

BETTER WORK, BETTER LIFE 



HCQX-D4 Series Centralized Extension Module
HCNXXE Series Distributed Extension Module

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All information in this document is subject to change without notice.
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Due to the delay in updating the paper version, please refer to the official website for the latest product information.

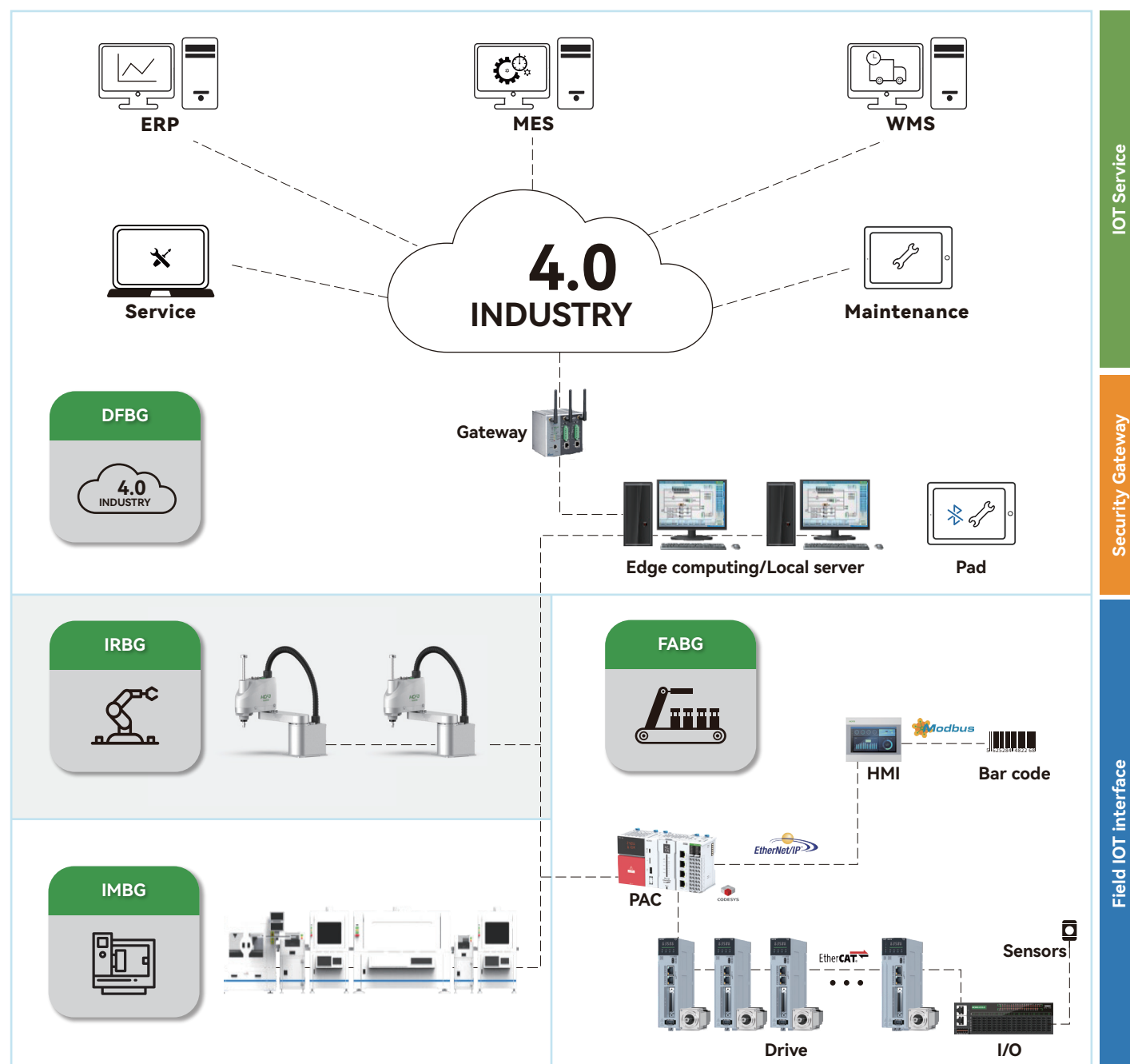
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Better Work, Better Life



We not only provide the core components of industrial automation, but also engage in the industrial process, industrial robots, industrial machines, and digital factories, and can provide enterprises with comprehensive solutions of **automation + intelligent equipment + digitalization**



Be dedicated to creating values in automation industry

Zhejiang Hechuan Technology Co., Ltd., established in 2011, is a company that focuses on the research and development, manufacturing, sales and application integration of industrial automation products, and committed to providing core components and system integration solutions for smart factories.

The main products include controllers, servo systems, vision systems, encoders, VFDs, HMIs, electric rollers, precision transmission components, etc., covering the entire field of industrial automation.

We have newly established a 200-mu high-efficiency precision industrial transmission industrialization base. By introducing industry professionals, it has orderly promoted the industrialization application of precision guide rails, lead screws and other transmission components.

In November 2023, HCFA Technology and Bosch Rexroth signed a strategic cooperation agreement. Bosch Rexroth strategically invested in HCFA Technology and planned to cooperate to establish a subsidiary. Based on common innovation concepts and innovative thinking, the two parties will integrate their respective advantages, form resource complementarity, and carry out in-depth cooperation, striving to become ecological partners in the entire value chain of industrial automation and promote the further development of China's industrial automation industry.



Never stop to build up core competitiveness

R&D Centers

6

Set up nationally

R&D investment

10%+

Proportion of revenue

R&D personnel

300+

Elite gathering

- Established six R&D centers in Longyou, Hangzhou, Shenzhen, Dalian, Suzhou and Germany
- Self-designed ASIC and SOC chips, realize localization replacement
- First-class AMR magnetic technology/high-precision encoder in the industry

3 types of EtherCAT Couplers

6-ch EtherCAT Splitter

Suitable for different application scenarios!



- Rich specifications

① 20 kinds of extension modules; ② 3 types of EtherCAT couplers; ③ 6-ch EtherCAT splitter.
- Flexible and easy-to-use

① Ultra-thin module: 13mm; ② PUSH IN terminal.
- Safe and reliable

① Multiple hardware protection; ② Detailed fault diagnosis.

More than 20 kinds of I/O extension modules

13mm ultra-thin module, 50% space saved;
Removable terminals, no wiring when replacing modules ; PUSH IN, direct plug-in wiring.

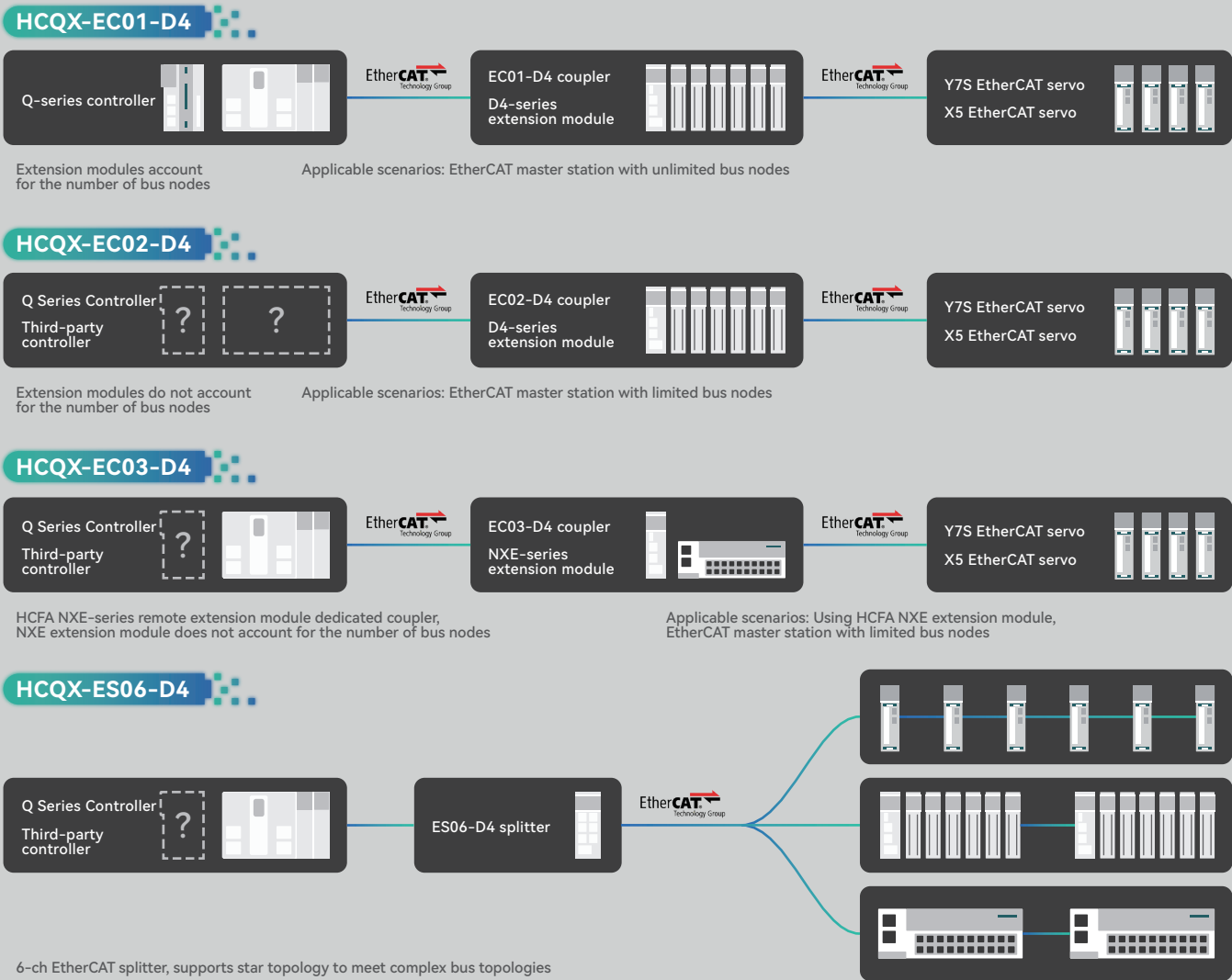
EC coupler module
HCQX-EC01-D4
HCQX-EC02-D4
HCQX-EC03-D4

ES splitter module
HCQX-ES06-D4

16-point digital module
HCQX-ID16-D4
HCQX-OD16-D4
HCQX-OD16-D4-PNP
HCQX-MD16-D4
HCQX-MD16-D4-PNP

32-point digital module
HCQX-ID32-D4
HCQX-OD32-D4
HCQX-OD32-D4-PNP
HCQX-MD32-D4
HCQX-MD32-D4-PNP

Special function module
HCQX-AD04-D4
HCQX-AD08-D4
HCQX-DA04-D4
HCQX-TS04-D4
HCQX-RS02-D4
HCQX-RS02-D4-M
HCQX-OC08-D4



Naming rule for Q-series coupler

HCQX-EC01-D4-****

1

2

3

4

5

6

7

1.Product name

HC

HC: HCFA

2.Product series

QX

QX: Q-Series general extension

3.Function module

EC

EC: EtherCAT coupler

4.Function code

01

01: Standard version^{*1}

02: Function code 2^{*2}

03: Function code 3^{*3}

5.Power type

D

D: DC power

6. Iterative version

4

7.Non-standard specifications

*

None: Standard version

Naming rule for Q-series extension module

HCQX-AD04-D4-****

1

2

3

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5

6

7

1.Product name

HC

HC: HCFA

2.Product series

QX

QX: Q-Series general extension

3.Function module

AD

AD: Analog input

DA: Analog output

ID: Digital input

OD: Digital output

MD: Digital I/O

TS: Temperature measurement

RS: Serial communication

ES: Splitter

4.Number of channels

04

5.Power type

D

D: DC power

6.Iterative version

4

7.Non-standard specifications

*

None: Standard version

PNP: PNP output

M: Modbus protocol

General specifications of Q-series extension module

General specifications

Items		Specifications
Ambient environment	Working temperature	-10~55℃
	Storage temperature	-40~75℃
	Relative humidity	10~95%RH,(no condensation)
	Altitude	2,000m MAX.
	Random drop	1m. twice with outer packaging
	Vibration resistance	5~8.4Hz, amplitude 3.5mm, 8.4~150Hz, acceleration 9.8m/s ² (100 minutes each in X, Y, Z directions) 5-150Hz
	Impact resistance	147m/s ² , 3 times each in X, Y and Z directions
	Protection level	IP20
	Pollution level	Pollution degree II
Insulation method		Please refer to the instructions
EMC requirements	Electrostatic discharge	Contact ±4kV, air ±8kV
	EFT	±2kV
	Surge	DC power: 0.5 CM 0.5kV DM
Withstand voltage		500VDC for 1 minute (leakage current 5mA or less)
Heat dissipation method		Passive heat dissipation, natural air cooling
Installation location		Inside control cabinet
Main material		Standard PPE, UL94, fire protection grade V0

^{*1}Standard EtherCAT coupler, extension module accounts for the number of bus nodes;
^{*2}Standard EtherCAT coupler, extension module does not account for the number of bus nodes;
^{*3}NXE-series module EtherCAT coupler, extension modules do not account for the number of bus nodes.

Coupler module

Models		HCQX-EC01-D4	HCQX-EC02-D4	HCQX-EC03-D4
Appearance				
Transfer protocol		EtherCAT		
Extension module type *1		Applicable to all types of Q-series modules	Applicable to Q-series ID/OD/MD/AD/DA/TS/RS modules	Applicable to all NXE series extension modules
Max. number of extension modules		16*2		31
Data transmission medium		Category 5e shielded twisted pair		
Transmission rate		100Mbps		
Max. communication distance between stations		100m		
Communication physical layer		10/100BASE-TX (IEEE 802.3)		
QBUS communication cycle		Mini. scan period 125μs; The scan cycle time is same as master station scan cycle	Mini. scan period 500μs; The scan cycle time is same as the master station scan cycle	-
QBUS fault tolerance		-	The number of frame loss tolerances for QBUS communication: 0~255 times, 12 times by default, this can be set.	-
NXE OUT communication cycle		-		Mini. scan cycle 500μs; The scan cycle time is same as master station scan cycle.
NXE OUT fault tolerance		-		The number of frame loss tolerances for QBUS communication: 0~255 times, 12 times by default, this can be set.
Addressing mode		Sequential addressing, setting addressing		
COE		✓		
FOE		✓		
Refresh method	Free-run	✓		
	SM-Synchron	✓		
	DC	Support DC with master station	Supported(The module itself supports DC)	
Rated voltage		DC 24V (-15%~+20%)		
Rated current		79mA		50mA
QBUS rated output voltage		DC12V		-
QBUS output power		16W MAX.		-
Power protection features	Undervoltage protection	18V		
	Overvoltage protection	33V		
	Overcurrent protection	3.5A		
	Anti-reverse connection function	✓		
	Abnormal voltage alarm	-	Supports overvoltage and undervoltage detection (error: ±0.5V)	
Weight(g)		About 90	About 95	About 90

*1 Please refer to the selection guide.

*2 Users should ensure that the power of all modules on QBUS is not greater than 16W when selecting modules.

Splitter module

Items		HCQX-ES06-D4
Appearance		
Transfer protocol		EtherCAT
Number of channels		1-ch EtherCAT signal input, 5-ch EtherCAT signal output
Splitter cascade		Support up to 2 ES06 splitter cascade
Port data priority		PORT2>PORT3>PORT4>PORT5>PORT6
Transmission mode		Full duplex
Topology		Star topology
Data transmission medium		Category 5e shielded twisted pair
Transmission rate		100Mbps
Max. communication distance between stations		100m
Communication physical layer		10/100BASE-TX (IEEE 802.3)
Mini. scan cycle of the master station		500μs
Addressing mode		Sequential addressing, setting addressing
Refresh method	DC	DC mode by default, One ES06 splitter occupies 2 EtherCAT slave numbers
Rated voltage		DC 24V (-15%~+20%)
Rated current		106mA
Power consumption		2.4W
Power protection features	Undervoltage protection	18V
	Overvoltage protection	33V
	Overcurrent protection	3.5A
	Anti-reverse connection function	✓
Weight (g)		About 130

Digital input module

Models		HCQX-ID16-D4	HCQX-ID32-D4
Appearance			
Input points		16	32
Operating temperature based on different input points and channels	Full load working	45°C	-
	Inputs conduction 75%	50°C	-
	Inputs conduction 50%	55°C	-
Input format		NPN/PNP	
Rated input voltage		DC 24V (-15%~+20%)	
Rated input current		4.1mA/DC24V (Typ.)	
Input impedance		6.35kΩ	
Input OFF voltage		<DC5V	
Input OFF current		<0.65mA	
Input ON voltage		>DC15V	
Input ON current		>2.4mA	
ON/OFF response time		125μs	
Hardware filtering time		1ms	
QBUS power consumption		1.0W	
Weight (g)		About 70	About 120

Digital output module

Model		HCQX-OD16-D4	HCQX-OD16-D4-PNP	HCQX-OD32-D4	HCQX-OD32-D4-PNP
Appearance					
Output points		16		32	
Output form		NPN		PNP	
Rated load voltage		DC 24V (-15%~+20%)		DC 24V (-15%~+20%)	
Rated load current		0.5A/ch 4A/module		0.5A/ch 8A/module	
Inductive load		12W/ch 96W/module		12W/ch 216W/module	
Lamp load		1.5W/ch 12W/ module		1.5W/ch 24W/ module	
Leakage current at OFF		0.1mA or less		0.1mA or less	
ON/OFF response time		125μs		125μs	
Overcurrent protection		✓		✓	
Overvoltage protection		✓		✓	
QBUS power consumption		1.2W		1.3W	
Weight (g)		About 70		About 120	

Digital I/O module

Model		HCQX-MD16-D4	HCQX-MD16-D4-PNP	HCQX-MD32-D4	HCQX-MD32-D4-PNP
Appearance					
Input specifications	Input points	8		16	
	Operating temperature based on different input points and channels	Full load working	45°C		-
		Inputs conduction 75%	50°C		-
		Inputs conduction 50%	55°C		-
	Input format		NPN/PNP		NPN/PNP
	Rated input voltage		DC 24V (-15%~+20%)		DC 24V (-15%~+20%)
	Rated input current		4.1mA/DC24V (Typ.)		4.1mA/DC24V (Typ.)
	Input impedance		6.35kΩ		6.35kΩ
	Input OFF voltage		<DC5V		<DC5V
	Input OFF current		<0.65mA		<0.65mA
	Input ON voltage		>DC15V		>DC15V
	Input ON current		>2.4mA		>2.4mA
	ON/OFF response time		125μs		125μs
	Hardware filtering time		1ms		1ms
Output specifications	Output points	8		16	
	Output form	NPN		PNP	
	Rated load voltage	DC 24V (-15%~+20%)		DC 24V (-15%~+20%)	
	Rated load current	0.5A/ch 4A/module		0.5A/ch 4A/module	
	Inductive load	12W/ch 96W/ module		12W/ch 96W/ module	
	Lamp load	1.5W/ch 12W/ module		1.5W/ch 12W/ module	
	Leakage current at OFF	0.1mA or less		0.1mA or less	
	ON/OFF response time	125μs		125μs	
	Overcurrent protection	✓		✓	
	Overvoltage protection	✓		✓	
QBUS power consumption		1.0W		1.0W	
Weight (g)		About 70		About 120	

Relay output module

Model	HCQX-OC08-D4
Appearance	
Output points	8
Output format	Relay output
Rated load voltage	DC24V (-15%~+20%) 、AC220V
Rated load current	2A/channel, 16A/module
Inductive load	48W/channel, 384W/module
Lamp load	6W/channel, 48W/module
Rated power	1.2W
ON/OFF response time	15ms
Common terminal	4 points share one common terminal, 2 groups in total, 2 groups of common terminals are independent
Switching times	>100000

Analog module

Model		HCQX-DA04-D4
Appearance		
Number of output channels		4-ch
Voltage output	Voltage output range	-10~+10V, 0~10V, -5V~+5V, 0~5V, 1~5V
	Voltage load	>5kΩ
	Voltage output type	Single-ended output
Current output	Current output range	0~20mA, 4~20mA
	Current load	<350Ω
	Current output type	Single-ended output
Conversion time		1ms/4-ch
Resolution		16bit
Accuracy		<= ±0.3%FSR
Preset input/output values		✓
User calibration		✓
Power protection characteristic	Under-voltage protection	18V
	Overvoltage protection	30V
	Reverse phase protection	(max. voltage 60V for reverse connection)
	Voltage output short-circuit protection	Not supported
	Voltage output open-circuit detection	Not supported
Addressing mode		Sequential addressing, setting addressing
COE		✓
FOE		✓
Refresh mode		SM-Synchron supported
QBUS power consumption		1.2W
Weight (g)		About 70

Analog module

Model		HCQX-AD04-D4		HCQX-AD08-D4	
Appearance					
Number of output channels		4-ch		8-ch	
Voltage Input	Voltage input range	-10~+10V, 0~10V, -5V~+5V, 0~5V, 1~5V			
	Voltage input impedance	1MΩ			
	Voltage input type	Differential input			
Current Input	Current input range	0~20mA, 4~20mA			
	Current input impedance	240Ω			
	Current input type	Differential input			
Software filtering		Supports average filtering, 0~4096			
Max. common-mode voltage		35V			
Conversion time		1ms/4-ch		1ms/8-ch	
Resolution		16bit			
Accuracy		25°C: ±0.1% FSR	Full temperature: ±0.3% FSR	25°C: ±0.1% FSR	Full temperature: ±0.2% FSR
Over-limit detection		✓			
Range detection		✓			
Rapid change detection		✓			
User calibration		✓			
Power protection character- -eristic	Under-voltage protection	18V			
	Overvoltage protection	30V			
	Reverse phase protection	✓			
	Overvoltage protection	-50~+50V			
	Overcurrent protection	-50~+50mA			
Addressing mode		Sequential addressing, setting addressing			
COE		✓			
FOE		✓			
Refresh mode		SM-Synchron supported			
QBUS power consumption		1.2W			
Weight (g)		About 70		About 125	

Serial communication module

Models		HCQX-RS02-D4	HCQX-RS02-D4-M
Appearance			
Hardware specifications	Number of channels	2-ch	
	Supported serial ports	RS232、RS485、RS422	
	Supported Protocol	Free protocol master	Modbus RTU master
	Number of slave	32 (16 for each channel)	16 (8 for each channel)
	Wiring mode	2-wire, 3-wire, 4-wire	
Software specifications	MODBUS function code	-	01、02、03、04、05、06、15、16
	Parity bit	odd parity, even parity, no parity	
	Start bit	Only bit1	
	Stop bit	bit1、bit2	
	Data length	7、8bytes	8bytes
	Termination resistor configuration	Software control whether the terminal resistor is configured (only RS485/RS422)	
	Data overflow detection	Detect whether the data received from the slave station overflows, indicating that data has been lost	-
	Check error detection	Detect whether there are check errors during data transmission	-
	Frame format error detection	Detect whether there are frame format errors during data transmission	-
	Data communication control	Control data communication between the master station and slave stations through control words and status words	
Bus specification	PDO maximum number of bytes	Output 32 bytes and input 32 bytes for each channel	Input 64 bytes and output 64 bytes for each channel
	Receive buffer	1024 bytes for sending and receiving	-
	Addressing mode	Sequential addressing, setting addressing	
	COE	✓	
	FOE	✓	
	Refresh mode	SM- Synchron supported	
QBUS power consumption		1.2W	
Weight (g)		About 70	

RS232/RS485/RS422 serial port specifications

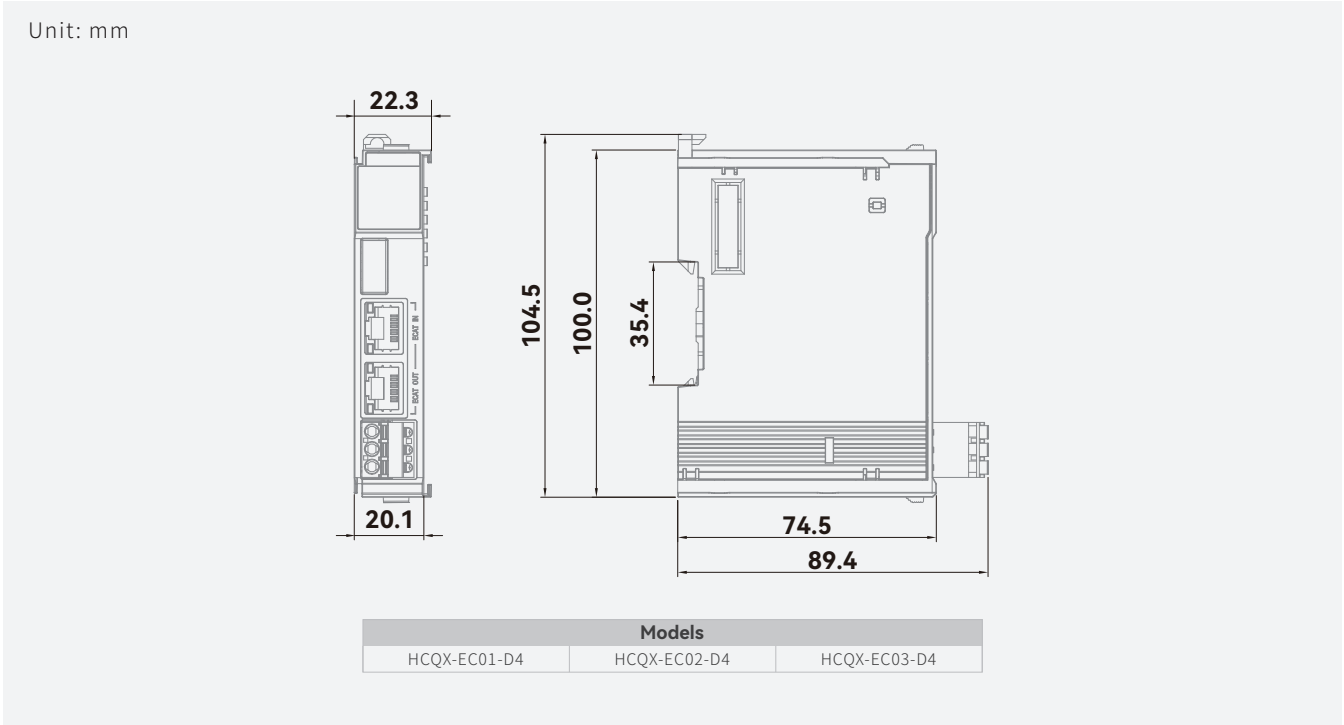
Items	Specifications		
	RS232	RS485	RS422
Wiring method	3-wire	2-wire	4-wire
Communication method	Full duplex	Half duplex	Full duplex
Termination resistor	-	120Ω (By software configuration or external wiring)	
Baud rate (bps)	1200、2400、4800、9600(default)、19.2k、38.4K、57.6k、115.2k、230.4k		
Communication distance	10m(related to communication rate)	500m(using terminal resistor, and related to communication rate)	

Temperature measurement module

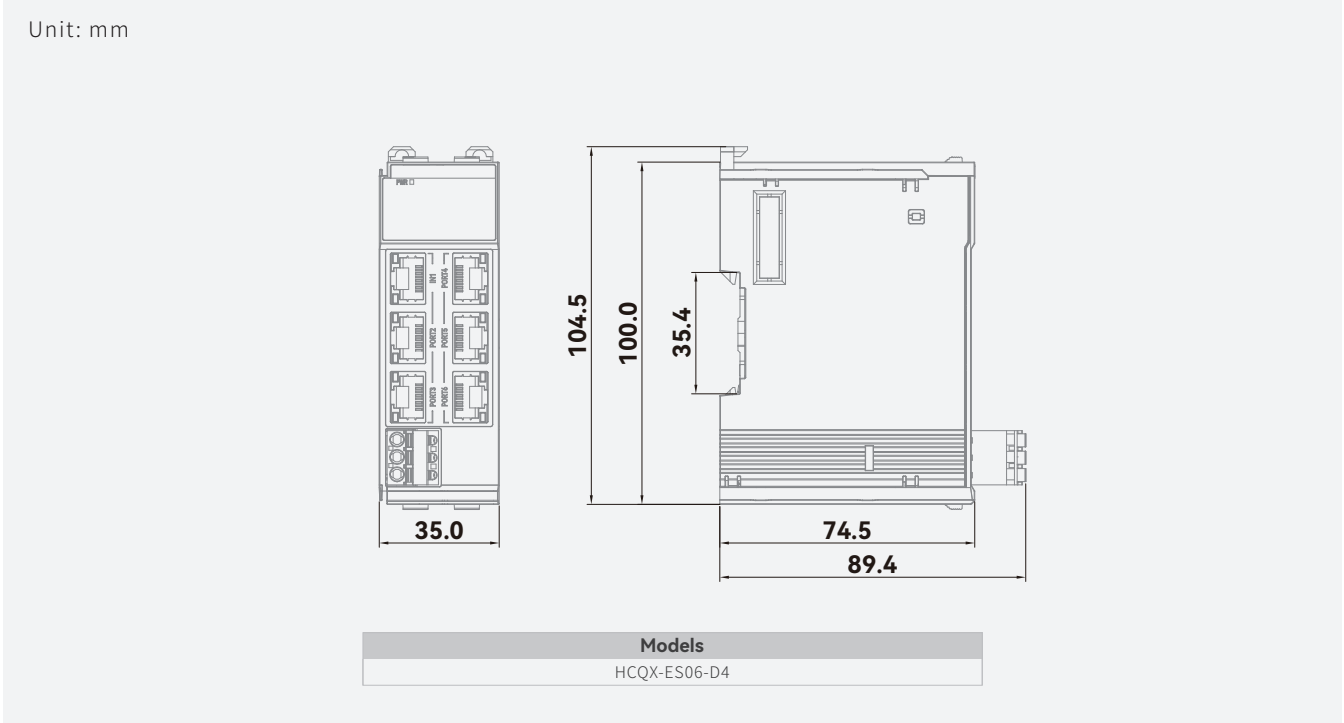
HCQX-TS04-D4							
Appearance							
Hardware specifications	Number of channels	4-ch		Software specifications	Sensor type setting	Can be set by software	
	Wiring mode	2-wire, 3-wire			Over-limit detection	Supported	
	Thermal resistance sensors	PT100、PT1000、Ni100、Ni1000			Disconnection detection	Supported, user chooses to turn it on, and it's turned off by default. (After turning on, the sampling time of each channel increases by about 40ms)	
	Thermocouple sensors	K、J、E、T、N、B、R、S			External cold junction compensation	Supported, enabled by default	
	Display sensitivity	0.1°C, 0.1°F			Software filtering	Supports average filtering, 0~4096	
	Digital resolution	24bit			Temperature unit	°C or °F	
	Accuracy	TC: Full temperature 0~55°C; Full range* (±0.1%) ± 4°C (Max. cold-junction error 4°C) PT: Full temperature 0~55°C: ±0.5°C			User calibration	✓	
	Sampling time (Disconnection disabled)	TC: 100ms*Number of starting channels*Number of filtering times for this channel PT: 200ms*Number of starting channels*Number of filtering times for this channel			Troubleshooting	Power not connected	Global error: Automatic recovery
	Sampling time (Disconnection disabled)	TC: 140ms*Number of starting channels*Number of filtering times for this channel PT: 240ms*Number of starting channels*Number of filtering times for this channel				Input over-limit	Channel error: Automatic recovery
	Preheat time	No preheating required				Disconnection detection	Channel error: Automatic recovery
Cold-junction resistor	10kΩ (The external cold-end resistor is built-in by default)						
Addressing mode		Sequential addressing, setting addressing					
COE		✓					
FOE		✓					
Refresh mode		SM- Synchron supported					
QBUS power consumption		1.2W					
Weight (g)		About 70					

Q-SERIES UNIT DIMENSION DRAWING

Coupler module



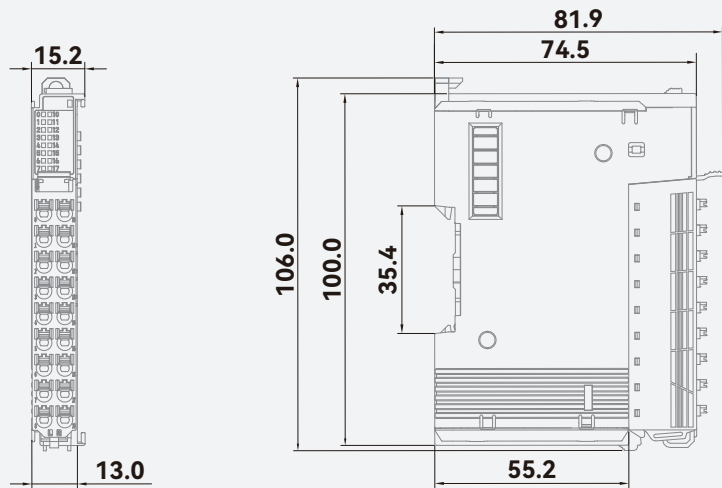
Splitter module



MEMO

Extension module (narrow type)

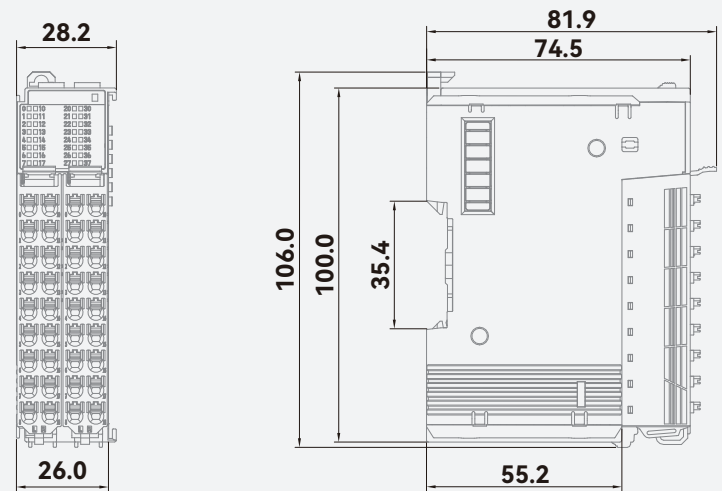
Unit: mm



Models					
HCQX-ID16-D4	HCQX-OD16-D4	HCQX-OD16-D4-PNP	HCQX-MD16-D4	HCQX-MD16-D4-PNP	HCQX-AD04-D4
HCQX-DA04-D4	HCQX-RS02-D4	HCQX-RS02-D4-M	HCQX-TS04-D4		

Extension module (wide type)

Unit: mm



Models						
HCQX-ID32-D4	HCQX-OD32-D4	HCQX-OD32-D4-PNP	HCQX-MD32-D4	HCQX-MD32-D4-PNP	HCQX-AD08-D4	HCQX-OC08-D4

7 I/O combination modules

Meet various application scenarios !



HCNXX Series

EtherCAT distributed I/O module

Rich specifications

① 7 I/O combinations available; ② Supports 16 points and 32 points; ③ Supports I/O.

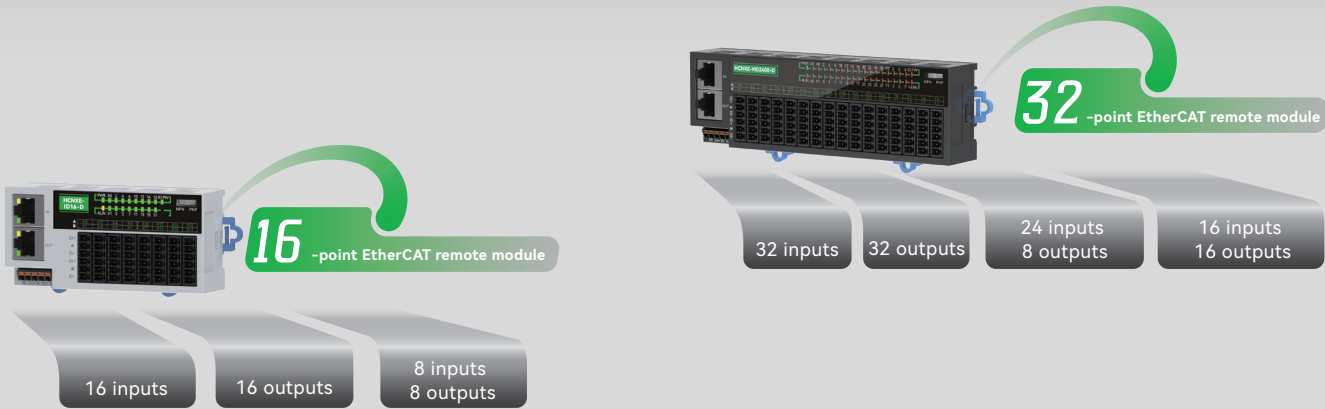
Convenient and easy-to-use

① Standard DIN35 rail; ② Supports NPN/PNP input switching;
③ Supports 2-wire/3-wire sensors; ④ Provide external 24VDC sensor power supply.

Safe and reliable

① Multiple hardware protection.

► Rich Specifications



Easy-to-use

- Significantly reduces wiring time
- Standard DIN35 rail mounting
- M4 screw for installation

- Quickly respond to various sensor signals
- NPN/PNP input can be switchable

- Installation time and costs are greatly reduced
- Compatible with 2/3 wire sensors
- Provide 24VDC power supply for sensors

► High protection

- The fuse will not break if the current exceeds 5A, and max. 20A (the fuse can be replaceable)
- I/O board external sensor protection 1.1A (recoverable fuse)

- EtherCAT bus to avoid electromagnetic interference caused by too long I/O signal cables
- Multiple I/O signals are connected through EtherCAT

Naming rule for NXE series extension module

H C N X E - I D 3 2 - D

1

2

3

4

5

1.Product name

HC

HC: HCFA

2.Distributed module

NXE

NXE: EtherCAT protocol module

3.Function modules

ID

ID: Digital input
OD: Digital output
MD: Digital I/O

4.Number of channels

32

16: 16-ch
32: 32-ch
Note:For I/O module, use a 4-digit number to indicate input and output. For example: 2408, representing 24 inputs and 8 outputs.

5.Power type

D

D: DC power

General specifications of NXE series extension modules

General specifications

Items		Specifications	
Working environment	Working temperature	-5~55°C	
	Storage temperature	-40~70°C	
	Relative humidity	10%~95% (no condensation, temperature 55°C)	
	Altitude	2,000m Max.	
	Random drop	1m. twice with outer packaging	
	Vibration resistance	Frequency	5-150Hz
		Displacement	3.5mm, constant amplitude
		Acceleration	1.0g, constant amplitude
		Direction	X/Y/Z-axis
	Shock resistance	Random amplitude 15g, 11ms half sine wave, 3 mutually perpendicular axes	
Insulation method	Protection grade	IP40 (with protective cover)	
	Pollution level	Pollution degree II	
	Between channels	Not isolated	
	Between power supply and interface	Transformer isolation	
EMC requirements	Between interface and bus	Digital isolation	
	Electrostatic discharge	Contact ±4kV, air ±8kV	
	EFT ±2kV	±2kV	
	Surge	DC power: 0.5 CM 0.5kV DM	
Insulation resistance		>1MΩ	
Withstand voltage		500VDC for 1 minute (leakage current 5mA or less)	
Heat dissipation		Passive heat dissipation, natural air cooling	
Installation location		Inside the control cabinet	
Main material		Standard PPE, UL94, fire protection grade V0	

Power Specifications

Items	Specifications
Rated power supply for module	DC 24V
Input voltage range for module	DC 24V (-15%~+20%)
Max. current for module	50mA/DC24V
Rated power supply for I/O terminal	DC 24V
Input voltage range for I/O terminal	DC 24V (-15%~+20%)
Max. current for I/O terminal	5A (The fuse will not blow at overcurrent)
IO power supply protection	20A(Blow at overcurrent, need to remove the shell and replace)
I/O board external sensor protection	1.1A (recoverable fuse, 8-ch share 1 fuse)

Digital input module

Models	HCNXE-ID16-D	HCNXE-ID32-D
Appearance		
Input points	16 points	32 points
Input form	NPN /PNP (can be switched)	
Rated input voltage	DC 24V (-15%~+20%)	DC 24V (-15%~+20%)
Rated input current	4.1mA/DC24V (Typ.)	6mA/DC24V (Typ.)
Input impedance	5.6kΩ	3kΩ
Input ON voltage	>DC15V	
Input ON current	>5mA	
Max. OFF current	2.5mA	
ON/OFF response time	125μs	
Wiring mode	2-wire, 3-wire	
QBUS power consumption	1.0W	
Weight (g)	About 100	About 210

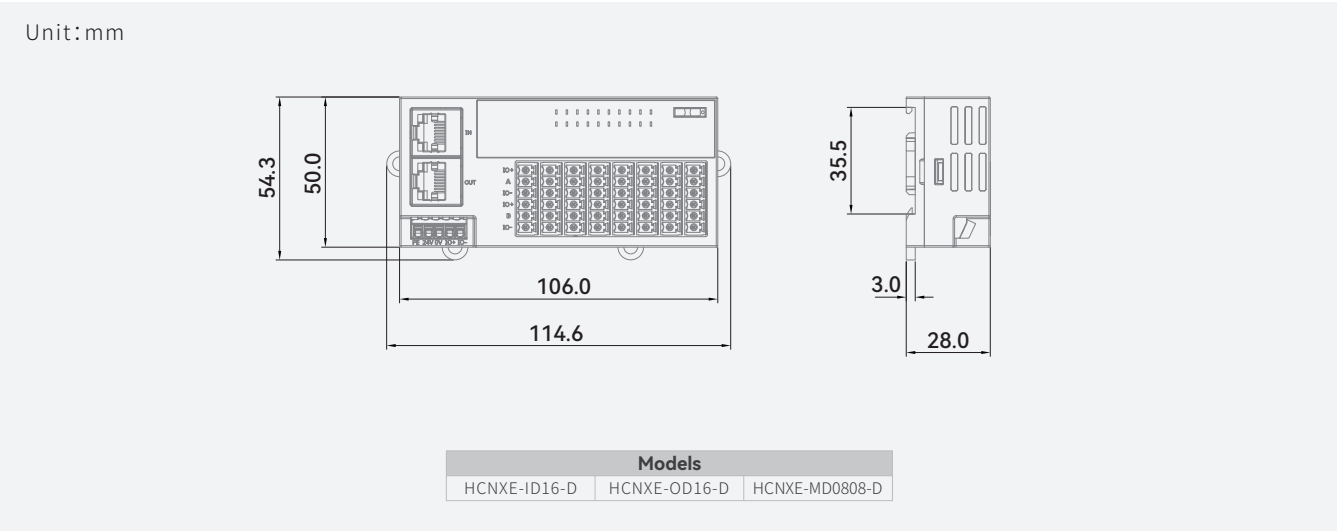
Digital output module

Models	HCNXE-OD16-D	HCNXE-OD32-D
Appearance		
Output points	16 points	32 points
Output form	NPN	
Rated load voltage	DC 24V (-15%~+20%)	
Rated load current	0.5A/ch, 4A/module	0.5A/ch, 2A/module
Leakage current at OFF	0.1mA or less	
ON Residual voltage	0.3V or less	
ON/OFF response time	125μs	
Hardware filtering	1ms	-
Wiring method	2-wire	
Protection items	Overcurrent/overvoltage/ overheat protection	
QBUS power consumption	1.0W	
Weight (g)	About 100	About 210

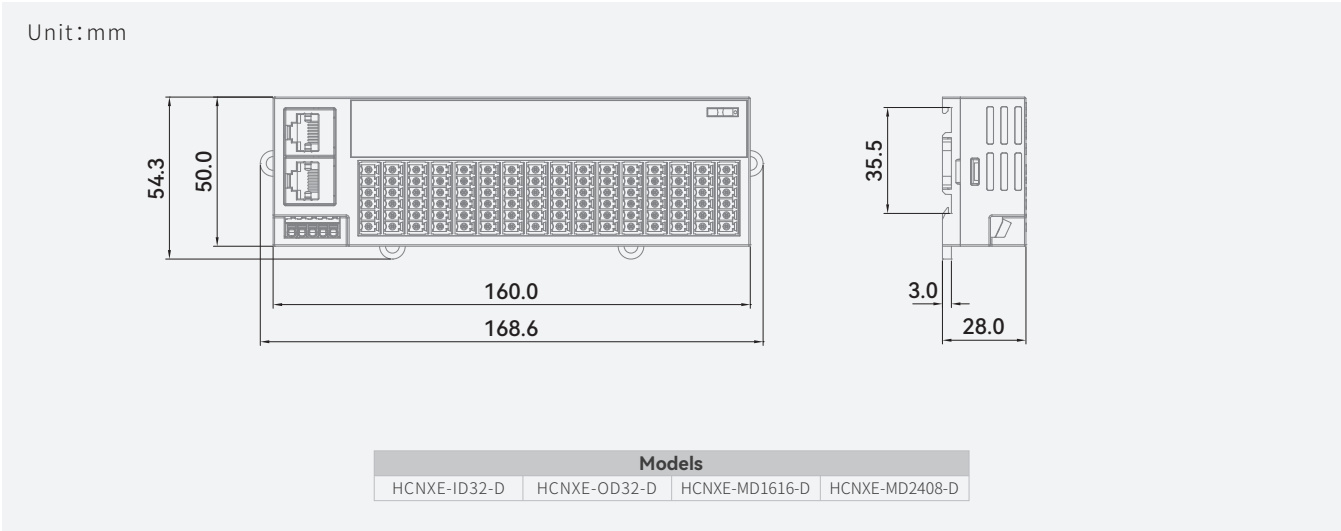
Digital I/O module

Models		HCNXE-MD0808-D	HCNXE-MD1616-D	HCNXE-MD2408-D
Appearance				
Input specifications	Input points	8 points	16 points	24 points
	Input form	NPN /PNP (can be switched)		
	Rated input voltage	DC 24V (-15%~+20%)		
	Rated input current	4.1mA/DC24V (Typ.)	6mA/DC24V (Typ.)	6mA/DC24V (Typ.)
	Input impedance	5.6kΩ	3kΩ	3kΩ
	Input ON voltage	>DC15V		
	Input ON current	>5mA		
	Max. OFF current	2.5mA		
	ON/OFF response time	125μs		
	Wiring mode	2-wire, 3-wire		
Output specifications	Output points	8 points	16 points	8 points
	Output form	NPN		
	Rated load voltage	DC 24V (-15%~+20%)		
	Rated load current	0.5A/ch, 2A/module	0.5A/ch, 4A/ module	0.5A/ch, 2A/ module
	Leakage current at OFF	0.1mA or less		
	Residual voltage	0.3V or less		
	ON/OFF response time	125μs		
	Hardware filtering	1ms	-	-
	Wiring method	2-wire		
Protection items		Overcurrent/overvoltage/ overheat protection		
QBUS power consumption		1.0W		
Weight (g)		About 100	About 210	

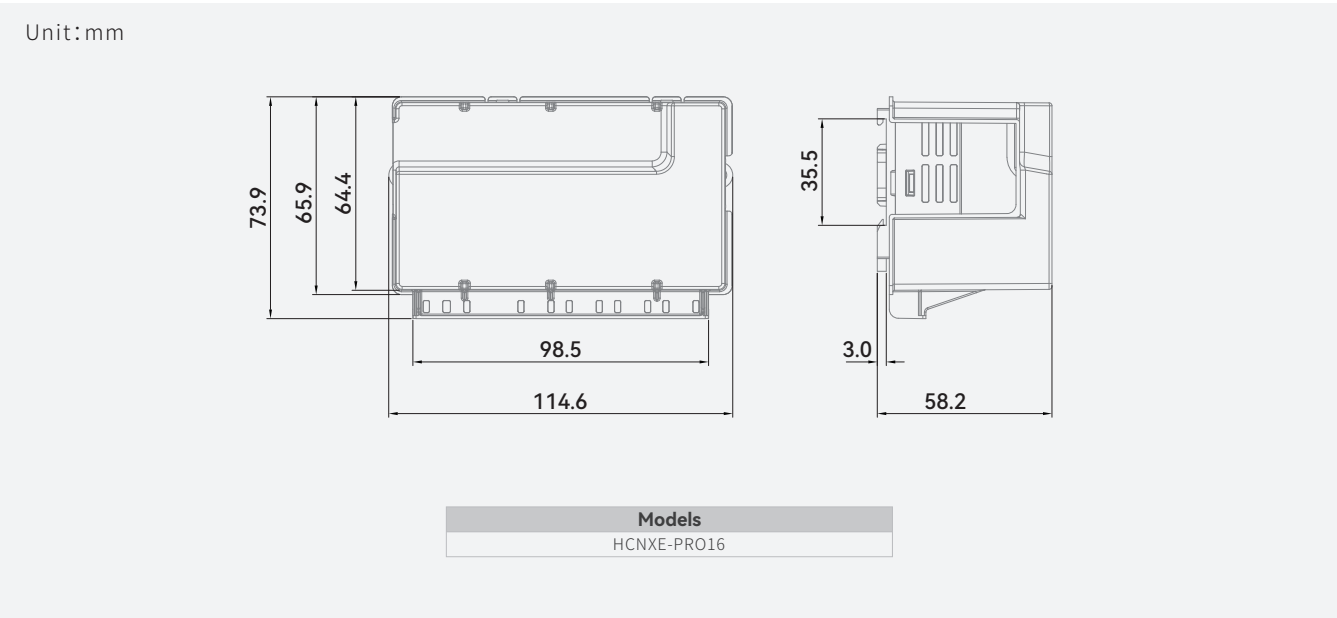
NXE-series 16 points



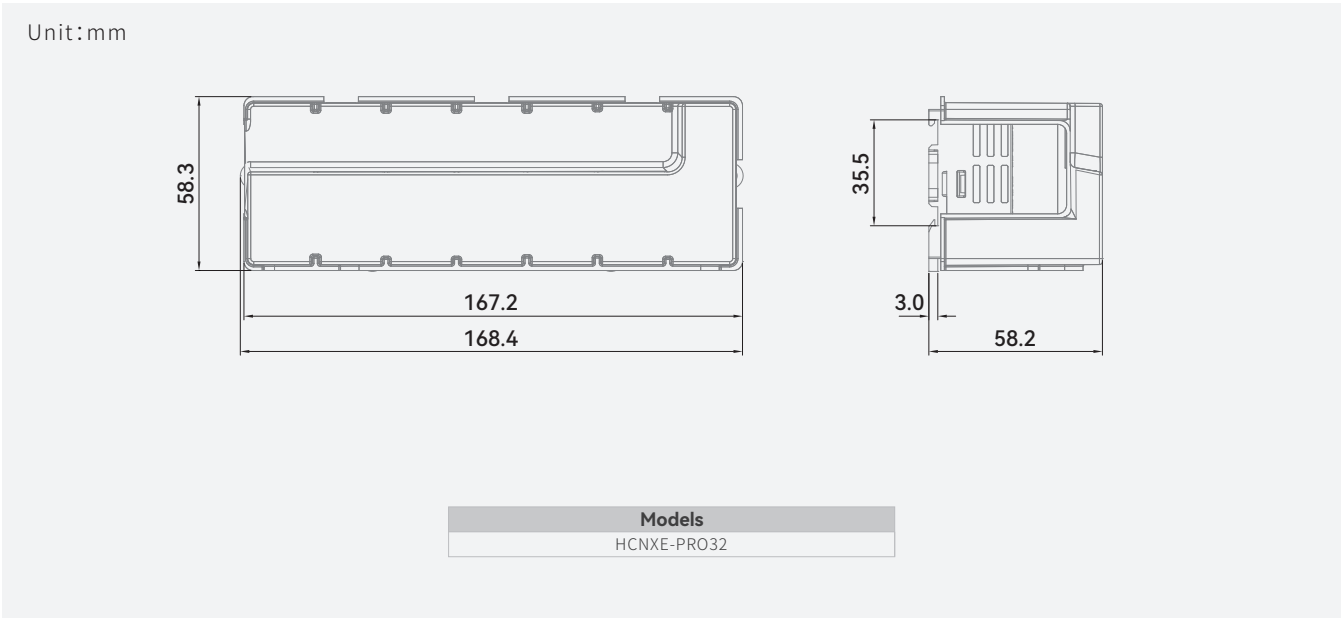
NXE-series 32 points



NXE-series 16 points Protective cover



NXE-series 32 points Protective cover



Q-Series EtherCAT Coupler

Model name	Output power	Max. number of extension modules	Specification	Page
HCQX-EC01-D4	16W	16*	Standard EtherCAT coupler, extension module accounts for the number of bus nodes	05
HCQX-EC02-D4	16W	16*	Standard EtherCAT coupler, extension module does not account for the number of bus	05
HCQX-EC03-D4	-	31	EtherCAT coupler for NXE series modules, and extension module does not account for the number of bus nodes	05

*Make sure that the power of all modules on QBUS is not greater than 16W when selecting modules.

Q series splitter module

Model name	Specification	Page
HCQX-ES06-D4	EtherCAT 6-ch splitter (1 input and 5 outputs); support star topology; support splitter cascade	06

Q-series I/O module

Model		Specification					Page
		Power	Input		Output		
Digital input module	HCQX-ID16-D4	1.0W	16 points	NPN/PNP	-	-	06
	HCQX-ID32-D4		32 points				06
Digital output module	HCQX-OD16-D4	1.2W	-	-	16 points	NPN	07
	HCQX-OD16-D4-PNP					PNP	07
	HCQX-OD32-D4	1.3W			32 points	NPN	07
	HCQX-OD32-D4-PNP					PNP	07
Digital I/O module	HCQX-MD16-D4	1.0W	8 points	NPN/PNP	8 points	NPN	07
	HCQX-MD16-D4-PNP		PNP			07	
	HCQX-MD32-D4	16 points	16 points		NPN	07	
	HCQX-MD32-D4-PNP				PNP	07	
Relay output module	HCQX-OC08-D4	1.2W	-		8 points	Relay	08

Q-series special function module

Model		Power	Specifications	Page
Analog input module	HCQX-AD04-D4	1.2W	4-ch analog input; support -10~+10V, 0~10V, -5V~+5V, 0~5V, 1~5V differential input; support 0~20mA, 4~20mA differential input	09
	HCQX-AD08-D4	1.2W	8-ch analog input; support -10~+10V, 0~10V, -5V~+5V, 0~5V, 1~5V differential input; support 0~20mA, 4~20mA differential input	09
Analog output module	HCQX-DA04-D4	1.2W	4-ch analog output; support -10~+10V, 0~10V, -5V~+5V, 0~5V, 1~5V single-ended output; support 0~20mA, 4~20mA single-ended output	08
Serial communication module	HCQX-RS02-D4	1.2W	2-ch serial communication (free protocol); supports RS232, RS485, RS422 interfaces; supports 32 slave stations; software configured terminal resistor	10
	HCQX-RS02-D4-M	1.2W	2-ch serial communication (Modbus protocol); support RS232, RS485, RS422 interfaces; support 16 slave stations; software configured terminal resistor	10
Temperature measure-ment module	HCQX-TS04-D4	1.2W	4-ch temperature measurement; support thermal resistors and thermocouples; support 2-wire and 3-wire sensors; 24bit resolution	11

NXE series I/O module

Model		Specifications					Page
		Power	Inputs		Outputs		
Digital input module	HCNXX-ID16-D	1.0W	16 points	NPN/PNP	-	-	19
	HCNXX-ID32-D	1.0W	32 points				19
Digital output module	HCNXX-OD16-D	1.0W	-	-	16 points	NPN	19
	HCNXX-OD32-D	1.0W			32 points		19
Digital I/O module	HCNXX-MD0808-D	1.0W	8 points	NPN/PNP	8 points	NPN	20
	HCNXX-MD1616-D	1.0W	16 points		16 points		20
	HCNXX-MD2408-D	1.0W	24 points		8 points		20

NXE-series protective cover

Model name	Specification	Page
HCNxE-PRO16	Protective cover for 16-point extension module	-
HCNxE-PRO32	Protective cover for 32-point extension module	-

Accessories

Type	Model name	Specifications	Page
Extension module 18-pin terminal	HCQXT-18P-N	Removable terminal block, suitable for QP controller I/O and extension module.	-
Terminal module	HCQX-END04	Attached to the end of the module.	-
24VDC power terminal	HCQX-3P-N	24VDC power terminal for HCQX-EC01/02/03-D4 coupler and HCQX-ES06-D4 splitter	-

Matching table for EC coupler and module

Module \ EC	EC01	EC02	EC03
HCQX-ID16-D4	✓	✓	-
HCQX-ID32-D4	✓	✓	-
HCQX-OC08-D4	✓	✓	-
HCQX-OD16-D4	✓	✓	-
HCQX-OD16-D4-PNP	✓	✓	-
HCQX-OD32-D4	✓	✓	-
HCQX-OD32-D4-PNP	✓	✓	-
HCQX-MD16-D4	✓	✓	-
HCQX-MD16-D4-PNP	✓	✓	-
HCQX-MD32-D4	✓	✓	-
HCQX-MD32-D4-PNP	✓	✓	-
HCQX-AD04-D4	✓	✓	-
HCQX-AD08-D4	✓	✓	-
HCQX-DA04-D4	✓	✓	-
HCQX-RS02-D4	✓	✓	-
HCQX-RS02-D4-M	✓	✓	-
HCQX-TS04-D4	✓	✓	-
HCNxE-ID16-D	-	-	✓
HCNxE-ID32-D	-	-	✓
HCNxE-OD16-D	-	-	✓
HCNxE-OD32-D	-	-	✓
HCNxE-MD0808-D	-	-	✓
HCNxE-MD1616-D	-	-	✓
HCNxE-MD2408-D	-	-	✓