



2017 XINJE all series of products

Rich models make perfect control system

PLC / HMI / PLC&HMI integrated controller / servo system / Frequency inverter / Stepper system

XINJE

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Company profile



XINJE Electric Co., Ltd. is a well-known company in China dedicated to the automation products development and application.

Since its set up, we insist the purpose of innovation, quick and pragmatic to improve the enterprise competitiveness. We got many honors from government through several years efforts. They are Jiangsu High-tech enterprise, Wuxi high-tech enterprise, Wuxi leader innovation enterprise, Jiangsu private high-tech enterprise, software enterprise certificate, a number of patent technologies and industry initiative core technologies.

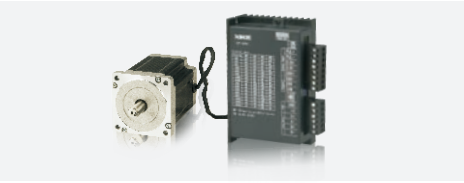
The company products include PLC, HMI, servo system, frequency inverters, machine vision system, robots, network products, etc. We make perfect automation solutions for customers and help them to control the cost, improve the enterprise values.

XINJE has 40 agents and 170 distributors in China, 1 branch, 20 agents abroad. The sales market covers Europe, America, Southeast Asia, the Middle East and Africa. By now, XINJE has more than 600 employees, 4000 m2 office area and 20000 m2 manufacturing area, one R&D center, two laboratories, one training base. The company cooperated with a number of universities and established the University - XNJE Laboratory to train the technical personnel.

XINJE has become the cooperator of many national projects, such as Beijing Olympics Games, Shanghai World Expo. The product applications cover textile, aerospace, solar energy, nuclear power, coal mining, tunnel engineering, central air conditioning, environmental protection engineering and so on.

XINJE listed on the Shanghai stock exchange in December, 2016, the stock code is 603416. With the business philosophy of Innovation, Quality, Service, the company keep developing and designing more reliable products, improving product quality, and striving to become a global automated solution provider. We are committed to build gold brand reputation in the industrial automation field.

Catalog

PLC	3-50	
HMI	51-67	
PLC&HMI integrated controller	68-72	
Servo system	73-86	
Frequency inverter	87-95	
Stepper system	96-102	

XG1^{NEW} series middle-sized PLC



Middle-sized PLC

XG1 series

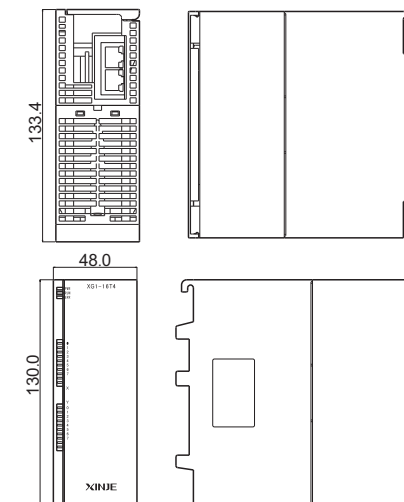
New light appearance

Features

- Ethernet communication port, fast speed and powerful functions
- Motion control function
- Total improved CPU processing speed
- More reliable



Dimension (unit: mm)



XL3^{NEW} series ultrathin PLC



Ultrathin PLC

XL3 Series

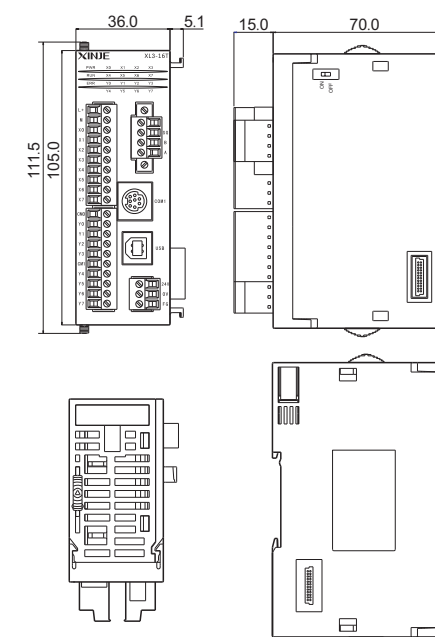
Small size, powerful function

Features

- Ultrathin appearance, compact and practical, fit for different environment
- Good compatibility
- Support max 10 extension modules
- Outstanding cost performance
- Save installation sapce



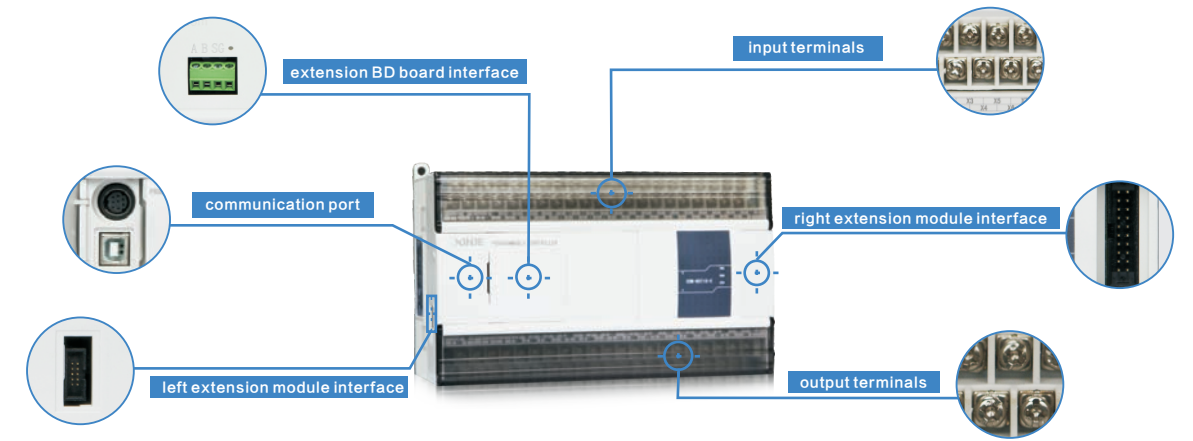
Dimension (unit: mm)



XD^{NEW} series

XD2 series
XD3 series
XD5 series
XDM series
XDC series

- Faster processing speed
- Rich expansion modules
- Stable performance, meet different needs



XD Series

After XC series PLC, XINJE company developed XD series PLC which has faster speed, better performance and fit for various requirments.

Basic model XD2 series



- 256K program capacity
- I/O sequence control
- Basic model PLC
- 2-axis pulse output
- X-NET fieldbus
- 200KHz pulse output
- No extension function
- Basic instruction 0.02~0.05us

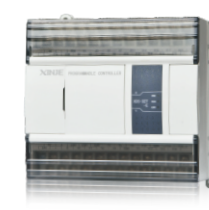
Standard model XD3 series



- 256K program capacity
- I/O sequence control
- Standard model PLC
- USB communication port
- X-NET fieldbus
- 200KHz pulse output
- Max 380 I/O points
- Basic instruction 0.02~0.05us
- 2-axis pulse output

Enhanced model

XD5-24/32/48/60



- 384K program capacity
- I/O sequence control
- USB communication port
- 200KHz pulse output
- X-NET fieldbus
- Max 572 I/O points
- Basic instruction 0.02~0.05us
- 2-axis pulse output

XD5-24T4/32T4



- 384K program capacity
- I/O sequence control
- USB communication port
- 200KHz pulse output
- X-NET fieldbus
- Max 544 I/O points
- Basic instruction 0.02~0.05us
- 4-axis pulse output

XD5-48T6/60T6



- 384K program capacity
- I/O sequence control
- USB communication port
- 200KHz pulse output
- X-NET fieldbus
- Max 572 I/O points
- Basic instruction 0.02~0.05us
- 6-axis pulse output

Motion control model

XDM-24T4/32T4/60T4



- 384K program capacity
- I/O sequence control
- Standard model PLC
- USB communication port
- X-NET fieldbus
- Function block programming
- 200KHz pulse output
- Max 572 I/O points
- Basic instruction 0.02~0.05us
- Linear and circular interpolation
- Follow-up function
- 4-axis pulse output

XDM-60T10



- 384K program capacity
- I/O sequence control
- Standard model PLC
- USB communication port
- X-NET fieldbus
- Function block programming
- 200KHz pulse output
- Max 572 I/O points
- Basic instruction 0.02~0.05us
- Linear and circular interpolation
- Follow-up function
- 10-axis pulse output

Motion fieldbus model

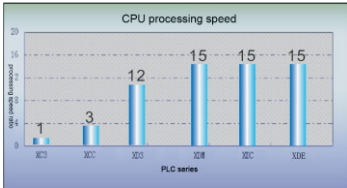
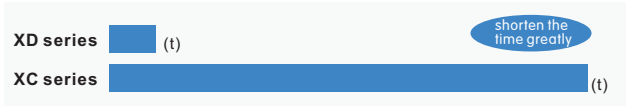
XDC series



- 384K program capacity
- I/O sequence control
- Standard model PLC
- USB communication port
- X-NET fieldbus
- Function block programming
- 200KHz pulse output
- Max 572 I/O points
- Basic instruction 0.02~0.05us
- Follow-up function
- 10-axis pulse output

High speed processing

Basic instruction processing speed is 0.02~0.05μs, scanning time is 0.5ms for 10000 steps, program capacity is 256K~384K, the integrated speed is 12~15 times of XC series.



Rich extensions

XD series PLC has rich I/O modules, analog I/O modules, temperature modules, BD board, left extension modules. The PLC unit can connect 10~16 modules, 1~2 BD board, 1 left extension module.



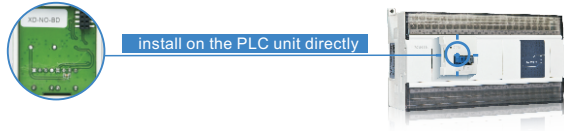
Series	Type	Left extension module	BD board	Right extension module
XD2	16 points	1	0	0
	16 points	1	0	10
XD3	24/32 points	1	1	10
	48/60 points	1	2	10
XD5	24/32/24T4/32T4 points	1	1	16
	48/60 points	1	2	16
XDM	48T6/60T6 points	1	2	16
	24T4/32T4 points	1	1	16
XDC	60T4/T10 points	1	2	16
	24/32 points	1	1	16
	60 points	1	2	16

I/O extension module

- To extend the I/O numbers, 8~32 points, the PLC can extend to 572 points.
- Output extension module has two types which are transistor and relay.

Extension BD board

- The small card can install on the PLC directly, save space, with wireless and wired communication function.



Left extension module

- PLC can transfer the data through WIFI, RS232 or RS485 with the left extension ED module.

Analog and temperature extension module

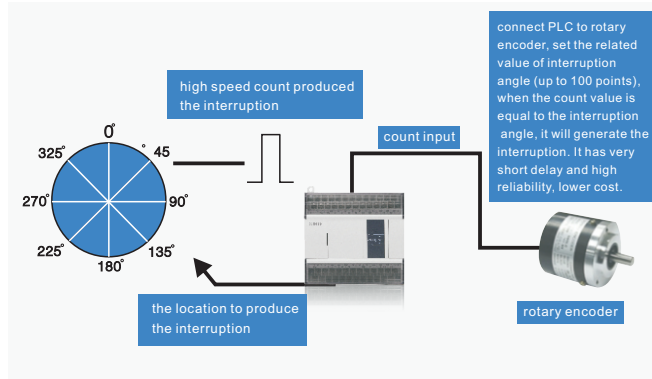
- D/A and A/D transformation function. Apply to process control system including temperature, flow, liquid level, pressure.
- PID function, only four parameters to set. Fit for various applications, flexible using, high control accuracy.
- XD-E6TC-P, XD-E6PT-P have PID control for each channel, with auto-tune function, transfer data with PLC by instruction FROM and TO.

Faster data exchange speed between extension module and main PLC

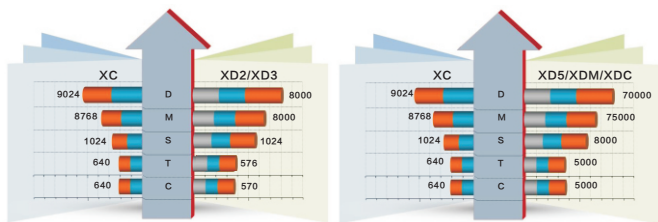
- The data exchange between extension module and main PLC of XD series is SPI serial communication instead of parallel communication which used by XC series, the speed is faster (μs).

100-segment high speed count interruption function

- High speed count interruption, good real time performance.
- XD series high speed counter has 100 segments of 32 bits preset value. The interruption is produced when the count value difference of each segment is equal to the preset value.

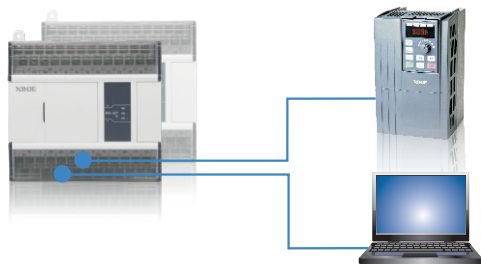


XD3 series
Larger soft component capacity



Communication function

- Multi-communication ports (up to 5), support RS232, RS485, motion fieldbus, X-NET fieldbus, Ethernet, can connect VFD, meter and other devices, networking freely.



Subdivided soft component

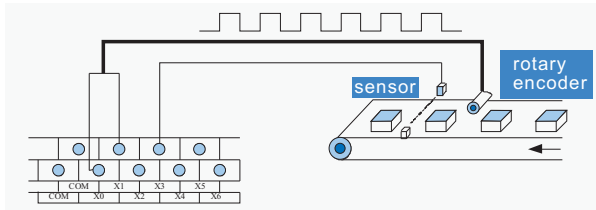
- Subdivided soft component makes the ladder chart more visually.
- Normal soft component, power-off retentive and special soft component is different from each other by writing format.
- Single phase and AB phase of high speed count also can be distinguished by writing format.

Type	Symbol	Notes	Remark
Bit object	X	Input terminal	
	Y	Output terminal	
	M	Internal coil	
	S	Process coil	
	SM	Special internal coil	similar to the special auxiliary register after M8000 of XC series PLC
	T	Timer coil	
	ET	Precise timer coil	Similar to T600 to T618 of XC series PLC
	C	Counter coil	
	HM	Power-off retentive internal coil	Similar to power-off retentive internal coil of XC series PLC, default is M3000 to M7999
	HS	Power-off retentive process coil	Similar to power-off retentive process coil of XC series PLC, default is S512 to S1023
	HT	Power-off retentive timer coil	New soft component, the timer value and state will be kept even the PLC power is off
	HC	Power-off retentive counter coil	Similar to power-off retentive counter coil of XC series PLC, default is C320 to C630
	HSC	High speed counter coil	Similar to high speed counter coil C600 to C634 of XC series PLC, XD series PLC only have single phase and AB phase mode, AB phase has 2-time frequency and 4-time frequency
	SEM	BLOCK WAIT instruction special coil	The wait coil of XC series PLC can be anyone, in XD series it only can be SEM
Word object	D	register	
	TD	Timer register	
	ETD	Precise timer register	
	CD	Counter register	
	SD	Special register	
	ID	Analog sampling register	
	QD	Analog output register	
	HD	Power-off retentive register	
	HTD	Power-off retentive timer register	
	HCD	Power-off retentive counter register	
	HSCD	High speed counter register	
	HSD	Power-off retentive special register	
	FD	Flash register	protect the customer's intellectual property
	SFD	Special flash register	

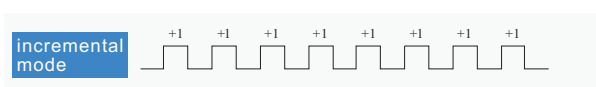
High speed count

- XD series PLC can configure 2 to 10 channels of 32-bit high speed count, the max frequency can up to 80KHz, it can connect the rotary encoder and count its value directly.

count input

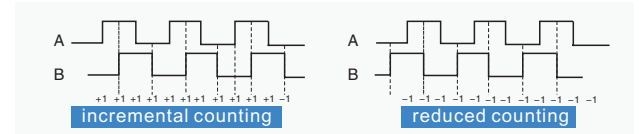


Multi-counting mode

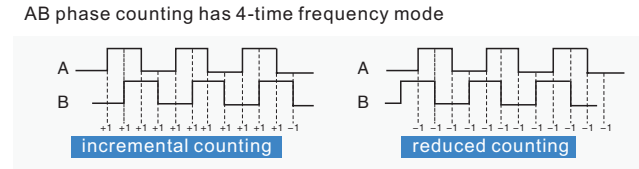


- There are two counting modes including single phase (incremental mode, max frequency 80KHz) and AB phase (2-time/4-time frequency, max frequency 50KHz).

2-time frequency mode

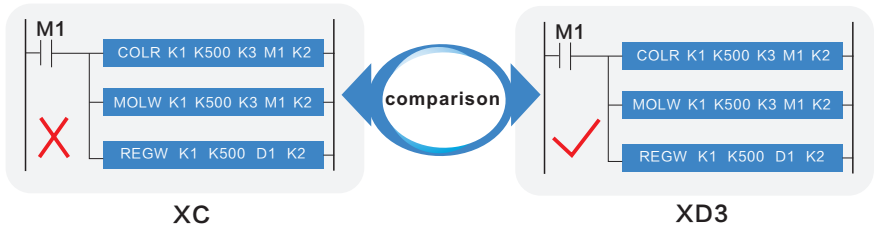


4-time frequency mode



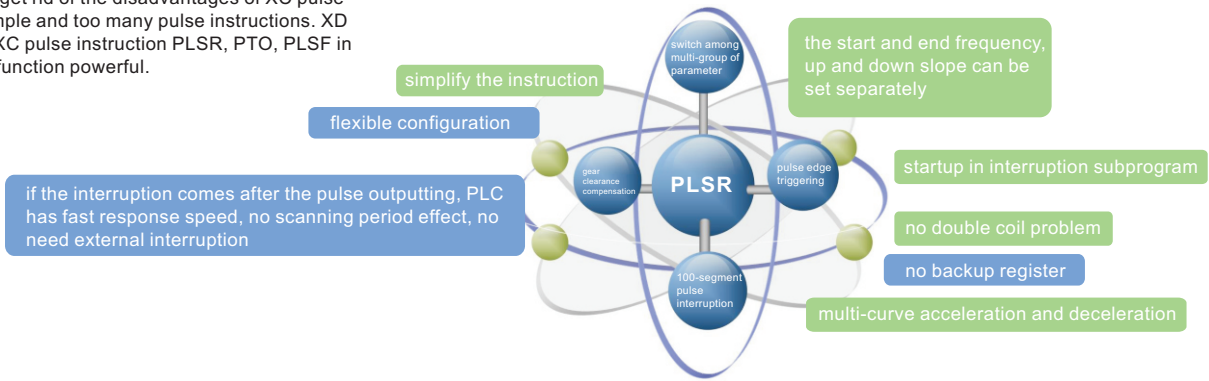
Optimized Modbus instruction

More than one modbus instruction can be triggered by one condition in the main program, these instructions will be executed one by one as the protocol station request. It will not run two instructions at the same time and cause error.



Powerful pulse instruction

XD series PLC get rid of the disadvantages of XC pulse function too simple and too many pulse instructions. XD integrated the XC pulse instruction PLSR, PTO, PLSF in one, make the function powerful.

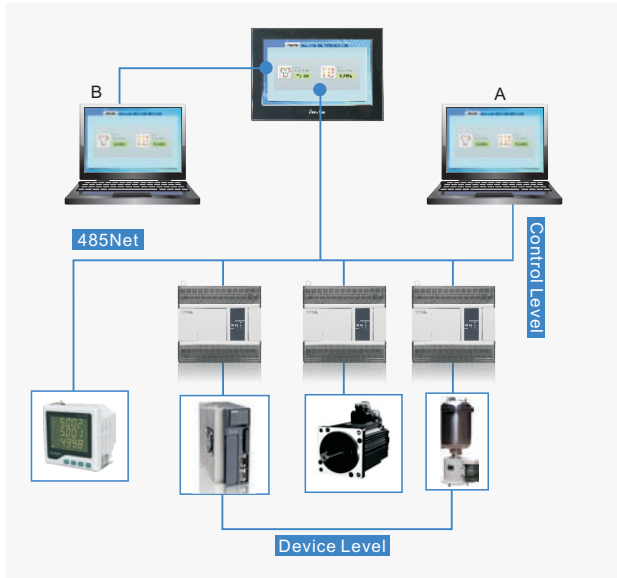


Powerful communication and networking function

XD series PLC communication port not only support Modbus protocol, but also support other complicated network. Users can make free format protocol to communicate with printer and meters.

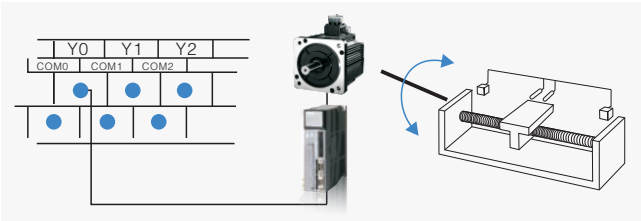
Modbus network

XD series PLC support Modbus (RTU and ASCII) protocol master and slave mode. When PLC is master station, it will send requests to other devices which respond it. When PLC is slave station, it will answer the master station.



200KHz 10 channels pulse output

XD2/XD3/XDC have 2 channels of pulse output, XD5 has 2 to 6 channels of pulse output, XDM has 4 to 10 channels pulse output. Multi-mode output by different instructions. The frequency can up to 200KHz.

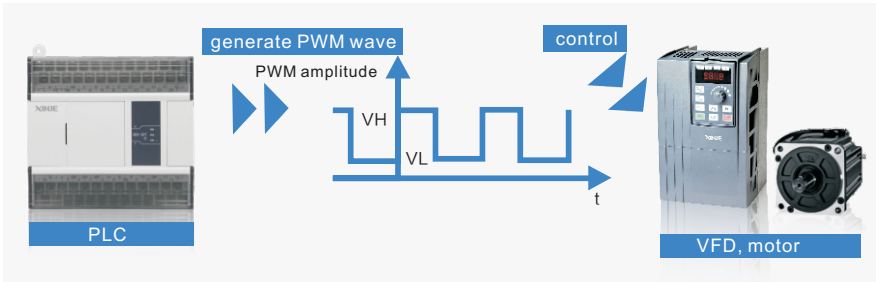


- It needs transistor output PLC for pulse output, such as XD3-16T-E, XD3-60RT-E.
- XD5-24T4/32T4 have 4 channels of pulse output (Y0, Y1, Y2, Y3).
- XD5-48T6/60T6 have 6 channels of pulse output (Y0, Y1, Y2....Y5).
- XDM series PLC has 4 to 10 channels pulse output (Y0, Y1, Y2.....Y11).

series	model	pulse output channel	pulse output terminal
XD2	16T	2	Y0/Y1
XD3	all the transistor output model	2	Y0/Y1
	24T/32T/48T/60T	2	Y0/Y1
XD5	48T6/60T6	6	Y0/Y1/Y2/Y3/Y4/Y5
	24T4/32T4	4	Y0/Y1/Y2/Y3
	24T4/32T4 and 60T4	4	Y0/Y1/Y2/Y3
XDM	60T10	10	Y0/Y1/Y2/Y3/Y4/Y5/Y6/Y7/Y10/Y11
XDC	24T/32T	2	Y0/Y1
	48T/60T	2	Y0/Y1

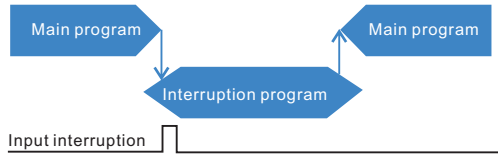
PWM pulse width modulation

- PWM instruction can modulate the pulse width
- The subdivision accuracy is 128 times of XC series PLC, up to 1/65536
- The output frequency is higher than XC series PLC, up to 200KHz
- Control the inverter and DC motor by this function



Interruption

XD series PLC interruption function includes external interruption, timing interruption, 100 segments high speed counter interruption. It can do some special operation by calling the interruption without PLC scanning period influence.

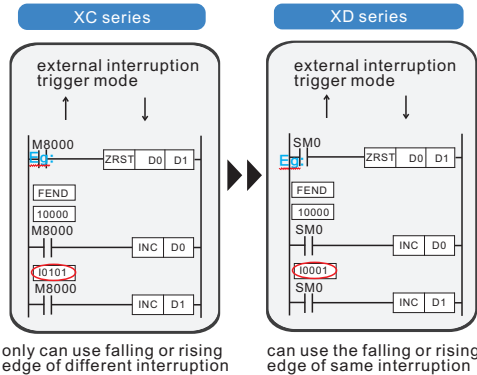


Timing interruption

- To run appointed program when the main program is long; to run the program every certain time. The timing interruption is useful for these occasions. It is not affected by PLC scanning period. It will run the subprogram every n ms.
- XD series PLC have 20 channels timing interruption, it is 2 times of XC series PLC.

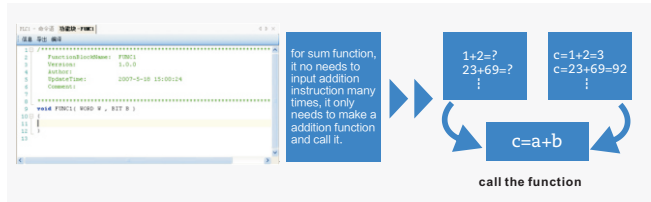
External interruption

- The input terminal X is the input of interruption. Each terminal corresponds to an interruption which is activated by falling or rising edge.
- XD series PLC have more interruption terminals than XC series.
- The falling edge and rising edge can be used at the same time for XD series external interruption.

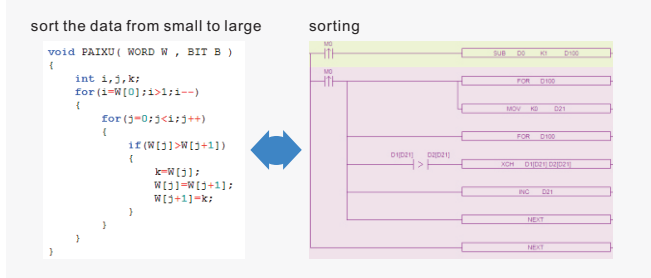


Support C programming(the pioneer in the industry)

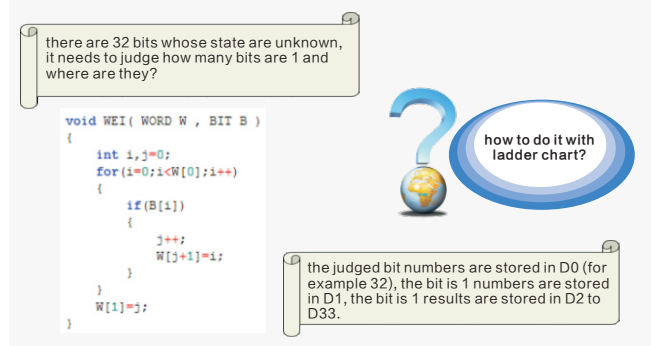
- Better program security: call the C program module directly, the C program is encrypted and invisible
- Support all the C functions
- Support local variable and global variable
- Save the program capacity, reduce the workload, improve the programming efficiency



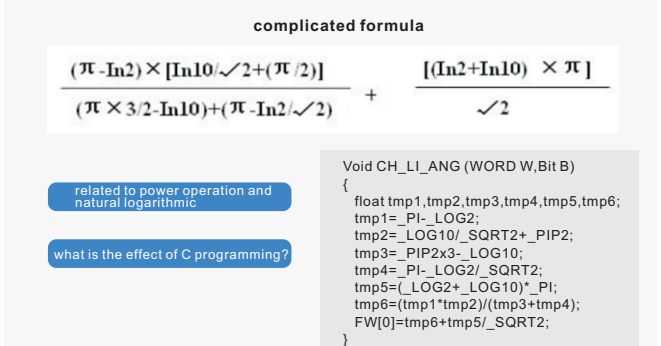
C application I



C application II

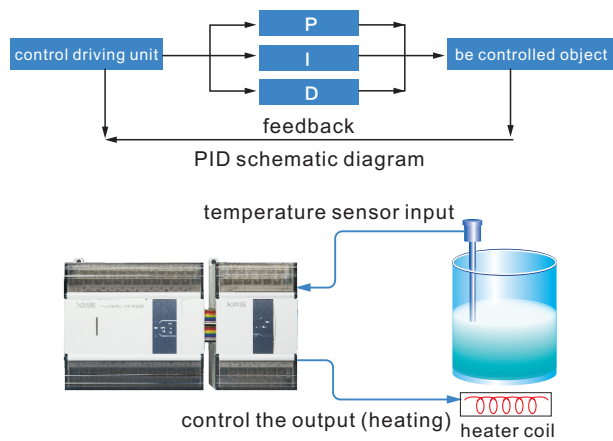
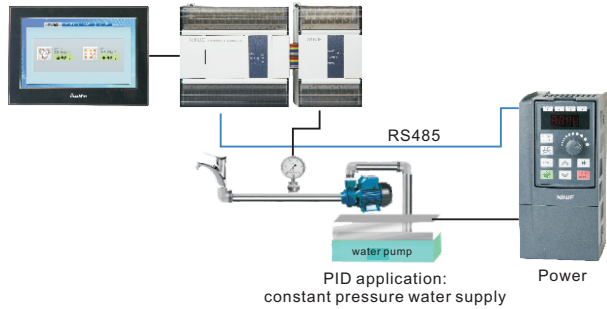


C application III



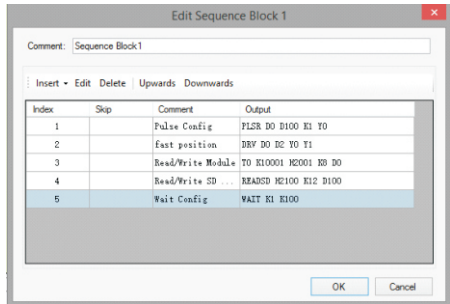
PID control

- XD series PLC support PID control instruction and auto-tune function
- User can get the best sampling time and PID parameters via auto-tune to improve the control accuracy
- Two control methods: step-response and critical oscillation, applied to more occasions



Sequence block

- All the instructions in the sequence block will run one by one. The next instruction will run after the present instruction completed
- The sequence block can optimize the program



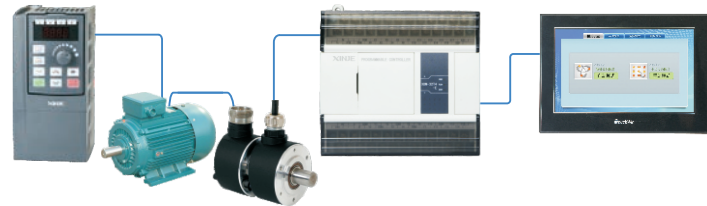
Real time clock

- XD series PLC all have RTC inside
- Built-in clock, Li-battery power loss retentive
- XD-CLOCK-BD can apply to high precise clock occasions
- Clock protection function: the PLC clock cannot be changed through communication when secret downloading program in advanced mode



Frequency measurement

- 32 bits instruction FRQM can measure the frequency



Self-diagnosis

- Power on self-diagnosis, monitor the timer, grammar checking

Precise timing

- 32-bit instruction STR can do precise timing
- The precise timer will generate an interruption when it reaches the timer value, each precise timer has related interruption flag
- The precise timer is 1ms 32 bits timer

Password protection

- 6 bits ASCII code, protect the program security
- The soft component FS can protect the intellectual property right of customers

Compact size, easy to installation

- Compact size, two installation methods
- Easy to change the Li-battery of XD series PLC without opening the PLC cover

XD2 basic type

I/O numbers: 16

Data processing function, high speed count, high speed pulse output, communication, real time clock, pulse width modulation (PWM), frequency measurement, precise timing, interruption and so on. The processing speed is 12 times of XC series. Cannot extend modules or BD, ED board.



- 32-bit CPU.
- XD2 provides 16 points I/O, is fit for basic application.
- 2 RS232 ports and 1 RS485 port, support Modbus, free format and X-NET communication.
- Program capacity: 256KB.
- The CPU processing speed is 12 times of XC series.
- Basic instructions: 0.02~0.05us, 6000 steps of instruction only need 0.1~0.2ms.
- 2-axis 200KHz pulse output.
- Powerful password function, protect the intellectual property right of customers.

Built-in high speed counter			
incremental mode		AB phase mode	
count ID	max frequency	count ID	max frequency
2	10KHz	2	5KHz

XD5 enhanced type

I/O numbers: 24/32, 48/60

The same functions to XD3. The processing speed is 15 times of XC series. Larger internal space. With serial port and one USB download port. All the models can connect 16 extension modules, 1 or 2 BD boards, 1 left extension module.



- 32-bit CPU.
- XD5 provides 24/32/48/60 points I/O, is fit for various applications.
- USB port makes the downloading and communication very fast.
- Program capacity: 25K steps/data register ID: 70K words.
- The CPU processing speed is 15 times of XC3 series.
- Basic instructions: 0.02~0.05us, 6000 steps of instruction only need 0.1~0.2ms.
- 2-axis to 6-axis 200KHz pulse output.
- Powerful password function, protect the intellectual property right of customers.

Built-in high speed counter			
incremental mode		AB phase mode	
counter	max frequency	counter	max frequency
3/4/6	80KHz	3/4/6	50KHz

XDC motion control fieldbus type

I/O numbers: 24/32, 48/60

The processing speed is 15 times of XC series. Support floating-point calculation, 2 channels pulse output, 4 channels AB phase high speed count, and all the functions of XD series such as interruption, PID. All the models can connect 16 extension modules, 1 or 2 BD boards, 1 left extension module. Support SD card for data storage, with 2 serial ports, support motion control fieldbus, control 20-axis motions at the same time.



- 32-bit CPU.
- XDC provides 24/32/48/60 points I/O, is fit for various applications.
- Program capacity: 25K steps/data register ID: 70K words.
- The CPU processing speed is 15 times of XC3 series, 6000 steps of instruction only need 0.1~0.2ms.
- 2-axis 200KHz pulse output.
- 1-axis to 20-axis fieldbus control.
- Powerful password function, protect the intellectual property right of customers.

Built-in high speed counter			
incremental mode		AB phase mode	
counter	max frequency	counter	max frequency
4	80KHz/10KHz	4	50KHz/5KHz

XD3 standard type

I/O numbers: 16, 24/32, 48/60

Data processing function, high speed count, electronic cam, real time clock, communication (Modbus RTU/ASCII), pulse width modulation (PWM), frequency measurement, precise timing, interruption and so on. The processing speed is 12 times of XC series. All the models can connect 10 extension modules, 1 or 2 BD boards, 1 left extension module.



- 32-bit CPU.
- XD3 provides 16/24/32/48/60 points I/O, is fit for various applications.
- USB port makes the downloading and communication very fast.
- Program capacity: 10K steps/data register ID: 1K words.
- The CPU processing speed is 12 times of XC3 series.
- Basic instructions: 0.02~0.05us, 6000 steps of instruction only need 0.1~0.2ms.
- 2-axis 200KHz pulse output.
- 16 points I/O model also can extend modules.
- Powerful password function, protect the intellectual property right of customers.

Built-in high speed counter			
incremental mode		AB phase mode	
count ID	max frequency	count ID	max frequency
2/3	80KHz/10KHz	2/3	50KHz/5KHz

XDM motion control type

I/O numbers: 24/32, 48/60

Support basic motion control instructions, 2-axis linkage motion, interpolation, follow-up, 4-axis separate pulse output, up to 10-axis pulse output, all the functions of XD series such as high speed count, interruption, PID control, the processing speed is 15 times of XC series, support SD card for data storage, with 1 serial port and 1 USB download port (high speed downloading, monitoring, speed up to 12M). All the models can connect 16 extension modules, 1 or 2 BD boards, 1 left extension module.

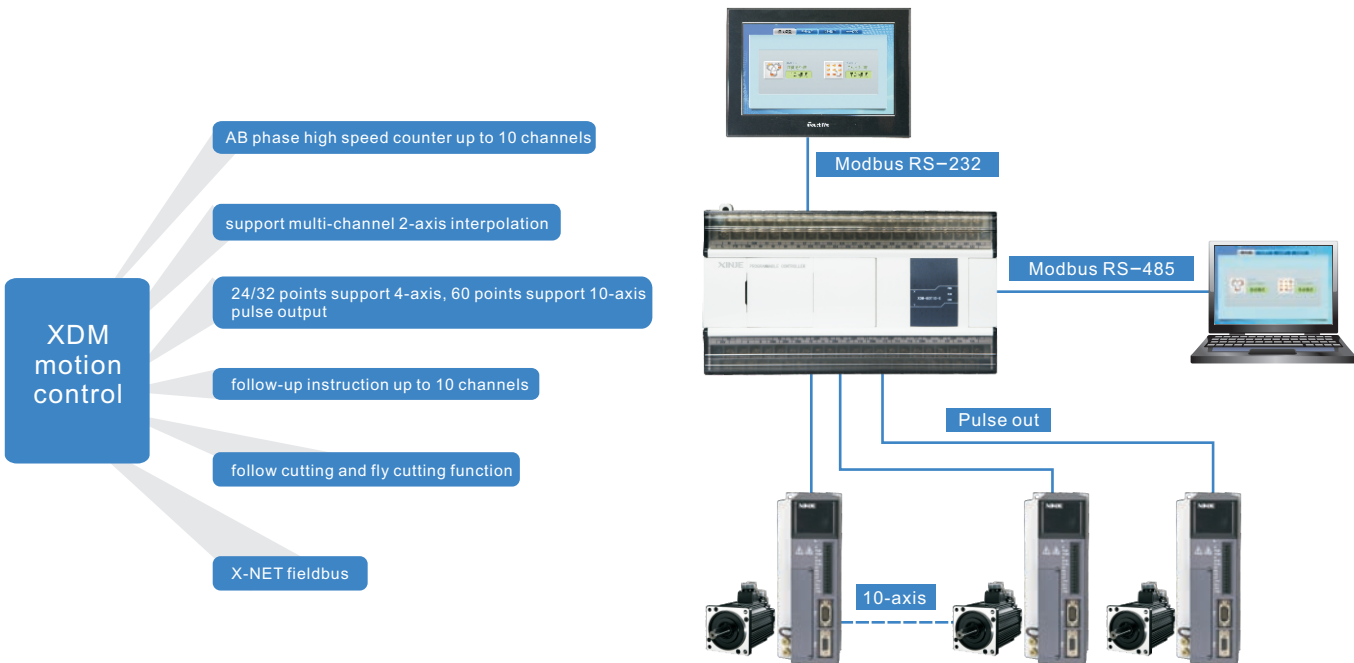


- 32-bit CPU.
- XDM provides 24/32/48/60 points I/O, is fit for various applications.
- USB port makes the downloading and communication very fast.
- Program capacity: 25K steps/data register ID: 70K words.
- The CPU processing speed is 15 times of XC3 series, 6000 steps of instruction only need 0.1~0.2ms.
- 4-axis to 10-axis 200KHz pulse output.
- Linear or circular interpolation instructions.
- Follow-up control instructions.
- Powerful password function, protect the intellectual property right of customers.

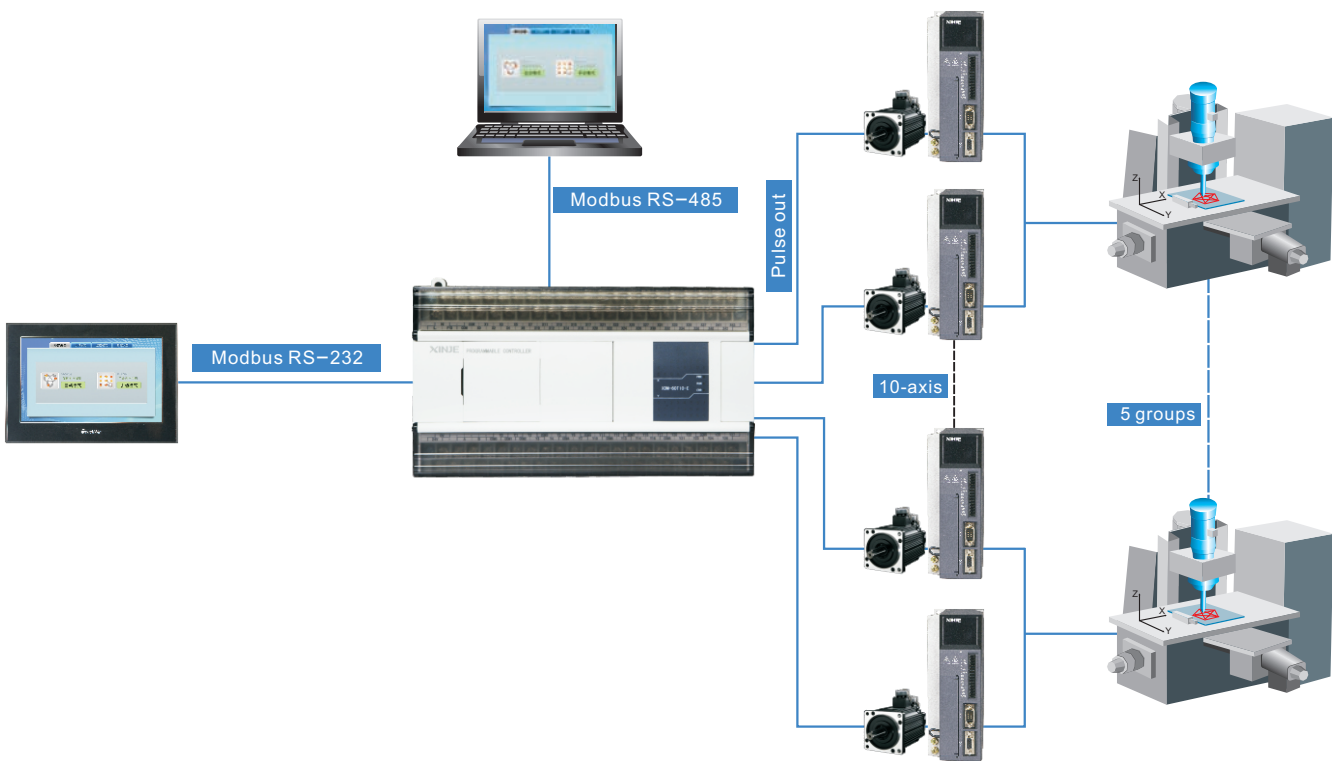
Built-in high speed counter			
incremental mode		AB phase mode	
counter	max frequency	counter	max frequency
4/10	80KHz/10KHz	4/10	50KHz/5KHz

XDM series motion control structure diagram

Multi-axis independent control structure diagram



Multi-axis linkage motion control structure diagram



Packing machine

The packing machine can pack the product, the process includes filling, packing, sealing and before and after procedures such as cleaning, stacking, removing. Besides, it also includes counting and printing on the product. The packing machine can improve the production efficiency and reduce labor intensity, be suitable for mass production.

Lid tightener

The lid tightener has fast tightening speed, high qualification rate, be suitable for different type of bottle caps such as food, pharmacy, daily chemical, pesticide, cosmetics, etc. The machine has intelligent mechanical torque controlling, easy to adjusting and operation. The worker only needs to put the cap on the bottle, the caps will be auto-tightened by three groups of twisting wheels when the bottle is moving forward. It is fit for single production or attachment production.

The glass bottle grinding machine

The machine can polish many glass cup-mouths at the same time. It used servo system to improve the precision, product consistency and production efficiency.

Sealant smearing

The coating machine can control the fluid sealant and smear it on and inside the product. It can precise find the position, control the sealant accurately, no wire drawing, no sealant leak through. It can be applied to the figure of point, line, arc and circular. It is fit for the product process of injection, coating, point, drop. It is easy to operate, fast and accurately.

Casting machine

This machine can heat the pouring object, then control 2-axis or 3-axis path position through linear or circular interpolation function and pour the object onto the product for splicing and sealing.

Edge grinding machine

The machine can grind different size and shape of metal edge through linear and circular interpolation function. It contains the coarse grinding, fine grinding, polishing in one process. It has long service life and high efficiency, the shaping is ruled.

Glass cutting machine

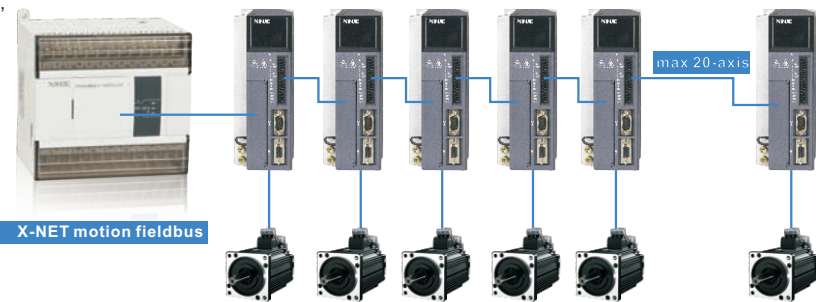
This machine can control 2-axis or 3-axis path position through linear or circular interpolation function. The laser machine which is processing the organic glass has fast cutting speed, high precision, accurate positioning. It can produce artware, model toys, panel lens case, advertising light box, packing box, etc.

XDC series motion fieldbus controller

X-NET motion control fieldbus

The motion fieldbus mode replaces the pulse control mode, makes the system processing speed faster, performance more reliable and stable. It makes the wiring simple and is able to control 20-axis synchronous motion.

- The I/O numbers: 24 points (14/10), 32 points (18/14), 48 points (28/20), 60 points (36/24).
- The I/O can up to 292 input terminals and 280 output terminals through extension modules.
- Support 2 channels of pulse output.
- Support motion control instructions.
- Synchronous period up to 10-axis 4ms, 4-axis 2ms.
- The advanced algorithm makes the control precision higher.



X-NET motion fieldbus accessories		
model	name	features
XD-NE-BD	PLC communication extension board	PLC communication extension board
JA-NE-L	servo fieldbus extension board	easy to wiring and operate

XDC system control structure diagram



Ball crusher

This machine can polish the crystal by multi-axis grinding wheel and produce various shapes of crystal crafts. The 20-axis of machine can run at the same time and is controlled by motion fieldbus.

16-axis high speed winding machine

This machine can wind the wires onto the workpiece. Generally, it is used to wind the copper wire. The servo system can replace the traditional frequency inverter to improve the efficiency.

Three-servo packing machine

The packing machine can pack the product, the process includes filling, packing, sealing and before and after procedures such as cleaning, stacking, removing. Besides, it also includes counting and printing on the product. The packing machine can improve the production efficiency and reduce labor intensity, be suitable for mass production.

CNC lathe

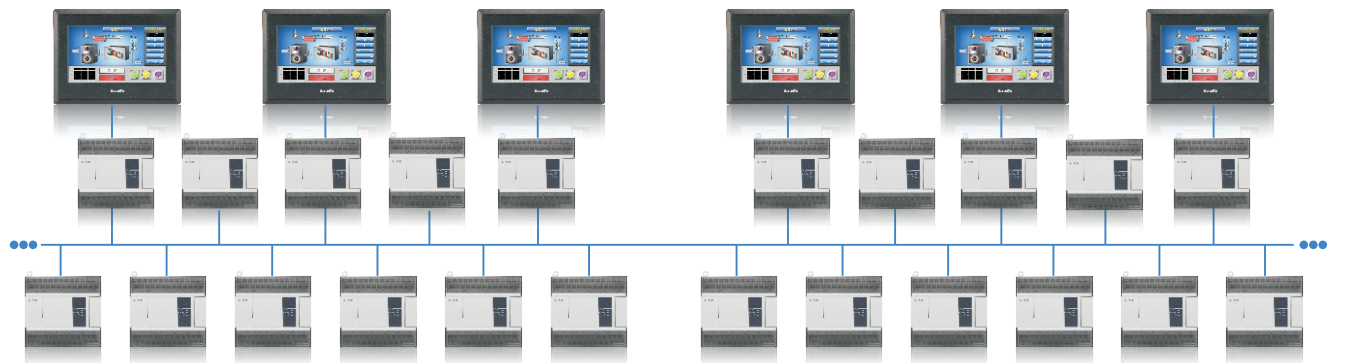
CNC lathe is one of the automatic lathe installed with program control system which can process the special program and code then translate to digital code and input to CNC device. The CNC device will process the information and output various signals to control the lathe motion to produce the parts as the drawing. The CNC lathe is fit for complicated, accurate and different type of parts, is one type of flexible high-performance lathe.

X-NET fieldbus control system

X-NET fieldbus

The fieldbus replaced the traditional Modbus and free format communication, makes the system faster and reliable. The wiring also become easy. The nodes can up to 32 in single network, different network can communicate with each other.

- XD2, XD3, XD5, XDM, XDC all support X-NET fieldbus.
- I/O numbers can up to 292 inputs and 280 outputs through the extension modules.
- X-NET fieldbus is token ring structure.
- Any node in the network who got the token can send message to other node.
- The speed can up to 3Mbps.



Network mode

Factory monitoring network, token structure, real-time multi-master station system. Multi-control, configuration or visual system can operate with each other on the same bus. Any node in the network has access right (token), no need external requests to send and receive data.

Communication speed and distance

The field bus communication speed and medium is related to the site environment. The communication distance has limit as the field bus transferring signal is electricity. The distance is 100m at 3Mbps speed and using XINJE cable. The distance can be 1000m at 192kbps speed. The communication speed can up to 600bit-3Mbit.

Shield

The shield cable of field bus X-NET must connect to the ground. If the high frequency is serious, it can multi-point-capacitance connect to the ground, cannot directly connect to the ground to avoid ground return current. The shield twin-core cable no need shield but it needs to shield under strong electromagnetism emission environment (automobile industry) to improve the compatibility of electromagnetism. The shielding line and foil must connect the both ends to the ground and cover with large area of shielding wiring to keep good conductivity. The data line must isolate with the high voltage line.

● Isolation

The electrical signal of field bus X-NET is electrical isolated with the equipment. If the high voltage input in the network, all the equipment bus transceiver will damage. If there is no isolation, all the equipment circuits will damage.

● Intelligent and autonomous

The fieldbus X-NET can process various parameters, running state and error information. It has high intelligence. It can auto-control the system, diagnosis the running status and send the error information to the control center, decrease the maintenance workload, improve the system reliability. Users can check the device running status, the maintenance information, find the error reason and solve the problem earlier. Finally it can save the cost.

● Improve the accuracy and reliability

Compared with the analog signal, fieldbus device is intelligent, digitization. It improves the accuracy and reliability of whole system, reduces the transmission error. The system structure is simple, devices and wiring decreased, field meter function enhanced, signal transmission decreased. As the device standardization and function modularization, the system design and rebuilding is easy.

● Powerful system expansion

The fieldbus can auto-identify the device reduction or addition, no need to connect new cable and cut the power supply.

● Open system

XD series PLC, TN series HMI, DS3E and DS5 series servo drive and frequency inverter have fieldbus X-NET function which can meet most customers' requirements. XINJE company will cooperate with other instrument manufacturers, different devices can interchange information. XINJE products can match more products.

● More communication stations

There can be 127 station numbers in the field bus X-NET system.

● Save the installation cost

The field bus wiring is very simple. One pair of twisted pair cable can connect multi-devices, save the cables, terminals, slot box, bridges, decrease the workload of wiring design and joint proofreading. It saves the installation and maintenance cost. The system structure is simple, support linear and ring topology, save the time of project design, drafting, cable laying and hardware manage files.

● Cable option

The transmission is affected by electromagnetic environment. XINJE cable is shield twin-core or optical fiber which can reach the standard speed and distance. (0.3mm2 and larger multi-strand copper shielded wire is recommended)

● Connector

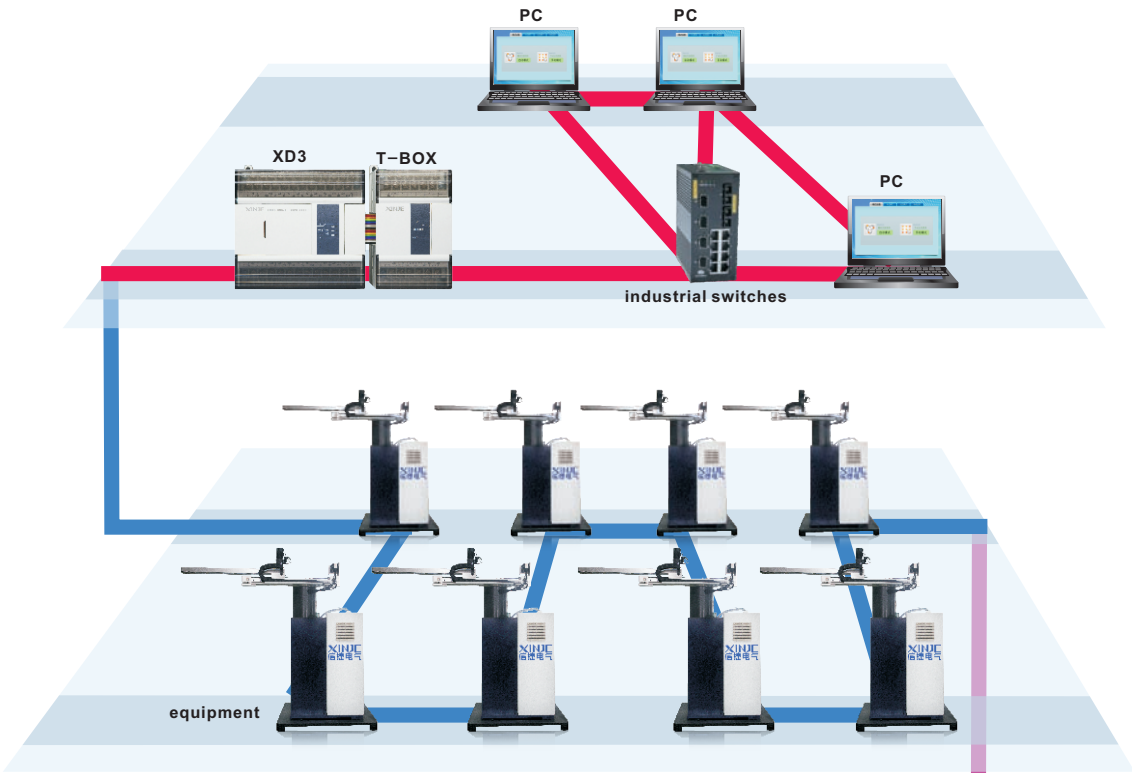
PLC terminal (A, B), extension BD board XD-NE-BD, XD-NO-BD make the connection faster, improve the working efficiency, easy to maintenance.

● Terminal matching

The field bus X-NET has reflection phenomenon just like all the electromagnetic signal. Both ends of bus network segment must use resistor (120Ω) to absorb the radiation, make the correct voltage and ensure the communication.

● Outstanding cost performance

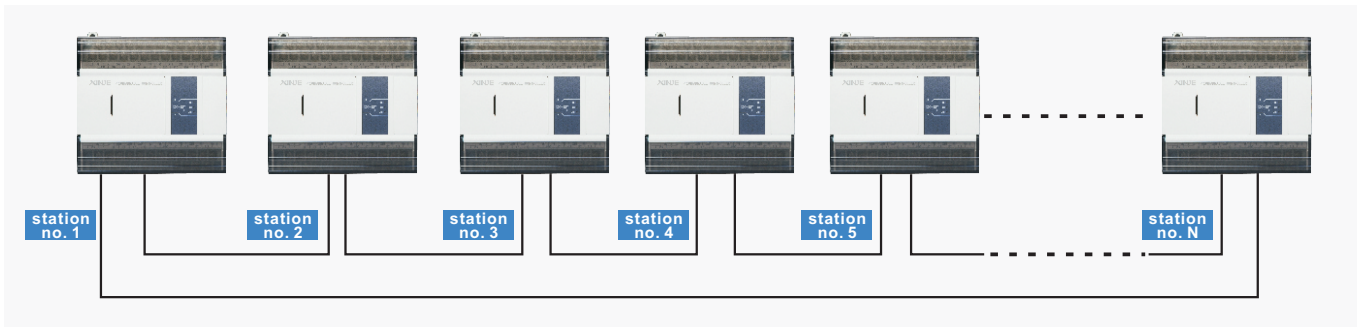
Users have to spend lots of money for the fieldbus project in nowadays industrial control industry. The XINJE products all have fieldbus X-NET inside, it no needs extra costs. It will not limit by product brand.



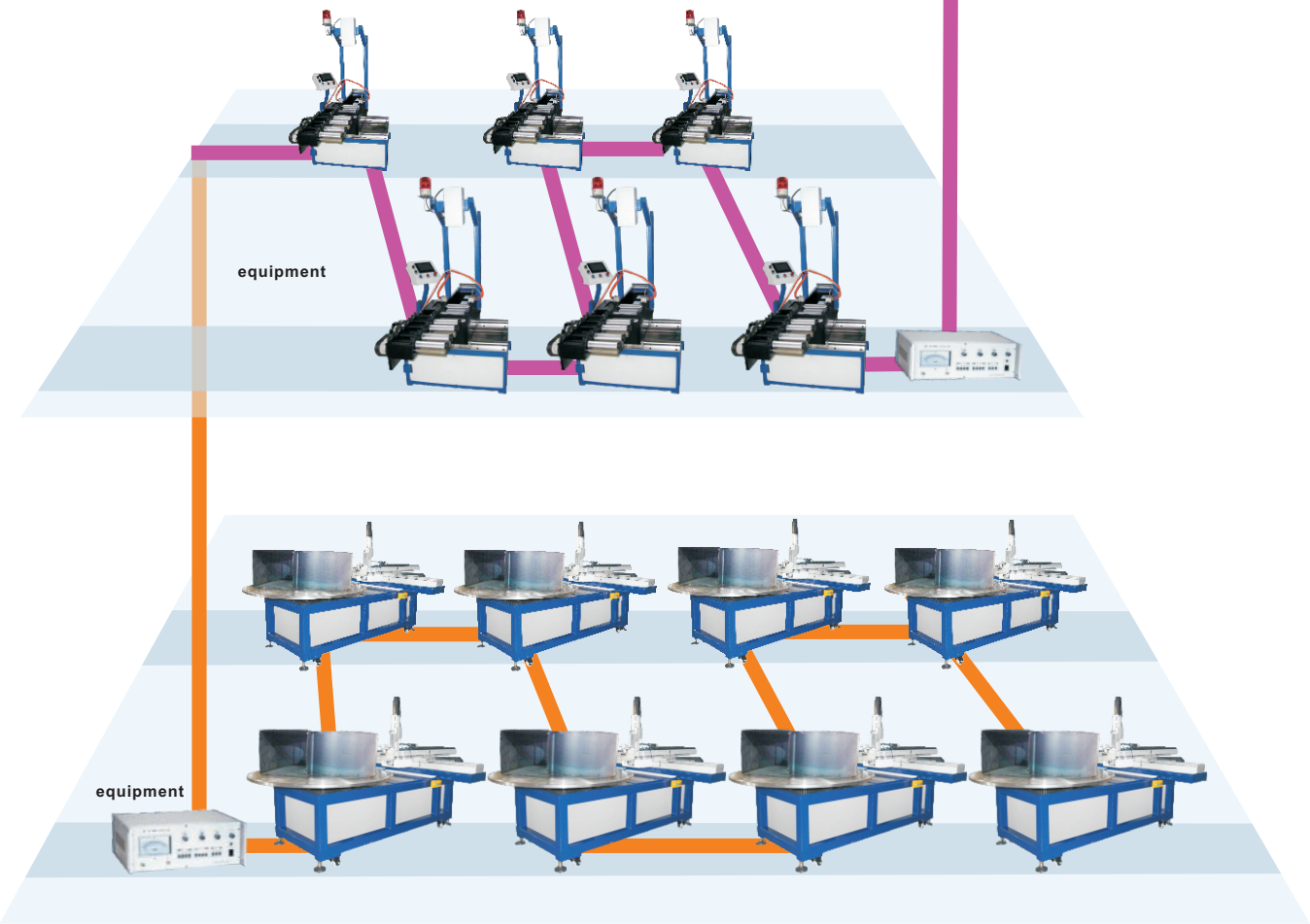
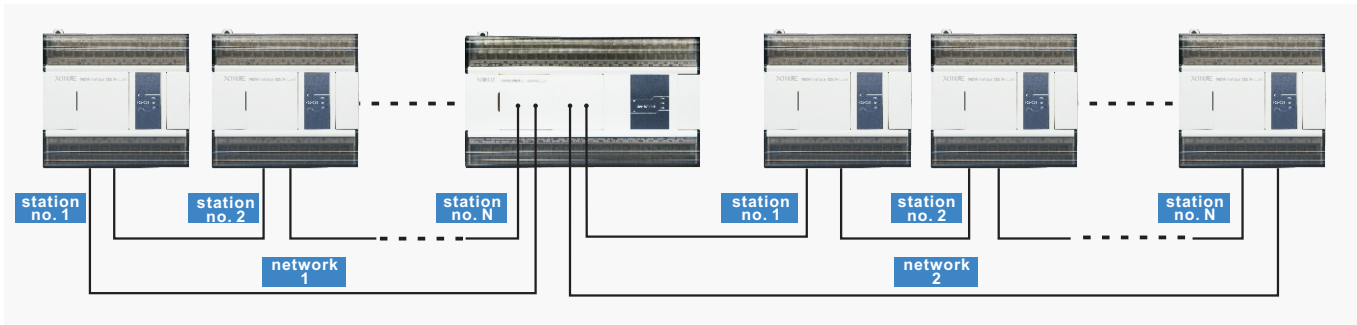
Flexible network topology

Support various network topology structures including star, line, star and line integrated, ring.

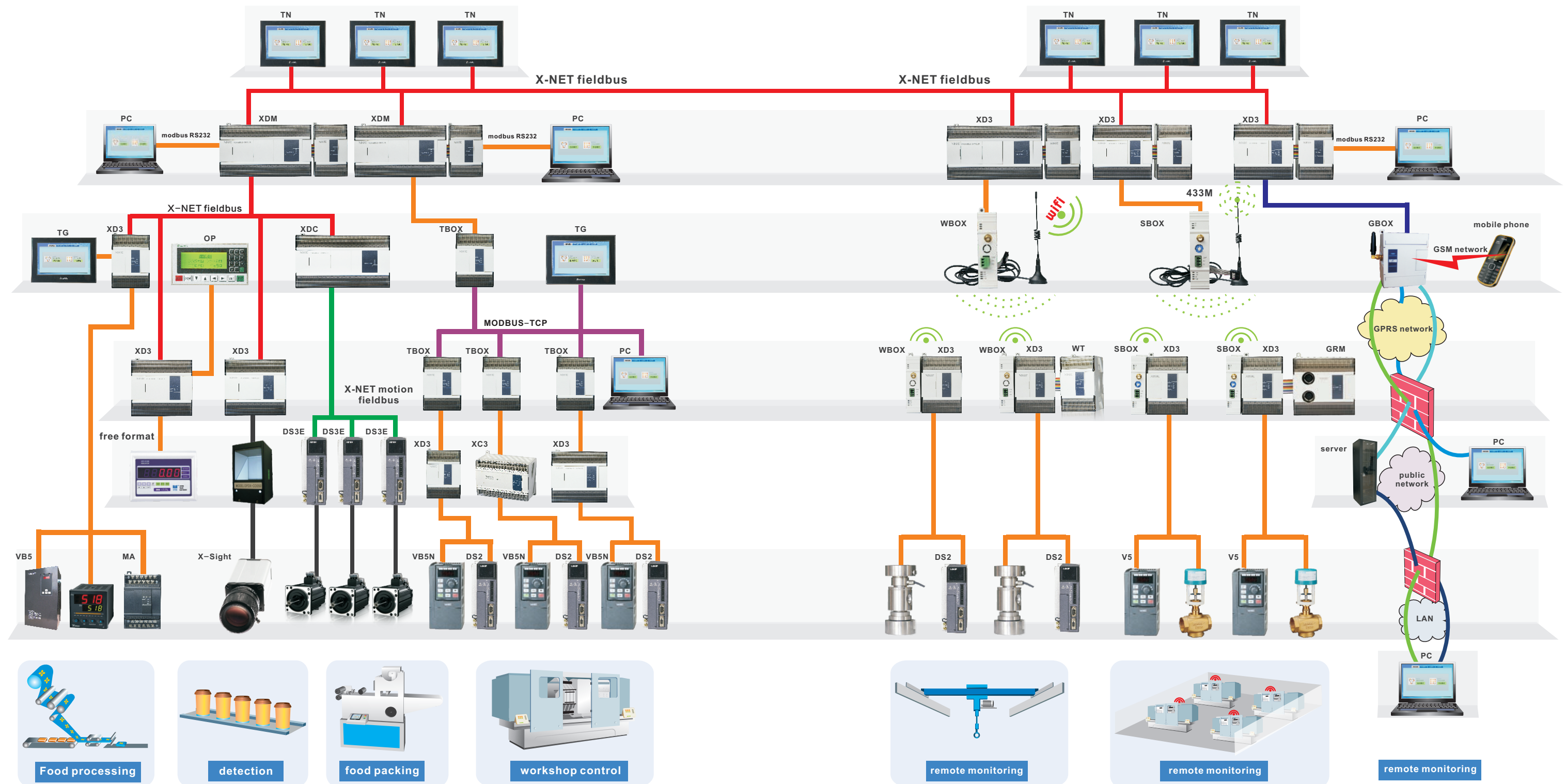
the ring topology



Multi-network structure



Integrated network structure



X-NET fieldbus

XINJE XD all series of PLC support X-NET fieldbus, which has the features of intelligent, digital and strong stability. The max speed can up to 3M, the wiring and design is easy, reconstitution is simple.

X-NET motion fieldbus

XINJE XD all series of PLC support X-NET motion fieldbus, which can high speed connect servo system, be fit for multi-axis control, high speed and complicated motion applications. The max axis can up to 20, the max speed can up to 3Mbps.

MODBUS

Support standard Modbus serial port communication, easy to connect other brand of products. It contains RS232, RS485 and free format communication which can be selected as actual applications.

GPRS

Support Modbus-TCP protocol, use together with XC series PLC to connect automation system with GPRS or GSM network. It is fit for distributed system and remote monitoring.

WIFI/433M

WIFI provides the wifi network that other nodes can access and high-speed wireless monitor the device in it. 433M means decreasing the frequency to improve the penetration and transferring distance, get better wireless communication effect.

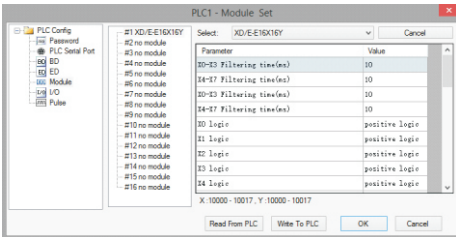
MODBUS-TCP

Support Modbus-TCP protocol, the automation devices connect to each other via the Ethernet. It has better communication performance and makes a widely range of open network.

NEW
XD/EPPro edit tool

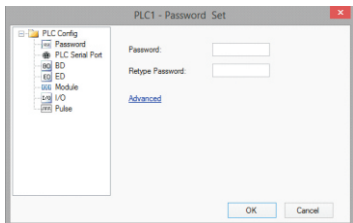
Support XD all series of products

● XD/EPPro software is suitable for XD, XE series PLC, make PLC program, configure the network module, extension module, extension BD and left extension module.

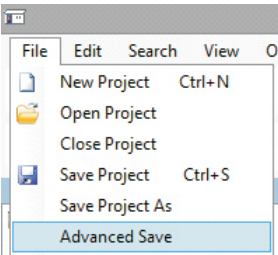


Enhanced password function

● The password can block the program uploading, protect the intellectual property right of user. The password is added to the program downloading to avoid program damage.

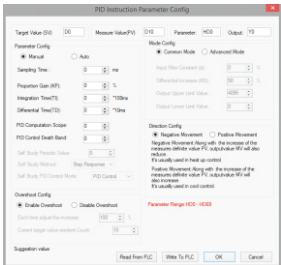


● new function advanced save can encrypt the program notes.

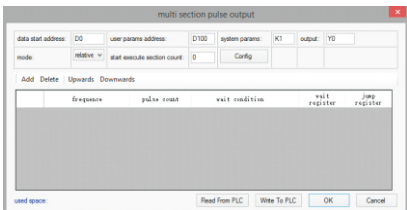


Panel configuration

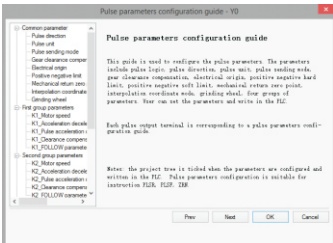
● Easy to write the complicated instruction
► XD/EPPro software provides easy editing platform for the complicated instructions including PID, 100-segment high speed counter interruption, electronic cam and so on.



● Easy to configure the pulse instruction
► XD/EPPro software has PLSR pulse instruction configuration interface which can configure all the pulse functions.



● pulse configuration guide
► The guide will help user to set the pulse parameters.

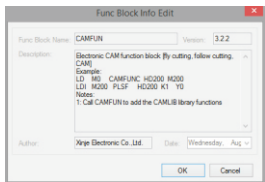


Powerful programming language

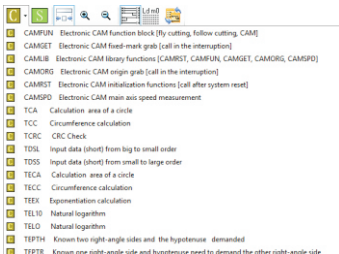
● Support ladder chart and instruction, the two modes can switch to each other

● Support C programming in XD/EPPro, no need to use C programming software

● The function block can be imported and exported, support active code and passive code. The program in the function block is invisible after exporting, the privacy is better

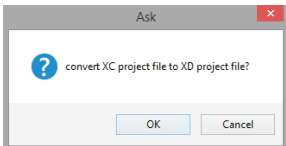


● C library contains more C instructions which can be called directly.



Good compatibility

● XC series PLC program can be transformed to XD program through XD/EPPro software.



XD/EPPro serial port

● Can configure the serial port from COM1 to COM256
● Support Modbus-RTU and Modbus-ASCII protocol
● Support free format communication

Program capacity calculation

● Programmer can know the program capacity accurately.

Rich downloading function

● The data will not be reset, I/O will not be OFF when downloading online, the PLC will auto-run after downloading. User can choosethe downloading data type.

XD2 series PLC

Basic small PLC

- 7 inputs, 8 outputs
- 2 channels 200KHz high speed pulse output
- Faster processing speed
- Cannot support extension module, BD and ED



model	specification											
XD2-16R-E	AC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD2-16R-C	DC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD2-16T-E	AC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD2-16T-C	DC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus



XD3 series PLC

Economical small PLC

- max I/O numbers are 380
- 2 channels 200KHz high speed pulse output
- 16 points model cannot support right extension module
- Faster instruction processing speed
- Rich extension functions



model	specification											
XD3-16R-E	AC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16R-C	DC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16T-E	AC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16T-C	DC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16RT-E	AC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16RT-C	DC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16PR-E	AC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16PR-C	DC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16PT-E	AC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16PT-C	DC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16PRT-E	AC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-16PRT-C	DC	18	8	8	RS485	RS232	3	3	20	6	XNET	fieldbus
XD3-24R-E	AC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24R-C	DC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24T-E	AC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24T-C	DC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24RT-E	AC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24RT-C	DC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24PR-E	AC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24PR-C	DC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24PT-E	AC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24PT-C	DC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24PRT-E	AC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-24PRT-C	DC	18	10	10	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32R-E	AC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32R-C	DC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32T-E	AC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32T-C	DC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32RT-E	AC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32RT-C	DC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32PR-E	AC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32PR-C	DC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus
XD3-32PT-E	AC	18	14	14	RS485	RS232	3	3	20	10	XNET	fieldbus

model	specification																
XD3-32PT-C																	fieldbus
XD3-32PRT-E																	fieldbus
XD3-32PRT-C																	fieldbus
XD3-48R-E																	fieldbus
XD3-48R-C																	fieldbus
XD3-48T-E																	fieldbus
XD3-48T-C																	fieldbus
XD3-48RT-E																	fieldbus
XD3-48RT-C																	fieldbus
XD3-48PR-E																	fieldbus
XD3-48PR-C																	fieldbus
XD3-48PT-E																	fieldbus
XD3-48PT-C																	fieldbus
XD3-48PRT-E																	fieldbus
XD3-48PRT-C																	fieldbus
XD3-60R-E																	fieldbus
XD3-60R-C																	fieldbus
XD3-60T-E																	fieldbus
XD3-60T-C																	fieldbus
XD3-60RT-E																	fieldbus
XD3-60RT-C																	fieldbus
XD3-60PR-E																	fieldbus
XD3-60PT-E																	

Special function extension BD board

XD series extension communication BD board

installation mode	install inside the XD PLC directly
dimension	40mm×42mm×14mm
using environment	no corrosive gas
environment temperature	0℃ ~ 60℃
environment humidity	5 ~ 95%

XD-NE-BD

XD series PLC extension BD, fieldbus communication, X-NET interface.



Part name:

name	function
communication LED	the LED light is flashing when BD communication well
terminals	A 485+
	B 485-
	SG signal ground
	● empty terminal
terminal resistor DIP	choose terminal resistor by turning on the DIP switch (120ohm)

XD-NO-BD

XD series PLC extension BD, fieldbus communication, X-NET optical fiber interface, fast speed, strong anti-interference ability, far communication distance.



Part name:

name	function
communication LED	the LED light is flashing when BD communication well
terminal	signal input terminals are on the left, signal output terminals are on the right

XD-NS-BD

XD series PLC extension BD RS-232.



Part name:

name	function
communication LED	the LED light is flashing when BD communication well
terminals	TX signal send
	RX signal receive
	GND ground
	● empty

left 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	fix with M3 screw or install on the DIN46277 (width 35mm) rail directly
dimension	25mm×100mm×89.0mm 18mm×100mm×89.0mm

XD-WBOXT-ED

left extension WIFI module



XD-SBOXT-BD

left extension 433M module



XD-NES-ED

left extension RS232/RS485 module



right extension module the extension cable length can up to 1.5m

I/O extension

if the PLC main unit I/O numbers cannot meet the requirements, please use I/O extension module.

XD series I/O extension module specification

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	fix with M3 screw or install on the DIN46277 (width 35mm) rail directly
dimension	70.8mm×108mm×89.0mm 108.6mm×108mm×89.0mm

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

Input extension module

XD-E8X, XD-E8PX



8 input points
Rated input voltage is DC24V
Response time below 20ms
External wiring mode is terminal
The wiring method is same to PLC main unit
The P in the model name means PNP input

XD-E16X, XD-E16PX



16 input points
Rated input voltage is DC24V
Response time below 20ms
External wiring mode is terminal
The wiring method is same to PLC main unit
The P in the model name means PNP input

XD-E32X, XD-E32PX



32 input points
Rated input voltage is DC24V
Response time below 20ms
External wiring mode is terminal
The wiring method is same to PLC main unit
The P in the model name means PNP input

output extension module

XD-E8YR, XD-E8YT



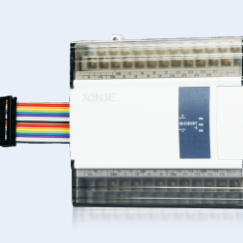
8 output points
R: relay output T: transistor output
The wiring method is same to PLC main unit
External wiring mode is terminal
R response time below 10ms
R max load: resistance 3A, inductance 80VA
response time below 0.2ms
T max load: resistance 0.5A, inductance 12W 80VA

XD-E16YR, XD-E16YT



16 output points
R: relay output T: transistor output
The wiring method is same to PLC main unit
External wiring mode is terminal
R response time below 10ms
R max load: resistance 3A, inductance 80VA
response time below 0.2ms
T max load: resistance 0.5A, inductance 12W 80VA

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



32 output points
R: relay output T: transistor output
The wiring method is same to PLC main unit
External wiring mode is terminal
R response time below 10ms
R max load: resistance 3A, inductance 80VA
response time below 0.2ms
T max load: resistance 0.5A, inductance 12W 80VA

I/O extension module

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



8 input points	Rated input voltage is DC24V
Response time below 20ms	The P in the model name means PNP input
8 output points	R: relay output T: transistor output
R response time below 10ms	T response time below 0.2ms
R max load: resistance 3A, inductance 80VA	T max load: resistance 0.5A, inductance 12W80VA
External wiring mode is terminal	The wiring method is same to PLC main unit76

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



16 input points	Rated input voltage is DC24V
Response time below 20ms	The P in the model name means PNP input
16 output points	R: relay output T: transistor output
R response time below 10ms	T response time below 0.2ms
R max load: resistance 3A, inductance 80VA	T max load: resistance 0.5A, inductance 12W80VA
External wiring mode is terminal	The wiring method is same to PLC main unit76

analog extension module

transform the analog signal to digital or digital to analog, receive and process temperature sensor signal.

analog extension module specification

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	fix with M3 screw or install on the DIN46277 (width 35mm) rail directly
dimension	63mm×108mm×89.0mm

AD type

XD-E4AD



4 input channels
Input voltage 0~5/0~10V
Input current 0~20/4~20mA
Transforming speed 2ms/channel
Resolution 1/16383
Precision ±1%
Filter coefficient 0~255
Enable bit is added

XD-E8AD



8 input channels 4 voltage channels and 4 current channels
Input voltage 0~5/0~10V
Input current 0~20/4~20mA
Transforming speed 2ms/channel
Resolution 1/16383
Precision ±1%
Filter coefficient 0~255
Enable bit is added

DA type



2 output channels
output voltage 0~5/0~10V
output current 0~20/4~20mA
Transforming speed 2ms/channel
Resolution 1/4096
Precision ±1%
Enable bit is added



2 output channels
output voltage 0~5/0~10V
output current 0~20/4~20mA
Transforming speed 2ms/channel
Resolution 1/4096
Precision ±1%
Enable bit is added

mixed type



4 input channels	2 output channels
Input voltage 0~5/0~10V	output voltage 0~5/0~10V
Input current 0~20/4~20mA	output current 0~20/4~20mA
Transforming speed 2ms/channel	Transforming speed 2ms/channel
Resolution 1/16383	Resolution 1/4096
Precision ±1%	Precision ±1%
Filter coefficient 0~255	Enable bit is added
Enable bit is added	



4 input channels	2 output channels
Input voltage 0~5/0~10V	output voltage 0~5/0~10V
Input current 0~20/4~20mA	Transforming speed 2ms/channel
Transforming speed 2ms/channel	Resolution 1/4096
Resolution 1/16383	Precision ±1%
Precision ±1%	Enable bit is added
Filter coefficient 0~255	
Enable bit is added	

temperature control extension module

Pt100 thermal resistor or thermocouple temperature measurement, PID control inside.

Pt100 thermal resistor

analog extension module XD-E6PT-P general specification

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	fix with M3 screw or install on the DIN46277(width 35mm) rail directly
dimension	63mm×108mm×89.0mm

analog extension module XD-E6PT-P general specification

item	specification
analog input	Pt100 thermal resistor
Temperature range	-100℃ ~ 500℃
Digital output range	-1000~5000, 16-bit signed value, binary
Control precision	± 0.5℃
Resolution	0.1℃
Integrated precision	1% (relative max value)
Transformation speed	20ms/channel
Power supply for analog	DC24V±10%, 50mA



6 temperature input channels	Control the heating and cooling
Self-study function	Optional sampling period
Temperature range -100~500℃	Control precision ±0.5℃
Resolution 0.1℃	Integrated precision ±1%
Channel transformation speed 20ms/channel	

TC thermocouple

analog extension module XD-E6TC-P general specification

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	fix with M3 screw or install on the DIN46277(width 35mm) rail directly
dimension	63mm×108mm×89.0mm

analog extension module XD-E6TC-P performance specification

item	specification
analog input	thermocouple K, S, E, N, B, T, J, R
Temperature range	24 0~1300℃ (type K)
Digital output range	25 0~13000, signed 16-bit value, binary
Control precision	±0.5℃
Resolution	0.1℃
Integrated precision	1% (relative max value)
Transformation speed	20ms/channel
Power supply for analog	DC24V±10%, 50mA



6 temperature input channels	Control the heating and cooling
Self-study function	Optional sampling period
Temperature range 0~1300℃	Control precision ±0.5℃
Resolution 0.1℃	Integrated precision ±1%
Channel transformation speed 20ms/channel	

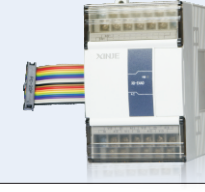
weighing extension module

transform the weighing signal to digital value

analog input range	DC -39.06 ~ 39.06mV
Resolution	1/16777216(24Bit)
Integrated precision	±0.1%
Transformation speed	0~255 times/second
Power supply	DC24V±10%, 100mA
Sensor excitation power supply	5VDC/120mA, can connect 4 350Ω weighing sensor in parallel
Installation mode	fix with M3 screw or install on the DIN46277(width 35mm) rail directly
Dimension	63mm×108mm×89.0mm
Using environment	no corrosive gas
Environment temperature	0℃ ~ 60℃
Environment humidity	5 ~ 95%



2 weighing channels
AD transformation speed 0~255 times/second
Internal resolution 1/16777216
Display resolution 1/20000
Nonlinear error 0.01% F.S
Time drift 0.005% F.S
Integrated precision ±0.1%



4 weighing channels
AD transformation speed 0~255 times/second
Internal resolution 1/16777216
Display resolution 1/20000
Nonlinear error 0.01% F.S
Time drift 0.005% F.S
Integrated precision ±0.1%



1 weighing channels
AD transformation speed 0~255 times/second
Internal resolution 1/16777216
Display resolution 1/20000
Nonlinear error 0.01% F.S
Time drift 0.005% F.S
Integrated precision ±0.1%

MA series remote extension module

MA series modules include digital input and output, analog input and output, temperature control. It uses RS485 port and based on Modbus protocol, can connect PLC, HMI, PLC&HMI integrated controller, and other devices supporting Modbus protocol. It is fit for temperature, flow, liquid level, pressure control, can extend up to 16 modules.

digital I/O module general specification

item	specification
input power supply voltage	DC24V±10%
Using environment	no corrosive gas
Environment temperature	0℃ ~ 60℃
Environment humidity	5 ~ 95%
Installation	fix with M3 screw or install on the DIN46277(width 35mm) rail directly
Dimension	63mm×102mm×73.3mm

digital I/O

I/O extension module MA-nXnY

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

input extension module



16 input points
Rated input voltage DC24V
Response time below 20ms
External wiring mode is terminal
The wiring method is same to PLC main unit
The P in the model name means PNP input

output extension module



16 output points	R: relay output T: transistor output
The wiring method is same to PLC main unit	R max load: resistance 3A, inductance 80VA
External wiring mode is terminal	T response time below 0.2ms
R response time below 10ms	T max load: resistance 0.5A, inductance 12W80VA

I/O extension module



8 input points	R response time below 10ms
Rated input voltage DC24V	T response time below 0.2ms
Response time below 20ms	R max load: resistance 3A, inductance 80VA
The P in the model name means PNP input	T max load: resistance 0.5A, inductance 12W80VA
8 output points	External wiring mode is terminal
R: relay output T: transistor output	The wiring method is same to PLC main unit

analog I/O

analog input module MA-nAD	
model	notes
MA-4AD	4 channels, 12-bit high precision analog input (voltage/current), each channel has PID function
MA-8AD-A	8 channels, 12-bit high precision analog input (current), each channel has PID function
MA-8AD-V	8 channels, 12-bit high precision analog input (voltage), each channel has PID function

analog output module MA-nDA	
model	notes
MA-2DA	2 channels, 10-bit high precision analog output (voltage/current)
MA-4DA	4 channels, 10-bit high precision analog output (voltage/current)

analog I/O module MA-nADmDA	
model	notes
MA-4AD2DA	4 channels, 12-bit high precision analog input (voltage/current), each channel has PID function; 2 channels, 10-bit high precision analog output (voltage/current)

AD type

MA-4AD							
	<table><tr><td>4 input channels</td></tr><tr><td>Input voltage 0~5/0~10V</td></tr><tr><td>Input current 0~20/4~20mA</td></tr><tr><td>Transformation speed 20ms/channel</td></tr><tr><td>Resolution 1/4096</td></tr><tr><td>Precision ±0.8%</td></tr></table>	4 input channels	Input voltage 0~5/0~10V	Input current 0~20/4~20mA	Transformation speed 20ms/channel	Resolution 1/4096	Precision ±0.8%
4 input channels							
Input voltage 0~5/0~10V							
Input current 0~20/4~20mA							
Transformation speed 20ms/channel							
Resolution 1/4096							
Precision ±0.8%							

MA-8AD-A						
	<table><tr><td>8 input channels</td></tr><tr><td>Input current 0~20/4~20mA</td></tr><tr><td>Transformation speed 20ms/channel</td></tr><tr><td>Resolution 1/4096</td></tr><tr><td>Precision ±0.8%</td></tr></table>	8 input channels	Input current 0~20/4~20mA	Transformation speed 20ms/channel	Resolution 1/4096	Precision ±0.8%
8 input channels						
Input current 0~20/4~20mA						
Transformation speed 20ms/channel						
Resolution 1/4096						
Precision ±0.8%						

MA-8AD-V						
	<table><tr><td>8 input channels</td></tr><tr><td>Input voltage 0~5/0~10V</td></tr><tr><td>Transformation speed 20ms/channel</td></tr><tr><td>Resolution 1/4096</td></tr><tr><td>Precision ±0.8%</td></tr></table>	8 input channels	Input voltage 0~5/0~10V	Transformation speed 20ms/channel	Resolution 1/4096	Precision ±0.8%
8 input channels						
Input voltage 0~5/0~10V						
Transformation speed 20ms/channel						
Resolution 1/4096						
Precision ±0.8%						

DA type

MA-2DA		MA-4DA		MA-4AD2DA																									
	<table><tr><td>2 output channels</td></tr><tr><td>output voltage 0~5/0~10V</td></tr><tr><td>output current 0~20/4~20mA</td></tr><tr><td>Transformation speed 3ms/channel</td></tr><tr><td>Resolution 1/1024</td></tr><tr><td>Precision ±0.8%</td></tr></table>	2 output channels	output voltage 0~5/0~10V	output current 0~20/4~20mA	Transformation speed 3ms/channel	Resolution 1/1024	Precision ±0.8%		<table><tr><td>4 output channels</td></tr><tr><td>output voltage 0~5/0~10V</td></tr><tr><td>output current 0~20/4~20mA</td></tr><tr><td>Transformation speed 3ms/channel</td></tr><tr><td>Resolution 1/1024</td></tr><tr><td>Precision ±0.8%</td></tr></table>	4 output channels	output voltage 0~5/0~10V	output current 0~20/4~20mA	Transformation speed 3ms/channel	Resolution 1/1024	Precision ±0.8%		<table><tr><td>4 input channels</td><td>2 output channels</td></tr><tr><td>Input voltage 0~5/0~10V</td><td>output voltage 0~5/0~10V</td></tr><tr><td>Input current 0~20/4~20mA</td><td>output current 0~20/4~20mA</td></tr><tr><td>Transformation speed 20ms/channel</td><td>Transformation speed 3ms/channel</td></tr><tr><td>Resolution 1/4096</td><td>Resolution 1/1024</td></tr><tr><td>Precision ±0.8%</td><td>Precision ±0.8%</td></tr></table>	4 input channels	2 output channels	Input voltage 0~5/0~10V	output voltage 0~5/0~10V	Input current 0~20/4~20mA	output current 0~20/4~20mA	Transformation speed 20ms/channel	Transformation speed 3ms/channel	Resolution 1/4096	Resolution 1/1024	Precision ±0.8%	Precision ±0.8%
2 output channels																													
output voltage 0~5/0~10V																													
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Transformation speed 3ms/channel																													
Resolution 1/1024																													
Precision ±0.8%																													
4 input channels	2 output channels																												
Input voltage 0~5/0~10V	output voltage 0~5/0~10V																												
Input current 0~20/4~20mA	output current 0~20/4~20mA																												
Transformation speed 20ms/channel	Transformation speed 3ms/channel																												
Resolution 1/4096	Resolution 1/1024																												
Precision ±0.8%	Precision ±0.8%																												

AD/DA mixed type

temperature control

PT100 thermal resistor											
MA-6PT-P											
	<table><tr><td>6 temperature input channels</td><td>Heating and cooling control</td></tr><tr><td>Self-study function</td><td>Optional sampling period</td></tr><tr><td>Temperature range -100~50℃</td><td>Control precision ±0.1℃</td></tr><tr><td>Resolution 0.1℃</td><td>Integrated precision ±0.8%</td></tr><tr><td colspan="2">Transformation speed 20ms/channel</td></tr></table>	6 temperature input channels	Heating and cooling control	Self-study function	Optional sampling period	Temperature range -100~50℃	Control precision ±0.1℃	Resolution 0.1℃	Integrated precision ±0.8%	Transformation speed 20ms/channel	
6 temperature input channels	Heating and cooling control										
Self-study function	Optional sampling period										
Temperature range -100~50℃	Control precision ±0.1℃										
Resolution 0.1℃	Integrated precision ±0.8%										
Transformation speed 20ms/channel											

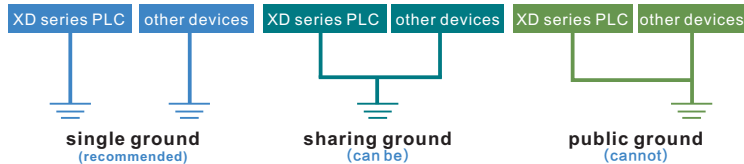
TC thermocouple											
MA-6TCA-P											
	<table><tr><td>6 temperature input channels</td><td>Heating and cooling control</td></tr><tr><td>Self-study function</td><td>Optional sampling period</td></tr><tr><td>Temperature range 0~1300℃</td><td>Control precision ±0.1℃</td></tr><tr><td>Resolution 0.1℃</td><td>Integrated precision ±0.8%</td></tr><tr><td colspan="2">Transformation speed 20ms/channel</td></tr></table>	6 temperature input channels	Heating and cooling control	Self-study function	Optional sampling period	Temperature range 0~1300℃	Control precision ±0.1℃	Resolution 0.1℃	Integrated precision ±0.8%	Transformation speed 20ms/channel	
6 temperature input channels	Heating and cooling control										
Self-study function	Optional sampling period										
Temperature range 0~1300℃	Control precision ±0.1℃										
Resolution 0.1℃	Integrated precision ±0.8%										
Transformation speed 20ms/channel											

XD series product specifications

General specification of basic unit

Item	Specification
Insulation voltage	Up DC500V 2Mohm
anti-noise	Noise voltage 1000 Vp-p 1us pulse 1 minute
Air	No corrosive and flammable gas
Environment temperature	0℃~60℃
Environment humidity	5%RH~95%RH (no condensation)
Com 1	RS232, connect to upper device, HMI to debug and programming
Com 2	RS485, connect to smart meter and VFD
Installation	fix with M3 screw or install on the rail directly
Ground	The third ground (cannot connect the ground with high voltage system)

- All the basic units have com1 for programming and debug.
- The rail specification is DIN46277, the width is 35mm.
- The ground is better to use single ground or sharing ground, cannot use public ground.



XD2 series basic unit performance specifications

Items	Specifications	
Program execution mode	scan round mode	
Program mode	Instructions, ladder chart, C language	
Processing speed	0.05us	
Power off retentive	FlashROM and Li-battery (3V button battery)	
Users' program capacity ^{※1}	256KB	
I/O points ^{※2}	Total I/O numbers	16 points
	Input numbers	8 points X0~X7
	Output numbers	8 points Y0~Y7
Internal Coils(X) ^{※3}	1280 points: X0~X77, X10000~X11777, X20000~X20277	
Internal Coils(Y) ^{※4}	1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20277	
Internal Coils(M, HM)	11008 points	M0~M7999 [HMO~HM959] ^{※5} For Special Use ^{※6} SM0~SM2047
	Procedure(S)	1152 points S0~S1023 [HS0~HS127]
Timer(T)	points	672 points T0~T575 [HT0~HT95]
	Specification	100mS timer: set time 0.1~3276.7s
		10mS timer: set time 0.01~327.67s
		1mS timer: set time 0.001~32.767s
Counter(T)	points	672 points C0~C575 [HC0~HC95]
	Specification	16 bits counter: set value K0~32,767
		32 bits counter: set value -2147483648~+2147483647
Data Register(D)	11048 words	D0~D7999 [HD0~HD999] ^{※5} For Special Use ^{※6} SD0~SD2047
	FlashROM Register (FD)	5120 words FD0~FD5119 For Special Use ^{※6} SFD0~SFD1999
High speed processing ability	High speed counter, pulse output, external interruption	
Password Protection	6 bits ASCII	
Self-diagnose Function	Power on self-check, monitor timer, grammar check	

- ※1: The users' program capacity means the maximum program capacity when encrypted downloading.
※2: I/O points mean terminal number that users can connect from outside.
※3: X stands for the internal input relays and can be used as middle relay when input points are exceeded.
※4: Y stands for the internal output relays and can be used as middle relay when output points are exceeded.
※5: [] means the default power off retentive area, this area can't be changed.
※6: For special use means special usage registers that are occupied by system, can't be applied for other usage.

XD5 series basic unit performance specifications

Items	Specifications	
Program execution mode	scan round mode	
Program mode	Instructions, ladder chart, C language	
Processing speed	0.05us	
Power off retentive	FlashROM and Li-battery (3V button battery)	
Users' program capacity ^{※1}	384KB	
I/O points ^{※2}	Total I/O numbers	24 points 32 points 48 points 60 points
	Input numbers	14 points X0~X15 18 points X0~X21 28 points X0~33 36 points X0~X43
	Output numbers	10 points Y0~Y11 14 points Y0~Y15 20 points Y0~Y23 24 points Y0~Y27
Internal Coils(X) ^{※3}	1280 points: X0~X77, X10000~X11777, X20000~X20277	
Internal Coils(Y) ^{※4}	1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20277	
Internal Coils(M, HM)	92000 points	M0~M74999 [HMO~HM11999] ^{※5} For Special Use ^{※6} SM0~SM4999
	Procedure(S)	9000 points S0~S7999 [HS0~HS999]
Timer(T)	points	7000 points T0~T4999 [HT0~HT1999]
	Specification	100mS timer: set time 0.1~3276.7s
		10mS timer: set time 0.01~327.67s
		1mS timer: set time 0.001~32.767s
Counter(T)	points	7000 points C0~C4999 [HC0~HC1999]
	Specification	16 bits counter: set value K0~32,767
		32 bits counter: set value -2147483648~+2147483647
Data Register(D)	100000 words	D0~D69999 [HD0~HD24999] ^{※5} For Special Use ^{※6} SD0~SD4999
	FlashROM Register (FD)	14192 words FD0~FD8191 For Special Use ^{※6} SFD0~SFD5999
High speed processing ability	High speed counter, pulse output, external interruption	
Password Protection	6 bits ASCII	
Self-diagnose Function	Power on self-check, monitor timer, grammar check	

- ※1: The users' program capacity means the maximum program capacity when encrypted downloading.
※2: I/O points mean terminal number that users can connect from outside.
※3: X stands for the internal input relays and can be used as middle relay when input points are exceeded.
※4: Y stands for the internal output relays and can be used as middle relay when output points are exceeded.
※5: [] means the default power off retentive area, this area can't be changed.
※6: For special use means special usage registers that are occupied by system, can't be applied for other usage.

XD3 series basic unit performance specifications

Items		Specifications				
Program execution mode		scan round mode				
Program mode		Instructions, ladder chart, C language				
Processing speed		0.05us				
Power off retentive		FlashROM and Li-battery (3V button battery)				
Users' program capacity ^{※1}		256KB				
I/O points ^{※2}	Total I/O numbers	16 points	24 points	32 points	48 points	60 points
	Input numbers	8 points X0~X7	14 points X0~X15	18 points X0~X21	28 points X0~33	36 points X0~X43
	Output numbers	8 points Y0~Y7	10 points Y0~Y11	14 points Y0~Y15	20 points Y0~Y23	24 points Y0~Y27
Internal Coils(X) ^{※3}		1280 points: X0~X77, X10000~X11777, X20000~X20277				
Internal Coils(Y) ^{※4}		1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20277				
Internal Coils(M, HM)		11008 points	M0~M7999 [HMO~HM959] ^{※5} For Special Use ^{※6} SMO~SM2047			
Procedure(S)		1152 points	S0~S1023 [HS0~HS127]			
Timer(T)	points	672 points	T0~T575 [HT0~HT95]			
	Specification	100mS timer: set time 0.1~3276.7s				
		10mS timer: set time 0.01~327.67s				
		1mS timer: set time 0.001~32.767s				
Counter(T)	points	672 points	C0~C575 [HC0~HC95]			
	Specification	16 bits counter: set value K0~32,767				
		32 bits counter: set value -2147483648~+2147483647				
Data Register(D)		11048 words	D0~D7999 [HD0~HD999] ^{※5} For Special Use ^{※6} SD0~SD2047			
FlashROM Register (FD)		5120 words	FD0~FD5119 For Special Use ^{※6} SFD0~SFD1999			
High speed processing ability		High speed counter, pulse output, external interruption				
Password Protection		6 bits ASCII				
Self-diagnose Function		Power on self-check, monitor timer, grammar check				

- ※1: The users' program capacity means the maximum program capacity when encrypted downloading.
※2: I/O points mean terminal number that users can connect from outside.
※3: X stands for the internal input relays and can be used as middle relay when input points are exceeded.
※4: Y stands for the internal output relays and can be used as middle relay when output points are exceeded.
※5: [] means the default power off retentive area, this area can't be changed.
※6: For special use means special usage registers that are occupied by system, can't be applied for other usage.

XDM series basic unit performance specifications

Items	Specifications	
Program execution mode	scan round mode	
Program mode	Instructions, ladder chart, C language	
Processing speed	0.05us	
Power off retentive	FlashROM and Li-battery (3V button battery)	
Users' program capacity ^{※1}	384KB	
I/O points ^{※2}	Total I/O numbers	24 points 32 points 60 points
	Input numbers	14 points X0~X15 18 points X0~X21 36 points X0~X43
	Output numbers	10 points Y0~Y11 14 points Y0~Y15 24 points Y0~Y27
Internal Coils(X) ^{※3}	1280 points: X0~X77, X10000~X11777, X20000~X20277	
Internal Coils(Y) ^{※4}	1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20277	
Internal Coils(M, HM)	92000 points	M0~M74999 [HMO~HM11999] ^{※5} For Special Use ^{※6} SM0~SM4999
	Procedure(S)	9000 points S0~S7999 [HS0~HS999]
Timer(T)	points	7000 points T0~T4999 [HT0~HT1999]
	Specification	100mS timer: set time 0.1~3276.7s
		10mS timer: set time 0.01~327.67s
		1mS timer: set time 0.001~32.767s
Counter(T)	points	7000 points 7000 points
	Specification	16 bits counter: set value K0~32,767
		32 bits counter: set value -2147483648~+2147483647
Data Register(D)	100000 words	D0~D69999 [HD0~HD24999] ^{※5} For Special Use ^{※6} SD0~SD4999
	FlashROM Register (FD)	14192 words FD0~FD8191 For Special Use ^{※6} SFD0~SFD5999
High speed processing ability	High speed counter, pulse output, external interruption	
Password Protection	6 bits ASCII	
Self-diagnose Function	Power on self-check, monitor timer, grammar check	

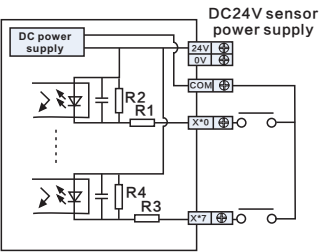
- ※1: The users' program capacity means the maximum program capacity when encrypted downloading.
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※3: X stands for the internal input relays and can be used as middle relay when input points are exceeded.
※4: Y stands for the internal output relays and can be used as middle relay when output points are exceeded.
※5: [] means the default power off retentive area, this area can't be changed.
※6: For special use means special usage registers that are occupied by system, can't be applied for other usage.

Items		Specifications			
Program execution mode		scan round mode			
Program mode		Instructions, ladder chart, C language			
Processing speed		0.05us			
Power off retentive		FlashROM and Li-battery (3V button battery)			
Users' program capacity ^{*1}		384KB			
I/O points ^{*2}	Total I/O numbers	24 points	32 points	60 points	
	Input numbers	14 points X0~X15	18 points X0~X21	36 points X0~X43	
	Output numbers	10 points Y0~Y11	14 points Y0~Y15	24 points Y0~Y27	
Internal Coils(X) ^{*3}		1280 points: X0~X77, X10000~X11777, X20000~X20277			
Internal Coils(Y) ^{*4}		1280 points: Y0~Y77, Y10000~Y11777, Y20000~Y20277			
Internal Coils(M, HM)		92000 points	M0~M74999 [HM0~HM11999] ^{*5} For Special Use [※] SM0~SM4999		
Procedure(S)		9000 points	S0~S7999 [HS0~HS999]		
Timer(T)	points	7000 points	T0~T4999 [HT0~HT1999]		
		100mS timer: set time 0.1~3276.7s			
		10mS timer: set time 0.01~327.67s			
	Specification	1mS timer: set time 0.001~32.767s			
Counter(T)	points	7000 points	C0~C4999 [HC0~HC1999]		
	Specification	16 bits counter: set value C0~32.767			
		32 bits counter: set value -2147483648~+2147483647			
Data Register(D)		100000 words	D0~D69999 [HD0~HD24999] ^{*6} For Special Use [※] SD0~SD4999 FD0~FD8191		
FlashROM Register (FD)		14192 words	For Special Use [※] SFD0~SFD5999		
High speed processing ability		High speed counter, pulse output, external interruption			
Password Protection		6 bits ASCII			
Self-diagnose Function		Power on self-check, monitor timer, grammar check			

※1: The users' program capacity means the maximum program capacity when encrypted downloading.
 ※2: I/O points mean terminal number that users can connect from outside.
 ※3: X stands for the internal input relays and can be used as middle relay when input points are exceeded.
 ※4: Y stands for the internal output relays and can be used as middle relay when output points are exceeded.
 ※5: [] means the default power off retentive area, this area can't be changed.
 ※6: For special use means special usage registers that are occupied by system, can't be applied for other usage.

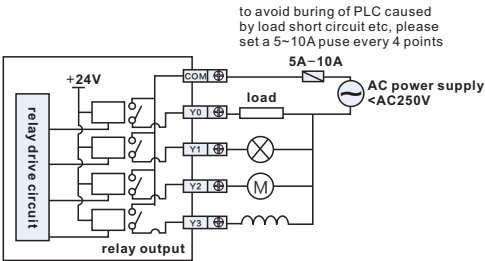
the Input includes NPN and PNP mode.

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	Connector input or NPN open collector transistor
Circuit insulation	Photo-electricity coupling insulation
Input action display	LED lights when input ON



The output includes relay and transistor mode.

Relay output		
External power	Below AC250V, DC30V	
Circuit insulation	Mechanical insulation	
Action indicator	LED	
Max load	Resistant load	3A
	Inductive load	80VA
	Lamp load	100W
Mini load	DC5V 2mA	
Response time	OFF→ON	10ms
	ON→OFF	10ms



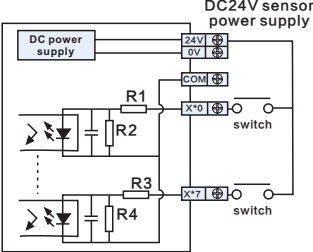
Model	RT or T
High Speed Pulse Output Terminal	Y0, Y1(Y2/Y3)(Y4/Y5-Y10/Y11)
External Power Supply	Below DC5-30V
Action Indicator	LED
Maximum Current	50mA
Max output pulse frequency	200KHZ

Items	Content
Rated Voltage	AC100V~240V
Allowed Voltage Range	AC90V~265V
Rated Frequency	50/60Hz
Allow momentary power off time	Interruption Time $\leq$ 0.5 AC cycle, interval $\geq$ 1s
Impulse Current	Max 40A below 5ms/AC100V max 60A below 5ms/AC200V
Maximum Power Consumption	12W
Power Supply for Sensor	24VDC $\pm$ 10% 16 points max is 200mA, 32 points max is 400mA

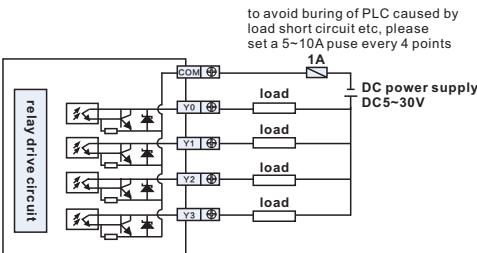
Items	Content
Rated Voltage	DC24V
Allowed Voltage Range	DC21.6V~26.4V
Input Current (Only for basic unit)	120mA DC24V
Allow momentary power off time	10ms DC24V
Impulse Current	10ADC26.4V
Maximum Power Consumption	12W
Power Supply for Sensor	24VDC±10% 16 points max is 200 mA, 32 points max is 400mA

- Please use the wire cable more than 2mm² to avoid the decrease of voltage.
- Even power off in 10ms, the PLC can still keep working. But when power is off for long time or voltage abnormally decrease, the PLC will stop working, output will be OFF. When power is on again, the PLC will run automatically.
- The grounding terminals on basic units and extensions are connected together, and connected to the ground well (the third kind of ground).

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	Connector input or PNP open collector transistor
Circuit insulation	Photo-electricity coupling insulation
Input action display	LED lights when input ON



External power		DC5~30V
Circuit insulation		optocoupler insulation
Action indicator		LED
Max load	Resistant load	0.3A
	Inductive load	8W/DC24V
	Lamp load	1.5W/DC24V
Mini load		DC5V 2mA
Response time	OFF→ON	Below 0.2ms
	ON→OFF	Below 0.2ms

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Instruction list

Application instruction

XDM-60T10												
	single phase incremental mode											
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC14	HSC16	HSC18	HSC20	HSC22
max frequency	80K	80K	80K	80K	80K	80K	80K	80K	10K	10K		
4-time frequency												
Counter 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												
	AB phase mode											
	HSC0	HSC2	HSC4	HSC6	HSC8	HSC10	HSC12	HSC14	HSC16	HSC18	HSC20	HSC22
max frequency	50K	50K	50K	50K	50K	50K	50K	50K	5K	5K		
4-time frequency												
Counter 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												

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

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

Basic instruction

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

Serial port (RS232/RS485) communication parameters

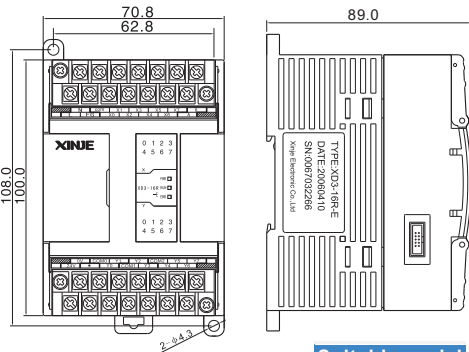
Item	Parameters
Communication mode	Half duplex
Baud rate	9600bps, 19200bps (defaulted), 38400bps, 57600bps, 115200bps
Data type	Data bit: 5, 6, 7, 8(defaulted), 9 Stop bit: 1(defaulted), 1.5, 2 Parity bit: no parity, odd, even(defaulted)
Mode	RTU(defaulted), ASCII, free format, fieldbus X-NET
Station number	1~255 (defaulted is 1)
Before sending delay	1~100ms(defaulted is 3ms)
Reply overtime	1~1000ms(defaulted is 300ms)
Retry times	1~20 times(defaulted is 3 times)

Special instruction

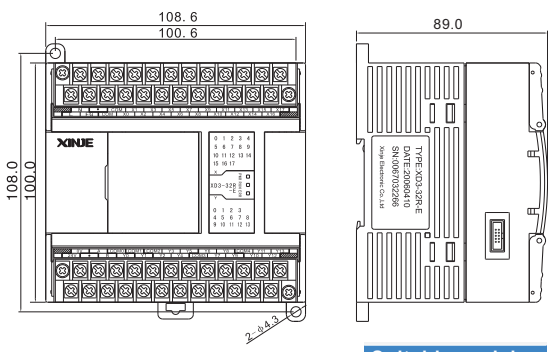
Type	Instruction	Function
Pulse output	PLSR	Multi-segment pulse output
	PLSF	Variable frequency pulse output
	ZRN	Mechanical return to zero
	PLSMV	Refresh the pulse number immediately
	STOP	Stop the pulse
High speed counter	DMOV	Read 32 bits high speed counter
	DMOV	Write 32 bits high speed counter
	CNT (_AB)	100-segment high speed counter interruption
	CNT (_AB)	Electronic cam
	RST	Reset high speed counter
Modbus communication	COLR	Modbus read coil
	INPR	Modbus read input coil
	COLW	Modbus write single coil
	MCLW	Modbus write multi coils
	REGR	Modbus read register
	INRP	Modbus read input register
Precise timing	REGW	Modbus write single register
	MRGW	Modbus write multi registers
	STR	Precise timing
Interruption	DMOV	Read precise timing register
	STOP	Stop precise timing
	EI	Enable the interruption
Sequence block	DI	Disable the interruption
	IRET	Interruption return
	SBLOCK	Block start
	SBLOCKE	Block end
Write and read the module	SBSTOP	Stop block
	SBGOON	Continue running the stop block
	WAIT	Wait
Others	FROM	Read the module
	TO	Write in
	FROM	Frequency measurement
	PWM	Pulse width modulation
	PID	PID control
	NAME_C	C function block

Dimension (unit: mm)

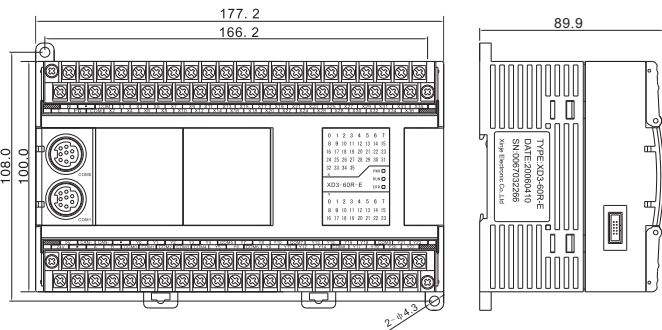
XD series basic unit



Suitable model	
Series	I/O numbers
XD2	16 points
XD3	

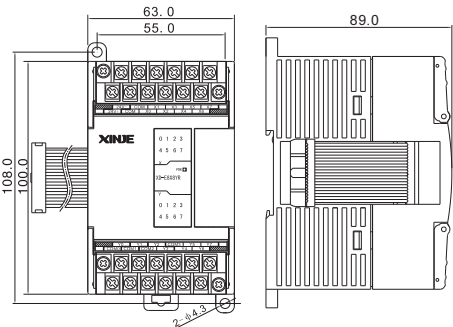


Suitable model	
Series	I/O numbers
XD3	
XD5	24/32points
XDM	
XDC	

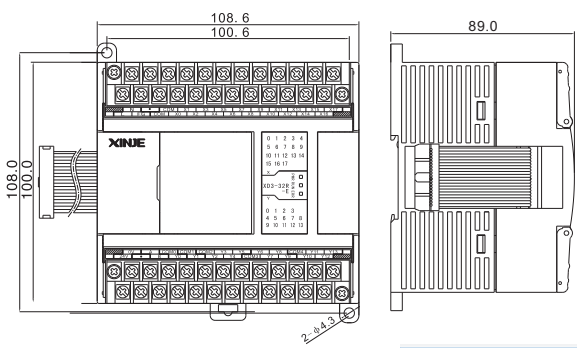


Suitable model	
Series	I/O numbers
XD3	
XD5	48/60points
XDM	
XDC	

XD3 series right extension module

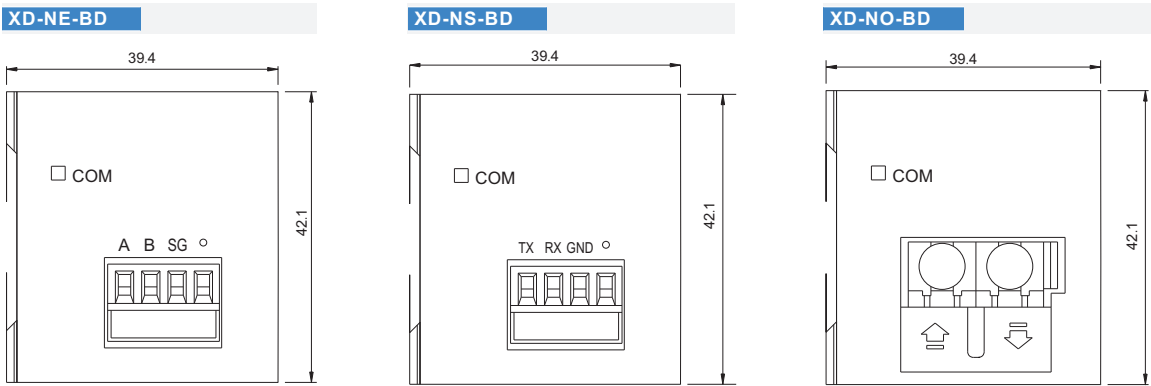


Suitable model	
Module type	Model
Input and output	8X/8Y
	8X8Y
	16X/16Y
Analog	All

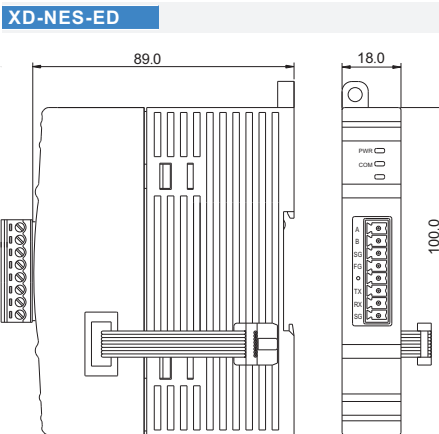
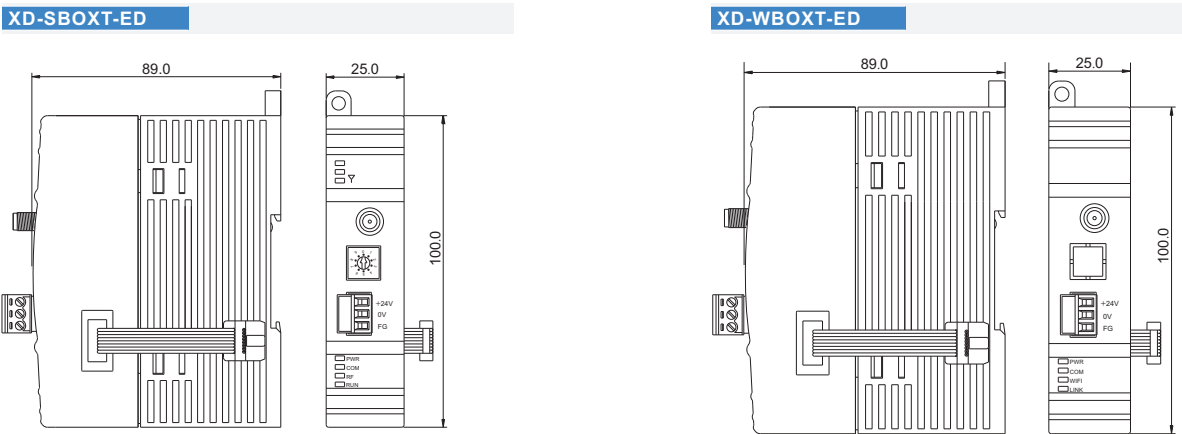


Suitable model	
Module type	Model
I/O module	32X/32Y
	16X/16Y

XD series extension BD

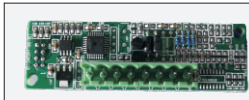


XD series left extension module



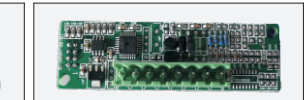
XC Series

Special function extension BD board



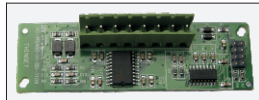
XC-2AD2PT-BD

2 channels 14 bits high precise input(voltage), 2 channels PT100 temperature input, with PID function.



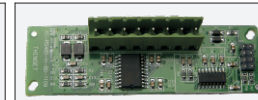
XC-2AD2PT-H-BD

2 channels 14 bits high precise input(voltage), 2 channels PT100 temperature input, with PID function. Electrical isolation with PLC main unit, enhanced protection for AD input.



XC-COM-H-BD

Special BD for RS232/RS485 communication, extend the communication port of basic unit. RS485 port is isolated.



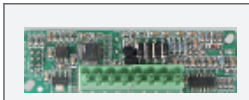
XC-COM-BD

Special BD for RS232/RS485 communication, extend the communication port of basic unit.



XC-SD-BD

To install SD card, extend the capacity of XC and store the data.



XC-2AD2DA-BD

2 channels analog input(voltage), 2 channels analog output(current).



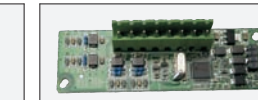
XC-TBOX-BD

Connect the PLC with the Ethernet, the function is the same to T-BOX.



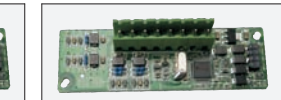
XC-OFC-BD

Connect to PLC for RS485 optical fiber communication.



XC-4AD-BD

2 channels analog voltage input, 2 channels analog current input.



XC-4AD-H-BD

2 channels analog voltage input, 2 channels analog current input. Electrical isolation with PLC main unit, enhanced protection for AD input.

Special PLC

● **Special function basic unit XC3-19AR-E**



logic control, analog I/O, compact size, cost saving

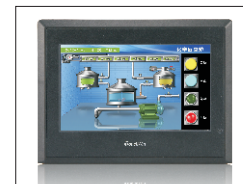
● **PLC and HMI integrated controller XMH/XMP/XP series**



XC3 series PLC function, TH series HMI function, integrated control

Peripheral equipment

HMI ➡



TG/TH/TP series HMI



MP series touch panel



OP series operate panel

Connection ➡



Programming cable



Communication cable



USB-COM (USB to serial port converter)



COM-BLT (Blue-tooth module, wireless short distance connection)

XC basic unit

● **XC1 series affordable**

I/O numbers: 10/16/24/32

Compact model fit for general applications, the functions include logic control, data calculation and other basic functions.

● **XC2 series basic**

I/O numbers: 14/16/24/32/42/48/60

The functions include data processing, high speed count, high speed pulse output, communication. The processing speed is 2 times of XC1 series. The register numbers are less than XC3, cannot expand module but can connect expansion BD (except 14/16/42 models).

● **XC3 series standard**

I/O numbers: 14/24/32/42/48/60

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

● **XC5 series enhanced**

I/O numbers: 24/32/48/60

All the functions of XC3 series, 4-axis pulse output (24/32 support), CANBUS network, can connect expansion modules and BD, the register numbers are more than XC3.

● **XC series motion control**

I/O numbers: 24/32/60

Support motion control instructions, the functions include two-axis linkage, interpolation, following, coordinates transformation (except I/O 60), 3-10 axes pulse output. Support most functions of XC series such as PID control, high speed count, interruption. Can connect expansion modules and BD.

● **XCC series high performance**

I/O numbers: 24/32

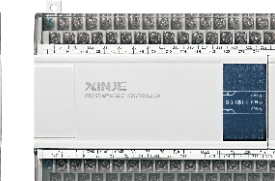
Faster processing speed, support 5 channels pulse output, 5 channels AB phase high speed count, motion control instructions, 2-axis linkage, interpolation, following, coordinates transformation, most functions of XC series such as high speed count, high speed pulse output, interruption, PID control. Can connect expansion modules and BD.



sort by I/O numbers 10/14/16points



24/32points



42points



48/60points

Expansion modules XCC series PLC only can connect XCL series expansion module

● **I/O expansion**



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

Input extension module	Output extension module	I/O extension module
XC(L)-E8X	XC(L)-E8YR	XC(L)-E8YT
XC(L)-E16X	XC(L)-E16YR	XC(L)-E16YT
XC(L)-E32X	XC(L)-E32YR	XC(L)-E32YT

● **Analog expansion**



AD, DA transformation, temperature control

AD model	DA model	mixed model
XC-E2AD-H XC-E4AD(H) XC-E8AD(H) XC-E8AD-B	XC-E2DA(H) XC-E4DA(H) XC-E4DA-B-H XCL-E4DA	XC-E4AD2DA(H) XC-E4AD2DA-B-H XCL-E4AD2DA

● **Temperature control**



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

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

● **MA series extension module**



digital 8 inputs/8 outputs analog 4 inputs/2 outputs

Based on Modbus protocol, can extend up to 16 modules

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

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

High speed calculation

Basic instruction 0.2~0.5us, scanning time 10000 steps 5ms, program capacity 32K~256K.

Rich extensions

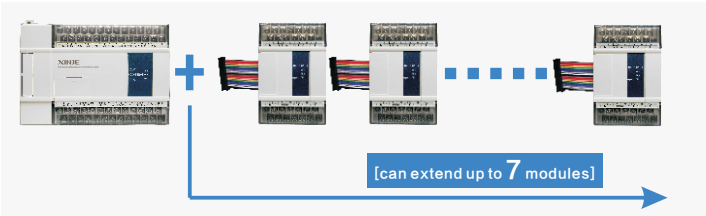
In order to meet more application needs, XC series PLC can extend I/O module, analog module, temperature control module. Can extend 7 different modules and 1 BD board.

I/O extension module

- To extend I/O numbers, the numbers are 8~32, can extend the basic unit I/O numbers to 540
- The output expansion module contains transistor (T) and relay (R).

Analog and temperature extension module

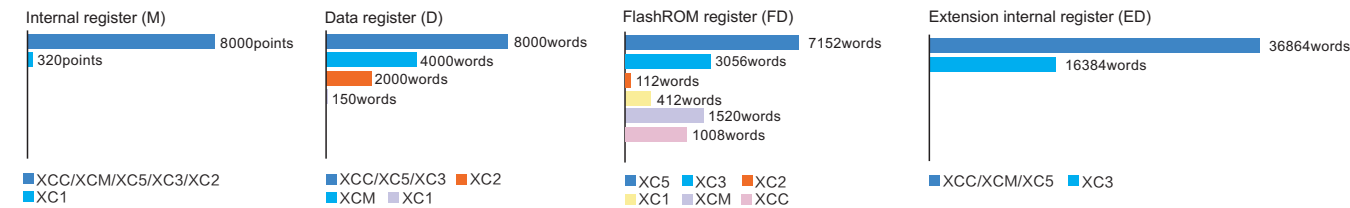
- AD, DA transformation function, fit for process control system such as temperature, flow, liquid level, pressure, etc
- Built-in PID function, wide range of application, high control accuracy
- Each channel of XC-E6TCA-P and XC-E2AD2PT2DA can perform PID and auto-tune individually, exchange data with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



Extension BD

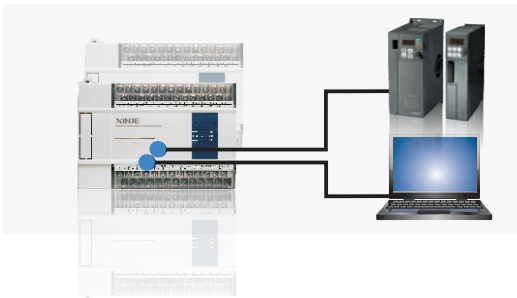
- AD, DA transformation function, fit for process control system such as temperature, flow, liquid level, pressure, etc
- Can install on the PLC directly, not occupy extra space, with wired and wireless communication functions

Larger capacity for soft component



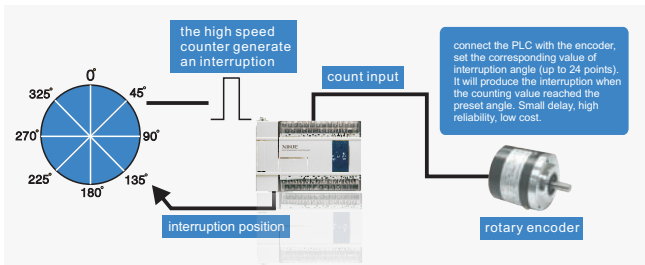
Communication function

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



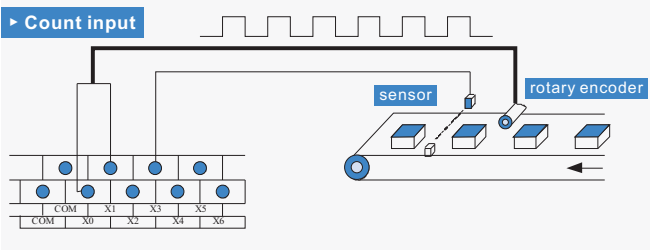
24-segment high speed count interruption

- High speed count interruption has good real-time feature
- The high speed count has 24-segment 32 bits preset value, the interruption is produced when the count difference value is equal to the preset value.

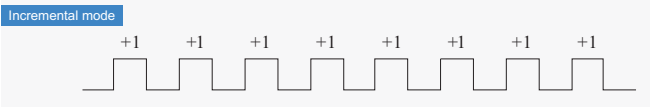


High speed count

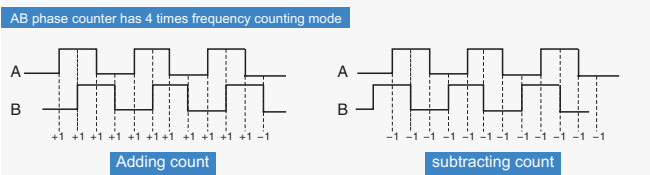
- XC series PLC has 2~6 channels 2 phases 32 bits high speed counter and high speed count comparator, can connect rotary encoder directly and count the encoder signal
- The counting mode includes single phase (incremental mode), pulse and direction mode, AB phase mode (1 time, 4 times). The max frequency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



Various counting modes



4 times frequency mode

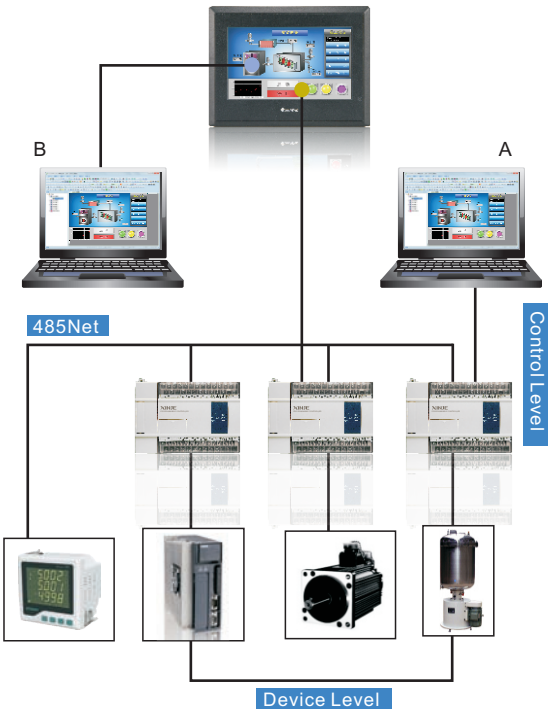


Enhanced communication and networking function

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

Modbus networking

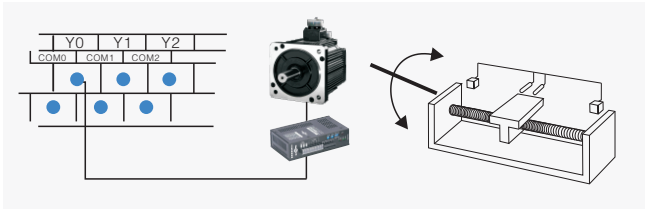
XC series PLC supports Modbus master-slave mode. PLC master station can send requests to other devices, other devices will response it. PLC slave station only can response the master station.



Up to 200KHz pulse output, support 10 channels

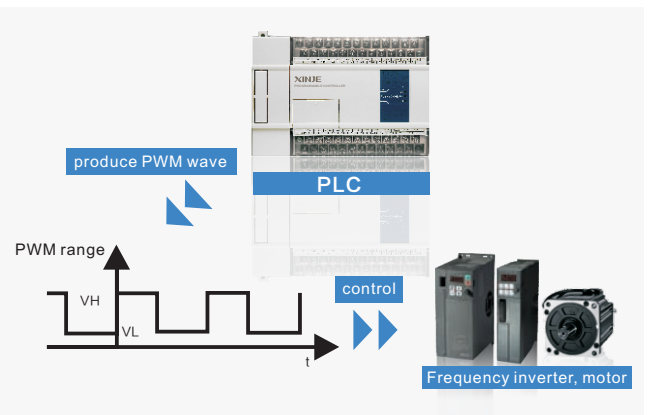
XC2/XC3 (I/O 48/60) have 2 channels pulse output. Support multi-mode output with different instructions. The output frequency can up to 200KHz.

- It needs transistor output PLC to output pulse, such as XC3-14T-E or XC3-60RT-E
- XC5 (I/O 24/32) series have 4 channels pulse output (Y0~Y3)
- XCC-32T-E has 5 channels pulse output (Y0~Y4)
- XCM-60T-E has 10 channels pulse output (Y0~Y11)



PWM pulse width modulation

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



Interruption function

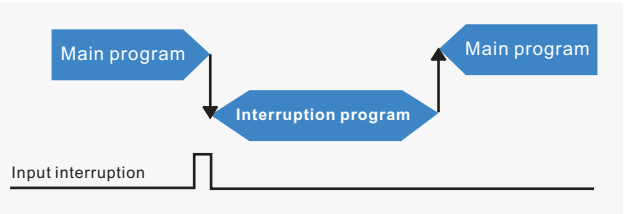
The interruption function includes external interruption, timing interruption, 24-segment high speed count interruption. The special operations can be done by calling the interruption. It will not be affected by the PLC scanning period.

External interruption

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

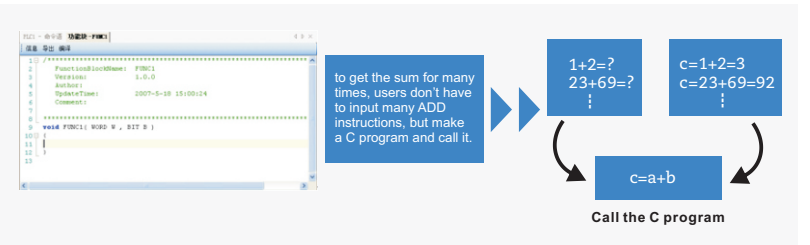
Timing interruption

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



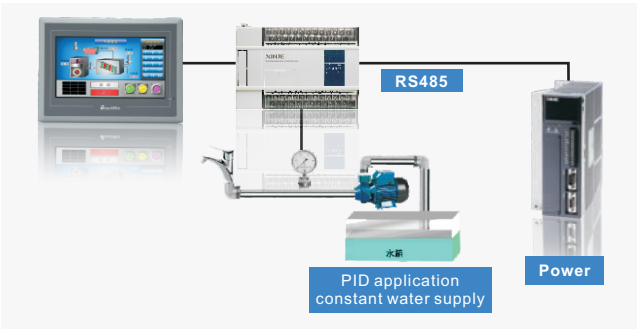
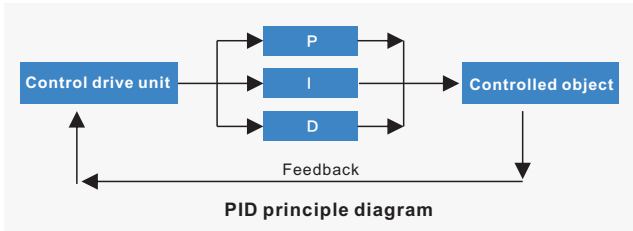
C programming function

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



PID control

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

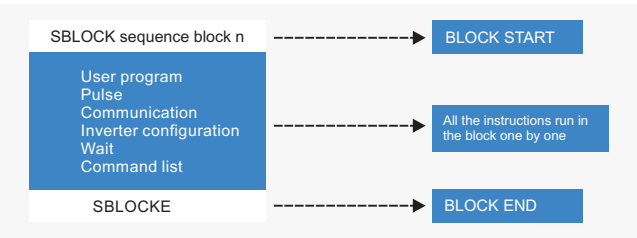


Sequence block

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

- The block can optimize the programming method of pulse and communication instruction in the program.

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



Precise timing

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

Frequency measurement

- 32 bits instruction FRQM can measure the frequency.

Self-diagnosis

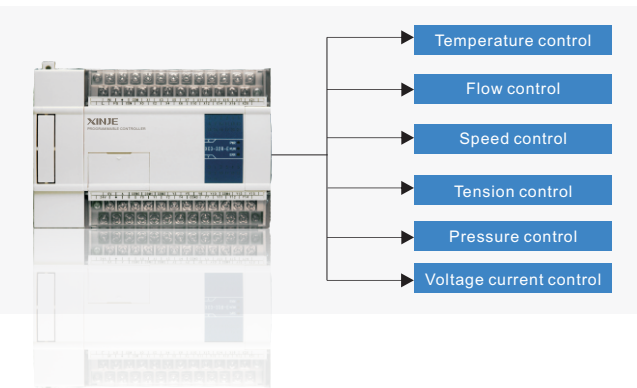
- Power-on self-examination, timer monitoring, grammar checking.

Small size, easy to install

- Compact structure, improve the utilization, two installation modes.

XC3-19AR-E meets diverse needs

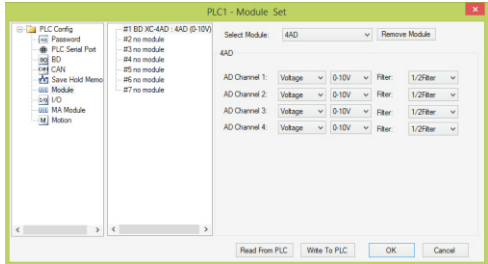
- Has analog I/O without connecting extension module.
- ▶ Logic control and analog I/O in one unit
Digital input: 9 (NPN optical-coupler isolation); digital output: 10 (relay)
Analog input: 8 (voltage); analog output: 2 (voltage/current)
- bits high precision analog input, 8 bits analog output .
- 2 channels AB phase input, 4 channels high speed count (10KHz).
- 2 channels 32 bits pulse output, cost-effective, save space



XCPpro software

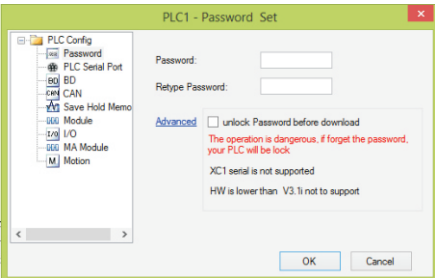
Support all series of PLC products

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



Enhanced password function

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



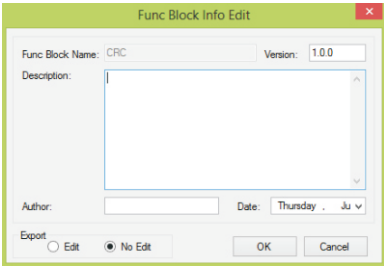
Panel configuration

- Reduce the difficulty of making complicated instructions
- ▶ XCPpro provides easy editing environment for complicated instructions such as multi-pulse output, PID control, 24-segment high speed count interruption.
- Improve the configuration of pulse instruction
- ▶ New pulse instructions such as PTO are added to XCPpro software, these instructions can be configured in the panel.

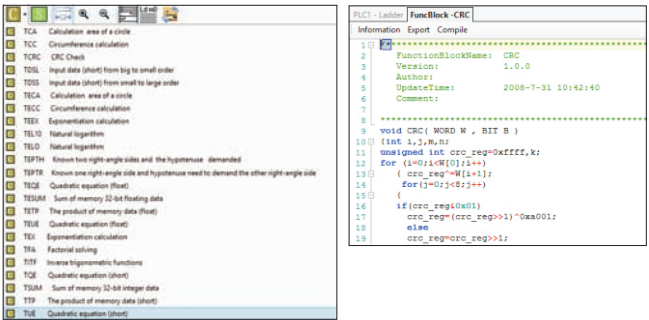


Powerful programming ability, better compatibility

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

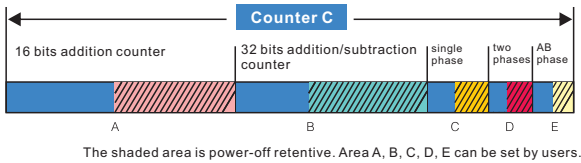


- C function library contains more C instructions which can be called directly



Power-off retentive in sections

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



Better system compatibility

- Compatible with different OS: Windows2000/XP/7.
- Support 64 bits operation system.

Calculate the program size

- The programmer can command the program capacity accurately.

Download the program online

Serial port setting

- Enable to configure from com1 to com256.
- Online downloading will not clear the data and shut down the output. PLC will auto-run after downloading.

Useful simple functions

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

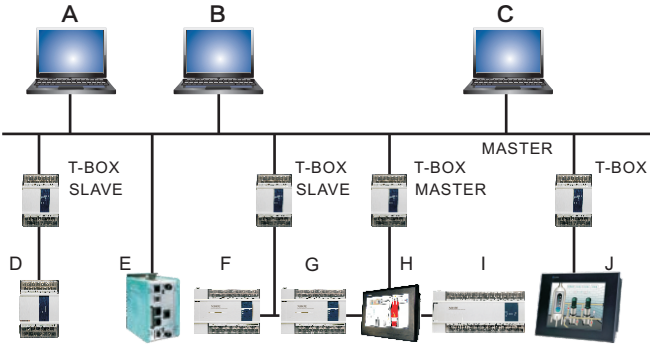
Industry Ethernet module T-BOX

Open network, enhanced communication ability

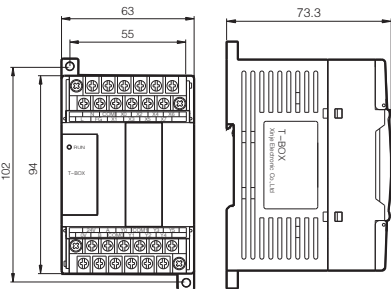
- Support Modbus-TCP protocol, connect all the industry devices by T-BOX to form Ethernet control system. It breaks the island state of traditional industry automation, makes the communication more efficient and realizes a wide range of open network.

Equipped T-BOX with the PLC brings many advantages

- Flexible distributed automation structure, simplify the system management.
 - Access Ethernet via RJ45 port and TCP/IP protocol.
 - Realize remote programming, monitoring and diagnosing via Ethernet, save time and cost.
 - Store and manage the information via Ethernet, simplify the operation of data processing.
 - Cost-effective, easy to maintain, friendly diagnosis function.
 - Modbus communication is one-master multi-slave mode, the speed is very slow.
- Multi-station devices can high-speed exchange data between master and slave PLC through T-BOX.



Dimension (unit: mm)

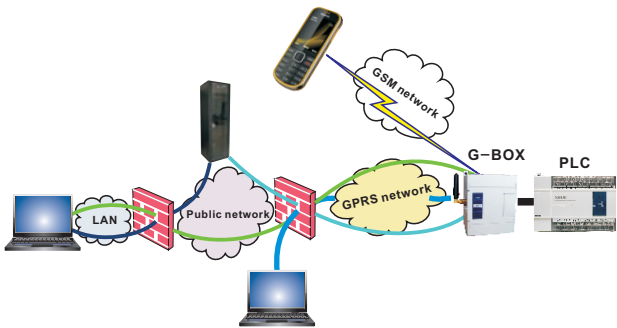


Wireless data transmission module G-BOX

The G-BOX with XC series PLC can make wireless connection with GPRS or GSM network. It supports Modbus-TCP protocol, fit for distributed system and remote monitoring.

Features

- Open and transparent data transmission
- Data terminal has TCP/IP protocol stack inside, support TCP, UDP, DNS, PPP, etc.
- Standard industry interface (RS232 or RS485)
- Persistent online mode, with break redial and heartbeat function
- Support SMS sending and receiving
- Support local configuration
- Support GPRS and GSM network communication



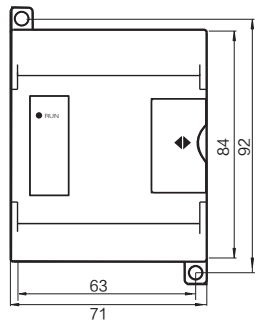
Wireless upload and download PLC program, real-time monitoring

It is hard to monitor and change the PLC program in remote control system. If XC series PLC is equipped with G-BOX, user can monitor the device, wireless upload/download program via PC though the system is in remote place.

Communicate with mobile by SMS

When PLC is equipped with G-BOX, PLC can communicate with user's mobile by SMS. User can remote monitor the PLC state with the mobile. If the PLC has problem, G-BOX will send error code to user's mobile, after user replied the G-BOX, G-BOX will send the user's modification SMS to the PLC to solve the problem.

Dimension (unit: mm)



Wireless networking W-BOX

W-BOX can be configured as wireless STA and AP, support 2 wireless interfaces in theory.

- AP mode: PC and mobile phone can search this hot spot and connect the PLC, HMI through virtual serial port of W-BOX.
- STA+AP mode: W-BOX has AP+STA function, STA interface can connect router and server in the network through TCP. PC and mobile phone can connect AP interface to control serial port device and configure the module.

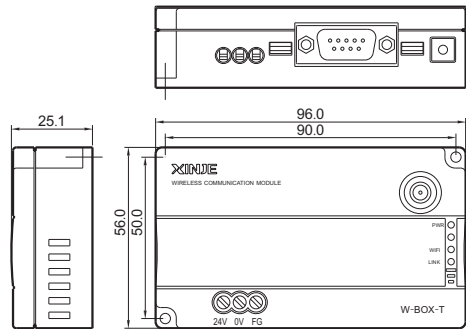
Application

- Remote device monitoring
- Application of the internet of things
- Industry control
- Handheld device

Compatible PLC version and series

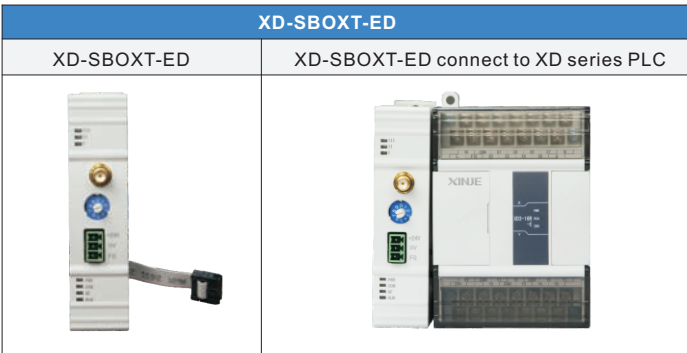
series	W-BOX-T	XD-WBOX-T-ED
XD	×	not support
XC	✓	XC2 and up

Dimension (unit: mm)



Transparent transmission S-BOX

- Wireless transparent transmission, no protocol. The two modules can communicate with each other when the baud rate (DIP switch), channel (button) settings are same. It makes the communication of HMI, PC, PLC faster and easy.
- S-BOX includes S-BOX-T and XD-SBOX-T-ED, the latter only can be used to left extension module of XD series PLC.

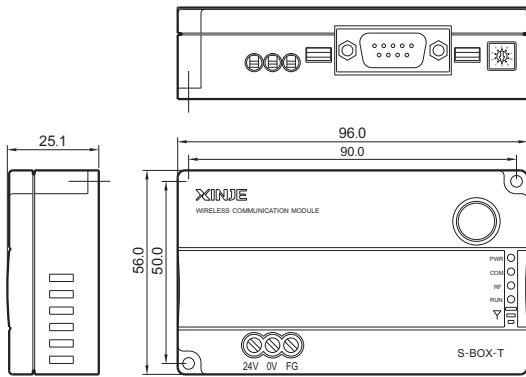


*Note: this model is special for left extension module of XD series PLC, the functions are same to S-BOX-T.

Application

- Wireless meter reading, wireless sensor
- Container information management
- Automation data collection
- Industry control, telemetry
- POS system, asset management
- Building automation and security
- The electric power monitoring of high temperature and high pressure
- Meteorological monitoring and remote sensing

Dimension (unit: mm)



MA series data acquisition and control module

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



Digital I/O module MA-nXnY

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

Analog output module MA-nDA

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

Analog input module MA-nAD

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

Analog I/O module MA-nADmDA

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

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

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

Specifications of basic unit

● General specification

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

● XC3-19AR-E specification

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

● Performance specification

Item		Specification										
Series		XC1		XC2			XC3			XC5	XCM	XCC
I/O numbers		10/16	24/32	14/16	24/32/42	48/60	14	24/32/42	48/60	24/32	60	24/32
Program running mode		Cyclic scan										
Programming mode		Instruction, ladder chart										
Processing speed		0.5 us										
Power-off retentive		FlashROM		FlashROM and Li-battery								
User program capacity		32KB		128KB						96KB	128KB	256KB
I/O numbers		5/5 5/8	12/12 16/16	8/6 8/8	14/10 18/14 24/18	28/20 36/24	8/6	14/10 18/14 24/18	28/20 36/24	14/10 18/14	36/24	14/10 18/14
Internal coil		448		8768								
Timer (T)	Numbers	80		640								
	Specification	100MS TIMER: 0.1~3276.7S 10MS TIMER: 0.01~327.67S 1MS TIMER: 0.001~32.767S										
Counter (C)	Numbers	48		640								
	Specification	16 BITS COUNTER: 0~32767 32 BITS COUNTER: -2147483648~2147483647										
Sequence (S)		32		1024			1024			1024	1024	1024
Data register (D)		150		2000			8000			8000	4000	8000
FlashROM register (FD)		412		128			3072			7168	1536	1024
Extension internal register (ED)		-		-			16384			36864	36864	36864
High speed counter		-		max 6 channels, 80KHz, 3 kinds of high speed counting mode (single phase, pulse&direction, AB phase is 50KHz)								
Pulse output		-		2channels						4chnnels	10channels	5channels
External interruption		-		2 kinds of external interruption (rising edge, falling edge)								
Password		6 bits ASCII										
Self-diagnosis		power-on self-test, monitoring timer, grammar checking										

XC series model list

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

* Note: NPN and PNP are for input terminal.

I/O extension

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

* Note: NPN and PNP are for input terminal.

Analog and temperature extension modules

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

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

Extension BD board model list

Model		Description
Temperature measurement	XC-2AD2PT-BD	2 channels analog input, 2 channels PT100 input
Communication	XC-COM(-H)-BD	RS232/485 communication
SD card	XC-SD-BD	Extend the XC PLC data capacity
Analog I/O	XC-2AD2DA-BD	2 channels analog input, 2 channels analog output
Ethernet	XC-TBOX-BD	Connect to the Ethernet
Optical fiber communication	XC-OFC-BD	Connect PLC and make optical fiber communication
Analog input	XC-4AD-BD	2 channels voltage input, 2 channels current input

Connection accessory model list

Model		Description
USB convertor	USB-COM	PLC connect to PC via USB port
Bluetooth	COM-BLT	Short distance wireless connection between PLC and PC

Basic instructions

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

Motion control instruction

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

Special instruction

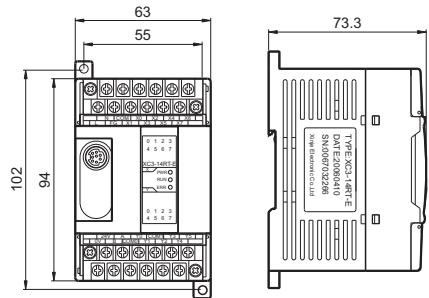
Type	Instruction	Function
Pulse output	PLSY	Single-segment pulse output without acceleration and deceleration
	PLSA	Absolute position multi-segment pulse output
	PLSR	Relative position multi-segment pulse output
	PLSF	Variable frequency pulse output
	PLSNEXT/PLSNT	Pulse segment changing
	DRVA	Absolute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

Application instruction

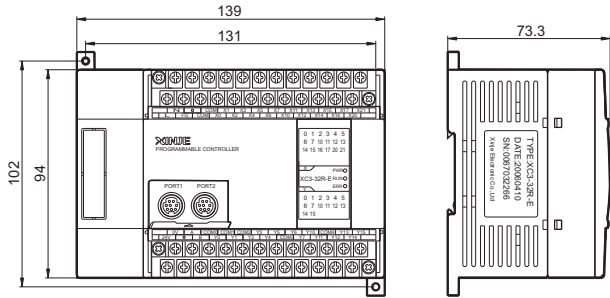
Type	Instruction	Function
Program process	CJ	Condition jump
	CALL	Call the subprogram
	SRET	Subprogram return
	STL	Process start
	STLE	Process end
	SET	Open assigned process, close present process
	ST	Open assigned process, not close present process
	FOR	Cycle start
	NEXT	Cycle end
	FEND	Main program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

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

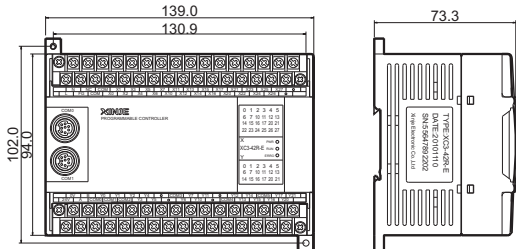
Dimension of basic unit



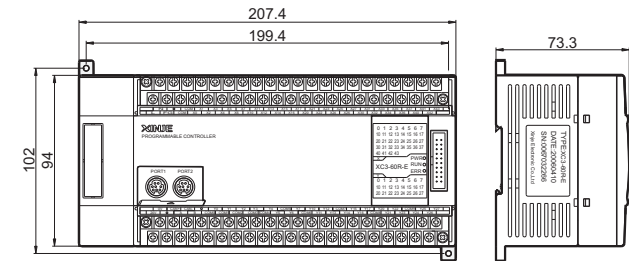
Suitable model	
Series	I/O numbers
XC1	10/16
XC2	14/16
XC3	14



Suitable model	
Series	I/O numbers
XC1	24/32
XC2	24/32
XC3	24/32
XC5	24/32
XCC	24/32



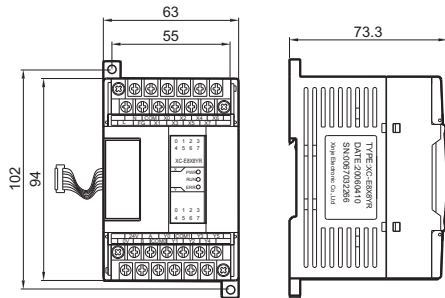
Suitable model	
Series	I/O numbers
XC2	42
XC3	42



Suitable model	
Series	I/O numbers
XC2	48/60
XC3	48/60
XCM	60

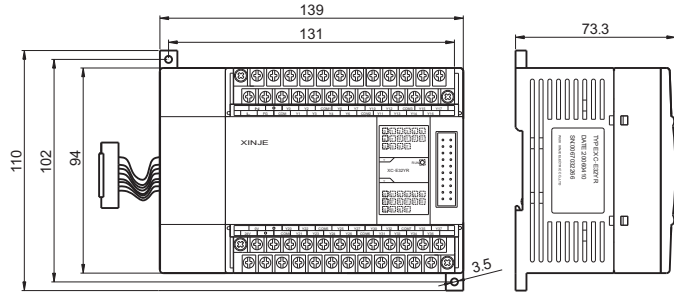
Dimension of extension module

● No.1 diagram



Suitable model	
Series	I/O numbers
I/O	8, 16
Analog	All
Temperature	All
Mixed	All

● No.2 diagram



Suitable model	
Series	I/O numbers
I/O	32
Analog	-
Temperature	-
Mixed	-

HMI Rich product models

MTG series
TG series
TE series
TH series
OP series
MP series

- The perfect combination of specialization and humanization, lead the new concept of HMI.
- 4.3 inches to 15.6 inches.
- 16.77 million colors, exquisite image quality, the display effect is comparable with LCD.
- High speed response for downloading, startup, running.
- Support C language, free format protocol, programming freely.
- Rich 3D library makes the screen vividly.

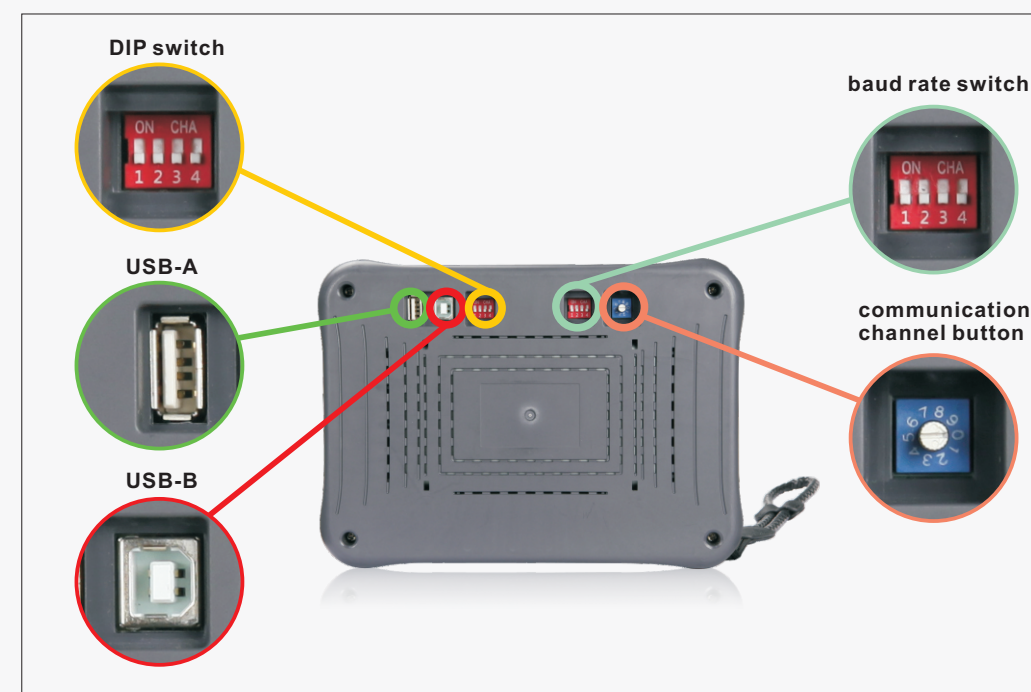


Handheld wireless MTG765-UT

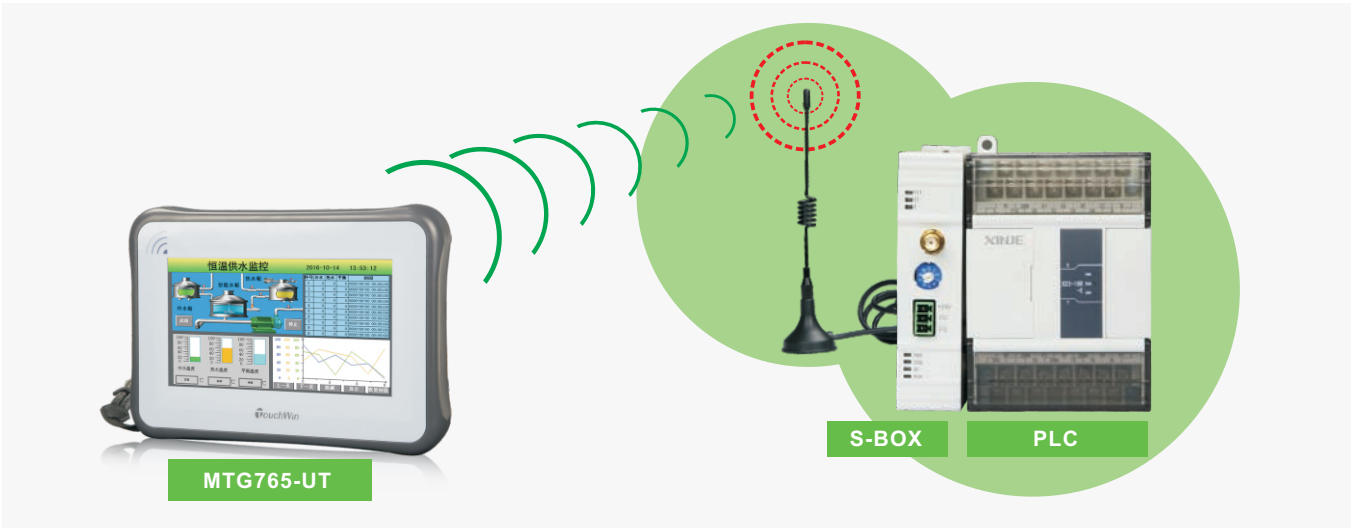
- 16.77 million colors, resolution 800*480, 7 inches wide screen.
- Delicate appearance, handheld operation, more flexible.
- Wireless communicate with PLC, the max speed is 115200bps, the distance can up to 150m, more stable.
- Built-in mobile power supply, easy to charge, long battery life.
- Built-in flash disk interface supports data import export and program import.
- High speed response for downloading, startup, running.
- Powerful software can make complicated screen.
- Easy to programming and operate, fit for various applications.



Appearance



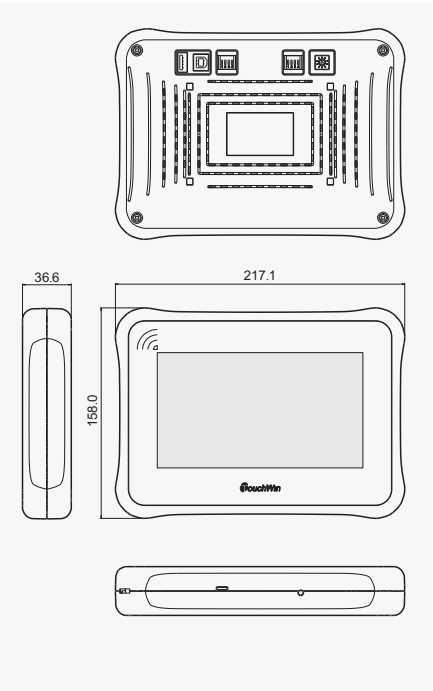
Networking communication



Product specification

HMI specification		
Item	MTG765-UT	
Screen	LCD	7.0"
	Colors	16.77 million
	Resolution	800*480
	Brightness	Adjustable (PFW100)
	Touch panel	4-wire resistor touch panel
	Using life	Up 50000 hours, ambient temperature 25℃, 24 hours running
	Language	Chinese, English, Japanese, Korean, German, Russian...
	Character size	Any font and size
Memory	Memory	128MB
Electrical specification		
Item	MTG765-UT	
Electric	Power	4W
	Charging input parameter	5.0V-2.0A 9.0V-2.0A 12V-1.5A
	Battery life (always ON)	8 hours
	Charging time	< 10 hours
Ambient	Operation temperature	0 ~ 45℃
	Ambient humidity	10%RH-90%RH (no condensation)
	Air	No corrosive gas
	Protection	The front cover is accord to IP65
Structure	Cooling mode	Natural cooling
	Dimension (mm)	217.1*158.0*36.6
Interface	PLC port (built-in)	Built-in PLC port integrated wireless communication module
	USB port 1	USB-A (USB2.0), flash disk port
	USB port 2	USB-B (USB2.0), USB download port
	Micro-USB	Micro-USB, USB charging port

Dimension (unit: mm)



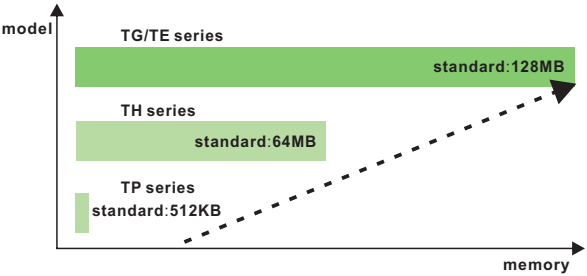
New generation of HMI TG/TE series

TG/TE series HMI has better hardware, faster response, good image quality and rich connectivity.

TG/TE series outstanding performance

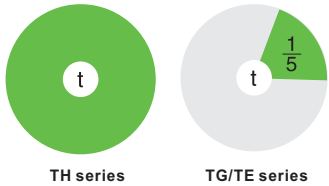
Better hardware makes advanced products

- CPU is ARM9 400MHz
- Internal memory 128MB/64MB
- Memory 128MB
- Color 16.77 million

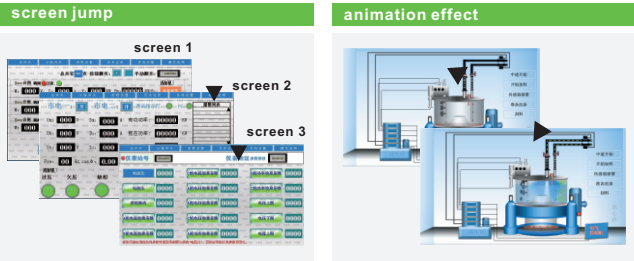


High speed response for downloading, start and running

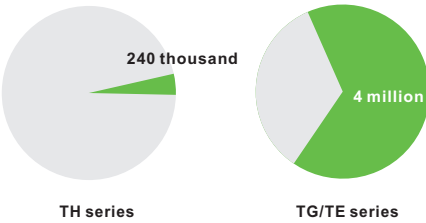
- Download- USB faster data transmission, the speed is 5 times of TH series.
- Start- shorten the start time, improve the start speed.



- Run- smooth effect for screen switching and animation.



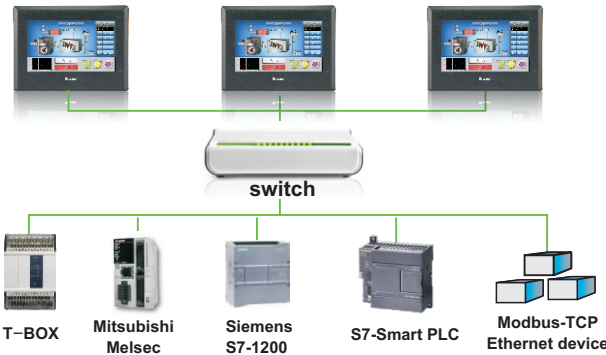
- larger power-off retentive range, about 4 million words can be used.



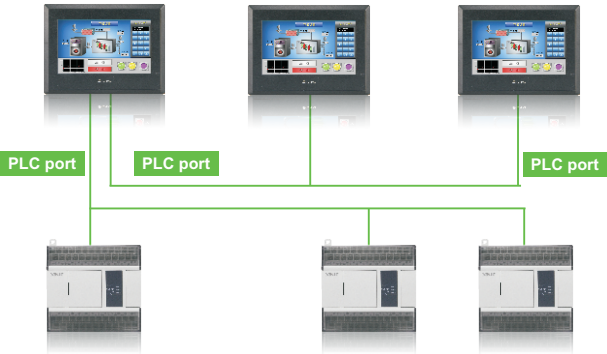
From single HMI to network communication

Support Ethernet communication, improve the communication speed, fit for complicated environment.

- Standard RJ45 Ethernet port
- Construct the open network with Modbus-TCP devices, Siemens S7-1200, Mitsubishi Melsec, T-BOX, G-BOX



Support X-NET fieldbus, the communication mode includes one HMI one device, one HMI multi-device, multi-HMI one device, multi-HMI multi-device, the max speed can up to 3M.



Pass through function, remote upload and download program via HMI, monitor the PLC state



Cover all the functions of TH series



Rich products, complete specifications, meet all your requirements

Best hardware configuration, high speed response, high display quality, from single device to networking, cover all the functions of TH series.

X-NET fieldbus - NT series

10.1 inches
TGA63-NT

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 1024*600
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485, RS422
PLC port: RS485
- ◆ Model explanation:
NT: USB-A port, USB-B port, Ethernet port



8 inches
TG865-NT

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 800*600
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485, RS422
PLC port: RS485
- ◆ Model explanation:
NT: USB-A port, USB-B port, Ethernet port



7 inches
TG765-NT

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485, RS422
PLC port: RS485
- ◆ Model explanation:
NT: USB-A port, USB-B port, Ethernet port



Advanced model - TG/TE series

15.6 inches
TGC65-ET

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 1366*768
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
ET: USB-A port, USB-B port, Ethernet port



10.1 inches
TGA63-MT/UT/ET

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 1024*600
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port UT: USB-A port, USB-B port
ET: USB-A port, USB-B port, Ethernet port



10.1 inches
TGA62-MT/ET

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port
ET: USB-A port, USB-B port, Ethernet port



8 inches
TG865-MT/ET

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 800*600
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port
ET: USB-A port, USB-B port, Ethernet port



7 inches
TG/TE765-MT/UT/ET

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port
UT: USB-A port, USB-B port
ET: USB-A port, USB-B port, Ethernet port



4.3 inches
TG465-XT/MT/UT/ET/MT2/UT2

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 480*272
- ◆ Memory 128MB
- ◆ XT: one serial port
PLC port: RS232, RS485
- ◆ MT/UT/ET: one serial port
PLC port: RS232, RS485, RS422
- ◆ MT2/UT2: 2 serial ports
PLC port: RS232, RS485, RS422
Download port: RS232, RS485
- ◆ Model explanation:
XT/MT/MT2: USB-B port
UT/UT2: USB-A port, USB-B port
ET: USB-A port, USB-B port, Ethernet port



Fashionable model - TG765S, TGA63S series

Ultra-thin appearance, the thickness is only 38.5mm. The cover is made of PC and ABC alloy, more sturdy and durable. The installation bayonet is sealed to prevent from dust and oil. The communication port is at the bottom, saving the installation space.

7 inches
TG765S-MT/UT/ET

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port
UT: USB-A port, USB-B port
ET: USB-A port, USB-B port, Ethernet port



10.1 inches
TGA63S-MT/UT/ET

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 1024*600
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port
ET: USB-A port, USB-B port, Ethernet port



Economical model - TG765S-XT-C, TG765S-XT series

Based on advanced model TG765, has one RS232 port.

7 inches
TG765S-XT-C

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ PLC port: RS232
- ◆ Model explanation:
XT-C: real-time clock



7 inches
TG765S-XT

- ◆ 16.77 million colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232
PLC port: RS232
- ◆ Model explanation:
XT: USB-B port, real-time clock



Normal model - TH series

Standard model with basic functions, the size includes 4.3 to 10.4 inches.

10.4 inches
THA65-MT/UT

- ◆ 65536 colors, TFT LCD, LED backlight
- ◆ Resolution 800*600
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port
UT: USB-A port, USB-B port



10.1 inches
THA62-MT/UT

- ◆ 65536 colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port
UT: USB-A port, USB-B port



8 inches
TH865-MT/UT

- ◆ 65536 colors, TFT LCD, LED backlight
- ◆ Resolution 800*600
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT: USB-B port
UT: USB-A port, USB-B port



7 inches
TH765-MT/UT/N/NU

- ◆ 65536 colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ Two serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT/N: USB-B port
UT/NU: USB-A port, USB-B port



7 inches
TH765-N3/NU3

- ◆ 65536 colors, TFT LCD, LED backlight
- ◆ Resolution 800*480
- ◆ Memory 128MB
- ◆ Three serial ports
Download port: RS232, RS485
PLC port: RS232, RS485, RS422
Extension port: RS485 (extend from download port 1A6B)
- ◆ Model explanation:
N3: USB-B port
NU3: USB-A port, USB-B port



4.3 inches
TH465-MT/UT/MT2/UT2

- ◆ 65536 colors, TFT LCD, LED backlight
- ◆ Resolution 480*272
- ◆ Memory 8MB
- ◆ MT/UT: one serial port
PLC port: RS232, RS485, RS422
- ◆ MT2/UT2: two serial ports
Download port: RS232
PLC port: RS232, RS485, RS422
- ◆ Model explanation:
MT/MT2: USB-B port
UT/UT2: USB-A port, USB-B port



Oil proof model

Model Dimension	TH series oil proof model	TG series oil proof model	TE series oil proof model
4.3 inches	TH465-MT(P) TH465-UT(P)	TG465-MT(P) TG465-UT(P)	
7 inches	TH765-NT(P) TH765-NU(P)	TG765-MT(P) TG765-UT(P) TG765-ET(P) TG765-XT(P)-C	TE765-MT(P) TE765-UT(P) TE765-ET(P)
8 inches	TH865-MT(P) TH865-UT(P)	TG865-MT(P) TG865-ET(P)	
10.1 inches	THA62-MT(P) THA62-UT(P)	TGA62-MT(P) TGA62-ET(P)	



Oil proof model with suffix P re-design the cover and film. The film back adhesive tape width increased to prevent from the oil. Other functions are the same. The models are fit for the heavy oil environment.

Operate panel - OP/MP series

OP/MP series HMI has compact size and delicate appearance

- 3.7 inches, STN LCD, resolution 192*64, memory 64KB.
- User-defined function buttons, replace the machine button.
- Support most PLC brands in the market.
- Alarm, password, clock, bmp picture display, screen switching by PLC.
- MP series display area can be touched.

3.7 inches
OP320/OP320-S

- ◆ 7 buttons
- ◆ Without clock
- ◆ One communication port
OP320: RS232, RS422
OP320-S: RS232, RS485

3.7 inches
OP320-A/OP320-A-S/
OP320-A-N

- ◆ 20 buttons
- ◆ With clock
- ◆ One communication port
OP320-A: RS232, RS422
OP320-A-S: RS232, RS485
OP320-A-N: RS232

3.7 inches
OP325-A/OP325-A-S

- ◆ 20 buttons
- ◆ With clock
- ◆ One communication port
OP325-A: RS232, RS422
OP325-A-S: RS232, RS485

3.7 inches
OP330/OP330-S

- ◆ 26 buttons
- ◆ With clock
- ◆ One communication port
OP330: RS232, RS422
OP330-S: RS232, RS485

3.7 inches
MP325-A/MP325-A-S

- ◆ 20 buttons
- ◆ With clock
- ◆ One communication port
MP325-A: RS232, RS422
MP325-A-S: RS232, RS485

3.7 inches
MP330/MP330-S

- ◆ 26 buttons
- ◆ With clock
- ◆ One communication port
MP330: RS232, RS422
MP330-S: RS232, RS485

Hardware features

DIP switch:
DIP2: forced download.
DIP3: set system clock, adjust the touch area.

Power supply interface:
24V DC power supply.

Serial port:
TG/TE/TH series
PORT1 (Download) : RS232/RS485.
PORT2 (PLC) : RS232/RS485/RS422.
Extension port: RS485 (only TH765-N3/NU3 support)
-NT series
PORT1 (Download) : RS232/RS485/RS422.
PORT2 (PLC) : RS485.

Model explanations
MT: USB-B port.
UT: USB-A port, USB-B port.
ET: USB-A port, USB-B port, Ethernet port.
NT: USB-A port, USB-B port, Ethernet port.

USB-A port:
connect flash disk to export and import data (characters and data), download program(TG/TE series support, the version must be v2.d3c and up).

USB-B port:
download and upload program.

Ethernet port:
ET, NT series, remote monitoring, data exchanging, networking based on Ethernet. Support pass through function.

Powerful communication ability

Flexible connectivity, can communicate with multi-device

- Can connect most PLC brands such as Mitsubishi, Siemens, Omron, Schneider and frequency inverter such as Delta, Yaskawa.
- Can communicate with Modbus protocol devices, can connect more than one devices at the same port such as PLC, frequency inverter, servo drive, meter.
- Support free format communication, make program with C language to communicate with various meters.



Support micro printer

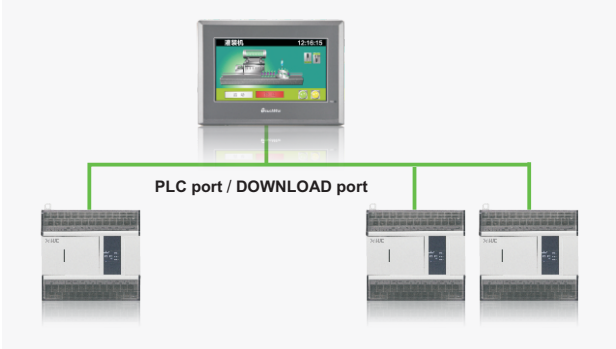
- The download port can connect micro needle printer, panel printer, thermal printer. It can real-time print the project data and curve.



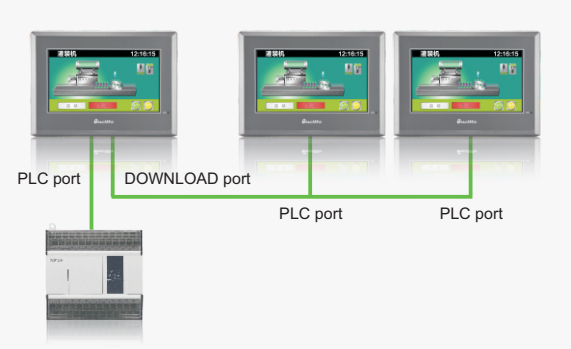
Various networking mode

Networking as master-slave mode or X-NET fieldbus.

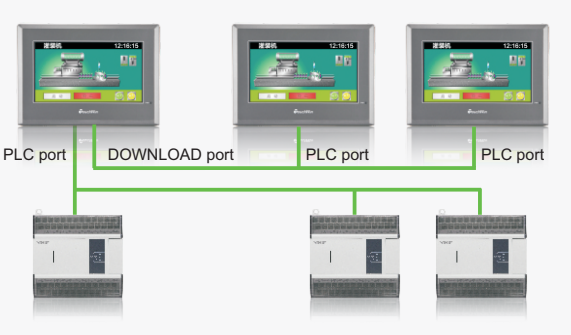
● One HMI and multi-device



● Multi-HMI and one device



● Multi-HMI and multi-device



High speed transmission with humanized port

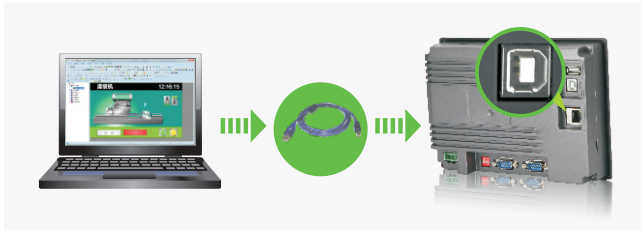
Humanized front USB-A port

- USB-A port can export and import the data. This port is in the front of the cover. It no needs to open the control cabinet when sending the data, easy to operate, improve the working efficiency.



Program download based on USB-B port

- USB-B port accords to USB2.0 standard. The port connects PC through USB cable and high speed downloads the program. It saves the downloading time and easy to debug the program.



Free installation mode

- To choose vertical or horizontal installation according to the scene condition (TG/TE series)

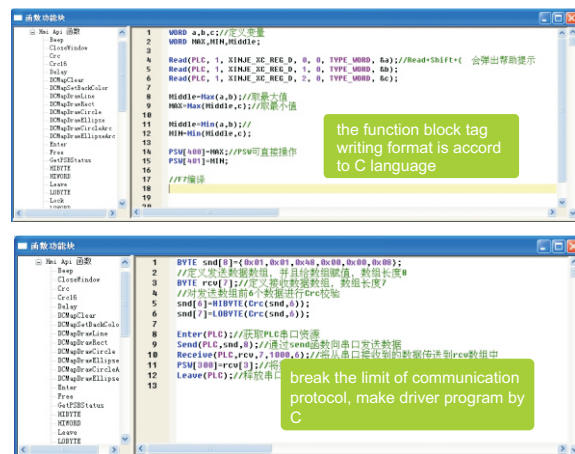


Touchwin software

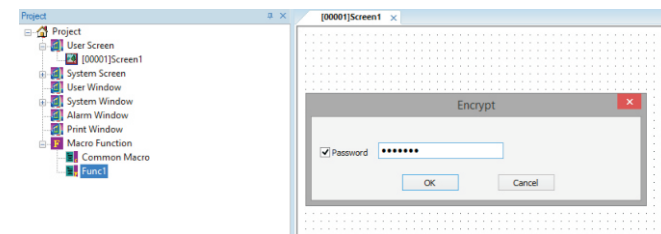
C function block is equal to anything including calculation, command, communication

C function block makes the HMI fit for complicated calculation and communication, improves the system performance.

● Support most C functions



● The C program can be encrypted, user can open the program after inputting the password

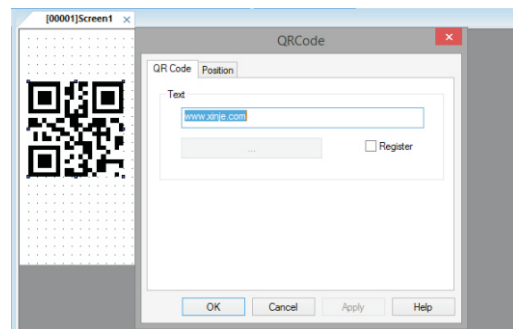


Screen saver

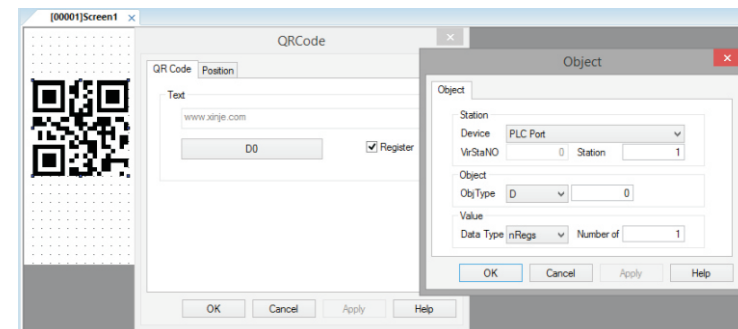
PSB8=1, HMI will be in screen saver mode, PSB8=0, HMI will exit screen saver mode.

Support QR code generation and display (TG/TE series)

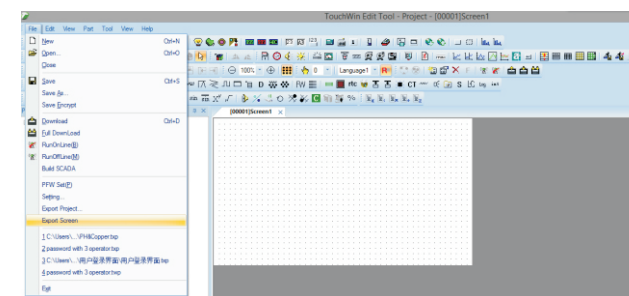
● Set the QR code contents



● Dynamic set the QR code contents through registers



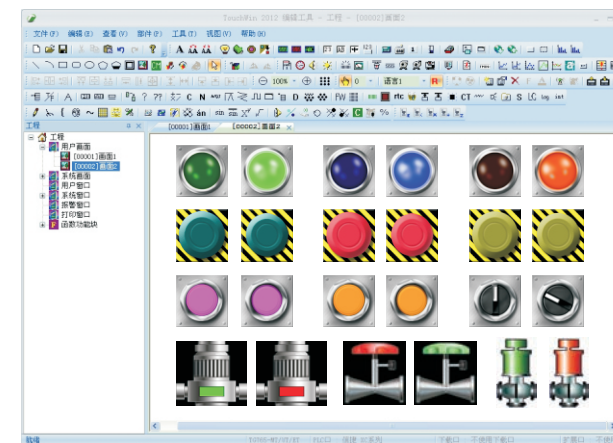
The user screen can be saved as picture



Powerful visual expressive brings new feeling

Rich 3D picture library and element resources

- The picture library has rich icons including meter, valve, pipe, fan, pump, motor, etc.
- Design the icon with the drawing element including line, rectangle, ellipse, broken line, polygon, three dimensional frame.
- Support bmp, jpg and png format picture import.
- Bar graph and cylindrical graph.

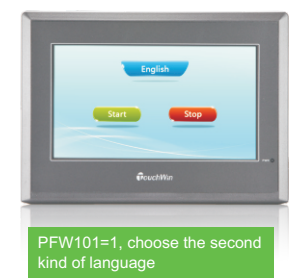


Support multi-language, easy to switch

- Use standard characters corresponding to Unicode character library.
- Switch the language through PFW101.
- Support 8 kinds of language switching online.



PFW101=0, choose the first kind of language



PFW101=1, choose the second kind of language

Various fonts and language

- Windows graph font input.
- Support Chinese, English, Japanese, Russian and so on.
- Support any fonts, size, bold, italic, underline.
- Support art effect, projection, stroke, fill.
- Support rolling words, twinkling, dynamic text.



Powerful data processing ability

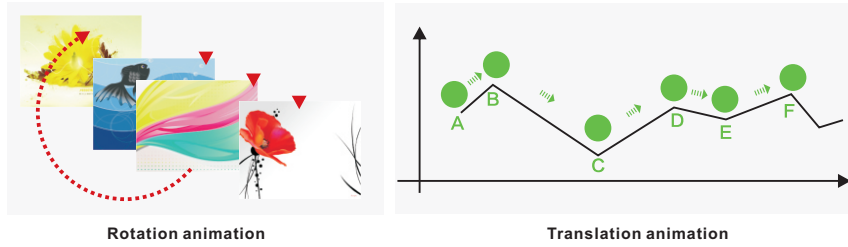
Process control data acquisition, the trend graph is more visual

- Various graph displaying: real-time trend graph, historical trend graph, time trend graph, XY trend graph, XY curve graph, bar graph.
- Zoom in and out, page up and down, clear the curve with data moving button.
- Read detailed data at certain time with general table and data table.



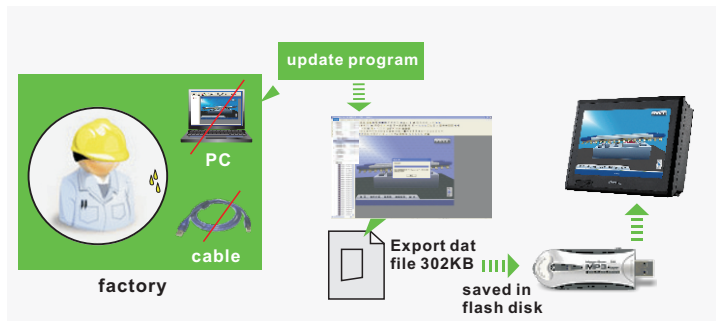
New animation editing mode, rich performance

- Easy animation editing mode, user-defined movement track.
- Support translation and rotation animation, close connection, smooth screen.



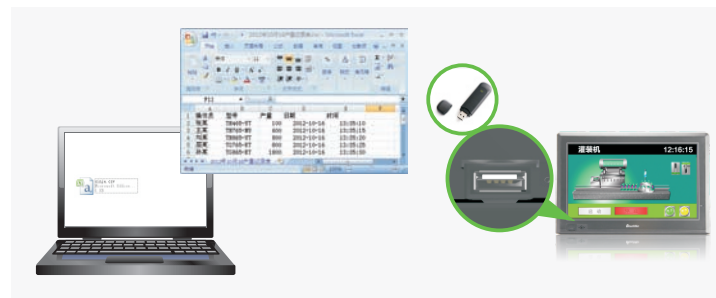
Import program via USB-A port with flash disk

TG/TE series –UT/ET/NT model have USB-A port, which can import the program in the HMI with flash disk but no need PC. The download process is easy and fast. The program is encrypted, it is fit for program updating without download cable and PC. (the HMI version must be v2.d3c and up)



Export the csv file from Flash-disk, backup the important data

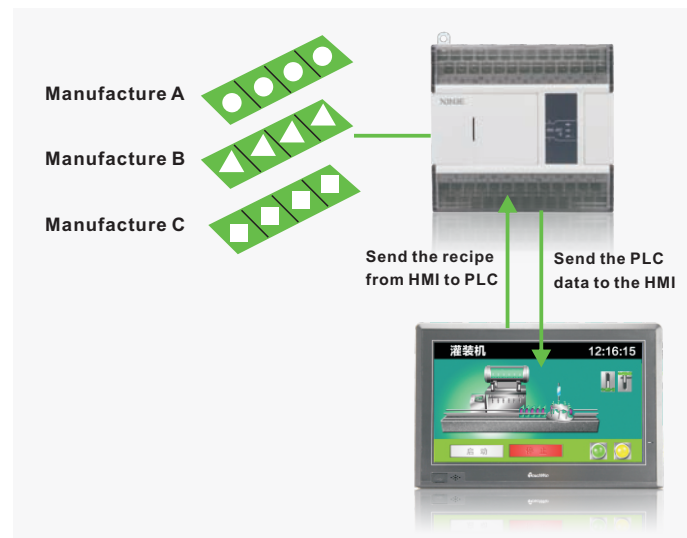
Export and import the historical data, recipe data, curve data in csv format by Flash-disk. The file can be opened in Excel. Support many kinds of hexadecimal and characters..



The storage and bidirectional transmission of recipe data improve the working efficiency

The HMI can store large amounts of data. Manual inputting parameters every time will influence the working efficiency for various types of production.

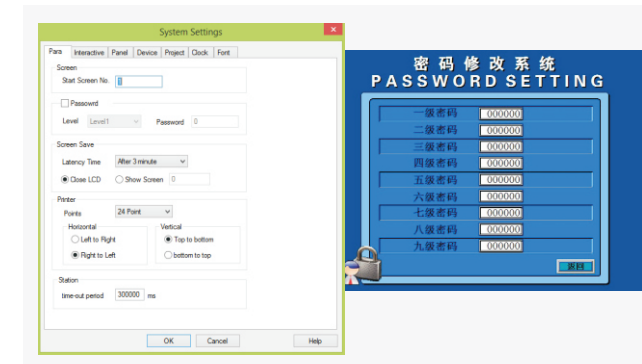
Storing the data in the HMI and bidirectional transfer the data in csv format through Flash-disk. It can manage different types of information and improve the efficiency.



Perfect encryption function

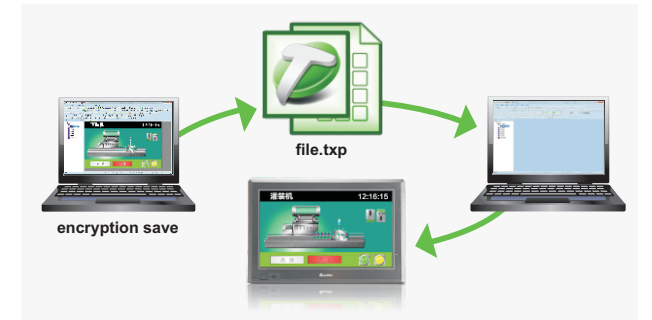
Nine levels of password, user-defined authority setting

- Protect the authority through the password.
- The password level defines the operation authority.



Program encryption

- The software can export the encryption file in txp format. When this file is opened, the program is invisible but can be downloaded in the HMI through Touchwin software. The programmer needs to save another backup for this application.



The alarm function can fast recover the system

- Alarm list, alarm window and calling window can help user to find the error and recover the system.
- The historical event can show the historical alarm information.
- The list can page up and down, clear with data moving button.

Buzzer alarm

- The alarm list and window has buzzer function. The buzzer mode including silent, ring once, continuous ringing.



Manually close the backlight

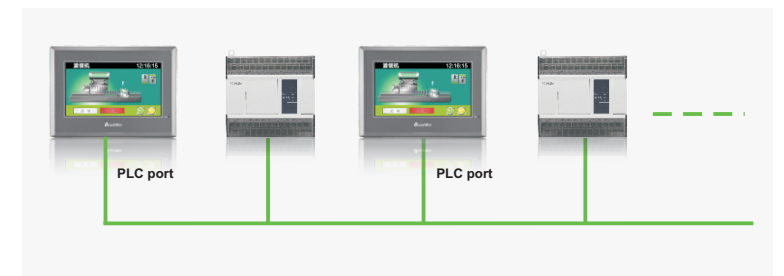
- When PSB9 is ON, the backlight is off and enter the screen saver.

Buzzer sound

- PFW2=0, the buzzer has sound, PFW2=1, the buzzer has no sound. Repower on the HMI to make the setting effective. The default value is 0.

X-NET fieldbus TG/TE/TG(P)/TE(P) supported

- The download port of slave machine can be used.
- The speed can up to 3M, the communication has no delay.
- Can communicate with XD series PLC.
- The system wiring diagram please refer to XD.
- TG/TE/TG(P)/TE(P) support X-NET fieldbus OMMS mode; -NT model support X-NET fieldbus OMMS and TBN mode..



Product specification

Advanced model - TG/TE series

Specification	product	TGC65 series	TGA63 series	TGA62 series	TG865 series	TG765/TE765 series	TG765(S)-XT series		TG465 series
		TGC65-ET	TGA63-MT/UT/ET/NT TGA63S-MT/UT/NT	TGA62-MT/ET	TG865-MT/ET/NT	TG/TE765-MT/UT/ET/NT TG765S-MT/UT/ET	TG765-XT-C	TG765S-XT	TG465-XT/MT/ UT/ET/MT2/UT2
Product feature	Dimension(inch)	15.6	10.1	10.1	8	7	7	7	4.3
	Resolution	1366*768	1024*600	800*480	800*600	800*480	800*480	800*480	480*272
	LCD	TFT LCD, LED backlight							
	Color	16.77 million true colors							
	Bright	250	200						
	Touch panel	4-wire resistor touch screen							
	LCD life	Above 50000 hours, ambient temperature 25℃, 24 hours running							
	Memory	128MB							
Interface	PLC port	RS232/RS422/RS485 (–NT series is RS485)					RS232	RS232	RS232/RS485/ RS422 (–XT support RS232/RS485)
	Download port	RS232/RS485 (–NT series is RS232/RS485/RS422)					\	RS232	RS232/RS485 (only –MT2/UT2 supported)
	USB port1	USB-B (USB 2.0 standard), USB download port							
	USB port2	USB-A (USB 2.0 standard), Flash-disk port, UT/ET model supported							
Electric feature	Ethernet	ET model supported					\		ET model supported
	Input voltage	DC24V (voltage range: DC22V~26V)							
	Consumption current	730mA	270mA	270mA	250mA	200mA	200mA		180mA
	Allowable power-off	1Under 10ms (actual power-off is less than 1s)							
	Voltage shock endurance	AC1000V, 10mA less than 1 minute							
Environment	Insulation resistance	Above 10MΩ, DC500V							
	Operating temperature	0~50℃							
	Storage temperature	~20℃ ~ 60℃							
	Operating humidity	10%RH~90%RH (no condensation)							
	Anti-interference ability	Interference voltage: 1500 Vp-p, pulse period: 1μs, duration time: 1 minute							
	Ambient	No corrosive gas							
	Cooling mode	Natural cooling							
	Protection level	IP65 for front cover							
Dimension	Dimension (mm)	410.0*270.0*65.0	272.2*191.7*51.2	272.2*191.7*51.2	224.4*170.8*45.5	200.4*146.9*48.5	200.4*146.9*48.5	205.4*146.5*38.5	152.0*102.0*41.8
	Mounting dimension (mm)	399.0*259.0	260.2*179.7	260.2*179.7	211.4*157.8	192.0*138.5	192.0*138.5		144.0*94.0

* Note: all the models have clock, TG765S-MT/UT/ET dimension is 205.4*146.5*38.5mm. TE765 series include MT/UT/ET model.

Basic model - TH series

product		THA65 series		THA62 series	TH865 series	TH765-M series	TH765-N series	TH465 series
		THA65-MT/UT		THA62-MT/UT	TH865-MT/UT	TH765-MT/UT	TH765-N/NU/N3/NU3	TH465-MT/UT/MT2/UT2
Product feature	Dimension(inch)	10.4		10.1	8	7	7	4.3
	Resolution	800*600		800*480	800*600	800*480	800*480	480*272
	LCD	TFT LCD, LED backlight						
	Color	65536 true colors						
	Bright	200						
	Touch panel	4-wire resistor touch screen						
	LCD life	Above 50000 hours, ambient temperature 25℃, 24 hours running						
	Memory	128MB						8MB
Interface	PLC port	RS232/RS422/RS485						
	Download port	RS232/RS485						RS232 (MT2/UT2 supported)
	USB port1	USB-B (USB 2.0 standard), USB download port						
	USB port2	USB-A (USB 2.0 standard), Flash-disk port, UT/UT2/NU/NU3 model supported						
	Ethernet	Not supported						
	Expansion	Not supported					RS485 (N3/NU3 supported)	Not supported
Electric feature	Input voltage	DC24V (voltage range: DC22V~26V)						
	Consumption current	630mA		230mA	260mA	250mA	250mA	130mA
	Allowable power-off	Under 10ms (actual power-off is less than 1s)						
	Voltage shock endurance	AC1000V, 10mA less than 1 minute						
	Insulation resistance	Above 10MΩ, DC500V						
Environment	Operating temperature	0℃ ~ 50℃						
	Storage temperature	-20℃ ~ 60℃						
	Operating humidity	10%RH~90%RH (no condensation)						
	Anti-interference ability	Interference voltage: 1500 Vp-p, pulse period: 1μs, duration time: 1 minute						
	Ambient	No corrosive gas						
	Cooling mode	Natural cooling						
	Protection level	IP65 for front cover						
Dimension	Dimension (mm)	311.0*234.0*48.0		272.2*191.7*51.2	224.4*170.8*45.5	204.0*150.5*43.9	204.0*150.5*43.9	152.0*102.0*41.8
	Mounting dimension (mm)	303.0*225.0		260.2*179.7	211.4*157.8	192.0*138.5	192.0*138.5	144.0*94.0

Oil proof model- TG(P)/TE(P)/TH(P)

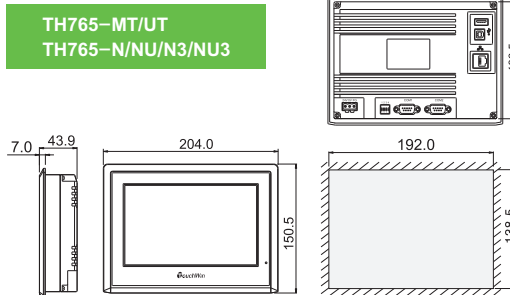
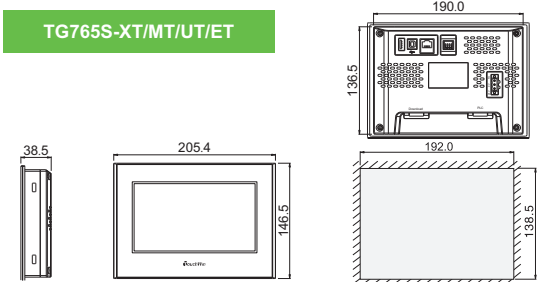
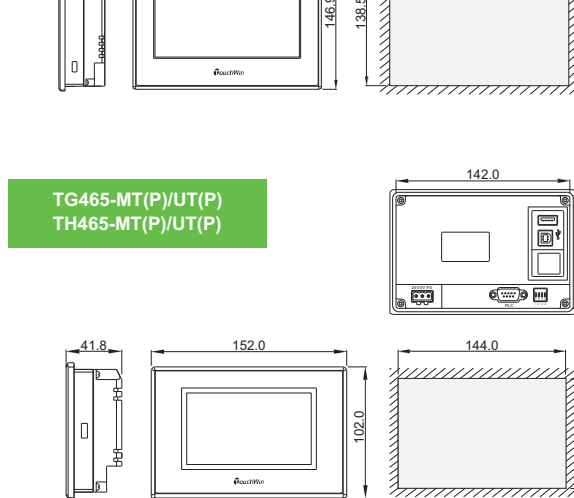
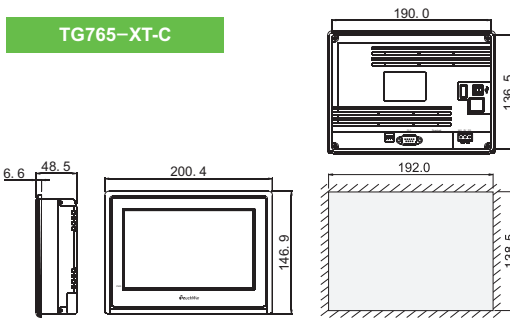
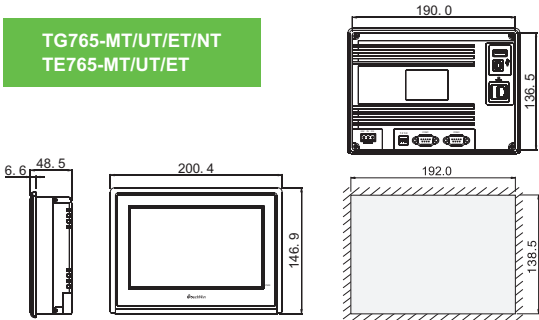
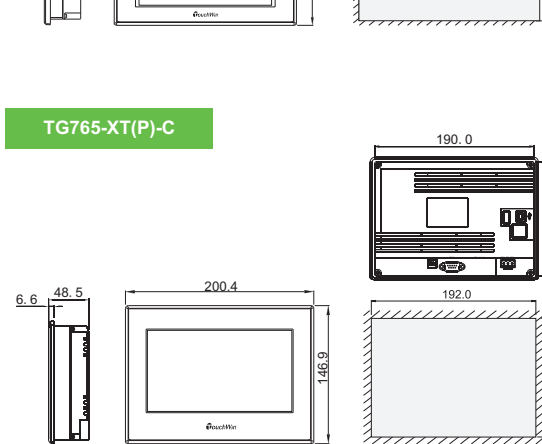
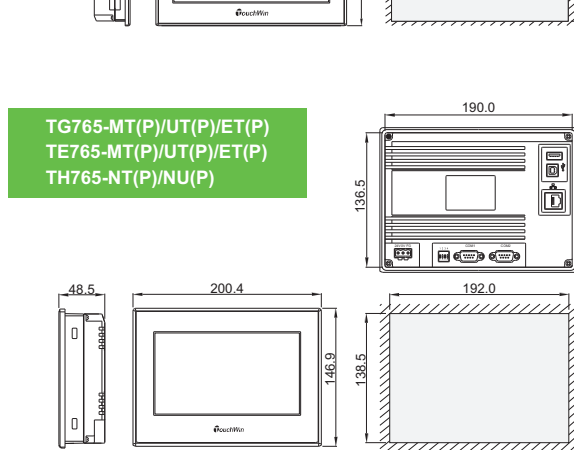
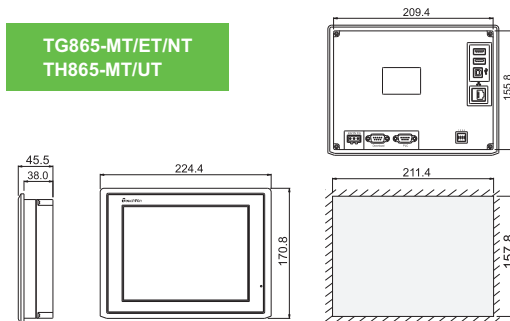
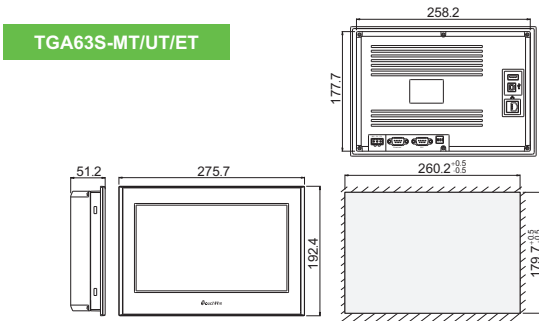
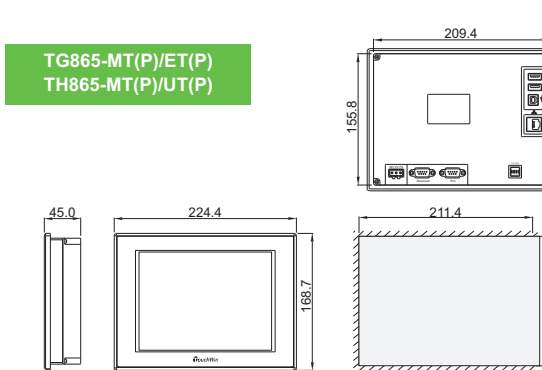
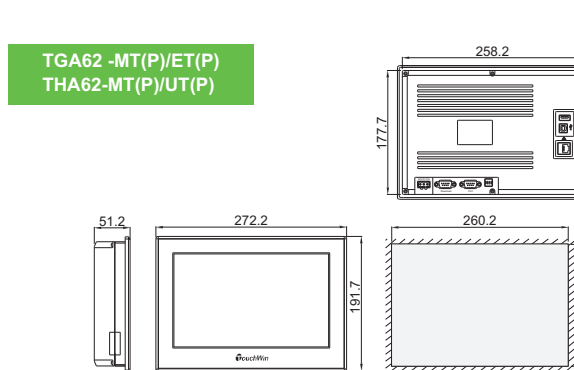
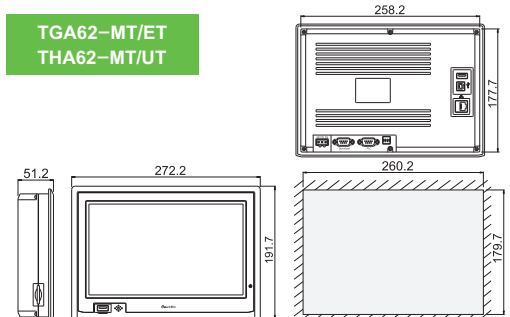
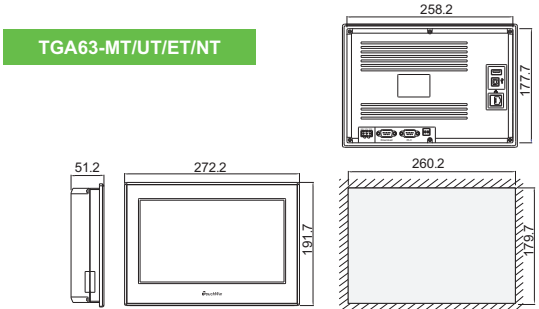
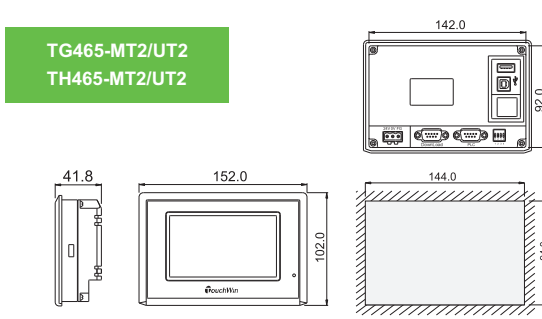
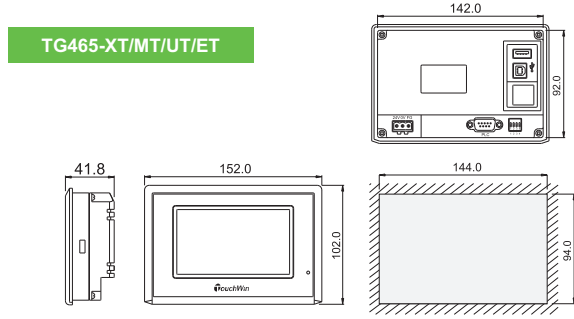
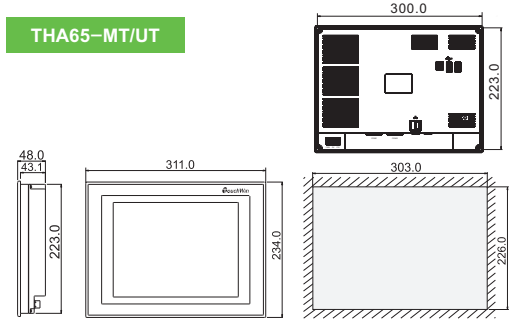
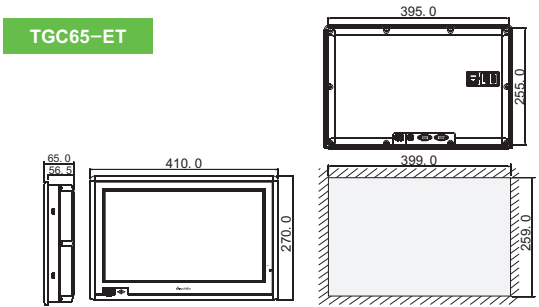
product	TGA62(P) series	TG865(P) series	TG/TE765(P) series	TG765-XT(P) series	TG465(P) series	THA62(P) series	TH865(P) series	TH765(P) series	TH465(P) series	
	TGA62-MT(P) TGA62-ET(P)	TG865-MT(P) TG865-ET(P)	TG/TE765-MT(P) TG/TE765-UT(P) TG/TE765-ET(P)	TG765-XT(P)-C	TG465-MT(P) TG465-UT(P)	THA62-MT(P) THA62-UT(P)	TH865-MT(P) TH865-UT(P)	TH765-MT(P) TH765-NU(P)	TH465-MT(P) TH465-UT(P)	
Specification	Dimension(inch)	10.1	8	7	7	4.3	10.1	8	7	4.3
	Resolution	800*480	800*600	800*480	800*480	480*272	800*480	800*600	800*480	480*272
Product feature	LCD	TFT LCD, LED backlight								
	Color	16.77 million true colors					65536 true colors			
	Bright	200								
	Touch panel	4-wire resistor touch screen								
	LCD life	Above 50000 hours, ambient temperature 25℃, 24 hours running								
	Memory	128MB								8MB
Interface	PLC port	RS232/RS422/RS485			RS232	RS232/RS422/RS485				
	Download port	RS232/RS485			\	\	RS232/RS485			\
	USB port1	USB-B (USB 2.0 standard), USB download port								
	USB port2	USB-A (USB 2.0 standard), Flash-disk port, UT(P)/NU(P)/ET(P) model supported								
Electric feature	Ethernet	ET(P) model supported			\	Not supported				
	Input voltage	DC24V (voltage range: DC22V~26V)								
	Consumption current	270mA	250mA	200mA	200mA	180mA	230mA	260mA	250mA	130mA
	Allowable power-off	Under 10ms (actual power-off is less than 1s)								
	Voltage shock endurance	AC1000V, 10mA less than 1 minute								
Environment	Insulation resistance	Above 10MQ, DC500V								
	Operating temperature	0~50℃								
	Storage temperature	-20℃ ~ 60℃								
	Operating humidity	10%RH~90%RH (no condensation)								
	Anti-interference ability	Interference voltage: 1500 Vp-p, pulse period: 1μs, duration time: 1 minute								
Protection	Ambient	No corrosive gas								
	Cooling mode	Natural cooling								
	Protection level	IP65 for front cover								
Dimension	Dimension (mm)	272.2*191.7*51.2	224.4*168.7*45.0	200.4*146.9*48.5	200.4*146.9*48.5	152.0*102.0*41.8	272.2*191.7*51.2	224.4*168.7*45.0	200.4*146.9*48.5	152.0*102.0*41.8
	Mounting dimension (mm)	260.2*179.7	211.4*157.8	192.0*138.5	192.0*138.5	144.0*94.0	260.2*179.7	211.4*157.8	192.0*138.5	144.0*94.0

OP series product specification

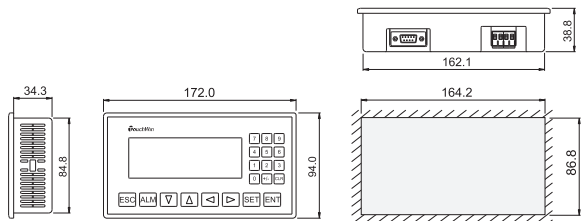
Model	OP330/-S	MP330/-S	OP325-A/-A-S	MP325-A/-A-S	OP320-A/-A-S	OP320-A-N	OP320/-S
Display							
Type	Kelly STN			Blue STN	Kelly STN		
Using life	Above 20000 hours, ambient temperature 25℃, 24 hours running						
Resolution	192*64						
Contrast	Adjust by potentiometer						
Character	Chinese, English						
Character size	Chinese: 16*16 32*32 English: 8*16 16*32						
Button	26		20				7
Memory							
Screen	64KB FlashROM						
Interface							
Download port	RS232						
Communication port	Normal models support RS232/RS422, (-S) models support RS232/RS485, OP320-A-N support RS232						
Electric feature							
Input voltage	DC24V						
Voltage range	DC22V~26V						
Consumption current	<140mA						
Allowable power-off	Under 10ms (actual power-off less than 1s)						
Voltage shock endurance	AC1000V, 10mA less than 1 minute						
Insulation resistance	Above 10MΩ, DC500V						
Environment							
Operating temperature	0℃ ~ 50℃						
Storage temperature	-20℃ ~ 60℃						
Operating humidity	10%RH~90%RH (no condensation)						
Anti-interference ability	Interference voltage: 1500 Vp-p, pulse period: 1μs, duration time: 1 minute						
Ambient	No corrosive gas						
Cooling mode	Natural cooling						
Protection level	IP65 for front cover						
Structure							
Dimension (mm)	172.0*121.0*56.5		172.0*94.0*38.8		172.0*94.0*30.0		162.0*102.0*38.0
Mounting dimension (mm)	164.0*113.0		164.2*86.8		164.2*85.0		156.5*94.0

*Note: OP320/OP320-S have no clock, other models have clock.

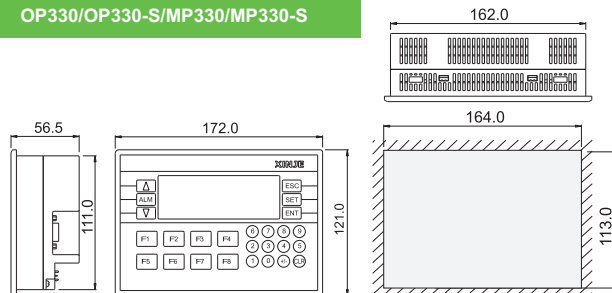
Product dimension (unit: mm)



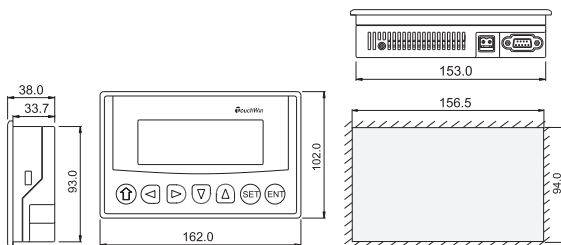
OP325-A/OP325-A-S/MP325-A/MP325-A-S



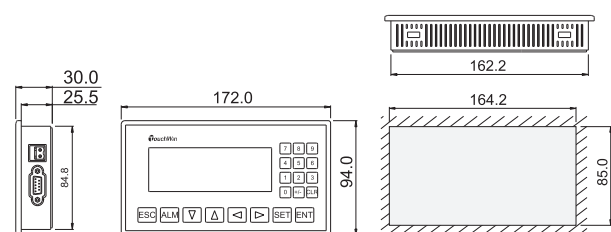
OP330/OP330-S/MP330/MP330-S



OP320/OP320-S



OP320-A/OP320-A-N/OP320-A-S



Integrated PLC&HMI controller

ZG NEW series

ZP series

XMH series

XMP series

XP series

Integrated PLC &HMI controller Rich product models

ZG series
ZP series
XMH series
XMP series
XP series

- Integrate PLC and HMI in one unit.
- High speed data transmission and program downloading based on USB port.
- User-defined cover mask fits for different needs.
- Flexible expansion function, ZP/XMH series can connect two BD boards.
- Rich screen display and picture library, support all the functions of HMI.



High performance and complete functions

Two-in-one functions bring new experience

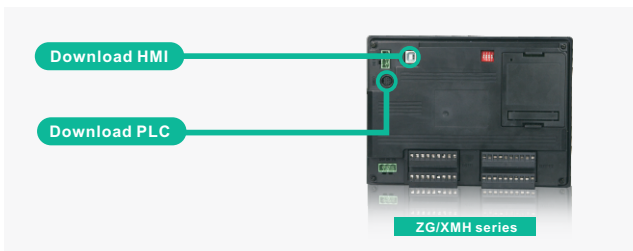
- ZGM-30T4-7 = XDM-30T4 + TG765
- ZG3-30R/T/RT-7 = XD3-32R/T/RT + TG765
- ZP3-18T=XD3-18T + OP331
- XMH3-30 = XC3-30 + TH765
- Integrate logic control and HMI in one unit
- The display area is touch screen, easier to control



Integrated structure, perfect combination of PLC and HMI

Integrated structure, save mounting space

- Multi-functional programming port: download PLC and HMI program with the same cable except ZG and XMH series.



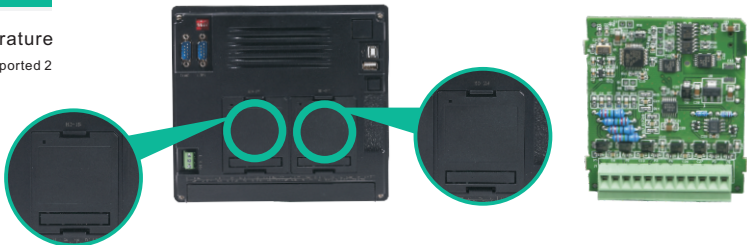
Compact structure, save the space of electrical cabinet



Flexible extension function (can extend 2 BD boards)

Integrated structure, save mounting space

- ZP3-18, XMH3-30 can meet more needs of analog and temperature control; support 2 BD boards, the BD board type up to 5 (ZP3-18 supported 2 types of Z series BD, XMH3-30 supported 5 types of XP-BD2 series BD)
- Other models supported 1 BD board.



Powerful data backup function, user-friendly interface

Data import and export based on USB port

XMH3-30 has USB-A port on the front and back side which is used to backup the data, especially designed for the field data collection and storage, data export and import. The maintenance and checking of project data are more effective through csv format file.

- USB-A port is accord to USB2.0 standard, the USB cable can transfer the data at high speed and save the downloading time.



Panel design closes to user needs

Multi-functional panel buttons with panel LED (XMH series)

- 8 function buttons can be set to any functions, the buttons are sensitive and precise.
- The panel has power LED, easy to command the machine running state.

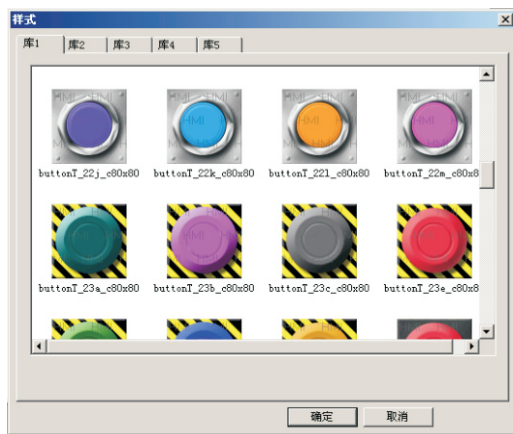


Display

Vivid display and picture library, support all the HMI functions

- True color LCD, XPG series is 16.77 million colors, XMH series is 65536 colors.
- 7 inches screen, more displaying contents and vibrant colors.
- 128MB FlashROM fits for large project making.

3D picture library brings new visual experience



Enhanced alarm function enables the user to solve process problem quickly

- The flexible setting of alarm list and alarm window helps the user to find the problem and shorten the machine downtime, fast recover the system.

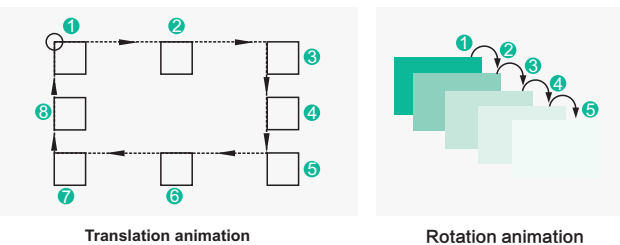


Fit for different project needs

- The button mask can be changed.



New animation editing mode, rich performing format



Process control and data acquisition functions, the trend graph is more visually



Communication

Two communication ports, connect all kinds of devices quickly

- **Download port:** download/upload PLC and HMI program (ZGM-30T4, ZG3-30 and XMH3-30 can download/upload HMI program via USB-B port).
- **Communication port:** PLC can communicate with other devices via RS232 or RS485.

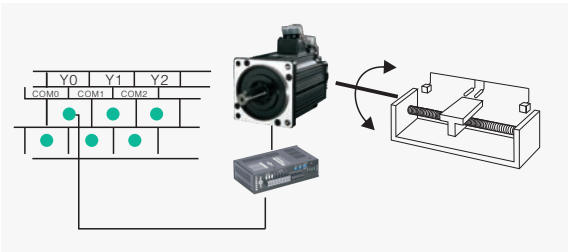
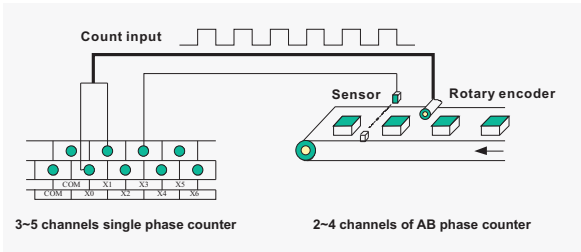


Control

ZGM-30 uses the chip of XDM series PLC, has 4 channels of pulse output

ZG3-30 has the chip of XD3 series PLC, with richer PLC functions, other models have the chip of XC3 series PLC

- The 32-bit high speed counter frequency can up to 80KHz
- 2 to 4 channels of 200KHz high speed pulse output

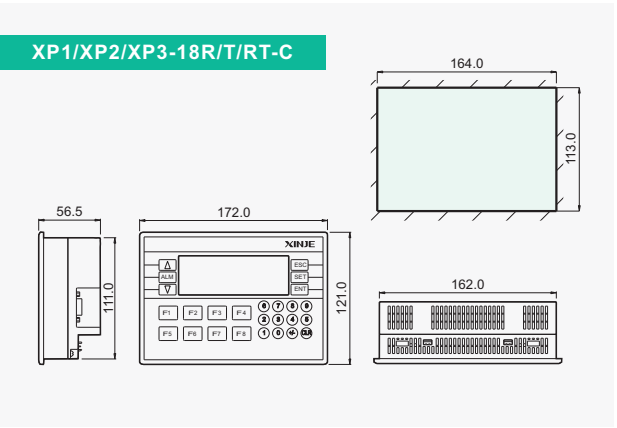
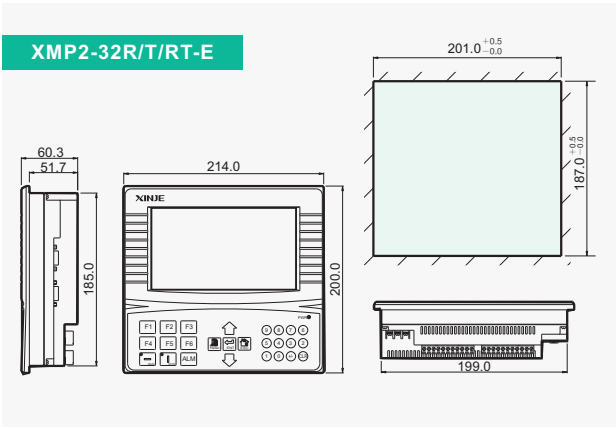
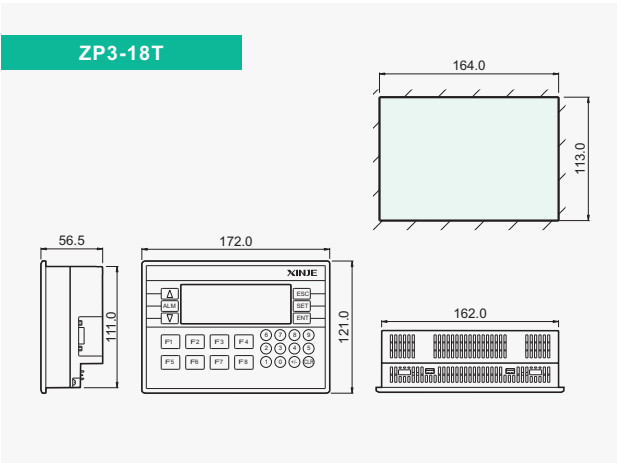
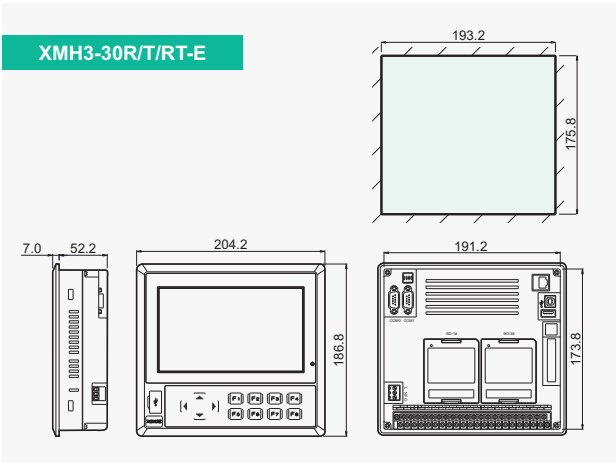
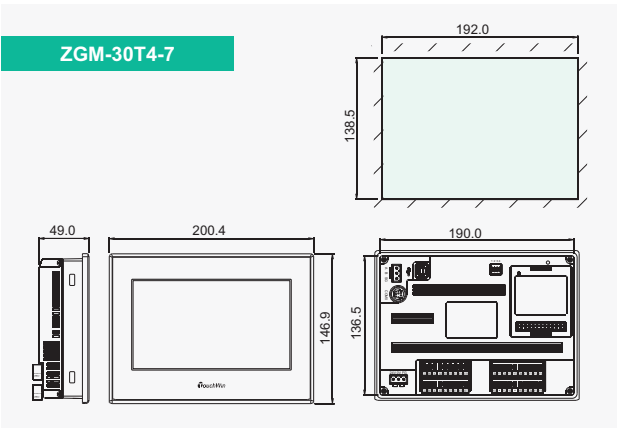
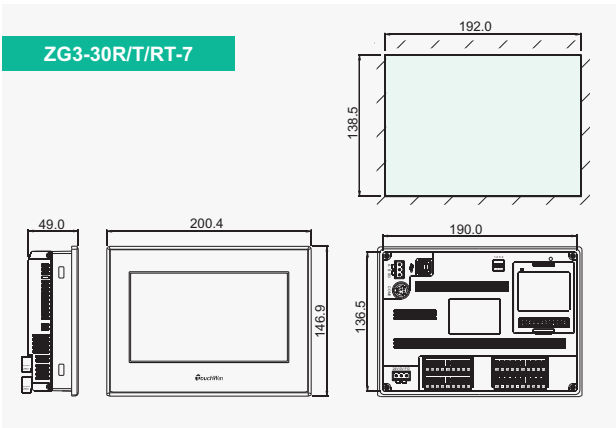


Configuration table

Specification	product	XP series			XMP series	XMH series	ZG series	ZGM series
		XP1-18/R/T/RT-C	XP2-18/R/T/RT-C	XP3-18/R/T/RT-C	XMP2-32R/T/RT-E	XMH3-30R/T/RT-E	ZG3-30R/T/RT-7	ZGM-30T4-7
Structure	HMI	OP330(XP)			MP760-T(XMP-32)	B/MH765-M(XB/MH-30)	TG765-MT/UT/ET/XT	TG765-MT/UT/ET/XT
	PLC	XC1-18R/T/RT	XC2-18R/T/RT	XC3-18R/T/RT	XC2-32R/T/RT	XC3-32R/T/RT	XD3-32R/T/RT	XDM-32T
Electric features	Input voltage	DC24V (voltage range: DC22V~DC26V)			AC220V (voltage range: AC100V~240V)		DC24V (voltage range: DC22V~DC26V)	DC24V (voltage range: DC22V~DC26V)
Interface	Com0	RS232 (download/upload PLC program, download OP program)			/	RS232 (download/upload PLC program, PLC port1)		
	Com1	/			RS232 (download/upload PLC+HMI program)	RS232 (PLC port2)	/	
	Com2	/			RS232 (PLC port2)	/	/	/
	AB terminal	/	RS485 (PLC port2)					
	USB port1	/			USB-B, download/upload HMI program			
Screen features	USB port2	/			USB-A, Flash-dish port			
	Type	Blue LCD			256 colors	65536 colors	16.77 million colors	/
	LCD	3.7 inches			7 inches			
	Touch mode	Cannot touch			Matrix touch mode	4-wire resistor touch mode		
	PLC features	Programming mode	Instruction, ladder chart, C language					
PLC features	Processing speed	0.3us			0.5us	0.3us	0.05us	0.05us
	I/O numbers	Input 10, output 8			Input 16, output 16		Input 16, output 14	
	High speed processing	/	High speed count, pulse output, external interruption					
	Password	6-bit ASCII						
	Self-diagnosis	Power-on self-checking, monitor timer, grammar checking						

Specification	product	ZP3 series
		ZP3-18T
Structure	HMI	OP331
	PLC	XD3-18T
Electric features	Input voltage	DC24V (voltage range: DC22V~DC26V)
Interface	Com0	RS232 (download/upload PLC program, download OP program)
	Com1	/
	Com2	/
	AB terminal	RS485 (PLC port2)
	USB port1	/
Screen features	USB port2	/
	Type	Blue LCD
	LCD	3.7 inches
PLC features	Touch mode	Cannot touch
	Programming mode	Instruction, ladder chart, C language
	Processing speed	0.05us
	I/O numbers	Input 10, output 8
	High speed processing	High speed count, pulse output, external interruption
	Password	6-bit ASCII
Self-diagnosis	Self-diagnosis	Power-on self-checking, monitor timer, grammar checking

Dimension (unit: mm)



DS3E series DS3L series DS3-PTA series DS2 series

Servo system

DS series

DS3E series
DS3L series
DS3-PTA series
DS2 series

Continuous innovation, keep forging ahead
High response and rigidity of new DS3E series servo system
Entering a new era of motion fieldbus



Fieldbus motion control

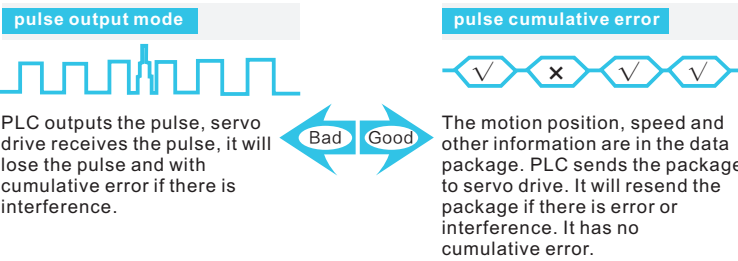
Motion fieldbus control (only DS3E supported)

Motion control is real-time control the speed, position of mechanical components, make them move as setting track and parameters.

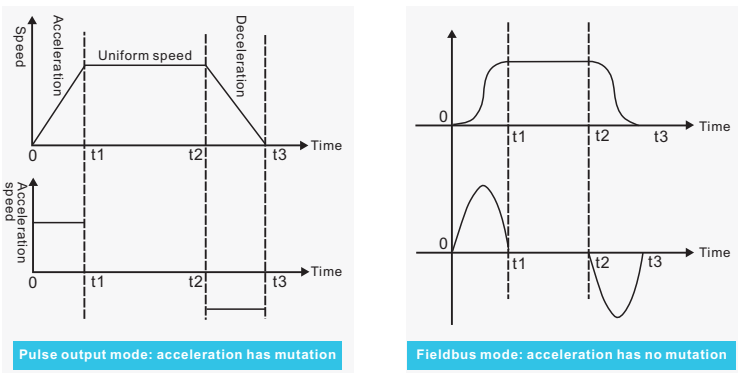
- The fieldbus PLC XDC series instead of pulse output mode, used fieldbus communication, 3Mbps baud rate, improved the system speed. The wiring is easy and shared.
- Use XINJE industry fieldbus protocol, support all the XINJE fieldbus products.

Fieldbus motion control features

pulse cumulative error

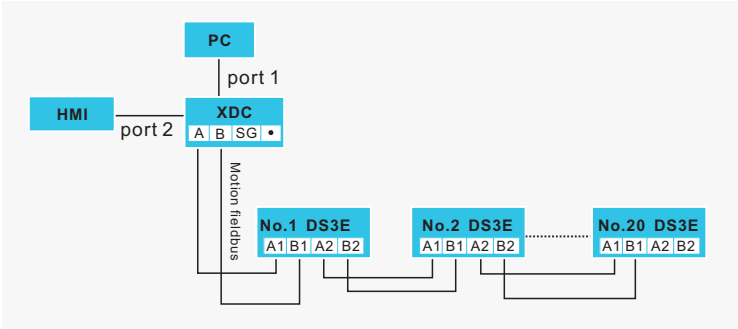


S acceleration curve makes the process softer



Easy and sharable wiring

- Pulse output wiring mode**
one channel needs pulse output, pulse direction, signal I/O, servo alarm, servo enable, encoder feedback port, the wiring is complicated.
- Motion fieldbus wiring mode**
one fieldbus channel can connect 20-axis, and two extra pulse channels, save the wiring.



Better precision in high-speed condition

- XDC series PLC communicate with DS3E series servo drive via fieldbus, the data and sign bit also transfer via fieldbus.
- The data is two-way transmission between PLC and servo drive. PLC can send servo position, speed information, and read servo position feedback information.

Synchronous motion control

Synchronous motion

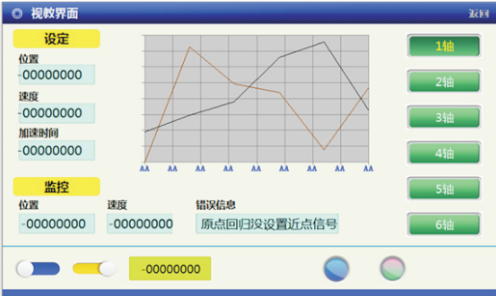
Multi-axis synchronous move or synchronize with high speed counter.

Application

It is applied to the system with electronic CAM such as dyeing, printing, paper, steel rolling, synchronous cutting.

Powerful teaching function

- Servo can jog, return to origin and so on via teaching function.
- No need to make program, it only needs to modify the register value online to make it move. It can real-time modify the target position, speed, synchronous speed ratio in motion process.



ordering informaiton for motion fieldbus

DS3E fieldbus servo drive matched module: JA-NE-L

Connect to CN1 port of servo drive to perform filedbus function.

XDC fieldbus PLC matched module: XD-NE-BD

Insert in the BD card slot of PLC to perform fieldbus function.

DS3E series fieldbus servo drive

New generation of servo drive has better response ability, more accurate positioning, stronger rigidity, fit for high performance requirements.

XDC series PLC

Motion fieldbus model, powerful motion control and teaching function.

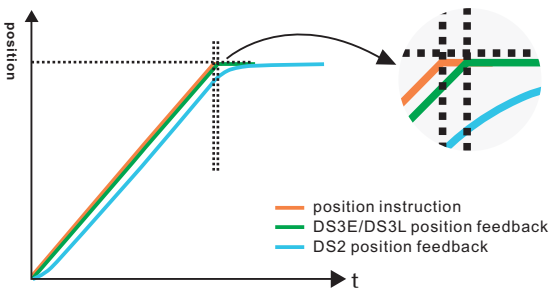
DS3E series
fieldbus type servo drive

DS3L series
pulse type servo drive

Outstanding performance

higher response, stronger rigidity, more accurate positioning

DS3E and DS3L series servo drive has advanced intelligent control system which has better anti-interference ability, stronger rigidity and shorter positioning time.



support motion fieldbus control system

*Note: DS3L cannot support motion fieldbus.

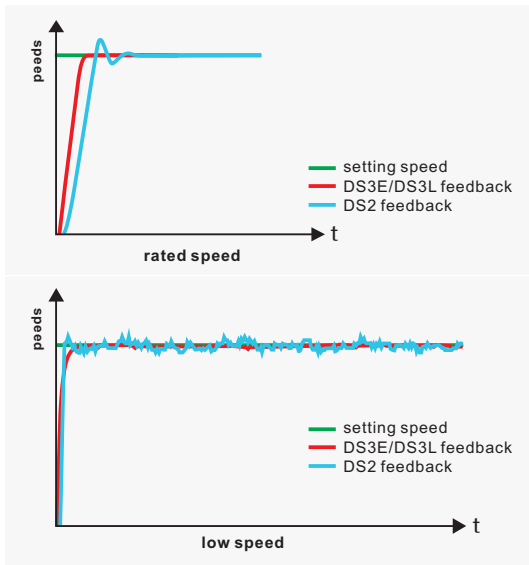
DS3-PTA series
high precision type servo drive

higher response, stronger rigidity, more accurate positioning

support motion fieldbus function

Smoother and faster speed response

DS3E and DS3L has built-in status monitoring device, the speed tracking is stable and accurate. It can effective suppress the mechanical vibration, reduce the motor speed fluctuation, smooth run at low speed(internal speed mode).



smoother and faster speed response

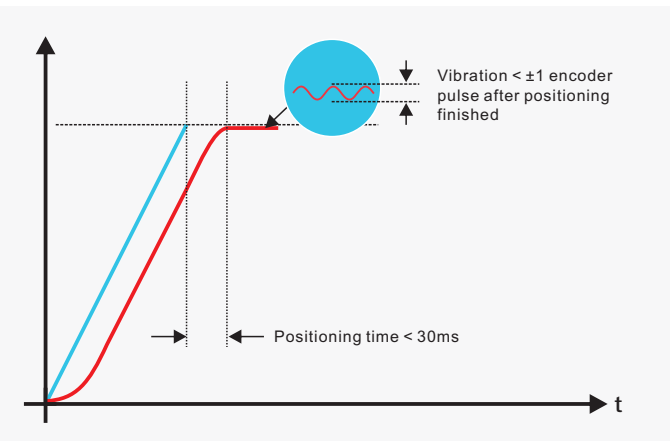
high resolution encoder perform high precision positioning

131072 pulses per circle (17 bits) absolute encoder supports high precision positioning and stable low speed running.

DS2 series
basic type servo drive

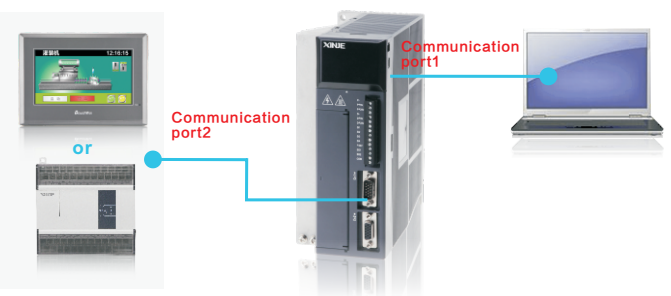
Good performance

- Up to 400Hz high response frequency
- High precision positioning, improve the equipment efficiency



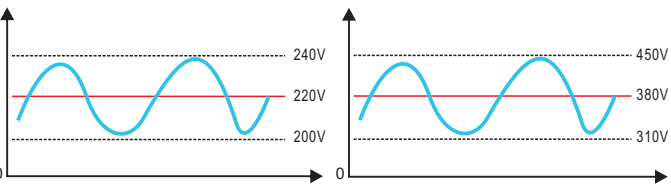
Communication function

- Two communication ports – Support RS232 and RS485 (cannot use at the same time)
- Monitor servo parameter, set servo position and torque through RS232/485 communication



Safe and reliable

- IGBT can withstand high voltage 1200V, wide voltage input range, outstanding noise immunity ability, suitable for bad electromagnetic environment.

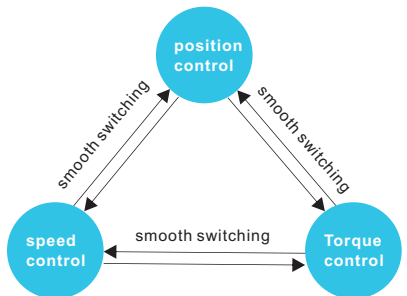


- Complete protection: over voltage, under voltage, over current, over load, over speed, etc.



Rich functions

- Support position/speed/torque mode
- Any two modes can smooth switch



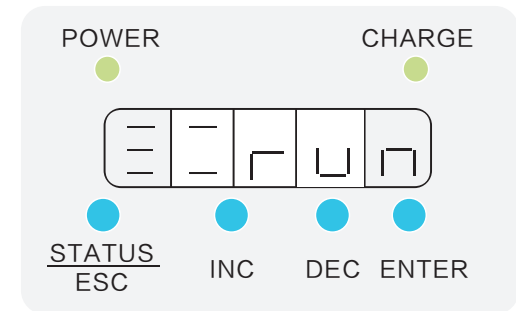
- Can leave out the controller, support internal position, internal speed, internal torque, analog speed, analog torque mode
- Support various commands: AB phase pulse, CW/CCW, pulse and direction, analog voltage

Flexible setting

- 2 channels high speed pulse input, max frequency 500KHz
- 2 channels 12 bits high precision -10~10V analog input
- 5 channels SI input, 3 channels SO output are user-defined
- 1 channel Z phase original point signal transistor output
- Encoder feedback output: differential signal (for collector signal, please purchase accessory – differential circuit board)

Easy operating interface

- Commonly used pulse input signal, I/O signal, European terminals, welding free
- Display the servo state through operate panel, there are 16 monitor parameters and error message, easy to debug



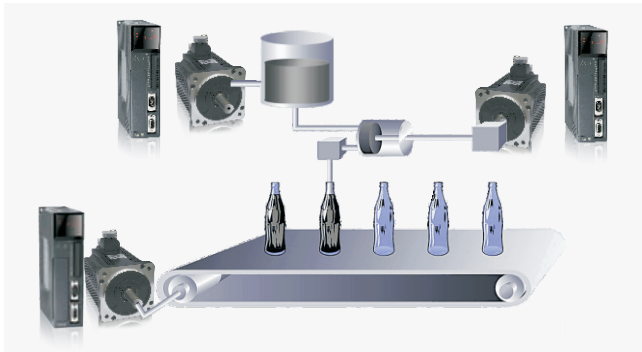
The matched motor has complete specifications, fit for different needs

- Middle inertia servo motor can improve the mechanical stability
- Small inertia servo motor can performance high speed acceleration and deceleration

DS series servo drive application

Applications

Combination control of position, speed and torque



Functions:

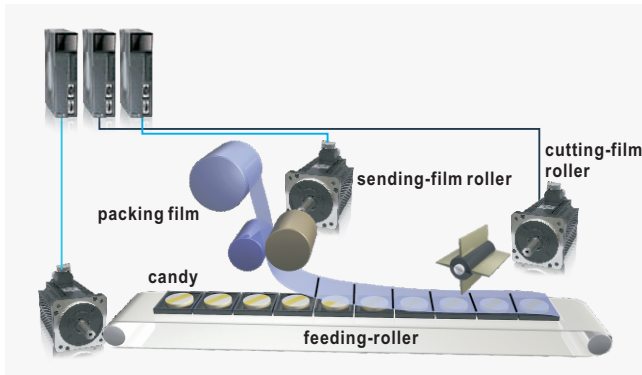
The control modes of DS series servo include position, speed, torque. The diagram shows the liquid filling machine. The belt will stop when detected the products. The position control motor ensures the positioning of the belt. The motor is running to fill the liquid. The liquid is full when reach certain torque. The torque control motor ensures the liquid height in the bottle. The speed control motor runs forward or backward to press the liquid into the hydraulic cylinder.

Any two modes can switch smoothly, the torque can be limited in position or speed mode.

More applications:

Liquid filling machine, packing machine, screw tightening machine, butt-welding machine.

Synchro-position control



Functions:

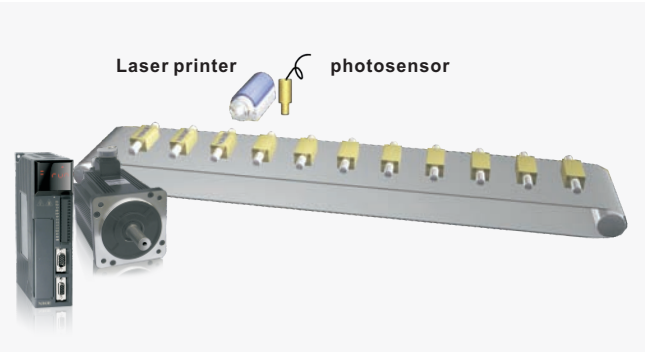
Feeding-roller runs certain distance, cutting-film roller follows it to run certain angle, sending-film roller runs certain distance. The servo will ensure the consistency of three rollers height and the stability of running speed. The smoothness of speed control, position control, torque control can be adjusted through filter parameter. It also can adjust the smoothness of the whole motions and avoid skid.

Any two modes can switch smoothly, the torque can be limited in position or speed mode.

More applications:

Die cutting machine, feeding machine

Interruption control



Functions:

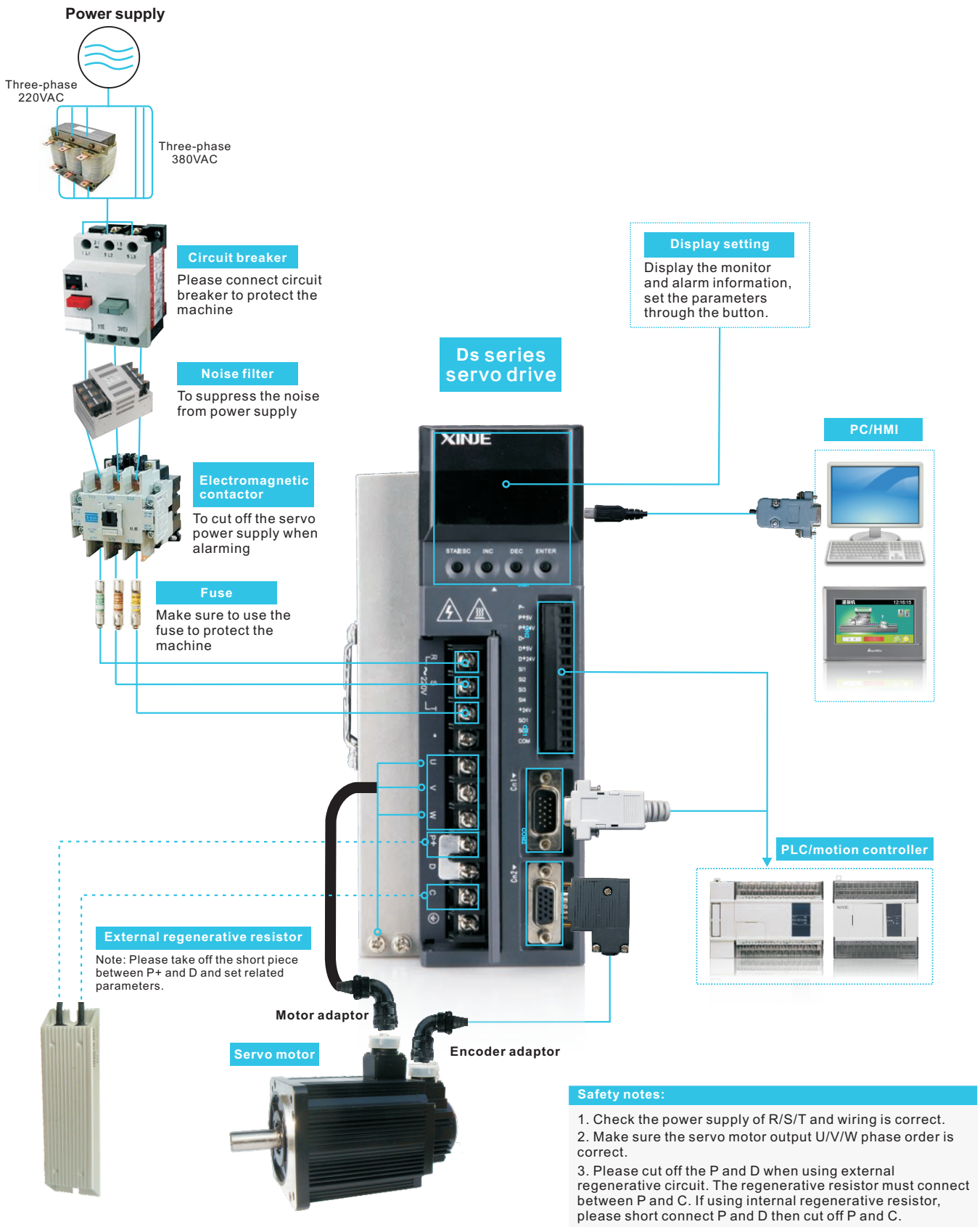
The servo runs uncertain distance in internal position mode. It will run certain distance when detected the external sensor signal. The output signal will start the next process after positioning end. The laser printer will go to the next positioning process when the photoelectric switch touches the workpiece. The printer will print after positioning end. High speed interruption will deal with the photoelectric switch signal and ensure the printer position.

No need any controller to positioning, high positioning precision

More applications:

Laser printer, pipe cutting machine, etc.

Servo external device connection diagram



Servo drive terminals

Input terminal of main circuit

Terminal	Function	Explanation										
R/S/T	Power supply input of main circuit	Single phase or three-phase AC 220~240V, 50/60Hz										
•	Vacant terminal											
U,V,W	Motor connection terminal	Connect to the motor										
		<table><tr><th>Terminal</th><th>Wire color</th></tr><tr><td>U</td><td>Brown</td></tr><tr><td>V</td><td>Black</td></tr><tr><td>W</td><td>Blue</td></tr><tr><td>PE</td><td>Yellow-green</td></tr></table>	Terminal	Wire color	U	Brown	V	Black	W	Blue	PE	Yellow-green
		Terminal	Wire color									
		U	Brown									
		V	Black									
W	Blue											
PE	Yellow-green											
P+,D,C	Use internal regenerative resistor	Short connect P+ and D, disconnect P+ and C										
	Use external regenerative resistor	Connect regenerative resistor to P+ and C, take off the short wire between P+ and D										
⊕	Ground terminal	Connect to ground terminal, the drive connects to the ground										

Communication terminal

Pin number	Name	Explanation
1	TXD	RS232 send
2	RXD	RS232 receive
3	GND	RS232 signal ground

CN0 signal

Signal name	Default function	Pin number	Function
P-		1	Pulse input PUL -
P+5V		2	5V differential signal input
P+24V		3	Collector open circuit input
D-		4	Direction input DIR -
D+5V		5	5V differential signal input
D+24V		6	Collector open circuit input
SI1	S-ON	7	Servo ON: servo motor electrify
SI2	ALM-RST	8	Alarm reset: reset the servo alarm
SI3	P-OT	9	Forward driving prohibition
SI4	N-OT	10	Reverse driving prohibition
+24V	Input 24V	11	Input 24V power supply
SO1	COIN	12	Positioning finished signal
S02	ALM	13	Alarm output signal
COM	Output terminal ground	14	Output terminal ground

CN2 encoder terminal

No.	Name
1	A+
2	B+
3	Z+
4	U+
5	W+
6	A-
7	B-
8	Z-
9	U-
10	W-
11	connect to the shield layer
12	GND
13	5V
14	V+
15	V-

CN1 signal

Signal	Default function	Pin number	Function
NC	Reserved	1	Reserved
NC	Reserved	2	Reserved
SI5	SPD-A	3	Multi-segment speed choice
S03	S-RDY	4	Ready
B-		5	Encoder output B-
A+		6	Encoder output A+
A-		7	Encoder output A-
Z+		8	Encoder output Z+
Z-		9	Encoder output Z-
B+		10	Encoder output B+
T-REF		11	Torque analog input
V-REF		12	Speed analog input
GND		13	GND for analog input
A		14	RS485 communication +
B		15	RS485 communication -

* the diagram takes DS2-21P5-AS as an example

servo drive and motor model

DS3E/DS3L/DS3-PTA series servo drive

display	series	display	configuration type
DS3E	fieldbus type	P	input command type: compatible with pulse type and fieldbus type
DS3L	pulse type	F	encoder type: Q – quadrature encoder, F – compatible saving wire encoder
DS3	high precision type	A	T – 17-bit absolute value encoder, N – 20-bit absolute value encoder
			developing order: A

display	power
0P2	0.2KW
0P4	0.4KW
0P7	0.75KW
1P5	1.5KW
2P3	2.3KW
2P6	2.6KW
3P0	3.0KW

display	input voltage
2	three phase 220V AC
4	three phase 380V AC

DS2 series servo drive

display	series	display	configuration type
DS2	series name	AS	encoder feedback (differential output mode), analog input, RS485
		AS2	no encoder feedback, no analog input, no RS485
		AS6	encoder feedback (differential output mode), analog input, can accept AB phase pulse, RS485
		BS	no encoder feedback, no analog input, no RS485
		BSW	
		BS6	no encoder feedback, no analog input, no RS485, can accept AB phase pulse
		BSW6	

display	input voltage
2	3 phase 220V AC (1.5KW and below can use single phase 220V AC)
4	3 phase 380V AC (fit for 1.5KW, 5.5KW and up)

display	power	display	power
0P2	0.2KW	3P0	3.0KW
0P4	0.4KW	5P5	5.5KW
0P7	0.75KW	7P5	7.5KW
1P5	1.5KW	11P0 _{NEW}	11KW
2P3	2.3KW		

MS series servo drive

display	series	display	Shaft length
MS	series name	-	Normal type
		s	Short type
			* Only 180ST has such differences

display	Base number
40	40Base
60	60Base
80	80Base
90	90Base
110	110Base
130	130Base
180	180Base
220	220Base

display	Product name
ST	Sine wave drives the motor

display	Rated torque
003	0.32
006	0.637
013	1.27
024	2.39
035	3.5
040	4.0
050	5.0
060	6.0
077	7.7
100	10.0
150	15.0
190	19.0
215	21.5
270	27.0
350	35.0
480	48.0
700	70.0
960	96.0

display	Oil seal
vacancy	no oil seal (130ST and up has oil seal, the model has no E)
E	oil seal

display	feedback component
M	incremental encoder (2500ppr photoelectric encoder)
F	wire saving incremental encoder (2500ppr photoelectric encoder)
T	17-bit absolute value Tamagawa encoder

display	Rated power (Kw)
0P1 _{NEW}	0.1
0P2	0.2
0P4	0.4
0P7	0.75
1P2	1.2
1P5	1.5
2P0	2.0
2P3	2.3
3P0	3.0
4P3	4.3
4P5	4.5
5P5	5.5
7P5	7.5
11P0 _{NEW}	11.0
15P0	15.0

display	Voltage level
2	220V
4	380V

display	Body length
-	Normal type
s	Short body

display	Power loss brake
-	No power loss brake
Z	Power loss brake

display	Bearing key
A	No key
B	Key

display	Rated speed (rpm)
15	1500
20	2000
25	2500
30	3000

DS3E, DS3L, DS3-PTA, DS2 series servo drive comparison table

item		fieldbus type	pulse type	high precision type	basic type	
		DS3E-□□P□-PFA series	DS3L-□□P□-PFA series	DS3-□□P□-PTA series	DS2 series	
basic specification	power range	0.1KW ~ 3.0KW	0.1KW ~ 3.0KW	0.2KW ~ 1.5KW	0.2KW ~ 11.0KW	
	input power supply	single/3 phase AC200~240V, 50/60Hz; 3 phaseAC340~440V, 50/60Hz				
	encoder feedback	2500ppr incremental encoder	2500ppr incremental encoder	17-bit absolute value encoder	2500ppr incremental encoder	
	control mode	3 phase full-wave rectifier, IPM PWM control, sine wave current drive mode				
	using environment	environment temperature	20 run: 0°C~50°C (no freeze)/storage: -20°C ~75°C(no freeze)			
		environment humidity	21 run/storage: below 90% RH (no condensation)			
		Vibration/impact toleration	4.9m/s2 / 19.6m/s2			
	function	protection function	overvoltage, undervoltage, overheat, overcurrent, overload, overspeed, analog input error, position offset too large, output short circuit, encoder error, regenerative error, overrange protection, etc			
		dynamic brake	—			
		communication	RS232: Modbus RTU protocol RS485: Modbus RTU protocol XNET fieldbus (max 20 axes)	RS232: Modbus RTU protocol	RS232: Modbus RTU protocol RS485: Modbus RTU protocol XNET fieldbus (max 20 axes)	RS232: Modbus RTU protocol RS485: Modbus RTU protocol
		brake resistor	Built-in brake resistor, can connect external brake resistor			
		display and operate	395-bit LED light, power LED light, 4 buttons			
	load change rate	400~100% load: below ±0.1%(rated speed)				
	voltage change rate	41Rated voltage ±10%: 0%(rated speed)				
	1temperature change rate	4220±25°C: below ±0.1%(rated speed)				
	2frequency features	250Hz (JL≤JM)				
	I/O signal	Position output	Output mode	—	—	-AS/AS6: differential output -BS/BSW/AS2: not support encoder feedback output
Frequency division output			—	—	—	
Collector Z phase output			—	support	support	
Analog input		—	—	—	-AS/AS6: 2 channels input(12-bit A/D) -BS/BSW/AS2: not support	
Digital input		4 channels SI input	4 channels SI input	4 channels SI input	5 channels SI input	
		servo enable, alarm reset, forward banned, reverse banned, torque limit option, internal speed option, gear ratio switch, mode switch, gain switch, pulse input banned, zero speed locked, position offset reset, internal position switch step signal, internal control mode direction switch				
Digital output	2 channels SO output	2 channels SO output	2 channels SO output	3 channels SO output		
	Positioning completion, servo ready, alarm output, torque limit output, same speed detection, rotation detection, speed reached, brake release output, warn output					
Position control mode	Max input pulse frequency	Differential input: 500kpps; collector open circuit : 200kpps				
	Pulse command mode	Can accept 3.3V~24V pulse and direction, AB phase pulse		Can accept 3.3V~24V pulse and direction, AB phase pulse, CW/CCW signal	External pulse/internal position/motion fieldbus	
	Control mode	External pulse/internal position/ motion fieldbus	External pulse/internal position	External pulse/motion fieldbus	External pulse/internal position	
	Feedforward compensation	0~100% (resolution is 1%)				
	Positioning completed width	750~250 command unit(resolution is 1 command unit)				
Speed control mode	Electronic gear ratio	1/100≤B/A≤100				
	Control mode	Internal 3-segment speed, external speed mode			Internal 3-segment speed, external analog, external speed mode	
	Command filter	Low pass filter, smoothing filter				
	Analog input	Voltage range	—	—	~10V~+10V (resolution 12-bit)	
		Input resistance	—	—	13KΩ	
	Torque limit	Internal parameters	Internal parameters	Internal parameters	Intertnal parameters/external analog	
	Speed change rate	Load rated change 0~100%: below ±0.01%(rated speed)				
		Rated voltage ±10%: 0.01% (rated speed)				
Environment temperature 20±25°C: below ±0.01%(rated speed)						
Torque control mode	Control mode	Internal torque mode			Internal 3-segment speed, external analog	
	Command filter	Low pass filter, smoothing filter				
	Analog input	Voltage range	—	—	~10V~+10V (resolution 12-bit)	
		Input resistance	—	—	13KΩ	
	Speed limit	Internal parameters	Internal parameters	Internal parameters	Intertnal parameters/external analog	
Fieldbus mode	Axis number	20 axes	—	20 axes	—	
	Communication protocol	XNET protocol	—	XNET protocol	—	

Servo motor parameters

Voltage level		220V																
Motor model MS-	40ST-	60ST-				80ST-				90ST-		110ST-			130ST-			
	M00330	M00630	M01330			M02430			M03520	M02430	M04030	M05030		M04030				
	□□-20P1	□□-20P2	□□-20P4		□□S-20P4	□□S-20P7	□□-20P7				□□-21P2	□□-21P5		□□-21P2				
Motor code	1002	1003	0004	1004	F004	F011	0011	1011	0012	0021	0031	0032	1032	1031				
Rated power (KW)	0.1	0.2	0.4	0.4	0.4	0.75									1.2	1.5	1.5	1.2
Rated current (A)	1.0	1.8	2.5	2.0	2.5	3.5	3.0	3.2	3.0	3.0	5.0	6.0	6.5	6.7				
Rated speed (rpm)	3000	3000	3000	3000	3000	3000	3000	3000	2000	3000	3000	3000	3000	3000				
Max speed (rpm)	4000	4000	4000	4000	5000	5000	4000	4000	2500	4000	3500	3500	4000	4000				
Rated torque (N·m)	0.32	0.637	1.27	1.27	1.27	2.4	2.39	2.39	3.5	2.4	4	5	5	4				
Peak torque (N·m)	0.96	1.91	3.8	3.8	3.82	7.2	7.1	7.1	10.5	7.1	12	15	15	10				
Back EMF constant (V/krpm)	11	26	28	162	36	36	48	56.6	71	51	54	62	51	33				
Torque coefficient (N·m/A)	0.18	0.37	0.5	0.68	0.51	0.51	0.8	0.92	1.17	0.8	0.8	0.83	0.77	0.54				
Rotor inertia (Kg·m2)	0.04×10 ⁻⁴	0.18×10 ⁻⁴	0.438×10 ⁻⁴	0.53×10 ⁻⁴	0.34×10 ⁻⁴	1.08×10 ⁻⁴	1.82×10 ⁻⁴	1.05×10 ⁻⁴	2.63×10 ⁻⁴	2.45×10 ⁻⁴	0.54×10 ⁻³	0.63×10 ⁻³	0.44×10 ⁻³	0.54×10 ⁻³				
Winding resistor (Ω)	3.4	3.50	3.49	3.80	2.90	2.9	2.88	2.7	3.65	3.20	1.09	1.03	0.77	2.6				
Winding inductance (mH)	2.7	8.32	8.47	11.51	10.4	10.4	6.40	6.25	8.80	7.00	3.30	3.43	8	12				
Electrical time constant (ms)	0.8	2.38	2.43	3.03	3.6	3.6	2.22	2.3	2.41	2.19	3.03	3.33	10.4	4.62				
Weight (Kg)	0.55	1.1	1.8	1.7	1.3	2.6	2.9	2.87	3.7	3.4	5.5	6.1	6.15	5.9				
Encoder ppr (ppr)	2500																	
Pole pairs	4																	
Motor insulation level	Class B (130℃)																	
Protection level	IP65																	
Using ambient	Ambient temperature	- 15℃ ~ +40℃																
	Ambient humidity	relative humidity < 90% (no condensation)																

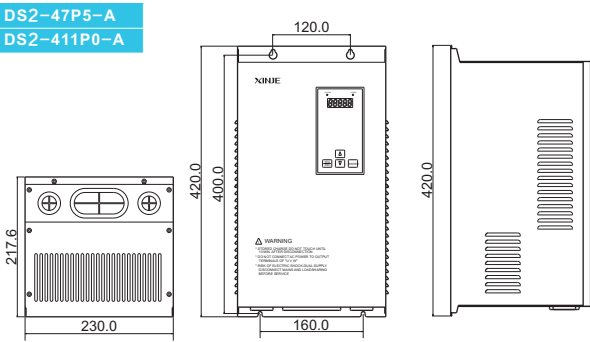
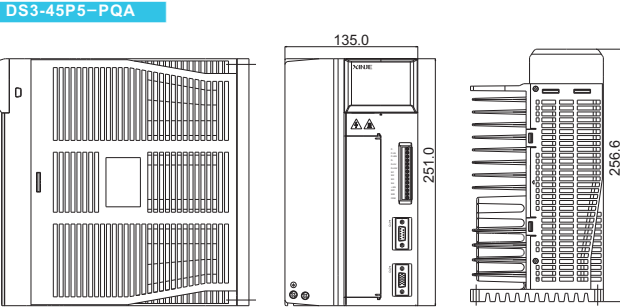
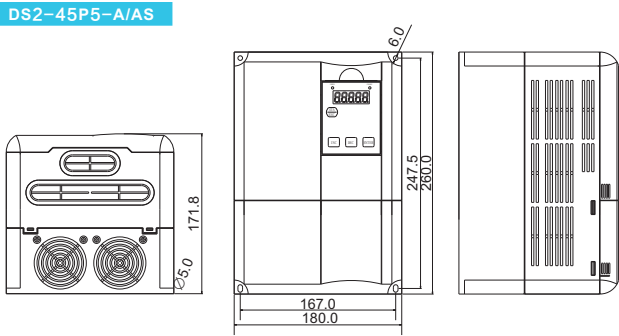
Voltage level		220V										380V					
Motor model MS-	130ST-														110ST-		130ST-
	M10010	M06025		M10015		M10015G	M07725	M15015	M15015G	M07730	M10025	M04030	M05030	M06025			
	□□-21P0	□□-21P5		□□-21P5		□□-21P5	□□-22P0	□□-22P3	□□-22P3	□□-22P4	□□-22P6	□□-41P2	□□-41P5	□□-41P5			
Motor code	1040	0042	1042	0044	1044	104A	0043	0046	1046	104B	0045	0131	0132	0142			
Rated power (KW)	1.0	1.5	1.5	1.5	1.5	1.5	2.0	2.3	2.3	2.4	2.6	1.2	1.5	1.5			
Rated current (A)	6.2	6.0	7.4	6.0	8.0	8.9	7.5	9.5	9	10.5	10.0	3.0	3.9	3.7			
Rated speed (rpm)	1000	2500	2500	1500	1500	1500	2500	1500	1500	3000	2500	3000	3000	2500			
Max speed (rpm)	2000	3000	3000	2000	2000	2500	3000	2000	2000	4000	3000	3500	3500	3000			
Rated torque (N·m)	10	6	6	10	10	10	7.7	15	15.1	8	10	4	5	6			
Peak torque (N·m)	30	18	18	25	25	26.7	22	30	30.2	16	25	12	15	18			
Back EMF constant (V/krpm)	106.7	65	82	103	61	73.3	68	114	101	52.8	70	89	90	110			
Torque coefficient (N·m/A)	1.612	1.0	0.81	1.67	1.25	1.12	1.03	1.58	1.68	0.76	1.0	1.33	1.11	1.62			
Rotor inertia (Kg·m2)	1.105×10 ⁻³	1.26×10 ⁻³	0.84×10 ⁻³	1.94×10 ⁻³	1.272×10 ⁻³	1.62×10 ⁻³	1.53×10 ⁻³	2.77×10 ⁻³	2.63×10 ⁻³	1.27×10 ⁻³	1.94×10 ⁻³	0.54×10 ⁻³	0.63×10 ⁻³	1.26×10 ⁻³			
Winding resistor (Ω)	1.02	1.21	0.70	1.29	0.3	0.7	1.01	1.10	0.8	0.331	0.73	3.30	2.28	3.50			
Winding inductance (mH)	3.57	3.87	5.07	5.07	1.29	11	2.94	4.45	14	4.7	2.45	8.78	7.40	10.75			
Electrical time constant (ms)	3.5	3.20	7.24	3.93	4.3	15.7	2.91	4.05	17.5	14.2	3.36	2.66	3.25	3.07			
Weight (Kg)	8.434	8.9	7.2	11.5	9.340	-	10.0	14.4	12.6	9.8	9.8	5.5	6.1	8.9			
Encoder ppr (ppr)	2500																
Pole pairs	4																
Motor insulation level	Class B (130℃)																
Protection level	IP65																
Using ambient	Ambient temperature	- 15℃ ~ +40℃															
	Ambient humidity	relative humidity < 90% (no condensation)															

Voltage level		380V													
Motor model MS-	130ST-					180ST-					220ST-				
	M10015	M07725	M15015	M10030	M19015	M21520	M27015	M35015	M48015	M70015					
	□□-41P5	□□-42P0	□□-42P3	□□-43P0	□□-43P0	□□-44P5	□□-44P3	□□-45P5	□□-47P5	□□-411P0					
Motor code	0144	2144	1143	1146	1148	0156	1052	0150	2151	0151	1152	0152	0153	1153	1157
Rated power (KW)	1.5	1.5	2.0	2.3	3.0	3.0	3.0	4.5	4.3	4.3	5.5	5.5	7.5	7.5	11.0
Rated current (A)	3.5	5.6	6.4	7.3	6.4	7.5	8.5	9.5	8.0	10.0	8.5	12.0	20.0	15.6	25
Rated speed (rpm)	1500	1500	2500	1500	3000	1500	1500	2000	1500	1500	1500	1500	1500	1500	1500
Max speed (rpm)	2000	2000	3000	2000	3500	2000	2000	3000	2000	2000	2000	2000	2000	1800	2000
Rated torque (N·m)	10	10	7.7	15	10	19	19	21.5	27	27	35	35	48	48.3	70
Peak torque (N·m)	25	20	19.25	45	25	47	50	53	54	67	87.5	70	96	72	105
Back EMF constant (V/krpm)	177	61	61	124	88.3	158	138	140	210	172	250	181	156	196.7	170
Torque coefficient (N·m/A)	2.86	1.25	1.2	2	1.56	2.53	2.56	2.26	3.37	2.70	4.1	2.92	2.40	3.07	2.8
Rotor inertia (Kg·m2)	1.94×10 ⁻³	1.272×10 ⁻³	1.272×10 ⁻³	2.44×10 ⁻³	1.13×10 ⁻³	3.8×10 ⁻³	2.8×10 ⁻³	4.7×10 ⁻³	7.2×10 ⁻³	6.1×10 ⁻³	9.18×10 ⁻³	8.6×10 ⁻³	9.5×10 ⁻³	9.5×10 ⁻³	23.5×10 ⁻³
Winding resistor (Ω)	4.37	0.3	0.3	1.8	0.46	1.15	0.67	0.71	0.59	0.796	1.1	0.62	0.273	0.428	0.46
Winding inductance (mH)	15.00	1.29	1.29	11.6	1.52	6.40	2.68	4.00	14.4	4.83	15.1	4.00	2.14	14.6	5.54
Electrical time constant (ms)	3.46	4.3	4.3	6.44	3.33	5.57	4.00	5.63	24.4	6.07	13.7	6.45	7.84	34.11	12
Weight (Kg)	11.5	9.34	9.34	11.1	11.4	20.5	17.1	22.2	23.3	25.5	27.70	30.5	40.0	-	55.0
Encoder ppr (ppr)	2500														
Pole pairs	4														
Motor insulation level	Class B (130℃)														
Protection level	IP65														
Using ambient	Ambient temperature	- 15℃ ~ +40℃													
	Ambient humidity	relative humidity < 90% (no condensation)													

Compatible table of servo motor and drive

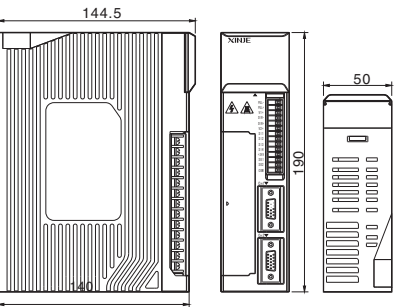
Motor model	Motor code	Suitable drive	Voltage level
MS-40ST-M00330-20P1	1002	DS3-20P2-PQA DS3E/L-20P2-PFA	single/3 phase 220V
MS-60ST-M00630-20P2	1003	DS2-20P2-AS/AS6 DS3E/L-20P2-PFA DS3-20P2-PQA	single/3 phase 220V
MS-60ST-M01330-20P4	0004/1004/ F004	DS2-20P4-AS/AS6 DS2-20P4-BS/BS6 DS3E/L-20P4-PFA DS3-20P4-PQA	single/3 phase 220V
MS-80ST-M02430-20P7	0011/1011/ F011	DS2-20P7-AS/AS6 DS2-20P7-BSW/BSW6	single/3 phase 220V
MS-80ST-M03520-20P7	0012	DS3E/L-20P7-PFA	
MS-90ST-M02430-20P7	0021	DS3-20P7-PQA	
MS-110ST-M04030-21P2	0031	DS2-21P5-AS/AS2/AS6 DS3E/L-21P5-PFA DS3-21P5-PQA	single/3 phase 220V
MS-110ST-M05030-21P5	0032		
MS-130ST-M04030-21P2	1031		
MS-130ST-M06025-21P5	0042/1042		
MS-130ST-M10015-21P5	0044/1044		
MS-130ST-M07725-22P0	0043	DS2-22P3-AS/AS6 DS3E/L-22P3-PFA	3 phase 220V
MS-130ST-M15015-22P3	0046	DS3-22P3-PQA	

Motor model	Motor code	Suitable drive	Voltage level
MS-110ST-M04030-41P2	0131	DS2-41P5-AS/AS6 DS3E-41P5-PFA	3 phase 380V
MS-110ST-M05030-41P5	0132		
MS-130ST-M06025-41P5	0142		
MS-130ST-M10015-41P5	0144/2144		
MS-130ST-M07725-42P0	1143	DS2-43P0-AS/AS6	
MS-130ST-M15015-42P3	1146	DS2-43P0-AS/AS6 DS3E-43P0-PFA DS3-43P0-PQA	
MS-130ST-M10030-43P0	1148		
MS-180ST-M19015-43P0	0156/1052		
MS-180ST-M21520-44P5	0150		
MS-180ST-M27015-44P3	0151/2151	DS2-45P5-A/AS DS3-45P5-PQA	
MS-180ST-M35015-45P5	0152/1152		
MS-180ST-M48015-47P5	0153/1153	DS2-47P5-A	
MS-220ST-M70015-411P0	1157	DS2-411P0-A	



DS2 servo drive dimension (unit: mm)

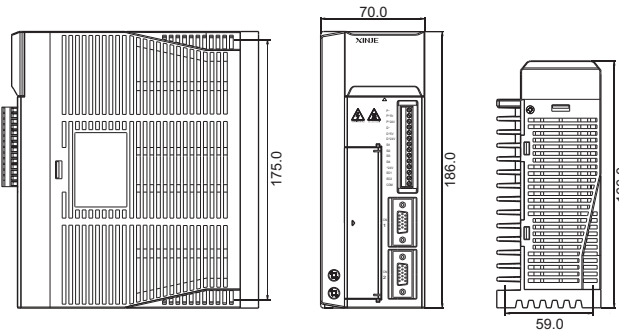
DS2-20P2-AS/AS6/BS
DS2-20P4-AS/AS6/BS/BS6
DS2-20P7-AS/AS6



DS2-20P7-BSW/BSW6
DS3L-20P2/4/7-PFA

DS3E-20P2/4/7-PFA
DS3E-21P0-PFA

DS3-20P2/4/7-PQA
DS3-20P2/4-PNA
DS3-20P7-PTA

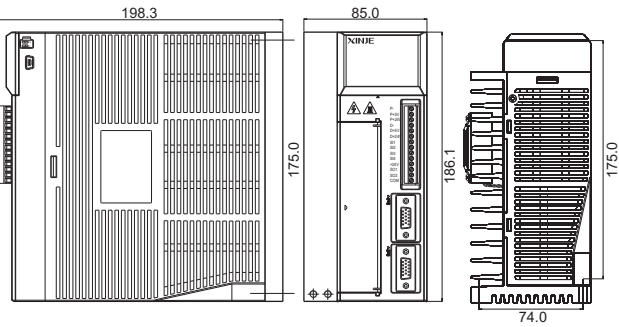
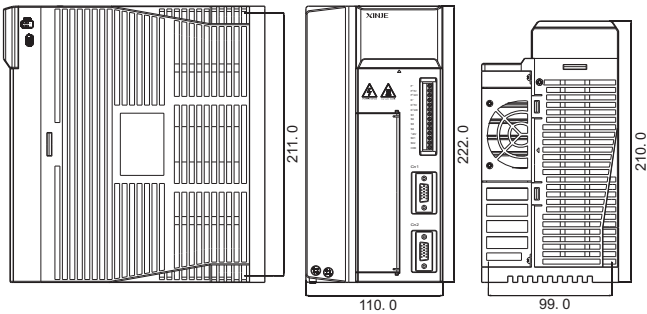


DS2-21P5-AS/AS6/AS2
DS2-22P3-AS/AS6
DS2-41P5-AS/AS6
DS3I-21P5-PFA

DS3-21P5-PTA
DS3-22P3-PTA
DS3-21P5-PQA
DS3-22P3-PQA

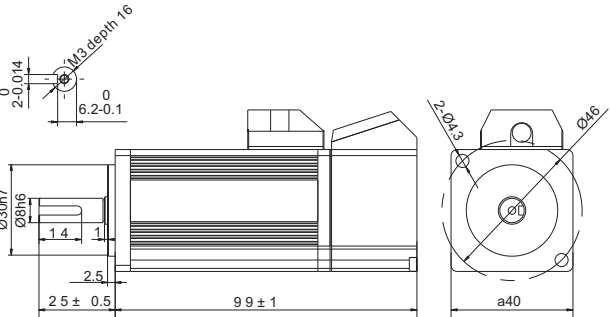
DS3E-21P5-PFA
DS3E-41P5-PFA
DS3E-22P3-PFA
DS3E-22P6-PFA

DS3L-21P5-PFA
DS3L-22P3-PFA
DS3L-22P6-PFA

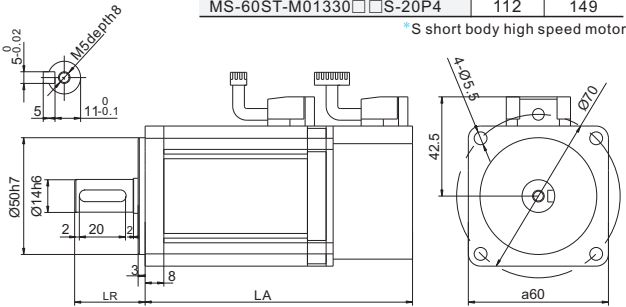
DS2-43P0-AS/AS6DS3E-43P0-PFADS3-43P0-PQA

servo motor dimension (unit: mm)

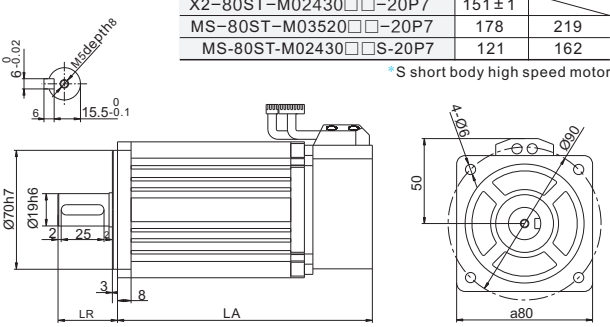
motor model	LA	
	normal	with brake
X2-40ST-M00330□□-20P1	99 ± 1	



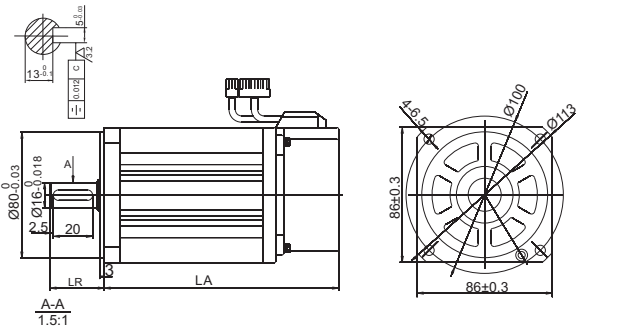
motor model	LA	
	normal	with brake
MS-60ST-M00630□□-20P2	115.5 ± 1	159.5 ± 1
MS-60ST-M01330□□-20P4	145 ± 1	189 ± 1
X2-60ST-M01330□□-20P4	133 ± 1	
MS-60ST-M01330□□S-20P4	112	149



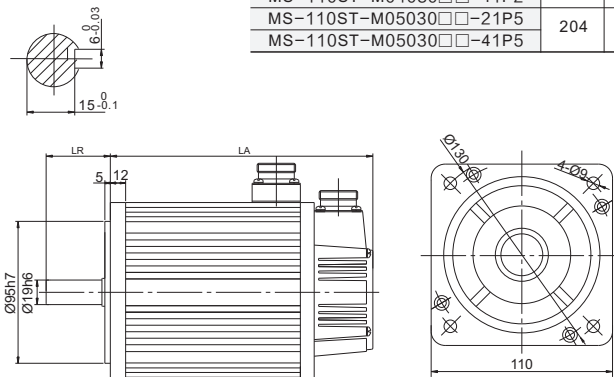
motor model	LA	
	normal	with brake
MS-80ST-M02430□□-20P7	151 ± 1	199 ± 1
X2-80ST-M02430□□-20P7	151 ± 1	
MS-80ST-M03520□□-20P7	178	219
MS-80ST-M02430□□S-20P7	121	162



motor model	LA	
	normal	with brake
MS-90ST-M02430□□-20P7	149	194

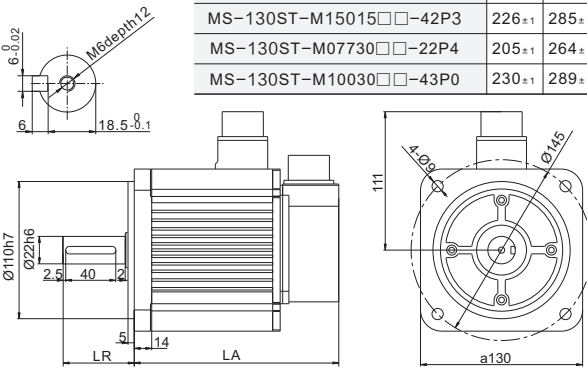


110 series motor



motor model	LA	
	normal	with brake
MS-110ST-M04030□□-21P2	189	263
MS-110ST-M04030□□-41P2		
MS-110ST-M05030□□-21P5	204	278
MS-110ST-M05030□□-41P5		

130 series motor

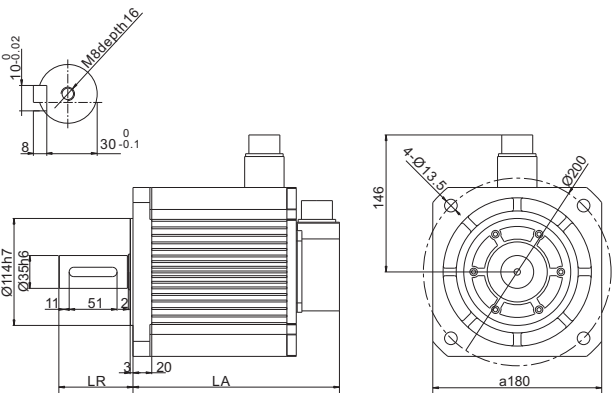


motor model	LA	
	normal	with brake
MS-130ST-M10010□□-21P0	194 ^{±1}	
MS-130ST-M04030□□-21P2	165 ^{±1}	
MS-130ST-M06025□□-21P5	180 ^{±1}	239 ^{±1}
MS-130ST-M06025□□-41P5	179	265 ^{±1}
MS-130ST-M10015□□-21P5	206 ^{±1}	265 ^{±1} (8N.m) 294 ^{±1} (16N.m)
MS-130ST-M10015G□□-21P5	193 ^{±1}	264 ^{±1}
MS-130ST-M10015□□-41P5	213	270 ^(8N.m) 294 ^(16N.m)
MS-130ST-M07725□□-22P0	192	249
MS-130ST-M07725□□-42P0	205	264
MS-130ST-M15015□□-22P3	241	298 ^(8N.m) 322 ^(16N.m)
MS-130ST-M15015G□□-22P3	235 ^{±1}	294 ^{±1}
MS-130ST-M10025□□-22P6	209	290
MS-130ST-M15015□□-42P3	226 ^{±1}	285 ^{±1}
MS-130ST-M07730□□-22P4	205 ^{±1}	264 ^{±1}
MS-130ST-M10030□□-43P0	230 ^{±1}	289 ^{±1}

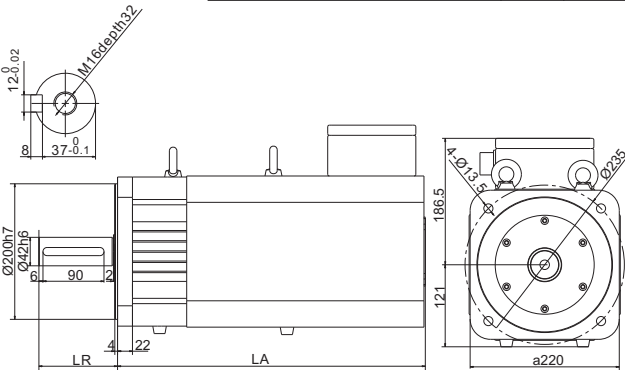
180 series motor

motor model	motor code	LR	LA	
			normal	with brake
MS-180ST-M19015□□-43P0	1052	79	221 ^{±1}	303 ^{±1}
MS-180ST-M19015□□-43P0-S ⁻¹	1052	65	221 ^{±1}	303 ^{±1}
	0156	65	232	289
MS-180ST-M21520□□-44P5	0150	65	243	300
MS-180ST-M27015□□-44P3	2151	79	247 ^{±1}	329 ^{±1}
MS-180ST-M27015□□-44P3-S ⁻¹	2151	65	247 ^{±1}	329 ^{±1}
	0151	65	262	319
MS-180ST-M35015□□-45P5	1152	79	277 ^{±1}	359 ^{±1}
MS-180ST-M35015□□-45P5-S ⁻¹	1152	65	277 ^{±1}	359 ^{±1}
	0152	65	292	349
MS-180ST-M48015□□-47P5	1153	79	308 ^{±1}	390 ^{±1}
MS-180ST-M48015□□-47P5-S ⁻¹	1153	65	308 ^{±1}	390 ^{±1}
	0153	65	346	403

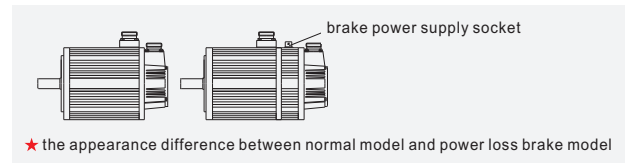
note: as the needs for 180ST motor shaft length, it has -S short body model, please confirm the model before ordering.



220 series motor



motor model	LA	
	normal	with brake
MS-220ST-M70015□□-411P0	454 ^{±1}	
MS-220ST-M96015□□-415P0	507 ^{±1}	



Accessories

Fast terminal	Power supply connection	Encoder cable	RS232 communication cable
● Easy and flexible wiring mode	● 3 meters cable or customized length cable ● Brake motor has brake power supply connector	● 3 meters cable or customized length cable	● 1.5 meters cable for communicating with controller
ABZ signal transformation	Regenerative resistor	DS3E fieldbus servo drive matched module JA-NE-L NEW	
● The encoder output is collector signal or differential signal. The two modes can switch to each other.	● Release the regenerative voltage of capacitance	● Connect to servo drive CN1 port, perform fieldbus function.	

regenerative resistor table

Servo drive model	Internal regenerative resistor	Recommended external regenerative resistor
DS2-20P4-AS/AS6 DS2-20P7-AS/AS6	No internal regenerative resistor	External regenerative resistor 40Ω-100Ω, up 500W, connect between P+ and PB (there is 100Ω, 100W resistor in the packing box, if the discharge specification is not enough, please purchase recommended resistor)
DS2-45P5-A/AS DS2-47P5-A	No internal regenerative resistor	External regenerative resistor 25Ω-65Ω, up 2000W, connect between P+ and PB (there is 20Ω, 1000W resistor in the packing box, if the discharge specification is not enough, please purchase recommended resistor)
DS2-20P7-BSW/BSW6 DS3E-20P7-PFA DS3L-20P7-PFA DS3-20P7-PTA DS3E-20P4-PFA DS3L-20P4-PFA DS3-20P4-PTA	Internal regenerative resistor 100Ω 100W, short connect P+ and D (already short connected when out of factory), disconnect P+ and C. DS2 set P0-10 to 0, DS3 set P0-24 to 0.	connect the regenerative resistor between P+ and C, move the short connector between P+ and D, DS2 set P0-10 to 1, DS3 set P0-24 to 1. External regenerative resistor is 40Ω to 100Ω, up 500W. External regenerative resistor needs to buy.
DS2-21P5-AS/AS6 DS2-21P5-AS2 DS3E-21P5-PFA DS3L-21P5-PFA DS3-21P5-PTA DS2-22P3-AS/AS6 DS3E-22P3-PFA DS3L-22P3-PFA DS3E-22P6-PFA DS3L-22P6-PFA	Internal regenerative resistor 75Ω 150W, short connect P+ and D (already short connected when out of factory), disconnect P+ and C. DS2 set P0-10 to 0, DS3 set P0-24 to 0.	connect the regenerative resistor between P+ and C, move the short connector between P+ and D, DS2 set P0-10 to 1, DS3 set P0-24 to 1. External regenerative resistor is 25Ω to 50Ω, up 1000W. External regenerative resistor needs to buy.
DS2-41P5-AS/AS6	Internal regenerative resistor 75Ω 150W, short connect P+ and D (already short connected when out of factory), disconnect P+ and C. DS2 set P0-10 to 0, DS3 set P0-24 to 0.	connect the regenerative resistor between P+ and C, move the short connector between P+ and D, set P0-10 to 1. External regenerative resistor is 55Ω to 100Ω, up 1000W. External regenerative resistor needs to buy.
DS2-43P0-AS/AS6 DS3E-43P0-PFA DS3L-43P0-PFA DS3-43P0-PTA	Internal regenerative resistor 75Ω 150W, short connect P+ and D (already short connected when out of factory), disconnect P+ and C. DS2 set P0-10 to 0, DS3 set P0-24 to 0.	connect the regenerative resistor between P+ and C, move the short connector between P+ and D, DS2 set P0-10 to 1, DS3 set P0-24 to 1. External regenerative resistor is 55Ω to 75Ω, up 1000W. External regenerative resistor needs to buy.
DS3E-20P2-PFA DS3L-20P2-PFA	Internal regenerative resistor 50Ω 100W, short connect P+ and D (already short connected when out of factory), disconnect P+ and C. DS2 set P0-10 to 0, DS3 set P0-24 to 0.	connect the regenerative resistor between P+ and C, move the short connector between P+ and D, set P0-24 to 1. External regenerative resistor is 50Ω to 100Ω, up 200W. External regenerative resistor needs to buy.

variable
frequency
system frequency inverter

VH3 series
VH3E series
VB5N series
VB5 series
V5 series

- Stable performance easy to operate
- Suitable motor 0.75~55KW
- High performance motion control DSP chip
- Optimized structure



Excellent product performance

VH3/VH3E have enhanced performance

- Output frequency max 500Hz, can control high speed motor.
- Rich and flexible input, output terminal and control methods.
- SMT and conformal coating technology make the product more stable.
- Built-in PID auto-tune function and simple PLC function, fit for different needs.
- Protection for over voltage, under voltage, over load, over current, over heat. The protection for short circuit can avoid the inverter damage caused by external machine error.
- Standard RJ-45 Ethernet port (the connection between operate panel and main control panel).
- Good ventilation and cooling.



VH3/VH3E complete basic functions

No sense vector control mode

- Smooth drive large load at low frequency.

Fieldbus communication mode for VH3E

- Communication speed is 0~3Mbps.

Built-in two groups of PID function

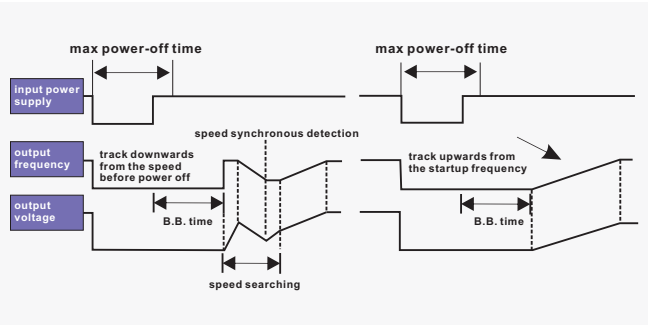
- Easy to make process close loop control system, improve the precision.

Flexible I/O terminals

- I/O terminals can be defined to diverse functions.

Speed tracking function under the control of VF

- If it needs to start up the motor again before it stops, the frequency inverter can catch the present speed and start up without impact.



Modify the parameter online

- Modify the inverter parameters when it is running, more convenient to operate.

Energy consumption brake unit

- The inverter has built-in brake unit. When internal brake unit is not enough, the external brake unit can be connected, and we provide different kinds of brake units..

High speed pulse input and output

- X6 terminal supports maximum 50KHz pulse input for pulse frequency speed tuning.
- DO terminal supports maximum 100KHz pulse output, user-defined f unction. PLC and other controller can read the internal variable of inverter via frequency measurement.

up to 9 kinds of frequency setting mode

- Set the frequency through potentiometer, digital keyboard, UP/DOWN terminal, VI/CI terminal, pulse terminal, combination setting, remote setting from serial port.

Built-in simple PLC function

- The simple PLC function is a multi-segment speed generator. The inverter can auto-change the frequency and direction as the running time.

Communication function

RS485 port, support Modbus-RTU protocol

Master-slave multi-inverter linkage function

Compact design

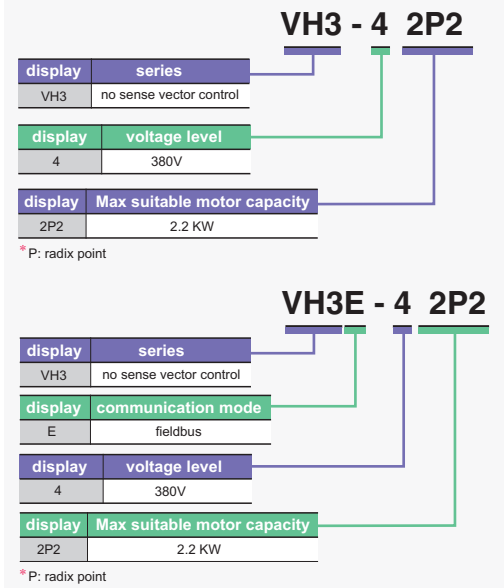
- Protection level accords to IP20.
- Good ventilation and cooling design.



Moveable cooling fan (for the frequency inverter power above 11KW)



Product naming rule



Complete protection functions

- Over current protection.
- Over voltage protection.
- Under voltage protection.
- Overheating protection, the inverter will close the output and free stop.
- Over load protection, the inverter will close the output and free stop.

Moveable numeric keyboard



Moveable rotary potentiometer

Optional accessories: installation seat of operate panel and extension cable

- User can remote operate the frequency inverter with the accessories.

Filtering unit

- The frequency inverter power above 30KW are equipped with reactor to restrain the higher harmonic and improve the power factor.

VB5N - 4 3 P 7 - S

display	series
VB5N	VVVF control
display	voltage level
2	220V
4	380V
display	Max suitable motor capacity
0P7	0.7 KW
3P7	3.7 KW

* P: radix point

VB5N series contain 220V and 380V voltage level, -S type means simple version inverter. Simple version and general model comparison table:

model	RS485 communication	X6 high speed pulse input	relay output
VB5N-20P7	✓	×	×
VB5N-20P7-S	×	×	×
VB5N-40P7	✓	✓	✓
VB5N-40P7-S	×	×	×
VB5N-41P5	✓	✓	✓
VB5N-41P5-S	×	×	×
VB5N-42P2	✓	✓	✓
VB5N-42P2-S	×	×	×
VB5N-43P7	✓	✓	✓
VB5N-43P7-S	×	×	×

* Note: × not support ✓ support

Rich models

The frequency inverter contains VB3 series, VB5 series, VD4 series, VB5N series, V5 series. The voltage level has 220V single phase and 380V three-phase. The suitable motor capacity is from 0.75KW to 55KW.

Model table

Capacity (KW)	Current (A)	Single phase 220V		3-phase 380V			
		VB5N	VB5	VH3	VB5N	VB5	V5
0.75	4.7	VB5N-20P7(-S)					
	2.5				VB5N-40P7(-S)	VB5-40P7	
	2.1			VH3-40P7			
1.5	7.5	VB5N-21P5	VB5-21P5		VB5N-41P5(-S)	VB5-41P5	
	4.0						
	3.8			VH3-41P5			
2.2	10.0		VB5-22P2				
	6.0				VB5N-42P2(-S)	VB5-42P2	
	5.1			VH3-42P2			
3.7	9.6				VB5N-43P7(-S)	VB5-43P7	
	9.0			VH3-43P7			
5.5	14.0					VB5-45P5	
	13.0			VH3-45P5			
7.5	17.0			VH3-47P5		VB5-47P5	
11.5	25.0			VH3-4011			V5-4011
15	32.0			VH3-4015			
	33.0						V5-4015
18.5	38.0						V5-4018
22	46.0						V5-4022
30	60.0						V5-4030
37	75.0						V5-4037
45	90.0						V5-4045
55	110						V5-4055

VH3 series have two 380V models. The VFD function is shown as the following table.

model	X-NET fieldbus	RS485 communication	Multi-speed running	X6 high speed pulse input	relay output	high speed pulse output	analog voltage output	analog current output	error relay output
VH3-40P7	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3-41P5	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3-42P2	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3-43P7	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3-45P5	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3-47P5	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3-4011	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3-4015	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3-4018	×	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-40P7	✓	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-41P5	✓	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-42P2	✓	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-43P7	✓	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-45P5	✓	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-47P5	✓	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-4011	✓	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-4015	✓	✓	✓	✓	✓	✓	✓	✓	✓
VH3E-4018	✓	✓	✓	✓	✓	✓	✓	✓	✓

Standard specification 220V models

Model		VB5N-20P7(-S)	VB5N-20P7	VB5-21P5	VB5-22P2
Output	Suitable motor (KW)	0.75	0.75	1.5	2.2
	Rated output current (A)	4.7	4.7	7.5	10.0
	Rated voltage (V)	AC 220			
	Frequency range (Hz)	0~500			
	Frequency resolution (Hz)	0.01			
	Over load ability	150% of rated current 1 minute, 180% of rated current 1 second			
	Rated voltage/frequency	Single phase 220V, 50/60 Hz			
Input	Allowable range of AC voltage fluctuation	Voltage: -20%~20% voltage imbalance rate: < 3%			
	Allowable range of frequency fluctuation	Frequency: ±5%			
	Power supply capacity (KVA)	1.5	1.5	2.8	4.5

Standard specification 380V models

Model VH3-4 ____		0P7	1P5	2P2	3P7
Output	Suitable motor (KW)	0.75	1.5	1.5	3.7
	Rated output current (A)	2.5	4.5	4.5	9.6
	Rated voltage (V)	AC 380			
	Frequency range (Hz)	0~500			
	Frequency resolution (Hz)	0.01			
	Over load ability	150% of rated current 1 minute, 180% of rated current 1 second			
	Rated voltage/frequency	Three-phase 380V, 50/60 Hz			
Input	Allowable range of AC voltage fluctuation	Voltage: -20%~20% voltage imbalance rate: < 3%			
	Allowable range of frequency fluctuation	Frequency: ±5%			
	Power supply capacity (KVA)	1.5	3	4	5.9

Model VH3-4 ____		011	015
Output	Suitable motor (KW)	11	15
	Rated output current (A)	25.0	33.0
	Rated voltage (V)	AC 380	
	Frequency range (Hz)	0~500	
	Frequency resolution (Hz)	0.01	
	Over load ability	150% of rated current 1 minute, 180% of rated current 1 second	
	Rated voltage/frequency	Three-phase 380V, 50/60 Hz	
Input	Allowable range of AC voltage fluctuation	Voltage: -20%~20% voltage imbalance rate: < 3%	
	Allowable range of frequency fluctuation	Frequency: ±5%	
	Power supply capacity (KVA)	8.9	11

Model VB5N-4 ____		0P7 (-S)	1P5 (-S)	2P2 (-S)	3P7 (-S)
Output	Suitable motor (KW)	0.75	1.5	1.5	3.7
	Rated output current (A)	2.5	4.5	4.5	9.6
	Rated voltage (V)	AC 380			
	Frequency range (Hz)	0~500			
	Frequency resolution (Hz)	0.01			
	Over load ability	150% of rated current 1 minute, 180% of rated current 1 second			
	Rated voltage/frequency	Three-phase 380V, 50/60 Hz			
Input	Allowable range of AC voltage fluctuation	Voltage: -20%~20% voltage imbalance rate: < 3%			
	Allowable range of frequency fluctuation	Frequency: ±5%			
	Power supply capacity (KVA)	2.1	2.5	3.0	5.9

Model VB5-4 ____		0P7	1P5	2P2	3P7	5P5	7P5
Output	Suitable motor (KW)	0.75	1.5	2.2	3.7	5.5	7.5
	Rated output current (A)	2.5	4.5	6.0	9.6	14.0	17.0
	Rated voltage (V)	AC 380					
	Frequency range (Hz)	0~500					
	Frequency resolution (Hz)	0.01					
	Over load ability	150% of rated current 1 minute, 180% of rated current 1 second					
	Rated voltage/frequency	Three-phase 380V, 50/60 Hz					
Input	Allowable range of AC voltage fluctuation	Voltage: -20%~20% voltage imbalance rate: < 3%					
	Allowable range of frequency fluctuation	Frequency: ±5%					
	Power supply capacity (KVA)	2.1	2.5	3.0	5.9	8.5	11.0

Model V5-4 ____		011	015	018	022	030	037	045	055
Output	Suitable motor (KW)	11	15	18.5	22	30	37	45	55
	Rated output current (A)	25.0	33.0	38.0	46.0	60.0	75.0	90.0	110.0
	Rated voltage (V)	AC 380							
	Frequency range (Hz)	0~500							
	Frequency resolution (Hz)	0.01							
	Over load ability	150% of rated current 1 minute, 180% of rated current 1 second							
	Rated voltage/frequency	Three-phase 380V, 50/60 Hz							
Input	Allowable range of AC voltage fluctuation	Voltage: -20%~20% voltage imbalance rate: < 3%							
	Allowable range of frequency fluctuation	Frequency: ±5%							
	Power supply capacity (KVA)	15	20	25	30	40	50	60	75

Specification and performance

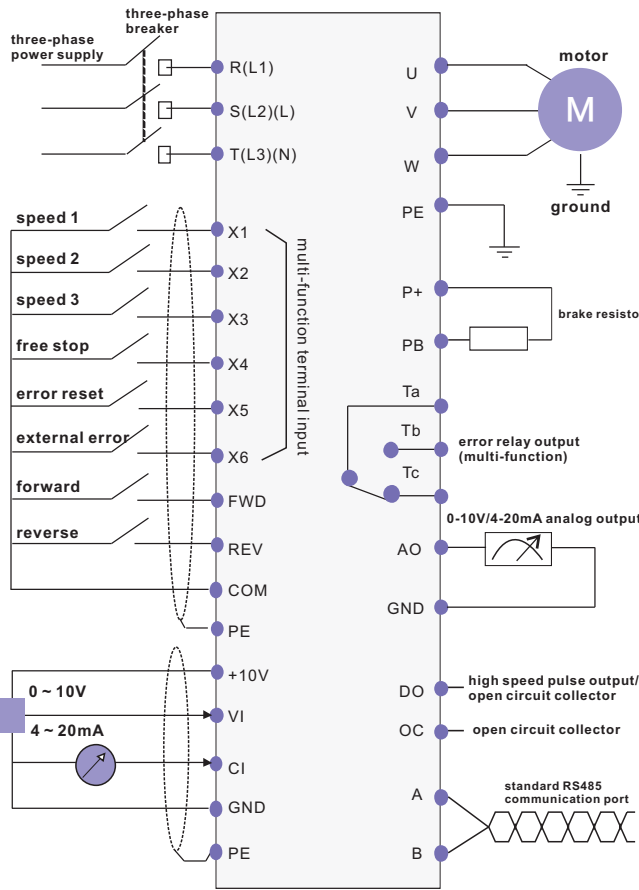
Environment and structure

Item		Type
Environment	Using place	Indoor, protect from direct sunlight, dustless, no corrosive gas, n4 o oil mist, no steam
	Altitude	Lower than 1000 meters (need derate when higher than 1000 meters)
	Ambient temperature	−10℃~ +40℃
	Humidity	< 90% RH, no condensation
	Vibration	< 5.9 m/s2 (0.6G)
	Storage temperature	-20℃~ +60℃
	Protection structure	IP20 (when use keyboard or status display unit)
Structure	Cooling code	Forced air-cooling
	Installation mode	Wall-mounted, cabinet-mounted

Performance specification

Control functions	Modulation mode	Optimal space voltage vector modulation SVPWM
	Control mode	Space voltage vector modulation SVPWM(optimal low-frequency dead zone compensation)
	Frequency accuracy	Digital setting: the highest frequency ×±0.01% Analog setting: the highest frequency ×±0.2%
	Frequency resolution	Digital setting: 0.01Hz Analog setting: the highest frequency×0.1%
	Startup frequency	0.32Hz~20.00Hz
	V/F curve	Five modes: constant torque V/F curve, 1 kind of user-defined multi-segment V/F curve, 3 kinds of torque falling curve(2nd power, 1.7th power, 1.2nd power)
	Acceleration and deceleration curve	2 modes: linear acceleration/deceleration, S curve acceleration/deceleration; 7 kinds of acceleration/deceleration time, units options: minute/second, up to 6000 minutes
	Energy consumption brake	Built-in energy consumption brake unit, enable to connect external brake resistor
	Jog	Jog frequency range: 0.1 to 50.00Hz Jog acceleration/deceleration time: 0.1 to 65.0 s
	Multi-speed running	Run in multi-speed mode via built-in PLC or control terminals
	Fixed-length control	VFD stop when reaching the settings length
	Communication function	RS-485 port, support Modbus-RTU protocol, support master-slave linkage function
Running functions	Command running channel	control panel, control terminals, serial port. 3 modes can switch to each other
	Frequency setting channel	Potentiometer, up/down buttons, function code, serial port, analog voltage, analog current, pulse, multi-speed setting, simple PLC setting. All kinds of modes can switch to each other
	Digital setting channel	Forward/backward command;6 channels programmable digital input.35 kinds of functions, X6 supports 0~20KHz pulse input
	Analog input channel	2 channels analog input; Options: 4 to 20mA/0 to 10 V
	Analog output channel	1 channel analog input: 0 to 10 V,4 to 20mA. Output the preset frequency, output frequency
Control panel	digital, pulse output channel	1 channel programmable open collector output;1 channel relay output;1 channel 0 to 20 KHz pulse output
	LED digital display	Display the preset frequency, output voltage, output current, etc
	External meter display	Display the output frequency, output current, output voltage, etc
	Key lock	Lock all the keys
Protection functions		Over current protection, overvoltage protection, under voltage protection, overheat protection, overload protection
Accessories		Brake unit, control panel, extension cable of the control panel

VB5N/VB5/V5 standard wiring diagram



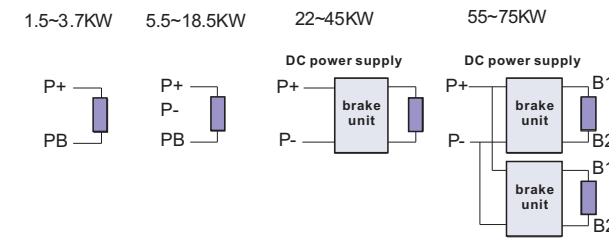
VB5N/VB5/V5 accessories

The frequency inverters 0.75~15KW have brake unit inside. Please refer to the following table to choose brake unit if there are energy-consumption brake requirements. The inverter above 18.5KW need to connect external brake unit. Please refer to wiring diagram on the previous page.

Brake unit and resistor

Type (kW)		brake unit		brake resistor	
		Type	quantity	equivalent brake resistor (Ω)	equivalent brake power
220V	0.75	built-in	1	150	200
	1.5		1	100	400
	2.2		1	70	500
380V	1.5	built-in	1	300	400
	2.2		1	200	500
	3.7		1	200	500
	5.5		1	100	500
	7.5		1	75	1000
	11	BRU-4045	1	50	1000
	15		1	40	1500
	18.5		1	32	5000
	22		1	27.2	5000
	30		1	20	6000
380V VH3	37	built-in	1	16	9600
	45		1	13.6	9600
	55		1	10	12000
	0.75		1	≥300	150
	1.5		1	≥220	150
	2.2		1	≥200	250
	3.7		1	≥130	300
	5.5		1	≥90	400
	7.5		1	≥65	500
	11		1	≥43	800
	15		1	≥32	1000

the brake resistor wiring of frequency inverter



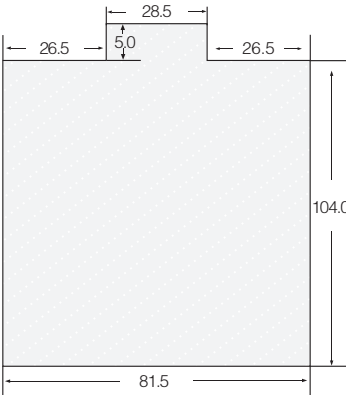
Operate panel and extension cable

Operate panel	Power range (KW)	Suitable model	Mounting dimension of control panel W×H (mm)	Extension cable type
VB5-OPU-01	0.75~2.2	VB5 series single phase	62*75	YC-ECC-05
	0.75~3.7	VB3, VB5 series three-phase		
	5.5~7.5	VB5 series three-phase		
V5-OPU-03	11~55	V5 series	71*131	YC-ECC-10

* Note: the extension cable length includes 1m, 2m, 3m, 5m.

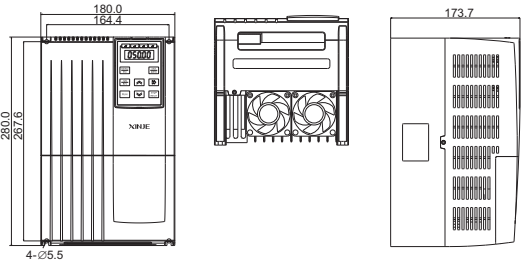
VH3/VB5N series operate panel model is D-panel. The serial port connection cable between operate panel and CPU circuit is D-CN-1.5, the default length is 1.5m. It needs VB5N operate panel foundation for extending the operate panel. The extension operate panel will be installed on the foundation. The mounting dimension of foundation is shown in the diagram.

Unit: mm

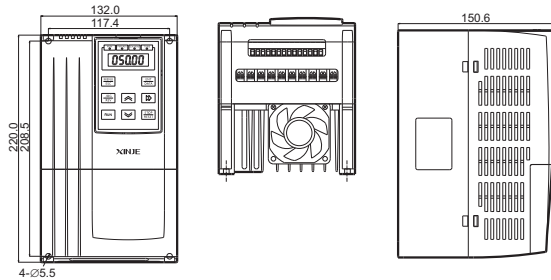


Dimension (unit: mm)

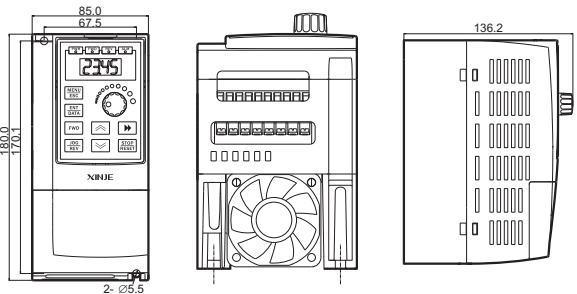
VH3 series 3 phase 7.5KW



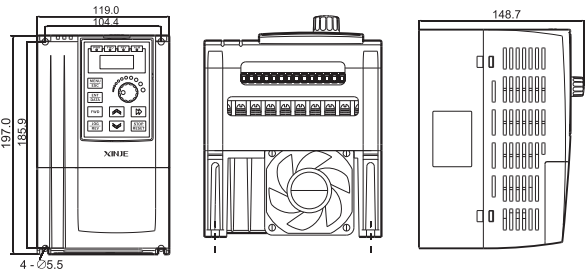
VH3 series 3 phase 1.5~3.7KW



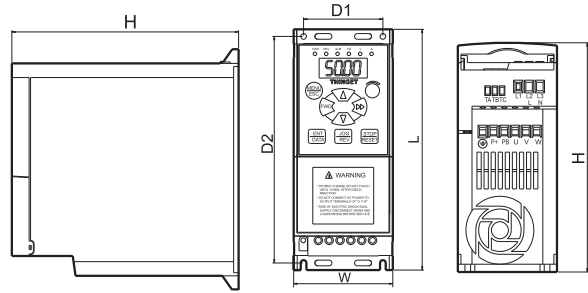
VB5N series single phase 0.75KW



VB5N series 3 phase 0.75~1.5KW

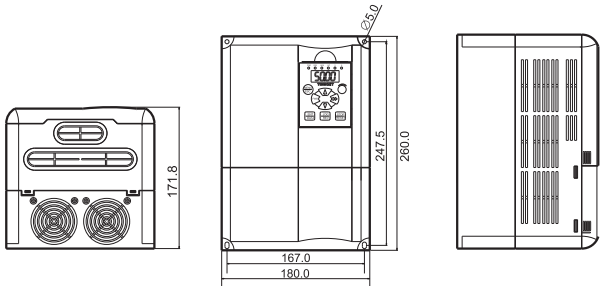


VB3, VB5 serie 0.75~3.7KW

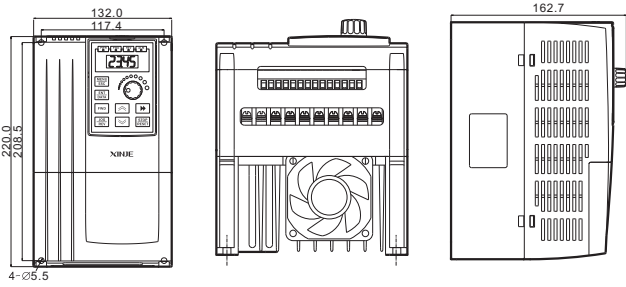


Product model	W	D1	L	D2	H
VB5-20P7	70	56	170	160	162
VB5-21P5					
VB5-22P2					
VB3/VB5-40P7	80	56	200	190	162
VB3/VB5-41P5					
VB3/VB5-42P2					
VB3/VB5-43P7					

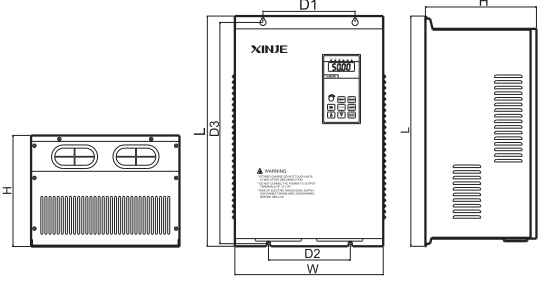
VB5 series 3 phase 5.5~7.5KW



VB5N series 3 phase 2.2~3.7KW



V5 series 3 phase 11~55KW



product model	W	D1	L	D2	H	D3
V5-4011	230	120	420	160	218	400
V5-4015						
V5-4018						
V5-4022	290	180	450	210	217	430
V5-4030						
V5-4037	375	230	581	230	261	551
V5-4045						
V5-4055						

Stepper system | DPL series DP series

Stepper system All series of stepper system

DPL series
DP series

- Digital control mode, accurate and advanced sine current PWM control technology
- More stable performance, excellent noise immunity ability
- High subdivision precision, easy to set the current, pulse frequency up to 200KHz, max idle speed up to 3000rpm
- The configuration panel is easy to operate



DPL series features

Excellent driver technology

DPL series stepper drive is digital two-phase stepper drive. it can set the subdivision from 200 to 40000 and any current less than rated current. The drive uses sine wave current control technology, makes the motor running stable, low noise, is fit for most application cases. Built-in parameter self-study function can automatically produce the best parameters for different motor.

Complete function and performance

- Parameter self-study function
- Low motor running noise
- Control signal is 24V, connect to PLC directly
- Built-in high subdivision, subdivision is dynamic selectable, pulses per circle up to 40000
- Auto-half the current when resting
- Photoelectric differential signal input
- Overvoltage, overcurrent, short circuit protection

simple model selection

Suitable for small and medium-sized device, such as pneumatic marking machine, labeling machine, cutting machine, laser marking machine, plotter, small engraving machine, handling machine. It has good effect for the needs of low vibration, small noise, high precision, high speed.

two-phase stepper drive model list

model	current(A)	voltage (V)		max pulses per circle	matched motor
		range	typical value		
DPL-425	0.7 ~ 3.0	DC: 20 ~ 50	36	40000	42/57
DPL-685	1.9 ~ 5.0	DC: 36 ~ 50	48	40000	57/86
DPL-708A	2.0 ~ 6.0	AC: 20 ~ 80	68	40000	57/86
		DC: 30 ~ 100			

subdivision setting

Pulse/rev	SW2	SW3	SW4	SW5
200	OFF	OFF	OFF	OFF
400	OFF	OFF	OFF	ON
800	OFF	OFF	ON	OFF
1600	OFF	OFF	ON	ON
3200	OFF	ON	OFF	OFF
6400	OFF	ON	OFF	ON
12800	OFF	ON	ON	OFF
25600	OFF	ON	ON	ON
1000	ON	OFF	OFF	OFF
2000	ON	OFF	OFF	ON
4000	ON	OFF	ON	OFF
5000	ON	OFF	ON	ON
8000	ON	ON	OFF	OFF
10000	ON	ON	OFF	ON
20000	ON	ON	ON	OFF
40000	ON	ON	ON	ON

•notes: DPL-425 set subdivision via SW1~SW4 of CN2, DPL-685 and DPL-708A set subdivision via SW5~SW8 of CN1.

Electric features

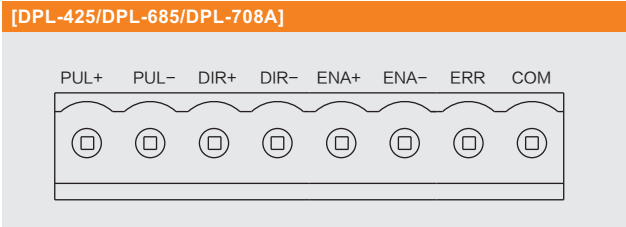
item	min value	typical value	max value
logic input current (mA)	4	7	16
Stepper pulse frequency (KHz)	0	-	200
Insulation resistor (MΩ)	500	-	-
Environment temperature	0℃ ~ 50℃		
Max working temperature	60℃		
Humidity	40~90% RH (no condensation)		
Vibration	5.9m/s² Max		
Storate temperature	-20℃ ~ 65℃		

Parameter self-study function

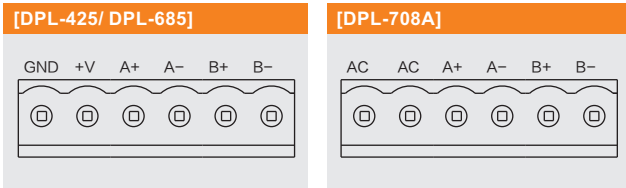
- SW4 of CN1 can set semi-current, full-current, parameter self-study function.
- Parameter self-study function can produce the best parameters according to the motor and maximize the performance of motor.
- If toggle back and forth SW4 of CN1 once in 1 second, drive can auto-indentify the motor parameters and control the parameter self-study. Please do this operate when the power supply voltage or other condition changed, otherwise the motor running will be abnormal. Please note it cannot input pulse, the direction signal cannot change. The self-study time cannot less than 3 seconds
- method 1: SW4 from ON to OFF, then from OFF to ON in one second.
- method 2: SW4 from OFF to ON, then from ON to OFF in one second.

terminal arrangement

terminal of control circuit



terminal of main circuit



current setting

CON1 of DPL-425

Peak	RMS	SW1	SW2	SW3
1.0	0.7	OFF	OFF	OFF
1.7	1.2	OFF	OFF	ON
2.0	1.4	OFF	ON	OFF
2.4	1.7	OFF	ON	ON
2.8	2.0	ON	OFF	OFF
3.4	2.4	ON	OFF	ON
4.0	2.8	ON	ON	OFF
4.2	3.0	ON	ON	ON

CON1 of DPL-685

Peak	RMS	SW1	SW2	SW3
2.7	1.9	OFF	OFF	OFF
3.4	2.4	OFF	OFF	ON
4.0	2.8	OFF	ON	OFF
4.2	3.0	OFF	ON	ON
5.1	3.6	ON	OFF	OFF
6.0	4.2	ON	OFF	ON
6.5	4.6	ON	ON	OFF
7.0	5.0	ON	ON	ON

CON1 of DPL-708A

REF Current	PK Current	SW1	SW2	SW3
2.00	2.40	OFF	OFF	OFF
2.57	3.08	OFF	OFF	ON
3.14	3.77	OFF	ON	OFF
3.71	4.45	OFF	ON	ON
4.28	5.14	ON	OFF	OFF
4.86	5.83	ON	OFF	ON
5.43	6.52	ON	ON	OFF
6.00	7.20	ON	ON	ON

DP series features

excellent drive technology

DP series stepper drive used digital control and sine wave current PWM control technology to form current close-loop and position open loop. This control method can real-time correct the position error and has stable performance, stronger anti-interference ability. The stepper drive can match 4, 6, 8 wires mixed type two phases stepper motor and 3 wires mixed type 3-phase stepper motor. The drive has small size and high cost performance.

Stable performance

DP series stepper drive has high input voltage and output current, improved the motor output torque at high-speed, controled the positioning precision at low speed, solved the problem of large noise, vibration, serious heating when motor is running, makes the motor running more stable.

complete protection function

Overvoltage, overcurrent, short circuit, under voltage protection, the protection circuit will cut off the PWM output if there is error, the alarm indicator will show related message, the error signal will output from ERRO, COM.

high subdivision precision, easy to set current

The performance was improved significantly by using advanced current control technology. The max input pulse frequency is 200KHz, it enabled to output large torque at high speed.

rich models for choice

there are many stepper drive models for choice, it is suitable for small automation equipment of low noise, high precision, low vibration, such as cutting machine, CNC machine.

two phases stepper drive

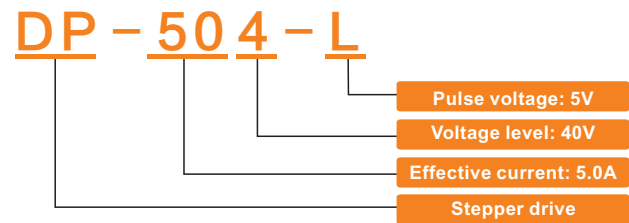
model	type	current(A)	voltage (V)		max pulses per circle	matched motor
			range	typical value		
DP-153	2-phase subdivision type	0 ~ 1.5	DC +12 ~ +30	DC 24V	25600	42
DP-304		0 ~ 2.5	DC +12 ~ +40	DC 36V	12800	42,57
DP-308D		0 ~ 3.0	DC +20 ~ +80	DC 48V	40000	42,57
DP-504		0 ~ 5.0	DC +20 ~ +40	DC 36V	40000	57,86
DP-508		0 ~ 5.0	DC +20 ~ +80	DC 48V	40000	86
DP-508D		0 ~ 5.0	DC +35 ~ +80	DC 48V	40000	86

•note: DP-308D has the function of overvoltage, overcurrent and short circuit protection. DP-508D was added short circuit protection compared to DP-508.

Three phases stepper drive

model	type	current(A)	voltage (V)		max pulses per circle	matched motor
			range	typical value		
DP-7022	3-phase subdivision type	0 ~ 7.0	AC200 ~ 240	AC220V	40000	86,110,130

Naming rule (take DP-504-L as an example)



•note: default model pulse voltage is +24V, -L model pulse voltage is +5V.

electric features

item	min value	typical value	max value
logic input current (mA)	4	7	16
Stepper pulse frequency (KHz)	0	-	200
Insulation resistor (MΩ)	500	-	-
Environment temperature	0℃ ~ 50℃		
Max working temperature	60℃		
Humidity	40~90% RH (no condensation)		
Vibration	5.9m/s² Max		
Storate temperature	-20℃ ~ 65℃		

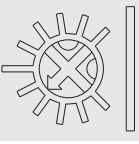
Current setting

Lap potentiometer can set the current

It can set any current levels less than max output current through lap potentiometer. The full-current and semi-current mode can be set through Sw1.

* Note: DP-153, DP-304 have auto semi-current function, no need SW1 to set the full-current or semi-current mode.

4.2
3.5
2.8
2.1
1.4
0.7
0.0



DIP switch to set the current

Set the current through SW1 to SW3 of CN1, the range is 0~5.0A. SW4 can set the semi-current and full-current.

I(A)	SW1	SW2	SW3
1.5	OFF	OFF	OFF
2.0	OFF	OFF	ON
2.5	OFF	ON	OFF
3.0	OFF	ON	ON
3.5	ON	OFF	OFF
4.0	ON	OFF	ON
4.5	ON	ON	OFF
5.0	ON	ON	ON

Subdivision setting

The subdivision can be set through DIP switch

Set the subdivision through SW2, SW3, SW4, Sw5

subdivision times	steps/circle (1.8° /step)	SW2	SW3	SW4	SW5
1	200	OFF	OFF	OFF	OFF
2	400	OFF	OFF	OFF	ON
4	800	OFF	OFF	ON	OFF
8	1600	OFF	OFF	ON	ON
16	3200	OFF	ON	OFF	OFF
32	6400	OFF	ON	OFF	ON
64	12800	OFF	ON	ON	OFF
128	25600	OFF	ON	ON	ON
5	1000	ON	OFF	OFF	OFF
10	2000	ON	OFF	OFF	ON
20	4000	ON	OFF	ON	OFF
25	5000	ON	OFF	ON	ON
40	8000	ON	ON	OFF	OFF
50	10000	ON	ON	OFF	ON
100	20000	ON	ON	ON	OFF
200	40000	ON	ON	ON	ON

* Note: DP-153, DP-304 set the subdivision through SW1, SW2, SW3; DP-508 set the subdivision through SW5, SW6, SW7, SW8 of CN1.

Mixed type stepper motor models

matching rules of stepper motor and drive

torque

If the load is large, please choose large torque motor.

motor speed

Please choose large phase current motor for high speed condition to increase the output power. The drive also needs higher power supply voltage.

positioning precision

It is related to the subdivision numbers.

motor current, subdivision and power supply voltage are all conditions of choosing the model.

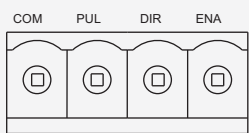
Two-phase stepper motor models

Drive model	Motor model	Step angle (°)	Length L (mm)	Static torque (N.m)	Phase current (A)	Phase resistor (Ω)	Phase inductance (mH)	Rotor inertia (g.cm ²)	Shaft body	Shaft diameter (mm)	Weight (kg)
DPL-425/DP-153/DP-304/DP-308D	42BYGH038	1.8	38	0.26	1.2	2.0	4.0	53	flat	5.0	0.24
DPL-425/DP-153/DP-304/DP-308D	42BYGH047	1.8	47	0.32	1.2	2.7	5.2	78	flat	5.0	0.38
DPL-425/DPL-685/DPL-708A/DP-304/DP-308D/DP-504	57BYGH051	1.8	51	0.72	3	0.75	2.2	228	flat	8	0.62
DPL-425/DPL-685/DPL-708A/DP-304/DP-308D/DP-504	57BYGH056	1.8	56	0.9	3	0.6	1.8	273	flat	8	0.62
DPL-425/DPL-685/DPL-708A/DP-304/DP-308D/DP-504	57BYGH076	1.8	76	1.35	3	0.75	2.5	482	flat	8	1.1
DPL-685/DPL-708A/DP-504/DP-508/DP-508D	86BYGH065	1.8	65	3.3	2.8	1.1	8.0	1468	right angle flat	14	1.7
DPL-685/DPL-708A/DP-508/DP-508D	86BYGH078	1.8	78	4.5	4.2	0.56	4.8	1170	right angle flat	14	2.3
	86BYGH078-J	1.8	78	4.5	4.2	0.56	4.8	1170	flat key 5*25	14	2.3
DPL-685/DPL-708A/DP-508/DP-508D	86BYGH114	1.8	114	8.5	4.2	0.85	7.4	3547	right angle flat	14	3.8
	86BYGH114-J	1.8	114	8.5	4.2	0.85	7.4	3547	flat key 5*25	14	3.8
DPL-685/DPL-708A/DP-508/DP-508D	86BYGH150	1.8	150	12	4.2	1.1	12.8	5318	right angle flat	14	5.1
	86BYGH150-J	1.8	150	12	4.2	1.1	12.8	5318	flat key 5*25	14	5.1

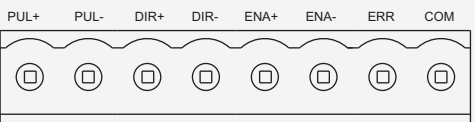
terminal arrangement

The terminals of control circuit

[DP-153]

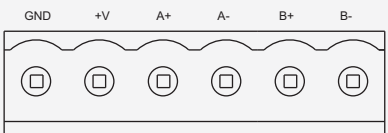


[DP-304/DP-308D/DP-504/DP-508/DP-508D/DP-7022]

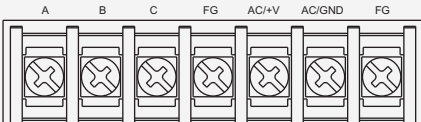


The terminals of main circuit

[DP-153/ DP-304/DP-308D/DP-504/DP-508/DP-508D/]

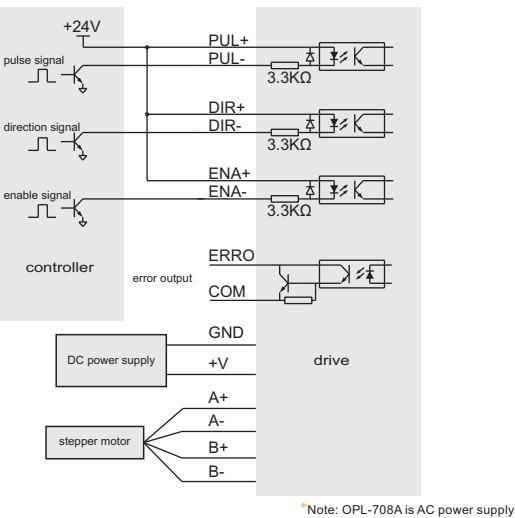


[DP-7022]

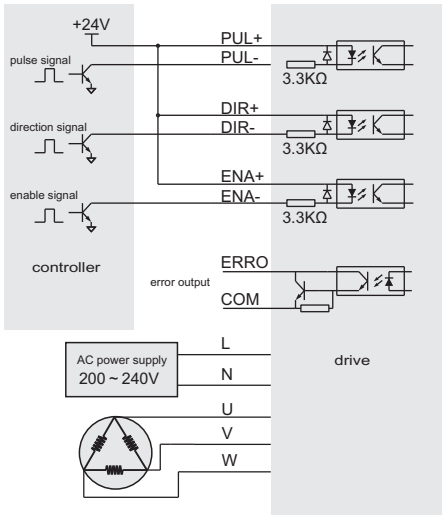


Typical wiring diagram

Two-phase stepper typical wiring diagram



Three-phase stepper typical wiring diagram



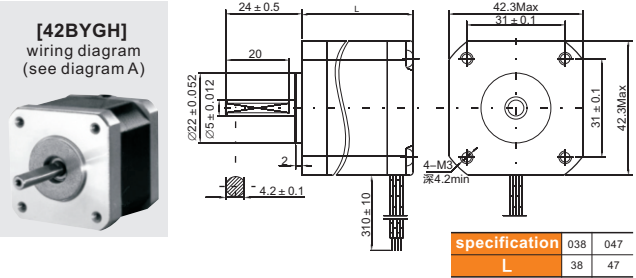
three-phase stepper motor models

Drive model	Motor model	Step angle (°)	Length L (mm)	Static torque (N.m)	Phase current (A)	Rotor inertia (g.cm ²)	Phase resistor (Ω)	Phase inductance (mH)	Shaft diameter (mm)	Shaft body	Weight (kg)
DP-7022	86BYGH3125H	1.2	125	6	5.8	3480	0.9	2.17	12	flat key4*20	4
	86BYGH3125H-1	1.2	125	6	5.8	3480	0.9	2.17	12	flat key5*25	4
	110BYGH3128	1.2	128.5	8	4.3	6000	1.25	4.49	19	flat key6*30	5
	110BYGH3153	1.2	153	12	6	9720	1.89	8.34	19	flat key6*30	6.6
	110BYGH3186	1.2	186.5	16	6.4	13560	1.89	8.73	19	flat key6*30	9
	110BYGH3221	1.2	221	20	6.9	17400	1.859	7.26	19	flat key6*30	11.1
	130BYGH3162	1.2	162	15	6.9	20000	0.88	3.7	24	flat key8*30	11
	130BYGH3191	1.2	191	20	6.9	26700	1.1	4.9	24	flat key8*30	14.1
	130BYGH3223	1.2	223	28	6.9	33970	2.8	17.9	24	flat key8*30	17.2
	130BYGH3255	1.2	255	35	6.9	41240	3.3	21.52	24	flat key8*30	19.8
	130BYGH3319	1.2	319	50	6.9	55780	4.2	28.9	24	flat key8*30	26

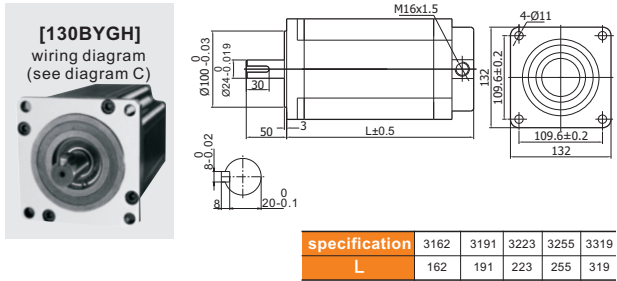
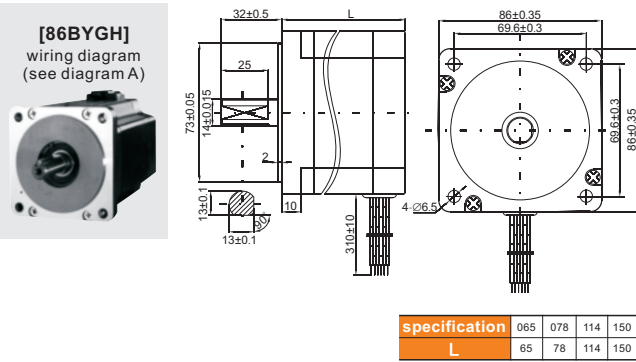
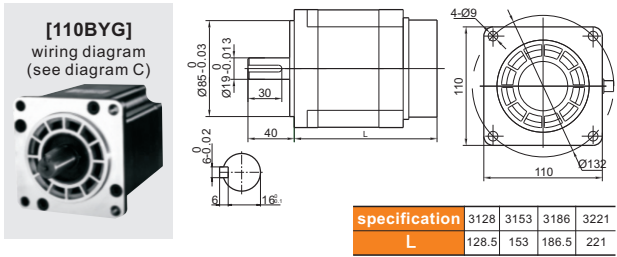
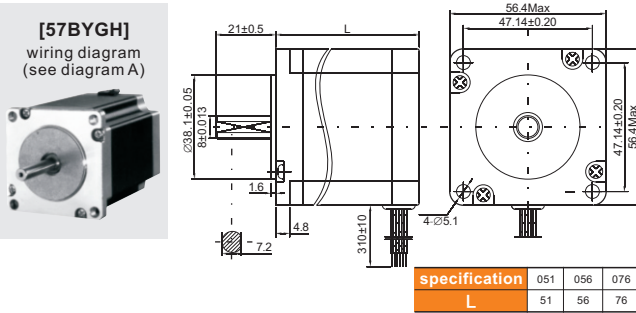
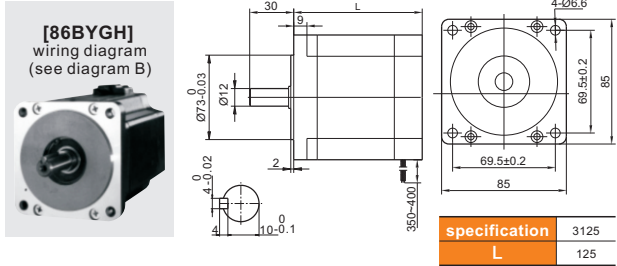
Motor dimension drawing (unit: mm)

Motor dimension

Two-phase motor



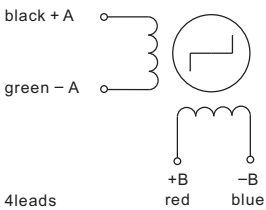
Three-phase motor



Wiring diagram

Two-phase motor wiring diagram

diagram A



Three-phase motor wiring diagram

diagram B

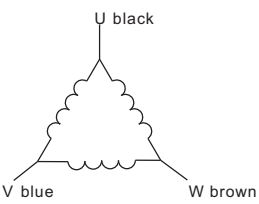
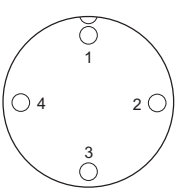


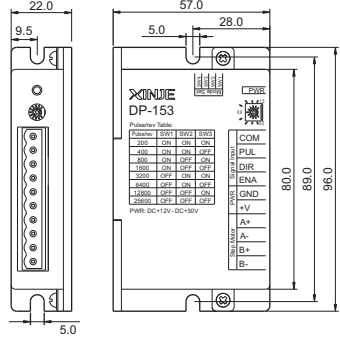
diagram C



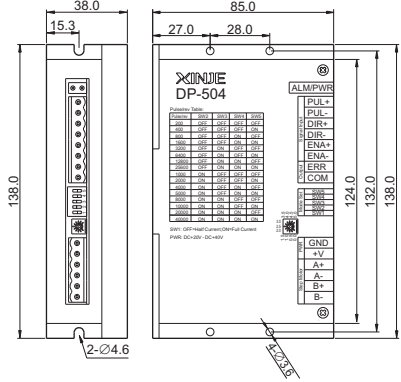
number	1	2	3	4	
phase order	U	V	W	GND	4 cores

Stepper drive installation dimension (unit: mm)

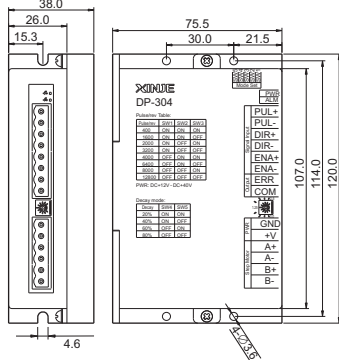
DP-153



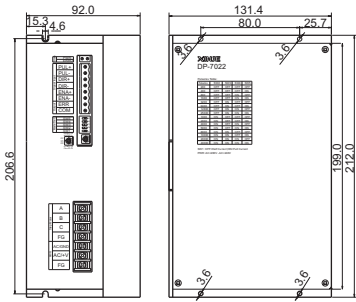
DP-504/DP-508 /DP-508D



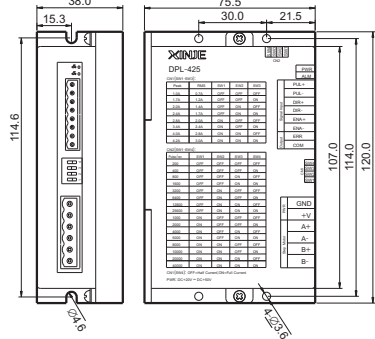
DP-304/ DP-308D



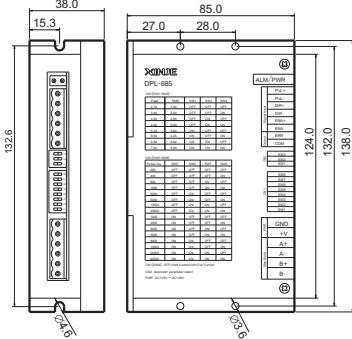
DP-7022



DPL-425



DPL-685



DPL-708A

