



> Main units

Models	Description
HCA1P-8X6YT/R-A/D	8 input points, 6 output points, transistor/relay output
HCA1P-12X8YT/R-A/D	12 input points, 8 output points, transistor/relay output
HCA1P-16X14YT/R-A/D	16 input points, 14 output points, transistor/relay output

> Environment specifications

Items	Specifications
Working temperature	0~55°C
Storage temperature	-25~70°C (No condensation)
Relative humidity	10%~95% (No condensation)
Working altitude	2000m Max.
Electromagnetic interference	EFT 2KV (Power cable, signal cable)
Vibration	5~8.4Hz, amplitude 3.5mm, 8.4~150Hz, Acceleration 9.8m/s <sup>2</sup> , scan at a rate of one multiplication frequency per minute, ten times in each direction (X-, Y-, and Z-axis directions)
Impact (collision)	147m/s <sup>2</sup> , three times in each direction (X-, Y-, and Z-axis directions)
Pollution level	Pollution degree2
Protection level	IP20
Cooling method	Natural air cooling
Installation method	DIN rail mounting 35mm

> Power specifications

Items	Specifications
Power specifications	AC power: AC 100~240V DC power: DC 24V±20%
Power consumption	AC power : 19W (6X4Y, 8X6Y) , 20W (12X8Y) , 21W (16X14Y) DC power : 6W (6X4Y) , 6.5W (8X6Y) , 7W (12X8Y) , 8W (16X14Y)
Rush current	AC power: Max.15A 5ms or less/AC 100V, max.25A 5ms or less/AC 200V DC power: Max.10A 100µs/DC 24V
Input specifications	DC 24V 7mA/5mA No voltage contact or NPN open-collector transistor input
Output specifications	Relay output: 2A/1 point, 8A/4 points COM AC 250V, DC 30V or less Transistor output: 0.5A/1 point, 0.8A/4 points COM DC 5~30V
I/O extension, special extension	Some inputs/outputs and analog inputs/outputs can be extended by installing function extension boards

> Performance specifications

Items	Specifications	
Performance	Program capacity	Built-in 2,000 steps,(EEPROM without battery) , comment input, write during RUN Memory Box with program transfer function can be installed (max. 2,000 steps)
	Clock function	Built-in real-time clock (with time setting and time comparison instructions)
	Instructions	Basic instruction: 27, Step ladder instruction: 2, Applied instruction: 85
	Operation processing time	Basic instruction: 0.5~0.7µs/instruction, Applied instruction: 3.7~100µs/instruction
	High-speed processing	I/O refresh instruction, input filter adjustment command, input interrupt function, pulse catch function
	Max. I/O points	30 points(4 input points and 2 output points can be extended by function extension boards)
	Auxiliary relay, timer	Auxiliary relay: 512 points, Timer: 64 points
	Counter	For general use, 16-bit up counter: 32 points For high-speed use, 32-bit up/down counter: [1-phase]60kHz/2points, 10kHz/4 points [2-phase]30kHz/1 point, 5kHz/1 point
Others	Data registers	For general use: 256 points, for index use: 16 points, for file use: Up to 1,500 points
	COM port	Built-in communication port, RS422/RS485
	Corresponding data communication	N:N network, parallel link, PC link, programming communication

> Input specifications

Items	Specifications	
Input points	HCA1P-8X6Y□	8 points
	HCA1P-12X8Y□	12 points
	HCA1P-16X14Y□	16 points
Input form	NPN/PNP	
Input voltage	DC 24V±10%	
Input resistance	X000~X007	3.3kΩ
	X010 or more	4.3kΩ
Input current	X000~X007	7mA/DC 24V
	X010 or more	5mA/DC 24V
Input sensitivity current at power-ON	X000~X007	4.5mA or more
	X010 or more	3.5mA or more
Input sensitivity current at power-OFF	All inputs	1.5mA or less
Input response time	X000~X001	About 10µs
	X002~X007	About 50µs
	X010 or more	About 10µs
Input circuit isolation	Optocoupler isolation	
Input operation display	LED lit when driving	

## &gt; Output specifications

Items		Transistor output specifications
External voltage		DC 5~30V
Max. load	Resistive load	Make sure that the total load current of resistance load per common terminal not exceed the following value: 1 output point: 0.5A 4 output points: 0.8A 8 output points: 1.6A
	Inductive load	12W/DC 24V
Mini. load		-
Open circuit leakage current		0.1mA or less/DC 30V
ON voltage		1.5V or less

Items			Relay output specifications
External voltage			DC 30V or less AC 240V or less (AC 250V or less when not compatible with CE, UL, cUL standards)
Max. load	Resistive load	2A/1 point	Make sure that the total load current of resistance load per common terminal not exceed the following value: 1 output point: 2A 4 output points: 8A 8 output points: 8A
	Inductive load	80VA	-
Mini. load			DC 5V 2mA (Reference)
Open circuit leakage current			-
Response time	OFF→ON		About 10ms
	ON→OFF		About 10ms
Circuit insulation			Mechanical insulation
Operation display			LED lit when the relay coil is energized

## &gt; RS485 specifications

Items	Specifications
Interface type	RS485
Data transmission speed	Max.115200bps
Communication mode	Half-duplex
Max. transmission distance	50m (At a specific baud rate)
Supported protocol	N:N network, parallel link, PC link
Isolation status	Non-isolated
Terminating resistor	Not built-in

## &gt; RS422 specifications

Items	Specifications
Interface type	RS422
Data transmission speed	Max.115200bps
Communication mode	Full-duplex
Max. transmission distance	50m (At a specific baud rate)
Supported protocol	Programming port protocol
Isolation status	Non-isolated