XINJE

CODESYS   XS Studio

PLCopen
Standard controller

XSF series blade type PLC
Excellent choice for small and medium-sized motion control

Automation trust partner

XSF

series blade type PLC

Targeting advanced manufacturing and complex process industries

Blade type design Flexible and open

Power supply module | Main control unit | Expansion unit

LC5E-32T4

DS5C2

VH6

EtherCAT®

DP3CL
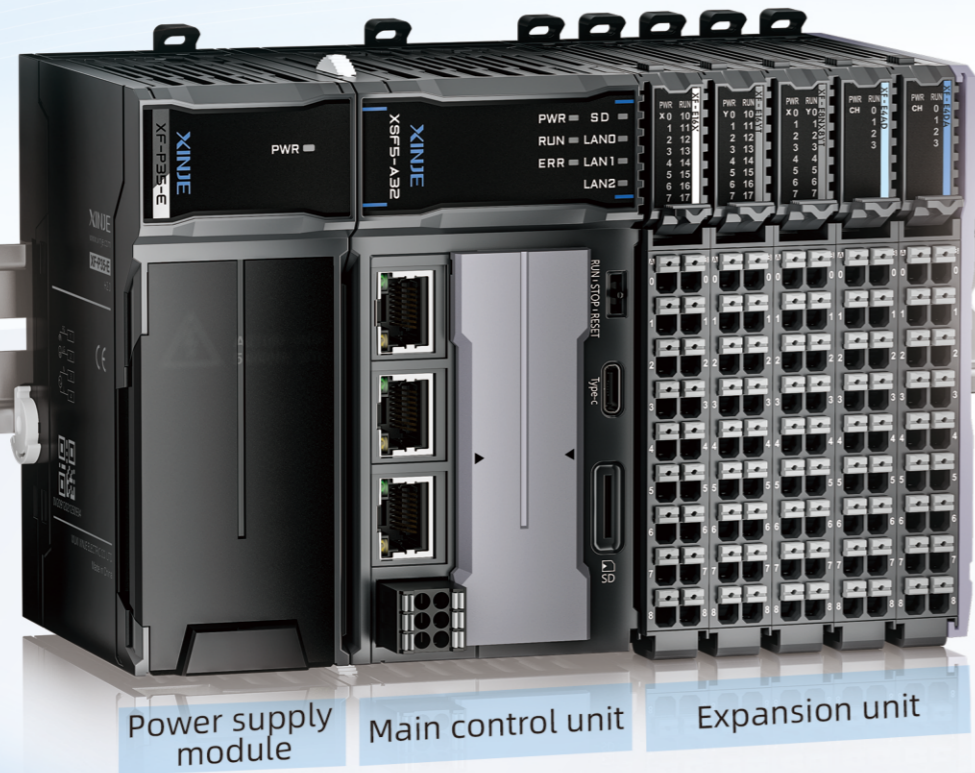
XSF5-A32
Small and medium-sized | 32 axes type

Dominant frequency	Program capacity	Synchronization cycle
1.2GHz	32MB	2ms/32axes

Communication port

Ethernet	EtherCAT	RS485	CAN

XSF5-A64
Small and medium-sized | 64 axes type

Dominant frequency	Program capacity	Synchronization cycle
1.2GHz	32MB	4ms/64axes

Communication port

Ethernet	EtherCAT	RS485	CAN

5 major innovations

- Blade structure design slim body
- Flexible and open free programming
- More powerful scalability
- More powerful scalability
- Easy to debug and maintain

Blade structural design, achieving slim body

- The smallest volume among 64 axes similar products in the industry.
- Compared with XDH-60A64-E, the body size is reduced by 70%, significantly reducing installation space.

Approximately **70%** reduction in volume compared to the previous generation XDH-60A64-E

More powerful scalability

- Up to 32 XF extension modules can be connected locally.
- The new high-speed backplane bus allows for the expansion of functional modules such as high-speed counting, pulse output, flying shooting, and communication.

High-speed backplane bus

Up to **32**
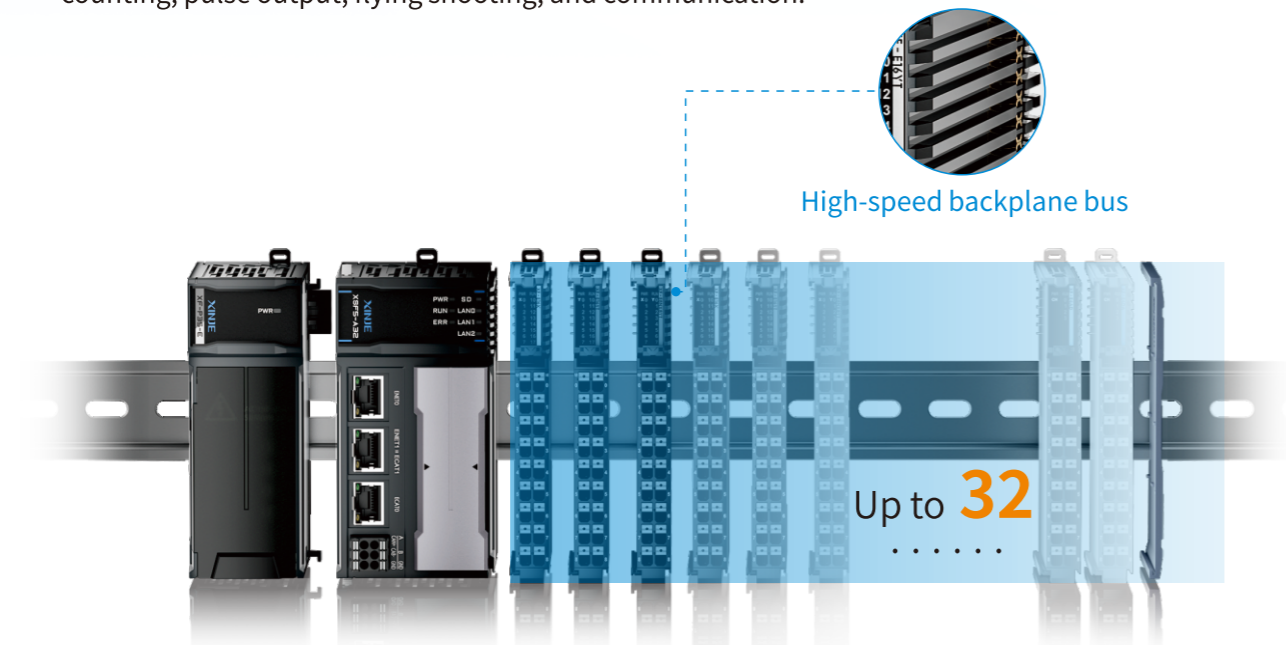
Note: Modules such as high-speed counting, pulse output, flying shoot, and communication are under development. Stay tuned!

Easy to debug and maintain

- The entire XSF series products, including the main control unit and expansion unit, support firmware self updating, and new features are available with just one click.
- Equipped with Type-C port, it can connect to the upper computer, and online debugging only requires a mobile data cable.
- Support importing and exporting device data and project files through USB flash drives and TF cards.
- Standard system slide switch, which can immediately stop PLC operation without power outage.

Type-c

Slide switch

SD card port

Flexible and open, free programming

XSF supports the Codesys platform, can be adapted to Xinje XS Studio programming software, meets the IEC61131 standard and PLCopen programming specification.
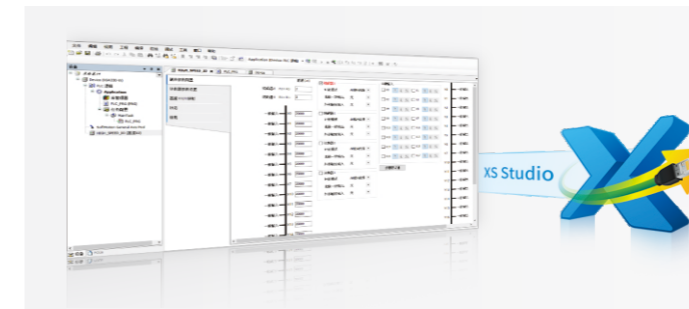
- XS Studio integrates PLC programming, visual HMI, safety PLC, real-time controller core, fieldbus, and motion control functions, providing a complete configuration, programming, debugging, and monitoring environment that can flexibly and freely process powerful IEC language.

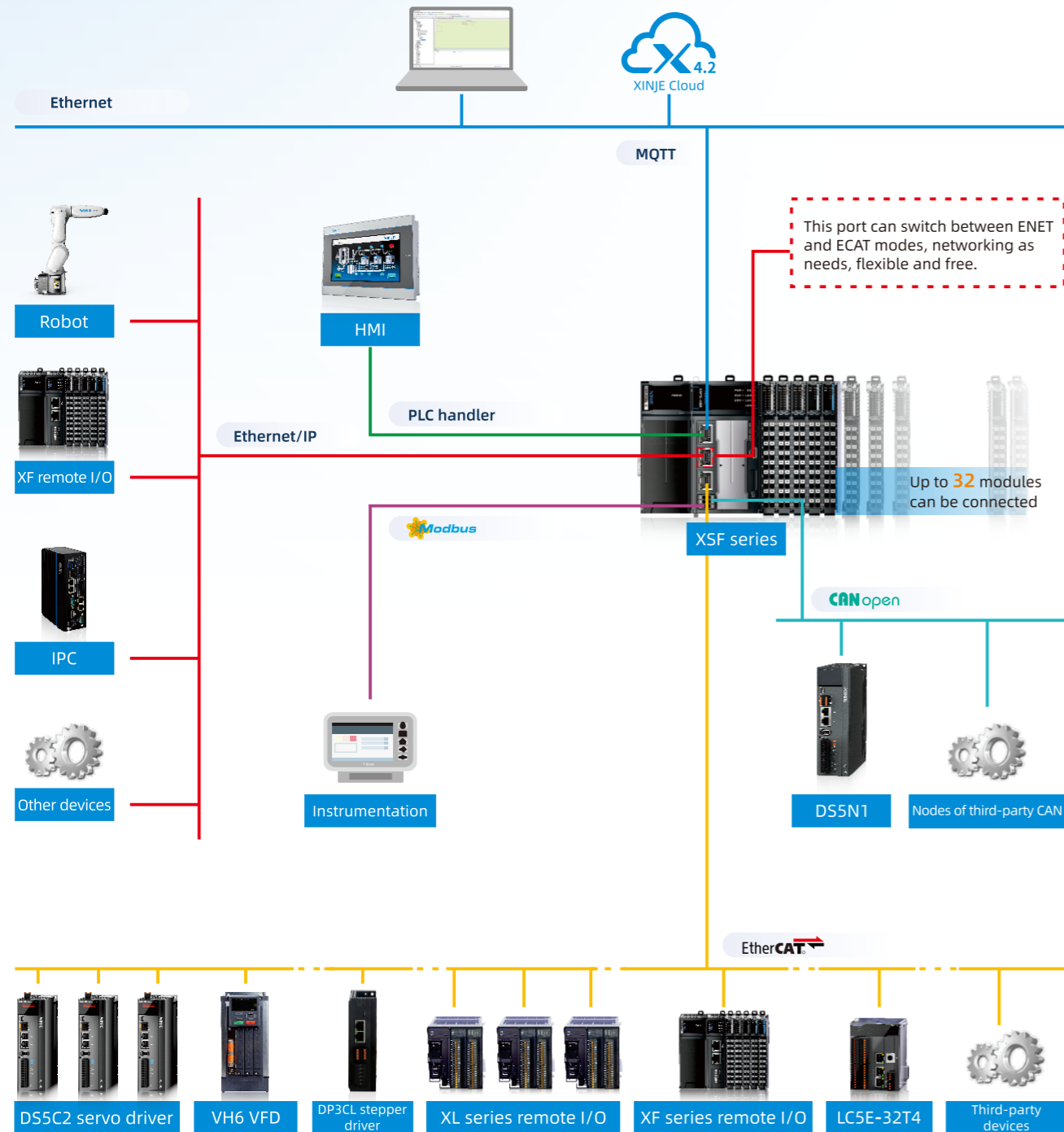- Support online download function and online simulation.
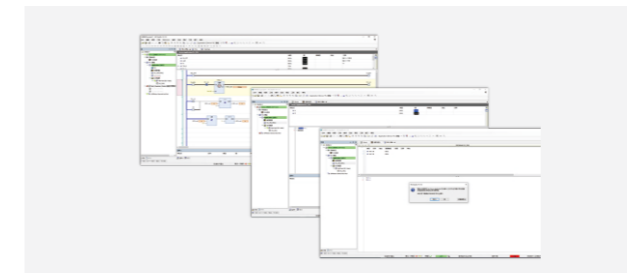
- Real time data detection, curve acquisition and tracking.
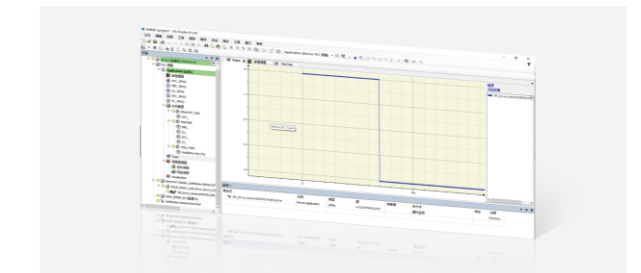
Multiple networks union, convenient interwork

� The XSF main control unit is equipped with 3 RJ45 ports, 1 CAN communication port, and 1 RS485 port.
◧ Supports multiple protocols, including Mdbus TCP, UDP, OPC UA, TCP/IP, Ethernet/IP, CANopen, and Modbus communication.
◧ Ethernet/IP is built on the TCP/IP communication protocol and can be implemented through software without the need for dedicated ASIC or FPGA.
◧ Support dual IP settings, achieve isolation between internal and external networks of equipment, and assist in the digital transformation of factories.

XINJE Cloud 4.2

Ethernet

MQTT

This port can switch between ENET and ECAT modes, networking as needs, flexible and free.

Robot

HMI

PLC handler

Ethernet/IP

XF remote I/O

Modbus

XSF series

Up to **32** modules can be connected

CANopen

IPC

Other devices

Instrumentation

DS5N1

Nodes of third-party CAN

EtherCAT

DS5C2 servo driver | VH6 VFD | DP3CL stepper driver | XL series remote I/O | XF series remote I/O | LC5E-32T4 | Third-party devices

Outstanding motion control ability

◧ The XSF main control unit can communicate with various EtherCAT standard protocol devices, such as Xinje XF/XL series distributed IO, DS5C1/DS5C2 series servo drivers, VH6 series frequency converters, DP3CL series stepper drivers, etc.

Up to 64 axes EtherCAT bus control with short synchronization cycle.

High speed bus control 32 axes

Synchronization cycle 2ms

XSF5-A32

High speed bus control 64 axes

Synchronization cycle 4ms

XSF5-A64

Multi-axis interpolation
Support multi-line, arc, and spiral interpolation functions, which can be effectively applied to common multi-axis interpolation platforms.
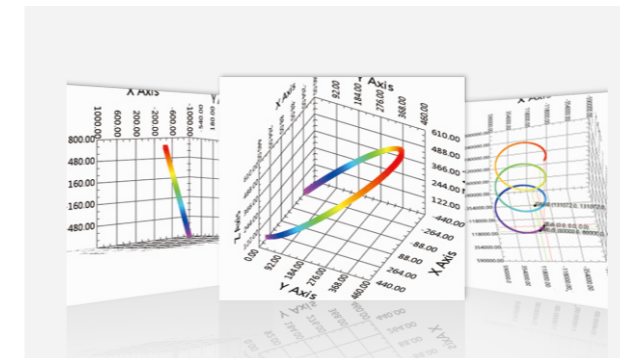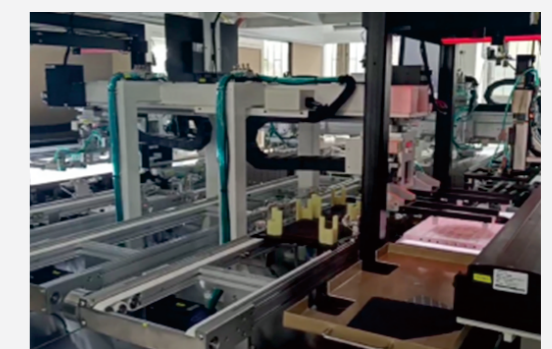
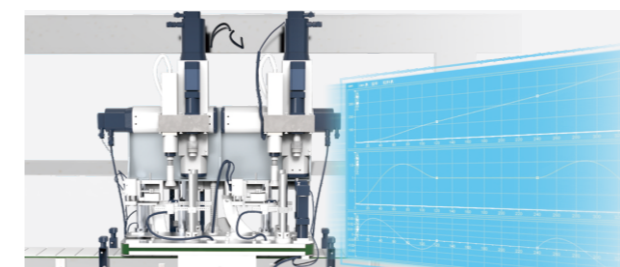## Typical application

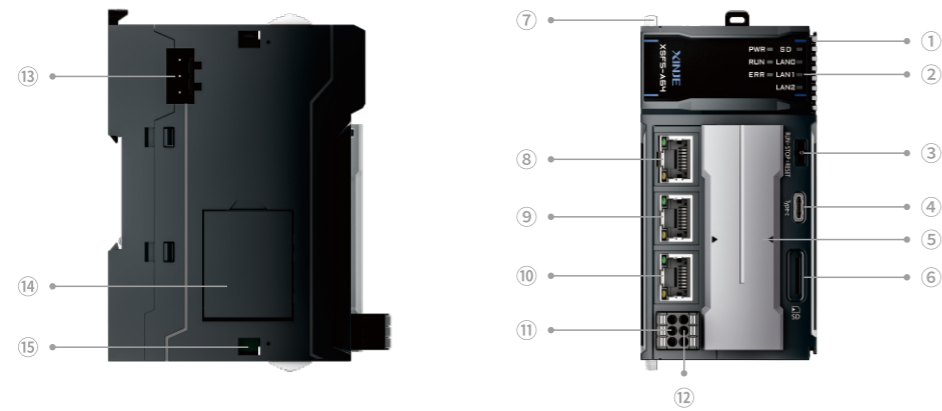Up and bottom cover double-end forming machine

Electronic cam
In terms of mechanical processing, replacing bulky mechanical cams with electronic cam systems can achieve higher machining accuracy and flexibility, effectively improving production efficiency. Currently, it is widely used in industry equipment such as capping machines, pillow packaging machines, and bottle blowing machines.

Dicing machine

Product composition

NO.	Name		Description
①	Expansion connection		It is used to connect with the XF-IO unit
②	Indicator light	PWR（green）	Always ON: with power supply input
			OFF: no power spuply input
		RUN（green）	Always ON: user program execution in progress
			OFF: user program stop
		ERR（red）	Always ON: system critical error
			OFF: system normal
		Sd（green）	Always ON: SD card pending access
			1Hz flashing: accessing SD card
			10Hz flashing: software access failure: SD card format not support
			OFF: SD card not detected: whether SD card is inserted or hardware damaged
		LAN0	Show the status of the ENET0, ENET1//ECAT1, ECAT0 termials respectively
		LAN1	
		LAN2	
③	System dial switch		Control CPU unit to allow shutdown and IP recovery
④	USB port		Connect to the upper computer or import export data through USB flash disk
⑤	Sliding cover		Move left and right to protect the system dial switch, TF card slot, USB port
⑥	TF card interface		Import and export data through TF card
⑦	Sliding latch		To fix the XF power module and CPU unit
⑧	ENET0		Connect the upper computer or other network nodes
⑨	ENET1	ECAT1		Connect the network nodes or ECAT nodes
⑩	ECAT0		Connect the ECAT nodes
⑪	CAN		1 channel of CAN interface
⑫	485		1 channel of isolated RS485 port
⑬	Power supply module interface		Connect the XF power module
⑭	Battery compartment		Install CR2032 battery to improve the RTC time effect
⑮	Auxiliary dial switch		Control the load resistor of CAN and RS485

Model naming rule

XF □ - □ X □ □ Y □ □ □
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

① Series name

Display	Product name
XF	XF series
XSF	XSF series

② Series number

Display	Product name
5	Motion control type

③ Input channel

Display	Product name
4	4 channels
8	8 channels
16	16 channels
32	32 channels

④ Type

Display	Product name
X	Digital input

⑤ Output channel

Display	Product name
4	4 channels
8	8 channels
16	16 channels
32	32 channels

⑥ Output terminal type

Display	Product name
Vacant	Digital output NPN type
P	Digital output PNP type

⑦ Type

Display	Product name
Y	Digital output

⑧ Output terminal type

Display	Product name
T	Digital output transistor type
R	Digital output relay type
RT	First two channels are transistor type others are relay type

⑨ High speed pulse output channel (only for T model)

Display	Product name
Vacant	2 channels
4	4 channels
6	6 channels
8	8 channels
10	10 channels

⑩ Driving axis ability (fit for 3, 5, 7 series)

Display	Product name
A32	Driving 32 axes
A64	Driving 64 axes

Specifications

Item		Specification	
Legend			
Product model		XSF5-A32	XSF5-A64
Programming method		ST, SFC, FBD, CFC, LD and IL	
User program capacity		32MB	32MB
Power supply	Rated voltage	DC24V	DC24V
	Output power supply	/	
ECAT max driving axis numbers		32	64
Driving axis ability		32axes/2ms	32 axes/2ms、64 axes/4ms
Expansion capability		Right expansion module*32	
RTC		Can last for 14 days without batteries (RTC batteries can be added)	
Communication function	Communication port	1 CAN port, 1 RS485 port, 3 RJ45 ports	
	Communication protocol	Standard Modbus ASCII/RTU, free format protocol, Ethernet	
Bus function		Ethernet/IP fieldbus, EtherCAT bus	
Motion control function		Basic single axis and axis group motion control, as well as electric cam function	

Product dimension diagram

XSF5-A32、XSF5-A64

XF-P35-E