

**XINJE**

**Reliable Partners  
In Industrial Automation**

**Rich Product Types Create Perfect Control System**

PLC/HMI/Integrated Controller/Servo System/Frequency Inverter/Stepper System/Industrial Informatization/ Vision Machine Cameras

# **2020 ALL PRODUCTS CATALOG**

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COMPANY INTRODUCTION



XINJE Electric Co., Ltd. is a prestigious company in China Mainland who dedicates to design, develop and manufacture the automation products and application systems.

Since its set up, the company insists the purpose of innovation, quick response and complete solutions to improve the enterprise competitiveness. Years of efforts get us numbers of patented technologies, which also help us to win many honors from government; They are High-Tech Enterprise Certificate, Leader of Innovation Enterprise Certificate and so on; We are also authorized to be Industrial Key Project Enterprise, Engineering Technology Research Center.

The company offers complete products line which covers PLC Programmable Logic Controllers, HMI Touch Panel Monitors, Servo Control Systems, Frequency Inverters, Vision Machine System, Robot Arms, Network products, etc. We make total automation solutions for customers. In this way, we help customers to improve their productivity, reduce production costs, maximize their profits, and promote their company's value; We XINJE Electric always grow together with our customers.

Up to now, We XINJE Electric has more than 40 branches in China and more than 170 agents in China; We also have 1 branch in Germany and more than 40 distributors overseas; We sell our products all over the world, such as Europe, America, Asia, the Middle East and Africa etc. We XINJE Electric has more than 1000 employees, 4000 m<sup>2</sup> office area and 20000 m<sup>2</sup> manufacturing area, one R&D center, two laboratories, one training base. Our company cooperates with a number of universities in China, we established the University - XINJE Laboratory to train the technical engineers.

XINJE was also successfully listed at the Shanghai stock exchange in December, 2016. Our stock code is 603416. With the business philosophy of Innovation, Quality, Service, the company keeps developing and designing much qualified and reliable products, we aim to be a global automation solutions provider. We are committed to build a golden brand reputation in the industrial automation field.

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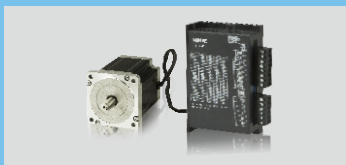
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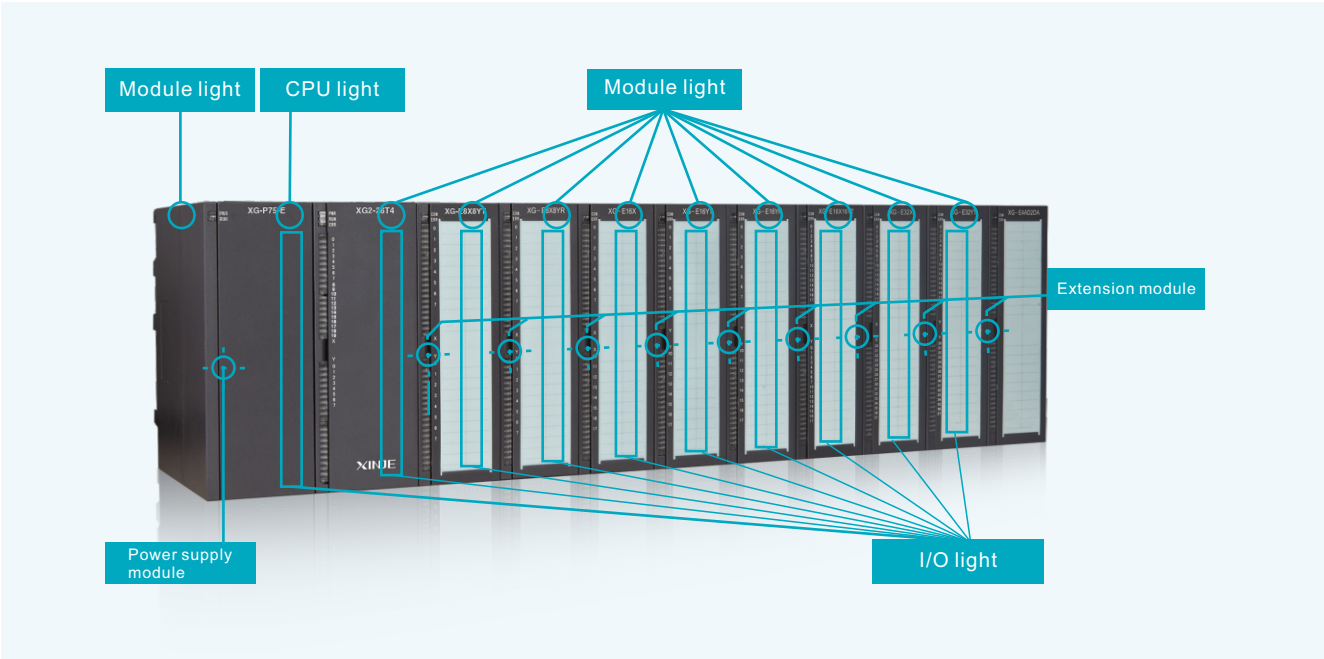
XG Series / XL Series / XD Series / XC Series



Product Introduction

XG MIDDLE-SIZE PLC

XG series PLC has stronger CPU processing capability, higher reliability and compact structure. The PLC models provide complete solutions for customers and create higher value.



XG1 Series



1M program capacity	I/O sequential control	USB port
X-NET fieldbus	X-NET motion bus	4 channels 100KHz pulse output
Ethernet communication	I/O up to 528 points	Linear and arc interpolation
Basic instruction 0.01~0.03 us, 2~3 times faster than XDM series	Follow function	NPN or PNP input

XG2 Series

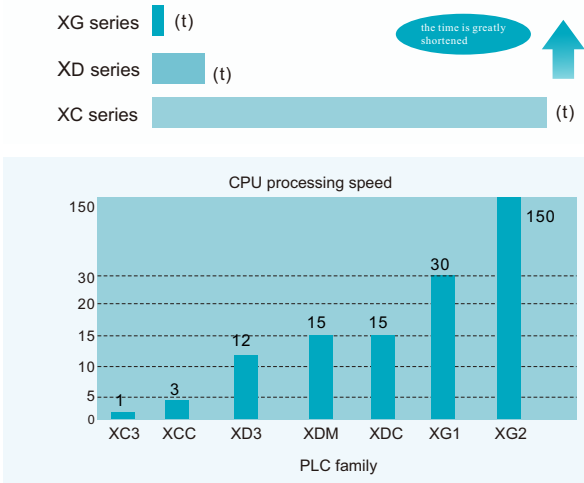


16M program capacity	I/O sequential control	EtherCAT bus
Basic instruction 0.005~0.01 us, 5~6 times faster than XG1 series	4 channels 100KHz pulse output	
Follow function	Linear and arc interpolation	Ethernet communication
NPN/differential signal input	I/O up to 538 points	
	4 channels 200KHz differential input high speed counting	

Programmable logic controller **PLC**

High Speed Operation

Basic instruction processing speed 0.005~0.03 us, scanning time 0.2ms per 10000 steps, program capacity 1M~16M, XG1 processing speed is 2~3 times faster than XDM series, XG2 processing speed is 5~6 times faster than XG1 series.



Abundant Expansions

In order to meet the application requirements in more occasions, XG basic units can be equipped with abundant I/O expansion modules, analog input and output modules, temperature control modules, basic units can expand up to 16 different types of modules, and 512 I/O.

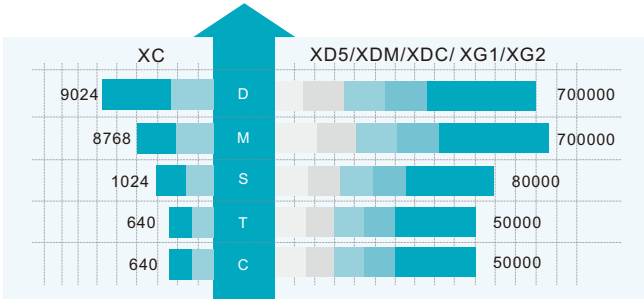


- Used to expand input, output points, points 8 to 32, the basic unit can be extended to more than 512 points. Input is compatible with NPN, PNP input.
- The output expansion module can be two output types: transistor (T) and relay ®.

Analog and temperature extension module

- By expanding analog input, output module, temperature control module, XG series PLC can be applied to process control systems such as temperature, flow, liquid level, pressure, etc.
- With the addition of PID adjusting function, it has wider using field, bigger flexibility and higher control precision.
- Each channel of XG-E8TC-P, XG-E8PT3-P has PID and auto-tuning function, exchange data with basic unit by FROM, TO instruction.

Expanded software component capacity



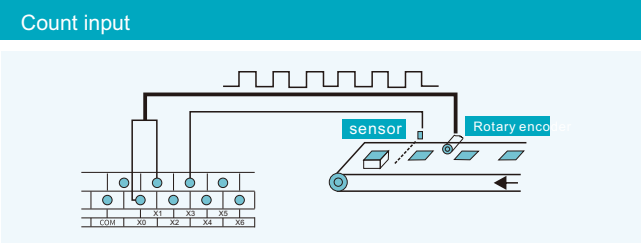
Rich communication ports

The communication ports provided by XG series PLC can meet the requirements of most communication and network conditions. It not only supports Modbus protocol, but also supports other complicated networks. Users can communicate with printers and instruments by free communication protocol. XG1 series PLC has four communication ports, XG2 series has five communication ports.

XG1 series	
2*RS485 port	support Modbus, free, X-NET communication
1*USB port	support high-speed downloading, monitoring, the speed is up to 12M
1*Ethernet port	support remote monitoring and local network monitoring and other Modbus-TCP devices. It can realize the functions of PLC on-line programming, real-time monitoring and data uploading and downloading
XG2 series	
1*RS232 port	support Modbus, the default is Modbus communication
2*RS485 port	support Modbus, free communication
2*Ethernet port	LIN1 supports Ethernet communication, LIN2 supports EtherCAT communication

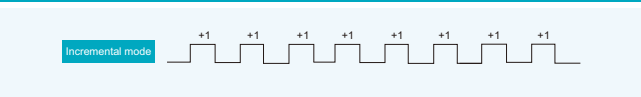
High speed counting

XG series PLC basic unit can set 4 channels 2-phase 32-bit high speed counter. XG1 series PLC single-phase high-speed counting frequency is up to 80KHz, AB-phase counting (collector signal) frequency is up to 50KHz, can be connected with a rotary encoder to count the input from the encoder. XG2 series PLC single-phase high speed counting frequency and AB-phase high speed counting frequency (differential signal) are up to 200KHz, can be used with hand-operated pulse generator to count the differential signal.

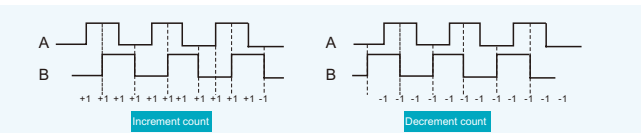


- By selecting different counters, single-phase (incremental mode) and AB-phase mode can be counted (2 or 4 frequency doubling).

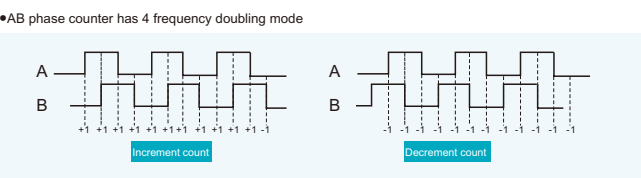
Multiple counting modes are optional



2 frequency doubling mode



4 frequency doubling mode





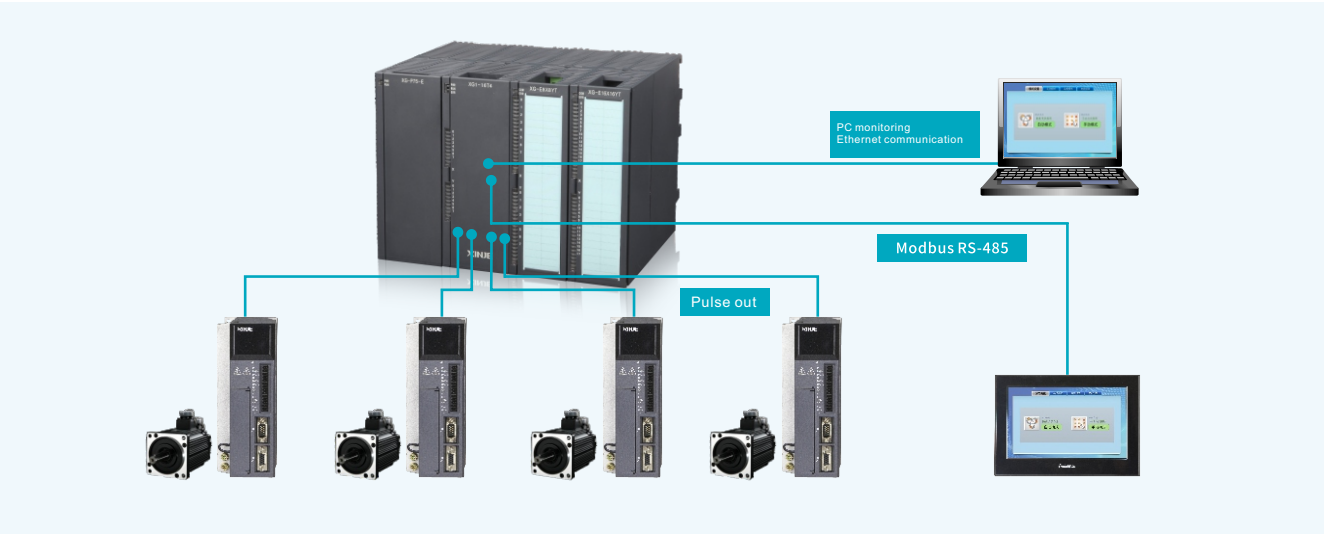
Product Introduction

Powerful motion control function

- Pulse function PLSR instruction has multiple functions and rich back-to-origin mode.
- Interpolation function Two-axis coordinated control (linear/arc interpolation) (only XDM, XDME, XLME, XG1, XG2 series PLC support this function).
- X-NET motion bus Support 1 channel 20-axis X-NET motion bus (only XDC, XG1 series PLC support this function).
- EtherCAT motion bus Support 1 channel 32-axis EtherCAT motion bus (only XG2 supports this function).

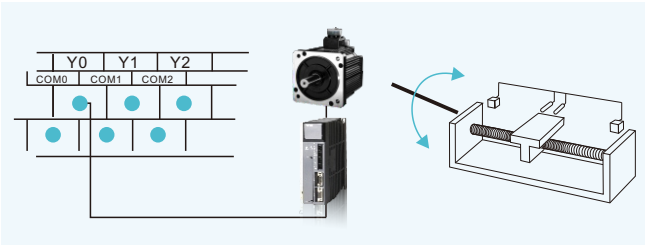
Pulse function

Multi-axis independent control diagram



4 channels 100KHz pulse output

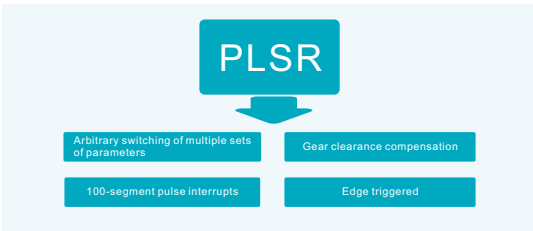
Series	Model	Pulse output channels	Pulse output terminals
XG1 series	16T4	4	Y0/Y1/Y2/Y3
XG2 series	26T4	4	Y0/Y1/Y2/Y3



Pulse instruction function is more powerful

XG series PLC eliminates the shortcomings of single function and too many instructions of XC series pulse instruction. It integrates the functions of original XC series PLSR, PTO and other pulse instructions into one, which makes the pulse function more compact and powerful.

- ① Reduced instruction
- ② Flexible configuration
- ③ Various acceleration and deceleration curves
- ④ Startup in interrupt subprogram
- ⑤ Start, end frequency, rising and falling slope can be set separately, higher accuracy than XC series PLC
- ⑥ After the pulse outputting finished, it can deal with other program when the interrupt arrived, fast response, not affected by scan cycle, saving external interrupt resources.



Application

**Packing machine**

Packing machine can complete all or part of the product and commodity packaging process. Packaging process includes filling, packaging, sealing and other major processes, as well as its related before and after processes, such as cleaning, stacking and disassembly.

In addition, packaging also includes measurement or stamping on the package. The use of mechanical packaging products can improve productivity, reduce labor intensity, meet the needs of large-scale production, and meet the requirements of cleanliness and hygiene.

**Screwing machine**

Automatic screwing machine has beautiful appearance, dexterity, fast screwing speed and high qualification rate. It is suitable for screwing different bottle shapes in food, pharmaceutical, daily chemical, pesticide, cosmetics and other industries. The design of this machine is new and original, the mechanical torque control is intelligent, and the operation and adjustment are very convenient. The operator only needs to place the cap on the bottle mouth. In the process of forward movement, the cover is tightened automatically by three sets of rubbing wheels. It can be used in stand-alone production, and it is also an ideal model for connecting production.

**Glass grinding machine**

The automatic grinding of glass cup mouth can realize simultaneous processing of multiple glasses. Through servo drive system, the advantages of high grinding accuracy and high product consistency can be realized, and the production efficiency of customers can be rapidly improved.

Interpolation function

Multi-axis coordinated motion diagram

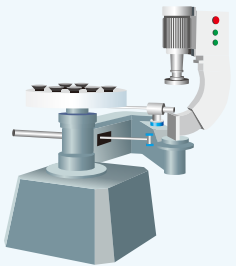


Product Introduction

•Application

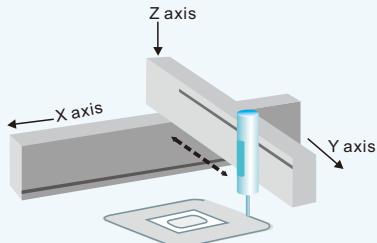
Edge grinding machine

Through linear arc interpolation and other motion control functions, the edge grinding machine can realize the grinding operation of various shapes. It has the characteristics of rough grinding, fine grinding and polishing at one time. It is suitable for grinding inclined surfaces and straight edges of metal belts of different sizes and thicknesses. It is equipped with spare grinding wheels. It has the advantages of long service life, regular shape and high efficiency.



Application of sealant

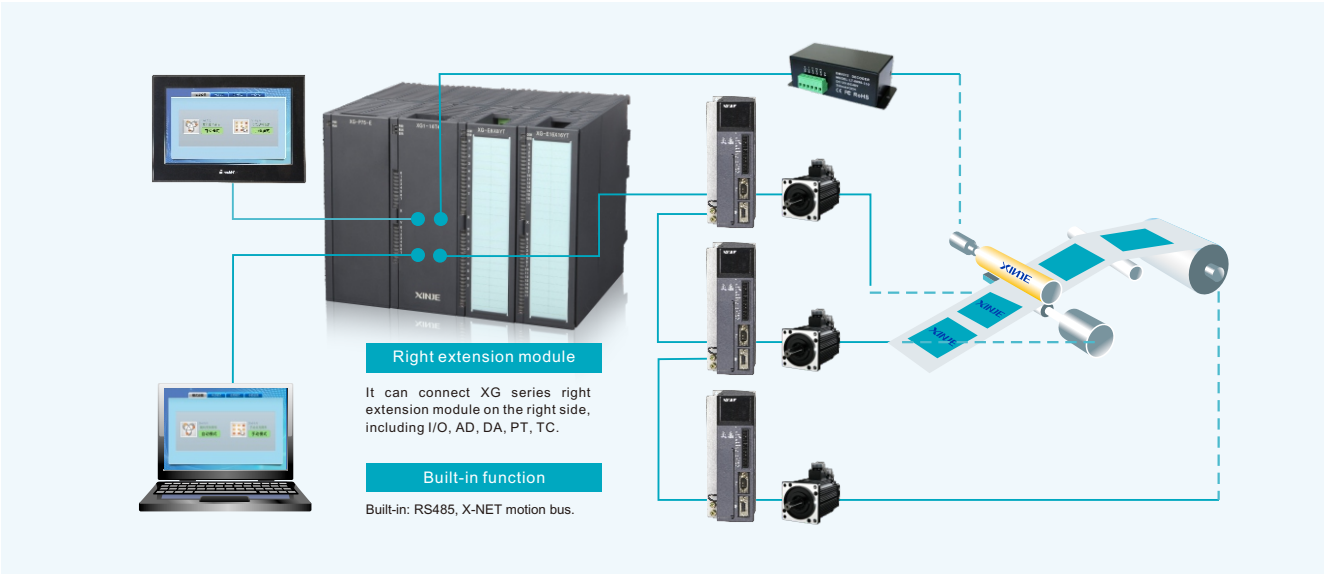
The coating machine specially controls the fluid sealant. It can coat the fluid droplets on the product surface or internal, accurate positioning, accurate sealant control, no wire drawing, no leakage, no sealant dropping. Mainly used for injection, coating, dripping to the precise position of each product in the product process, can be used to achieve dotting, drawing lines, circle or arc. It can replace manual work and realize mechanized production. It can be operated by a single machine. It is simple, convenient, high-speed and accurate.



X-NET motion bus

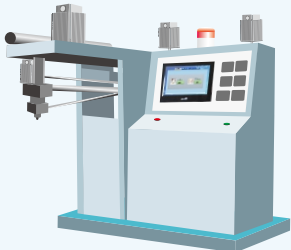
•XG1 series control diagram

X-NET motion bus control replaces the traditional pulse control mode, making the whole system faster, more reliable and more stable. At the same time, it makes the complicated wiring simpler, meets the requirements of improving equipment performance, and can control 20-axis synchronous motion.



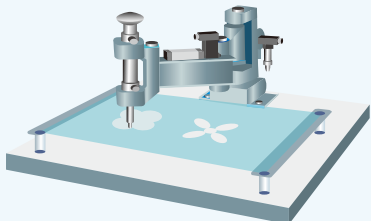
Pouring machine

By heating and melting the pouring material, and then through linear arc interpolation and other motion control functions, the pouring machine realizes high-precision path positioning control of two or three axes. The melting material is quantitatively encapsulated and coated on the product to achieve the purpose of adhesion and sealing.



Glass cutting machine

Glass cutting machine through linear arc interpolation and other motion control functions, to achieve two or three axes of high-precision path positioning control, the laser cutting machine which processing organic glass has fast speed, high accuracy, accurate positioning. It can produce gifts, panel lens cases, model toys, advertising light boxes, signboard display supplies, packaging boxes, etc.

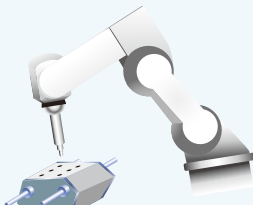


Programmable logic controller **PLC**

•Application

Mechanical arm

Robot arm is the most widely used automatic mechanical device in the field of robotics. It can be seen in the fields of industrial manufacturing, medical treatment, entertainment services, military, semiconductor manufacturing and space exploration. Although they have different shapes, they all have a common characteristic, that is, they can accept instructions and accurately locate a point in three-dimensional (or two-dimensional) space for operation.



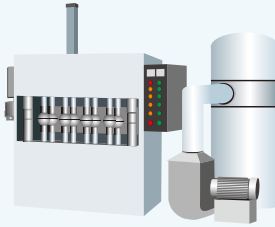
High speed cutting machine

The high-speed cutting machine combines the ultrasonic cutting technology with the traditional cutting technology. When the ultrasonic generator works, the ultrasonic energy is transmitted to the welding head through the ultrasonic transducer, which produces violent vibration and friction with the tool mould, so as to achieve the shearing effect. Shearing products have the advantages of beauty, firmness and high production efficiency.



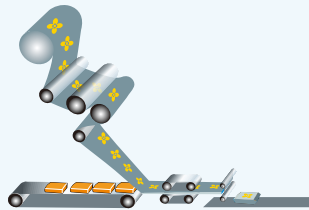
Ball grinder

The grinding ball machine uses multi-axis grinding wheels to grind artificial or natural crystals. At most, it can run more than twenty shafts at the same time, so as to produce crystalline products with different shapes. The more than twenty shafts can be controlled by bus, which can realize multi-axis control in a simple and economical way.



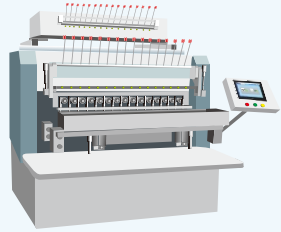
Three servo packing machine

Packaging machine can complete all or part of the product and commodity packaging process. Packaging process includes filling, packaging, sealing and other major processes, as well as its related before and after processes, such as cleaning, stacking and disassembly. In addition, packaging also includes measurement or stamping on the package. The use of mechanical packaging products can improve productivity, reduce labor intensity, meet the needs of large-scale production, and meet the requirements of cleanliness and hygiene.



16-axis high-speed winder

High-speed winding machine is a device that twists linear objects onto specific work pieces. It is usually used for copper wire winding. In the past, high-speed winding was realized by variable-frequency motor combined with tension control system. With the increasing demand for efficiency in modern industry, the original variable-frequency motor can be replaced by servo to achieve high-speed and efficient production.



CNC lathes

CNC machine tool is the abbreviation of digital control machine tool. It is an automatic machine tool equipped with program control system. The control system can logically process programs with control coding or other symbolic instructions, decode them, use coded number to display, and input them into the NC device through the information carrier. After calculation and processing, the NC device sends out various control signals to control the movement of the machine tool, and automatically processes the parts according to the shape and size required by the drawings. CNC machine tool is a flexible and efficient automatic machine tool, which can solve the problems of complex, precise, small batch and multi-variety parts processing. It represents the development direction of modern machine tool control technology and is a typical mechatronic product.



EtherCAT motion bus

EtherCAT communication is a real-time Ethernet for open network communication between master and slave stations. Compared with the traditional bus system, the EtherCAT bus has more axes, shorter control period, higher bandwidth utilization and more flexible system structure.

EtherCAT communication is mainly used in XG2 series PLC. At present, it can support 32-axis servo synchronous motion, 2-channel touch probe function, position, speed, torque and other control modes. It is widely used in various industries.

- Only XG2 series PLC and DS5C series servo driver support EtherCAT communication.
- Support 32-axis slave stations.
- The slave stations support the drivers with EtherCAT protocol, such as Xinje DS5C servo driver.
- The longest distance between slave stations is 100 meters.
- The communication period between master and slave station is 500~1000us.





Product Introduction

•Network mode

EtherCAT (Ethernet Control Automation Technology) is an open field bus system based on Ethernet.

•Communication speed and distance

The field environment decides the communication speed and medium of motion control. Because the bus uses electric signals to transmit data, its communication distance generally has certain requirements. It uses the special network cable of Xinje, the longest distance between nodes is 100m. The synchronization period under 16-axis is 500 microseconds, and the synchronization period under 32-axis is 1ms.

•Shield

The outer layer of shielded cable must have a good grounding. Xinje network cable JC-CA-OP5 has shielding layer and grounding function. If other industrial UTP5 network cables are used, the two ends of the network cable should be connected with the protective ground, and covered by shielding wiring as large as possible, so as to maintain good communication ability. It is also suggested that the data cable must be isolated from the high voltage cable.

•Isolation

Whether as the master station of the XG2 series of PLC or as the slave station of driver, their network ports and equipment are electrically isolated. Fieldbus cables are distributed in all corners of the workshop. Once high voltage is connected in series, the bus transceiver of all equipments in the whole network will be damaged. If there is no isolation, the high voltage signal will continue to damage other circuits inside the equipment, leading to serious consequences.

•Multi-axis for communication

In an EtherCAT motion bus system, up to 32 axes can be achieved at present, and subsequent companies will continue to develop to 64 axes.

•Intelligence and autonomy

EtherCAT bus can deal with all kinds of parameters, operation status information and fault information. It has high intelligence. It can complete the basic function of automatic control only by field equipment, and can diagnose the operation status of equipment at any time, which greatly improves the reliability of the whole system. As field control equipment often has self-diagnosis function, and can send fault information to control room, which reduces maintenance work. Users can check the operation, diagnose and maintain information of all equipment, so as to early analyze the causes of the fault and quickly eliminate it, shorten the maintenance downtime, and ultimately achieve the purpose of increasing profits.

•Outstanding cost-effective performance

In the industry control nowadays, when it comes to bus control, users need to spend a lot of money on it, while EtherCAT bus does not need to spend an extra penny. The company directly allocates it to XG2 series PLC and DS5C series servo driver. The customers who need to use this function can directly use it, so that it achieves an unprecedented high cost-effective performance.

•Strong system expansibility

One-click identifies the number of slave devices, and the node address is automatically set. The device can adjust the position of the node only by changing the node and scanning again. The structure is simple and the application is flexible.

•Openness of system

EtherCAT is an open real-time Ethernet communication protocol. The driver supporting standard EtherCAT communication protocol can communicate with XG2, it can support the control of 32-axis servo synchronous motion, and can meet the needs of customers in most occasions.

•Save installation cost

The connection of EtherCAT motion control system is very simple. Thanks to EtherCAT, the star topology of EtherCAT can be replaced by simple linear structure. Because EtherCAT does not need hubs and switches, XG2 series PLC body and DS5C series servo have EtherCAT communication network ports, so the consumption of cable and bridge frame is greatly reduced, the workload of connection design and joint proofreading is also greatly reduced, which is convenient to save installation costs, maintenance costs, system structure is simple, engineering design and drawing quantity, laying cables, processing time and hardware management files are reduced.

•Cable select

The transmission process is inevitably affected by the surrounding electromagnetic environment. Only when the cable is used correctly can the specified speed and transmission distance be achieved. It is recommended that users use industrial UTP5 cables, or Xinje cable.

•Connector

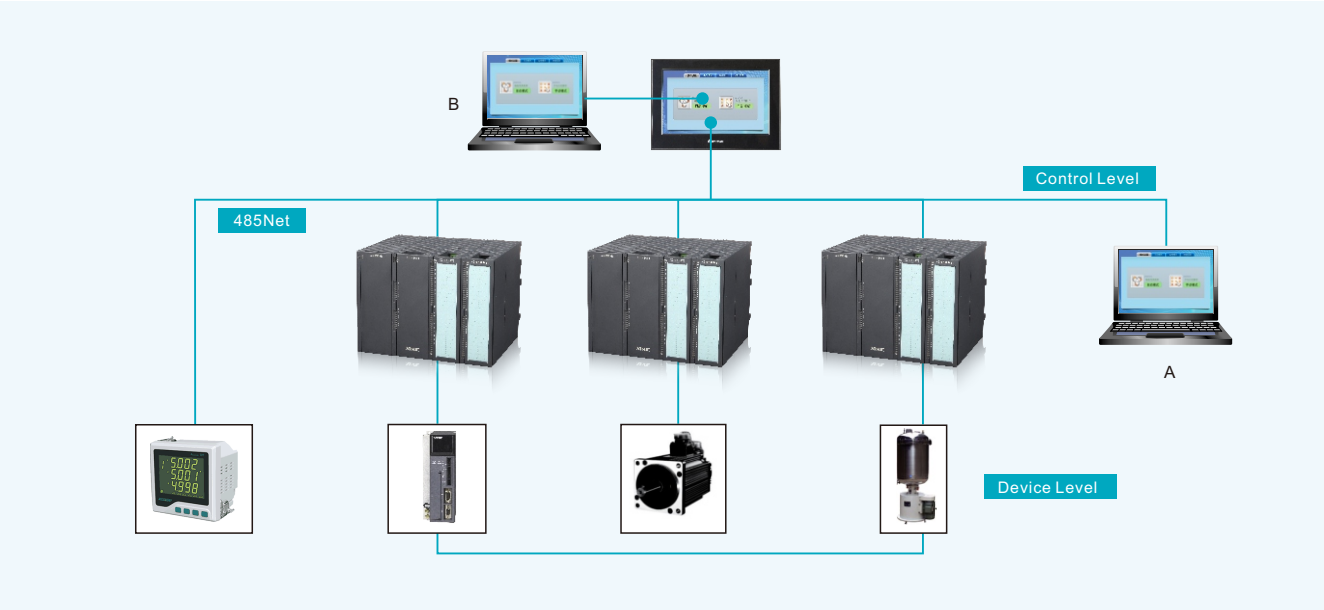
XG2 series PLC and DS5C series servo driver have EtherCAT communication network ports. Only special network cables, such as Xinje JC-CA-OP5, make the connection more convenient, efficient and convenient for maintenance.

•Terminal matching

Because EtherCAT bus is based on network communication, it does not need terminal resistance to solve the problem of signal reflection.

•Improve the accuracy and reliability of the system

EtherCAT supports the master station redundancy of hot backup. Since the EtherCAT slave controller chip will automatically return the data frame when the loop is interrupted, the failure of a device will not cause the whole network to be paralyzed. At the same time, the distributed clock used in EtherCAT system makes the vibration of the clock far less than 1us through the calibration mechanism of the master clock and the slave clock in the system. Because the synchronization is realized by hardware, the reliability of EtherCAT is guaranteed to a great extent.



X-NET networking

•X-NET fieldbus

Fieldbus control replaces the traditional Modbus communication and free communication, making the whole system faster, more reliable and more stable. At the same time, it makes the complex wiring simpler and meets the requirements of improving project performance. A single network can connect up to 32 nodes at the same time, and the network can communicate with each other.

- ① XD/XL/XG1 series support X-NET fieldbus.
- ② X-NET fieldbus belongs to token network structure.
- ③ Any node in the network can actively send information to other nodes on the network after obtaining the token.
- ④ The speed can up to 3Mbps.

■ Network mode

For workshop monitoring network, it is a token structure, real-time multi-master network. It is a multi-master system. It can realize multiple control configurations or visualization systems interoperable on a bus. Any node in the network has access rights (tokens), and can send and receive data without external requests.

■ Shield

The outer layer of shielded cable used in fieldbus X-NET must be well grounded at one point. If the high frequency interference is serious, multi-point capacitive grounding can be adopted, and multi-point direct grounding can not be allowed to avoid generating ground loop current. Shielded double-core cable can also be cancelled, it depends on the environmental conditions, if the system is in high electromagnetic environment (automobile manufacturing), shielded cables must be used. Shielding can improve electromagnetic compatibility. If the shielded braided wire and shielded foil are used, it needs to connect with the protection ground, and cover by the shielded wiring as large area as possible to maintain good communication capability. It is also suggested that the data cable must be isolated from the high voltage cable.

■ Communication speed and distance

The field environment determines the communication speed and medium of fieldbus. As fieldbus uses electric signals to transmit data, it is necessary to adopt special cable of Xinje, which can reach 5 meters at 3 Mbps speed, and 300 meters at 192 Kbps speed. The rate can reach 600Bit~3MBit.

•Flexible network topology

■ Ring topology



Powerful communication and networking functions

The communication port provided by XG series PLC can meet the needs of most communication and network.

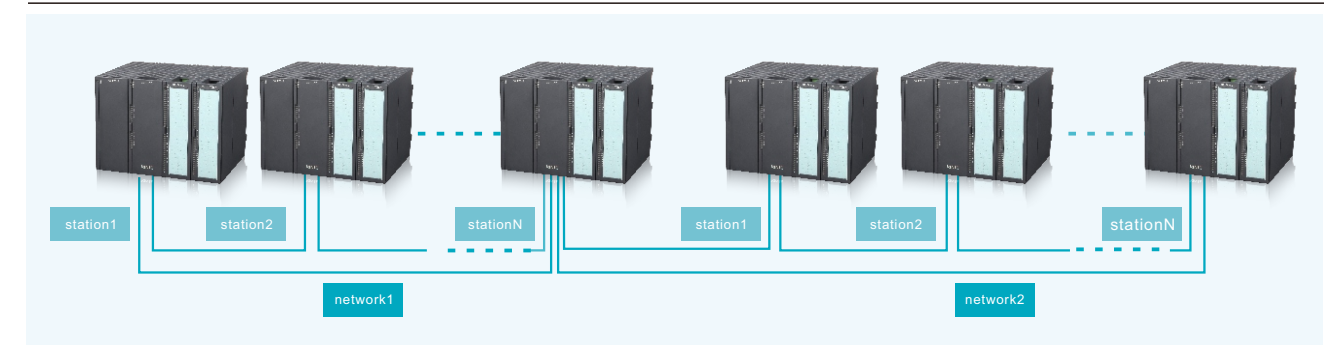
■ Modbus networking	Supports (RTU and ASCII) protocol master and slave mode.
■ X-NET networking	A single network can connect up to 32 nodes at the same time, and the network can communicate with each other. X-NET fieldbus belongs to token network structure, and its speed can reach 3M.
■ Ethernet communication	Supports remote monitoring and local network monitoring as well as communication between modbus-tcp, TCP/IP, free format, UDP and other devices. It can realize the functions of PLC on-line programming, real-time monitoring and data uploading downloading.

Modbus networking

XG series PLC supports Modbus (RTU/ASCII) protocol master-slave mode. When PLC is used as master station equipment, it sends requests to other slave devices through Modbus instructions, other devices can make corresponding requests. When PLC is used as slave station equipment, it can only respond to the requests of other master stations.

# Product Introduction

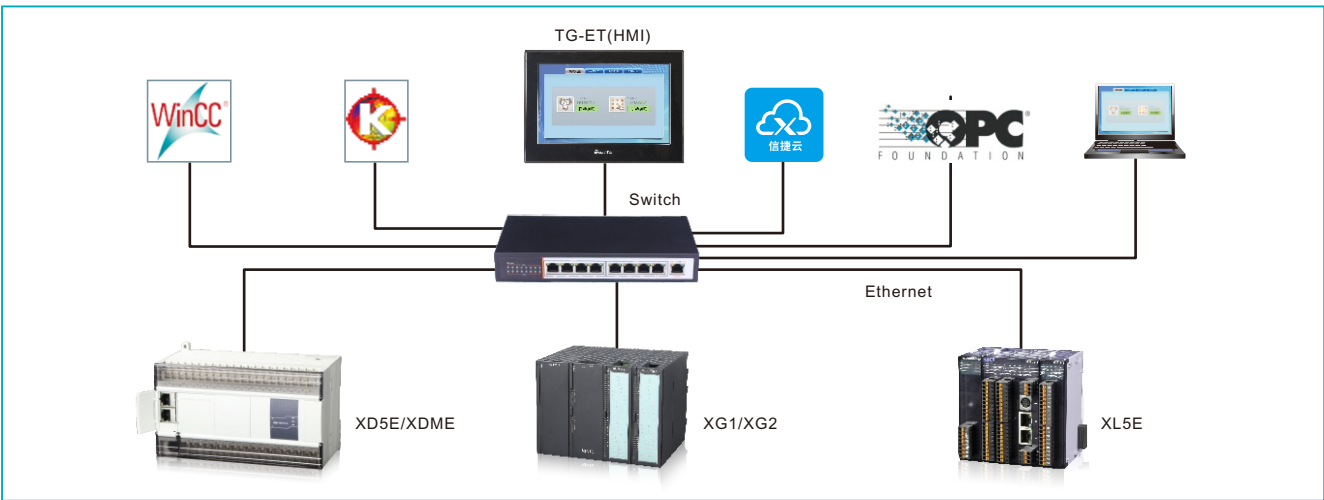
## Multi-network structure



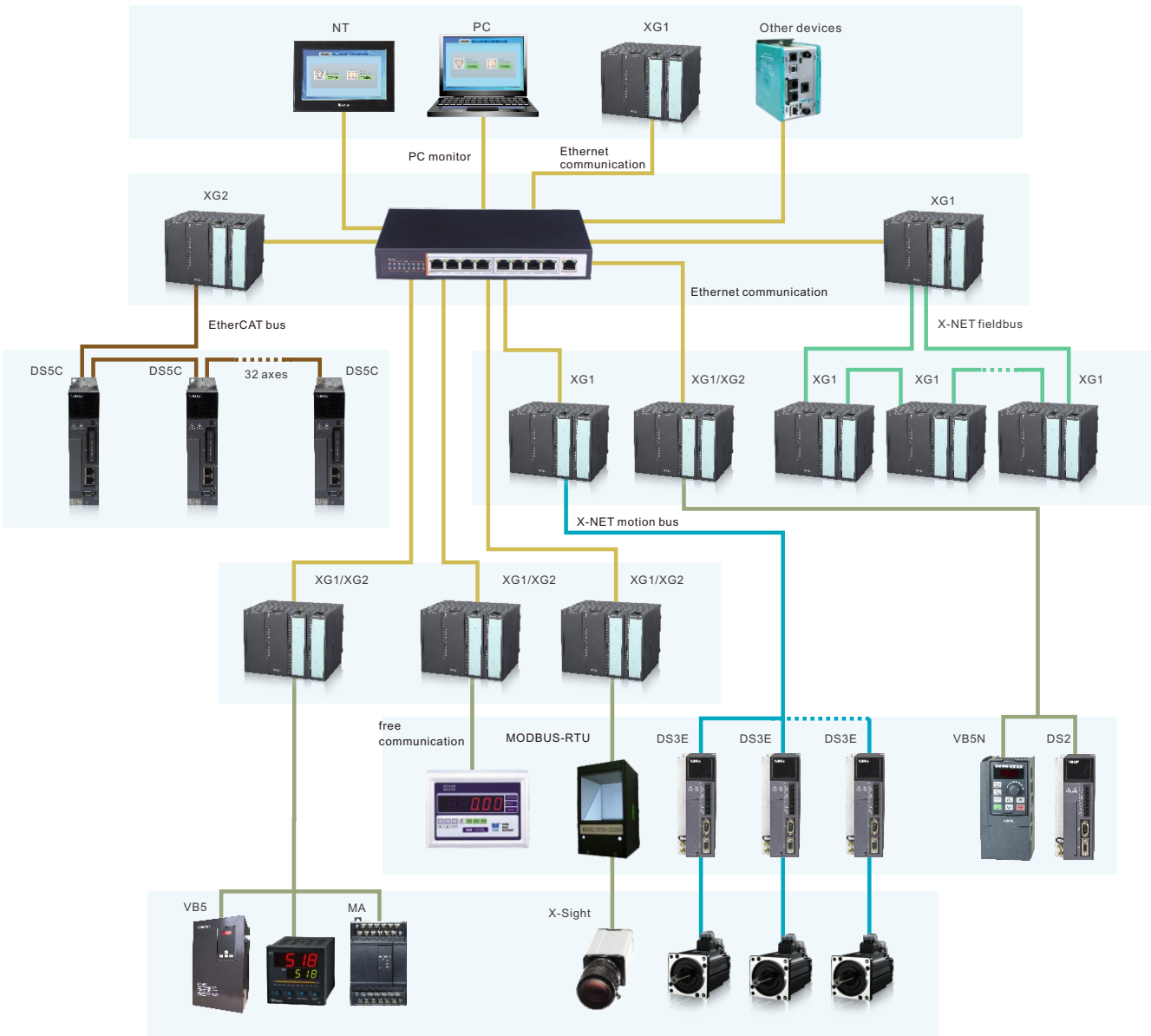
## Ethernet communication

Ethernet communication is mainly used in XG1, XG2 series PLC, which is faster than USB. In many PLC communication occasions, users can communicate with any PLC on the spot through only one switch. In addition to its application in local area network, Ethernet also supports the functions of remote searching, monitoring operation and uploading and downloading of PLC through the Internet.

- Support TCP/IP communication, up to 32 communication connections
- Support Modbus TCP communication
- Support industrial fieldbus based on X-NET protocol
- Support PLC remote searching, data monitoring, program uploading downloading through Internet
- Rich data interface for PC development



## Comprehensive Network Structure Diagram



X-NET fieldbus	X-NET motion bus	MODBUS	Ethernet communication	EtherCAT communication
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XG/XL/XD series PLC supports X-NET fieldbus. It has the advantages of intellectualization, digitalization and stability. The highest speed can achieve 3M. It has the advantages of simple design, convenient wiring and easy reconfiguration.

XG/XL/XD series PLC supports X-NET motion bus. Servo can be connected at high speed, suitable for multi-axis control, high-speed and complex motion control, up to 20 axes can be controlled at the same time, the maximum speed can reach 3Mbps.

It supports standard MODBUS serial communication and can be easily integrated with various brand devices. It supports free communication and can cooperate flexibly with the actual situation.

Supporting Ethernet communication protocol, automation equipment can easily form an Ethernet control system through interconnection of Ethernet. It breaks the traditional industrial automation island state, has higher communication performance and achieves a wide range of open network.

Supporting standard EtherCAT protocol, automation devices are interconnected through Ethernet to achieve faster communication speed. It has better synchronization, and the fully open technology can meet today and future technical requirements.



Support XD/XG/XL series PLC products

PLC1 - Module Set

Select: XG-E4AD2DA

general advanced

Parameter	Value
AD1-AD2 filter params(0 no filter,1-254...	0
AD3-AD4 filter params(0 no F, 1-254...	0
AD1 input	voltage
AD1 voltage input	0-10v
AD2 input	voltage
AD2 voltage input	0-10v

X: 10000-10027.Y: 10000-10005.ID: 10000-10003.QD: 10000-10001

Configuration module more than 5, please add terminal resistance, long cable must add terminal resistance

Read From PLC Write To PLC OK Cancel

PLC1 - Password Set

PLC Config

- I/O
  - Password
  - PLC Serial Port
  - ethernet
  - Pulse
- Module
  - BD
  - ED
  - 4GBOX
  - EtherCAT
  - NC
  - WBOX


Password:

Retype Password:

[Advanced](#) ☐ unlock Password before download

*The operation is dangerous, if forget the password, your PLC will be lock*

OK Cancel



**PID Installation Parameter Config**

Target Value (SV)  Measure Value(PV)  Parameter  Output

**Parameter Config**

☒ Manual ☐ Auto

Sampling Time  s  ms

Proportion Gain (Kp)  %

Integration Time(Ti)  s  ms

Differential Time(TD)  s  ms

**PID Computation Scope**

Self Control Death Band  %

Self Tuning Periodic Value  s

Self Tuning Method  Step Response

Self Tuning PID Control Mode  PID Control

**Overhaul Config**

☒ Enable Overhaul ☐ Disable Overhaul

Each time adjust the increase  %

Current target value readout Count  s

**Suggestion value**

**Mode Config**

☒ Common Mode ☐ Advanced Mode

Reset Filter Constant (k)  s  s

Output Differential Movement (DD)  NO

Output Upper Limit Value  %

Output Lower Limit Value  %

**Direction Config**

☒ Negative Movement ☐ Positive Movement

Negative Movement: When with the increase of the measure definite value PV, output control MV will also increase.

Positive Movement: When with the increase of the measure definite value PV, output control MV will also increase.

It's usually used in heat up control.

It's usually used in cool control.

**Parameter Range HDD - HDDS**

Reset from PLC

multi section pulse output

data start address: D0 user params address: D100 system params: K1 output: Y0

mode: relative start execute section count: 0 Config

Add Delete Upwards Downwards

	frequency	pulse count	wait condition	wait register	jump register

used space: D0-D9.D100-D103

Read From PLC Write To PLC OK Cancel

Pulse parameters configuration guide - Y0

## Pulse parameters configuration guide

This guide is used to configure the pulse parameters. The parameters include pulse logic, pulse direction, pulse unit, pulse sending mode, gear clearance compensation, electrical origin, positive negative hard limit, positive negative soft limit, mechanical return zero point, interpolation coordinate mode, grinding wheel, four groups of parameters. User can set the parameters and write in the PLC.

Each pulse output terminal is corresponding to a pulse parameters configuration guide.

Notes: the project tree is ticked when the parameters are configured and written in the PLC. Pulse parameters configuration is suitable for instruction PLSR, PLSF, ZSR.

Prev Next OK Cancel

Search Ladder chart

Search:

Search Next

Search Direction

☒ Search from Beginning to End

☐ Search from Current to End

☐ Search from Current to Beginning

☐ Search from End to Beginning

☒ Match Case

Close

Download User Data

- ☒ Reg Init Value
- ☒ Serial Port Config
- ☒ Module Config
- ☒ I/O Config
- ☒ Sys Pulse Block Config
- ☒ Instruction Data
- ☒ Ethernet Port Config
- ☒ EtherCAT Config

☒ all      OK      Cancel

Programmers can accurately know the use of program capacity in PLC.

Func Block Info Edit

Func Block Name: TCA Version: 1.0.0

Description:

Calculation: area of a circle

Data of radius (short) input: W [0]  
 The output value of circular area (float): W [2]  
 Example:  
 TCA D0 M0

Radius: D0 = 2  
 Float(D2, D3) =  $\pi \cdot D0 \cdot D0$

Author: Xinje Electronic Co.,Ltd. Date: Wednesday, Aug 14, 2019

Export

☒ Edit ☐ No Edit

OK Cancel

The screenshot shows the MATLAB IDE with a script named 'FuncTest\_H02.m'. The script defines a function 'funcTest' that calculates the area of a circle and the hypotenuse of a right triangle. The function signature is 'funcTest( a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z)'. The script includes comments in German and MATLAB code for input, calculation, and output.

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## 16

# XG1 Series PLC

Powerful motion control PLC	Up to 528 I/O points	4-channel 100KHz high speed pulse output	X-NET communication
	16 right extension modules	Linear arc interpolation	Faster instruction processing speed

Model	Specification
XG1-16T4	             

	AC power supply		Input		Transistor output		RS232 : RS232		Fieldbus XNET : XNETfieldbus		: NPN		: Pulse input		: Right extension module		: Timing interruption
	DC power supply		Output		Relay output		RS485 : RS485		Motion bus XNET : XNET motion bus		: PNP		: Pulse output		: Left extension module		: External interruption
	BD card		Clock		Transistor and relay output				Motion bus EtherCAT : EtherCAT motion bus								

## Application function

Function	Explanation
Soft component capacity	By subdividing all the soft components, the average capacity of the soft components is 8 times that of XC.
Data exchange speed between PLC and extension module is faster	SPI serial port communication mode, (2ms per channel)
100-segment high speed count interruption	100-segment 32-bit preset value, each segment can produce interruption, good real-time ability, high reliability and low cost
High speed counting	4-channel 50KHz AB phase or 4-channel 80KHz single phase high speed counter
Modbus instruction processing optimization	The same condition can trigger multiple instructions
Powerful pulse instructions	Multifunctional PLSR Gear clearance compensation 100-segment pulse interruption Arbitrary switching of multiple sets of parameters Various curve acceleration and deceleration It can be started in the interrupt subroutine
Powerful communication and networking function	<a href="#">Modbus networking</a> Support (RTU and ASCII) protocol master-slave mode networking <a href="#">X-NET networking</a> The maximum speed of token network structure can reach 3Mbps. A single network can connect up to 32 nodes at the same time. <a href="#">Ethernet communication</a> Support PLC remote searching, monitoring, uploading downloading through Internet. In many occasions of PLC communication, users can communicate with any PLC on the spot through only one switch.
Pulse width modulation	The precision of pulse width subdivision can reach 1/65536, which can be used to control frequency converter and DC motor.
Interruption function	Interruption contains external interrupt, timing interrupt, 100-segment high speed counter interrupt, electronic CAM and 100-segment pulse interrupt, will not be affected by scanning period.
C language function	Program confidentiality is better, support all the C language functions
PID control	Support multi-channel PID simultaneous control and auto-tuning function. It has two control methods, step response method and critical oscillation method. It can be flexibly applied to more control occasions.
Sequence block	8 block instructions can be executed sequentially at the same time; the ladder chart of users is greatly optimized.
Frequency measurement	32-bit instruction FRQM can measure the frequency
Password protection	Improving program security by 6-bit ASCII. New FS soft component can effective protect customer's intellectual property rights
Self-diagnostic function	Power-on self-check, monitor timer, grammar check
Real-time clock	Built-in clock, Lithium battery power supply, with power-down memory function (clock protection: when selecting advanced mode of encrypted download, the PLC clock cannot be changed through communication)
Precise timing	32-bit instruction STR has 1ms precise timing function, when the time arrives, interrupt flags are generated and interrupt subroutines are executed.
Simple appearance, easy to install	Compact structure, improve space utilization

## Basic unit performance specification














Item		Specification	
Program execution mode		Cyclic scanning mode	
Programming method		Instruction, ladder chart, C language	
Processing speed		0.01~0.03us	
Power-off retentive		Use FlashROM and Li battery (3V button battery)	
User program capacity		1M	
User program※2	Total points	16 points	
	Input points	8 points X0~X7	
	Output points	8 points Y0~Y7	
Internal coil (X)※3		1280: X0~77, X10000~11777, X20000~20177, X30000~30077	
Internal coil (Y)※4		1280: Y0~77, Y10000~11777, Y20000~20177, X30000~30077	
Internal coil (M, HM)		87000 points	M0~M69999 HM0~HM11999 ※5
			Special use※6 SM0~SM4999
Flow (S)		9000 points	S0~S7999 HS0~HS999
Timer ( T )	Points	7000 points	T0~T4999 HT0~HT1999
	Specification	100ms timer: setting time 0.1~3276.7s	
		10ms timer: setting time 0.01~327.67s	
		1ms timer: setting time 0.001~32.767s	
Counter ( C )	Points	7000 points	C0~C4999 【HC0~HC1999】
	Specification	16-bit counter: setting value 0~32767	
		32-bit counter: setting value -2147483648~+2147483647	
Data register(D)		100000 words	D0~D69999 【HD0~HD24999】 ※5
			Special use※6 SD0~SD4999
FlashROM register (FD)		14192 words	FD0~FD8191
			Special use※6 SFD0~SFD5999
High-speed processing function		High speed counter, pulse output, external interrupt	
Password protection		6-bit ASCII	
Self-diagnosis function		Power-on self-test, monitor timer, grammar check	

- ※1 User program capacity refers to the maximum program capacity when secret downloading.
- ※2 I/O points refer to the number of terminals that users can input and output signals from outside.
- ※3 X is internal input relay, X beyond the number of I points can be used as an intermediate relay.
- ※4 Y is internal output relay, Y beyond the number of O points can be used as an intermediate relay.
- ※5 [] is the default power-off holding area and cannot be changed.
- ※6 special use is special registers occupied by the system, cannot be used for other purpose.



# XG2 Series PLC

Powerful motion control PLC	Up to 538 I/O points	4-channel 100KHz high speed pulse output	EtherCAT communication
	16 right extension modules	Linear arc interpolation	Faster instruction processing speed

Model	Specification												
XG2-26T4													
	AC power supply	Input	Transistor output		RS232 : RS232	XNETfieldbus : XNETfieldbus			NPN	Pulse input		Right extension module	Timing interruption
	DC power supply	Output	Relay output		RS485 : RS485	XNET motion bus : XNET motion bus			PNP	Pulse output		Left extension module	External interruption
	BD card	Clock	Transistor and relay output			EtherCAT : EtherCAT motion bus			Differential signal				

## Application function

Function	Explanation
Soft component capacity	By subdividing all the soft components, the average capacity of the soft components is 10 times that of XD.
Data exchange speed between PLC and extension module is faster	SPI serial port communication mode, (2ms per channel)
100-segment high speed count interruption	100-segment 32-bit preset value, each segment can produce interruption, good real-time ability, high reliability and low cost
High speed counting	4-channel 200KHz single phase or 4-channel 200KHz differential signal high speed counter
Modbus instruction processing optimization	The same condition can trigger multiple instructions
Powerful pulse instructions	Multifunctional PLSR Gear clearance compensation 100-segment pulse interruption Arbitrary switching of multiple sets of parameters Various curve acceleration and deceleration It can be started in the interrupt subroutine
Powerful communication and networking function	<a href="#">Modbus networking</a> Support (RTU and ASCII) protocol master-slave mode networking  <a href="#">Ethernet communication</a> Support PLC remote searching, monitoring, uploading downloading through Internet. In many occasions of PLC communication, users can communicate with any PLC on the spot through only one switch.  <a href="#">EtherCAT motion control</a> At present, the maximum number of slave stations are 64 axes and the synchronization period of 32 axes is 1 ms. 2-channel Touch probe function, position, speed and torque control mode, widely applicable to various industries.
Pulse width modulation	Not support
Interruption function	Interruption contains external interrupt, timing interrupt, 100-segment high speed counter interrupt, electronic CAM and 100-segment pulse interrupt, will not be affected by scanning period.
C language function	Program confidentiality is better, support all the C language functions
PID control	Support multi-channel PID simultaneous control and auto-tuning function. It has two control methods, step response method and critical oscillation method. It can be flexibly applied to more control occasions.
Sequence block	8 block instructions can be executed sequentially at the same time; the ladder chart of users is greatly optimized.
Frequency measurement	Not support
Password protection	Improving program security by 6-bit ASCII. New FS soft component can effective protect customer's intellectual property rights
Self-diagnostic function	Power-on self-check, monitor timer, grammar check
Real-time clock	Built-in clock, Lithium battery power supply, with power-down memory function (clock protection: when selecting advanced mode of encrypted download, the PLC clock cannot be changed through communication)
Precise timing	Not support
Simple appearance, easy to install	Compact structure, improve space utilization

## Basic unit performance specification

Item		Specification	
Program execution mode		Cyclic scanning mode	
Programming method		Instruction, ladder chart, C language	
Processing speed		0.005~0.01us	
Power-off retentive		Use FlashROM and Li battery (3V button battery)	
User program capacity		16M	
User program <sup>x2</sup>	Total points	26 points	
	Input points	18 points X0~X21	
	Output points	8 points Y0~Y7	
Internal coil (X) <sup>x3</sup>		1280: X0~77, X10000~11777, X20000~20177, X30000~30077	
Internal coil (Y) <sup>x4</sup>		1280: Y0~77, Y10000~11777, Y20000~20177, X30000~30077	
Internal coil (M, HM)		798000 points	M0~M699999 【HM0~HM47999】 <sup>5</sup>
			Special use <sup>5</sup> SM0~SM49999
Flow (S)		84000 points	S0~S79999 【HS0~HS3999】
Timer ( T )	Points	58000 points	T0~T49999 【HT0~HT7999】
	Specification	100ms timer: setting time 0.1~3276.7s	
		10ms timer: setting time 0.01~327.67s	
		1ms timer: setting time 0.001~32.767s	
Counter ( C )	Points	58000 points	C0~C49999 【HC0~HC7999】
	Specification	16-bit counter: setting value 0~32767	
		32-bit counter: setting value -2147483648~2147483647	
Data register(D)		810000 words	D0~D699999 【HD0~HD99999】 <sup>5</sup>
			Special use <sup>5</sup> SD0~SD4999
FlashROM register (FD)		75536 words	FD0~FD65535
			Special use <sup>5</sup> SFD0~SFD9999
High-speed processing function		High speed counter, pulse output, external interrupt	
Password protection		6-bit ASCII	
Self-diagnosis function		Power-on self-test, monitor timer, grammar check	

- ✖1 User program capacity refers to the maximum program capacity when secret downloading.
- ✖2 I/O points refer to the number of terminals that users can input and output signals from outside.
- ✖3 X is internal input relay, X beyond the number of I points can be used as an intermediate relay.
- ✖4 Y is internal output relay, Y beyond the number of O points can be used as an intermediate relay.
- ✖5 {} is the default power-off holding area and cannot be changed.
- ✖6 special use is special registers occupied by the system, cannot be used for other purpose.

Product Introduction


XG Series Extension Module


XG I/O extension module

When I/O points of PLC can not meet the requirements of use, I/O extension module can be used.


•XG series I/O extension module list


Model	Function
XG-E8X8YR	8-channel NPN or PNP digital input, 8-channel relay output
XG-E8X8YT	8-channel NPN or PNP digital input, 8-channel transistor output
XG-E16X	16-channel NPN or PNP digital input
XG-E16YR	16-channel relay output
XG-E16YT	16-channel transistor output
XG-E16X16YR	16-channel NPN or PNP digital input, 16-channel relay output
XG-E16X16YT	16-channel NPN or PNP digital input, 16-channel transistor output
XG-E32X	32-channel NPN or PNP digital input
XG-E32YT	32-channel transistor output

XG-E8X8YR, XG-E8X8YT		
	8 input points	R: output relay
	Rated input voltage 24V	External wiring method: terminals
	8 output points	T: output transistor
	R max load: resistance 3A inductance 80VA	Wiring method is same to PLC
	Response time below 20ms	R response time below
	T max load: resistance 0.5A inductance 12W80VA	T response time below 0.2ms


XG-E16X16YR, XG-E16X16YT		
	16 input points	R: output relay
	16 output points	External wiring method: terminals
	Rated input voltage 24V	T: output transistor
	R max load: resistance 3A inductance 80VA	Wiring method is same to PLC
	Response time below 20ms	R response time below 10ms
	T max load: resistance 0.5A inductance 12W80VA	T response time below 0.2ms


•Input extension module

XG-E16X	
	16 input points
	Rated input voltage 24V
	Response time below 20ms
	External wiring method:terminals
	Wiring method is same to PLC

XG-E32X	
	32 input points
	Rated input voltage 24V
	Response time below 20ms
	External wiring method:terminals
	Wiring method is same to PLC

•I/O extension module


XG-E16YR, XG-E16YT		
	Rated input voltage 24V	R: Output relay
	16 output points	External wiring method: terminals
	R max load: resistance 3A inductance 80VA	T: output transistor
	Response time below 20ms	Wiring method is same to PLC
	T max load: resistance 0.5A inductance 12W80VA	R response time below 10ms
		T response time below 0.2ms


XG-E32YT		
	Rated input voltage 24V	T: output transistor
	32 output points	T response time below 0.2ms
	Response time below 20ms	External wiring method: terminals
	T max load: resistance 0.5A inductance 12W80VA	Wiring method is same to PLC

XG series analog extension module


The signal can be D/A or A/D converted, and the signal of temperature transmitter can be received and processed.

•AD model

XG-E8AD-A-S	
	8 input channels
	Input current 0~20/4~20/-20~20mA
	Conversion speed 2ms/channel
	Resolution 1/65535(16-bit)
	Accuracy ±1%
	Filtering coefficient 0~254
	Added enabling flags

XG-E8AD-V-S	
	8 input channels
	Input voltage 0~5/0~10/-5~5/-10~10V
	Conversion speed 2ms/channel
	Resolution 1/65535(16-bit)
	Accuracy ±1%
	Filtering coefficient 0~254
	Added enabling flags

•Mixed model

XG-E4AD2DA		
	4 input channels	2 output channels
	Input voltage 0~5/0~10/-5~5/-10~10V	output voltage 0~5/0~10/-5~5/-10~10V
	Input current 0~20/4~20/-20~20mA	output current 0~20/4~20mA
	Conversion speed 2ms/channel	Resolution 1/4095(12-bit)
	Resolution 1/16383(14-bit)	Accuracy ±1%
	Accuracy ±1%	Added enabling flags
	Filtering coefficient 0~254	
	Added enabling flags	

•DA model

XG-E4DA-S	
	4 output channels
	output voltage 0~5/0~10/-5~5/-10~10V
	output current 0~20/4~20mA
	Resolution 1/65535(16-bit)
	Accuracy ±1%
	Added enabling flags

XG series extension module specifications

Item	Specification
Using environment	Non-corrosive gas
Environment temperature	0℃~60℃
Storage temperature	-20~70℃
Environment humidity	5~95%RH
Storage humidity	5~95%RH
Installation	Install on the rail XG-EB-length(mm)
Dimension	130.0mm×40.0mm×133.4mm

Product Introduction


XG temperature control extension module

Pt100 thermal resistor and thermocouple temperature measurement, built-in PID control.

• PT100 thermal resistor model

■Analog extension module XG-E8PT3-P performance

Item	Content
Analog input signal	PT100 thermal resistor
Measuring range	-100℃~500℃
Digital input range	-1000~5000, 16-bit, binary
Control accuracy	±0.5℃
Resolution	0.1℃
Comprehensive accuracy	1% (relative maximum)
Conversion speed	650ms/8 channels
Power supply for analog	DC24V±10%, 50mA




**XG-E8PT3-P**

8 temperature input channels (3-wire has compensation)
Auto-tuning function
Measuring range -100℃~500℃
Heating and cooling control
Resolution 0Input specification.1℃
Control accuracy ±0.5℃
Channel conversion speed 650ms/8 channels
Comprehensive accuracy ±1%

• TC thermocouple model

■Analog extension module XG-E8TC-P performance

Item	Content
Analog input signal	K, S, E, N, B, T, J, R types of thermocouple
Measuring range	0℃~1300℃ (type K)
Digital input range	0~13000, signed 16-bit, binary
Control accuracy	±0.5℃
Resolution	0.1℃
Comprehensive accuracy	1% (relative maximum)
Conversion speed	450ms/8 channels
Power supply for analog	DC24V±10%, 50mA



**XG-E8TC-P**

8 temperature input channels
Auto-tuning function
Measuring range 0℃~1800℃
Heating and cooling control
Resolution 0.1℃
Control accuracy ±0.5℃
Channel conversion speed 450ms/8 channels
Comprehensive accuracy ±1%

I/O Specification And Wiring

Power supply specification

• Special power supply XG-P75-E

The special independent power supply guarantees the normal operation of PLC in a good and reliable power supply system and prolongs the service life of PLC.

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

• External DC power supply

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

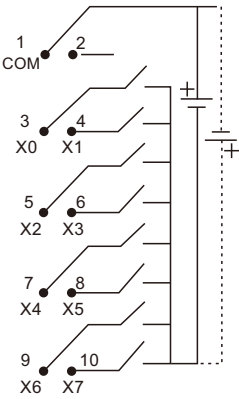
XG1 series PLC input specification and wiring

XG1 series PLC supports NPN and PNP mode, the following is specification and wiring details:

•Input specification

Item	Content
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 form	NPN or PNP open collector transistor
Circuit insulation	Photoelectric coupled insulation
Input action display	LED lights when input is ON

•Input terminal and wiring



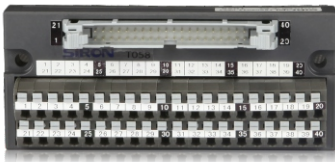
Note: • Input part: The solid line is NPN connection, the dotted line is PNP connection, please refer to the above figure, compatible with NPN and PNP input mode.

• The common terminal com of the input terminal corresponds to all input points, and the com of the output terminal corresponds to different Y output points.

XG2 series PLC input specification and wiring

XG2 series PLC terminals are different from XG1, it is an external module JT-G26.

XG2 series PLC supports NPN and differential signal mode, the following is specification and wiring details:

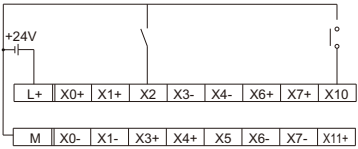


Terminal model: JT-G26

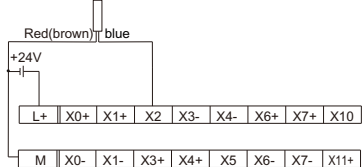
•NPN mode specification

Item	Content
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 form	NPN open collector transistor (X2 X5 X10 X13 X14 X15 X16 X17 X20)
Circuit insulation	Photoelectric coupled insulation
Input action display	LED lights when input is ON

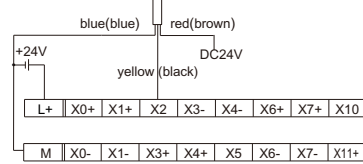
•Switch button wiring example



•2-wire proximity switch (NO or NC) wiring example



•3-wire proximity switch (NPN type) wiring example

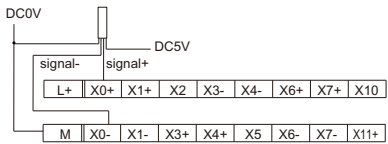


•Differential signal mode specification

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

Note: there are four groups of differential signal; X0+, X0-, X1+, X1-; X3+, X3-, X4+, X4-; X6+, X6-, X7+, X7-; X11+, X11-, X12+, X12-; which can be used as high speed counting input. If it needs to receive collector signal, the differential signal should be converted to collector signal through DIFF-OC card.

•Differential wiring example





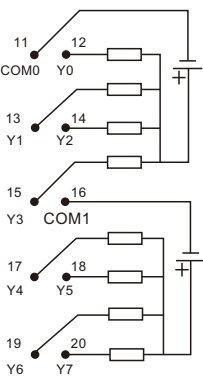
Product Introduction

Transistor output

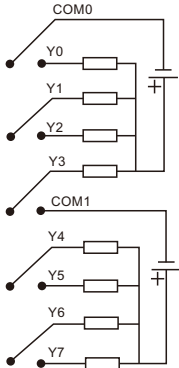
•Output specification

Item		Content
External power supply		Below DC5~30V
Circuit insulation		Optocoupler insulation
Action display		LED light
Max load	Resistance load	0.3A
	Inductance load	7.2W/DC24V
	Light load	1.5W/DC24V
Min load		DC5V 2mA
Response time	OFF-->ON	Below 0.2ms
	ON-->OFF	Below 0.2ms

•XG1 output terminal wiring



•XG2 output terminal wiring



High speed pulse output

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

Note:

- When using high speed pulse output function, PLC can output pulse of 100KHz~200KHz, but there is no guarantee that all servos will work properly. Please connect 500ohm resistor between output terminal and 24V power supply.
- When the PLC is out of the factory, it is usually equipped with plug-and-pull spring connector to facilitate wiring. The connector requires that the length of the conductor stripped is at least 1.5 cm. When wiring, press the yellow spring switch with a small-sized screwdriver, insert the wire into the corresponding hole, and loosen the spring switch.

High Speed Counter Configuration List

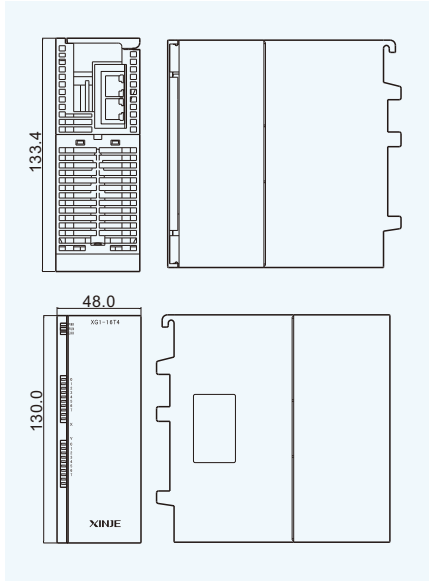
XG1-16T4								
	Single phase incremental mode				AB phase mode			
	HSC0	HSC2	HSC4	HSC6	HSC0	HSC2	HSC4	HSC6
Max frequency	80K	80K	80K	80K	50K	50K	50K	50K
4 frequency doubling					2/4	2/4	2/4	2/4
Counting interrupt	✓	✓	✓	✓	✓	✓	✓	✓
X000	U				A			
X001					B			
X002		U			A			
X003					B			
X004			U				A	
X005							B	
X006				U				A
X007								B

XG2-26T4								
	Single phase incremental mode				Differential mode			
	HSC0	HSC2	HSC4	HSC6	HSC0	HSC2	HSC4	HSC6
Max frequency	200K	200K	200K	200K	200K	200K	200K	200K
4 frequency doubling					2/4	2/4	2/4	2/4
Counting interrupt								
X000+	U+				A+			
X000-	U-				A-			
X001+					B+			
X001-					B-			
X002								
X003+		U+			A+			
X003-		U-			A-			
X004+					B+			
X004-					B-			
X005								
X006+			U+				A+	
X006-			U-				A-	
X007+							B+	
X007-							B-	
X010								
X011+				U+				A+
X011-				U-				A-
X012+								B+
X012-								B-

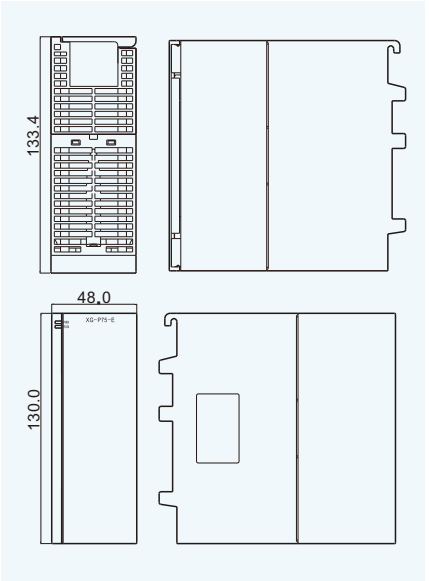
Dimension (Unit: mm)

XG1 series

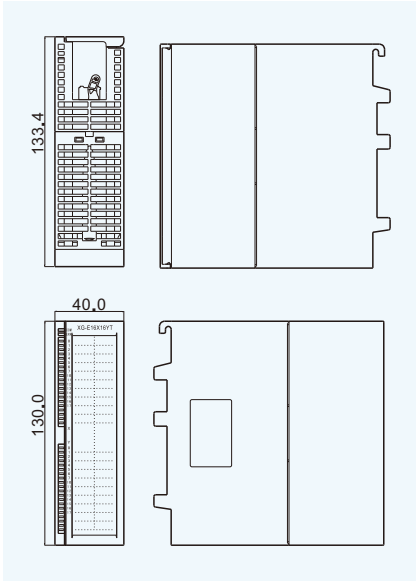
•PLC



•Power supply module

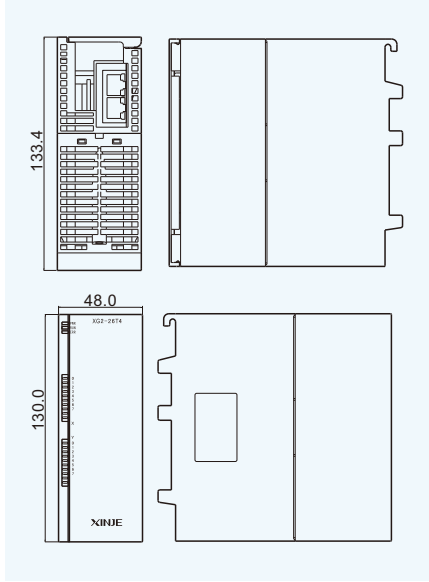


•Extension module

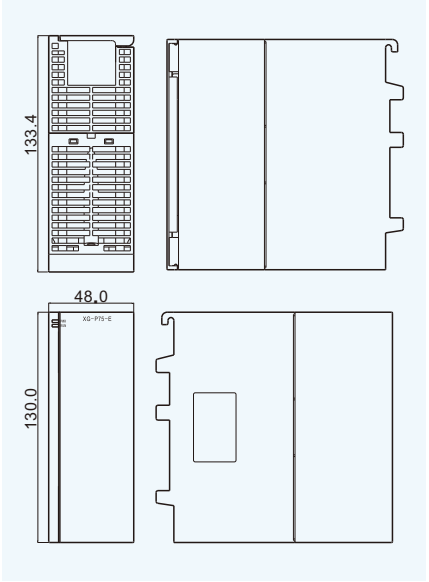


XG2 series

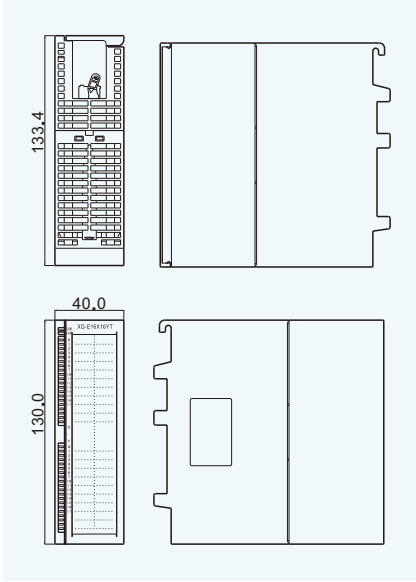
•PLC



•Power supply module

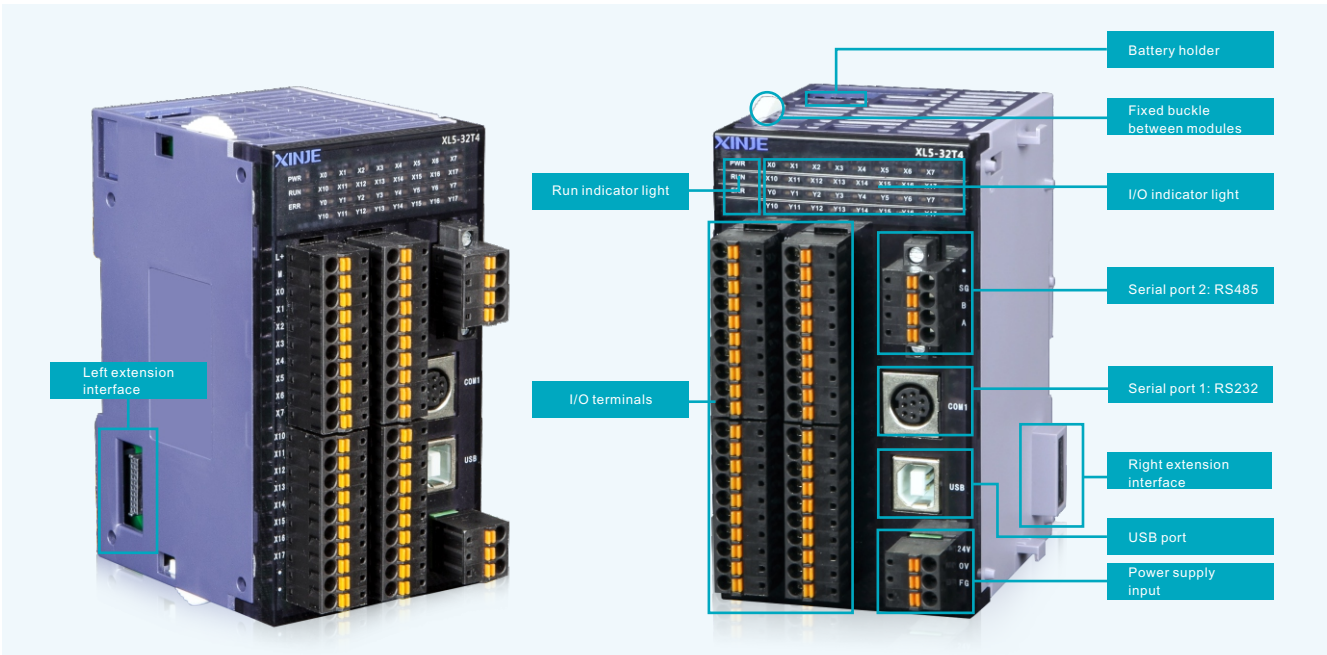


•Extension module



XL SLIM PLC

XL series PLC not only has powerful CPU processing speed, high reliability and compact structure, but also provides more perfect solutions for customers and creates higher value.



XL SLIM PLC/XD SMALL-SIZED PLC

XL Series

XL1 series/XL3 series/XL5 series/XL5E series/XLME series

- Ultra-thin appearance, compact and practical, suitable for various industrial environments
- Strong compatibility
- Stronger scalability
- Outstanding cost-effective
- Save installation space

XD Series

XD1 series/ XD2 series /XD3 series/XD5 series/XDM series/XDC series/XD5E series/XDME series

- Richer control schemes
- More complete product line-up
- More flexible scalability
- Faster processing speed
- More stable performance

Product lineup

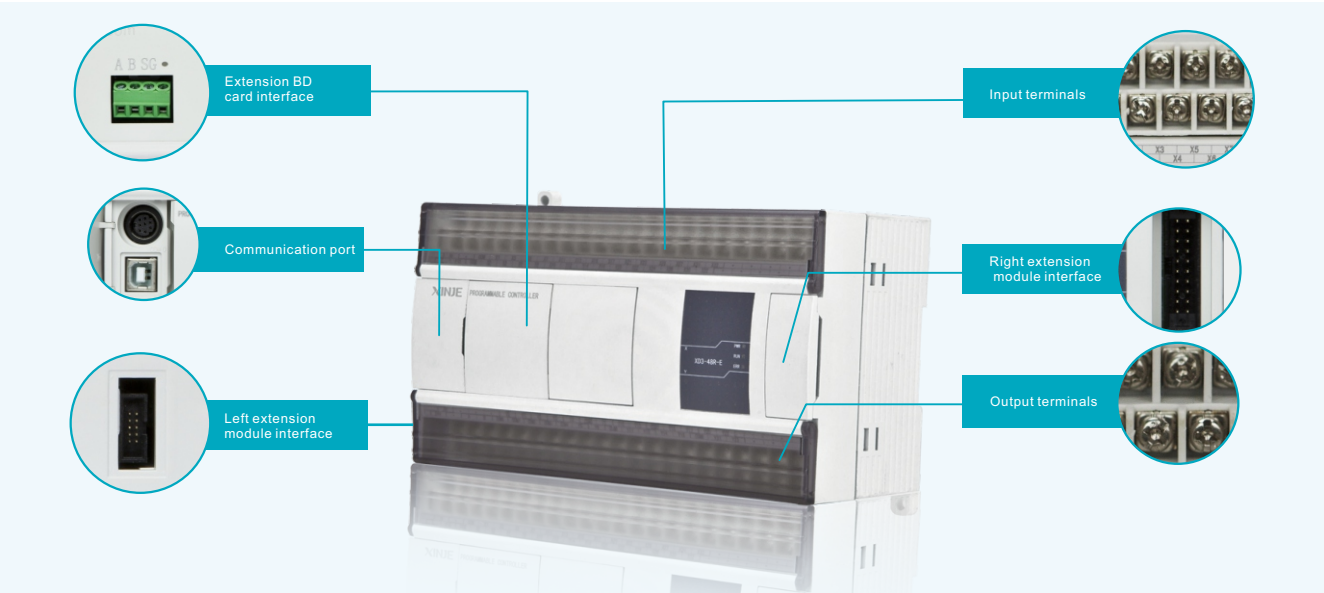
				
Cost-effective model XL1-16T-U	Standard model XL3-16T	Enhanced model XL5-32T4	Ethernet model XL5E-32T4	Ethernet model XLME-32T4
⊙ 256K program capacity ⊙ I/O sequential control ⊙ Max I/O 16 points ⊙ 1 channel RS232, 1 channel RS485 ⊙ Basic instruction 0.02~0.05us ⊙ USB port ⊙ X-NET fieldbus	⊙ 256K program capacity ⊙ I/O sequential control ⊙ Max I/O 336 points ⊙ 1 channel RS232, 1 channel RS485 ⊙ USB port ⊙ 2-axis 100KHz pulse output ⊙ Basic instruction 0.02~0.05us ⊙ X-NET fieldbus	⊙ 512K program capacity ⊙ I/O sequential control ⊙ Max I/O 544 points ⊙ 1 channel RS232, 1 channel RS485 ⊙ USB port ⊙ 4-axis 100KHz pulse output ⊙ Basic instruction 0.02~0.05us ⊙ X-NET fieldbus	⊙ 1M program capacity ⊙ I/O sequential control ⊙ Max I/O 544 points ⊙ 1 channel RS232, 1 channel RS485 ⊙ Ethernet port ⊙ 4-axis 100KHz pulse output ⊙ Basic instruction 0.02~0.05us ⊙ X-NET fieldbus	⊙ 1M program capacity ⊙ I/O sequential control ⊙ Max I/O 544 points ⊙ 1 channel RS232, 1 channel RS485 ⊙ Ethernet port ⊙ 4-axis 100KHz pulse output ⊙ Basic instruction 0.02~0.05us ⊙ X-NET fieldbus ⊙ Linear/arc interpolation ⊙ Following function

Product Introduction

XD Series PLC

- XD1 series
- XD2 series
- XD3 series
- XD5 series
- XD5E series
- XDM series
- XDME series
- XDC series

**Faster processing speed, richer scalability, more stable performance, meet variety of requirements**  
Following the XC series PLC, Xinje has devoted itself to the development of XD series PLC, which have faster speed, higher performance and better meet the diversified needsof users.



Product lineup



- ① 256K program capacity

② I/O sequential control

③ Max I/O 32 points

④ 2 channels RS232, 1 channel RS485

⑤ Basic instruction 0.02~0.05us

⑥ X-NET fieldbus
- ① 256K program capacity

② I/O sequential control

③ 2-axis 100KHz pulse output

④ Not support right extension module

⑤ Basic instruction 0.02~0.05us

⑥ X-NET fieldbus
- ① 256K program capacity

② I/O sequential control

③ Max I/O 380 points

④ USB port

⑤ 2-axis 100KHz pulse output

⑥ Basic instruction 0.02~0.05us

⑦ X-NET fieldbus
- ① 512K program capacity

② I/O sequential control

③ Max I/O 572 points

④ USB port

⑤ 2-axis 100KHz pulseoutput

⑥ Basic instruction0.02~0.05us

⑦ X-NET fieldbus
- ① 512K program capacity

② I/O sequential control

③ Max I/O 544 points

④ USB port

⑤ 4-axis 100KHz pulse output

⑥ Basic instruction 0.02~0.05us

⑦ X-NET fieldbus



- ① 512K program capacity

② I/O sequential control

③ Max I/O 572 points

④ USB port

⑤ 6-axis 100KHz pulse output

⑥ Basic instruction 0.02~0.05us

⑦ X-NET fieldbus
- ① 512K program capacity

② I/O sequential control

③ Max I/O 572 points

④ USB port

⑤ 4-axis 100KHz pulse output

⑥ Basic instruction 0.02~0.05us

⑦ Linear/arc interpolation

⑧ Following function

⑨ X-NET fieldbus
- ① 512K program capacity

② I/O sequential control

③ Max I/O 572 points

④ USB port

⑤ 10-axis 100KHz pulse output

⑥ Basic instruction 0.02~0.05us

⑦ Linear/arc interpolation

⑧ Following function

⑨ X-NET fieldbus
- ① 512K program capacity

② I/O sequential control

③ Max I/O 572 points

④ 2-axis 100KHz pulse output

⑤ Basic instruction 0.02~0.05us

⑥ X-NET motion bus
- ① 1M program capacity

② I/O sequential control

③ Max I/O 572 points

④ 4-axis/10-axis 100KHz pulse output

⑤ Ethernet port

⑥ Basic instruction 0.02~0.05us

⑦ X-NET fieldbus
- ① 1M program capacity

② I/O sequential control

③ Max I/O 572 points

④ 10-axis 100KHz pulse output

⑤ Ethernet port

⑥ Basic instruction 0.02~0.05us

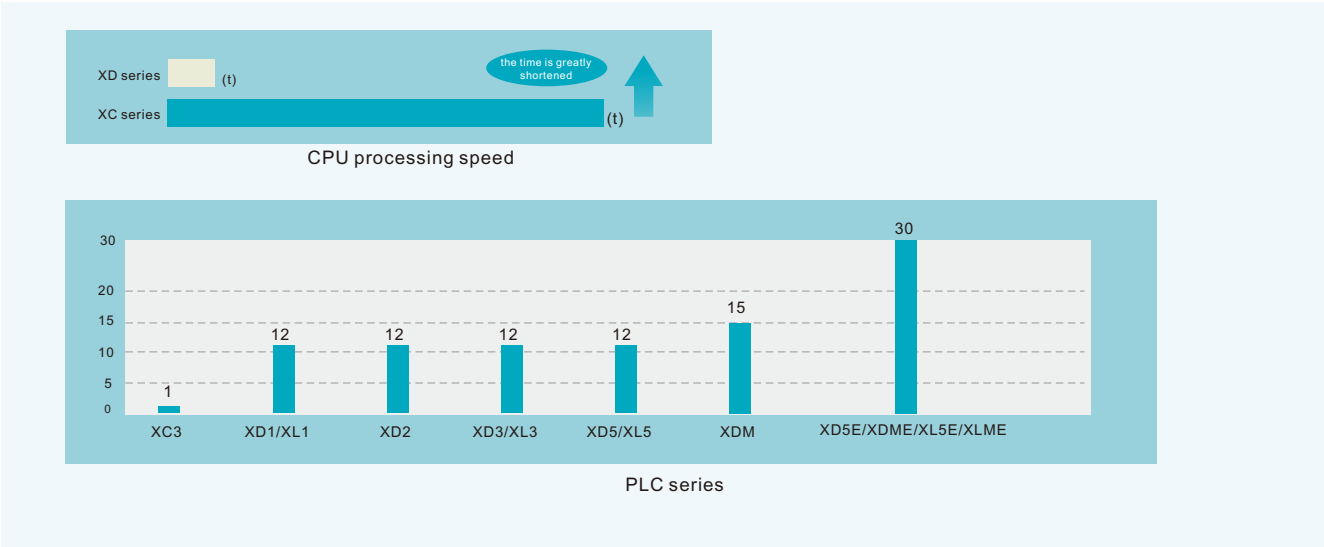
⑦ X-NET fieldbus

⑧ Linear/arc interpolation

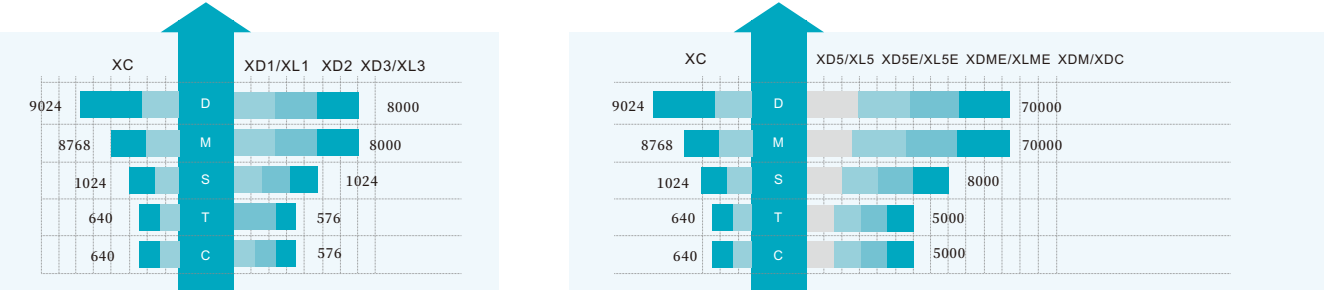
⑨ Following function

High-speed computing

Non-Ethernet PLC basic instruction processing speed is 0.02~0.05us, scanning time 10000 steps 0.5ms, program capacity 256k~512k, the overall processing speed is about 12-15 times faster than that of XC. Ethernet PLC basic instruction processing speed is 0.01~0.03us, scanning time 10000 steps 0.2ms, program capacity 1M, the overall processing speed is about 2-3 times faster than that of XDM.



Expanded software component capacity

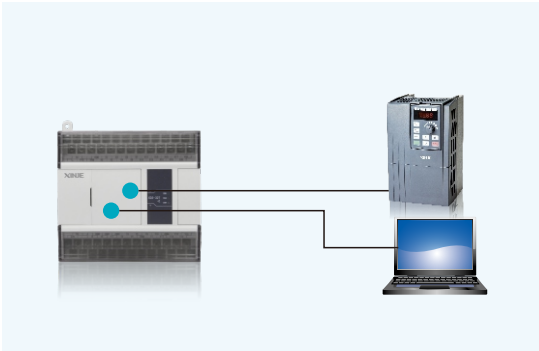


Multiple communication ports

XD series PLC has 5 communication ports at most. XL series PLC has 3 communication ports at most. Support RS232, RS485, motion control bus, X-NET fieldbus, Ethernet and so on, can connect peripheral such as frequency convertor, meter, and create communication network freely.

Serial port (RS232/RS485) specification

Item	Parameter
Communication mode	Half duplex
Baud rate	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: no parity, odd, even (default)
Mode	RTU (default), ASCII, free communication
Station number	1~255 (default is 1)
Send delay time	1~100ms (default is 3ms)
Reply timeout	1~1000ms (default is 300ms)
Retry count	1~20 (default is 30)






Product Introduction

Rich extension

In order to meet the application needs of more occasions, XD series PLC can be equipped with rich extension modules including I/O extension, analog extension, temperature control, BD card, left extension. It can expand up to 10-16 different types of modules, 1~2 BD cards, 1 left extension module.


XD series



[Up to 16 modules can be extended]

Series	Model	Left extension module	BD card	Right extension module
XD1	16/24/32 Points	0	0	0
	16 Points	1	0	0
XD2	24/32 Points	1	1	0
	48/60 Points	1	2	0
XD3	16 Points	1	0	10
	24/32 Points	1	1	10
XD5	48/60 Points	1	2	10
	16 Points	1	0	10
XD5	24/32/24T4/32T4 Points	1	1	16
	48/60/48T6/60T2 Points	1	2	16
XDM	24T4/32T4 Points	1	1	16
	60T4/60T10 Points	1	2	16
XDC	24/32 Points	1	1	16
	48/60 Points	1	2	16
XD5E	30T4 Points	1	1	16
	60T10 Points	1	2	16
XDME	60T10 Points	1	2	16
	16 Points	0	0	0
XL1	16 Points	0	0	0
	16 Points	1	0	10
XL3	16 Points	1	0	10
	32T4 Points	1	0	16
XL5	32T4 Points	1	0	16
	32T4 Points	1	0	16
XLME	32T4 Points	1	0	16

XL series



[Up to 16 modules can be extended]

Right extension module

- I/O extension module
  - ①To extend I/O points, points 8~32, the basic unit can be extended to 512 points at most.
  - ②Output extension module has two output types which are transistor (T) and relay ®.
- Analog and temperature control extension module
  - ①D/A and A/D conversion function. XD/XL series PLC can be applied to temperature, flow, liquid level and other pressure process control systems by extending analog I/O module, temperature control module.
  - ②PID function has more flexible use, higher control accuracy, only four parameters need to be set.
  - ③Each channel of temperature control module has PID and auto-tuning function, it can exchange data from basic unit through instruction FROM and TO.

Left extension module

- Analog and temperature extension module
  - ① D/A, A/D conversion and temperature measurement function.
- Communication module
  - ① PLC can transmit data through wireless WiFi, wireless transparent transmission, RS232, RS485.

Extension BD card

The small size BD card can be installed on the PLC, not occupy extra space, with communication function.

Data exchange speed is faster between expansion module and PLC

Data exchange between extension module and ontology has changed from parallel communication of XC series to SPI serial communication of XD/XL series. The speed of data exchange is faster (2ms/AD).

Soft components are divided more finely

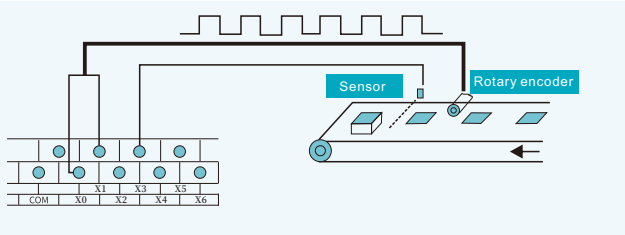
Soft components are divided more finely, make the ladder chart looking more intuitive. Common soft components, power-down memory soft components and special soft components can be distinguished by the writing format of soft components. Single phase and AB phase of high speed counter can be distinguished by the writing format of soft components.

Type	Soft components	Notes	Notes
Bit object	X	Input terminal	
	Y	Output terminal	
	M	Internal coil	
	S	Flow coil	
	SM	Special internal coil	Same to the special auxiliary relay after M8000 in XC PLC
	T	Timer coil	
	ET	Precise timer coil	Same to T600~T618 in XC
	C	Counter coil	
	HM	Power-down memory internal coil	Same to power-down memory internal coil in XC, default is M3000~M7999
	HS	Power-down memory flow coil	Same to power-down memory flow coil in XC, default is S512~S1023
	HT	Power-down memory timer coil	New soft components, even if the PLC is powered off, the value and status of the timer remain unchanged.
	HC	Power-down memory counter coil	Same to power-down memory counter coil in XC, default is C320~C630
	HSC	High speed counter coil	Same to high speed counter coil C600~C634 in XC. XD only has single phase and AB phase mode, AB phase has 2 frequency doubling and 4 frequency doubling
	SEM	Special coil for wait instruction	The wait coil can be set freely in XC, XD only can be SEM coil
Word object	D	Register	
	TD	Timer register	
	ETD	Precise timer register	
	CD	Counter register	
	SD	Special register	
	ID	Analog collecting register	
	QD	Analog output register	
	HD	Power-down memory register	
	HTD	Power-down memory timer register	
	HCD	Power-down memory counter register	
	HSCD	High speed counter register	
	HSD	Power-down memory special register	
	FLASH	Flash register	
	FD	Flash register	
	SFD	Special flash register	To protect user's intellectual property rights

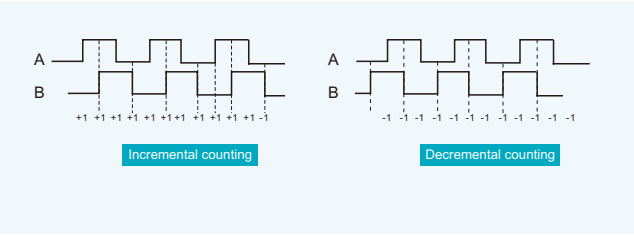
High speed counter

XD/XL series PLC can be equipped with 2-10 channels, 2-phase and 32-bit high-speed counter, which can be directly connected with rotary encoder. By selecting different counters, single-phase counting (incremental mode, max frequency 80Khz) and AB phase counting (2 frequency doubling and 4 frequency doubling, max frequency 50KHz) can be performed. The details of PLC high speed counter please refer to appendix high speed counter configuration table.

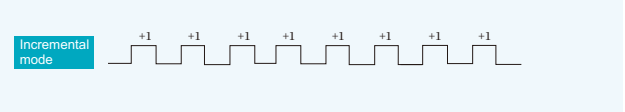
Counting input



2 frequency doubling mode

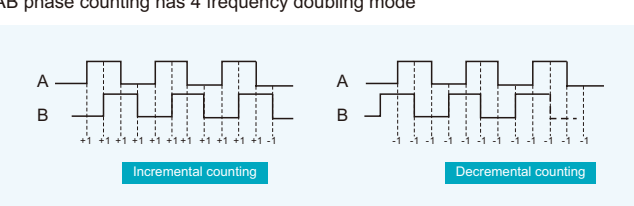


Multiple counting modes



4 frequency doubling mode

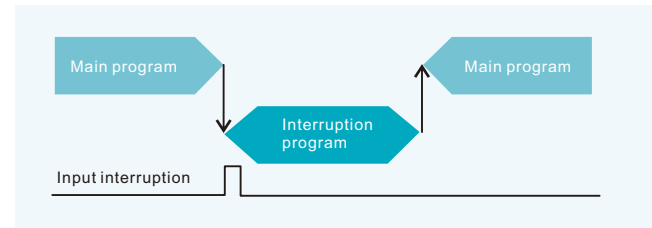
AB phase counting has 4 frequency doubling mode



## Product Introduction

### Interruption function

XD/XL series PLC all have interruption function. Interruption can be divided into external interruption, timing interruption, 100-segment high-speed counting interruption, electronic cam function and 100-segment pulse interruption. Some special operations can be realized by calling interruption, which is not affected by the scanning cycle of PLC.



#### Timing interruption

① In the case of long execution cycle of the main program, interruption is very practical to deal with specific programs, or to execute specific programs at intervals in sequential scanning. Not affected by the scanning cycle of PLC, every Nms executes timing interruption subroutine.

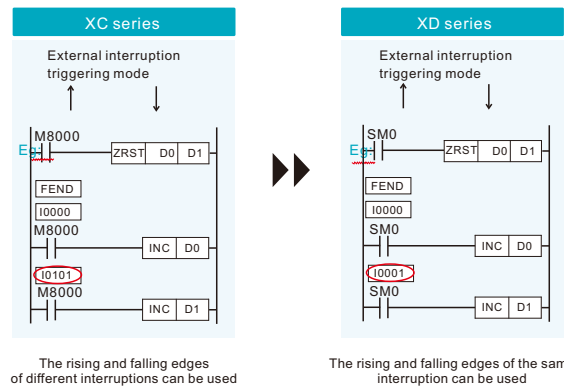
② XD/XL series PLC has at least 20-channel timing interruption, 2-times of XC series.

#### External interruption

① The input terminal can be used as external interruption input, each input terminal is corresponding to one external interruption, is triggered at the rising or falling edge.

② XD/XL series external interruption terminals are more than that of XC series.

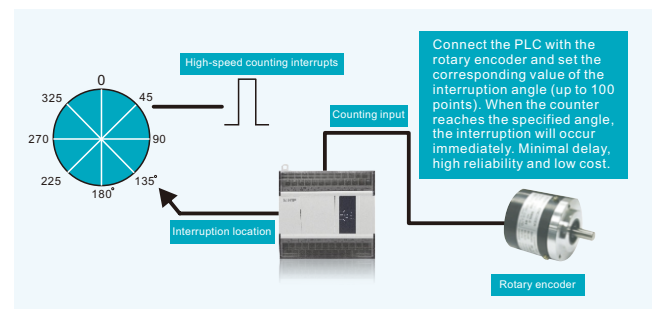
③ The rising edge and falling edge of XD/XL series external interruption can be used at the same time.



#### 100-segment high speed counting interruption

① High speed pulse counting interruption, good real-time ability.

② XD/XL series high speed counter has 100-segment 32-bit preset value, the interruption will be generated when the counting difference value of each segment is equal to preset value.

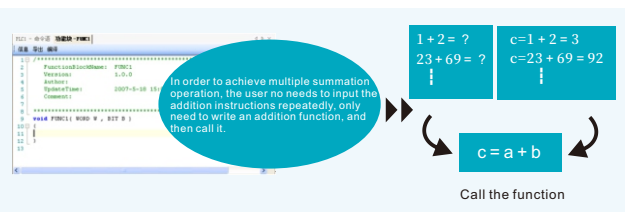
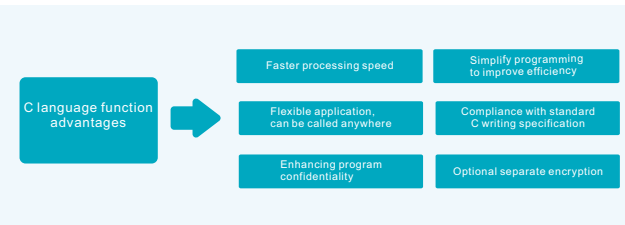


#### 100-segment pulse interruption

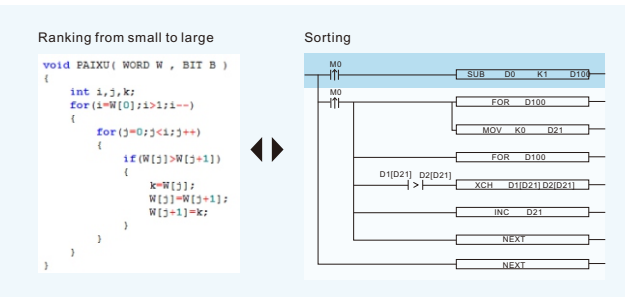
Multi-segment pulse output instruction PLSR can set 100 segments, an interrupt occurs after each pulse is executed.

### C language programming function

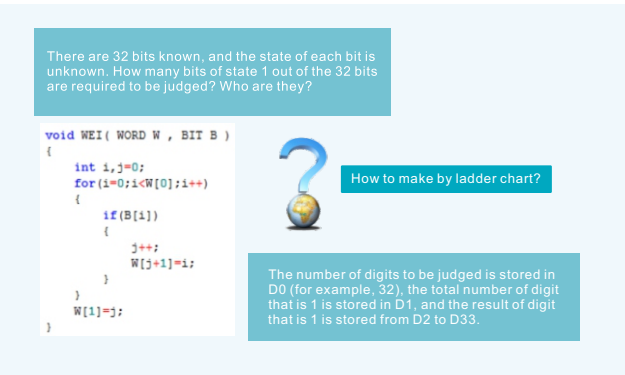
Program confidentiality is better, when the user edits the function block, the module can be directly invoked where needed, and internal program encryption is not visible. Support richer arithmetic functions, including some supported by C language. Compared with XC series, XD/XL series not only supports local variables, but also global variables. It saves internal space, reduces workload and has high programming efficiency.



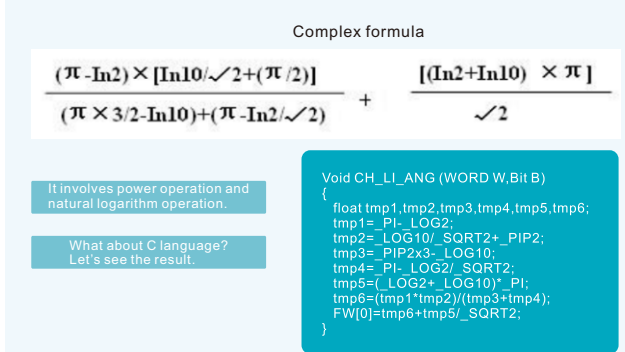
#### C language example one



#### C language example two

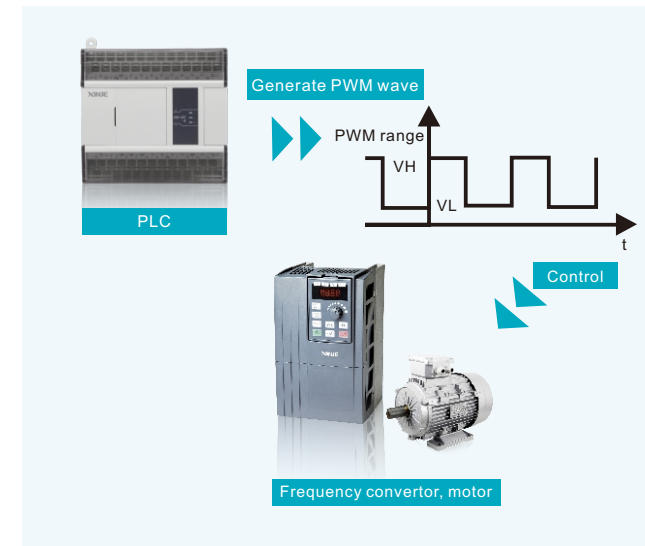


#### C language example three



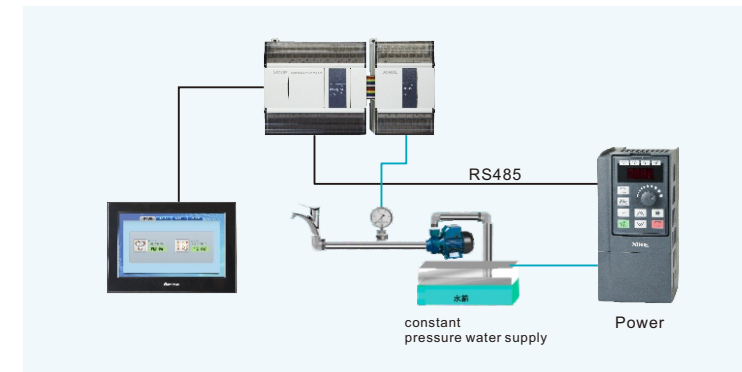
### Pulse width modulation

Pulse width modulation (PWM) can be realized by PWM instruction. The precision of pulse width subdivision is 128 times higher than that of XC series, up to 1/65536. With this function, the frequency converter and DC motor can be controlled.



### PID control

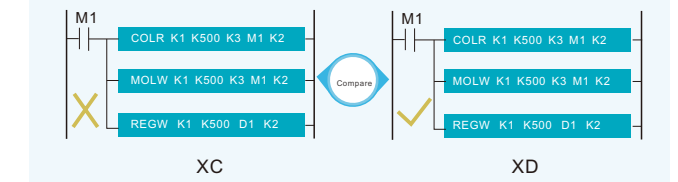
XD/XL series PLC supports PID control instructions and provides auto-tuning function, which makes it more flexible to use. Users can get the best sampling time and PID parameters by auto-tuning, so as to improve the control accuracy. There are two control methods, step response method and critical oscillation method, which can be applied in more applications.



## Programmable logic controller **PLC**

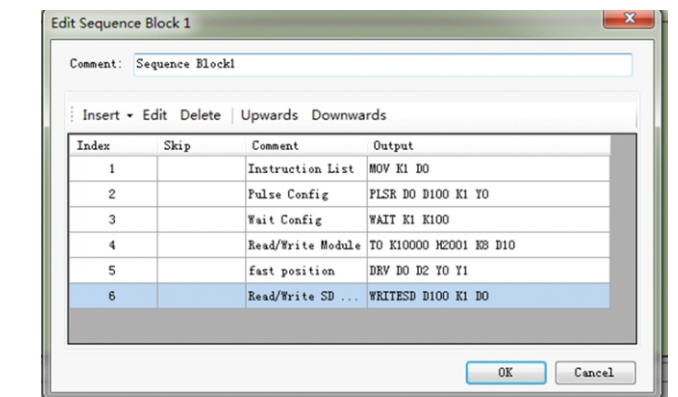
### Optimized Modbus instructions

In the main program, multiple Modbus communication instructions can be written together and triggered by the same condition at the same time. The PLC will queue the Modbus communication requests according to the protocol station, so that the half-duplex characteristics of Modbus will not lead to errors in the simultaneous execution of multiple instructions.



### Sequence function block

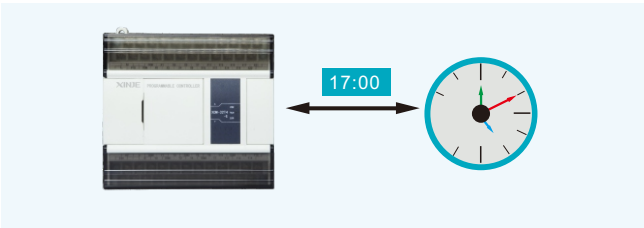
In the Sequence function block, all programs are executed sequentially, and the execution of the next instruction begins only after the first instruction has been executed. Sequence function blocks can be used to optimize the ladder chart.



Product Introduction

Real-time clock

XD/XL series PLC all models have clock inside.  
Built-in clock, Lithium battery power-off memory.  
XD-CLOCK-BD can be used as high precision clock.  
Clock protection function: when the user encrypted downloads program in advanced mode, it will not be possible to modify the PLC clock through communication.



Frequency measurement

32-bit instruction FRQM can measure the frequency.



Self-diagnostic function

Power-on self-check, monitor timer, grammar check

Precise timing

32-bit instruction STR can precise timing.  
The precise timer will produce a corresponding interrupt flag when it reaches the timer value. It can execute the interrupt subroutine. Each precise timer has a corresponding interrupt flag.  
Precise timer is a 32-bit 1ms timer.

Small shape, more convenient to install

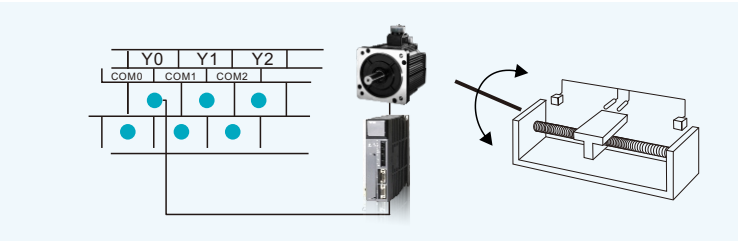
Compact structure, improve utilization, two installation options.  
XD/XL series lithium batteries can be easily replaced without disassembling the PLC.

Password protection

6-bit ASCII increase program security.  
FS soft component can protect user's intellectual property rights.

Up to 100KHz pulse output, up to 10 channels

XD2/XD3/XL3/XDC have 2-channel pulse output, XD5 has 2~6 channels pulse output, XL5/XL5E/XLME have 4-channel pulse output, XDM/XD5E have 4~10 channels pulse output, XDME series has 10-channel pulse output. The output frequency can reach 100KHz by using different instructions. It needs to use transistor output PLC for pulse output such as XD3-16T-E.



Series	Model	Pulse output channel	Pulse output terminal
XD1 series	16T/24T/32T	0	x
XD2 series	Transistor output model	2	Y0/Y1
XD3 series	Transistor output model	2	Y0/Y1
XD5 series	16T/24T/32T/48T/60T	2	Y0/Y1
	24T4/32T4	4	Y0/Y1/Y2/Y3
	48T6/60T6	6	Y0/Y1/Y2/Y3/Y4/Y5
XDM series	24T4/32T4/60T4	4	Y0/Y1/Y2/Y3
	60T10	10	Y0/Y1/Y2/Y3/Y4/Y5/Y6/Y7/Y10/Y11
XDC series	24T/32T	2	Y0/Y1
	48T/60T	2	Y0/Y1
XD5E series	30T4	4	Y0/Y1/Y2/Y3
	60T10	10	Y0/Y1/Y2/Y3/Y4/Y5/Y6/Y7/Y10/Y11
XDME series	60T10	10	Y0/Y1/Y2/Y3/Y4/Y5/Y6/Y7/Y10/Y11
XL1 series	16T	0	x
XL3 series	16T	2	Y0/Y1
XL5 series	32T4	4	Y0/Y1/Y2/Y3
XL5E series	32T4	4	Y0/Y1/Y2/Y3
XLME series	32T4	4	Y0/Y1/Y2/Y3

Powerful motion control function

Pulse function	Multifunctional instruction PLSR, rich back-to-origin modes
Interpolation function	2-axis linkage (linear/arc interpolation) (only XDM, XDME, XLME, XG1, XG2 series PLC support this function)
X-NET motion bus	Support 1 channel 20-axis X-NET motion bus (only XDC, XG1 series PLC support)

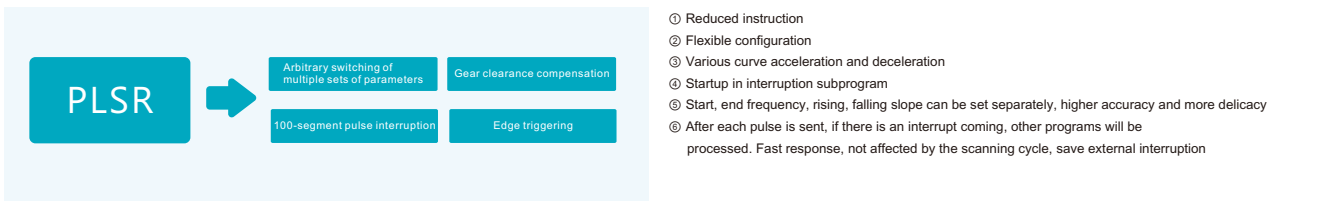
Pulse function

Multi-axis independent control diagram



Powerful instruction function

XD/XL series PLC solve the disadvantage of XC series of pulse instructions with single function and many instructions. It combines the functions of PLSR and PTO of XC series PLC to make the pulse function more compact and powerful.



- ① Reduced instruction
- ② Flexible configuration
- ③ Various curve acceleration and deceleration
- ④ Startup in interruption subprogram
- ⑤ Start, end frequency, rising, falling slope can be set separately, higher accuracy and more delicacy
- ⑥ After each pulse is sent, if there is an interrupt coming, other programs will be processed. Fast response, not affected by the scanning cycle, save external interruption

Application

Capping machine

Automatic capping machine has beautiful appearance, dexterity, fast capping speed and high qualified rate. It is suitable for capping different bottles in food, pharmaceutical, daily chemical, pesticide, cosmetics and other industries. The machine is innovative in design, intelligent control of mechanical torque, convenient in operation and adjustment. Operators only need to put the cap on the mouth of the bottle. During the forward movement of the bottle, the cap is tightened by three groups of gears automatically. It can be used in stand-alone production, and it is also an ideal model for connecting production.

Glass grinder

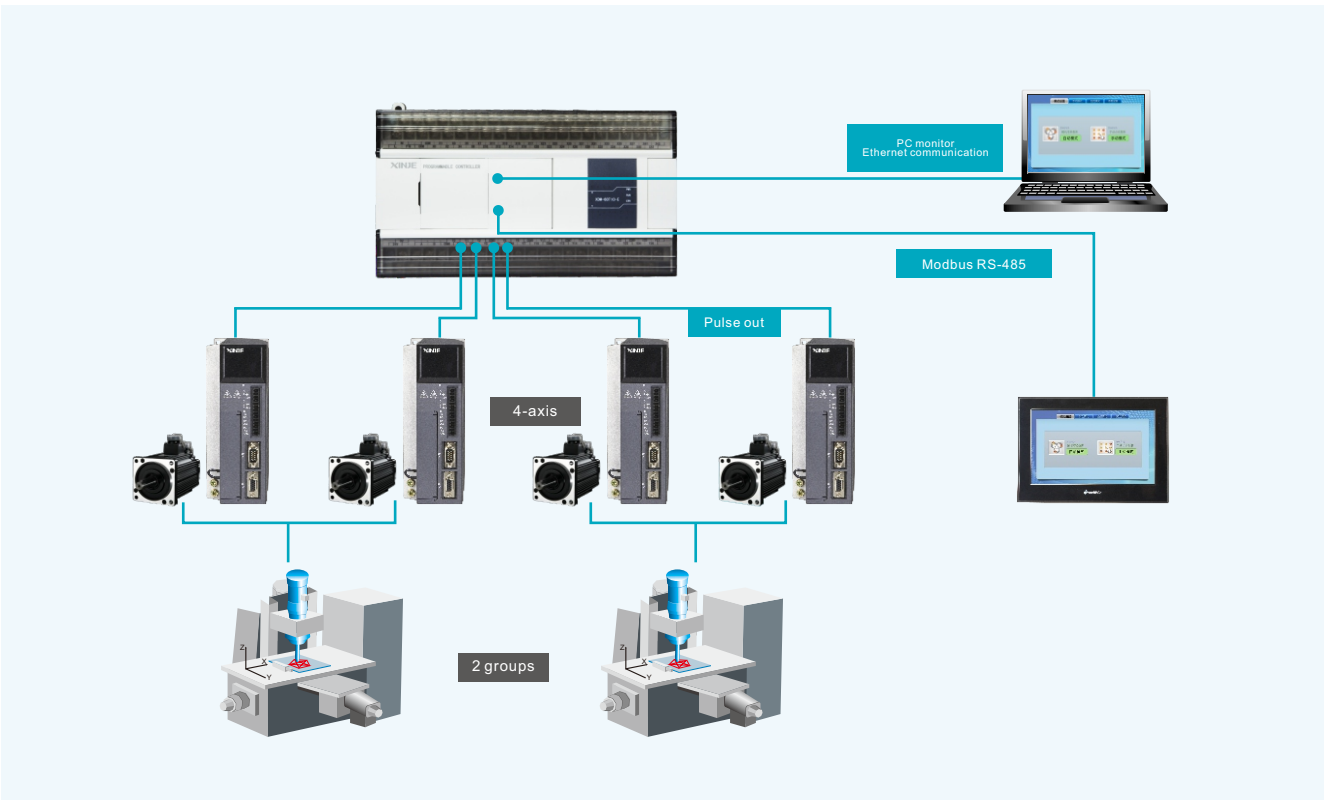
The automatic grinding of glass cup mouth can realize simultaneous processing of multiple glasses. The servo system can realize the advantages of high grinding accuracy and high product consistency and can rapidly improve production efficiency.



Product Introduction

Interpolation function

•Multi-Axis linkage motion control diagram



•Application

**Application of sealant**

The diagram shows a sealant application machine with X, Y, and Z axes. The machine is used for applying sealant to a product. The text describes the machine's capabilities and its use in various applications.

The coating machine specially controls the fluid sealant. It can coat the fluid droplets on the product surface or internal, accurate positioning, accurate sealant control, no wire drawing, no leakage, no sealant dropping. Mainly used for injection, coating, dripping to the precise position of each product in the product process, can be used to achieve dotting, drawing lines, circle or arc. It can replace manual work and realize mechanized production. It can be operated by a single machine. It is simple, convenient, high-speed and accurate.

**Edge grinding machine**

The diagram shows an edge grinding machine. The text describes its function and the types of grinding it can perform.

Through linear arc interpolation and other motion control functions, the edge grinding machine can realize the grinding operation of various shapes. It has the characteristics of rough grinding, fine grinding and polishing at one time. It is suitable for grinding inclined surfaces and straight edges of metal belts of different sizes and thicknesses. It is equipped with spare grinding wheels. It has the advantages of long service life, regular shape and high efficiency.

**Pouring machine**

The diagram shows a pouring machine. The text describes its function and the types of pouring it can perform.

By heating and melting the pouring material, and then through linear arc interpolation and other motion control functions, the pouring machine realizes high-precision path positioning control of two or three axes. The melting material is quantitatively encapsulated and coated on the product to achieve the purpose of adhesion and sealing.

**Glass cutting machine**

The diagram shows a glass cutting machine. The text describes its function and the types of glass it can cut.

Glass cutting machine through linear arc interpolation and other motion control functions, to achieve two or three axes of high-precision path positioning control, the laser cutting machine which processing organic glass has fast speed, high accuracy, accurate positioning. It can produce gifts, panel lens cases, model toys, advertising light boxes, signboard display supplies, packaging boxes, etc.

X-NET motion bus

•X-NET motion control bus

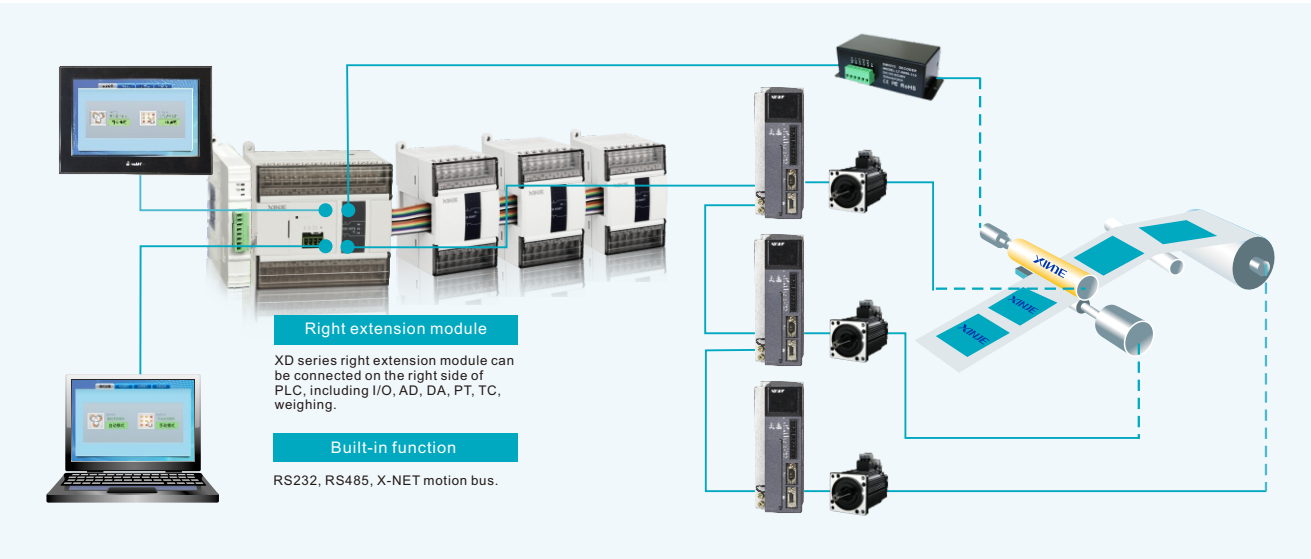
Motion bus control replaces the traditional pulse control mode, which makes the whole system perform faster, more reliable and more stable. At the same time, it makes the complex wiring simpler and improves equipment performance. It can control 20-axis synchronous motion.

- ① XDC series PLC motion control instructions are easy to learn and use.
- ② The synchronization period can reach 10-axis 4ms and 4-axis 2ms.
- ③ Advanced arithmetic operation is adopted, and the control precision is higher.

X-NET motion bus parts		
Model	Name	Feature
XD-NE-BD	PLC communication extension card	Photoelectric isolation, with terminal resistance
JA-NE-L	Servo fieldbus connection card	Easy to wiring and operate



•Motion control diagram



•Application

**CNC lathes**

The diagram shows a CNC lathe. The text describes its function and the types of parts it can machine.

CNC machine tool is the abbreviation of digital control machine tool. It is an automatic machine tool equipped with program control system. The control system can logically process programs with control coding or other symbolic instructions, decode them, use coded number to display, and input them into the NC device through the information carrier. After calculation and processing, the NC device sends out various control signals to control the movement of the machine tool, and automatically processes the parts according to the shape and size required by the drawings. CNC machine tool is a flexible and efficient automatic machine tool, which can solve the problems of complex, precise, small batch and multi-variety parts processing. It represents the development direction of modern machine tool control technology and is a typical mechatronic product.

**Mechanical arm**

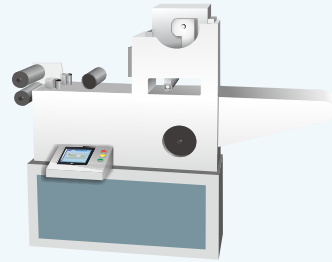
The diagram shows a mechanical arm. The text describes its function and the types of tasks it can perform.

Robot arm is the most widely used automatic mechanical device in the field of robotics. It can be seen in the fields of industrial manufacturing, medical treatment, entertainment services, military, semiconductor manufacturing and space exploration. Although they have different shapes, they all have a common characteristic, that is, they can accept instructions and accurately locate a point in three-dimensional (or two-dimensional) space for operation.

Product Introduction

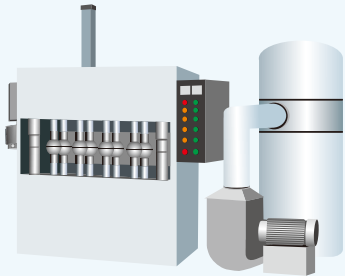
High speed cutting machine

The high-speed cutting machine combines the ultrasonic cutting technology with the traditional cutting technology. When the ultrasonic generator works, the ultrasonic energy is transmitted to the welding head through the ultrasonic transducer, which produces violent vibration and friction with the tool mould, so as to achieve the shearing effect. Shearing products have the advantages of beauty, firmness and high production efficiency.



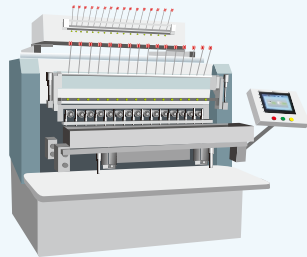
Ball grinder

The grinding ball machine uses multi-axis grinding wheels to grind artificial or natural crystals. At most, it can run more than twenty shafts at the same time, so as to produce crystalline products with different shapes. The more than twenty shafts can be controlled by bus, which can realize multi-axis control in a simple and economical way.



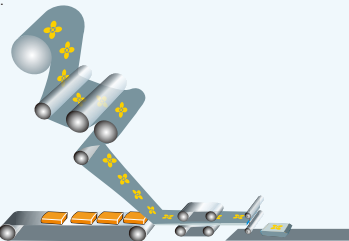
16-axis high-speed winder

High-speed winding machine is a device that twists linear objects onto specific workpieces. It is usually used for copper wire winding. In the past, high-speed winding was realized by variable-frequency motor combined with tension control system. With the increasing demand for efficiency in modern industry, the original variable-frequency motor can be replaced by servo to achieve high-speed and efficient production.



Three servo packing machine

Packaging machine can complete all or part of the product and commodity packaging process. Packaging process includes filling, packaging, sealing and other major processes, as well as its related before and after processes, such as cleaning, stacking and disassembly. In addition, packaging also includes measurement or stamping on the package. The use of mechanical packaging products can improve productivity, reduce labor intensity, meet the needs of large-scale production, and meet the requirements of cleanliness and hygiene.



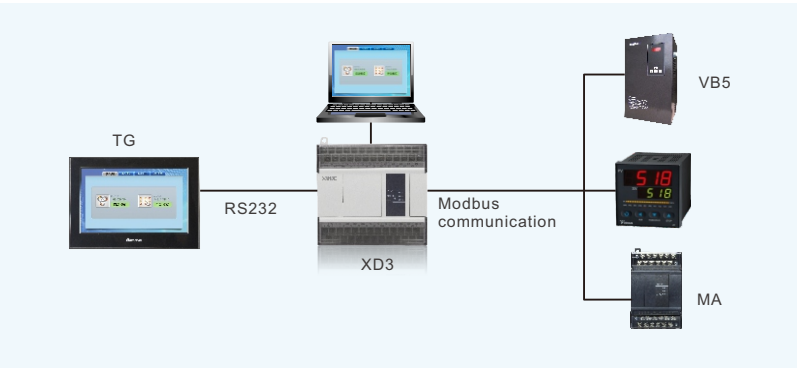
Powerful communication and networking functions

The communication port provided by XD/XL series PLC can meet the needs of most communication and network.

■Modbus networking	Supports (RTU and ASCII) protocol master and slave mode.
■X-NET networking	A single network can connect up to 32 nodes at the same time, and the network can communicate with each other. X-NET fieldbus belongs to token network structure, and its speed can reach 3Mbps.
■Ethernet communication	Supports remote monitoring and local network monitoring as well as communication between modbus-tcp, TCP/IP, free format, UDP and other devices. It can realize the functions of PLC on-line programming, real-time monitoring and data uploading downloading.

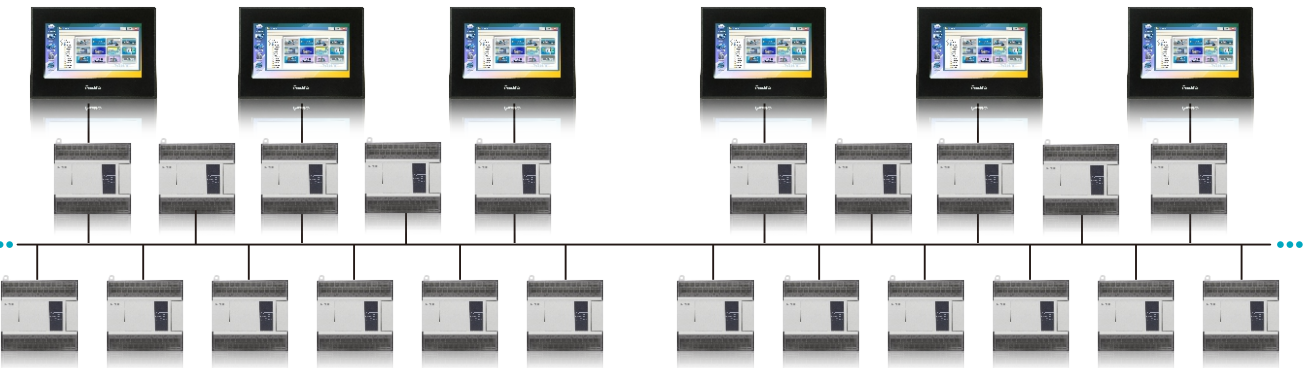
Modbus networking

XD/XL series PLC supports Modbus (RTU/ASCII) protocol communication master-slave mode. When PLC is used as master station equipment, it sends requests to other slave devices through Modbus instructions, so that other devices can respond. As a slave station equipment, PLC can only respond to the requirements of other master stations.



X-NET networking

- X-NET fieldbus
- Fieldbus control replaces the traditional Modbus communication and free communication, which makes the whole system perform faster, more reliable and more stable. At the same time, it makes complex wiring simpler and improves project performance. A single network can connect up to 32 nodes at the same time, and the network can communicate with each other.
- ① XD/XL series PLC support X-NET fieldbus.
  - ② X-NET fieldbus is token network structure.
  - ③ In the network, any node can actively send information to other nodes after obtaining the token.
  - ④ The speed can up to 3Mbps.



**Network mode**

For workshop monitoring network, it is a token structure, real-time multi-master network. It is a multi-master system. Multiple control, configuration or vision system are interoperable on a bus. Any node in the network has access rights (tokens), and can send and receive data without external requests.

**Communication speed and distance**

The field environment determines the communication speed and medium of fieldbus. Fieldbus uses electric signal to transmit data, which has certain requirements for communication distance. If xinje cable is used, the distance can reach 5m when the speed is 3 Mbps, 300m when the speed is 192 kbps, and the communication speed can reach 600bit to 3 Mbit.

**Isolation**

The electric signal and equipment of X-NET fieldbus are electrically isolated. Fieldbus cables are distributed in every corner of the workshop. Once high voltage power is connected in series, the bus transceiver of all equipment in the whole network will be damaged. If there is no isolation, the high voltage signal will continue to damage other circuits inside the equipment, leading to serious consequences.

**Intelligence and autonomy**

X-NET fieldbus equipment can process all kinds of parameters, operation status and fault information, and has high intelligence. It can complete the basic function of automatic control only by field equipment, and can diagnose the operation status of equipment at any time, which greatly improves the reliability of the whole system. As field control equipment often has self-diagnosis function, and can send fault information to control room, which reduces maintenance workload, users can inquire about the operation status of all equipment, diagnose and maintain information, so as to quickly analyze the causes of failure and troubleshooting, shorten the time of shutdown maintenance, and ultimately achieve the purpose of increasing profits.

**Improve the accuracy and reliability of the system**

Compared with analog signals, the intelligent and digital fieldbus equipment fundamentally improves the accuracy of measurement and reduces transmission errors. At the same time, due to the simplification of the system structure, the reduction of equipment and connection, the enhancement of the internal functions of field instruments, the round trip transmission of signals is reduced, and the reliability of the system is improved. In addition, due to the standardization and functional modularization of equipment, it also has the advantages of simple design and easy reconfiguration.

**Strong system expansibility**

Bus can automatically identify the increase and decrease of equipment, no need to install new cables, no need to power off.

**Openness of system**

X-NET fieldbus is not only added to XD series PLC, but also to TN series HMI and bus type servo driver. It can satisfy all kinds of needs of customers in most occasions. In the future, the company is also committed to cooperating with other instrument manufacturers, so that the equipment of each manufacturer can be interconnected and information exchanged, and has more supporting products.

**Shield**

The shielded cable of X-NET fieldbus must be well grounded at one point. If the high frequency interference is serious, it can be grounded by multi-point capacitance, and multi-point direct grounding is not allowed to avoid the generation of ground circuit current. Shielded double-core cable can cancel shielding, which depends on environmental conditions, but shielded cables should be used in high electromagnetic emission environment (such as automobile manufacturing), shielding can improve electromagnetic compatibility. If shielded braided wire and shielded foil are used, they should be connected at both ends and grounded, and covered with shielded wire of as large area as possible to maintain good communication ability. It is also suggested that the data cable must be isolated from the high voltage cable.

**Multiple communication stations**

The maximum number of nodes in an X-NET fieldbus system can be 127.

**Save installation cost**

The connection of fieldbus system is very simple. As the twisted pairs or cable can be connected with multiple devices, the consumption of cables, terminals, slot boxes and bridge frames is greatly reduced. The workload of connection design and joint alignment is also greatly reduced. It is convenient to save installation costs, maintenance costs, it supports linear and ring topology structure, and the system structure is simple, which reduces the engineering design, drawing quantity, engineering time for laying cables and hardware management documents.

**Cable select**

In the process of transmission, the influence of surrounding electromagnetic environment is unavoidable. Xinje special cable adopts shielded double core cable or optical fiber. Only when the cable is used correctly can the specified speed and transmission distance be achieved. (It is recommended to use multi-strand copper core shielding wires over 0.3mm2).

**Connector**

PLC terminal (A, B terminals), BD card XD-NE-BD and XD-NO-BD make the connection more convenient and efficient, effectively improve work efficiency, and easy to maintenance.

**Terminal matching**

X-NET fieldbus signal has reflection phenomenon like all electromagnetic wave signals. Resistors (120 ohms) should be matched at two terminals of each network of the bus. The first function is to absorb radiation, and the second function is to achieve the correct voltage at both ends of the bus to ensure communication.

**Outstanding cost-effective**

In today's industrial control industry, where fieldbus control is involved, a large amount of money is needed. X-NET fieldbus does not need any additional investment. It is directly configured in all products of Xinje. Customers can use this function directly, and the cost-effective ratio is higher.

## Product Introduction

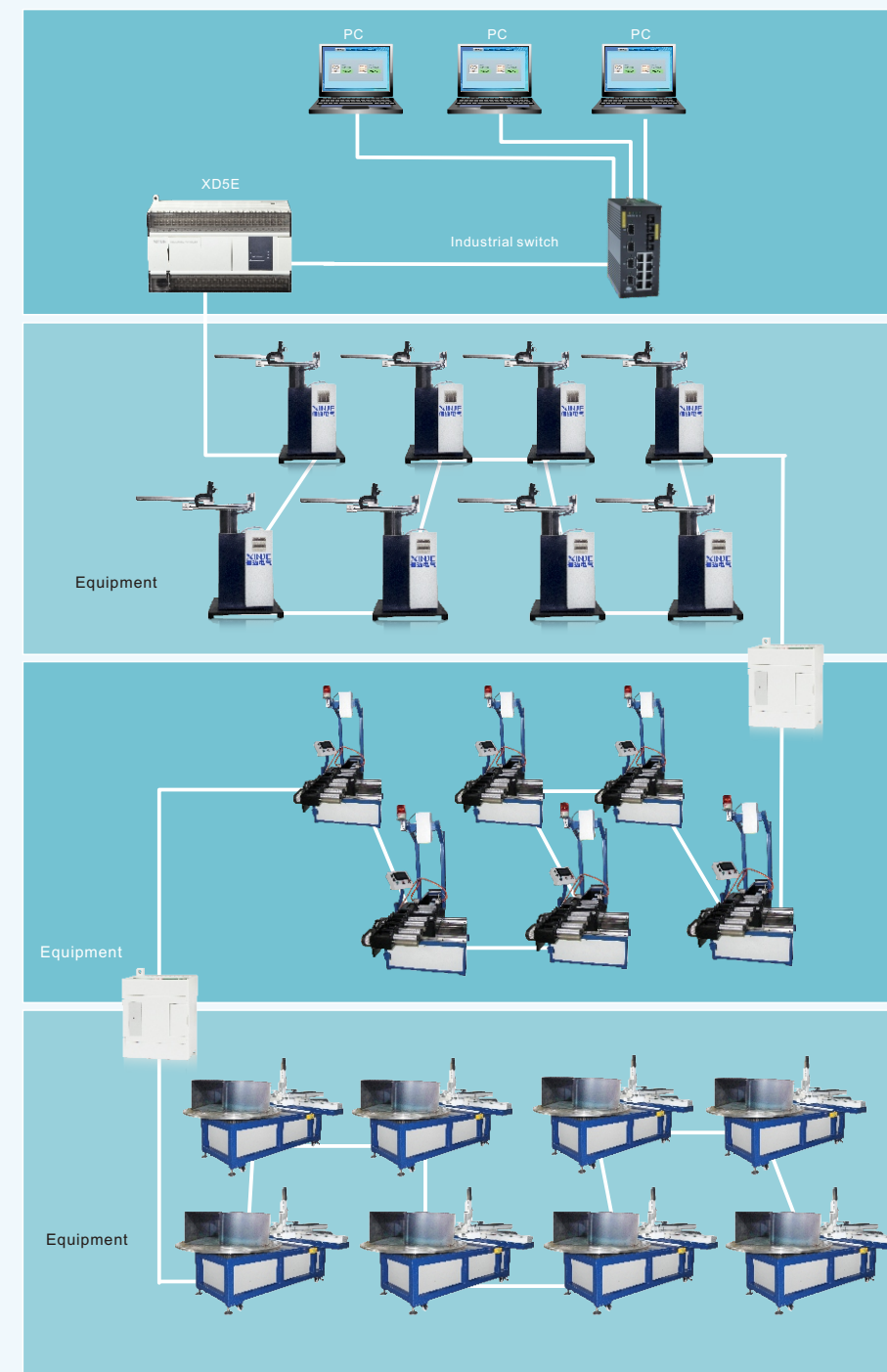
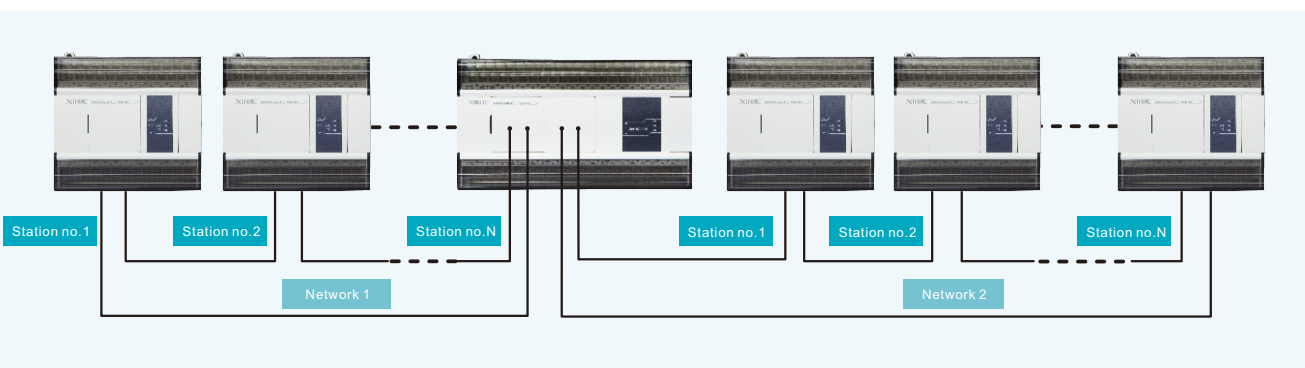
### • Flexible network topology

Support a variety of network topology forms, including ring topology and multi-network structure.

#### Ring topology

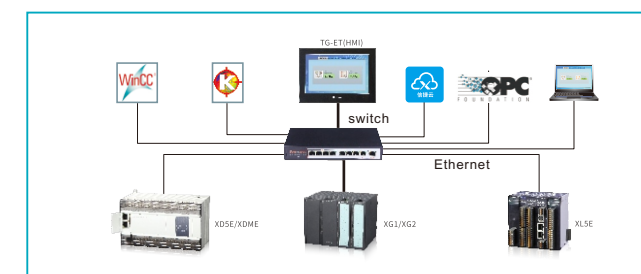


#### Multi-network structure



### Ethernet communication

Ethernet communication is mainly used in XD5E/XDME/XL5E/XLME series PLC, which is faster and more stable than USB mode. In the case of multiple PLC communication, users can communicate with any PLC in the field by only one switch. In addition to its application in local area network, Ethernet also supports the functions of remote searching, monitoring operation and uploading and downloading of PLC through the Internet.





Xinje XL/XD series PLC supports X-NET fieldbus. It has the advantages of intellectualization, digitalization and stability. The highest speed can up to 3M. It has the advantages of simple design, convenient wiring and easy reconfiguration.

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

Support standard Modbus communication, easy to integration with various brand devices, support free communication, and flexible cooperation with the actual situation.

Using Modbus-TCP protocol, applied to automation system with XD series PLC to realize wireless connection between automation system, GPRS network and GSM network, especially fit for distributed system, remote monitoring and other application occasions.

WIFI refers to the establishment of a WIFI network, other nodes access network to achieve high-speed wireless monitoring through the search of WIFI network. 433M refers to greatly improving of its penetration and transmission distance by the reduction of frequency, in order to obtain better wireless communication.

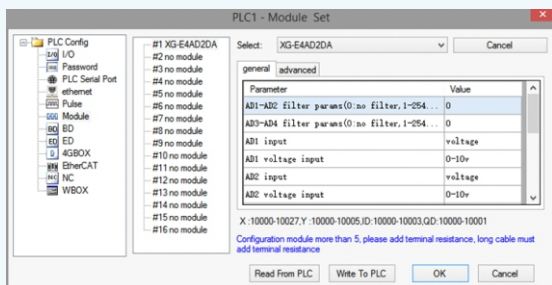
Support Modbus-TCP protocol, with the interconnection of the automation equipment through the Ethernet, the control system of the Ethernet can be easily constructed, which breaks the isolated state of the traditional industrial automation, has better communication performance and achieves a wide range of open network.

Support Ethernet communication protocol, automation equipment can easily form an Ethernet control system through the interconnection of Ethernet. It breaks the isolated state of the traditional industrial automation, has higher communication performance, and achieves a wide range of open network.

# XD/XG/XL Series PLC Programming Tool

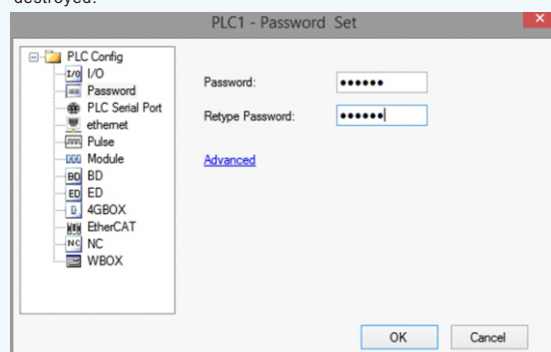
Support XD/XG/XL series PLC products

XDPpro software is suitable for XD/XG/XL series PLC, it can make program, configure the network module, extension module, extension BD card and left extension module.

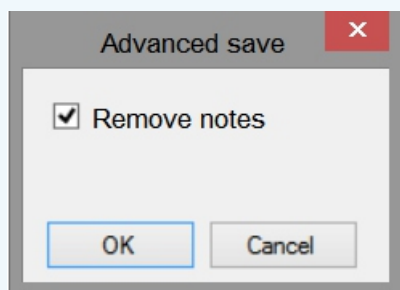


## More powerful password function

Password function can not only restrict the upload of PLC program and protect the intellectual property rights of users, but also protect the download of the program from being destroyed.

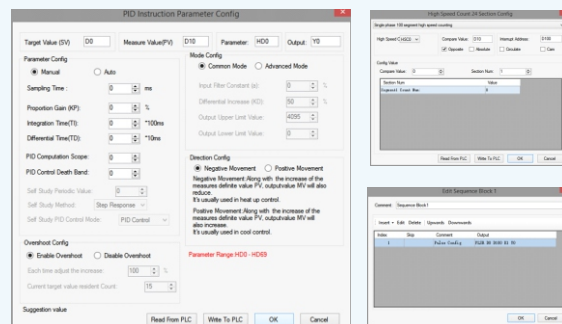


Advanced save function can encrypt program notes.

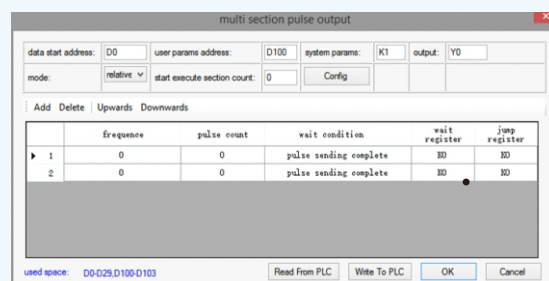


## Panel configuration

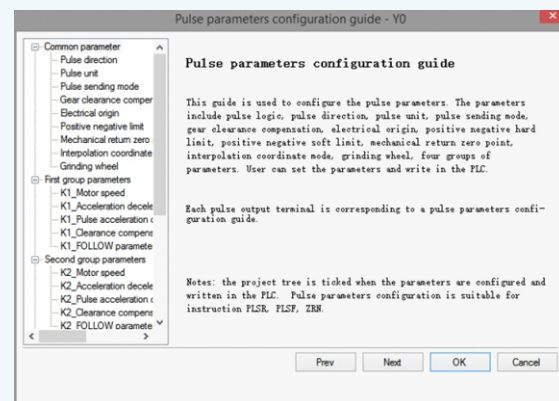
- It reduces the difficulty of making complex instructions.  
XDPpro software provides simple and easy operation instruction editing interface for complicated instructions such as PID, 100-segment high speed counting interruption.



- Pulse instruction configuration
- XDPpro software added the instruction PLSR pulse configuration interface, all the parameters can be set through the interface.

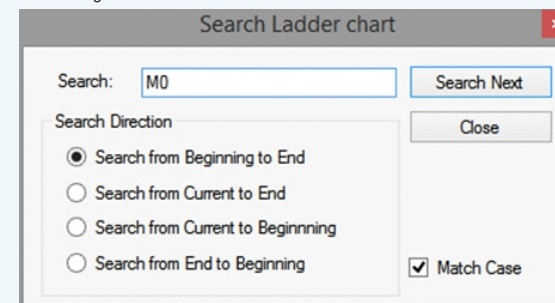


- Pulse configuration wizard
- The Pulse configuration wizard helps users to set parameters better.



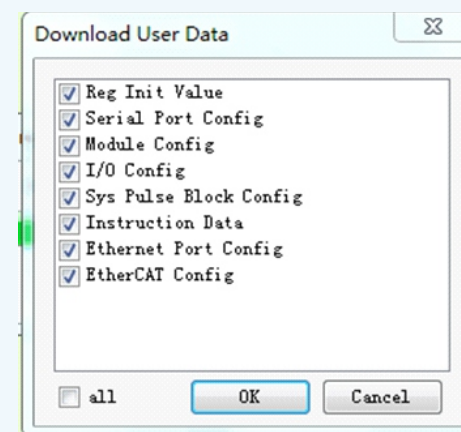
## Convenient way to find soft components

Put the mouse on the soft component, press Ctrl+F to show the searching window.



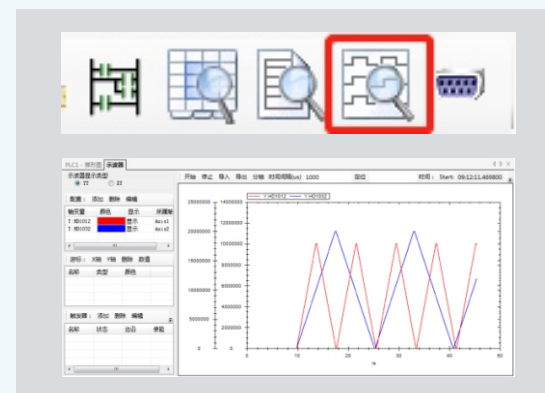
## Rich download function

Support online download program, data will not be deleted, output point will not be shut down, after downloading, PLC will automatically run. It is free to choose which data to download.



## Oscilloscope function

The oscilloscope function can be used only when EtherCAT slave station is connected. It can accurately and intuitively observe the waveform of different signal amplitudes varying with time, which is convenient for monitoring and analysis.

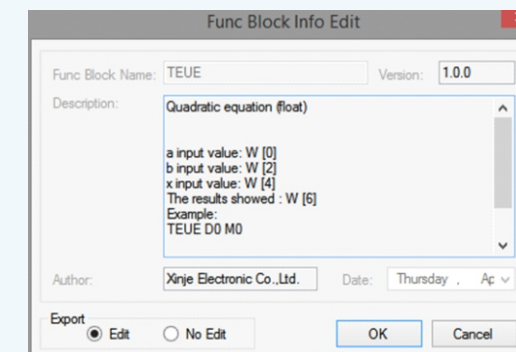


### Computing program occupied space

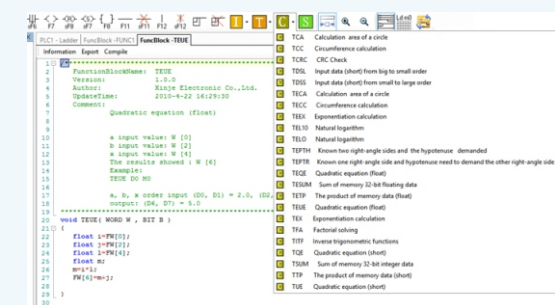
Through this function, programmers can accurately grasp the use of program capacity in PLC.

Strong language editing ability

- Supports simple and easy-to-understand ladder chart and instructions, which can be switched at any time. Users choose them according to their programming habits.
- C program can be edited in XDPpro software directly, no need to use special C
- Function blocks can be imported and exported freely, supports active code and passive code. After passive code is exported, the program in function blocks will not be read, and the confidentiality is better.

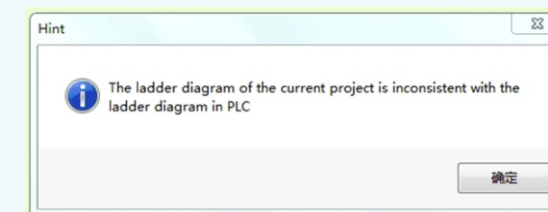


- Add C language function library, containing more C language instructions, can be directly invoked.



## Automatic comparing ladder chart

It can compare the current program of the host computer with the ladder chart in the PLC. If inconsistency occurs, an error is prompted.



## Software serial port configuration

- COM1 to COM3 can be configured.
- Modbus-RTU or Modbus-ASCII can be chosen
- Support free communication



Product Introduction

XD/XL Series Product List

AC power supply

DC power supply

BD card

Input points

Output points

Clock

Transistor output

Relay output

Transistor and relay output

RS232

XNET fieldbus

XNET motion bus

EtherCAT motion bus

NPN

PNP

Pulse input

Pulse output

Right extension module

Left extension module

Timing interruption

External interruption

XL1 series PLC Cost-effective slim type PLC Control points: 16

XL series cost-effective models, suitable for small installation space in general applications, simple functions, can carry out logical control, data operations and other general functions.

- ① Use 32-bit CPU
- ② Compact shape, stronger computing ability
- ③ Built-in USB port, faster communication speed and downloading time
- ④ Program capacity: 256KB
- ⑤ Basic instruction: 0.02~0.05us
- ⑥ Powerful password function, protecting user's intellectual property rights

Model	Specification
XL1-16T-U	



XL3 series PLC Standard slim type PLC Control points: 16

In addition to the general data processing functions, the standard XL series model also has the functions of high-speed counting, high-speed pulse output, standard clock, communication (modbus RTU/ASCII), PWM pulse width modulation, frequency measurement, accurate timing, interruption, etc. Its processing speed is faster, and it supports right expansion module (10), left expansion module (1), which can meet various needs.

- ① Use 32-bit CPU
- ② Compact shape, stronger motion function
- ③ Built-in USB port, faster communication speed and downloading time
- ④ Program capacity: 256KB
- ⑤ CPU processing speed is 12 times of XC3
- ⑥ Basic instruction: 0.02~0.05us
- ⑦ 2-axis 100KHz pulse output
- ⑧ Powerful password function, protecting user's intellectual property rights

Model	Specification
XL3-16T	
XL3-16R	



XL5 series PLC Enhanced slim type PLC Control points: 32

In addition to the general data processing functions, it also has the functions of high-speed counting, high-speed pulse output, standard clock, communication (modbus RTU/ASCII), PWM pulse width modulation, frequency measurement, accurate timing, interruption, etc. Its processing speed is faster, and it supports right expansion module (16), left expansion module (1), which can meet various needs.

- ① Use 32-bit CPU
- ② Compact shape, stronger motion function
- ③ Built-in USB port, faster communication speed and downloading time
- ④ Program capacity: 512KB
- ⑤ CPU processing speed is 1.5 times of XL3
- ⑥ Basic instruction: 0.02~0.05us
- ⑦ 4-axis 100KHz pulse output
- ⑧ Powerful password function, protecting user's intellectual property rights

Model	Specification
XL5-32T4	



XL5E series PLC Ethernet communication slim type PLC Control points: 32

In addition to the functions of XL5 series, it has faster processing speed (about 2-3 times of XDM series), larger internal resource space, and can support four pulse outputs. It has one 232 serial port, one 485 serial port and two network ports. It supports the connection of right expansion module (16) and left expansion module (1).

- ① Use 32-bit CPU
- ② Compact shape, stronger motion function
- ③ Program capacity: 1MB
- ④ CPU processing speed is 2~3 times of XDM
- ⑤ Basic instruction: 0.01~0.03us
- ⑥ 4-axis 200KHz pulse output
- ⑦ Ethernet communication (with switch function)
- ⑧ Powerful password function, protecting user's intellectual property rights

Model	Specification
XL5E-32T4	



XLME series Ethernet communication slim type PLC Control points: 32

In addition to the functions of XDM series, it has faster processing speed (about 2-3 times of XDM series), larger internal resource space, and can support four pulse outputs. It has one 232 serial port, one 485 serial port and two network ports. It supports the connection of right expansion module (16) and left expansion module (1).

- ① Use 32-bit CPU
- ② Compact shape, stronger motion function
- ③ Program capacity: 1MB
- ④ CPU processing speed is 2~3 times of XDM
- ⑤ Basic instruction: 0.01~0.03us
- ⑥ 4-axis 100KHz pulse output
- ⑦ Motion control instructions
- ⑧ Ethernet communication (with switch function)
- ⑨ Powerful password function, protecting user's intellectual property rights

Model	Specification
XLME-32T4	



XD1 series Cost-effective PLC Control points: 16, 24, 32

In addition to the general data processing functions, the standard XD series model also has the functions of high-speed counting, high-speed pulse output, standard clock, communication (modbus RTU/ASCII), PWM pulse width modulation, frequency measurement, accurate timing, interruption, etc. Its processing speed is faster, and it supports right expansion module (10), extension BD card (1, 16 points model cannot support), which can meet various needs.

- ① Use 32-bit CPU
- ② XD1 provides 16/24/32/48/60 points I/O, meet various needs
- ③ Built-in two 232 serial ports, one 485 serial port (16 points model cannot support)
- ④ Program capacity: 256KB
- ⑤ CPU processing speed is 12 times of XC3
- ⑥ Basic instruction: 0.02~0.05us, 6000-step basic instructions only need 0.1~0.2ms
- ⑦ 2-axis 100KHz pulse output
- ⑧ Powerful password function, protecting user's intellectual property rights

Model	Specification
XD1-16T-E	
XD1-16R-E	
XD1-24T-E	
XD1-24R-E	
XD1-32T-E	
XD1-32R-E	





Product Introduction

XD2 series

Basic type PLC    Control points: 16, 24, 32, 48, 60

In addition to the general data processing functions, the basic type of XD series also has the functions of high-speed counting, high-speed pulse output, communication, PWM pulse width modulation, frequency measurement, accurate timing, interruption, etc. Its processing speed is faster, and it cannot support right expansion module, support left extension ED module (1), support extension BD card (1-2, 16 points model cannot support), which can meet various needs.

- ① Use 32-bit CPU
- ② XD2 provides 16/24/32/48/60 points I/O, meet various needs
- ③ Built-in two 232 serial ports, one 485 serial port, support Modbus, free, X-NET communication
- ④ Program capacity: 256KB
- ⑤ CPU processing speed is 12 times of XC3
- ⑥ Basic instruction: 0.02~0.05us, 6000-step basic instructions only need 0.1~0.2ms
- ⑦ 2-axis 100KHz pulse output
- ⑧ Powerful password function, protecting user's intellectual property rights

Built-in high speed counter configuration			
Incremental mode		AB phase mode	
Counter ID	Highest frequency	Counter ID	Highest frequency
3	80KHz/10KHz	3	50KHz/5KHz



Model	Specification															
XD2-16R-E	AC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD2-16R-C	DC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD2-16T-E	AC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD2-16T-C	DC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD2-24R-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD2-24R-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD2-24T-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD2-24T-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD2-24RT-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD2-24RT-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD2-32R-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD2-32R-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD2-32T-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD2-32T-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD2-32RT-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD2-32RT-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD2-48R-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD2-48R-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD2-48T-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD2-48T-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD2-48RT-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD2-48RT-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD2-60R-E	AC	36	36	36	RS485	RS232	36	36	36	36	36	36	36	36	36	36
XD2-60R-C	DC	36	36	36	RS485	RS232	36	36	36	36	36	36	36	36	36	36
XD2-60T-E	AC	36	36	36	RS485	RS232	36	36	36	36	36	36	36	36	36	36
XD2-60T-C	DC	36	36	36	RS485	RS232	36	36	36	36	36	36	36	36	36	36
XD2-60RT-E	AC	36	36	36	RS485	RS232	36	36	36	36	36	36	36	36	36	36
XD2-60RT-C	DC	36	36	36	RS485	RS232	36	36	36	36	36	36	36	36	36	36

XD3 series

Standard PLC    Control points: 16, 24, 32, 48, 60

In addition to the general data processing functions, the standard type of XD series also has the functions of high-speed counting, high-speed pulse output, communication (Modbus RTU/ASCII), PWM pulse width modulation, frequency measurement, accurate timing, interruption, etc. Its processing speed is faster, and it can support right expansion module (10), left extension ED module (1), extension BD card (1-2, 16 points model cannot support), which can meet various needs.

- ① Use 32-bit CPU
- ② XD3 provides 16/24/32/48/60 points I/O, meet various needs
- ③ Built-in USB port, faster communication speed and downloading time
- ④ Program capacity: 256KB
- ⑤ CPU processing speed is 12 times of XC3



- ⑥ Basic instruction: 0.02~0.05us, 6000-step basic instructions only need 0.1~0.2ms
- ⑦ 2-axis 100KHz pulse output
- ⑧ Powerful password function, protecting user's intellectual property rights

Built-in high speed counter configuration			
Incremental mode		AB phase mode	
Counter ID	Highest frequency	Counter ID	Highest frequency
3	80KHz/10KHz	3	50KHz/5KHz

Model	Specification															
XD3-16R-E	AC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16R-C	DC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16T-E	AC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16T-C	DC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16RT-E	AC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16RT-C	DC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16PR-E	AC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16PR-C	DC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16PT-E	AC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16PT-C	DC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16PRT-E	AC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-16PRT-C	DC	8	8	8	RS485	RS232	8	8	8	8	8	8	8	8	8	8
XD3-24R-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24R-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24T-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24T-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24RT-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24RT-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24PR-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24PR-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24PT-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24PT-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24PRT-E	AC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-24PRT-C	DC	14	14	14	RS485	RS232	14	14	14	14	14	14	14	14	14	14
XD3-32R-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32R-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32T-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32T-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32RT-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32RT-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32PR-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32PR-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32PT-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32PT-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32PRT-E	AC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-32PRT-C	DC	18	18	18	RS485	RS232	18	18	18	18	18	18	18	18	18	18
XD3-48R-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48R-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48T-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48T-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48RT-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48RT-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48PR-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48PR-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48PT-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48PT-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48PRT-E	AC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-48PRT-C	DC	26	26	26	RS485	RS232	26	26	26	26	26	26	26	26	26	26
XD3-60R-E	AC	36	36	36	RS485	RS232	36	36	36	36	36	36	36	36	36	36
XD3-60R-C	DC	36	36	36	RS485	RS232	36	36	36	36	36	36	36	36	36	36

Product Introduction

Model	Specification															
XD3-60T-E	AC	36	24		RS485	RS232				13	12	2	10	1	20	10
XD3-60T-C	DC	36	24		RS485	RS232				13	12	2	10	1	20	10
XD3-60RT-E	AC	36	24		RS485	RS232				13	12	2	10	1	20	10
XD3-60RT-C	DC	36	24		RS485	RS232				13	12	2	10	1	20	10
XD3-60PR-E	AC	36	24		RS485	RS232				13		2	10	1	20	10
XD3-60PR-C	DC	36	24		RS485	RS232				13		2	10	1	20	10
XD3-60PT-E	AC	36	24		RS485	RS232				13	12	2	10	1	20	10
XD3-60PT-C	DC	36	24		RS485	RS232				13	12	2	10	1	20	10
XD3-60PRT-E	AC	36	24		RS485	RS232				13	12	2	10	1	20	10
XD3-60PRT-C	DC	36	24		RS485	RS232				13	12	2	10	1	20	10
XD3-20T3TC-E	AC	18	12			RS232				12	12				20	6
XD3-20T3TC-E(S)	AC	18	12		RS485	RS232				12	12				20	6

XD5 series

Enhanced type PLC Control points: 16/24/32/48/60

In addition to all the functions of XD3 series, it has faster processing speed and larger internal resource space. It has one 232 serial port and one 485 serial port. All models support the connection of right extension module (16), extended BD (1-2, 16 points PLC does not support) and left extension module (1).

- ① Use 32-bit CPU
- ② XD5 provides 16/24/32/48/60 points I/O, meet various needs
- ③ Built-in USB port, faster communication speed and downloading time
- ④ Program capacity: 512KB
- ⑤ CPU processing speed is 12 times of XC3
- ⑥ Basic instruction: 0.02~0.05us, 6000-step basic instructions only need 0.1~0.2ms
- ⑦ 2~6 axis 100KHz pulse output
- ⑧ Powerful password function, protecting user's intellectual property rights



Built-in high speed counter configuration			
Incremental mode		AB phase mode	
Counter ID	Highest frequency	Counter ID	Highest frequency
3/4/6	80KHz/10KHz	3/4/6	50KHz/5KHz

Model	Specification															
XD5-16R-E	AC	16	16		RS485	RS232				13		1	16	1	20	6
XD5-16R-C	DC	16	16		RS485	RS232				13		1	16	1	20	6
XD5-16T-E	AC	16	16		RS485	RS232				13	12	1	16	1	20	6
XD5-16T-C	DC	16	16		RS485	RS232				13	12	1	16	1	20	6
XD5-24R-E	AC	14	10		RS485	RS232				13		1	16	1	20	10
XD5-24R-C	DC	14	10		RS485	RS232				13		1	16	1	20	10
XD5-24T-E	AC	14	10		RS485	RS232				13	12	1	16	1	20	10
XD5-24T4-E	AC	14	10		RS485	RS232				13	14	1	16	1	20	10
XD5-24T-C	DC	14	10		RS485	RS232				13	14	1	16	1	20	10
XD5-24T4-C	DC	14	10		RS485	RS232				13	14	1	16	1	20	10
XD5-32R-E	AC	18	14		RS485	RS232				13		1	16	1	20	10
XD5-32R-C	DC	18	14		RS485	RS232				13		1	16	1	20	10
XD5-32T-E	AC	18	14		RS485	RS232				13	12	1	16	1	20	10
XD5-32T4-E	AC	18	14		RS485	RS232				13	14	1	16	1	20	10
XD5-32T-C	DC	18	14		RS485	RS232				13	12	1	16	1	20	10
XD5-32T4-C	DC	18	14		RS485	RS232				13	14	1	16	1	20	10
XD5-48R-E	AC	28	20		RS485	RS232				13		2	16	1	20	10
XD5-48R-C	DC	28	20		RS485	RS232				13		2	16	1	20	10
XD5-48T-E	AC	28	20		RS485	RS232				13	12	2	16	1	20	10
XD5-48T-C	DC	28	20		RS485	RS232				13	12	2	16	1	20	10
XD5-48T6-E	AC	28	20		RS485	RS232				13	16	2	16	1	20	10
XD5-48T6-C	DC	28	20		RS485	RS232				13	16	2	16	1	20	10
XD5-60R-E	AC	36	24		RS485	RS232				13		2	16	1	20	10
XD5-60R-C	DC	36	24		RS485	RS232				13		2	16	1	20	10
XD5-60T-E	AC	36	24		RS485	RS232				13	12	2	16	1	20	10
XD5-60T-C	DC	36	24		RS485	RS232				13	12	2	16	1	20	10
XD5-60T6-E	AC	36	24		RS485	RS232				13	16	2	16	1	20	10
XD5-60T6-C	DC	36	24		RS485	RS232				13	16	2	16	1	20	10

XD5E series

Ehternet type PLC control points: 30, 60

In addition to all the functions of XD5 series, it has faster processing speed (2~3 times of XDM) and larger internal resource space. It supports 4 or 10 channels pulse output. It has one 232 serial port, one 485 serial port, one USB download port (support high-speed upload, download, monitor, speed up to 12M). All models support the connection of right extension module (16), extended BD (1-2) and left extension module (1).

- ① Use 32-bit CPU
- ② XD5E provides 30/60 points I/O, meet various needs
- ③ Program capacity: 1MB
- ④ CPU processing speed is 2~3 times of XDM
- ⑤ Basic instruction: 0.02~0.05us
- ⑥ 4-axis or 10-axis 100KHz pulse output
- ⑦ Ethernet communication (with switch function)
- ⑧ Powerful password function, protecting user's intellectual property rights

Built-in high speed counter configuration			
Incremental mode		AB phase mode	
Counter ID	Highest frequency	Counter ID	Highest frequency
4/10	80KHz	4/10	50KHz



Model	Specification															
XD5E-30T4	AC	18	18		RS485	RS232				14	14	1	16	1	20	10
XD5E-60T10	AC	36	24		RS485	RS232				10	10	2	16	1	20	10

XDM series

Motion control type PLC Control points: 24, 32, 60

Support basic motion control instructions. It can realize the functions of 2-axis linkage, interpolation and follow-up. It can realize at least 4-axis high-speed pulse output, up to 10-axis pulse output, support all the functions of standard PLC, such as high speed counting, interruption, PID control, it has faster processing speed, it can insert SD card to store the data, with one RS232 and one RS485 serial port, one USB download port (support high-speed download, monitor, speed can up to 12M), all the models can support right extension modules (16), extended BD (1~2) and left extension module (1).

- ① Use 32-bit CPU
- ② XDM provides 24/32/60 points I/O, meet various needs
- ③ Built-in USB port, faster communication speed and download time
- ④ Program capacity: 512KB
- ⑤ CPU processing speed is 15 times of XC3, 6000-step basic instructions only need 0.1~0.2ms
- ⑥ 4~10 axis 100KHz pulse output
- ⑦ Linear/arc interpolation instructions
- ⑧ Follow-up instructions
- ⑨ Powerful password function, protecting user's intellectual property rights

Built-in high speed counter configuration			
Incremental mode		AB phase mode	
Counter ID	Highest frequency	Counter ID	Highest frequency
4/10	80KHz	4/10	50KHz



Model	Specification															
XDM-24T4-E	AC	14	10		RS485	RS232				14	14	1	16	1	20	10
XDM-24T4-C	DC	14	10		RS485	RS232				14	14	1	16	1	20	10
XDM-32T4-E	AC	18	14		RS485	RS232				14	14	1	16	1	20	10
XDM-32T4-C	DC	18	14		RS485	RS232				14	14	1	16	1	20	10
XDM-60T4-E	AC	36	24		RS485	RS232				14	14	2	16	1	20	10
XDM-60T4-C	DC	36	24		RS485	RS232				14	14	2	16	1	20	10
XDM-60T10-E	AC	36	24		RS485	RS232				10	10	2	16	1	20	10
XDM-60T10-C	DC	36	24		RS485	RS232				10	10	2	16	1	20	10



Product Introduction

XDC series

Motion control bus type PLC    Control points: 24/32/48/60

It has faster processing speed (about 15 times of XC series). It supports floating-point operation. It can support up to 2 channels of pulse output and 4 channels of AB phase high-speed counting. It also supports almost all functions of standard PLC, such as high-speed counting, interruption, PID control, etc. All models support right expansion module (16), BD card (1-2) and the left expansion module (1 block), can be plugged into SD card to store data. It has one RS232 serial port and one RS485 port, which supports the motion control bus and controls 20 axes running through the bus.

- ① Use 32-bit CPU
- ② XDC provides 24/32/48/60 points I/O, meet various needs
- ③ Program capacity: 512KB
- ④ CPU processing speed is 15 times of XC3, 6000-step basic instructions only need 0.1~0.2ms
- ⑤ 2-axis 100KHz pulse output
- ⑥ 1~20 axes bus control
- ⑦ Powerful password function, protecting user's intellectual property rights

Built-in high speed counter configuration			
Incremental mode		AB phase mode	
Counter ID	Highest frequency	Counter ID	Highest frequency
4	80KHz	4	50KHz



Model	Specification															
XDC-24T-E	AC	16	16	16	RS485	RS232	16	16	16	16	16	16	16	16	16	16
XDC-24T-C	DC	16	16	16	RS485	RS232	16	16	16	16	16	16	16	16	16	16
XDC-32T-E	AC	16	16	16	RS485	RS232	16	16	16	16	16	16	16	16	16	16
XDC-32T-C	DC	16	16	16	RS485	RS232	16	16	16	16	16	16	16	16	16	16
XDC-48T-E	AC	24	24	24	RS485	RS232	16	16	16	16	16	16	16	16	16	16
XDC-48T-C	DC	24	24	24	RS485	RS232	16	16	16	16	16	16	16	16	16	16
XDC-60T-E	AC	32	32	32	RS485	RS232	16	16	16	16	16	16	16	16	16	16
XDC-60T-C	DC	32	32	32	RS485	RS232	16	16	16	16	16	16	16	16	16	16

XDME series

Ethernet type PLC    Control points: 60

In addition to all the functions of XDM series PLC, it has faster processing speed (2~3 times of XDM), larger internal resource space, supports 10 channels of pulse output, it has one RS232 serial port, two Ethernet ports, supports right extension module (16), BD card (2) and left extension module (1).

- ① Use 32-bit CPU
- ② XDME provides 60 points I/O
- ③ Program capacity: 1MB
- ④ CPU processing speed is 2~3 times of XDM
- ⑤ Basic instructions: 0.01~0.03us
- ⑥ 10-axis 100KHz pulse output
- ⑦ Ethernet communication (with switch function)
- ⑧ Powerful password function, protecting user's intellectual property rights

Built-in high speed counter configuration			
Incremental mode		AB phase mode	
Counter ID	Highest frequency	Counter ID	Highest frequency
10	80KHz	10	50KHz



Model	Specification															
XDME-60T10-E	AC	16	16	16	RS485	RS232	16	16	16	16	16	16	16	16	16	16

XL series right extension module

General specification of XL series right extension module

Item	Specification
Using environment	No corrosive gas
Environment temperature	0℃~60℃
Storage temperature	-20 ~ 70℃
Environment humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	Install on the DIN46277 rail directly (width 35mm)

XL series I/O extension module


Extension modules can be used when the number of PLC I/O can not meet the requirements.

•XL series I/O extension module list

Model		Function
NPN input model	PNP input model	
XL-E8X8YR	-	8 channels of digital input, 8 channels of relay output, DC24V power supply
XL-E8X8YT	-	8 channels of digital input, 8 channels of transistor output, DC24V power supply
XL-E16X	-	16 channels of digital input, DC 24V power supply
XL-E16YR	-	16 channels of relay output, no need power supply
XL-E16YT	-	16 channels of transistor output, no need power supply
XL-E16X16YT	-	16 channels of digital input, 16 channels of transistor output, DC24V power supply
XL-E32X	-	32 channels of digital input, DC 24V power supply
XL-E32YT	-	32 channels of relay output, no need power supply


•Input extension module

XL-E16X



- ① 16 input points
- ② NPN type input
- ③ Rated input voltage DC 24V
- ④ Response time below 20ms
- ⑤ External wiring mode: terminals
- ⑥ Wiring mode is same to PLC


XL-E32X



- ① 32 input points
- ② NPN type input
- ③ Rated input voltage DC 24V
- ④ Response time below 20ms
- ⑤ External wiring mode: need to connect external terminals
- ⑥ Wiring mode is same to PLC


•I/O extension module

XL-E8X8YR,XL-E8X8YT



- ① 8 input points
- ② Response time below 20ms
- ③ NPN type input
- ④ Rated input voltage DC 24V
- ⑤ 8 output points
- ⑥ R: relay output
- ⑦ T: transistor output
- ⑧ R response time below 10ms
- ⑨ T response time below 0.2ms
- ⑩ R max load: resistance 3A, inductance 80VA
- ⑪ T max load: resistance 3A, inductance 12W80VA
- ⑫ External wiring mode: terminals
- ⑬ Wiring mode is same to PLC

XL-E16X16YT




- ① 16 input points
- ② Response time below 20ms
- ③ NPN type input
- ④ Rated input voltage DC 24V
- ⑤ 16 output points
- ⑥ T: transistor output
- ⑦ T response time below 0.2ms
- ⑧ T max load: resistance 3A, inductance 12W80VA
- ⑨ External wiring mode: need to connect external terminals
- ⑩ Wiring mode is same to PLC



Product Introduction


•Output extension module

XL-E16YR,XL-E16YT



- ① 8 input points
- ② Response time below 20ms
- ③ Rated input voltage DC 24V
- ④ 8 output points
- ⑤ R: relay output
- ⑥ T: transistor output
- ⑦ R response time below 10ms
- ⑧ T response time below 0.2ms
- ⑨ R max load: resistance 3A, inductance 80VA
- ⑩ T max load: resistance 3A, inductance 12W80VA
- ⑪ External wiring mode: terminals
- ⑫ Wiring mode is same to PLC

XL-E32YT



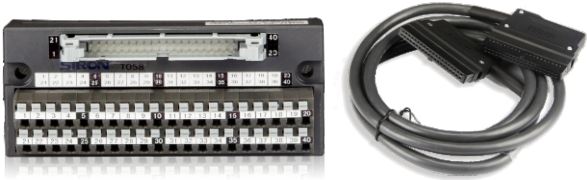
- ① 32 output points
- ② T: transistor output
- ③ T response time below 0.2ms
- ④ T max load: resistance 3A, inductance 12W80VA
- ⑤ External wiring mode: need to connect external terminals
- ⑥ Wiring mode is same to PLC

•I/O extension module parts

XL-E32X, XL-E16X16YT, XL-E32YT need external terminals, the following is the suitable terminals and cables.

■Model, terminals and cables

Module	Terminals	Cables
XL-32X	JT-E32X	JC-TE32-NN05 (0.5m)
XL-16X16YT	JT-E16X16YT	JC-TE32-NN10 (1.0m)
XL-32YT	JT-E32YT	JC-TE32-NN15 (1.5m)




XL series right extension analog module

The signal can be D/A or A/D converted and the temperature transmitter signal can be received and processed.


•AD model

XL-E8AD-A



- ① 8 input channels
- ② Input current 0~20mA/4~20mA/-20~20mA
- ③ Conversion speed 2ms/channel
- ④ Resolution 1/16383 (14 bits)
- ⑤ Comprehensive accuracy ±1%
- ⑥ Filtering coefficient 0~254
- ⑦ Enabling marker


XL-E8AD-V



- ① 8 input channels
- ② Input voltage 0~5V/0~10V/-5~5V/-h10~10V
- ③ Conversion speed 2ms/channel
- ④ Resolution 1/16383 (14 bits)
- ⑤ Comprehensive accuracy ±1%
- ⑥ Filtering coefficient 0~254
- ⑦ Enabling marker

•Mixed type


XL-E4AD2DA



- ① 4 input channels
- ② Input voltage 0~5V/0~10V/-5~5V/-10~10V
- ③ Input current 0~20mA/4~20mA/-20~20mA
- ④ Conversion speed 2ms/channel
- ⑤ Resolution 1/16383 (14 bits)
- ⑥ Comprehensive accuracy ±1%
- ⑦ Filtering coefficient 0~254
- ⑧ Enabling marker
- ⑨ 2 output channels
- ⑩ Output voltage 0~5V/0~10V/-5~5V/-10~10V (external load resistance 2KΩ~1MΩ)
- ⑪ Output current 0~20mA/4~20mA (external load resistance less than 500Ω)
- ⑫ Conversion speed 2ms/channel
- ⑬ Resolution 1/4095 (12 bits)
- ⑭ Accuracy ±1%
- ⑮ Enabling marker

•DA type

XL-E4DA




- ① 4 output channels
- ② Output voltage 0~5V/0~10V/-5~5V/-10~10V (external load resistance 2KΩ~1MΩ)
- ③ Output current 0~20mA/4~20mA (external load resistance less than 500Ω)
- ④ Conversion speed 2ms/channel
- ⑤ Resolution 1/4095 (12 bits)
- ⑥ Accuracy ±1%
- ⑦ Enabling marker

•Temperature control module

PT100 thermal resistance, thermocouple temperature measuremnt, built-in PID control.

■PT100 thermal resistance model

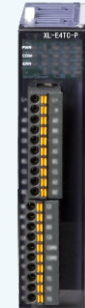
XL-E4PT3-P



- ① Analog input signal PT100 thermal resistance
- ② 4 temperature input channels
- ③ Temperature measurement range -100°C~500°C
- ④ Digital output range -1000~5000, signed 16-bit, binary
- ⑤ Control accuracy ±0.5%
- ⑥ Resolution 0.1°C
- ⑦ Comprehensive accuracy 1% (relative max value)
- ⑧ Conversion speed 450ms/4 channels
- ⑨ Filtering coefficient 0~254
- ⑩ Auto-tuning function
- ⑪ Heating-cooling control
- ⑫ Optional sampling period

■TC thermocouple model

XL-E4TC-P



- ① Analog input signal type K, S, E, N, B, T, J, R thermocouple
- ② 4 temperature input channels
- ③ Temperature measurement range 0°C~1300°C (type K)
- ④ Digital output range 0~13000, signed 16-bit, binary
- ⑤ Control accuracy ±0.5%
- ⑥ Resolution 0.1°C
- ⑦ Comprehensive accuracy 1% (relative max value)
- ⑧ Conversion speed 420ms/4 channels
- ⑨ Filtering coefficient 0~254
- ⑩ Auto-tuning function
- ⑪ Heating-cooling control
- ⑫ Optional sampling period

XL series left extension ED module

As a special function ED module of XL series, XL series can connect up to one ED module (except XL1).

•General specification of XL series left extension module

Item	Specification
Using environment	No corrosive gas
Environment temperature	0°C~60°C
Storage temperature	-20 ~ 70°C
Environment humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	Install on the DIN46277 rail directly (width 35mm)
Dimension	105mm×25mm×85mm

## Product Introduction

**XL-E2AD2DA-A-ED**


- ① 2 input channels
- ② Input current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy  $\pm 1\%$
- ⑥ Filtering coefficient 0~254
- ⑦ 2 output channels
- ⑧ Output current 0~20mA/4~20mA
- ⑨ Conversion speed 10ms
- ⑩ Resolution 1/1023 (10 bits)
- ⑪ Accuracy  $\pm 1\%$

**XL-E2AD2DA-V-ED**


- ① 2 input channels
- ② Input voltage 0~5V/0~10V
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy  $\pm 1\%$
- ⑥ Filtering coefficient 0~254
- ⑦ 2 output channels
- ⑧ Output voltage 0~5V/0~10V
- ⑨ Conversion speed 10ms
- ⑩ Resolution 1/1023 (10 bits)
- ⑪ Accuracy  $\pm 1\%$

**XL-E4DA-A-ED**


- ① 4 output channels
- ② Output current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/1023 (10 bits)
- ⑤ Comprehensive accuracy  $\pm 1\%$

**XL-E4AD-V-ED**


- ① 4 output channels
- ② Output voltage 0~5V/0~10V
- ③ Conversion speed 10ms
- ④ Resolution 1/1023 (10 bits)
- ⑤ Comprehensive accuracy  $\pm 1\%$

**XL-E2AD2PT-A-ED**


- ① 2 input channels
- ② Input current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy  $\pm 1\%$
- ⑥ Filtering coefficient 0~254
- ⑦ 2 temperature input channels
- ⑧ Analog input signal PT100 thermal resistance
- ⑨ Temperature measurement range -100°C~500°C
- ⑩ Digital output range -1000~5000
- ⑪ Conversion speed 10ms
- ⑫ Resolution 0.1°C
- ⑬ Comprehensive accuracy  $\pm 0.8\%$  of full scale
- ⑭ Filtering coefficient 0~254

**XL-E2AD2PT-V-ED**


- ① 2 input channels
- ② Input voltage 0~5V/0~10V
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy  $\pm 1\%$
- ⑥ Filtering coefficient 0~254
- ⑦ 2 temperature input channels
- ⑧ Analog input signal PT100 thermal resistance
- ⑨ Temperature measurement range -100°C~500°C
- ⑩ Digital output range -1000~5000
- ⑪ Conversion speed 10ms
- ⑫ Resolution 0.1°C
- ⑬ Comprehensive accuracy  $\pm 0.8\%$  of full scale
- ⑭ Filtering coefficient 0~254

**XL-NES-ED**


- ① Extend the RS232 or RS485 port on the left side of XL series PLC
- ② RS232 and RS485 only can use one of them
- ③ Serial port COM3

**XL-E2PT2DA-A-ED**


- ① 2 temperature input channels
- ② Analog input signal PT100 thermal resistance
- ③ Temperature measurement range -100°C~500°C
- ④ Digital output range -1000~5000
- ⑤ Conversion speed 10ms
- ⑥ Resolution 0.1 °C
- ⑦ Comprehensive accuracy  $\pm 0.8\%$  of full scale
- ⑧ Filtering coefficient 0~254
- ⑨ 2 output channels
- ⑩ Output current 0~20mA/4~20mA
- ⑪ Conversion speed 10ms
- ⑫ Resolution 1/1023 (10 bits)
- ⑬ Comprehensive accuracy  $\pm 1\%$

**XL-E2PT2DA-V-ED**


- ① 2 temperature input channels
- ② Analog input signal PT100 thermal resistance
- ③ Temperature measurement range -100°C~500°C
- ④ Digital output range -1000~5000
- ⑤ Conversion speed 10ms
- ⑥ Resolution 0.1 °C
- ⑦ Comprehensive accuracy  $\pm 0.8\%$  of full scale
- ⑧ Filtering coefficient 0~254
- ⑨ 2 output channels
- ⑩ Output voltage 0~5V/0~10V
- ⑪ Conversion speed 10ms
- ⑫ Resolution 1/1023 (10 bits)
- ⑬ Accuracy  $\pm 1\%$

**XL-E4AD-A-ED**


- ① 4 input channels
- ② Input current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy  $\pm 1\%$
- ⑥ Filtering coefficient 0~254

**XL-E4AD-V-ED**


- ① 4 input channels
- ② Input voltage 0~5V/0~10V
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy  $\pm 1\%$
- ⑥ Filtering coefficient 0~254

Product Introduction

XD series right extension module

XD series I/O extension module

Extension modules can be used when the number of PLC I/O can not meet the requirements.

General specification of XD series I/O extension module


Item	Specification
Using environment	No corrosive gas
Environment temperature	0℃~60℃
Storage temperature	-20 ~ 70℃
Environment humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	Install on the DIN46277 rail directly (width 35mm) or fix with screw M3
Dimension	70.8mm×108mm×89.0mm 108.6mm×108mm×89.0mm

XD series I/O extension module list

Model		Function
NPN input model	PNP input model	
XD-E8X	XD-E8PX	8 channels of digital input, DC24V power supply
XD-E8YR	-	8 channels of relay output, DC24V power supply
XD-E8YT	-	8 channels of transistor output, DC24V power supply
XD-E8X8YR	XD-E8PX8YR	8 channels of digital input, 8 channels of relay output, DC24V power supply
XD-E8X8YT	XD-E8PX8YT	8 channels of digital input, 8 channels of transistor output, DC24V power supply
XD-E16X	XD-E16PX	16 channels of digital input, DC24V power supply
XD-E16YR	-	16 channels of relay output, no need power supply
XD-E16YT	-	16 channels of transistor output, no need power supply
XD-E16X16YR-E/C	XD-E16PX16YR-E/C	16 channels of digital input, 16 channels of relay output, AC220V or DC24V power supply
XD-E16X16YT-E/C	XD-E16PX16YT-E/C	16 channels of digital input, 16 channels of transistor output, AC220V or DC24V power supply
XD-E32YR-E/C	-	32 channels of relay output, AC220V or DC24V power supply
XD-E32YT-E/C	-	32 channels of transistor output, AC220V or DC24V power supply
XD-E32X-E/C	XD-E32PX-E/C	32 channels of digital input, AC220V or DC24V power supply


Input extension module

XD-E8X,XD-E8PX




- ① 8 input points
- ② Rated input voltage DC24V
- ③ Response time below 20ms
- ④ External wiring mode: terminals
- ⑤ Wiring mode is same to PLC
- ⑥ Model containing P is PNP input

XD-E16X,XD-E16PX



- ① 16 input points
- ② Rated input voltage DC24V
- ③ Response time below 20ms
- ④ External wiring mode: terminals
- ⑤ Wiring mode is same to PLC
- ⑥ Model containing P is PNP input


XD-E32X,XD-E32PX



- ① 32 input points
- ② Rated input voltage DC24V
- ③ Response time below 20ms
- ④ External wiring mode: terminals
- ⑤ Wiring mode is same to PLC
- ⑥ Model containing P is PNP input

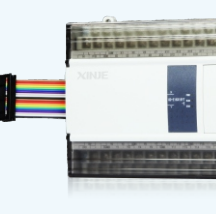
I/O extension module

XD-E8X8YR,XD-E8X8YT,XD-E8PX8YR,XD-E8PX8YT



- ① 8 input points
- ② Response time below 20ms
- ③ Rated input voltage DC 24V
- ④ 8 output points
- ⑤ R response time below 10ms
- ⑥ T response time below 0.2ms
- ⑦ The model containing P is PNP input
- ⑧ R: relay output    T: transistor output
- ⑨ R max load: resistance 3A, inductance 80VA
- ⑩ T max load: resistance 0.3A, inductance 12W80VA
- ⑪ External wiring mode: terminals
- ⑫ Wiring mode is same to PLC

XD-E16X16YR-E/C,XD-E16X16YT-E/C,XD-E16PX16YR-E/C,XD-E16PX16YT-E/C



- ① 16 input points
- ② Response time below 20ms
- ③ Rated input voltage DC 24V
- ④ 16 output points
- ⑤ R response time below 10ms
- ⑥ T response time below 0.2ms
- ⑦ The model containing P is PNP input
- ⑧ R: relay output    T: transistor output
- ⑨ R max load: resistance 3A, inductance 80VA
- ⑩ T max load: resistance 0.3A, inductance 12W80VA
- ⑪ External wiring mode: terminals
- ⑫ Wiring mode is same to PLC

XD series analog extension module


The signal can be A/D or D/A converted, temperature transmitter signal can be received and processed.

General specification of XD series analog extension module

Item	Specification
Using environment	No corrosive gas
Environment temperature	0℃~60℃
Storage temperature	-20 ~ 70℃
Environment humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	Install on the DIN46277 rail directly (width 35mm) or fix with screw M3
Dimension	63mm×108mm×89mm


AD type

XD-E4AD




- ① 4 input channels
- ② Input voltage 0~5V/0~10V/-5~5V/-10~10V
- ③ Input current 0~20mA/4~20mA
- ④ Conversion speed 2ms/channel
- ⑤ Resolution 1/16383 (14 bits)
- ⑥ Comprehensive accuracy ±1%
- ⑦ Filtering coefficient 0~254
- ⑧ Enabling marker

XD-E8AD




- ① 8 input channels
- ② Input voltage 0~5V/0~10V/-5~5V/-10~10V
- ③ Input current 0~20mA/4~20mA/-20~20mA
- ④ Conversion speed 2ms/channel
- ⑤ Resolution 1/16383 (14 bits)
- ⑥ Comprehensive accuracy ±1%
- ⑦ Filtering coefficient 0~254
- ⑧ Enabling marker

XD-E8AD-A



- ① 8 input channels
- ② Input current 0~20mA/4~20mA/-20~20mA
- ③ Conversion speed 2ms/channel
- ④ Resolution 1/16383 (14 bits)
- ⑤ Comprehensive accuracy ±1%
- ⑥ Filtering coefficient 0~254
- ⑦ Enabling marker

XD-E8AD-V



- ① 8 input channels    channel 0~3 voltage, channel 4~7 current
- ② Input voltage 0~5V/0~10V/-5~5V/-10~10V
- ③ Conversion speed 2ms/channel
- ④ Resolution 1/16383 (14 bits)
- ⑤ Comprehensive accuracy ±1%
- ⑥ Filtering coefficient 0~254
- ⑦ Enabling marker



## Product Introduction

### •Output extension module

#### XD-E8YR,XD-E8YT



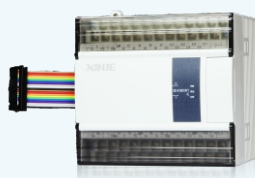
- ① 8 output points
- ② R response time below 10ms
- ③ T response time below 0.2ms
- ④ R: relay output T: transistor output
- ⑤ R max load: resistance 3A, inductance 80VA
- ⑥ T max load: resistance 0.3A, inductance 12W80VA
- ⑦ External wiring mode: terminals
- ⑧ Wiring mode is same to PLC

#### XD-E16YR,XD-E16YT



- ① 16 output points
- ② R response time below 10ms
- ③ T response time below 0.2ms
- ④ R: relay output T: transistor output
- ⑤ R max load: resistance 3A, inductance 80VA
- ⑥ T max load: resistance 0.3A, inductance 12W80VA
- ⑦ External wiring mode: terminals
- ⑧ Wiring mode is same to PLC

#### XD-E32YR -E/C,XD-E32YT-E/C



- ① 32 output points
- ② R response time below 10ms
- ③ T response time below 0.2ms
- ④ R: relay output T: transistor output
- ⑤ R max load: resistance 3A, inductance 80VA
- ⑥ T max load: resistance 0.3A, inductance 12W80VA
- ⑦ External wiring mode: terminals
- ⑧ Wiring mode is same to PLC

### •Mixed type

#### XD-E4AD2DA



- ① 4 input channels
- ② Input voltage 0~5V/0~10V/-5~-5V/-10~-10V
- ③ Input current 0~20mA/4~20mA/-20~-20mA
- ④ Conversion speed 2ms/channel
- ⑤ Resolution 1/16383 (14 bits)
- ⑥ Comprehensive accuracy  $\pm 1\%$
- ⑦ Filtering coefficient 0~254
- ⑧ Enabling marker
- ① 2 output channels
- ② Output voltage 0~5V/0~10V
- ③ Output current 0~20mA/4~20mA
- ④ Conversion speed 2ms/channel
- ⑤ Resolution 1/4095 (12 bits)
- ⑥ Comprehensive accuracy  $\pm 1\%$
- ⑦ Enabling marker

### •DA type

#### XD-E2DA



- ① 2 output channels
- ② Output voltage 0~5V/0~10V/-5~-5V/-10~-10V
- ③ Output current 0~20mA/4~20mA
- ④ Conversion speed 2ms/channel
- ⑤ Resolution 1/4095 (12 bits)
- ⑥ Comprehensive accuracy  $\pm 1\%$
- ⑦ Enabling marker

#### XD-E4DA



- ① 4 output channels
- ② Output voltage 0~5V/0~10V
- ③ Output current 0~20mA/4~20mA
- ④ Conversion speed 2ms/channel
- ⑤ Resolution 1/4095 (12 bits)
- ⑥ Comprehensive accuracy  $\pm 1\%$
- ⑦ Enabling marker

## Programmable logic controller **PLC**

### •Temperature control module

PT100 thermal resistance, thermocouple temperature measurement, build-in PID control.

#### ■PT100 thermal resistance type

#### XD-E6PT-P



- ① Analog input signal PT100 thermal resistance
- ② 6 temperature input channels
- ③ Temperature measurement range -100°C~500°C
- ④ Digital output range -1000~5000, signed 16-bit, binary
- ⑤ Control accuracy  $\pm 0.5\%$
- ⑥ Resolution 0.1 °C
- ⑦ Comprehensive accuracy 1% (relative max value)
- ⑧ Conversion speed 20ms/channel
- ⑨ Filtering coefficient 0~254
- ⑩ Auto-tuning function
- ⑪ Heating-cooling control
- ⑫ Optional sampling period

#### ■TC thermocouple type

#### XD-E6TC-P



- ① Analog input signal type K, S, E, N, B, T, J, R thermocouple
- ② 6 temperature input channels
- ③ Temperature measurement range 0°C~1300°C (type K)
- ④ Digital output range 0~13000, signed 16-bit, binary
- ⑤ Control accuracy  $\pm 0.5\%$
- ⑥ Resolution 0.1 °C
- ⑦ Comprehensive accuracy 1% (relative max value)
- ⑧ Conversion speed 20ms/channel
- ⑨ Filtering coefficient 0~254
- ⑩ Auto-tuning function
- ⑪ Heating-cooling control
- ⑫ Optional sampling period

## XD series left extension ED module

As special function ED module of XD series, XD series (except XD1) can connect 1 ED module.

### XD series left extension analog module

#### XD-2AD2DA-A-ED



- ① 2 input channels
- ② Input current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy 1%
- ① 2 output channels
- ② Output current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/1023 (10 bits)
- ⑤ Accuracy 1%

#### XD-2AD2DA-V-ED



- ① 2 input channels
- ② Input voltage 0~10V/0~5V
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy 1%
- ① 2 output channels
- ② Output voltage 0~10V/0~5V
- ③ Conversion speed 10ms
- ④ Resolution 1/1023 (10 bits)
- ⑤ Accuracy 1%

#### XD-2AD2PT-A-ED



- ① 2 input channels
- ② Input current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy 1%
- ① 2 temperature input channels
- ② Temperature measurement range -100°C~500°C
- ③ Conversion speed 10ms
- ④ Resolution 0.1 °C
- ⑤ Comprehensive accuracy  $\pm 0.8\%$  of full scale

#### XD-2AD2PT-V-ED



- ① 2 input channels
- ② Input voltage 0~10V/0~5V
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy 1%
- ① 2 temperature input channels
- ② Temperature measurement range -100°C~500°C
- ③ Conversion speed 10ms
- ④ Resolution 0.1 °C
- ⑤ Comprehensive accuracy  $\pm 0.8\%$  of full scale

#### XD-2PT2DA-A-ED



- ① 2 output channels
- ② Output current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/1023 (10 bits)
- ⑤ Comprehensive accuracy 1%
- ① 2 temperature input channels
- ② Temperature measurement range -100°C~500°C
- ③ Conversion speed 10ms
- ④ Resolution 0.1 °C
- ⑤ Comprehensive accuracy  $\pm 0.8\%$  of full scale


#### XD-2PT2DA-V-ED



- ① 2 output channels
- ② Output voltage 0~10V/0~5V
- ③ Conversion speed 10ms
- ④ Resolution 1/1023 (10 bits)
- ⑤ Comprehensive accuracy 1%
- ① 2 temperature input channels
- ② Temperature measurement range -100°C~500°C
- ③ Conversion speed 10ms
- ④ Resolution 0.1 °C
- ⑤ Comprehensive accuracy  $\pm 0.8\%$  of full scale


Product Introduction

XD-4AD-A-ED




- ① 4 input channels
- ② Input current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy 1%

XD-4AD-V-ED




- ① 4 input channels
- ② Input voltage 0~10V/0~5V
- ③ Conversion speed 10ms
- ④ Resolution 1/4095 (12 bits)
- ⑤ Comprehensive accuracy 1%

XD-4DA-A-ED



- ① 4 output channels
- ② Output current 0~20mA/4~20mA
- ③ Conversion speed 10ms
- ④ Resolution 1/1023 (10 bits)
- ⑤ Comprehensive accuracy 1%

XD-4DA-V-ED

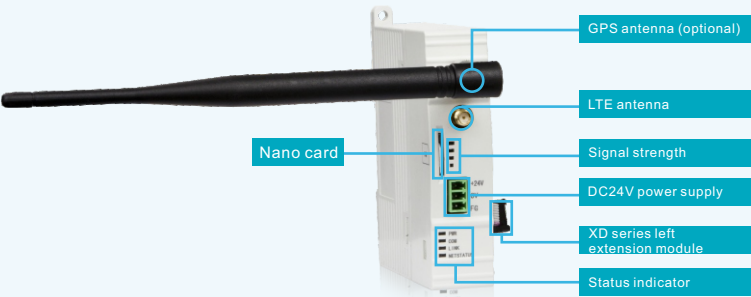


- ① 4 output channels
- ② Output voltage 0~10V/0~5V
- ③ Conversion speed 10ms
- ④ Resolution 1/1023 (10 bits)
- ⑤ Comprehensive accuracy 1%

XD series left extension communication module

Item	Specification
Using environment	No corrosive gas
Environment temperature	0℃~60℃
Storage temperature	-20 ~ 70℃
Environment humidity	5 ~ 95%RH
Storage humidity	5 ~ 95%RH
Installation	Install on the DIN46277 rail directly (width 35mm) or fix with screw M3
Dimension	25mm×100mm×89mm
	18mm×100mm×89mm

XD-4GBOX-ED




- GPS antenna (optional)
- LTE antenna
- Nano card
- Signal strength
- DC24V power supply
- XD series left extension module
- Status indicator

PLC program remote upload, download and real-time monitor  
Communicate with user's mobile through SMS  
Remote monitor

- ① Support multiple telecom operators
- ② GPS positioning function
- ③ As left extension ED module of XD series PLC, the transmission rate can reach 1M.
- ④ Support X-NET fieldbus, deep optimization of data monitoring
- ⑤ Persistent online, with disconnection redial and watchdog functions


XD-SBOX-ED



Left extension 433M module

Transparent wireless transmission is protocol-free, so long as two modules dial switch (baud rate) and knob (channel) are set uniformly, communication can be achieved. For example, the communication between HMI, computer or PLC is more convenient and fast.


XD-NES-ED



Left extension RS232/RS485 module

XD series PLC extension ED can connect RS232 or RS485 (support fieldbus communication).

XD-WBOX-ED



Left extension WIFI module


- ① Support 2.4GHz wireless WLAN technology
- ② Support AP (wireless hotspot) and STA mode
- ③ W-BOX has RS232 and RS485 port
- ④ XD-WBOX-ED is left extended TTL interface
- ⑤ Support wireless hotspot roaming technology
- ⑥ XD series PLC provide data support to XD-WBOX-ED and W-BOX
- ⑦ XC series PLC provide data support to W-BOX
- ⑧ Modbus RTU equipment provides data support to W-BOX, supports serial port RS232, RS485, TTL
- ⑨ Support Modbus-TCP communication protocol (cannot over 4 connections), X-NET communication protocol, Xinje Cloud web SCADA

XD series special function extension BD card

General specification of XD series extended communication BD card

Installation	Install on the XD series PLC directly
Dimension	40mm×42mm×14mm
Using environment	No corrosive gas
Environment temperature	0℃~60℃
Environment humidity	5 ~ 95%RH

XD-NE-BD




XD series PLC extended BD, interface of fieldbus and X-NET.

The names of each part are as follows:

Name	Function
Communication indicator	The indicator flashes when the communication of BD card is successful
Wiring terminals	A RS485+
	B RS485-
	SG Signal ground
	● Empty terminal
Terminal resistance dial switch	Select whether terminal resistance (120 ) is needed by dial switch

XD-NO-BD




XD series PLC extended BD, fieldbus communication function, X-NET optical fiber interface for optical fiber communication. It has the advantages of fast speed, strong anti-interference ability and long communication distance.

The names of each part are as follows:

Communication indicator	The indicator flashes when the communication of BD card is successful
Wiring terminals	Left side is signal input terminal, right side is signal output terminal

XD-NS-BD



XD series PLC extension RS232 BD card.

The names of each part are as follows:

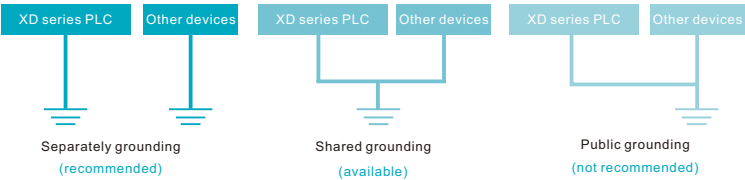
Name	Function
Communication indicator	The indicator flashes when the communication of BD card is successful
Wiring terminals	TX Signal sending terminal
	RX Signal receiving terminal
	GND Ground terminal
	● Empty terminal

XD/XL Series Products Specification

General specification of basic products

Item	Specification
Insulation voltage	Above DC500V 2M
Anti-noise	Noise voltage 1000Vp-p 1us pulse per minute
Air	Non-corrosive, flammable gases
Environment temperature	0℃~60℃
Environment humidity	5%RH-95%RH (no condensation)
COM1	RS232, connect to the upper device, HMI, programming or debug
COM2	RS485, connect to smart meter, frequency inverter, etc.
Installation	Install on the rail directly or fix with screw M3
Ground	The third kind of grounding (Not grounding with strong electricity system)

- ⒶAll the basic units have COM1 for programming and communication.  
ⒷThe rail specification is DIN46277, the width is 35mm.  
ⒸGrounding should be separately grounded or shared grounding, not public grounding.



Performance specification of basic unit product

Item		Specification				
Series		XD1	XD2	XD3	XL1	XL3
I/O points <sup>※2</sup>	Total points	16/24/32	16/24/32/48/60	16/24/32/48/60	16	16
	Input points	8/14/18	8/14/18/28/36	8/14/18/28/36	8	8
	Output points	8/10/14	8/10/14/20/24	8/10/14/20/24	8	8
Processing speed		0.05us				
User program capacity <sup>※1</sup>		256KB				
Program execution mode		Cyclic scanning mode				
Programming mode		Instruction, ladder chart, C language				
Power-off holding		FlashROM and lithium battery (3V button battery)				
Internal coil (X) <sup>※3</sup>		896: X0~77, X10000~11177, X20000~20177, X30000~30077				
Internal coil (Y) <sup>※4</sup>		896: Y0~77, Y10000~11177, Y20000~20177, Y30000~30077				
Internal coil (M, HM)		11008 points	M0~M7999[HM0~HM959] <sup>※5</sup>			
			Special use SM0~SM2047 <sup>※6</sup>			
Flow (S)			S0~S1023 [HS0~HS127]			
Timer (T)	Points		T0~T575 [HT0~HT95]			
	Specification		100ms timer: setting time 0.1~3276.7s			
			10ms timer: setting time 0.01~327.67s			
			1ms timer: setting time 0.001~32.767s			
Counter (C)	Points	672 points	C0~C575 【HC0~HC95】			
	Specification		16-bit counter: setting value -32768~+32767			
			32-bit counter: setting value -2147483648~+2147483647			
Data register (D)		11048 words	D0~D7999 [HD0~HD999] <sup>※5</sup>			
			Special use SD0~SD2047 <sup>※6</sup>			
FlashROM register (FD)		7120 words	FD0~FD5119			
			Special use SFD0~SFD1999			
High-speed processing ability		High speed count, pulse output, external interruption				
Password protection		6-bit ASCII				
Self-diagnosis function		Power-on self-check, monitor timer, grammar check				

Item		Specification	
Series		XD5	XL5
I/O points <sup>※2</sup>	Total points	16/24/32/48/60	32
	Input points	8/14/18/28/36	18
	Output points	8/10/14/20/24	14
Processing speed		0.05us	
User program capacity <sup>※1</sup>		512KB	
Program execution mode		Cyclic scanning mode	
Programming mode		Instruction, ladder chart, C language	
Power-off holding		FlashROM and lithium battery (3V button battery)	
Internal coil (X) <sup>※3</sup>		1280: X0~77, X10000~11777, X20000~20177, X30000~30077	
Internal coil (Y) <sup>※4</sup>		1280: Y0~77, Y10000~11777, Y20000~20177, Y30000~30077	
Internal coil (M, HM)	87000 points	M0~M69999[HM0~HM11999] <sup>※5</sup>	
		Special use SM0~SM4999 <sup>※6</sup>	
Flow (S)		9000 points	S0~S7999 [HS0~HS999]
Timer (T)	Points	7000 points	T0~T4999 [HT0~HT1999]
	Specification	100ms timer: setting time 0.1~3276.7s	
		10ms timer: setting time 0.01~327.67s	
		1ms timer: setting time 0.001~32.767s	
Counter (C)	Points	7000 points	C0~C4999 [HC0~HC1999]
	Specification	16-bit counter: setting value -32768~+32767	
		32-bit counter: setting value -2147483648~+2147483647	
Data register (D)		100000 words	D0~D69999 [HD0~HD24999] <sup>※5</sup>
			Special use SD0~SD4999 <sup>※6</sup>
FlashROM register (FD)		14192 words	FD0~FD8191
			Special use SFD0~SFD5999
High-speed processing ability		High speed count, pulse output, external interruption	
Password protection		6-bit ASCII	
Self-diagnosis function		Power-on self-check, monitor timer, grammar check	

Item		Specification					
Series		XDM	XDC	XD5E	XDME	XL5E	XLME
I/O points <sup>※2</sup>	Total points	24/32/60	24/32/48/60	30/60	60	32	32
	Input points	14/18/36	14/18/28/36	16/36	36	18	18
	Output points	10/14/24	10/14/20/24	14/24	24	14	14
Processing speed		0.05us			0.03us		
User program capacity <sup>※1</sup>		512KB			1M		
Program execution mode				Cyclic scanning mode			
Programming mode				Instruction, ladder chart, C language			
Power-off holding				FlashROM and lithium battery (3V button battery)			
Internal coil (X) <sup>※3</sup>				1280: X0~77, X10000~11777, X20000~20177, X30000~30077			
Internal coil (Y) <sup>※4</sup>				1280: Y0~77, Y10000~11777, Y20000~20177, Y30000~30077			
Internal coil (M, HM)		87000 points	M0~M69999[HM0~HM11999] <sup>※5</sup>				
			Special use SM0~SM4999 <sup>※6</sup>				
Flow (S)		9000 points	S0~S7999 [HS0~HS999]				
Timer (T)	Points	7000 points	T0~T4999 [HT0~HT1999]				
	Specification	100ms timer: setting time 0.1~3276.7s					
		10ms timer: setting time 0.01~327.67s					
		1ms timer: setting time 0.001~32.767s					
Counter (C)	Points	7000 points	C0~C4999 [HC0~HC1999]				
	Specification	16-bit counter: setting value -32768~+32767					
		32-bit counter: setting value -2147483648~+2147483647					
Data register (D)		100000 words	D0~D69999 [HD0~HD24999] <sup>※5</sup>				
			Special use SD0~SD4999 <sup>※6</sup>				
FlashROM register (FD)		14192 words	FD0~FD8191				
			Special use SFD0~SFD5999				
High-speed processing ability		High speed count, pulse output, external interruption					
Password protection		6-bit ASCII					
Self-diagnosis function		Power-on self-check, monitor timer, grammar check					

- ※1 User program capacity refers to the maximum program capacity when secret downloading.  
※2 I/O points refer to the terminal numbers which can be input and output signal.  
※3 X refers to internal input relay, the X points over I can be used as intermediate relay.  
※4 Y refers to internal output relay, the Y points over O can be used as intermediate relay.  
※5 [ ] is defaulted power-off holding area which cannot be changed.  
※6 special use refers to the special registers occupied by the system, which cannot be used as other purpose.



Product Introduction

XD/XL series I/O wiring and specification

XL series power supply specification


•External DC power supply

Item	Contents
Rated voltage	DC24V
Voltage permissible range	DC21.6V~26.4V
Rated voltageInput current (only for basic unit)	120mA/DC24V
Allowable instantaneous power off time	10ms DC24V
Impact current	10A DC26.4V
Max consumption power	12W
Sensor power supply	24V DC±10%

- ① The power cord should be more than 2mm<sup>2</sup> in order to prevent voltage drop.  
② Even if there is a power failure within 10 ms, the PLC can continue to work. When the power is cut off for a long time or the voltage drops, the PLC stops working, and the output also shows the state of OFF. When the power supply is restored, the PLC automatically starts to run.  
③ The grounding terminals of the basic unit and the expansion module are interconnected and reliable grounding (the third kind of grounding).

•Special power supply module XL-P50-E

Independent power supply ensures the normal operation of PLC in a good and reliable power supply system, and prolongs the service life of PLC.



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

Power supply specification of XD series

•AC power supply model

Item	Contents
Rated voltage	AC100V~240V
Voltage permissible range	AC90V~265V
Rated frequency	50/60Hz
Allowable instantaneous power off time	Interruption time 0.5 AC cycle, space 1s
Impact current	Max below 40A 5ms/AC100V Max below 60A 5ms/AC200V 12W
Max consumption power	12W
Sensor power supply	24V DC±10%, 16 points max 200mA, 32 points max 400mA

DC power supply model

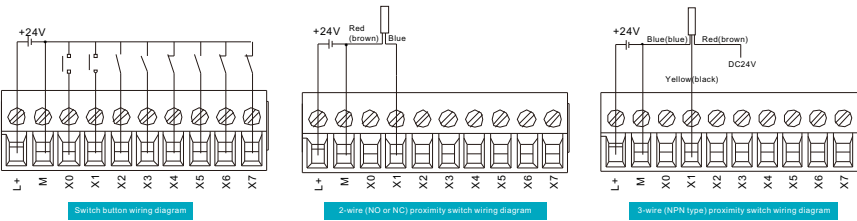
Item	Contents
Rated voltage	DC24V
Voltage permissible range	DC21.6~26.4V
Rated voltageInput current (only for basic unit)	120mA DC24V
Allowable instantaneous power off time	10ms DC24V
Impact current	10A DC26.4V
Max consumption power	12W
Sensor power supply	24V DC±10%, 16 points max 200mA, 32 points max 400mA

- ① The power cord should be more than 2mm<sup>2</sup> in order to prevent voltage drop.  
② Even if there is a power failure within 10 ms, the PLC can continue to work. When the power is cut off for a long time or the voltage drops, the PLC stops working, and the output also shows the state of OFF. When the power supply is restored, the PLC automatically starts to run.  
③ The grounding terminals of the basic unit and the expansion module are interconnected and reliable grounding (the third kind of grounding).

Input specification and wiring of XL series

•NPN mode specification

Item	Contents
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 mode	Contactor input or NPN, open collector transistor
Circuit insulation	Photoelectric coupled insulation
Input action display	LED lights when input is ON



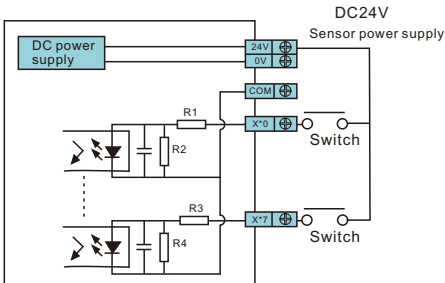
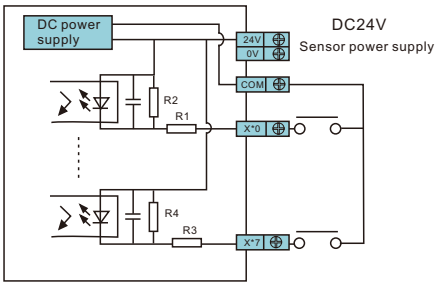
Input specification and wiring of XD series

•NPN mode specification

Item	Contents
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 mode	Contactor input or NPN, open collector transistor
Circuit insulation	Photoelectric coupled insulation
Input action display	LED lights when input is ON

•PNP mode specification

Item	Contents
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 mode	Contactor input or PNP, open collector transistor
Circuit insulation	Photoelectric coupled insulation
Input action display	LED lights when input is ON



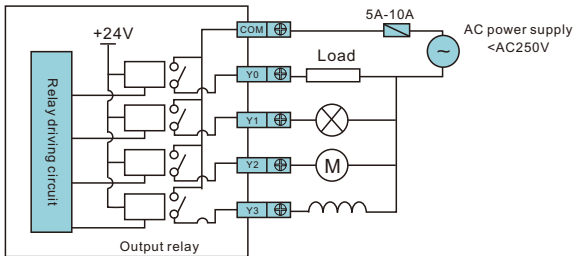
Output specification and wiring of XD/XL series

•Relay output

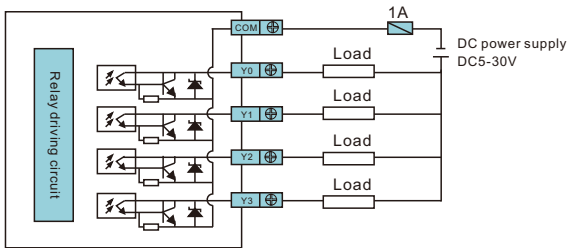
External power supply	Below AC250V, DC30V
Circuit insulation	Mechanical insulation
Action indication	LED indicator
Max load	Resistance load 3A Inductance load 80VA Light load 100W
Min load	DC5V 2mA
Response time	OFF --> ON 10ms ON --> OFF 10ms

•Transistor output

External power supply	DC5~30V
Circuit insulation	Photocoupler insulation
Action indication	LED indicator
Max load	Resistance load 0.3A Inductance load 8W/DC24V Light load 1.5W/DC24V
Min load	DC5V 2mA
Response time	OFF --> ON Below 0.2ms ON --> OFF Below 0.2ms



Prevent load short circuit and other faults from burning out the PLC's baseboard wiring, and install 5A-10A fuse every four points.



To prevent load short circuit and other faults from burning out the output unit and the PLC baseboard wiring, please select the appropriate load fuse.

•High speed pulse output

Model	Model RT or T
High speed pulse output terminal	Terminal Y0/Y1(Y2/Y3)(Y4/Y5~Y10/Y11)
External power supply	Below DC5~30V
Action indicator	LED indicator
Max current	50mA
Pulse max output frequency	100KHz

When using the high-speed pulse output function, the PLC can output 100KHz ~ 200KHz pulse, but it can not guarantee the normal operation of all servos. Please insert about 500Ω resistance between the pulse output terminal and 24V power supply.

Appendix

Configuration table of high speed counter

XD2-16R/T												
	Single phase incremental counting mode							AB phase counting mode				
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC0	HSC2	HSC4	HSC6	HSC8
Max frequency	10K	10K	10K					5K	5K	5K		
4 frequency doubling								2/4	2/4	2/4		
Counting interruption	√	√	√					√	√	√		
X000	U							A				
X001								B				
X002												
X003		U							A			
X004									B			
X005			U									
X006										A		
X007										B		

XD3-16/24/32/T/R/RT    XD5-16/24/32/T/R/RT    XD2-24/32T/R/RT-E    XL3-16												
	Single phase incremental counting mode							AB phase counting mode				
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC0	HSC2	HSC4	HSC6	HSC8
Max frequency	80K	10K	10K					50K	5K	5K		
4 frequency doubling								2/4	2/4	2/4		
Counting interruption	√	√	√					√	√	√		
X000	U							A				
X001								B				
X002												
X003		U							A			
X004									B			
X005												
X006			U							A		
X007										B		

XD3-48/60R/T/RT    XD5-48/60R/T/RT    XD2-48/60R/T/RT-E												
	Single phase incremental counting mode							AB phase counting mode				
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC0	HSC2	HSC4	HSC6	HSC8
Max frequency	80K	80K	10K					50K	50K	5K		
4 frequency doubling								2/4	2/4	2/4		
Counting interruption	√	√	√					√	√	√		
X000	U							A				
X001								B				
X002												
X003		U							A			
X004									B			
X005												
X006			U							A		
X007										B		
X010												
X011												
X012												
X013												

XD5-24T4/32T4    XL5-32T4/XL5E-32T4    XLME-32T4												
	Single phase incremental counting mode							AB phase counting mode				
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC0	HSC2	HSC4	HSC6	HSC8
Max frequency	80K	80K	80K	80K				50K	50K	50K	50K	
4 frequency doubling								2/4	2/4	2/4	2/4	
Counting interruption	√	√	√	√				√	√	√	√	
X000	U							A				
X001								B				
X002												
X003		U							A			
X004									B			
X005												
X006			U							A		
X007										B		
X010												
X011				U						A		
X012										B		
X013												
X014												
X015												
X016												
X017												
X020												
X021												

XD5-48T6/60T6												
	Single phase incremental counting mode							AB phase counting mode				
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC0	HSC2	HSC4	HSC6	HSC8
Max frequency	80K	80K	80K	80K	80K	80K		50K	50K	50K	50K	50K
4 frequency doubling								2/4	2/4	2/4	2/4	2/4
Counting interruption	√	√	√	√	√	√		√	√	√	√	√
X000	U							A				
X001								B				
X002												
X003		U							A			
X004									B			
X005												
X006			U							A		
X007										B		
X010												
X011				U							A	
X012											B	
X013												
X014					U						A	
X015											B	
X016												
X017						U						A
X020												B
X021												

XD5E-30T4								
	Single phase incremental counting mode				AB phase counting mode			
	HSC0	HSC2	HSC4	HSC6	HSC0	HSC2	HSC4	HSC6
Max frequency	80K	80K	80K	80K	50K	50K	50K	50K
4 frequency doubling					2/4	2/4	2/4	2/4
Counting interruption	√	√	√	√	√	√	√	√
X000	U				A			
X001					B			
X002								
X003		U				A		
X004						B		
X005								
X006			U				A	
X007							B	
X0010								
X0011				U				A
X0012								B

XDM-24T4/32T4/60T4,XDC-24T/32T/48T/60T												
	Single phase incremental counting mode							AB phase counting mode				
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC0	HSC2	HSC4	HSC6	HSC8
Max frequency	80K	80K	80K	80K				50K	50K	50K	50K	
4 frequency doubling								2/4	2/4	2/4	2/4	
Counting interruption	√	√	√	√				√	√	√	√	
X000	U							A				
X001								B				
X002												
X003		U							A			
X004									B			
X005												
X006			U							A		
X007										B		
X010												
X011				U							A	
X012											B	
X013												

XDM-60T10    XD5E-60T10    XDME-60T10												
Single phase incremental counting mode												
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC14	HSC16	HSC18	HSC20	HSC22
Max frequency	80K	80K	80K	80K	80K	80K	80K	80K	80K	80K		
4 frequency doubling												
Counting interruption	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
X000	U											
X001												
X002												
X003		U										
X004												
X005												
X006			U									
X007												
X010												
X011				U								
X012												
X013												
X014					U							
X015												
X016												
X017						U						
X020												
X021												
X022							U					
X023												
X024												
X025								U				
X026												
X027												
X030										U		
X031												
X032												
X033										U		
X034												

XDM-60T10    XD5E-60T10    XDME-60T10												
AB phase counting mode												
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC14	HSC16	HSC18	HSC20	HSC22
Max frequency	50K	50K	50K	50K	50K	50K	50K	50K	50K	50K		
4 frequency doubling	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/4		
Counting interruption	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
X000	A											
X001	B											
X002												
X003		A										
X004		B										
X005												
X006			A									
X007			B									
X010												
X011				A								
X012				B								
X013												
X014					A							
X015					B							
X016												
X017						A						
X020						B						
X021												
X022							A					
X023							B					
X024												
X025								A				
X026								B				
X027												
X030									A			
X031									B			
X032												
X033										A		
X034										B		
X035												

Instruction list

•Application instruction

Type	Mnemonic	Function
Program process	CJ	Condition jump
	CALL	Call subprogram
	SRET	Subprogram return
	STL	Process start
	STLE	Process end
	SET	Open the specified process, close the present process
	ST	Open the specified process, not close the present process
	FOR	Cycle scope beginning
	NEXT	Cycle range end
	FEND	Main program end
Data comparison	LD=	Start ON when (S1)=(S2)
	LD>	Start ON when (S1)>(S2)
	LD<	Start ON when (S1)<(S2)
	LD<=>	Start ON when (S1)=(S2)
	LD>=	Start ON when (S1)>(S2)
	LD<=	Start ON when (S1)<(S2)
	AND=	Series connection ON when (S1)=(S2)
	AND>	Series connection ON when (S1)>(S2)
	AND<	Series connection ON when (S1)<(S2)
	AND<=>	Series connection ON when (S1)=(S2)
	AND>=	Series connection ON when (S1)>(S2)
	AND<=	Series connection ON when (S1)<(S2)
	OR=	Parallel connection ON when (S1)=(S2)
	OR>	Parallel connection ON when (S1)>(S2)
	OR<	Parallel connection ON when (S1)<(S2)
	OR<=>	Parallel connection ON when (S1)=(S2)
Data transmission	OR>=	Parallel connection ON when (S1)>(S2)
	OR<=	Parallel connection ON when (S1)<(S2)
	CMP	Data comparison
	ZCP	Data zone comparison
	MOV	Transmission
	BMOV	Data block transmission
	FMOV	Multiple points repeated transmission
	EMOV	Floating point number transfer
	FWRT	FlashROM write in
	MSET	Batch set
Data operation	ZRST	Batch reset
	SWAP	Switch high-low byte
	XCH	Switch two data
	ADD	Add
	SUB	Subtract
	MUL	Multiply
	DIV	Divide
	INC	Increase 1
	DEC	Decrease 1
	MEAN	Mean value

•Basic instruction

Type	Mnemonic	Function
Data operation	WAND	Logic and
	WOR	Logic or
	WXOR	Logic xor
	CML	Logic not
	NEG	Negative
Data shift	SHL	Arithmetic left shift
	SHR	Arithmetic right shift
	LSL	Logic left shift
	LSR	Logic right shift
	ROL	Cycle left shift
	ROR	Cycle right shift
	SFTL	Bit left shift
	SFTR	Bit right shift
	WSFL	Word left shift
	WSFR	Word right shift
Data conversion	WTD	Single word integer convert to double words integer
	FLT	16-bit integer convert to floating point number
	DFLT	32-bit integer convert to floating point number
	FLTD	64-bit integer convert to floating point number
	INT	Floating point number convert to integer
	BIN	BCD convert to binary
	BCD	Binary convert to BCD
	ASCII	Hex convert to ASCII
	HEX	ASCII convert to hex
	DECO	Decoding
Floating point operation	ENCO	High bit coding
	ENCOL	Low bit coding
	GRY	Binary convert to gray code
	GBIN	Gray code convert to binary
	ECMP	Floating point number comparison
	EZCP	Floating point number zone comparison
	EADD	Floating point number add
	ESUB	Floating point number subtract
	EMUL	Floating point number multiply
	EDIV	Floating point number divide
Clock	ESQR	Floating point number square
	SIN	Floating point number sine
	COS	Floating point number cosine
	TAN	Floating point number tangent
	ASIN	Floating point number asine
	ACOS	Floating point number acosine
	ATAN	Floating point number atangent
	TRD	Read clock data
	TWR	Write clock data
	TCMP	Clock comparison

Mnemonic	Function
LD	Operation start NO contactor
LDI	Operation start NC contactor
AND	Series connection NO contactor
ANI	Series connection NC contactor
OR	Parallel connection NO contactor
ORI	Parallel connection NC contactor
LDP	Rising edge operation start
LDF	Falling edge operation start
ANDP	Rising edge series connection
ANDF	Falling edge series connection
ORP	Rising edge parallel connection
ORF	Falling edge parallel connection
LDD	Read NO contactor
LDDI	Read NC contactor
ANDD	Read NO contactor series connection
ANDDI	Read NC contactor series connection
ORD	Read NO contactor parallel connection
ORDI	Read NC contactor parallel connection
OUT	Coil driving
OUTD	Contactor output
ORB	Parallel connection of series connection circuit block
ANB	Series connection of parallel connection circuit block
MCS	New bus start
MCR	Bus return
ALT	Coil inverse
PLS	Turn on a scan cycle at the rising edge
PLF	Turn on a scan cycle at the falling edge
SET	Set ON the coil
RST	Reset the coil
TMR	Timer driving
CNT	Counter driving
RST	Contactor reset, present value set to zero
END	I/O operation and return to step 0
GROUP	Instruction block folding start
GROUPE	Instruction block folding end

•Special instruction

Type	Mnemonic	Function
Pulse output	PLSR	Multi-segment pulse output
	PLSF	Variable frequency pulse output
	DRVI	Relative positioning
	DRVA	Absolute positioning
	ZRN	Mechanical zero return
	STOP	Pulse stop
High-speed operation	DMOV	Read 32-bit high speed counter
	DMOV	Write 32-bit high speed counter
	CNT(_AB)	100 segments high speed counting interruption
	CNT(_AB)	Electronic CAM
Modbus communication	RST	High speed counter reset
	COLR	Modbus coil read
	INPR	Modbus input coil read
	COLW	Modbus single coil write
	MCLW	Modbus multiple coils write
	REGR	Modbus register read
	INRR	Modbus input register read
	REGW	Modbus single register write
	MRGW	Modbus multiple registers write

Type	Mnemonic	Function
Serial port parameters read and write	CFGCR	Read serial port parameters
	CFGCW	Write serial port parameters
Precise timing	STR	Precise timing
	DMOV	Read precise timing register
	STOP	Stop precise timing
Interruption	EI	Allow interruption
	DI	Disable interruption
Sequence block	IRET	Interruption return
	SBLOCK	Block start
	SBLOCKE	Block end
	BSTOP	Stop block
	BGOON	Continue running the block
Read and write the module	WAIT	Wait
	FROM	Read the module
	TO	Write the module
Others	FRQM	Frequency measurement
	PWM	Pulse width modulation
	PID	PID operation
	NAME_C	C language function block



Product Introduction

Dimension (unit: mm)

•XL series PLC

Suitable model

Series name	Points
XL1 series	16 points

Suitable model

Series name	Points
XL3 series	16 points

•XL series power supply

Suitable model

Series name	Points
XL5 series	32 points
XLME series	32 points

•XL series right extension module

Suitable model

Module type	Model
I/O	8X8Y
	16X
	16Y
Analog	All

•Terminal dimension

•Module dimension

Suitable model

Module type	Model
I/O	16X16Y
	32X
	32Y

•XL series left extension module

Suitable model

Module type	Model
Analog	All
Communication	XL-NES-ED

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•XD series basic unit

Suitable model

Series name	Points
XD1 series	16 points
XD2 series	
XD3 series	
XD5 series	
XD5 series	

•Terminal dimension

Suitable model

Series name	Points
XD5E series	30 points

•Module dimension

Suitable model

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

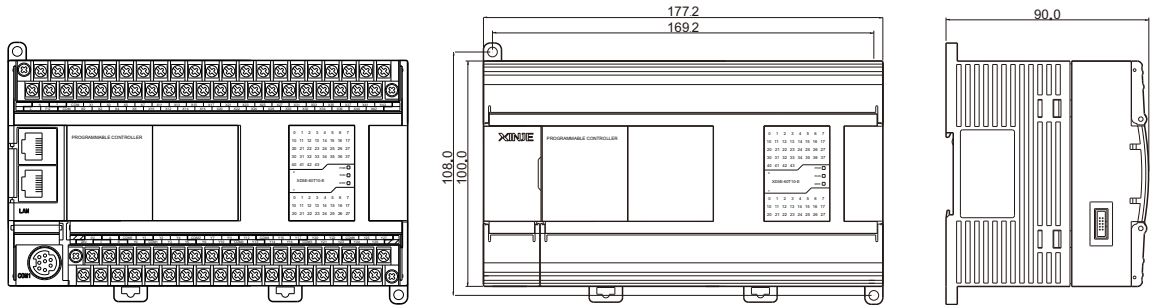
•Module dimension

Suitable model

Series name	Points
XD2 series	48/60 points
XD3 series	
XD5 series	
XDM series	
XDC series	

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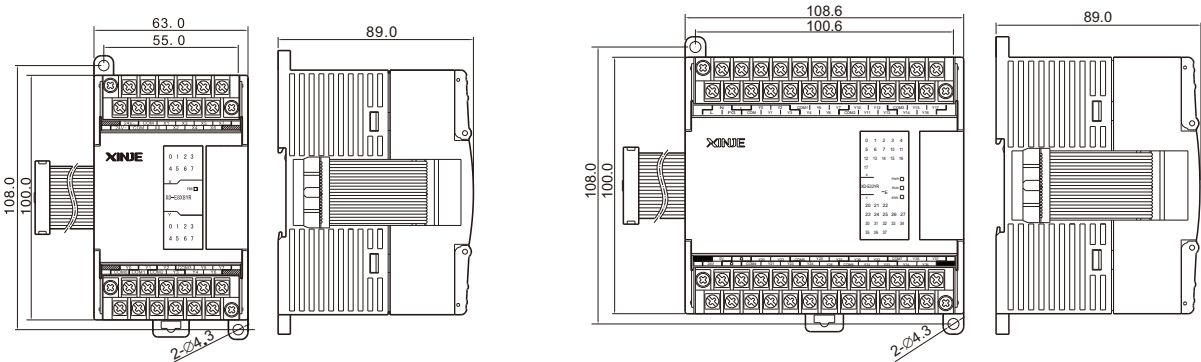
Product Introduction



Suitable model

Series name	Points
XD5E series	60 points
XDME series	

•XD series right extension module



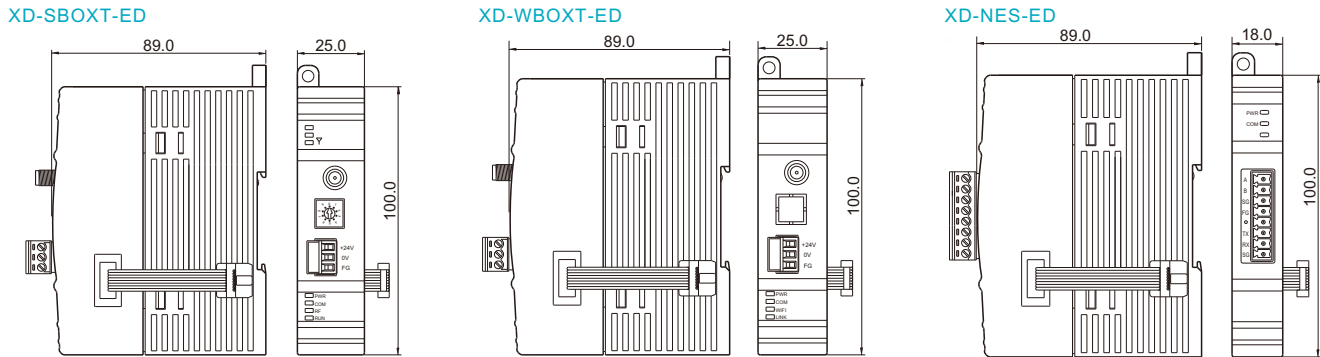
Suitable model

Module type	Model
I/O	8X/8Y
	8X8Y
	16X/16Y
Analog	All

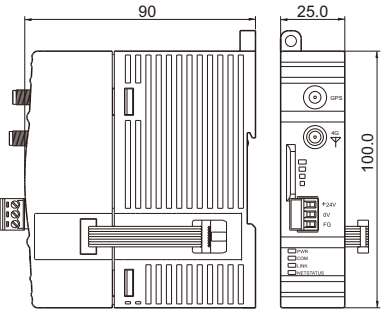
Suitable model

Module type	Model
I/O module	32X/32Y
	16X16Y

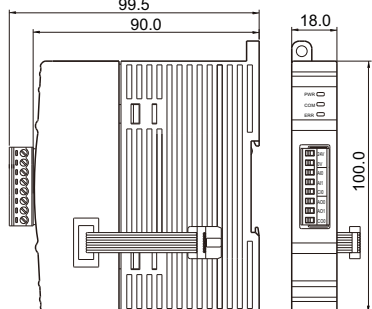
•XD series left extension module



XD-4GBOX-ED

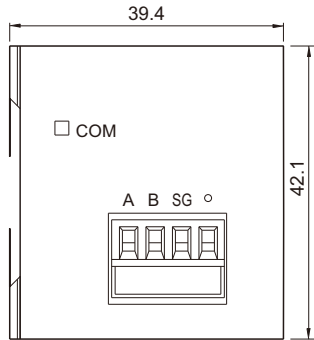


XD series analog ED module

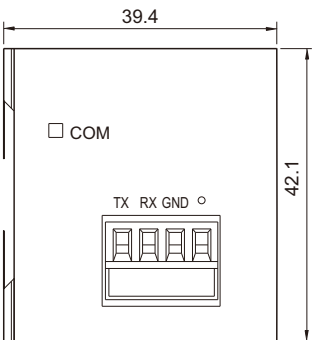


•XD series extension BD card

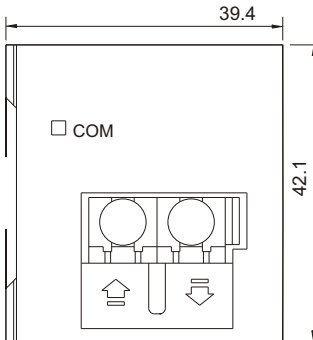
XD-NE-BD



XD-NS-BD



XD-NO-BD







Product Introduction

XC basic unit divided by series

• XC1 series cost-effective type

Control points: 10/16/24/32

The control system of small points is suitable for general application occasions. Its function is relatively simple. It can carry out logic control, data operation and other functions.

• XC2 series basic type

Control points: 14/16/24/32/42/48/60

The functions include data processing, high speed count, high speed pulse output, communication, PWM, frequency measurement, precise timing, interruption. Can connect expansion module and BD (14 points cannot support expansions; 42 points cannot support BD).

• XC3 series standard type

Control points: 14/24/32/42/48/60

The functions include data processing, high speed count, high speed pulse output, communication, PWM, frequency measurement, precise timing, interruption. Can connect expansion module and BD (14 points cannot support expansions; 42 points cannot support BD).

• XC5 series enhanced type

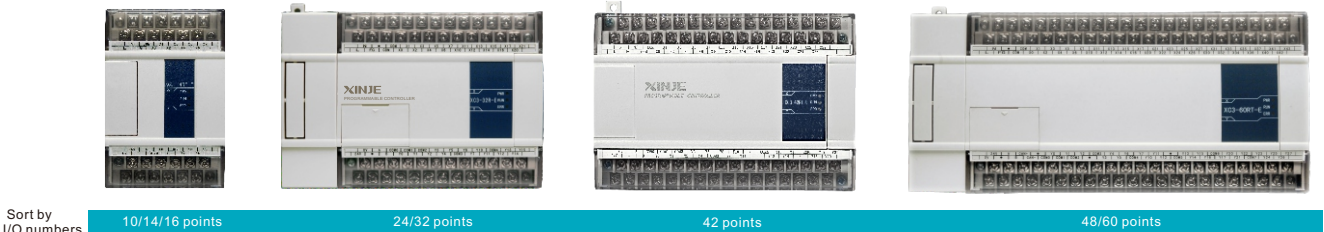
Control points: 24/32

In addition to all the functions of XC3, it also supports the functions of 4-axis pulse output, connection between expansion module and BD card, and has larger internal resource space.

• XCM series motion control type

Control points: 60

Support 10-axis pulse output. Support most functions of XC series such as PID control, high speed count, interruption. Cannot connect expansion modules but can install BD card.



Extension module

• I/O extension

XC-E16X    XC-E8X8YR    XC-E32YR

If the I/O numbers of main unit cannot meet the requirements, it can use I/O extension modules.

Input extension module	Output extension module	I/O extension module
XC-E8X XC-E16X XC-E32X	XC-E8YR   XC-E8YT XC-E16YR   XC-E16YT XC-E32YR   XC-E32YT	XC-E8X8YR XC-E8X8YT XC-E16X16YR XC-E16X16YT

• MA series extension module

MA-8X8YR    MA-4AD2DA

Digital value 8 inputs 8 outputs    Analog value 4 inputs 2 outputs

Based on Modbus protocol, can extend up to 16 modules

Digital I/O	Analog I/O	Temperature control
MA-8X8YR , MA-8X8YT MA-16X MA-16YR , MA-16YT	MA-2DA , MA-4DA MA-4AD , MA-8AD-A(V) MA-4AD2DA	MA-6PT-P MA-6TCA-P

\* Note: the model with "H" is photoelectricity isolation for each channel.

• Analog extension

XC-E4AD-H    XC-E4DA-H    XC-E4AD2DA-H

AD, DA transformation, temperature control

AD model	DA model	Mixed model
XC-E2AD-H XC-E4AD-H XC-E8AD-H XC-E8AD-B	XC-E2DA-H XC-E4DA-H XC-E4DA-B-H	XC-E4AD2DA-H XC-E4AD2DA-B-H

• Temperature control

XC-E6PT-P    XC-E6TCA-P

Pt100 thermal resistor and K/E thermocouple signal input, built-in PID function

PT100	Thermocouple model	Analog and temperature mixed model
XC-E2PT-H XC-E6PT-H XC-E6PT-P-H	XC-E2TCA-P XC-E6TCA-P	XC-E3AD4PT2DA-H XC-E2AD2PT2DA

High speed calculation

Basic instruction 0.2~0.5μs, scanning time 10000 steps 5ms, program capacity 32K~128K.

Rich extensions

In order to meet more application needs, XC series PLC can extend I/O module, analog module, temperature control module. Support 7 different modules and 1 BD card.

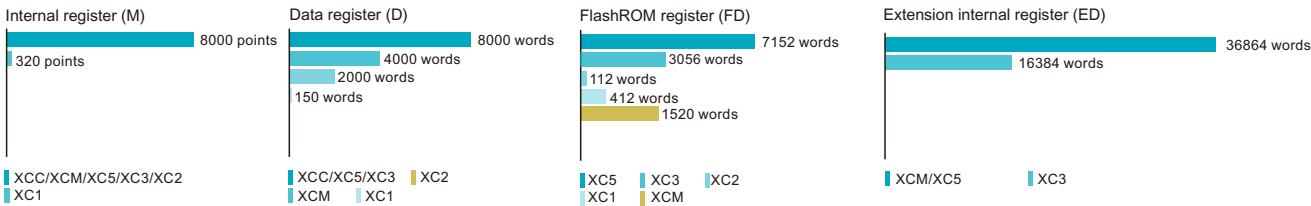
I/O extension module

- ① To extend I/O numbers, the numbers are 8~32, can extend the basic unit I/O numbers to 284.
- ② The output expansion module contains transistor (T) and relay (R).

Analog and temperature extension module

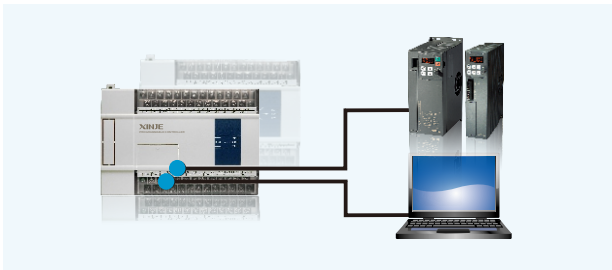
- ① AD, DA transformation function, fit for process control system such as temperature, flow, liquid level, pressure, etc.
- ② Built-in PID function, wide range of application, high control accuracy.
- ③ Each channel of XC-E6TCA-P and XC-E2AD2PT2DA can perform PID and auto-tune individually, exchange data with PLC by instruction FROM and TO.

Larger capacity for soft component



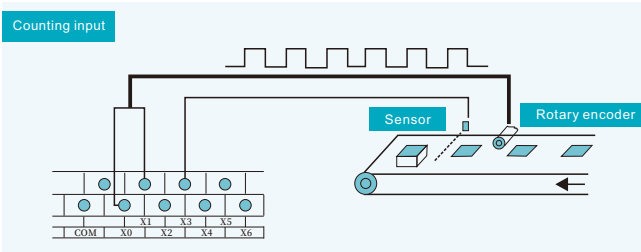
Communication function

- Multi-communication port (max 4 ports), support RS232, RS485, Ethernet. Can communicate with frequency inverter, meter and other devices, easy to build communication network.

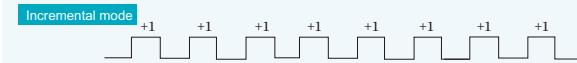


High speed count

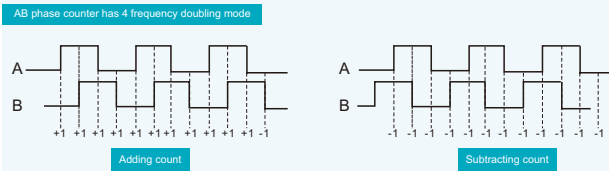
- XC series PLC has 2~6 channels 2 phases 32 bits high speed counter and high speed count comparator, can connect rotary encoder directly and count the encoder signal.
- The counting mode includes single phase (incremental mode), pulse and direction mode, AB phase mode (\*1, \*4). The max frequency is 80KHz.



Various counting modes



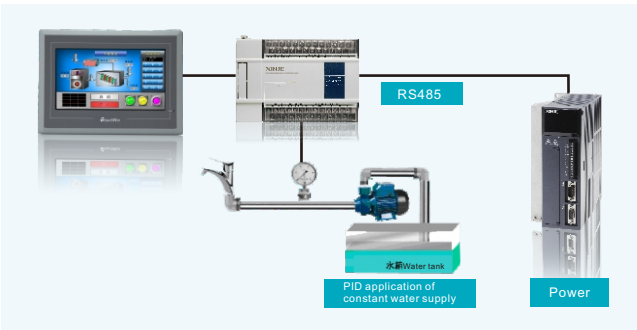
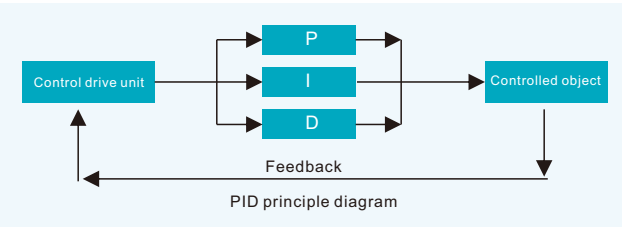
4 frequency doubling mode



# Product Introduction

## PLC PID control

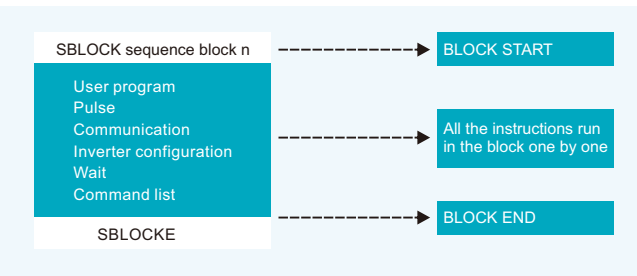
- XC series PLC has PID control instruction and auto-tune function.
- Users can get the best sampling time and PID parameters by auto-tune function, improve the controlling accuracy.



## Sequence block

All the instructions run one by one in the sequence block. The next instruction will run after the current instruction ends.

- The block can optimize the programming method of pulse and communication instruction in the program.
- Multi-pulse and communication instructions cannot run at the same time in the process which makes the programming method complicated. The block can simplify the program.



## Precise timing

- 32 bits instruction STR is precise timing function.
- The precise timer will generate an interruption flag when it reaches the timing value. Each precise timer has corresponding interruption flag.
- The precise timer is a 1ms 32 bits timer.

## Frequency measurement

- 32 bits instruction FRQM can measure the frequency.

## Real-time clock

- Built-in real-time clock, Li-battery power-off retentive.

## Password protection

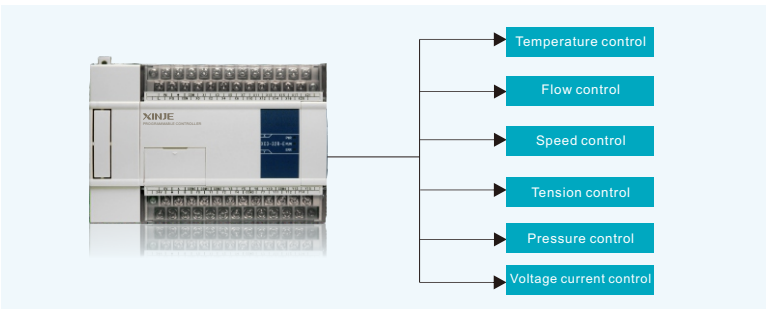
- 6 bits ASCII, protect the program security.

## XC3-19AR-E meets diverse needs

- Has analog I/O function without connecting extension module

Logic control and analog I/O in one unit  
Digital input: 9 (NPN optical-coupler isolation); digital output: 10 (relay)  
Analog input: 8 (voltage); analog output: 2 (voltage/current)

- 12 bits high precision analog input, 8 bits analog output
- 2 channels AB phase input, 4 channels high speed count (10KHz)
- 2 channels 32 bits pulse output
- Cost-effective, save space



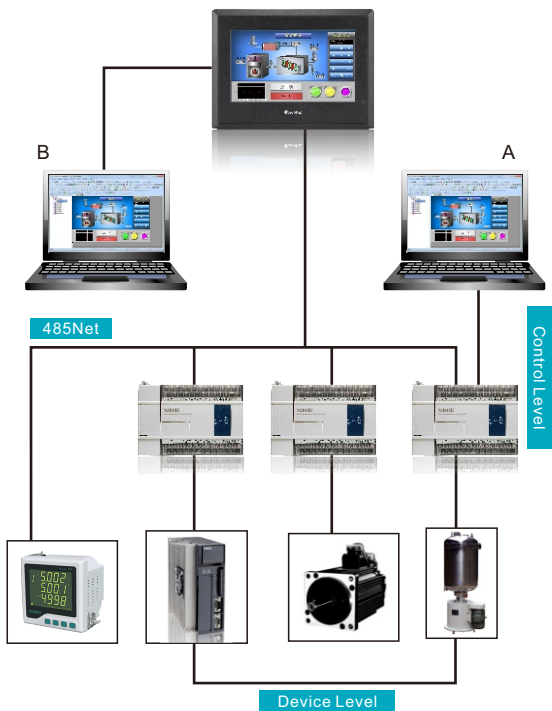
# Programmable logic controller **PLC**

## Powerful communication and networking function

XC series PLC supports Modbus protocol, free format protocol and other complicated network. The PLC can communicate with printer and meter through free format protocol.

- Modbus networking

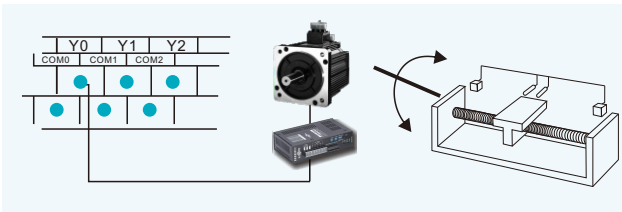
XC series PLC supports Modbus master-slave mode. PLC master station can send requests to other devices, other devices will response it. PLC slave station only can response the master station.



## Up to 100KHz pulse output, support 10 channels

XC2/XC3 (I/O 48/60) have 2 channels pulse output. Support multi-mode output with different instructions. The output frequency can up to 100KHz.

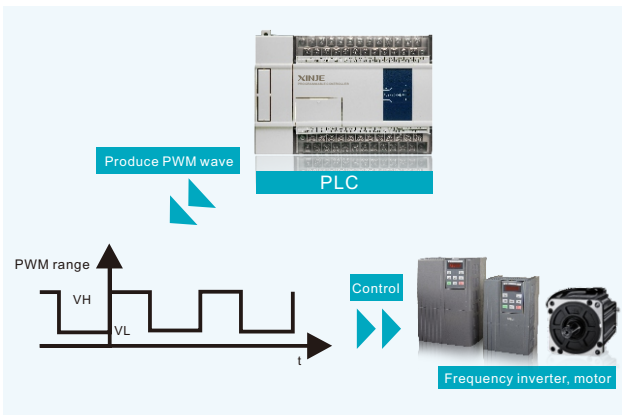
- ① It needs transistor output PLC to output pulse, such as XC3-14T-E or XC3-60RT-E
- ② XC5 (I/O 24/32) series have 4 channels pulse output (Y0~Y3)
- ③ XCM-60T-E has 10 channels pulse output (Y0~Y11)



\* Note: When using high-speed pulse output function, the PLC can output 100-200KHz pulse, but it can not guarantee the normal operation of all servos. Please connect about 500Ω resistor between the output and 24V power supply.

## PWM pulse width modulation

- PWM instruction has pulse width modulation function.
- This function can control the frequency inverter and DC motor.



## Interruption function

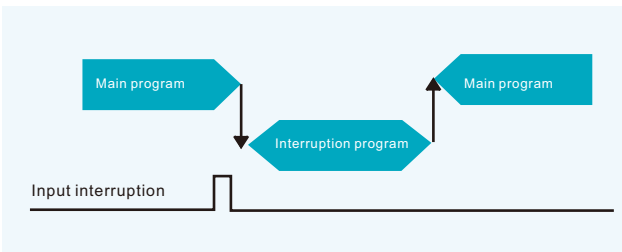
The interruption function includes external interruption, timing interruption, 24-segment high speed count interruption. The special operations can be done by calling the interruption. It will not be affected by the PLC scanning period.

- External interruption

X terminal is the external interruption input, each X is corresponding to an interruption which is activated by falling or rising edge.

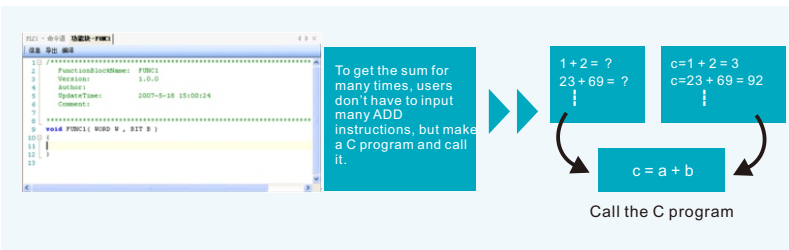
- Timing interruption

The timing interruption is very useful when it needs to process special program in long running period main program, or it needs to run special program every certain time in sequence control program. The interruption will not be affected by PLC scanning period. The interruption subprogram will run every N ms.



## C programming function

- Better program privacy, the C program is invisible after encrypted and can be called in the main program.
- Support rich calculation functions: contain all the C functions.
- Save internal space, reduce the workload, programming is more efficient.



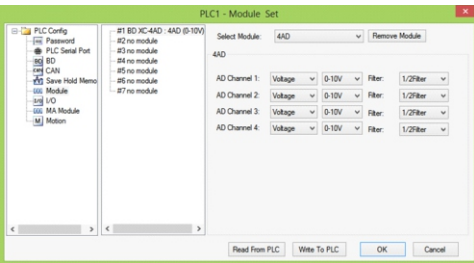


Product Introduction

XCPpro Software

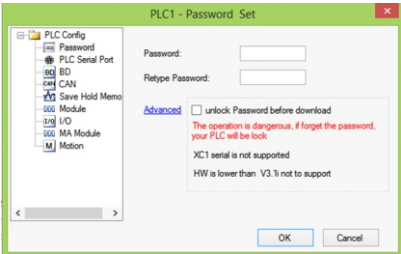
Support all series of PLC products

XCPpro software is fit for XC series PLC and XMH, XMP, XP series HMI&PLC integrated controller. It can make PLC program and configure the network module, extension module and extension BD.



Enhanced password function

The password can block the program uploading and protect the intellectual property rights of user. The password is also added to program downloading to avoid program damage.

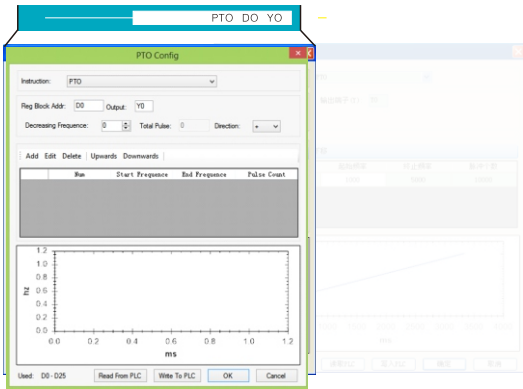


Panel configuration

Reduce the difficulty of making complicated instructions  
XCPpro provides easy editing environment for complicated instructions such as multi-pulse output, PID control, 24-segment high speed count interruption.

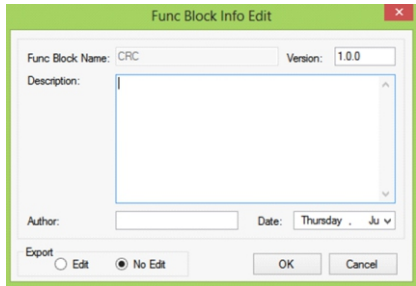
Improve the configuration of pulse instruction

New pulse instructions such as PTO are added to XCPpro software, these instructions can be configured in the panel.

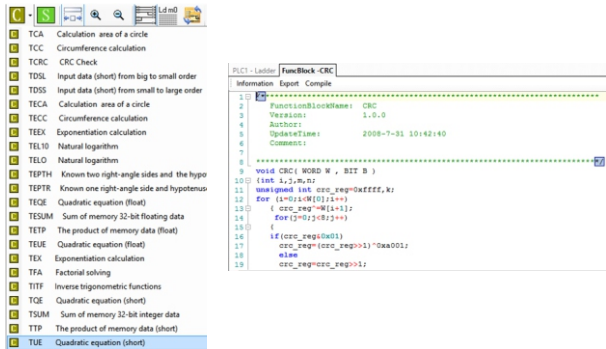


Powerful programming ability, better compatibility

Support ladder chart and instructions, the two modes can be switched.  
XCPpro software can make C program, no need changes to C programming software.  
The function block can be exported and imported, support source code and passive code. If exporting the passive code, the program cannot be read. The privacy is better.

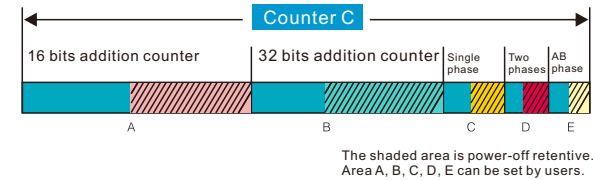


C function library contains more C instructions which can be called directly.



Power-off retentive in sections

User can set the power-off retentive range of ED register.  
XCPpro software can set the power-off retentive range of various registers such as timer, counter by changing the value in FD register.



Serial port setting Download the program online

Can configure COM1 to COM3.

Online downloading will not clear the data and shut down the output.  
PLC will auto-run after downloading.

Better system compatibility

Compatible with different OS: Windows2000/XP/7.  
Windows XP, Windows7.  
Support 64 bits operation system.

Calculate the program size

The programmer can command the program capacity accurately.

Useful simple functions

Cancel, redo, forward, backward, grammar, checking, instruction prompt.

MA Series Data Acquisition And Control Module



MA series module includes digital I/O, analog I/O and temperature control. MA module has RS485 port which based on Modbus protocol, can connect to PLC, HMI, integrated PLC&HMI controller and other devices which support Modbus. It is suitable for process control system such as temperature, flow, level, pressure. Support 16 extension modules.

Digital I/O module MA-nXnY

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

Analog output module MA-nDA

Model	Explanation
MA-2DA	2 channels 10 bits high precision analog output (voltage/current)
MA-4DA	4 channels 10 bits high precision analog output (voltage/current)

Analog input module MA-nAD

Model	Explanation
MA-4AD	4 channels 12 bits high precision analog input (voltage/current), each channel has PID control
MA-8AD-A	8 channels 12 bits high precision analog input (current), each channel has PID control
MA-8AD-V	8 channels 12 bits high precision analog input (voltage), each channel has PID control

Analog I/O module MA-nADmDA

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

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

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



XC Series Product Specification

Specifications of basic unit

• General specification

Item	Specification
Insulation voltage	Above DC500V 2MΩ
Noise immunity	Noise voltage 1000Vp-p 1μs
Air	No corrosive, flammable gas
Ambient temperature	0℃ ~ 60℃
Ambient humidity	5RH%~95RH% (no condensation)
COM1	RS232, connect with PC, HMI to program and debug
COM2	RS232/RS485, connect with network, meters, inverter...
COM3	Extension port of BD board, RS232/RS485
Installation	Fix with M3 screw or install on the rail directly
Ground	Third ground (cannot ground with strong power system)

• XC3-19AR-E specification

Item	Analog input (AD)	Analog output (DA)	
	Voltage input	Voltage output	Current output
Analog input range	0~10V	-	
Max input range	DC±18V	-	
Analog output range	-	DC 0~10V (external load resistor 2KΩ~1MΩ)	DC4~20mA (external load resistor less than 500Ω)
Digital input range	-	8 bits (0~255)	
Digital output range	12 bits (0~4095)	-	
Resolution	1/4095 (Bit)	1/255 (8-bit)	
Integrated precision	0.8%		
Transformation speed	15ms/channel	2ms/channel	
Power for analog	DC24V±10%, 100mA		

• Performance specification

Item		Specification									
Series		XC1		XC2			XC3			XC5	XCM
I/O numbers		10/16	24/32	14/16	24/32/42	48/60	14	24/32/42	48/60	24/32	60
Program running mode		Cyclic scan									
Programming mode		Instruction, ladder chart									
Processing speed		0.5us									
Power-off retentive		FlashROM		FlashROM and Li-battery							
User program capacity		32KB		96KB						128KB	128KB
I/O points		5/5 8/8	12/12 16/16	8/6 8/6	14/10 18/14 24/18	28/20 36/24	8/6	14/10 18/14 24/18	28/20 36/24	14/10 18/14	36/24
Internal coil (M)		448		8768							
Timer (T)	Points	80		640							
	Specification	100ms timer: 0.1~3276.7s 10ms timer: 0.01~327.67s 1ms timer: 0.001~32.767s									
Counter (C)	Points	48		640							
	Specification	16 bits counter: 0~32767 32 bits counter: -2147483648~2147483647									
Process (S)		32		1024			1024			1024	1024
Data register (D)		288		2612			9024			9024	5024
FlashROM register (FD)		510		496			4080			8176	1980
Extension internal register (ED)		-		-			16384			36864	36864
High speed counter		-		Max 6 channels, 80KHz, 3 kinds of high speed counting mode (single phase, pulse&direction, AB phase is 50KHz)							
Pulse output		-		2 channels						4 channels	10 channels
External interruption		-		2 kinds of external interruption (rising edge, falling edge)							
Password		6 bits ASCII									
Self-diagnosis		Power-on self-test, monitoring timer, grammar checking									

XC series basic unit model list

Model							Input points (DC24V)	Output points ( R,T )
AC power supply			DC power supply					
	Relay output	Transistor output	Transistor relay mixed output	Relay output	Transistor output	Transistor relay mixed output		
NPN type	XC1-10R-E	XC1-10T-E	-	XC1-10R-C	XC1-10T-C	-	5 points	5 points
	XC1-16R-E	XC1-16T-E	-	XC1-16R-C	XC1-16T-C	-	8 points	8 points
	XC1-24R-E	XC1-24T-E	-	XC1-24R-C	XC1-24T-C	-	12 points	12 points
	XC1-32R-E	XC1-32T-E	-	XC1-32R-C	XC1-32T-C	-	16 points	16 points
PNP type	XC1-10PR-E	XC1-10PT-E	-	XC1-10PR-C	XC1-10PT-C	-	5 points	5 points
	XC1-16PR-E	XC1-16PT-E	-	XC1-16PR-C	XC1-16PT-C	-	8 points	8 points
	XC1-24PR-E	XC1-24PT-E	-	XC1-24PR-C	XC1-24PT-C	-	12 points	12 points
	XC1-32PR-E	XC1-32PT-E	-	XC1-32PR-C	XC1-32PT-C	-	16 points	16 points
NPN type	XC2-14R-E	XC2-14T-E	XC2-14RT-E	XC2-14R-C	XC2-14T-C	XC2-14RT-C	8 points	6 points
	XC2-16R-E	XC2-16T-E	XC2-16RT-E	XC2-16R-C	XC2-16T-C	XC2-16RT-C	8 points	8 points
	XC2-24R-E	XC2-24T-E	XC2-24RT-E	XC2-24R-C	XC2-24T-C	XC2-24RT-C	14 points	10 points
	XC2-32R-E	XC2-32T-E	XC2-32RT-E	XC2-32R-C	XC2-32T-C	XC2-32RT-C	18 points	14 points
	XC2-42R-E	XC2-42T-E	XC2-42RT-E	XC2-42R-C	XC2-42T-C	XC2-42RT-C	24 points	18 points
	XC2-48R-E	XC2-48T-E	XC2-48RT-E	XC2-48R-C	XC2-48T-C	XC2-48RT-C	28 points	20 points
	XC2-60R-E	XC2-60T-E	XC2-60RT-E	XC2-60R-C	XC2-60T-C	XC2-60RT-C	36 points	24 points
PNP type	XC2-14PR-E	XC2-14PT-E	XC2-14PRT-E	XC2-14PR-C	XC2-14PT-C	XC2-14PRT-C	8 points	6 points
	XC2-16PR-E	XC2-16PT-E	XC2-16PRT-E	XC2-16PR-C	XC2-16PT-C	XC2-16PRT-C	8 points	8 points
	XC2-24PR-E	XC2-24PT-E	XC2-24PRT-E	XC2-24PR-C	XC2-24PT-C	XC2-24PRT-C	14 points	10 points
	XC2-32PR-E	XC2-32PT-E	XC2-32PRT-E	XC2-32PR-C	XC2-32PT-C	XC2-32PRT-C	18 points	14 points
	XC2-42PR-E	XC2-42T-E	XC2-42PRT-E	XC2-42R-C	XC2-42PT-C	XC2-42RT-C	24 points	18 points
	XC2-48PR-E	XC2-48PT-E	XC2-48PRT-E	XC2-48PR-C	XC2-48PT-C	XC2-48PRT-C	28 points	20 points
	XC2-60PR-E	XC2-60PT-E	XC2-60PRT-E	XC2-60PR-C	XC2-60PT-C	XC2-60PRT-C	36 points	24 points
NPN type	XC3-14R-E	XC3-14T-E	XC3-14RT-E	XC3-14R-C	XC3-14T-C	XC3-14RT-C	8 points	6 points
	XC3-24R-E	XC3-24T-E	XC3-24RT-E	XC3-24R-C	XC3-24T-C	XC3-24RT-C	14 points	10 points
	XC3-32R-E	XC3-32T-E	XC3-32RT-E	XC3-32R-C	XC3-32T-C	XC3-32RT-C	18 points	14 points
	XC3-42R-E	XC3-42T-E	XC3-42RT-E	XC3-42R-C	XC3-42T-C	XC3-42RT-C	24 points	18 points
	XC3-48R-E	XC3-48T-E	XC3-48RT-E	XC3-48R-C	XC3-48T-C	XC3-48RT-C	28 points	20 points
	XC3-60R-E	XC3-60T-E	XC3-60RT-E	XC3-60R-C	XC3-60T-C	XC3-60RT-C	36 points	24 points
PNP type	XC3-14PR-E	XC3-14PT-E	XC3-14PRT-E	XC3-14PR-C	XC3-14PT-C	XC3-14PRT-C	8 points	6 points
	XC3-24PR-E	XC3-24PT-E	XC3-24PRT-E	XC3-24PR-C	XC3-24PT-C	XC3-24PRT-C	14 points	10 points
	XC3-32PR-E	XC3-32PT-E	XC3-32PRT-E	XC3-32PR-C	XC3-32PT-C	XC3-32PRT-C	18 points	14 points
	XC3-42PR-E	XC3-42PT-E	XC3-42PRT-E	XC3-42PR-C	XC3-42PT-C	XC3-42PRT-C	24 points	18 points
	XC3-48PR-E	XC3-48PT-E	XC3-48PRT-E	XC3-48PR-C	XC3-48PT-C	XC3-48PRT-C	28 points	20 points
	XC3-60PR-E	XC3-60PT-E	XC3-60PRT-E	XC3-60PR-C	XC3-60PT-C	XC3-60PRT-C	36 points	24 points
NPN type	-	XC5-24T-E	XC5-24RT-E	-	XC5-24T-C	XC5-24RT-C	14 points	10 points
	-	XC5-32T-E	XC5-32RT-E	-	XC5-32T-C	XC5-32RT-C	18 points	14 points
PNP type	-	XC5-24PT-E	XC5-24PRT-E	-	XC5-24PT-C	XC5-24PRT-C	14 points	10 points
	-	XC5-32PT-E	XC5-32PRT-E	-	XC5-32PT-C	XC5-32PRT-C	18 points	14 points
NPN type	-	XCM-60T-E	-	-	XCM-60T-C	-	36 points	24 points
PNP type	-	XCM-60PT-E	-	-	XCM-60PT-C	-	36 points	24 points

\* Note: NPN and PNP is input type.

Product Introduction

I/O extension modules

	Input	Model		I/O points	Input points ( DC24V )	Output points ( R,T )
		Output				
		Relay output	Transistor output			
NPN type	XC-E8X	-	-	8 points	8 points	-
	-	XC-E8YR	XC-E8YT	8 points	-	8 points
	-	XC-E8X8YR	XC-E8X8YT	16 points	8 points	8 points
	XC-E16X	-	-	16 points	16 points	-
	-	XC-E16YR	XC-E16YT	16 points	-	16 points
	-	XC-E16X16YR-E	XC-E16X16YT-E	32 points	16 points	16 points
	-	XC-E16X16YR-C	XC-E16X16YT-C	32 points	16 points	16 points
	XC-E32X-E	-	-	32 points	32 points	-
	XC-E32X-C	-	-	32 points	32 points	-
	-	XC-E32YR-E	XC-E32YT-E	32 points	-	32 points
-	XC-E32YR-C	XC-E32YT-C	32 points	-	32 points	
PNP type	XC-E8PX	-	-	8 points	8 points	-
	-	XC-E8PX8YR	XC-E8PX8YT	16 points	8 points	8 points
	XC-E16PX	-	-	16 points	16 points	-
	-	XC-E16PX16YR-E	-	32 points	16 points	16 points
	-	XC-E16PX16YR-C	-	32 points	16 points	16 points
	XC-E32PX-E	-	-	32 points	32 points	-

\* Note: NPN and PNP is input type.

Analog and temperature extension modules

Model		Description
Analog input	XC-E2AD-H	2 channels analog input
	XC-E4AD-H	4 channels analog input
	XC-E8AD-H	8 channels analog input (first 4 channels are voltage input, last 4 channels are current input)
	XC-E8AD-B	First 4 channels are voltage input (-10~10V/-5~5V), last 4 channels are current input (-20~20mA)
	XC-E4AD2DA-H	4 channels analog input, 2 channels analog output
	XC-E4AD2DA-B-H	4 channels analog input (voltage/current), 2 channels voltage output (-10~10V/-5~5V)
Analog output	XC-E2DA-H	2 channels analog output
	XC-E4DA-H	4 channels analog output
	XC-E4DA-B-H	4 channels voltage output (-10~10V/-5~5V)
Temperature measurement	XC-E2PT-H	2 channels PT100 input
	XC-E6PT-H	6 channels PT100 input
	XC-E6PT-P-H	6 channels PT100 input, with PID control function
	XC-E6TCA-P	6 channels K, S, E, N, J, T, R thermocouple input, each channel has PID function
	XC-E2TCA-P	2 channels K, S, E, N, J, T, R thermocouple input, each channel has PID function
	XC-E3AD4PT2DA-H	3 channels analog input, 4 channels PT100 input, 2 channels analog output
	XC-E2AD2PT2DA	2 channels analog input, 2 channels PT100 input, each channel has PID function, 2 channels analog output

\* Note: the model with H is photoelectric isolation for each channel.

Extension BD card model list

Model	Description
Temperature measurement	XC-2AD2PT(-H)-BD
Communication	XC-COM(-H)-BD
SD card	XC-SD-BD
Analog I/O	XC-2AD2DA-BD
Ethernet	XC-TBOX-BD
Optical fiber communication	XC-OFC-BD
Analog input	XC-4AD(-H)-BD

Connection accessory model list

Model	Description
USB convertor	USB-COM
Bluetooth	COM-BLT

Basic instructions

Instruction	Function
LD	Initial logic normally open contactor
LDI	Initial logic normally close contactor
AND	Serial connection normally open contactor
ANI	Serial connection normally close contactor
OR	Parallel connection normally open contactor
ORI	Parallel connection normally close contactor
LDP	Initial logic rising-edge of pulse
LDI	Initial logic falling-edge of pulse
ANDP	Serial connection rising-edge of the pulse
ANDF	Serial connection falling-edge of the pulse
ORP	Parallel connection rising-edge of the pulse
ORF	Parallel connection falling-edge of the pulse
LDD	Read normally open contactor
LDDI	Read normally close contactor
ANDD	Read normally open contactor, serial connection
ANDDI	Read normally close contactor, serial connection
ORD	Read normally open contactor, parallel connection
ORDI	Read normally close contactor, parallel connection
OUT	Coil drive
OUTD	Output to the contactor
ORB	Parallel connection of serial circuit block
ANB	Serial connection of parallel circuit block
MCS	New generatrix start
MCR	Generatrix reset
ALT	Coil reverse
PLS	ON for one scanning period at rising-edge
PLF	ON for one scanning period at falling-edge
SET	Keep the coil ON
RST	Reset the coil
OUT	Counter drive
RST	Reset the contactor or present value
END	I/O operation and return to step 0
GROUP	Instruction block folding start
GROUPE	Instruction block folding end

Motion control instruction

Instruction	Function
ABS	Absolute address
CCW	Arc anticlockwise interpolation
CHK	Servo checking
CW	Arc clockwise interpolation
DRV	High speed positioning
DRV	Electrical back to zero
DRVZ	Mechanical back to zero
FOLLOW	Follow
INC	Incremental address
LIN	Linear interpolation
PLAN	Plane or space choice
TIM	Stable time
SETR	Set the electrical zero
SETP	Set the coordinate system

Application instruction

Type	Instruction	Function
Program process	CJ	Condition jump
	CALL	Call the subprogram
	SRET	Subprogram return
	STL	Process start
	STLE	Process end
	SET	Open assigned process, close present process
	ST	Open assigned process, not close present process
	FOR	Cycle start
	NEXT	Cycle end
	FEND	Main program end
Data comparison	LD=	Initial logic ON when (S1)=(S2)
	LD>	Initial logic ON when (S1)>(S2)
	LD<	Initial logic ON when (S1)<(S2)
	LD<>	Initial logic ON when (S1)≠(S2)
	LD>=	Initial logic ON when (S1)≥(S2)
	LD<=	Initial logic ON when (S1)≤(S2)
	AND=	Serial connection ON when (S1)=(S2)
	AND>	Serial connection ON when (S1)>(S2)
	AND<	Serial connection ON when (S1)<(S2)
	AND<>	Serial connection ON when (S1)≠(S2)
Data transmission	AND>=	Serial connection ON when (S1)≥(S2)
	AND<=	Serial connection ON when (S1)≤(S2)
	OR=	Parallel connection ON when (S1)=(S2)
	OR>	Parallel connection ON when (S1)>(S2)
	OR<	Parallel connection ON when (S1)<(S2)
	OR<>	Parallel connection ON when (S1)≠(S2)
	OR>=	Parallel connection ON when (S1)≥(S2)
	OR<=	Parallel connection ON when (S1)≤(S2)
	CMP	Data comparison
	ZCP	Data range comparison
Data calculation	MOV	Transmission
	BMOV	Data block transmission
	FMOV	Multi-point repeat transmission
	EMOV	Transfer of floating-point numbers
	FWRT	Write in FlashROM
	MSET	Batch set on
	ZRST	Batch reset
	SWAP	Exchange the high byte and low byte
	XCH	Exchange the data
	ADD	Addition

Type	Instruction	Function
Data calculation	MEAN	Get the mean value
	WAND	Logic AND
	WOR	Logic OR
	WXOR	Logic XOR
	CML	Reverse
Data shift	NEG	Negative
	SHL	Arithmetic shift left
	SHR	Arithmetic shift right
	LSL	Logic shift left
	LSR	Logic shift right
	ROL	Cycle shift left
	ROR	Cycle shift right
	SFTL	Bit shift left
	SFTR	Bit shift right
	WSFL	Word shift left
Data transformation	WSFR	Word shift right
	WTD	Word integer change to double word integer
	FLT	16 bits integer change to floating number
	DFLT	32 bits integer change to floating number
	FLTD	64 bits integer change to floating number
	INT	Floating number change to integer
	BIN	BCD code change to binary
	BCD	Binary change to BCD code
	ASCII	Hex change to ASCII
	HEX	ASCII change to hex
Floating calculation	DECO	Decoding
	ENCO	High-bit encoding
	ENCOL	Low-bit encoding
	GRY	Binary change to gray code
	GBIN	Gray code change to binary
	ECMP	Floating number comparison
	EZCP	Floating number range comparison
	EADD	Floating number addition
	ESUB	Floating number subtraction
	EMUL	Floating number multiplication
Clock	EDIV	Floating number division
	ESQR	Floating number square
	SIN	Floating number sine
	COS	Floating number cosine
	TAN	Floating number tangent
	ASIN	Floating number arcsine
	ACOS	Floating number arccosine
	ATAN	Floating number arctangent
	TRD	Read clock data
	TWR	Write clock data

Special instruction

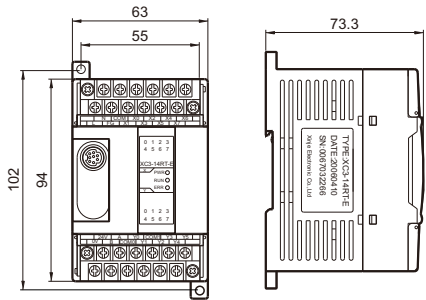
Type	Instruction	Function
Pulse output	PLSY	Single-segment pulse output without acceleration and deceleration
	PLSA	Absolute position multi-segment pulse output
	PLSR	Relative position multi-segment pulse output
	PLSF	Variable frequency pulse output
	PLSNEXT/PLSNT	Pulse segment changing
	DRVA	Absolute position single segment pulse control
	DRVI	Relative position single segment pulse control
	PLSMV	Store the pulse numbers in the register
	STOP	Stop the pulse
	ZRN	Mechanical return to zero
Modbus communication	PTO	Relative multi-segment pulse output
	PTOA	Absolute multi-segment pulse output
	PSTOP	Pulse stop
	PTF	Variable frequency pulse output

Type	Instruction	Function
High speed counter	HSCR	Read 32 bits high speed counter
	HSCW	Write 32 bits high speed counter
	OUT	24-segment high speed count interruption
	RST	Reset high speed counter
Free format communication	COLR	Modbus read coil
	INPR	Modbus read input coil
	COLW	Modbus write single coil
	MCLW	Modbus write multi coils
	REGR	Modbus read register
	INRR	Modbus read input register
	REGW	Modbus write single register
	MRGW	Modbus write multi registers
Free format communication	SEND	Free format data send
	RCV	Free format data receive

Type	Instruction	Function
Precise timing	STR	Precise timing
	STRR	Read precise timing register
	STRS	Stop precise timing
Interruption	EI	Enable the interruption
	DI	Disable the interruption
	IRET	Interruption return
Sequence block	SBLOCK	Block start
	SBLOCKE	Block end
	BSTOP	Stop block
	BGOON	Continue running the stop block
	WAIT	Wait
Write and read the module	FROM	Read the module
	TO	Write in
Others	FRQM	Frequency measurement
	PWM	Pulse width modulation
	PID	PID control
	NAME_C	C function block

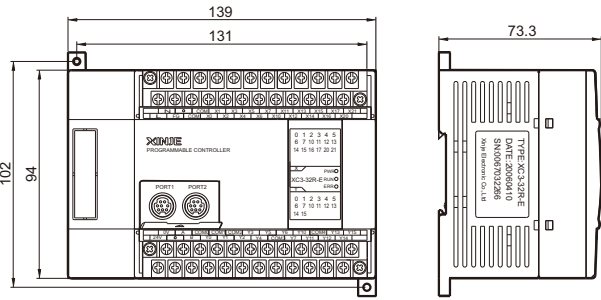
Product Dimension (unit: mm)

Dimension of basic unit



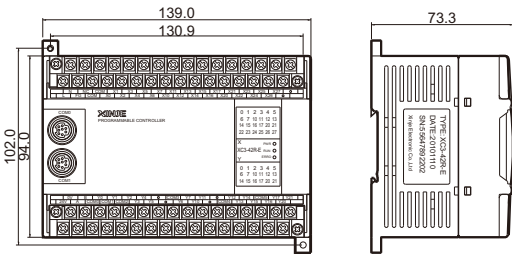
Suitable model

Series name	I/O points
XC1 series	10/16 points
XC2 series	14/16 points
XC3 series	14points



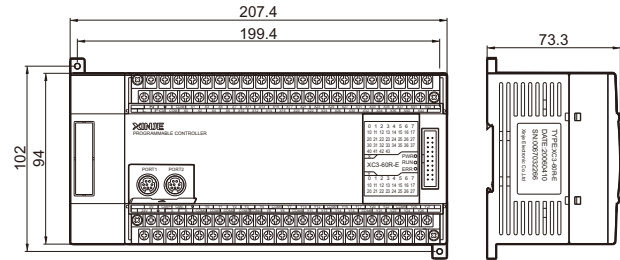
Suitable model

Series name	I/O points
XC1 series	24/32 points
XC2 series	24/32 points
XC3 series	24/32 points
XC5 series	24/32 points



Suitable model

Series name	I/O points
XC2 series	42 points
XC3 series	42 points

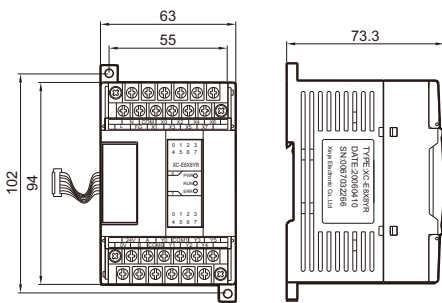


Suitable model

Series name	I/O points
XC2 series	48/60 points
XC3 series	48/60 points
XCM series	60 points

Dimension of extension module

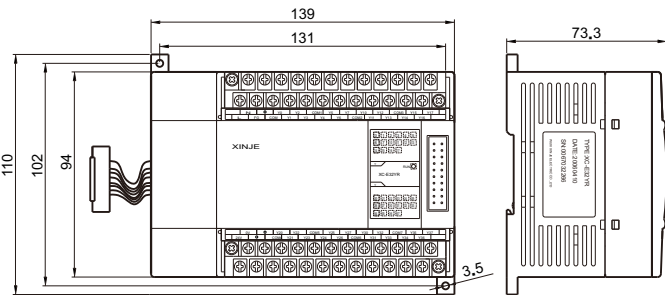
• Diagram 1



Suitable model

Series name	I/O points
I/O	8 points, 16 points
Analog	All
Temperature	All
Mixed	All

• Diagram 2



Suitable model

Series name	I/O points
I/O	32 points
Analog	-
Temperature	-
Mixed	-