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

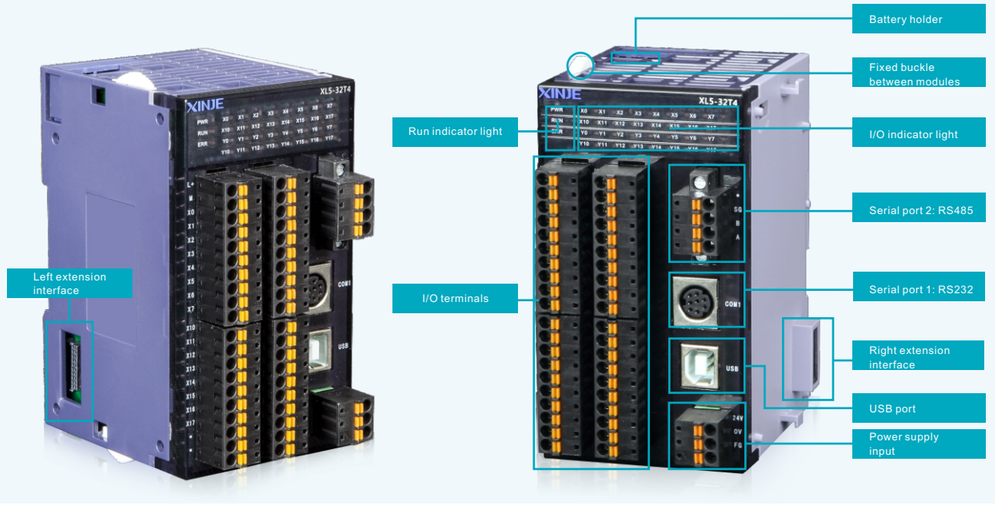
XD Series

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

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.



Product lineup

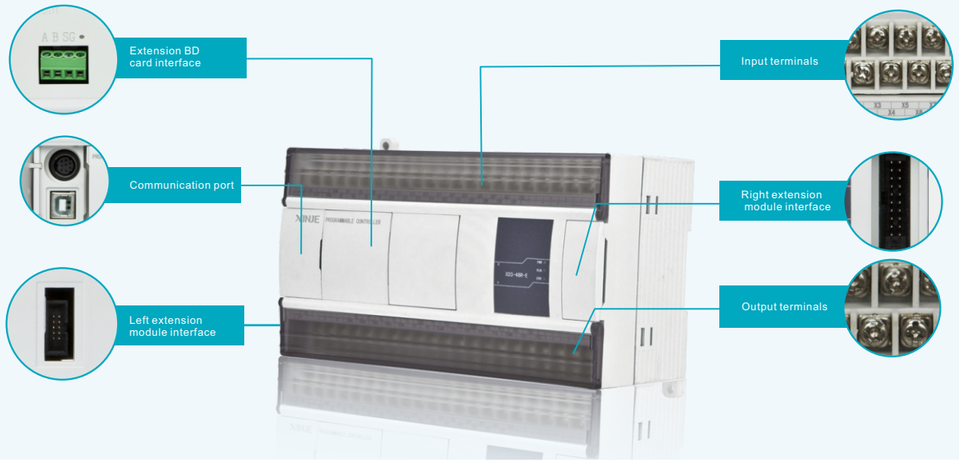
Cost-effective model XL1-16T-U	Standard model XL3-16T	Enhanced model XL5-32T4	Ethernet model XL5E-32T4	Ethernet model XLME-32T4
256K program capacity	256K program capacity	512K program capacity	1M program capacity	1M program capacity
I/O sequential control	I/O sequential control	I/O sequential control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

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

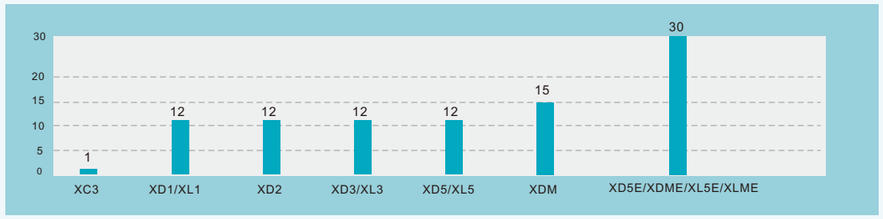
Following the XC series PLC, Xinje has devoted itself to the development of XD series PLC, which have faster speed, higher performance and better meet the diversified needsof users.



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.

CPU processing speed



PLC series

Product lineup

Cost-effective model XD1-16/24/32

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

Basic model XD2 series

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

Standard model XD3 series

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

Enhanced model XD5-16/24/32/48/60

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

Enhanced model XD5-24T4/32T4

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

Enhanced model XD5-48T6/60T6

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

Motion control model XDM-24T4/32T4/60T4

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

Motion control model XDM-60T10

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

Motion control model XDC-24/32/48/60

①512K 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 fieldbus
⑦ X-NET motion bus

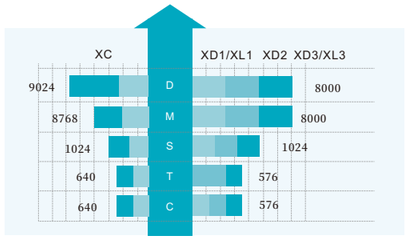
Ethernet model XD5E-30T4/60T10

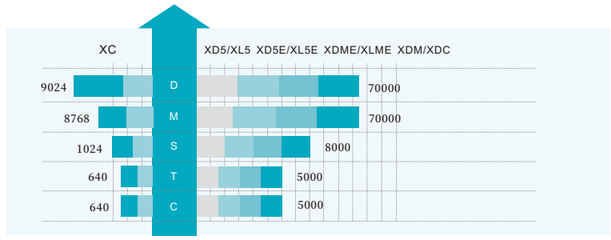
① 1M program capacity
② I/O sequential control
③ Max I/O 572 points
④ 4-axis/10-axis 100KHz pulse output
⑤ Ethernet port
⑥ Basic instruction 0.02~0.05us
⑦ X-NET fieldbus

Ethernet model XDME-60T10

①1M 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

Expanded software component capacity



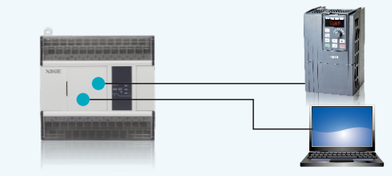


Multiple communication ports

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)



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
XD2	16 Points	1	0	0
	24/32 Points	1	1	0
	48/60 Points	1	2	0
XD3	16 Points	1	0	10
	24/32 Points	1	1	10
	48/60 Points	1	2	10
XD5	16 Points	1	0	10
	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
XL1	16 Points	0	0	0
XL3	16 Points	1	0	10
XL5	32T4 Points	1	0	16
XL5E	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

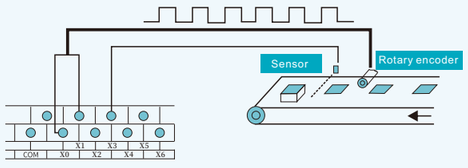
Soft components are divided more finely, make the ladder chart looking more intuitive.
Common soft components, power-down memory soft components and special soft components can be distinguished by the writing format of soft components.
Single phase and AB phase of high speed counter can be ditinguished 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	RAM	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	FD	Flash register	
		SFD	Special flash register	To protect user's intellectual property rights

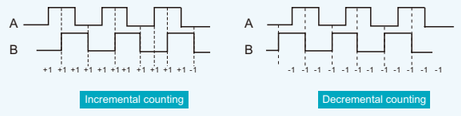
High speed counter

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.

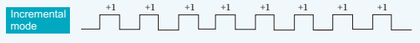
Counting input



2 frequency doubling mode

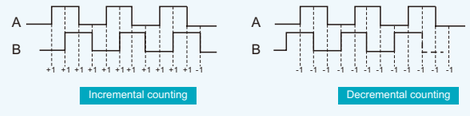


Multiple counting modes



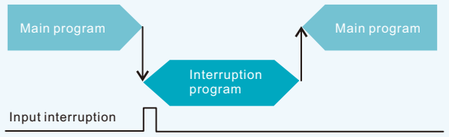
4 frequency doubling mode

AB phase counting has 4 frequency doubling mode



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

①In 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.

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

External interruption

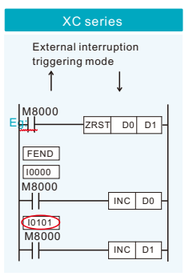
①The input terminal can be used as external interruption input, each input terminal is corresponding to one external interruption, is triggered at the rising or falling edge.

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

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

XC series

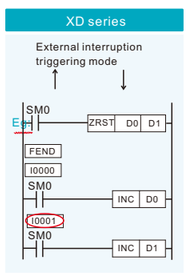
External interruption triggering mode



The rising and falling edges of different interruptions can be used

XD series

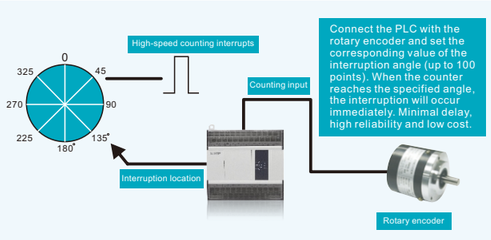
External interruption triggering mode



The rising and falling edges of the same interruption can be used

100-segment high speed counting interruption

①High speed pulse counting interruption, good real-time ability.
②XD/XL series high speed counter has 100-segment 32-bit preset value, the interruptionwill be generated when the counting difference value of each segment is equal to preset value.



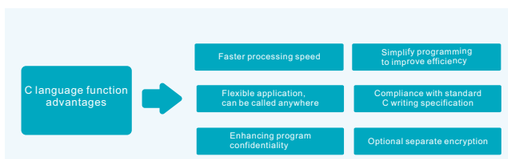
Connect the PLC with the rotary encoder and set the corresponding value of the interruption angle (up to 100 points). When the counter reaches the specified angle, the interruption will occur immediately. Minimal delay, high reliability and low cost.

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.

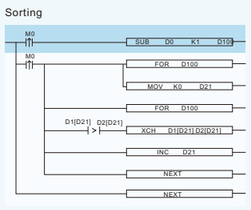


C language example one

Ranking from small to large

```
void PAIXU( WORD W , BIT B )
{
    int i,j,k;
    for(i=W[0];i>1;i--)
    {
        for(j=0;j<i;j++)
        {
            if(W[j]>W[j+1])
            {
                k=W[j];
                W[j]=W[j+1];
                W[j+1]=k;
            }
        }
    }
}
```

Sorting



C language example two

There are 32 bits known, and the state of each bit is unknown. How many bits of state 1 out of the 32 bits are required to be judged? Who are they?

```
void WEI( WORD W , BIT B )
{
    int i,j=0;
    for(i=0;i<W[0];i++)
    {
        if(B[i])
        {
            j++;
            W[j+1]=i;
        }
    }
    W[1]=j;
}
```

How to make by ladder chart?

The number of digits to be judged is stored in D0 (for example, 32), the total number of digit that is 1 is stored in D1, and the result of digit that is 1 is stored from D2 to D33.

C language example three

Complex formula

$$\frac{(\pi-In2)\times[In10/\sqrt{2}+(\pi/2)]}{(\pi\times3/2-In10)+(\pi-In2/\sqrt{2})}+\frac{[(In2+In10)\times\pi]}{\sqrt{2}}$$

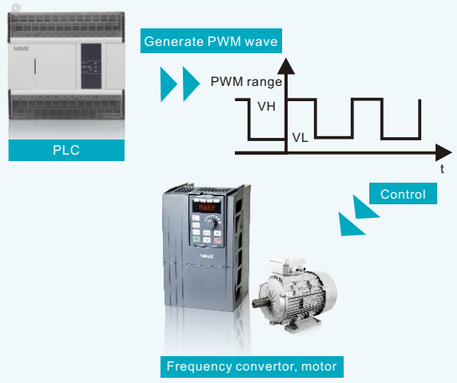
It involves power operation and natural logarithm operation.

What about C language? Let's see the result.

```
Void CH_LI_ANG (WORD W,Bit B)
{
  float tmp1,tmp2,tmp3,tmp4,tmp5,tmp6;
  tmp1=_PI-_LOG2;
  tmp2=_LOG10/_SQRT2+_PIP2;
  tmp3=_PIP2x3-_LOG10;
  tmp4=_PI-_LOG2/_SQRT2;
  tmp5=(_LOG2+_LOG10)*_PI;
  tmp6=(tmp1*tmp2)/(tmp3+tmp4);
  FW[0]=tmp6+tmp5/_SQRT2;
}
```

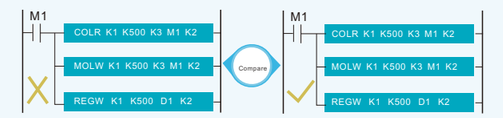
Pulse width modulation

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.



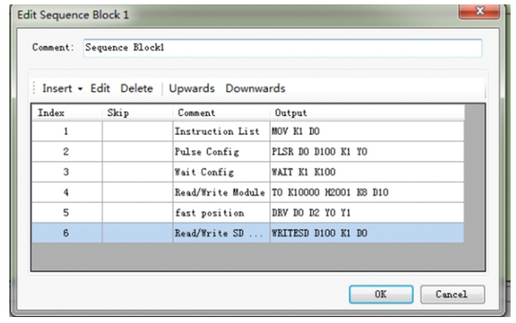
Optimized Modbus instructions

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.



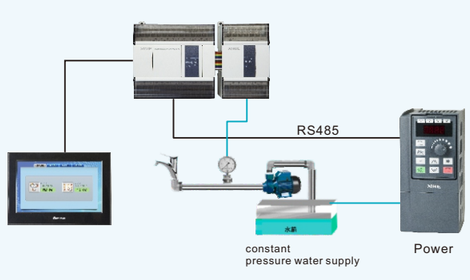
Sequence function block

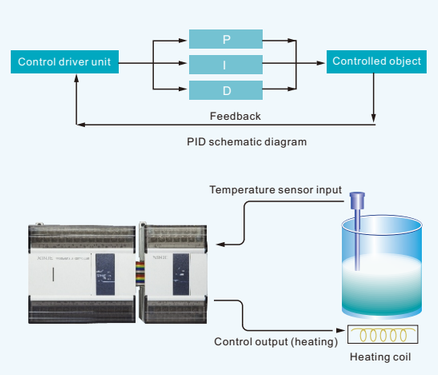
In the Sequence function block, all programs are executed sequentially, and the execution of the next instruction begins only after the first instruction has been executed.
Sequence function blocks can be used to optimize the ladder chart.



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.





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

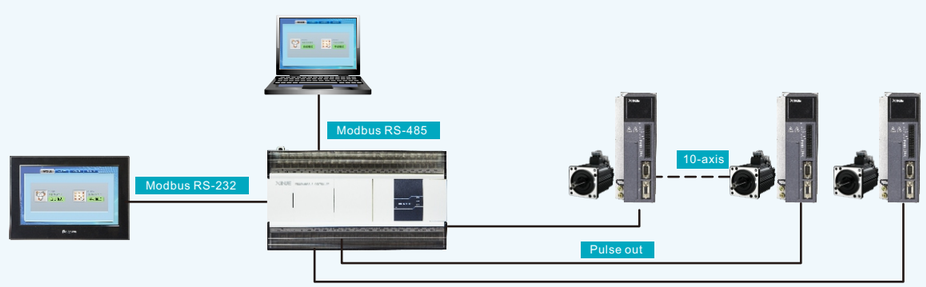
6-bit ASCII increase program security.
FS soft component can protect user's intellectual property rights.

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)

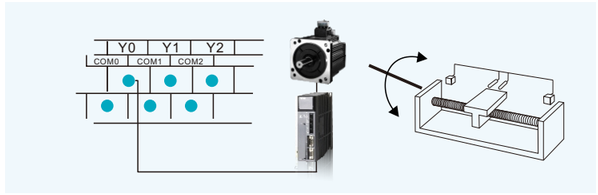
Pulse function

●Multi-axis independent control diagram



●Up to 100KHz pulse output, up to 10 channels

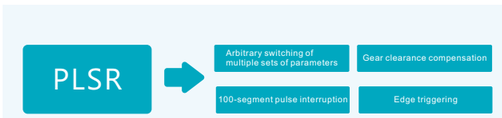
XD2/XD3/XL3/XDC have 2-channel pulse output, XD5 has 2~6 channels pulse output, XL5/XL5E/XLME have 4-channel pulse output, XDM/XD5E have 4~10 channels pulse output, XDME series has 10-channel pulse output. The output frequency can reach 100KHz by using different instructions. It needs to use transistor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



Series	Model	Pulse output channel	Pulse output terminal
XD1 series	16T/24T/32T	0	×
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	×
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 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.

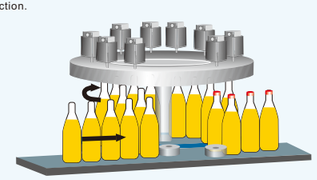


① Reduced instruction
② Flexible configuration
③ Various curve acceleration and deceleration
④ Startup in interruption subprogram
⑤ Start, end frequency, rising, falling slope can be set separately, higher accuracy and more delicacy
⑥ After each pulse is sent, if there is an interrupt coming, other programs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

●Application

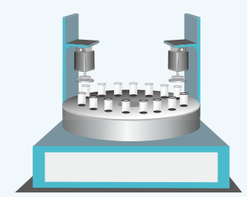
Capping machine

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.



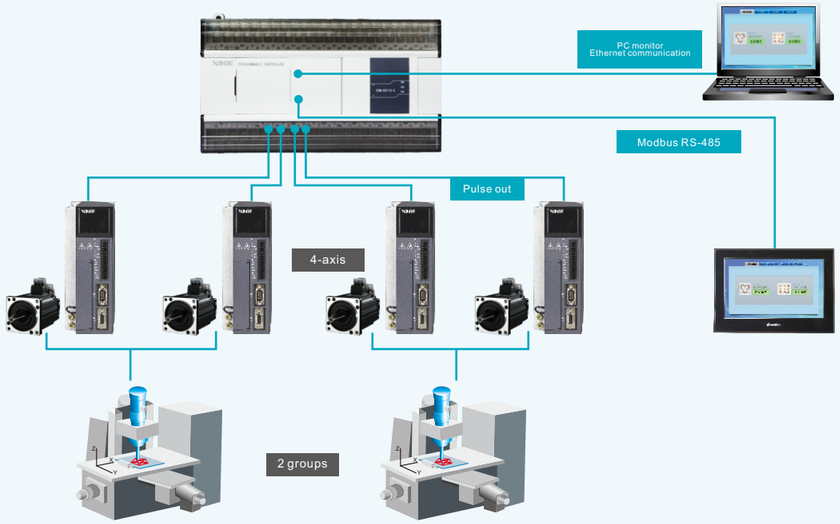
Glass grinder

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 consistencyand can rapidly improve production efficiency.



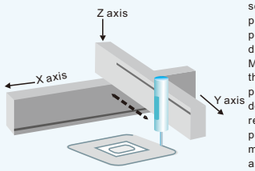
Interpolation function

●Multi-Axis linkage motion control diagram



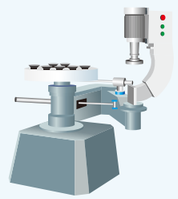
●Application

Application of sealant



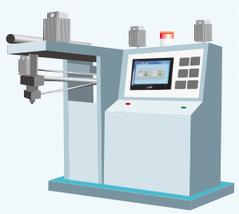
The coating machine specially controls the fluid sealant. It can coat the fluid droplets on the product surface or internal, accurate positioning, accurate sealant control, no wire drawing, no leakage, no sealant dropping. Mainly used for injection, coating, dripping to the precise position of each product 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.

Edge grinding machine



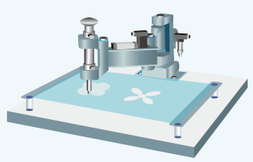
Through linear arc interpolation and other motion control functions, the edge grinding machine can realize the grinding operation of various shapes. It has the characteristics of rough grinding, fine grinding and polishing at one time. It is suitable for grinding inclined surfaces and straight edges 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.

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.

X-NET motion bus

●X-NET motion control bus

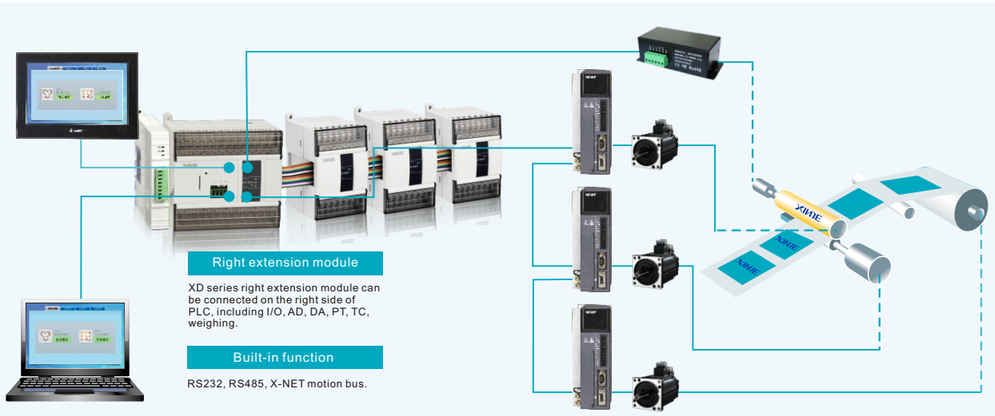
Motion bus control replaces the traditional pulse control mode, which makes the whole system perform faster, more reliable and more stable. At the same time, it makes the complex wiring simpler and improves equipment performance. It can control 20-axis synchronous motion.

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



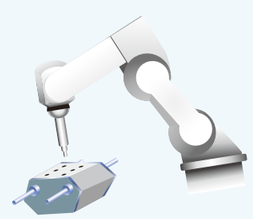
●Application

CNC lathes

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

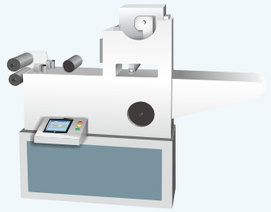
Robot arm is the most widely used automatic mechanical device in the field of robotics. It can be seen in the fields of industrial manufacturing, medical treatment, entertainment services, military, semiconductor manufacturing and space exploration. Although they have different shapes, they all have 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

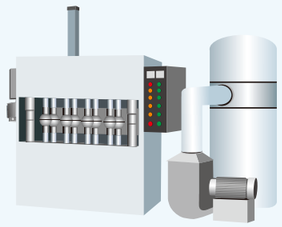
High speed cutting machine

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.



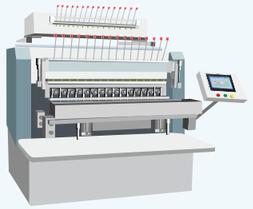
Ball grinder

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.



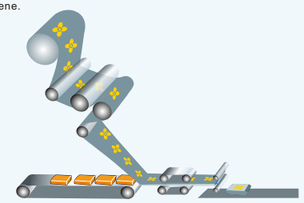
16-axis high-speed winder

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.



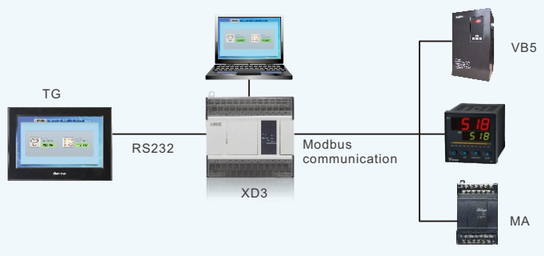
Powerful communication and networking functions

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 slope 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 Mpbs, 300m when the speed is 192 kpbs, 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.

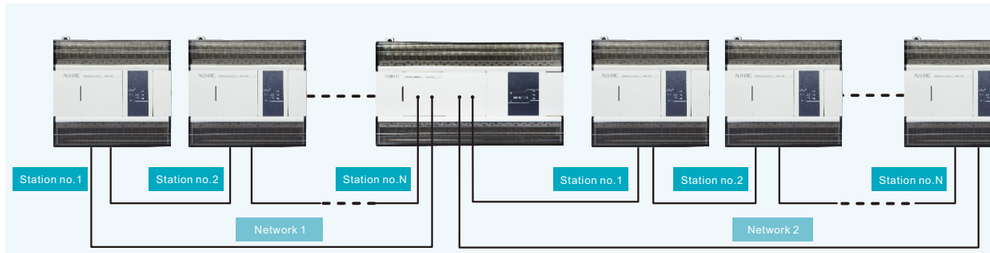
Product Introduction

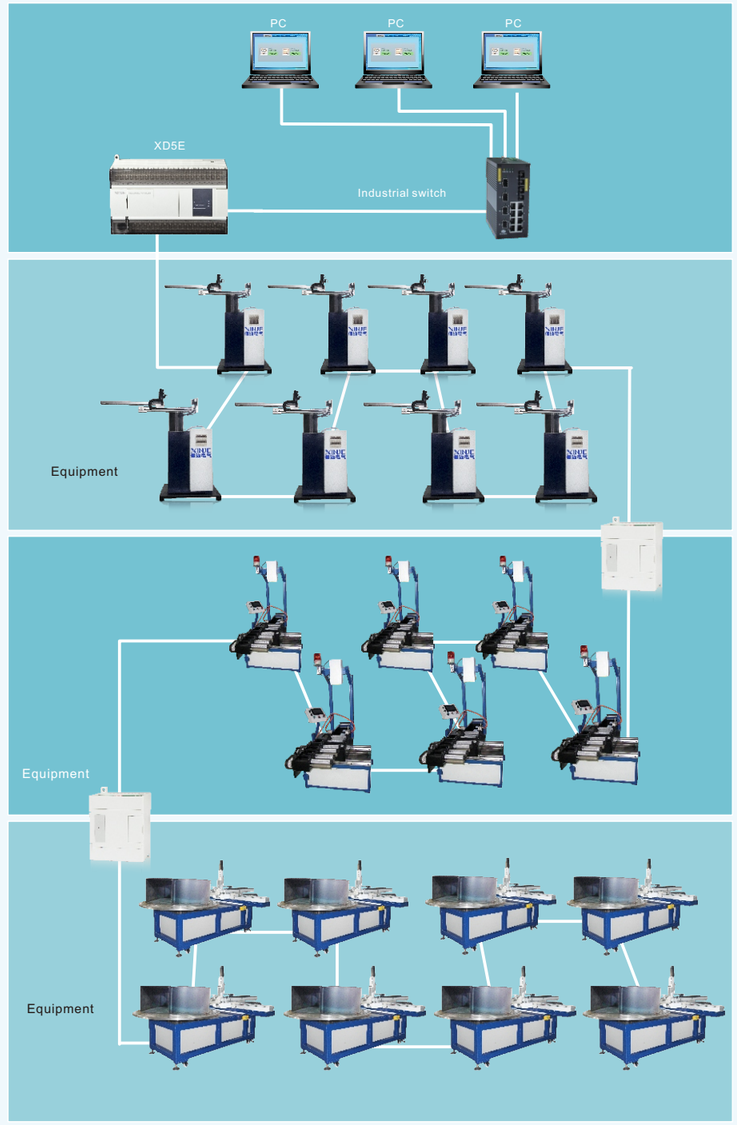
- Flexible network topology

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

Ring topology

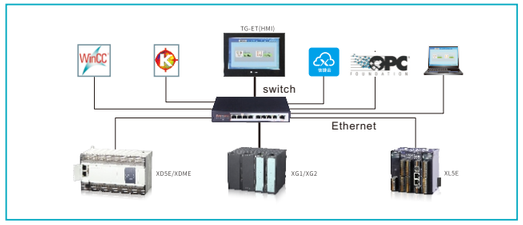
Multi-network structure



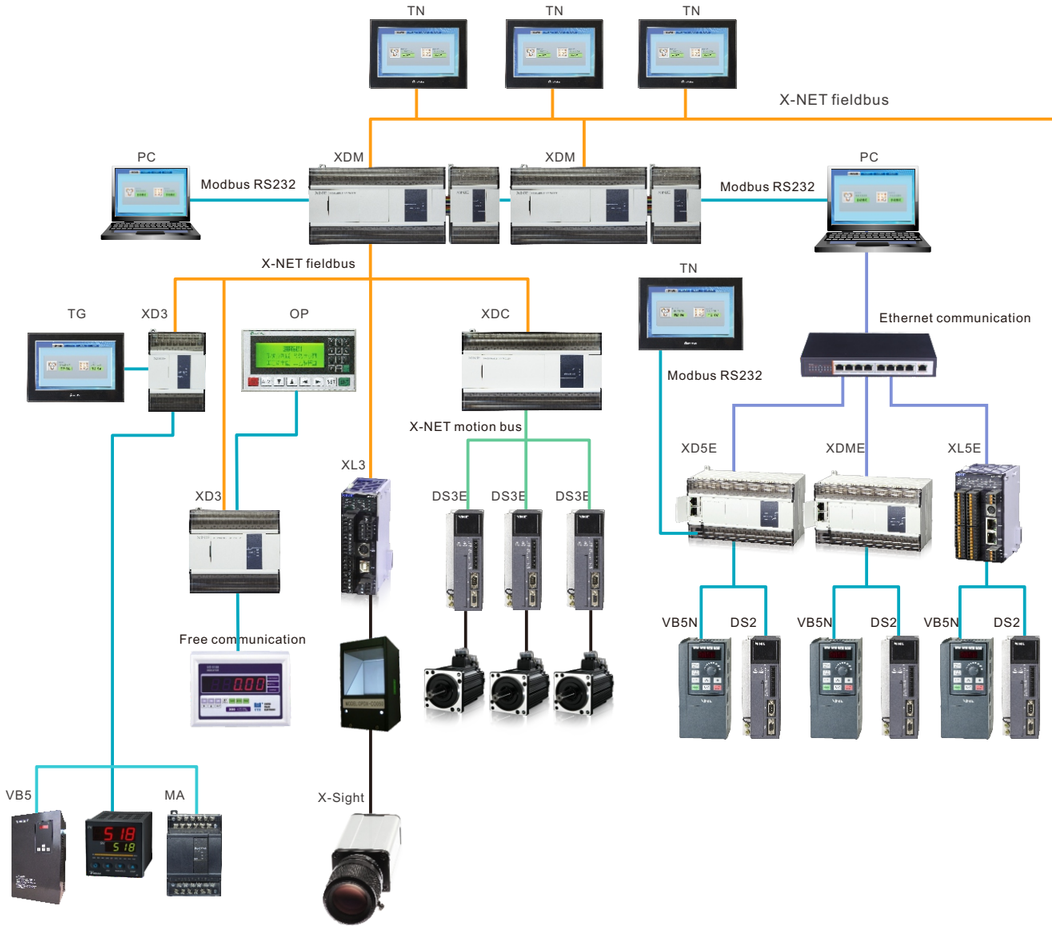


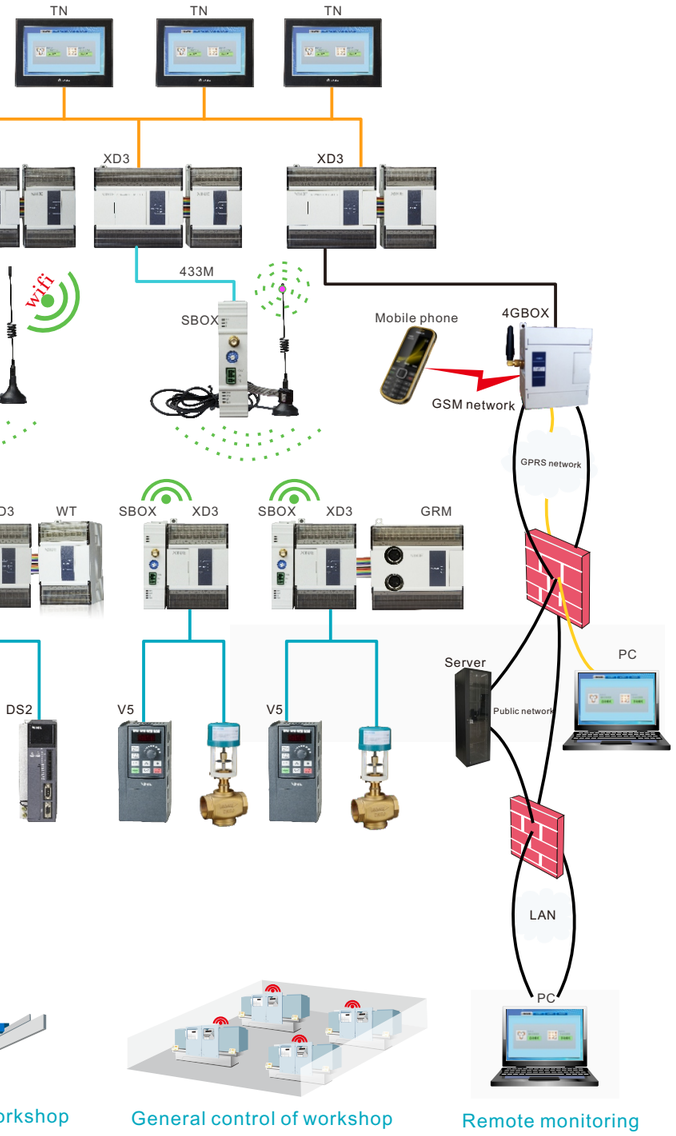
Ethernet communication

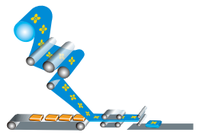
Ethernet communication is mainly used in XD5E/XDME/XL5E/XLME series PLC, which is faster and more stable than USB mode. In the case of multiple PLC communication, users can communicate with any PLC in the field by only one switch. In addition to its application in local area network, Ethernet also supports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



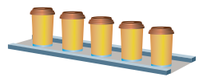
Comprehensive Network Structure Diagram





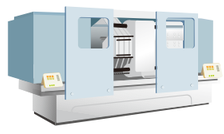


Food processing

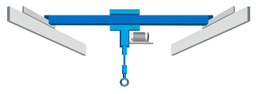


Testing

Food packaging



General control of workshop



General control of workshop

General control of workshop

Remote monitoring

X-NET fieldbus

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.

X-NET motion bus

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.

MODBUS

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

GPRS

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/433M

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.

MODBUS-TCP

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.

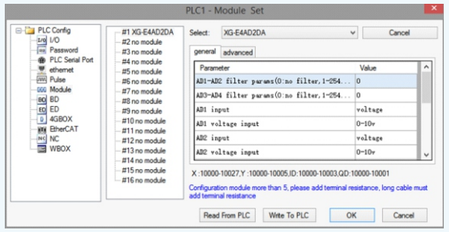
Ethernet communication

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

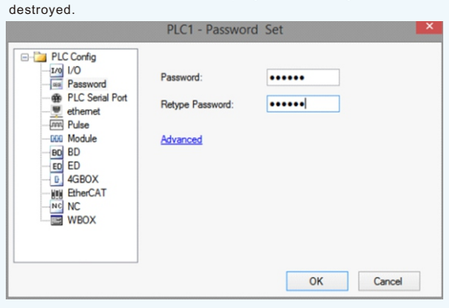
Support XD/XG/XL series PLC products

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.

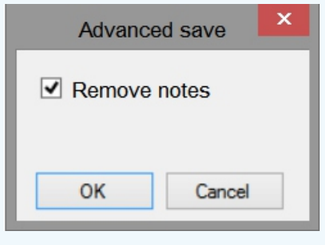


More powerful password function

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.



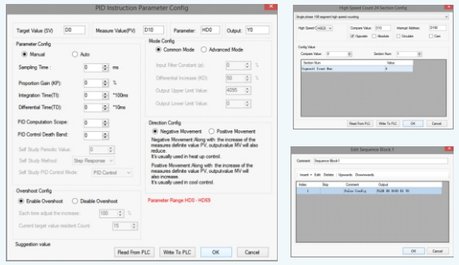
Advanced save function can encrypt program notes.



Panel configuration

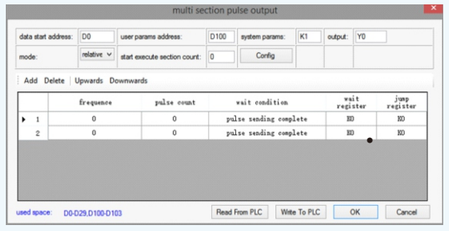
- It reduces the difficulty of making complex instructions.

  XDPpro software provides simple and easy operation instruction editing interface for complicated instructions such as PID, 100-segment high speed counting interruption.



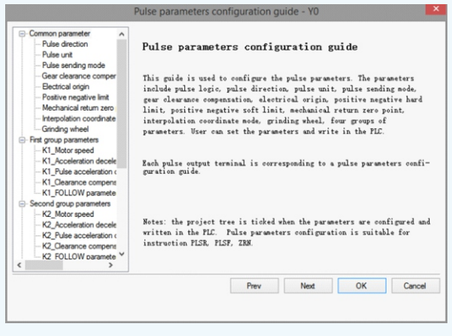
- Pulse instruction configuration

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



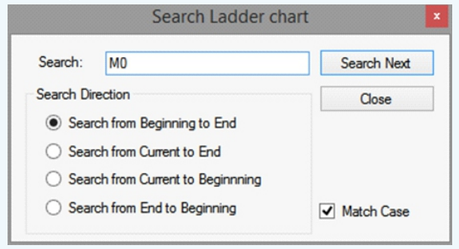
- Pulse configuration wizard

  The Pulse configuration wizard helps users to set parameters better.



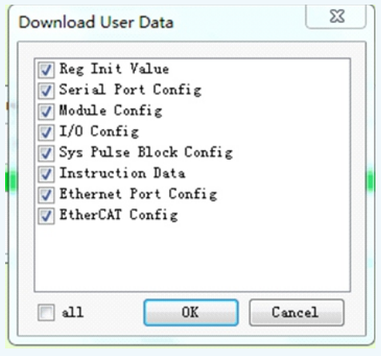
Convenient way to find soft components

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



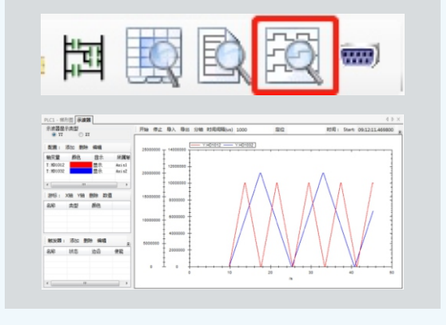
Rich download function

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.

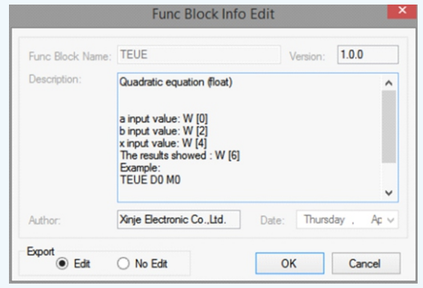


Computing program occupied space

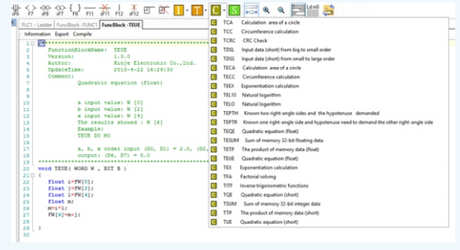
Through this function, programmers can accurately grasp the use of program capacity in PLC.

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.

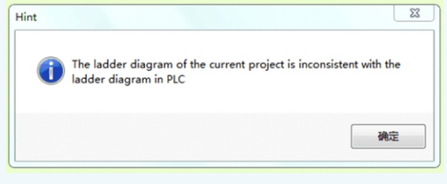


- Add C language function library, containing more C language instructions, can be directly invoked.



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 choosen
- Support free communication

XD/XL Series Product List

AC AC power supply | DC DC power supply | BD BD card | Input points | Output points | Clock | Transistor output | Relay output | Transistor and relay output | RS232 RS232 | RS485 RS485 | Fieldbus XNET XNET fieldbus | motion bus XNET XNET motion bus | motion bus EtherCAT 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	AC · 8 · 8 · Clock · RS485 · RS232 · T · NPN · 20 · 6 · Fieldbus XNET

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	DC · 8 · 8 · Clock · RS485 · RS232 · T · NPN · 2 Pulse input · 2 Pulse output · 10 · 1 · 20 · 6 · Fieldbus XNET
XL3-16R	DC · 8 · 8 · Clock · RS485 · RS232 · R · NPN · 2 Pulse input · 10 · 1 · 20 · 6 · Fieldbus XNET

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	AC · 16 · 14 · Clock · RS485 · RS232 · T · NPN · 4 Pulse input · 4 Pulse output · 1 · 16 · 1 · 20 · 10 · Fieldbus XNET

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	AC · 16 · 14 · Clock · RS485 · RS232 · T · NPN · 4 Pulse input · 4 Pulse output · 1 · 16 · 1 · 20 · 10 · Fieldbus XNET · Communication Ethernet

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	AC · 16 · 14 · Clock · RS485 · RS232 · T · NPN · 4 Pulse input · 4 Pulse output · 1 · 16 · 1 · 20 · 10 · Fieldbus XNET · Communication Ethernet

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	AC · 8 · 8 · Clock · RS232 · T · NPN · 20 · 6 · Fieldbus XNET
XD1-16R-E	AC · 8 · 8 · Clock · RS232 · R · NPN · 20 · 6 · Fieldbus XNET
XD1-24T-E	AC · 14 · 10 · Clock · RS485 · RS232 · T · NPN · 20 · 10 · Fieldbus XNET
XD1-24R-E	AC · 14 · 10 · Clock · RS485 · RS232 · R · NPN · 20 · 10 · Fieldbus XNET
XD1-32T-E	AC · 18 · 14 · Clock · RS485 · RS232 · T · NPN · 20 · 10 · Fieldbus XNET
XD1-32R-E	AC · 18 · 14 · Clock · RS485 · RS232 · R · NPN · 20 · 10 · Fieldbus XNET

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

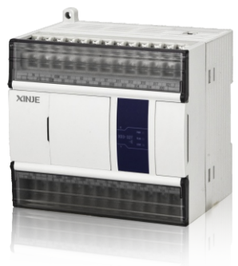
Model	Specification
XD2-16R-E	AC 8 8 RS485 RS232 R X n3 1 20 6 Fieldbus XNET
XD2-16R-C	DC 8 8 RS485 RS232 R X n3 1 20 6 Fieldbus XNET
XD2-16T-E	AC 8 8 RS485 RS232 T X n3 n2 1 20 6 Fieldbus XNET
XD2-16T-C	DC 8 8 RS485 RS232 T X n3 n2 1 20 6 Fieldbus XNET
XD2-24R-E	AC 14 10 RS485 RS232 R X n3 1 1 20 10 Fieldbus XNET
XD2-24R-C	DC 14 10 RS485 RS232 R X n3 1 1 20 10 Fieldbus XNET
XD2-24T-E	AC 14 10 RS485 RS232 T X n3 n2 1 1 20 10 Fieldbus XNET
XD2-24T-C	DC 14 10 RS485 RS232 T X n3 n2 1 1 20 10 Fieldbus XNET
XD2-24RT-E	AC 14 10 RS485 RS232 RT X n3 n2 1 1 20 10 Fieldbus XNET
XD2-24RT-C	DC 14 10 RS485 RS232 RT X n3 n2 1 1 20 10 Fieldbus XNET
XD2-32R-E	AC 18 14 RS485 RS232 R X n3 1 1 20 10 Fieldbus XNET
XD2-32R-C	DC 18 14 RS485 RS232 R X n3 1 1 20 10 Fieldbus XNET
XD2-32T-E	AC 18 14 RS485 RS232 T X n3 n2 1 1 20 10 Fieldbus XNET
XD2-32T-C	DC 18 14 RS485 RS232 T X n3 n2 1 1 20 10 Fieldbus XNET
XD2-32RT-E	AC 18 14 RS485 RS232 RT X n3 n2 1 1 20 10 Fieldbus XNET
XD2-32RT-C	DC 18 14 RS485 RS232 RT X n3 n2 1 1 20 10 Fieldbus XNET
XD2-48R-E	AC 28 20 RS485 RS232 R X n3 2 1 20 10 Fieldbus XNET
XD2-48R-C	DC 28 20 RS485 RS232 R X n3 2 1 20 10 Fieldbus XNET
XD2-48T-E	AC 28 20 RS485 RS232 T X n3 n2 2 1 20 10 Fieldbus XNET
XD2-48T-C	DC 28 20 RS485 RS232 T X n3 n2 2 1 20 10 Fieldbus XNET
XD2-48RT-E	AC 28 20 RS485 RS232 RT X n3 n2 2 1 20 10 Fieldbus XNET
XD2-48RT-C	DC 28 20 RS485 RS232 RT X n3 n2 2 1 20 10 Fieldbus XNET
XD2-60R-E	AC 36 24 RS485 RS232 R X n3 2 1 20 10 Fieldbus XNET
XD2-60R-C	DC 36 24 RS485 RS232 R X n3 2 1 20 10 Fieldbus XNET
XD2-60T-E	AC 36 24 RS485 RS232 T X n3 n2 2 1 20 10 Fieldbus XNET
XD2-60T-C	DC 36 24 RS485 RS232 T X n3 n2 2 1 20 10 Fieldbus XNET
XD2-60RT-E	AC 36 24 RS485 RS232 RT X n3 n2 2 1 20 10 Fieldbus XNET
XD2-60RT-C	DC 36 24 RS485 RS232 RT X n3 n2 2 1 20 10 Fieldbus XNET

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 RS485 RS232 R X n3 10 1 20 6 Fieldbus XNET
XD3-16R-C	DC 8 8 RS485 RS232 R X n3 10 1 20 6 Fieldbus XNET
XD3-16T-E	AC 8 8 RS485 RS232 T X n3 n2 10 1 20 6 Fieldbus XNET
XD3-16T-C	DC 8 8 RS485 RS232 T X n3 n2 10 1 20 6 Fieldbus XNET
XD3-16RT-E	AC 8 8 RS485 RS232 RT X n3 n2 10 1 20 6 Fieldbus XNET
XD3-16RT-C	DC 8 8 RS485 RS232 RT X n3 n2 10 1 20 6 Fieldbus XNET
XD3-16PR-E	AC 8 8 RS485 RS232 R X n3 10 1 20 6 Fieldbus XNET
XD3-16PR-C	DC 8 8 RS485 RS232 R X n3 10 1 20 6 Fieldbus XNET
XD3-16PT-E	AC 8 8 RS485 RS232 T X n3 n2 10 1 20 6 Fieldbus XNET
XD3-16PT-C	DC 8 8 RS485 RS232 T X n3 n2 10 1 20 6 Fieldbus XNET
XD3-16PRT-E	AC 8 8 RS485 RS232 RT X n3 n2 10 1 20 6 Fieldbus XNET
XD3-16PRT-C	DC 8 8 RS485 RS232 RT X n3 n2 10 1 20 6 Fieldbus XNET
XD3-24R-E	AC 8 10 RS485 RS232 R X n3 1 10 1 20 10 Fieldbus XNET
XD3-24R-C	DC 14 10 RS485 RS232 R X n3 1 10 1 20 10 Fieldbus XNET
XD3-24T-E	AC 14 10 RS485 RS232 T X n3 n2 1 10 1 20 10 Fieldbus XNET
XD3-24T-C	DC 14 10 RS485 RS232 T X n3 n2 1 10 1 20 10 Fieldbus XNET
XD3-24RT-E	AC 14 10 RS485 RS232 RT X n3 n2 1 10 1 20 10 Fieldbus XNET
XD3-24RT-C	DC 14 10 RS485 RS232 RT X n3 n2 1 10 1 20 10 Fieldbus XNET
XD3-24PR-E	AC 14 10 RS485 RS232 R X n3 1 10 1 20 10 Fieldbus XNET
XD3-24PR-C	DC 14 10 RS485 RS232 R X n3 1 10 1 20 10 Fieldbus XNET
XD3-24PT-E	AC 14 10 RS485 RS232 T X n3 n2 1 10 1 20 10 Fieldbus XNET
XD3-24PT-C	DC 14 10 RS485 RS232 T X n3 n2 1 10 1 20 10 Fieldbus XNET
XD3-24PRT-E	AC 14 10 RS485 RS232 RT X n3 n2 1 10 1 20 10 Fieldbus XNET
XD3-24PRT-C	DC 14 10 RS485 RS232 RT X n3 n2 1 10 1 20 10 Fieldbus XNET
XD3-32R-E	AC 18 14 RS485 RS232 R X n3 1 14 1 20 10 Fieldbus XNET
XD3-32R-C	DC 18 14 RS485 RS232 R X n3 1 14 1 20 10 Fieldbus XNET
XD3-32T-E	AC 18 14 RS485 RS232 T X n3 n2 1 14 1 20 10 Fieldbus XNET
XD3-32T-C	DC 18 14 RS485 RS232 T X n3 n2 1 14 1 20 10 Fieldbus XNET
XD3-32RT-E	AC 18 14 RS485 RS232 RT X n3 n2 1 14 1 20 10 Fieldbus XNET
XD3-32RT-C	DC 18 14 RS485 RS232 RT X n3 n2 1 14 1 20 10 Fieldbus XNET
XD3-32PR-E	AC 18 14 RS485 RS232 R X n3 1 14 1 20 10 Fieldbus XNET
XD3-32PR-C	DC 18 14 RS485 RS232 R X n3 1 14 1 20 10 Fieldbus XNET
XD3-32PT-E	AC 18 14 RS485 RS232 T X n3 n2 1 14 1 20 10 Fieldbus XNET
XD3-32PT-C	DC 18 14 RS485 RS232 T X n3 n2 1 14 1 20 10 Fieldbus XNET
XD3-32PRT-E	AC 18 14 RS485 RS232 RT X n3 n2 1 14 1 20 10 Fieldbus XNET
XD3-32PRT-C	DC 18 14 RS485 RS232 RT X n3 n2 1 14 1 20 10 Fieldbus XNET
XD3-48R-E	AC 28 20 RS485 RS232 R X n3 2 10 1 20 10 Fieldbus XNET
XD3-48R-C	DC 28 20 RS485 RS232 R X n3 2 10 1 20 10 Fieldbus XNET
XD3-48T-E	AC 28 20 RS485 RS232 T X n3 n2 2 10 1 20 10 Fieldbus XNET
XD3-48T-C	DC 28 20 RS485 RS232 T X n3 n2 2 10 1 20 10 Fieldbus XNET
XD3-48RT-E	AC 28 20 RS485 RS232 RT X n3 n2 2 10 1 20 10 Fieldbus XNET
XD3-48RT-C	DC 28 20 RS485 RS232 RT X n3 n2 2 10 1 20 10 Fieldbus XNET
XD3-48PR-E	AC 28 20 RS485 RS232 R X n3 2 10 1 20 10 Fieldbus XNET
XD3-48PR-C	DC 28 20 RS485 RS232 R X n3 2 10 1 20 10 Fieldbus XNET
XD3-48PT-E	AC 28 20 RS485 RS232 T X n3 n2 2 10 1 20 10 Fieldbus XNET
XD3-48PT-C	DC 28 20 RS485 RS232 T X n3 n2 2 10 1 20 10 Fieldbus XNET
XD3-48PRT-E	AC 28 20 RS485 RS232 RT X n3 n2 2 10 1 20 10 Fieldbus XNET
XD3-48PRT-C	DC 28 20 RS485 RS232 RT X n3 n2 2 10 1 20 10 Fieldbus XNET
XD3-60R-E	AC 36 24 RS485 RS232 R X n3 2 10 1 20 10 Fieldbus XNET
XD3-60R-C	DC 36 24 RS485 RS232 R X n3 2 10 1 20 10 Fieldbus XNET

Model	Specification
XD3-60T-E	AC 36 24 RS485 RS232 T N 13 12 2 10 1 20 10 Fieldbus XNET
XD3-60T-C	DC 36 24 RS485 RS232 T N 13 12 2 10 1 20 10 Fieldbus XNET
XD3-60RT-E	AC 36 24 RS485 RS232 RT N 13 12 2 10 1 20 10 Fieldbus XNET
XD3-60RT-C	DC 36 24 RS485 RS232 RT N 13 12 2 10 1 20 10 Fieldbus XNET
XD3-60PR-E	AC 36 24 RS485 RS232 R P 13 2 10 1 20 10 Fieldbus XNET
XD3-60PR-C	DC 36 24 RS485 RS232 R P 13 2 10 1 20 10 Fieldbus XNET
XD3-60PT-E	AC 36 24 RS485 RS232 T P 13 12 2 10 1 20 10 Fieldbus XNET
XD3-60PT-C	DC 36 24 RS485 RS232 T P 13 12 2 10 1 20 10 Fieldbus XNET
XD3-60PRT-E	AC 36 24 RS485 RS232 RT P 13 12 2 10 1 20 10 Fieldbus XNET
XD3-60PRT-C	DC 36 24 RS485 RS232 RT P 13 12 2 10 1 20 10 Fieldbus XNET
XD3-20T3TC-E	AC 18 12 RS232 T N 12 12 20 6
XD3-20T3TC-E(S)	AC 18 12 RS485 RS232 T N 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 8 8 RS485 RS232 R N 13 16 1 20 6 Fieldbus XNET
XD5-16R-C	DC 8 8 RS485 RS232 R N 13 16 1 20 6 Fieldbus XNET
XD5-16T-E	AC 8 8 RS485 RS232 T N 13 12 16 1 20 6 Fieldbus XNET
XD5-16T-C	DC 8 8 RS485 RS232 T N 13 12 16 1 20 6 Fieldbus XNET
XD5-24R-E	AC 14 10 RS485 RS232 R N 13 1 16 1 20 10 Fieldbus XNET
XD5-24R-C	DC 14 10 RS485 RS232 R N 13 1 16 1 20 10 Fieldbus XNET
XD5-24T-E	AC 14 10 RS485 RS232 T N 13 12 1 16 1 20 10 Fieldbus XNET
XD5-24T4-E	AC 14 10 RS485 RS232 T N 14 14 1 16 1 20 10 Fieldbus XNET
XD5-24T-C	DC 14 10 RS485 RS232 T N 13 12 1 16 1 20 10 Fieldbus XNET
XD5-24T4-C	DC 14 10 RS485 RS232 T N 14 14 1 16 1 20 10 Fieldbus XNET
XD5-32R-E	AC 18 14 RS485 RS232 R N 13 1 16 1 20 10 Fieldbus XNET
XD5-32R-C	DC 18 14 RS485 RS232 R N 13 1 16 1 20 10 Fieldbus XNET
XD5-32T-E	AC 18 14 RS485 RS232 T N 13 12 1 16 1 20 10 Fieldbus XNET
XD5-32T4-E	AC 18 14 RS485 RS232 T N 14 14 1 16 1 20 10 Fieldbus XNET
XD5-32T-C	DC 18 14 RS485 RS232 T N 13 12 1 16 1 20 10 Fieldbus XNET
XD5-32T4-C	DC 18 14 RS485 RS232 T N 14 14 1 16 1 20 10 Fieldbus XNET
XD5-48R-E	AC 28 20 RS485 RS232 R N 13 2 16 1 20 10 Fieldbus XNET
XD5-48R-C	DC 28 20 RS485 RS232 R N 13 2 16 1 20 10 Fieldbus XNET
XD5-48T-E	AC 28 20 RS485 RS232 T N 13 12 2 16 1 20 10 Fieldbus XNET
XD5-48T-C	DC 28 20 RS485 RS232 T N 13 12 2 16 1 20 10 Fieldbus XNET
XD5-48T6-E	AC 28 20 RS485 RS232 T N 16 16 2 16 1 20 10 Fieldbus XNET
XD5-48T6-C	DC 28 20 RS485 RS232 T N 16 16 2 16 1 20 10 Fieldbus XNET
XD5-60R-E	AC 36 24 RS485 RS232 R N 13 2 16 1 20 10 Fieldbus XNET
XD5-60R-C	DC 36 24 RS485 RS232 R N 13 2 16 1 20 10 Fieldbus XNET
XD5-60T-E	AC 36 24 RS485 RS232 T N 13 12 2 16 1 20 10 Fieldbus XNET
XD5-60T-C	DC 36 24 RS485 RS232 T N 13 12 2 16 1 20 10 Fieldbus XNET
XD5-60T6-E	AC 36 24 RS485 RS232 T N 16 16 2 16 1 20 10 Fieldbus XNET
XD5-60T6-C	DC 36 24 RS485 RS232 T N 16 16 2 16 1 20 10 Fieldbus XNET

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 14 RS485 RS232 T N 14 14 1 16 1 20 10 Fieldbus XNET Communication Ethernet
XD5E-60T10	AC 36 24 RS485 RS232 T N 10 10 2 16 1 20 10 Fieldbus XNET Communication Ethernet

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 T N 14 14 1 16 1 20 10 Fieldbus XNET
XDM-24T4-C	DC 14 10 RS485 RS232 T N 14 14 1 16 1 20 10 Fieldbus XNET
XDM-32T4-E	AC 18 14 RS485 RS232 T N 14 14 1 16 1 20 10 Fieldbus XNET
XDM-32T4-C	DC 18 14 RS485 RS232 T N 14 14 1 16 1 20 10 Fieldbus XNET
XDM-60T4-E	AC 36 24 RS485 RS232 T N 14 14 2 16 1 20 10 Fieldbus XNET
XDM-60T4-C	DC 36 24 RS485 RS232 T N 14 14 2 16 1 20 10 Fieldbus XNET
XDM-60T10-E	AC 36 24 RS485 RS232 T 10 10 2 16 1 20 10 Fieldbus XNET
XDM-60T10-C	DC 36 24 RS485 RS232 T 10 10 2 16 1 20 10 Fieldbus XNET

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 14 10 RS485 RS232 4 2 1 16 1 20 10 FieldBus XNET Motion bus XNET
XDC-24T-C	DC 14 10 RS485 RS232 4 2 1 16 1 20 10 FieldBus XNET Motion bus XNET
XDC-32T-E	AC 18 14 RS485 RS232 4 2 1 16 1 20 10 FieldBus XNET Motion bus XNET
XDC-32T-C	DC 18 14 RS485 RS232 4 2 1 16 1 20 10 FieldBus XNET Motion bus XNET
XDC-48T-E	AC 28 20 RS485 RS232 4 2 2 16 1 20 10 FieldBus XNET Motion bus XNET
XDC-48T-C	DC 28 20 RS485 RS232 4 2 2 16 1 20 10 FieldBus XNET Motion bus XNET
XDC-60T-E	AC 36 24 RS485 RS232 4 2 2 16 1 20 10 FieldBus XNET Motion bus XNET
XDC-60T-C	DC 36 24 RS485 RS232 4 2 2 16 1 20 10 FieldBus XNET Motion bus XNET

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 36 24 RS485 RS232 T X 10 10 2 16 1 20 10 FieldBus XNET Communication Ethernet

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
T: transistor output
⑦ R response time below 10ms
⑧ T response time below 0.2ms
⑨ R max load: resistance 3A, inductance 80VA
⑩T max load: resistance 3A, inductance 12W80VA
⑪External wiring mode: terminals
⑫Wiring 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
T: transistor output
⑥ R response time below 10ms
⑦ T response time below 0.2ms
⑧ R max load: resistance 3A, inductance 80VA
⑨ T max load: resistance 3A, inductance 12W80VA
⑩External wiring mode: terminals
⑪Wiring mode is same to PLC

XL-E32YT

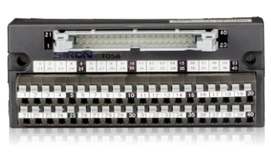
① 32 output points
② T: transistor output
③ T response time below 0.2ms
④ T max load: resistance 3A, inductance 12W80VA
⑤ External wiring mode: need to connect external terminals
⑥ Wiring mode is same to PLC

●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

① 2 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

●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℃~500℃
④ Digital output range -1000~5000, signed 16-bit, binary
⑤ Control accuracy ±0.5%
⑥ Resolution 0.1℃
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℃~1300℃ (type K)
④ Digital output range 0~13000, signed 16-bit, binary
⑤ Control accuracy ±0.5%
⑥ Resolution 0.1℃
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 ±1%
⑥ Filtering coefficient 0~254

① 2 output channels
② Output current 0~20mA/4~20mA
③ Conversion speed 10ms
④ Resolution 1/1023 (10 bits)
⑤ Accuracy ±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 ±1%
⑥ Filtering coefficient 0~254

① 2 output channels
② Output voltage 0~5V/0~10V
③ Conversion speed 10ms
④ Resolution 1/1023 (10 bits)
⑤ Accuracy ±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 ±1%
⑥ Filtering coefficient 0~254

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 ±0.8% of full scale
⑧ 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 ±1%
⑥ Filtering coefficient 0~254

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 ±0.8% of full scale
⑧ Filtering coefficient 0~254

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 ±0.8% of full scale
⑧ Filtering coefficient 0~254

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%

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 ±0.8% of full scale
⑧ Filtering coefficient 0~254

① 2 output channels
② Output voltage 0~5V/0~10V
③ Conversion speed 10ms
④ Resolution 1/1023 (10 bits)
⑤ Accuracy ±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 ±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 ±1%
⑥ Filtering coefficient 0~254

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 ±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 ±1%

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

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

①16 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 ±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 ±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 ±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 ±1%
⑦ Enabling marker

●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 -100ºC~500ºC
④ Digital output range -1000~5000, signed 16-bit, binary
⑤ Control accuracy ±0.5%
⑥ Resolution 0.1 ºC
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 0ºC~1300ºC (type K)
④ Digital output range 0~13000, signed 16-bit, binary
⑤ Control accuracy ±0.5%
⑥ Resolution 0.1 ºC
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 -100ºC~500ºC
③ Conversion speed 10ms
④ Resolution 0.1 ºC
⑤ Comprehensive accuracy ±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 -100ºC~500ºC
③ Conversion speed 10ms
④ Resolution 0.1 ºC
⑤ Comprehensive accuracy ±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 -100ºC~500ºC
③ Conversion speed 10ms
④ Resolution 0.1 ºC
⑤ Comprehensive accuracy ±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 -100ºC~500ºC
③ Conversion speed 10ms
④ Resolution 0.1 ºC
⑤ Comprehensive accuracy ±0.8% of full scale

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%

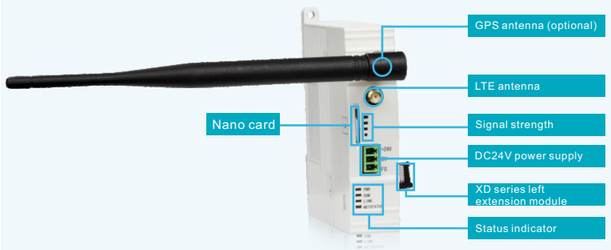
XD-4DA-V-ED

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



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)

①All the basic units have COM1 for programming and communication.
②The rail specification is DIN46277, the width is 35mm.
③Grounding 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※2	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※1		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)※3		896: X0~77, X10000~11177, X20000~20177, X30000~30077				
Internal coil (Y)※4		896: Y0~77, Y10000~11177, Y20000~20177, Y30000~30077				
Internal coil (M, HM)	11008 points	M0~M7999[HM0~HM959]※5				
		Special use SM0~SM2047※6				
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]※5			
			Special use SD0~SD2047※6			
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※2	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※1		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)※3		1280: X0~77, X10000~11777, X20000~20177, X30000~30077	
Internal coil (Y)※4		1280: Y0~77, Y10000~11777, Y20000~20177, Y30000~30077	
Internal coil (M, HM)	87000 points	M0~M69999[HM0~HM11999]※5	
		Special use SM0~SM4999※6	
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]※5	
		Special use SD0~SD4999※6	
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※2	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※1		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)※3		1280: X0~77, X10000~11777, X20000~20177, X30000~30077					
Internal coil (Y)※4		1280: Y0~77, Y10000~11777, Y20000~20177, Y30000~30077					
Internal coil (M, HM)	87000 points	M0~M69999[HM0~HM11999]※5					
		Special use SM0~SM4999※6					
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]※5					
		Special use SD0~SD4999※6					
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.

XD/XL series I/O wiring and specification

XL series power supply specification

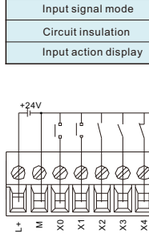
●External DC power supply

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^2 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

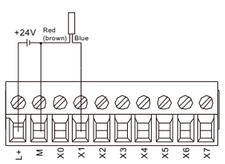
① The power cord should be more than 2mm^2 in order to prevent voltage drop.
② Even if there is a power failure within 10 ms, the PLC can continue to work. When the power is cut off for a long time or the voltage drops, the PLC stops working, and the output also shows the state of OFF. When the power 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

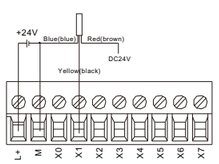
●NPN mode specification

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

Switch button wiring diagram



2-wire (NO or NC) proximity switch wiring diagram

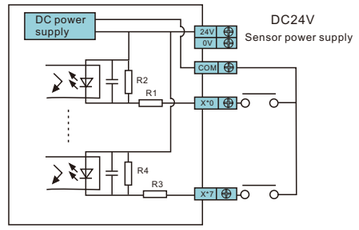


3-wire (NPN type) proximity switch wiring diagram

Input specification and wiring of XD series

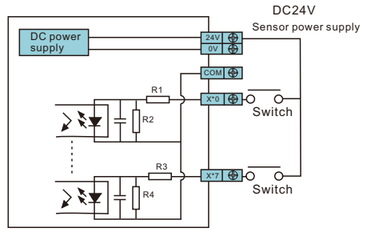
●NPN mode specification

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

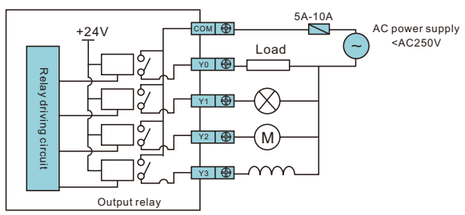
Item	Contents
Input signal voltage	DC24V±10%
Input signal current	7mA/DC24V
Input ON current	Above 4.5mA
Input OFF current	Below 1.5mA
Input response time	About 10ms
Input signal mode	Contactor input or PNP, open collector transistor
Circuit insulation	Photoelectric coupled insulation
Input action display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



Output specification and wiring of XD/XL series

●Relay output

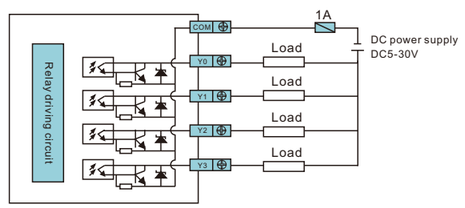
External power supply		Below AC250V, DC30V
Circuit insulation		Mechanical insulation
Action indication		LED indicator
Max load	Resistance load	3A
	Indutance load	80VA
	Light load	100W
Min load		DC5V 2mA
Response time	OFF --> ON	10ms
	ON --> OFF	10ms



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

●Transistor output

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



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	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10
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	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10
Max frequency	80K	80K	80K	80K	80K	80K	50K	50K	50K	50K	50K	50K
4 frequency doubling							2/4	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												

Product Introduction

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)
	OR>=	Parallel connection ON when (S1)≥(S2)
	OR<=	Parallel connection ON when (S1)≤(S2)
Data transmission	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
	ZRST	Batch reset
	SWAP	Switch high-low byte
	XCH	Switch two data
Data operation	ADD	Add
	SUB	Substract
	MUL	Multiply
	DIV	Divide
	INC	Increase 1
	DEC	Decrease 1
	MEAN	Mean value

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
	ASCI	Hex convert to ASCII
	HEX	ASCII convert to hex
	DECO	Decoding
	ENCO	High bit coding
	ENCOL	Low bit coding
	GRY	Binary conver to gray code
	GBIN	Gray code convert to binary
Floating point opertion	ECMP	Floating point number comparison
	EZCP	Floating point number zone comparison
	EADD	Floating point number add
	ESUB	Floating point number substract
	EMUL	Floating point number multiply
	EDIV	Floating point number divide
	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
Clock	TRD	Read clock data
	TWR	Write clock data
	TCMP	Clock comparison

●Basic instruction

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

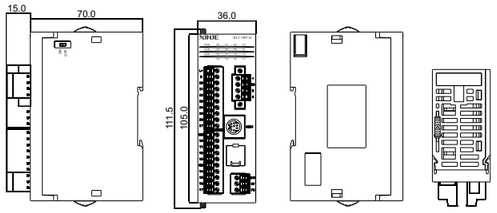
●Special instruction

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
	RST	High speed counter reset
Modbus communication	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
	IRET	Interruption return
Sequence block	SBLOCK	Block start
	SBLOCKE	Block end
	BSTOP	Stop block
	BGOON	Continue running the block
	WAIT	Wait
Read and write the module	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

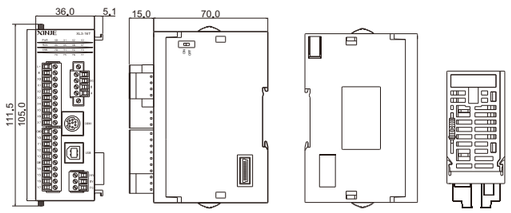
Dimension (unit: mm)

●XL series PLC



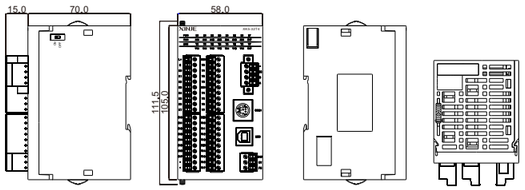
Suitable model

Series name	Points
XL1 series	16 points



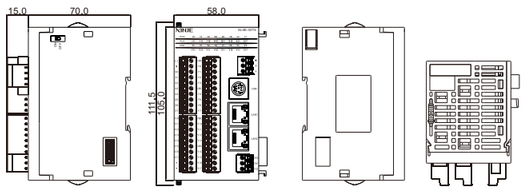
Suitable model

Series name	Points
XL3 series	16 points



Suitable model

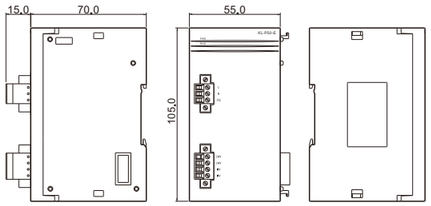
Series name	Points
XL5 series	32 points



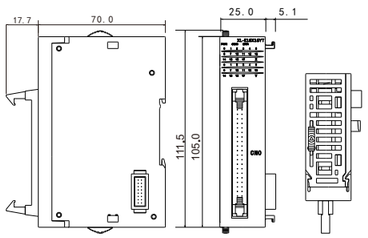
Suitable model

Series name	Points
XL5E series	32 points
XLME series	

●XL series power supply



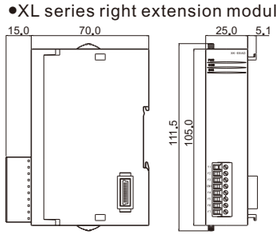
●Module dimension



Suitable model

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

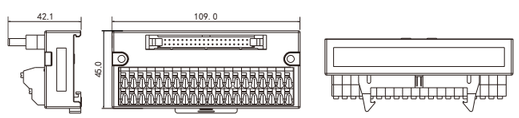
●XL series right extension module



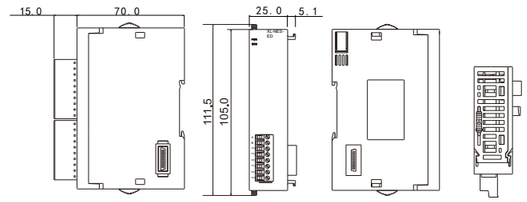
Suitable model

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

●Terminal dimension



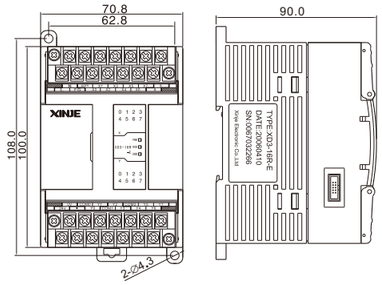
●XL series left extension module



Suitable model

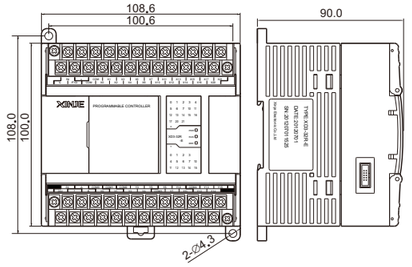
Module type	Model
Analog	All
Communication	XL-NES-ED

●XD series basic unit



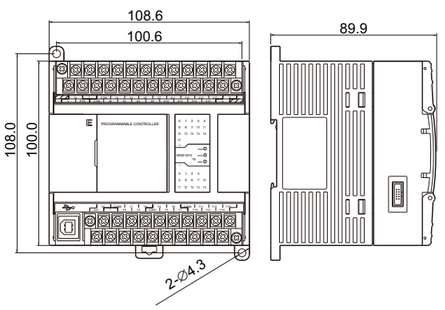
Suitable model

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



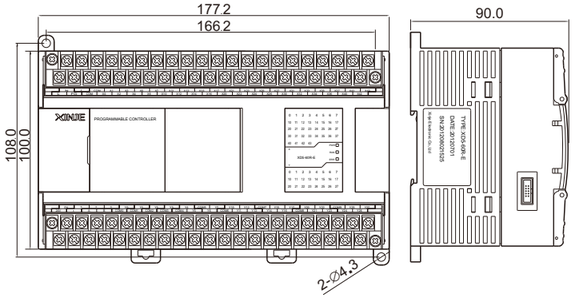
Suitable model

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



Suitable model

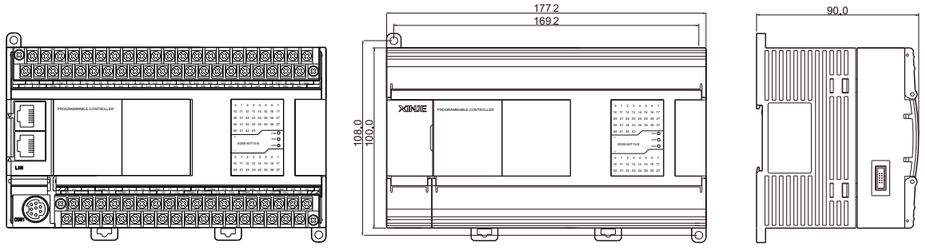
Series name	Points
XD5E series	30 points



Suitable model

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

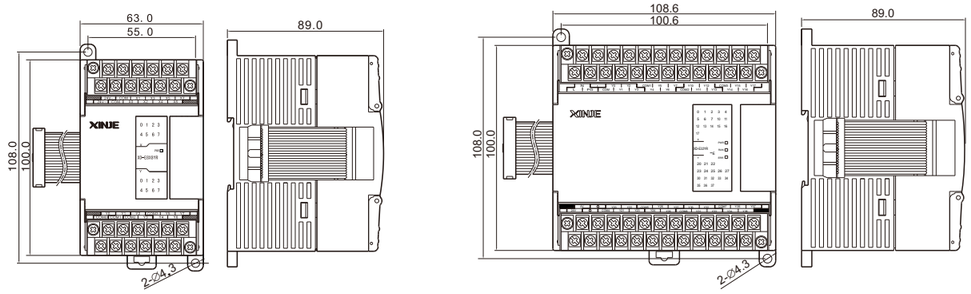
Product Introduction



Suitable model

Series name	Points
XD5E series	60 points
XDME series	

•XD series right extension module



Suitable model

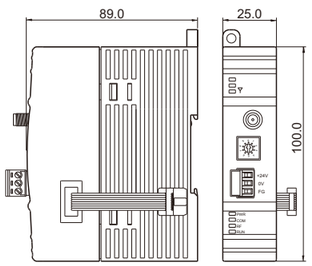
Module type	Model
I/O	8X/8Y
	8X8Y
	16X/16Y
Analog	All

Suitable model

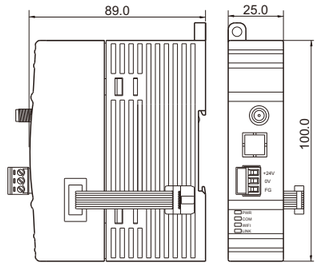
Module type	Model
I/O module	32X/32Y
	16X16Y

•XD series left extension module

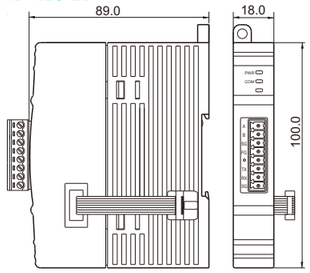
XD-SBOXT-ED



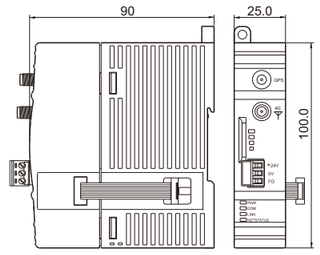
XD-WBOXT-ED



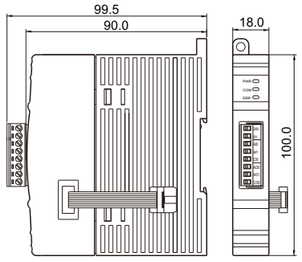
XD-NES-ED



XD-4GBOX-ED

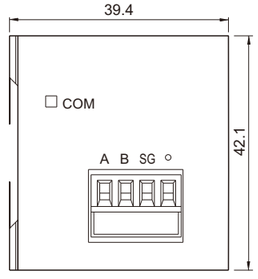


XD series analog ED module



•XD series extension BD card

XD-NE-BD



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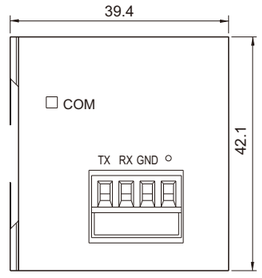

XD-NO-BD