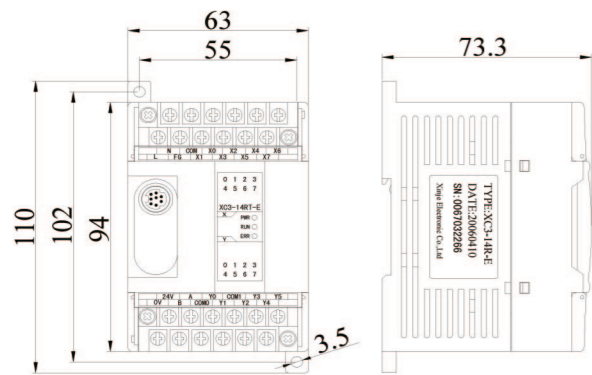
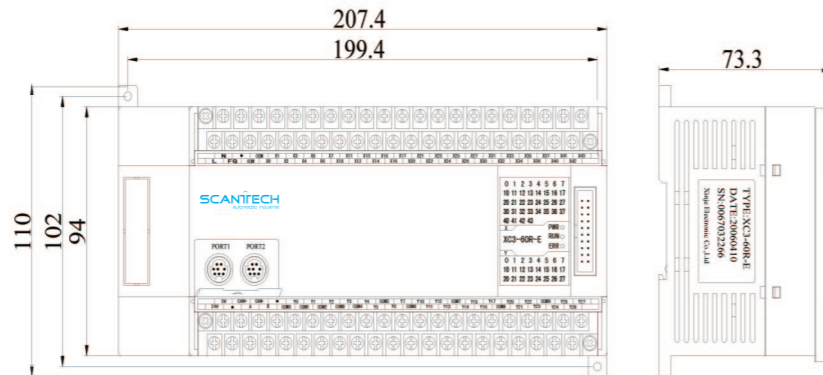


Appearance & Dimensions

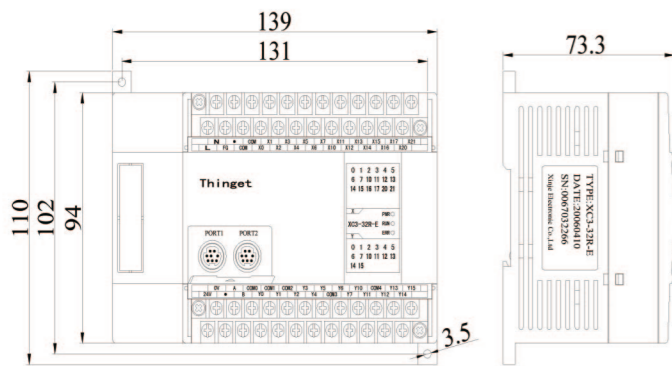
XC1 series 16I/O main unit
XC3 series 14I/O main unit(including 16I/O expansion)



XC1 series 32I/O main unit(including 24I/O main unit)
XC3 series 32I/O main unit(including 24I/O main unit, 32I/O expansion)
XC5 series 32I/O main unit



XC3 series 60I/O main unit (including 48I/O main unit)
XC5 series 60I/O main unit (including 48 I/O main unit)



Model	Dimension(mm)
14 I/O main unit	63*102*73.3
16 I/O main unit	
16 I/O expansion	
24 I/O main unit	139*102*73.3
32 I/O main unit	
32 I/O expansion	207*101.5*73.3
14 I/O main unit	
14 I/O main unit	

More models ,Stronger functions

SCANTECH
automação industrial



XC PROGRAMMABLE CONTROLLER
series small-sized plc

SCANTECH
automação industrial



XC series products summaries

XC basic units



XC1 series:8DI/8DO
XC3 series:8DI/6DO



XC1 series:12DI/12DO 16DI/16DO
XC3 series:14DI/10DO 18DI/14DO
XC5 series:18DI/14DO



XC3 series:28DI/20DO 36DI/24DO
XC5 series:28DI/20DO 36DI/24DO

More models
Stronger functions

Richer contrl plans More comprehensive product lineup
More flexible expansion function Satisfy user's diversification demands

Special function expansion BD board

No need to expand any module,only a dapper BD board,can also satisfy user's analog input/output,temperature control BD board

XC main unit temperature control BD board



XC-2AD2PT-BD



XC-2TC-P-BD

Temperature sampling BD board for integrated HMI+PLC



XP3-2AD2PT-BD



XP3-2TC-P-BD



XP3-2PT2AD1DA-BD



Special PLC

XC series integrated HMI+PLC



Integrate diplay,count, position solution in one
XP1-18R/RT
XP3-18R/RT
XMP3-18R/T/RT(Tangibly display area)

XC3-19AR-E main unit with special function



Logic control
Analog input/output
PID temperature control
Cost-effective,save much space

Expansion module

Input/Output expansion

When main units can't meet your requirement,we supply more I/O expansion module



XC-E16X



XC-E8X8YR



XC-E32YR

Input expansion	output expansion	Input /output expansion
XC-E16X XC-E32X	XC-E8YR, XC-E8YT XC-E16YR, XC-E16YT XC-E32YR	XC-E8X8YR, XC-E8X8YT XC-E16X16YR, XC-E16X16YT

Analog expansion

Can convert signal in A/D or D/A and incept,dispose temperature transmitter signal



XC-E4AD



XC-E4DA



XC-E4AD2DA

AD type	DA type	Mixture type
XC-E4AD XC-E8AD	XC-E2DA XC-E4DA	XC-E4AD2DA

Temperature control

PT100 temperature supplying type,K/E thermocouple temperature sampling type,can built-in PID control



XC-6PT-P



XC-6TC-P

PT100 type	Thermocouple type	Analog temperature mixture type
XC-6PT-P XC-8PT	XC-6PC-P XC-8PC	XC-E4AD4PT2DA

Note:-P representative of added PID control

CAN bus expansion



XC-EC8X8YR
8DI/8DO



XC-EC16X16YR
16DI/16DO

External device

HMI



TP touch screen



OP text display

Cable



Program cable



Communication cable

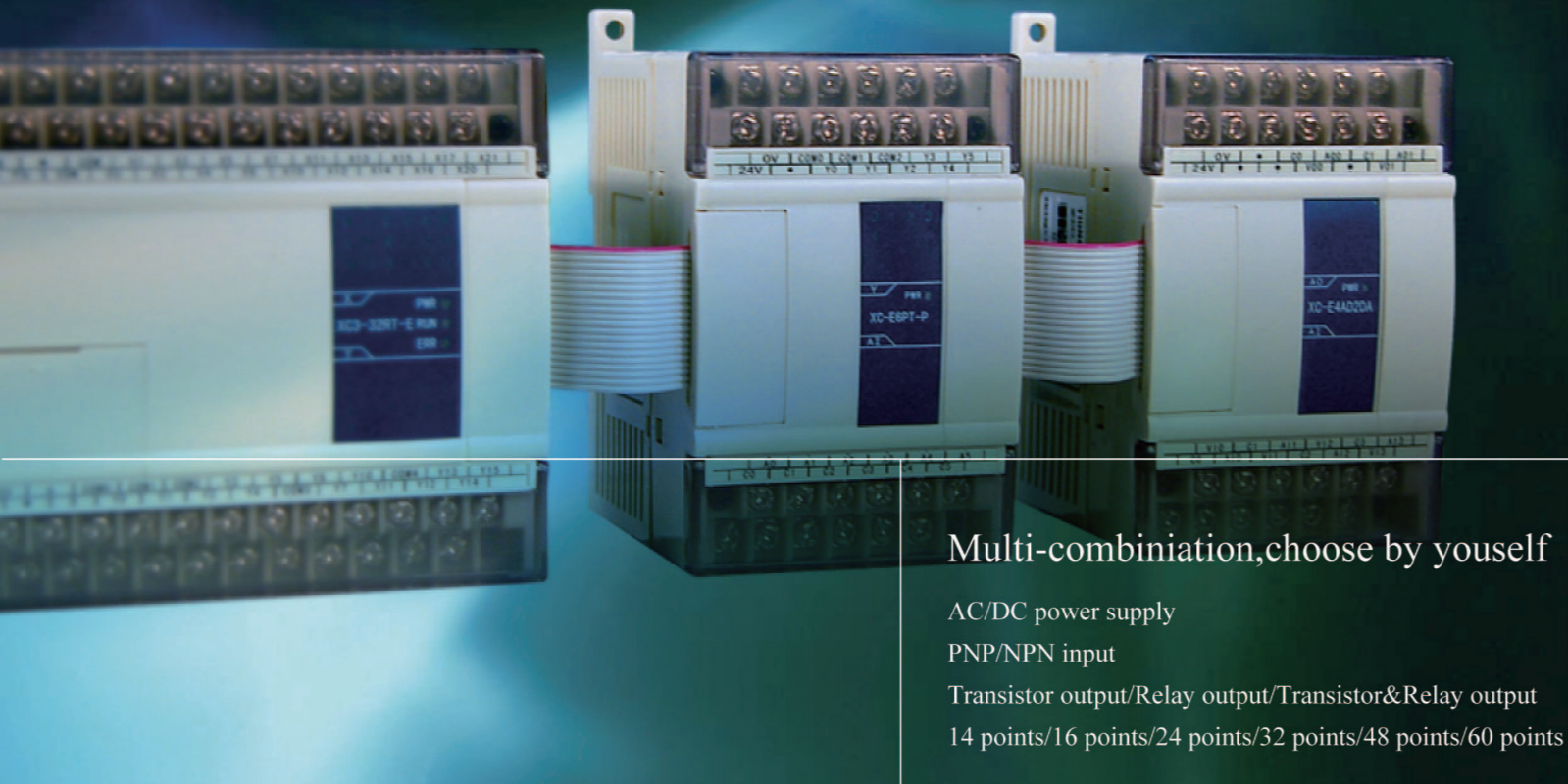
Datum



User CD



User manual



Multi-combination, choose by yourself

- AC/DC power supply
- PNP/NPN input
- Transistor output/Relay output/Transistor&Relay output
- 14 points/16 points/24 points/32 points/48 points/60 points



XC1 series(Economical Type)

Control points:16/24/32 points
Small points control system,used for common application,it can be used for logical control,data operation and some common functions,also,its main unit can be connected with special function BD board which can realize temperature sample,analog sample and PID control.



XC3 series(Standard Type)

Control points:14/32/48/60 points
The standard models of XC series with complete functions,also,that not only have common data operation function,but also have high-speed count, high-speed pulse output,communication,PWM pulse width modulation,frequency measure,precise timing,interrupt function,etc.So it can satisfy the requirements of most users.



XC5 series(Enlarge Type)

Control points:32/48/60 points
It's the most powerful sub-series.Besides all functions of XC3,it also support 4-axis pulse output, CAN Bus networking,etc.The internal resource space is larger than XC1 and XC3 series.

Full Basic Functions

High-speed count

Basic dispose instruction: 0.2~0.5uS,sacn time:5mS,program capability:30K

Small figure,convenient installation

- Compact structure,improved the spaceutilization.
- Fixed by screws of installed in guide rail diectly.

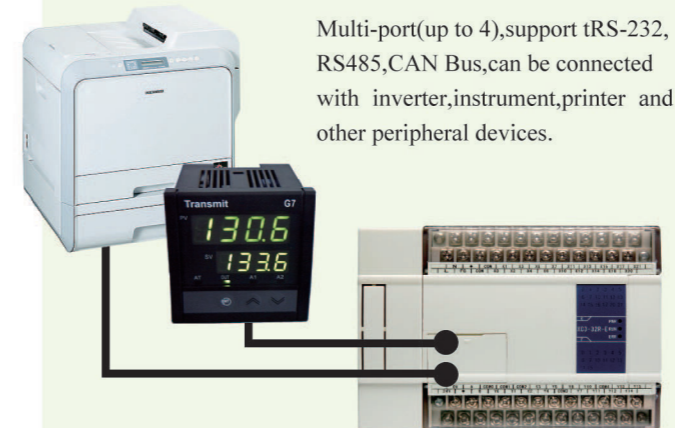


Abundant instructions

- 7 expansion modules and 1 BD module at most,the I/O points up to 284.
- The module speices is unlimited,user expand according to actual request,such as analog temperature,input/output digital .



Communication function



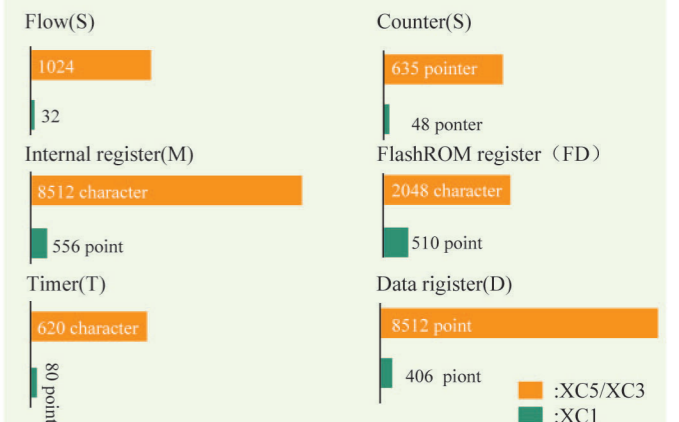
Convenient and widly edit tool

Program languages
Support two kinds of program languages:instructions and ladder chart.

step	instruction	软元件
0	LD	X 000
1	OR	Y 005
2	ANI	X 002
3	OUT	Y 005

- Abundant instructions**
- Basic instruction 24,application instruction 25,special function instruction 25
 - Support sequence control,data move and comparision,arithmetic logic control data circular movement,interrupt,special compara instruction for high-speed count high-speed pulse output and other high-speed operation instructions.

Expanded soft component capability



Other applied functions

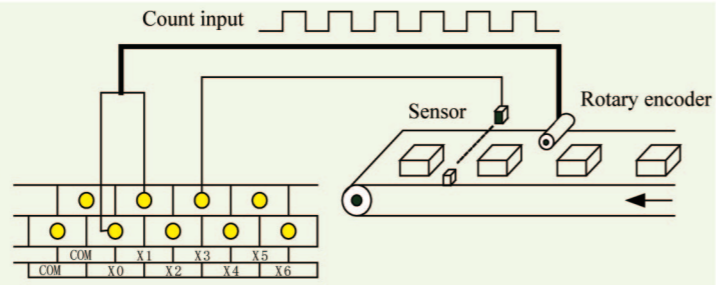
- Real-time clock
- Built-clock ,lithium batteries memory swap power-off memory
- Password protection
- 6 bits length ASCII,enhanced the security of program
- Self-diagnosis function
- power-on,self-check,timer monitor and program syntax check

Enhanced special functions

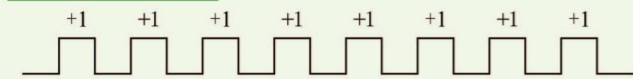


3-channel, 200KHz, 32bits high-speed count

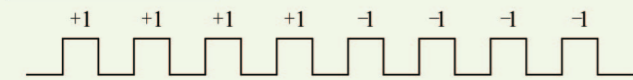
- XC series main units supply 3 channels, 2-phase high-speed counter and high-speed count comparator, which can be connected with rotary encoder directly and take count of input value from encoder
- you can select different counter to realize single-phase (increasing mode), pulse +direction input mode, AB phase count, the highest frequency can up to 80KHz
- Multi-count model can be chosen



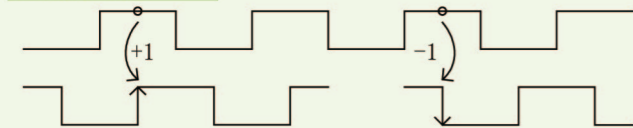
Increasing model



Pulse+direction model

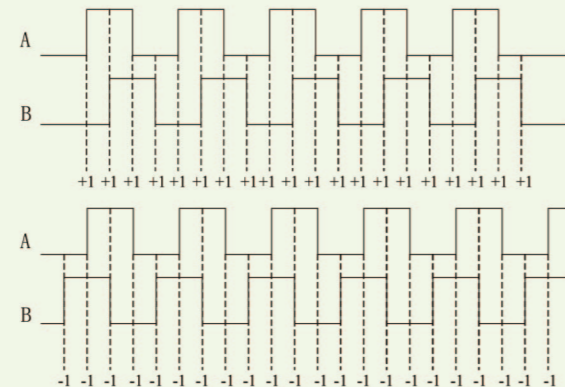


AB phase model



Four-time frequency mode

AB phases count with 4-time counter model also:

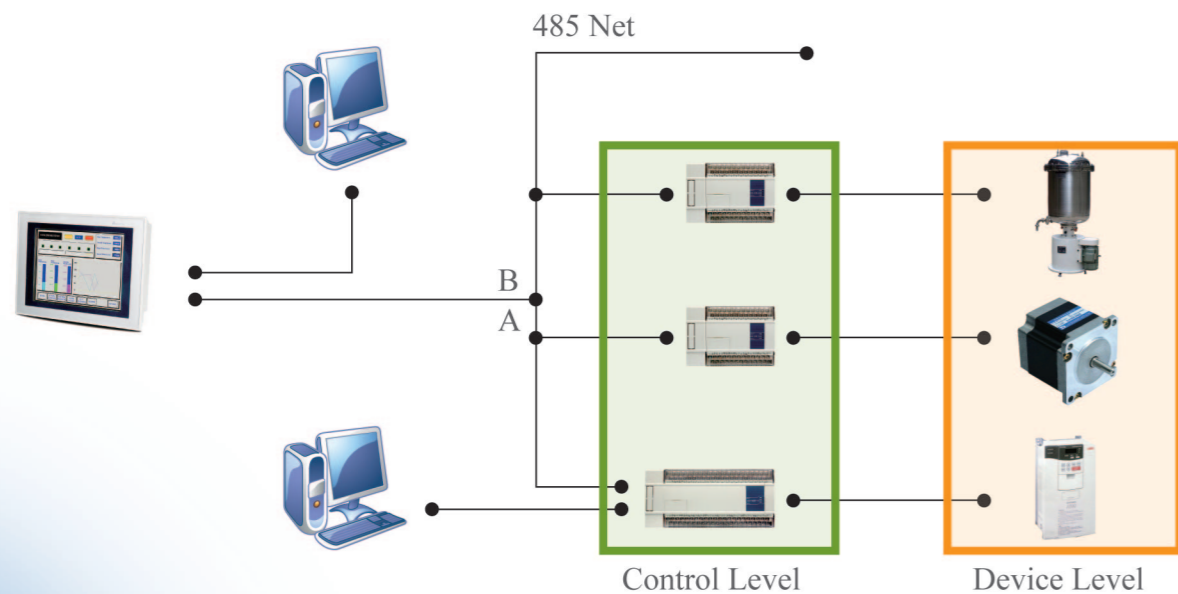


Poerful communication and networking function

XC series supply multi-communication ports to satisfy your requirements of communication and network. It supports not only Modbus protocol, free communication protocol to communicate with printer, instruments, etc. Besides, XC5 has CAN bus function also.

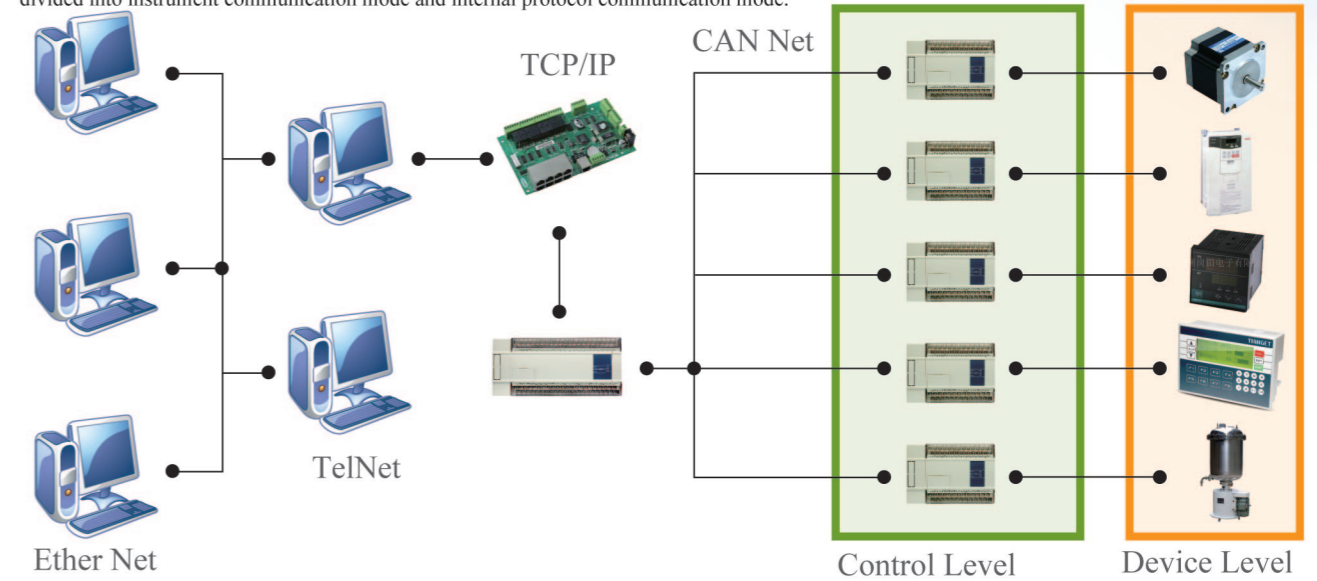
Modbus networking

XC series PLC main units supply Modbus protocol master-slave format when PLC is set as a master, it will send request to other slaves by modbus instruction and make other devices response when PLC is set as a slave, it can only respond to the master. Generally, XC is in the form of Modbus slave communication



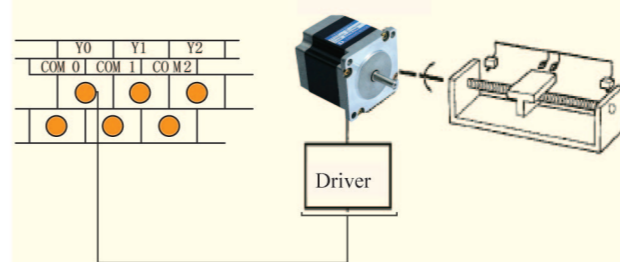
CAN bus networking

CAN controller works in the multi-master mode, each site in the networking can send data to bus according to its priority. The CAN bus data communication is excellent for its reliability, real time, and flexibility. The ways of CAN bus networking are divided into instrument communication mode and internal protocol communication mode.



The highest frequency of output pulse can up to 400KHz, supporting 4-channel at most

- XC3 and XC5 series have two pulse output by using different instruction program modes, it can realize multi-form output, the highest frequency can up to 400KHz.



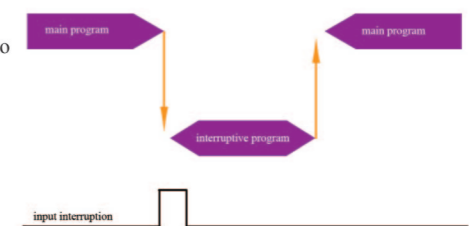
- When using pulse output, the PLC to use must have transistor output, such as XC3-14T-E, XC3-60RT-E, etc. XC5-32RT-E has 4 channels pulse output function (Y0, Y1, Y2, Y3).

Pulse output item	Wave output diagram				
Single direction pulse output without acceleration and deceleration					
Single direction pulse output with acceleration and deceleration.	<table border="1"> <tr> <td>single segment, single direction</td> <td></td> </tr> <tr> <td>Multi-segment, single direction</td> <td></td> </tr> </table>	single segment, single direction		Multi-segment, single direction	
single segment, single direction					
Multi-segment, single direction					
Two direction pulse output with acceleration and deceleration					
Pulse segment switch					

Interruption function

All XC series PLC have interruption function, which can be divided into external interruption and timing interruption. Some specific program can dispose via calling interruption, not affect of the user program scan cycle.

- External interruption**
Input terminal x can be used as interrupt input terminal, each terminal correspond to an external interruption rising edge or falling edge trigger.
- High-speed count interruption**
When count to set value, it will bring an interruption, see to P7
- Timing interruption**
When need to dispose a specific program at regular intervals in order scan, timing interruption is very applicable. It can dispose timing interrupting subprogram every Nms. Not affect of PLC scan style.



Special function of XC series

Support Compiling function block instructions by c, it's the pioneer in the field

Better program protection: After compiling the function block, user can invoke it directly in any needful place, while the internal program is hidden.

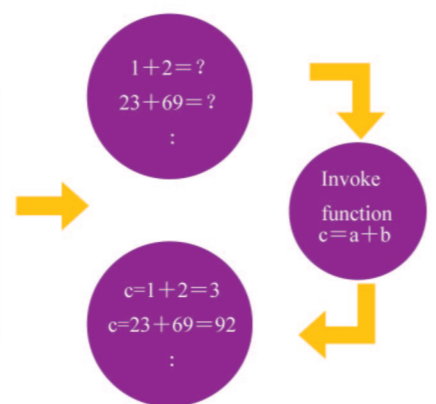
Support abundant operation function: contain all the functions which C supports.

Save internal space, reduce workload and improve compilation efficiency.

```

PLC1-Ladder FuncBlock-FUNC1
Information Export Compile
1
2 FunctionBlockName: FUNC1
3 Version: 1.0.0
4 Author:
5 UpdateTime: 2008-6-24 9:54:50
6 Comment:
7
8
9 void FUNC1( WORD V, BIT B )
10 {
11
12 }
13
    
```

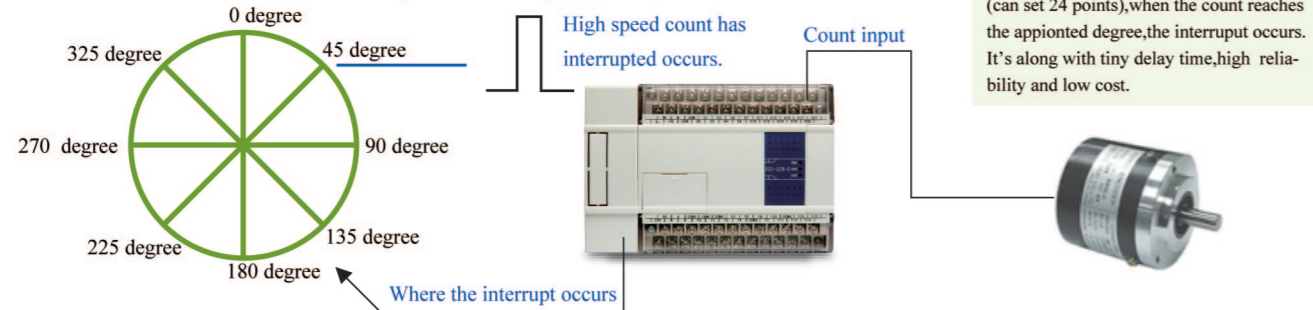
Such as :To realize a multi-sum function , no need to input sum function repeated,user only need to compile one sum function and then invoke it.



24 high speed count interrupt functions

High speed pulse count interrupt with good real time, can realize electronic cam function.

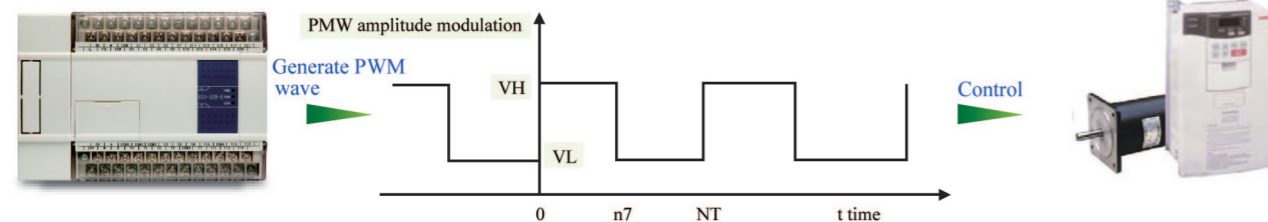
Every channel of XC high speed counter owns 24 segment and 32 bits reference values and interruption will be executed when the counter's each segment value is equal to the reference value.



PWM pulse width modulation

With the instruction "PWM" of XC, user can realize width modulation, which is applicable to XC3, XC5 modules.

Take advantage of this feature, control inverter, DC motor.



Frequency measure

Use XC's "FRM", instruction can realize, suit for XC3, XC5 models.

Precise timer

- Make use of XC's "instruction" can realize precise timing, suit for XC3, XC5 models.
- When precise timing reaching the appointed value, some interrupt sign occurs, and some sub-programs can be executed.
- Precise timer is a 32 bits timer with unit of 1 ms.

New edit toll XCP Pro-Dedicate to your need

Monitor	Search:	X	Y	M	S	T	C	D	FD	M8000	D8000	FD8000	ID	QD	ED
X30		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
X40		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
X50		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
X60		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
X70		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
X100		OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

XC series-PLC+HMI integrated



Face



Back

Characteristic:logic control、 analog input/output,temperature control,HNI are integrated into one unit with concise figure,compact configuration ,small oppupied space.

Multi-function design:use one program cable for the program of HMI and PLC,XMP3 series support display area touching、 making operation more easily.

Not only HMI

User can set the switch control and data on the touch screen directly.

HMI edit windows is simple and intuitionistic,and has more abundant function.

LCD display:192*64 pixels(3.7 inch),using life can up to 50 million hours

But also PLC

2-channel high speed pulse output(0~400Hz),can realize multi-segment .

4-channel single-phase or 2-channel AB phase 32 bits high speed count ,the highest frequency can up to 80 Hz.

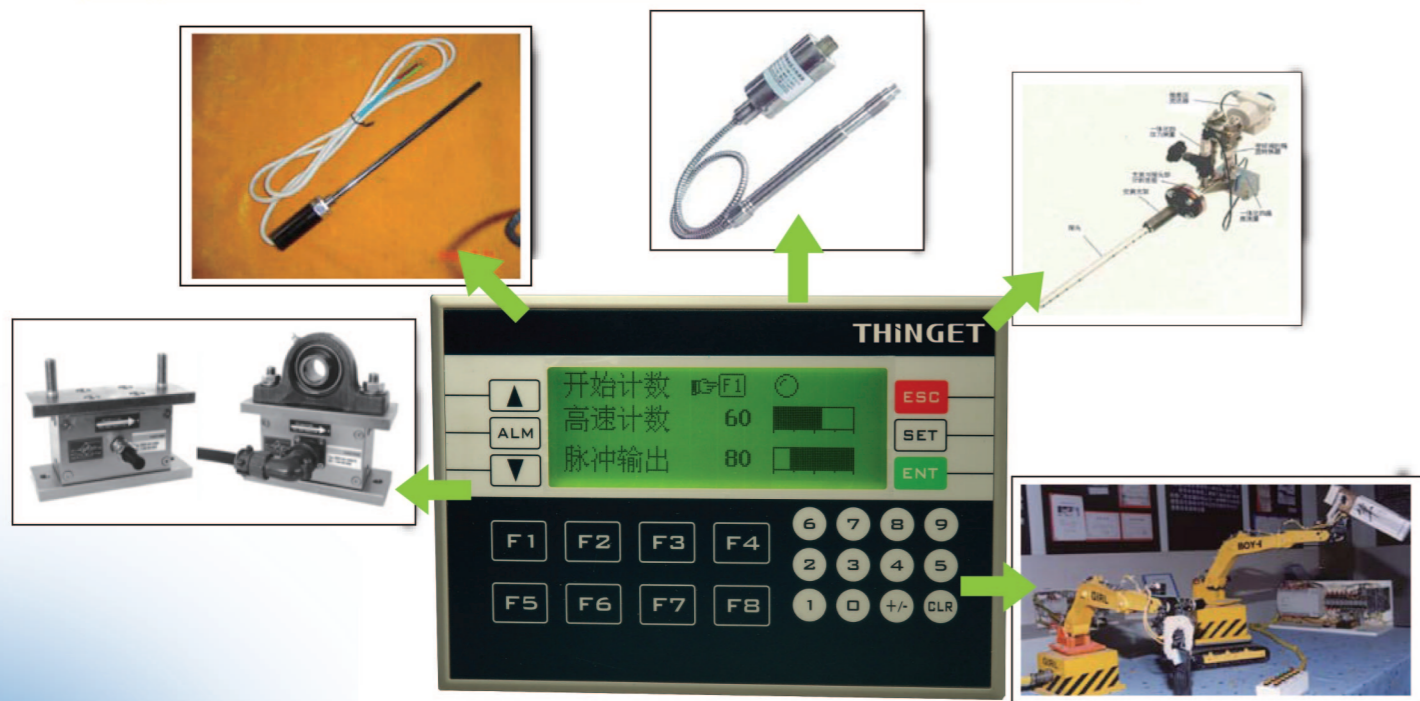
With 2 communication ports,support Modbus communication proctool and Free communication protocol.

Analog processing: A variety of BD modules arbitrary allocation ,such as XP3-2AD2PT-BD,XP-2TC-P-BD,XP-4AD-BD..,etc.

Temperature control(with precise and steady PID control),flow control,tension cntrol.

Pressure control,movement control(can control step-motor and servo motor easily without any complex programs)

Voltage and current monitor control



Expansion Modbus and BD board with abundant function

XC main unit can expand up to 7 modules and 1 BD board,including analog input,analog output,temperature control,etc.It is widely used in tempera-ture ,flow,level,pressure,and other process control system.

Added PID control also

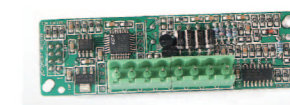


Modbus include the following kinds:

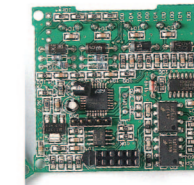
- Input/output expansion module
- Analog and temperature control module
- CAN bus module

Both analog input module (A/D module) and temperature control module have PID control function and flexible to use ,as only four parameter(kp,ki,kd,diff) are needed.

BD board with small size,when installing in the mian unit,it won't impropriate extra space



BD board used on the XC mian unit

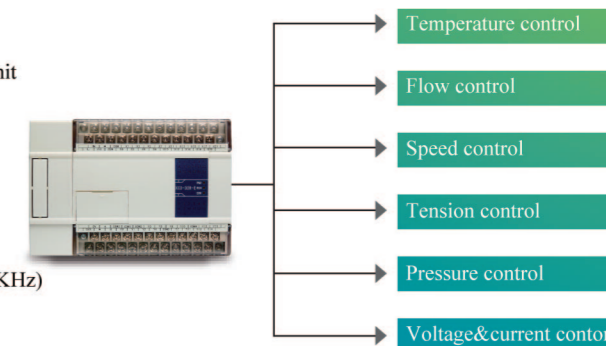


BD board used on the integrated PLC+HMI

XC3-19AR-E main unit with special function-Meet the diverse need for customers

No need to expand any module ,only the main unit can realize analog input/output,temperature control,etc.

- Integrated logic control,analog input/output in one unit
- PID temperature control
- 2-channel 32 bits pulse output
- 10 bits analog input/output
- Support 3-channel AB phase input
- Support 4-channel single phase high-speed count(20KHz)
- Cost-effective,save more space



Peripheral equipment

HMI



- Abundant colors,size:4.7"-10.4"
- Strong data processing capability
- Rapid reponse and free definition
- Internal chinese key-board can input Chinese directly
- optimum communication protocol,quickly data sampling
- Advanced function,achieve to control application freely
- Dual-prot independent communication,can be connect with various popular PLC.
- Text elven dynamic display textbook
- Support various languages,optional font size
- Small size interface ,excellent cost performance
- Single color-homochromy LCD screen can display the bitmap
- Display surface with IP 65 construction ,water and oil proof
- Password protection function,internal clock(optional)
- Key-press can be defined as function key

Cable



Program cable , communication cable



The XC series PLC user manual directly introduces the hardware, software,attention points, application points,etc.



The CD contains interrelated manuals and application points of Xinje products.

Whole Series

Normal specifications

Item	Specification
Insulation voltage	Above 500V 2MΩ
Noise endurance	1000V 1uS pulse out 1 minutes
Ambient temperature	0°C~60°C
Temperature humidity	5%~95%
port 1	RS-232,connect with host machine HMI for programing
port 2	RS-232/RS-485 port,network or connet to intelligent instrument,inverter
port 3	BD extension communication RS-232/RS-485
port 4	CAn Bus COM port(XC5 series)
Installing	M3 screw fastening or guiding rail DIN 46277(35mm width) directly installing
Grounding	The third type grounding (Never ground together with strong power system)

Power supply specifications

Item	Specification	
Power supply type	AC	DC
Rated voltage	AC100W~240	DC24V
Voltage range	AC90V~265VC	DC21.6V~26.4V
Rated frequency	50/60Hz	—
Input current(only for basic unit)	—	120mA DC24V
Allowable momentary power cut time	Interrupt time ≤0.5AC cycle, alternation ≥0.1S	10mS DC24V
Shock current	Maxial 40A below 5mS/AC 100V Maxial 60A below 5mS/AC 200V	10A DC26.4V
Maxial comsumptive power	12W	12W
Current for sensor	24DC±10% maxial 400mA	24DC±10% maxial 400mA

Feature specification

		Specification								
Main unit		XC1			XC3			XC5		
points		16	24	32	14	24/32	48/60	32	48	60
Program operation mode		Circulation scanning mode,timing scanning mode								
Program mode		Instructions and ladder chart								
Dispose speed		0.2~0.5uS								
Power failure holding		FlashROM			FlashROM & Lithium Battery					
User program capacity		2000steps			2500steps	8000steps		2500steps	1000steps	
I/O points		8/8	12/12	16/16	8/6	10/14	20/24	18/14	28/20	36/24
						14/18	28/36			
Interior coil's points(M)		556 points			8512 points					
Timer(T)	Points	80 points			620 points					
	Specification	100mS timer:set time 0.1~3276.7 seconds (T0~T99)、with memory(T100~T199) 10mS timer:set time 0.01~327.67 seconds (T200~T299)、with memory (T300~T399) 1ms timer:set time 0.001~32.767 seconds (T400~T499)、with memory(T500~T599) Precise timing :(T600~T619)								
Counter(C)	Points	48 points			635 points					
	specification	16 bits counter,set value k0~32767(C0~C299) 32 bits counter:set valueK0~32767(C300~C500)								
Data register(D)		406 characters			8512 characters					
FlashROM register(FD)		510 characters			2048 characters					
High-speed count format		High-speed counter,pulse output			High-speed counter,pulse output ,external interrupt					
timing scanning interval setting		1~99mS								
Calendar&clock		Week/Second/Minute//Hour/Day/Month/Year								
High-speed counter		1 channel			UP to 6 channels 200K/24,3 types counter(single phase,double phase,AB phase)					
External interrupt		No			2 types interrupt(rising-edge,falling-edge)					
Pulse output		1 channel			2 channels,special model 4 channels					
Password protection		6 characters ASCII								
Self-diagnose function		Power on self-diagnose,monitoring timer,grammer								

..... Main unit

	AC power		DC power		Output type	Output type	Input points
	NPN type	PNP type	NPN type	PNP type			
XC1	XC1-16R/T-E	XC1-16 P R/T-E	XC1-16R/T-C	XC1-16 P R/T-C	Relay/Transistor Output	8	8
	XC1-24R/T-E	XC1-24 P R/T-E	XC1-24R/T-C	XC1-24 P R/T-C	Relay/Transistor Output	12	12
	XC1-32R/T-E	XC1-32 P R/T-E	XC1-32R/T-C	XC1-32 P R/T-C	Relay/Transistor Output	16	16
XC3	XC3-14R/T-E	XC3-14 P R/T-E	XC3-14R/T-C	XC3-14 P R/T-C	Relay/Transistor Output	8	6
	XC3-14RT-E	XC3-14 P RT-E	XC3-14RT-C	XC3-14 P RT-C	Relay&Transistor		
	XC3-24R/T-E	XC3-24 P R/T-E	XC3-24R/T-C	XC3-24 P R/T-C	Relay/Transistor Output	14	10
	XC3-24RT-E	XC3-24 P RT-E	XC3-24RT-C	XC3-24 P RT-C	Relay&Transistor		
	XC3-32R/T-E	XC3-32 P R/T-E	XC3-32R/T-C	XC3-32 P R/T-C	Relay/Transistor Output	18	14
	XC3-32RT-E	XC3-32 P RT-E	XC3-32RT-C	XC3-32 P RT-C	Relay&Transistor		
	XC3-48R/T-E	XC3-48 P R/T-E	XC3-48R/T-C	XC3-48 P R/T-C	Relay/Transistor Output	28	20
	XC3-48RT-E	XC3-48 P RT-E	XC3-48RT-C	XC3-48 P RT-C	Relay&Transistor		
XC3-60R/T-E	XC3-60 P R/T-E	XC3-60R/T-C	XC3-60 P R/T-C	Relay/Transistor Output	36	24	
XC3-60RT-E	XC3-60 P RT-E	XC3-60RT-C	XC3-60 P RT-C	Relay&Transistor			
XC5	XC5-32T-E	XC5-32 P T-E	XC5-32T-C	XC5-32 P T-C	Transistor Output	18	14
	XC5-32RT-E	XC5-32 P RT-E	XC5-32RT-C	XC5-32 P RT-C	Relay&Transistor		
	XC5-48R/T-E	XC5-48 P R/T-E	XC5-48R/T-C	XC5-48 P R/T-C	Relay/Transistor Output	28	20
	XC5-48RT-E	XC5-48 P RT-E	XC5-48RT-C	XC5-48 P RT-C	Relay&Transistor		
	XC5-60R/T-E	XC5-60 P R/T-E	XC5-60R/T-C	XC5-60 P R/T-C	Relay/Transistor Output	36	24
XC5-60RT-E	XC5-60 P RT-E	XC5-60RT-C	XC5-60 P RT-C	Relay&Transistor			

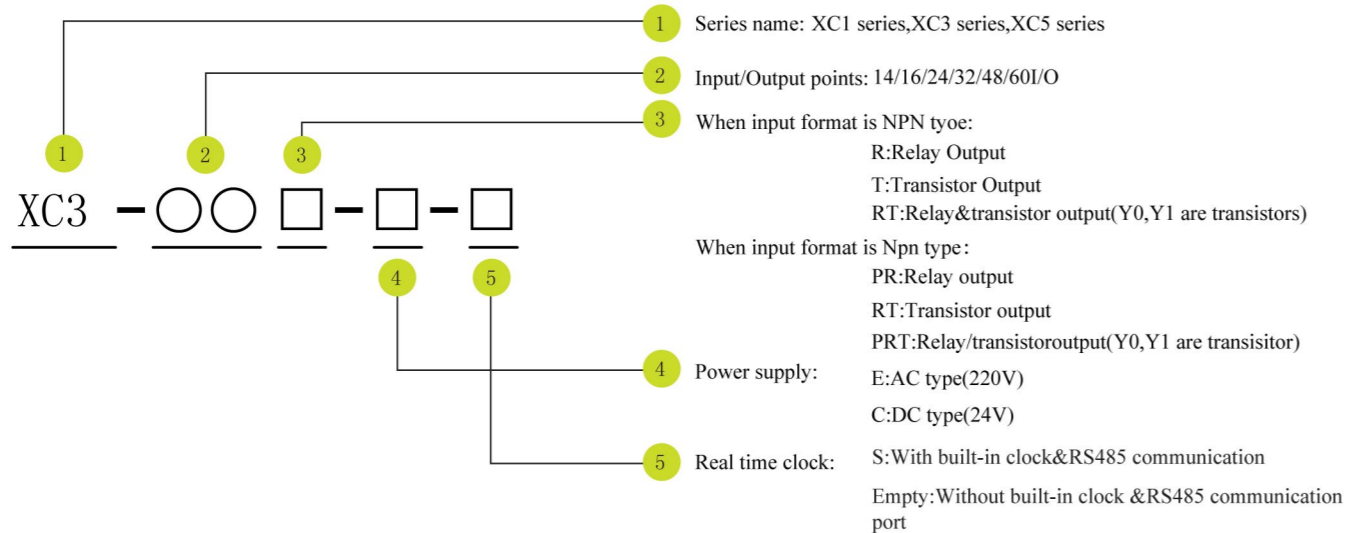
.....Expansion part.....

Type	Item	Istruction	Type	Item	Istruction
I/O expansion module	XC-E16X	16-point input	Analog expansion module	XC-E4AD	4-channel analog input
	XC-E8X8YR	8-point input/8-point relay output		XC-E8AD	8-channel analog input
	XC-E8X8YT	8-point input/8-point transistor output		XC-E2DA	2-channel analog output
	XC-E8YR	8-point relay output		XC-E4DA	4-channel analog output
	XC-E8YT	8-point transistor output		XC-E4AD2DA	4-channel analog input&2-channel analog output
	XC-E16YR	16-point relay output		XC-E6PT-P	6-channel PT100 temperature sampling(with PID control built-in)
	XC-E17YT	16-point transistor output		XC-E8PT	8-channel PT100 temperature sampling
	XC-16X16YR	16-point input/16-point relay output		XC-E6TC-P	6-channel K.E type thermocouples temperature sampling(with PID control built-in)
	XC-16X16YT	16-point input/16-point transistor output		XC-E8TC	8-channel K.e type thermocouples temperature sampling
	XC-E32X	32-point input		XC-E3AD4PT2DA	3-channel analog input,4-channel PT100 temperature sampling,2-channel analog output
CAN module	XC-EC8X8Y	CAN bus module(8I/8O)	BD board	XC-2AD2PT-BD	2-channel analog,2 -channel PT100 temperature
	XC-EC16X16Y	CAN bus module(16I/16O)		XC-2TC-P-BD	2 channels K.E type thermocouples temperature sampling (PID control built-in)
				XP3-2AD2PT-BD	2-channel 0'10,2-channel PT100 heat resistance
PLC&HMI integrator	XMP3-18R(-S)	XC3 series PLC,HMI integrator(10-channel input,8-channel relay output)		XP3-2TC-P-BDP	2-channel K type thermocouples/2-channel temperature control transistor output
	XMP3-18T(-S)	XC3 series PLC,HMI integrator(10-channel input,8-channel transistor output)		XP3-2PT2AD1DA-BD	2-channel analog input,2-channel PT100 temperature, 1-channel analog output
	XMP3-18RT(-S)	XC3 series PLC,HMI integrator(10-channel input,8-channel relay& transistor output)			
	XP1-18R(-S)	XC1 series PLC,HMI integrator(10-channel input,8 channel relay output)			
	XP1-18RT(-S)	XC1 series PLC,HMI integrator(10-channel input,8-channel relay& transistor output)			
	XP3-18R(-S)	XP3 series PLC,HMI integrator			
	XP3-18RT(-S)	XP3 series PLC,HMI integrator			

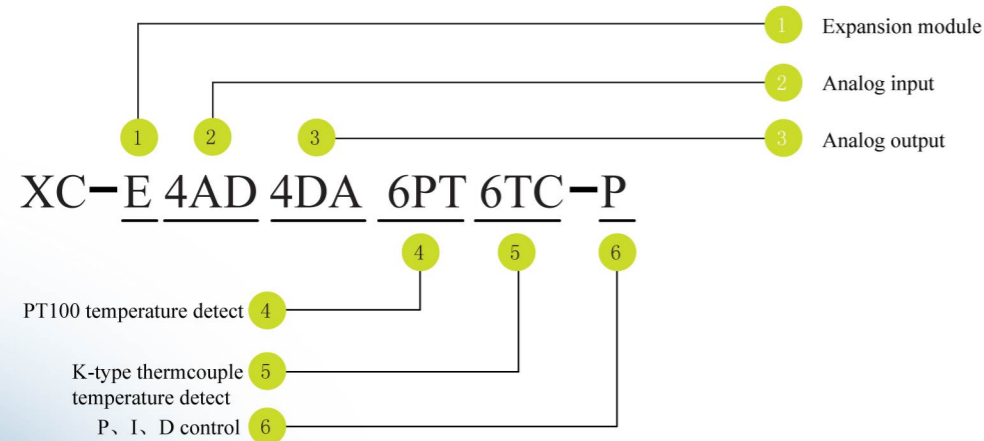
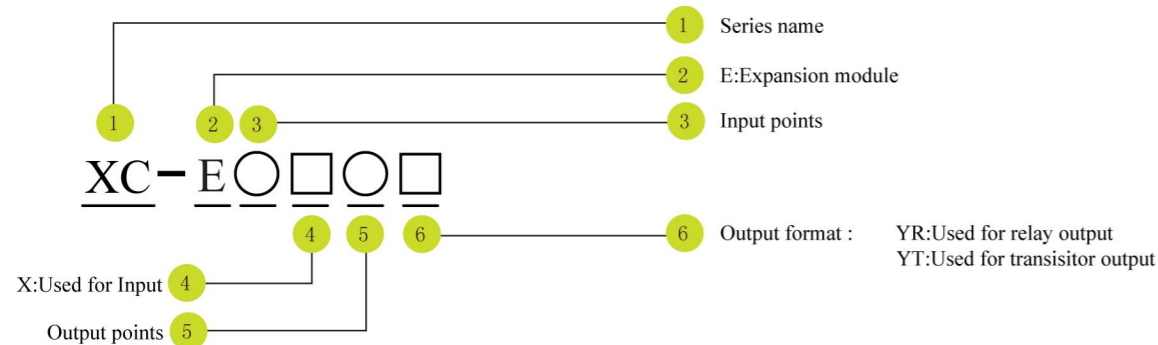
Note:“(-S)”stand for it has RS-485& time clock

Naming Rules

Naming principle of the main units



Digital I/O Expansion Modules



Instruction List

Type	Instruction	Function	
Basic Instruction	LD	Initial logical operational contact (normally open)	
	LDI	Initial logical operational contact (normally open)	
	LDP	Initial logical operation-rising edge pulse	
	LDF	Initial logical operation-falling/edge pulse	
	AND	Serial connection of normally open contacts.	
	ANI	Serial connection of normally closed contacts.	
	ANDP	Serial connection of rising edge pulse	
	ANDF	Serial connection of falling/trading edge pulse.	
	OR	Parallel connection of normally open contacts.	
	ORI	Parallel connection of normally close contacts.	
	ORP	Parallel connection of rising edge pulse	
	ORF	Parallel connection of falling/trading edge pulse.	
	ANB	Serial connection of multiply parallel circuits.	
	ORB	Parallel connection of multiply parallel circuits.	
	OUT	Final logical operation type coil drive	
	SET	Set a device permanently on	
	RST	Reset a device permanently off	
	PLS	Rising edge pulse	
	PLF	Falling/trading edge pulse	
	MCS	Donote the start of a master control block	
	MCR	Donote the end of a master contrl block	
	ALT	The status of the assigned device is inverted on every operation of the instruction	
	NOP	No operation or null step	
	END	Force the current program scan to end	
	Programme flow	CJ	Jump to the identified pointer position
CALL		Condition jump	
SRET		Subroutine return	
STL		Start s flow	
STLE		End a flow	
SET		Start the assigned flow,close the current flow	
ST		Start the assigned flow,not close the current flow (open the flow)	
FOR		Start of a For-Next loop	
NEXT		End of a For-Next loop	
FEND		First end	
Data compare		LD=	Initial comparison contact.Active when the comparison (s1)=(s2) is true.
		LD>	Initial comparison contact.Active when the comparison (s1)>(s2) is true.
	LD<	Initial comparison contact.Active when the comparison (s1)<(s2) is true.	
	LD<>	Initial comparison contact.Active when the comparison (s1)≠ (s2)is true.	
	LD<=	Initial comparison contact.Active when the comparison (s1)≤(s2) is true.	
	LD>=	Initial comparison contact.Active when the comparison (s1)≥(s2) is true.	
	AND=	Serial comparison contact.Active when the comprison (s1)=(s2) is true.	
	AND>	Serial comparison contact.Active when the comparison (s1)>(s2) is true.	
	AND<	Serial comparison contact.Active when the comparison (s1)<(s2) is true.	
	AND<>	Serial comparison contact .Active when the comparison (s1) ≠ (s2) is true.	
	AND<=	Serial comparison contact .Active when the comparison (s1)≤(s2) is true.	
	AND>=	Serial comparison contact .Active when the comparison (s1)≥(s2) is true.	
Data move	MOV	Mov	
	BMOV	Block move	
	FMOV	Fill move	
	FWRT	Written of FlashROM	
	MSET	Zone set	
	ZRST	Zone reset	
	SWAP	Float to scientific	
	XCH	Exchange	
	Data operation	ADD	Addition
		SUB	Subtraction
		MUL	Multiplication
		DIV	Divison
INC		Increase	
DEC		Decrease	
MEAN		Mean	
WAND		Logic word AND	
WOR		Logic word OR	
WXOR		Logic Exclusive OR	
CML		Compliment	
NEG		Negation	
Data shift	SHL	Arithmetic shift left	
	SHR	Arithmetic shift right	
	LSL	Logic shift left	
	LSR	Logic shift right	
	ROL	Rotation left	
	ROR	Rotation right	
	SFTL	Bit shift left	
	SFTR	Bit shift right	
	WSFL	Word shift left	
	WSFR	Word shift right	
	Data convert	WTD	Single word integer converts to double word integer
		FLT	32 bits integer converts to float
FLTD		64 bits integer converts to float	
INT		Float point converts to integer	
BIN		BCD converts to binary	
BCD		Binary converts to BCD	
ASC		Hex converts to ASCII	

The green sections are new insructions

Type	Instruction	Function	
Data compare	AND<=	Serial comparison contact .Active when the comparison (s1)≤(s2)	
	AND>=	Serial comparison contact.Active when the comparison (s1)≥(s2) is true.	
	OR=	Parallel comparison contact.Active when the comparison (s1)=(s2) is true.	
	OR>	Parallel comparison contact.Active when the comparison (s1)>(s2) is true.	
	OR<	Parallel comparison contact.Active when the comparison (s1)<(s2) is true.	
	OR<>	Parallel comparison contact.Active when the comparison (s1)≠(s2) is true.	
	OR<=	Parallel comparison contact.Active when the comparison (s1)≤(s2) is true.	
	OR>=	Parallel comparison contact .Active when the comparison (s1)≥(s2) is true.	
	Data move	MOV	Mov
		BMOV	Block move
		FMOV	Fill move
		FWRT	Written of FlashROM
MSET		Zone set	
ZRST		Zone reset	
SWAP		Float to scientific	
XCH		Exchange	
Data operation		ADD	Addition
		SUB	Subtraction
		MUL	Multiplication
		DIV	Divison
	INC	Increase	
	DEC	Decrease	
	MEAN	Mean	
	WAND	Logic word AND	
	WOR	Logic word OR	
	WXOR	Logic Exclusive OR	
	CML	Compliment	
	NEG	Negation	
Data shift	SHL	Arithmetic shift left	
	SHR	Arithmetic shift right	
	LSL	Logic shift left	
	LSR	Logic shift right	
	ROL	Rotation left	
	ROR	Rotation right	
	SFTL	Bit shift left	
	SFTR	Bit shift right	
	WSFL	Word shift left	
	WSFR	Word shift right	
	Data convert	WTD	Single word integer converts to double word integer
		FLT	32 bits integer converts to float
FLTD		64 bits integer converts to float	
INT		Float point converts to integer	
BIN		BCD converts to binary	
BCD		Binary converts to BCD	
ASC		Hex converts to ASCII	

Type	Instruction	Function	
Data convert	HEX	ASCII converts to Hex	
	DECO	Coding	
	ENCO	High bit coding	
	ENCOL	Low bit coding	
	Floating point operation	ECMP	Float compare
EZCP		Float zone compare	
EADD		Float add	
ESUB		Float subtract	
EMUL		Float multiplication	
EDIV		Float division	
ESQR		Float square root	
SIN		Sine	
COS		Cosine	
TAN		Tangent	
Clock operation		TCMP	Time compare
		TZCP	Time zone compare
	TADD	Time add	
	TSUB	Time subtract	
	TRD	Read RTC data	
	TWR	Write RTC data	
	Pulse output	PLSY	Pulse output without Acc or Dec
PLSR		Pulse output with Acc or Dec	
PLSF		Generate sequential pulse with changeable frequency form.	
PLSNEXT		Pulse segment switch	
STOP		Stop pulse	
Communication		COLR	Read Modbus coil
		INPR	Read Modbus input coil
	COLW	Read Modbus single coil	
	MCLW	Read Modbus multi-coil	
	REGR	Write Modbus register	
	INRR	Write Modbus input-register	
	REGW	Write Modbus single register	
	MRGW	Write Modbus multi-register	
	SEND	Free format data sending	
	RCV	Free format data sending	
	CANBUS	CCOLR	CAN — Bus coil read
		CCOLW	CAN — Bus coil write
CREGR		CAN — Bus register read	
CREGW		CAN — Bus regiser write	
Other	PWM	Pulse width modulation	
	FRQM	Frequency measurement	
	STR	Precise time	
	EI	Enable interrupt	
DI	Disable interrupt		
IRET	Interrupt return		