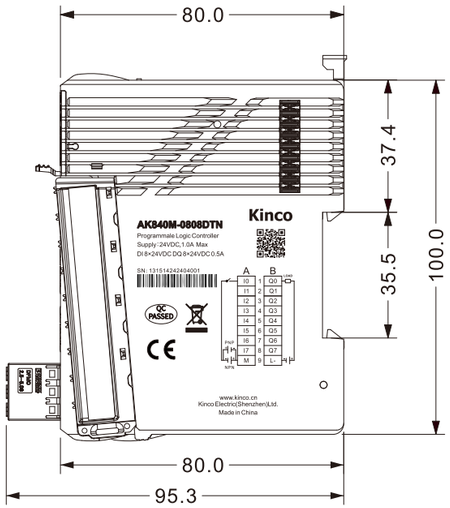
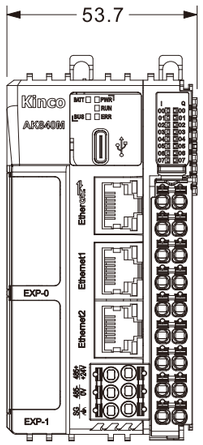
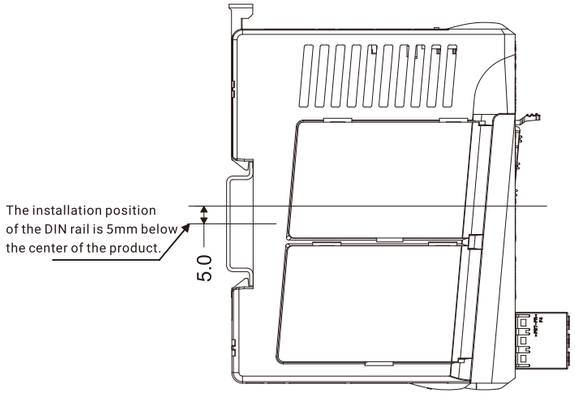
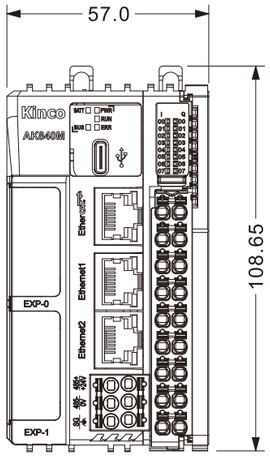
Dimension Diagram









Kinco® Automation

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Kinco

State-of-the-Art Medium-Sized Motion Controller

AK8X0 Series

The AK8X0 series products are a new generation of medium-sized motion controllers independently developed by Kinco, dedicated to meet diverse industrial control needs. They integrate advanced functions and performance, including EtherCAT bus motion control and high-speed backplane bus advantages.

Whether it is the synchronization of multiple workstations and robots in the industrial manufacturing industry, the complex process control and regulation in the food processing field, or the centralized control and monitoring of multiple areas or equipment through dual network ports in the logistics and warehousing industry, the AK8X0 series products can be flexibly applied to complex control scenarios in multiple industries with their outstanding design and performance, providing customers with reliable solutions and continuous operational support.

Standard Platform: Complies with IEC61131-3 International Standards, utilizing CoDeSys IDE for programming.

Motion Control Capability: Based on EtherCAT bus, supports up to 32 axes of synchronized motion control.

Modular Design: Modular and compact design, built-in 8 Digital inputs and 8 Digital outpus.

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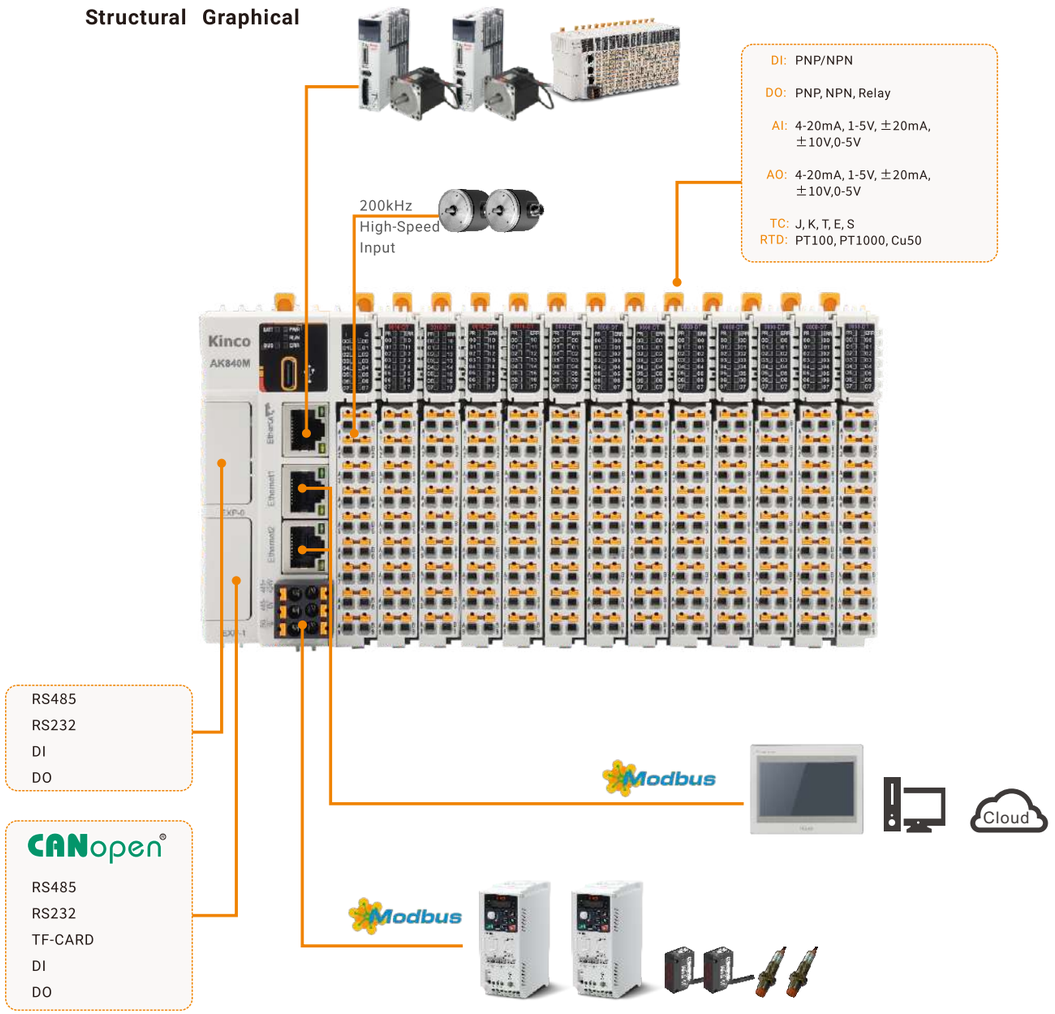
FBD LD ST SFC IF

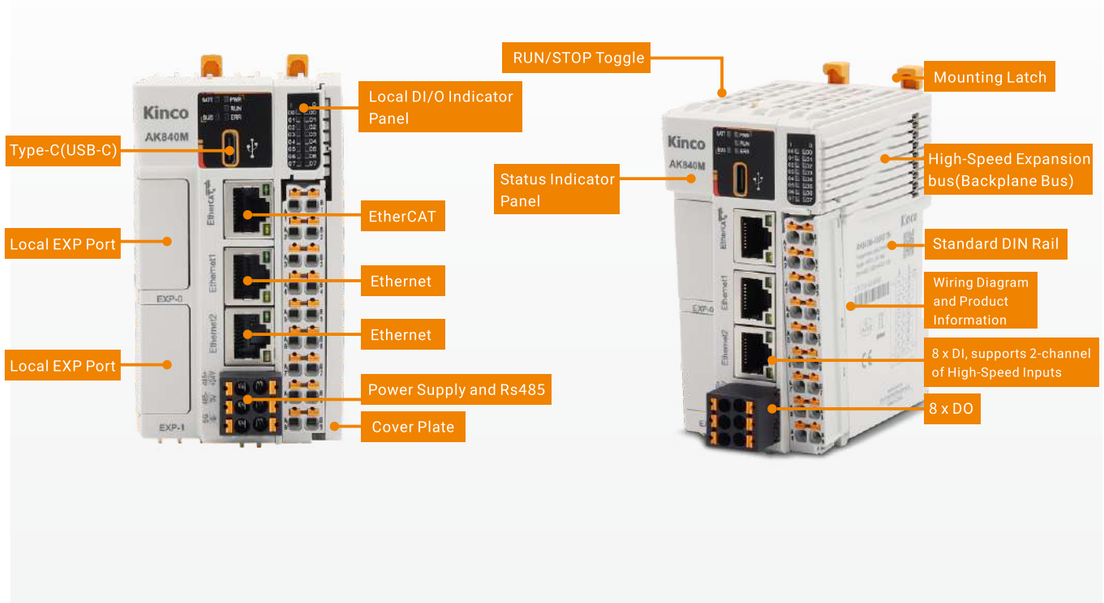
Structural Graphical



Product List

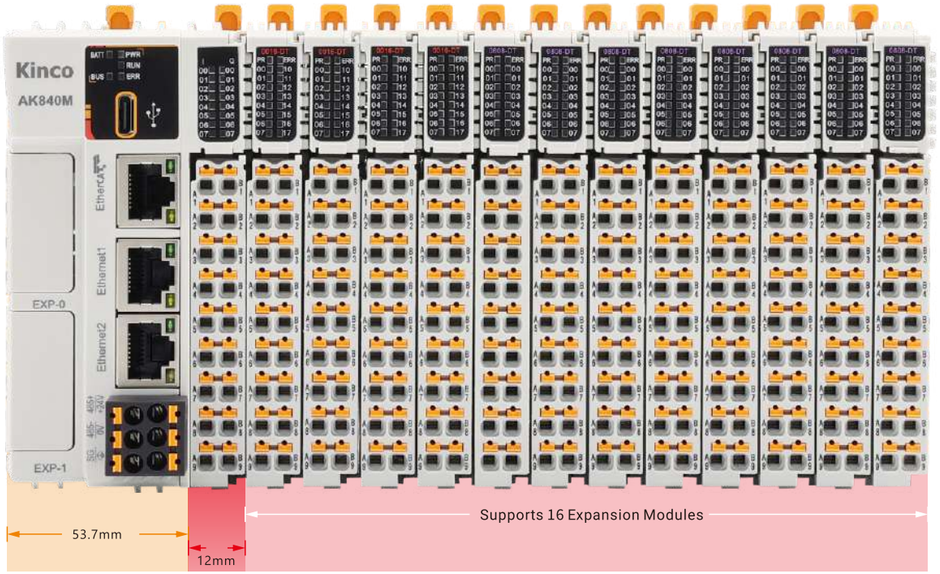
Order Model	Tpye	Description
AK840M-0808DTN	PLC	EtherCAT bus CoDeSys motion controller. 1 × EtherCAT: 8~32 axis synchronization (1~4ms, typical value: 1ms for 8-axis interpolation). 2 × Ethernet, 1 × RS485. DI 8×24V DC, sourcing/sinking, supports 2-channel of high-speed counters. DO 8×24V DC, NPN. Expansion capabilities (Backplane bus): supports up to 16 expansion modules.
RP20-0016DTP	Expansion Module	DO 16×24V DC, PNP
RP20-0016DTN		DO 16×24V DC, NPN
RP20-1600DT		DI 16×24V DC, Sourcing/Sinking
RP20-0808DTP		DI 8×24V DC, Sourcing DO 8×24V DC, PNP
*RP20-0008DR		DO 8×Relay output, normally open contacts(NO)
RP20-0400TC		AI 4×TC, thermocouple type: J/K/E/S/T
RP20-0400RD		AI 4×RTD, sensor type: Pt100/Pt1000/Cu50
RP20-0400IV		AI 4XIV,4-20mA,0-20mA/±10V/1-5V/*±20mA
*RP20-0004IV		AO 4XIV,4-20mA,0-20mA/±10V/1-5V
RP20-0202IV		AI 2×IV,4-20mA/0-20mA/0-10V/1-5V AO 2×IV,4-20mA/0-20mA/0-10V/1-5V
RP20-PW	Power Module	Powered by 24V DC, rated output: 5V DC, 2A

Component Overview



Component Overview

Ultra-thin Module Design: Compared to traditional(Kinco) PLCs, it saves 70% in horizontal installation space.



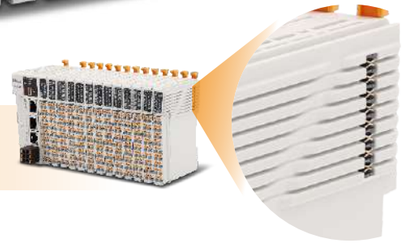
18-Pin Plug-In Spring Terminals: Tool-free installation and efficient connections.

Model Suffix and Color Labels on the Front: Quickly identify module types without disassembly.

Color Lable	
Orange	Coupler
Azure(Light blue)	Digital Input
Red	Digital Output
violet	Multi-DI/O
Green	Analog Input，I/V/RTD/TC
Yellow	Analog Output, I/V
Indigo(navy blue)	Multi-AI/O
white	Power Supply

Diverse I/O expansion, supports data acquisition, process integration, and various application scenarios.

DIN35 Rail Connection: Features a self-resetting function for the rail pull rod.



Double-Sided 8-Pin Terminal Block: Nickel-gold dual-plating technology ensures reliable transmission and durability between modules.

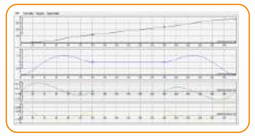
Component Overview

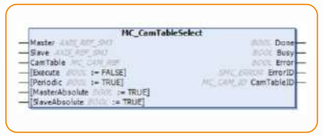
EtherCAT

Motion Control

1ms 8 axes ~ 4ms 32 axes synchronized motion control (typical for electronic cam motion), JOG, ABS, PT PTP…

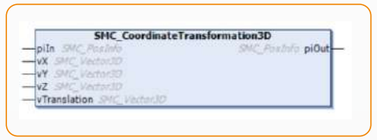
Electronic Gear/Cam

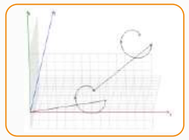




CNC/G-Code Functionality

Supports part of DIN 66025 CNC language function, allowing programming of geometric paths in the CNC object editor.





Megabit LVDS Backplane (Expansion) Bus

Microsecond-Level Data Refresh

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Kinco

Technical Specifications

Order Model	Description
AK840M-0808DTN	32-Axis EtherCAT Bus Motion Controller
Technical parameters	
Supply Power Rated Voltage	24V DC +/-20%
Supply Power Rated Power	6W(CPU unit only)/20W(Full-load)
Power protection	Overcurrent Protection Reverse Polarity Protection Surge Absorption
Communication interfaces	1 × EtherCAT, Minimum synchronization cycle: 1ms, maximum number of synchronized axes: 32 axes. Axis-control performance: 1ms, 8 axes synchronized motion control (typica MC: electronic cam)
	2 × Ethernet, Both support Modbus TCP master/slave, with a maximum of 31 TCP slaves per channel. Both support program upload and download
	1 × RS485,Supporting Modbus RTU master/slave protocol, supporting up to 31 Modbus RTU slaves
	1 × USB OTG, Supports firmware updates via USB drive (limited to FAT32 format)
Local I/O	8 × Digital inputs, supports 2-channel high-speed inputs, A/B phase and pulse/direction signals, with a maximum of 200KHz
	8 × Digital outputs
Local bus(backplane bus)	Kinco dedicated K-bus backplane, Supports up to 16 local expansion modules of the RP20 series
Motion Control	8 to 32 axes, 1ms to 4ms, supporting electronic gearing, electronic cam, interpolation, and other motion control functions
Program Memory	32MB
Data Memory	32MB
Non-volatile Storage	1MB
Indicators	PWR: Power status
	RUN: Device operation status
	ERR: Device error
	BUS: Expansion bus error
	BATT: Low voltage of backup battery
Dimensions (W × H × D) mm	57 X 80 X 108

General Specifications

Transportation and Storage Conditions		
Climatic Conditions	Ambient Temperature	-40℃～+70℃
	Relative Humidity	10%～95%,no condensation
	Atmospheric Pressure	equivalent to 0-3000 meters above sea level
Mechanical Conditions	Free Fall	With transport packaging, allows 5 drops from 1m height to the cement floor
Operating Conditions		
Climatic Conditions	Ambient Temperature	Open device with natural ventilation, ambient temperature range: -20℃ ～ 55℃
	Relative Humidity	10%～95%,no condensation
	Atmospheric Pressure	Altitude ⩽2000 meters
	Pollution Level	Suitable for pollution level 2
Mechanical Conditions	Sine Vibration	5 < f < 8.4 Hz, Random: 3.5mm displacement; Continuous: 1.75mm displacement
		8.4 < f < 150 Hz, Random: 1.0g acceleration; Continuous: 0.5g acceleration
	Shock	Half sine wave, 15g, 11ms, 6 times per axis
Electromagnetic Compatibility	EMC Immunity Level	Zone B，IEC61131-2
	Electrostatic Discharge	Air discharge 8kV, contact discharge 4kV
		Performance Leve A
	Surge	DC power supply 0.5kV CM, 0.5kV DM
		I/O and communication ports: 1kV CM
		Performance Leve A
	Fast Transient Burst	Power coupling: 2kV, 5kHz.I/O and communication coupling: 1kV, 5kHz
		Performance Leve A
Protection Level		IP20
Cooling Type		Natural air cooling
Installation Type		DIN35 rail mounting
Certification		CE(ENIEC61000-6-2:2019)