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HC2 Series PLC Catalog
EtherCAT&Motion control

> Product Catalogue

>> PLC Mainframe



Compact type PLC--HCS2 Series



Stand type PLC--HCG2 Series



High-Level standard type PLC-HCD2 Series



EtherCAT BUS type PLC--HCH2 Series



EtherCAT&Motion control type PLC--HCM2 Series

>> Extension Modules



HTE/HSE/HHE Series

> Company Profile

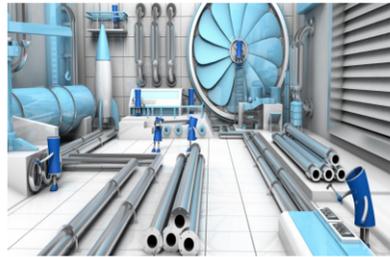
Established in 2012, HNC Electric keeps building the best R&D and production resource system in China. Combined with our professional marketing and product management elite team, we are committed to building the world's top-level industrial automation brand.

HNC Electric is a global automation & drive focusing company, providing international customers with control, display, drive and system solutions, and other related products and services, with the support of its excellent electrical and electronic technology and strong control technical force.

HNC Electric listens to and understands all clients' requirements, continuously improving and upgrading the product functions and performance, providing and developing perfect products and solutions according to the different requirements of the industry. HNC Electric's products have been used and applied widely and successfully in packing, printing, textiles, plastic injection, elevator, machine tools, robots, wood cutting, stone carving, ceramic, glass, paper making industry, crane, fan & pump, and new energy resources, etc.



> Application Field



Electronic Cam



Pillow Packaging



Data Acquisition



Automatic Dispensing



Control Cabinet System



Automatic Sewing



Automatic Printing



Medical Equipment



Automatic Weaving

> Case display

Pillow packaging machine



It can realize the functions of fixed length, variable length, tracking standard, anti-cutting, anti-air bag, anti-scalding film and so on. When working in fixed-length and tracking mode, the fastest production capacity is 1200 packages/min. Working in air defense bag, anti-cutting material, indefinite length mode, the production capacity can reach 300 bags/min.

Automatic tea packaging machine



Automatic tea packaging machine can achieve the simultaneous packaging for the inside and outside bags. It can automatically complete bag making, measuring, filling, sealing, slitting, counting and other processes. It has moisture-proof, anti-odor volatilization, preservation of freshness and other functions. It has wide range of packaging, and can perfectly replace manual packaging, realize packaging automation, and it can substantially improve productivity and reduce business costs. It adopts double electronic scales, and the metering and packaging speed can reach 18-20 package/min. Weighing accuracy can reach $\pm 0.1g$.

Rebar straightening machine



Straightening machine, is also called wire straightening machine or straightening and cutting machine. It can be used for straightening and cutting steel bars, can be used for straightening and cutting stainless steel wire, aluminum wire, cold drawn wire, plastic wrapped steel wire, etc. It utilizes our HCM2 type motion control function PLC, and the cutting length can be customized according to customer requirements. For the chasing shear, according to the length set by the customer, the distance of synchronization is automatically calculated. For flying shear, according to the different lengths, it can automatically calculate the most fast speed for wire feeding. For cutting products in length of 400mm, the speed can reach 100m/min. The cut is flush and the error is within 0.4mm. The system has fast response.

Visual Dispenser



The visual dispenser mainly uses the camera to take the coordinates of the product, and then send the calculated coordinates to the motion controller, which then drives the manipulator to move to the product to perform the dispensing operation. It is widely used in crafts, electronics, clothing and other industries. The two modes can be imported by demonstration and PC graphics. With high-performance embedded motion control as the core, the specialized drip molding process art software control function is integrated. Multiple interpolation algorithms are built in to realize fast path editing and support a variety of files format.

Automatic granule packing machine



Automatic granule packaging machine can be flexible to achieve 4-scale, 8-scale and 12-scale system building. It can greatly improve weighing Efficiency. It can automatically complete bag making, measuring, filling, sealing, slitting, counting and other functions. It is mainly applicable to jasmine Tea, recipe tea, health tea, herbal tea and other materials. The dosing material system can be configured according to the characteristics of the materials. The electronic scale dosing system is suitable for single material, multi-material, material of irregular shape and other materials that can not be generally weighed in measuring cups. The weighing weight of each scale can be controlled independently and flexibly according to requirements. The weighing accuracy can reach $\pm 0.1g$.

Bag-feeding vacuum packaging machine



The bag vacuum packaging machine can realize the real and empty packaging, the operator only need to put a certain number of packaging bags in the bag of the equipment, the equipment can automatically take the bag, print the date, open the bag, to the metering device signal measurement and feeding, sealing, output, to achieve automatic packaging. The company chooses the HCM2 motion control function PLC, to achieve high-speed servo feeding, pressing, greatly improve the packaging speed, can achieve 100 packages / min. Whether liquid, bulk, granular or powder products, can all be packaged and produced.

Pearl cotton chasing shear machine



Pearl cotton chasing shear machine is used for cutting and shaping pearl cotton, it utilizes the electronic cam technology and HCM2 motion control type PLC developed by HNC, it is applied to pearl cotton packaging industry, it has made a leap forward compared with the original average capacity. Compared with the traditional mode of the industry, the speed has increased by nearly 7 times. The maximum capacity can reach 15 meters per minute. It can fully liberate manual labor, and also improve efficiency while greatly reducing costs.

Sorting machine



Sorting machine is used for sorting SMD and LED. With the HNC HCG2 series PLC, the operating speed can be 80K/h, processing time for single product is 45ms. It has high requirements for PLC scan cycle and stability. Compare to certain products that have been used in this industry, the speed has been increased by almost 10%, which significantly reduces the cost and improves the operational efficiency.

PLC Controller

HNC series PLC is now mainly divided into high-order, bus, standard, customized, compact, motion control, to fully meet the needs of different industries, different customers, different equipment. PLC programmable controller in addition to have the function of traditional PLC on the market, also have U disk download program, electronic cam, custom instructions, built-in special algorithm custom, special hardware interface custom features, single pulse shaft can drive up to 24 axis stepping, servo motor, support a variety of communication technology, convenient connection, more cost-effective, integration, intelligence



HCH2 bus type PLC



HCD2 standard type PLC



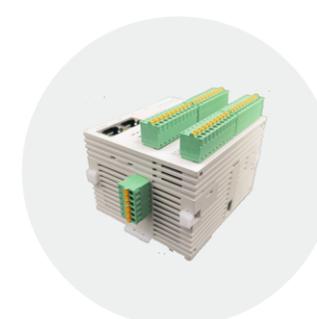
HCM2 Motion Control PLC



HCS2 Series PLC



HCG2 standard type PLC



PROFINET, EtherCAT slave station

Product Features

>> Various communication methods



USB interface communication

Function 1: With the unique USB dual-use function of HNC, the customer only needs to send the encrypted program to the end user via email, and the user will download and store the program in USB disk, and the USB disk is inserted into the USB port of the PLC controller, the system automatically recognizes and completes the download within 1s. It is easy to operate, and it has practical functions, and the ladder file undergoes encryption processing, the program is safe and reliable to prevent source code leakage and to protect the rights of users.



Benefits of using USB disks to download programs:

- Save time: When the equipment runs stably, it needs to download PLC programs in batches, it is time-consuming by using a computer through a serial line to download PLC programs in batches.
- Save fund: Since the equipment is often off the field, it takes a lot of labor to go back and forth to update the program, and program uploading is easily done via USB disk.
- Easy to use: It is easy to use and easy to update the program thanks to the USB disk that is easy to purchase and carry.
- Safe and reliable: PLC program in the USB disk is PLC. UJC file format and is encrypted, the file cannot be opened and occupies little storage space.

Function 2: It can use the protruding-to-protruding USB data cable to connect to a computer to implement online monitoring and facilitate data exchange with the computer, the transmission speed is fast and can reach 12Mbps.



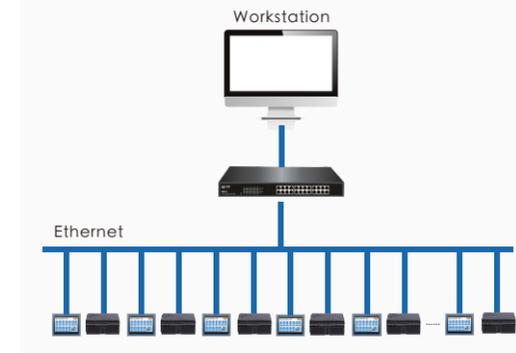
Note: HCG2 series of PLC need to switch functions by changing the status of M1293 when using function 1 and function 2, and it is recommended that the address is displayed in the touch screen. In addition to switching the status of M1293, USB function of HCD2 and HCH2 series of PLC can also switch the mode through the dip switch of the USB block on the PLC, open the small square cover on the left side of the PLC, the location is shown in the figure below



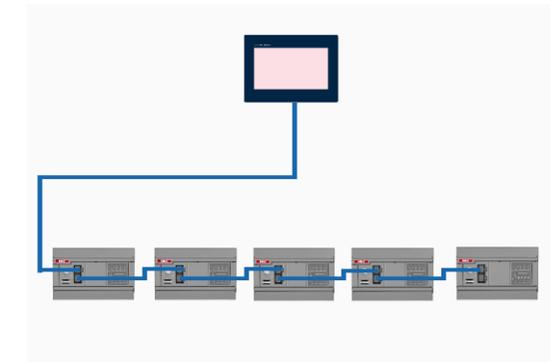
Ethernet communication

With Ethernet port, you can only easily fill in the set parameters through Ethernet communication, you can realize a PC to multiple PLC online monitoring, download the program. Can connect to the cloud platform, bind the mobile phone wechat, connect to the router, etc.

■ Ethernet realizes multi-computer multi-screen data exchange
When each workstation is equipped with an HMI, it is possible to work with multiple PLC groups simultaneously for communication, any two devices can exchange data, data exchange speed is fast and efficient. It supports Modbus TCP/IP protocol.

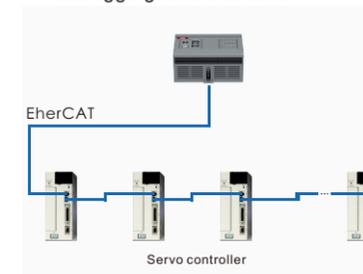


■ Dual Ethernet ports realize switch function
When a device has multiple PLC controllers, there is no need to connect the switch in the traditional way. Using the PLC with dual Ethernet from HNC can easily realize one screen and multiple computers.



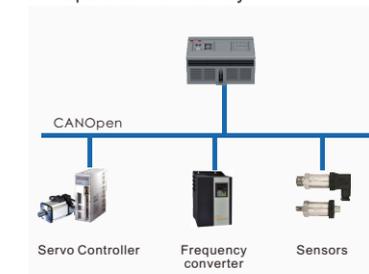
EtherCAT communication

- Support EtherCAT communication, easy wiring, maximum communication rate: 100Mbps.
- The programming is simple, saving you more installation and debugging time and cost.



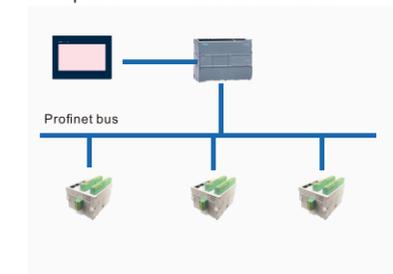
CANopen communication

- Support CANopen communication protocol, more stable and smarter and easy to wire.
- Maximum communication rate: 1Mbps, improve equipment operation efficiency.



Profinet communication

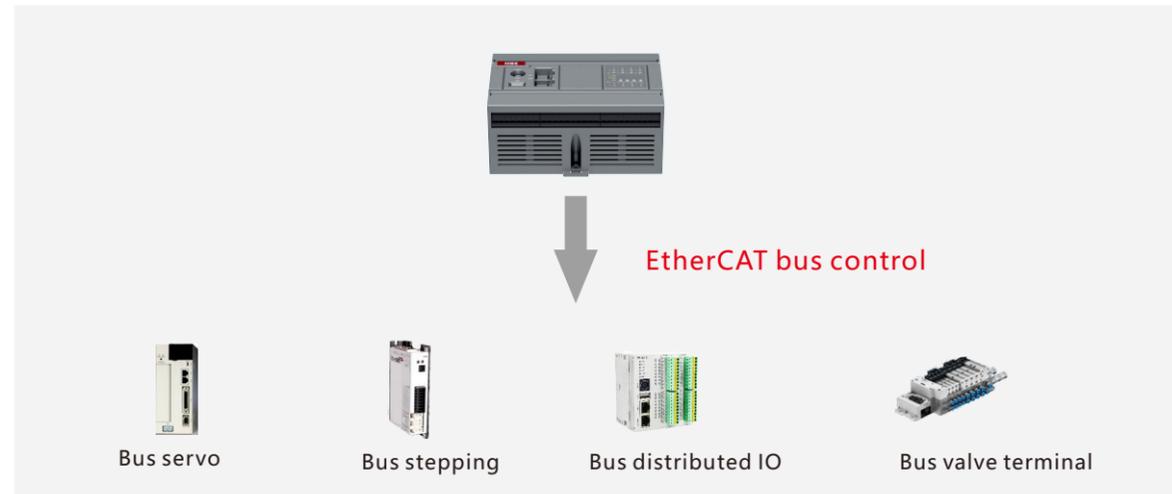
- Integrated and pluggable I/O modules, rich modules: analog quantity, digital quantity, weighing, temperature.
- Fast processing speed: High-speed ARM + dedicated ASIC.



Product Features

>> Bus communication

EtherCAT bus control

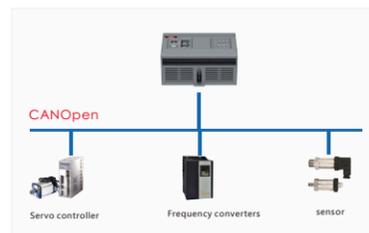


Our advantage

<p>Independent research and development</p> <p>Use the independent research and development software platform of HNC.</p>	<p>It's easy to get started</p> <p>No need to import XML files, network cable plug and play.</p>	<p>Flexible allocation</p> <p>The ontology PLC supports both pulse and bus axes.</p>
<p>High compatibility</p> <p>The bus and pulse motion control instructions are exactly the same, the same program can control the pulse servo and bus servo.</p>	<p>Mashups are supported</p> <p>Support slaves for different brands of bus servo, stepping, distributed IO.</p>	<p>Communication rate</p> <p>The maximum length between communication nodes is 100m, and the synchronization period is 1ms.</p>

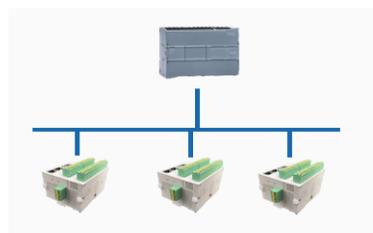
CAN bus communication

- Support CANOpen communication protocol, more stable, more intelligent, convenient wiring.
- The maximum communication rate is 1Mbps, which improves the operation efficiency of the equipment.



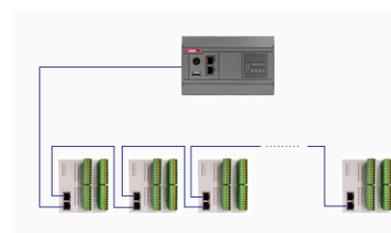
Profinet bus distributed IO

- Integrated and pluggable I/O modules, rich modules: analog, digital, weighing, temperature.
- The coupler body comes with 32 IO, compact and compact, and adopts a plug-in structure.
- Supports 32 slave connections, and each coupler supports 16 extensions.



EtherCAT bus distributed IO

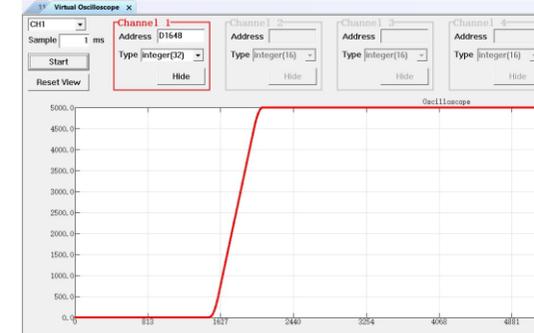
- Integrated and pluggable I/O modules, rich modules: analog, digital, weighing, temperature.
- The coupler body comes with 32 IO, compact and compact, and adopts a plug-in structure.
- Supports 32 slave connections, and each coupler supports 16 extensions.



>> Programming software features

Oscilloscope function

Monitor the changes of each component over time during operation, which is convenient for analyzing problems and effective debugging.



Support for creating multiple programs

Multiple main programs and subprograms can be created at the same time, interrupt programs, C functions, convenient classification, and function differentiation.

Program security settings feature

With password function, you can set whether PLC supports upload, and the number of uploads can be set. Protect users' intellectual property.



Enter the command, and the write is successful quickly

After entering the instruction, press "OK", the instruction is quickly generated, no need to wait, improve programming efficiency.

Product Features

>> Support function customization

- High cost performance, create industry-specific machines.
- One board is done, without multiple PLC online: set temperature, weighing, analog input / out, multiple SSR solid state output, multi-channel step / servo motor output, multiple communication interface control system and other powerful functions in one.

>> The advanced storage technology in case of power-down

- Program and data areas are permanently saved and stored in Flash, no battery backup is required.

>> Motion control functions

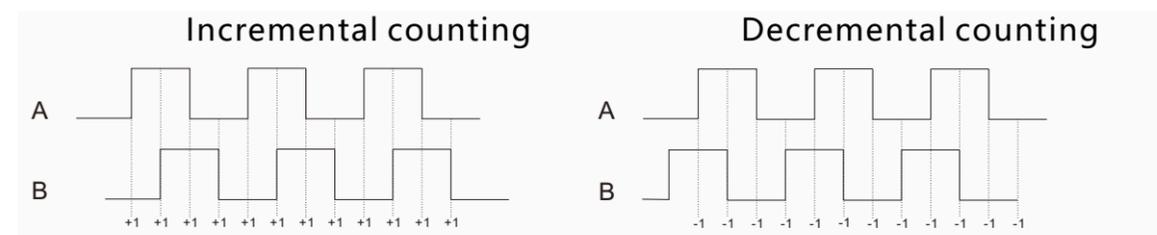
High speed output
Pulse + direction: Up to 24 stepper/servo motors can be driven by a single board with high speed output at a maximum frequency of 200khz.



High-speed input

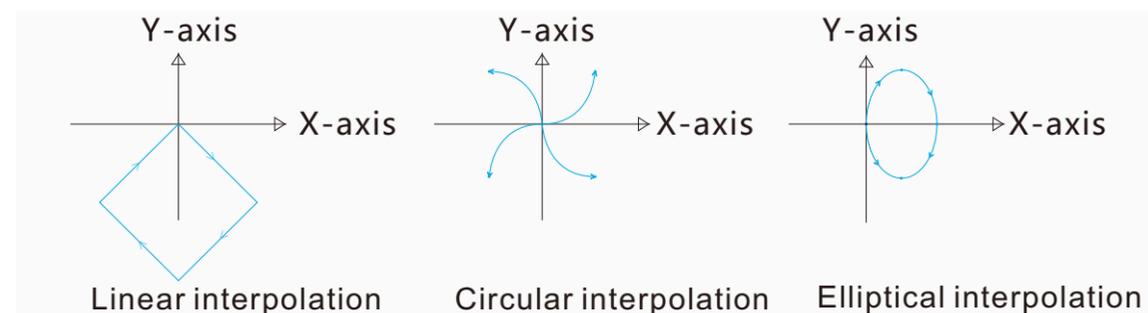
It supports single-phase high-speed counting up to 12 channels, AB-phase high-speed counting up to 6 channels: the maximum frequency of 200khz, it can be connected to the rotary encoder, the encoder rotates, PLC counts the input of the encoder.

AB-phase counting 4x frequency mode

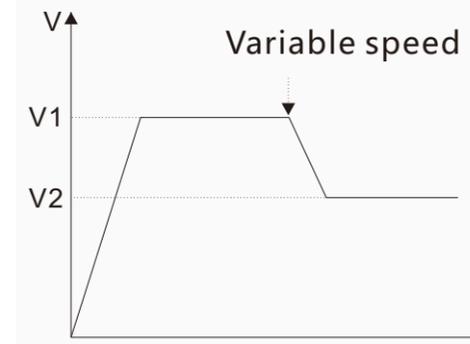


Interpolation function

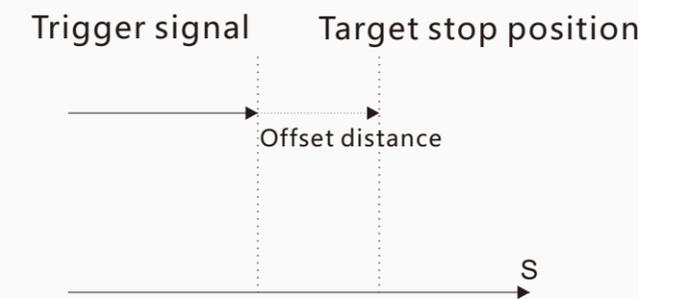
It supports two-axis linkage (linear interpolation/circular interpolation/elliptical interpolation)



Dynamic online variable speed



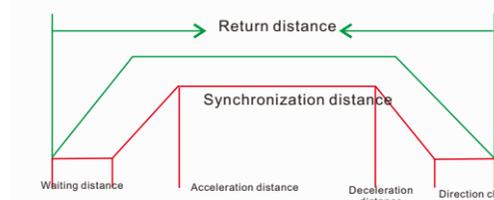
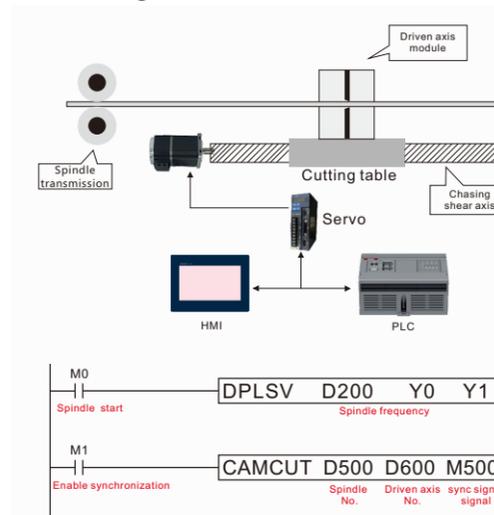
Dynamic modification of target position



Wheel cutting, roll cutting, chase cutting, pillow type packing

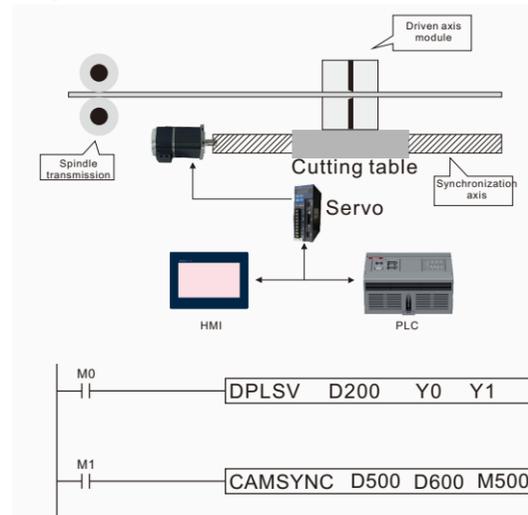
- High accuracy, error within $\pm 0.2\text{mm}$ at normal operation speed.
- Support for multi-segment indefinite length chasing shear with alignment.
- With fixed-length and alignment function, it is suitable for many occasions.
- The acceleration zone, deceleration zone and return zone have optimized curves for smooth and unobtrusive system operation
- With electronic cam speed profile, the positioning is highly accurate and does not produce any cumulative deviation.

Chasing shear solution



- Return distance = Shear length - waiting distance - acceleration distance - synchronization distance - deceleration distance - direction change distance
- The chasing shear system only needs to set the required waiting, acceleration, synchronization, deceleration and direction change distance parameters, it can meet the customer's cam adjustment and alignment functions.

Synchronization solution



- Electronic cam synchronization is easy to program. By using HNC's self-defined CAMSYNC instructions, the driven axis can be synchronized with the spindle.

Compact PLC -- HCS2 Series

HCS2 Series PLC

HCS2 compact PLC series provides 14~16 points for mainframe and 8~40 points for digital input/output modules, including mainframe maximum input/output expansion up to 256/256 points. In addition, it can be used with analog input/output expansion module, temperature expansion module and weighing expansion module, it is rich in expansion and is stable in performance to meet various applications.



Technical parameters

Model	Total I/O points	Output Mode	Output amount Rated current	Digital (high speed) Input Points	Digital (high speed) Output Points	Output maximum frequency	Drive Motor	Communication Interface
HCS2-14T(P)-D	14 points	NPN/PNP	0.3A	8(4) ^①	6(1)	200khz	1 axis	RS232/RS485
HCS2-14T(P)2-D	14 points	NPN/PNP	0.3A	8(4) ^①	6(1)	200khz	1 axis	RS232/RS485*2
HCS2-14R-D	14 points	Relay	2A	8(4) ^①	6(--)	200khz	---	RS232/RS485
HCS2-16T(P)-D	16 points	NPN/PNP	0.3A	8(4) ^①	8(1)	200khz	1 axis	RS232/RS485

Note: The maximum frequency of input is 200kh ① means the maximum frequency of high speed input is 50khz.

Note: All compact PLCs have DC24V power input.

Specification		Model		HCS2-14T(P)		HCS2-14T(P)2	
Supply Voltage		24VDC					
Input form		DC (NPN/PNP)					
Input Current		DC24V,5mA					
Input Impedance		4.7KΩ					
Input Points		8					
Input Points		X0~X3	X4~X7	X0~X3	X4~X7		
Input maximum frequency		50kHz	10kHz	50kHz	10kHz		
Input response time	Off→On	<10μs	<20μs	<10μs	<20μs		
	On→Off	<20μs	<50μs	<20μs	<50μs		
Output Point Type		Transistor (NPN/PNP)				Transistor (NPN/PNP)	
Output Points		6				6	
Output Points		Y0	Y1~Y5	Y0	Y1~Y5		
Maximum output frequency		200kHz	10kHz	200kHz	10kHz		
Output response counter time	Off→On	<2.5μs	<20μs	<2.5μs	<20μs		
	On→Off	<5μs	<30μs	<5μs	<30μs		

Specification		Model		HCS2-16T(P)		HCS2-14R	
Supply Voltage		24VDC					
Input form		DC (NPN/PNP)					
Input Current		DC24V,5mA					
Input Impedance		4.7KΩ					
Input Points		8					
Input Points		X0~X3	X4~X7	X0~X3	X4~X7		
Input maximum frequency		50kHz	10kHz	50kHz	10kHz		
Input response time	Off→On	<10μs	<20μs	<10μs	<20μs		
	On→Off	<20μs	<50μs	<20μs	<50μs		
Output Point Type		Transistor (NPN/PNP)				Relays	
Output Points		8				6	
Output Points		Y0	Y1~Y7	All			
Maximum output frequency		200kHz	10kHz	-			
Output response counter time	Off→On	<2.5μs	<20μs	About 10ms			
	On→Off	<5μs	<30μs				

Standard PLC -- HCG2 series

HCG2 Series

HCG2 standard PLC series provides 14-68 points mainframe and 8~40 points digital input/output extension modules, including the mainframe maximum input/output expansion up to 256/256 points. In addition, it can be used with analog input/output expansion module, temperature expansion module, and weighing expansion module, with rich expansion and stable performance to meet a variety of applications.



Technical parameters

Transistor output type mainframe

Model	Total I/O points	Output Mode	Output amount Rated current	Digital (high speed) Input Points	Digital (high speed) Output Points	Analog Input Points	Analog Output Points	Analog input/output Voltage Range	Output maximum frequency	Drive Motor	Communication Interface
HCG2-14T(P)3-D	14 points	NPN/PNP	0.3A	8(2)	6(3)	—	—	—	200khz	3-axis	RS232/RS485
HCG2-16T(P)-D	16 points	NPN/PNP	0.3A	8(4) ^①	8(4)	—	—	—	10khz	----	RS232/RS485
HCG2-16T(P)1-D	16 points	NPN/PNP	0.3A	8(2)	8(1)	—	—	—	200khz	1-axis	RS232
HCG2-24T(P)6-D/A	24 points	NPN/PNP	0.3A	12(2)	12(6)	—	—	—	200khz	6-axis	RS232/RS485/USB
HCG2-24T(P)3-D/A	24 points	NPN/PNP	0.3A	12(2)	12(3)	—	—	—	200khz	3-axis	RS232/RS485/USB
HCG2-1410T(P)2-D/A	24 points	NPN/PNP	0.3A	14(-)	10(2)	—	—	—	200khz	2-axis	RS232/RS485/USB
HCG2-32T(P)4-D/A	32 points	NPN/PNP	0.3A	16(2)	16(4)	—	—	—	200khz	4-axis	RS232/RS485/USB
HCG2-32T(P)4L-D/A	32 points	NPN/PNP	0.3A	16(6)	16(4)	—	—	—	200khz	4-axis	RS232/RS485/USB
HCG2-32T(P)8-D/A	32 points	NPN/PNP	0.3A	16(6)	16(8)	—	—	—	200khz	8-axis	RS232/RS485/USB
HCG2-40T(P)4-D/A	40 points	NPN/PNP	0.3A	24(6)	16(4)	—	—	—	200khz	4-axis	RS232/RS485/USB
HCG2-40T(P)4-C-D/A	40 points	NPN/PNP	0.3A	24(6)	16(4)	—	—	—	200khz	4-axis	RS232/RS485/USB/CAN
HCG2-40T(P)4-2AO-D	40 points	NPN/PNP	0.3A	24(6)	16(4)	—	2	0-10V	200khz	4-axis	RS232/RS485/USB
HCG2-40T(P)4-1AI1AO-D	40 points	NPN/PNP	0.3A	24(6)	16(4)	1	1	0-10V	200khz	4-axis	RS232/RS485/USB
HCG2-48T(P)4-D/A	48 points	NPN/PNP	0.3A	24(6)	24(4)	—	—	—	200khz	4-axis	RS232/RS485/USB
HCG2-48T(P)4-6AO-D/A	48 points	NPN/PNP	0.3A	24(6)	24(4)	—	6	0-10V	200khz	4-axis	RS232/RS485/USB
HCG2-48T(P)4-6AB-D/A	48 points	NPN/PNP	0.3A	28(12)	20(4)	—	—	—	200khz	4-axis	RS232/RS485/USB
HCG2-60T(P)4-D/A	60 points	NPN/PNP	0.3A	36(6)	24(4)	—	—	—	200khz	4-axis	RS232/RS485/USB
HCG2-60T(P)12-D/A	60 points	NPN/PNP	0.3A	36(6)	24(12)	—	—	—	200khz	12-axis	RS232/RS485*2/Ethernet
HCG2-68T(P)4-D	68 points	NPN/PNP	0.3A	36(4)	32(4)	—	—	—	200khz	4-axis	RS232/USB

Relay output type mainframe

Model	Total I/O points	Output Mode	Output amount Rated current	Digital (high speed) Input Points	Relay Output Points	Analog Output Points	Analog input/output Voltage Range	Communication Interface
HCG2-14R-D	14 points	Relay	2A	8(4) ^①	6	—	—	RS232/RS485
HCG2-14R3-D	14 points	Relay	2A	8(4) ^①	6	—	—	RS232*2/RS485
HCG2-16R-D	16 points	Relay	2A	8(4) ^①	8	—	—	RS232
HCG2-1608R-D/A	24 points	Relay	2A	16(-)	8	—	—	RS232/RS485/USB
HCG2-1410R-D/A	24 points	Relay	2A	14(-)	10	—	—	RS232/RS485/USB
HCG2-32R-D/A	32 points	Relay	2A	16(2)	16	—	—	RS232/RS485/USB
HCG2-40R-D/A	40 points	Relay	2A	24(6)	16	—	—	RS232/RS485/USB
HCG2-48R-D/A	48 points	Relay	2A	24(6)	24	—	—	RS232/RS485/USB
HCG2-48R-6AO-D/A	48 points	Relay	2A	24(6)	24	6	0-10V	RS232/RS485/USB
HCG2-60R-D/A	60 points	Relay	2A	36(6)	24	—	—	RS232/RS485/USB

Note 1: The input maximum frequency is 200kHz, ① Indicates that the high-speed input has a maximum frequency of 50kHz.

Note 2: In the product model, D means DC24V, A means AC100V-AC240V, and the default is DC24V without D or A suffix.

Note 3: HCG2 series supports NPN/PNP bipolar input, supports NPN or PNP output, the specific input and output types are determined by different models, you can download the product model catalog on the official website.

Performance Features

- Pulse control mode: It can drive stepper/servo motor up to 12 axes.
- It supports single-phase high-speed counting to 12 channels and differential high-speed counting input up to 6 channels: the maximum frequency is 200kHz.
- With Ethernet function, support online monitoring, download program, support MODBUS TCP/IP communication, free protocol communication.
- Using RS232 and RS485 dual-communication port, it both can realize HMI or PC communication, compatible with MODBUS ASCII and MODBUS RTU communication protocols.
- Advanced saving technology in case of power-down, the program is permanently saved.
- It can be expanded to 256 isolated input/output ports.
- Program undergoes encryption processing, it is optional to upload or not for protecting the user's intellectual property.
- You can download by inserting a USB disk, download and monitor the program by using a dual-headed USB cable for faster communication, with a download rate of up to 12Mbps.

Electrical specification of input point

Specification	Model	HCG2-14R-D	HCG2-16R-D	HCG2-16T(P)-D	HCG2-16T(P)1-D	HCG2-14T(P)3-D	HCG2-24T(P)6-D	HCG2-32T(P)4R-D/A	HCG2-48T(P)4-6AB-D/A	
Input Points		X0~X3	X4~	X0~X1	X2~X7, X10~	X0~X13	X14~			
Input Point Type		Digital input								
Input form		DC (NPN/PNP)								
Input Current		DC24V, 5mA								
Input Impedance		4.7KΩ								
Maximum frequency		50kHz	10kHz	200kHz	10kHz	200kHz	10kHz			
Response time	Off→On	<10μs	<20μs	<2.5μs	<20μs	<2.5μs	<20μs			
	On→Off	<20μs	<50μs	<5μs	<50μs	<5μs	<50μs			

Specification	Model	HCG2-32T(P)8-D/A	HCG2-40T(P)4-D/A	HCG2-60T(P)4-D/A	HCG2-40T(P)4-C-D/A	HCG2-40T(P)4-1AI1AO-D/A
Input Points		HCG2-32T(P)L-D	HCG2-40R-D/A	HCG2-60R-D/A	HCG2-48T(P)46AO-D/A	HCG2-48R6AO-D/A
Input Point Type		X0~X5				X6~X7, X10~
Input form		Digital input				
Input Current		DC (NPN/PNP)				
Input Impedance		DC24V, 5mA				
Input Impedance		4.7KΩ				
Maximum frequency		200kHz			10kHz	
Response time	Off→On	<2.5μs			<20μs	
	On→Off	<5μs			<50μs	

Electrical specifications for output points

Specification	Model	HCG2-14R-D	HCG2-16R-D	HCG2-32R-D	HCG2-40R-D	HCG2-48R-D	HCG2-48R6AO-D	HCG2-60R-D
Output Point Type		Relay Output						
Output Points		All						
Maximum load		2AAC250V/DC30V						
Response time		About 10ms						

Specification	Model	HCG2-16T(P)-D	HCG2-16T(P)-D	HCG2-24T(P)6-D/A	HCG2-32T(P)8-D/A	HCG2-40T(P)4-D/A	HCG2-40T(P)4-C-D/A	HCG2-40T(P)42AO-D	HCG2-40T(P)41AI1AO-D	HCG2-48T(P)4-6AB-D/A
Output Point Type		NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP	NPN/PNP
Output Points		All	Y0, Y2, Y4, Y6, Y8, Y10, Y12, Y14, Y16	Y0, Y2, Y4, Y6, Y8, Y10, Y12, Y14, Y16	Y0, Y2, Y4, Y6, Y8, Y10, Y12, Y14, Y16	Y0, Y2, Y4, Y6	Y1, Y3, Y5, Y7~	Y0, Y2, Y4, Y6, Y10, Y12, Y14, Y16	Y1, Y3, Y5, Y7, Y11, Y13, Y15, Y17~	Y0, Y2, Y4, Y6, Y10, Y12, Y14, Y16
Maximum frequency		10kHz	200kHz	10kHz	200kHz	200kHz	10kHz	10kHz	200kHz	10kHz
Maximum load	Resistive	0.3A/1 point (2.4A/COM)								
	Inductive	15W								
Response time	Off→On	<20μs	<2μs	<20μs	<2μs	<2μs	<20μs	<2μs	<20μs	<20μs
	On→Off	<30μs	<3μs	<30μs	<3μs	<3μs	<30μs	<3μs	<30μs	<30μs

Advanced type PLC -- HCD2 series

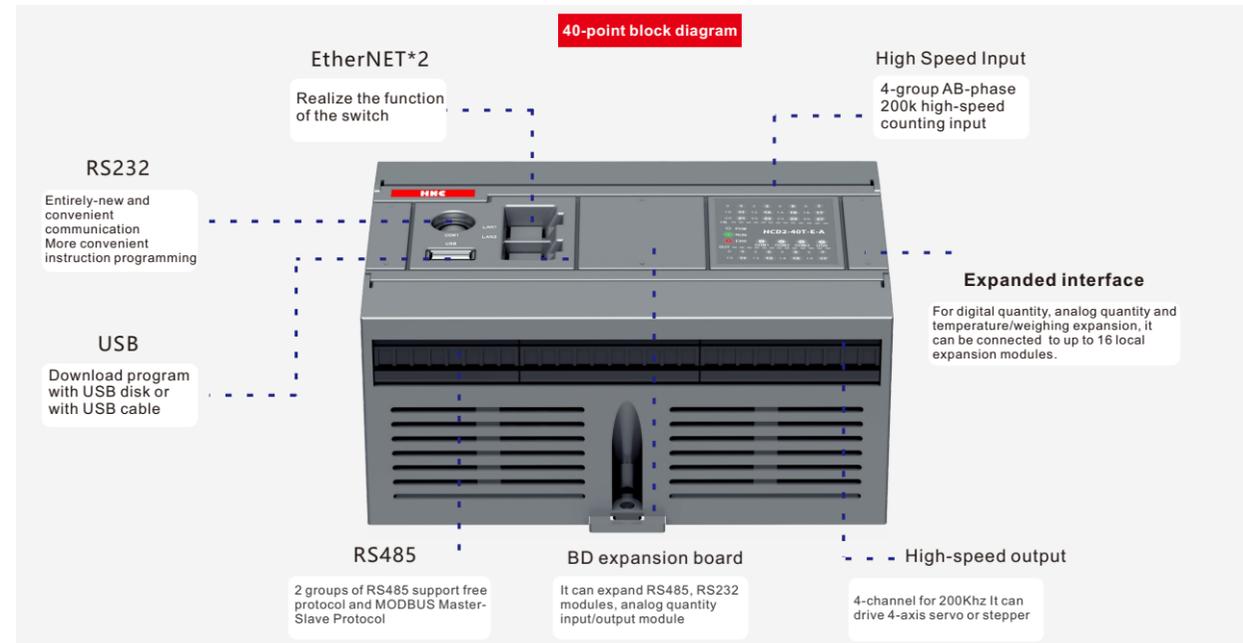
HCD2 Series

HCD2 Advanced type PLC series provides 14~60 points mainframe and 8~40 points digital input/output extension modules, including the maximum input/output expansion of the mainframe up to 256/256 points. In addition, it can be used with analog input/output expansion module, temperature expansion module and weighing expansion module, it is rich in expansion and is stable in performance to meet various applications.

Performance features

- High-speed input/output: Support up to 4 AB phase high-speed input, 12 axis high-speed output.
- With Ethernet function, support online monitoring, download program, support MODBUS TCP/IP communication, free protocol communication.
- Using RS232 and RS485*2 dual-communication port, it both can realize HMI or PC communication, compatible with MODBUS ASCII and MODBUS RTU communication protocols.
- Advanced saving technology in case of power-down, the program is permanently saved.
- Rich expansion: it can be expanded to 512 digital quantities, it otherwise can be matched with analog, weighing and temperature expansions.
- Program undergoes encryption processing, it is optional to upload or not for protecting the user's intellectual property.
- You can download by inserting a USB disk, download and monitor the program by using a dual-headed USB cable for faster communication, with a download rate of up to 12Mbps.

System block diagram



Model List

Points	AC power supply		DC power supply	
	Without Ethernet	With Ethernet	Without Ethernet	With Ethernet
16 Points	HCD2-16R-A	HCD2-16R-E-A	HCD2-16R-D	HCD2-16R-E-D
24 Points	HCD2-24R-A	HCD2-24R-E-A	HCD2-24R-D	HCD2-24R-E-D
32 Points	HCD2-32R-A	HCD2-32R-2E-A	HCD2-32R-D	HCD2-32R-2E-D
40 Points	HCD2-40R-A	HCD2-40R-2E-A	HCD2-40R-D	HCD2-40R-2E-D
48 Points	HCD2-48R-A	HCD2-48R-2E-A	HCD2-48R-D	HCD2-48R-2E-D
60 Points	HCD2-60R-A	HCD2-60R-2E-A	HCD2-60R-D	HCD2-60R-2E-D

Points	Number of pulse shafts	AC power supply		DC power supply	
		Without Ethernet	With Ethernet	Without Ethernet	With Ethernet
16 Points	2 or 4 axes	HCD2-16T (P) (2/4) -A	HCD2-16T (P) (2/4) -E-A	HCD2-16T (P) (2/4) -D	HCD2-16T (P) (2/4) -E-D
24 Points	4 axes	HCD2-24T (P) (4) -A	HCD2-24T (P) (4) -E-A	HCD2-24T (P) (4) -D	HCD2-24T (P) (4) -E-D
32 Points	4 or 8 axes	HCD2-32T (P) (4/8) -A	HCD2-32T (P) (4/8) -2E-A	HCD2-32T (P) (4/8) -D	HCD2-32T (P) (4/8) -2E-D
40 Points	4 or 8 axes	HCD2-40T (P) (4/8) -A	HCD2-40T (P) (4/8) -2E-A	HCD2-40T (P) (4/8) -D	HCD2-40T (P) (4/8) -2E-D
48 Points	4 or 12 axes	HCD2-48T (P) (4/12) -A	HCD2-48T (P) (4/12) -2E-A	HCD2-48T (P) (4/12) -D	HCD2-48T (P) (4/12) -2E-D
60 Points	4 or 12 axes	HCD2-60T (P) (4/12) -A	HCD2-60T (P) (4/12) -2E-A	HCD2-60T (P) (4/12) -D	HCD2-60T (P) (4/12) -2E-D

Note 1: 16~24 points with 1 Ethernet port (no USB interface), if there is no Ethernet port, with 1 USB interface, 32~60 points with 2 Ethernet ports, default with USB interface.

Note 2: T: represents transistor NPN output; P: Indicates the transistor PNP output.

Note 3: D: indicates that the PLC is powered by a DC24V DC power supply. A: Indicates that the PLC supplies power to AC220V AC power supply.

Note 4: HCD2 series supports NPN/PNP bipolar input, supports NPN or PNP output, the specific input and output type is determined by different models, you can download the product model catalog on the official website.

Technical parameters

The following are the technical specifications of PLC with Ethernet port, other technical specifications of PLC without Ethernet port are the same.

Series Model HCD2-	HCD2-16T (P/R) -E	HCD2-24T (P/R) -E	HCD2-32T (P/R) -2E	HCD2-40T (P/R) -2E	HCD2-48T (P/R) -2E	HCD2-60T (P/R) -2E
Total number of points	16 points	24 points	32 points	40 points	48 points	60 points
Number of digital input points	8	14	16	24	24	36
Number of digital output points	8	10	16	16	24	24
Output method	T: NPN/P:PNP/R: Relay	T: NPN/P:PNP/R: Relay	T: NPN/P:PNP/R: Relay	T: NPN/P:PNP/R: Relay	T: NPN/P:PNP/R: Relay	T: NPN/P:PNP/R: Relay
High-speed input counter	3-way AB phase	3-way AB phase	4-way AB phase	4-way AB phase	4-way AB phase	4-way AB phase
High-speed input maximum frequency	200khz	200khz	200khz	200khz	200khz	200khz
Right Module	16	16	16	16	16	16
Left Extension	Communication extension supported	Communication extension supported	Communication extension supported	Communication extension supported	Communication extension supported	Communication extension supported
BD Board	Support 1 board	Support 1 board	Support 1 board	Support 1 board	Support 2 board	Support 2 board
Serial communication port	RS232/RS485*2	RS232/RS485*2	RS232/RS485*2	RS232/RS485*2	RS232/RS485*2	RS232/RS485*2
USB communication port	None	None	Program downloading/Firmware upgrade	Program downloading/Firmware upgrade	Program downloading/Firmware upgrade	Program downloading/Firmware upgrade
Ethernet port	Support 1 port	Support 1 port	Support 2 ports	Support 2 ports	Support 2 ports	Support 2 ports
Number of pulse axes	T and P: 2 or 4-axis R: None	T and P: 4 axis R: None	T: 4 axis/P: 8 axis/Rename	T and P: 4 or 8-axis R: None	T and P: 4 or 12-axis R: None	T and P: 4 or 12-axis R: None
High-speed output maximum frequency	200khz	200khz	200khz	200khz	200khz	200khz
Bus Functions	None	None	None	None	None	None
Number of bus axis	None	None	None	None	None	None
Program Capacity	30k	30k	30k	30k	30k	30k
Perpetual Calendar	Supported	Supported	Supported	Supported	Supported	Supported
Size (mm)	114*100*73	114*100*73	155*100*73	155*100*73	218*100*73	218*100*73
Protection level	Ip20					
Working environment temperature	5 to 55°C (41 to 131°F), No condensation					
Relative Humidity	5 to 95%					
Transport ambient temperature	-25~70°C (-13-158°F)					
Vibration resistance	10M/S ²					
Working altitude	0 ~ 2000M, without capacity reduction, 2000M or more, ambient temperature <40°C (104°F)					

Electrical specification of input point

Series Model HCD2-	16T (P/R), 24T (P/R)		32T (P/R), 40T (P/R), 48T (P/R), 60T (P/R)	
Input Points	X0~X5	X6~	X0~X7	X10~
Input Point Type	Digital input			
Input form	DC (NPN/PNP)			
Input Current	5mA			
Input Impedance	4.7KΩ			
Maximum frequency	200kHz	10kHz	200kHz	10kHz
Response time	Off→On	<2.5μs	<2.5μs	<20μs
	On→Off	<5μs	<5μs	<50μs

Electrical specification of output point

Series Model HCD2-	16T/P4, 24T/P4, 32T/P4, 40T/P4, 48T/P4, 60T/P4		32T/P8, 40T/P8	48T/P12, 60T/P12
Output Points	Y0, Y2, Y4, Y6	Y1, Y3, Y5, Y7~Y17	Ya0, Y2... Y16 (8 even output ports)	Y0, Y2... Y26 (12 even output ports)
Maximum frequency	200Khz	10Khz		
Maximum load	Resistive: 0.3A/1 point (2.4A/COM)			
	Inductive: 15W			
Response time	Off→On	<2μs		<20μs
	On→Off	<3μs		<30μs

Series Model HCD2-	16R, 24R, 32R, 40R, 48R, 60R
Output Point Type	Relay Output
Output Points	All
Maximum load	2A AC250V /DC30V
Response time	About 10ms

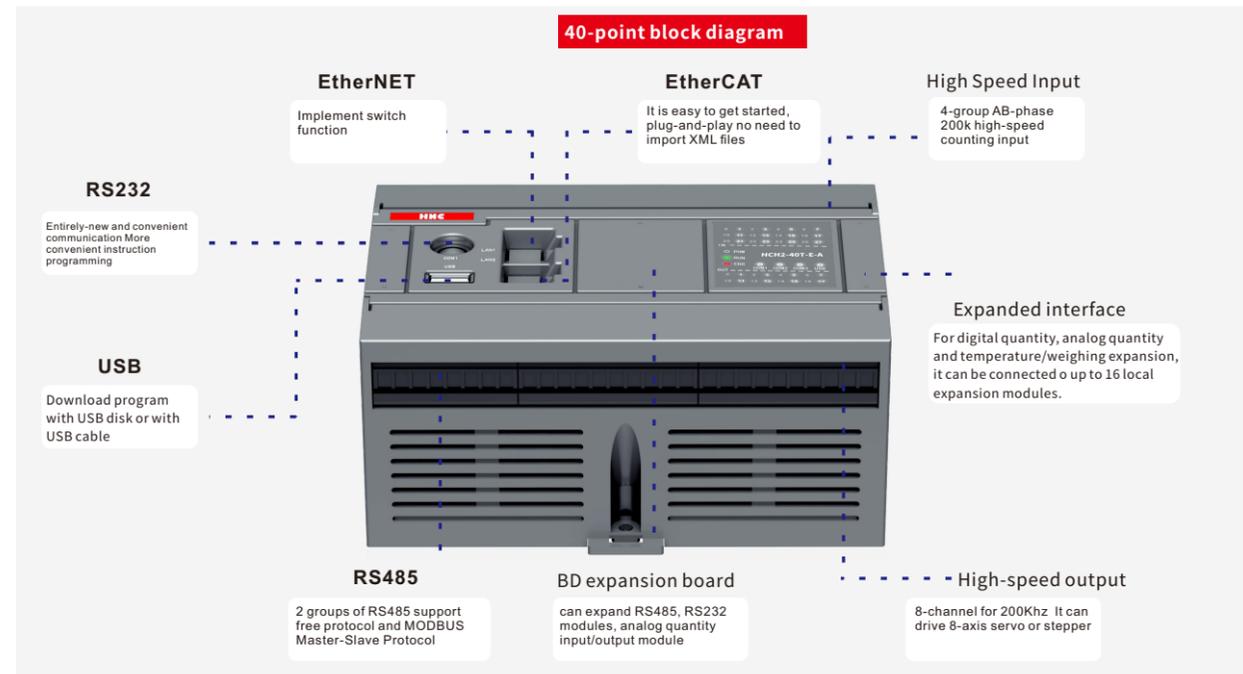
EtherCAT Bus Type PLC -- HCH2 Series

Multi-axis controller based on EtherCAT field bus has a bus transmission rate of 100Mbps, uses a distributed clock, combines pulse axes with bus axes, can quickly, accurately and efficiently transfer data, is convenient for users to quickly get started. It supports single-axis motion commands such as position, speed, torque and return to origin, and supports multi-axis commands such as electronic gear, electronic cam, linear interpolation and circular arc interpolation. With multiple built-in communication ports, there are RS232, RS485, USB and Ethernet ports for users to choose. It has perpetual calendar and can expand IO ports.

Performance features

- Pulse control method and bus control: The bus is combined with the pulse axis for flexible and free distribution.
- High speed input/output: 4-way AB phase for input of 200Khz, 8-axis high speed output of 200Khz.
- With Ethernet function, support online monitoring, download program, support MODBUS TCP/IP communication, free protocol communication.
- Using RS232 and RS485 dual-communication port, it both can realize HMI or PC communication, compatible with MODBUS ASCII and MODBUS RTU communication protocols.
- Advanced saving technology in case of power-down, the program is permanently saved.
- Rich expansion: it can be expanded to 512 digital quantities, it otherwise can be matched with analog, weighing and temperature expansions.
- Program undergoes encryption processing, it is optional to upload or not for protecting the user's intellectual property.
- You can download by inserting a USB disk, download and monitor the program by using a dual-headed USB cable for faster communication, with a download rate of up to 12Mbps.
- Development humanization: with the completely self-developed bus platform, it easier to get started.
- Closer to the user: no need to import XML files, the bus is plug-and-play.

HCH2 series



Hardware Upgrade

- New upgraded appearance.
- More communication: USB/RS232/RS485*2.
- In-line terminals for easier disassembly.

Software Upgrade

- MODBUS communication commands are more convenient and PLC programs do not need to be polled.
- High-speed on-line connection is possible between the main body PLC mainframes.
- PLC program capacity is expanded to 60K.

Model List

Points	Number of bus axes	Model	
		A: AC power AC100V~240V;	D: DC power DC24V
16点	8~32轴	HCH2-16T (P/R) (8/16/32) -A	HCH2-16T (P/R) (8/16/32) -D
24点	8~32轴	HCH2-24T (P/R) (8/16/32) -A	HCH2-24T (P/R) (8/16/32) -D
32点	8~32轴	HCH2-32T (P/R) (8/16/32) -E-A	HCH2-32T (P/R) (8/16/32) -E-D
40点	8~32轴	HCH2-40T (P/R) (8/16/32) -E-A	HCH2-40T (P/R) (8/16/32) -E-D
48点	12~32轴	HCH2-48T (P/R) (12/32) -E-A	HCH2-48T (P/R) (12/32) -E-D
60点	12~32轴	HCH2-60T (P/R) (12/32) -E-A	HCH2-60T (P/R) (12/32) -E-D

Note 1: T: indicates transistor NPN output; P: Indicates the transistor PNP output. R: Relay output.

Note 2: D: indicates that the PLC is powered by a DC24V DC power supply. A: Indicates that the PLC supplies power to AC220V AC power supply.

Note 3: HCH2 series supports NPN/ PNP bipolar input, supports NPN or PNP output, the specific input and output type is determined by different models, you can download the product model catalog on the official website.

Technical parameters

Series Model Jh2-	HCH2-16T (P/R) -E	HCH2-24T (P/R) -E	HCH2-32T (P) /T (P) 2/T (P) 4/R -E	HCH2-40T (P/R) -E	HCH2-48T (P/R) -E	HCH2-60T (P/R) -E
Total number of points	16 points	24 points	32 points	40 points	48 points	60 points
Number of digital input points	8	14	16	24	24	36
Number of digital output points	8	10	16	16	24	24
Output method	T: NPN/P:PNP/R:Relay	T: NPN/P:PNP/R:Relay	T: NPN/P:PNP/R:Relay	T: NPN/P:PNP/R:Relay	T: NPN/P:PNP/R:Relay	T: NPN/P:PNP/R:Relay
High-speed input counter	3-way AB phase (X0 ~ X5)	3-way AB phase (X0 ~ X5)	4-way AB phase (X0 ~ X7)	4-way AB phase (X0 ~ X7)	4-way AB phase (X0 ~ X7)	4-way AB phase (X0 ~ X7)
High-speed input maximum frequency	200khz	200khz	200khz	200khz	200khz	200khz
Right Module	16	16	16	16	16	16
Left Extension	Communication extension supported	Communication extension supported	Communication extension supported	Communication extension supported	Communication extension supported	Communication extension supported
BD Board	Support 1 board	Support 1 board	Support 1 board	Support 1 board	Support 2 board	Support 2 board
Serial communication port	RS232/RS485*2	RS232/RS485*2	RS232/RS485*2	RS232/RS485*2	RS232/RS485*2	RS232/RS485*2
USB communication port	None	None	Program Download/Firmware Upgrade	Program Download/Firmware Upgrade	Program Download/Firmware Upgrade	Program Download/Firmware Upgrade
Ethernet communication port	None	None	Support 1 port	Support 1 port	Support 1 port	Support 1 port
Number of pulse axes	T: 4 axis/ R:-	T: 5 axis/ R:-	T: 8 axis/ R:-	T: 8 axis/ R:-	T: 8 axis/ R:-	T: 8 axis/ R:-
High-speed output maximum frequency	200khz	200khz	200khz	200khz	200khz	200khz
Bus Function	EtherCAT Bus	EtherCAT Bus	EtherCAT Bus	EtherCAT Bus	EtherCAT Bus	EtherCAT Bus
Number of bus axis	8 axis	8 axis	T:8 axis/T2:16axis/T4:32 axis/R:8 axis	8 axis	8 axis	8 axis
Program Capacity	60k	60k	60k	60k	60k	60k
Perpetual Calendar	Supported	Supported	Supported	Supported	Supported	Supported
Size(mm)	114*100*73	114*100*73	155*100*73	155*100*73	278*100*73	218*100*73
Protection level	IP20					
Working environment temperature	5~55°C (41-131°F) No condensation					
Relative Humidity	5~95%					
Transport ambient temperature	-25 ~70°C (-13-158T)					
Vibration resistance	10M/S²					
Working altitude	0~2000M without capacity reduction, 2000M or more, ambient temperature <40°C (104°F)					
Description	Note: If the pulse axes and bus axes are total in 16 axes, the program can be customized to freely assign them. For example, the number of pulse axes is defined as 2 axes, the bus axes are 14 axes					

Electrical specification of input point

Series Model HCH2-	16~24 point		32~60 point	
	X0~X5	X6~	X0~X7	X10~
Input Points				
Input Point Type	Digital input			
Input Current	5mA			
Input Impedance	4.7KΩ			
Maximum frequency	200kHz	10kHz	200kHz	10kHz
Response time	Off→On	<2.5μs	<20μs	<2.5μs
	On→Off	<5μs	<50μs	<5μs

Electrical specification of output point

Series Model HCH2-	16T(P), 24T(P), 32T(P), 40T(P), 48T(P), 60T(P)	
Output Point Type	NPN/ PNP	
Output Points	Y0-Y1 6: output points are even digits, 4 points for 16T, 5 points for 24T, 8 points for 32T~60T	Y1, Y3, Y5...Y17 (output point are base bit)
Maximum frequency	200Khz	10Khz
Maximum Load	Resistive	0.3A/1point (2.4A/COM)
	Inductive	15W
Response Time	Off→On	<2μs
	On→Off	<3μs

Series Model HCH2-	16R, 24R, 32R, 40R, 48R, 60R
Output Point Type	Relay Output
Output Points	All
Maximum load	2A AC250V/DC30V
Response time	About 10ms

> Motion Control Type PLC-- HCM2 Series

HCM2 Series PLC-Electronic Cam

HCM2 series PLC provides 32-60 points mainframe with built-in electronic cam function, including fixed length chasing shear, flying shear, wheel cutting, synchronization and other technical solutions. It adopts electronic cam speed curve, has high positioning accuracy and has no accumulated error. With HNC's self-defined instructions, it is simple to make application programming and is easy to understand, and it runs smoothly. The alignment accuracy is within 0.20mm. It can also be used with analog input/output module, temperature module and weighing module. It is rich in expansion and has stable performance to meet various applications.

Model description

Points	Number of bus axes	Model	
		A: AC power AC100V~240V;	D: DC power DC24V
16点	8~32轴	HCM2-16T (P) (8/16/32) -A	HCM2-16T (P) (8/16/32) -D
24点	8~32轴	HCM2-24T (P) (8/16/32) -A	HCM2-24T (P) (8/16/32) -D
32点	8~32轴	HCM2-32T (P) (8/16/32) -E-A	HCM2-32T (P) (8/16/32) -E-D
40点	8~32轴	HCM2-40T (P) (8/16/32) -E-A	HCM2-40T (P) (8/16/32) -E-D
48点	12~32轴	HCM2-48T (P) (12/32) -E-A	HCM2-48T (P) (12/32) -E-D
60点	12~32轴	HCM2-60T (P) (12/32) -E-A	HCM2-60T (P) (12/32) -E-D

Focus on motion control to make electronic cams simpler and more precise

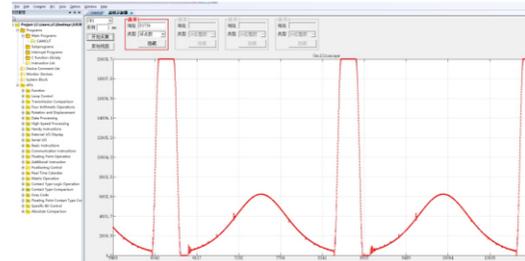
- Feature-rich: chasing clips, flying shears, synchronization, following, motion overlays, virtual axes, custom cams, etc
- Easy programming: Dedicated cam command control is simpler
- Case application Pillow packing machine: fixed length, variable length, follow-up standard, air defense bag, anti-scalding film, anti-cutting material, etc. When working in the fixed length and benchmarking mode, the fastest production capacity is 1200 packs/min. Work in anti-aircraft packages, Anti-cutting, variable length mode, production capacity up to 300 packs/min.

Performance characteristics

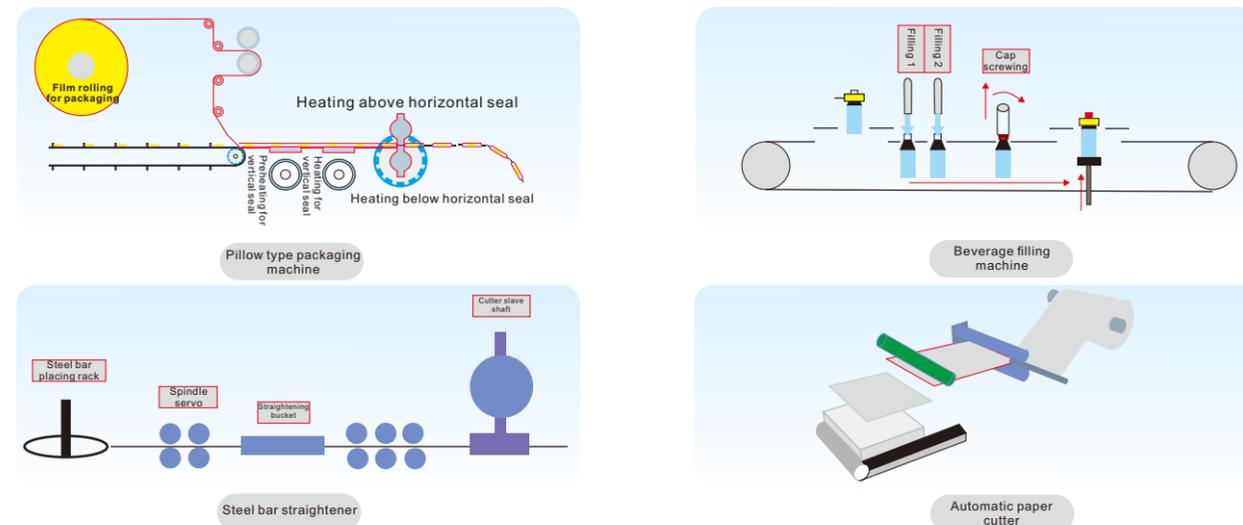
- Expandable to 256 isolated inputs/outputs.
- Advanced power-down preservation technology, program permanent storage.
- Pulse control mode: can drive up to 12 axis stepper/servo motor.
- The program is encrypted and can be set whether to upload to protect the user's intellectual property rights.
- You can download the program by plugging in a USB stick or use a dual-ended USB cable to download and monitor the program, the communication speed is faster, and the download rate can reach 12Mbps.
- Using RS232, RS485 dual communication ports, can realize HMI or PC communication, compatible with MODBUS ASCII, MODBUS RTU communication protocol.

Electronic cam PLC with oscilloscope function

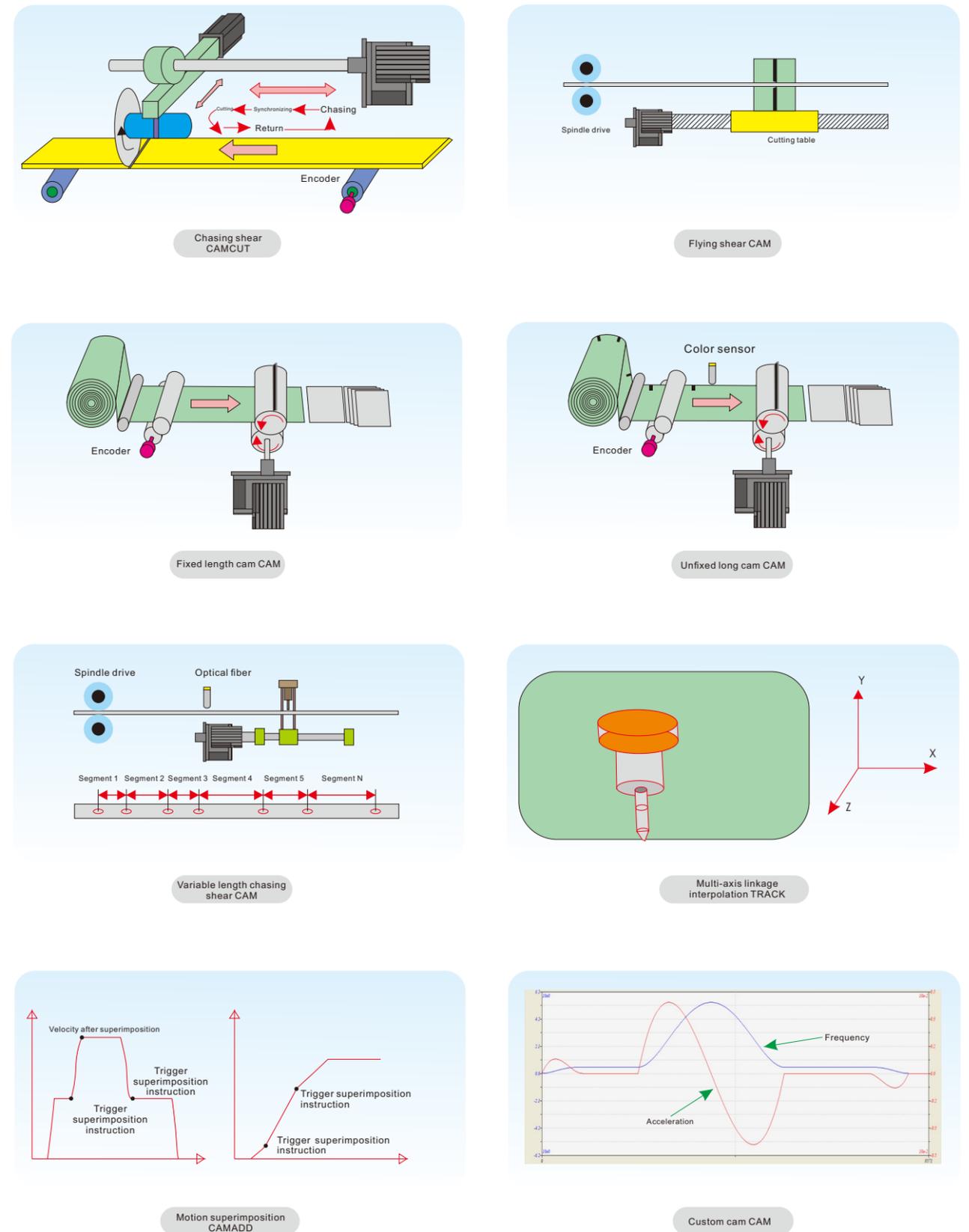
Oscilloscope function: monitor the change of each component over time during operation, to facilitate analysis of problems and effective debugging.



Typical applications



Motion control functions



> Profinet, EtherCAT Bus Type Distributed I/O

Launched by the PROFIBUS International Organization (PROFIBUS International, PI), PROFINET is a new generation of automated bus standard based on industrial Ethernet technology. PROFINET provides a complete network solution for automated communications, including current hot automation topics such as real-time Ethernet, motion control, distributed automation, fault security, and network security. HNC PROFINET bus products mainly cover integrated IO, plug-in IO, with Siemens S7-1200, has a wide range of applications in many industries.

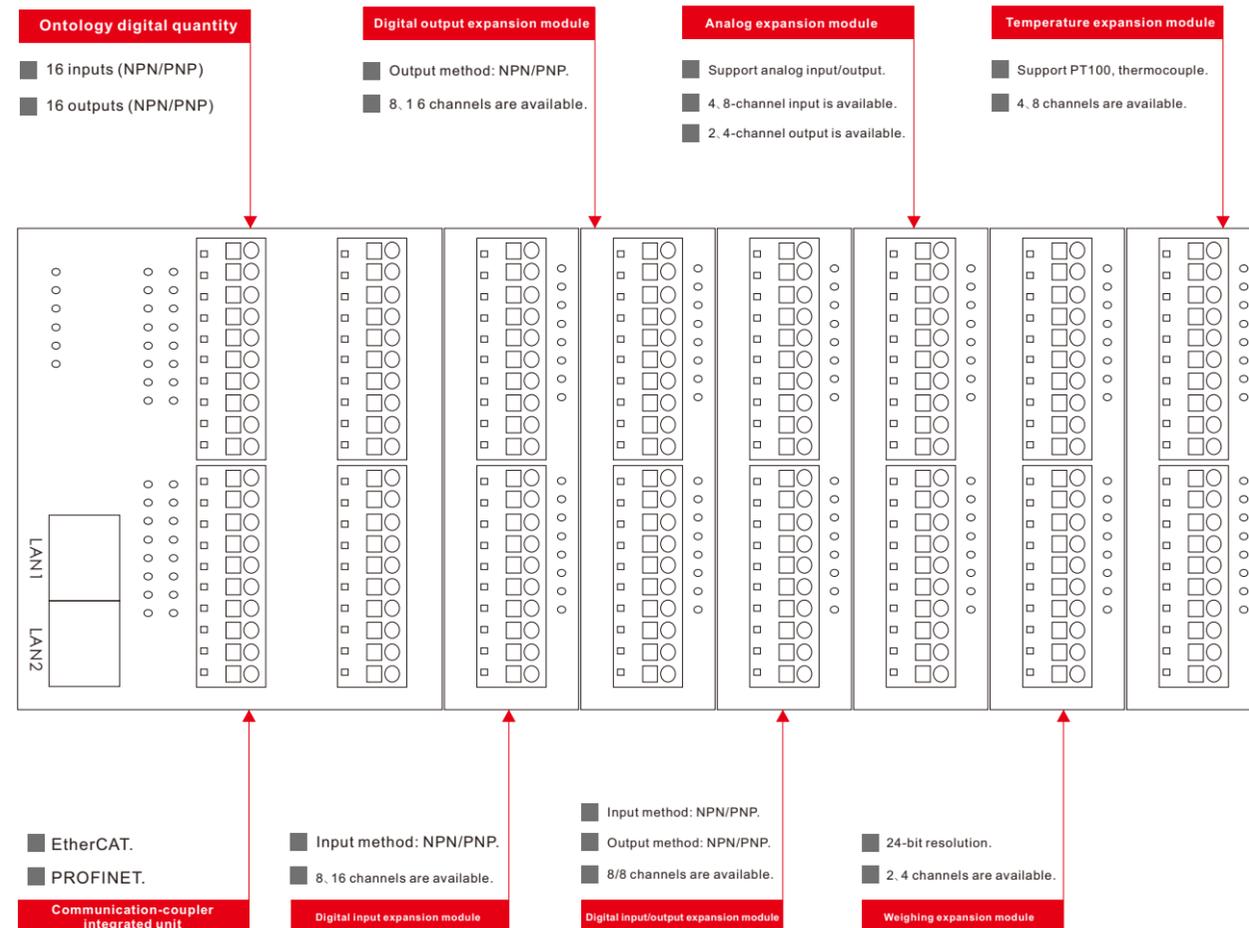
EtherCAT is a deterministic industrial Ethernet, which was first developed by Beckhoff in Germany. Automation generally requires short update times (or cycle times), low communication jitter during data synchronization and low hardware costs, and EtherCAT was developed to allow Ethernet to be used in automation applications. HNC EtherCAT bus products include all-in-one IOs and plug-in IOs, with a wide range of products, models and functions.

Performance Features

- Spring-loaded extractable terminals for easier connection and maintenance.
- A wide variety of I/O: digital, analog, temperature, and weighing.
- Fast processing speed: high-speed ARM + dedicated ASIC.
- More cost-effective and easy to connect.
- Up to 32 digital points for a single module, expandable with 16 expansion modules.
- Card type machine, small size and small space occupation.



Distributed Remote Module



Coupler models at a glance

Coupler	
HTEP-32TP	PROFINET coupler, 16 in (NPN/PNP type), 16 out (PNP type)
HTEE-32TN	EtherCAT coupler, 16 in (NPN/PNP type), 16 out (NPN type)
HTEE-32TP	EtherCAT coupler, 16 in (NPN/PNP type), 16 out (PNP type)

Extended models at a glance

Note: The coupler can be used with any expansion module of the HTE series, and up to 16 expansion modules can be connected to one coupler.

Digital quantities	
HTE-8X	8-channel digital input, NPN/PNP type
HTE-8YT(P)	8-point digital output extension, 8DO (NPN or PNP transistor output)
HTE-16YT	16 point digital output extension, 16DO (NPN transistor)
HTE-16T(P)	16 point digital expansion, 8DI (NPN/PNP)/8DO (NPN/PNP)
HTE-16YP	16 point digital output extension, 16DO (PNP transistor)

Analog	
HTE-4AI2AO	4/2-channel analog input/output, (0~10V,0~20mA)/(0~10V,0~20mA) adjustable
HTE-4AO	4-channel analog output, adjustable (10~10V,0-20mA)
HTE-8AI	8-channel analog input, (0~10V,0-20mA) adjustable

Temperature	
HTE-4PTY	4-channel temperature input, 4-channel transistor NPN output, support PT100, measurement range:-50~300° C, accuracy:1° C
HTE-n4TC	4 temperature acquisition inputs (no optocoupler isolation between channels), supporting thermocouples, temperature measurement range 0-900 °C, accuracy 1 °C
HTE-n4TCY	4 temperature acquisition inputs (without optocoupler isolation between channels), 4 NPN transistor outputs, supporting thermocouples, temperature measurement range 0-900 °C, accuracy 1 °C

Weighing	
HTE-2L	2-channel weighing input, 24-bit resolution, accuracy: ±1%
HTE-4L	4-channel weighing input, 24-bit resolution, accuracy: ±1%

Electrical specifications

Digital Electrical specification of input point		
Input type	DC (NPN/PNP)	
Input Impedance	4.7KΩ	
Maximum frequency at input point	10kHz	
Input response time	Off→On	<20μs
	On→Off	<50μs

Digital Electrical specification of output point		
Output method	NPN/PNP	
Maximum frequency at output point	10kHz	
Maximum Load	Resistive	0.3/1point
	Inductive	1.5W
Output Response time	Off→On	<20μs
	On→Off	<30μs

Extension Modules

HNC series expansion modules are mainly divided into standard, customized, and compact models. Digital modules, analog modules, temperature modules, weighing modules, function modules, etc. are available.

Note 1: HHE series expansion and HCD2, HCH2, HCM2 series mainframe have the same appearance and color, HSE series expansion and HCG2 have the same appearance and color, HTE series expansion and HCS2 have the same appearance and color.

List of each series of extensions matched with each series of mainframes

Extended Series	Mainframe Series
HTE Series	HCS2 series
HSE Series	HCG2 series
HHE Series	HCD2 HCH2 HCM2 series



HTE Series Expansion



HSE Series Expansion



HHE Series Expansion

> Standard Extension--HTE Series

In order to meet the application requirements of more occasions, the mainframe can be equipped with abundant expansion modules. HNC's expansion modules are mainly divided into digital input and output expansion modules, analog input and output expansion modules, temperature expansion modules, weighing expansion modules and other major categories. Each type of module has a variety of points, and can be flexibly configured with various I/O scales of the Company to achieve higher cost performance.

Note: Only available with the expansion module of the Company's mainframe.

Performance Features

- Input and output are optoelectronic isolated for each channel, with high reliability and anti-interference capability.
- Power supply has reverse connection protection and surge absorption function, which can be applied to a variety of working environments.
- The maximum number of digital I/O points is: 256DI/256DO.
- One mainframe can be equipped with 16 expansion modules.

HTE Series Digital Expansion

Digital input expansion



Model	Function	Specification
HTE-8X	8-channel digital input	NPN/PNP bipolar input DC24V power supply, no need for external power supply Maximum frequency at input point: 10Khz
HTE-16X	16-channel digital input	

Digital output expansion



Model	Function	Specification
HTE-8YT	8-channel transistor output	DC24V power supply, no need for external power supply P: PNP type transistor output T: NPN type transistor output Response time: approx. 50us Maximum output current: 0.3A per point
HTE-8YP	8-channel transistor output	
HTE-16YT	16-channel transistor output	
HTE-16YP	16-channel transistor output	

Digital input/output expansion



Model	Function	Specification
HTE-16T(P)	8-channel digital input, 8-channel transistor output	DC24V power supply, no need for external power supply NPN/PNP bipolar input Maximum input point frequency 10Khz T(P): NPN(PNP) type transistor output T response time: about 50us T maximum output current: 0.3A per point

High speed DI/DO expansion



Model	Function
HTE-02HSC	2 sets of AB phase high-speed inputs (or 4 single-phase high-speed inputs), NPN/PNP bipolar inputs, 4 outputs (PNP), with high-speed counter comparison setting function, equivalent to DHSCS instructions.
HTE-16HSC	16 Channels single-phase High-speed input (NPN/PNP bipolar inputs)

HTE Series Analog Expansion

Performance Features

- High reliability and strong anti-interference capability.
- Power supply has reverse connection protection and surge absorption function, it can be applied to a variety of working environments.

Analog input expansion



Model	Function	Specification
HTE-8AI	8-channel analog input	Voltage range: 0V-10V Current range: 0-20mA; 4-20mA Resolution: 12bit

Analog output expansion



Model	Function	Specification
HTE-4AO	4channel analog input	Voltage range: -10V-10V Current range: 0-20mA; 4-20mA Resolution: 12bit

Analog input/output expansion



Model	Function	Specification
HTE-4AI2AO	4-channel analog input, 2-channel analog output	Voltage range: (input: 0V-5V; 0-10V,output: 0-10V) Current range: 0-20mA; 4-20mA Resolution: 12bit

Temperature Extension



Model	Function
HTE-4PTY(P)	Temperature expansion module, 4 temperature acquisition inputs, 4 NPN (PNP) transistor outputs, supporting three wire Pt100.
HTE-n4TC	Temperature expansion module, 4 temperature acquisition inputs (no optocoupler isolation between channels), supporting thermocouples, temperature measurement range 0-900 °C, accuracy 1 °C.
HTE-n4TCY(P)	Temperature expansion module, 4 temperature acquisition inputs (without optocoupler isolation between channels), 4 NPN (PNP) transistor outputs, supporting thermocouples, temperature measurement range 0-900 °C, accuracy 1.
HTE-4PTC	Temperature expansion module, 4 temperature acquisition inputs (supporting connection to PT100 or K-type thermocouple sensors, optocoupler isolation between channels), temperature measurement range 0-900 °C, accuracy.
HTE-1TC-1AOS	Analog Expansion Modules, 1 Channel temperature acquisition input, support thermocouple, with self-tuning PID control function, Measuring Arrange: 0-800°C, 1 Channel analog output, Voltage Range: 0~10V.

Weighing Extension



Model	Function	Specification
HTE-2L	2-channel weighing input	DC24V power supply, no need for external power supply Resolution 24 bits, accuracy ±1%
HTE-4L	4-channel weighing input	DC24V power supply, no need for external power supply Resolution 24 bits, accuracy ±1%

> Standard Extension--HSE Series

In order to meet the application requirements of more occasions, the mainframe can be equipped with abundant expansion modules. HNC's expansion modules are mainly divided into digital input and output expansion modules, analog input and output expansion modules, temperature expansion modules, weighing expansion modules and other major categories. Each type of module has a variety of points, and can be flexibly configured with various I/O scales of the Company to achieve higher cost performance.

Note: Only available with the expansion module of the Company's mainframe.

HSE Series Digital Expansion

Performance Features

- Input and output are optoelectronically isolated for each channel, with high reliability and strong anti-interference capability.
- Power supply has reverse connection protection and surge absorption function, it can be applied to a variety of working environments.
- The maximum number of digital I/O points is: 256DI/256DO.
- One mainframe can be equipped with 16 expansion modules.

Digital input expansion



Model	Function	Specification
HSE-8X	8-channel digital input	NPN/PNP bipolar input DC24V power supply, no need for external power supply Maximum frequency at input point: 10Khz
HSE-16X	16-channel digital input	

Digital output expansion



Model	Function	Specification
HSE-8YT(P)	8-channel transistor output	DC24V power supply, no need for external power supply R: Relay output T: NPN type transistor output P:PNP type transistor output
HSE-16YT(P)	16-channel transistor output	
HSE-16YR	16-channel relay output	R response time: approx. 10ms T response time: about 50us
HSE-32YT(P)	32-channel transistor output	R maximum output current: max. 2A T maximum output current: 0.3A per point

Digital input/output expansion



Model	Function	Specification
HSE-8T(P)	4-channel digital input, 4-channel transistor output	DC24V power supply, no need for external power supply NPN/PNP bipolar input Maximum frequency at input point 10Khz
HSE-16T(P)	8-channel digital input, 8-channel transistor output	
HSE-16R	8-channel digital input, 8-channel relay output	R: Relay output T: NPN type transistor output P:PNP type transistor output
HSE-32T(P)	16-channel digital input, 16-channel transistor output	R response time: about 10ms T response time: about 50us
HSE-32R	16-channel digital input, 16-channel relay output	R maximum output current: max. 2A T maximum output current: 0.3A per point
HSE-40T(P)	24-channel of digital input, 16-channel of transistorized output	

HSE Series Analog Expansion

Performance Features

- High reliability and strong anti-interference capability.
- Power supply has reverse connection protection and surge absorption function, it can be applied to a variety of working environments.

Analog output expansion



Model	Function	Specification
HSE-4AO	4-channel analog output	Voltage range: -10V~10V Current range: 0-20mA; 4-20mA Resolution: 12bit

Analog input/output expansion



Model	Function	Specification
HSE-4AI2AO	4-channel analog input, 2-channel analog output	Voltage range: (input/output: -10V~10V) Current range: (input/output: 0-20mA; 4-20mA) Resolution: 12bit
HSE-4hAI2AO	4-channel analog input, 2-channel analog output	

Temperature Extension



Model	Function
HSE-2TCY(P)	Temperature expansion module, 2 temperature acquisition inputs (with optocoupler isolation between channels), 2 NPN/PNP transistor outputs, supporting thermocouples. Measurement range 0-900 °C, accuracy 1 °C
HSE-n2TCY(P)	Measurement range 0-900 °C, accuracy 1 °C Temperature expansion module, 2 temperature acquisition inputs (no optocoupler isolation between channels), 2 NPN/PNP transistor outputs, supporting thermocouples, measurement range 0-900 °C, accuracy 1 °C
HSE-2TCY2(P)	The temperature module can work independently without the host and has an RS485 communication interface. It has 2 temperature acquisition inputs (with optocoupler isolation between channels) and 2 NPN/PNP transistor outputs. It supports thermocouples and has PID self-tuning function. The measurement range is 0-900 °C, with an accuracy of 1 °C
HSE-2TC-A	2 Channels temperature acquisition input, support PT100/thermocouple, Max Measuring Range: 300 °C, Precision: 1°C, 2 Channels SSR(Solid State Relay) AC output (can drive the Heating Rod within 500W directly). Factory default thermocouple. If you need PT100 type, please confirm with us.
HSE-n2TCY2(P)	The temperature module can work independently without the host, with RS485 communication interface, 2 temperature acquisition inputs (without optocoupler isolation between channels), 2 NPN/PNP transistor outputs, supports thermocouples, has PID self-tuning function, measurement range 0-900 °C, accuracy 1 °C
HSE-n4TC	Temperature Expansion Modules, 4 Channels temperature acquisition input(without Optocoupler isolation between channels), support thermocouple, Measuring Arrange: 0-900 °C, Precision: 1°C.
HSE-4TCY(P)	Temperature expansion module, 4 temperature acquisition inputs (with optocoupler isolation between channels), 4NPN/PNP transistor outputs, supporting thermocouples. Measurement range 0-900 °C, accuracy 1 °C
HSE-n4TCY(P)	Temperature expansion module, 4 temperature acquisition inputs (without optocoupler isolation between channels), 4NPN/PNP transistor outputs, supporting thermocouples. Measurement range 0-900 °C, accuracy 1 °C
HSE-4TCY2(P)	The temperature module can work independently without the host and has an RS485 communication interface. It has 4 temperature acquisition inputs (with optocoupler isolation between channels) and 4 NPN/PNP transistor outputs. It supports thermocouples and has PID self-tuning function. The measurement range is 0-900 °C, with an accuracy of 1 °C
HSE-n4TCY2(P)	Temperature Expansion Modules can be running independently without PLC main unit, with RS485 COM Port, 4 Channels temperature acquisition input(without optocoupler isolation between channels), 4 Channels transistor NPN/PNP output, support thermocouple, with self-tuning PID control function, Measuring Arrange: 0-900 °C, Precision: 1 °C
HSE-8TC	Temperature expansion module, 8 temperature acquisition inputs (with optocoupler isolation between channels), supports thermocouples, measurement range 0-900 °C, accuracy 1 °C
HSE-8TCY(P)	Temperature expansion module, 8 temperature acquisition inputs (with optocoupler isolation between channels), 8 NPN/PNP transistor outputs, supporting thermocouples, measurement range 0-900 °C, accuracy 1 °C
HSE-8TCY2(P)	The temperature module can work independently without the host and has an RS485 communication interface. It has 8 temperature acquisition inputs (with optocoupler isolation between channels), 8 NPN/PNP transistor outputs, supports thermocouples, and has PID self-tuning function. The measurement range is 0-900 °C, with an accuracy of 1 °C
HSE-4PT	Temperature expansion module, 4 temperature acquisition inputs, supports 3-wire PT100, measurement range -50 °C -300 °C, accuracy 1 °C
HSE-8PT	Temperature expansion module, 8 temperature acquisition inputs, supports 3-wire PT100, measurement range -50 °C -300 °C, accuracy 1 °C

Weighing Extension



Model	Function	Specification
HSE-2L	2-channel weighing input	DC24V power supply, no need for external power supply Resolution 24 bits, accuracy ±1%
HSE-4L	4-channel weighing input	DC24V power supply, no need for external power supply Resolution 24 bits, accuracy ±1%

Thyristor output extension



Model	Function	Specification
HSE-4S-A	4-channel SSR thyristor output	DC24V power supply, no need for external power supply Drive AC vibration plate within 500W

Standard Extension--HHE Series

In order to meet the application requirements of more occasions, the mainframe can be equipped with abundant expansion modules. HNC's expansion modules are mainly divided into digital input and output expansion modules, analog input and output expansion modules, temperature expansion modules, weighing expansion modules and other major categories. Each type of module has a variety of points, and can be flexibly configured with various I/O scales of the company to achieve higher cost performance.

Note: Only available with the expansion module of mainframes of the Company.

Performance Features

- Input and output are optoelectronically isolated for each channel, with high reliability and strong anti-interference capability.
- Power supply has reverse connection protection and surge absorption function, it can be applied to a variety of working environments.
- The maximum number of digital I/O points is: 256DI/256DO.
- One mainframe can be equipped with 16 expansion modules.

HHE series digital volume expansion

Note: For more models, please refer to the product catalog models published on the official website every month.

Digital input expansion



Model	Function	Specification
HHE-8X	8 channel digital NPN/PNP input	DC24V power supply, no external power supply input point maximum frequency 10Khz
HHE-16X	16 channel digital NPN/PNP input	
HHE-16X2	16 channels digital NPN/PNP input, 1 RS485 communication	

Digital output expansion



Model	Function	Specification
HHE-8YT(P)	8-channel transistor NPN/PNP output	DC24V power supply, no external power supply R: Relay output T: NPN type transistor output P: PNP type transistor output R Response time: about 10ms T/P response time: about 50us R Max output current: Max 2A T/P maximum output current: 0.3A per point
HHE-16YT(P)	16 channel transistor NPN/PNP output	
HHE-8YR	8 channel relay output	
HHE-16YR	16 channel relay output	
HHE-32YT(P)	32 channel transistor NPN/PNP output	
HHE-32YR	32 channel relay output	

Digital input/output expansion



Model	Function	Specification
HHE-8T(P)	4 channels digital input, 4 channels transistor output	DC24V power supply, no external power supply NPN input Maximum frequency of input point 10Khz R: Relay output T: NPN type transistor output P: PNP type transistor output R Response time: about 10ms T/P response time: about 50us R Max output current: Max 2A T/P maximum output current: 0.3A per point
HHE-16T(P)	8-channel digital input, 8-channel transistor output	
HHE-16T(P)2	8 channels digital input, 8 channels transistor output, 1 RS485 communication	
HHE-16R	8-channel digital input, 8-channel relay output	
HHE-32T(P)	16 channel digital input, 16 channel transistor output	
HHE-32R	16 channel digital input, 16 channel relay output	
HHE-40T(P)	24 channel digital input, 16 channel transistor output	

HE series HBD board



Model	Function	Specification
HBD-1AI1AOS	1 analog input, 1 analog output	Voltage range: 0V~10V; Current range: 0-20mA
HBD-2AI	Two analog inputs	Voltage range: 0V~10V; Current range: 0-20mA
HBD-2AOS	2 analog output	Voltage range: 0V~10V; Current range: 0-20mA
HBD-2RS485	2-way RS485	Tape isolation
HBD-2TC	Two temperature collection inputs	Two K-type thermocouple temperature acquisition inputs
HBD-CAN	1 CAN bus	with 16 CAN slave stations such as servo, stepper, valve island, etc

HHE series analog expansion

Performance Features

- High reliability and strong anti-interference capability.
- Power supply has reverse connection protection and surge absorption function, it can be applied to a variety of working environments.

Analog output expansion



Model	Function	Specification
HHE-4AI	4 channels analog input	Voltage range: 0V~10V Current range: 0-20mA Resolution: 12bit
HHE-4AI2	4 channels analog input, 1 channel RS485 communication	
HHE-8AI	8 channels analog input	
HHE-8AI2	8 channels of analog input, 1 RS485 communication	

Analog output expansion



Model	Function	Specification
HHE-4AO	4-channel analog output	Voltage range: -10V~10V Current range: 0-20mA; 4-20mA Resolution: 12bit
HHE-8AO	8-channel analog output	Voltage range: -10V~10V Current range: 0-20mA; 4-20mA Resolution: 12bit
HHE-4VF	4 channel Frequency modulation and voltage modulation AC vibration disk output	Inout voltage range: 200~255V AC Output frequency range: 35-150Hz Precision: 0.1hz

Analog input/output expansion



Model	Function	Specification
HHE-4AI2AO	4 channels analog input, 2 channels analog output	Voltage range: (Input: 0-5V, 0-10V) (Output: -10V~10V) Current range: (Input/output: 0-20mA; 4-20mA) Resolution: 12bit
HHE-4AI2AO2	4 channels analog input, 2 channels analog output, 1 channel RS485 communication	Voltage range: (Input/output: -10V~10V) Current range: (Input/output: 0-20mA; 4-20mA) Resolution: Input 16bit/Output 12bit
HHE-4AI2AO	4 channels analog input, 2 channels analog output	
HHE-4AI2AO2	4 channels analog input, 2 channels analog output, 1 channel RS485 communication	Voltage range: (Input/output: 0~10V) Current range: (Input/output: 0-20mA; 4-20mA) Resolution: 12bit
HHE-8AI4AOS2	8 channels analog input, 4 channels analog output, 1 channel RS485 communication	
HHE-8AI8AOS2	8 channels analog input, 8 channels analog output, 1 RS485 communication	

Temperature Extension



Model	Function	Specification	
HHE-2TCY(P)	2 channel temperature input, 2 channel transistor NPN/PNP output	Support K-type thermocouple, measuring range 0~900℃, accuracy 1℃	
HHE-2TCY2(P)	2 channel temperature input, 2 channel transistor NPN/PNP output, with RS485		
HHE-4TCY(P)	4 channel temperature input, 4 channel transistor NPN/PNP output		
HHE-4TCY2(P)	4 channel temperature input, 4 channel transistor NPN/PNP output, with RS485		
HHE-8TC	8 channel temperature input		
HHE-8TCY(P)	8 channel temperature input, 8 channel transistor NPN/PNP output		
HHE-8TCY2(P)	8 channel temperature input, 8 channel transistor NPN/PNP output, with RS485		
HHE-4PT	4 channels Temperature input		Support PT100, measuring range -50~300℃, accuracy 1℃
HHE-4PT2	4 channel temperature input with RS485		
HHE-8PT	8 channel temperature input		
HHE-8PT2	8-channel temperature input with Rs485		

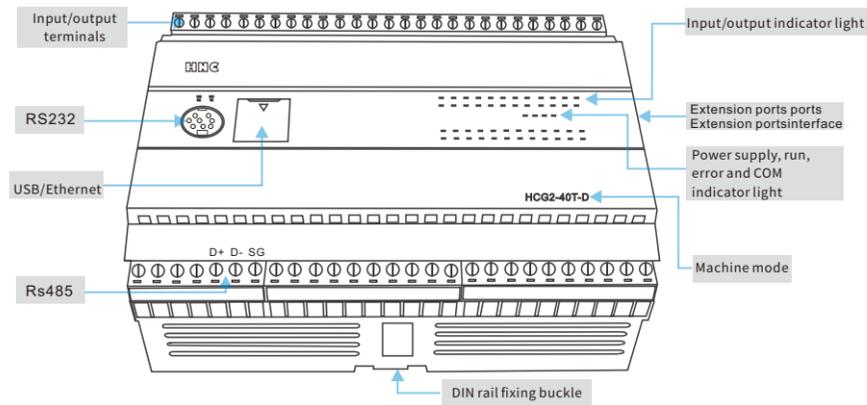
Weighing Extension



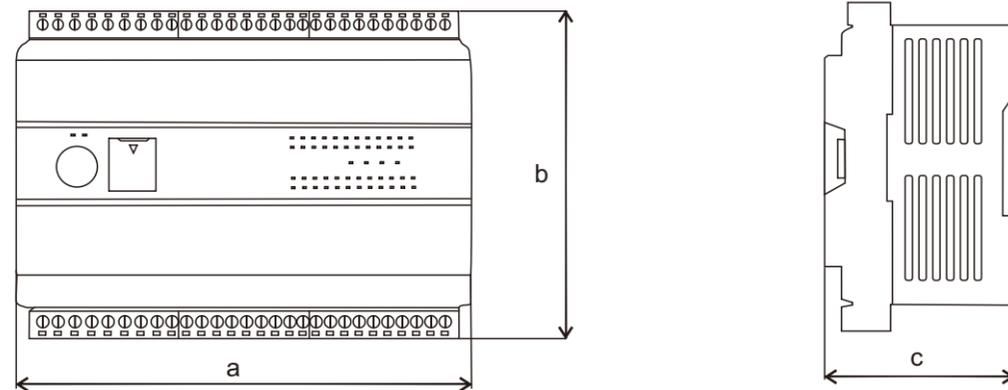
Model	Function	Specification
HHE-2L	2-channel weighing input	DC24V power supply, no need for external power supply resolution 24 bits, accuracy: ± 1%
HHE-4L	4-channel weighing input	DC24V power supply, no need for external power supply resolution 24 bits, accuracy: ± 1%

▶ Mainframe size

■ Introduction to product dimensions and positions of HCG2 Series

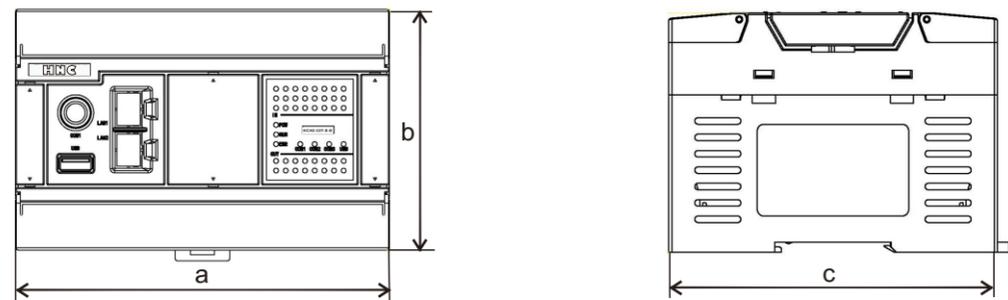


■ Mounting dimensions



Mainframe	Size (mm)		
	a	b	c
14-16 points	60	110	61
24-40 points	141	110	61
48-68 points	201	110	61

■ Mounting dimensions of HCD2, HCH2, HCM2, series mainframe

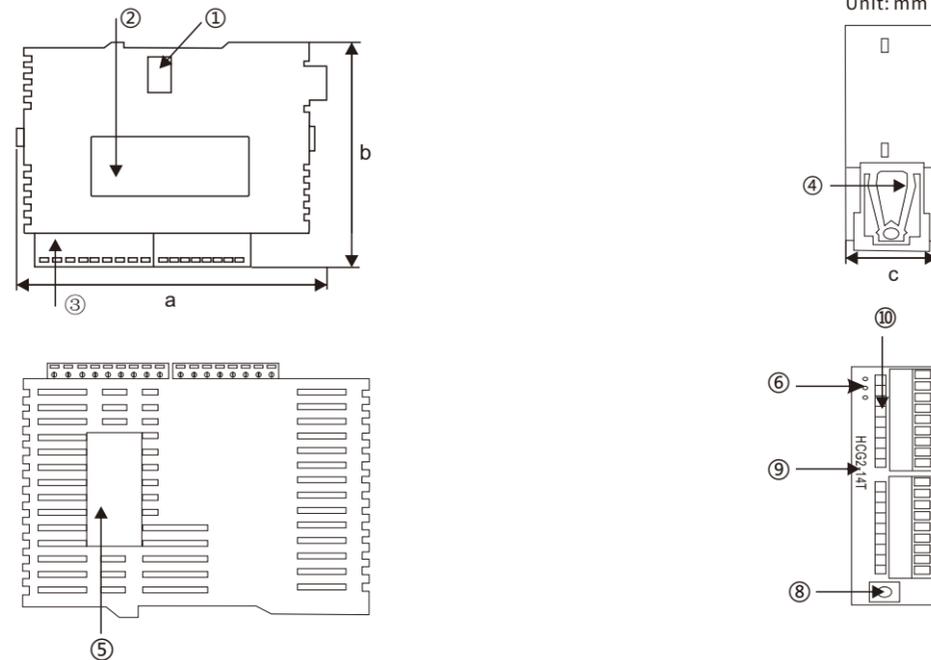


Mainframe	Size (mm)		
	a	b	c
14-24 points	114	100	73
32-40 points	155	100	73
48-60 points	218	100	73

Note 1: For 48-60 points, 2 BD expansion boards for exterior appearance; for 14-40 points, 1 BD expansion board.

Note 2: For 14-24 points, for PLC with Ethernet port, then there is no USB interface; for PLC with USB interface, there is no Ethernet port.

■ Introduction to product dimensions and positions of HCS2 series mainframe

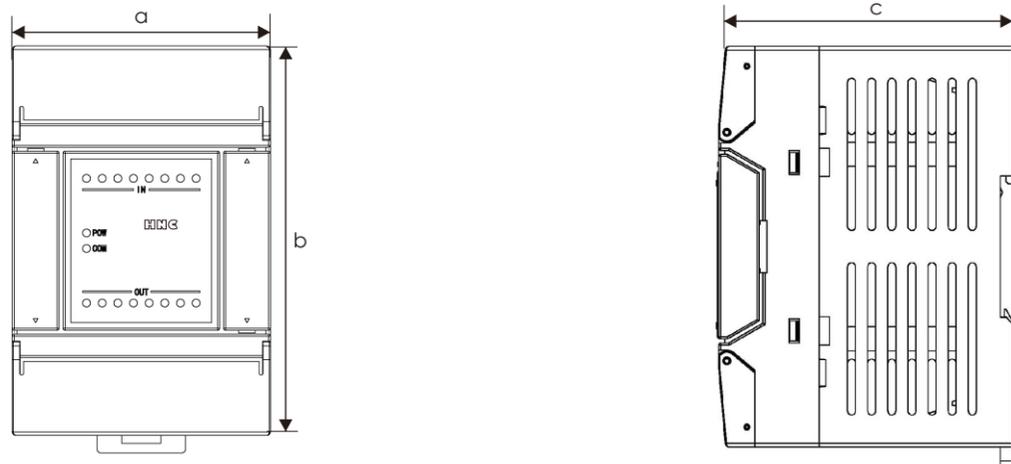


- ① Expansion interface
- ② Nameplate
- ③ Input/output terminals
- ④ DIN rail fixing buckle
- ⑤ Company's logo
- ⑥ Power, operation, error indicator light
- ⑦ Input/output indicator
- ⑧ RS232 interface
- ⑨ Machine model
- ⑩ Input/Output silkscreen name

Mainframe	Size (mm)		
	a	b	c
14-16 points	90	60	26

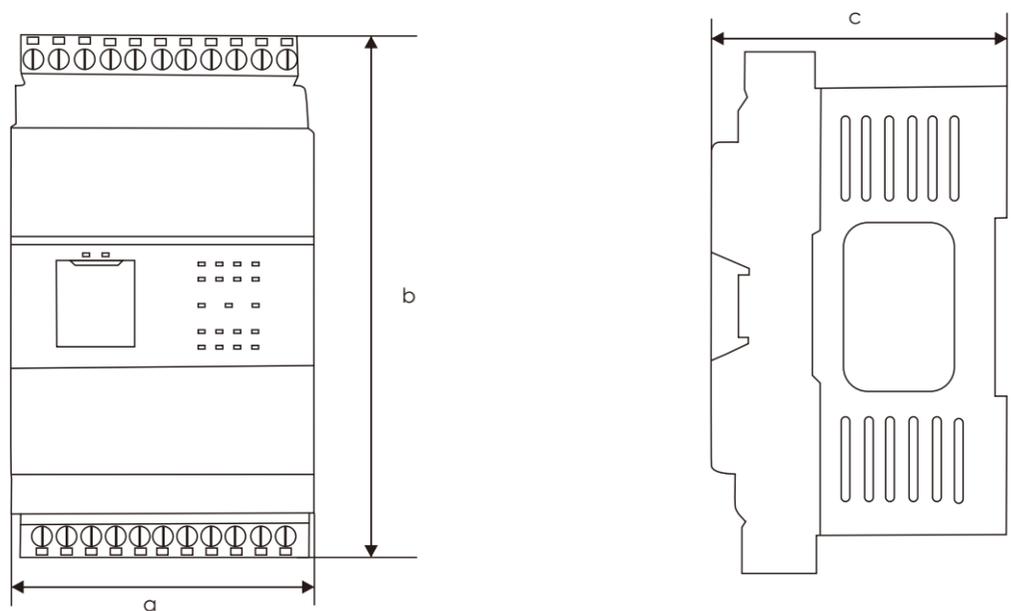
Expansion Dimensions

HHE Series Expansion Product Dimensions



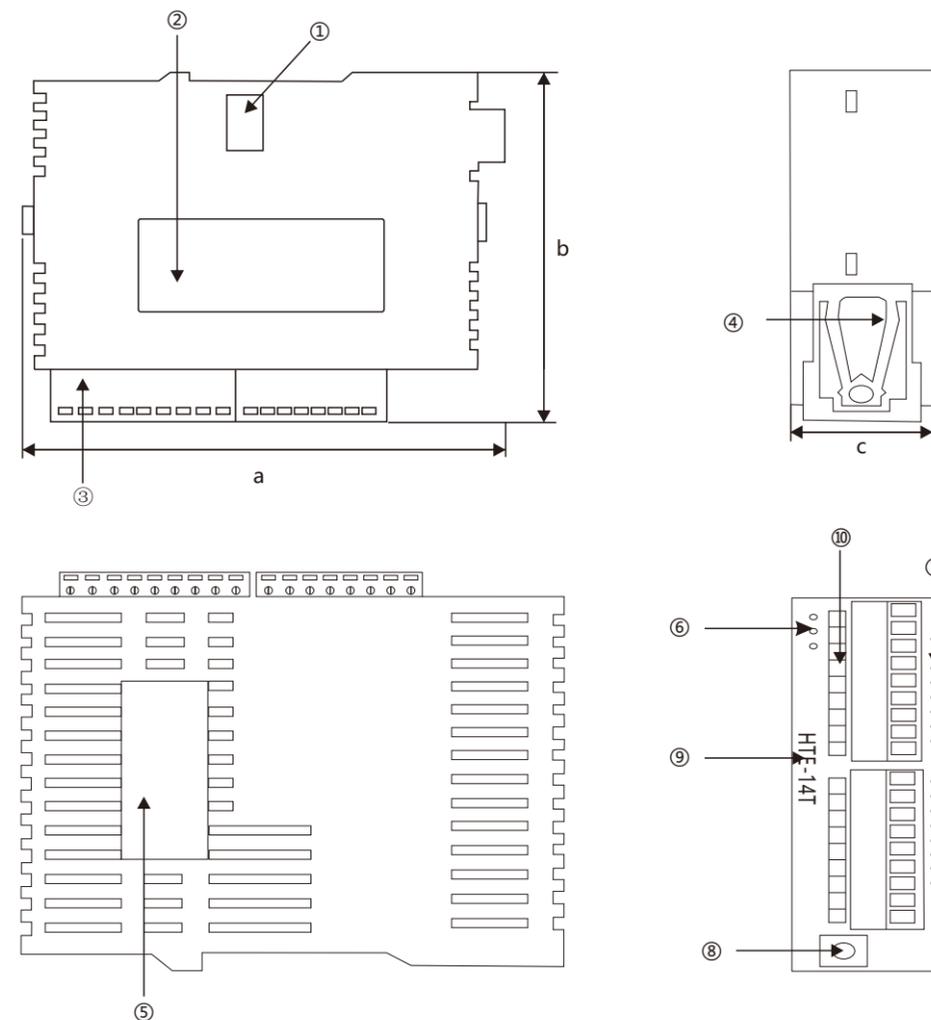
Expansion	size (mm)		
	a	b	c
Digital quantity expansion: 8-16 points Simulation expansion: HHE-4AI2AO, HHE-4AO, HHE-8AO, HHE-8AI, HHE-2L, HHE-4L, HHE-2TCY, HHE-2TCY2, HHE-4TCY, HHE-8PT, HHE-4PT, HHE-4PT2	66	100	73
Number expansion: 24-32 points, HHE-8AI4AOS2, HHE-8AI8AOS2, HHE-8PT2	114	100	73

HSE Series Expansion Product dimensions



Expansion	size (mm)		
	a	c	b
Digital expansion: 8-16 points Analog Extension: HSE-4S-A, HSE-4AI2AO, HSE-4AO, HSE-4PT, HSE-8PT, HSE-2L, HSE-4L, HSE-2TCY, HSE-4TCY, HSE-2TC-A	60	60	110
Digital expansion: 32-40 points Analog Extension: HSE-8TCY, HSE-8TC	141	60	110

Dimensions of HTE Series Expansion



- | | |
|--------------------------|---|
| Expansion interface | ⑥ Power, operation, error indicator light |
| Nameplate | ⑦ Input/output indicator |
| ③ Input/output terminals | ⑧ RS232 interface |
| ④ DIN rail fixing buckle | ⑨ Machine model |
| ⑤ Company's logo | ⑩ Input/Output silkscreen name |

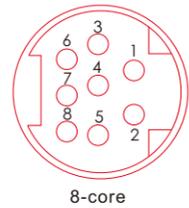
Expansion	Size (mm)		
	a	b	c
8-16 points	90	60	26

> PLC Expansion

LED system status self-diagnosis

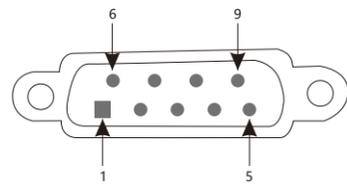
- POW (24VDC/AC220V power supply indicator light)
 - On: 24VDC/AC220V power supply is normal
 - Off: no 24VDC/AC220V power supply
- RUN (Run indicator light)
 - On: PLC program runs normally
 - Off: PLC program is not running/Insufficient voltage of DC24V (AC220V)
- COM (expansion indicator light)
 - On: Successful connect to the expansion module
 - Off: not connected/incorrectly connected to the expansion module
- ERR (Run error indicator light)
 - Blink: PLC program has run error/or program invalid run
 - Off: PLC program runs normally

Round port RS232 interface diagram



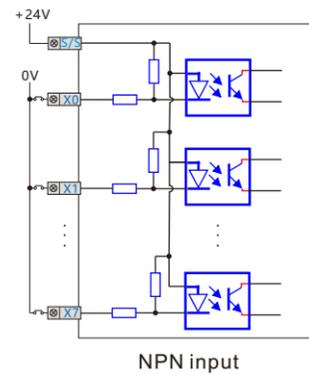
Pin number	Description	Description
5	TXD	Sending data
4	RXD	Receiving data
3	GND	Signal ground
6	GND	Signal ground
8	GND	Signal ground

9-pin RS232 interface diagram

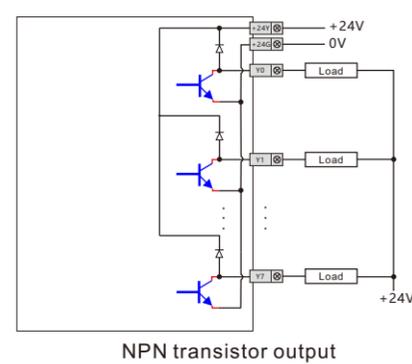


Pin number	Description	Description
2	TXD	Sending data
3	RXD	Receiving data
5	GND	Signal ground
9	GND	Signal ground

Input wiring diagram



Output wiring diagram

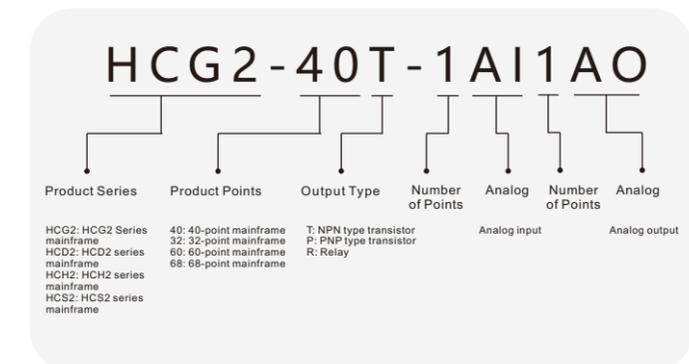
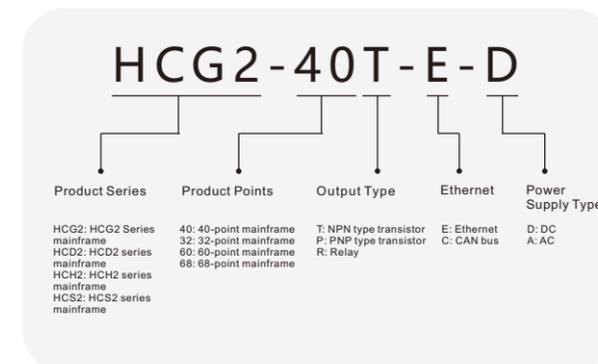
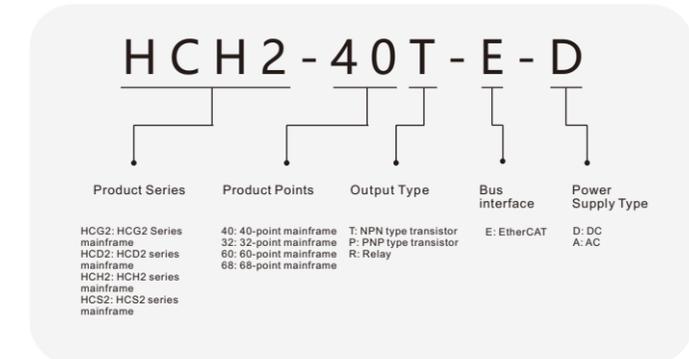
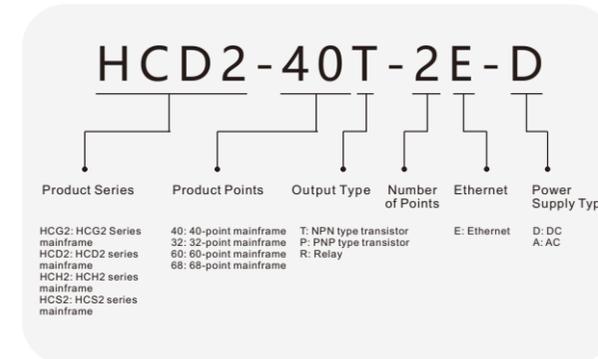


Serial port (RS232/RS485) communication parameter specifications

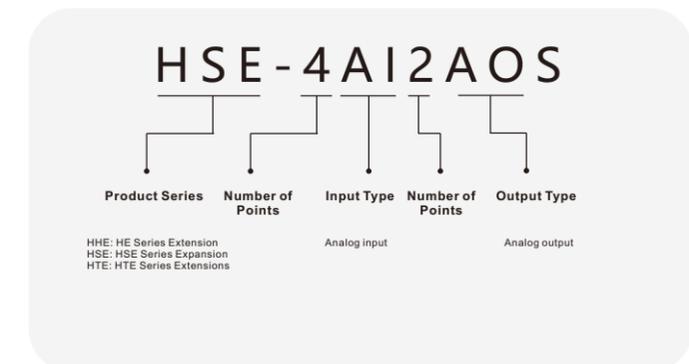
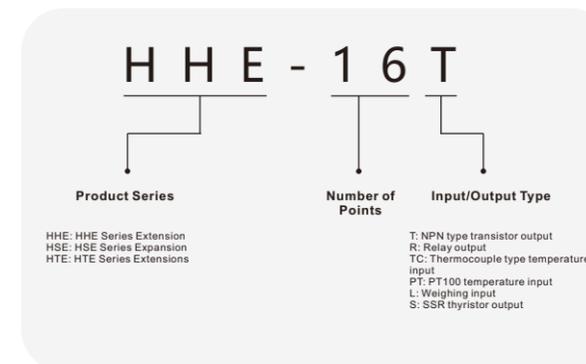
Category	Parameters
Communication mode	Half Duplex
Baud rate	9600bps (factory default), 19200bps, 38400bps, 57600bps, 115200bps
Data type	7 (factory default), 8
Mode	RTU, ASCII (factory default)
Station number	1-255 (factory default 1)

> Naming Rules

>> Mainframe naming rules



>> Naming Rules for Extensions

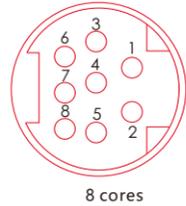


> PLC Expansion

LED system status self-diagnosis

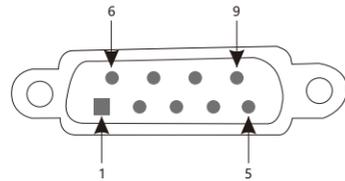
- POW(24VDC/AC220V Power LED)
 - bright: 24VDC/AC220V The power supply is normal
 - extinguish: No 24VDC/AC220V power supply
- COM(Expansion LED)
 - bright: Successful access to the expansion module
 - extinguish: Expansion modules are not accessed/incorrectly accessed
- RUN(Run indicator)
 - bright: The PLC program runs normally
 - extinguish: The PLC program is not working/DC24V (AC220V) voltage is insufficient
- ERR(Running error indicator)
 - Flashing: PLC program running error / or program running illegally
 - extinguish: The PLC program runs normally

Round port RS232 interface diagram



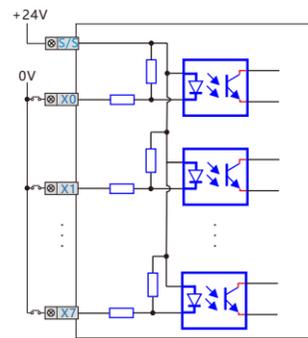
Pin number	description	illustrate
5	TXD	Send data
4	RXD	Receive data
3	GND	Signally
6	GND	Signally
8	GND	Signally

9-pin RS232 interface diagram

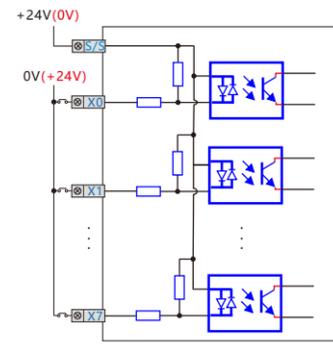


Pin number	description	illustrate
2	TXD	Send data
3	RXD	Receive data
5	GND	Signally
9	GND	Signally

Enter the wiring diagram

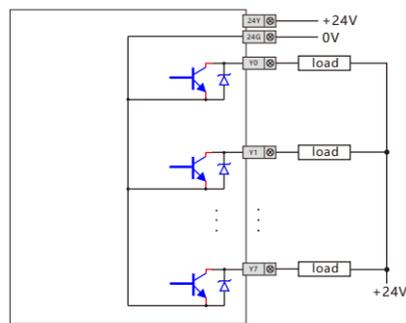


NPN input

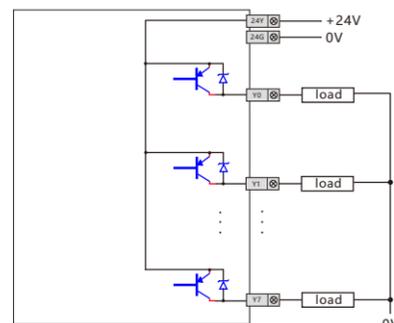


NPN/PNP input

Output wiring diagram



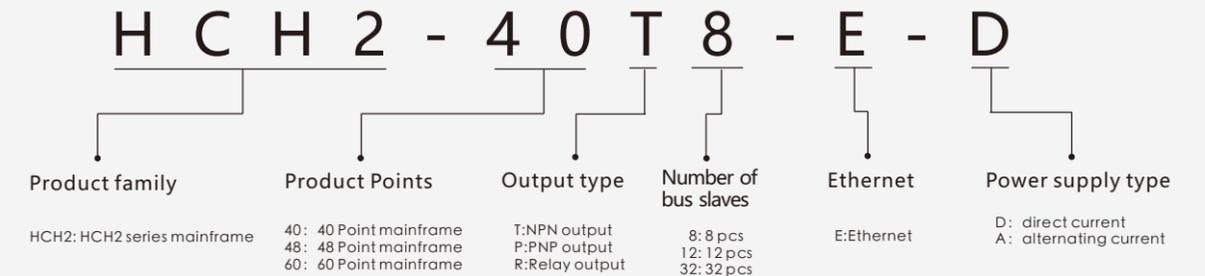
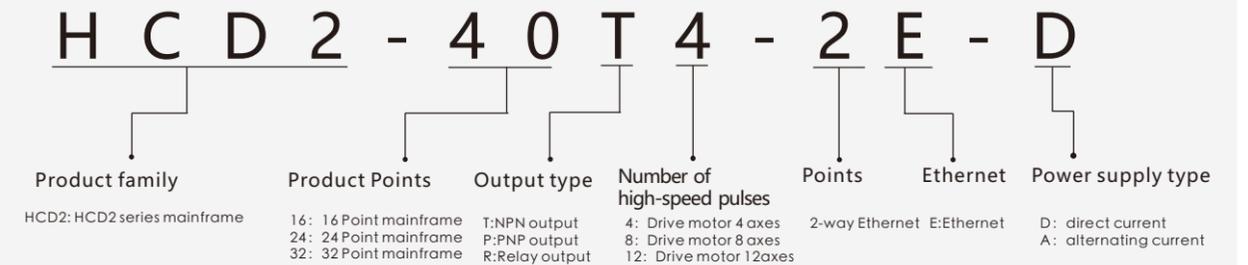
NPN transistor output



PNP transistor output

> Naming Rules

>> Mainframe naming rules



>> Extend the naming convention

