User's Manual of AI/AQ Extension Module

V2.0

1.Product Model List

Type with ethernet	24VDC power supply	Type with ethernet	220VAC power supply	Type	24VDC power supply	Type	220VAC power supply	Dimension
				S04AI	0.07A	S04AI2	7W	70×95×82mm
				S04AO	0.15A	S04AO2	8.8W	
				S04XA	0.1A	S04XA2	7.8W	
				H04RC	0.07A	H04RC2	2W	
				H04TC	0.07A	H04TC2	2W	
				H08TC	0.07A	H08TC2	2.2W	
S08AI-e	0.11A	S08AI2-e	7.9W	S08AI	0.08A	S08AI2	7.3W	93×95×82mm
S08AO-e	0.25A	S08AO2-e	12.4W	S08AO	0.22A	S08AO2	11.8W	
S08XA-e	0.18A	S08XA2-e	10.4W	S08XA	0.15A	S08XA2	9.8W	
H08RC-e	0.1A	H08RC2-e	2.9W	H08RC	0.07A	H08RC2	2.3W	

2. Indicator Description

①PWR:power indicator .green,constant light -Power normal;Not light - Power error.

②LINK:many state indicator .three colors(Red. Yellow. Green),as follow:

Consult manage	Module bus state	LINK the state of the indicator
Normal	Module no communication	Not light
	MPU identification the module but have not communication	Green constant light
	Serial or parallel communicating	Green flicker:indicator light 30ms not light 30ms
parallel power supply not enough,must connect to external power supply	Without serial or parallel communicate	Yellow flicker:indicator light 0.5s not light0.5s
	With serial or parallel communicate	Yellow dark and shake alternately:indicator not light 0.5s shark 0.5s
Upgrade the fireware fail,reupgrade the fireware of the module	Without serial or parallel communicate	Red flicker:indicator light 0.5s not light 0.5s
	With serial or parallel communicate	Red dark and shake alternately:indicator not dark 0.5s shark 0.5s
Maintain	Without serial or parallel communicate	Red constant light
	With serial or parallel communicate	Red shark quickly:indicator light 30ms not light 30ms

3.Power Supply Specification

Item	DC Power Supply	AC Power Supply
Power Supply Voltage	DC24V -15%~+20%	100~240VAC
Power Supply Frequency	——	50~60Hz
Instantaneous Surge	MAX 20A 1.5ms @24VDC	20A 1.5ms MAX @220VAC
Power Loss Time	10ms or less	20ms or less @220VAC
Fuse	0.3A，250VAC	2A, 250VAC
24V Output Voltage (for output and extension)	None	24V, -15%~+15%, 200mA (Max)
Insulation Type	No Electrical isolation	Transformer isolation or optoelectronic isolation,1500VAC/1 minute
Power Protection	DC input power polarity reverse, over current	DC24V output over current

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

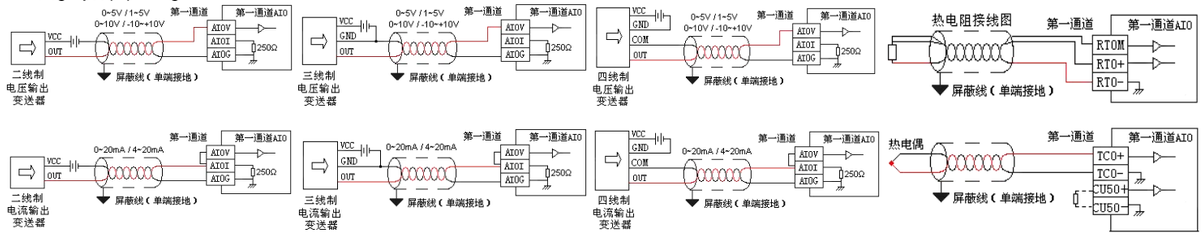
Item	Voltage input				Current input	RTD input	Thermocouple Input
Input range	-10V~+10V	0V~+10V	0V~+5V	1V~+5V	0~20mA 4~20mA	Pt100、Pt1000 Cu50、Cu100	S、K、T、E、J、B、N、R、Wre3/25、Wre5/26、[0,20]mV、[0,50]mV、[0,100]mV
Resolution	5mV	2.5mV	1.25mV	1.25mV	5uA	0.1℃	0.1℃
Input impedance	6MΩ				250Ω	6MΩ	6MΩ
Maximum input range	±13V				±30mA		±5V
Input indication	LED light means normal ,dark means break OFF						
Response time	5ms/4 Channel					560ms/4 Channel ,880ms/8 Channel	
Digital input range	12 bits,Code range:0~32000(H series module 16 bits A/D convert)					16 bits,Code range:0~32000	
Precision	0.2% F.S					0.1% F.S	
Power supply	MPU use internal power supply, extend module use external power supply 24VDC ±10% 5VA						
Isolation mode	Opto-electric isolation,Non-isolation between Channel ,between analog and digital is opto-electricisolation						
Power consumption	24VDC ±20%,100mA(maximum)					24VDC ±20%,50mA(maximum)	

6. Analog Output (AQ) Specification

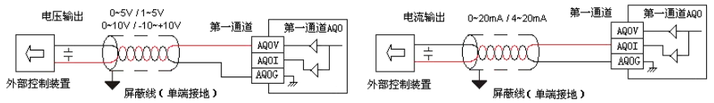
Item	Voltage output				Current output	
Output range	-10V~+10V	0V~ +10V	0V~+5V	1V~+5V	0~20mA	4~20mA
Resolution	5mV	2.5mV	1.25mV	1.25mV	5uA	5uA
Output load impedance	1KΩ@10V		≥500Ω@10V		≤500Ω	
Output indication	LED light means normal					

Drive capabilit	10mA
Response time	3ms
Digital output range	12 bits,Code range:0~32000(H series module 16 bits D/A convert)
Precision	0.2% F.S
Power supply	MPU use internal power supply, extend module use external power supply 24VDC ±10% 5VA
Isolation mode	Opto-electric isolation,Non-isolation between Channel ,between analog and digital is opto-electricisolation
Power consumption	24VDC ±20%,100mA(maximum)

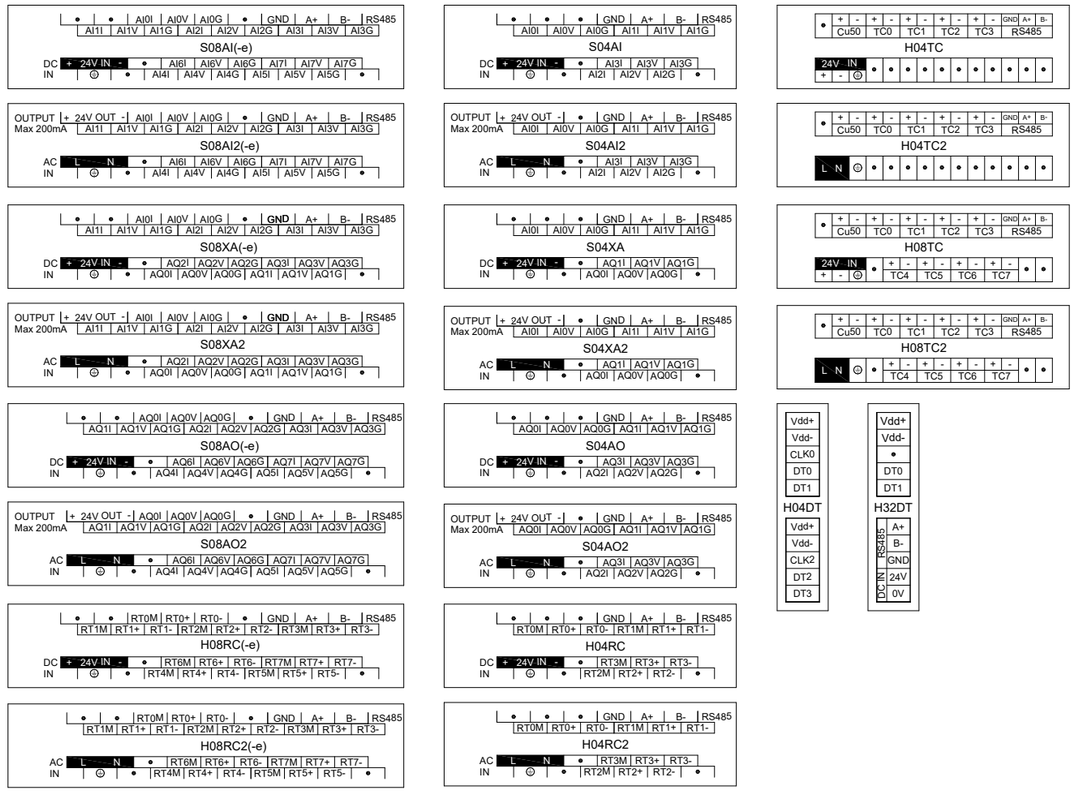
7. Analog Input (AI) Wiring



8. Analog Output (AQ) Wiring



9. MPU Terminal Wiring Diagram



10.Mounting and installation

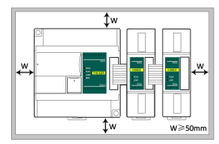
The PLC should be secured to an enclosed cabinet while mounting. For heat dissipation, make sure to provide a minimum clearance of 50mm between the unit and all sides of the cabinet. (See the figure.)

Rail Mounting: Use standard 35 mm rail.

Screw Mounting: Each MPU or extension module has two positioning screw holes, the diameter of the hole is 4.5mm. Please refer to the dimension figure for the location of the positioning holes and their spacing.

To avoid over temperature and for a better heat dissipation, do not mount PLC to a position near to the bottom/top of the cabinet. Do not mount PLC in vertical direction.

Extension Module Wiring: Connections between extension modules and connections between module and MPU are achieved through bus.A extension cable will be configured to every extension module, for the connection between two different modules.Connection methods: turn the right side of extended interface(the last MPU or extension module) over, plug the extension cable in the extended interface, then press down the cover of the extended interface to reset the interface, the extended interface at the right side of the module will be reserved for extension of the next module. Connect all extension modules in turn in the same way.



Thanks for choosing Haiwell PLC, If you have any questions about our products or services, please let us know!

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