

KNC-PLC-AK840M



FEATURES

- EtherCAT Bus CoDeSys Based Motion Controller
- Arm Cortex-A53, 1.4GHz Quad-Core Processor
- 1 EtherCAT: Up to 32 Axis Synchronization
- 2 Ethernet / 1 RS485 / Modbus RTU
- Rated Input voltage DC 24V
- 8 Digital Inputs, Sourcing/Sinking, Supports 2-Channel of High-Speed Counters
- 8 Digital Outputs, NPN or PNP
- Supports 16 Expansion Modules (Backplane Bus)



DESCRIPTION

The KNC-PLC-AK840M Programmable Logic Controller (PLC) is a new generation of medium size motion controllers designed to support a diverse range of industrial control needs. Programmed with the CoDe Sys IDE and complying with the IEC61131-3 International Standards, this EtherCAT bus motion controller supports up to 32 axes of synchronized motion control. This controller is modular and compact with built-in 8 digital inputs and 8 digital outputs with either NPN or PNP topology. The AK840M series integrates advanced functions and performance, including EtherCAT bus motion control and high-speed backplane bus advantages. These PLCs synchronize with multiple workstations and robots in the industrial manufacturing industry, complete complex process control and regulation for food processing, and are capable of centralized control and monitoring of multiple areas or equipment through dual network ports in the logistics and warehousing industry. The AK840M series products are capable of easily adapting to complex control scenarios in multiple industries with superior design and performance.

SPECIFICATIONS

Parameter	KNC-PLC-AK840M-0808DTN
Digital Input Specifications	
Input Points	8
Input Type	Sinking or Sourcing
Input Voltage	Rated: 24 Vdc; Maximum: 30 VDC
Input Impedance	5.4K
Max Input Voltage of Logic "0"	5V @ 0.8mA
Minimum Input Voltage of Logic "1"	Common Channel: 11 VDC @ 2.0 mA
Input Delay • Off-to-On • On-to-Off	<2.5µs <2.5µs
Isolation	Mode: Optoelectronic Isolation Voltage: 500 VAC / 1 Min
Digital Output Specifications	
Output Points	8
Output Type	Transistor Output, NPN
Output Current / Channel	Maximum 500mA (24VDC ±10%)
Output Leakage Current	Maximum: 10µA
Output Impedance	Maximum: 0.3Ω
Output Delay	<5µS
Protection	Inductive Load Output Protection. Short Circuit Protection.
Output Load	Resistive Load: 12W/channel, 48W/channel
	Inductive Load: 6W/channel, 24W/module
	Lamp Load: 5W/channel, 20W/module
Isolation	Digital Isolation, 500VAC/minute

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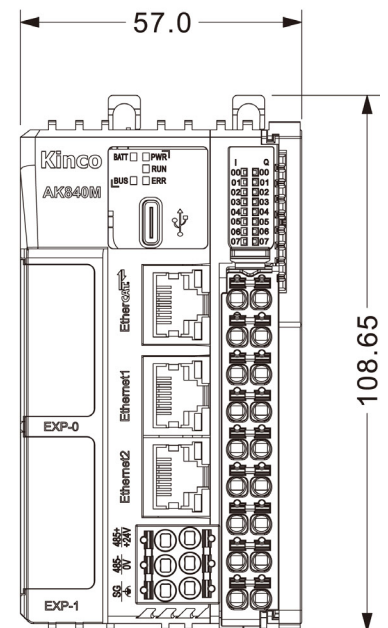
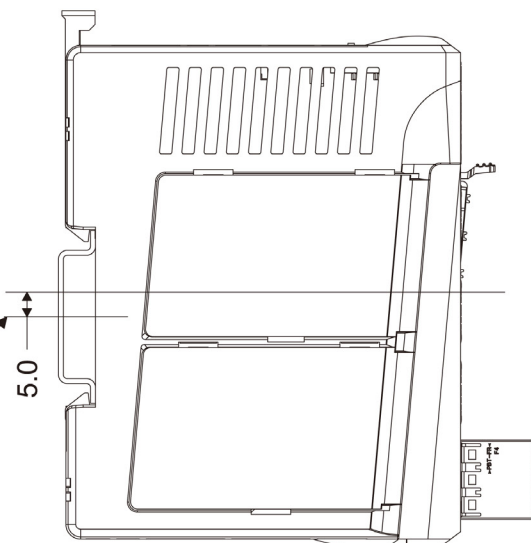
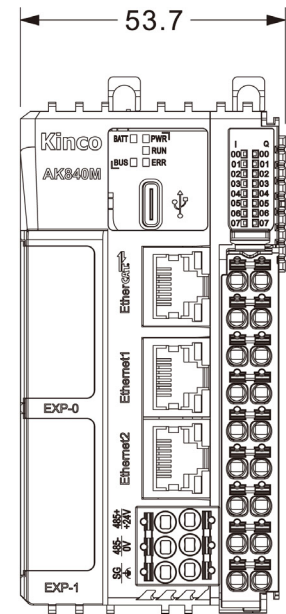
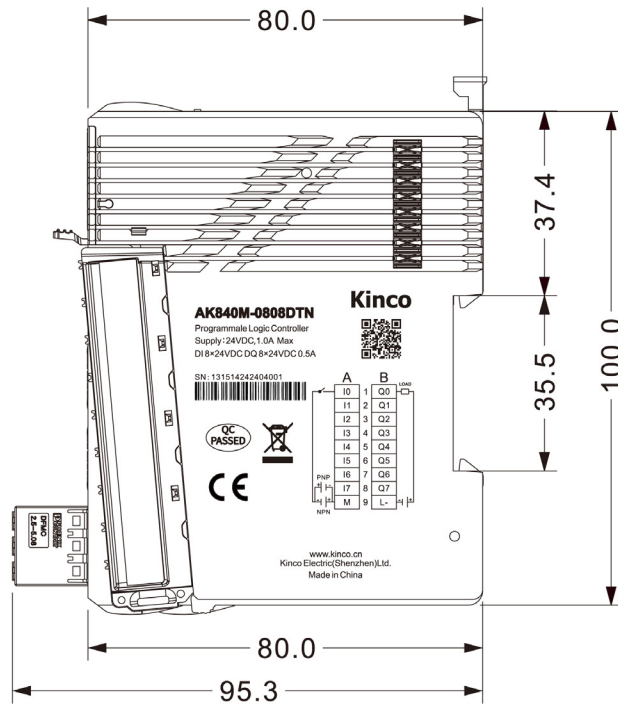
Parameter	KNC-PLC-AK840M-0808DTP
Digital Input Specifications	
Input Points	8
Input Type	Sinking or Sourcing
Input Voltage	Rated: 24 Vdc; Maximum: 30 VDC
Input Impedance	5.4K
Max Input Voltage of Logic "0"	5V @ 0.8mA
Minimum Input Voltage of Logic "1"	Common Channel: 11 VDC @ 2.0 mA
Input Delay	
• Off-to-On	<2.5μs
• On-to-Off	<2.5μs
Isolation	Mode: Optoelectronic Isolation Voltage: 500 VAC / 1 Min
Digital Output Specifications	
Output Points	8
Output Type	Transistor Output, PNP
Output Current / Channel	Maximum 300mA (24VDC ±10%)
Output Leakage Current	Maximum: 10μA
Output Impedance	Maximum: 0.3Ω
Output Delay	<20uS
Protection	Inductive Load Output Protection. Short Circuit Protection.
Output Load	Resistive Load: 7.2W/channel, 48W/channel
	Inductive Load: 3.6W/channel, 24W/module
	Lamp Load: 3W/channel, 20W/module
Isolation	Digital Isolation, 500VAC/minute

Parameter	KNC-PLC-AK840M
Supply Power Rated Voltage	24VDC $\pm$ 20%
Supply Power Rated Power	6W(CPU Unit Only) / 20W(Full-Load)
Power Protection	Overcurrent Protection Reverse Polarity Protection Surge Absorption
Expansion Modules	Supports Up to 16 Expansion Modules
Communication Interfaces	1 X EtherCAT, Minimum Synchronization Cycle: 1ms, Maximum Number of Synchronized Axes: 32 axes. Axis-Control Performance: 1ms, 8 Axes Synchronized Motion Control (Typical MC: Electronic Cam). 2 X Ethernet, Both Support Modbus TCP Master/Slave, with a Maximum of 31 TCP Slaves Per Channel. Both Support Program Upload and Download. 1 X RS485, Supporting Modbus RTU Master/Slave Protocol, Supporting Up to 31 Modbus RTU Slaves. 1 X USB OTG, Supports Firmware Updates Via USB Drive (FAT32 Format).
High Speed Inputs	Supports 2-Channel High-Speed Inputs, A/B Phase and Pulse/Direction Signals, with a Maximum of 200KHz.
Local Bus (Back-plane Bus)	Kinco Dedicated K-Bus Backplane. Supports up to 16 Expansion Modules.
Motion Control	Up 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 x H x D)mm	57 x 80 x 108
Weight	0.39 lbs
Signal Identification	Separate LED Indicators for Each Channel
Module Width	80mm

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Operating Conditions		
Climatic Conditions	Ambient Temperature	Open Device with Natural Ventilation, Ambient Temperature Range: -20°C~55°C
	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
	Free Fall	With Transport Packaging, Allows 5 Drops from 1m Height to the Cement Floor
Electromagnetic Compatibility	EMC Immunity Level	Zone B, IEC61131-2
	Electrostatic Discharge	Air Discharge 8kV, Contact Discharge 4kV
		Performance Level A
	Surge	DC Power Supply 0.5kV CM, 0.5kV DM
		I/O and Communication Ports: 1kV CM
		Performance Level A
	Fast Transient Burst	Power Coupling: 2kV, 5kHz.I/O and Communication Coupling: 1kV, 5kHz
		Performance Level A
Protection Level		IP20
Cooling Type		Natural Air Cooling
Installation Type		DIN35 Rail Mounting
Certification		CE(ENIEC61000-6-2:2019)

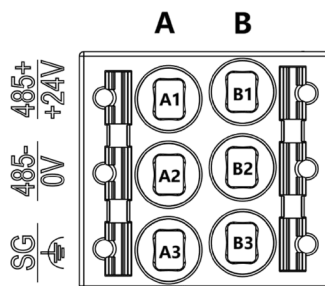
KNC-PLC-AK840M-0808DTN & KNC-PLC-AK840M-0808DTP



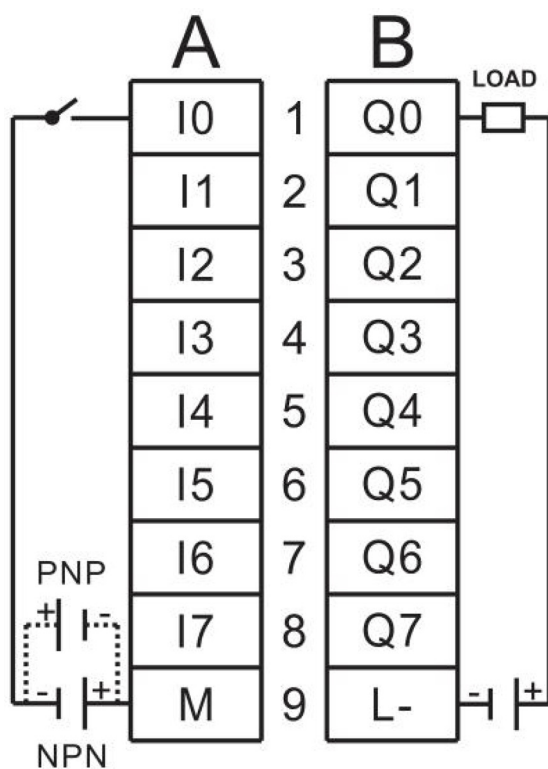
The installation position of the DIN rail is 5mm below the center of the product.

Units are in mm

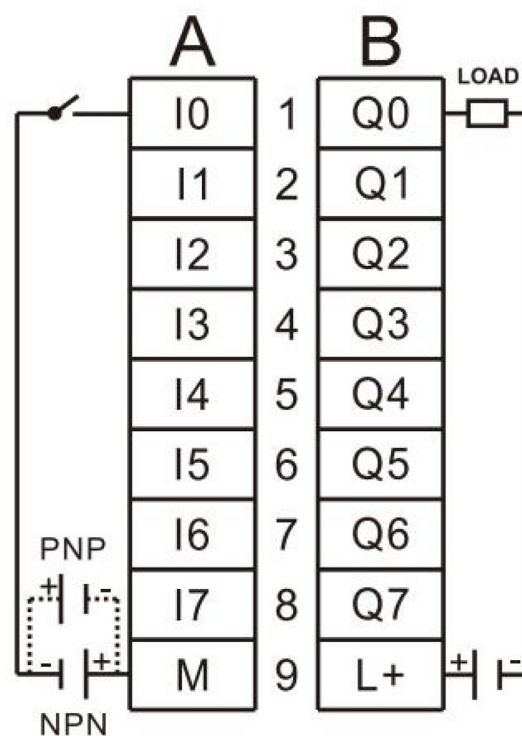
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Pin	Symbol	Description	Pin	Symbol	Description
A1	485+	RS485+	B1	+24V	Power Supply+
A2	485-	RS485-	B2	0V	Power Supply-
A3	SG	RS485 Ground	B3		Power Supply Ground



Local I/O Wiring Diagram (Output NPN)



Local I/O Wiring Diagram (Output PNP)