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LX SERIES PLC CATALOG



Intelligence
For Excellence

Profile

Founded in 1993, HollySys is a leading supplier of intelligence solutions with more than 4,700 employees and operates in both China and abroad. HollySys is headquartered in Beijing with R&D, production, and service bases in Beijing, Hangzhou, Xi'an, Singapore, and local branches in major cities in China, as well as offices in India, Malaysia and Indonesia, establishing a comprehensive service network across the world.

HollySys business consists of industrial intelligence, transportation intelligence, and food and pharmaceutical intelligence, covering the main industries for the national economy and the people's livelihood. With years of technological accumulation in various fields and continuous capacity building, we can provide customers with customized integrated solutions, stable and reliable products, and full lifecycle services, helping them improve market competitiveness. Over the past three decades, we have served more than 35,000 clients, successfully completed more than 45,000 projects, and gained more than 1,000 new clients each year, making HollySys a world-renowned brand in automation and intelligence field.

HollySys' intelligent business is committed to providing automation, informatization and intelligent overall solutions for discrete manufacturing and infrastructure. The core products include programmable logic controllers, motion controllers, human-machine interfaces, drive systems, large-scale integrated monitoring systems, etc. Industrial automation products are widely used in water affairs, water conservancy, metro, tunnel, integrated pipe gallery, power, petrochemical, oil and gas, and high-end equipment manufacturing field including semiconductor, lithium, logistics, ports, mining, and airline.

Specializing in HollySys instruments and control system engineering and integration, the company can provide both new and brown field projects of enterprises with HollySys proprietary products, as well as comprehensive engineering services such as customized design and construction & commissioning.

HollySys has always pursued continuous innovation and R&D while sticking to its vision "create the most valuable intelligent company through stable and sustainable development" to provide more reliable, secure, and intelligent technology and products for our customers.

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PRODUCT SPECIFICATIONS

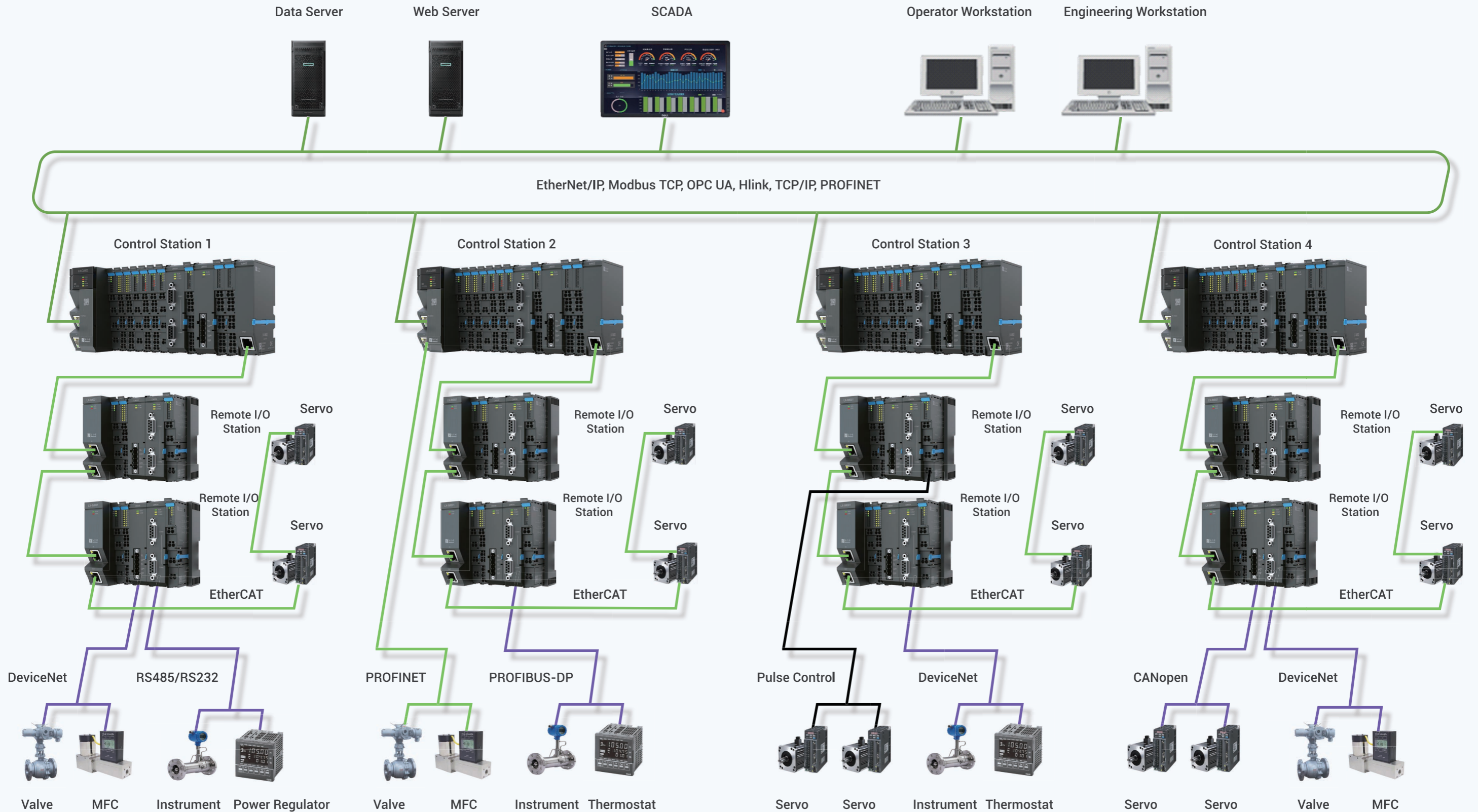
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PLC Milestones



LX Network Architecture

- Ethernet Communication
- Bus Communication
- Hard Wiring



LX System Configuration



- Breakthrough innovation based on multiple and powerful functions covering a wide range of applications

Model
LX-CM500

Controller Module



- Breakthrough innovation based on multiple and powerful functions covering a wide range of applications
- Ring network with high reliability

Model
LX-CU501

Controller Module

Coprocessor Module

- Supporting C/C++ programming languages
- Supporting POSIX programming interface

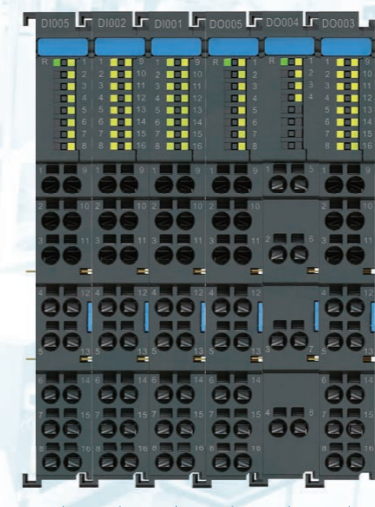
Model
LX-CM010



Analog I/O Module

- 4-channel Input module (current mode, voltage mode)
- 8-channel voltage input module
- 8-channel voltage output module
- 4-channel voltage and current output module
- 4 points RTD

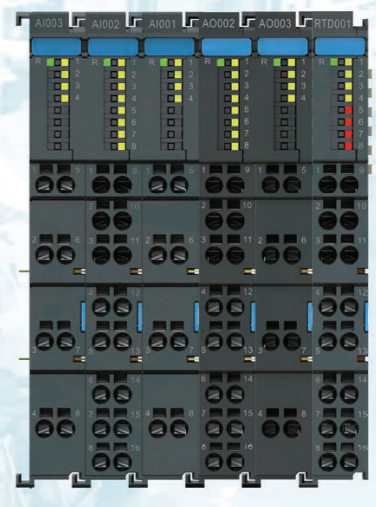
Model
LX-AI001 LX-AI002 LX-AI003
LX-AO002 LX-AO003 LX-RTD001



- 8/16-channel input module (NPN,PNP)
- 4/8/16-channel output module

Model
LX-DI001 LX-DI002
LX-DI005 LX-DOD003
LX-DOD004 LX-DOD005

Digital I/O Module



LX System Configuration

Communication Module

- Devicenet master station module
- Devicenet slave station module
- EtherCAT slave communication module

Model
LX-CM005 LX-CM006 LX-CM020



Power Relay Module

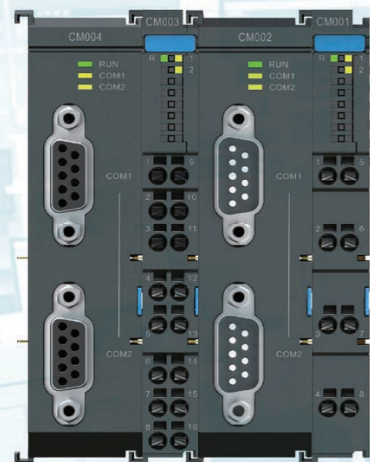
Model
LX-PM003



Coupler Module

- EtherCAT coupler module

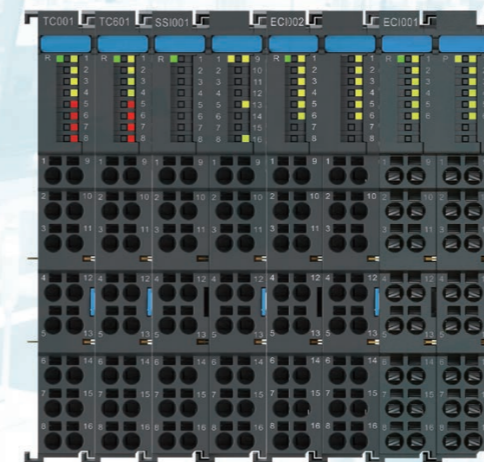
Model
LX-IM001



- Terminal interface
- D-sub interface
- E-RS232/RS484 interface

Model
LX-CM001 LX-CM002
LX-CM003 LX-CM004

Serial Communication Module



- 4-Channel TC
- 4-Channel high accuracy TC
- 2-Channel absolute encoder
- 2-Channel 5V Incremental encoder
- 2-Channel 24V Incremental encoder

Model
LX-TC001 LX-TC601 LX-SSI001
LX-ECI001 ECI002

Special Function I/O Module

- EtherCAT end coupler module

Model
LX-IM002

End Coupler Module

Going Beyond the Space Confinement

➡ Mini Footprint Saving Cabinet Space and Costs



High-performance Controller Covering All Application Scenarios



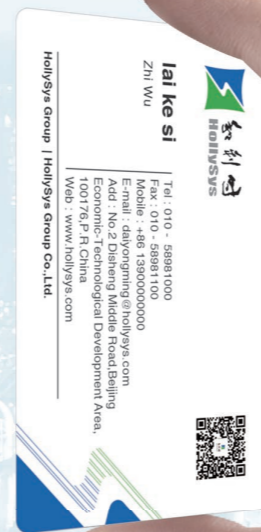
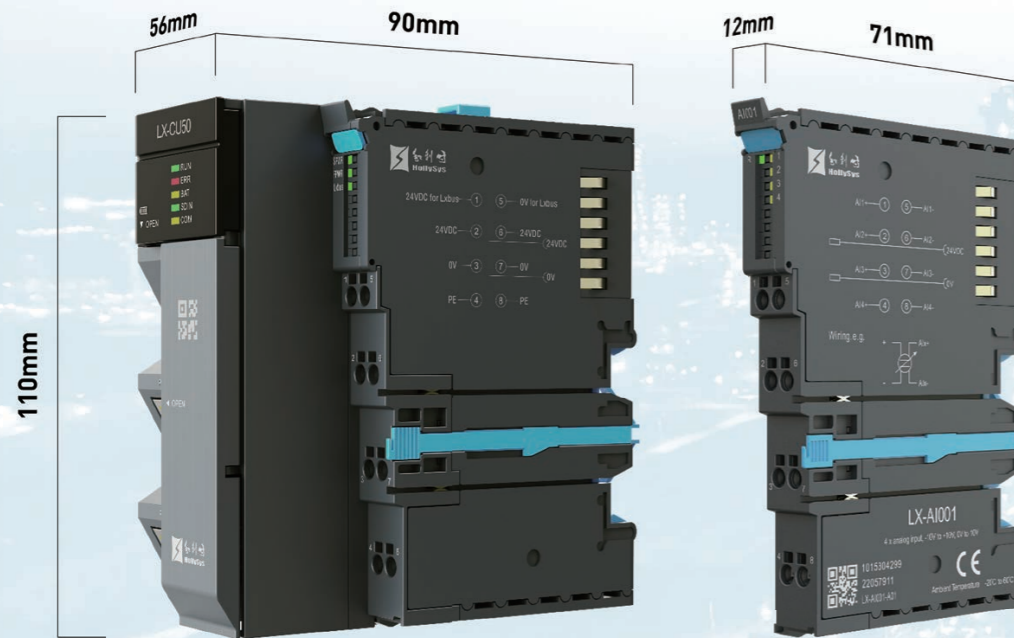
Card Type I/O



Only 12 mm in Width



60% of Space Saving



Rich Communication Protocols

I/O Compatible with Third-Party Controllers

LX I/O is adaptive to third-party EtherCAT master station
 LX I/O is adaptive to third-party PROFINET master station

3rd-Party EtherCAT Master Station



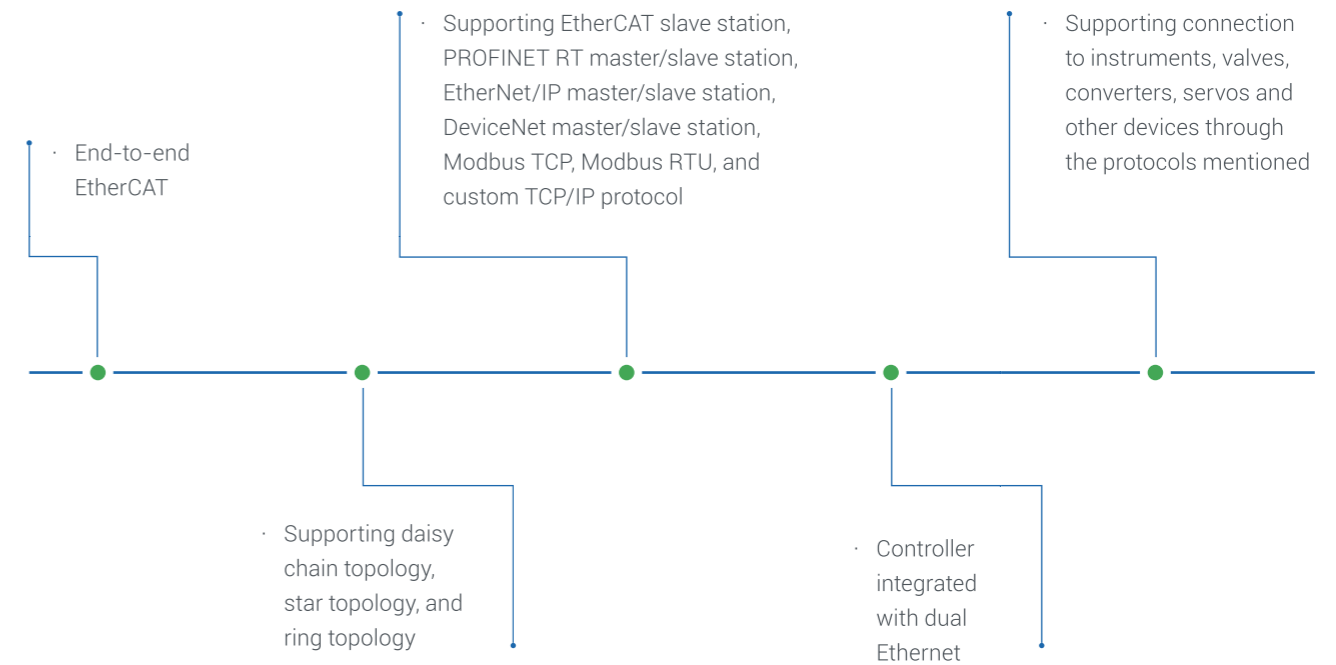
LX EtherCAT Coupler+LX Series I/O

3rd-Party PROFINET Master Station



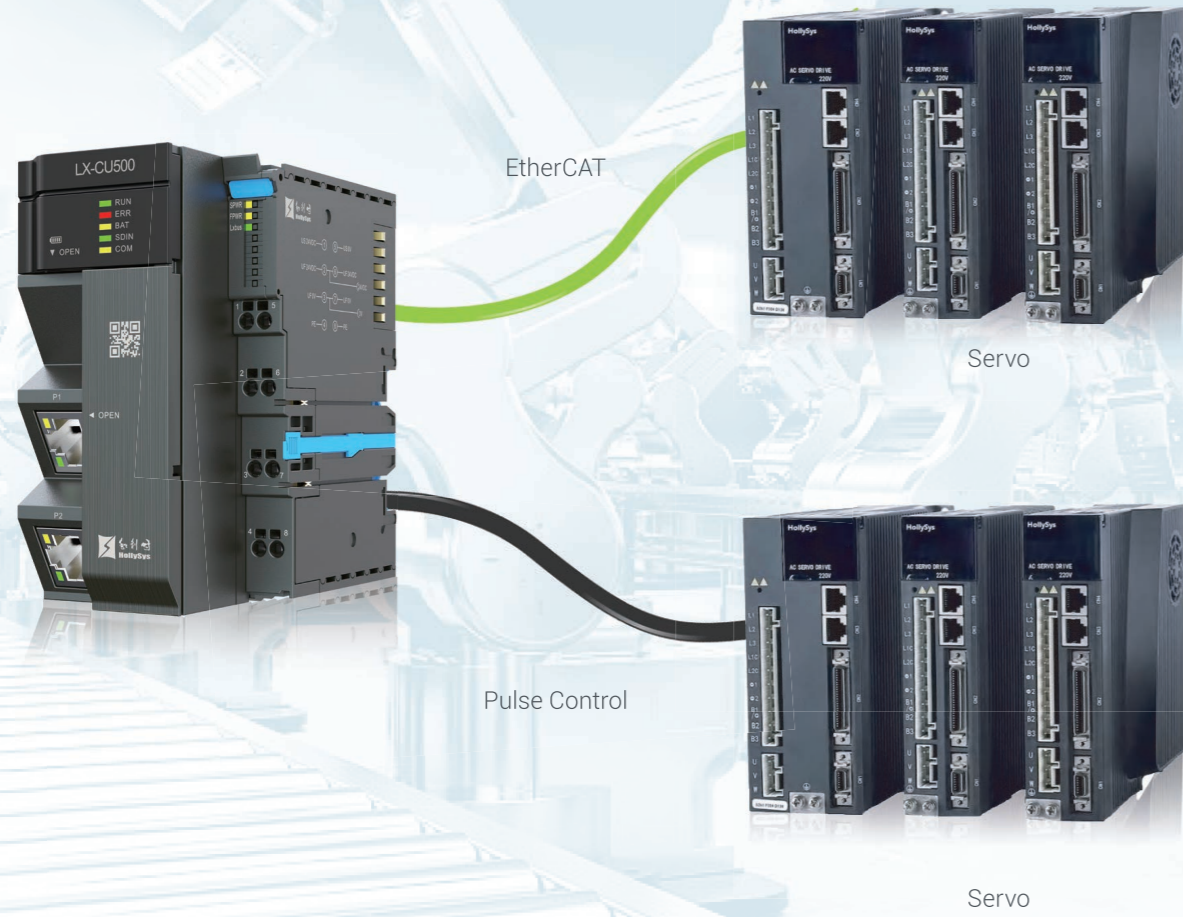
LX PROFINET Interface Module+LX Series I/O

Abundant Protocol Interface



EtherCAT	PROFI NET
OPC UA	PROFI BUS
DeviceNet	RS-232
EtherNet/IP	RS-485
CANopen	Modbus/TCP

Powerful Motion Control Capabilities



Motion Control



Supporting EtherCAT bus control and pulse control



Supporting Synchronization for up to 64 shafts



Compliant with PLCopen standard for motion control



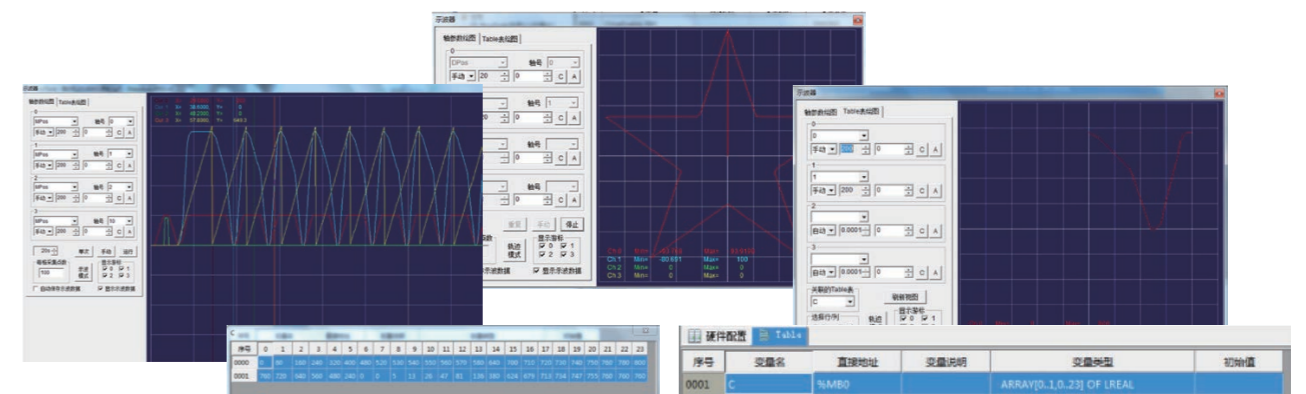
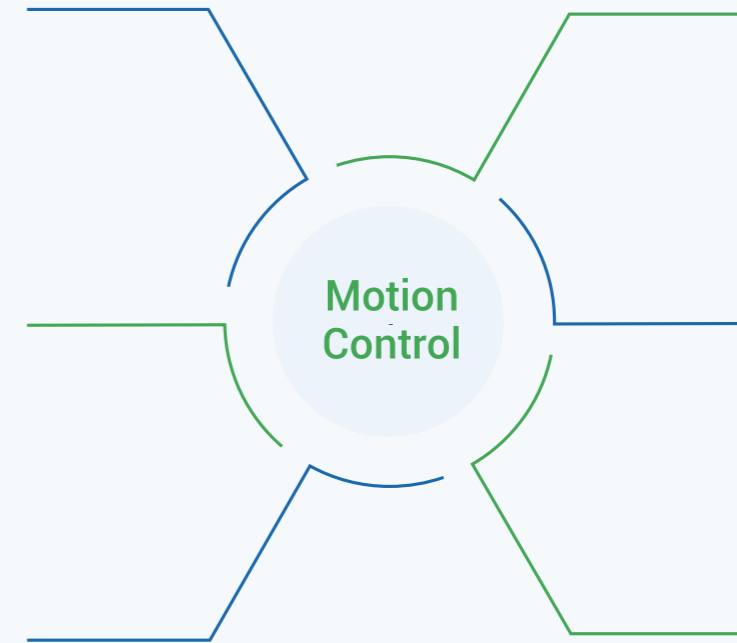
500 μ s of the minimum servo cycle



Supporting advanced motion control including ECAM, three-axis interpolation, 6-DOF robotic arm



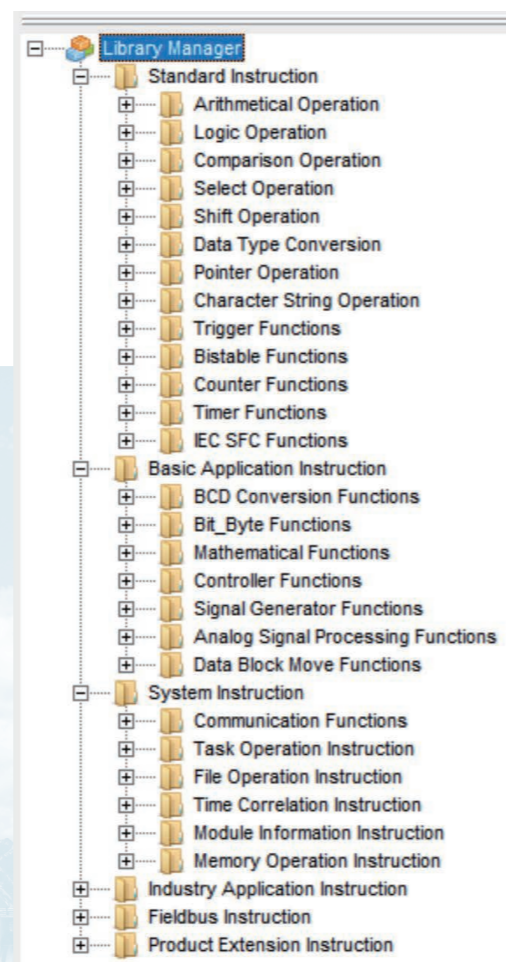
Supporting oscilloscopes and motion control data tracking



FA-AutoThink Programming Software

⇒ User-Friendly Operation

- Compliant with IEC61131-3 Standard
- Supporting 4 programming language (ST,LD,CFC,SFC)
- Supporting motion control with PLCopen standards
- Supporting customized algorithm libraries, integrated industry algorithm libraries
- Supporting C programming language



⇒ Stable, Reliable, and Secure

- Upgrading software with stability and reliability based on R&D investment over a decade
- Addressing software performance bottleneck problems through fully independent development and proprietary intellectual property rights
- Supporting secure PLC configuration and qualified for TÜV certification



IEC61508
ISO13849

LX-CU500 Controller

P1: Modbus TCP, TCP/IP, EtherNet/IP, Hlink

P2: Modbus TCP, TCP/IP, EtherNet/IP, Hlink



- System power : 24VDC-
- System power : 24VDC+
- Field power : 24VDC+
- Field power : 24VDC+
- Protective grounding



- RTC battery
- Dip switch
- Micro SD card slot
- RS-485

- Integrating 2 Ethernet interface and 1 RS-485
- Integrating an SD card and supporting firmware upgrading and data saving
- Supporting various mainstream industrial Ethernet protocols

LX-CM010 Coprocessor

⇒ Handling Complex Algorithms with Strong Computational Capability

- Supporting C/C++ high-level languages
- Compliant with POSIX programming standard interface
- Powerful computational capability
- Excellent shock resistance



LX-CU500 Technical Parameters

LX-CU500 Controller		
Power Supply		
Field Power	Voltage Range	24 V DC (19.2 V - 30 V)
	Anti-reverse Connection	Support
	Redundancy Input	Support
System Power	Voltage Range	24 V DC (19.2 V - 30 V)
	Anti-reverse Connection	Support
Storage		
Input Variable Area (I)	256 KB	
Output Variable Area (Q)	256 KB	
Global Variable Area (G)	6 MB	
Global Variable Area (M)	8 MB	
Power-off Holding Area (R)	500 KB	
Program Storage (Users)	6 MB	
SD Expansion Card	Expandable with a Micro SD card, up to 32 GB	
Program Scanning and Multi-tasking		
Multi-tasking	Supporting both single-task and multi-task configurations	
Number of Tasks	16	
Task Type	Supporting periodic, loop, state, event, and one-time task.	
Periodic Task Scope	1ms to 2000 ms, default is 20ms	
Motion Control		
Servo Task Cycle	500 μs of the minimum task cycle	
Motion Control Instruction	Multi-axis control, electronic gear, electronic cam, absolute positioning, relative positioning, synchronization, speed control, origin, jog interpolation	
The Maximum Axis	64-axis servo or inverter	
Motion Control Method	Supporting EtherCAT motion control and pulse control	
Ethernet Bus 1 (P0/P1 Northbound Network)		
Communication Ports	2 Ports (P1, P2)	
Voltage Level Standard	IEEE 802.3	
Communication Rate (bps)	1000 Mbps	
Communication Protocol 1: ModbusTCP Master/Slave Station Protocol	Polling Time: 10 ms	
	Connections: 32	
Communication Protocol 2: TCP/IP Free Protocol	Data Input and Output Areas Size: 1~32 K	
	Connections: 16	
Communication Protocol 3: EtherNet/IP Protocol	Data Input and Output Areas Size: 502B×15	
	Connections: 15 (Read While Write)	
Communication Protocol 4: Hlink Protocol	Data Input and Output Areas Size: 1 KB	
	Connections: 10	

Serial Communication	
Interface Quantity	1
Interface Type	Pluggable
Voltage Level Standard	RS-485
Protocol Type	ModbusRTU Master\Slave, Free ports
Transmission Mode and Frame Format	RTU
Supported Function Codes	01, 02, 03, 04, 05, 06, 0F, 10 (in hexadecimal)
Maximum Number of Supported Slave Stations	Connecting 32 Modbus Slave Stations
Cable Impedance	120 Ω
Communication Rate	Supporting 1200, 2400, 4800, 9600 (default), 19200, 38400, 57600, 115200bps, configurable
Parity Check	Odd, even, or no parity bit (configurable)
Trigger Mode	Supporting trigger mode to write a function
Diagnostics Function	Supporting diagnostic reporting (including diagnostics of the status of each slave station)
Isolation	Isolation between the field and the system
Real-time Clock	
Data Format	Year: Month: Day: Hour: Minute: Second, BCD code
Clock Accuracy	≤ ±60 s/month, supporting time synchronization
Power-off Hold-up Time	1 Year (Needs to be equipped with an RTC battery)
Others	
Power-off Data Preservation	Support
Time Synchronization	Supporting NTP time synchronization
Log Function	Minimum of 10,000 logs
Module Protection Level	IP20
Time from Module Startup to User Program Initiation	≤ 30s
Environment Conditions	
Operating Environment Temperature	-20~60°C
Operating Environment Relative Humidity	5~95% Non-condensing
Storage Environment Temperature	-40°C ~70°C
Storage Environment Relative Humidity	5~95% Non-condensing

Catalog

CPU Module



Type	Module Name	Specification			Model	Certification	Dimensions W×H×D (mm)
		The Minimum Servo Cycle	The Maximum Shafts	Connected Slave Stations			
Controller module	CPU module	500 μs	64	300	LX-CU500	CE	56×109×90
	Ring network CPU module	500 μs	64	300	LX-CU500	CE	56×109×90



Digital Input Module

Type	Module Name	Specification				Model	Certification	Dimensions W×H×D (mm)
		Channels	Channel Type	Channel Voltage	Channel Response Time			
DI module	16-channel PNP DI module (24VDC)	16	PNP	Logic 1 signal (minimum): 3mA at 11VDC Logic 0 signal (minimum): 1mA at 5VDC	0.5ms	LX-DI002	CE	12×100×71
	16-channel NPN DI module (24VDC)	16	NPN	Logic 1 signal (minimum): 1mA at 5VDC Logic 0 signal (minimum): 3mA at 11VDC		LX-DI001	CE	
	8-channel DI module (5VDC)	8	PNP	Logic 1 signal (minimum) >2.4 DC (1mA) Logic 0 signal (minimum) <0.8DC (<1mA)	0.1ms	LX-DI005	CE	

Digital Output Module



Type	Module Name	Specification					Model	Certification	Dimensions W×H×D (mm)
		Channels	Channel Type	Maximum Load Current	Maximum Load Voltage	Channel Response Time			
DO module	16-channel DO module	16	High-side/low-side (configurable)	0.5A/tag 4A/module	24 V DC	T _{on} :120μs T _{off} :300μs	LXD0003	CE	12×100×71
	8-channel DO module (5VDC)	8	High-side output	8mV/tag 64mA/module	5 V DC	0.15 ms	LXD0005	CE	
	4-channel relay DO module	4	Dry normally open contact	1A@230VAC 3A@30VDC	230VAC /30VDC		LXD0004	CE	



Position Interface Module

Type	Module Name	Specification			Model	Certification	Dimensions W×H×D (mm)
		Channels	Main Unit I/O Quantity	Maximum Channel Input Frequency			
Incremental Encoder Input Module	2-channel 5V Incremental encoder Input module	2	6DI	5MHz	LX-ECI001	CE	24×100×71
	2-channel 24V Incremental encoder Input module	2	6DI	200KHz	LX-ECI002	CE	24×100×71



Pulse Output Module

Type	Module Name	Specification			Model	Certification	Dimensions W×H×D (mm)
		Channels	Main Unit I/O Quantity	Maximum Channel Input Frequency			
Pulse Output Module	2-channel pulse output module	2	3DI, 3DO	4MHz	LX-PO001	CE	24×100×71



Encoder Module

Type	Module Name	Specification				Model	Certification	Dimensions W×H×D (mm)
		Channels	Encode Methods	Communication Baud Rate	Compatible Encoder Model			
Encoder module	2-channell SSI absolute value encoder module	2	Configurable with single-turn or multi-turn	2Mbps, 1.5Mbps, 1Mbps, 500Kbps, 400Kbps, 300Kbps, 250Kbps(default), 200Kbps, 100Kbps, 50 Kbps (Depending on whether encoder is compatible)	SSI Interface bit width: 8 bits to 32 bits default: 25 bits	LX-SSI001	CE	26.8×100×71



Temperature Input Module

Type	Module Name	Specification					Model	Certification	Dimensions W×H×D (mm)
		Channels	Input	Resolution	Channel Accuracy	Transfer Time			
Temperature Input module	4-channel RTD AI module	4	RTD	0.1% F.S.@ (Full Scale)	< ±0.5 °C (Pt sensors, 3-wire) < ±0.9 °C (Ni sensors) < ±1 °C (Pt sensors, 2-wire)	200ms/channel	LX-RTD001	CE	12×100×71
	4-channel TC AI module	4	TC voltage Input	0.01°C (TC) 0.001mV (Voltage)	mV: ±0.1%F.S. B: ±8.5°C /C: ±6.2°C /E: ±2.5°C / J: ±2.7°C /K: ±3°C /N: ±3°C / R: ±6.7°C /S: ±7.1°C /T: ±2.9°C	200ms	LX-TC001	CE	
	4-channel high accuracy TC AI module	4	TC voltage Input	0.1°C (TC) 0.001mV (Voltage)	mV: 0.05%F.S R: ±1.0C/ S: ±1.0° C/ B: ±1.5° C/ J: ±0.5° C/ T: ±0.5° C/ E: ±0.4C/ K: ±0.4° C/ N: ±0.6° C/ C: ±0.5C	4-channel 200ms 2-channel 100ms	LX-TC601	CE	



Voltage Distribution Module

Type	Module Name	Input Voltage	Maximum Current	Model	Certification	Dimensions W×H×D (mm)
Voltage Distribution Module	16-channel Positive 24V Voltage Distribution Module	DC24V (19.2V~28.8V)	10A/channel, 10A/module	LX-AUX002	CE	12×100×71
	64-channel GND Voltage Distribution Module	0V	10A/channel, 10A/module	LX-AUX001	CE	



Analog Input Module

Type	Module Name	Specification							Module	Certification	Dimensions W×H×D (mm)
		Channels	Input Range	Resolution	Accuracy	Input Method	Transfer Time	Input Impedance			
Voltage/ current AI module	8-channel voltage AI module	8	0-10V -10-10V	24"	±0.3% F.S (Full Scale)	Single-end differential	330µs/channel	>1MΩ	LX-AI002	CE	12×100×71
	4-channel voltage AI module	4	0-10V -10-10V			Single-end differential			LX-AI001	CE	
	4-channel current AI module	4	0-20mA 4-20mA			Single-end differential			LX-AI003	CE	



Analog Output Module

Type	Module Name	Specification						Module	Certification	Dimensions W×H×D (mm)
		Channels	Input Range	Resolution	Accuracy	Transfer Time	Carrying Capability			
Voltage/ current AO module	4-channel voltage/ current AO module	4	0-10V -10-10V 0-20mA 4-20mA	16"	±0.1%F.S (full scale)	100µs/point	Current mode< 600Ω voltage mode> 1KΩ	LX-AO003	CE	12×100×71
			8-channel voltage AO module							



Coupler Module

Type	Module Name	Communication Rate	Interfaces	Interface Type	Standard	Model	Certification	Dimensions W×H×D (mm)
Coupler module	Coupler	100Mbps	2	RJ45	802.3	LX-IM001	CE	40×107×84
	End coupler		1	RJ45	802.3	LX-IM002	CE	20×100×69



Communication Module

Type	Module Name	Channels	Interface Type	Standard	Model	Certification	Dimensions W×H×D (mm)
Communication module	2-channel RS-232 serial port communication module	2	Terminal	RS-232	LX-CM001	CE	12×100×71
	2-channel RS-232 serial DB9 communication module	2	DB9	RS-232	LX-CM002	CE	24×100×71
	2-channel R5-485 serial port communication module	2	Terminal	R5-485	LX-CM003	CE	12×100×71
	2-channel RS-485 serial DB9 communication module	2	DB9	R5-485	LX-CM004	CE	24×100×71
	DeviceNet slave communication module	1	Terminal	CAN	LX-CM005	CE	24×100×69
	DeviceNet master station communication module	1	Terminal	CAN	LX-CM006	CE	24×100×69
	CPU coprocessor module (special port)	2	RJ45	IEEE802.3	LX-CM010	CE	56×110×90
	EtherCAT slave station communication module	2	RJ45	IEEE802.3	LX-CM020	CE	24×100×69



Power Supply Module

Type	Module Name	Input	Maximum Current of the System Side	Maximum Current of the Field Side	Model	Certification	Dimensions W×H×D (mm)
Power supply module	Power relay module	24 V DC (19.2 V - 28.8 V)	1.5 A	10 A	LX-PM003	CE	12×100×71

Customers in Mind with Sincerity