Instruction list

Application instruction

Type	Instruction	Function
Process	CJ	Condition jump
	CALL	Call the subprogram
	SRET	Subprogram return
	STL	Process start
	STLE	Process end
	SET	Open assigned process, close current process
	ST	Open assigned process, not close current 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 zone comparison
	MOV	Data transmission
	BMOV	Data block transmission
	FMOV	Multi-point repeat transmission
	EMOV	Float transmission
	FWRT	Write into FlashROM
	MSET	Multi-set on
	ZRST	Multi-reset
	SWAP	Exchange the high byte and low byte
	XCH	Exchange two values
Data calculation	ADD	Addition
	SUB	Subtraction
	MUL	Multiplication
	DIV	Division
	INC	Plus one
	DEC	Minus one
	MEAN	Get the mean value
	WAND	Logic and
	WOR	Logic or
	WXOR	Logic xor
	CML	Negate
	NEG	Negative
Data shift	SHL	Arithmetic shift left
	SHR	Arithmetic shift right
	LSL	Logic shift left
	LSR	Logic shift right
	ROL	Rotate left
	ROR	Rotate right
	SFTL	Bit shift left
	SFTR	Bit shift right
	WSFL	Word shift left
	WSFR	Word shift right
Data conversion	WTD	Word convert to double word
	FLT	16-bit integer convert to float
	FLTD	64-bit integer convert to float
	INT	Float convert to integer
	BIN	BCD convert to binary
	BCD	Binary convert to BCD
	ASCI	Hex convert to ASCII
	HEX	ASCII convert to hex
	DECO	Decoding
	ENCO	High-bit encoding
	ENCOL	Low-bit encoding
	GRY	Binary convert to gray code
	GBIN	Gray code convert to binary
Float calculation	ECMP	Float comparison
	EZCP	Float zone comparison
	EADD	Float addition
	ESUB	Float subtraction
	EMUL	Float multiplication
	EDIV	Float division
	ESQR	Float square
	SIN	Float sine
	COS	Float cosine
	TAN	Float tangent
	ASIN	Float arcsine
	ACOS	Float arccosine
	ATAN	Float arctangent
Clock	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 pulse
ANDF	Serial connection falling-edge of pulse
ORP	Parallel connection rising-edge of pulse
ORF	Parallel connection falling-edge of 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	Negate the coil
PLS	ON for one scanning period at rising-edge of pulse
PLF	ON for one scanning period at falling-edge of pulse
SET	Keep the coil ON
RST	Clear the coil-ON state
TMR	Timer drive
OUT	Counter drive
RST	Reset the contactor, clear the current value
END	Operate output/input and return to step 0
GROUP	Block folding start
GROUPE	Block folding end

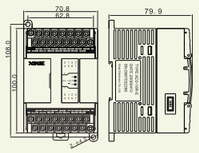
Special instruction

Type	Instruction	Function
Pulse output	PLSR	Multi-segment pulse output
	PLSF	Variable frequency pulse output
	ZRN	Return to the origin
	PLSMV	Refresh the pulse quantity in the register
	STOP	Stop the pulse
High speed count	DMOV	read 32-bit high speed counter
	DMOV	Write 32-bit high speed counter
	CNT(_AB)	100-segment high speed count interruption
	CNT(_AB)	Electronic gear ratio
	RST	High speed count reset
Modbus communication	COLR	Modbus read coil
	INPR	Modbus read input coil
	COLW	Modbus write single coil
	MCLW	Modbus write multi coil
	REGR	Modbus read register
	INRR	Modbus read input register
	REGW	Modbus write single register
	MRGW	Modbus write multi register
Free format Communication*1	SEND	Free format send data
	RCV	Free format receive data
CANBUS Communication*2	CCOLR	CANBUS read coil
	CCOLW	CANBUS write coil
	CREGR	CANBUS read register
	CREGW	CANBUS write register
	CSEND	CAN send
	CRECV	CAN receive
Precise timing	STR	Precise timing
	DMOV	Read precise timing register
	STOP	Stop precise timing
Interruption	EI	Enable the interruption
	DI	Disable the interruption
	IRET	Interruption return
Sequence block	SBLOCK	Block start
	SBLOCKE	Block end
	BSTOP	Stop the block
	BGOON	Continue running the stop block
	WAIT	Wait
Read& write module	FROM	Read the module
	TO	Write the module
Others	FRQM	Frequency measurement
	PWM	Pulse width modulation
	PID	PID control
	NAME_C	C block

*1: XD3 PLC not support this function ,XD5 and XDCM support!
*2: XD3 ,XD5,XDM series PLC not support the function!

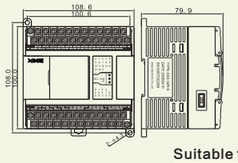
Dimension

XD series dimension of basic unit (unit :mm)



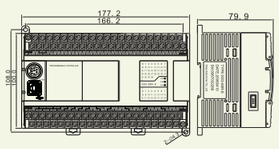
Suitable type

Series	Points
XD 3 series	16



Suitable type

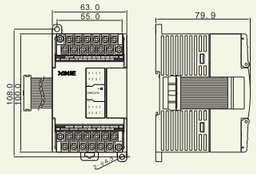
Series	Points
XD 3 series	24/32
XDM series	24/32



Suitable type

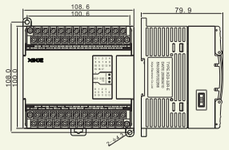
Series	Points
XD 3 series	48/60
XDM series	60

XD 3 series dimension of expansion module (unit :mm)



Suitable type

Module type	Type
I/O	8X/8Y/8X8Y/16X/16Y
Analog	all
Temperature	all
Pressure	all



Suitable type

Series	Points
XD series	16X16Y/32X/32Y

XINJE

Xinje Electronic Co.,Ltd

4 th Floor Building7 , Originality Park, 100 Dicui Road, Wuxi City , Jiangsu Province, China
Tel: 0510 – 85134136 / 85134174 / 85134228
Fax: 0510 – 85111290
Email: sales@xinje.com
Http//: www.xinje.com

XINJE

More stable performance
meet more demands 2014.8

XD series programmable controller

XD series PLC basic units

XD 3 standard type XD5 enhanced type
XDM motion control type XDC enhanced communication type

XD 3 standard type

Control point :16 point/14C point(pending) /24 point/32 point/ 32C point(pending)/48 point/58C point (pending)/60 point (pending)

XD3 have complete functions ,contain USB port ,apart from common data process function,and high speed count,high speed pulse output ,communication(Modbus,X-NET and CANBUS (some types with C),PWM pulse width modulation ,frequency measurement,precise timing,interruption functions,have faster process speed (10 times than XC speed),can extend 10 expansion modules ,1 BD board and 1ED module,meet kinds of demand .

XDM motion control type

Control points :24 points/32 points/60 points

Support basic motion control instruction ,can realize two axes linkage,interpolation,roll cut,coordinate transfer,can realize 4-10axes pulse output,and support PLC.Most functions,such as high speed count,interruption,PID control,have faster process speed(12 times than XC speed),with serial port ,1 USB download port,all types can extend 16 expansion modules,2 BD boards and 3 ED modules.

XD 5 enhanced type(pending)

Control point :16 point/14Cpoint/24 point/32 point / 32C point/48 point/60 point/60C point

Apart of have XD3 all functions ,XD5 has faster process speed,(10 times than XC speed),bigger internal resource space ,with serial port ,1 USB download port ,all types can extend 16 expansion modules,2 BD boards and 3 ED modules.

XD series products overview

Special function expansion BD board

XD-OFC-BD
Use for optical fiber communication ,with fast speed ,strong anti-interference,long communication length that betterthan Modbus

XD-RS485-BD
To extend communication port ,can extend one RS485 communication port

XD-CLOCK-BD (pending)
High precise clock timing function,use for high precision clock function place

Special function ED module

XD-2AD2DA-ED (pending)
2 -channel analog input , 2 -channel analog output

XD-4AD-ED
4-channel analog input

XD-2AD2PT-P-ED (pending)
2-channel high precise analog input ,2-channel PT100 temperature input,add PID tune function

W-BOX (pending)
Wireless connetion via wifi,can realize PC ,mobile phone and XD series PLC wireless connection

P-BOX (pending)
Via connect to P-BOX, XD series PLC can realize Profibus net communication(only can be slave station)

T-BOX (pending)
Via net cable connection,can realize XD series PLC ,PC etc.LAN and WLAN connection

S-BOX (pending)
Enhanced version of XC series Z-BOX ,suitble for XD PLC,farther communication distance ,stronger penetrating power ,more stable to run

G-BOX (pending)
Via GPRS wireless net can realize GPRS ,phone message communication between moblie phone ,PC and XD PLC

Expansion module Module FPC length can up to 1m

I/O expansion

When CPU I/O points can not meet the demand , can use I/O expansion module

Input expansion module	Output expansion module	I/O expansion module
XD-E16X XD-E32X	XD-E8YR XD-E8YT XD-E16YR XD-E16YT XD-E32YR XD-E32YT	XD-E8X8YR XD-E8X8YT XD-E16X16YR XD-E16X16YT

Analog expansion

Can covert signal to D/A or S/D , and can receive ,process temperature transmitter etc. Signal

AD type	DA type	Mixed type
XD-E4AD XD-E8AD	XD-E2DA XD-E4DA	XD-E4AD2DA

MA series expansion module

Based on standard MODBUS protocol , most can support 16 modules

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

Temperature Control

Pt100 thermal resistance temperature measure type,
K/E Thermocouple temperature measure type,
can build-in PID control

PT 100	Thermocouple type	Analog temperature mixed type
XD-E6PT-P	XD-E6TC-P	XD-E3AD4PT2DA XD-E2AD2PT2DA

External devices

HMI


TG/TH/TP TOUCH PANEL


MP TOUCH PANEL


OP OPERATE PANEL

CONNECTION


Programming cable


Communication cable


COM-USB
(USB to serial port convert)


COM-BLUETOOTH
(Bluetooth module,to realize wireless connection)


USB cable

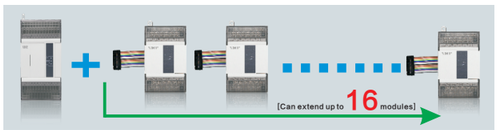
Product performance

High speed calculation

Basic instruction 0.02-0.05 us ,scanning time 10,000 steps 0.5 ms ,program capacity 96k-512K .

Rich expansions

For more application needs,XD series PLC can extend I/O module ,analog I/O module .temperature control module ,BD board and expansion card ,PLC most can extend different 10-16 modules ,1-2 BD board ,1-3 ED modules .



I/O expansion module

- Used for extend input , output points ,8-32 points ,the basic unit can extend up to 572 points .
- Output expansion module contains transistor(T) and relay(R)output .

Special function ED module

- Small size , super thin thickness ,can install on lest side of PLC ,can realize analog ,temperature controland communication functions at the same time.

Special function expansion BD board

- The small size BD board can install on the PLC ,will not occupy extra space, has communication and analog dunctions

Analog and temperature expansion module

- Has D/A ,A/D conversion function ,can be applied in process control system such as temperature ,flow ,liquid level,pressure,etc. via expansion analog I/O module ,temperature control module ,XD series. .PLC
- Add PID tune function ,four parameters setting .wide range of applications , high control accuracy .
- Each channel of XD-E6TCA-P,XD-E2AD2PT2DA can do PID control and auto- tune individually,exchange data with PLC by instruction FROM and TO.

Expansion of soft component capacity XD 3 series

- Internal registers (M【8000】/HM【960】/SM【2048】)
- Data registers (D【8000】/HD【1000】/SD【2048】/HSD【500】)
- FlashROM registers (FD【6144】/SFD【2000】)

Soft component segmenting

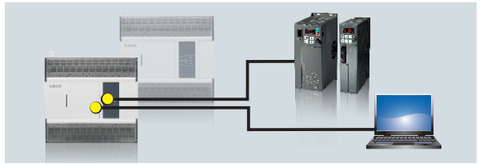
- Segmenting all the soft components , make the ladder diagram more intuitive.
- Common soft component , PW cut memory and special soft component in different written form to distinguish.
- High speed count of single-phase ,AB phase via soft component written form to distinguish.

Expansion module exchange data with CPU in higher speed

- Expansion module exchange data with CPU ,change from parallel port communication in XC series to SPI serial port communication in XD series , so the data exchange speed faster than XC series.

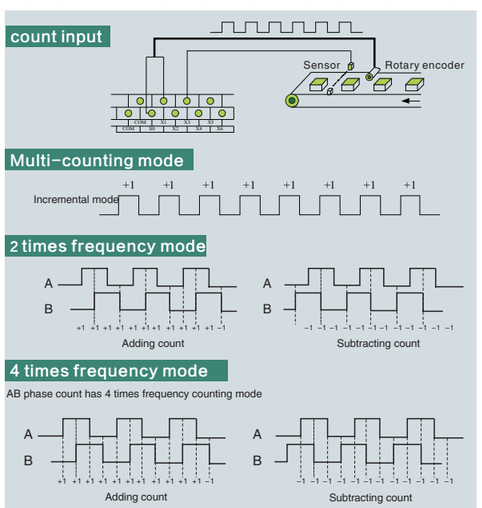
Communication function

- Multi-communication ports (up to 7),support RS232,RS485,CANBUS , USB ,can connect to inverter ,peripheral instrument lamp,can build communication network freely



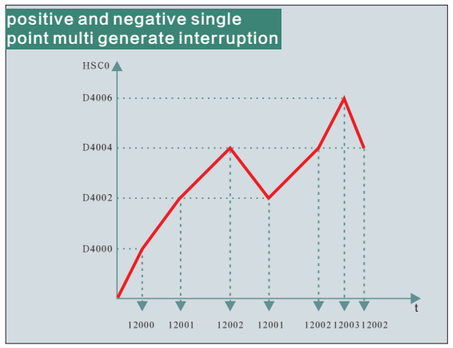
High speed count

- XD series has 2-4 channel,2-phase high speed counter and high speed count comparator,the highest frequency can up to 50K,enable to connect with rotary encoder directly,count the encoder input signal
- Use different counters to realize single-phase (incremental mode,the highest frequency can up to 80K),AB phase mode counting ,(2 times frequency and 4 times frequency ,the highest frequency can up to 50KHz)



Electronic CAM function

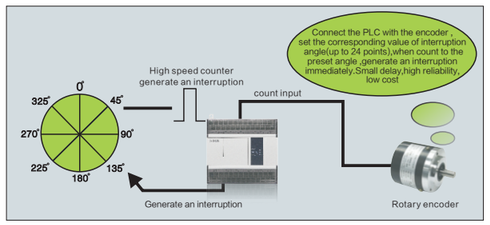
◆Not only can totally realize common electronic CAM interruption function of order cycle ,but also can realize positive and negative single point multi generate interruption function in single circle .



100–segment high speed count interruption

◆High speed pulse count interruption has real–time advantage

◆The XD series high speed counter has 100–segment 32–bit preset value , the interruption is produced when the count difference value is equal to the preset value

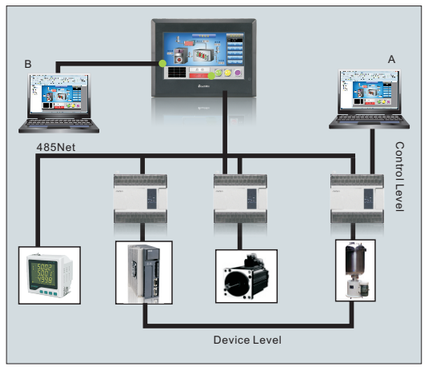


Powerful communication and networking functions

XD series PLC provide COM port,can meet mostly communication and net needs ,notonlt support MODBUS protocol ,CANBUS BUS ,but also support other complex network, user also can program free format protocol , communicate with printer and instrument .

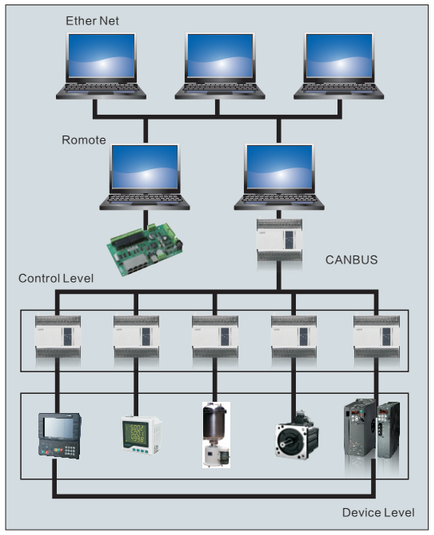
»Modbus networking

XD series PLC support MODBUS(RTU and ASCII) master-slave mode protocol ,PLC master can send requires to other devices , receive response of other devices ;PLC slave only can response master's requires .Generally , PLCs are in MODBUS slave mode .



»CANBUS networking pending

CANBUS controller works in multi-master mode .Each node can send data to the bus according to the bus access priority .CANBUS has outstanding reliability,real-time and flexibility .CANBUS network includes instruction communication mode and internal protocol communication mode.



»Filedbus X–NET

Network mode

Monitor the workshop network , a token structure , real-time multi masters network , a multi master station system , can realize multi control , config or visualization system can operate each other in a bus , any node in net has access right(token) , no need external request then can send and receive the data.

Communicate rate and distance

Site temperature decides the communication speed and communicate medium of fieldbus , cause fieldbus transfer data via electronic signal ,and there are some request for communication distance of fieldbus ,in rate of 3Mbps,use Xinje special cable,can reach up to 200m.if in rate of 192Kbps,can reach up to. 1000m,communication can reach 600bit-3Mbit.

Multi Communication stations

In a X-NET fieldbus system ,most can reach up to 200 nodes.

Reduce cost of installation

It is very simple for fieldbus system connection ,cause a twisted-pair cable or a cable can hang multi equipments commonly ,so reduce the number of cable ,terminal ,tray use , connection design and joint calibration work also reduce much ,save the installation fee and maintenance ,support linear and annulus topological structure :simple system structure , reduce project design ,drawing number ,the project time of laying cable and firmware manage files.

Cable selection

In the process of transmission will be affected by the electromagnetism environment ,Xinje special cable use shield double wired conductor can realize the specified rate and distancewhen use cable correctly .

Isolation

Electronic signal and internal of equipment are electronic isolated in FieldbusX-NET . Fieldbus cable cover everywhere of workshop,once high voltage in ,will lead whole network and all equipments bus transceivers damage .If do not isolate ,high voltage will continue damage other circuit inside of equipments, lead serious result .

Shield

The shield cable outer must connect to ground well of fieldbus X-NET ,if the high-frequency interference serious,can adopt multi-point capacitance connect to ground ,not allow connect to ground directly,avoid having ground loop current ,shield double wired conductor ,can cancle the shield ,depend on environment condition ,but if the system running in high electromagnetism emission environment(automobile industry)should use shield cable , shield can increase the compatibility of electromagnetism. If use shield braided wire and shield foil ,should connect in the both ends and protection grounding ,and try best to cover by using big area shield connection to keep good conductivity In other hand suggest data cable must isolated with high tension line .

Terminal configuration

Fieldbus X-NET signal is the same with all electromagnetic wave signal have reflection phenomenon ,each network segment both ends of bus should configurate 120 Ω resistances , the first can absorb the radiation ,the second one can realize the exact electrical level of bus both ends ,make sure the communication.

The connector

Use PLC terminals to connect(A,B terminal),BD board XD-RS485-BD and XD-DFC-BD ,make the connection more convenient and faster,improve the work efficiency effectively ,and is convenient to maintenance.

Intelligent and autonomy

Fieldbus X-NET can process kinds of parameters ,run status information and error information , has higher intelligence ,only via site equipment can finish basic function of auto-control ,and can diagnosis the running status of equipment at any time,improve whole system"s reliability,cause site control equipments all have self-diagnosis function in common ,and can send the error information to control room ,reduce the maintenance ,work ,users can inquire all equipments , running ,diagnosis maintenance information to find the error cause reason and rule out quickly ,reduce the time of maintenance stop working,at last can increase profits.

Increase the accuracy and reliability

Because of the intelligence and digitization ,compare with analog signal ,it increase the accuracy of measure and control fundamentally ,reduce the transmission error.

Strong system expansion

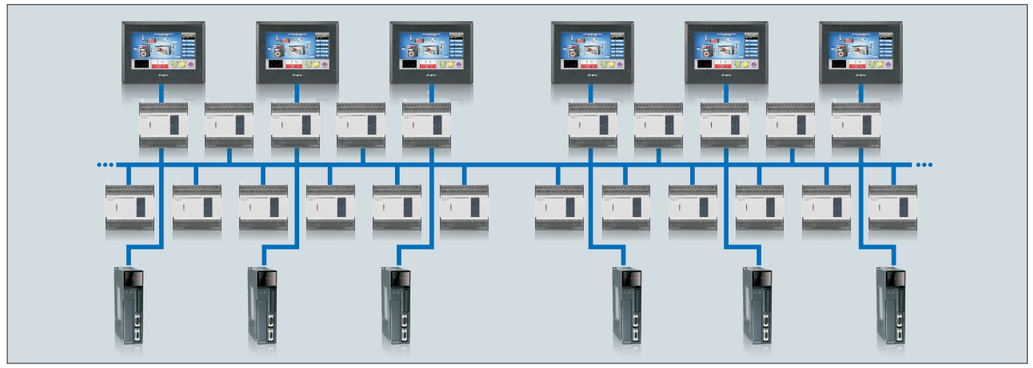
The bus can auto identify increase and reduce of equipment ,no need to erect new cable ,and no need to power off the system.

Outstanding cost performance

Nowadays industrial control industry ,any occasion come down to fieldbus control , need to spend a lot of money in it ,but X-NET do not need to cost extra money ,Xinje configurate it in all products ontology ,when need use this function ,customer can use directly ,make it up to high cost performance that never has ,will not be limited by brand.

System openness

Add the fieldbus X-NET to XD series PLC ,and will add into TG series HMI,DS5 series driver and frequency inverter ,can meet diverse demands in most occasion of customer;Xinje will focus on cooperate with other instrument manufacturers ,make equipments of different manufacturers can connect each other and exchange information ,will have more and more supporting products.



MODBUS instruction process optimize

In main programme can write multi Modbus communication instructions together , via same trigger condition can trigger to them,PLC will do line up process of Modbus communication request to these communication instructions according to protocol station ,will not because of Modbus half–duplex features and lead multi instructions perform at the same time appear communication error.

More powerful pulse instruction function

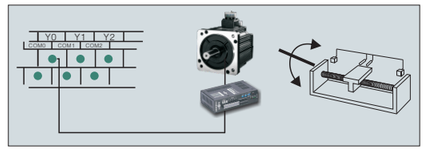
XD series PLC abandon the disadvantages of XC series pulse instruction function is single and the instruction number is too much ,gather the PLSR, PTO etc.multi pulse instructions function in Xd series ,make the pulse function more simple and powerful

Up to 200 KHz Pulse output max support 10–channel

XD3/XD5 series have 2–channel pulse output . XDM series ,have 3/4/10 channel pulse output .Support multi–mode output with.

◆Use PLC with transistor to support pulse output ,such as XD3-16T-E or XD3-60RT-E

◆Pulse output points(Y0,Y1,Y2.....Y11)



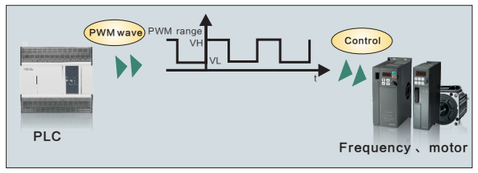
PWM pulse width modulation

◆Realize pulse width modulation via PWM instruction

◆Segmentation accuracy is 128 times than XC series ,up to 1/32768

◆Output frequency higher than XC series ,up to 200KHz

◆Control the inverter and DC motor by this function



Interruption function

XD series PLC has interruption function which includes external interruption, timing interruption ,100 segment high speed count interruption .Calling interruption can realize special operations without PLCscanning period influence.

»External interruption

◆Use X terminals as input external interruption ,each X input is an interruption which is activated at falling or rising edge

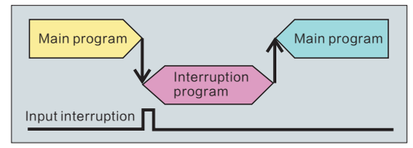
◆XD series PLC external interruption terminal is much more than XC series

◆XD series PLC falling and rising edge of external interruption can use at the same time

»Timing interruption

◆Need process appointed program if the main program period is too long ;run appointed program at set intervals ,It is not affected by PLC scanning period ,run the interruption sub-program every Nms

◆XD has 20 channel timing interruption at least ,is 2 times than XC



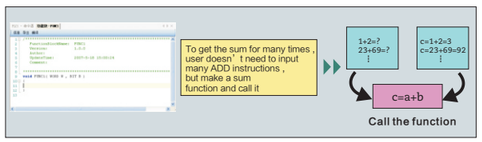
Support C program block the pioneer in this field

◆Better program privacy :call the C block after making the C program ,the internal program is invisible

◆Support rich operational functions ； include all the C–supported functions

◆XD support local variable and global variable

◆Save internal space ,reduce the workload,programme is more efficient

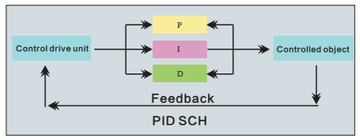


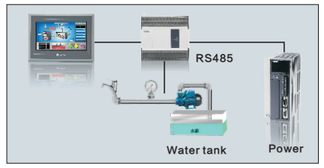
PID control

◆XD series PLC support PID control instruction and auto-tune function. More flexible to use

◆Users 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 ,use in more occasion





Sequence BLOCK

◆In sequence BLOCK,all the instructions run one by one .The next instruction will run after the current instruction ends

◆The block can optimize the ladder

Precise timing

◆32-bit instruction STR can make precise timing

◆The precise timer will generate an interruption flag when it reaches timer value,each precise timer has related interruption flag

◆The precise timer is a 1 ms 32-bit timer

Frequency measurement

◆32-bit instruction FRQM can measure the frequency

Self-diagnosis

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

Real-time clock

◆XD series PLC clock all standard configure

◆Built-in clock ,Li-battery power-down memory

◆XD-CLOCK-BD apply in high precise clock occasion

◆New clock protect function ,when secret download program can choose advanced mode ,can not change PLC clock via communication

Password protection

◆6-bit ASCII ,protect the program security

◆Add FS soft element ,can protect intellectual property of custom

Small size,easy to install

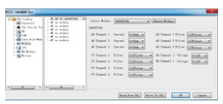
◆Compact structure,improve the utilization,two installation modes

◆XD series can change the Li-battery without taking apart of PLC

XDPPro edit tool

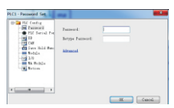
Support all XD series of PLC products

XDPPro is suitable for XD series PLC , can make PLC program ,configure network module ,expansion module , expansion BD board and expansion card



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

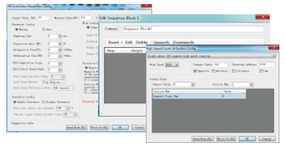


◆Add C block program and program note ,set password protection to them

Panel configuration

»Reduce the difficulty of making complicated instructions

◆XDPPro provides easy editing environment for complicated instructions such as PID,100-segment high speed count interruption ,and electronic gear ratio etc.parameters



»Optimize the configuration of pulse instruction

◆XDPPro add PLSR pulse instruction configure screen ,this function parameters can set via panel

Powerful ability of program editing

◆Edit by ladder chart or instructions, the two modes can be swithed

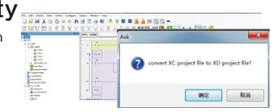
◆Support C block in XDPPro ,no need C software

◆Export/import the function block ,support two modes,source code and passive code . If export thepassive code ,the program cannot be read,the privacy is better

◆Add C instruction library, can ne called directly

Strong compatibility

◆XC1,XC2,XC3 series PLC program almost can convert into XD3 program via XDPPro software



XDPPro USB communication

◆Fast communication speed

◆XDPPro program software no need to configure when connect to PLC

Download the program online

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

Calculate the program size

◆The programmer can command the program capacity accurately

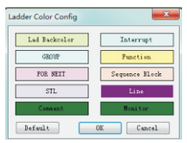
Better system compatibility

◆Compatible with different OS :Windows2000,WindowsXP,Windows7

◆Support 64-bit operation system

XDPPro color edit

◆User can edit the background color as self like



Useful simple functions

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

◆Download and upload the Ladder node comment

Product specifications of XD series

Specifications of basic unit

»General specifications

Item	Specifications
Insulation voltage	Above DC500V 2MΩ
Noise immunity	Noise voltage 1000Vp-p 1us pulse 1 minute
Air	No corrosive,flammable
Ambient temperature	0℃~60℃
Ambient humidity	5%RH~95RH%(no condensation)
COM1	RS-232,connect with PC,HMI to program and debug
COM2	RS-232/RS-485,connect with inverters
Installation	Fix with M3screw or install on the rail directly※2
Ground	Third ground (cannot ground with strong power system)※3

»Specifications

Item		Specifications				
Program running mode		Cyclic scan				
Programming mode		Instruction,lader chart				
Operation speed		0.05 us				
Latched		FlashROM and Li-battery				
User program capacity ※1		128KB				
I/O points ※2	Total points	16	24	32	48	60
	Input points	8 X0~X7	14 X0~X15	18 X0~X21	28 X0~X33	36 X0~X43
	Output points	8 Y0~Y7	10 Y0~Y11	14 Y0~Y15	20 Y0~Y23	24 Y0~Y27
Internal coil(X) ※3		1048：X0~X2027				
Internal coil（Y）※4		1048：Y0~Y1037				
Internal coil（M、HM）		11008	M0~M7999【HM0~HM959】※5			
			Special ※6 SM0~SM2047			
Process（S）		1153	S0~S1023【HS0~HS128】			
Timer（T）	Points	640	T0~T575【HT0~HT95】			
	Spec	100ms：0.1~3276.7s				
		10ms：0.01~327.67s				
		1ms：0.001~32.767s				
Counter（C）	Points	672	C0~C575【HC0~HC95】			
	Spec	16-bit Counter：Setting valueK0~32,767				
		32-bit Counter：Setting value-2147483648~2147483647				
Data register（D）		11048	D0~D7999【HD0~HD999】※5			
			Special ※6 SD0~SD2047			
FlashROM（FD）		8144	FD0~FD6143			
			Special ※6 SFD0~SFD1999			
High speed process function		high speed count ,pulse output ,external interruption				
Password protection		6-bit ASCII				
Self-diagnosis		Power-on self-test,monitoring timer ,grammar checking				

※1 User program capacity is the max program capacity when secret download.
※2 I/O points is the terminals of input and output signal.
※3 X,Internal Input relay ,the X beyond Input points can be used as middle relay.
※4 Y Internal Output relay ,the Y beyond Output can be used as middle relay.
※5【 】is power off retentive zone ,can not change.
※6 For special use ,,means the special registers occupied by the system , cannot used for other purposes .Please refer to Appendix 1.

Full range of products list

Analog expansion module

Type		Description
Analog input	XD-E4AD	4-channel analog input
	XD-E8AD	8-channel analog input
	XD-E4AD2DA	4-channel analog input ,2-channel analog output
	XD-E4AD2DA-B	4-channel analog input ,2-channel analog output (+ - voltage)
	XD-E4AD	4-channel analog output
Analog output	XD-E2DA	2-channel analog input
Temperature measurement	XD-E6PT-P	6-channel PT100 input
	XD-E6TCP	6-channel K thermocouple input
Pressure module	XD-E1WT	1-channel pressure sensor measurement
	XD-E2WT	2-channel pressure senor measurement

I/O expansion module

Type				I/O points	Input points（DC24V）	Output points（R,T）
	Input	Output				
		Relay out	Transistor output			
NPN	–	XD-E8X8YR	XD-E8X8YT	16	8	8
	XD-E16X	–	–	16	16	–
	XD-E32X	–	–	32	32	–
	–	XD-E16X16YR	XD-E16X16YT	32	16	16
PNP	–	XD-E8PX8YR	XD-E8PX8YT	16	8	8
	XD-E16PX	–	–	16	16	–
	XD-E32PX	–	–	32	32	–
	–	XD-E16PX16YR	XD-E16PX16YT	32	16	16
	–	XD-E8YR	XD-E8YT	8	–	8
	–	XD-E16YR	XD-E16YT	16	–	16
	–	XD-E32YR	XD-E32YT	32	–	32

Connection accessories type list

Type		Description
USB converter	COM-USB	Connect PC to PLC via USB port
Bluetooth	COM-BLUETOOTH	Short -distance wireless connection of PLC and PC
USB cable	–	Monitor upload and download program of PLC and PC

XD 3 series basic unit type list

Type							Input points（DC24V）	Output points（R，T）
	AC power			DC power				
	Relay out	Transistor output	Mixed transistor& relay output	Relay output	Transistor output	Mixed transistor& relay output		
NPN	XD3-16R-E	XD3-16T-E	XD3-16RT-E	XD3-16R-C	XD3-16T-C	XD3-16RT-C	8	8
	XD3-24R-E	XD3-24T-E	XD3-24RT-E	XD3-24R-C	XD3-24T-C	XD3-24RT-C	14	10
	XD3-32R-E	XD3-32T-E	XD3-32RT-E	XD3-32R-C	XD3-32T-C	XD3-32RT-C	18	14
	XD3-48R-E	XD3-48T-E	XD3-48RT-E	XD3-48R-C	XD3-48T-C	XD3-48RT-C	28	20
	XD3-60R-E	XD3-60T-E	XD3-60RT-E	XD3-60R-C	XD3-60T-C	XD3-60RT-C	36	24
PNP	XD3-16PR-E	XD3-16PT-E	XD3-16PRT-E	XD3-16PR-C	XD3-16PT-C	XD3-16PRT-C	8	8
	XD3-24PR-E	XD3-24PT-E	XD3-24PRT-E	XD3-24PR-C	XD3-24PT-C	XD3-24PRT-C	14	10
	XD3-32PR-E	XD3-32PT-E	XD3-32PRT-E	XD3-32PR-C	XD3-32PT-C	XD3-32PRT-C	18	14
	XD3-48PR-E	XD3-48PT-E	XD3-48PRT-E	XD3-48PR-C	XD3-48PT-C	XD3-48PRT-C	28	20
	XD3-60PR-E	XD3-60PT-E	XD3-60PRT-E	XD3-60PR-C	XD3-60PT-C	XD3-60PRT-C	36	24

XDM series basic unit type list

Type							Input points（DC24V）	Output points（R，T）
	AC power			DC power				
	Relay out	Transistor output	Mixed transistor& relay output	Relay output	Transistor output	Mixed transistor& relay output		
NPN		XDM-24T-E			XDM-24T-C		14	10
		XDM-32T-E			XDM-32T-C		18	14
		XDM-60T-E			XDM-60T-C		36	24
PNP		XDM-24PT-E			XDM-24PT-C		14	10
		XDM-32PT-E			XDM-32PT-C		18	14
		XDM-60PT-E			XDM-60PT-C		36	24