue MAX
2BH			Reserved	CH3, EngineeringValue MAX	CH3, EngineeringValue MAX	Output Value of CH2		CH3,EngineeringValue MAX		CH3,EngineeringValue MAX
2CH				CH4, EngineeringValue MAX	CH4, EngineeringValue MAX	Output Value of CH3		CH4,EngineeringValue MAX		CH4,EngineeringValue MAX
2DH				CH5, EngineeringValue MAX	CH5, EngineeringValue MAX	Output Value of CH4		CH5,EngineeringValue MAX		CH5,EngineeringValue MAX
2EH				CH6, EngineeringValue MAX	CH6, EngineeringValue MAX	CH1, Output Signal Type		CH6,EngineeringValue MAX		CH6,EngineeringValue MAX
2FH				CH7, EngineeringValue MAX	CH7, EngineeringValue MAX	CH2, Output Signal Type		CH7,EngineeringValue MAX		CH7,EngineeringValue MAX
30H				CH8, EngineeringValue MAX	CH8, EngineeringValue MAX	CH3, Output Signal Type		CH8,EngineeringValue MAX		CH8,EngineeringValue MAX
31H				CH1,InputSamplingTimes①	Power Cut Symbol ⑧	CH4, Output Signal Type		CH1,InputSamplingTimes①		CH1,InputSamplingTimes①
32H				CH2,InputSamplingTimes	CH1,PowerCut OutputValue	EngineeringValue Symbol⑥		CH2,InputSamplingTimes		CH2,InputSamplingTimes
33H				CH3,InputSamplingTimes	CH2,PowerCut OutputValue	CH1,OutputEngineeringValue MIN		CH3,InputSamplingTimes		CH3,InputSamplingTimes
34H				CH4,InputSamplingTimes	CH3,PowerCut OutputValue	CH2,OutputEngineeringValue MIN		CH4,InputSamplingTimes		CH4,InputSamplingTimes
35H				CH5,InputSamplingTimes	CH4,PowerCut OutputValue	CH3,OutputEngineeringValue MIN		CH5,InputSamplingTimes		CH5,InputSamplingTimes
36H				CH6,InputSamplingTimes	CH5,PowerCut OutputValue	CH4,OutputEngineeringValue MIN		CH6,InputSamplingTimes		CH6,InputSamplingTimes
37H				CH7,InputSamplingTimes	CH6,PowerCut OutputValue	CH1,OutputEngineeringValue MAX		CH7,InputSamplingTimes		CH7,InputSamplingTimes
38H				CH8,InputSamplingTimes	CH7,PowerCut OutputValue	CH2,OutputEngineeringValue MAX		CH8,InputSamplingTimes		CH8,InputSamplingTimes
39H				CH1,Zero Corrected Value	CH8,PowerCut OutputValue	CH3,OutputEngineeringValue MAX		CH1,Zero Corrected Value		CH1,Zero Corrected Value
3AH				CH2,Zero Corrected Value	State of Channel Indicator	CH4,OutputEngineeringValue MAX		CH2,Zero Corrected Value		CH2,Zero Corrected Value
3BH				CH3,Zero Corrected Value	Reserved	Power Cut Symbol ⑧		CH3,Zero Corrected Value		CH3,Zero Corrected Value
3CH				CH4,Zero Corrected Value		CH1,PowerCut OutputValue		CH4,Zero Corrected Value		CH4,Zero Corrected Value
3DH				CH5,Zero Corrected Value		CH2,PowerCut OutputValue		CH5,Zero Corrected Value		CH5,Zero Corrected Value
3EH				CH6,Zero Corrected Value		CH3,PowerCut OutputValue		CH6,Zero Corrected Value		CH6,Zero Corrected Value
3FH				CH7,Zero Corrected Value		CH4,PowerCut OutputValue		CH7,Zero Corrected Value		CH7,Zero Corrected Value
40H				CH8,Zero Corrected Value		State of Channel Indicator		CH8,Zero Corrected Value		CH8,Zero Corrected Value
41H				CH1-8,DissconnectAlarm		Reserved		CH1-8,DissconnectAlarm		CH1-8,DissconnectAlarm
42H~4FH				Reserved				Reserved		Reserved

Note:①Sampling Times: 0-2 times, 1-4 times, 2-8 times, 3-16 times, 4-32 times, 5-64 times, 6-128 times, 7-256 times ②Signal Type: 0 - [4,20]mA, 1 - [0,20]mA ,2 - [1,5]V ,3 - [0,5]V ,4 - [0,10]V ,5 - [-10,10]V ③Thermal Resistor Type: 0 - Pt100, 1 - Pt1000, 2 - Cu50, 3 - Cu100 ④Thermocouple Type: 0 – S, 1 – K, 2 – T, 3 – E, 4 – J, 5 – B, 6 – N, 7 – R, 8 – Wre3/25, 9- Wre5/26, 10 - [0,20]mV, 11 - [0,50]mV, 12 - [0,100]mV ⑤Disconnect Alarm: Each bit represents one channel, 0-Normal, 1-Disconnect ⑥Engineering Value Symbol: Each bit represents one channel, 0-No Disconnect,1-Disconnect ⑦State of Channel Indicator: Each bit represents one channel, 0-OFF, 1-ON ⑧Power Cut Symbol: Each bit represents one channel, 0-No Power Cut, 1-Power Cut.

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