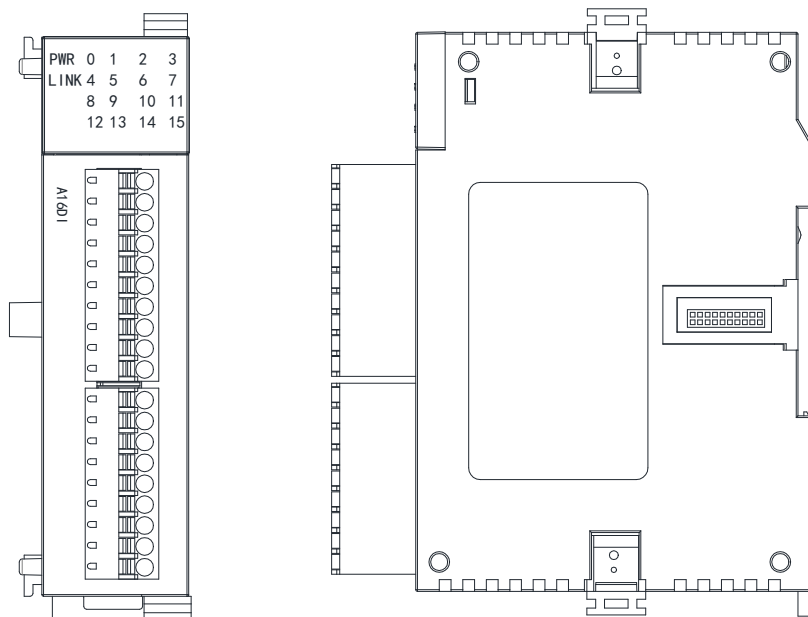


Haiwell PLC User Manual

A Series Card-type PLC

Digital Module User Manual



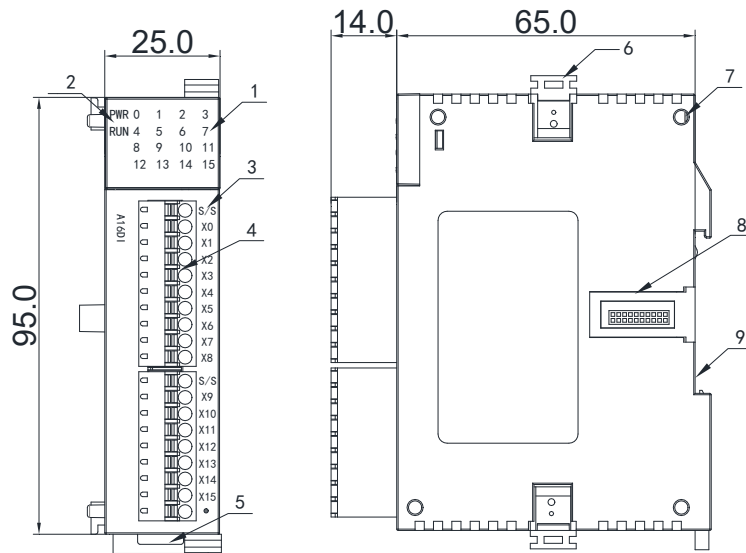
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Digital module user manual

1. Product Model List and Dimension

Model	power(24V)	Dimensions
A08DI	DC24V~0.1A MAX	25*95*68
A08DOR	DC24V~0.2A MAX	
A08DOT	DC24V~0.2A MAX	
A08DOP	DC24V~0.2A MAX	
A08XDR	DC24V~0.1A MAX	
A08XDT	DC24V~0.1A MAX	
A08XDP	DC24V~0.1A MAX	
A16DI	DC24V~0.1A MAX	
A16DOR	DC24V~0.35A MAX	
A16DOT	DC24V~0.35A MAX	
A16DOP	DC24V~0.35A MAX	
A16XDR	DC24V~0.2A MAX	
A16XDT	DC24V~0.2A MAX	
A16XDP	DC24V~0.2A MAX	



1.Digital channel indicator	8.Module expansion port
2.PWR power indicator、link running indicator	9. 35mm DIN guide rail
3.Terminal definition	
4.Removable terminal	
5.Rail buckle	
6.Module hook	
7.Module connection positioning hole	

2. Indicator Description

- PWR: power indicator .green,constant light -Power normal; Not light - Power abnormal.
- LINK: multi-status indicator, three colors (Red/ Yellow/ Green), as follow:

Reference processing mode	Module bus state	LINK indicator state
Normal	No communication of module	No light
	MPU has identified the module but no communication	Constant light in green
	Serial or parallel port in communication	Green jitter: indicator on 30ms and off 30ms
Parallel power supply not enough, must connect to external power supply	Without serial or parallel port in communication	Yellow flicker: indicator on 0.5s and off 0.5s
	With serial or parallel port in communication	Yellow is darkened and jitter alternately: indicator off 0.5s and jitter 0.5s
Firmware upgrade failed, reupgrade the module firmware	Without serial or parallel port in communication	Red flicker: indicator on 0.5s and off 0.5s
	With serial or parallel port in communication	Red is darkened and jitter alternately: indicator off 0.5s and jitter 0.5s
Hardware failure and maintenance	Without serial or parallel port in communication	Constant light in red
	With serial or parallel port in communication	Red jitter quickly: indicator on 30ms and off 30ms

3. Power Supply Specification

Item	DC Power Supply
Power supply voltage	24VDC -15%~+20%
Power supply frequency	—
Instantaneous surge	MAX 20A 1.5ms @24VDC
Power loss time	10ms or less
Fuse	0.3A, 250V
24V Output voltage (for input and expansion)	None
Isolation type	No Electrical isolation
Power protection	DC input power polarity reverse, over voltage protection

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	Between AC terminal and PE terminal @500VDC, >=5MΩ ,all input/output points to PE terminal @500VDC
Operating environment	Avoid dust, moisture, corrosion, electric shock and external shocks

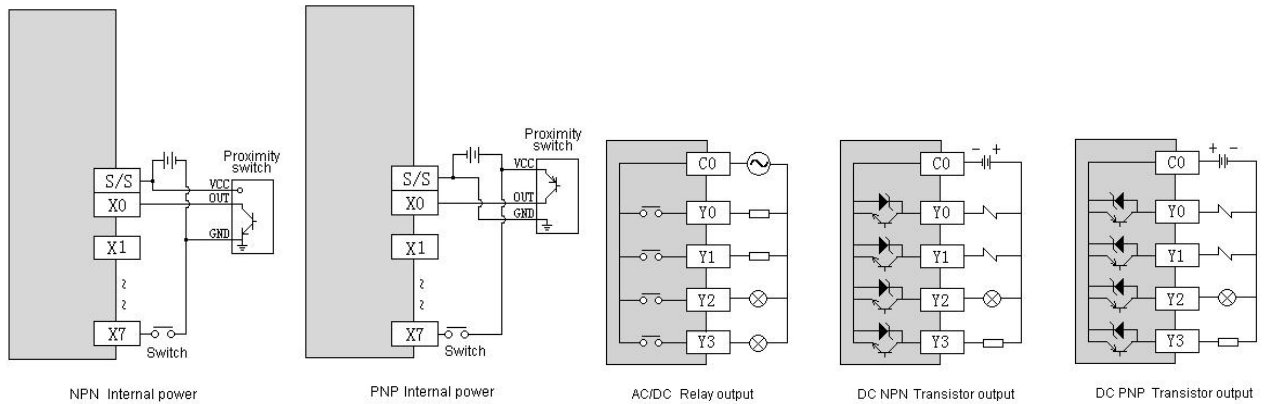
5. Digital Input (DI) Specification

Item	Environment Specification
Input signal	No voltage contact or NPN/PNP
Action driving	ON>3.5mA OFF<1.5mA
Input impedance	Input Impedance≈4.3KΩ
Maximum input current	10mA
Reaction time	6.4ms DEFAULT, can be configured to 0.8~51.2ms
Isolation type	Independent optoelectronic isolation for each channel
Input indication	LED's lighting indicates ON, no light indicates OFF
Power supply	MPU internal power supply:DC power supply (SINK or SOURCE) 5.3mA@24VDC

6. Digital Output (DO) Specification

Item	Relay output-R	NPN or PNP transistor output-T/P
Maximum load	Resistive Load	2A/1 point, 8A/4 points COM
	Inductive Load	50VA
	Lamp load	100W
Minimum Load	10mA	2mA
Voltage Specification	Below 250VAC, 30VDC	30VDC

7. Digital Input/Output (DI/DO) Wiring Diagram



8. Terminal Wiring Diagram



9. Module Parameter Table

(CR code is corresponding to the Modbus register address)

Note: CR code is corresponding to the Modbus register address, the gray parts are read-only ,the white parts are readable and writable.

CR 号	功能说明
	A08DI、A08DOR、A08DOT、A08DOP、A08XDR、A08XDT、A08XDP、 A16DI、A16DOR、A16DOT、A16DOP、A16XDR、A16XDT、A16XDP
00H	Low byte for module code, and high byte for module version number.
01H	Communication address
02H	Communication protocol: The low 4-bit of the 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 The high 4-bit of the low byte: 0 - 2400, 1 - 4800, 2 - 9600, 3 - 19200, 4 - 38400, 5 - 57600, 6 - 115200
03H~06H	Module name
07H~08H	Default IP address: 192.168.1.111
09~0AH	Reserve
0BH	High byte subnet mask (b3~b0,1indicates 255, 0 indicates 0, for example, subnet mask255.255.255.0, b3~b0=1110), low byte Reserved
0CH~0EH	Reserve
0FH	Error code: 0-Normal, 1-Illegal firmware identity, 2-Incomplete firmware, 3-System data access exception, 4-No external 24V power supply
10H~4FH	DI channel 1~64 input value
50H~8FH	DO channel 1~64 output value
90H	DI filter time ms, 0 - 0.8、1 - 1.6、2 - 3.2、3 - 6.4、4 - 12.8、5 - 25.6、6 - 51.2
91H~9FH	Reserve

10. Extend module Installation

When installing, install it in an enclosed distribution box, and keep a certain space around it (as shown on the right) to ensure that the PLC can perform heat dissipation.

Rail Mounting: Use standard 35 mm rail.

Extend the connection method of the module

The parallel interface on the lower right side of the previous module (host or expansion module) is inserted into the parallel interface on the lower left side of the next module and hooked with small cards on both sides. The parallel interface on the right side of this module is used as the next expansion module. Connect all expansion modules in this way in sequence.

