Control Drive Sensor Transmission Digitalization

HCFa

BETTER WORK, BETTER LIFE

NEXT-GEN AUTONOMOUS SMALL/MEDIUM CONTROLLERS

M-Series Control Products Selection Manual

DOMESTIC CORE · INDEPENDENT CONTROL

Innovation Integrity Service

Zhejiang Hechuan Technology Co., Ltd.

HCFa

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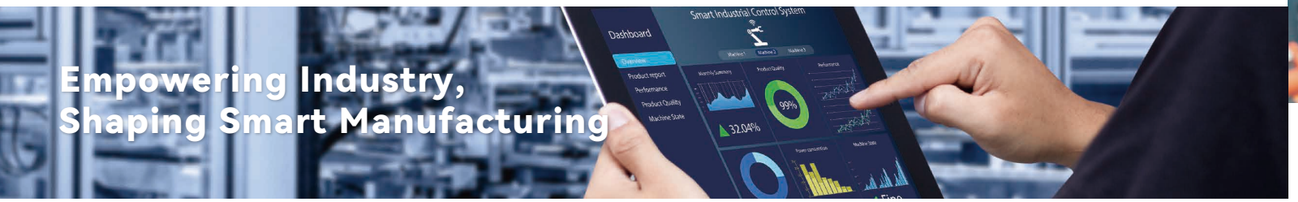
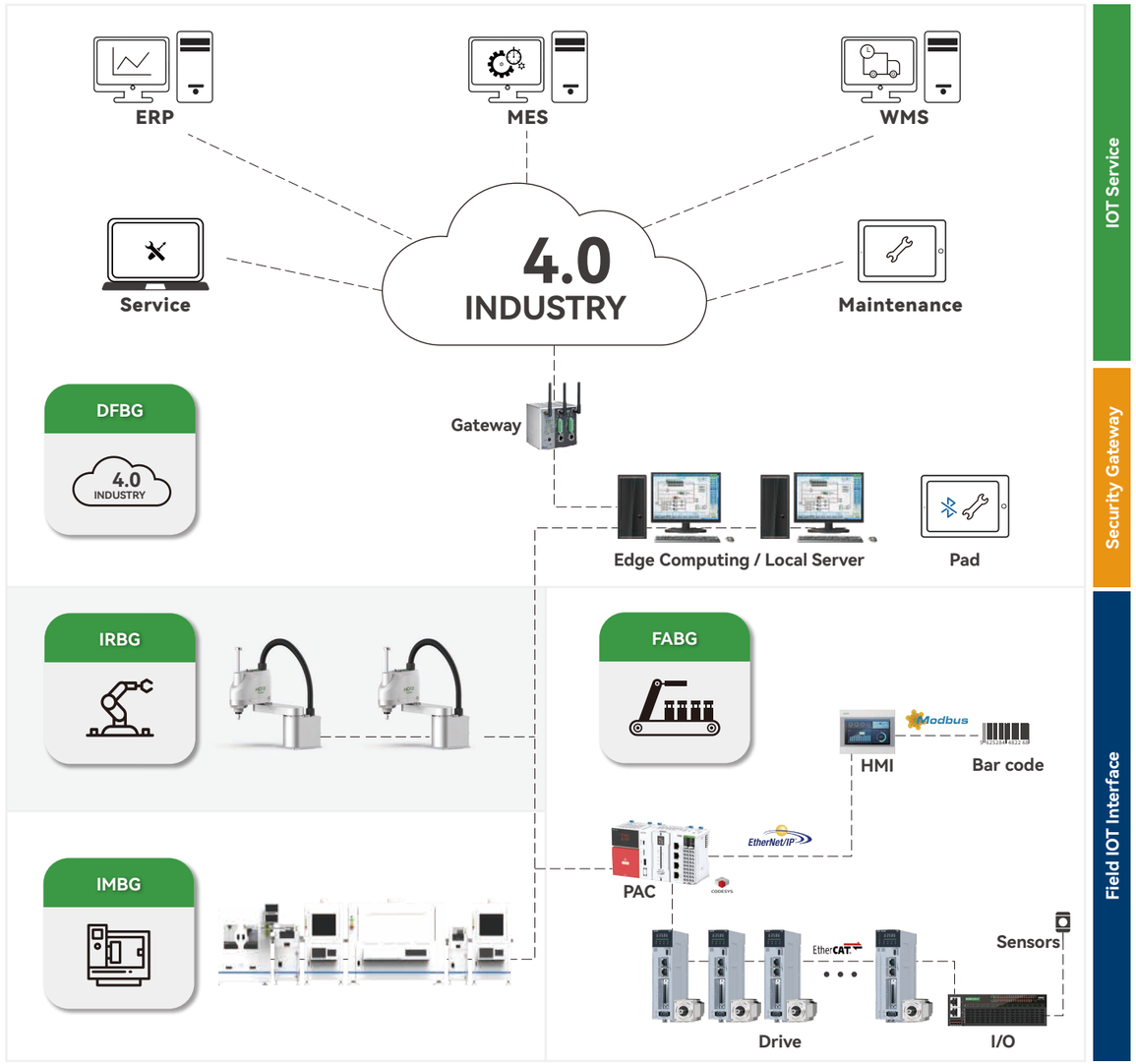
HCFA ATC

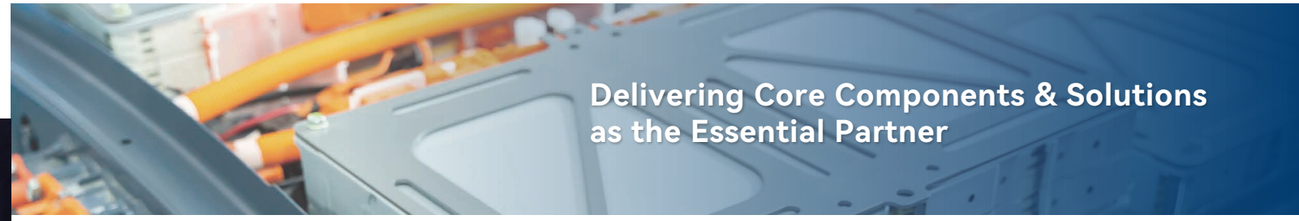
Manual Number: April 2025, Issue No. 1



Empowering Industry, Shaping Smart Manufacturing

We not only provide essential components for industrial automation, but also engage in industrial robots, industrial machinery, and digital factories. We can offer businesses comprehensive solutions integrating **automation, intelligent equipment, and digitalization.**





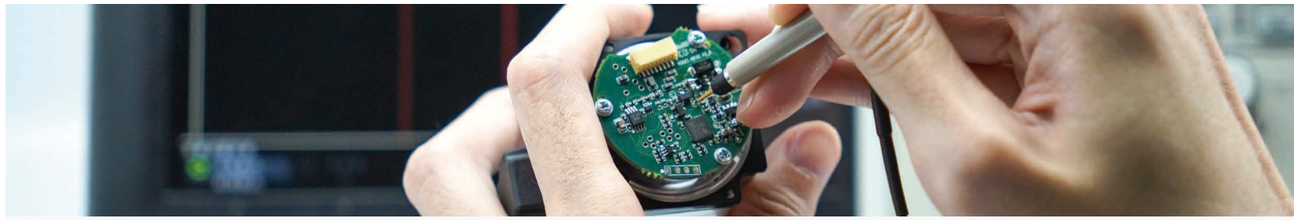
Delivering Core Components & Solutions as the Essential Partner

Zhejiang Hechuan Technology Co., Ltd. (HCFA Technology), founded in 2011, is a company dedicated to developing, manufacturing, sales, and application-integration of industrial automation products. It is committed to supplying core components and system-integration solutions for smart factories.

Its product range encompasses controllers, servo systems, vision systems, encoders, variable-frequency drives (VFDs), human-machine interfaces (HMIs), electric rollers, and precision transmission components, covering the entire spectrum of the industrial automation field.

In November 2023, HCFA Technology and Bosch Rexroth inked a strategic cooperation agreement. Bosch Rexroth made a strategic investment in HCFA Technology and planned to collaborate on establishing a subsidiary. Grounded in shared innovative concepts and forward-thinking, the two parties will pool their respective strengths, create resource complementarity, and engage in in-depth cooperation, aiming to become ecological partners throughout the industrial automation value chain and drive the further advancement of China's industrial automation industry.

Stock Code: 688320



R&D Center
6
Number of Establishments

R&D Investment
10%+
Proportion of Revenue

R&D Personnel
300+
Elite Talent Pool

- Six R&D centers across Longyou, Hangzhou, Shenzhen, Dalian, Suzhou, and Germany
- Independently designed ASIC & SOC chips for domestic fabrication and localization substitution
- Industry-leading AMR magnetic technology and high-precision encoders

5 MAJOR HIGHLIGHTS

PRODUCT ADVANTAGES

M-SERIES CONTROLLER

Efficiency and Fast

Ultra-fast execution speed +
Multi-task management

Convenient Interconnection

Full-Series standard Ethernet,
easy multi-protocol interconnection

Flexible Expansion

Module + Optional cards for flexible
and efficient operation

Easy Development

Standardized instructions, multi-language support,
and modular design

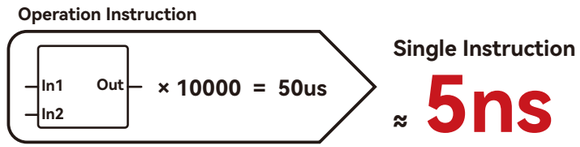
Diverse Motion Control

Bus + Pulse solutions for various
application needs

EFFICIENT AND FAST

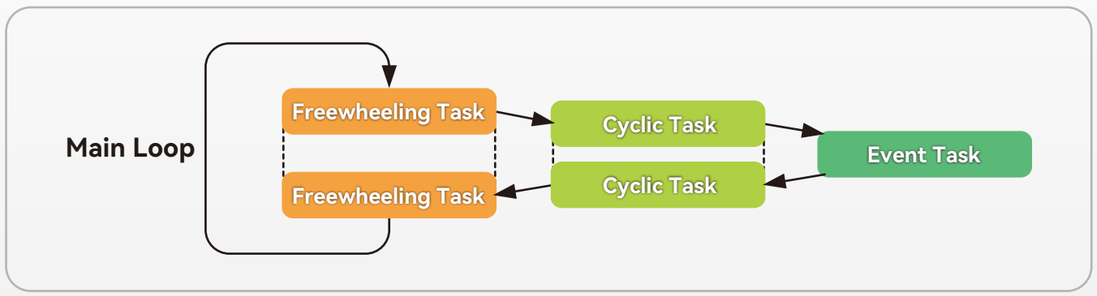
High-Speed Operation Capacity

Enhance instruction processing speed;
Basic instructions execute at
nanosecond-level speeds.

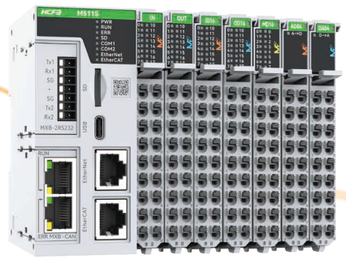


High-efficiency Multi-task Management System

Configure execution modes/frequencies for diverse tasks to optimize system resource allocation.



FLEXIBLE EXPANSION



Configurable Options

Requirement-Driven Customization

Dual-Slot Design

Flexible deployment

Blade Installation Architecture

Space-Saving design

Quick-Release Spring Terminal

Efficient assembly

DIVERSE MOTION CONTROL

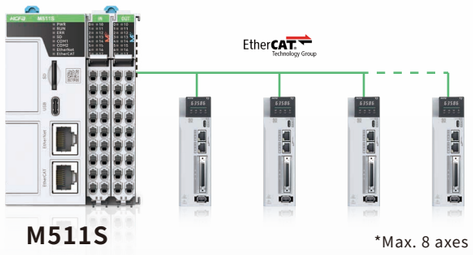
Flexible Bus and Pulse Control

Multiple axis control modes (bus/pulse/bus+pulse) for diverse scenarios;

EtherCAT high-speed bus (8-axis synchronization under 0.5ms) for high-response demands.

Bus

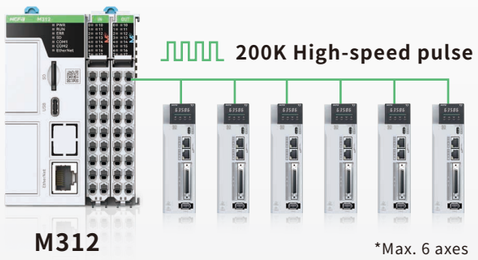
8-Axis synchronization under 0.5 ms



M511S

*Max. 8 axes

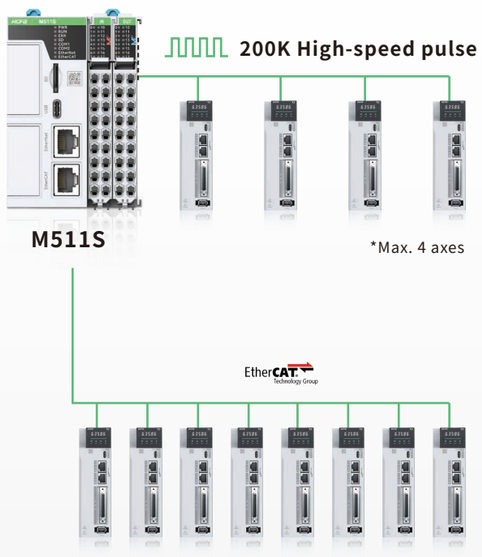
Pulse



M312

*Max. 6 axes

Bus + Pulse

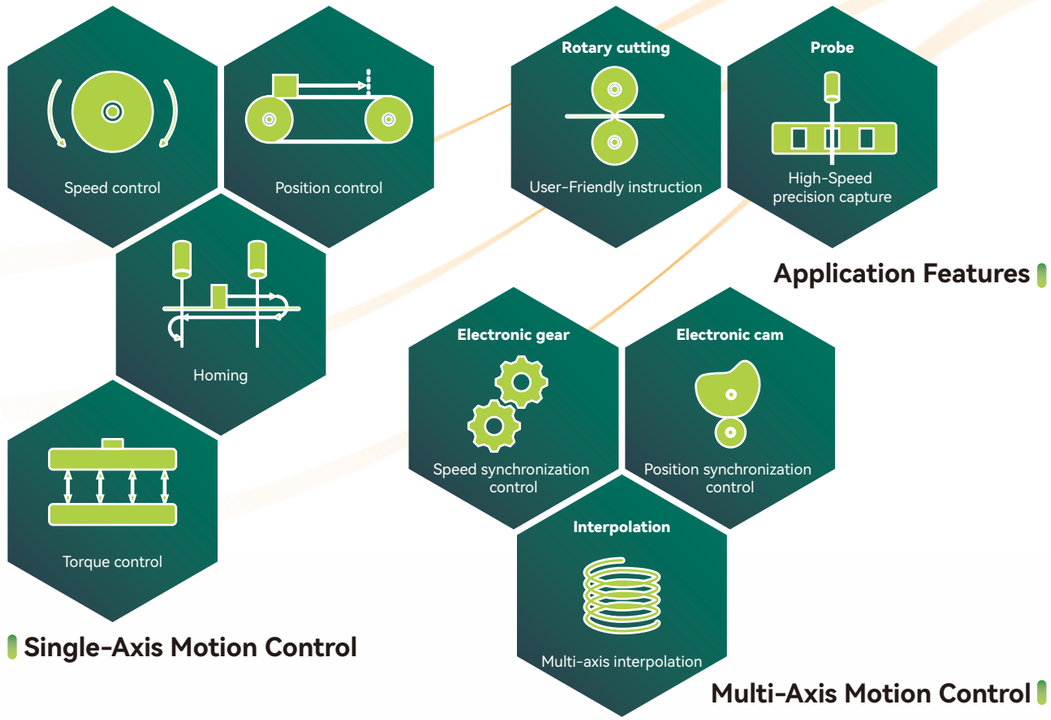


M511S

*Max. 4 axes

*Max. 8 axes

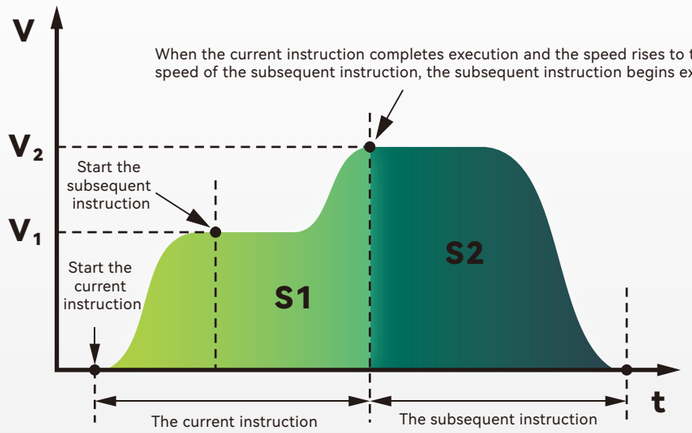
Powerful Motion Control Features



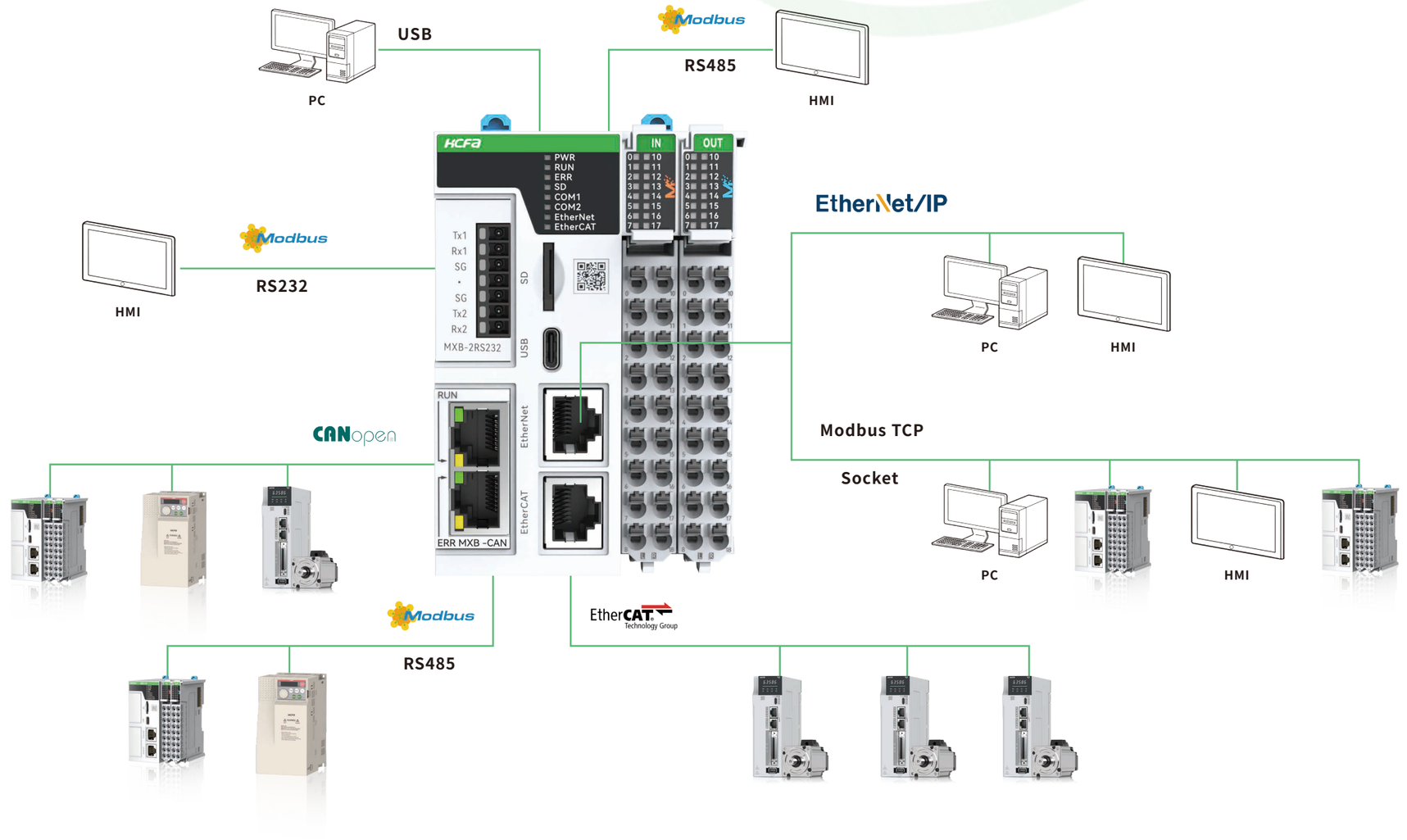
BufferMode

Smooth speed transitions for seamless multi-segment speed control;

Uninterrupted speed for motion cadence enhancement.



CONVENIENT INTERCONNECTION



Supports Multiple Communication Protocols

Facilitates Seamless Multi-Protocol Interconnection

EtherCAT Technology Group

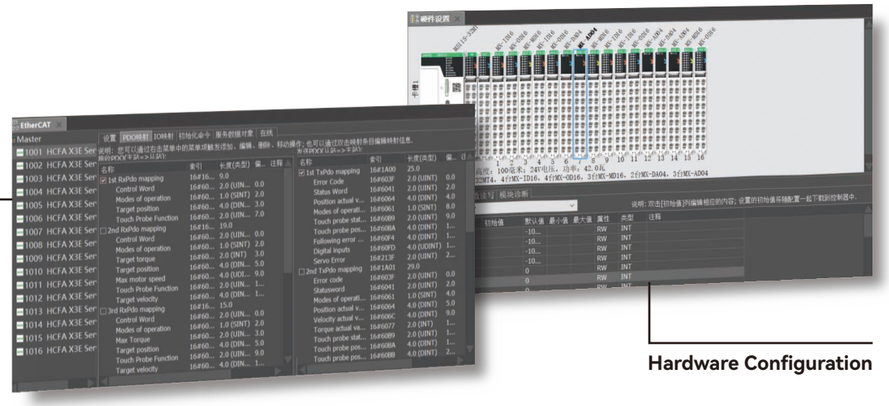
EtherNet/IP

CANopen

Modbus

EASY DEVELOPMENT

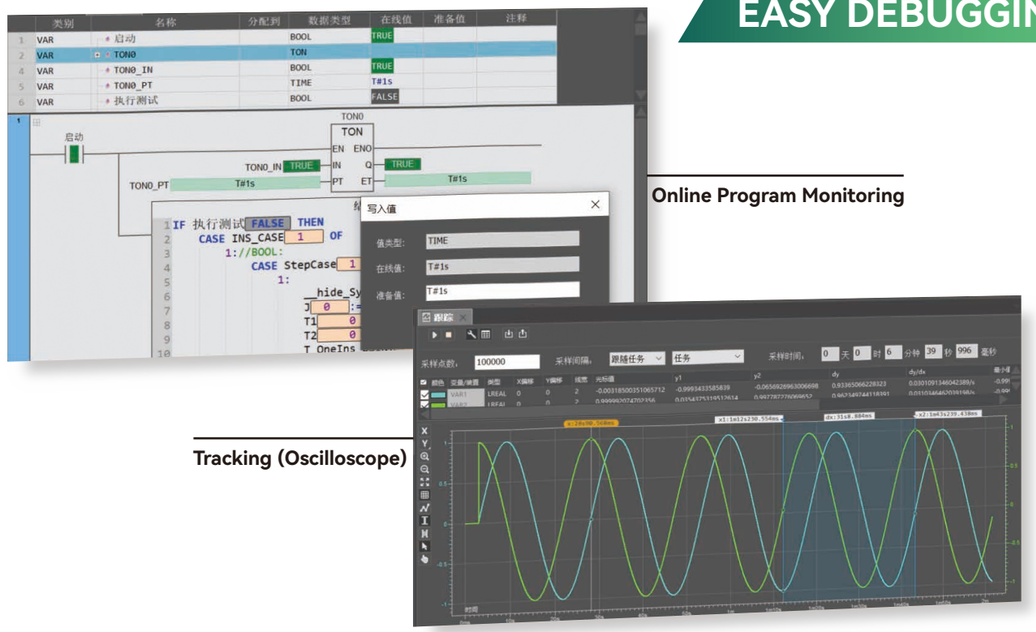
EASY CONFIGURATION



EtherCAT Network Configuration

Hardware Configuration

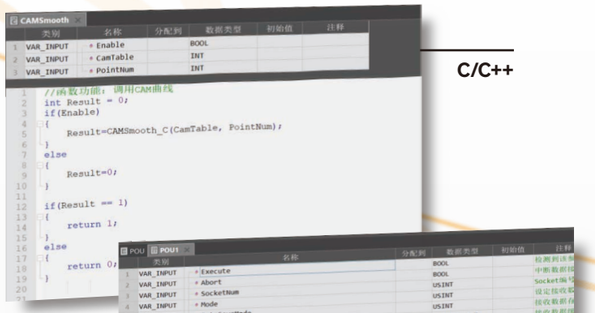
EASY DEBUGGING



Online Program Monitoring

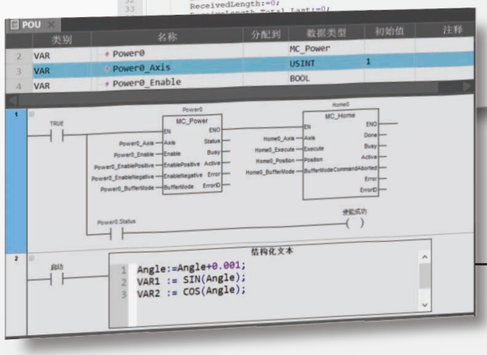
Tracking (Oscilloscope)

EASY PROGRAMMING



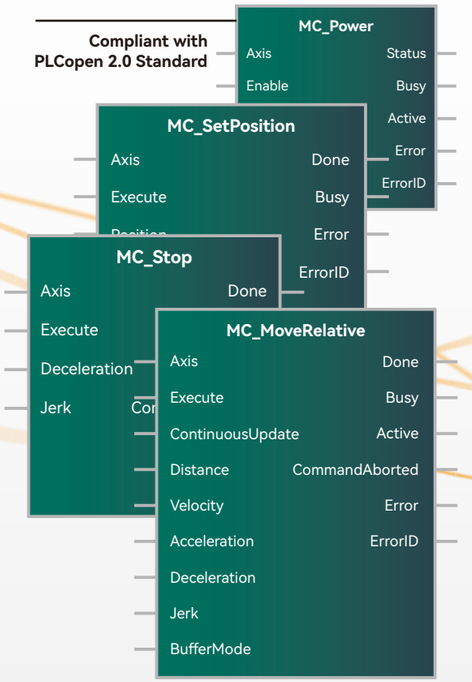
C/C++

ST



Ladder Diagram (Embedded ST)

Compliant with PLCopen 2.0 Standard



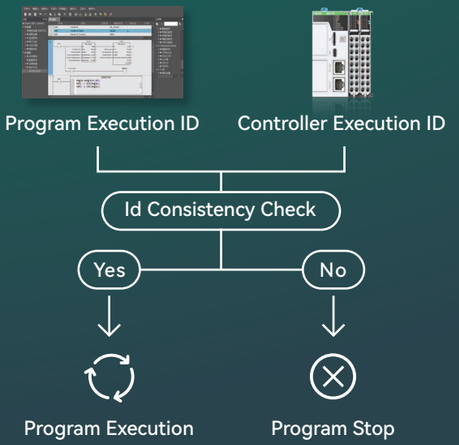
EASY PROTECTION

User Authorization Management

Role-based access control

Display | Modify | Delete

Developer Key (Execution ID)



M-SERIES LINE UP

Naming Rule for M-Series Controllers

HCM501S-16MT4-D-****

(1) (2) (3)(4)(5) (6) (7)(8)(9) (10) (11)

1. Product Name

HC

- **HC:** HCFA

2. Product Series

M5

- **M1:** Pulse economic controller
- **M2:** Basic/Standard logic controller
- **M3:** Slim motion controller
- **M5:** General-Purpose motion controller

3. Number of Ethernet Ports

0

- **0 :** None
- **1 :** 1 Ethernet port
- **2 :** 2 Ethernet ports
- **3 :** 3 Ethernet ports

4. Model Code

1

M100/M200/M300 series

- **0:** Type 1 product
- **1:** Type 2 product
- **2:** Type 3 product
- **3:** Type 4 product

M500 series

- **1:** 8-axis EtherCAT motion axes
- **2:** 16-axis EtherCAT motion axes
- **3:** 32-axis EtherCAT motion axes
- **4:** 64-axis EtherCAT motion axes

5. Function Code

S

- **None:** Standard version
- **S :** Economic version
- **P :** Enhanced version

6. Total I/O Channels

16

- **14:** 8 inputs, 6 outputs
- **16:** 8 inputs, 8 outputs
- **20:** 12 inputs, 8 outputs
- **30:** 16 inputs, 14 outputs
- **32:** 16 inputs, 16 outputs (M300/M500 series); 18 inputs, 14 outputs (M200 series)
- **40:** 24 inputs, 16 outputs
- **42:** 24 inputs, 18 outputs
- **48:** 28 inputs, 20 outputs
- **60:** 36 inputs, 24 outputs

7. Description

M

- **M:** Main control unit

8. Output Type

T

- **T :** NPN transistor
- **R :** Relay
- **P :** PNP transistor

9. Pulse Output

4

- **3 :** 3-Channel pulse output
- **4 :** 4-Channel pulse output
- **6 :** 6-Channel pulse output
- **8 :** 8-Channel pulse output
- **10:** 10-Channel pulse output

10. Power Supply Type

D

- **D:** DC power supply
- **A:** AC power supply

11. Controlled Version Number & Non-standard Specifications

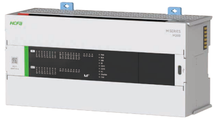
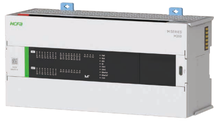
*****

Note: 1. The "Type × product" in the model code are primarily distinguished by their functions.
2. The "EtherCAT motion axes" in the model code indicate the maximum axis count limit.

Model			HCM100-14MT3-A HCM100-14MR-A	HCM100-20MT4-A HCM100-20MR-A	HCM100-30MT6-A HCM100-30MR-A	HCM100-40MT6-A HCM100-40MR-A	HCM100-48MT6-A HCM100-48MR-A	HCM100-60MT6-A HCM100-60MR-A
Appearance								
Programming	Program capacity		256 KBytes					
	Variable capacity		256 KBytes (Persistent data memory: 16 KBytes)					
	I-area (%I)		128 Bytes					
	O-area (%Q)		128 Bytes					
	M-area (%M)		128 KBytes					
Programming language			LD, ST, C/C++					
Axis capability	Number of pulse axes (MT models only)		3-axis 100k	4-axis 100k	6-axis 100k			
	Number of encoder axes		2					
	Total axes (pulse axis+ encoder axis+ virtual axis)		⩽16					
Right-side expansion	Max. number of expandable modules		Non-support for right-side expansion; Expansion capability enabled by adding HCMX-CAN-100-BD optional card for CAN remote expansion					
RTC battery			Built-in in the controller					
Optional card	Max. number of optional cards		1					
Controller IO channel	Input	Number of channels	8-channel input	12-channel input	16-channel input	24-channel input	28-channel input	36-channel input
		Function	8-channel external interrupts; 2-channel 100kHz high-speed pulse input (AB phase, pulse+direction, single pulse)					
	Output (MT model: NPN output; MR model: relay output)	Number of channels	6-channel output	8-channel output	14-channel output	16-channel output	20-channel output	24-channel output
		Function	3-channel 100kHz pulse output (pulse+direction)*	4-channel 100kHz pulse output (pulse+direction)*	6-channel 100kHz pulse output (pulse+direction)*			
Electronic cam	Number of cams		-					
	Number of key points per curve		-					
Axis group	Max. number of axis groups		-					
G-code capacity			-					
SD card			-					
USB	Number of interfaces		1×USB2.0 Type-C					
	Function		Program upload/download; Software monitoring & debugging; Firmware upgrade					
Power supply			AC 220V					
Serial port	RS485	Number of interfaces	Max. 3 channels: 1 built-in in the controller, expandable by 2 more via optional HCMXB-2RS485-100-BD card					
		Supported protocols	Modbus master/slave (ASCII/RTU); Custom protocol					
		Max. number of slave stations	32					
		Baud rate (bps)	9600, 19200, 38400, 57600, 115200					
	RS232	Number of interfaces	Max. 3 channels: 1 built-in in the controller, expandable by 2 more via optional HCMXB-2RS232-100-BD card					
		Supported protocols	Modbus master/slave (ASCII/RTU); Custom protocol					
		Max. number of slave stations	1					
		Baud rate (bps)	9600, 19200, 38400, 57600, 115200					
CAN	Number of interfaces		Install optional HCMXB-CAN-100-BD card to support 1 channel					
	Supported protocols		CANopen protocol (DS301), supports master/slave; supports 32 slave stations when acting as a master					

*Note: Pulse output is only supported by MT models.

M-SERIES CONTROLLER

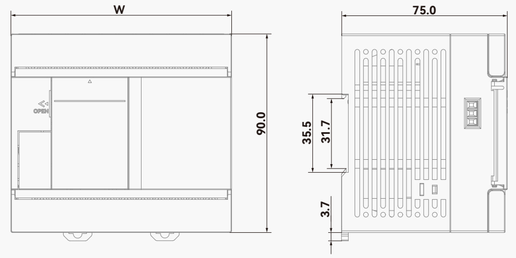
Model			HCM211-20MT4-A HCM211-20MR-A	HCM211-32MT6-A HCM211-32MR-A	HCM211-42MT8-A HCM211-42MR-A	HCM211-60MT10-A HCM211-60MR-A	HCM212-32MT4-A -	HCM212-60MT8-A -
Appearance								
Programming	Program capacity		512 KBytes					
	Variable capacity		256 KBytes (Persistent data memory: 32 KBytes)					
	I-area (%I)		128 Bytes					
	O-area (%Q)		128 Bytes					
	M-area (%M)		128 KBytes					
Programming language			LD, ST, C/C++					
Axis capability	EtherCAT axis		-				8 (PDO-Free configuration; only available for slaves provided in programming software)	
	Number of pulse axes (MT models only)		4-axis 200k	6-axis 200k	8-axis 200k	10-axis 200k	4-axis 200k	8-axis 200k
	Number of encoder axes		2		4		2	4
	Total axes (EtherCAT axis + pulse axis + encoder axis + virtual axis)		⩽16					
Right-side expansion	Max. number of expandable modules		16					
RTC battery			Built-in in the controller					
Optional card	Max. number of optional cards		1					
Controller IO channel	Input	Number of channels	12-channel input	18-channel input	24-channel input	36-channel input	18-channel input	36-channel input
		Function	8-channel external interrupts; 2-channel 200kHz high-speed pulse input (AB phase, pulse+direction, single pulse)		8-channel external interrupts; 4-channel 200kHz high-speed pulse input (AB phase, pulse+direction, single pulse)		8-channel external interrupts; 2-channel 200kHz high-speed pulse input (AB phase, pulse+direction, single pulse)	8-channel external interrupts; 4-channel 200kHz high-speed pulse input (AB phase, pulse+direction, single pulse)
	Output (MT model: NPN output; MR model: relay output)	Number of channels	8-channel output	14-channel output	18-channel output	24-channel output	14-channel output	24-channel output
		Function	4-channel 200kHz pulse output (pulse+direction)*	6-channel 200kHz pulse output (pulse+direction)*	8-channel 200kHz pulse output (pulse+direction)*	10-channel 200kHz pulse output (pulse+direction)*	4-channel 200kHz pulse output (pulse+direction)*	8-channel 200kHz pulse output (pulse+direction)*
Electronic cam	Number of cams		16					
	Number of key points per curve		32					
Axis group	Max. number of axis groups		1 axis group (each axis group supports up to 8-axis interpolation)					
G-code capacity			-					
SD card			1					
USB	Number of interfaces		1×USB2.0 Type-C					
	Function		Program upload/download; Software monitoring & debugging; Firmware upgrade					
Power supply			AC 220V					
Serial port	RS485	Number of interfaces	Max. 4 channels: 2 built-in in the controller, expandable by 2 more via optional HCMXB-2RS485-200-BD card					
		Supported protocols	Modbus master/slave (ASCII/RTU); Custom protocol					
		Max. number of slave stations	32					
		Baud rate (bps)	9600, 19200, 38400, 57600, 115200					
	RS232	Number of interfaces	Install optional HCMXB-2RS232-200-BD card to support 2 channels					
		Supported protocols	Modbus master/slave (ASCII/RTU); Custom protocol					
		Max. number of slave stations	1					
		Baud rate (bps)	9600, 19200, 38400, 57600, 115200					
CAN	Number of interfaces		1					
	Supported protocols		CANopen protocol (DS301), supports master/slave; supports 32 slave stations when acting as a master				CANopen protocol (DS301), supports master/slave; supports 16 slave stations when acting as a master	
EtherNet	Number of interfaces		1					
	Function		Communication, program download/upload					
	Data transmission speed		100/10Mbps					
	Total TCP connections		16(ModbusTCP+Socket + EtherNet/IP)				12 (ModbusTCP+Socket)	
	Modbus TCP		Client (Master) Max. connections: 16; Server (Slave) Max. connections: 16				Client (Master) Max. connections: 4; Server (Slave) Max. connections: 4	
	Socket		Max. connections: 8 (UDP+TCP)				Max. connections: 4 (UDP+TCP)	
	Cable		Standard industrial Ethernet communication cable					
EtherNet/IP (slave mode only)	Implicit CIP communication		Max. connections: 8; Max. data per connection: 200 Bytes; Cycle interval: 5~1000ms				-	
	Explicit CIP communication		Class 3 connections: 8; UCMM (unconnected message manager) concurrent client access: 16					
EtherCAT	Topology		-				Linear topology	
	Transmission medium						Standard Ethernet communication cable	
	Max. node-to-node transmission distance						100m	
	Max. number of nodes						8 (PDO-Free configuration; only available for slaves provided in programming software)	
	Max. process data						1380 Bytes (Max. frames: 1)	
	Communication cycle						Min. 500μs	
	Supported protocols						EtherCAT master	

*Note: Pulse output is only supported by MT models.

M-SERIES PLC DIMENSIONAL DRAWING

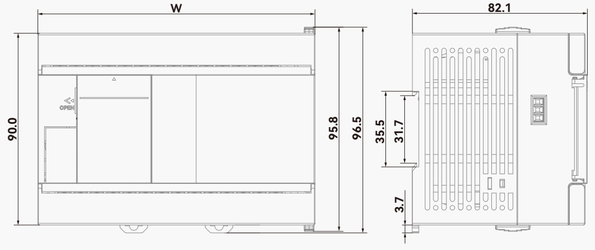
M100-Series Controller

Unit: mm



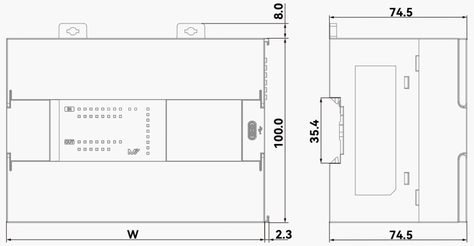
Compatible model	HCM100-14MT3-A	HCM100-14MR-A	HCM100-20MT4-A	HCM100-20MR-A	HCM100-30MT6-A	HCM100-30MR-A
Width (W)	60.5	60.5	75.5	75.5	100	100

Unit: mm



Compatible model	HCM100-40MT6-A	HCM100-40MR-A	HCM100-48MT6-A	HCM100-48MR-A	HCM100-60MT6-A	HCM100-60MR-A
Width (W)	130.0	130.0	175.0	175.0	175.0	175.0

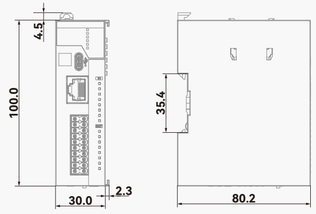
Unit: mm



Compatible model	HCM211-20MT4-A HCM211-20MR-A	HCM211-32MT6-A HCM211-32MR-A	HCM211-42MT8-A HCM211-42MR-A	HCM211-60MT10-A HCM211-60MR-A	HCM212-32MT4-A -	HCM212-60MT8-A -
Width (W)	120.0	140.0	170.0	212.0	140.0	212.0

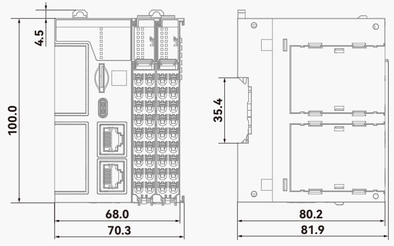
M300/M500-Series Controller

Unit: mm



Compatible model: HCM301-16MT4-D, HCM302-16MT4-D, HCM310-16MT4-D, HCM311-16MT4-D, HCM501S-16MT4-D

Unit: mm



Compatible model: HCM312-32MT6-D, HCM511S-32MT4-D, HCM511-32MT4-D, HCM512-32MT4-D, HCM513-32MT4-D, HCM514-32MT4-D

PLC

Specifications

M-SERIES CONTROLLER

Model			HCM301-16MT4-D	HCM302-16MT4-D	HCM310-16MT4-D	HCM311-16MT4-D	HCM312-32MT6-D	-
Appearance								-
Programming	Program capacity		256 KBytes		512 KBytes			-
	Variable capacity		256 KBytes (Persistent data memory: 16 KBytes)		256 KBytes (Persistent data memory: 32 KBytes)			-
	I-area (%I)		128 Bytes					-
	O-area (%Q)		128 Bytes					-
	M-area (%M)		128 KBytes					-
Programming language			LD, ST, C/C++					-
Axis capability	Number of pulse axes		4-axis 100k		4-axis 200k		6-axis 200k	-
	Number of encoder axes		2					-
	Total axes (EtherCAT axis + pulse axis + encoder axis + virtual axis)		⩽16					-
Right-side expansion	Max. number of expandable modules		16					-
RTC battery			Built-in in the controller				Install the HCMXB-RTC-BD optional card for support	-
Optional card	Max. number of optional cards		-				2	-
Controller IO channel	Input	Number of channels	8-channel input				16-channel input	-
		Function	8-channel external interrupts; 2-channel 200kHz high-speed pulse input (AB phase, pulse+direction, single pulse)		8-channel external interrupts; 2-channel 200kHz high-speed pulse input (AB phase, pulse+direction, single pulse)			-
	Output	Number of channels	8-channel output				16-channel output	-
		Function	4-channel 100kHz pulse output (pulse+direction)*		4-channel 200kHz pulse output (pulse+direction)*		6-channel 200kHz pulse output (pulse+direction)*	-
Electronic cam	Number of cams		-	16	-	16	16	-
	Number of key points per curve		-	32	-	32	32	-
Axis group	Max. number of axis groups		-	1 axis group (each axis group supports up to 8-axis interpolation)	-	1 axis group (each axis group supports up to 8-axis interpolation)	1 axis group (each axis group supports up to 8-axis interpolation)	-
G-code capacity			-					-
SD card			-				1	-
USB	Number of interfaces		1×USB2.0 Type-C					-
	Function		Program upload/download; Software monitoring & debugging; Firmware upgrade					-
Power supply			DC24V(±10%)					-
Serial port	RS485	Number of interfaces	1				Max. 4 channels: 2 built-in in the controller, expandable by 2 more via optional HCMXB-2RS485-BD card	-
		Supported protocols	Modbus master/slave (ASCII/RTU); Custom protocol					-
		Max. number of slave stations	32					-
		Baud rate (bps)	9600, 19200, 38400, 57600, 115200					-
	RS232	Number of interfaces	1				Install optional HCMXB-2RS232-BD card to support 2 channels	-
		Supported protocols	Modbus master/slave (ASCII/RTU); Custom protocol					-
		Max. number of slave stations	1					-
		Baud rate (bps)	9600, 19200, 38400, 57600, 115200					-
CAN	Number of interfaces		-				Install optional HCMXB-CAN-BD card to support 1 channel	-
	Supported protocols		-				CANopen protocol (DS301), supports master/slave; supports 32 slave stations when acting as a master	-
EtherNet	Number of interfaces		-		1			-
	Function		-		Communication, program download/upload			-
	Data transmission speed		-		100/10Mbps			-
	Total TCP connections		-		16(ModbusTCP+Socket + EtherNet/IP)			-
	Modbus TCP		-		Client (Master) Max. connections: 16; Server (Slave) Max. connections: 16			-
	Socket		-		Max. connections: 8 (TCP/UDP)			-
	Cable		-		Standard industrial Ethernet communication cable			-
EtherNet/IP (slave mode only)	Implicit CIP communication		-		Max. connections: 8; Max. data per connection: 200 Bytes; Cycle interval: 5~1000ms			-
	Explicit CIP communication		-		Class 3 connections: 8; UCMM (unconnected message manager) concurrent client access: 16			-

Model			HCM500S-16MT4-D	HCM501S-16MT4-D	HCM511S-32MT4-D	HCM511-32MT4-D	HCM512-32MT4-D	HCM513-32MT4-D	HCM514-32MT4-D
Appearance									
Programming	Program capacity		512 KBytes			20 MBytes			
	Variable capacity		256 KBytes (Persistent data memory: 32 KBytes)			20 MBytes (Persistent data memory: 128 KBytes)			
	I-area (%I)		128 Bytes						
	O-area (%Q)		128 Bytes						
	M-area (%M)		128 KBytes						
Programming language			LD, ST, C/C++						
Axis capability	EtherCAT axis		4 (PDO-Free configuration; only available for slaves provided in programming software)	8 (PDO-Free configuration; only available for slaves provided in programming software)		8	16	32	64
	Number of pulse axes (MT models only)		4-axis 200k						
	Number of encoder axes		2						
	Total axes (EtherCAT axis + pulse axis + encoder axis + virtual axis)		⩽16			⩽64			⩽128
Right-side expansion	Max. number of expandable modules		16						
RTC battery			Built-in in the controller		Supported by installing the optional HCMXB-RTC-BD card				
Optional card	Max. number of optional cards		-		2				
Controller IO channel	Input	Number of channels	8-channel input		16-channel input				
		Function	8-channel external interrupts; 2-channel 200kHz high-speed pulse input (AB phase, pulse+direction, single pulse)						
	Output	Number of channels	8-channel output		16-channel output				
		Function	4-channel 200kHz high-speed pulse output (pulse+direction)						
Electronic cam	Number of cams		16			64			
	Number of key points per curve		32			2048			
Axis group	Max. number of axis groups		1 axis group (each axis group supports up to 8-axis interpolation)			8 axis group (each axis group supports up to 8-axis interpolation)			
G-code capacity			-			16MB (supports up to 64 G-code files, each with a maximum size of 256KB)			
SD card			Not supported		1				
USB	Number of interfaces		1×USB2.0 Type-C						
	Function		Program upload/download; Software monitoring & debugging; Firmware upgrade						
Power supply			DC24V(±10%)						
Serial port	RS485	Number of interfaces	1		Max. 4 channels: 2 built-in in the controller, expandable by 2 more via optional HCMXB-2RS485-BD card				
		Supported protocols	Modbus master/slave (ASCII/RTU); Custom protocol						
		Max. number of slave stations	32						
		Baud rate (bps)	9600, 19200, 38400, 57600, 115200						
	RS232	Number of interfaces	1		Install optional HCMXB-2RS232-BD card to support 2 channels				
		Supported protocols	Modbus master/slave (ASCII/RTU); Custom protocol						
		Max. number of slave stations	1						
		Baud rate (bps)	9600, 19200, 38400, 57600, 115200						
CAN	Number of interfaces		-		Install optional HCMXB-CAN-BD card to support 1 channel				
	Supported protocols		-		CANopen protocol (DS301), supports master/slave; supports 16 slave stations when acting as a master	CANopen protocol (DS301), supports master/slave; supports 32 slave stations when acting as a master			
EtherNet	Function		-		Communication, program download/upload				
	Data transmission speed		-		100/10Mbps				
	Total TCP connections		-		12(ModbusTCP+Socket)	16 (ModbusTCP+Socket + EtherNet/IP)			
	Modbus TCP		-		Client (Master) Max. connections: 4; Server (Slave) Max. connections: 4	Client (Master) Max. connections: 16; Server (Slave) Max. connections: 16			
	Socket		-		Max. connections: 4 (TCP/UDP)	Max. connections: 8 (TCP/UDP)			
	Cable		-		Standard industrial Ethernet communication cable				
EtherNet/IP (slave mode only)	Implicit CIP communication		-		Max. connections: 8; Max. data per connection: 200 Bytes; Cycle interval: 5~1000ms				
	Explicit CIP communication		-		Class 3 connections: 8; UCMM (unconnected message manager) concurrent client access: 16				
EtherCAT	Topology		Linear topology						
	Transmission medium		Standard Ethernet communication cable						
	Max. node-to-node transmission distance		100m						
	Max. number of slave stations		8 (PDO-Free configuration; only available for slaves provided in programming software)			16	32	64	128
	Max. process data		1380 Bytes (Max. frames: 1)						
	Communication cycle		Min. 500μs			Min. 250μs			
	Supported protocols		EtherCAT master						

M-Series Controller General Specifications

> Environmental Specifications

Item	Specification
Operating temperature	0~55℃
Storage temperature	-25~70℃
Ambient humidity	10 - 95% (non-condensing)
Altitude/Pressure	2,000m Max. (80kPa)
Pollution degree	Pollution degree II: Normally non-conductive contamination, with occasional temporary conductivity due to condensation
Cooling method	Passive heat dissipation; Natural air cooling

> AC Power Supply Specifications (M100, M200 Series)

Item	Specification
Power supply voltage	AC 100-240V
Allowable voltage fluctuation	AC 90-265V
Rated frequency	50/60Hz
Allowable power failure time	⩽5ms
Max. power consumption	25W

> DC Power Supply Specifications (M300, M500S, M500 Series)

Item	Specification
Power supply voltage	DC 24V
Allowable voltage fluctuation	DC 20.4-28.8V
Power consumption	5W
Undervoltage threshold	19V

> Relay Output Specifications

Item	Specification
Output type	Relay output
External power supply	AC250V,DC30V or less
Circuit insulation	Mechanical insulation
Max. Load	Resistive load: 2A per channel Inductive load: 1A per channel Lamp load: 30W per channel
Min. Load	DC5V 10mA
Insulation resistance	1000MΩ (500VDC)
On/OFF response time	＜10ms

> Main Unit High-Speed IO Input Specifications

Item	Specification
Rated input voltage	DC 24V
Input type	Source/Sink (PNP/NPN) input
Rated input current	5mA
ON current	>4mA
OFF current	<2.5mA
ON voltage	⩾15V DC
OFF voltage	⩽5V DC
Input resistance	2.7kΩ
Max. Input frequency	200kHz
Isolation method	Capacitive isolation

> Transistor Output Specifications

Item	Specification
Output type	Sink (NPN) output
Max. load	Resistive load: 0.5A per channel Inductive load: 13W (24VDC) Lamp load: 2.5W (24VDC)
Min. load	1mA / 5V
OFF leakage current	<10μA
Max. output frequency	200kHz
ON/OFF response time	＜2.5us
Isolation method	Capacitive isolation

M-SERIES LINE UP

Naming Rule for M-Series Optional Cards

HCMXB-2RS232-200-BD

1 2 3 4 5

1.Product Name

HC

HC: HCFA controller

2.Optional Card Series

MXB

MXB: M-Series optional expansion

3.Product Series

2RS232

2RS232: Two RS232 serial ports
2RS485: Two RS485 serial ports
CAN: CAN communication protocol
RTC: Real-Time Clock battery backup card
A B : AB-Phase differential encoder optional card

4.Suffix

200

None: M300/M500S/M500-Series optional card
500: M500-Series optional card
200: M200-Series optional card
100: M100-Series optional card

5.Suffix

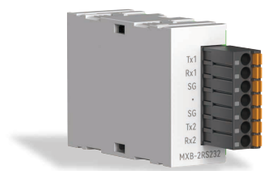
BD

BD: BD optional card

M-SERIES OPTIONAL CONFIGURATION

M-Series Optional Card Specifications

Model	HCMXB-CAN-BD (Compatible with M312, M511S and M500 controllers)	HCMXB-CAN-100-BD (Compatible with M100 controllers)
Appearance		
Specification overview	CANopen protocol (DS301), supports master/slave	
Number of supported slave stations	Refer to controller specifications	
Link layer	CAN2.0A	
Termination resistor	External 120Ω resistor	
Baud rate (bps)	20K, 50K, 125K, 250K, 500K, 1M	
Topology	Daisy chain topology and star topology	
Transmission medium	CIA-Compliant CAN cable	
Max. communication distance	2500m (20kbps)	
Synchronization cycle	Min. 1ms	

Model	HCMXB-2RS232-BD (Compatible with M312, M511S and M500 controllers)	HCMXB-2RS232-100-BD (Compatible with M100 controllers)	HCMXB-2RS232-200-BD (Compatible with M200 controllers)
Appearance			
Specification overview	2-channel RS232 communication optional card; Independently configurable as master or slave station, supporting Modbus protocol and custom protocol		
Communication mode	RTU/ASCII		
Max. number of supported stations	1		
Baud rate (bps)	9600, 19200, 38400, 57600, 115200		
Max. communication distance	15m (9600bps)		

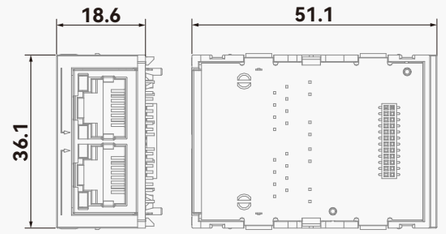
Model	HCMXB-2RS485-BD (Compatible with M312, M511S and M500 controllers)	HCMXB-2RS485-100-BD (Compatible with M100 controllers)	HCMXB-2RS485-200-BD (Compatible with M200 controllers)
Appearance			
Specification overview	2-Channel RS485 communication card; Standalone master/slave configurable; Modbus & Custom protocol support		
Communication mode	RTU/ASCII		
Max. number of supported slave stations	32		
Termination resistor	External 120Ω resistor		
Baud rate (bps)	9600, 19200, 38400, 57600, 115200		
Max. communication distance	500m (9600bps)		

Model	HCMXB-RTC-BD (Compatible with M312, M511S and M500 controllers)
Appearance	
Specification overview	Real-Time Clock battery backup card (timekeeping during power failure)
Clock accuracy	Monthly accuracy: 120s
Clock format	YYYY-MM-DD-Weekday-HH:MM:SS
Battery specification	HCFA standard battery ((replaceable, 3-5 years lifespan)

Model	HCMXB-AB-500-BD (Compatible with M500 controllers)
Appearance	
Specification overview	AB-Phase differential encoder optional card
Counting mode	AB-Phase 1x/2x/4x frequency multiplication
Counting direction	Up/Down-Counting

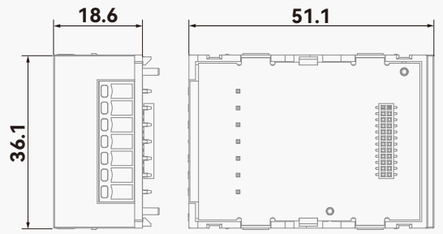
M312, M511S, M500 Series Controller Optional Card

Unit: mm



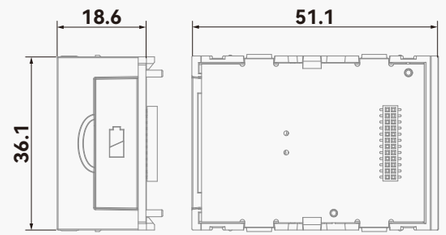
Compatible model: HCMXB-CAN-BD

Unit: mm



Compatible model: HCMXB-2RS232-BD, HCMXB-2RS485-BD, HCMXB-AB-500-BD

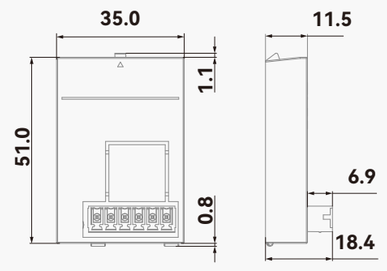
Unit: mm



Compatible model: HCMXB-RTC-BD

M100-Series Controller Optional Card

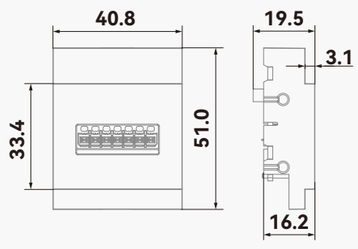
Unit: mm



Compatible model: HCMXB-CAN-100-BD, HCMXB-2RS232-100-BD, HCMXB-2RS485-100-BD

M200-Series Controller Optional Card

Unit: mm



Compatible model: HCMXB-2RS232-200-BD, HCMXB-2RS485-200-BD

M-SERIES UNIT LINE UP

Naming Rule for M-Series Expansion Modules

HCMX-MD16-D-****

(1) (2) (3) (4) (5) (6)

1.Product Name

HC: HCFA

2.Product Series

M X : M-Series general-purpose expansion
MXE: EtherCAT remote I/O
MXC: CANopen remote I/O
MXP: Profinet remote I/O

3.Function Module

OC: Relay output
ID: Digital input
OD: Digital output
MD: Digital Mixed
AD: Analog input
DA: Analog output
EC: EtherCAT Coupler

4.Number of channels

04: 4 Channels
08: 8 Channels
16: 16 Channels
32: 32 Channels

5.Power Supply Type

D: DC power supply

6.Controlled Version Number & Non-standard Specifications

*

Coupler Module

Model	HCMX-EC01-D
Appearance	
Product type	EtherCAT coupler
Max. number of expansion modules	16
Communication protocol	EtherCAT
Communication speed	100Mbps
Max. inter-station distance	100m
Operation mode	FreeRun, SM-Synchron, DC-Synchron
Rated voltage	DC 24V

Remote Expansion Module

Model	HCMXE-MD16-D	HCMXC-MD16-D	HCMXP-MD16-D
Appearance			
Product type	EtherCAT remote I/O	CANopen remote I/O	Profinet remote I/O
Max. number of expansion modules	16		
Expansion module input specification	8-channel input, NPN/PNP input		
Expansion module output specification	8-channel output, NPN output		
Communication protocol	EtherCAT	CANopen	Profinet
Communication speed	100Mbps	Max. 1Mbps	100Mbps
Max. communication distance	100m	5000m (10Kbps)	100m
Operation mode	FreeRun, SM-Synchron, DC-Synchron	-	-
Rated voltage	DC 24V		

Digital Input Module

Model	HCMX-ID08-D	HCMX-ID16-D	HCMX-ID32-D
Appearance			
Number of input channels	8	16	32
Input type	NPN/PNP		
Rated power	1W		
Rated input voltage	DC24V		
Rated input current	5mA		
Input ON current	>4mA		
Input OFF current	<2.5mA		
Input ON voltage	⩾DC15V		
Input OFF voltage	⩽DC5V		
Hardware response time (ON/OFF)	100μs/100μs		
Software filtering	Support		
Input resistance	2.7kΩ		
Common terminal mode	8 Channels per common terminal		

Digital Output Module

Model	HCMX-OD08-D	HCMX-OD16-D	HCMX-OD32-D
Appearance			
Number of output channels	8	16	32
Output type	NPN		
Rated power	1W	1W	1.5W
Control circuit voltage	DC24V		
Rated load current (resistive)	0.5A/channel, 4A/common terminal		
Rated load current (inductive)	7.2W/channel, 24W/common terminal		
Rated load current (lamp)	5W/channel, 18W/common terminal		
Leakage current when OFF	< 10μA		
Hardware response time (ON/OFF)	500μs/500μs		
Output frequency	Resistive load: 100Hz; Inductive load: 0.5Hz; Lamp load: 10Hz		
Protection function	Short-circuit protection; Overcurrent protection		
Common terminal mode	For 8-channel output modules: 1 common terminal per 8 channels; For 16/32-channel output modules: 1 common terminal per 16 channels		

Model	HCMX-OD08-D-PNP	HCMX-OD16-D-PNP	HCMX-OD32-D-PNP	HCMX-OC08-D
Appearance				
Number of output channels	8	16	32	8
Output type	PNP			Relay
Rated power	1W	1W	1.5W	1.5W
Control circuit voltage	DC24V			AC250V/DC30V
Rated load current (resistive)	0.5A/channel, 2A/common terminal			2A/channel, 8A/common terminal
Rated load current (inductive)	7.2W/channel, 12W/common terminal			1A/channel, 4A/common terminal
Rated load current (lamp)	5W/channel, 10W/common terminal			30W/channel, 120W/common terminal
Leakage current when OFF	< 10μA			-
Hardware response time (ON/OFF)	500μs/500μs			10ms/10ms
Output frequency	Resistive load: 100Hz; Inductive load: 0.5Hz; Lamp load: 10Hz			Resistive load: 1Hz; Inductive load: 0.5Hz; Lamp load: 1Hz
Min. number of operable switching cycles	-			100000
Protection function	Short-circuit protection; Overcurrent protection			-
Common terminal mode	For 8-channel output modules: 1 common terminal per 8 channels; For 16/32-channel output modules: 1 common terminal per 16 channels			1 common terminal per 4 channels

Digital Mixed Module

Model		HCMX-MD16-D	HCMX-MD32-D	HCMX-MD16-D-PNP	HCMX-MD32-D-PNP
Appearance					
Input specifications	Number of input channels	8	16	8	16
	Input type	NPN/PNP			
	Rated input voltage	DC24V			
	Rated input current	5mA			
	Input ON current	>4mA			
	Input OFF current	<2.5mA			
	Input ON voltage	⩾DC15V			
	Input OFF voltage	⩽DC5V			
	Hardware response time (ON/OFF)	100μs/100μs			
	Software filtering	Support			
	Input resistance	2.7kΩ			
Output specifications	Number of output channels	8	16	8	16
	Output type	NPN		PNP	
	Control circuit voltage	DC24V			
	Rated load current (resistive)	0.5A/channel, 4A/common terminal		0.5A/channel, 2A/common terminal	
	Rated load current (inductive)	7.2W/channel, 24W/common terminal		7.2W/channel, 12W/common terminal	
	Rated load current (lamp)	5W/channel, 18W/common terminal		5W/channel, 10W/common terminal	
	Leakage current when OFF	< 10μA			
	Hardware response time (ON/OFF)	500μs/500μs			
	Output frequency	Resistive load: 100Hz; Inductive load: 0.5Hz; Lamp load: 10Hz			
	Protection function	Short-circuit protection; Overcurrent protection			
Rated power		1W	1.5W	1W	1.5W
Common terminal mode		8 Channels per common terminal	16 Channels per common terminal	8 Channels per common terminal	16 Channels per common terminal

Analog Input Module

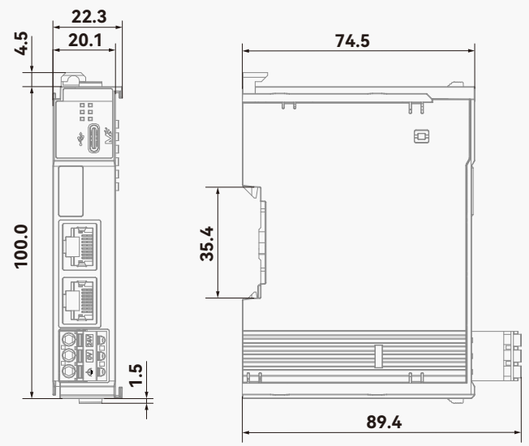
Model	HCMX-AD04-D	HCMX-AD04S-D
Appearance		
Input type	Voltage/Current	
Number of input channels	4	
Resolution	16-bit	14-bit
Conversion time	60μs/channel	
Accuracy	Ambient temperature 25°C: ±0.1% (full scale range); Full temperature range: ±0.2% (full scale range)	Ambient temperature 25°C: ±0.5% (full scale range); Full temperature range: ±1% (full scale range)
Supported modes & Converted values	-10V～10V (-32000～32000)	
	-5V～5V (-32000～32000)	
	0V～5V (0～32000)	
	1V～5V (0～32000)	
	-20mA～20mA (-32000～32000)	
	0mA～20mA (0～32000)	
	4mA～20mA (0～32000)	
Rated input voltage	DC24V	
Rated power	1W	
Filtering function	Support	
Input disconnection detection	Supported in 4 mA to 20 mA mode	

Analog Output Module

Model	HCMX-DA04-D	HCMX-DA04S-D
Appearance		
Output type	Voltage/Current	
Number of output channels	4	
Resolution	16-bit	14-bit
Conversion time	60μs/channel	
Accuracy	Ambient temperature 25°C: ±0.1% (full scale range); Full temperature range: ±0.2% (full scale range)	Ambient temperature 25°C: ±0.5% (full scale range); Full temperature range: ±1% (full scale range)
Supported modes & Converted values	-10V～10V (-32000～32000)	
	0V～10V (0～32000)	
	0mA～20mA (0～32000)	
	4mA～20mA (0～32000)	
Rated input voltage	DC24V	
Rated power	1W	
Voltage output diagnosis	Short-circuit detection and over-temperature protection	
Current output diagnosis	Open-circuit detection and over-temperature protection	

Coupler Module

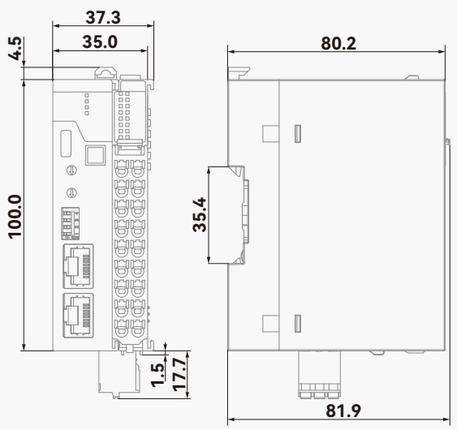
Unit: mm



Compatible model: HCMX-EC01-D

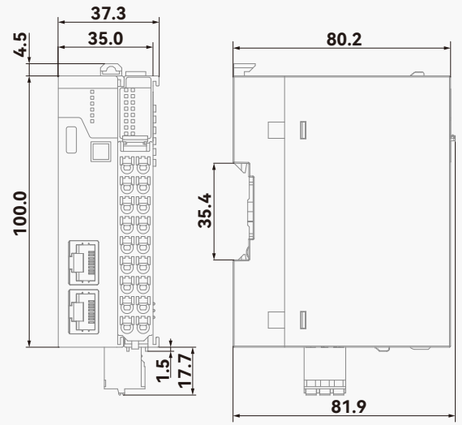
Remote Expansion Module

Unit: mm



Compatible model: HCMXC-MD16-D

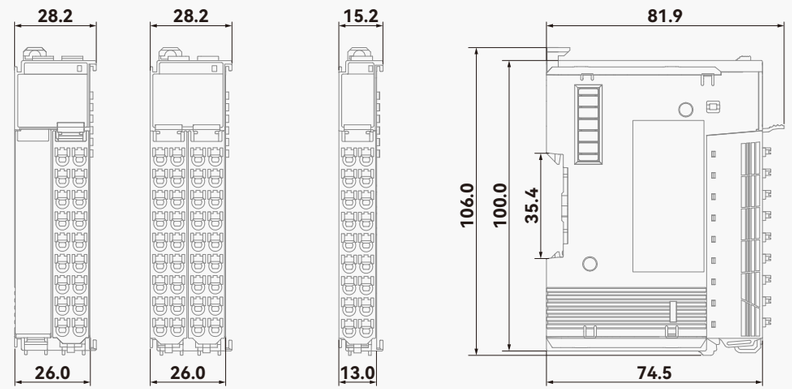
Unit: mm



Compatible model: HCMXE-MD16-D, HCMXP-MD16-D

Digital/Analog Module

Unit: mm



Double-Row module **Single-Row module**

Compatible model

Double-Row module: HCMX-OC08-D, HCMX-ID32-D, HCMX-OD32-D (PNP) , HCMX-MD32-D (PNP)

Single-Row module: HCMX-ID08-D, HCMX-ID16-D, HCMX-OD08-D (PNP) , HCMX-OD16-D (PNP) , HCMX-MD16-D (PNP) , HCMX-AD04-D, HCMX-AD04S-D, HCMX-DA04-D, HCMX-DA04S-D

M-Series Selection Overview Table

M-Series Controller Selection Table

Model	Specification	Page
HCM100-14MR-A	Relay output, 100k high-speed counter*2, 8 inputs 6 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-14MT3-A	100k pulse axis*3, 100k high-speed counter*2, 8 inputs 6 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-20MR-A	Relay output, 100k high-speed counter*2, 12 inputs 8 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-20MT4-A	100k pulse axis*4, 100k high-speed counter*2, 12 inputs 8 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-30MR-A	Relay output, 100k high-speed counter*2, 16 inputs 14 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-30MT6-A	100k pulse axis*6, 100k high-speed counter*2, 16 inputs 14 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-40MR-A	Relay output, 100k high-speed counter*2, 24 inputs 16 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-40MT6-A	100k pulse axis*6, 100k high-speed counter*2, 24 inputs 16 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-48MR-A	Relay output, 100k high-speed counter*2, 28 inputs 20 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-48MT6-A	100k pulse axis*6, 100k high-speed counter*2, 28 inputs 20 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-60MR-A	Relay output, 100k high-speed counter*2, 36 inputs 24 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM100-60MT6-A	100k pulse axis*6, 100k high-speed counter*2, 36 inputs 24 outputs, RS232*1, RS485*1, USB*1, 1 optional card	12
HCM211-20MR-A	Relay output, 200k high-speed counter*2, 12 inputs 8 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM211-20MT4-A	200k pulse axis*4, 200k high-speed counter*2, 12 inputs 8 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM211-32MR-A	Relay output, 200k high-speed counter*2, 18 inputs 14 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM211-32MT6-A	200k pulse axis*6, 200k high-speed counter*2, 18 inputs 14 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM211-42MR-A	Relay output, 200k high-speed counter*4, 24 inputs 18 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM211-42MT8-A	200k pulse axis*8, 200k high-speed counter*4, 24 inputs 18 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM211-60MR-A	Relay output, 200k high-speed counter*4, 36 inputs 24 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM211-60MT10-A	200k pulse axis*10, 200k high-speed counter*4, 36 inputs 24 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM212-32MT4-A	200k pulse axis*4, 200k high-speed counter*2, EtherCAT bus axis*8, 18 inputs 14 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM212-60MT8-A	200k pulse axis*8, 200k high-speed counter*4, EtherCAT bus axis*8, 36 inputs 24 outputs, EtherNet*1, CAN*1, RS485*2, USB*1, 1 optional card, SD card*1, supports 16 right-side expansion modules	13
HCM301-16MT4-D	100k pulse axis*4, 100k high-speed counter*2, RS485*1, RS232*1, 8 inputs 8 outputs, supports 16 right-side expansion modules	16
HCM302-16MT4-D	100k pulse axis*4, 100k high-speed counter*2, RS485*1, RS232*1, 8 inputs 8 outputs, supports 16 right-side expansion modules	16
HCM310-16MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherNet*1, RS485*1, RS232*1, 8 inputs 8 outputs, supports 16 right-side expansions	16
HCM311-16MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherNet*1, RS485*1, RS232*1, 8 inputs 8 outputs, supports 16 right-side expansions	16
HCM312-32MT6-D	200k pulse axis*6, 200k high-speed counter*2, EtherNet*1, RS485*2, 16 inputs 16 outputs, 2 optional cards, supports 16 right-side expansion modules, SD card*1	16
HCM500S-16MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherCAT bus axis*4*[1], RS485*1, RS232*1, 8 inputs 8 outputs, supports 16 right-side expansion modules	17
HCM501S-16MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherCAT bus axis*8*[1], RS485*1, RS232*1, 8 inputs 8 outputs, supports 16 right-side expansion modules	17
HCM511S-32MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherCAT bus axis*8*[1], EtherNet*1, RS485*2, 16 inputs 16 outputs, 2 optional cards, supports 16 right-side expansion modules, SD card*1	17
HCM511-32MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherCAT bus axis*8, EtherNet*1, RS485*2, 16 inputs 16 outputs, 2 optional cards, supports 16 right-side expansion modules, SD card*1	17
HCM512-32MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherCAT bus axis*16, EtherNet*1, RS485*2, 16 inputs 16 outputs, 2 optional cards, supports 16 right-side expansion modules, SD card*1	17
HCM513-32MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherCAT bus axis*32, EtherNet*1, RS485*2, 16 inputs 16 outputs, 2 optional cards, supports 16 right-side expansion modules, SD card*1	17
HCM514-32MT4-D	200k pulse axis*4, 200k high-speed counter*2, EtherCAT bus axis*64, EtherNet*1, RS485*2, 16 inputs 16 outputs, 2 optional cards, supports 16 right-side expansion modules, SD card*1	17

*[1]: PDO is a fixed configuration; only slaves provided in the configuration software are applicable.

M-Series Expansion Module Selection Table

Model	Specification	Page
HCMX-EC01-D	EtherCAT coupler, supporting 16 right-side expansion modules	24
HCMXE-MD16-D	EtherCAT remote IO, with built-in 8-channel input & 8-channel output, supporting 16 right-side expansion modules	24
HCMXC-MD16-D	CANopen remote IO, with built-in 8-channel input & 8-channel output, supporting 16 right-side expansion modules	24
HCMXP-MD16-D	Profinet remote IO, with built-in 8-channel input & 8-channel output, supporting 16 right-side expansion modules	24
HCMX-ID08-D	8-channel digital input, supporting NPN or PNP input	25
HCMX-ID16-D	16-channel digital input, supporting NPN or PNP input	25
HCMX-ID32-D	32-channel digital input, supporting NPN or PNP input	25
HCMX-OC08-D	8-channel relay output	26
HCMX-OD08-D	8-channel digital output, supporting NPN output	25
HCMX-OD08-D-PNP	8-channel digital output, supporting PNP output	26
HCMX-OD16-D	16-channel digital output, supporting NPN output	25
HCMX-OD16-D-PNP	16-channel digital output, supporting PNP output	26
HCMX-OD32-D	32-channel digital output, supporting NPN output	25
HCMX-OD32-D-PNP	32-channel digital output, supporting PNP output	26
HCMX-MD16-D	16-channel digital mixed: 8-channel digital input (NPN/PNP), 8-channel digital output (NPN)	27
HCMX-MD16-D-PNP	16-channel digital mixed: 8-channel digital input (NPN/PNP), 8-channel digital output (PNP)	27
HCMX-MD32-D	32-channel digital mixed: 16-channel digital input (NPN/PNP), 16-channel digital output (NPN)	27
HCMX-MD32-D-PNP	32-channel digital mixed: 16-channel digital input (NPN/PNP), 16-channel digital output (PNP)	27
HCMX-AD04-D	4-channel analog input, 16-bit resolution. Supporting modes: -10V~10V, -5V~5V, 0V~5V, 1V~5V, -20mA~20mA, 0mA~20mA, 4mA~20mA	28
HCMX-AD04S-D	4-channel analog input, 14-bit resolution. Supporting modes: -10V~10V, -5V~5V, 0V~5V, 1V~5V, -20mA~20mA, 0mA~20mA, 4mA~20mA	28
HCMX-DA04-D	4-channel analog output, 16-bit resolution. Supporting modes: -10V~10V, 0V~10V, 0~20mA, 4mA~20mA	28
HCMX-DA04S-D	4-channel analog output, 14-bit resolution. Supporting modes: -10V~10V, 0V~10V, 0~20mA, 4mA~20mA	28

M-Series Programming Software

Name	Overview	Page
SysCtrl Studio	M-Series PLC programming software: Integrated multi-functional engineering debugging software tool	-

M-Series Optional Card Selection Table

Model	Compatible controller	Specification	Page
HCMXB-CAN-100-BD	M100-Series	Supports CANopen protocol (DS301), configurable as master or slave	20
HCMXB-2RS232-100-BD		2-channel RS232 serial port, independently configurable as master or slave, supporting Modbus protocol and custom protocol	20
HCMXB-2RS485-100-BD		2-channel RS485 serial port, independently configurable as master or slave, supporting Modbus protocol and user-defined protocol	21
HCMXB-2RS232-200-BD	M200-Series	2-channel RS232 serial port, independently configurable as master or slave, supporting Modbus protocol and user-defined protocol	20
HCMXB-2RS485-200-BD		2-channel RS485 serial port, independently configurable as master or slave, supporting Modbus protocol and user-defined protocol	21
HCMXB-CAN-BD	M312, M511, M511S, M512, M513, M514	Supports CANopen protocol (DS301), configurable as master or slave	20
HCMXB-2RS232-BD		2-channel RS232 serial port, independently configurable as master or slave, supporting Modbus protocol and user-defined protocol	20
HCMXB-2RS485-BD		2-channel RS485 serial port, independently configurable as master or slave, supporting Modbus protocol and custom protocol	21
HCMXB-RTC-BD		RTC battery backup card: Maintains calendar timing during controller power loss	21
HCMXB-AB-500-BD	M511, M512, M513, M514	AB-phase differential encoder option card: Supports 1x/2x/4x frequency multiplication, and up-counting/down-counting	21