A-SERIES UNIT LINEUP

Naming rule for HCA8C-series extension modules

HCA8C-16X16YT-A

Product name
HC
HC: HCFA controller

Series name
A8
A1: Simple-type controller
A2: General0purpose
A8: High-performance controller

Series models
C
N/A: Standard-type
P : Upgraded-type
C : Compact-type

Input points
16
16: 16 points

Input type
X
X : Digital input for main units
EX: Digital input for extension modules
AD: Analog input
PT: Thermal resistance input
TC: Thermocouple input
HC: High-speed input
LC : Load cell

Output points
16
16: 16 points

Output type
Y
Y: Digital output for main units
EY : Digital output for extension modules
DA: Analog output
PG: Pulse output
GM: Motion control

Output method
T
R: Relay output
T: Transistor output

Power type
A
D: DC power
A: AC power
N/A: None for modules

Naming rule for HCA8P-series extension modules

HCA8P-ADxx-D

Product name
HC
HC: HCFA controller

Extension series name
A8P
M: Standard control

Series models
AD
AD: Analog input **PG:** Pulse output
DA: Analog output

Number of channel
xx
xx: Number of channels

Power type
D
D : DC power
A : AC power

Right-extension input modules

Models		Number of channels	Input/output type				Connector type	External dimension WxDxH(mm)
			Input		Output			
	HCA8C-8EX	8	8	DC 24V	-	-	Screw terminal type	29x74.5x94.6
	HCA8C-16EX	16	16	DC 24V	-	-	Screw terminal type	28.9x74.5x94.6
	HCA8C-16EX-C	16	16	DC 24V	-	-	Screw terminal type	19.4x86.8x94.6

Right-extension output modules

Models		Number of channels	Input/output type				Connector type	External dimension WxDxH(mm)
			Input		Output			
	HCA8C-8EYR	8	-	-	8	Relay	Screw terminal type	29x74.5x94.6
	HCA8C-8EYT	8	-	-	8	Transistor	Screw terminal type	29x74.5x94.6
	HCA8C-16EYR	16	-	-	16	Relay	Screw terminal type	28.9x74.5x94.6
	HCA8C-16EYT	16	-	-	16	Transistor	Screw terminal type	28.9x74.5x94.6
	HCA8C-16EYT-C	16	-	-	16	Transistor	Horn connector	19.4x86.8x94.6

Right-extension I/O modules

Models		Total points	Input/output type				Connector type	External dimension WxDxH(mm)
			Input		Output			
	HCA8C-4EX4EYR	8	4	DC 24V	4	Relay	Screw terminal type	29x74.5x94.6
	HCA8C-4EX4EYT	8	4	DC 24V	4	Transistor	Screw terminal type	29x74.5x94.6
	HCA8C-8EX8EYR	16	8	DC 24V	8	Relay	Screw terminal type	28.9x74.5x94.6
	HCA8C-8EX8EYT	16	8	DC 24V	8	Transistor	Screw terminal type	28.9x74.5x94.6
	HCA8C-8EX8EYT-C	16	8	DC 24V	8	Transistor	Horn connector	19.4x86.8x94.6

Analog modules

Models		Number of channels	Input specifications		Channel data update time	External dimension WxDxH(mm)
			Signal voltage	Signal current		
	HCA8P-AD04-D	4	-10V~10V	0~20mA 4~20mA	500μs×Number of channels used ×Average times	19.4x74.8x97.8
	HCA8P-DA04-D	4	-10V~10V	0~20mA 4~20mA	1ms (Regardless of the number of channels used)	19.4x74.8x97.8

Pulse positioning modules

Models		Number of channels	Input signal	Output signal	External dimension WxDxH(mm)
				Pulse output	
	HCA8P-1PG	1	DC 24V±10%	DC 5~24V	19.4x74.9x95.7

A-series Modules | Overview

Terminal conversion modules

Models		Type	Functions	External dimensionWxDxH(mm)
	HCA8C-CBR	Relay output	Realize the conversion between Ihorn terminal and conventional terminalfor IO modules, which is convenient for users to make wiring	100x90x40.7
	HCA8C-CBT	Transistor output		100x90x40.7

Extension conversion modules

Models		Functions	Power signal		External dimension
			Input	Output	
	HCA8C-CNV5V-TX2N	Interface conversion and power extension	DC 24V	DC 5V	19.5x74.9x96

Digital I/O modules

HCA8 SERIES UNIT

DIGITAL INPUT

HCA8C-8EX

8 points digital input

HCA8C-16EX

16 points digital input

HCA8C-16EX-C

8 points digital input

DIGITAL OUTPUT

HCA8C-8EYR

8 points digital output

Relay output

HCA8C-8EYT

8 points digital output

Transistor output

HCA8C-16EYR

16 points digital output

Relay output

HCA8C-16EYT

16 points digital output

Transistor output

HCA8C-16EYT-C

16 points digital output

Transistor output

DIGITAL IN/OUT

HCA8C-4EX4EYR

4 points digital input/output

Transistor output

HCA8C-4EX4EYT

4 points digital input/output

Transistor output

HCA8C-8EX8EYR

8 points digital input/output

Transistor output

HCA8C-8EX8EYT

8 points digital input/output

Transistor output

HCA8C-8EX8EYT-C

8 points digital input/output

Transistor output

> HCA8-series Modules | Specifications

Models	Input points	Type	Output points	Type	Connector type	I/Ooccupied points	DC5Vpower supply capacity(mA)
HCA8C-4EX4EYR	4	DC 24V	4	Relay	Hom connector	16*	40
HCA8C-4EX4EYT	4	DC 24V	4	Transistor	Hom connector	16*	40
HCA8C-8EX	8	DC 24V	-	-	Hom connector	8	25
HCA8C-8EYR	-	-	8	Relay	Hom connector	8	30
HCA8C-8EYT	-	-	8	Transistor	Hom connector	8	30
HCA8C-8EX8EYR	8	DC 24V	8	Relay	Hom connector	16	60
HCA8C-8EX8EYT	8	DC 24V	8	Transistor	Hom connector	16	60
HCA8C-8EX8EYT-C	8	DC 24V	8	Transistor	Screw terminal type	16	60
HCA8C-16EX	16	DC 24V	-	-	Hom connector	16	30
HCA8C-16EYR	-	-	16	Relay	Hom connector	16	50
HCA8C-16EYT	-	-	16	Transistor	Hom connector	16	50
HCA8C-16EX-C	16	DC 24V	-	-	Screw terminal type	16	30
HCA8C-16EYT-C	-	-	16	Transistor	Screw terminal type	16	50

*Note：HCA8C-4EX4EYT; HCA8C-4EX4EYR has four input points and four output points, but it occupies eight input points and eight output points in the PLC; So pay attention to the use of input and output points when needs to connect other extension modules.

> Input specifications

Items		Specifications
Signal voltage		DC 24V+20%-15% ,fluctuation (P-P) within 5%
Input resistance		4.3kΩ
Signal current		5mA / DC 24V
Input sensitivity current	NO	3.5mA or more
	OFF	1.5mA or less
Response time		About 10ms
Signal type		NPN/ PNP input
Circuit isolation		Optocoupler isolation
Operation display		LED lit when the input is ON

> Transistor output specifications

Items			Transistor output specifications	
External power supply			DC 5~30V	
Max. load	Resistance load	HCA8C-16EYT	0.1A/1 point	
		HCA8C-16EYT-C	0.3A/ 1 point	Make sure that the total load current of resistance load per common terminal (16 points) is 1.6A or less
		HCA8C-8EYT、HCA8C-16EYT、HCA8C-16EYR	0.5A/1 point	The total load current of resistance load per common terminal (16 points) should be the following:4 points/common: 0.8A; 8 points: 1.6A
		HCA8C-8EYR	1A/1 point	Make sure that the total load current of resistance load per common terminal (4 points) is 2A or less
	Inductive load	HCA8C-16EYT	2.4W/1 point (DC 24V)	
		HCA8C-16EYT-C	7.2W/1 point (DC 24V)	
		HCA8C-8EYT、HCA8C-16EYT、HCA8C-16EYR	12W/1 point (DC 24V)	
	Lamp load	HCA8C-16EYT	0.3W/1 point (DC 24V)	
		HCA8C-16EYT-C	1W/1 point (DC 24V)	
		HCA8C-8EYT、HCA8C-16EYT、HCA8C-16EYR	1.5W/1 point (DC 24V)	
		HCA8C-8EYR	3W/1 point (DC 24V)	
Open-circuit leakage current			0.1WmA or less/DC 30V	
ON-voltage			1.5V	
Response time	OFF-ON	Extension modules	0.2ms or less/100mA(DC 24V)	
	ON-OFF	Extension modules	0.2ms or less/100mA(DC 24V)	
Circuit isolation			Optocoupler isolation	
Operation display		Extension modules	LED lit when the optocoupler is driven	

> Relay output specifications

Items			Specifications
External power supply			DC 30V or less, AC 250V or less
Max. load	Resistance load	HCA8C-16EYT	Make sure that the total load current of resistance load per common terminal (16 points) is 8A or less 2A/1 point The total load current of resistance load per common terminal should be the following: 4 points/common: 8A; 8 points: 8A
		HCA8C-16EYR	
	Inductive load	HCA8C-16EYT	Please refer to the user manual (item 622) for the life-expectancy standard 80VA when inductive load is connected In addition, please refer to the user manual (item 624) for theprecaution on external wiring
		HCA8C-16EYR	
Mini. load			DC 5V 2mA (Reference)
Open-circuit leakage current			-
Response time	OFF-ON		About10ms
	ON-OFF		About10ms
Circuit isolation			Mechanical isolation
Operation display			LED lit when the relay is energized

Analog/Special Modules

HCA8 SERIES UNIT

ANALOG INPUT

HCA8P-AD04-D

- 4-ch analog input
- Differential/single-ended input
- Input voltage range：-10~10V
- Input current range：0~20mA、4~20mA

ANALOG OUTPUT

HCA8P-DA04-D

- 4-ch analog output
- Single-ended output
- Output voltage range：-10~10V
- Output current range：0~20mA、4~20mA

PULSE POSITIONING MODULE

HCA8P-1PG

- Single channel pulse output
- Built-in T-shaped acceleration and deceleration function
- Multiple positioning control methods

TERMINAL CONVERSION

HCA8C-CBR/CBT

- Transistor/relay output
- Conversion of horn and conventional terminal

EXTENSION CONVERSION

HCA8C-CNV5V-TX2N

- Extension for IO module connector
- 24VDC power supply extension

Power specifications

Items	Specifications
A/D conversion circuit driving power	DC 24V±10% 100mA (24VDC needs to be supplied from the terminal block)
CPU driving power	DC 5V 100mA (Supplied from the main unit)

Analog input module — Performance specifications

Items	Voltage input	Current input
Analog input range	DC -10V~+10V	DC 0~20mA,4~20mA
Max. absolute input	±15V	0~30mA
Digital output	Decimal	Decimal
Resolution	0.32mV (20Vx1/64000) 2.5mV (20Vx1/8000)	1.25μA (40mAx1/32000) 5.00μA (40mAx1/8000)
Overall accuracy	Ambient temperature 25°C±5°C Full scale 20V±0.3% (±60mV) Ambient temperature 0°C~55°C Full scale 20V±0.3% (±100mV)	Ambient temperature 25°C±5°C Full scale 20mA±0.3% (±100uA) Ambient temperature 0°C~55°C Full scale 20mA±0.3% (±200uA)
AD conversion time	500μs×Number of channels used×Average times	

Analog output module — Performance specifications

Items	Voltage output	Current output
Analog output range	DC -10~+10V	DC 0~20mA,4~20mA
Offset value	-10~+9V	0~17mA
Gain value	-9~+10V	3~30mA
Digital input	16 bits, binary, with sign	15 bits, binary
Resolution	0.32mV (20Vx1/64000)	0.63μA (20mA/32000)
Overall accuracy	Ambient temperature 25°C±5°C Full scale 20V±0.3% (±60mV) Ambient temperature0°C~55°C Full scale 20V±0.3% (±100mV)	Ambient temperature 25°C±5°C Full scale 20mA±0.3% (±100uA) Ambient temperature 0°C~55°C Full scale 20mA±0.3% (±200uA)
D/A conversion time	1ms (Not related to the number of selected channels)	
Insulation method	The photocoupler is used to insulate the analog input area from the PLC. • The DC/DC converter is used to insulate the power supply line from the analog input area. • Channels are not insulated from each other.	
Occupied points	8 points (can be either inputs or outputs)	

Pulse positioning module — Performance Specifications

Items		Specifications
Power supply	Input signal	DC 24V±10%,Current consumption 40mA or less
	Output signal	Pulse output: DC 5~24V, current consumption 35mA or less CLR output: DC 5~24V, current consumption 20mA or less
Number of control axes		1
Positioning operation	Method	Incremental/absolute value
	Unit	PLS,um,10^{-4} inch,mdeg
	Unit magnification	1x,10x,100x,300x
	Range	-2,147,483,648,to2,147,483,647 PLS
	Opeation speed unit	Hz,cm/min,inch/min,10deg/min
	Output frequency	1Hz~200kHz
	Acceleration and deceleration settings	Trapezoidal acceleration/ deceleration: 1~32767 ms
Occupied points		8 points (can be either inputs or outputs)