01

PLC

I²C · PLCopen | Small-sized | Medium-sized | Slim-type

PLC overview

PLC overview

I²C series

The I²C series controller is based on the X86 high-performance processor and supports programming on the XS Studio/XDPro platform. Strong operational control capability, supporting up to 1ms 256 axes. Windows version fusion control meets the multi-purpose needs of information technology+control, machine vision+motion control, and more.

XF series Blade type PLC

The XF series PLC is designed with a brand new blade structure, featuring a thinner body, stronger and richer expansion capabilities. Through a high-speed backplane bus, it is connected for more stable, reliable and high real-time performance.

XL series Slim type PLC

XL series slim PLC card design, ultra-thin appearance, compact and practical, outstanding cost-effectiveness, can meet the vast majority of functional requirements in smaller spaces.

XG series Medium-sized PLC

The XG series medium-sized PLC has a brand new appearance design, compact structure, lightweight and intuitive, with obvious advantages such as faster speed, larger capacity, and significantly improved functions, providing customers with more comprehensive solutions and creating higher value.

XD series Small PLC

The XD series small PLC has the characteristics of fast speed, stable performance, complete functions, and wide applicability, which can meet the diverse needs of users.

IO series

Diverse structural designs, diverse product types, and a complete IO system product matrix can provide customers with diverse choices based on actual on-site needs.

PLC product model selection topology

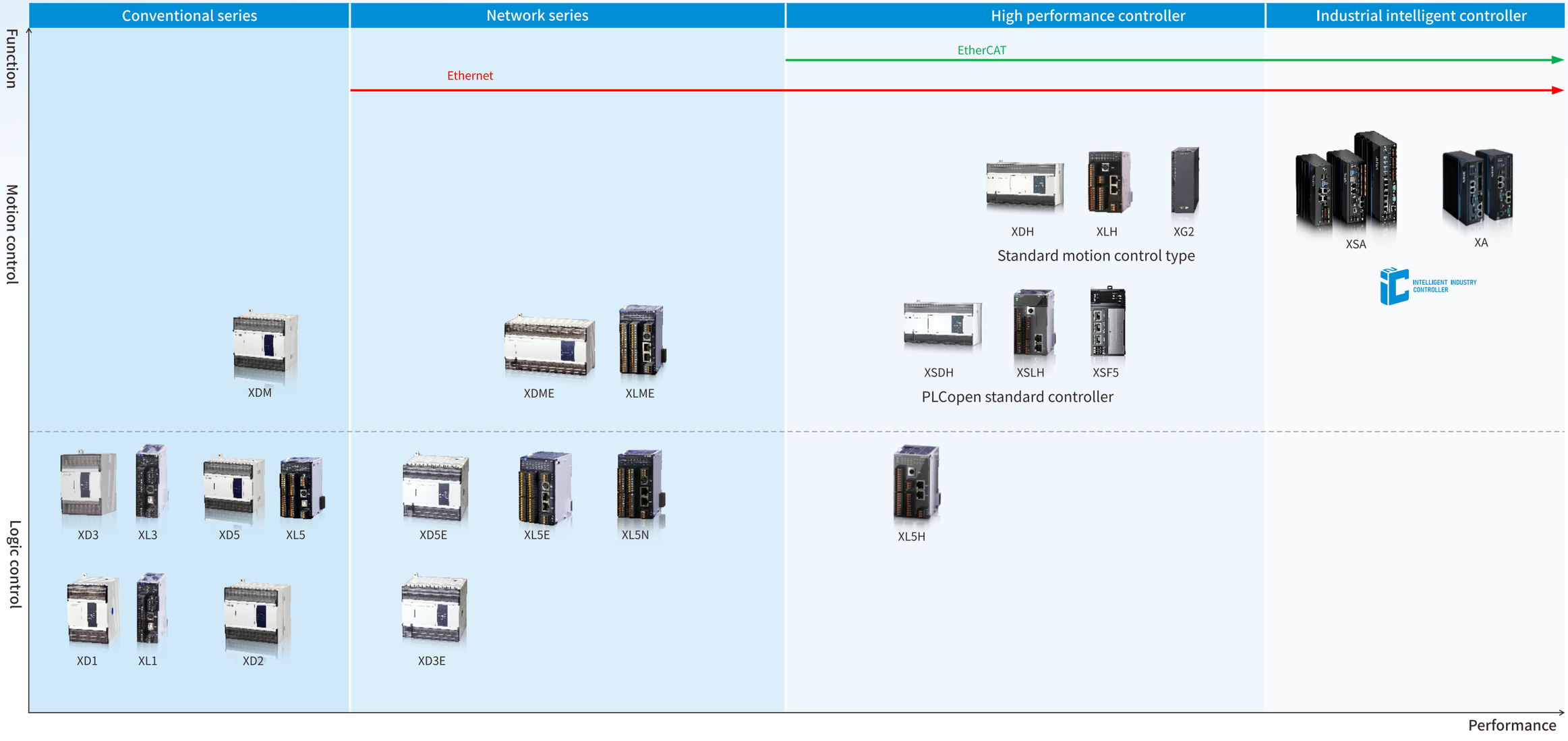
PLC product model selection topology

Xinje PLC products encompass 6 major product lines with over 400 models, offering a wide variety suitable for different control scenarios. The product series can be divided into XF, XS, XA, XG, XD, and XL. In terms of product performance, they can be categorized into conventional PLCs, network PLCs, high-performance controllers, and industrial intelligent controllers. Functionally, they can be classified into logic control types and motion control types.

Logic control PLCs are primarily used for point control and also support 2-10 axes positioning control functions. Motion control PLCs include the XS, XA, XDH, and XLH series, which support 2-256 axes synchronous motion control.

Network-based PLCs, high-performance controllers, and industrial intelligent controllers support Ethernet communication and Ethernet/IP communication; high-performance controllers and industrial intelligent controllers also support EtherCAT bus control functionality.

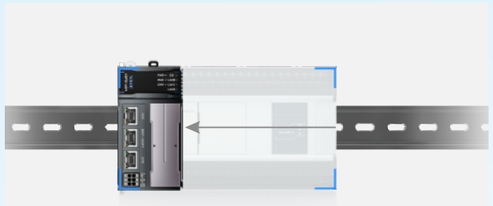
The XSF5 series and I/O modules feature a blade-style design with an ultra-thin body, supporting up to 32 expansion modules. The XSA series of industrial intelligent controllers, based on the X86 processor, offer superior performance, capable of controlling up to 256 axes with a synchronous cycle of 256 axes per 4 milliseconds.



XSF series blade type PLC

Blade structural design, achieving slim body

- Compared with XDH-60A64-E, the body size is reduced by 70%, significantly reducing installation space.



Approximately **70%** reduction in volume compared to the previous generationXDH-60A64-E

More powerful scalability

- Up to 32 XF extension modules can be connected locally.
- The new high-speed backplane bus allows for the expansion of functional modules such as high-speed counting, pulse output, flying shooting, and communication.

*Note: Modules such as high-speed counting, pulse output, flying shoot, and communication are under development. Stay tuned!

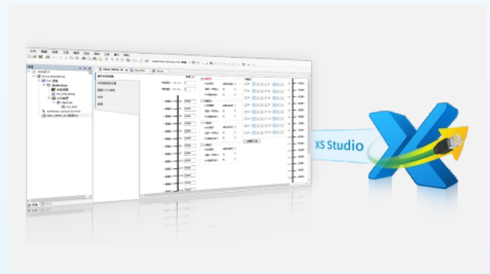
Easy to debug and maintain

- The entire XSF series products, including the main control unit and expansion unit, support firmware self updating, and new features are available with just one click.
- Equipped with Type-C port, it can connect to the upper computer, and online debugging only requires a mobile data cable.
- Support importing and exporting device data and project files through USB flash drives and TF cards (version V2.3.0 supports).
- Standard system slide switch, which can immediately stop PLC operation without power outage.

Flexible and open, free programming

XSF supports the Codesys platform, can be adapted to Xinje XS Studio programming software, meets the IEC61131 standard and PLCopen programming specification.

- Support online download function and online simulation.
- Real time data detection, curve acquisition and tracking.



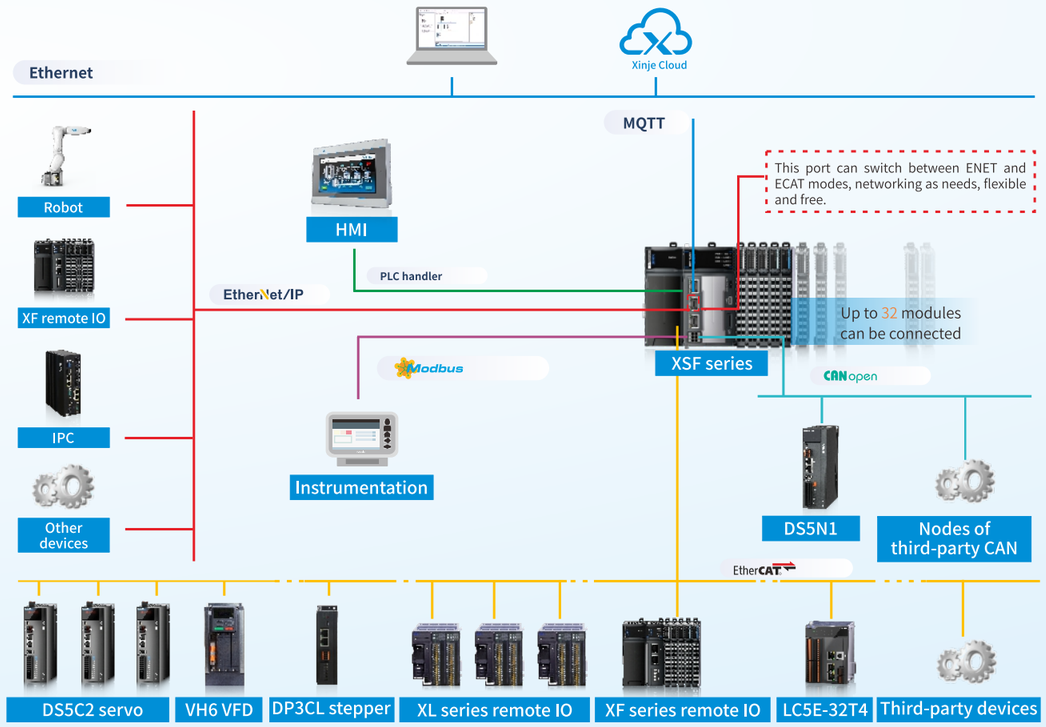
Outstanding motion control ability

- The XSF main control unit can communicate with various EtherCAT standard protocol devices, such as Xinie XF/XL series distributed IO, DS5C1/DS5C2 series servo drivers, VH6 series freguency converters, DP3CL series stepper drivers, etc.

Up to 64 axes EtherCAT bus control with short synchronization cycle.

Multiple networks union,convenient interwork

- The XSF main control unit is equipped with 3 RJ45 ports, 1 CAN communication port, and 1 RS485 port.
- Supports multiple protocols, including Mdbus TCP, UDP, OPC UA, TCP/IP, Ethernet/IP, CANopen, and Modbus communication.
- Support dual IP settings, achieve isolation between internal and external networks of equipment, and assist in the digital transformation of factories.



I²C series PLC

I²C series XSA230-L/W

The XSA230 series controller is based on a high-performance X86 processor and supports programming on the XS Studio platform. It features a distinctive Taihu stone-inspired exterior design, a wealth of built-in interfaces, and robust motion control capabilities, supporting up to 64 axes at 1ms intervals. The Windows version fulfills the need for multifunctional use, combining information technology with control, as well as machine vision with motion control.

As a controller for line automation equipment

Can be applied in industries such as lithium batteries, photovoltaics, semiconductors, 3C electronics, logistics, etc.


3C


Photovoltaic


Warehousing


Lithium battery

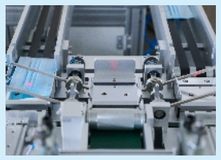
As a standalone high-performance motion controller

To improve the quality and efficiency of traditional industries with complex processes, such as printing, packaging, woodworking, aluminum profiles, etc.


Printing equipment


Packaging equipment


Aluminum profile processing equipment


Hygienic product processing equipment

Distinctive technological integration

Compatible with both WIN and Linux systems, enabling functionalities such as CAD graphic processing (CAM), MES client, and AGV algorithms.

The XSA230 series integrates motion control, logic control, IPC fusion applications, machine vision, and HMI into a single unit, resulting in a more streamlined overall product topology.

High performance

Adopting quad core 2.0G J6412, double precision floating-point 5.5ns, 1ms 32 axes (dual network port 64 axes)

Powerful function

EtherCAT*2: ECAT IO extension: supports up to 128 ECAT nodes
EtherCAT*2: Modbus-TCP, TCP/IP, Ethernet/IP, OPC UA
RS232*1: Modbus-RTU/ASCII, free format
RS485*1: Modbus-RTU/ASCII, free format
DP++*1: The monitor interface is compatible with HDMI, DVI, VGA


Multi-axis synchronization


Vision


Manipulator

High reliability

The product design fully complies with strict PLC standards, making it more suitable for industrial use on site.

User-friendliness

Developed based on the XS Studio platform, it supports the IEC61131-3 standard and offers a variety of programming languages including LD, ST, FBD, IL, and SFC. It enables faster development and debugging with real-time debugging, online monitoring, and simulation capabilities.

XF series --New generation IO system

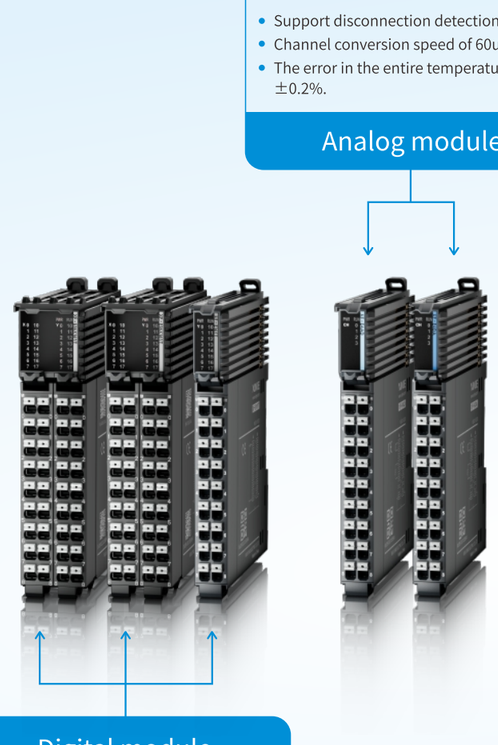
Rich module types, supporting up to 32 IO modules

- Support multiple bus protocols including PROFINET, EtherCAT, Modbus-TCP

Adapter module

- 4-channel 0-5V/10V, 1-5V, -20/0/4-20mA, ±5V, ±10V analog input (16-bit).
- 4-channel 0-5V/10V, 1-5V, 0/4-20mA, ±5V, ±10V analog output (16-bit).
- Support disconnection detection function.
- Channel conversion speed of 60us/CH.
- The error in the entire temperature range is ±0.2%.

Analog module



Digital module

- 16 points bipolar input
- 16 points transistor output (NPN)
- 16 points transistor output (PNP)
- 8 points NPN input and 8 points NPN output
- 32 points bipolar input
- 32 points transistor output (NPN)
- 16 points bipolar input and 16 points NPN output
- The time from the IO excitation signals to the main station is less than 1ms

- 1-channel high-speed counting module
- Support differential/single ended options
- 2-channel high-speed input (probe function)
- 4-channel high-speed output (flying shooting function)
- Maximum frequency 2MHz
- Support pulse frequency/width measurement

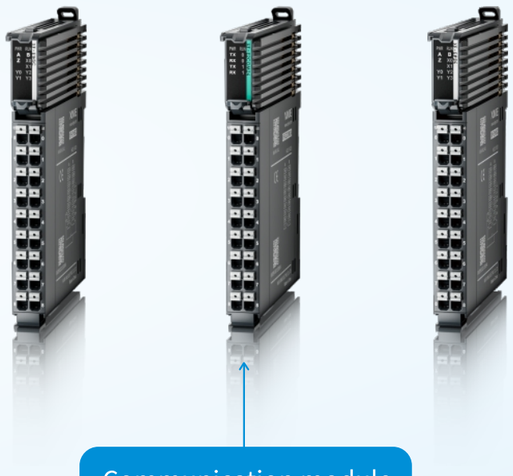
High speed counting module

- DC24V system power supply module

Special module

Temperature acquisition module

- 4-channel thermistor, thermocouple.
- Thermistor (RTD) PT100, PT1000, CU50, CU100, NTC-5K, NTC-10K resistance measurement input module, compatible with 2/3-wire thermistor sensor.
- Thermocouples (TC) K, S, E, N, B, T, J, R types, -100~100mA pressure measurement input module.



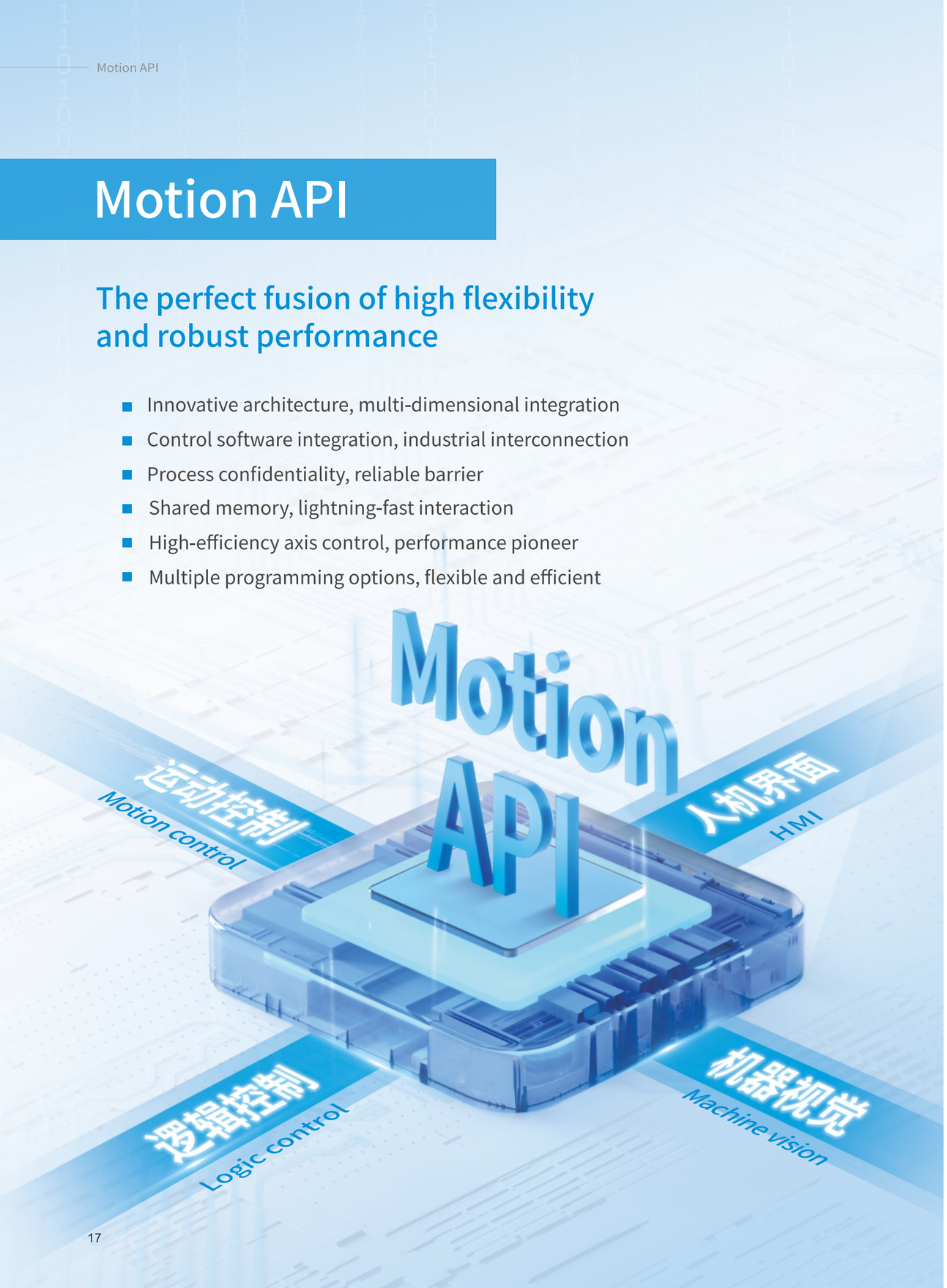
Communication module

- Dual independent 232/485 serial communication ports, supporting Modbus master, slave, and free format communication.
- Channel isolation ensures strong anti-interference capability.

Motion API

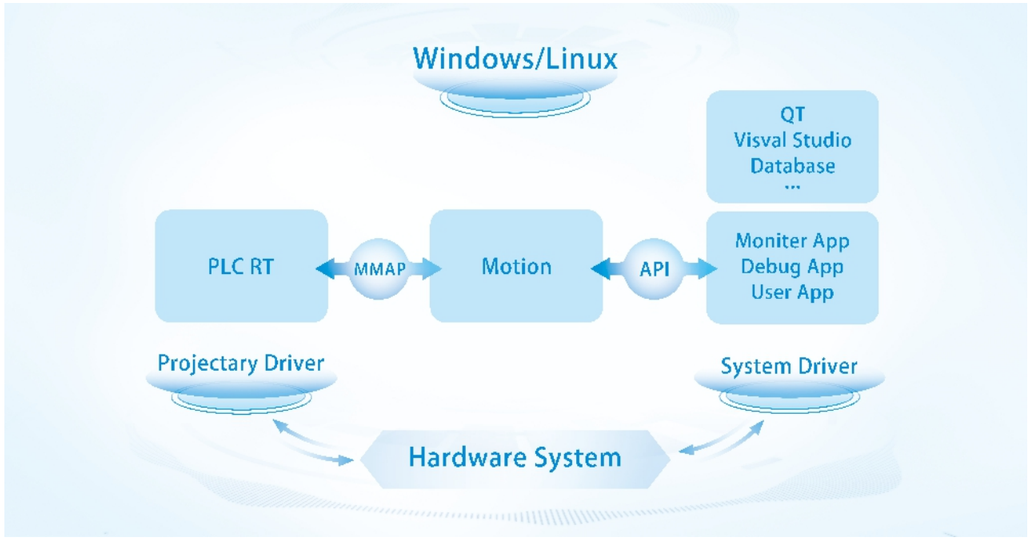
The perfect fusion of high flexibility and robust performance

- Innovative architecture, multi-dimensional integration
- Control software integration, industrial interconnection
- Process confidentiality, reliable barrier
- Shared memory, lightning-fast interaction
- High-efficiency axis control, performance pioneer
- Multiple programming options, flexible and efficient



Motion API

Motion API is a PC-based motion control system in the form of an industrial computer, utilizing an open X86 architecture, a microsecond-level Windows real-time system, and mainstream pure software EtherCAT communication.
It encompasses multiple instruction libraries, supports various programming languages (such as C++/C#), allows for kernel-level algorithm secondary development, is compatible with commonly used Fanuc G code, and supports 16-axis synchronous high-speed and high-precision trajectory interpolation, as well as advanced algorithms like look-ahead and AFM filtering. Deeply integrated with Xinje's servo, VFD, stepper drives, and I/O modules, it forms a comprehensive industry solution widely applied in fields such as woodworking, laser cutting, 3C inspection, dispensing, photovoltaic, and semiconductor.



Six major advantages, interpreting efficiency and flexibility

Architectural innovation, multi-dimensional integration

The Motion API series products integrate motion control, logic control, machine vision, and other functionalities into one, greatly simplifying the system architecture. This integration addresses the inconvenience caused by repeatedly switching between multiple software during the programming process and enhances development efficiency.

Control software integration, industrial interconnection

Utilizing soft PLC simplifies the topology structure, avoids wear and tear on PCI interfaces, and reduces hardware failure rates.
The Motion API series products can be deployed on either Windows or Linux systems as needed, easily integrating third-party software and bridging IT/OT data channels.

Process confidentiality, reliable barrier

The Motion API series products support secondary development at the algorithm kernel level in the form of C language and can be mounted on hardware platforms for execution, offering a high degree of confidentiality.

Shared memory, lightning-fast interaction

The Motion API series products utilize shared memory for data interaction, capable of handling megabyte-level data exchanges every millisecond, with system files and configuration files transmitted in seconds.

High-efficiency axis control, performance pioneer

The Motion API series products are based on the X86 hardware architecture, boasting exceptional performance with a single instruction operation cycle of 5ns, an interpolation cycle of 1ms, and the ability to control up to 256 axes in 1ms, with a maximum of 256 axes per single channel.

Multiple programming pptions, flexible and user-friendly

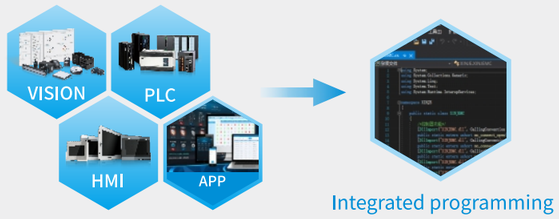
The Motion API series products support various programming languages such as C#, C++, LabView, VB, and VC, making projects more flexible and easier to maintain.

Motion API

Breaking through traditional forms, reshaping a highly integrated and unified intelligent platform

IPC+software PLC

Hardware carrier: XS series industrial intelligent controllers
Software carrier: 64-bit Windows/Linux operating systems

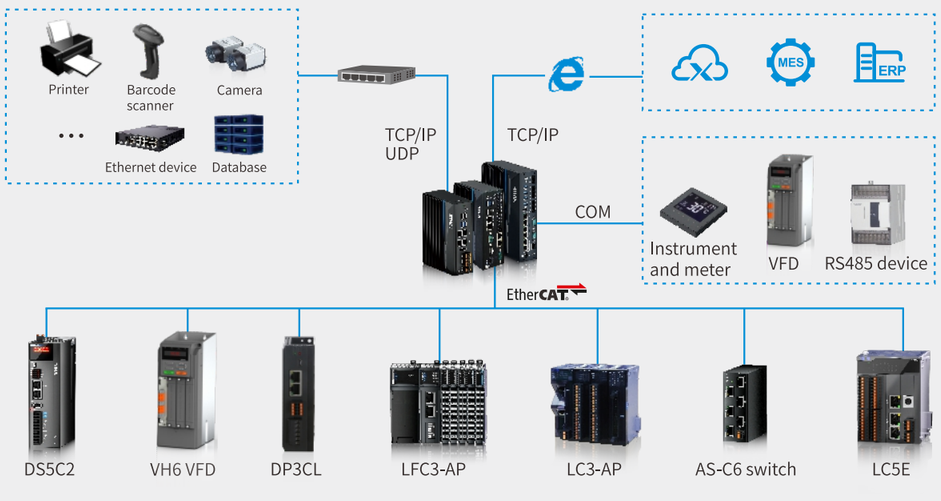


Highly integration

The PLC, HMI, motion control, vision, PC APP and other functions are integrated in a hardware carrier, which improves the development rate.

Open ecosystem, creating a comprehensive industrial information network

The Motion Api product series integrates the advantages of traditional PLC and IPC platforms, combining the powerful control capabilities of PLCs with the open ecosystem of Windows/Linux. It allows for the operation of motion control, logic control, machine vision, and high-speed data acquisition for automation all on a single platform. Additionally, it facilitates information databases, cloud platform interaction, and supports a wide range of bus protocols. It also accommodates third-party software integration, making it convenient for equipment manufacturers to integrate IT/OT applications.



Motion API

Quickly meet market demands for customization, bus-based systems, high performance, expansion interfaces, multi-step processes, and complete supply solutions.

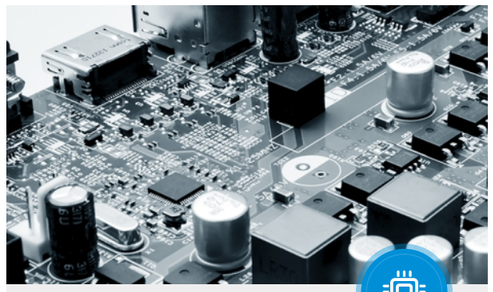
Widely used in 3C testing, semiconductor, woodworking, laser cutting, dispensing, photovoltaic and other industries.

Aluminum profile drilling and milling machine

The aluminum profile drilling and milling machine is used for processing aluminum profile door and window materials. It features a wide range of basic machining templates and various hinge patterns. With a CNC host system, it offers high processing speed and precision, maintaining a graphic accuracy error within 0.05mm. This machine boasts rich functionality and powerful performance, applicable in numerous fields such as laser cutting, 3C inspection, dispensing, photovoltaics, and semiconductors.

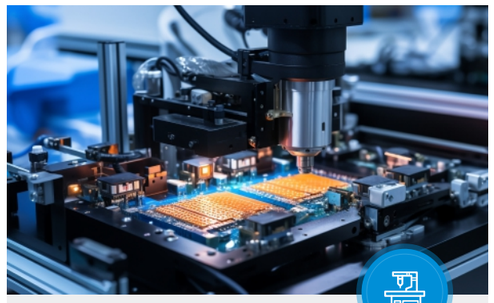
Robot

The robot system developed based on API features a rich set of instructions and is suitable for various scenarios. It supports debugging, is easy to program, and simple to operate. It offers advanced algorithms for smooth transitions at high speeds and allows users to load their own algorithm libraries to conduct higher-level development in combination with the Motion API.



3C inspection

During the movement of objects, there is no need to stop as the camera takes images and uses vision to calculate the position of objects, significantly improving production efficiency. The API-based 3C inspection system features high-speed responsiveness, ensuring that the transmitted IO signals reach the camera as quickly as possible. The camera can continuously move and capture images without stopping, and it can continuously output signal points.



Dispensing

Dispensing machines require precise control of the glue amount, consistency in dispensing, and high-quality stability during efficient operations. The API-based dispensing system ensures equipment stability and meets the demands of high-speed operations. The host software integrates functions such as algorithms, configuration, and diagnostics. It is easy to debug, supports data diagnostics and preview, and facilitates subsequent parameter adjustments, offering higher integration and suitability for experienced IT developers.

List of API functions

A rich function library that meets basic operations, read/write operations, and motion control functions.

Foundation class

Function	Name	Remark
Controller functions	mc_connect_open	Function for industrial computer operation. Communication connection, reboot, obtaining software version, reading and writing IP address, etc.
	mc_connect_close	
	mc_controller_restart	
	mc_get_connect_status	
	mc_get_controller_soft_version	
	mc_get_controller_ip_address	
	mc_set_controller_ip_address	

Management class

Function	Name	Remark
Ethercat communication	emc_get_object_node	PDO data reading (position, speed, torque, etc.) Ethercat bus cycle period Obtain scan period data
	emc_set_object_node	
	emc_get_pdo_ctrl_mode	
	emc_get_pdo_position	
	emc_get_pdo_velocity	
	emc_get_pdo_torque	
	mc_get_cycle_time	
	emc_get_consume_time_fieldbus	
	emc_clear_consume_time_fieldbus	
Axis configuration	mc_get_config_axis_type	Axis configuration parameter Axis type acquisition The amount of movement per turn Soft limit IO settings
	mc_set_config_pulse_movement	
	mc_get_config_pulse_movement	
	mc_set_softlimit_unit	
	mc_get_softlimit_unit	
	mc_set_config_counting_type	
	mc_get_config_counting_type	
	mc_set_config_counting_limit	
	mc_get_config_counting_limit	
	pmc_set_io_config	
	pmc_get_io_config	
Axis operation functions	mc_get_axis_status	Single axis data acquisition: position, speed, torque Gear binding setting
	mc_get_axis_err	
	mc_get_axis_ctrl_mode	
	mc_get_axis_target_position	
	mc_get_axis_target_velocity	
	mc_get_axis_target_accelerate	
	mc_get_axis_target_torque	
	mc_get_axis_actual_position	
	mc_get_axis_actual_velocity	
	mc_get_axis_actual_accelerate	
	mc_get_axis_actual_torque	
	mc_set_gearin_ratio	
	mc_get_gearin_ratio	

List of API functions

Motion class

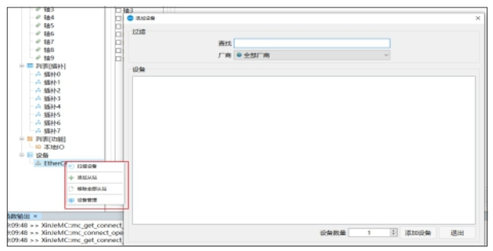
Function	Name	Remark
Axis group motion	mc_group_inst_ptp	Straight line, arc, PTP interpolation Interpolation speed read and write Axis group stop
	mc_group_inst_line	
	mc_group_inst_circle	
	mc_set_vector_profile	
	mc_get_vector_profile	
	mc_group_inst_stop	
Single axis motion	mc_axis_enable	Absolute and relative positioning of single axis Speed and torque control Gear binding Homing
	mc_axis_disable	
	mc_reset_fault	
	mc_position_move	
	mc_move_superpose	
	mc_velocity_move	
	mc_continue_move	
	mc_axis_stop	
	mc_gear_in	
	mc_gear_out	
	mc_home	
	mc_set_control_mode	
	mc_torque_control	
	mc_set_position	
G-Code	mc_gcode_start	G instruction function G command start, stop, pause Get file, update delete file, get current line information Get the next line of information and so on...
	mc_gcode_stop	
	mc_gcode_pause	
	mc_gcode_go_on	
	mc_gcode_get_status	
	mc_gcode_get_current_file	
	mc_gcode_get_current_line	
	mc_gcode_set_new_file	
	mc_gcode_change_file	
	mc_gcode_delete_file	
	mc_gcode_clear_file	
	mc_gcode_get_first_file	
	mc_gcode_get_next_file	

Debugging assistant interface

Intuitive and simple, good programming helper

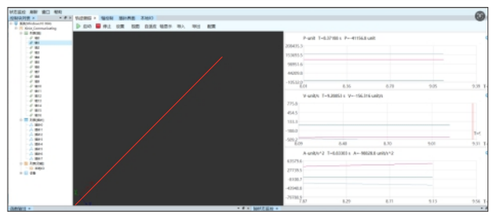
Single axis debugging

Interpolation debugging



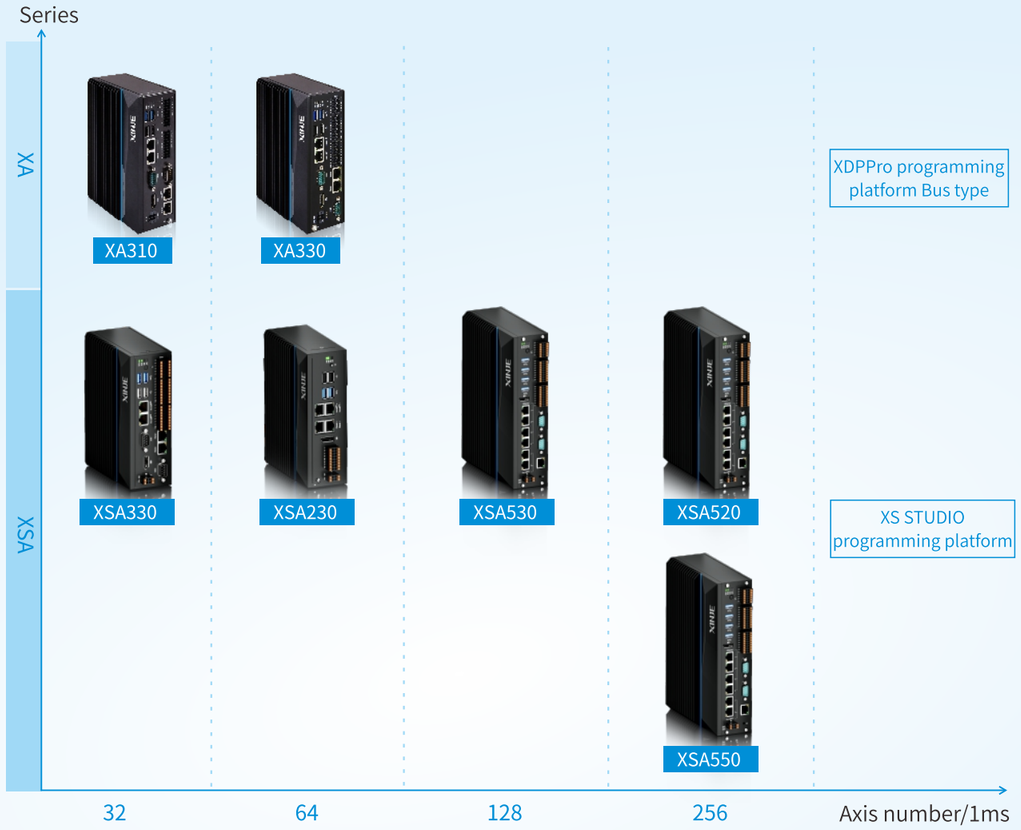
Scan

Oscilloscope



Industrial intelligent controller

The perfect combination of high flexibility and powerful performance



Universal characteristic

Platform complementarity

The XA series and the XSA series complement each other in terms of programming platforms, with the XA series supporting the XDPPro programming platform and the XSA series supporting the XS Studio programming platform.

High performance

Based on Intel high-performance x86 processors, it features a small size but offers faster response and greater computing power, with instruction execution capabilities reaching the ns level.

Fusion control

Offer optional Windows or Linux support to meet multifunctional needs such as informatization and control, machine vision and motion control. It also supports MotionAPI functionality.

Rich interfaces

The system supports differential encoder input and features frequency measurement, high-speed counting, high-speed pulse output, and pulse width modulation to meet various industrial scenarios.

Industrial intelligent controller

XA series

Intel high-performance X86 processor

XA series can integrate motion control, machine vision, HMI, information and other industrial automation applications to provide customers with integrated and intelligent system solutions. It is compatible with Xinje XDPPro programming platform, which supports POU programming mode and can significantly improve user programming efficiency.

① 4~8 channels 200KHz pulse output
② 2~4 channels 200KHz high speed counting
③ EtherCAT motion control
④ Support dual IP Ethernet interfaces to meet the separation of internal and external networks
⑤ Built-in UPS to ensure user data and device security
⑥ Built-in UPS, support user-defined UPS function
⑦ Support LD, IL, C language programming

Performance specification

Product series	XA310	XA330
CPU	Intel Celeron , 1.5GHz ARM Cortex A8	Intel Celeron , 1.5GHz
Operating system	Windows	Linux/Windows
Memory	DDR4-4G	
Display	DP, max resolution is 4096×2160@60Hz	
Ethernet	3 LAN ports	2 LAN ports
TMP	2.0	
Storage	1xM.22280（128G）	
USB	2xUSB2.0,2xUSB3.0	
IO	12 inputs (NPN/PNP), 12 outputs 4 channels 200K high speed counting 4 channels 200K pulse output	116 inputs (NPN/PNP), 16 outputs 2 channels 200K high speed counting 8 channels 200K pulse output *Note: pulse output is temporarily not supported.
Serial	RS485/RS232*1	RS485/RS232*2(BIOS switching)
EtherCAT communication node	64	128
Motion control	Single axis, axis group, electronic cam	
CAN	Not support	
Power supply	24VDCIN, 4PINPhonix, ACPI management, built-in UPS	
power waste	20W(typical)~60W(max)	
Working temperature	0°C~60°C with 0.7m/s airflow	-25°C~60°C with 0.7m/s airflow
Storage temperature	-10°C~60°C	-40°C~80°C
Relative humidity	10~95%@40°C（non-condensing）	
ESD	Contact discharge ±4KV, air discharge ±8KV	
Protection level	IP30	
Certificate	CE/FCC	CE/FCC

*Note: XA series use EtherCAT remote expansions.

XA series model list

Model						
	AC power			DC power		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN&PNP	-	-	-	-	XA310	-
	-	-	-	-	XA330	-

X86 Industrial intelligent controller

XSA series

Based on the X86 platform, Intel high-performance processor, and the response speed is faster.
The self-developed XS Studio programming platform, which can reference many standard function libraries, adopt the IEC61131-3 programming standard, support six programming languages (ST, SFC, FBD, CFC, LD, IL), and develop Xinje proprietary function blocks, instruction libraries and system libraries, which can significantly improve user programming efficiency.

① 128M program capacity
② EtherCAT motion control
③ EtherCAT remote IO
④ Ethernet communication
⑤ Simulation function
⑥ With SCADA screen, built-in super capacitor and UPS

Performance specification

Product series XSA-			XSA230	XSA330	XSA520	XSA530	XSA550
Operating system							
Programming method			IL,LD,FBD,ST,SFC,CFC				
Program capacity			128MB				
Data capacity			128MB (include power-off holding 6MB)				
Power supply			Rated voltage DC24V				
I/O	Total points		6	32			
	Input points	NPN	3	16			
		PNP	-	16			
	Output points	Transistor	3	16			
		Relay	-	-			
High speed input	Encoder input	Single phase	-	2 channels (max 1MHz)			
		AB phase	-	2 channels (max 1MHz)			
	OC input	Single phase	-	2 channels (max 200kHz)			
		AB phase	-	2 channels (max 200kHz)			
Expansion ability			Only support ECAT remote expansions				
Interrupt	External interrupt		-	16			
Communication function	Communication port		4 channels RJ45 (2 channels EtherCAT, 2 channels Ethernet) 2 channels USB2.0、2 channels USB3.0 1 channels RS232/RS485	4 channels RJ45(2 channels EtherCAT, 2 channels Ethernet) 2 channels USB2.0、2 channels USB3.0 2 channels RS232/RS485 (isolated) BIOS control	6 channels RJ45 (2 channels EtherCAT, 4 channels Ethernet) 4 channels USB3.0 2 channels RS232/RS485 (isolated) BIOS control		
	Communication protocol		Modbus RTU, Modbus TCP, Ethernet IP, TCP/IP, UDP, OPC UA, free format protocol, etc.				
Bus function			EtherCAT bus (128 nodes)		EtherCAT bus (256 nodes), CANopen bus		
Data power-off holding function			Supported				
RTC function			Supported				
Motion control	Single axis motion		Supported				
	Axis group motion		Supported				
	Electronic cam		Supported				

*Note: XSA series use EtherCAT remote expansion (LC3-AP).

XSA series product list

Model						
	AC power			DC power		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN& PNP型	-	-	-	-	XSA230-L/W	-
	-	-	-	-	XSA330-L/W	-
	-	-	-	-	XSA520-L/W	-
	-	-	-	-	XSA530-L/W	-
	-	-	-	-	XSA550-L/W	-

Power supply specification

General specification

Item	XA series	XSA series
Insulation resistance	/	Above DC500V 2MΩ
Anti-noise	Noise voltage 1000Vp-p 1us pulse 1 minute	/
Air	No corrosive and combustible gas	No corrosive and combustible gas
Working temperature	-25°C~55°C (XA330) -5°C~55°C (XA310)	-25°C~55°C (XSA330) -5°C~55°C (XSA500)
Storage temperature	-40°C~80°C	-40°C~80°C
Working humidity	5%~95% (no condensation)	5%~95% (no condensation)
Installation	Rail mounting	It can be fixed with M3 screws or directly installed on the guide rail
Grounding (FG)	The third kind of grounding (cannot be grounded with the strong current system)	

Power supply specification

XSA power supply specification

Item	Specification
Rated voltage	DC24V
Allowable range of voltage	DC21.6V~26.4V
Input current (only for basic unit)	120mA DC24V
Permissible instantaneous power-off time	10ms DC24V
Impact current	10A DC26.4V
Maximum power consumption	60W-70W
Power supply for sensor	24VDC±10%

Input specification

XA310, XSA input 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	Contact input or NPN or PNP open collector transistor
Circuit insulation	Photoelectric coupling insulation

XA330 input 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	Low speed 0.1ms, high speed 5us
Input signal format	Bidirectional optocoupler
Circuit insulation	Photoelectric coupling insulation

Output specification

XA310 output specification

General 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
	Light load	1.5W/DC24V
Min load		DC5V 2mA
Open circuit leakage current		Below 0.1mA
Response time	OFF→ON	Below 0.2mA
	ON→OFF	Below 0.2ms

High speed pulse output

High speed pulse output terminal	Y0~Y3
External power supply	DC5~30V
Action indicator	LED indicator
Max current	50mA
Max output frequency	100KHz

XSA330 output specification

General transistor output

Output load max voltage	DC24V±10%
Maximum current of nominal load	100mA/DC24V
Short-circuit protection current	200mA
Output response time	NPN 0.2ms, NMOS is 5us
Output signal format	NMOS open circuit leakage current or NPN open collector
Circuit insulation	Photoelectric coupling insulation

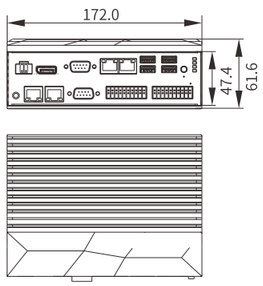
XSA output specification

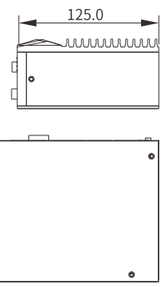
General transistor output

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

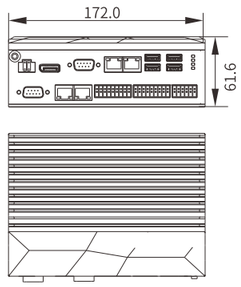
Exterior dimensional drawing (Unit:mm)

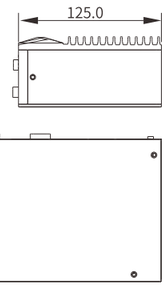
XA310



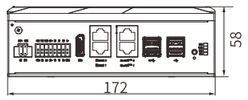


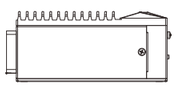
XA330

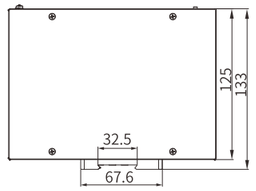


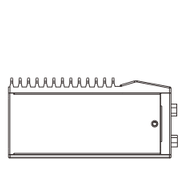


XSA230 series

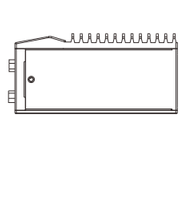


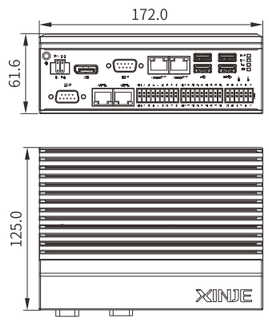




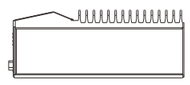


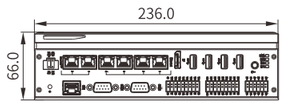
XSA330 series

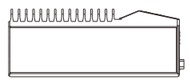


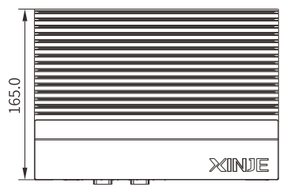


XSA500 series









XFseries blade type PLC

Compact, faster, and stronger motion control ability

The XSF5 series adopts a blade structure with a compact body, complies with the PLCopen programming specification, supports 6 programming languages, and can expand up to 32 local modules.

Features

Blade structural design, achieving slim body

- Compared with XDH-60A64-E,the body size is reduced by 70%, significantly reducing installation space.

Easy to debug and maintain

- The entire XSF series products, including the main control unit and expansion unit, support firmware self updating, and new features are available with just one click.
- Equipped with Type-C port, it can connect to the upper computer, and online debugging only requires a mobile data cable.
- Support importing and exporting device data and project files through USB flash drives and TF cards.
- Standard system slide switch, which can immediately stop PLC operation without power outage.

More powerful scalability

- Up to 32 XF extension modules can be connected locally.
  The new high-speed backplane bus allows for the expansion of functional modules such as high-speed counting, pulse output, flying shooting, and communication.

Flexible and open, free programming

- XSF supports the Codesys platform, can be adapted to Xinje XS Studio programming software, meets the IEC61131 standard and PLCopen programming specification.

Multiple networks union, convenient interwork

- The XSF main control unit is equipped with 3 RJ45 ports,1 CAN communication port, and 1 RS485 port.
- Supports multiple protocols, including Mdbus TCP, UDP, OPC UA, TCP/IP, Ethernet/IP, CANopen, and Modbus communication.
- Support dual IP settings, achieve isolation between internal and external networks of equipment, and assist in the digital transformation of factories.

System composition

Blade type controller

XSF5 series

Adopting a blade structure design, it has a compact body, complies with PLCopen programming specifications, supports 6 programming languages, and can be locally expanded up to 32 modules.

① 32MB program capacity
② Support up to 32 local extensions
③ EtherCAT motion control
④ EtherCAT remote IO
⑤ Ethernet/IP communication
⑥ CAN bus

Performance specification

Product series XSF5-		A8	A16	A32	A64
Processing time	LD Bit	15ns			
	Mov Double	25ns			
Programming method		ST、SFC、FBD、CFC、LD and IL			
User program capacity		32MB			
Data capacity	Non holding	32MB			
	Holding	10MB			
	Storage capacity (files/recipes)	512MB			
Built-in I/O function		None			
Scalability		1.Right expansion module*32			
Perpetual Calendar (RTC)		No battery can support 14 days (RTC battery can be added)			
Communi-cation	Port	1*CAN, 1*RS485, 3*RJ45 ports			
	Communication protocol	Standard MODBUS ASCII/RTU communication, Ethernet/IP, TCP/IP, UDP, OPC UA, free format communication			
Bus function		EtherCAT bus, CANbus			
ECAT max driving axis number		8	16	32	64
Axial capability		8-axis/1ms	16-axis/1ms	16-axis/1ms、32-axis/2ms	32-axis/2ms、64-axis/4ms
Motion control	Single axis motion	Support			
	Axis group motion	Support			
	Electronic cam	Support			

XSF5 series model list

Model				
	DC power supply			
EtherCAT bus type	XSF5-A8	XSF5-A16	XSF5-A32	XSF5-A64

General specification

Item	Specification
Insulation voltage	Above DC 500V 2MΩ
Anti-noise	Noise voltage 1000Vp-p 1us pulse for 1 minute
Air	Non corrosive and flammable gases
Ambient temperature	0℃~60℃
Ambient humidity	5%~95%（no condensation）
Installation	Can be fixed with M3 screws or directly installed on the guide rail
Grounding (FG)	The third type of grounding (cannot be connected to the common grounding of the high-voltage system)

Power supply specification

Item	Specification
Rated voltage	DC24V
Voltage allowable range	DC21.6V~26.4V
Input current (basic unit only)	120mA DC24V
Allow instantaneous power outage time	10ms DC24V
Impact current	10A DC26.4V
Maximum power consumption	XSA is 60W-70W, XSLH is 30W, XS3 is 12W
Sensor power supply	24VDC±10%

Expansion units

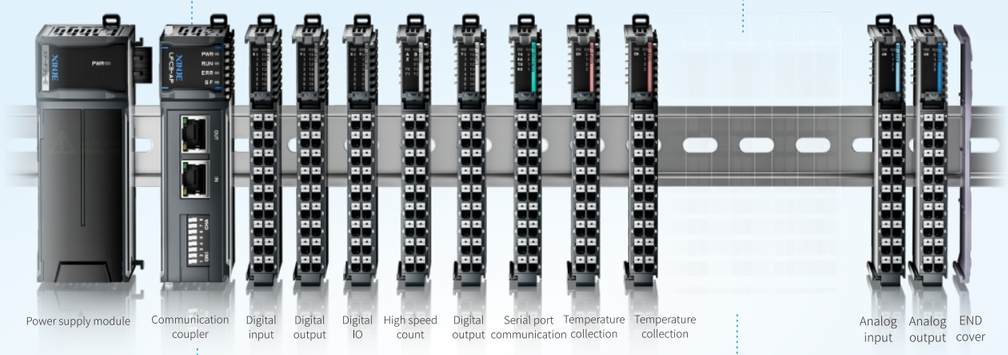
In order to meet the application needs of more occasions, the XF series PLC can be equipped with rich I/O expansion modules, analog input and output, temperature acquisition, communication, pulses, etc. The ontology can expand up to 32 different types of expansion modules.

Multi-system composition

Support EtherCAT and PROFINET buses
Protocol master station device communication, supporting Modbus TCP communication

Rich IO models

Support digital, analog, temperature, communication, process, pulse and other units



Low maintenance cost

Modules can be self updated through CPU units or communication couplers to reduce on-site debugging and maintenance costs

Large capacity expansion

Can support 32 expansion units

General specification

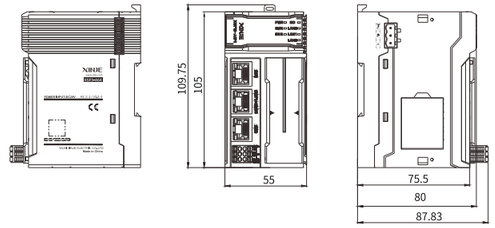
Item	Specification
Usage environment	Non corrosive gas
Operation temperature	-20℃~55℃
Storage temperature	-40℃~70℃
Ambient humidity	10~95%RH
Storage environment humidity	10~95%RH
Installation	Directly installed on the DIN46277 (35mm wide) guide rail

Expansion unit model list

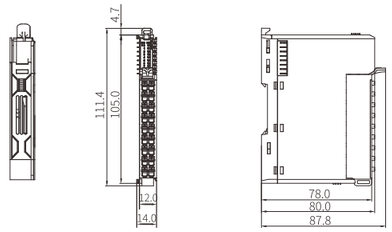
Module type	Model	Channel	Input signal	Specification
Digital input	XF-E16X	16	Digital input	Rated input DC24V Positive and negative logic can be set Input filtering time 0~128ms optional NPN&PNP input compatibility
	XF-E32X	32	Digital input	
Digital output	XF-E16YT	16	Transistor output, NPN type	DC24V±10% power supply Positive and negative logic can be set The response to CPU exception/STOP mode can be set
	XF-E16PYT	16	Transistor output, PNP type	
	XF-E32YT	32	Transistor output, NPN type	
Digital IO	XF-E8NX8YT	16	8-channel digital input, 8-channel transistor output, NPN input, NPN output	DC24V±10% power supply Positive and negative logic can be set Input filtering time 0ms~128ms optional The response to CPU exception/STOP mode can be set
	XF-E16X16YT	16	16-channel digital input, 16-channel transistor output, NPN&PNP bipolar input, NPN output	
Temperature collection	XF-E4RTD	4	Pt100, PT1000, CU50, CU100, NTC-5K, NTC-10K sensor types temperature range: PT100: -200.0~850.0°C PT1000: -200.0~850.0°C CU50: -50.0~150.0°C CU100: -50.0~150.0°C NTC-5K (B value 2000~6000): 40000Ω~400Ω NTC-10K (B value 2000~6000): 40000Ω~400Ω	DC24V±10% power supply Resolution of 0.1°C, 1°C optional Conversion speed (full channel): 250ms, 500ms, 1000ms optional Accuracy: ±0.1% (room temperature 25±5°C) ±0.2% (full temperature range -20~55°C) Filtering methods: first-order filtering, time averaging, frequency averaging, and moving average are optional Capable of detecting power outages, disconnections, and exceeding the range
	XF-E4TC	4	K, S, E, N, B, T, J, and R-type thermocouples temperature range: K-type: -200.0~1300°C S-type: -50.0~1768.0°C E-type: -200.0~1000.0°C N-type: -200.0~1300°C B-type: 250.0~1820.0°C T-type: -200.0~400.0°C J-type: -210.0~1200.0°C R-type: -50.0~1768.0°C Support -100mV~100mV voltage acquisition	
Analog input	XF-E4AD	4	Input current: 0~20mA, 4mA~20mA, -20mA~20mA Input voltage: 0-5V, 0~10V, 1-5V, ±5V, ±10V	DC24V±10% power supply Resolution: 16 bits Conversion speed: 60us/CH Response speed: 60us/CH Accuracy: ±0.1% (room temperature 25±5°C) ±0.2% (full temperature range -20~55°C) Filtering methods: first-order filtering, time averaging, frequency averaging, and moving average are optional Capable of detecting power outages, disconnections, and exceeding the range
Analog output	XF-E4DA	2	Output current: 0~20mA, 4mA~20mA Output voltage: 0-5V, 0~10V, 1-5V, ±5V, ±10V	DC24V±10% power supply Resolution: 16 bits Conversion speed: 60us/CH Response speed: 45us/CH Accuracy: ±0.1% (room temperature 25±5°C) ±0.2% (full temperature range -20~55°C)
Serial port	XF-E2COM24	2	2-channel independent RS232/485 serial port communication	RS232/485 optional Support Modbus master, slave, and free-form communication The channel is isolated from the interior, strong anti-interference ability
High speed count	XF-E1HSC	1-channel single ended input or differential input, 2-channel input, 4-channel output	Support 1-channel of encoder single ended input (bipolar) or differential input (A\B\Z) 2-channel high-speed input and 4-channel high-speed output	A/B phase supports 1/2/4 frequency doubling Differential/single ended optional Maximum frequency 2MHz Support pulse frequency/width measurement Support 2-channel probe Support 4-channel comparison output (fly shooting)

Appearance dimension diagram (Unit：mm)

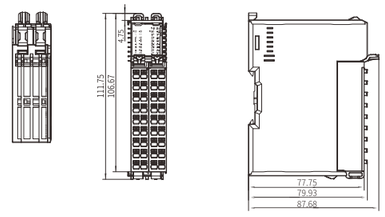
XSF5 series basic unit



XF series expansion modules



Suitable models	XF-E16X
	XF-E16(P)YT
	XF-E8NX8YT
	XF-E4AD
	XF-E4DA
	XF-E2COM24
	XF-E4RTD
	XF-E4TC
	XF-E1HSC
	XF-EP24



Suitable models	XF-E32X
	XF-E32YT
	XF-E16X16YT

Small-sized PLC

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

9 sub-series to meet various needs

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

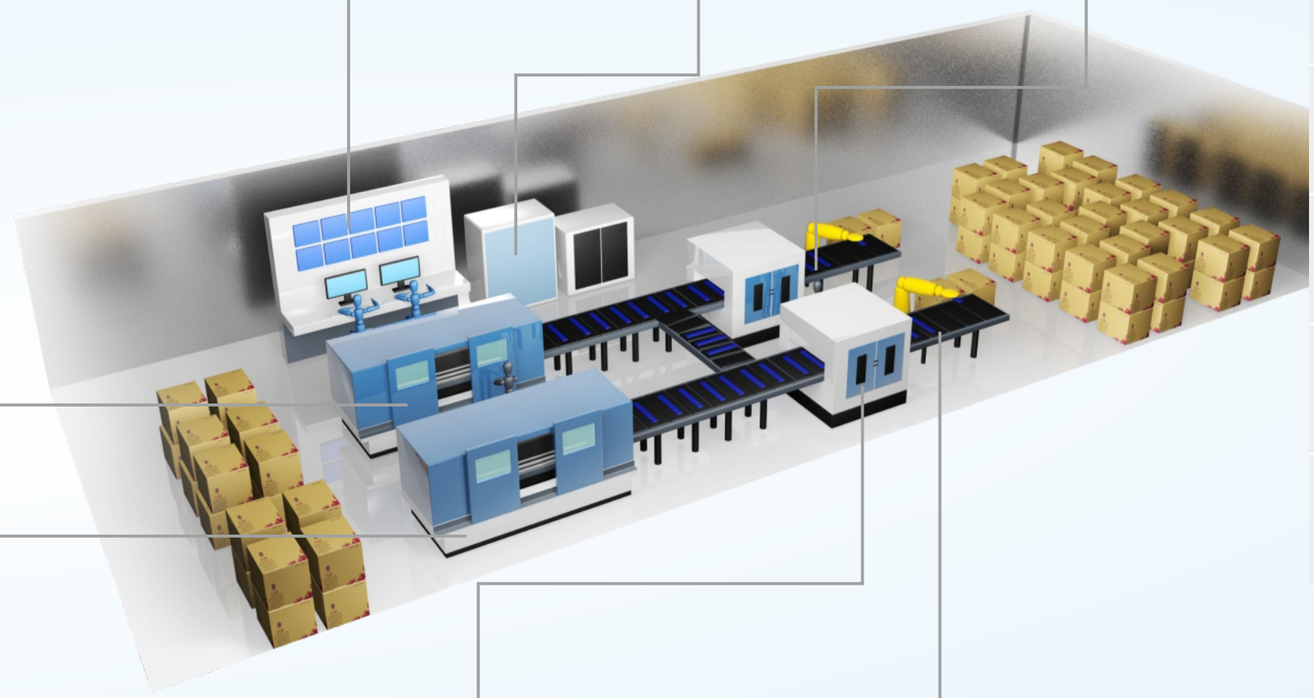
Up to 100KHz pulse output.

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 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.

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).

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

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)

Performance specification

Product series XD2-		16R/T/RT	24R/T/RT	32R/T/RT	42R/T/RT	48R/T/RT	60R/T/RT
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					

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	XD2-16RT-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	XD2-42RT-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	-	-

Product series XD2-			16R/T/RT	24R/T/RT	32R/T/RT	42R/T/RT	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: ①Only the PLC with transistor output has high speed positioning function;②The "-" in the table indicates that this model doesn't have this function;
③Special 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)①

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	-	-	-	-
	XD3-42R-E	XD3-42T-E	XD3-42RT-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	42R/T/RT	48R/T/RT	60R/T/RT
I/O	Total points	16	24	24	32	32	42	48	60
	Input points	8	14	14	18	18	24	28	36
	Output points	8	10	10	14	14	18	20	24
Max I/O points		336	344	344	352	352	362	368	380
High speed positioning	General pulse output	2 axes	2 axes	4 axes	2 axes	4 axes	2 axes	2 axes	2 axes
	Differential pulse output	-	-	-	-	-	-	-	-
High speed input	Single/AB phase mode	3channels	3channels	3channels	3channels	3channels	3channels	3channels	3channels
	Input mode	OC	OC	OC	OC	OC	OC	OC	OC
Expansion ability	Right expansion module	10	10	10	10	10	10	10	10
	Left expansion module	1	1	1	1	1	1	1	1
	BD board	-	1	1	1	1	1	2	2
Interruption	External interrupt	6	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		-							
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	42R/T/RT	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: ①Only the PLC with transistor output has high speed positioning function;②The "-" in the table indicates that this model doesn't have this function;
③Special 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 channels 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	3channels	3channels	4channels	3channels	4channels	3channels	3channels	4channels	6channels	3channels	4channels	6channels	10channels	3channels
	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	-
	XD5-80R-E	XD5-80T-E	-	-	-	-
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 cannot support)													
Bit soft component	Input relay (X)		1280 points: X0~X77, X10000~X11177, X20000~X20177, X30000~X30077													
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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: ①Only the PLC with transistor output has high speed positioning function;②The "-" in the table indicates that this model doesn't have this function.
③Special refers to system occupancy, cannot be used for other purposes;④The 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)

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
	Input mode	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	

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	-	-	-	-

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~X11177, X20000~X20177, X30000~X30077	
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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 pointsD0~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: ①The "-" in the table indicates that this model doesn't have this function;②Special refers to system occupancy, cannot be used for other purposes.

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

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)				

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	-	-	-	-
NPN type	-	XDM-24PT4-E	-	-	XDM-24PT4-C	-
	-	XDM-32PT4-E	-	-	XDM-32PT4-C	-
	-	XDM-60PT10-E	-	-	XDM-60PT10-C	-

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~X11177, X20000~X20177, X30000~X30077				
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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 pointsD0~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: ①Only the PLC with transistor output has high speed positioning function;②The "-" in the table indicates that this model doesn't have this function.
③Special refers to system occupancy, cannot be used for other purposes.

Ethernet communication type

XD3E series

In addition to all the functions of XD3 series (except SD card function), it has faster processing speed, 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 256KB
② I/O sequential control
③ Max I/O 536 points
④ Basic instruction 0.02~0.05us
⑤ RS232, RS485, RJ45
⑥ X-NET fieldbus
⑦ 2 axes 100KHz pulse output
⑧ 3 channels high speed counter (single phase up to 80KHz, AB phase up to 50KHz)

XD3E 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	XD3E-24R-E	XD3E-24T-E	-	-	-	-
	XD3E-30R-E	XD3E-30T-E	-	-	-	-
	XD3E-48R-E	XD3E-48T-E	-	-	-	-
	XD3E-60R-E	XD3E-60T-E	-	-	-	-
PNP type	-	-	-	XD3E-30PR-C	XD3E-30PT-C	-
	-	-	-	XD3E-48PR-C	-	-
	-	-	-	-	XD3E-60PT-C	-

Performance specification

Product series XD3E-		24R/T	30R/T	48R/T	60R/T
Main body I/O	Total points	24	30	48	60
	Input points	14	16	28	36
	Output points	10	14	20	24
Max I/O points		536	542	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	3 channels	3 channels	3 channels	3 channels
	Input mode	OC	OC	OC	OC
Expansion ability	Right expansion module	10	10	10	10
	Left expansion module	1	1	1	1
	BD board	1	1	1	1
Interruption	External interrupt	10			
	Timing interrupt	20			
	Other interrupts	High speed counting interrupt, pulse interrupt			
Communication function	Communication port	1 RS232 port, 1 RS485 port, 2 Ethernet ports			
	Communication protocol	Standard Modbus ASCII/RTU communication, free format communication			
Bus function		X-NET fieldbus			
PWM pulse width modulation		Support			
Frequency measurement		3 channels			
Precise timing		Support			
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 XD3E-			24R/T	30R/T	48R/T	60R/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	1021 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 TO~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 HC~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: ①The "-" in the table indicates that this model doesn't have this function;②Special refers to system occupancy, cannot be used for other purposes.

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 RS232, 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)
⑨ Online downloading

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	-
NPN type	-	-	-	XD5E-30PR-C	-	-
	-	XD5E-30PT4-E	-	-	-	-
	-	-	-	XD5E-48PR-C	-	-
	-	-	-	-	XD5E-60PT-C	-
	-	XD5E-60PT6-E	-	-	-	-
	-	-	-	-	XD5E-60PT10-C	-
Bipolar	XD5E-60NPR-E	-	-	-	-	-

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~X11177, X20000~X20177, X30000~X30077							
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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 pointsD0~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: ①The "-" in the table indicates that this model doesn't have this function; ②Special refers to system occupancy, cannot be used for other purposes.

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~X11177, X20000~X20177, X30000~X30077		
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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 pointsD0~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: ①The "-" in the table indicates that this model doesn't have this function; ②Special refers to system occupancy, cannot be used for other purposes.

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)

Performance specification

Product series XDH-		30A16	30A16L	60T4	60A32	60A64
Main body I/O	Total points	30	30	60	60	60
	Input points	16	16	36	36	36
	Output points	14	14	24	24	24
Max I/O points		542	542	572	572	572
High speed positioning	General pulse output	4 axes	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	4 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	0	0	1	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, XDH-60A64: 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		Support				
Frequency measurement		-				
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				
Basic instruction processing speed		0.01~0.03us	0.02~0.05us	0.01~0.03us	0.01~0.03us	0.01~0.03us
User program capacity (secret download mode)		1MB	2MB	4MB	4MB	4MB

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	-
	-	XDH-60A32-E	-	-	-	-
	-	XDH-60A64-E	-	-	-	-
PNP type	-	XDH-30PA16-E	-	-	-	-
	-	XDH-30PA16L-E	-	-	XDH-30PA16L-C	-
	-	XDH-60PT4-E	-	-	-	-
	-	XDH-60PA32-E	-	-	-	-
	-	XDH-60PA64-E	-	-	-	-

Product series XDH-			30A16	30A16L	60T4	60A32	60A64
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~X11177, X20000~X20177, X30000~X30077				
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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 HS0~HS19999				
		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				
		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		1000000 points D0~D999999		
		Power off holding HD	50000 points HD0~HD49999		100000 points HD0~HD99999		
		Special SD	65488 points SD0~SD65487				
	FlashROM register	Power off holding FD	65536 points SFD0~SFD65535				
		Special SFD	50000 points SFD0~SFD49999				
		Security register FS	48 points FS0~FS47				

*Note: ①The "-" in the table indicates that this model doesn't have this function; ②Special 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 0°C~50°C.

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: ①Please use more than 2mm² wires for the power cable to prevent voltage drop.

②Even 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.

③The 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 NPN 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

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 expansion function.

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.

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	

Expansion unit

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)

Model	Channel	Input signal	Specification
XD-E4PT3-P	4	Pt100, PT1000 Platinum thermistor Temperature range -100°C~500°C (digital output range -1000~5000, signed 16 bits, binary)	Analog power supply DC24V±10%, 50mA Resolution: 0.1°C Comprehensive accuracy: ±0.5% (relative maximum value) PT conversion speed: 80ms/1 channel PT3 conversion speed: 450ms/4 channels Filter coefficient: 0~254 Each channel is independently PID controlled and supports self-tuning function Capable of detecting power outages, disconnections, and exceeding the range
XD-E6PT-P	6	Pt100, PT1000 platinum thermistor (two-wire system) Temperature measurement range: -100.0°C~500.0°C (PT100, PT1000)	
XD- E2TC-P	2	K, S, E, N, B, T, J, and R-type thermocouples temperature range: K-TYPE 0.0°C~1300.0°C E-TYPE 0.0°C~600.0°C B-TYPE 250.0°C~1800.0°C J-TYPE 0.0°C~800.0°C S-TYPE 0.0°C~1700.0°C N-TYPE 0.0°C~1200.0°C T-TYPE 0.0°C~400.0°C R-TYPE 0.0°C~1700.0°C	Analog power supply DC24V±10%, 50mA Resolution: 0.1°C Comprehensive accuracy: ±1% (relative maximum value) Conversion speed: 80ms/1 channel Each channel is independently PID controlled and supports self-tuning function Capable of detecting power outages, disconnections, and exceeding the range
XD- E6TC-P	6		
XD-E6TC-P-H	6	K, S, E, N, B, T, J, and R-type thermocouples temperature range: K-type -200.0°C~1372.0°C E-type -200.0°C~1000.0°C B-type -250.0°C~1798.0°C J-type -210.0°C~1200.0°C S-type -50.0°C~1768.0°C N-type -200.0°C~1300.0°C T-type -200.0°C~400.0°C R-type -50.0°C~1768.0°C	Analog power supply DC24V±10%, 50mA Resolution: 0.1°C Comprehensive accuracy: ±1% (relative maximum value) Conversion speed: 80ms/1 channel Each channel is independently PID controlled and supports self-tuning function Capable of detecting power outages, disconnections, and exceeding the range

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	1.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: -100°C ~500°C (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 0.1°C 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: -100°C ~500°C (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 0.1°C 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.

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

1~2 channels weighing　　4 channels weighing

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

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

Expansion unit

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: -10~50°C
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%

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.

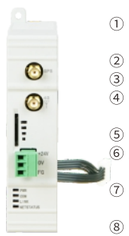
Model	I/O signal	Specification
XD-4AD-A-ED	4 channels current input: 0~20mA/4~20mA	Power supply for the module: DC24V±10%, 150mA Conversion speed: 10ms (all the channels) AD/DA: Current/voltage input resolution: 1/4095 (12-bit) Current/voltage output resolution: 1/1023 (10-bit) AD/DA conversion comprehensive accuracy: ±1% PT: Temperature range: -100~500°C Digital output range: -1000~5000 Temperature input resolution: 0.1°C 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	
XD-1TC-ED	K, S, E, N, B, T, J and R type thermocouple Temperature measuring range 0°C ~ 1300°C (K type) (digital output range 0~13000, signed 16-bit, binary)	Power supply for analog is DC24V±10%, 50mA Resolution: 0.1°C Integrated precision ±1% (relative max value) TC conversion speed 80ms/channel
XD-4PT-ED	Pt100, PT1000 Platinum thermistor Temperature measuring range -100°C ~ 500°C (digital output range -1000~5000, signed 16-bit, binary)	Power supply for analog is DC24V±10%, 50mA Control precision ±0.5% Resolution: 0.1°C Integrated precision ±1% (relative max value) PT conversion speed 80ms/channel Pt3 conversion speed 450ms/4 channels PT filter coefficient 0~254 Each channel has independent PID parameters Support self-tuning function Optional sampling period

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 accesscess

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 unit

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.

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:

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: Please refer to the manual for specific use. XDH, XC series PLC is not supported temporarily.

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.

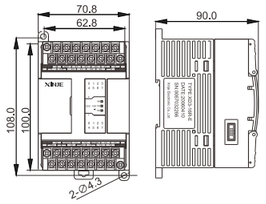
XD series terminal resistance

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.

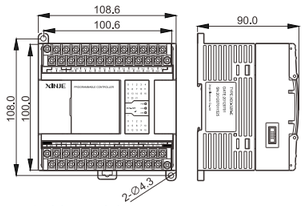
Dimension drawing (Unit: mm)

XD series basic unit



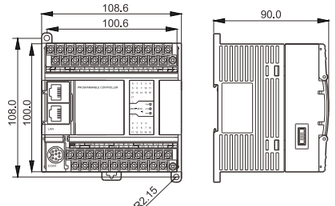
Suitable model

Series	XD1	XD2	XD3	XD5
Points	10/16 Points			



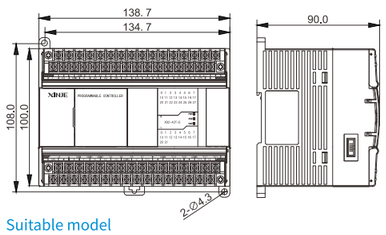
Suitable model

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



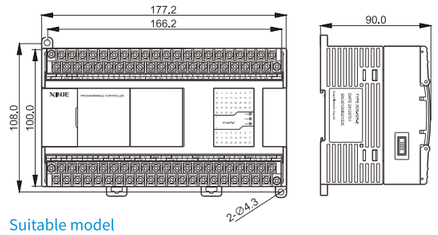
Suitable model

Series	XD3E	XD5E	XDME	XDH
Points	24/30 Points			



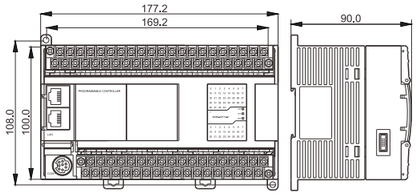
Suitable model

Series	XD2	XD3	XD5
Points	42 Points		



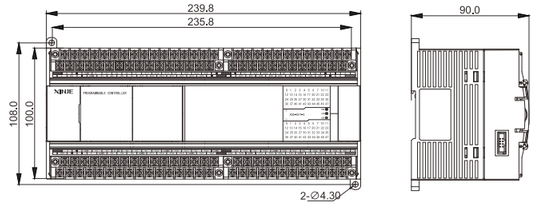
Suitable model

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



Suitable model

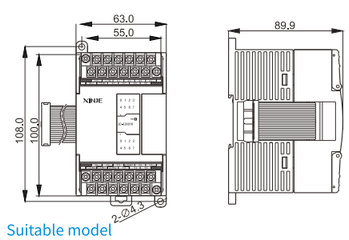
Series	XD5E	XDME	XDH	XSDH	XD3E
Points	60 Points				48/60 Points



Suitable model

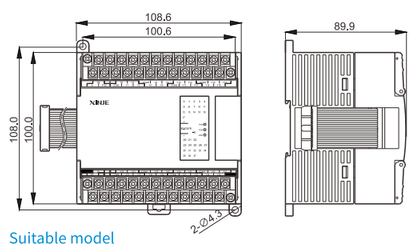
Series	XD5
Points	80 Points

XD series right expansion module



Suitable model

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



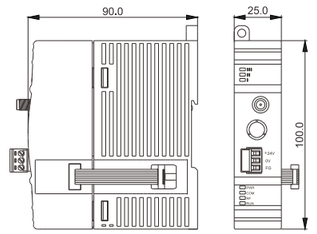
Suitable model

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

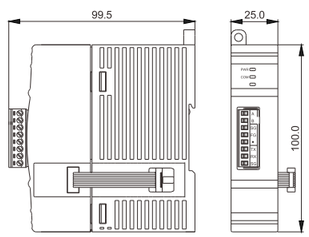
Dimension (Unit: mm)

XD series left expansion ED module

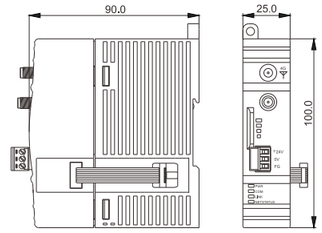
XD-WBOXL-ED



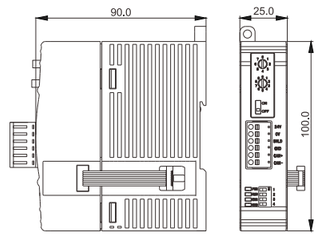
XD-NES-ED



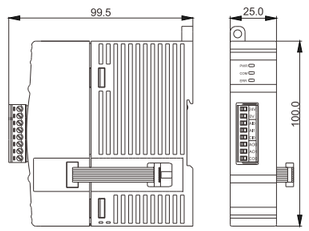
XD-4GBOXL-ED



XD-COBOX-ED

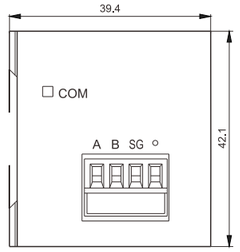


XD analog ED module

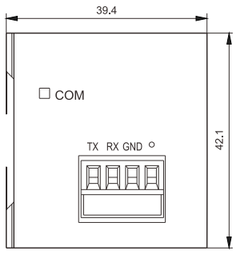


XD series expansion BD board

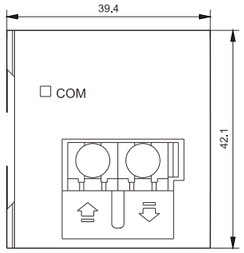
XD-NE-BD



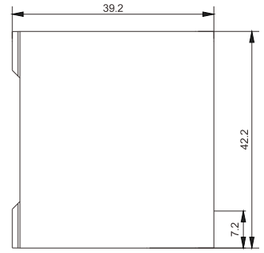
XD-NS-BD



XD-NO-BD

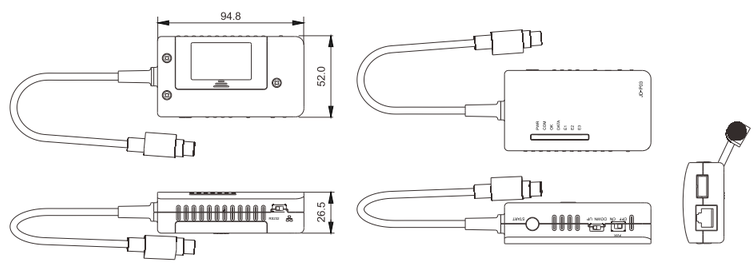


XD-RTC-BD



Host accessories

JD-P03



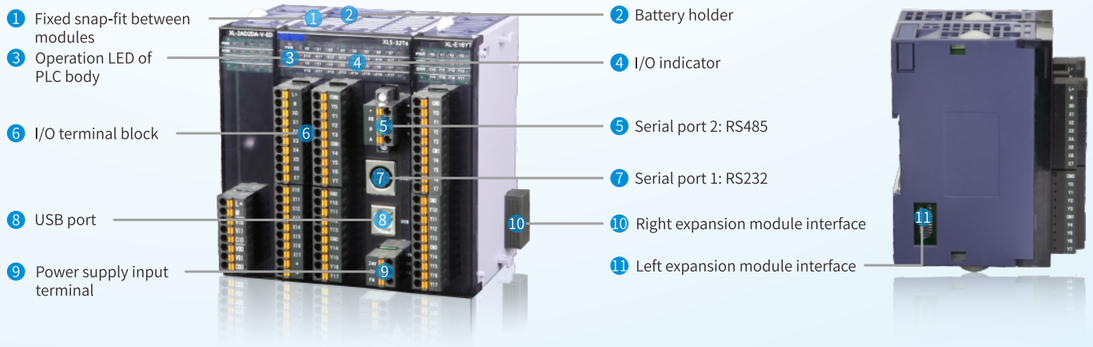
Slim type PLC

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	Standard	Enhanced	Ethernet communication	CAN communication	EtherCAT bus
XL1 series	XL3 series	XL5 series	XL5E/XLME series	XL5N series	XLH/XL5H/LC5E 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)

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		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	

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	-

Product series XL1-			16T	16T-U
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: K0~32767 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: ①The "-" in the table indicates that this model doesn't have this function; ②Special refers to system occupancy, cannot be used for other purposes.

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 2-4 channels 100KHz pulse output

Performance specification

Product series XL3-		16R/T	16T4	32R/T
Main body I/O	Total points	16	16	32
	Input points	8	8	16
	Output points	8	8	16
Max I/O points		336	336	352
High speed positioning	General pulse output	2 axes	4 axes	2 axes
	Differential pulse output	-	-	-
High speed input	Single/AB phase mode	3 channels	3 channels	3 channels
	Input mode	OC	OC	OC
Expansion ability	Right expansion module	10	10	10
	Left expansion module	1	1	1
	BD board	-	-	-
Interruption	External interrupt	6	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)		256KB		

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	-	-
PNP &NPN type	-	-	-	-	XL3-16T4	-

Product series XL3-			16R/T	16T4	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: K0~32767 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 pointsD0~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: ①The "-" in the table indicates that this model doesn't have this function;②Special refers to system occupancy, cannot be used for other purposes.

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	-
NPN type	-	-	-	-	XL5-32PT4	-
PNP &NPN type	-	-	-	-	XL3-16T4	-

Performance specification

Product series XL5-		16T	16T4	32T	32T4	64T10
Main body I/O	Total points	16	16	32	32	64
	Input points	8	8	16	16	32
	Output points	8	8	16	16	32
Max I/O points		528	528	544	544	576
High speed positioning	General pulse output	2 axes	4 axes	2 axes	4 axes	10 axes
	Differential pulse output	-	-	-	-	-
High speed input	Single/AB phase mode	3 channels	3 channels	3 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	-	-	-	-	-
Interruption	External interrupt	6	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 XL5-			16T	16T4	32T	32T4	64T10
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~X11177, X20000~X20177, X30000~X30077				
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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: K0~32767 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 pointsD0~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: ①The "-" in the table indicates that this model doesn't have this function; ②Special refers to system occupancy, cannot be used for other purposes.

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)
⑨ Online downloading
⑩ Bipolar input

Performance specification

Product series XL5E-		16T	32T	32T4	64T6	64T10
Main 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				

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
PNP &NPN type	-	-	-	-	XL5E-16T	-
	-	-	-	-	XL5E-32T	-
	-	-	-	-	XL5E-32T4	-
	-	-	-	-	XL5E-64T6	-
	-	-	-	-	XL5E-64T10	-
PNP type	-	-	-	-	XL5E-32PT4	-

Product series XL5E-			16T	32T	32T4	64T6	64T10
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~X11177, X20000~X20177, X30000~X30077				
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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: K0~32767 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 pointsD0~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: ①The "-" in the table indicates that this model doesn't have this function;②Special refers to system occupancy, cannot be used for other purposes.

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)
⑩ Online downloading

Performance specification

Product series XL5N-		32T
Main 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

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	-
PNP type	-	-	-	-	XL5N-32PT	-

Product series XL5N-			32T
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~X11177, X20000~X20177, X30000~X30077
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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	2000 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 C0~C4999
		Power off holding HT	2000 points HC0~HC1999
	Counter	Specification	16-bit counter: K0~32767 32-bit counter: -2147483648~+2147483647
		General C	20000 points C0~C19999
		Power off holding HC	2000 points HC0~HT1999
	Special coil for WAIT instruction		32 points SEM0~SEM31
Word soft component	Data register	General D	500000 pointsD0~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: ①The "-" in the table indicates that this model doesn't have this function; ②Special refers to system occupancy, cannot be used for other purposes.

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
⑪ Online downloading

Performance specification

Product series XLME-		16T4	32T4	64T10
Main body I/O	Total points	16	32	64
	Input points	8	16	32
	Output points	8	16	32
Max I/O points		528	544	576
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	-	-	-
Interruption	External interrupt	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, 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		

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
PNP &NPN type					XLME-16T4	
	-	-	-	-	XLME-32T4	-
	-	-	-	-	XLME-64T10	-

Product series XLME-			16T4	32T4	64T10
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~X11177, X20000~X20177, X30000~X30077		
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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 HT0~HT1999		
	Counter	Specification	16-bit counter: K0~32767 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 pointsD0~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: ①The "-" in the table indicates that this model doesn't have this function; ②Special 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/acr interpolation
⑫ 16 channels electronic cam (XLH-24A16L/XLH-30A32L not supported)
⑬ Bipolar input

Performance specification

Product series XLH-		24A16	24A16L	30A32	30A32L
Main body I/O	Total points	24	24	30	30
	Input points	12	12	14	14
	Output points	12	12	16	16
Max I/O points		536	536	542	542
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	2 channels differential signal + 2 channels OC	2 channels differential signal + 2 channels OC
Expansion ability	Right expansion module	16	16	16	16
	Left expansion module	1	1	1	1
	BD board	-	-	-	-
Interruption	External interrupt	10	10	10	10
	Timing interrupt	20	20	20	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)			
EtherCAT bus function	Single axis	Support	Support	Support	Support
	Axis group	Support	Support	Support	Support
	Electronic cam	Support	-	Support	-
PWM pulse width modulation		Support			
Frequency measurement		-			
Precise timing		26 points ET0~ET25 (cannot support this function)			
Multi-station control		Support			
Program execution mode		Cyclic scanning mode			
Programming method		LD、ST、C、IL			
Power off holding		FlashROM			
Basic instruction processing speed		0.02~0.05us		0.01~0.03us	
User program capacity (secret download mode)		2MB		4MB	

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	-
	-	-	-	-	XLH-30A32L	-
PNP type	-	-	-	-	XLH-24PA16	-
	-	-	-	-	XLH-24PA16L	-
	-	-	-	-	XLH-30PA32	-

Product series XLH-			24A16	24A16L	30A32	30A32L
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~X11177, X20000~X20177, X30000~X30077			
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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: ①The "-" in the table indicates that this model doesn't have this function;②Special refers to system occupancy, cannot be used for other purposes.

EtherCAT bus type

XL5H series

It is compatible with most functions of XL5E, supports EtherCAT bus, is equipped with RS232, RS485 and RJ45 ports, supports 2-channel pulse output, 3-channel high-speed counting, and supports the connection of right expansion module and left expansion module.

① Program capacity 1M
② Max I/O 536 points
③ Basic instruction 0.01~0.05us
④ RS232, RS485, RJ45
⑤ Ethernet communication
⑥ X-NET fieldbus
⑦ EtherCAT bus control
⑧ 2 channels 100KHz pulse output
⑨ 3 channels high speed counter (single phase max 80K, AB phase max 50K)
⑩ Follow-up function
⑪ Online downloading
⑫ Bipolar input

Performance specification

Product series XL5H-		24A8L	24A8L
Main body I/O	Total points	24	24
	Input points	12	12
	Output points	12	12
Max I/O points		536	536
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	16	16
	Left expansion module	1	1
	BD board	-	-
Interruption	External interrupt	10	10
	Timing interrupt	20	
	Other interrupts	High speed counting interrupt, pulse interrupt	
Communication function	Communication port	1 RS232 port, 1 RS485 port, 1 EtherCAT port, 1 Ethernet port	
	Communication protocol	Standard Modbus ASCII/RTU, free format communication, Modbus-TCP Client/Server, TCP/UDP	
EtherCAT bus function	Single axis	Support	Support
	Axis group	Support	Support
	Electronic cam	Support	-
PWM pulse width modulation		Support	
Frequency measurement		3 channels	
Precise timing		Support	
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		0.01~0.05us	
User program capacity (secret download mode)		1MB	

XL5H 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
PNP &NPN type	-	-	-	-	XL5H-24A8	-
	-	-	-	-	XL5H-24A8L	-

Product series XL5H-			24A8	24A8L
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~X11177, X20000~X20177, X30000~X30077	
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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	
		Precise timing	40 points ET0~ET39	
	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	
		High speed counter	40 points HSC0~HSC39	
	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: ①The "-" in the table indicates that this model doesn't have this function;②Special refers to system occupancy, cannot be used for other purposes.

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°C~55°C
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 frequency	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 have no "input ON current", "input OFF current", and its input ON voltage is below 9V, 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		DC5~30V
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°C ~ 55°C
Storage temperature	-20 ~ 70°C
Ambient humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	It is directly installed on the guide rail of DIN46277 (35mm width)

Expansion unit

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 576 points at most.

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

Digital input module

Model		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, 32PX-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	XL-E32PX-A	32 channels digital input, horn terminals	

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, horn terminals	
XL-E32YT	32 channels transistor output, no power supply required	
XL-E32YT-A	32 channels transistor output, no power supply required, horn terminals	

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, 16PX16YT-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-E16PX16YT	16 channels digital input, 16 channels transistor output (PNP type)	
XL-E16X16YT-A	XL-E16PX16YT-A	16 channels digital input, 16 channels transistor output, horn terminals	

Analog and temperature expansion module

It has D/A and A/D conversion functions. XD/L 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, PT1000 platinum thermistor (three-wire system) Measurement temperature range -100°C~500°C	Analog power supply DC24V±10%, 50mA; Resolution: 0.1°C Comprehensive accuracy: ±0.5% (relative maximum value) Conversion speed: 450ms/4 channels Filter coefficient: 0~254 Each channel is independently PID controlled and supports self-tuning function Capable of detecting power outages, disconnections, and exceeding the range
XL- E4TC-P	4	Temperature measurement range of K, S, E, N, B, T, J, and R-type thermocouples: K-type 0.0°C~1300.0°C E-type 0.0°C~600.0°C B-type 250.0°C~1800.0°C J-type 0.0°C~800.0°C S-type 0.0°C~1700.0°C N-type 0.0°C~1200.0°C T-type 0.0°C~400.0°C R-type 0.0°C~1700.0°C	Analog power supply DC24V±10%, 50mA Resolution: 0.1°C Comprehensive accuracy: ±1% (relative maximum value) Conversion speed: 420ms/4 channels Each channel is independently PID controlled and supports self-tuning function Capable of detecting power outages, disconnections, and exceeding the range
XL- E4PT3-P-H		1.PT100, PT1000, CU50, CU100 thermistor temperature measurement range: -200.0°C~850.0°C (PT100, PT1000) -50.0°C~150.0°C (CU50, CU1000)	Analog power supply DC24V±10%, 50mA; Resolution: 0.1°C, 0.01°C optional Comprehensive accuracy: 0.2% (relative maximum value) Conversion speed: 50ms/all channels; Filter coefficient: 0~254 Each channel is independently PID controlled and supports self-tuning function Capable of detecting power outages, disconnections, and exceeding the range Isolation between channels

Analog input module (AD type)

Model	Channel	Input signal	Specification
XL-E4AD	4	Current input: 0~20mA/4~20mA/-20~20mA Voltage input: 0~5V/0~10V/-5~5V/-10~10V	Power supply for analog DC24V ±10%, 150mA Conversion speed 2ms/channel Resolution: XL-E4AD, XL-E8AD-A, XL-E8AD-V: 1/16383 (14-bit) XL-E8AD-A-S, XL-E8AD-V-S: 1/65536 (16-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-A	8	Current input: 0~20mA/4~20mA/-20~20mA	
XL-E8AD-V	8	Voltage input: 0~5V/0~10V/-5~5V/-10~10V	
XL-E8AD-A-S	8	Current input: 0~20mA/4~20mA/-20~20mA	
XL-E8AD-V-S	8	Voltage input: 0~5V/0~10V/-5~5V/-10~10V	

Analog output module (DA type)

Model	Channel	Output 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 output module (DA 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

Expansion unit

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: -100~500°C Digital output range: -1000~5000 PT filter 0~254 Temperature input resolution: 0.1°C 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°C~60°C
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	
XLME-64T10	JT-E32X+JT-E32YT	
XL-E32X-A	JT-E32X	
XL-E32PX-A	JT-E32X	
XL-E16X16YT-A	JT-E16X16YT	
XL-E16PX16YT-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

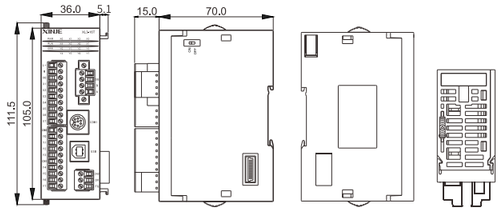
■ JD-P03

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)

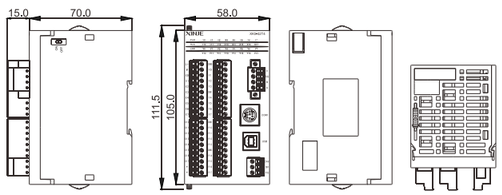
XL series PLC basic unit



Suitable mo els

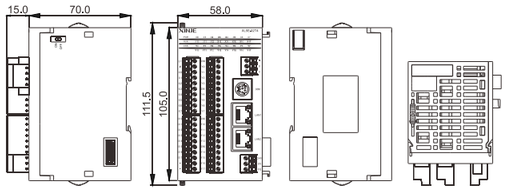
Series	XL1	XL3	XL5	XL5E
Points	16 points			

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



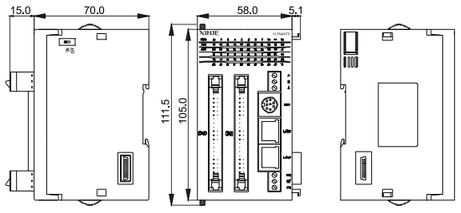
Suitable models

Series	XL3	XL5
Points	32 points	



Suitable models

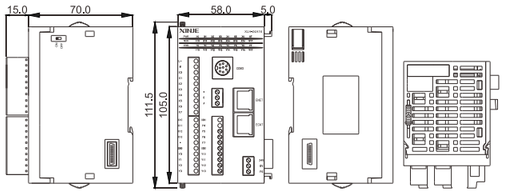
Series	XL5E	XL5N	XLME
Points	32 points		



Suitable models

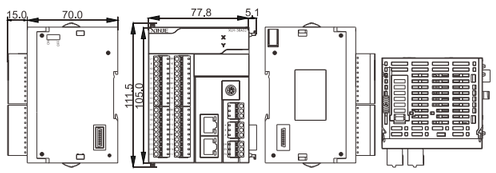
Series	XL5	XL5E	XLME
Points	64 points		

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



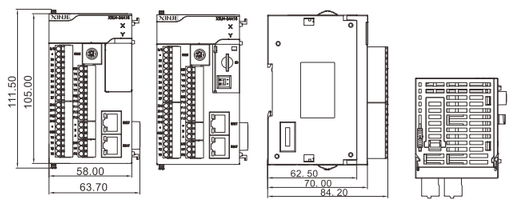
Suitable models

Series	XLH	XL5H
Points	24 points	



Suitable models

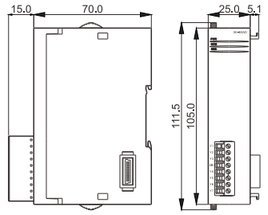
Series	XLH	XSLH
Points	30 points	



Suitable models

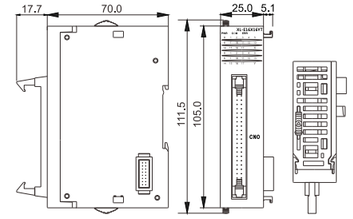
Series	XSLH
Points	24 points

XL series right expansion module



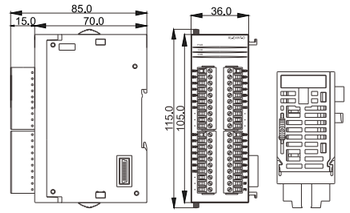
Suitable models

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



Suitable models

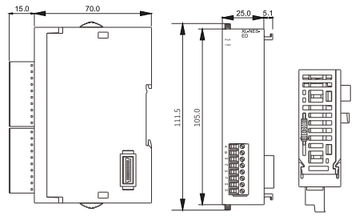
Module type	Digital value
Models	16YT-A
	16X16Y-A
	32X-A
	32YT-A



Suitable models

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

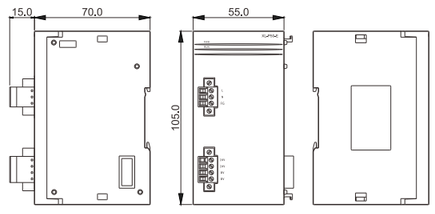
XL series left expansion ED module



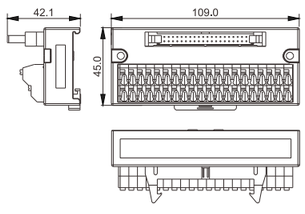
Suitable models

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

XL series power supply module



JT series external terminal block



Medium PLC

Overall improvement of speed, capacity and function

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 axes linear, arc interpolation
⑫ 16 channels electronic CAM

Performance specification

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

XG2 series model list

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

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 HD0~SD699999
		Power-off retentive HD	100000 points SD0~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: ①Only the PLC with transistor output has high speed positioning function;②The "-" in the table indicates that this function is not available;
③Special use refers to being occupied by the system and cannot be used for other purposes.

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°C~60°C
Ambient humidity	5%~95% (no condensation)
Installation	It can be fixed with M3 screws or directly installed on the rail
Grounding (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

XG2series PLC input specification
XG2 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 format	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 format	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

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 0.1mA
Response time	OFF→ON	Below 0.2ms
	ON→OFF	Below 0.2ms

High speed pulse output

Model	T4 type
High speed pulse output terminal	Y0~Y3
External power supply	Below DC5~30V
Action indicator	LED indicator
Max current	50mA
Pulse max output frequency	100KHz

*Note: ① When using the high-speed pulse output function, the PLC can output pulses up to 200kHz, but it can not ensure the normal operation of all servos. Please connect a resistance of about 500Ω between the output end and 24V power supply;

② PLC is generally equipped with plug-in spring connector when leaving the factory, which is convenient for wiring. The length of wire peeling off is required to be at least 1.5cm. When wiring, press the yellow spring switch with a small screwdriver, insert the wire into the corresponding socket, and release the spring switch.

Expansion unit

XG 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°C ~ 60°C
Storage temperature	-20 ~ 70°C
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 output	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 Input filter time 1~50ms optional 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	

Expansion unit

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 -100°C~500°C (digital output range -1000~5000, signed 16-bit, binary)	Power supply for analog DC24V±10%, 50mA Control precision ±0.5% Resolution 0.1°C 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 0°C~1300°C (K type) (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

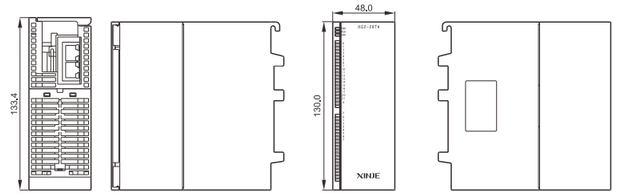
XG-EB series guide rail is selected for the installation of basic unit, expansion module and power module.

The following six specifications are available:

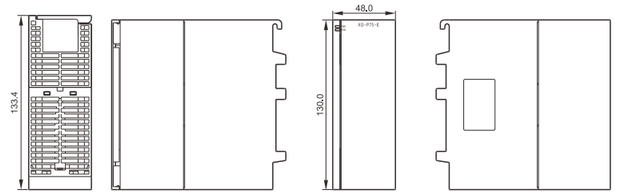
XG-EB-170(170mm),XG-EB-260（260mm）
XG-EB-385(385mm), XG-EB-590（590mm）
XG-EB-880(880mm),XG-EB-1500（1500mm）

Dimension (unit: mm)

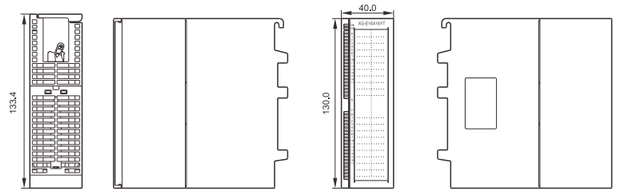
XG2 series basic unit



Power supply module



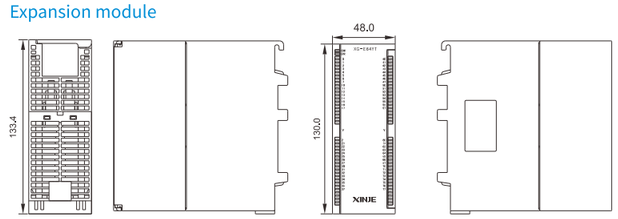
Expansion module



Suitable model

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

Expansion module



Suitable model

Module type	Digital value
Model	64X
	64Y

Bus distributed remote IO

High real-time performance, compact structure, diversified combination, meeting the application scenarios of different user needs

The new generation of Xinje distributed IO system is suitable for common bus networks, compatible with mainstream brand PLC master stations, and uses high-speed backplane bus between adapters and modules. It can quickly respond to external excitation signals for high-speed and high-precision field applications. According to different application scenarios and customer needs, the types of remote IO modules are constantly improving and enriching, providing a better experience for the "combination" needs of different customers and applications.

Features

Multi-system composition

Support Modbus TCP communication protocol and communication with master devices using EtherCAT and Profinet bus protocols.

High reliability and real-time performance

Utilize a self-developed high-speed backplane bus to achieve microsecond-level fast response in data acquisition, meeting the field requirements for high-speed and high-precision control.

Rich IO models

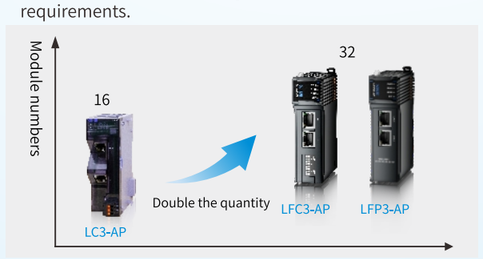
Support the expansion of digital, analog, temperature, communication, pulse, process and other unit modules.

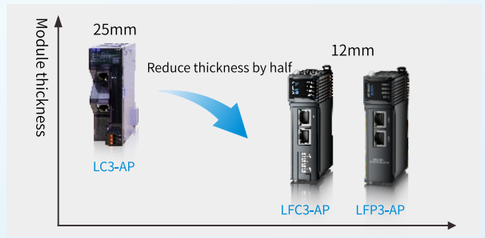
Convenient maintenance

The detachable terminal block allows for the replacement of modules of the same model without the need for complex wiring and disconnection actions, saving on-site maintenance time and costs.

Newly upgraded

- Large capacity expansion, supporting 32 expansion modules.
- Blade type structural design saves more installation space and is suitable for applications with strict volume requirements.





LF series distributed remote IO

LFC3-AP

High performance EtherCAT communication coupler

① Blade style expansion, diversified combinations
② Compact structure, saving installation space
③ Direct insertion terminal, easy and reliable wiring
④ Support network port firmware upgrade
⑤ Support hardware static station number setting
⑥ High speed bus microsecond level response
⑦ Support up to 32 IO expansion modules
⑧ Channel and backplane fault diagnosis, quickly obtain fault diagnosis information
⑨ Seamless compatibility with mainstream PLC master stations on the market

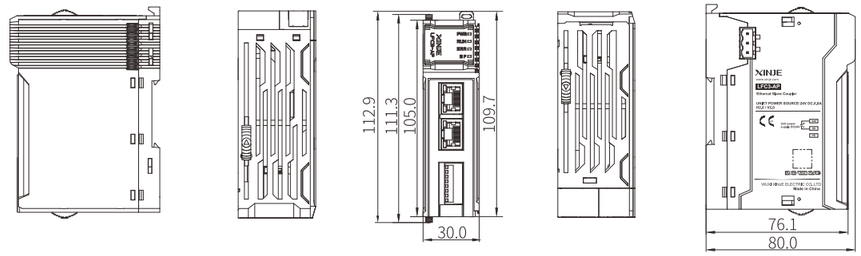
*Note: LFC3-AP can be used in conjunction with the XF right expansion modules

Performance specification

Model	LFC3-AP
Rated voltage	DC 24V
Voltage allowable range	DC 21.6V~26.4V
Input current	120mA DC24V
Allow instantaneous power outage time	10ms DC24V
Impact current	10A DC26.4V
Network protocol	EtherCAT
Cascade method	Follow the principle of 'bottom in, top out'
Single AP process data	Input maximum 1024 bytes, output maximum 1024 bytes
Network interface	2 RJ45 ports
Physical layer	100BASE-TX
Synchronization cycle	Support 250us, 500us, 1000us, 2000us, 4000us
Connection rate	100Mbps, full duplex
Transmission distance	Less than or equal to 100M between two nodes
Topology	Linear
Transmission medium	Cat5e and above
No configuration required when replacing equipment	Support (EtherCAT modules of the same type)
Number of expansion modules	Support 32 modules
Firmware upgrade	Support
Address setting	Configure by dip switch (1-255) or assigned by the main station

Appearance dimension diagram (Unit: mm)

LFC3-AP



LF series distributed remote IO

LFP3-AP

High performance PROFINET communication coupler

① Blade style expansion, diversified combinations
② Compact structure, saving installation space
③ Direct insertion terminal, easy and reliable wiring
④ Support RT and IRT transmission modes
⑤ Support hardware static station number setting
⑥ Support MRP and MRPD redundancy
⑦ Compatible with Siemens and TIA portal
⑧ Support up to 32 expansion IO modules
⑨ Channel and backplane fault diagnosis, quickly obtain fault diagnosis information

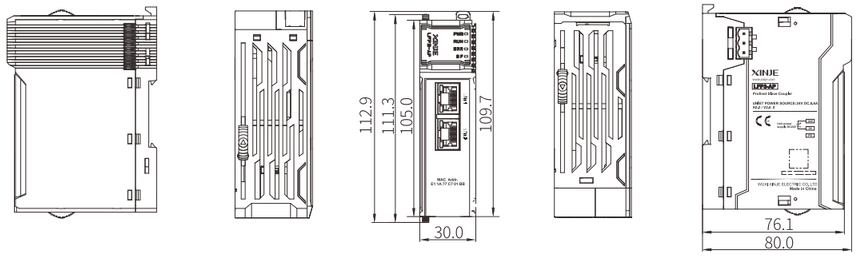
*Note: LFP3-AP can be used in conjunction with the XF right expansion modules

Performance specification

Model	LFP3-AP
Rated voltage	DC 24V
Voltage allowable range	DC 21.6V~26.4V
Input current	120mA DC24V
Allow instantaneous power outage time	10ms DC24V
Impact current	10A DC26.4V
Power protection	Anti reverse protection, overcurrent protection, surge absorption
Network protocol	Profinet
Single AP process data	Input maximum 1440 bytes, output maximum 1440 bytes
Communication mode	RT mode, IRT mode
Media redundancy (MRP)	Support
Media path redundancy planning (MRPD)	Support
Network interface	2 RJ45 ports
Connection rate	10/100Mbps adaptive, full duplex
Transmission distance	Less than or equal to 100m between two nodes
Topology	Support line type, star type, tree type, etc
Transmission medium	Cat5e and above
Number of expansion modules	Support 32 modules
Alarm, diagnosis, status information	Support, the main body supports uploading error codes to PLC
Profinet switch function	Support networking function
Firmware upgrade	Support

Appearance dimension diagram (Unit: mm)

LFP3-AP



LF series distributed remote IO

LFM3-AP

High performance Modbus TCP communication coupler

① Blade style expansion, diversified combinations
② Compact structure, saving installation space
③ Direct insertion terminal, easy and reliable wiring
④ Support network port firmware upgrade
⑤ Support Modbus TCP communication protocol
⑥ Support up to 32 expansion IO modules
⑦ Channel and backplane fault diagnosis, quickly obtain fault diagnosis information

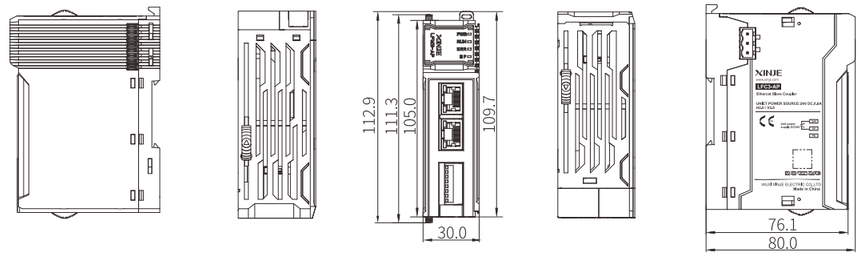
*Note: LFM3-AP can be used in conjunction with the XF right expansion modules.

Performance specification

Model	LFM3-AP
Rated voltage	DC 24V
Voltage allowable range	DC21.6V～26.4V
Input current	120mA DC24V
Allow instantaneous power outage time	10ms DC24V
Impact current	10A DC26.4V
Network protocol	Modbus TCP
High speed bus protocol	High speed backplane bus
Diagnostic function	Support
Number of client connections	8
TCP keep alive	30s
Support function code	01/03/05/06/15/16/23
Interface	2*RJ45 ports (switch form)
Physical layer	100BASE-TX
Connection rate/baud rate	10/100Mbps, adaptive, full duplex
Transmission distance/maximum bus length	Less than or equal to 100m between two nodes
Topology	Line type
Transmission medium	Cat5e and above
Number of expansion modules	Support 32 modules
Firmware upgrade	Support
IP address settings	Software configuration tool or dial code (1-254)

Appearance dimension diagram (Unit: mm)

LFM3-AP



L series distributed remote IO

LC3-AP

EtherCAT communication coupler

① Card based expansion and diversified combinations
② Compact structure, saving installation space
③ Direct insertion terminal, easy and reliable wiring
④ Support network port firmware upgrade
⑤ Support up to 16 expansion IO modules
⑥ Adopt a 45-degree angled Ethernet port design to reduce stress on the port and enhance product reliability
⑦ Seamless compatibility with mainstream PLC master stations on the market

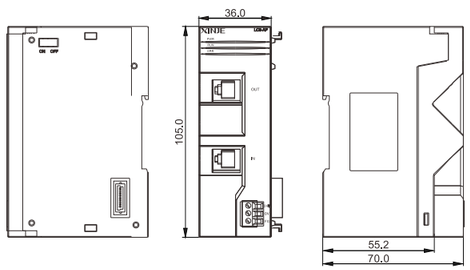
*Note: LC3-AP can be used in conjunction with the XL right expansion modules

Performance specification

Model	LC3-AP
Rated voltage	DC 24V
Voltage allowable range	DC 21.6V~26.4V
Input current	120mA DC24V
Allow instantaneous power outage time	10ms DC24V
Impact current	10A DC26.4V
Network protocol	EtherCAT
Cascade method	Follow the principle of 'bottom in, top out'
Single AP process data	938 bytes
Network interface	2*RJ45 ports
Physical layer	100BASE-TX
Synchronization cycle	Support 500us, 1000us, 2000us, 4000us
Connection rate	100Mbps, full duplex
Transmission distance	Less than or equal to 100m between two nodes
Topology	Line type
Transmission medium	Cat5e and above
No configuration required when replacing equipment	Support (EtherCAT modules of the same type)
Number of expansion modules	Support 16 modules
Firmware upgrade	Support (only for hardware versions H5.6 and above)
Address setting	Master station allocation
Termination resistor	When the number of expansion modules exceeds 5, it is necessary to cooperate with the terminal resistance module XL-ETR

Appearance dimension diagram (Unit: mm)

LC3-AP



L series distributed remote IO modules

LC3-AP can be used with XL series right expansion modules and L series remote IO modules.

Module model list

Module type	Model	Function description	Specification
Digital input	LL-E16X	16 channels digital input	LC3-AP dedicated expansion module, positive and negative logic can be set, input filtering time can be adjusted, NPN input; Power supply DC24V
	LL-E32X	32 channels digital input	LC3-AP dedicated expansion module; Expand 32 points DC input, positive and negative logic can be set, adjustable input filtering time; NPN input; Power supply DC24V
Digital output	LL-E16YT	16 channels digital output, this module does not require power supply	LC3-AP dedicated expansion module, expand 16 points transistor output; NPN output
	LL-E16YR	16 channels digital output, this module does not require power supply	LC3-AP dedicated expansion module, expand 16 points relay output
	LL-E32YT	32 channels digital output, this module does not require power supply	LC3-AP dedicated expansion module, expand 32 points transistor output; NPN output
Digital IO	LL-E8X8YT	8 channels digital input, channels digital output	LC3-AP dedicated expansion module, expand 8-point DC input/8-point transistor output, positive and negative logic can be set, input filtering ime can be adjusted, NPN input; NPN output; Power supply DC24V
	LL-E16X16YT	16 channels digital input, 16 channels digital output	LC3-AP dedicated expansion module, expand 16-point DC input/16-point transistor output, positive and negative logic can be set, input filtering time can be adjusted, NPN input; NPN output; Power supply DC24V

EtherCAT bus type

LC5E series

It is compatible with most functions of XL5E, supports EtherCAT slave station. It can interact with the master station and supports Ethernet communication, EtherCAT bus, supports the connection of expansion module and ED module.

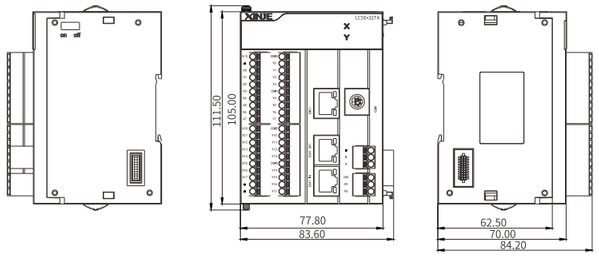
① Program capacity 1M
② Max I/O 544 points
③ Basic instruction 0.03us
④ RS232, RS485, RJ45
⑤ Ethernet communication
⑥ X-NET fieldbus
⑦ EtherCAT bus control
⑧ 4 channels 100KHz pulse output
⑨ 4 channels high speed counter (single phase max 80K, AB phase max 50K)
⑩ Online downloading

LC5E 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	-	-	-	-	LC5E-32T4	-

Appearance dimension diagram (Unit: mm)

LC5E-32T4



Performance specification

Product series LC5E-			32T4
Main body I/O	Total points		32
	Input points		16
	Output points		16
Max I/O points			544
High speed positioning	General pulse output		4 axes
	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		-
Interruption	External interrupt		10
	Timing interrupt		20
	Other interrupts		High speed counting interrupt, pulse interrupt
Communication function	Communication port		1 RS232 port, 1 RS485 port, 2 EtherCAT port, 1 Ethernet port
	Communication protocol		Standard Modbus ASCII/RTU, free format communication
Bus function			X-NET fieldbus, EtherCAT bus
PWM pulse width modulation			Support
Frequency measurement			4 channels
Precise timing			Support
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			0.03us
User program capacity (secret download mode)			1MB
Product series LC5E-			32T4
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~X11177, X20000~X20177, X30000~X30077
	Output relay (Y)		1280 points: Y0~Y77, Y10000~Y11177, 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
		Precise timing	40 points ET0~ET39
	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
		High speed counter	40 points HSC0~HSC39
	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

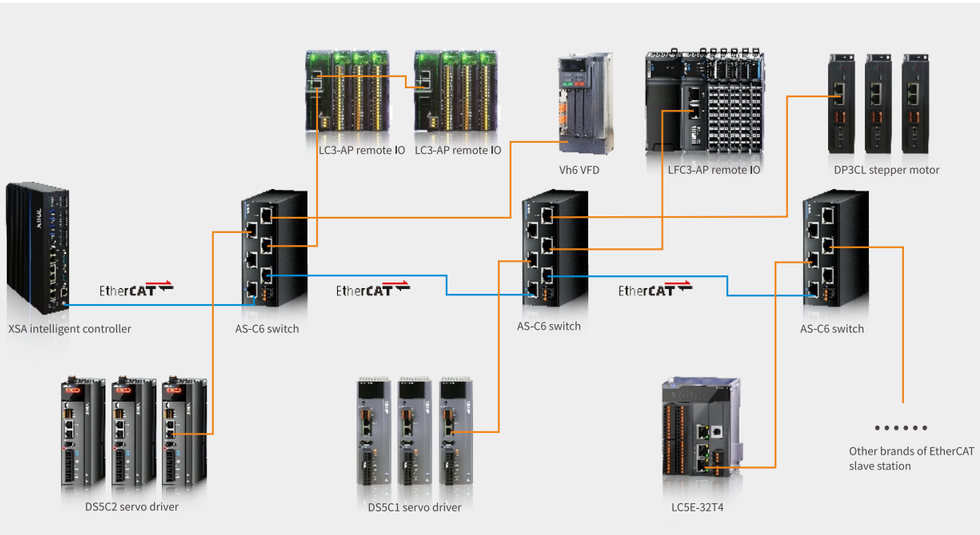
*Note: ①The "-" in the table indicates that this model doesn't have this function; ②Special refers to system occupancy, cannot be used for other purposes.

EtherCAT switch

EtherCAT switch

Introducing the EtherCAT switch (AS-C6) allows for a change from a simple linear topology to a complex multi-level star topology, achieving a one-in-multi-out effect. When a device on a specific port branch in the star topology is disconnected or replugged, it does not affect the normal operation of devices on other star ports.

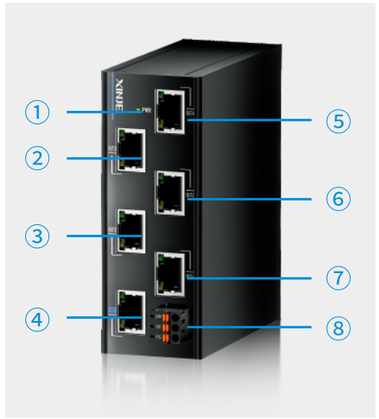
Topology example



Features

- 1 channel EtherCAT input, 5 channels EtherCAT outputs, capable of achieving star and tree topologies.
- The data flow priority of the switch output ports is: OUT2>OUT3>OUT4>OUT5>OUT6, meaning that any slave on the OUT2 branch has priority over all slaves on the OUT3 branch, and this priority is maintained during multi-level topologies.
- The switch can achieve multi-level topologies, with the connection status of each branch being mutually non-interfering. If any branch of the switch encounters a fault, it will not impact the working status of other branches.
- Each switch occupies two EtherCAT slave station numbers.
- Switch supports cascading, and the number of cascades is not related to the functionality of the switch itself, but only to the maximum number of nodes supported by the master station.

Interface definition



No.	Interface name	Mark	Explanation
①	Power indicator light	PWR	Green: illuminates when power on
②	EtherCAT input port	IN1	Port1, EtherCAT input port, connect to the previous EtherCAT master station
③	EtherCAT output port	OUT2	Port2, EtherCAT output port, connect to the next EtherCAT slave station
④		OUT3	Port3, EtherCAT output port, connect to the next EtherCAT slave station
⑤		OUT4	Port4, EtherCAT output port, connect to the next EtherCAT slave station
⑥		OUT5	Port5, EtherCAT output port, connect to the next EtherCAT slave station
⑦		OUT6	Port6, EtherCAT output port, connect to the next EtherCAT slave station
⑧	24V power input terminal	24V、0V	Module power supply input

1.General specification

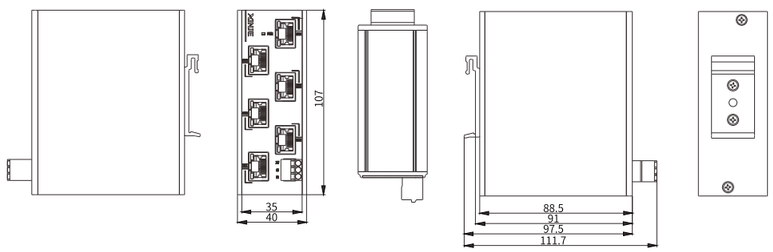
Item	Specification
Communication protocol	EtherCAT industrial real time bus protocol
EtherCAT channel	1 channel input, 5 channels output
Communication interface	6*RJ45 ports
Maximum communication speed	100Mbps
Network port/Ethernet cable	Standard Ethernet port with Cat5e Ethernet cable, cable length not exceeding 100m
Operation temperature	-20-65°C
Storage temperature	-30-70°C
Humidity	10-95%, no condensation
Installation	M35 rail fixation
Grounding (FG)	The third type of grounding (cannot be connected to the common grounding of the high-voltage system)※

EtherCAT communication specifications

Item	Specification
Communication protocol	EthereCAT industrial real time bus protocol (CIA402, 5001)
Synchronous mode	DC - distributed clock
Duplex mode	Full duplex
Physical layer	100BASE-TX (IEEE802.3)
Maximum communication speed	100 Mbit/s
Topology	Star topology
Switch cascading	Support
Network cable recognition	Auto MDI/MDIX
Cyclic time (DC communication cycle)	125,250,500,1000,2000,4000[μs]

Appearance dimension diagram (Unit: mm)

AS-C6



PLCopen standard controller

Faster speed, stronger motion control ability

XS series PLCopen standard controller has faster operation speed, stronger motion control ability, and supports multiple programming languages, which can significantly improve the programming efficiency. The process library and instruction library continue to improve and upgrade, providing more solutions for customers and creating greater value.

Function features

More types

- The XS series contains four sub-series XSA, XSF5, XSLH, XSDH, with multiple appearances and richer use scenarios.

Faster operation speed

- The main frequency reaches 2.4GHz, which can meet the requirements of high-speed operation. The minimum execution time of bit operation is 2ns, the minimum execution time of word operation is 2ns, and the minimum execution time of floating point operation is 2ns (XSA530-W).

Higher performance

- Support up to 256 nodes (XSA530-W)

More communication modes

- Support multiple communication protocols including Modbus-TCP, TCP/IP, UDP, Ethernet/IP, OPC_UA, etc.

System structure

Blade type controller

XSF5 series

Using a blade-style design with a slimmer body, compliant with PLCopen programming standards, supporting six programming languages, and local expansion of up to 32 units.

① 32MB program capacity
② Support up to 32 local extensions
③ EtherCAT motion control
④ EtherCAT remote IO
⑤ Ethernet/IP communication
⑥ CAN bus

Performance specification

Product series XSF5-		A8	A16	A32	A64
Processing time	LD Bit	15ns			
	Mov Double	25ns			
Programming method		ST, SFC, FBD, CFC, LD and IL			
User program capacity		32MB			
Data capacity	Non holding	32MB			
	Holding	10MB			
	Storage capacity (files/recipes)	512MB			
Main body built-in I/O function		None			
Scalability		Right expansion module*32			
Perpetual calendar (RTC)		Battery-free operation supports 14 days (RTC battery can be added)			
Communic-ation	Communication port	1*CAN, 1*RS485, 3*RJ45 ports			
	Communication protocol	Standard MODBUS ASCII/RTU communication, Ethernet/IP, TCP/IP, OPC UA communication			
Bus function		EtherCAT bus, CANbus			
Maximum number of EtherCAT driving axis		8	16	32	64
Axial capability		8axis/1ms	16axis/1ms	16axis/1ms、32axis/2ms	32axis/2ms、64axis/4ms
Motion control	Single axis motion	Support			
	Axis group motion	Support			
	Electronic cam	Support			

XSF5 series model list

	Model			
	DC power supply			
EtherCAT bus type	XSF5-A8	XSF5-A16	XSF5-A32	XSF5-A64

X86 Industrial intelligent controller

XSA series

The self-developed XS Studio programming platform, which can reference many standard function libraries, adopt the IEC61131-3 programming standard, support six programming languages (ST, SFC, FBD, CFC, LD, IL), and develop Xinje proprietary function blocks, instruction libraries and system libraries, which can significantly improve user programming efficiency.

① 128M program capacity
② EtherCAT motion control
③ EtherCAT remote IO
④ Ethernet communication
⑤ Online downloading
⑥ Simulation function
⑦ With SCADA screen, built-in super capacitor and UPS

Performance specification

Product series XSA-			XSA230	XSA330	XSA520	XSA530	XSA550
Operating system			Windows/Linux				
Programming method			IL,LD,FBD,ST,SFC,CFC				
Program capacity			128MB				
Data capacity			128MB (include power-off holding 6MB)				
Power supply			Rated voltage DC24V				
I/O	Total points		6	32			
	Input points	NPN	3	16			
		PNP	-	16			
	Output points	Transistor	3	16			
		Relay	-	-			
High speed input	Encoder input	Single phase	-	2 channels (max 1MHz)			
		AB phase	-	2 channels (max 1MHz)			
	OC input	Single phase	-	2 channels (max 200kHz)			
		AB phase	-	2 channels (max 200kHz)			
Expansion ability			Only support ECAT remote expansions				
Interrupt	External interrupt		-	16			
Communication function	Communication port		4-channel RJ45 (2*EtherCAT, 2*Ethernet) 2-channel USB 2.0, 2-channel USB 3.0 1-channel RS232/RS485	4 channels Rj45 (2 channels EtherCAT,2 channels Ethernet) 2 channels USB2.0、2 channels USB3.0 2 channels RS232/RS485 (isolated) BIOS control	6 channels RJ45 (2 channels EtherCAT, 4 channels Ethernet) 4 channels USB3.0 2 channels RS232/RS485 (isolated) BIOS control		
	Communication protocol		Modbus RTU, Modbus TCP, Ethernet IP, TCP/IP, UDP, OPC UA, free format protocol, etc.				
Bus function			EtherCAT bus (128 nodes)		EtherCAT bus (256 nodes), CANopen bus		
Data power-off holding function			Supported				
RTC function			Supported				
Motion control	Single axis motion		Supported				
	Axis group motion		Supported				
	Electronic cam		Supported				

*Note: XSA series use EtherCAT remote expansion (LC3-AP).

XSA series product list

Model						
	AC power			DC power		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN& PNP type	-	-	-	-	XSA230-L/W	-
	-	-	-	-	XSA330-L/W	-
	-	-	-	-	XSA520-L/W	-
	-	-	-	-	XSA530-L/W	-
	-	-	-	-	XSA550-L/W	-

Slim (card type)

XSLH series

Support PLCopen programming specification, reference many standard function library functions, and develop proprietary function blocks and instruction libraries.

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

Performance specification

Product series XSLH-			24A8	24A16	30A32
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	Normal pulse output		4 axes	4 axes	4 axes (not supported temporarily)
	Differential pulse output		-	-	-
High speed input	Single/AB phase		4 channels	4 channels	4 channels (not supported temporarily)
	Input mode		OC	OC	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, 1*RS485, 2*RJ45 ports		1 channel RS232, 1 channel RS485, 1 channel CAN port, 2 channels RJ45 port
	Communication protocol		Standard Modbus ASCII/RTU, EthernetIP, TCP/IP, UDP, OPC UA		
Bus function			EtherCAT bus (max 8 nodes)	EtherCAT bus (max 16 nodes)	EtherCAT bus control (max 32 nodes)
Programming method			ST, SFC, FBD, CFC, LD, IL		
Main processor			Cortex-A8, dominant frequency 800MHz		Cortex-A8, dominant frequency 1GHz
User program capacity			32MB		
Data capacity			32MB (include power-off holding 6MB)		

*Note: XSLH series use XL series expansion modules.

XSLH series product list

Model						
	AC power			DC power		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN	-	-	-	-	XSLH-24A8	-
	-	-	-	-	XSLH-24A16	-
	-	-	-	-	XSLH-30A32	-

Small-sized

XSDH series

Support PLCopen programming specification, reference many standard function libraries, and develop proprietary function blocks and instruction libraries.

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

Performance specification

Product series XSDH-		60A32
I/O	Total points	60
	Input points	36
	Output points	24
Max I/O points		572
High speed positioning	Normal pulse output	4-axis
	Differential pulse output	-
High speed input	Single/AB phase	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 channel RS232, 1 channel RS485, 2 channels RJ45 port
	Communication protocol	Standard Modbus ASCII/RTU, Ethernet IP, TCP/IP, UDP, OPC UA, free format protocol
Bus function		EtherCAT bus control (max 32 nodes)
Programming method		ST, SFC, FBD, CFC, LD, IL
Main processor		Cortex-A8, dominant frequency 1GHz
User program capacity		32MB
Data capacity		32MB (include power-off holding 6MB)

*Note: XSDH series use XD series expansion modules.

XSDH series product list

Model						
	AC power			DC power		
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output
NPN	-	XSDH-60A32-E	-	-	-	-
PNP	-	XSDH-60PA32-E	-	-	-	-

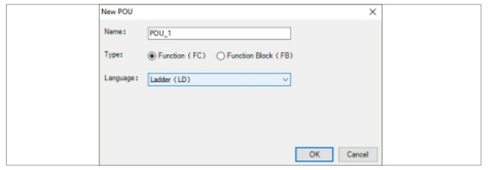
XDPPro

Support XD/XL/XG series

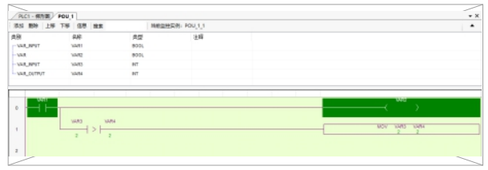
Structured programming

■ POU function

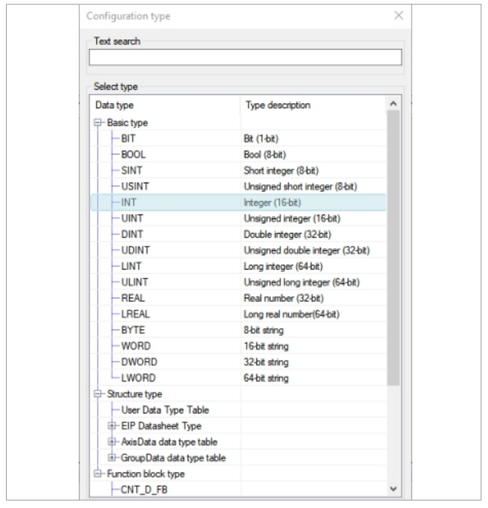
Support LD, ST, and C programming language



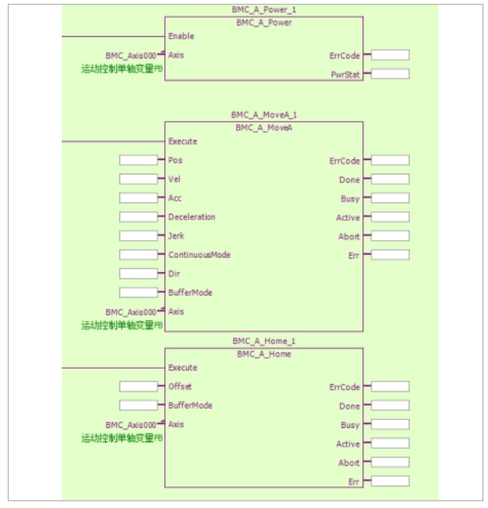
Support FB monitoring



Support multiple data types



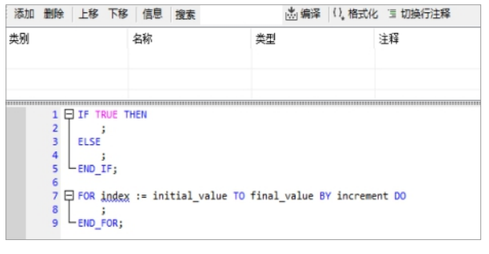
Support multiple data types



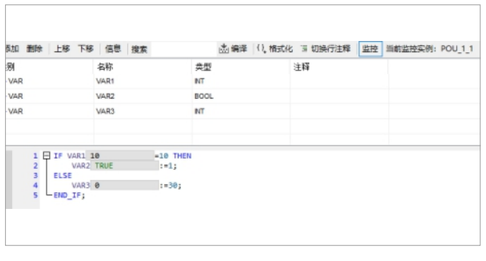
Programming language

■ ST language

Compliant with IEC61131-3 standard



ST monitoring



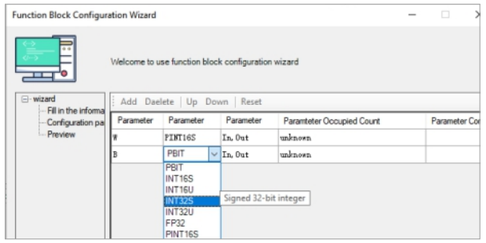
XDPPro

Programming language

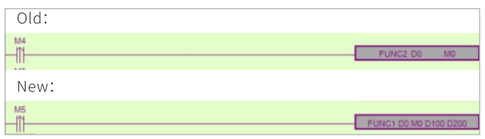
C language

User-defined function formal parameters

- Rich and diverse parameter types make data processing more convenient.

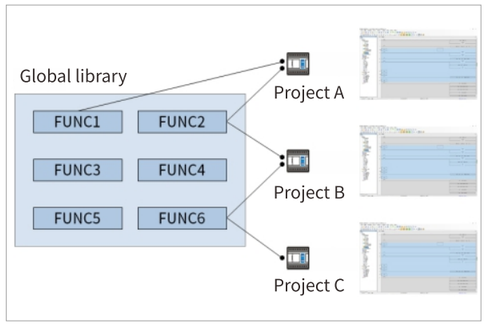


- Added input and output interfaces for the function, further optimizing the function structure.



Function library

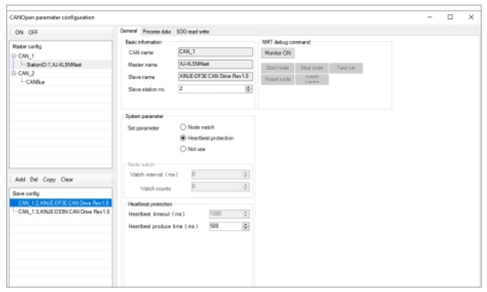
- Summarize common function components from multiple projects into one file for easy reference. The components in the library can be obtained and used in various projects.



Communication function

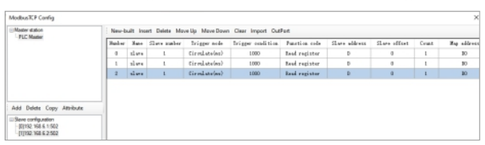
Label communication

Built in CANopen system configuration interface

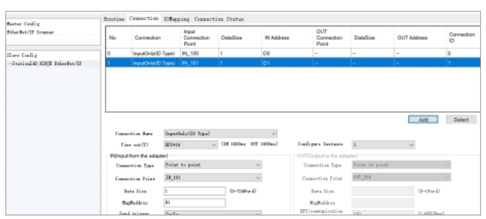


Modbus graphical configuration

- The Modbus TCP configuration interface allows for direct configuration of slave address information and read/write instructions, making it simple, convenient, and time-saving.



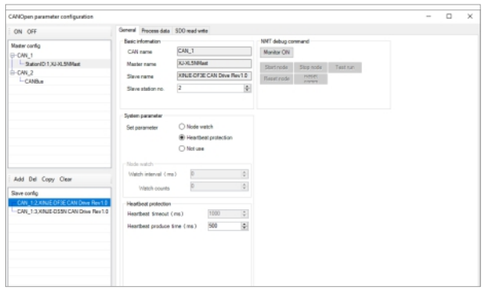
Ethernet/IP parameter configuration



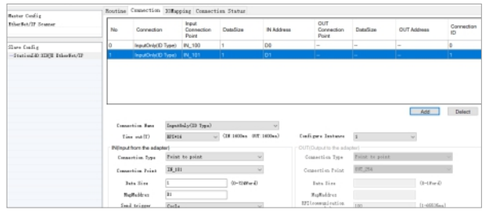
XDPPro

Communication function

Built in CANopen system configuration interface



Ethernet/IP parameter configuration



Modbus graphical configuration

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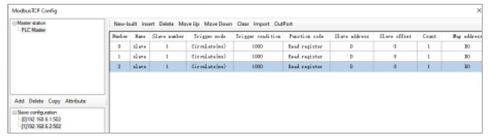
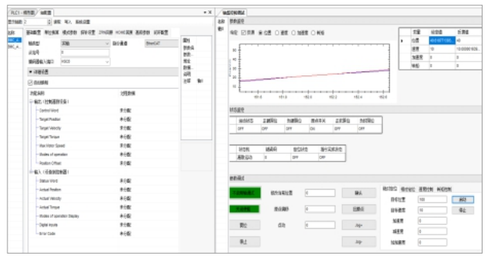
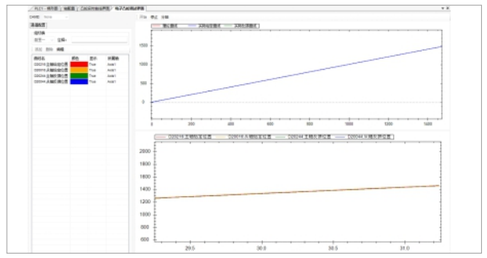


Motion control function

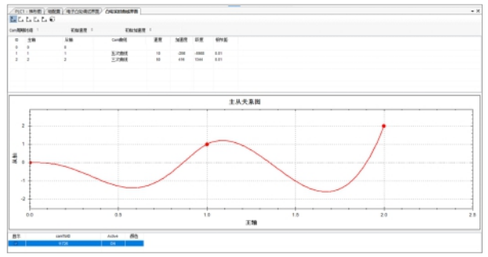
Complete axis configuration and monitoring



Convenient monitoring of cam related parameters



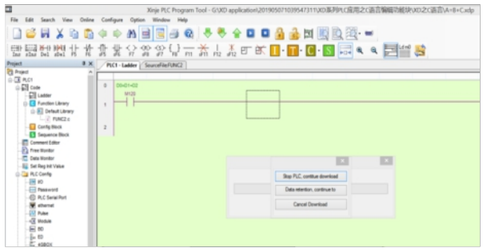
Real time cam curve monitoring



XDPPro

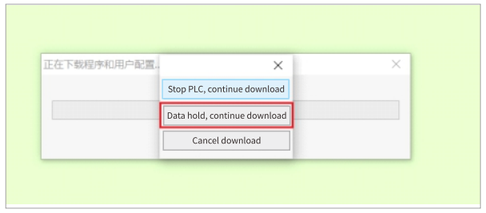
Online download

- 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, XDH series, XLH series, XL5E-16T, XG2 series.



Non online downloading

- Select data hold and continue downloading: it can keep the register state and values, and stop executing program during the download process.



Ease of use

Member comments

Support member annotation for global and local variables

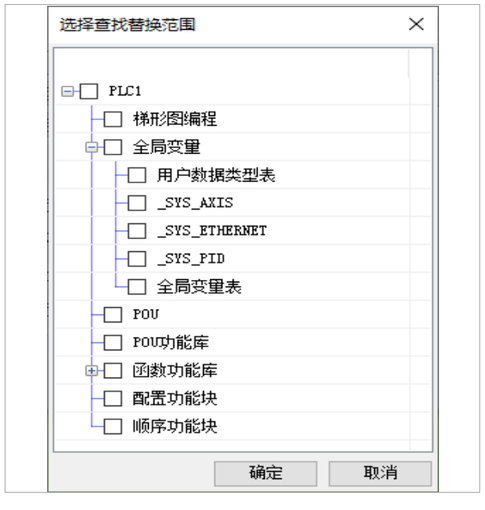
Name	Type	Keep	Initial va...	Con...	Network status	Map address	Comment
varGlobal5	BOOL	☐	--	☐	Not public		sensor1
varGlobal4	BOOL	☐	--	☐	Not public		sensor2
varGlobal3	BOOL	☐	--	☐	Not public		signal1
varGlobal2	BOOL	☐	--	☐	Not public		signal2
varGlobal1	BOOL	☐	--	☐	Not public		sensor3
varGlobal0	BOOL	☐	--	☐	Not public		sensor4

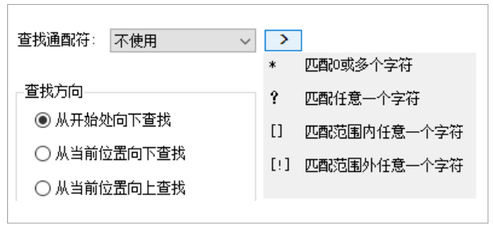
Chinese variables

LD, ST, and C languages all support Chinese variables

Search and replace

Support optional ranges and wildcard characters



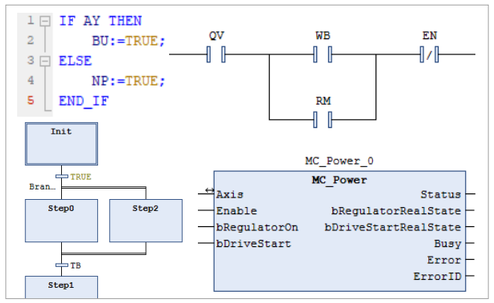


XS Studio is compatible with XS series PLC

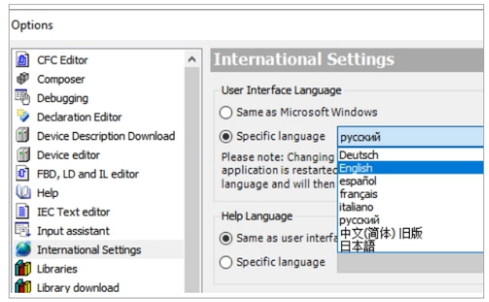
Motion control in accordance with international standard IEC61131-3 and PLCopen specification

Programming language

5 programming languages ST, LD, SFC, CFC, FBD

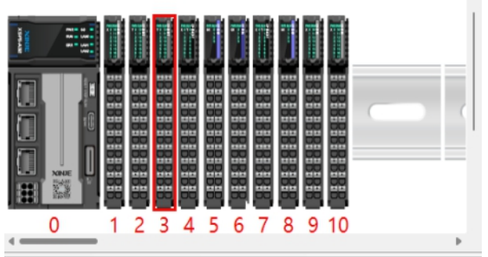


Support multiple languages



Configuration function

Hardware configuration

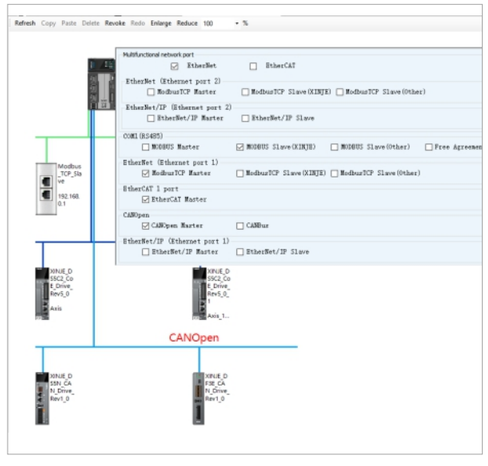


Configure device information output

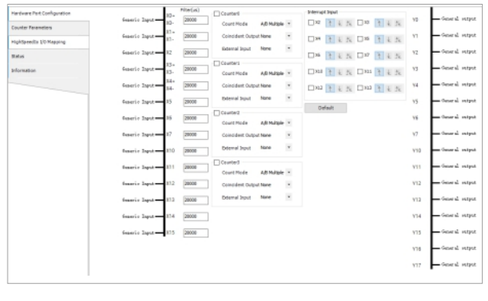
Device Information List

Machine slot	Device name	Describe
0	XSF5-A64	1-way CAN port, 1-way 485 port;1-way Ethernet port;1-way Ethe
1	XF_E16X	16 points NPN|PNP input module
2	XF_E16Y	16-point NPN output module
3	XF_E16Y_1	16-point NPN output module
4	XF_E8X8Y	8-point NPN input module, 8-point NPN output module
5	XF_E4AD	4-channel 16 bit resolution current voltage hybrid input module
6	XF_E4DA	4-channel 16 bit resolution current voltage hybrid output modul
7	XF_E8X8Y_1	8-point NPN input module, 8-point NPN output module
8	XF_E4AD_1	4-channel 16 bit resolution current voltage hybrid input module
9	XF_E16X_1	16 points NPN|PNP input module
10	XF_E16X_2	16 points NPN|PNP input module

Network configuration

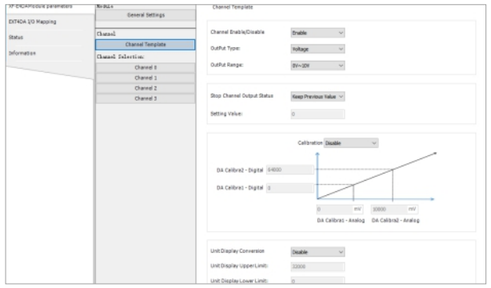


IO configuration

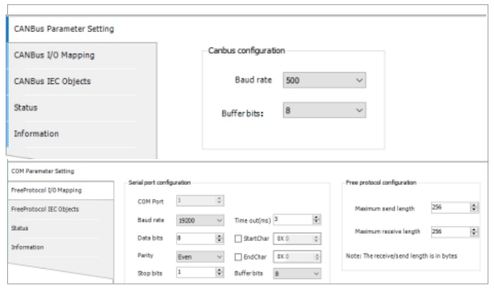


XS Studio is compatible with XS series PLC

■ Module configuration

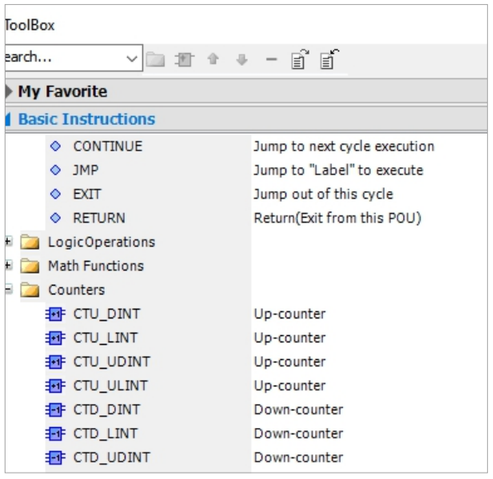


■ Communication configuration

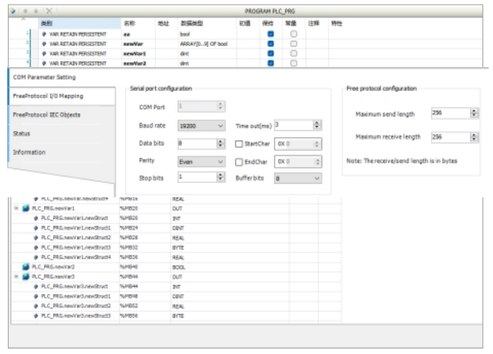


Programming ease of use

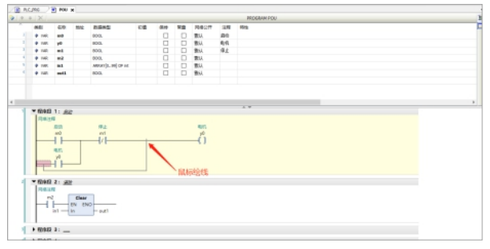
LD, ST support tool box



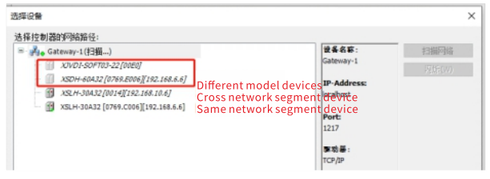
M area power outage maintenance



Ladder editor

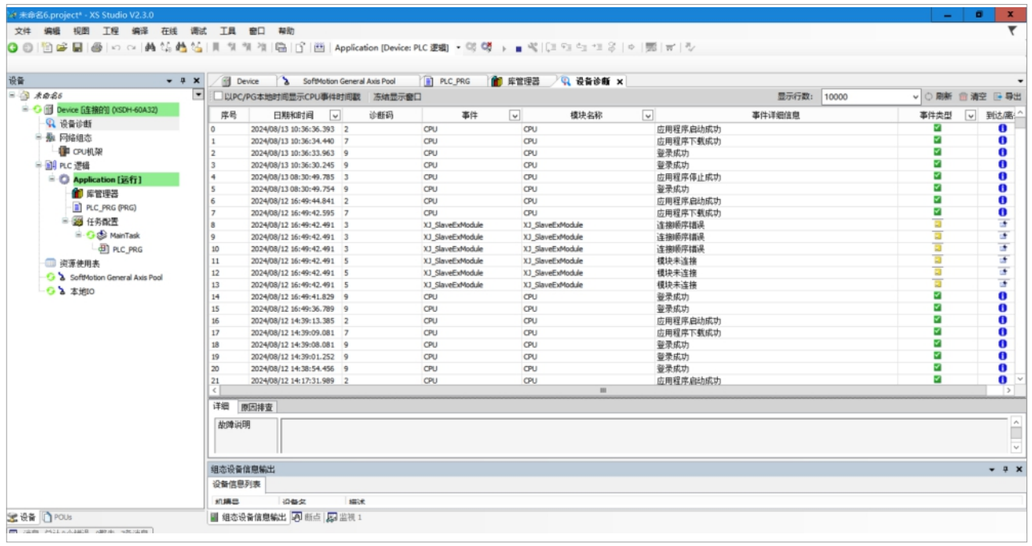


Cross network segment scanning

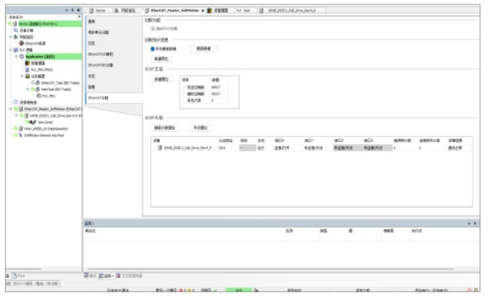


Diagnostic debugging

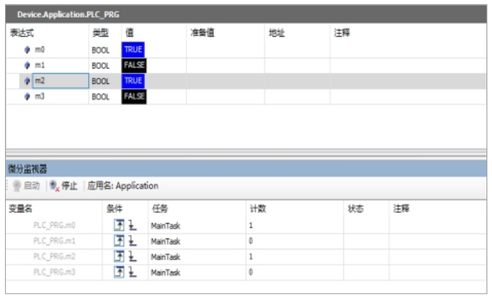
■ Device diagnostics



■ EtherCAT diagnostics



■ Differential monitor

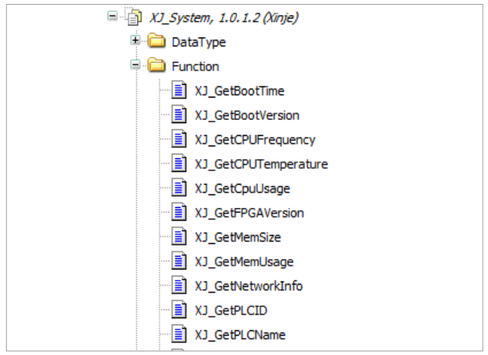


XS Studio is compatible with XS series PLC

Multiple libraries

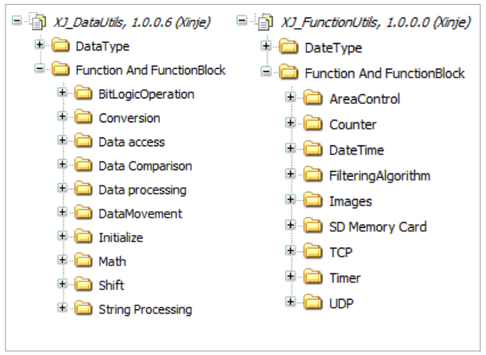
System library

- Get system information such as CPU, firmware, Ethernet ports, memory, etc

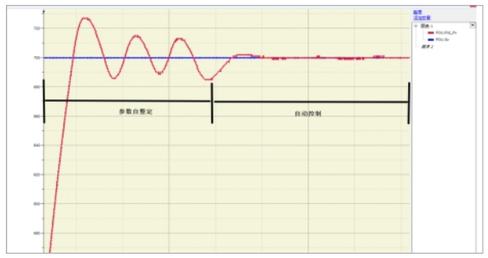


Basic instruction library

- Over 200 basic instructions

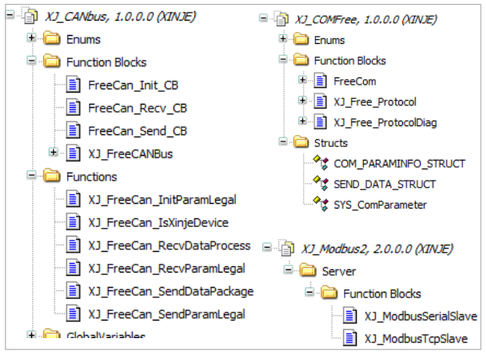


PID function, one click for self-tuning



Communication library

- Support multiple communication protocols such as Modbus RTU/TCP, CAN, OPC UA, Ethernet/IP, EtherCAT, Ethernet, etc



Motion control library

- Support hard limit, next cycle taking effect, phase compensation, cam clutch