XINJE

EtherCAT | CANopen | Ethernet | CODESYS

Programmable Controller XD / XL / XG / XS

Super product lineup • Provide all-round control solutions

Industrial automation trusted partner

XINJE Wechat

XINJE

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PLC Overview

XG series Medium-sized PLC

XG series medium-sized PLC has a brand-new appearance design, compact structure, lightweight and intuitive, with the advantages of fast speed, larger capacity and significantly enhanced functions, so as to provide customers with more perfect solutions and create higher quality.

XD series Small-sized PLC

XD series small-sized PLC has the characteristics of fast speed, stable performance, complete functions and wide application fields, which can meet the diversified needs of users.

XL series Slim type PLC

XL series slim type PLC card design, ultra-thin appearance, compact and practical, outstanding cost performance, can meet most of the functional requirements in a smaller space.

New products NEW

XDH / XLH Upgraded EtherCAT motion control PLC

- 2 ~ 4MB super large program capacity
- Dual network ports, supporting Ethernet and EtherCAT communication
- Support 3-axis linear / arc / spiral interpolation, electronic CAM
- 4-channel high-speed counting input and 4-channel high-speed pulse output

XS3 / XSDH / XSLH PLC based on CODESYS

- Fully support PLCopen programming specification
- Many standard function libraries can be referenced
- Develop proprietary function blocks and instruction libraries
- EtherCAT motion control
- EtherCAT remote IO
- 32 channels synchronous electronic CAM
- Ethernet communication
- Online download

XL5N The first built-in CANbus PLC

- Built in two channels independent CAN communication
- Support free format communication of CANopen and CAN
- The communication speed can up to 1Mbps
- Simple wiring and linear topology

XS Series CODESYS Controller

Developed based on CODESYS platform, covering medium-sized, small and slim product lines

Medium-sized PLC
XS3-26T4

Small-sized PLC
XSDH-60A32-E

Slim type PLC
XSLH-30A32
(Under development)

1 Network Control

- With its own Ethernet communication port, it is easy to build an intelligent network system

2 Multiple Communication Ports

- RS232, RS485, RJ45, realize rich communication functions, and can connect external equipment such as frequency converter and instrument

3 High Speed Operation

- Cortex-A8 processor and 1GHz main frequency are selected to quickly realize data processing

4 High Speed Positioning

- It is equipped with 4-axis positioning control function as standard, and the speed can reach 100kHz

5 High Speed Signal Acquisition

- Standard 4-channel 200kHz high-speed counter
- High speed control is realized through a simple high-speed counting instruction function block

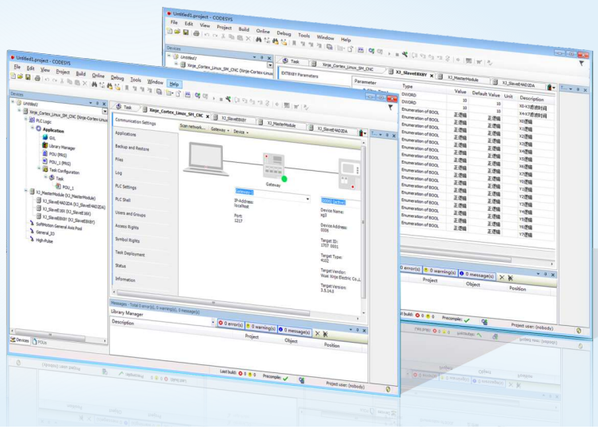
6 Strong Scalability

- It can be equipped with rich I/O expansion modules, analog input and output modules and temperature control modules to easily realize analog control for various purposes, with a maximum of 16 expansion modules

Based on CODESYS platform, the programming efficiency is significantly improved

CODESYS

- Fully support PLCopen programming specification
- Many standard function libraries can be referenced
- Develop Xinje proprietary function blocks and instruction libraries



CANbus Communication

Fast networking, simple wiring and strong anti-interference

CANbus is a fieldbus commonly used in industrial control. At present, it has established standards in a wide range of industrial communication, such as mechanical engineering, drive systems and components, medical equipment, building automation, transportation, etc.

PLC with CAN communication function

XL5N-32T

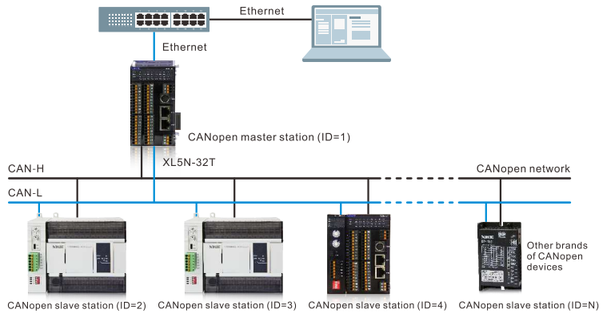
Communication expansion ED module
(use with PLC)

XD-COBOX-ED

XL-COBOX-ED

Network topology

When XD/XL series PLC is connected to CANopen network, it needs to cooperate with CANopen communication modules XD-COBOX-ED and XL-COBOX-ED. This module can be used as master station or slave station of CANopen network.



Communication specification

Item	Specification
Transmission mode	CAN
Electrical isolation	500VDC
Transmission cable	Two communication cables, one shielded wire and one grounding wire
Information type	PDO / SDO / SYNC / Emergency / NMT
Serial transmission speed	10 kbps~1 Mbps
Communication distance	25m~5000m The higher the communication rate, the shorter the distance

Highlight advantages

High communication rate

Up to 1Mbps.

Communication node

Up to 64 nodes.
When 1M communication rate is adopted, the maximum distance between nodes is 25m.

Heartbeat protection

The powered on slave station periodically sends a message called heartbeat, so that the master station can confirm whether the slave station fails and whether it is separated from the network. When the master station does not receive the heartbeat message sent by a slave station within the heartbeat consumption time, it will be considered that the slave station is disconnected and trigger the double flashing of the error indicator.

System reliability

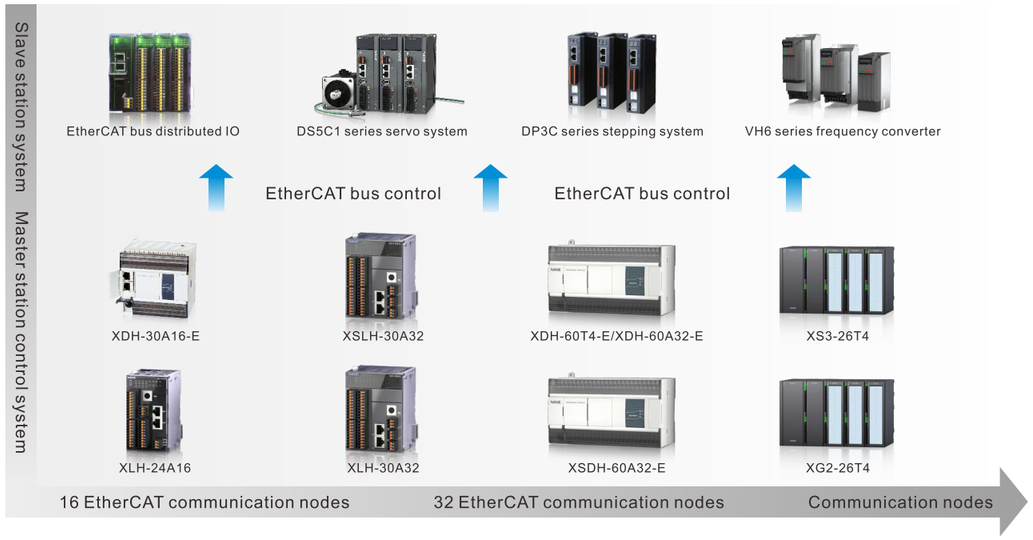
XD-COBOX-ED/XL-COBOX-ED/XL5N-32T are equipped with 120Ω terminal resistance dial switch to enhance the reliability of CAN communication and eliminate the reflection interference of CANbus terminal.

Easier wiring

When accessing the CANbus network, the linear topology is adopted. Only connect the terminal CAN_H to CAN_H and the CAN_L to CAN_L to establish communication.

EtherCAT Bus Control

More communication nodes, real-time performance and stability are greatly improved



Highlight advantages

Communication rate and distance

Xinje special network cable can be used, and the maximum length between communication nodes is 100m. The fastest synchronization cycle is 500μs below 16 axes and 1ms below 32 axes.

Communication nodes

Up to 32 nodes communication is supported in an EtherCAT bus control system.

System scalability

One click scanning identifies the number of slave devices, and the node address is automatically set. The device only needs to rescan after changing the node to adjust the node position, which has simple structure and flexible application.

Accuracy and reliability

EtherCAT system adopts distributed clock. Through the calibration mechanism of master clock and slave clock in the system, the clock jitter is far less than 1μs. Because the synchronization is realized by hardware, the reliability of EtherCAT is guaranteed.

Openness

EtherCAT is an open real-time Ethernet communication protocol. Any slave equipment supporting standard EtherCAT communication protocol can communicate with XDH, XLH, XG2, XS3. It supports 2-channel touch probe function, position, speed, torque and other control modes, and is widely applicable to various industry applications.

The wiring is simple and low installation cost

Thanks to the simple linear structure of EtherCAT, EtherCAT control system does not need hub and switch, the wiring is very simple, the installation cost is low, the number of engineering design and drawings, the engineering time for laying cables and hardware management documents are reduced.

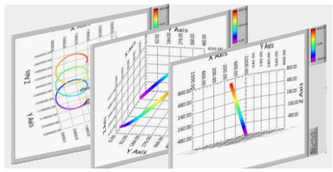
Communication specification

Item	Specification
Physical Layer	100BASE-TX(IEEE802.3)
Baud rate	100[Mbps] (full duplex)
Topology	Line
Connection cables	JC-CA twisted pair
Cable length	Max 100m between the nodes
Communication port	RJ45
Cyclic time (DC communication cycle)	500,1000,2000,4000[μs]
Communication object	SDO [service data object], PDO [process data object]
Maximum number of PDO allocated in a single station	TxPDO：4　　RxPDO：4
Maximum bytes of single station PDO	TxPDO：32[byte]　RxPDO：32[byte]

Up to 32 axes synchronous motion is supported. Compared with the traditional bus control, EtherCAT has shorter control cycle, higher bandwidth utilization and more flexible system structure, which can meet the control needs of most customers.

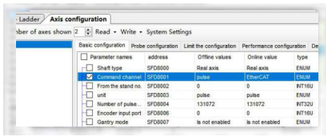
3 axes straight line, circular arc, spiral interpolation

It can realize 3-axis linear interpolation, arc interpolation and spiral interpolation, which is suitable for high-precision and high-speed positioning applications.



EtherCAT motion control command can realize local pulse output

In order to unify the application habit of motion control command, H motion control command can be used to realize the axis motion control of EtherCAT bus, and this command can also be used to realize the output of local pulse.



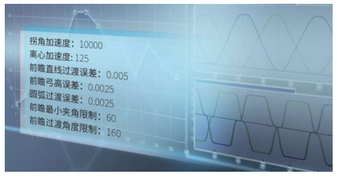
Electronic CAM

The electronic CAM function is favored by users because its trajectory is easy to change and flexible. It can easily change the machining trajectory according to the demand without cumbersome changes to the mechanical CAM.

The system using electronic CAM has higher machining accuracy and flexibility, and can effectively improve production efficiency. At present, it has been widely used in capping machine, pillow packaging machine, bottle blowing machine and other industries.

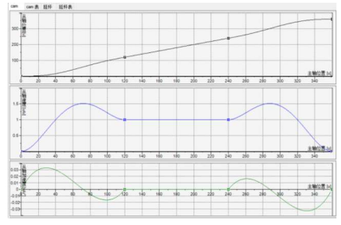
Forward-looking thinking and scientifically control the motion quality

In view of the possibility of time lag of some parts in the system, the forward-looking setting can effectively ensure the machining accuracy and speed.



The simple pulse command can realize the movement of EtherCAT communication axis

A_PLSF, A-DRVI, A_DRVA, A_PLSR, A_FOLLOW, A_ZRN are added to the single axis motion control command, which perfectly inherits the writing habit of the PLC pulse axis motion control command, which is convenient for users to quickly understand the application.



Typical application scheme based on EtherCAT bus

With the improvement of automation level and manufacturers' pursuit of more efficient production process, EtherCAT bus technology has obtained a wider application space, such as electronics, packaging, chemical industry, photovoltaic and other industries.

1 Stator Inner Winding Machine

The equipment adopts XDH series PLC to complete the control of 6 stations and 10 DS5C series servo EtherCAT motion bus. The scheme has high winding speed, which can be increased according to the wire diameter, and the maximum speed can reach 1100rpm. At the same time, the arrangement of wires is neat and beautiful without crossing. When winding, the electronic CAM function is used to realize multi-axis cylinder linkage motion, which greatly improves the efficiency.

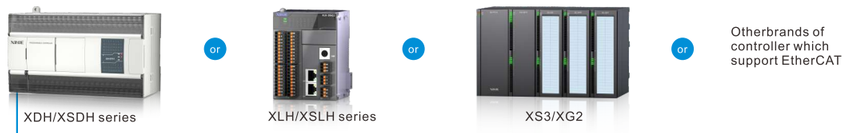
2 Photovoltaic Module Automatic Production Line

XDH series motion control PLC and DS5C/DS5C1 servo system are used in the automatic production line of solar photovoltaic modules, glass loading machine, typesetting machine, glass lamination, glass repair, edge cutting machine and blanking equipment on the curing line. Controlled by EtherCAT bus, the servo has higher motion accuracy, faster response speed, simple wiring and convenient maintenance.

EtherCAT Bus Distributed IO

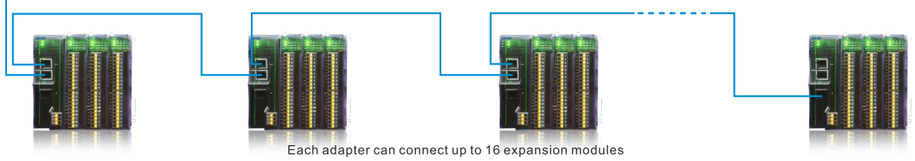
High real-time performance, compact structure and diversified combination

Xinje EtherCAT bus distributed IO is small in shape and adopts plug-in structure, which is composed of LC3-AP adapter and XL series modules. Bus networking can be carried out for multiple modules to flexibly expand IO points and analog quantity. Through strict electromagnetic compatibility test, it is safe and reliable.



EtherCAT

The number of slave station level connections is determined by the performance of EtherCAT master station. At present, Xinje PLC can realize up to 32 slave station level connections



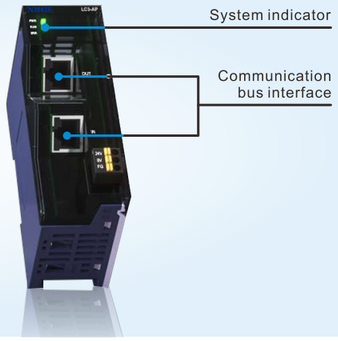
Each adapter can connect up to 16 expansion modules

*Note: Follow the principle of bottom in and top out when connecting.

LC3-AP adapter

LC3-AP adapter supports EtherCAT bus communication protocol and can realize seamless connection with most EtherCAT master stations such as TwinCAT and Codesys.

- A single adapter module can hook up to 16 XL series modules and support up to 512 signal points.
- A variety of status diagnosis functions and status indicator lights are designed.
- Screw free terminal is adopted, which is convenient and reliable.
- The 45 degree inclined Ethernet port design reduces the stress on the Ethernet port and increases the reliability of the product.



Technical specifications

① General specifications

Item	Specification
Using environment	No corrosive gas
Rated voltage	DC24V
Allowable voltage range	DC21.6V~26.4V
Input current	120mA DC24V
Allowable instantaneous power off time	10ms DC24V
Impact current	10A DC26.4V
Working temperature	0℃~55℃
Ambient humidity	5~95%RH
Installation	It is directly installed on the guide rail of DIN46277 (width 35mm)

Item	Specification
Ground	The third kind of grounding (not common grounding with strong current system)

② Communication parameters

Item	Specification
Bus protocol	EtherCAT
Interface type	Industry Ethernet
Connection mode	2*RJ45
Communication rate	100Mb/s

Selection guide

① L series adapter

Model	Description
LC3-AP	EtherCAT communication adapter

② Accessory

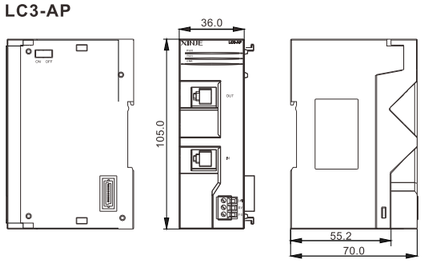
Model	Description
XL-ETR	Terminal resistance. When the external expansion modules is greater than or equal to 5, the terminal resistance module must be used together.
XL-P50-E	Power module. Independent power supply ensures the normal operation of the module under a good and reliable power supply system. This module is optional.

③ XL series module

Item	Description
XL-E8X8YR	8 channels digital input (NPN), 8 channels relay output
XL-E8X8YT	8 channels digital input (NPN), 8 channels transistor output
XL-E16X	16 channels digital input (NPN)
XL-E16YR	16 channels relay output
XL-E16YT	16 channels transistor output
XL-E16X16YT	16 channels digital input (NPN), 16 channels transistor output
XL-E32X	32 channels digital input (NPN)
XL-E32YT	32 channels transistor output
XL-E4AD2DA	4 channels analog input (14-bit), 2 channels analog output (12-bit), I/O is voltage current optional
XL-E8AD-A	8 channels analog input (14-bit), current bipolar input
XL-E8AD-V	8 channels analog input (14-bit), voltage bipolar input
XL-E4DA	4 channels analog output (12-bit), current voltage is optional
XL-E4PT3-P	4 channels PT100 temperature measurement, with PID function (developing)
XL-E4TC-P	4 channels thermocouple temperature measurement, with PID function (developing)

Dimension (unit: mm)

LC3-AP



Ethernet Communication

Easily build industrial intelligent network

As the core control component of Ethernet system, Xinje provides models with different structures, supports a variety of controls, can be flexibly selected, and is applied to multi-axis positioning or motion control equipment. It can also be directly connected to the industrial network to reduce the system construction cost.

Small-sized PLC

XD5E Series

XDME Series

XDH Series

XSDH Series

Slim type PLC

XL5E Series

XLME Series

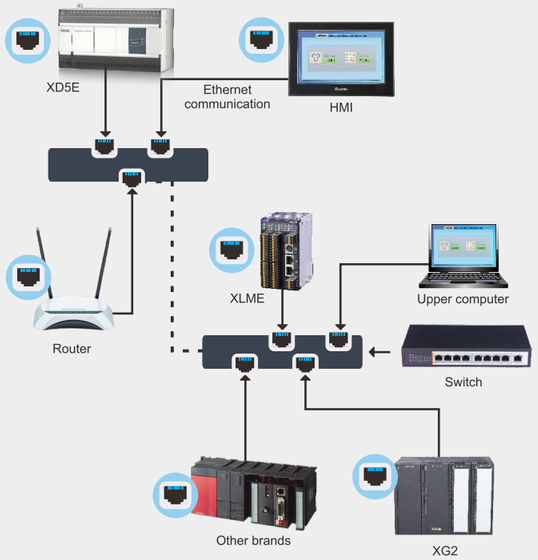
XLH Series

XSLH Series

Medium-sized PLC

XG2 Series

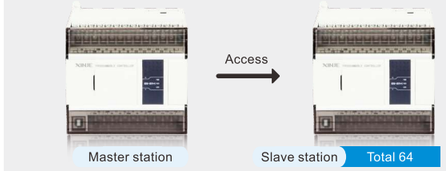
XS3 Series

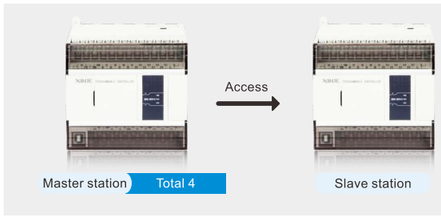


1 Support Access to Multiple Protocol Devices

MODBUS-TCP , TCP/IP , UDP protocol

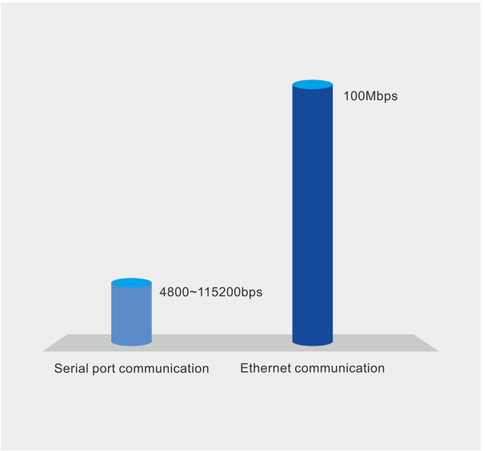
- When PLC is the master station, it can establish communication with 32 Modbus-TCP or TCP/IP slave stations and 32 UDP slave stations at the same time for data interaction.
- As a slave station, it can be accessed by four master stations for data interaction.





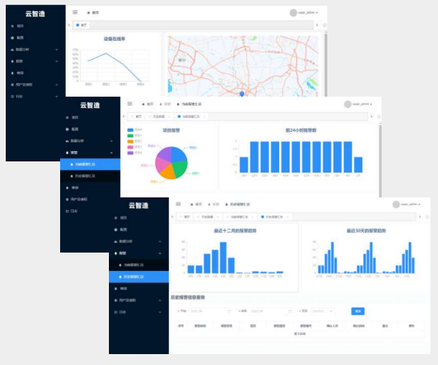
2 Faster and More Efficient Communication

- In XD/XG/XL series PLC software, PLC data can be monitored. Through Ethernet communication, better real-time data can be obtained and program uploading downloading is faster. At the same time, high-speed and stable Ethernet networking also provides a strong guarantee for high-capacity data interaction.



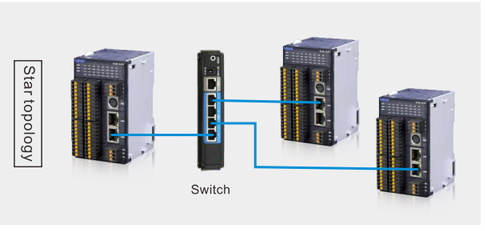
3 Support Access to Xinje Cloud

- After the remote communication function of Ethernet PLC is enabled, the device can be added in Xinje Cloud to realize the functions of remote data monitoring, data storage, data analysis and so on.



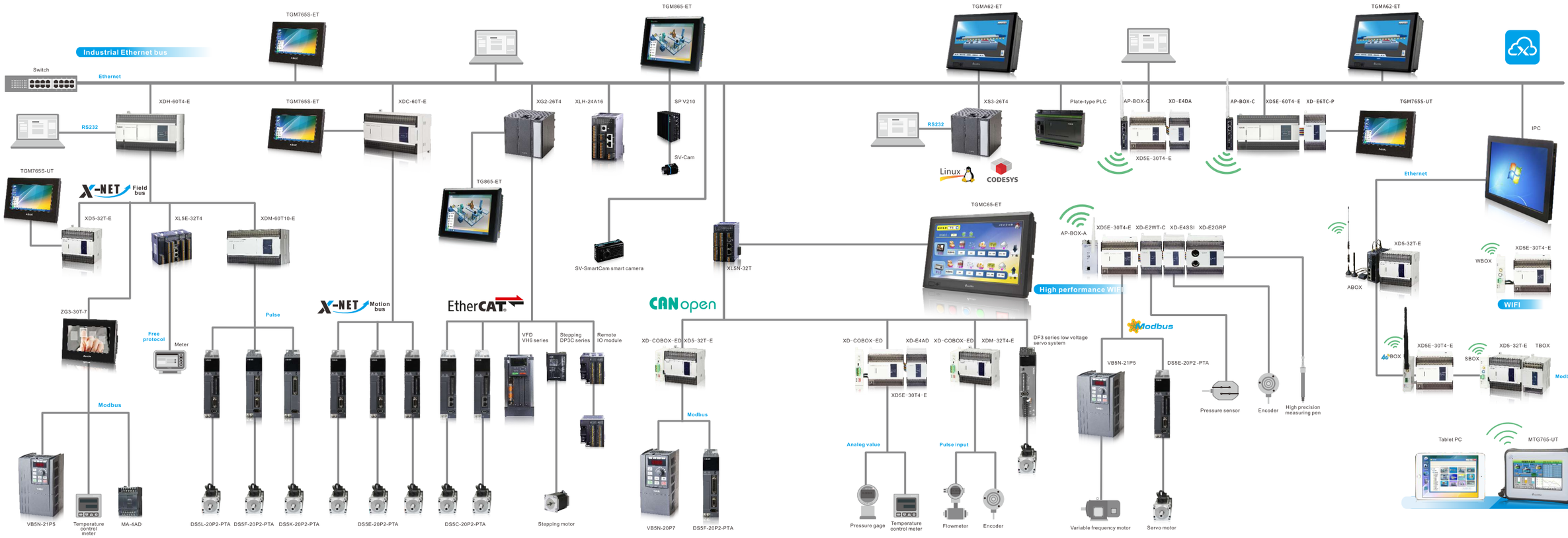
4 Flexible Network Topology

- Support linear and star wiring, with high wiring freedom



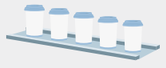
Integrated network structure diagram

Integrated Network Structure Diagram



Food processing

Testing equipment



Packaging equipment

Robot (multi-joint)

Workshop general control

Weighing equipment

Grinder equipment

Remote equipment monitoring

X-NET fieldbus

Xinje XL/XD series PLC supports X-NET fieldbus. It has the advantages of intelligence, digitization and strong stability. The maximum speed can reach 3M. It has the advantages of simple design, convenient wiring and easy reconstruction.

X-NET motion bus

Xinje XDC series PLC supports X-NET motion bus and can connect servo at high speed. It is suitable for multi-axis control. For high-speed and complex motion control requirements, it can control up to 20 axes at the same time, and the maximum speed can reach 3Mbps.

MODBUS

It supports standard MODBUS serial port communication, can be easily integrated with devices of various brands, supports free format communication, and can cooperate flexibly according to the actual situation on site.

EtherCAT communication

EtherCAT communication is a real-time Ethernet used for open network communication between master station and slave station. It has more axes than the traditional bus system, shorter control cycle, high bandwidth utilization and more flexible system structure. EtherCAT communication is currently mainly used in XG2, XDH, XLH, XS series PLC and can be widely used in various industries.

Canopen communication

Xinje PLC system can support CANopen communication, with fast networking, simple wiring, strong anti-interference and easy expansion. CANopen has established standards in a wide range of industrial communications, such as mechanical engineering, drive systems and components, medical equipment, building automation, transportation, etc.

Ethernet communication

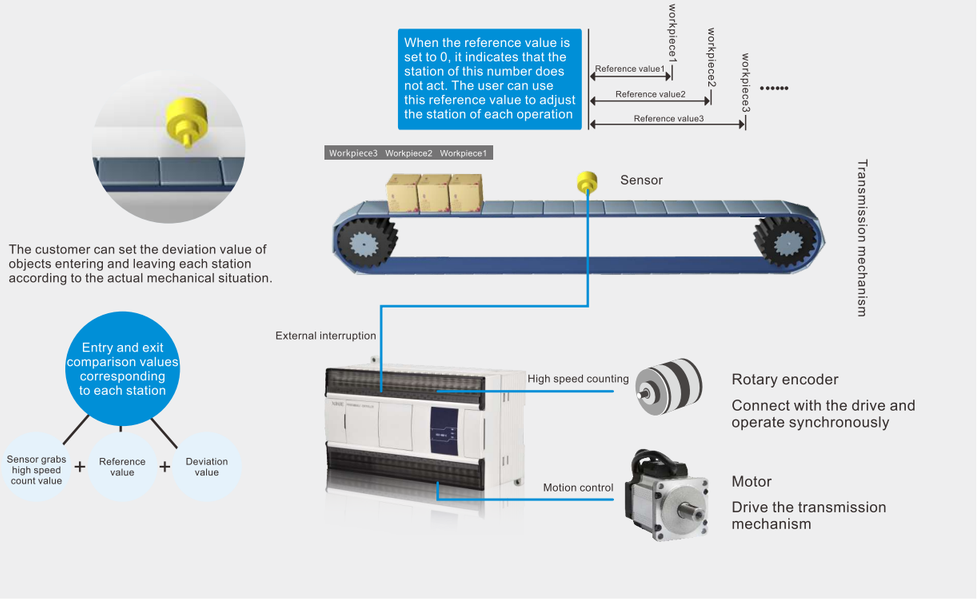
It supports Ethernet communication protocol. Automation equipment is interconnected through Ethernet, which can easily form an Ethernet control system, break the island state of traditional industrial automation, have higher communication performance and realize a wide open network.

Rich Special Functions

1 MSC Multistation Control

Suitable model Punching equipment / labeling machine

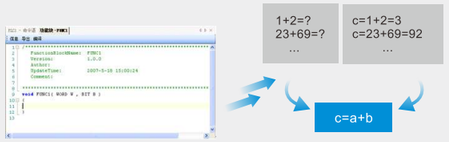
- Get the encoder value according to the trigger input, calculate and save the entry value and departure value of each station, compare the stored value of each workpiece of each station with the current value of the encoder, and output the result.



*Note: Some models do not support this function. Refer to the performance specifications for details.

2 C Language Function Block First in the industry

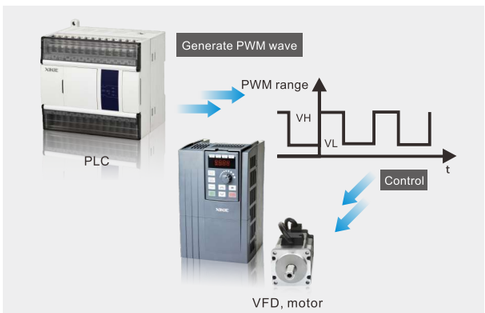
- The confidentiality of the program is better. When the user compiles the function module, he can call the module directly where needed, and the internal program encryption is not visible.
- It saves internal space, reduces workload and has high programming efficiency.
- Richer operation functions, including some functions supported by C language.
- Support local and global variables.



To realize the multiple summation function, the user does not need to input the addition and subtraction instructions repeatedly, but just write an addition function and call it.

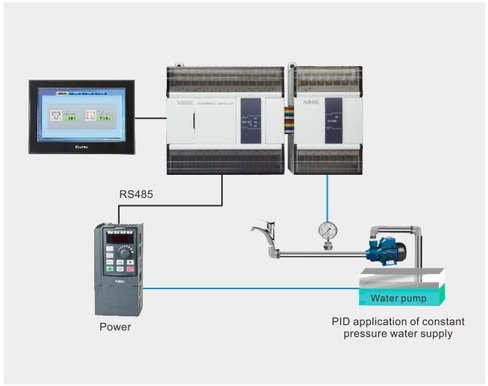
3 PWM Pulse Width Modulation

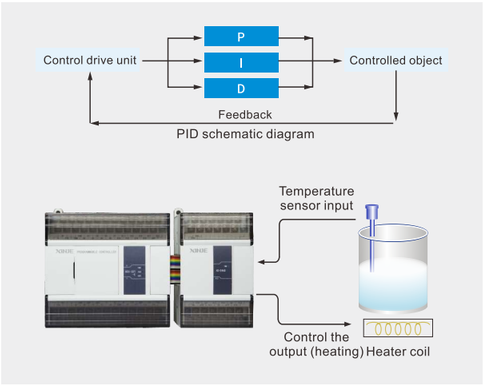
- Pulse width modulation can be realized by PWM command.
- The precision of pulse width subdivision can reach 1/65535
- With this function, the frequency converter and DC motor can be controlled.



4 Noumenon PID Control

- PLC body supports PID control instructions and provides self-tuning function, which is more flexible to use.
- Users can get the best sampling time and PID parameter value through self-tuning, so as to improve the control accuracy.
- It has two control methods: step response method and critical oscillation method, which can be applied to more occasions.





5 Precise Timing

- STR instruction can realize accurate timing in 1ms, and the timing range is $1\sim2^{32}$.
- When the precise timer reaches the timing value, a corresponding interrupt mark will be generated, and the interrupt subroutine can be executed. Each precise timer has a corresponding interrupt mark.

For example, in the application of filling machine, the filling capacity of liquid needs to be controlled by controlling the opening time of liquid valve. In order to improve the capacity accuracy of the liquid filled in the bottle, accurate timing can be used to control the opening time of the liquid valve.

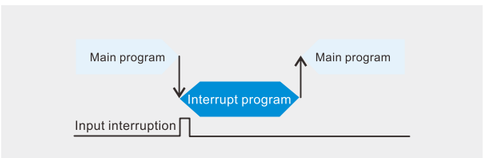
6 SD Card Storage

Suitable model XD5(except 16 points)/XDM

- XD5 (except 16 points), XDM series PLC can expand a SD card for data storage and backup. The SD card slot is located on the CPU board of PLC. When using, open the BD cover plate and insert the SD card into the card slot.
- The SD card is not installed when the PLC leaves the factory. The user needs to bring his own MicroSD (TF Card), and the card capacity must not be greater than 32GB.

7 Interruption Function

- XD series PLC has interrupt function. Some special operations can be realized by calling interrupt, which is not affected by PLC scanning cycle.
- The interrupt includes 100 segments of high-speed counting interrupt, 100 segments of pulse interrupt and timing interrupt.



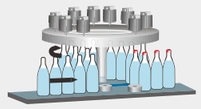
High Speed Pulse Output

Positioning control

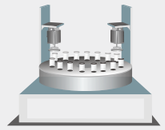
Transistor output PLC generally has 2 ~ 10 axis high-speed pulse output function, and the frequency can reach 100kHz.

Application

Capping machine

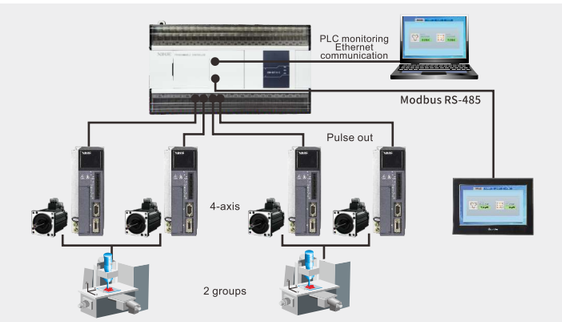


Glass grinder



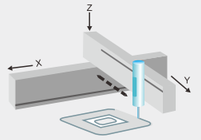
Motion control

XDM, XDME, XLME, XDH, XG series PLC have motion control function, support linear interpolation, arc interpolation, etc.

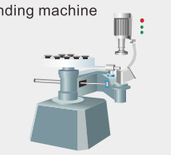


Application

Application of sealant

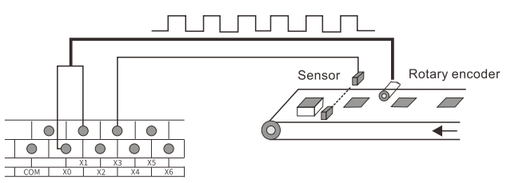


Edge grinding machine

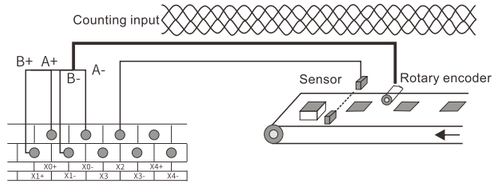


High speed counting input

PLC generally has 2 ~ 10 channels of high-speed counting functions, with single-phase up to 80kHz and AB phase up to 50KHz. It can be directly connected with rotary encoder to count the input of encoder.



XDH, XLH, XG2, XS3 series PLC single-phase/AB phase can up to 200KHz. XG2, XS3 support differential input mode.



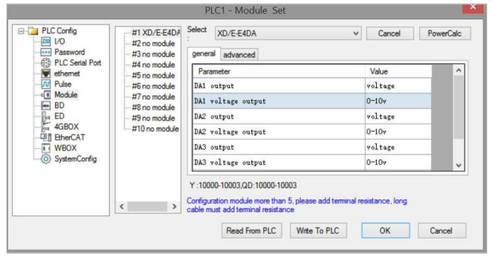
XDPPro

Support XD/XL/XG series

Easy to use configuration function

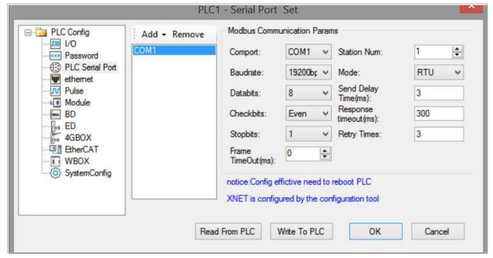
1 Module Configuration

- The connected network module, expansion module, expansion BD board and left expansion ED module can be configured directly.



2 Serial Port Configuration

- PLC serial port COM1~COM5 can be configured.
- Modbus-RTU, Modbus-ASCII, free format communication can be configured.

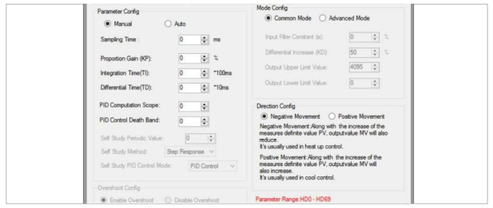


3 Flexible Pulse Function Configuration

- PLSR instruction integrates multiple pulse output modes, with more powerful functions and richer parameters
- 5 sets of different parameters can be configured to make programming more convenient

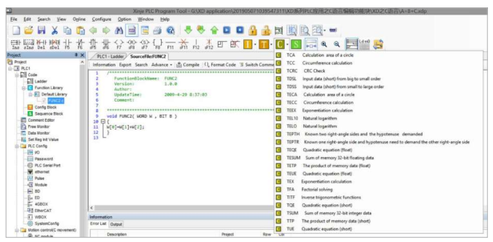
4 Complex Command Panel Configuration to Improve Programming Efficiency

- For instructions with many and complex parameters, such as PID, sequential function block, high-speed counting interrupt, a simple and easy instruction editing panel is provided. After setting the corresponding parameters, the instructions can be directly generated.



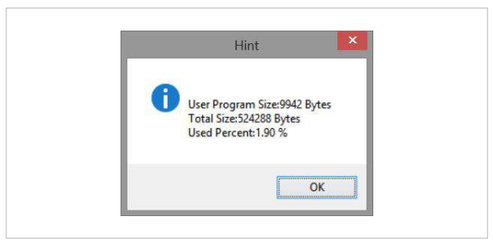
5 Strong Language Editing Ability

- Support ladder chart and command, the two can be switched at any time according to the user's programming habits.
- Built-in C language function block, which can be imported and exported freely.
- C language function block can be written directly in XDPPro software without switching to C language programming software.



6 Calculation of Program Occupied Space

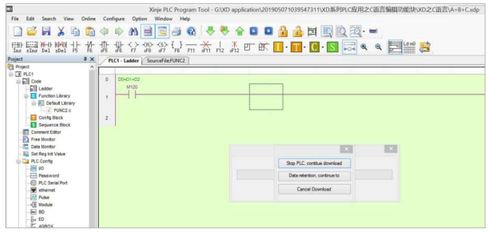
- Programmers can accurately grasp the utilization of program capacity in PLC.



XDPPro

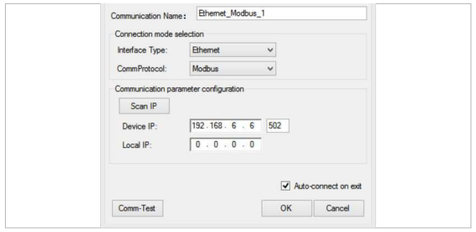
7 Online Download

- Customers can update the program at any time, and the program operation will not be affected during the download process.
- When PLC is running, the control operation of the system will be affected immediately after the new program is downloaded online.
- Applicable model: XD5E-60T4, XD5E-60T10, XDME-60T4, XDME-60T10, XDH series, XLH series, XL5E-16T, XG2 series.



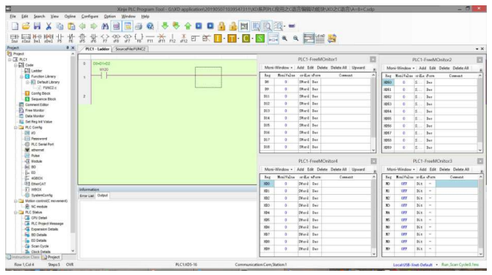
8 IP Adaptive Function

- XDPPro initiates the scanning request , **[scan IP]** with one click, modifies the corresponding IP address through the scanned IP, and completes the communication with Ethernet type PLC.



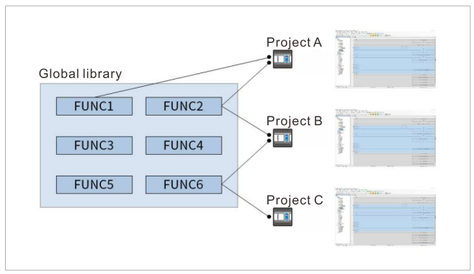
9 Multi-page Free Monitoring Function

- Users can freely monitor multiple data windows according to their classification habits.



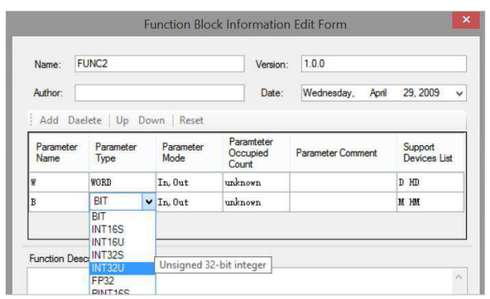
10 Function Library

- Summarize the common function components in multiple projects into one file for reference. The components of the library can be obtained for use in various projects.



11 Customized Function Formal Parameter Function

- The parameter types are rich and diverse, and the data processing is more convenient.

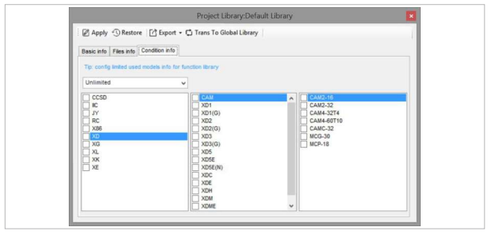


- The input-output interface of the function is added to further optimize the function structure.

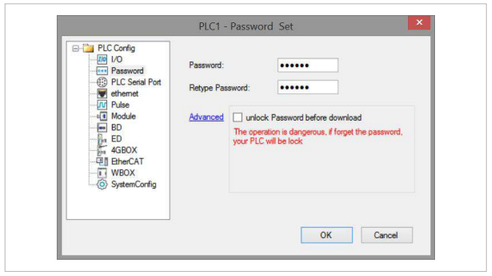
12 Multiple Security Functions

- The advanced saving function is added. You can choose whether to keep the program comments confidential. At the same time, using the advanced saving function can make the C function block written by the customer unable to upload, so as to enhance the confidentiality of the program.

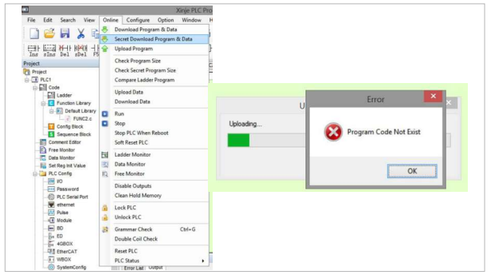
- When exporting the C function block, the user can freely choose the list of prohibited or allowed models.



- The optimized password function can not only limit the upload of PLC and protect the legitimate intellectual property rights of users, but also add password protection to the download of programs to effectively prevent the programs in PLC from being damaged.

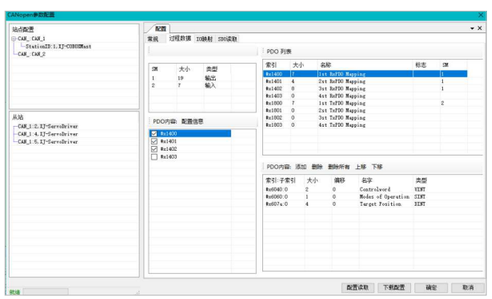


- In secret download mode, the PLC program will not be uploaded to protect the user's intellectual property rights.



13 CANopen System Configuration Interface

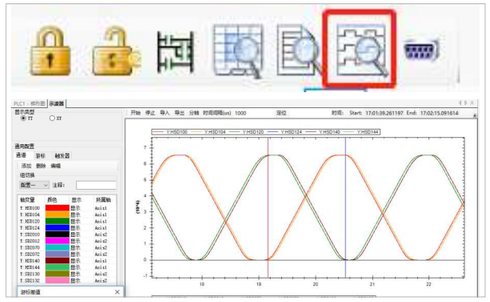
- Provide users with CANopen configuration information window, which makes programming more convenient and fast.



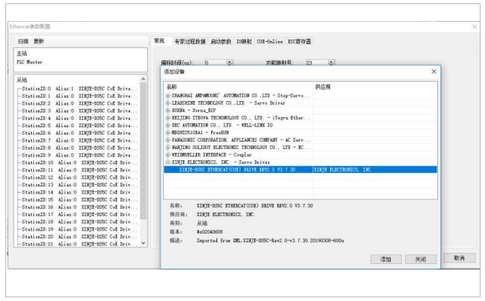
XDPPro

14 EtherCAT System Configuration and Programming Interface

More intuitive monitoring system, supporting oscilloscope function



EtherCAT configuration information window is provided to simplify programming



Axis complete configuration and monitoring function

- Provide customers with a complete information interface that can monitor the current motion of the axis, such as speed, various status bits, etc.

H instruction address management function

- For the complex H motion control command project, it can easily realize the systematic management of command address and optimize user programming.

Medium PLC

Overall improvement of speed, capacity and function

XG, XS series medium-sized PLC, with faster processing speed, stronger motion control function, higher reliability and more compact structure, provides users with more perfect solutions and creates higher value.

Function features

New appearance design, high space utilization	Ethernet port communication is convenient, fast, powerful and adaptable	CPU processing speed increased significantly	Higher reliability	Greater storage capacity

System composition

EtherCAT Motion Control Type

XG2 Series

The motion control type of medium-sized PLC provides customers with an ideal solution in bus motion control.

① 16MB program capacity
② 4 channels 100KHz pulse output
③ Max IO 1050 points
④ Basic instruction 0.005~0.01us
⑤ RS232&RS485 port
⑥ Linear/arc interpolation
⑦ Ethernet communication
⑧ EtherCAT communication
⑨ Follow up function
⑩ Support differential input
⑪ 3 axes linear, arc interpolation
⑫ 16 channels electronic CAM

XG2 series model list

Model						
	AC power supply			DC Power supply		
	Relay output	Transistor output	Transistor&relay mixed output	Relay output	Transistor output	Transistor&relay mixed output
NPN type	-	-	-	-	XG2-26T4	-

Performance parameter

Product series XG2-		26T4
Main body I/O	Total points	26
	Input points	18
	Output points	8
Max I/O points		1050
High speed positioning	Normal pulse output	4 axes
	Differential pulse output	-
High speed input	Single/AB phase mode	4 channels, max 200KHz
	Input mode	Differential input
Expansion capability	Right expansion module	16
	Left expansion module	-
	BD Board	-
Interruption	External interrupt	12
	Timing interrupt	20
	Other interrupts	High speed counting interrupt, pulse interrupt
Communication function	Communication port	1 RS232 port, 2 RS485 ports, 2 RJ45 ports
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication, Ethernet communication
Bus function		EtherCAT bus control
PWM pulse width modulation		-
Frequency measurement		-
Precise timing		-
Multi-station control		Support
Program execution mode		Cyclic scanning mode
Programming mode		Command, ladder chart, C language
Power failure holding		Use FlashROM
Basic instruction processing speed		0.005~0.01us
User program capacity (secret download mode)		16MB
Security function		6-bit ASCII password, secret downloading

Product series XG2-			26T4
Self diagnosis function			Power on self-test, monitoring timer, syntax check
Real-time clock			Built-in clock, lithium battery power supply, power down memory
Bit soft component	Input relay (X)		1280 points: X0~X77 / X10000~X11777 / X20000~X20177 / X30000~X30077
	Output relay (Y)		1280 points: Y0~Y77 / Y10000~Y11777 / Y20000~Y20177 / Y30000~Y30077
	Auxiliary relay	General M	700000 points M0~M699999
		Power-off retentive HM	48000 points HM0~HM47999
		Special SM	50000 points SM0~SM49999
	Flow	General S	80000 points S0~S79999
		Power-off retentive HS	4000 points HS0~HS3999
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s
		General T	50000 points T0~T49999
		Power-off retentive HT	8000 points HT0~HT7999
		Precise timing	26 points ET0~ET25 (not supported right now)
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647
		General C	50000 points C0~C49999
		Power-off retentive HC	8000 points HC0~HC7999
		High speed counter	40 points HSC0~HSC39
	Special coil for WAIT instruction		32 points SEM0~SEM31
Word soft component	Data register	General D	700000 points D0~D699999
		Power-off retentive HD	100000 points HD0~SD99999
		Special SD	10000 points SD0~SD9999
	FlashROM register	Power-off retentive FD	65536 points FD0~FD65535
		Special SFD	10000 points SFD0~SFD9999
		Security register FS	48 points FS0~FS47

*Note: ① Only the PLC with transistor output has high speed positioning function. ② The '-' in the table indicates that this function is not available.
③ Special use refers to being occupied by the system and cannot be used for other purposes.

New High Performance Model

XS3 Series

Based on Codesys programming platform, the programming efficiency is significantly improved.

XS3 series new medium-sized PLC supports PLCopen programming specification, and can reference many standard function libraries to develop proprietary function blocks and instruction libraries.

① EtherCAT motion control
② Support EtherCAT remote IO
③ 32 channels electronic CAM
④ Ethernet communication
⑤ Online downloading

Performance specification

Product model XS3-		26T4
Main body I/O	Total points	26
	Input points	18
	Output points	8
Max I/O points		1050
High speed positioning	Normal pulse output	4 axes, max 100KHz (not supported right now)
	Differential pulse output	-
High speed input	Single/AB phase mode	4 channels, max 200Khz
	Input mode	Differential input
Expansion capability	Right expansion module	16
	Left expansion module	-
	BD Board	-
Interruption	External interrupt	10
Communication function	RS232	1 port, can connect IP modification tool or communicate with other devices
	RS485	2 ports, Modbus, connect HMI and other communication devices
	RJ45 Port1	LAN1: Ethernet IP, TCP / IP, UDP, OPC UA, free format protocol, support program downloading and monitoring
	RJ45 Port2	LAN2: EtherCAT real-time bus master station
Bus motion control		EtherCAT bus mode, 32 axes
CAM control		EtherCAT bus mode, 32 axes
PWM pulse width modulation		-
Frequency measurement		-
Precise timing		-
Multi-station control		-
Programming mode		ST, SFC, FBD, CFC, LD and IL
Main processor		Dominant frequency 800MHz
User program capacity		32MB
Data capacity		32MB (including power off holding 6MB)

*Note: The '-' in the table indicates this model doesn't support this function.

XS3 Series model list

Model						
	AC power supply			DC Power supply		
	Relay output	Transistor output	Transistor&relay mixed output	Relay output	Transistor output	Transistor&relay mixed output
NPN type	-	-	-	-	XS3-26T4	-

Basic Unit General Specification

General specification

Item	Specification
Insulation voltage	Above DC500V 2MΩ
Anti-noise	Noise voltage 1000Vp-p 1us pulse 1 minute
Air	No corrosive and combustible gases
Ambient temperature	0℃~60℃
Ambient humidity	5%~95% (no condensation)
Installation	It can be fixed with M3 screws or directly installed on the rail
Ground (FG)	The third kind of grounding (not common grounding with strong current system)

Power supply specification

Item	Specification
Rated voltage	DC24V
Voltage allowable range	DC21.6V~26.4V
Input current (only for basic unit)	120mA DC24V
Allowable instantaneous power off time	10ms DC24V
Impact current	10A DC26.4V
Maximum power consumption	12W
Power supply for sensor	24VDC±10%

Input specification

XG2/XS3 series PLC input specification

XG2/XS3 series PLC supports NPN and differential signal input mode.

NPN mode specification

Item	Specification
Input signal voltage	DC24V±10%
Input signal current	7mA/DC24V
Input ON current	Above 4.5mA
Input OFF current	Below 1.5mA
Input reponse time	About 10ms
Input signal form	Contact input NPN open collector transistor (X2, X5, X10, X13, X14, X15, X16, X17, X20, X21)
Circuit insulation	Photoelectric coupling insulation
Input action display	LED lights when input is ON

Differential signal mode specification

Item	Specification
Input signal voltage	DC5V±10%
Input signal current	12mA/DC5V
Input ON current	Above 4.5mA
Input OFF current	Below 1.5mA
Input response feature	Max 200KHz
Input signal form	Differential input (X0, X1, X3, X4, X6, X7, X11, X12)
Circuit insulation	Photoelectric coupling insulation
Input action display	LED lights when input is ON

*Note: X0+, X0-, X1+, X1-; X3+, X3-, X4+, X4-; X6+, X6-, X7+, X7-; X11+, X11-, X12+, X12- are four groups of differential signal, which can be high speed counting terminals. To receive the collector signal, first convert the differential signal into collector signal through differential to collector board (DIFF-OC).

Output specification

General transistor output

External power supply		Below DC5~30V
Circuit insulation		Optocoupler insulation
Action indicator		LED indicator
Max load	Resistive load	0.3A
	Inductive load	7.2W/DC24V
	Light load	1.5W/DC24V
Min load		DC5V 2mA
Open circuit leakage current		Below .01mA
Response time	OFF→ON	Below 0.2ms
	ON→OFF	Below 0.2ms

Expansion Unit

XG, XS3 series medium-sized PLC can connect 1~16 different type and model of expansion modules.

General specification

Item	Specification
Using environment	No corrosive gas
Ambient temperature	0℃ ~ 60℃
Storage temperature	-20 ~ 70℃
Ambient humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	Directly installed on the guide rail of model XG-EB-Length (mm)
Dimension	130.0mm×40.0mm×133.4m

XG series I/O expansion module

When the number of main body I/O points cannot meet the use requirements, the I/O expansion module can be used.

Digital input module

Model	Function	Specification
XG-E16X	16 channels digital input	Compatible with NPN&PNP input The module does not need external power supply Input filtering time 1 ~ 50ms optional External wiring mode: 16X, 32X body include terminal strip 64X requires external terminal block Terminal wiring mode: the same to PLC body
XG-E32X	32 channels digital input	
XG-E64X	64 channels digital input	

Digital output module

Model	Function	Specification
XG-E16YR	16 channels relay outpu	The module does not need external power supply R: output relay T: output transistor R response time: below 10ms T response time: below 0.2ms R max load: resistive 3A inductive 80VA T max output current: each point 0.3A External wiring mode: 16YR, 16YT, 32YT body include terminal strip 64YT requires external terminal block Terminal wiring mode: the same to PLC body
XG-E16YT	16 channels transistor output	
XG-E32YT	32 channels transistor output	
XG-E64YT	64 channels transistor output	

Digital input output mixed module

Model	Function	Specification
XG-E8X8YR	8 channels digital input, 8 channels relay output	Compatible with NPN&PNP input The module does not need external power supply R: output relay T: output transistor R response time: below 10ms T response time: below 0.2ms R max load: resistive 3A inductive 80VA T max output current: each point 0.3A External wiring mode: the body include terminal strip Terminal wiring mode: the same to PLC body
XG-E8X8YT	8 channels digital input, 8 channels transistor output	
XG-E16X16YT	16 channels digital input, 16 channels transistor output	

XG series analog expansion module

① By expanding analog input/output module and temperature control module, XG series PLC can be applied to process control systems such as temperature, flow, liquid level and pressure.

② With the addition of PID regulation function, it has wider application, more flexible use and higher control accuracy.

③ XG-E8TC-P, XG-E8PT3-P module each channel can do independently PID controlling and self-tuning, and exchange information with the main body through FROM and TO instructions.

Analog input module (AD type)

Model	Input channel	Input signal	Specification
XG-E8AD-A-S	8	Current input: 0~20mA/4~20mA/-20~20mA	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Resolution 1/65535 (16-bit) Comprehensive accuracy ±1% AD filter coefficient 0~254 AD channel has the functions of short circuit, open circuit and over range detection Channel enable bit is added
XG-E8AD-V-S	8	Voltage input: 0~5V/0~10V/-5~5V/-10~10V	

Analog I/O mixed module (nADmDA type)

Model	Channel		Input/output signal	Specification
	Input	Output		
XG-E4AD2DA	4	2	Voltage input: 0~5V/0~10V/-5~5V/-10~10V Current input: 0~20mA/4~20mA/-20~20mA Voltage output: 0~5V/0~10V/-5~5V/-10~10V (external load resistor 2KΩ~1MΩ) Current output: 0~20mA/4~20mA (external load resistor less than 500Ω)	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Input resolution 1/16383 (14-bit) Output resolution 1/4095 (12-bit) AD filter coefficient 0~254 AD channel has the functions of short circuit, open circuit and over range detection Comprehensive accuracy ±1% Channel enable bit is added

Analog output module (DA type)

Model	Output channel	Output signal	Specification
XG-E4DA-S	4	Voltage output: 0~5V/0~10V/-5~5V/-10~10V (external load resistor 2KΩ~1MΩ) Current output: 0~20mA/4~20mA (external load resistor less than 500Ω)	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Resolution 1/65535 (16-bit) Comprehensive accuracy ±1% Channel enable bit is added

Temperature control expansion module

Model	Channel	Input signal	Specification
XG-E8PT3-P	8	Pt100 platinum thermistor (three wire system with compensation) Measuring temperature range -100ºC~500ºC(digital output range -1000~5000, signed 16-bit, binary)	Power supply for analog DC24V±10%, 50mA Control precision ±0.5% Resolution 0.1ºC Comprehensive accuracy ±1% (relative max value) PT conversion speed 650ms/8 channels TC conversion speed 450ms/8 channels PT filter coefficient 0~254 8 groups of independent PID parameters, support self-tuning function
XG- E8TC-P	8	K, S, E, N, B, T, J and R type thermocouple Measuring temperature range 0ºC~1300ºC(digital output range 0~13000, signed 16-bit, binary)	

Accessory

Special power supply module XG-P75-E

XG independent power supply ensures the operation of PLC in a good and reliable power supply system, which can prolong the service life of PLC.

Item	Content
Rated voltage	AC100V~240V
Allowable voltage	AC90V~265V
Rated frequency	50Hz~60Hz
Allowable instantaneous power off time	Interruption time≤0.5 AC cycle, interval≥1s
Impact current	Max 40A below 5ms/AC100V
	Max 60A below 5ms/AC200V
Max consumption power	75W

External terminal block

XG2-26T4, XS3-26T4, XG-E64X, XG-E64YT module need external terminal block, the following is suitable terminal and wiring cable for the module.

Product model	Terminal block model	Wiring cable model
XG2-26T4	JT-G26	JC-TG26-NN05 (0.5m) JC-TG26-NN10 (1.0m) JC-TG26-NN15 (1.5m)
XS3-26T4		
XG-E64X	JT-E32X	JC-TE32-NN05 (0.5m) JC-TE32-NN10 (1.0m) JC-TE32-NN15 (1.5m)
XG-E64YT	JT-E32YT	

*Note: ① When connecting, one end near the transparent heat shrinkable tube which wrapped the model name is connected to XG-E64YT, and the other end is connected to the terminal block, which cannot be reversed.

② One XG-E64X, XG-E64YT module need 2 special terminal blocks and 2 wiring cables.

U-shaped connector XG-EUC-1 / XG-EUCT-1

XG-EUC-1

The U-shaped connector is used to connect the medium-sized PLC with the expansion module, or the connection between expansion modules.

XG-EUCT-1

Based on the XG-EUC-1, the built-in terminal resistance is inserted into the expansion port of the last expansion module to improve the signal quality.

*Note: ① When more than 10 expansion modules are connected, XG-EUCT-1 is required. It is also recommended for occasions with strong electromagnetic interference.

② When connecting multiple expansion modules, XG-EUCT-1 can only be used in the last expansion location, and XG-EUC-1 can still be used in other locations.

Basic unit communication port accessories

Name	Model	Description	Product drawing
Communication/ programming cable	JC-EL-Length	Elbow XVP cable is only applicable to XG2, XS3 series PLC. Three specifications are available: JC-EL-25 (2.5m), JC-EL-50 (5m), JC-EL-100 (10m)	
USB convertor	USB-COM	For the interface conversion of DB9 female port and USB port	
USB printer cable	JC-UA-15	Special USB cable for Xinje products, black with double magnetic rings to improve anti-interference ability	
EtherCAT communication cable	JC-CB-Length	EtherCAT bus cable, for the second Ethernet port of XG2, XS3, XDH, XLH series PLC. Nine specifications are available: JC-CB-OP1 (0.1m), JC-CB-OP2 (0.2m), JC-CB-OP3 (0.3m), JC-CB-OP5 (0.5m), JC-CB-1 (1m), JC-CB-3 (3m), JC-CB-5 (5m), JC-CB-10 (10m), JC-CB-20 (20m)	

Mounting plate XG-EB Series

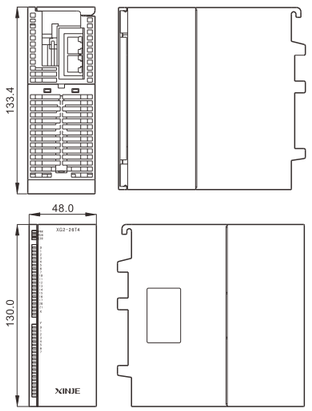
XG-EB series guide rail is selected for the installation of basic unit, expansion module and power module.

The following six specifications are available:

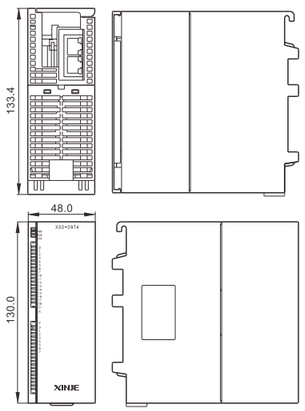
XG-EB-170 (170mm) , XG-EB-260 (260mm) ,
XG-EB-385 (385mm) , XG-EB-590 (590mm) ,
XG-EB-880 (880mm) , XG-EB-1500 (1500mm)

Dimension (unit: mm)

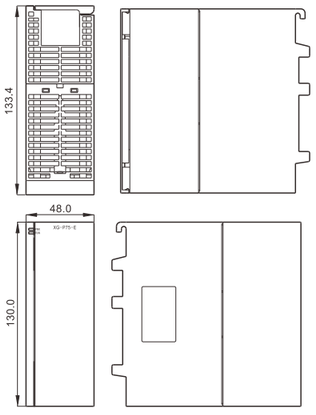
XG2 series basic unit



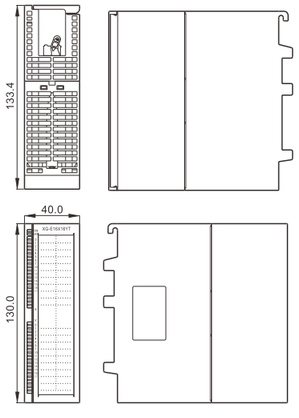
XS3 series basic unit



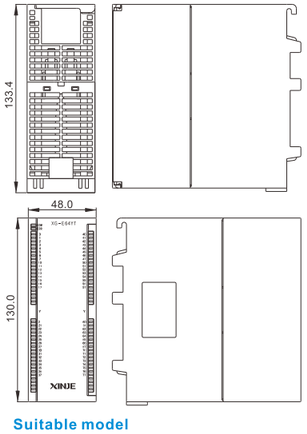
Power supply module



Expansion module



Suitable model



Suitable model

Module type	Digital value	Analog value
Model	16X	All
	32X	
	16Y	
	32Y	
	8X8Y	
	16X16Y	

Suitable model

Module type	Digital value
Model	64X
	64Y

Small-sized PLC

XD series small-sized PLC Fast speed, stable performance and powerful function

10 Sub-series to Meet Various Needs

High speed operation Fast data processing

Non-Ethernet type PLC

The basic instruction processing speed 0.02~0.05us, scanning time 10000 steps 0.5ms, program capacity 256kB~512kB, and processing speed are about 12-15 times that of XC series.

Ethernet type PLC

The basic instruction processing speed 0.01~0.03us, scanning time 10000 steps 0.2ms, program capacity 1MB~4MB, and processing speed are about 2-3 times that of XDM series.

Bus control High speed communication, cost saving

The bus network can be easily constructed through standard EtherCAT bus and CAN bus, and multi-device control can be realized with minimal wiring.

XDH series PLC has EtherCAT motion control master station function.

XL5N series PLC has CAN bus communication function.

Wide Range of Applications and Can Meet the Diversified Needs of Users

Network control

Ethernet series PLC is equipped with 2 Ethernet communication ports as standard to easily build an intelligent network system.

High speed pulse output

With 2~10 axes positioning control function

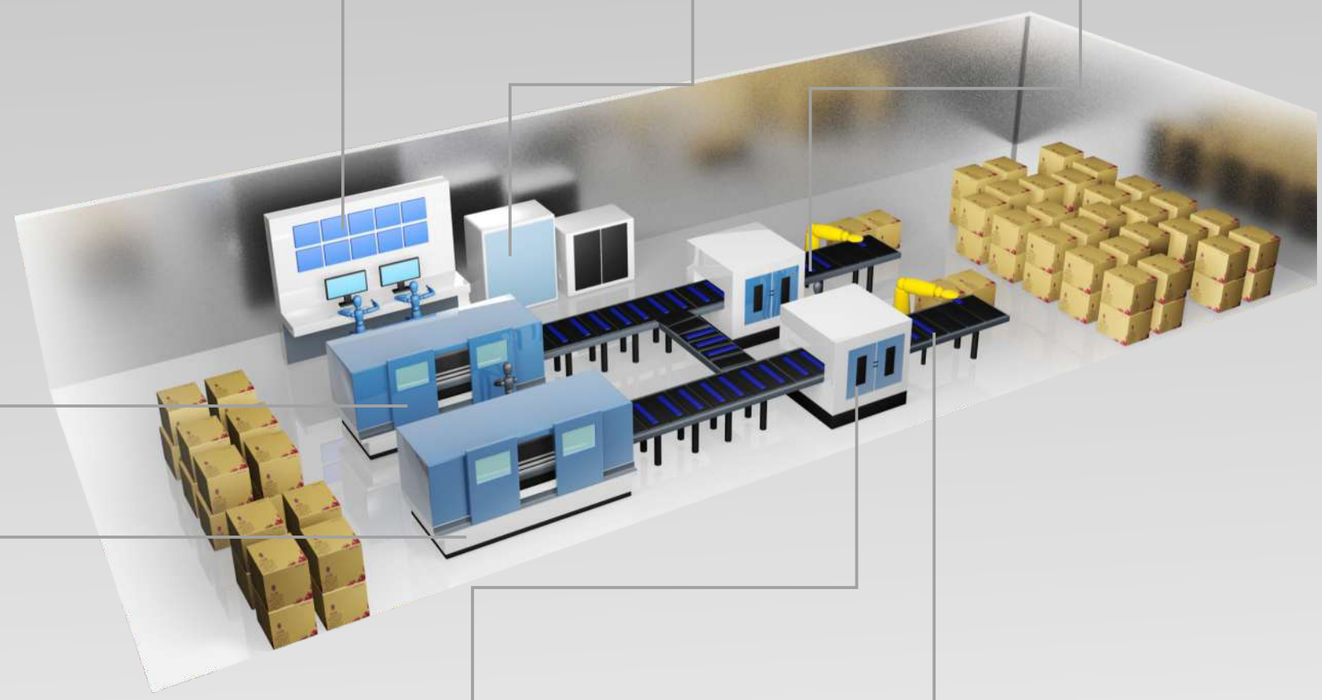
Up to 100KHz pulse output.

Pulse instruction is simple and powerful.

Multiple communication ports

Can realize rich communication functions

XD series PLC has 5 communication ports at most. Support RS232, RS485, bus communication (Ethercat&CAN), Ethernet (only for Ethernet type PLC), can connect VFD, meter and other peripheral devices, communication network can be set up freely.



High speed signal acquisition

With 3~10 channels high speed counter

By selecting different counters, it can count in single-phase incremental mode (the max frequency can reach 80kHz), AB phase mode (double frequency and quadruple frequency are optional, and the max frequency can reach 50KHz) and differential mode (the max frequency can reach 200kHz).

High speed control is realized by simple high-speed counting instruction.

Strong expansion capability

XD series PLC basic units can be equipped with rich I/O expansion module, analog input and output module, temperature control module, BD board and left expansion module, which can easily realize analog control for various purposes.

The data exchange between the expansion module and the ontology has changed from the original parallel port communication mode of XC series to the SPI serial port communication mode of XD series, so the data exchange speed is faster than that of the original XC series (2ms/AD).

Small-sized PLC

Economic Type

XD1 Series

The function is relatively simple. It can carry out logic control, data operation and other general functions. It does not support right expansion module, left expansion ED module and expansion BD board.

① Program capacity 256KB
② I/O sequential control
③ Max I/O 32 points
④ Basic instruction 0.02~0.05us
⑤ RS232 , RS485
⑥ X-NET fieldbus

XD1 series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	XD1-10R-E	XD1-10T-E	-	XD1-10R-C	XD1-10T-C	-
	XD1-16R-E	XD1-16T-E	-	XD1-16R-C	-	-
	XD1-24R-E	XD1-24T-E	-	XD1-24R-C	-	-
	XD1-32R-E	XD1-32T-E	-	XD1-32R-C	XD1-32T-C	-
PNP type	XD1-16PR-E	-	-	-	-	-

Performance specification

Product series XD1-		10R/T	16R/T	24R/T	32R/T
Main body I/O	Total points	10	16	24	32
	Input points	5	8	12	16
	Output points	5	8	12	16
Max I/O points		10	16	24	32
High speed positioning	General pulse output	-	-	-	-
	Differential pulse output	-	-	-	-
High speed input	Single/AB phase mode	-	-	-	-
	Input mode	-	-	-	-
Expansion ability	Right expansion module	-	-	-	-
	Left expansion module	-	-	-	-
	BD board	-	-	-	-
Interruption	External interrupt	3	6	10	10
	Timing interrupt	20	20	20	20
	Other interrupts	-	-	-	-
Communication function	Communication port	2 RS232 ports	2 RS232 ports	2 RS232 ports, 1 RS485 port	2 RS232 ports, 1 RS485 port
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication			
Bus function		X-NET fieldbus			
PWM pulse width modulation		-			
Frequency measurement		-			
Precise timing		26 points ET0~ET26 (Only even numbers can be used)			
Multi-station control		-			
Program execution mode		Cyclic scanning mode			
Programming method		Instruction, ladder diagram, C language			
Power off holding		Use FlashROM and lithium battery (3V button battery)			
Basic instruction processing speed		0.02~0.05us			
User program capacity (secret download mode)		256KB			

Product series XD1-			10R/T	16R/T	24R/T	32R/T
Security function			6-bit ASCII password encryption, secret downloading			
Self-diagnosis function			Power on self-test, monitoring timer, syntax check			
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory			
SD expansion card			-			
Bit soft component	Input relay (X)		896 points: X0~X77, X10000~X11177, X20000~X20177, X30000~X30077			
	Output relay (Y)		896 points: Y0~Y77, Y10000~Y11177, Y20000~Y20177, Y30000~Y30077			
	Auxiliary relay	General M	8000 points M0~M7999			
		Power off holding HM	960 points HM0~HM959			
		Special SM	2048 points SM0~SM2047			
	Flow	General S	1024 points S0~S1023			
		Power off holding HS	128 points HS0~HS127			
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s			
		General T	576 points T0~T575			
		Power off holding HT	96 points HT0~HT95			
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647			
		General C	576 points C0~C575			
		Power off holding HC	96 points HC0~HC95			
	Special coil for WAIT instruction		32 points SEM0~SEM31			
Word soft component	Data register	General D	8000 points D0~D7999			
		Power off holding HD	1000 points HD0~HD999			
		Special SD	2048 points SD0~SD2047			
	FlashROM register	Power off holding FD	5120 points FD0~FD5119			
		Special SFD	2000 points SFD0~SFD1999			
		Security register FS	48 points FS0~FS47			

*Note: ① Only the PLC with transistor output has high speed positioning function.
② The '-' in the table indicates that this model doesn't have this function.
③ Special refers to system occupancy, cannot be used for other purposes.

Small-sized PLC

Basic Type

XD2 Series

The functions are complete. In addition to the basic data processing function, it also has special functions such as pulse output, high-speed counting, pulse width modulation, frequency measurement and so on. It supports left expansion ED and BD (16 points are not supported), and does not support right expansion module, which can meet the basic use needs of users.

① Program capacity 256KB
② I/O sequential control
③ Max I/O 60 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ 2 channels 100KHz pulse output
⑧ 3 channels high speed counting (single phase max 80KHz, AB phase max 50KHz)

XD2 series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	XD2-16R-E	XD2-16T-E	-	XD2-16R-C	XD2-16T-C	-
	XD2-24R-E	XD2-24T-E	XD2-24RT-E	XD2-24R-C	XD2-24T-C	XD2-24RT-C
	XD2-32R-E	XD2-32T-E	XD2-32RT-E	XD2-32R-C	XD2-32T-C	XD2-32RT-C
	XD2-42R-E	XD2-42T-E	-	-	-	-
	XD2-48R-E	XD2-48T-E	XD2-48RT-E	XD2-48R-C	XD2-48T-C	XD2-48RT-C
	XD2-60R-E	XD2-60T-E	XD2-60RT-E	XD2-60R-C	XD2-60T-C	XD2-60RT-C
PNP type	-	-	-	XD2-32PR-C	-	-

Performance specification

Product series XD2-		16R/T	24R/T/RT	32R/T/RT	42R/T	48R/T/RT	60R/T/RT
Main body I/O	Total points	16	24	32	42	48	60
	Input points	8	14	18	24	28	36
	Output points	8	10	14	18	20	24
Max I/O points		16	24	32	42	48	60
High speed positioning	General pulse output	2 axes	2 axes	2 axes	2 axes	2 axes	2 axes
	Differential pulse output	-	-	-	-	-	-
High speed input	Single/AB phase mode	3 channels	3 channels	3 channels	3 channels	3 channels	3 channels
	Input mode	OC	OC	OC	OC	OC	OC
Expansion ability	Right expansion module	-	-	-	-	-	-
	Left expansion module	1	1	1	1	1	1
	BD board	-	1	1	1	2	2
Interruption	External interrupt	6	10	10	10	10	10
	Timing interrupt	20					
	Other interrupts	High speed counting interrupt, pulse interrupt					
Communication function	Communication port	2 RS232 ports, 1 RS485 port					
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication					
Bus function		X-NET fieldbus					
PWM pulse width modulation		Support					
Frequency measurement		Support					
Precise timing		26 points ET0~ET25 (only even numbers can be used)					
Multi-station control		-					
Program execution mode		Cyclic scanning mode					
Programming method		Instruction, ladder diagram, C language					
Power off holding		Use FlashROM and lithium battery (3V button battery)					
Basic instruction processing speed		0.02~0.05us					
User program capacity (secret download mode)		256KB					

Product series XD2-			16R/T	24R/T/RT	32R/T/RT	42R/T	48R/T/RT	60R/T/RT
Security function			6-bit ASCII password encryption, secret downloading					
Self-diagnosis function			Power on self-test, monitoring timer, syntax check					
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory					
SD expansion card			-					
Bit soft component	Input relay (X)		896 points: X0~X77, X10000~X11177, X20000~X20177, X30000~X30077					
	Output relay (Y)		896 points: Y0~Y77, Y10000~Y11177, Y20000~Y20177, Y30000~Y30077					
	Auxiliary relay	General M	8000 points M0~M7999					
		Power off holding HM	960 points HM0~HM959					
		Special SM	2048 points SM0~SM2047					
	Flow	General S	1024 points S0~S1023					
		Power off holding HS	128 points HS0~HS127					
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s					
		General T	576 points T0~T575					
		Power off holding HT	96 points HT0~HT95					
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647					
		General C	576 points C0~C575					
		Power off holding HC	96 points HC0~HC95					
	Special coil for WAIT instruction		32 points SEM0~SEM31					
Word soft component	Data register	General D	8000 points D0~D7999					
		Power off holding HD	1000 points HD0~HD999					
		Special SD	2048 points SD0~SD2047					
	FlashROM register	Power off holding FD	5120 points FD0~FD5119					
		Special SFD	2000 points SFD0~SFD1999					
		Security register FS	48 points FS0~FS47					

*Note: ① Only the PLC with transistor output has high speed positioning function.
② The '-' in the table indicates that this model doesn't have this function.
③ Special refers to system occupancy, cannot be used for other purposes.

Standard Type

XD3 Series

The functions are complete. In addition to the basic data processing function, it also has special functions such as pulse output, high-speed counting, pulse width modulation, frequency measurement and so on. It supports left expansion ED, expansion BD (16 points are not supported) and right expansion module, which can meet the basic use needs of users.

① Program capacity 256KB
② I/O sequential control
③ Max I/O 380 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ 2~4 channels 100KHz pulse output (Y2, Y3 max pulse output frequency of XD3-24T4/32T4 are 20KHz)
⑧ 3 channels high speed counting (single phase max 80KHz, AB phase max 50KHz)
⑨ USB port high speed download (max 12Mbps)

XD3 series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	XD3-16R-E	XD3-16T-E	XD3-16RT-E	XD3-16R-C	XD3-16T-C	XD3-16RT-C
	XD3-24R-E	XD3-24T-E	XD3-24RT-E	XD3-24R-C	XD3-24T-C	XD3-24RT-C
	-	XD3-24T4-E	-	-	XD3-24T4-C	-
	XD3-32R-E	XD3-32T-E	XD3-32RT-E	XD3-32R-C	XD3-32T-C	XD3-32RT-C
	-	XD3-32T4-E	-	-	-	-
	XD3-48R-E	XD3-48T-E	XD3-48RT-E	XD3-48R-C	XD3-48T-C	XD3-48RT-C
	XD3-60R-E	XD3-60T-E	XD3-60RT-E	XD3-60R-C	XD3-60T-C	XD3-60RT-C
PNP type	XD3-16PR-E	XD3-16PT-E	-	XD3-16PR-C	XD3-16PT-C	XD3-16PRT-C
	XD3-24PR-E	XD3-24PT-E	XD3-24PRT-E	XD3-24PR-C	XD3-24PT-C	XD3-24PRT-C
	XD3-32PR-E	XD3-32PT-E	XD3-32PRT-E	XD3-32PR-C	XD3-32PT-C	XD3-32PRT-C
	XD3-48PR-E	XD3-48PT-E	XD3-48PRT-E	XD3-48PR-C	XD3-48PT-C	XD3-48PRT-C
	XD3-60PR-E	XD3-60PT-E	XD3-60PRT-E	XD3-60PR-C	XD3-60PT-C	XD3-60PRT-C

Performance specification

Product series XD3-		16R/T/RT	24R/T/RT	24T4	32R/T/RT	32T4	48R/T/RT	60R/T/RT
Main body I/O	Total points	16	24	24	32	32	48	60
	Input points	8	14	14	18	18	28	36
	Output points	8	10	10	14	14	20	24
Max I/O points		336	334	344	352	352	368	380
High speed positioning	General pulse output	2 axes	2 axes	4 axes	2 axes	4 axes	2 axes	2 axes
	Differential pulse output	-	-	-	-	-	-	-
High speed input	Single/AB phase mode	3 channels	3 channels	3 channels	3 channels	3 channels	3 channels	3 channels
	Input mode	OC	OC	OC	OC	OC	OC	OC
Expansion ability	Right expansion module	10	10	10	10	10	10	10
	Left expansion module	1	1	1	1	1	1	1
	BD board	-	1	1	1	1	2	2
Interruption	External interrupt	6	10	10	10	10	10	10
	Timing interrupt	20						
	Other interrupts	High speed counting interrupt, pulse interrupt						
Communication function	Communication port	1 RS232 ports, 1 RS485 port, 1 USB port						
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication						
Bus function		X-NET fieldbus						
PWM pulse width modulation		Support						
Frequency measurement		Support						
Precise timing		26 points ET0~ET25 (only even numbers can be used)						
Multi-station control		-						
Program execution mode		Cyclic scanning mode						
Programming method		Instruction, ladder diagram, C language						
Power off holding		Use FlashROM and lithium battery (3V button battery)						
Basic instruction processing speed		0.02~0.05us						
User program capacity (secret download mode)		256KB						

Product series XD3-			16R/T/RT	24R/T/RT	24T4	32R/T/RT	32T4	48R/T/RT	60R/T/RT
Security function			6-bit ASCII password encryption, secret downloading						
Self-diagnosis function			Power on self-test, monitoring timer, syntax check						
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory						
SD expansion card			-						
Bit soft component	Input relay (X)		896 points: X0~X77, X10000~X11177, X20000~X20177, X30000~X30077						
	Output relay (Y)		896 points: Y0~Y77, Y10000~Y11177, Y20000~Y20177, Y30000~Y30077						
	Auxiliary relay	General M	8000 points M0~M7999						
		Power off holding HM	960 points HM0~HM959						
		Special SM	2048 points SM0~SM2047						
	Flow	General S	1024 points S0~S1023						
		Power off holding HS	128 points HS0~HS127						
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s						
		General T	576 points T0~T575						
		Power off holding HT	96 points HT0~HT95						
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647						
		General C	576 points C0~C575						
		Power off holding HC	96 points HC0~HC95						
	Special coil for WAIT instruction		32 points SEM0~SEM31						
Word soft component	Data register	General D	8000 points D0~D7999						
		Power off holding HD	1000 points HD0~HD999						
		Special SD	2048 points SD0~SD2047						
	FlashROM register	Power off holding FD	5120 points FD0~FD5119						
		Special SFD	2000 points SFD0~SFD1999						
		Security register FS	48 points FS0~FS47						

*Note: ① Only the PLC with transistor output has high speed positioning function.
② The '-' in the table indicates that this model doesn't have this function.
③ Special refers to system occupancy, cannot be used for other purposes.

Enhanced Type

XD5 Series

In addition to all the functions of standard PLC, it has faster processing speed (about 15 times that of XC series), larger internal resource space and 2 ~ 10 channels of high-speed pulse output. It supports the connection of right expansion module, expansion BD board (not supported by 16 points) and left expansion ED module, and supports SD card expansion (except 16 points), which can meet various requirements.

① Program capacity 512KB
② I/O sequential control
③ Max I/O 592 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ 2~10 axes 100KHz pulse output
⑧ 3~10 channels high speed counting (single phase max 80KHz, AB phase max 50KHz)
⑨ USB port high speed download (max 12Mbps)

Performance specification

Product series XD5-		16	24	24T4	32	32T4	42	48	48T4	48T6	60	60T4	60T6	60T10	80
Main body I/O	Total points	16	24	24	32	32	42	48	48	48	60	60	60	60	80
	Input points	8	14	14	18	18	24	28	28	28	36	36	36	36	40
	Output points	8	10	10	14	14	18	20	20	20	24	24	24	24	40
Max I/O points		528	536	536	544	544	554	560	560	560	572	572	572	572	592
High speed positioning	General pulse output	2 axes	2 axes	4 axes	2 axes	4 axes	2 axes	2 axes	4 axes	6 axes	2 axes	4 axes	6 axes	10 axes	2 axes
	Differential pulse output	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High speed input	Single/AB phase mode	3 channels	3 channels	4 channels	3 channels	4 channels	3 channels	3 channels	4 channels	6 channels	3 channels	4 channels	6 channels	10 channels	3 channels
	Input mode	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC	OC
Expansion ability	Right expansion module	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Left expansion module	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	BD board	-	1	1	1	1	1	2	2	2	2	2	2	2	2
Interruption	External interrupt	6	10	10	10	10	10	10	10	10	10	10	10	10	10
	Timing interrupt	20													
	Other interrupts	High speed counting interrupt, pulse interrupt													
Communication function	Communication port	1 RS232 ports, 1 RS485 port, 1 USB port													
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication													
Bus function		X-NET fieldbus													
PWM pulse width modulation		Support													
Frequency measurement		Support													
Precise timing		26 points ET0~ET25 (only even numbers can be used)													
Multi-station control		Support													
Program execution mode		Cyclic scanning mode													
Programming method		Instruction, ladder diagram, C language													
Power off holding		Use FlashROM and lithium battery (3V button battery)													
Basic instruction processing speed		0.02~0.05us													
User program capacity (secret download mode)		512KB													

XD5 series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	XD5-16R-E	XD5-16T-E	XD5-16RT-E	XD5-16R-C	XD5-16T-C	XD5-16RT-C
	XD5-24R-E	XD5-24T-E	XD5-24RT-E	XD5-24R-C	XD5-24T-C	XD5-24RT-C
	-	XD5-24T4-E	-	-	XD5-24T4-C	-
	XD5-32R-E	XD5-32T-E	XD5-32RT-E	XD5-32R-C	XD5-32T-C	XD5-32RT-C
	-	XD5-32T4-E	-	-	XD5-32T4-C	-
	XD5-42R-E	XD5-42T-E	-	-	-	-
	XD5-48R-E	XD5-48T-E	XD5-48RT-E	XD5-48R-C	XD5-48T-C	XD5-48RT-C
	-	XD5-48T4-E	-	-	XD5-48T4-C	-
	-	XD5-48T6-E	-	-	XD5-48T6-C	-
	XD5-60R-E	XD5-60T-E	XD5-60RT-E	XD5-60R-C	XD5-60T-C	XD5-60RT-C
	-	XD5-60T4-E	-	-	XD5-60T4-C	-
	-	XD5-60T6-E	-	-	XD5-60T6-C	-
	-	XD5-60T10-E	-	-	XD5-60T10-C	-
	-	XD5-80T-E	-	-	XD5-80T-C	-
PNP type	XD5-24PR-E	XD5-24PT-E	XD5-24PRT-E	XD5-24PR-C	XD5-24PT-C	XD5-24PRT-C
	-	XD5-24PT4-E	-	-	-	-
	XD5-32PR-E	XD5-32PT-E	XD5-32PRT-E	-	XD5-32PT-C	XD5-32PRT-C
	-	-	-	-	XD5-32PT4-C	-
	-	-	XD5-48PRT-E	-	-	-
	-	XD5-48PT6-E	-	-	XD5-48PT6-C	-
	XD5-60PR-E	-	-	-	XD5-60PT-C	-
	-	-	-	-	XD5-60PT6-C	-

Product series XD5-			16	24	24T4	32	32T4	42	48	48T4	48T6	60	60T4	60T6	60T10	80
Security function			6-bit ASCII password encryption, secret downloading													
Self-diagnosis function			Power on self-test, monitoring timer, syntax check													
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory													
SD expansion card			Support (16 points not supported)													
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077													
	Output relay (Y)		1280 points:Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077													
	Auxiliary relay	General M	70000 points: M0~M69999													
		Power off holding HM	12000 points: HM0~HM11999													
		Special SM	5000 points: SM0~SM4999													
	Flow	General S	8000 points S0~S7999													
		Power off holding HS	1000 pointsHS0~HS999													
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s													
		General T	5000 points T0~T4999													
		Power off holding HT	2000 points HT0~HT1999													
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647													
		General C	5000 points C0~C4999													
		Power off holding HC	2000 points HC0~HC1999													
	Special coil for WAIT instruction		32 points SEM0~SEM31													
Word soft component	Data register	General D	70000 points D0~D69999													
		Power off holding HD	25000 points HD0~HD24999													
		Special SD	5000 points SD0~SD4999													
	FlashROM register	Power off holding FD	8192 points FD0~FD8191													
		Special SFD	6000 points SFD0~SFD5999													
		Security register FS	48 points FS0~FS47													

*Note: ① Only the PLC with transistor output has high speed positioning function.
② The '-' in the table indicates that this model doesn't have this function.
③ Special refers to system occupancy, cannot be used for other purposes.
④ The D register range of XD5 firmware v3.4.5 and below is D0~D59999.

Differential Type

XD5-xDnTm Series

XD5 series high-speed differential PLC is designed according to the fast response demand of servo motor. It does not need conversion circuit, wiring is convenient and standard equipped with all functions of enhanced PLC.

① Program capacity 512KB
② I/O sequential control
③ Max I/O 560 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ 4 axes 920KHz differential pulse output
⑧ 4 channels 1MHz differential high speed counter
⑨ USB port high speed download (max 12Mbps)

XD5 differential series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	XD5-24D2T2-E	-	-	-	-
	-	XD5-48D4T4-E	-	-	-	-

Performance specification

Product series XD5-		24D2T2	48D4T4
Main body I/O	Total points	24	48
	Input points	14	28
	Output points	10	20
Max I/O points		536	560
High speed positioning	General pulse output	2 axes	4 axes
	Differential pulse output	2 axes	4 axes
High speed input	Single/AB phase mode	2 channels	4 channels
	Differential high speed input	2 channels	4 channels
Expansion ability	Right expansion module	16	16
	Left expansion module	1	1
	BD board	1	2
Interruption	External interrupt	10	
	Timing interrupt	20	
	Other interrupts	High speed counting interrupt, pulse interrupt	
Communication function	Communication port	1 RS232 ports, 1 RS485 port, 1 USB port	
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication	
Bus function		X-NET fieldbus	
PWM pulse width modulation		Support	
Frequency measurement		Support	
Precise timing		26 points ET0~ET25 (only even numbers can be used)	
Multi-station control		Support	
Program execution mode		Cyclic scanning mode	
Programming method		Instruction, ladder diagram, C language	
Power off holding		Use FlashROM and lithium battery (3V button battery)	
Basic instruction processing speed		0.02~0.05us	
User program capacity (secret download mode)		512KB	

Product series XD5-			24D2T2	48D4T4
Security function			6-bit ASCII password encryption, secret downloading	
Self-diagnosis function			Power on self-test, monitoring timer, syntax check	
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory	
SD expansion card			Support	
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077	
	Output relay (Y)		1280 points:Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077	
	Auxiliary relay	General M	70000 points: M0~M69999	
		Power off holding HM	12000 points: HM0~HM11999	
		Special SM	5000 points: SM0~SM4999	
	Flow	General S	8000 points S0~S7999	
		Power off holding HS	1000 pointsHS0~HS999	
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s	
		General T	5000 points T0~T4999	
		Power off holding HT	2000 points HT0~HT1999	
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647	
		General C	5000 points C0~C4999	
		Power off holding HC	2000 points HC0~HC1999	
	Special coil for WAIT instruction		32 points SEM0~SEM31	
Word soft component	Data register	General D	70000 points D0~D69999	
		Power off holding HD	25000 points HD0~HD24999	
		Special SD	5000 points SD0~SD4999	
	FlashROM register	Power off holding FD	8192 points FD0~FD8191	
		Special SFD	6000 points SFD0~SFD5999	
		Security register FS	48 points FS0~FS47	

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Small-sized PLC

Motion Control Type

XDM Series

In addition to all functions of standard PLC, it has faster processing speed (about 15 times that of XC Series), larger internal resource space, two-axis linkage, interpolation and follow-up functions, and supports external SD card for data storage. Support the connection of right expansion module, expansion BD board and left expansion module.

① Program capacity 512KB~1.5MB
② I/O sequential control
③ Max I/O 572 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ 4~10 axes 100KHz pulse output
⑧ 4~10 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)
⑨ Follow-up function
⑩ USB port high speed download (max 12Mbps)
⑪ Linear/arc interpolation

XDM series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	XDM-24T4-E	-	-	XDM-24T4-C	-
	-	XDM-32T4-E	-	-	XDM-32T4-C	-
	-	XDM-60T4-E	-	-	XDM-60T4-C	-
	-	XDM-60T10-E	-	-	XDM-60T10-C	-
	-	XDM-60T4L-E	-	-	-	-
PNP type	-	XDM-24PT4-E	-	-	XDM-24PT4-C	-
	-	XDM-32PT4-E	-	-	XDM-32PT4-C	-
	-	XDM-60PT10-E	-	-	XDM-60PT10-C	-

Performance specification

Product series XDM-		24T4	32T4	60T4	60T4L	60T10
Main body I/O	Total points	24	32	60	60	60
	Input points	14	18	36	36	36
	Output points	10	14	24	24	24
Max I/O points		536	544	572	572	572
High speed positioning	General pulse output	4 axes	4 axes	4 axes	4 axes	10 axes
	Differential pulse output	-	-	-	-	-
High speed input	Single/AB phase mode	4 channels	4 channels	4 channels	4 channels	10 channels
	Input mode	OC	OC	OC	OC	OC
Expansion ability	Right expansion module	16	16	16	16	16
	Left expansion module	1	1	1	1	1
	BD board	1	1	2	2	2
Interruption	External interrupt	10				
	Timing interrupt	20				
	Other interrupts	High speed counting interrupt, pulse interrupt				
Communication function	Communication port	1 RS232 ports, 1 RS485 port, 1 USB port				
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication				
Bus function		X-NET fieldbus				
PWM pulse width modulation		Support				
Frequency measurement		Support				
Precise timing		26 points ET0~ET25 (only even numbers can be used)				
Multi-station control		Support				
Program execution mode		Cyclic scanning mode				
Programming method		Instruction, ladder diagram, C language				
Power off holding		Use FlashROM and lithium battery (3V button battery)				
Basic instruction processing speed		0.02~0.05us				
User program capacity (secret download mode)		512KB (XDM-60T4L: 1.5MB)				

Product series XDM-			24T4	32T4	60T4	60T4L	60T10
Security function			6-bit ASCII password encryption, secret downloading				
Self-diagnosis function			Power on self-test, monitoring timer, syntax check				
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory				
SD expansion card			Support				
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077				
	Output relay (Y)		1280 points:Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077				
	Auxiliary relay	General M	70000 points: M0~M69999				
		Power off holding HM	12000 points: HM0~HM11999				
		Special SM	5000 points: SM0~SM4999				
	Flow	General S	8000 points S0~S7999				
		Power off holding HS	1000 pointsHS0~HS999				
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s				
		General T	5000 points T0~T4999				
		Power off holding HT	2000 points HT0~HT1999				
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647				
		General C	5000 points C0~C4999				
		Power off holding HC	2000 points HC0~HC1999				
	Special coil for WAIT instruction		32 points SEM0~SEM31				
Word soft component	Data register	General D	70000 points D0~D69999				
		Power off holding HD	25000 points HD0~HD24999				
		Special SD	5000 points SD0~SD4999				
	FlashROM register	Power off holding FD	8192 points FD0~FD8191				
		Special SFD	6000 points SFD0~SFD5999				
		Security register FS	48 points FS0~FS47				

*Note: ① Only the PLC with transistor output has high speed positioning function.
② The '-' in the table indicates that this model doesn't have this function.
③ Special refers to system occupancy, cannot be used for other purposes.

X-NET Motion Bus Type

XDC Series

In addition to all functions of standard PLC, it has faster processing speed (about 15 times that of XC Series) and supports X-NET motion bus control (1 ~ 20 axes). Support the connection of right expansion module, BD board and left expansion module.

① Program capacity 384KB
② I/O sequential control
③ Max I/O 572 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ X-NET motion bus
⑧ 4 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)
⑨ 2 axes 100KHz pulse output

XDC series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	XDC-24T-E	-	-	XDC-24T-C	-
	-	XDC-32T-E	-	-	XDC-32T-C	-
	-	XDC-48T-E	-	-	XDC-48T-C	-
	-	XDC-60T-E	-	-	XDC-60T-C	-
PNP type	-	-	-	-	XDC-60PT-C	-

Performance specification

Product series XDC-		24T	32T	48T	60T
Main body I/O	Total points	24	32	48	60
	Input points	14	18	28	36
	Output points	10	14	20	24
Max I/O points		536	544	560	572
High speed positioning	General pulse output	2 axes	2 axes	2 axes	2 axes
	Differential pulse output	-	-	-	-
High speed input	Single/AB phase mode	4 channels	4 channels	4 channels	4 channels
	Input mode	OC	OC	OC	OC
Expansion ability	Right expansion module	16	16	16	16
	Left expansion module	1	1	1	1
	BD board	1	1	2	2
Interruption	External interrupt	10			
	Timing interrupt	20			
	Other interrupts	High speed counting interrupt, pulse interrupt			
Communication function	Communication port	2 RS232 ports (COM1 is X-NET communicationby default), 1 RS485 port			
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication			
Bus function		X-NET fieldbus, X-NET motion bus			
PWM pulse width modulation		Support			
Frequency measurement		Support			
Precise timing		26 points ET0~ET25 (only even numbers can be used)			
Multi-station control		-			
Program execution mode		Cyclic scanning mode			
Programming method		Instruction, ladder diagram, C language			
Power off holding		Use FlashROM and lithium battery (3V button battery)			
Basic instruction processing speed		0.02~0.05us			
User program capacity (secret download mode)		384KB			

Product series XDC-			24T	32T	48T	60T
Security function			6-bit ASCII password encryption, secret downloading			
Self-diagnosis function			Power on self-test, monitoring timer, syntax check			
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory			
SD expansion card			-			
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077			
	Output relay (Y)		1280 points:Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077			
	Auxiliary relay	General M	70000 points: M0~M69999			
		Power off holding HM	12000 points: HM0~HM11999			
		Special SM	5000 points: SM0~SM4999			
	Flow	General S	8000 points S0~S7999			
		Power off holding HS	1000 pointsHS0~HS999			
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s			
		General T	5000 points T0~T4999			
		Power off holding HT	2000 points HT0~HT1999			
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647			
		General C	5000 points C0~C4999			
		Power off holding HC	2000 points HC0~HC1999			
	Special coil for WAIT instruction		32 points SEM0~SEM31			
Word soft component	Data register	General D	70000 points D0~D69999			
		Power off holding HD	25000 points HD0~HD24999			
		Special SD	5000 points SD0~SD4999			
	FlashROM register	Power off holding FD	8192 points FD0~FD8191			
		Special SFD	6000 points SFD0~SFD5999			
		Security register FS	48 points FS0~FS47			

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Small-sized PLC

Ethernet Communication Type

XD5E Series

In addition to all functions of XD5 series (except SD card function), it has faster processing speed (about 2 ~ 3 times that of XDM series), larger internal resource space, supports RS232, RS485 serial port communication and Ethernet communication, and supports the connection of right expansion module, BD board and left expansion ED module.

① Program capacity 1MB
② I/O sequential control
③ Max I/O 572 points
④ Basic instruction 0.01~0.03us
⑤ RRS232, RS485, RJ45
⑥ X-NET fieldbus
⑦ 2~10 axes 100KHz pulse output
⑧ 3~10 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)

XD5E series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	XD5E-24R-E	XD5E-24T-E	-	XD5E-24R-C	-	-
	XD5E-30R-E	XD5E-30T-E	-	-	-	-
	-	XD5E-30T4-E	-	-	XD5E-30T4-C	-
	XD5E-48R-E	XD5E-48T-E	-	-	-	-
	XD5E-60R-E	XD5E-60T-E	-	-	-	-
	-	XD5E-60T4-E	-	-	XD5E-60T4-C	-
	-	XD5E-60T6-E	-	-	XD5E-60T6-C	-
	-	XD5E-60T10-E	-	-	XD5E-60T10-C	-
PNP type	-	XD5E-30PT4-E	-	-	-	-
	-	XD5E-60PT6-E	-	-	-	-
	-	-	-	-	XD5E-60PT10-C	-

Performance specification

Product series XD5E-		24R/T	30R/T	30T4	48R/T	60R/T	60T4	60T6	60T10
Main body I/O	Total points	24	30	30	48	60	60	60	60
	Input points	14	16	16	28	36	36	36	36
	Output points	10	14	14	20	24	24	24	24
Max I/O points		536	542	542	560	572	572	572	572
High speed positioning	General pulse output	2 axes	2 axes	4 axes	2 axes	2 axes	4 axes	6 axes	10 axes
	Differential pulse output	-	-	-	-	-	-	-	-
High speed input	Single/AB phase mode	3 channels	3 channels	4 channels	3 channels	3 channels	4 channels	6 channels	10 channels
	Input mode	OC	OC	OC	OC	OC	OC	OC	OC
Expansion ability	Right expansion module	16	16	16	16	16	16	16	16
	Left expansion module	1	1	1	1	1	1	1	1
	BD board	1	1	1	2	2	2	2	2
Interruption	External interrupt	10							
	Timing interrupt	20							
	Other interrupts	High speed counting interrupt, pulse interrupt							
Communication function	Communication port	1 RS232 ports, 1 RS485 port, 2 RJ45 ports							
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication, Ethernet communication							
Bus function		X-NET fieldbus							
PWM pulse width modulation		Support							
Frequency measurement		Support							
Precise timing		26 points ET0~ET25 (only even numbers can be used)							
Multi-station control		Support							
Program execution mode		Cyclic scanning mode							
Programming method		Instruction, ladder diagram, C language							
Power off holding		Use FlashROM and lithium battery (3V button battery)							
Basic instruction processing speed		0.01~0.03us							
User program capacity (secret download mode)		1MB							

Product series XD5E-			24R/T	30R/T	30T4	48R/T	60R/T	60T4	60T6	60T10
Security function			6-bit ASCII password encryption, secret downloading							
Self-diagnosis function			Power on self-test, monitoring timer, syntax check							
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory							
SD expansion card			-							
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077							
	Output relay (Y)		1280 points:Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077							
	Auxiliary relay	General M	70000 points: M0~M69999							
		Power off holding HM	12000 points: HM0~HM11999							
		Special SM	5000 points: SM0~SM4999							
	Flow	General S	8000 points S0~S7999							
		Power off holding HS	1000 pointsHS0~HS999							
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s							
		General T	5000 points T0~T4999							
		Power off holding HT	2000 points HT0~HT1999							
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647							
		General C	5000 points C0~C4999							
		Power off holding HC	2000 points HC0~HC1999							
	Special coil for WAIT instruction		32 points SEM0~SEM31							
Word soft component	Data register	General D	70000 points D0~D69999							
		Power off holding HD	25000 points HD0~HD24999							
		Special SD	5000 points SD0~SD4999							
	FlashROM register	Power off holding FD	8192 points FD0~FD8191							
		Special SFD	6000 points SFD0~SFD5999							
		Security register FS	48 points FS0~FS47							

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Small-sized PLC

Ethernet Communication Type

XDME Series

In addition to all the functions of XDM series, it has faster processing speed (about 2 ~ 3 times that of XDM Series), larger internal resource space, and supports the connection of right expansion module, BD board and left expansion ED module.

① Program capacity 1MB
② I/O sequential control
③ Max I/O 572 points
④ Basic instruction 0.01~0.03us
⑤ RS232, RS485, RJ45
⑥ X-NET fieldbus
⑦ 4~10 axes 100KHz pulse output
⑧ 4~10 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)
⑨ Linear/arc interpolation
⑩ Follow-up function

XDME series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	XDME-30T4-E	-	-	XDME-30T4-C	-
	-	XDME-60T4-E	-	-	-	-
	-	XDME-60T10-E	-	-	-	-

Performance specification

Product series XDME-		30T4	60T4	60T10
Main body I/O	Total points	30	60	60
	Input points	16	36	36
	Output points	14	24	24
Max I/O points		542	572	572
High speed positioning	General pulse output	4 axes	4 axes	10 axes
	Differential pulse output	-	-	-
High speed input	Single/AB phase mode	4 channels	4 channels	10 channels
	Input mode	OC	OC	OC
Expansion ability	Right expansion module	16	16	16
	Left expansion module	1	1	1
	BD board	1	2	2
Interruption	External interrupt	10		
	Timing interrupt	20		
	Other interrupts	High speed counting interrupt, pulse interrupt		
Communication function	Communication port	1 RS232 ports, 1 RS485 port, 2 RJ45 ports		
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication, Ethernet communication		
Bus function		X-NET fieldbus		
PWM pulse width modulation		Support		
Frequency measurement		Support		
Precise timing		26 points ET0~ET25 (only even numbers can be used)		
Multi-station control		Support		
Program execution mode		Cyclic scanning mode		
Programming method		Instruction, ladder diagram, C language		
Power off holding		Use FlashROM and lithium battery (3V button battery)		
Basic instruction processing speed		0.01~0.03us		
User program capacity (secret download mode)		1MB		

Product series XDME-			30T4	60T4	60T10
Security function			6-bit ASCII password encryption, secret downloading		
Self-diagnosis function			Power on self-test, monitoring timer, syntax check		
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory		
SD expansion card			-		
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077		
	Output relay (Y)		1280 points:Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077		
	Auxiliary relay	General M	70000 points: M0~M69999		
		Power off holding HM	12000 points: HM0~HM11999		
		Special SM	5000 points: SM0~SM4999		
	Flow	General S	8000 points S0~S7999		
		Power off holding HS	1000 pointsHS0~HS999		
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s		
		General T	5000 points T0~T4999		
		Power off holding HT	2000 points HT0~HT1999		
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647		
		General C	5000 points C0~C4999		
		Power off holding HC	2000 points HC0~HC1999		
	Special coil for WAIT instruction		32 points SEM0~SEM31		
Word soft component	Data register	General D	70000 points D0~D69999		
		Power off holding HD	25000 points HD0~HD24999		
		Special SD	5000 points SD0~SD4999		
	FlashROM register	Power off holding FD	8192 points FD0~FD8191		
		Special SFD	6000 points SFD0~SFD5999		
		Security register FS	48 points FS0~FS47		

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Small-sized PLC

EtherCAT Bus Type

XDH Series

Compatible with most functions of XDM, it has larger program capacity and faster processing speed, supports Ethernet communication, EtherCAT bus, motion control commands such as interpolation and follow-up, expansion module and left expansion ED module.

① Program capacity 2~4MB
② Ethernet communication
③ Max I/O 572 points
④ Basic instruction 0.01~0.05us
⑤ RS232, RS485, RJ45
⑥ X-NET fieldbus
⑦ 4 axes 100KHz pulse output
⑧ 4 channels high speed counter (up to 200KHz)
⑨ 3-axis linear/arc interpolation
⑩ Follow-up function
⑪ EtherCAT communication
⑫ 16 channels electronic CAM (XDH-30A16L cannot support)

XDH series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	XDH-30A16-E	-	-	-	-
	-	XDH-30A16L-E	-	-	XDH-30A16L-C	-
	-	XDH-60T4-E	-	-	XDH-60T4-C	-
PNP type	-	XDH-30PA16L-E	-	-	-	-

Performance specification

Product series XDH-		30A16	30A16L	60T4	60A32
Main body I/O	Total points	30	30	60	60
	Input points	16	16	36	36
	Output points	14	14	24	24
Max I/O points		542	542	572	572
High speed positioning	General pulse output	4 axes	4 axes	4 axes	4 axes
	Differential pulse output	-	-	-	-
High speed input	Single/AB phase mode	4 channels	4 channels	4 channels	4 channels
	Input mode	OC	OC	OC	OC
Expansion ability	Right expansion module	16	16	16	16
	Left expansion module	1	1	1	1
	BD board	0	0	1	1
Interruption	External interrupt	10			
	Timing interrupt	20			
	Other interrupts	High speed counting interrupt, pulse interrupt			
Communication function	Communication port	1 RS232 ports, 1 RS485 port, 2 RJ45 ports			
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication, Ethernet communication			
Bus function		EtherCAT bus control XDH-30A16, XDH-60A32, XDH-60T4: support single axis, axis group motion and electronic CAM function. XDH-30A16L: support single axis, axis group motion (Note: cannot support electronic CAM)			
PWM pulse width modulation		-			
Frequency measurement		-			
Precise timing		26 points ET0~ET25 (cannot support this function)			
Multi-station control		Support			
Program execution mode		Cyclic scanning mode			
Programming method		Instruction, ladder diagram, C language			
Power off holding		Use FlashROM and lithium battery (3V button battery)			
Basic instruction processing speed		0.02~0.05us	0.02~0.05us	0.01~0.03us	0.01~0.03us
User program capacity (secret download mode)		2MB	2MB	4MB	4MB

Product series XDH-			30A16	30A16L	60T4	60A32
Security function			6-bit ASCII password encryption, secret downloading			
Self-diagnosis function			Power on self-test, monitoring timer, syntax check			
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory			
SD expansion card			-			
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077			
	Output relay (Y)		1280 points:Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077			
	Auxiliary relay	General M	200000 points M0~M199999			
		Power off holding HM	20000 points HM0~HM19999			
		Special SM	50000 points SM0~SM49999			
	Flow	General S	20000 points S0~S19999			
		Power off holding HS	2000 points HS0~HS1999			
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s			
		General T	20000 pointsT0~T19999			
		Power off holding HT	2000 points HT0~HT1999			
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647			
		General C	20000 points C0~C19999			
		Power off holding HC	2000 points HC0~HC1999			
		High speed counter	40 points HSC0~HSC39			
	Special coil for WAIT instruction		32 points SEM0~SEM31			
Word soft component	Data register	General D	500000 points D0~D499999	500000 points D0~D499999	500000 points D0~D499999	1000000 points D0~D999999
		Power off holding HD	50000 points HD0~HD49999	50000 points HD0~HD49999	50000 points HD0~HD49999	100000 points HD0~HD99999
		Special SD	65488 points SFD0~SFD65487			
	FlashROM register	Power off holding FD	65536 points FD0~FD65535			
		Special SFD	50000 points SFD0~SFD49999			
		Security register FS	48 points FS0~FS47			

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

CODESYS High Performance Type

XSDH Series

The small-sized PLC developed based on Codesys platform can significantly improve the programming efficiency and support the PLCopen programming specification. Many standard function libraries can be referenced to develop proprietary function blocks and instruction libraries.

① EtherCAT motion control
② Support EtherCAT remote IO
③ 32 channels electronic CAM
④ Ethernet communication
⑤ Online downloading

Performance specification

Product series XSDH-		60A32
Main body I/O	Total points	60
	Input points	36
	Output points	24
Max I/O points		572
High speed positioning	General pulse output	4 axes (not supported right now)
	Differential pulse output	-
High speed input	Single/AB phase mode	4 channels
	Input mode	OC
Expansion ability	Right expansion module	16
	Left expansion module	1
	BD board	1
External interrupt		10
Communication function	Communication port	1 RS232 ports, 1 RS485 port, 2 RJ45 ports
	Communication protocol	Standard Modbus ASCII/RTU communication, Ethernet IP, TCP / IP, UDP, OPC UA, free format protocol
Bus function		EtherCAT bus control (up to 32 nodes)
Programming method		ST, SFC, FBD, CFC, LD and IL
Main processor		Cortex-A8, main frequency 1GHz
User program capacity		32MB
Data capacity		32MB (including power off holding 6MB)

XSDH series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	XSDH-60A32-E	-	-	-	-

Special for Ship Navigation

CCSD Series

It has passed the certification of China Classification Society and is applicable to ships and offshore facilities. It has passed relevant EMC tests to ensure the stable and reliable operation of the system.

① Program capacity 384KB
② I/O sequential control
③ Max I/O 572 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ X-NET motion bus
⑧ 4 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)
⑨ 2 axes 100KHz pulse output

Performance specification

Product series CCSD-		C32T	C60T
Main body I/O	Total points	32	60
	Input points	18	36
	Output points	14	24
Max I/O points		544	572
High speed positioning	General pulse output	2 axes	2 axes
	Differential pulse output	-	-
High speed input	Single/AB phase mode	4 channels	4 channels
	Input mode	OC	OC
Expansion ability	Right expansion module	16	16
	Left expansion module	1	1
	BD board	1	2
Interruption	External interrupt	10	
	Timing interrupt	20	
	Other interrupts	High speed counting interrupt, pulse interrupt	
Communication function	Communication port	2 RS232 ports (COM1 is X-NET communicationby default), 1 RS485 port	
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication	
Bus function		X-NET fieldbus, X-NET motion bus	
PWM pulse width modulation		Support	
Frequency measurement		Support	
Precise timing		26 points ET0~ET25 (only even numbers can be used)	
Multi-station control		-	
Program execution mode		Cyclic scanning mode	
Programming method		Instruction, ladder diagram, C language	
Power off holding		Use FlashROM and lithium battery (3V button battery)	
Basic instruction processing speed		0.02~0.05us	
User program capacity (secret download mode)		384KB	

Special for Ship Navigation

CCSD series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	CCSD-C32T-E	-	-	CCSD-C32T-C	-
	-	CCSD-C60T-E	-	-	CCSD-C60T-C	-

(Table before continuation)

Product series CCSD-			C32T	C60T
Security function			6-bit ASCII password encryption, secret downloading	
Self-diagnosis function			Power on self-test, monitoring timer, syntax check	
Real-time clock			Built-in clock, Lithium battery power supply, with power down memory	
SD expansion card			-	
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077	
	Output relay (Y)		1280 points:Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077	
	Auxiliary relay	General M	70000 points: M0~M69999	
		Power off holding HM	12000 points: HM0~HM11999	
		Special SM	5000 points: SM0~SM4999	
	Flow	General S	8000 points S0~S7999	
		Power off holding HS	1000 pointsHS0~HS999	
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s	
		General T	5000 points T0~T4999	
		Power off holding HT	2000 points HT0~HT1999	
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647	
		General C	5000 points C0~C4999	
		Power off holding HC	2000 points HC0~HC1999	
	Special coil for WAIT instruction		32 points SEM0~SEM31	
Word soft component	Data register	General D	70000 points D0~D69999	
		Power off holding HD	25000 points HD0~HD24999	
		Special SD	5000 points SD0~SD4999	
	FlashROM register	Power off holding FD	8192 points FD0~FD8191	
		Special SFD	6000 points SFD0~SFD5999	
		Security register FS	48 points FS0~FS47	

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Basic Unit General Specification

General specification

Item	Specification
Insulation voltage	DC500V above 2MΩ
Anti noise	Noise voltage 1000Vp-p 1us pulse 1 minute
Air	No corrosive and combustible gas
Ambient temperature	0°C~60°C
Ambient humidity	5%~95% (no condensation)
Installation	It can be fixed with M3 screws or directly installed on the guide rail
Grounding (FG)	The third grounding (It shall not be grounded in common with strong current system)

*Note: XDH series ambient temperature is 0ºC~50ºC.

Power supply specification

AC power supply

Item	Specification
Rated voltage	AC100V~240V
Allowable voltage range	AC90V~265V
Rated frequency	50/60Hz
Allowable instantaneous power off time	Interruption time ≤0.5 AC cycle, interval ≥1s
Impulse current	Max 40A below 5ms/AC100V Max 60A below 5ms/AC200V
Maximum power consumption	15W (16 points)/ 30W (24 points and up)
Power supply for sensor	24VDC±10% 16 points max 200mA 32 points max 400mA

DC power supply

Item	Specification
Rated voltage	DC24V
Allowable voltage range	DC21.6V~26.4V
Rated frequency	120mA DC24V
Allowable instantaneous power off time	10ms DC24V
Impulse current	10A DC26.4V
Maximum power consumption	15W (16 points)/ 30W (24 points and up)
Power supply for sensor	24VDC±10% 16 points max 200mA 32 points max 400mA

*Note: ① Please use more than 2mm2 wires for the power cable to prevent voltage drop.
② Even in case of power failure within 10ms, the PLC can continue to work.
When the power is cut off for a long time or the abnormal voltage drops,
the PLC will stop working and the output is also in off state.
When the power supply is restored, the PLC will automatically start running.
③ The grounding terminals of basic unit and expansion module are recommended
to be connected with each other and grounded reliably.

Input specification

NPN type

Item	Specification
Input signal voltage	DC24V±10%
Input signal current	7mA/DC24V
Input ON current	Above 4.5mA
Input OFF current	Below 1.5mA
Input response time	About 10ms
Input signal format	Contactor input or NPN open collector transistor
Circuit insulation	Photoelectric coupling insulation
Input action display	LED lights when the input is ON

PNP type

Item	Specification
Input signal voltage	DC24V±10%
Input signal current	7mA/DC24V
Input ON current	Above 4.5mA
Input OFF current	Below 1.5mA
Input response time	About 10ms
Input signal format	Contactor input or PNP open collector transistor
Circuit insulation	Photoelectric coupling insulation
Input action display	LED lights when the input is ON

Differential type

Item	Contents
Input signal	5V differential signal
Input max frequency	1MHz
Circuit insulation	Photoelectric coupling insulation
Input action display	LED lights when the input is ON

Basic Unit General Specification

Output specification

Relay output

External power supply		Below AC250V, DC30V
Circuit insulation		Mechanical insulation
Action indicator		LED indicator
Max load	Resistive load	3A
	Inductive load	80VA
	Lamp load	100W
Min load		DC5V 10mA
Response time	OFF→ON	10ms
	ON→OFF	10ms

Transistor output

External power supply		DC5~30V
Circuit insulation		Optocoupler insulation
Action indicator		LED indicator
Max load	Resistive load	0.3A
	Inductive load	7.2W/DC24V
	Lamp load	1.5W/DC24V
Min load		DC5V 2mA
Open circuit leakage current		Below 0.1mA
Response time	OFF→ON	Below 0.2ms
	ON→OFF	Below 0.2ms

High speed pulse output

Model	RT/T model	T4 model	T6 model	T10 model
High speed pulse output terminal	Terminal Y0~Y1	Terminal Y0~Y3	Terminal Y0~Y5	Terminal Y0~Y11
External power supply	Below DC5~30V			
Action indicator	LED indicator			
Max current	50mA			
Pulse max output frequency	100KHz			

*Note: Terminal Y2, Y3 max pulse output frequency of XD3-24T4/32T4 is 20KHz.

Differential high speed output

Model		XD5-xDnTm-E
Output signal		5V differential signal
Max frequency		920KHz
Circuit insulation		Photoelectric coupling insulation
Action indicator		LED indicator
Response time	OFF→ON	Below 0.2ms

Serial port (RS232/RS485) communication parameter specification

Item	Parameter
Communication mode	Half duplex
Baud rate	4800bps, 9600bps, 19200bps (default), 38400bps, 57600bps, 115200bps
Data type	Data bit: 5, 6, 7, 8 (default), 9 Stop bit: 1 (default), 1.5, 2 Parity bit: none, odd, even (default)
Mode	RTU (default), ASCII, free format
Station number	1~255 (the default is 1)
Delay before sending	1~100ms (the default is 3ms)
Reply timeout	1~1000ms (the default is 300ms)
Retry count	1~20 times (the default is 3 times)

Expansion Unit

In order to meet more application requirements, XD series PLC basic units can be equipped with rich I/O expansion modules, analog input and output modules, temperature control modules, BD boards and left expansion modules. The ontology can expand up to 10 ~ 16 right expansion modules, 1 ~ 2 BD boards and 1 left expansion module of different types.

Left expansion module

Analog and temperature expansion module
With D/A, A/D conversion and temperature measurement function.

Communication module
PLC can realize wireless WiFi, 4G and other data transmission, as well as wired communication of RS232, RS485 and CANopen.

Expansion BD

The compact expansion card can be directly installed on the basic unit, does not occupy excess space, and can complete the communication

Right expansion module

I/O expansion module
It is used to expand the number of input and output points. The number of points is 8 ~ 32, and the basic unit can be expanded by 512 points at most.

The output expansion module is divided into transistor (T) and relay (R) output types.

Analog and temperature expansion module
It has D/A and A/D conversion functions. By expanding analog input/output module, temperature control module, XD series PLC can be used in temperature, flow, liquid level, pressure and other process control systems.

By adding PID regulation function, it can be used more widely, flexibly and controlled with higher precision. Only four parameters need to be set.
Each channel of the temperature control module can carry out PID control independently, which can do self-tuning, and exchange information with the PLC through FROM and TO instructions.

General specification

Item	Specification
Using environment	No corrosive gas
Ambient temperature	0℃ ~ 60℃
Storage temperature	-20 ~ 70℃
Ambient humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	It can be fixed with M3 screws or directly installed on the guide rail of DIN46277 (35mm wide). BD board is directly installed on the top of PLC.

Expansion Unit

Right expansion module

I/O expansion module

When the number of ontology points cannot meet the use requirements, this type of extension module can be used. The basic unit can be expanded by 512 points.

Total I/O points: 8 points/16 points

Total I/O points: 32 points

Digital input module

Model		Function description	Specification
NPN input type	PNP input type		
XD-E8X	XD-E8PX	8 channels digital input, DC24V power supply	Input filter time 1~50ms External wiring method: terminal block Wiring method: same to PLC unit
XD-E16X	XD-E16PX	16 channels digital input, DC24V power supply	
XD-E32X-E	XD-E32PX-E	32 channels digital input, AC220V power supply	
XD-E32X-C	XD-E32PX-C	32 channels digital input, DC24V power supply	

Digital output module

Model	Function description	Specification
XD-E8YR	8 channels relay output, no need power supply	R: relay output T: transistor output R response time below 10ms T response time below 0.2ms R max load: resistive 3A, inductive 80VA T max load: max output current of each point is 0.3A External wiring method: terminal block Wiring method: same to PLC unit
XD-E8YT	8 channels transistor output, no need power supply	
XD-E16YR	16 channels relay output, no need power supply	
XD-E16YT	16 channels transistor output, no need power supply	
XD-E32YR-E	32 channels relay output, AC220V power supply	
XD-E32YR-C	32 channels relay output, DC24V power supply	
XD-E32YT-E	32 channels transistor output, AC220V power supply	
XD-E32YT-C	32 channels transistor output, DC24V power supply	

Digital I/O module

Model		Function description	Specification
NPN input type	PNP input type		
XD-E8X8YR	XD-E8PX8YR	8 channels digital input, 8 channels relay output, DC24V power supply	Input filter time 1~50ms R: output relay T: output transistor R response time below 10ms T response time below 0.2ms R max load: resistive 3A, inductive 80VA T max load: max output current of each point is 0.3A External wiring method: terminal block Wiring method: same to PLC unit
XD-E8X8YT	XD-E8PX8YT	8 channels digital input, 8 channels transistor output, DC24V power supply	
XD-E16X16YR-E	XD-E16PX16YR-E	16 channels digital input, 16 channels relay output, AC220V power supply	
XD-E16X16YR-C	XD-E16PX16YR-C	16 channels digital input, 16 channels relay output, DC24V power supply	
XD-E16X16YT-E	XD-E16PX16YT-E	16 channels digital input, 16 channels transistor output, AC220V power supply	
XD-E16X16YT-C	XD-E16PX16YT-C	16 channels digital input, 16 channels transistor output, DC24V power supply	

Analog and temperature expansion module

It has D/A and A/D conversion functions. By expanding analog input and output module, temperature control module and XD series PLC, it can be applied to process control systems such as temperature, flow, liquid level and pressure.

With PID regulation function, it can be used more widely, flexibly, and has higher control accuracy. Only four parameters need to be set.

Each channel of the temperature control module can carry out PID control independently, can do self-tuning, and exchange information with the PLC through the FROM, TO command.

Analog input module (AD type)

Model	Channel	Input signal	Specification
XD-E4AD	4	Input voltage: 0~5V/0~10V/-5~5V/-10~10V Input current: 0~20mA/4~20mA/-20~20mA	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Resolution 1/16383 (14 bits) Comprehensive accuracy ±1% AD filter coefficient 0~254 Channel enabit bit is added AD channel has the functions of short circuit, open circuit and over range detection
XD-E8AD	8	Input voltage: 0~5V/0~10V/-5~5V/-10~10V Input current: 0~20mA/4~20mA/-20~20mA (first four channels are voltage, last four channels are current)	
XD-E8AD-A	8	Input current: 0~20mA/4~20mA/-20~20mA	
XD-E8AD-V	8	Input voltage: 0~5V/0~10V/-5~5V/-10~10V	
XD-E12AD-V	12	Input voltage: 0~5V/0~10V/-5~5V/-10~10V	

Analog output module (DA type)

Model	Channel	Input signal	Specification
XD-E2DA	2	Output voltage: 0~5V/0~10V/-5~5V/-10~10V Output current: 0~20mA/4~20mA	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Resolution 1/4095 (12 bits) Comprehensive accuracy ±1% Channel enabit bit is added
XD-E4DA	4	Output voltage: 0~5V/0~10V Output current: 0~20mA/4~20mA	

Temperature control module (PT&TC type)

Model	Channel	Input signal	Specification
XD-E6PT-P	6	PT100 Platinum thermistor Temperature range -100ºC~500ºC (digital output range -1000~5000, signed 16 bits, binary)	Power supply for analog DC24V±10%, 150mA Control precision ±5% Resolution 0.1ºC Comprehensive accuracy ±1% (relative max value) PT conversion speed 80ms/channel TC conversion speed 80ms/channel PT3 conversion speed 450ms/4 channels PT filter coefficient 0~254 Each channel has independent PID parameters and support self-tuning function Optional sampling period Isolation between XD-E6TC-P-H channels
XD- E2TC-P	2	Thermocouple type K, S, E, N, B, T, J and R Temperature range 0ºC~1300ºC (type K) (digital output range 0~13000, signed 16 bits, binary)	
XD- E6TC-P	6		
XD-E6TC-P-H	6		
XD-E4PT3-P	4	Pt100 Platinum thermistor Temperature range -100ºC~500ºC (digital output range -1000~5000, signed 16 bits, binary)	

Expansion Unit

Analog I/O hybrid module (nADxPTmDA type)

Model	Channel		I/O signal	Specification
	Input	Output		
XD-E4AD2DA	4	2	Input voltage: 0~5V/0~10V/-5~5V/-10~10V Input current: 0~20mA/4~20mA/-20~20mA Output voltage: 0~5V/0~10V/-5~5V/-10~10V Output current: 0~20mA/4~20mA	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Input resolution 1/16383 (14-bit) Output resolution 1/4095 (12-bit) AD filter coefficient 0~254 Comprehensive accuracy ±1% Channel enable bit is added AD channel has the functions of short circuit, open circuit and over range detection
XD-E2AD2PT2DA	4	2	Input voltage: 0~5V/0~10V Input current: 0~20mA/4~20mA Output voltage: 0~5V/0~10V Output current: 0~20mA/4~20mA Temperature collection: PT100 Platinum thermistor Temperature range: -100ºC ~500ºC (digital output range -1000~5000, signed 16 bits, binary)	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Input resolution 1/16383 (16-bit) Output resolution 1/1023 (10-bit) AD filter coefficient 0~254 PT channel resolution 0.1ºC Comprehensive accuracy ±1% (relative max value) PT conversion speed 2ms/channel PT filter coefficient 0~254 Channel enable bit is added
XD-E3AD4PT2DA	7	2	Input current: 0~20mA/4~20mA Output voltage: 0~5V/0~10V Temperature collection: PT100 Platinum thermistor Temperature range: -100ºC ~500ºC (digital output range -1000~5000, signed 16 bits, binary)	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Input resolution 1/16383 (14-bit) Output resolution 1/1023 (10-bit) AD filter coefficient 0~254 PT channel resolution 0.1ºC Comprehensive accuracy ±1% (relative max value) PT conversion speed 2ms/channel PT filter coefficient 0~254 Channel enable bit is added

Weighing extension module

It is used to convert the analog signal of the load cell into digital signal. The weighing module has the characteristics of dynamic weighing, small volume, stable performance, simple and practical operation.

occasions.It can be widely used in seed, chemical industry, grain, feed weight control and other

Module features

① New algorithm, optimized hardware system, faster and accurate weighing control
② Analog voltage signals of 4 load cells can be collected at the same time
③ High performance A/D conversion, sampling speed up to 450 times/s
④ The display accuracy up to 1/300000
⑤ Automatic zero tracking function
⑥ The real-time data communicates with PLC at high speed through the bus, which does not affect the conversion speed

1~2 channels weighing

4 channels weighing

Item	Specification	
Model	XD-E1WT-C, XD-E2WT-C, XD-E4WT-C	XD-E1WT-D, XD-E2WT-D, XD-E4WT-D
Analog input range	DC0~10mV (sensor 2mV/V)	DC-20~20mV
A/D actual resolution	1/1048575 (20Bit)	1/8388607(23Bit)
Max display resolution	1/300000	1/500000
Nonlinear	0.01%F.S0.01%F.S	
Conversion speed	150 times/s, 300 times/s, 450 times/s optional	
Power supply	AC220V±10%, 50/60HZ	DC24V±10%
Sensor excitation power supply	5VDC/120mA, four 350Ω load cells can be connected in parallel	
Software version	V3.5.1 and up	V3.5.3 and up

SSI encoder measurement module XD-E4SSI

Module features

① Support 4-channel absolute encoder position or displacement sensor detection
② Suitable for 10 ~ 31 bits SSI encoder, supporting 125KHz ~ 1MHz communication frequency and gray code or binary format coding
③ It has the function of disconnection detection and alarm

Specification

Item	Specification
Module power supply	DC24V (input range: 20.4~28.8V)
Module power consumption	1W (no load)
Position detection	Absolute mode
Difference between SSI data and clock signal	Comply with RS422 standard
Encoder bit number	10bit~31bit
Digital output range	0~encoder max feedback value
Resolution	1/encoder max feedback value
Communication frequency	125KHz~1MHz
Coding type	Gray code or binary code
Comprehensive accuracy	1%
Conversion speed	400us/channel
Power supply for encoder	DC24V±10%, 100mA or 300mA

XD-E4SSI communication speed and cable length

Communication speed	Shielded twisted pair length
125KHz	Max 320m
250KHz	Max 160m
500KHz	Max 60m
1MHz	Max 20m

Macro measurement module XD-E2GRP

Precision displacement sensor is also called position sensor. Digital displacement sensors are widely used to transform old machine tools and equip new machine tools. After ordinary machine tools are equipped with digital display devices, they can meet the machining accuracy requirements of most parts and are suitable for machining complex parts.

XD-E2GRP can be widely used in precision measurement occasions, such as bearing inner and outer diameter detection, shaft product detection, non-standard product detection, etc.

Performance features

① Range: ±1000UM
② Resolution: 0.1um
③ Full range linearity error: ≤0.1%
④ Repeatability error: ≤1um
⑤ Working temperature range: -10~50ºC
⑥ Data collection mode: parallel communication

Specification

Item	Specification
Power supply	DC24V±10%
Nonlinear	0.001%F.S
Time drift	0.005%F.S
Input sensitivity	0.004uV/d
Comprehensive accuracy	0.1%

Expansion Unit

Left expansion ED module

In addition to supporting the right expansion module, XD series PLC can also expand another ED module on the left side of the PLC. The left expansion ED module is designed as a thin sheet, occupies less space, and has the functions of AD/DA conversion, temperature measurement, remote communication and so on.

Analog and temperature expansion ED module

With the functions of AD/DA conversion, temperature measurement. XD series (except XD1 series) can connect 1 ED module.

Model	I/O signal	Specification
XD-4AD-A-ED	4 channels current input: 0~20mA/4~20mA	Power supply for the module: DC24V±10%, 150mA Conversion speed: 10ms (all the channels) AD/DA: Current/voltage input resolution: 1/4095 (12-bit) Current/voltage output resolution: 1/1023 (10-bit) AD/DA conversion comprehensive accuracy: ±1% PT: Temperature range: -100~500ºC Digital output range: -1000~5000 Temperature input resolution: 0.1ºC PT channel comprehensive accuracy: ±0.8% of the full scale
XD-4AD-V-ED	4 channels voltage input: 0~5V/0~10V	
XD-4DA-A-ED	4 channels current output: 0~20mA/4~20mA	
XD-4DA-V-ED	4 channels voltage output: 0~5V/0~10V	
XD-2AD2DA-A-ED	2 channels current input: 0~20mA/4~20mA 2 channels current output: 0~20mA/4~20mA	
XD-2AD2DA-V-ED	2 channels voltage input: 0~5V/0~10V 2 channels voltage output: 0~5V/0~10V	
XD-2AD2PT-A-ED	2 channels current input: 0~20mA/4~20mA 2 channels temperature input: PT100 platinum thermistor	
XD-2AD2PT-V-ED	2 channels voltage input: 0~5V/0~10V 2 channels temperature input: PT100 platinum thermistor	
XD-2PT2DA-A-ED	2 channels temperature input: PT100 platinum thermistor 2 channels current output: 0~20mA/4~20mA	
XD-2PT2DA-V-ED	2 channels temperature input: PT100 platinum thermistor 2 channels voltage output: 0~5V/0~10V	

Communication expansion ED module

PLC can realize wireless WIFI, 4G and other data transmission, as well as wired communication such as RS232, RS485 and CANopen.

XD-4GBOXL-ED Left expansion 4GBOX module

① Realize wireless downloading and real-time monitoring of PLC program
② SMS communication with user's mobile phone
③ Support remote monitoring
④ Support multiple Telecom operators including China Mobile, China Telecom, China Unicom
⑤ Support GPS positioning function
⑥ As the left expansion ED module of XD series PLC, the transmission rate can reach 1M
⑦ Support fieldbus (X-NET) and deep optimization of data monitoring
⑧ Long lasting online, with disconnection redial and watchdog functions

XD-WBOXL-ED Left expansion WIFI module

① Support 2.4GHz wireless WLAN technology
② Support AP (wireless hotspot) and STA mode
③ XD-WBOX-ED is left expansion TTL interface
④ Support wireless hotspot (same SSID) roaming technology
⑤ XD series PLC provides data support for XD-WBOX-ED
⑥ Support Modbus-TCP communication protocol (up to 4 connections)
⑦ Support X-NET communication protocol, support Xinje Cloud access

XD-NES-ED Left expansion RS232/RS485 module

XD series extended ED module can expand one RS232 or RS485 port (support fieldbus communication).

XD-COBOX-ED CANopen communication module

① The communication rate can reach 1Mbps
② 64 communication nodes
③ Support master and slave modes
④ The reliability of the system is improved
⑤ Heartbeat protection
⑥ Easier wiring

Expansion BD board

Communication expansion BD board

XD-NE-BD

XD series expansion BD, fieldbus, X-NET interface.

The names of each part are as follows:

Name		Function
Communication indicator		The indicator flashes when the BD board communicating successfully
Terminal block	A	485+
	B	485-
	SG	Signal ground
	•	Vacant terminal
Terminal resistance dialing switch		Select whether terminal resistance is required through the dial switch (120Ω)

XD-NO-BD

XD series expansion BD, fieldbus communication function and X-NET optical fiber interface. It is used for optical fiber communication. It has the advantages of high speed and strong anti-interference.

The names of each part are as follows:

Name	Function
Communication indicator	The indicator flashes when the BD board communicating successfully
Terminal block	On the left is the signal input terminal and on the right is the signal output terminal

XD-NS-BD

XD series expansion RS-232 BD.

The names of each part are as follows:

Name		Function
Communication indicator		The indicator flashes when the BD board communicating successfully
Terminal block	TX	Signal sending terminal
	RX	Signal receiving terminal
	GND	Grounding terminal
	•	Vacant terminal

Precise clock expansion BD

XD-RTC-BD

More accurate clock function can be realized, and the clock error is about 13s per month.

Software version requirements: V3.5.3 and up.

Expansion Unit

Marine special module CCSD series

CCSD series modules are equipped with marine special controller CCSD series, which is used for ships and offshore facilities. CCSD series modules include digital input and output, analog input and output, temperature control and RS485 communication expansion. They are suitable for temperature, flow, liquid level, pressure and other process control systems, and support up to 16 expansion modules.

General specification

Item	Specification
Using environment	No corrosive gas
Ambient temperature	0℃ ~ 60℃
Storage temperature	-20 ~ 70℃
Ambient humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	It can be fixed with M3 screws or directly installed on the guide rail of DIN46277 (35mm wide). BD board is directly installed on the top of PLC

Digital I/O module CCSD-nXmY

Model	Function description	Specification
CCSD-E16X16YR-E	16 channels digital input, 16 channels relay output, AC220V power supply	Input filter time 1~50ms R: output relay T: output transistor R response time below 10ms T response time below 0.2ms R max load: resistive 3A inductive 80VA T max load: max output current of each point 0.3A External wiring mode: terminal block Wiring method: same to PLC
CCSD-E16X16YR-C	16 channels digital input, 16 channels relay output, DC24V power supply	
CCSD-E16X16YT-E	16 channels digital input, 16 channels transistor output, AC220V power supply	
CCSD-E16X16YT-C	16 channels digital input, 16 channels transistor output, DC24V power supply	

Analog I/O module CCSD-nAD

Model	Channels	Input signal	Specification
CCSD-E8AD	8	Input voltage: 0~5V/0~10V/-5~5V/-10~10V Input current: 0~20mA/4~20mA/-20~20mA (first four channels are voltage, last four channels are current)	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Resolution 1/16383 (14-bit) Comprehensive accuracy ±1% AD filter coefficient 0~254 Channel enable bit is added AD channel has the functions of short circuit, open circuit and over range detection

Analog I/O module CCSD-nADmDA

Model	Channels		I/O output signal	Specification
	Input	Output		
CCSD-E4AD2DA	4	2	Input voltage: 0~5V/0~10V/-5~5V/-10~10V Input current: 0~20mA/4~20mA/-20~20mA Output voltage: 0~5V/0~10V/-5~5V/-10~10V Output current: 0~20mA/4~20mA	Power supply for analog DC24V±10%, 150mA Conversion speed 2ms/channel Input resolution 1/16383 (14-bit) Output resolution 1/4095 (12-bit) Comprehensive accuracy ±1% AD filter coefficient 0~254 Channel enable bit is added AD channel has the functions of short circuit, open circuit and over range detection

Temperature control module CCSD-nPT-P/CCSD-nTC-P

Model	Channels	Input signal	Specification
CCSD-E6PT-P	6	PT100 platinum thermistor Temperature range -100ºC~500ºC (digital output range -1000~5000, signed 16-bit, binary)	Power supply for analog DC24V±10%, 150mA Control precision: ±0.5% Resolution 0.1ºC Comprehensive accuracy ±1% (relative max value) PT conversion speed 80ms/channel TC conversion speed 80ms/channel PT3 conversion speed 450ms/4 channels PT filter coefficient 0~254 Each channel has independent PID parameters, supports self-tuning function and optional sampling period
CCSD- E6TC-P	6	Type K, S, E, N, B, T, J and R thermocouple Temperature range 0ºC~1300ºC (type K) (digital output range 0~13000, signed 16-bit, binary)	

Communication expansion BD board

CCSD-NE-BD

CCSD series expansion BD board can realize RS485 and X-NET fieldbus communication.

The names of each part are as follows:

Name		Function
Communication indicator		The indicator flashes when the BD board communicating successfully
Wiring terminal block	A	485+
	B	485-
	SG	Signal ground
	•	Vacant terminal
Terminal resistance dialing switch		Select whether terminal resistance (120Ω) is required through the dial switch

Expansion Unit

Data acquisition control module MA series

MA series modules include digital input and output, analog input and output, temperature control, RS485 communication port, based on the standard Modbus communication protocol, can connect PLC, HMI, all-in-one machine and other equipment supporting Modbus protocol. It is suitable for temperature, flow, liquid level, pressure and other process control systems, and supports the expansion of up to 16 modules.

Digital expansion module MA-nXnY

Model	Explanation
MA-8X8YR	8 channels digital input, 8 channels digital output (relay output)
MA-8X8YT	8 channels digital input, 8 channels digital output (transistor output)
MA-16X	16 channels digital input
MA-16YR	16 channels digital output (relay output)
MA-16YT	16 channels digital output (transistor output)

Analog output module MA-nDA

Model	Explanation
MA-2DA	2 channels, 10-bit high precision analog output (voltage current optional)
MA-4DA	4 channels, 10-bit high precision analog output (voltage current optional)

Analog input module MA-nAD

Model	Explanation
MA-4AD	4 channels, 12-bit high precision analog input (voltage, current optional), PID control for each channel

Analog input output module MA-nADmDA

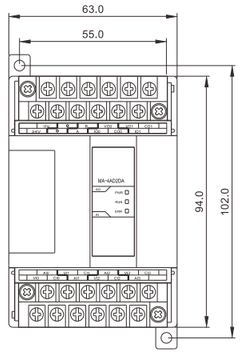
Model	Explanation
MA-4AD2DA	4 channels, 12-bit high precision analog input (voltage, current optional), PID control for each channel. 2 channels, 10-bit high precision analog output (voltage, current optional).

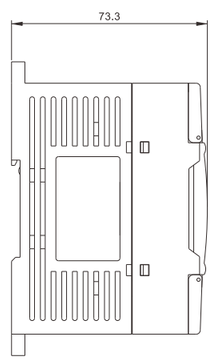
Temperature control module MA-nPT-P/MA-nTCA-P

Model	Explanation
MA-6PT-P	6 channels PT100 input, PID for each channel, 6 channels output. 1mA constant current output, not affected by the external environment changing
MA-6TCA-P	6 channels thermocouple input, PID control for each channel, 6 channels output.

Dimension drawing

(Unit: mm)





Parts

List of basic unit accessories

Communication/programming cable

XVP/DVP

For communication and program uploading/downloading.

USB to serial port convertor

USB-COM

For interface conversion between DB9 female port and USB port.

USB printer cable

JC-UA-15

Special download cable for Xinje products (except products without USB-B interface). Black, with double magnetic rings to improve anti-interference performance.

DB9 to RS485 cable

JC-EB-Length

DB9 to RS485 cable for RS485 communication between HMI and PLC. It has three models: JC-EB-3 (3m), JC-EB-5 (5m), JC-EB-8 (8m).

X-NET fieldbus cable

JC-EA-Length

Use together with XD-NE-BD or XD-NES-BD. It has 7 models:

JC-EA-1 (1m), JC-EA-05 (5m),
JC-EA-10 (10m), JC-EA-20 (20m),
JC-EA-30 (30m), JC-EA-50 (50m),
JC-EA-100 (100m)

Relay module

JR-EH

Suitable for all the RS485 communication occasions.

Program downloader

JD-P03

① Without computer, it can be used for program and data transfer and download between multiple Xinje PLCs.

② Suitable PLC: uploading requires the XD/XL/XG2 series PLC firmware v3.4.6 or above v3.5.3 (Ethernet type) or ZG/ZP series integrated controller. Downloading requires the PLC firmware v3.4 and up.

③ JD-P03 has small appearance and takes up small space.

*Note: Refer to the instruction manual for specific instructions. XDH, XC series PLC is not supported for the time being.

List of expansion module accessories

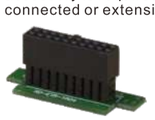
XD expansion module extension cable

XD extension cable has the length of 0.7m and 1.5m. Two 0.7m or one 1.5m cables can be added to a series of modules, and two 1.5m cables are not supported.

XD series terminal resistance

XD-ETR

The terminal resistance is a small plug-in board, which is inserted into the expansion port of the last expansion module to improve the signal quality. This accessory is required when more than 5 modules are connected or extension cables are used.

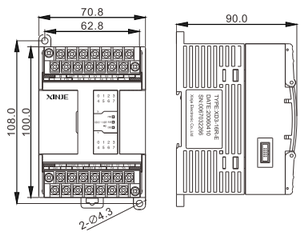


Small-sized PLC

Dimension Drawing

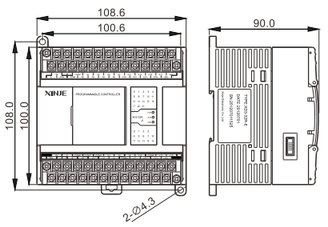
(Unit: mm)

XD series basic unit



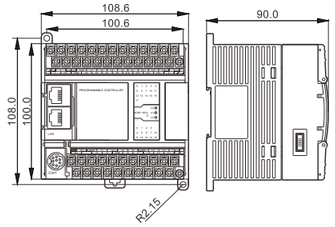
Suitable model

Series	XD1	XD2	XD3	XD5
Points	10/16 points			



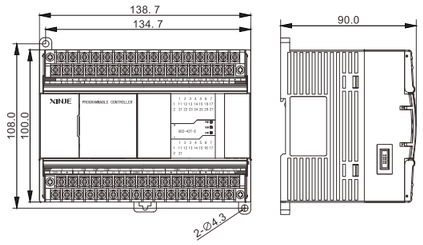
Suitable model

Series	XD1	XD2	XD3	XD5	XDM	XDC	CCSD
Points	24/32 points						



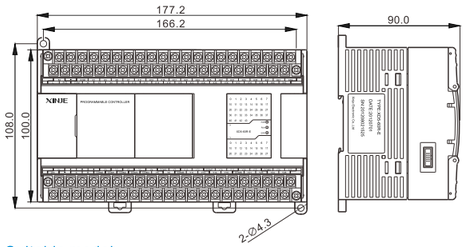
Suitable model

Series	XD5E	XDME	XDH
Points	24/30 points		



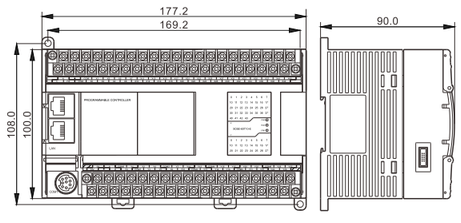
Suitable model

Series	XD2	XD5
Points	42 points	



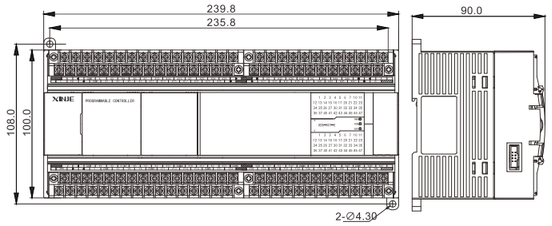
Suitable model

Series	XD2	XD3	XD5	XDM	XDC	CCSD
Points	48/60 points					



Suitable model

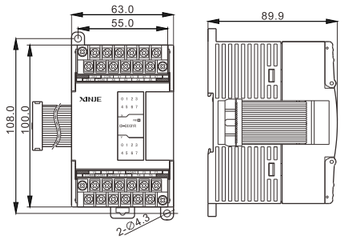
Series	XD5E	XDME	XDH	XSDH
Points	60 points			



Suitable model

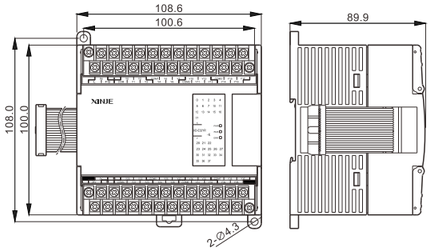
Series	XD5
Points	80 points

XD series right expansion module



Applicable model

Module type	Digital value	Analog value
Model	8X	ALL
	8Y	
	8X8Y	
	16X	
	16Y	

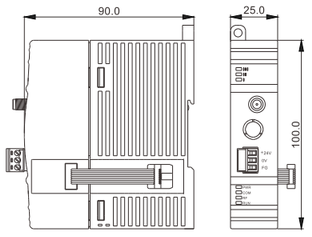


Applicable model

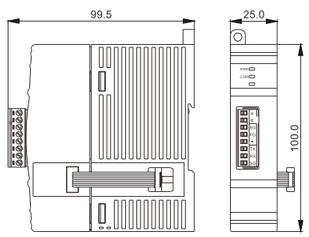
Module type	Digital value	Analog value
Model	32X	XD-E4WT-C
	32Y	XD-E4WT-D
	16X16Y	XD-E2GRP

XD series left expansion ED module

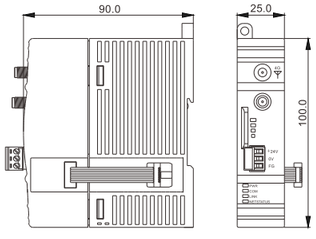
XD-WBOXL-ED



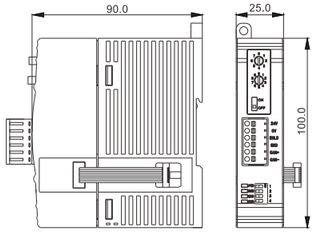
XD-NES-ED



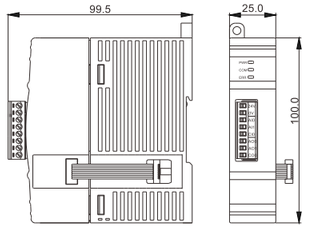
XD-4GBOXL-ED



XD-COBOX-ED



XD analog ED module

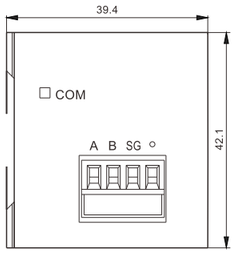


Dimension Drawing

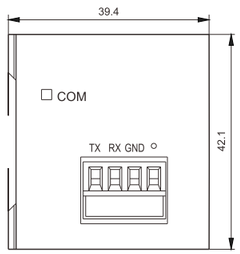
(Unit: mm)

XD series expansion BD board

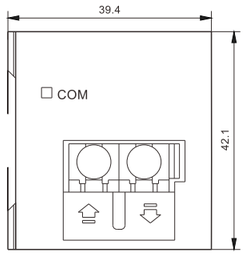
XD-NE-BD



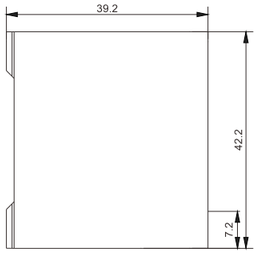
XD-NS-BD



XD-NO-BD

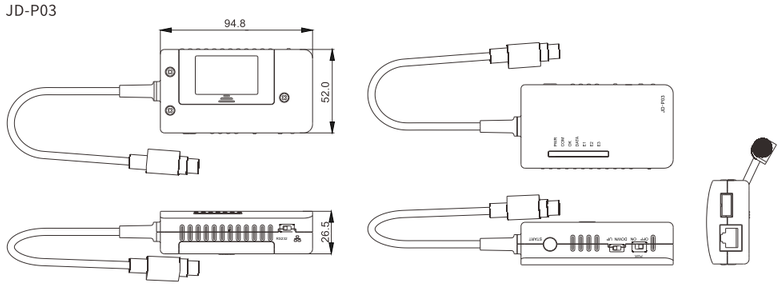


XD-RTC-BD



Host accessories

JD-P03

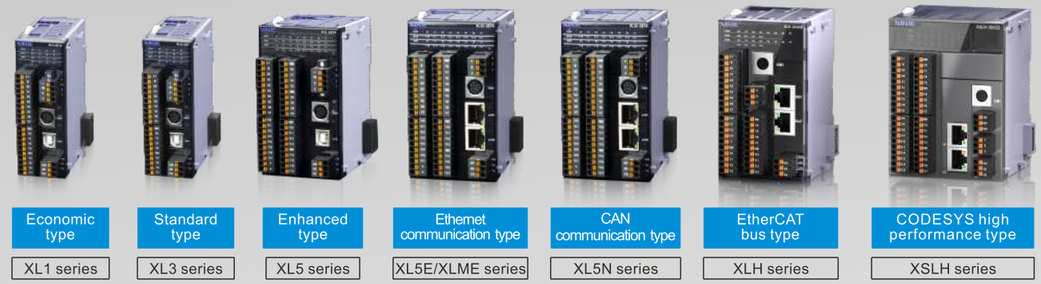


Slim Type PLC

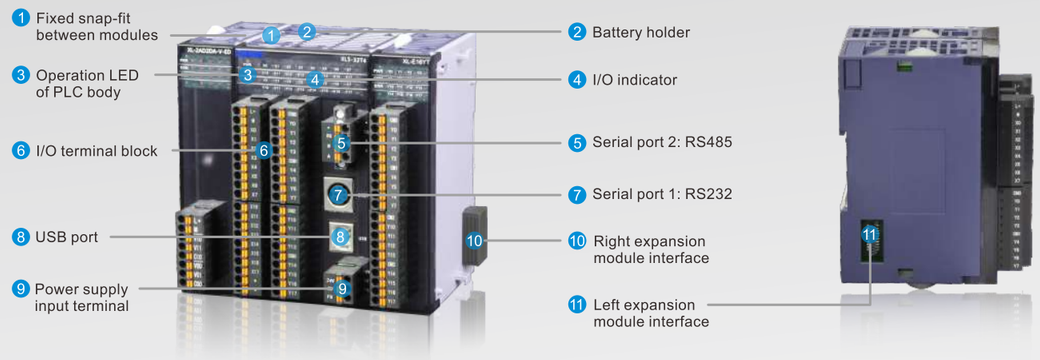
Small size, large function, powerful core

XL series PLC has card design, ultra-thin appearance, equipped with powerful CPU processor, complete functions, high reliability and compact structure, especially suitable for narrow installation space.

① Slim appearance, small and practical
② Strong compatibility
③ Strong expansion ability
④ Outstanding cost performance
⑤ Save more installation space



Economic type	Standard type	Enhanced type	Ethernet communication type	CAN communication type	EtherCAT bus type	CODESYS high performance type
XL1 series	XL3 series	XL5 series	XL5E/XLME series	XL5N series	XLH series	XSLH series



Economic Type

XL1 Series

The function is relatively simple, which can carry out logic control, data operation and other general functions. XL1 series is equipped with RS232 port, RS485 port, USB port and supports the networking function of X-NET fieldbus. No expansion, high-speed processing function.

① Program capacity 256KB
② I/O sequential control
③ Max I/O 16 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ USB port high speed download (max 12Mbps)

XL1 series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	-	-	-	XL1-16T	-
	-	-	-	-	XL1-16T-U	-
PNP type	-	-	-	-	-	-

Performance specification

Product series XL1-		16T	16T-U
Main body I/O	Total points	16	16
	Input points	8	8
	Output points	8	8
Max I/O points		16	16
High speed positioning	General pulse output	-	-
	Differential pulse output	-	-
High speed input	Single/AB phase mode	-	-
	Input mode	-	-
Expansion ability	Right expansion module	-	-
	Left expansion module	-	-
	BD board	-	-
Interruption	External interrupt	6	6
	Timing interrupt	20	20
	Other interrupts	-	-
Communication function	Communication port	2 RS232 ports, 1 RS485 port	1 RS232 port, 1 RS485 port, 1 USB port
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication	
Bus function		X-NET fieldbus	
PWM pulse width modulation		-	
Frequency measurement		-	
Precise timing		-	
Multi-station control		-	
Program execution mode		Cyclic scanning mode	
Programming method		Instruction, ladder diagram, C language	
Power off holding		Use FlashROM and lithium battery (3V button battery)	
Basic instruction processing speed		0.02~0.05us	
User program capacity (secret download mode)		256KB	

Product series XL1-			16T	16T-U
Security function			6-bit ASCII password protection, secret download	
Self-diagnosis function			Power on self-test, monitoring timer, syntax check	
Real-time clock			Built-in clock, Lithium battery, power off memory	
SD expansion card			-	
Bit soft component	Input relay (X)		896 points: X0~X77, X10000~X11177, X20000~X20177, X30000~X30077	
	Output relay (Y)		896 points: Y0~Y77, Y10000~Y11177, Y20000~Y20177, Y30000~Y30077	
	Auxiliary relay	General M	8000 points M0~M7999	
		Power off holding HM	960 points HM0~HM959	
		Special SM	2048 points SM0~SM2047	
	Flow	General S	1024 points S0~S1023	
		Power off holding HS	128 points HS0~HS127	
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s	
		General T	576 points T0~T575	
		Power off holding HT	96 points HT0~HT95	
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647	
		General C	576 points C0~C575	
		Power off holding HC	96 points HC0~HC95	
	Special coil for WAIT instruction		32 points SEM0~SEM31	
Word soft component	Data register	General D	8000 points D0~D7999	
		Power off holding HD	1000 points HD0~HD999	
		Special SD	2048 points SD0~SD2047	
	FlashROM register	Power off holding FD	5120 points FD0~FD5119	
		Special SFD	2000 points SFD0~SFD1999	
		Security register FS	48 points FS0~FS47	

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Slim type PLC

Standard Type

XL3 Series

It has complete functions. In addition to the general data processing function, it also has special functions such as high-speed pulse output, high-speed counting function, pulse width modulation, frequency measurement and accurate timing. It supports the connection of right expansion module and left expansion module, which can meet various use needs.

① Program capacity 256KB
② I/O sequential control
③ Max I/O 352 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ USB port high speed download (max 12Mbps)
⑧ 3 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)
⑨ 2 channels 100KHz pulse output

XL3 series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	-	-	XL3-16R	XL3-16T	-
	-	-	-	XL3-32R	XL3-32T	-
PNP type	-	-	-	XL3-16PR	-	-
	-	-	-	XL3-32PR	-	-

Performance specification

Product series XL3-		16R/T	32R/T
PLC body I/O	Total points	16	32
	Input points	8	16
	Output points	8	16
Max I/O points		336	352
High speed positioning	General pulse output	2 axes	2 axes
	Differential pulse output	-	-
High speed input	Single/AB phase mode	3 channels	3 channels
	Input mode	OC	OC
Expansion ability	Right expansion module	10	10
	Left expansion module	1	1
	BD board	-	-
Interruption	External interrupt	6	10
	Timing interrupt	20	
	Other interrupts	High speed counter interrupt, pulse interrupt	
Communication function	Communication port	1 RS232 port, 1 RS485 port, 1 USB port	
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication	
Bus function		X-NET fieldbus	
PWM pulse width modulation		Support	
Frequency measurement		Support	
Precise timing		26 points ET0~ET25 (Only even numbers can be used)	
Multi-station control		-	
Program execution mode		Cyclic scanning mode	
Programming method		Command, ladder chart, C language	
Power off holding		FlashROM and lithium battery (3V button battery)	
Basic instruction processing speed		0.02~0.05us	
User program capacity (secret download mode)		256KB	

Product series XL3-			16R/T	32R/T
Security function			6-bit ASCII password protection, secret download	
Self-diagnosis function			Power on self-test, monitoring timer, syntax check	
Real-time clock			Built-in clock, Lithium battery, power off memory	
SD expansion card			-	
Bit soft component	Input relay (X)		896 points: X0~X77, X10000~X11177, X20000~X20177, X30000~X30077	
	Output relay (Y)		896 points: Y0~Y77, Y10000~Y11177, Y20000~Y20177, Y30000~Y30077	
	Auxiliary relay	General M	8000 points M0~M7999	
		Power off holding HM	960 points HM0~HM959	
		Special SM	2048 points SM0~SM2047	
	Flow	General S	1024 points S0~S1023	
		Power off holding HS	128 points HS0~HS127	
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s	
		General T	576 points T0~T575	
		Power off holding HT	96 points HT0~HT95	
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647	
		General C	576 points C0~C575	
		Power off holding HC	96 points HC0~HC95	
	Special coil for WAIT instruction		32 points SEM0~SEM31	
Word soft component	Data register	General D	8000 points D0~D7999	
		Power off holding HD	1000 points HD0~HD999	
		Special SD	2048 points SD0~SD2047	
	FlashROM register	Power off holding FD	5120 points FD0~FD5119	
		Special SFD	2000 points SFD0~SFD1999	
		Security register FS	48 points FS0~FS47	

*Note: ① The PLC with transistor output has high speed positioning function.
② The '-' in the table indicates that the model does not have this function.
③ Special means it is occupied by the system and cannot be used for other purposes.

Slim type PLC

Enhanced Type

XL5 Series

In addition to all the functions of standard PLC, it has faster processing speed (about 15 times of XC series), larger internal resource space, 2 ~ 4 channels high-speed pulse output, supports the connection of right expansion module and left expansion ED module, and can meet various use requirements.

① Program capacity 512KB
② I/O sequential control
③ Max I/O 576 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485
⑥ X-NET fieldbus
⑦ USB port high speed download (max 12Mbps)
⑧ 3~4 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)
⑨ 2~10 channels 100KHz pulse output

XL5 series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	-	-	-	XL5-16T	-
	-	-	-	-	XL5-32T	-
	-	-	-	-	XL5-32T4	-
	-	-	-	-	XL5-64T10	-
PNP type	-	-	-	-	XL5-32PT4	-

Performance specification

Product series XL5-		16T	32T	32T4	64T10
PLC body I/O	Total points	16	32	32	64
	Input points	8	16	16	32
	Output points	8	16	16	32
Max I/O points		528	544	544	576
High speed positioning	General pulse output	2 axes	2 axes	4 axes	10 axes
	Differential pulse output	-	-	-	-
High speed input	Single/AB phase mode	3 channels	3 channels	4 channels	10 channels
	Input mode	OC	OC	OC	OC
Expansion ability	Right expansion module	16	16	16	16
	Left expansion module	1	1	1	1
	BD board	-	-	-	-
Interruption	External interrupt	6	10	10	10
	Timing interrupt	20			
	Other interrupts	High speed counter interrupt, pulse interrupt			
Communication function	Communication port	1 RS232 port, 1 RS485 port, 1 USB port			
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication			
Bus function		X-NET fieldbus			
PWM pulse width modulation		Support			
Frequency measurement		Support			
Precise timing		26 points ET0~ET25 (Only even numbers can be used)			
Multi-station control		-			
Program execution mode		Cyclic scanning mode			
Programming method		Command, ladder chart, C language			
Power off holding		FlashROM and lithium battery (3V button battery)			
Basic instruction processing speed		0.02~0.05us			
User program capacity (secret download mode)		512KB			

Product series XL3-			16T	32T	32T4	64T10
Security function			6-bit ASCII password protection, secret download			
Self-diagnosis function			Power on self-test, monitoring timer, syntax check			
Real-time clock			Built-in clock, Lithium battery, power off memory			
SD expansion card			-			
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077			
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077			
	Auxiliary relay	General M	70000 points M0~M69999			
		Power off holding HM	12000 points HM0~HM11999			
		Special SM	5000 points SM0~SM4999			
	Flow	General S	8000 points S0~S7999			
		Power off holding HS	1000 points HS0~HS999			
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s			
		General T	5000 points C0~C4999			
		Power off holding HT	2000 points HC0~HC1999			
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647			
		General C	5000 points C0~C4999			
		Power off holding HC	2000 points HT0~HT1999			
	Special coil for WAIT instruction		32 points SEM0~SEM31			
Word soft component	Data register	General D	70000 points D0~D69999			
		Power off holding HD	25000 points HD0~HD24999			
		Special SD	5000 points SD0~SD4999			
	FlashROM register	Power off holding FD	8192 points FD0~FD8191			
		Special SFD	6000 points SFD0~SFD5999			
		Security register FS	48 points FS0~FS47			

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Slim type PLC

Ethernet Communication Type

XL5E Series

In addition to all the functions of XL5 series, it has faster processing speed (about 2 ~ 3 times that of XDM series), larger internal resource space (1M), RS232, RS485 and Ethernet ports, supports 2 ~ 10 channels pulse output, and supports the connection of right expansion module and left expansion module.

① Program capacity 1MB
② I/O sequential control
③ Max I/O 576 points
④ Basic instruction 0.01~0.03us
⑤ RS232, RS485, RJ45
⑥ X-NET fieldbus
⑦ 2~10 channels 100KHz pulse output
⑧ 3~10 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)

XL5E series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	-	-	-	XL5E-16T	-
	-	-	-	-	XL5E-32T	-
	-	-	-	-	XL5E-32T4	-
	-	-	-	-	XL5E-64T6	-
	-	-	-	-	XL5E-64T10	-
PNP type	-	-	-	-	XL5E-32PT4	-

Performance specification

Product series XL5E-		16T	32T	32T4	64T6	64T10
PLC body I/O	Total points	16	32	32	64	64
	Input points	8	16	16	32	32
	Output points	8	16	16	32	32
Max I/O points		528	544	544	576	576
High speed positioning	General pulse output	2 axes	2 axes	4 axes	6 axes	10 axes
	Differential pulse output	-	-	-	-	-
High speed input	Single/AB phase mode	3 channels	3 channels	4 channels	6 channels	10 channels
	Input mode	OC	OC	OC	OC	OC
Expansion ability	Right expansion module	16	16	16	16	16
	Left expansion module	1	1	1	1	1
	BD board	-	-	-	-	-
Interruption	External interrupt	6	10	10	10	10
	Timing interrupt	20				
	Other interrupts	High speed counter interrupt, pulse interrupt				
Communication function	Communication port	1 RS232 port, 1 RS485 port, 2 RJ45 ports				
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication				
Bus function		X-NET fieldbus				
PWM pulse width modulation		Support				
Frequency measurement		Support				
Precise timing		26 points ET0~ET25 (Only even numbers can be used)				
Multi-station control		Support				
Program execution mode		Cyclic scanning mode				
Programming method		Command, ladder chart, C language				
Power off holding		FlashROM and lithium battery (3V button battery)				
Basic instruction processing speed		0.01~0.03us				
User program capacity (secret download mode)		1MB				

Product series XL5E-			16T	32T	32T4	64T6	64T10
Security function			6-bit ASCII password protection, secret download				
Self-diagnosis function			Power on self-test, monitoring timer, syntax check				
Real-time clock			Built-in clock, Lithium battery, power off memory				
SD expansion card			-				
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077				
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077				
	Auxiliary relay	General M	70000 points M0~M69999				
		Power off holding HM	12000 points HM0~HM11999				
		Special SM	5000 points SM0~SM4999				
	Flow	General S	8000 points S0~S7999				
		Power off holding HS	1000 points HS0~HS999				
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s				
		General T	5000 points C0~C4999				
		Power off holding HT	2000 points HC0~HC1999				
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647				
		General C	5000 points C0~C4999				
		Power off holding HC	2000 points HT0~HT1999				
	Special coil for WAIT instruction		32 points SEM0~SEM31				
Word soft component	Data register	General D	70000 points D0~D69999				
		Power off holding HD	25000 points HD0~HD24999				
		Special SD	5000 points SD0~SD4999				
	FlashROM register	Power off holding FD	8192 points FD0~FD8191				
		Special SFD	6000 points SFD0~SFD5999				
		Security register FS	48 points FS0~FS47				

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Slim type PLC

CAN Communication Type

XL5N Series

Compatible with most functions of XL5E series, it has built-in two-channel independent CAN communication, equipped with RS232, RS485, RJ45 port, supports two-channel pulse output, three-channel high-speed counting, and supports the connection of right expansion module and left expansion module.

① Program capacity 1MB
② I/O sequential control
③ Max I/O 544 points
④ Basic instruction 0.01~0.03us
⑤ RS232, RS485, RJ45
⑥ 2 channels CAN communication, support CANopen and CAN free format communication
⑦ Support Ethernet communication
⑧ 2 channels 100KHz pulse output
⑨ 3 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)

XL5N series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	-	-	-	XL5N-32T	-

Performance specification

Product series XL5N-		32T
PLC body I/O	Total points	32
	Input points	16
	Output points	16
Max I/O points		544
High speed positioning	General pulse output	2 axes
	Differential pulse output	-
High speed input	Single/AB phase mode	3 channels
	Input mode	OC
Expansion ability	Right expansion module	16
	Left expansion module	1
	BD board	-
Interruption	External interrupt	10
	Timing interrupt	20
	Other interrupts	High speed counter interrupt, pulse interrupt
Communication function	Communication port	1 RS232 port, 1 RS485 port, 2 RJ45 ports
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication, Ethernet communication, CAN communication
Bus function		CANbus control, X-NET fieldbus
PWM pulse width modulation		Support
Frequency measurement		Support
Precise timing		Support
Multi-station control		Support
Program execution mode		Cyclic scanning mode
Programming method		Command, ladder chart, C language
Power off holding		FlashROM
Basic instruction processing speed		0.01~0.03us
User program capacity (secret download mode)		1MB

Product series XL5N-			32T
Security function			6-bit ASCII password protection, secret download
Self-diagnosis function			Power on self-test, monitoring timer, syntax check
Real-time clock			Built-in clock, Lithium battery, power off memory
SD expansion card			-
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077
	Auxiliary relay	General M	200000 points M0~M199999
		Power off holding HM	20000 points HM0~HM19999
		Special SM	5000 points SM0~SM4999
	Flow	General S	20000 points S0~S19999
		Power off holding HS	2000 points HS0~HS1999
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s
		General T	20000 points T0~T19999
		Power off holding HT	2000 points HT0~HT1999
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647
		General C	20000 points C0~C19999
		Power off holding HC	2000 points HC0~HC1999
	Special coil for WAIT instruction		32 points SEM0~SEM31
Word soft component	Data register	General D	500000 points D0~D499999
		Power off holding HD	50000 points HD0~HD49999
		Special SD	50000 points SD0~SD49999
	FlashROM register	Power off holding FD	65536 points FD0~FD65535
		Special SFD	50000 points SFD0~SFD49999
		Security register FS	48 points FS0~FS47

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

Slim type PLC

Ethernet Communication Type

XLME Series

In addition to all the functions of XDM series small-sized PLC, it has faster processing speed (about 2 ~ 3 times that of XDM series), larger internal resource space (1M), supports up to 10 channels pulse output, is equipped with RS232, RS485 port and 2 RJ45 ports, and supports the connection of right expansion module and left expansion module.

① Program capacity 1MB
② I/O sequential control
③ Max I/O 576 points
④ Basic instruction 0.01~0.03us
⑤ RS232, RS485, RJ45
⑥ X-NET fieldbus
⑦ 4~10 channels 100KHz pulse output
⑧ 4~10 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)
⑨ Linear/arc interpolation
⑩ Follow-up function

XLME series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	-	-	-	XLME-32T4	-
	-	-	-	-	XLME-64T10	-

Performance specification

Product series XLME-		32T4	64T10
PLC body I/O	Total points	32	64
	Input points	16	32
	Output points	16	32
Max I/O points		544	576
High speed positioning	General pulse output	4 axes	10 axes
	Differential pulse output	-	-
High speed input	Single/AB phase mode	4 channels	10 channels
	Input mode	OC	OC
Expansion ability	Right expansion module	16	16
	Left expansion module	1	1
	BD board	-	-
Interruption	External interrupt	10	10
	Timing interrupt	20	
	Other interrupts	High speed counter interrupt, pulse interrupt	
Communication function	Communication port	1 RS232 port, 1 RS485 port, 2 RJ45 ports	
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication, Ethernet communication	
Bus function		X-NET fieldbus	
PWM pulse width modulation		Support	
Frequency measurement		Support	
Precise timing		26 points ET0~ET25 (Only even numbers can be used)	
Multi-station control		Support	
Program execution mode		Cyclic scanning mode	
Programming method		Command, ladder chart, C language	
Power off holding		FlashROM and lithium battery (3V button battery)	
Basic instruction processing speed		0.01~0.03us	
User program capacity (secret download mode)		1MB	

Product series XLME-			32T4	64T10
Security function			6-bit ASCII password protection, secret download	
Self-diagnosis function			Power on self-test, monitoring timer, syntax check	
Real-time clock			Built-in clock, Lithium battery, power off memory	
SD expansion card			-	
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077	
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077	
	Auxiliary relay	General M	70000 points M0~M69999	
		Power off holding HM	12000 points HM0~HM11999	
		Special SM	5000 points SM0~SM4999	
	Flow	General S	8000 points S0~S7999	
		Power off holding HS	1000 points HS0~HS999	
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s	
		General T	5000 points T0~T4999	
		Power off holding HT	2000 points HT0~HT1999	
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647	
		General C	5000 points C0~C4999	
		Power off holding HC	2000 points HC0~HC1999	
	Special coil for WAIT instruction		32 points SEM0~SEM31	
Word soft component	Data register	General D	70000 points D0~D69999	
		Power off holding HD	25000 points HD0~HD24999	
		Special SD	5000 points SD0~SD4999	
	FlashROM register	Power off holding FD	8192 points FD0~FD8191	
		Special SFD	6000 points SFD0~SFD5999	
		Security register FS	48 points FS0~FS47	

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

EtherCAT Bus Type

XLH Series

Compatible with most functions of XLME, it has larger program capacity and faster processing speed, supports Ethernet communication, EtherCAT bus, motion control commands such as interpolation and follow-up, can connect expansion module and left expansion ED module.

① Program capacity 2~4MB
② Max I/O 542 points
③ Basic instruction 0.01~0.05us
④ RS232, RS485, RJ45
⑤ Ethernet communication
⑥ X-NET fieldbus
⑦ EtherCAT bus control
⑧ 4 channels 100KHz pulse output
⑨ 4 channels high speed counter (up to 200KHz)
⑩ Follow-up function
⑪ 3 axes linear/arc interpolation
⑫ 16 channels electronic CAM (XLH-24A16L cannot support)

XLH series model list

Model						
	AC power supply			DC power supply		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN type	-	-	-	-	XLH-24A16	-
	-	-	-	-	XLH-24A16L	-
	-	-	-	-	XLH-30A32	-

Performance specification

Product series XLH-		24A16	24A16L	30A32
PLC body I/O	Total points	24	24	30
	Input points	12	12	14
	Output points	12	12	16
Max I/O points		536	536	542
High speed positioning	General pulse output	4 axes	4 axes	4 axes
	Differential pulse output	-	-	-
High speed input	Single/AB phase mode	4 channels	4 channels	4 channels
	Input mode	OC	OC	2 channels differential signal + 2 channels OC
Expansion ability	Right expansion module	16		
	Left expansion module	1		
	BD board	-		
Interruption	External interrupt	10		
	Timing interrupt	20		
	Other interrupts	High speed counter interrupt, pulse interrupt		
Communication function	Communication port	1 RS232 port, 1 RS485 port, 2 RJ45 ports		
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication, Ethernet communication, CAN communication (only 30A32 support)		
Bus function		EtherCAT bus control XLH-24A16, XLH-30A32: support single axis, axis group motion control and electronic CAM function XLH-24A16L: support single axis, axis group motion control (Note: cannot support electronic CAM function)		
PWM pulse width modulation		-		
Frequency measurement		-		
Precise timing		26 points ET0~ET25 (cannot support this function)		
Multi-station control		Support		
Program execution mode		Cyclic scanning mode		
Programming method		Command, ladder chart, C language		
Power off holding		FlashROM		
Basic instruction processing speed		0.02~0.05us	0.02~0.05us	0.01~0.03us
User program capacity (secret download mode)		2MB	2MB	4MB

Product series XLH-			24A16	24A16L	30A32
Security function			6-bit ASCII password protection, secret download		
Self-diagnosis function			Power on self-test, monitoring timer, syntax check		
Real-time clock			Built-in clock, Lithium battery, power off memory		
SD expansion card			-		
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11777, X20000~X20177, X30000~X30077		
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20177, Y30000~Y30077		
	Auxiliary relay	General M	200000 points M0~M199999		
		Power off holding HM	20000 points HM0~HM19999		
		Special SM	50000 points SM0~SM49999		
	Flow	General S	20000 points S0~S19999		
		Power off holding HS	2000 points HS0~HS1999		
	Timer	Specification	100ms timer: 0.1~3276.7s, 10ms timer: 0.01~327.67s, 1ms timer: 0.001~32.767s		
		General T	20000 points T0~T19999		
		Power off holding HT	2000 points HT0~HT1999		
		Precise timing	40 points ET0~ET39		
	Counter	Specification	16-bit counter: 0~32767 32-bit counter: -2147483648~+2147483647		
		General C	20000 points C0~C19999		
		Power off holding HC	2000 points HC0~HC1999		
		High speed counter	40 points HSC0~HSC39		
	Special coil for WAIT instruction		32 points SEM0~SEM31		
Word soft component	Data register	General D	500000 points D0~D499999	500000 points D0~D499999	1000000 points D0~D999999
		Power off holding HD	50000 points HD0~HD49999	50000 points HD0~HD49999	100000 points HD0~HD99999
		Special SD	50000 points SD0~SD49999		
	FlashROM register	Power off holding FD	65536 points FD0~FD65535		
		Special SFD	50000 points SFD0~SFD49999		
		Security register FS	48 points FS0~FS47		

*Note: ① The '-' in the table indicates that this model doesn't have this function.
② Special refers to system occupancy, cannot be used for other purposes.

CODESYS High Performance Type

XSLH Series

The small PLC developed based on Codesys platform can significantly improve the programming efficiency and support the PLCopen programming specification. Many standard function libraries can be referenced to develop proprietary function blocks and instruction libraries.

① EtherCAT motion control
② Support EtherCAT remote IO
③ 32 channels electronic CAM
④ Ethernet communication
⑤ Online download

Performance specification

Product series XSLH-		30A32
PLC body I/O	Total points	30
	Input points	14
	Output points	16
Max I/O points		542
High speed positioning	General pulse output	4 axes (not supported right now)
	Differential pulse output	-
High speed input	Single/AB phase mode	4 channels
	Input mode	2 channels differential signal + 2 channels OC
Expansion ability	Right expansion module	16
	Left expansion module	1
	BD board	-
External interrupt		10
Communication function	Communication port	1 RS232 port, 1 RS485 port, 2 RJ45 ports
	Communication protocol	Standard Modbus ASCII/RTU communication, Ethernet IP, TCP / IP, UDP, OPC UA, free format protocol, CAN communication
Bus function		EtherCAT bus control (max 32 nodes)
Programming method		ST, SFC, FBD, CFC, LD and IL
Main processor		Cortex-A8, dominant frequency 1GHz
User program capacity		32MB
Data capacity		32MB (including power off holding 6MB)

Basic Unit Specification

General specification

Item	Specification
Insulation voltage	Above DC500V 2MΩ
Anti-noise	Noise voltage 1000Vp-p 1us pulse 1 minute
Air	No corrosive and combustible gas
Ambient temperature	0℃~55℃
Ambient humidity	5%RH~95%RH (no condensation)
Installation	Directly mounted on the guide rail
Grounding	The third kind of grounding (not common grounding with strong current system)

Power supply specification

DC power supply

Item	Specification
Rated voltage	DC24V
Allowable voltage range	DC21.6V~26.4V
Rated power	120mA DC24V
Allowable instantaneous power off time	10ms DC24V
Impact current	10A DC26.4V
Max power consumption	15W (16 points) / 30W (24 points and up)
Power supply for sensor	24VDC±10% 16 points max 200mA, 32 points max 400mA

Input specification

NPN mode

Item	Specification
Input signal voltage	DC24V±10%
Input signal current	7mA/DC24V
Input ON current	Above 4.5mA
Input OFF current	Below 1.5mA
Input response time	About 10ms
Input signal format	Contactor input or NPN open collector transistor
Circuit insulation	Photoelectric coupling insulation
Input action display	LED lights when input is ON

PNP mode

Item	Specification
Input signal voltage	DC24V±10%
Input signal current	7mA/DC24V
Input ON current	Above 4.5mA
Input OFF current	Below 1.5mA
Input response time	About 10ms
Input signal format	Contactor input or PNP open collector transistor
Circuit insulation	Photoelectric coupling insulation
Input action display	LED lights when input is ON

Differential mode

Item	Specification
Input signal	5V differential signal
Input max frequency	1MHz
Circuit insulation	Photoelectric coupling insulation
Input action display	LED lights when input is ON

*Note: XL5/XL5E/XLME series 64 points models don't have input ON/OFF current. Their input ON voltage is below 9V, and input OFF voltage is above 19V.

Output specification

Relay output

External power supply		Below AC250V, DC30V
Circuit insulation		Mechanical insulation
Action indicator		LED light
Max load	Resistive load	3A
	Inductive load	80VA
	Lamp load	100W
Min load		DC5V 10mA
Response time	OFF→ON	10ms
	ON→OFF	10ms

Transistor output

External power supply		DC5~30 V
Circuit insulation		Optocoupler insulation
Action indicator		LED light
Max load	Resistive load	0.3A
	Inductive load	7.2W/DC24V
	Lamp load	1.5W/DC24V
Min load		DC5V 2mA
Open circuit leakage current		Below 0.1mA
Response time	OFF→ON	Below 0.2ms
	ON→OFF	Below 0.2ms

High speed pulse output

Model	T	T4	T6	T10
High speed pulse output terminal	Y0~Y1	Y0~Y3	Y0~Y5	Y0~Y11
External power supply	Below DC5~30V			
Action indicator	LED light			
Max current	50mA			
Pulse max output frequency	100KHz			

Serial port (RS232/RS485) communication parameter specification

Item	Parameter
Communication mode	Half duplex
Baud rate	4800bps, 9600bps, 19200bps (default), 38400bps, 57600bps, 115200bps
Data type	Data bit: 5, 6, 7, 8 (default), 9. Stop bit: 1 (default), 1.5, 2. Parity bit: none, odd, even (default)
Mode	RTU (default), ASCII, free format
Station no.	1~255 (default 1)
Delay before sending	1~100ms (default 3ms)
Reply timeout	1~1000ms (default 300ms)
Retry count	1~20 times (default 3 times)

Expansion Unit

In order to meet the application requirements of more occasions, XL series PLC can be equipped with rich I/O expansion module, analog input and output module, temperature control module and left expansion module. The main body can expand 10~16 different type of right expansion modules and one left expansion ED module.

Left expansion ED module

Analog and temperature expansion module
With D/A, A/D conversion and temperature measurement function.

Communication module
PLC can realize CANopen, RS232, RS485 communication.

Right expansion module

I/O expansion module
To expand the I/O points, the points include 8~32 points. The basic unit can extend to 512 points.

The output type includes transistor (T) and relay (R).

Analog and temperature expansion module
It has D/A and A/D conversion functions. XD/XL series PLC can be applied to temperature, flow, liquid level, pressure and other process control systems by expanding analog input/output module and temperature control module.

Adding PID regulation function, it has wider and more flexible use and higher control accuracy. Only four parameters need to be set.

Each channel of the temperature control module can carry out PID control independently, which can be self-tuning, and exchange information with the main body through FROM and TO instructions.

General specification

Item	Specification
Using environment	No corrosive gas
Ambient temperature	0℃ ~ 55℃
Storage temperature	-20 ~ 70℃
Ambient humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	It is directly installed on the guide rail of DIN46277 (35mm width)

Right expansion module

I/O expansion module

When the number of main body points cannot meet the use requirements, this type of expansion module can be used to expand the I/O points to 544 points at most.

European terminal: 16/32 points Horn terminal: 16/32 points External terminal strip is required

Digital input module

Type		Function description	Specification
NPN input	PNP input		
XL-E16X	XL-E16PX	16 channels digital input	DC24V power supply Input filter time 1~50ms optional External wiring method: 16X, 32X: built-in terminal strip 32X-A: external terminal block is required The wiring method is same to PLC main body
XL-E32X	XL-E32PX	32 channels digital input	
XL-E32X-A	-	32 channels digital input	

Digital output module

Model	Function description	Specification
XL-E16YR	16 channels relay output, no power supply required	The module does not require power supply R: output relay T: output transistor R response time is below 10ms T response time is below 0.2ms R max load: resistive 3A inductive 80VA T max load: each point max output current is 0.3A External wiring method: 16YR, 16YT, 32YT: built-in terminal strip 16YT-A, 32YT-A: external terminal block is required The wiring method is same to PLC main body
XL-E16YT	16 channels transistor output, no power supply required	
XL-E16YT-A	16 channels transistor output, no power supply required	
XL-E32YT	32 channels transistor output, no power supply required	
XL-E32YT-A	32 channels transistor output, no power supply required	

Digital I/O module

Model		Function description	Specification
NPN input	PNP input		
XL-E8X8YR	XL-E8PX8YR	8 channels digital input, 8 channels relay output	DC 24V power supply Input filter time 1~50ms optional R: output relay T: output transistor R response time is below 10ms T response time is below 0.2ms R max load: resistive 3A inductive 80VA T max load: each point max output current is 0.3A External wiring method: 8X8YR, 8X8YT, 16X16YT: built-in terminal strip 16X16YT-A: external terminal block is required The wiring method is same to PLC main body
XL-E8X8YT	XL-E8PX8YT	8 channels digital input, 8 channels transistor output	
XL-E16X16YT	XL-E16PX16YT	16 channels digital input, 16 channels transistor output	
XL-E16X16YT-A	-	16 channels digital input, 16 channels transistor output	

Expansion Unit

Analog and temperature expansion module

It has D/A and A/D conversion functions. XD/XL series PLC can be applied to temperature, flow, liquid level, pressure and other process control systems by expanding analog input/output module and temperature control module.

Adding PID regulation function, it has wider and more flexible use and higher control accuracy. Only four parameters need to be set.

Each channel of the temperature control module can carry out PID control independently, which can be self-tuning, and exchange information with the main body through FROM and TO instructions.

Temperature control module (PT&TC type)

Model	Channel	Input signal	Specification
XL-E4PT3-P	4	PT100 platinum thermistor Measuring temperature range: -100ºC ~500ºC (Digital output range -1000~5000, with sign 16-bit, binary)	Power supply for analog DC24V ±10%, 50mA Control precision ±0.5% Resolution 0.1ºC Comprehensive accuracy ±1% (relative max value) PT conversion speed 450ms/4 channels TC conversion speed 420ms/4 channels PT filter coefficient 0~254 4 groups of PID parameters, support self-tuning function Sampling period optional
XL- E4TC-P	4	K, S, E, N, B, T, J and R type of thermocouple Measuring temperature range: 0ºC ~1300ºC (type K) (Digital output range 0~13000, with sign 16-bit, binary)	

Analog input module (AD type)

Model	Channel	Input signal	Specification
XL-E8AD-A	8	Current input: 0~20mA/4~20mA/-20~20mA	Power supply for analog DC24V ±10%, 150mA Conversion speed 2ms/channel Resolution 1/16383 (14-bit) Comprehensive accuracy ±1% AD filter coefficient 0~254 Channel enable bit is added AD channel has the functions of short circuit, open circuit and over range detection
XL-E8AD-V	8	Voltage input: 0~5V/0~10V/-5~5V/-10~10V	

Analog output module (DA type)

Model	Channel	Input signal	Specification
XL-E4DA	4	Voltage output: 0~5V/0~10V/-5~5V/-10~10V (external load resistor 2kΩ~1MΩ) Current output: 0~20mA/4~20mA (external load resistor less than 500Ω)	Power supply for analog DC24V ±10%, 150mA Conversion speed 2ms/channel Resolution 1/4095 (12-bit) Comprehensive accuracy ±1% Channel enable bit is added

Analog I/O module (nADmDA type)

Model	Channel		Input/output signal	Specification
	Input	Output		
XL-E4AD2DA	4	2	Current input: 0~20mA/4~20mA/-20~20mA Voltage input: 0~5V/0~10V/-5~5V/-10~10V Voltage output: 0~5V/0~10V/-5~5V/-10~10V (external load resistor 2kΩ~1MΩ) Current output: 0~20mA/4~20mA (external load resistor less than 500Ω)	Power supply for analog DC24V ±10%, 150mA Conversion speed 2ms/channel Input resolution 1/16383 (14-bit) Output resolution 1/4095 (12-bit) Comprehensive accuracy ±1% AD filter coefficient 0~254 Channel enable bit is added AD channel has the functions of short circuit, open circuit and over range detection

Weighing extension module

It is used to convert the analog signal of the load cell into digital signal. The weighing module has the characteristics of dynamic weighing, small volume, stable performance, simple and applicable operation.
It can be widely used in seed, chemical industry, grain, feed weight control and other occasions.

① New algorithm, comprehensive optimization of hardware system, faster and more accurate weighing control
② Up to 4 analog voltage signals of load cells can be collected at the same time
③ High performance AD conversion, sampling speed up to 450 times/s
④ Display accuracy up to 1/300000
⑤ Automatic zero tracking function
⑥ The real-time data communicates with PLC at high speed through the bus, which does not affect the conversion speed

XL-E1WT-D/XL-E2WT-D

XL-E4WT-D

Item	Specification
Model	XL-E1WT-D, XL-E2WT-D, XL-E4WT-D
Analog input range	DC-20~20mV
AD actual resolution	1/8388607 (23Bit)
Max display resolution	1/500000
Nonlinear	0.01%F.S
Conversion speed	150 times/s, 300 times/s, 450 times/s
Power supply	DC24V±10%
Sensor excitation power supply	5VDC/120mA, four 350Ω load cells can be connected in parallel

Left expansion ED module

XL series left expansion ED module has the type of DA, AD conversion, temperature measurement, RS232, RS485 communication. XL series basic unit can connect 1 ED module (XL1 cannot support).

Analog and temperature expansion ED module

Model	Input/output signal	Specification
XL-4AD-A-ED	4 channels current input: 0~20mA/4~20mA	Power supply of module: DC24V±10%, 150mA Conversion speed: 10ms (all the channels) AD/DA: Current/voltage input resolution: 1/4095 (12-bit) Current/voltage output resolution: 1/1023 (10-bit) AD/DA conversion comprehensive accuracy: ±1% AD filter coefficient: 0~254 PT: Temperature measurement range: -100~500ºC Digital output range: -1000~5000 PT filter 0~254 Temperature input resolution: 0.1ºC PT channel comprehensive accuracy: ±0.8% of the full scale
XL-4AD-V-ED	4 channels voltage input: 0~5V/0~10V	
XL-4DA-A-ED	4 channels current output: 0~20mA/4~20mA	
XL-4DA-V-ED	4 channels voltage output: 0~5V/0~10V	
XL-2AD2DA-A-ED	2 channels current input: 0~20mA/4~20mA 2 channels current output: 0~20mA/4~20mA	
XL-2AD2DA-V-ED	2 channels voltage input: 0~5V/0~10V 2 channels voltage output: 0~5V/0~10V	
XL-2AD2PT-A-ED	2 channels current input: 0~20mA/4~20mA 2 channels temperature input: PT100 platinum thermistor	
XL-2AD2PT-V-ED	2 channels voltage input: 0~5V/0~10V 2 channels temperature input: PT100 platinum thermistor	
XL-2PT2DA-A-ED	2 channels current output: 0~20mA/4~20mA 2 channels temperature input: PT100 platinum thermistor	
XL-2PT2DA-V-ED	2 channels voltage output: 0~5V/0~10V 2 channels temperature input: PT100 platinum thermistor	

Communication expansion ED module

Model	Description
XL-NES-ED	For the XL series PLC left side to expand RS232 or RS485 port. Only one can be used between RS232 and RS485, serial port is COM3
XL-COBOX-ED	CANopen communication module. ① The communication speed can up to 1Mbps ② 64 communication nodes ③ Support master station and slave station mode ④ The reliability of the system is improved ⑤ Heartbeat protection ⑥ Simple wiring

Accessories

Basic unit accessories list

Name	Model	Description	Product drawing
Communication/ programming cable	XVP/DVP	For communication and program uploading/downloading	
USB to serial port convertor	USB-COM	For the conversion of DB9 female port and USB port	
USB print cable	JC-UA-15	Special USB download cable for Xinje products (except the products without USB-B port) Black, with double magnetic rings to improve anti-interference ability	
DB9 to RS485 cable	JC-EB-Length	DB9 to RS485 cable, for the RS485 communication between HMI and PLC, There are three models for selection: JC-EB-3 (3m), JC-EB-5 (5m), JC-EB-8 (8m)	
X-NET fieldbus cable	JC-EA-Length	Used together with XD-NE-BD or XD-NES-BD There are 7 models: JC-EA-1 (1m), JC-EA-05 (5m), JC-EA-10 (10m), JC-EA-20 (20m), JC-EA-30 (30m), JC-EA-50 (50m), JC-EA-100 (100m)	

Special power supply module

XL-P50-E

XL independent power supply ensures the normal operation of PLC in a good and reliable power supply system, which can prolong the service life of PLC.

Specification
AC85-265V
DC24V
2A
No corrosive and combustible gas
0℃~60℃
5%RH~95%RH (no condensation)
Directly mounted on the guide rail
The third kind of grounding (not common grounding with strong current system)

XL series terminal resistance

XL-ETR

XL series terminal resistance module is required when external right expansion module is connected. Only for expansion module hardware version H3.1 and up.

XL series external terminal block

Some basic units and expansion modules need external terminal blocks, Xinje provide adapter terminal and connecting cable required by the following products.

Product model	Terminal block model	Adaptive connecting cable
XL5-64T10	JT-E32X+JT-E32YT	JC-TE32-NN05（0.5m） JC-TE32-NN10（1.0m） JC-TE32-NN15（1.5m）
XL5E-64T6	JT-E32X+JT-E32YT	
XL5E-64T10	JT-E32X+JT-E32YT	
XL-E32X-A	JT-E32X	
XL-E16X16YT-A	JT-E16X16YT	
XL-E32YT-A	JT-E32YT	
XL-E16YT-A	JT-E16YT-A	

*Note: ① When connecting, the end closing to the transparent heat shrinkable tube and wrapping the model is connected to the PLC or module, and the other end is connected to the terminal block, which can not be reversed!!!
② One 64 points basic unit needs 2 special terminal blocks and 2 adaptive connection cables.

Program donwloader

JD-P03

① Without computer, it can be used for program and data transfer and download between multiple Xinje PLCs. It must be used together with JC-ED-25 and USB-COM (hardware version H2).

② Suitable PLC: uploading requires the XD/XL/XG2 series PLC or ZG/ZP series integrated controller firmware version v3.4.6 or v3.5.3 (Ethernet models) and up. Downloading requires the PLC firmware v3.4 and up.

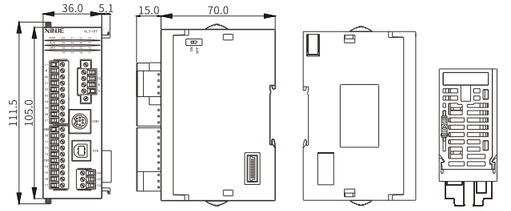
③ JD-P03 has small size and footprint.

*Note: Please refer to the manual for details. XDH, XC series PLC are not supported temporarily.

Dimension Drawing

(Unit: mm)

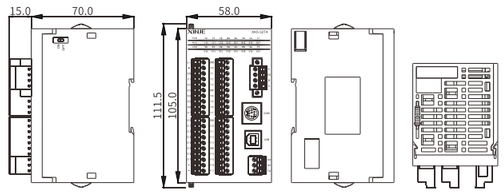
XL series PLC basic unit



Suitable models

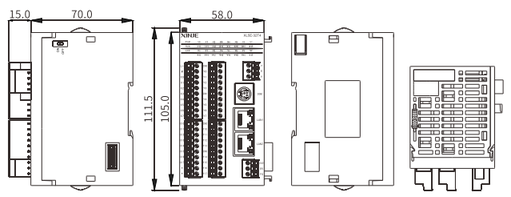
Series	XL1	XL3	XL5	XL5E
Points	16 points			

*Note: The location of USB port for XL1-16T is RS232 port. XL5E-16 is double Ethernet ports.



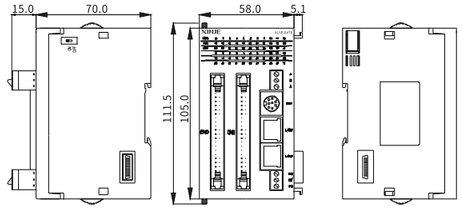
Suitable models

Series	XL3	XL5
Points	32 points	



Suitable models

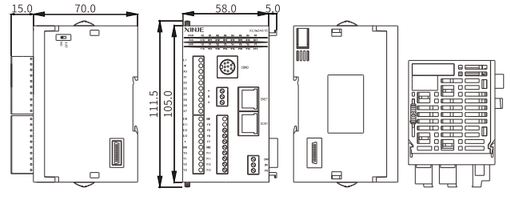
Series	XL5E	XLME
Points	32 points	



Suitable models

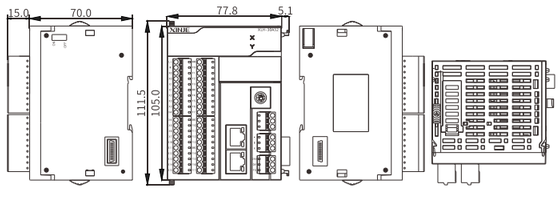
Series	XL5	XL5E	XLME
Points	64 points		

*Note: XL5-64 doesn't have two Ethernet ports.



Suitable models

Series	XLH
Points	24 points



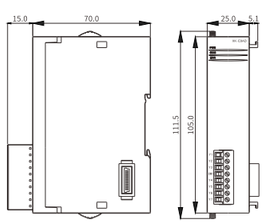
Suitable models

Series	XLH	XSLH
Points	30 points	

Dimension Drawing

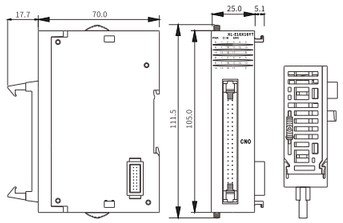
(Unit: mm)

XL series right expansion module



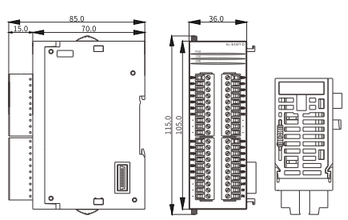
Suitable models

Module type	Digital value	Analog value
Models	8X/8Y	ALL
	16X	
	16Y	



Suitable models

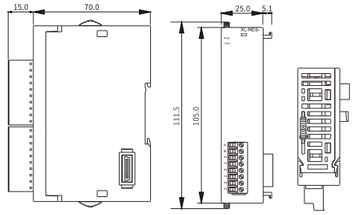
Module type	Digital value
Models	16YT-A
	16X16Y-A
	32X-A
	32YT-A



Suitable models

Module type	Digital value	Analog value
Models	16X16Y	4WT-D
	32X	
	32Y	

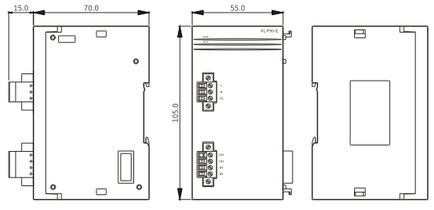
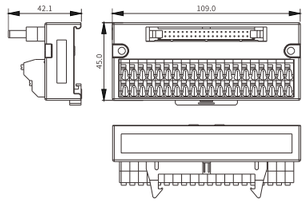
XL series left expansion ED module



Suitable models

Module type	Analog value	Communication
Models	ALL	XL-NES-ED

XL series power supply module



JT series external terminal block