HCA8C

High-speed and card-type unit

Controllable I/O:16~256 points
Main Unit I/O : 16/32/64/96 points

◆New High speed and ultrathin PLC
◆Ultra high-speed, More capacity, Max. Performance, More Function
◆Built-in 4 Pulse Train Outputs (100KHz / 200KHz)
◆Built-in six 100kHz & two 10kHz high speed counter
◆Built-in 2 Communication Ports (RS422 +Rs485)

HCFA

HCA8C

High-speed and compact blocks

Controllable I/O:16~256 points
Main Unit I/O : 16/32/64/96 points

■ HCA8C Main Units

HCA8C-8X8YR
HCA8C-8X8YT-P0
HCA8C-8X8YT-P3
HCA8C-8X8YT-P4
HCA8C-8X8YT-D2

Input: 8points
Output: 8points

HCA8C-16X16YT-P0
HCA8C-16X16YT-P3
HCA8C-16X16YT-P4

Input: 16points
Output: 16points

HCA8C-32X32YR
HCA8C-32X32YT-P4

Input: 32points
Output: 32points

■ Specifications

	Item	Specification
Power supply	Power supply (24V DC)	DC POWER: 24V DC, 350 mA
	Input Spec.	Support NPN (sink input type) and PNP (source input type)
	Output Spec.	Relay Output:2A/1 point, 8A/4 points COM, 8A/8 points COM, 250 VAC, 30 VDC or less Transistor Output: 0.5 A/1 point,0. 8A/4points COM, 1,6 A/8points COM, 5~30V DC
	I/O extension	HCA8C Series input/output extension blocks can be connected. Up to 7 HCA8C Series special function units/blocks can be connected
Performance	Built-in switch	Built-in RUN/STOP switch, RUN/STOP operation can also be realized by input terminal or peripheral device
	Data registers	General:8,000 points,Expansion:32,768 points,File:32,768 points(Memory cassette should be installed), Index:16 points
	Program memory	Built-in 64KM SRAM memory
	Clock function	Built-in real-time clock to have the time control
	Instruction	Support pulse outputs, high-speed processing, positioning, zero return Maximum number of input/output points is 256 points,.
	Processing speed	Standard:0.050μs/basic instruction + 0.170μs /applied instruction
	High speed processing	[I phase] 100kHz [2 phase] 50kHz 4-axis pulse output
	Max integrated I/O point	384 points (including input/output points of main units, input/output extension blocks, remote I/O)
	Auxiliary relay& timers	Auxiliary:7,680 points timer:512 points
	Counter	General:200 points (16 bit) 35 points (32 bit) High speed counters: [1 phase]100KHz/6 points,10KHz/2 points [2 phase]50KHz/2 point (4 times available) [I phase] 200kHz [2 phase] 100kHz with high speed adapter
	Remote debugging of program	Programming software enables you to remotely transfer the program and monitor the PLC operation through a modem connected to the RS-232C expansion board
	Write during RUN	The programming software for personal computer enables you to modify the program while the PLC is running.
Others	Communication ports	RS422/RS232/RS485
	Special expansion	Expansion modules with communication function and special function can be connected.
	Provided data communication	Programming communication, parallel link, MODBUS master/ slave station, PC link, inverter communication

■ Extension Device

Conversion blocks	Left-side extension blocks			Right-side extension blocks			
•Conversion blocks	•Communication blocks	•Temperature input	•Analog blocks	•Special extension blocks	•Input extension blocks	•Output extension blocks	•I/O extension blocks
HCA8C-CNV-TX2N needed for HCA8/TX2N series blocks	HCA8C-C24-ADP	HCA8C-4PT-4DP HCA8C-4PNK-ADP	HCA8C-4AD-ADP HCA8C-4DA-ADP HCA8C-3A-ADP	HCA8C-4AD HCA8C-4DA HCA8C-4PT HCA8C-4TC HCA8C-4WK HCA8C-2HC	HCA8C-8EX HCA8C-16EX HCA8C-16EX-C	HCA8C-8EYR HCA8C-8EYT HCA8C-8EYT-C HCA8C-16EYR HCA8C-16EYT HCA8C-16EYT-C	HCA8C-8EX8EYR HCA8C-8EX8EYT HCA8C-4EX4EYR HCA8C-4EX4EYT HCA8C-8EX8EYT-C

■ HCA8C-4AD / Analog input block

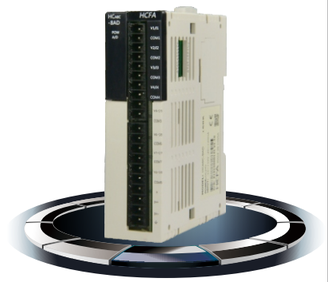
1) High accuracy analog input block with 16 bits binary (voltage),15 bits binary (current) Resolution
2) 4 channels voltage input (-10V~+10V DC) or current input (-20 mA ~+20mA, 4mA~20mA)
3) Either "voltage input" or "current input" can be specified for each channel.

Item	Voltage input	Current input
Analog input range	-10 V to +10 V DC (Input resistance:250kΩ)	-20 mA to +20 mA DC, 4mA to 20mA (Input resistance:250 Ω)
Absolute maximum input	±15V	±30mA
Digital input	16 bits, binary	15 bits, binary
Resolution	0.32mV(20V×1/64000) 2.5mV(20V×1/8000)	1.25μA(40mA×1/32000) 5.00μA(40mA×1/8000)
Overall accuracy	• Ambient temperature: 25℃± 5℃ ±0.3% (±60mV) for 20V full scale • Ambient temperature: 0℃ to 55℃ ±0.5% (±100mV) for 20V full scale	• Ambient temperature: 25℃± 5℃ ±0.5% (±200μA) for 40mA full scale Same accuracy (±200μA) for 4mA to 20mA input • Ambient temperature: 0℃ to 55℃ ±1% (±400μA) for 40 mA full scale Same accuracy (±400μA) for 4mA to 20mA input
A/D conversion time	500μs * the number of used input channel	
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.	
Power supply	24V DC +20%-15%, 100mA(It is necessary to connect a 24V DC power supply to the terminal block.)	
Occupied points	8 points (can be either inputs or outputs)	
Applicable PLC	HCA8P/HCA8C	

■ HCA8C-4DA / Analog output block

1) High accuracy analog output block with 16 bits binary (-32000~+32000)
2) 4 channels voltage input (DC-10V~+10V) or current input (0 mA ~+20mA, 4mA~20mA)
3) Either "voltage output" or "current output" can be specified for each channel.

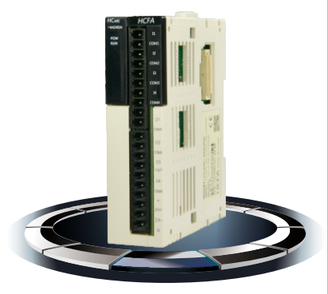
Item	Voltage output	Current output
Analog output range	-10 V to +10 V DC (External load: 1k ~ 1MΩ)	0 mA to +20 mA DC, 4mA to 20mA (External load:500 Ω or less)
Offset value	-10V ~ +9V*2	0mA ~ 17mA*3
Gain value	-9V ~ +10V*2	3mA ~ 30mA*3
Digital input	12 bits, binary (0 to 4000)	12 bits, binary (0 to 4000)
Resolution	0.32mV(20V/64000)	0.63μA(20mA/32000)
Overall accuracy	• Ambient temperature: 25℃± 5℃ ±0.3% (±60mV) for 20V full scale • Ambient temperature: 0℃ to 55℃ ±0.5% (±100mV) for 20V full scale	• Ambient temperature: 25℃± 5℃ ±0.3% (±60μA) for 20mA full scale • Ambient temperature: 0℃ to 55℃ ±0.5% (±100μA) for 20mA full scale
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.	
Power supply	24V DC +20%-15%, 160mA(It is necessary to connect a 24V DC power supply to the terminal block.)	
Occupied points	8 points (can be either inputs or outputs)	
Applicable PLC	HCA8P/HCA8C	



■ HCA8C-8AD / Analog input block

1) High accuracy analog input block with 16 bits binary (-32000 to 32000) Resolution
2) 4 channels voltage output (-10V~+10V DC) or current output (0 mA ~+20mA, 4mA~20mA)
3) Either "voltage input" or "current input" can be specified for each channel.

Item	Voltage input	Current input
Analog input range	-10 V to +10 V DC (Input resistance: 1MΩ)	-20 mA to +20 mA DC, 4mA to 20mA (Input resistance:250 Ω)
Absolute maximum input	±15V	±30mA
Digital input	16 bits with sign , binary	15 bits with sign, binary
Resolution	0.32mV(20V×1/64000) 2.5mV(20V×1/8000)	1.25μA(40mA×1/32000) 5.00μA(40mA×1/8000)
Overall accuracy	• Ambient temperature: 25℃± 5℃ ±0.3% (±60mV) for 20V full scale • Ambient temperature: 0℃ to 55℃ ±0.5% (±100mV) for 20V full scale	• Ambient temperature: 25℃± 5℃ ±0.5% (±200μA) for 40mA full scale Same accuracy (±200μA) for 4mA to 20mA input • Ambient temperature: 0℃ to 55℃ ±1% (±400μA) for 40 mA full scale Same accuracy (±400μA) for 4mA to 20mA input
A/D conversion time	500μs * the number of used input channel	
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	



■ HCA8C-4AD4DA / HCA8C-4AD2DA / Analog input/ output block

1) High resolution for input is 16 bits binary (-32000 to 32000), resolution for output is 12.5 binary (-3000 to 3000)
2) 4 channels voltage input/ output (-10V~+10V DC) or current input/ output (0 mA ~+20mA, 4mA~20mA)
3) Either "voltage input/ output" or "current input/ output" can be specified for each channel.

Item	Voltage input	Current input
Analog input range	-10 V to +10 V DC (Input resistance: 1MΩ) Absolute max. input: ±15V	-20 mA to +20 mA DC, 4mA to 20mA (Input resistance:250 Ω) Absolute max. input:: ±30mA
Digital output	16 bits with sign, binary 12 bits with sign, binary	15 bits with sign, binary
Resolution	• 312.5 μV (20V×1/64000) at -10 to 10V input • 50 μV (20mV×1/4000) at -100 to 100mV input	• 10μA(40mA×1/4000) at -20 to 20mA input • 1.25μA (40mA× 1/32000) at -20 to 20mA input • 10μA (40mA×1/4000) at 4 to 20mA input • 1.25μA (40mA× 1/32000) at 4 to 20mA input
Overall accuracy	• Ambient temperature: 25℃± 5℃ ±0.3% (±60mV) for 20V full scale • Ambient temperature: 0℃ to 55℃ ±0.5% (±100mV) for 20V full scale	• Ambient temperature: 25℃± 5℃ ±0.3% (±120μA) for 40mA full scale Same accuracy (±120μA) for 4mA to 20mA input • Ambient temperature: 0℃ to 55℃ ±5% (±200μA) for 40 mA full scale Same accuracy (±200μA) for 4mA to 20mA input
Item	**Voltage output**	**Current output**
Analog output range	-10 V to +10 V DC (External load resistance: 2kΩ to 1MΩ)	0 mA to +20 mA DC, 4mA to 20mA (External load resistance: 500 kΩ or less)
Digital output	12.5 bits with sign, binary	11.5 bits with sign, binary
Resolution	3.3mV (20V×1/6000) at -10 to 10V output	6.6μA (40mA×1/6000) at 0 to 20mA/ 4 to 20mA output)
Overall accuracy	• Ambient temperature: 25℃± 5℃ ±0.5% (±100mV) for 20V full scale • Ambient temperature: 0℃ to 55℃ ±1.0% (±200mV) for 20V full scale	• Ambient temperature: 25℃± 5℃ ±0.5% (±200μA) for 40mA full scale Same accuracy (±200μA) for 4mA to 20mA input • Ambient temperature: 0℃ to 55℃ ±1.0% (±200μA) for 40 mA full scale Same accuracy (±400μA) for 4mA to 20mA input