

KNC-PLC-K6 Series



FEATURES

- Four High Speed Counters
- Four Pulse Train/PWM Outputs
- 14 or 24 Sinking or Sourcing Inputs
- 10 or 16 Outputs
- 2 RS485 Ports + 1 Ethernet Port
- Supports Modbus TCP Protocol
- Communicate with up to 32 devices
- Up to 14 Expansion Modules



DESCRIPTION

The Kinco K6 series provides many diverse functions and is a cost-effective micro integrated PLC. The K6 CPU provides special I/O functions, CANopen master, multiple RS485 ports, high speed counter inputs and PTO/PWM outputs and so on. Equipped with diverse extension modules, the K6 PLCs are equipped to meet requirements of most process control applications. Kinco-K6 seamlessly integrates with the Green series HMIs, CD/FD/JD servo drives and CV/FV VFD's to provide users with easy automation solutions. CPU modules are integrated with a certain number of I/O points onboard. If the onboard I/O points are not enough, users can connect up to 14 expansion modules offering up to 136 I/O points, which will meet most automation demands.

High Speed Counters

The K6 PLC provides four high speed counters with 12 different operation modes, supporting single phase frequencies up to 200 KHz and dual-phase (A/B phase) frequencies up to 200 KHz. Each counter has its own inputs for clock, direction, start, reset, and has a 32-bit current and preset value.

High-Speed Pulse Outputs

The K6 PLC has four built-in pulse generators that can output frequencies up to 200 KHz, which support PTO (Pulse Train Output) or PWM (Pulse Width Modulation). The KincoBuilder software provides absolute and relative positioning, homing, jog, and quick stop instructions. Kinco-K6 easily controls stepper or servo system, with its pulse and direction outputs.

Ethernet

The standard 10/100M Ethernet port supports TCP Server, TCP Client, UDP and other communication protocols. It also supports Modbus TCP Client/Server industrial bus protocol.

Communication

The K6 PLCs provide 2 onboard RS485 serial communication ports. The K6 PLCs can be networked as slaves with other manufacturers HMIs or other master station devices using the Modbus RTU or ASCII protocols. The K6 PLCs can also work as a master to connect with other PLCs, inverters, instrumentation, actuators, and so on. Each RS485 port supports up to 32 interconnected devices on a single network. The expansion BD (Basic Unit Expansion Board) provides a small number of I/O channels and communication ports, which can be directly plugged into the CPU module for use. K606 can add 1 CAN bus interface, or 1 RS232 and an additional RS485 port through the BD board.

Interrupts

The K6 PLC provides 4 edge, communication, timer, and high-speed counter interrupts. Interrupt routines run in real time, can capture rising/falling edges of digital inputs, and are not affected by the PLC cycle.

PID

The K6 PLC provides PID control via an easy to use function block. User can call up to 4 PID function blocks in one PLC program. The PID function block accepts analog inputs as a PV value for PID, meanwhile, send the PID output value directly to an analog output.

Integrated 24 Vdc Sensor Supply

CPU modules provide a 24 Vdc power supply (Pins: VO+, VO-), with maximum current up to 300 mA. It can supply 24 Vdc for the connected HMI and digital inputs.
L011958

FEATURES

Transport and Storage		
Climatic Conditions	Temperature	Temperature -40 °C ~ + 70 °C
	Relative Humidity	10% ~ 95%, Non-Condensing
	Atmospheric Pressure	Correspond to Altitude 0 ~ 3000 m
Mechanical Conditions	Free Drop	Away from 1 m Height Drop to Cement Floor for 5 Times with Transportation Package

Operation		
Climatic Conditions	Temperature	Opening Device with Natural Ventilation, Ambient Temperature: 0 ~ 55 °C
	Relative Humidity	10% ~ 95%, Non-Condensing
	Atmospheric Pressure	Altitude Below 200 m
	Pollution Degree	Applicable to Pollution Degree 2
Mechanical Service Conditions	Vibrations	5<f<8.4 Hz, Random Amplitude: 3.5 mm Displacement, Constant Amplitude: 1.75 mm Displacement 8.4<f<150 Hz, Random Amplitude: 1.0 g Acceleration, Constant Amplitude: 0.5 g Acceleration
	Shock	Half-sine, 15 g peak, 11 ms Duration, Three Shocks in each Direction per Axis.
Electromagnetic Compatibility (EMC)	Electrostatic Discharge	Air: 8 kV, Contact: 4 kV, Performance Criteria B
	Surge	AC Supply: 2 KV CM, 1 KV DM DC Supply: 0.5 KV CM, 0.5 KV DM I/O and Communication Port: 1 KV CM Performance Criteria B
	Fast Transient Bursts	Power Coupling: 2 KV, 5 KHz I/O and Communication Port: 1 KV, 5 KHz Performance Criteria B
	Voltage Dips and Interruptions	AC Supply, @ 50 Hz 0% Voltage for 1 Period, 40% Voltage for 10 Periods, 70% Voltage for 20 Periods. Performance Criteria A
	Radio Frequency Electromagnetic Field	80 ~ 100 MHz, 10 V/m, Modulate by 1 KHz Sine Wave Class C
Protection Class	Dust and Water Proof	IP20

L011958

KNC-PLC-K6 Series



PLC SPECIFICATIONS

Parameter		KNC-PLC-K606	KNC-PLC-K608
Built-in Discrete Inputs / Outputs		14 Inputs / 10 Outputs	24 Inputs / 16 Outputs
Discrete Input Type		Sinking or Sourcing	
Discrete Input Voltage		Rated: 24 Vdc; Maximum: 30 Vdc / 100-240 Vac	
Rated Discrete Input Current		3.5 mA @ 24 Vdc	
Minimum Input Voltage of Logic "1"		Normal Input: 11 Vdc @ 2.0 mA; High-Speed Input: 18 Vdc @ 2.5 mA	
Maximum Input Voltage of Logic "0"		5 Vdc @ 0.7 mA	
Input Delay • Off-to-On • On-to-Off		Normal Input: 12 µs; High-Speed Input: 8 µs Normal Input: 40 µs; High-Speed Input: 12 µs	
Number of Connectable Expansion Modules		14	
Communication Ports	Serial Port	On Board: 2*RS485 BD Board: 1*RS232 + 1*RS485	
	CAN	On Board: None BD Board: 1*CAN	
	Ethernet	On Board: 1*Ethernet	
High-Speed Counter Single-Phase Dual-Phase		4 HSC0 and HSC1: Up to 200 KHz; HSC2 and HSC3: Up to 6 KHz HSC0 and HSC1: Up to 200 KHz; HSC2 and HSC3: Up to 2 KHz	
Pulse Output		4 (Not supported by Relay Type Outputs) PTO0--PTO2: Up to 200 KHz PTO3: Up to 10 KHz (Each channel requires that the load resistance not exceed 1.5 KΩ, otherwise the maximum output frequency will not be reached)	
User Program Memory		Max 8 Ksteps	
User Data Memory		M area 4 KB, V area 16 KB	
Discrete Input Mapping Area		32 Bytes (256*DI)	
Discrete Output Mapping Area		32 Bytes (256*DO)	
Analog Input Mapping Area		64 Bytes (32*AI)	
Analog Output Mapping Area		64 Bytes (32*AO)	
Data Backup Characteristic		EEPROM, 1 KB	
Data Retention Characteristic		V area 16 KB + C area (Counter) 512 Bytes. Lithium Battery, 3 Years at Normal Temperature	
Timer		256 1 ms time base: 4 10 ms time base: 16 100 ms time base: 236	
Timer Interruption		2 Time base: 0.1 ms	

L011958

KNC-PLC-K6 Series



Parameter	KNC-PLC-K606	KNC-PLC-K608
Counter	256	
Real Time Clock	Yes, with Error less than or Equal to 5 Minutes/Month at 25°C	
24 Vdc Output Supply	300 mA, Short Circuit Protection	

Discrete Inputs

Input Type	Sourcing or Sinking
Input Voltage	Rated 24 Vdc, Allowable Maximum 30 Vdc
Rated Input Current	3.5 mA @ 24 Vdc
Minimum Input Voltage of Logic "1"	Normal Channel: 11 Vdc @ 2.0 mA High-Speed Channel: 18 Vdc @ 2.5 mA
Maximum Input Voltage of Logic "0"	5 Vdc @ 0.7 mA
Input Delay • Off-to-On • On-to-Off	Common Channel 12 µs; High-Speed Channel 8 µs Common Channel 40 µs; High-Speed Channel 12 µs
Isolation Between Input and Internal Circuit • Mode • Voltage	Opto-Electrical Isolation 500 Vac / 1 Minute

Discrete Outputs (Transistor)

Output Type	Sourcing
Output Voltage	Rated 24 Vdc, Allowable Range: 20.4 - 28.8 Vdc
Output Current per Channel	Maximum 500 mA @ 24 Vdc
Parallel Connection of Output Channels	Yes
Protection Function: • Power Supply Access Polarity Protection • Inductive Load Protection • Short-Circuit Protection • Output Reverse Polarity Protection	Yes Yes Yes Yes, Allows Reverse Polarity at the Output End for No More than 10 Seconds
Isolation Between Output and Internal Circuit • Mode • Voltage	Opto-Electrical Isolation 500 Vac / 1 minute

Discrete Outputs (Relay)

Output Type	Relay
Maximum Load Voltage	30 Vdc / 250 Vac
Maximum Allowable Load Current	2 A @ 30 Vdc / 250 Vac
Output off-on delay	Maximum delay of 10 ms
Output on-off delay	Maximum delay of 5 ms
Protection Function: • Power Supply Access Polarity Protection • Inductive Load Protection • Short-Circuit Protection • Output Reverse Polarity Protection	Yes Yes Yes Yes, Allows Reverse Polarity at the Output End for No More than 10 Seconds
Isolation Between Output and Internal Circuit • Mode • Voltage	Opto-Electrical Isolation 500 Vac / 1 minute

L011958

KNC-PLC-K606-24DT	
Power Supply	20.4-28.8 VDC
Built-In Digital Inputs	14 Sinking or Sourcing
Built-In Digital Outputs	10 (Transistor Type) Sourcing
Number of Connectable Expansion Modules	14
Communication Ports	2 RS485 1 Ethernet
Expansion BD Slots	1
Installation Size (mm)	128 x 114 x 76 (L x W x H)

KNC-PLC-K606-24AR	
Power Supply	100-240 VAC
Built-In Digital Inputs	14 Sinking or Sourcing
Built-In Digital Outputs	10 (Relay Type)
Number of Connectable Expansion Modules	14
Communication Ports	2 RS485 1 Ethernet
Expansion BD Slots	1
Installation Size (mm)	128 x 114 x 76 (L x W x H)

KNC-PLC-K606-24DR	
Power Supply	20.4-28.8 VDC
Built-In Digital Inputs	14 Sinking or Sourcing
Built-In Digital Outputs	10 (Relay Type)
Number of Connectable Expansion Modules	14
Communication Ports	2 RS485 1 Ethernet
Expansion BD Slots	1
Installation Size (mm)	128 x 114 x 76 (L x W x H)

L011958

KNC-PLC-K606-24AT	
Power Supply	100-240 VAC
Built-In Digital Inputs	14 Sinking or Sourcing
Built-In Digital Outputs	10 (Transistor Type) Sourcing
Number of Connectable Expansion Modules	14
Communication Ports	2 RS485 1 Ethernet
Expansion BD Slots	1
Installation Size (mm)	128 x 114 x 76 (L x W x H)

KNC-PLC-K608-40DT	
Power Supply	20.4-28.8 VDC
Built-In Digital Inputs	24 Sinking or Sourcing
Built-In Digital Outputs	16 (Transistor Type) Sourcing
Number of Connectable Expansion Modules	14
Communication Ports	2 RS485 1 Ethernet
Expansion BD Slots	2
Installation Size (mm)	186 x 114 x 76 (L x W x H)

KNC-PLC-K608-40DR	
Power Supply	20.4-28.8 VDC
Built-In Digital Inputs	24 Sinking or Sourcing
Built-In Digital Outputs	16 (Relay Type)
Number of Connectable Expansion Modules	14
Communication Ports	2 RS485 1 Ethernet
Expansion BD Slots	2
Installation Size (mm)	186 x 114 x 76 (L x W x H)

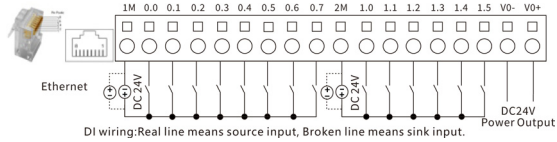
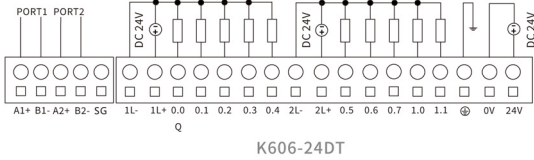
L011958

KNC-PLC-K6 Series

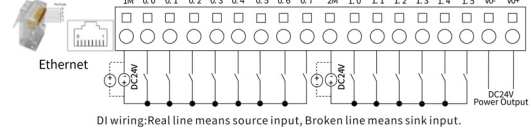
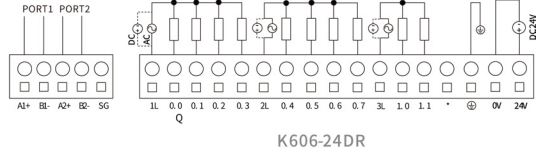


WIRING DIAGRAMS

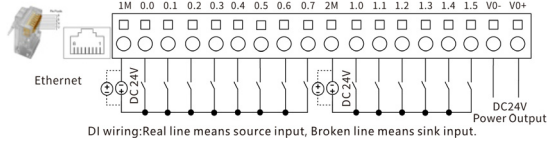
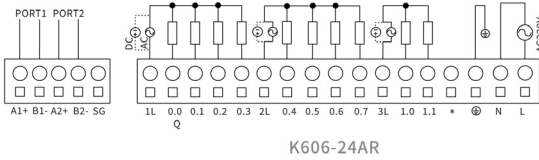
KNC-PLC-K606-24DT



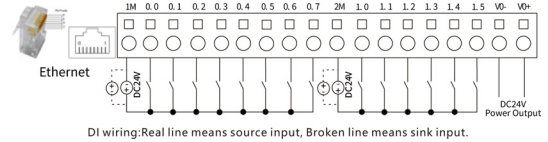
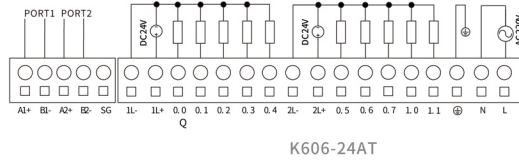
KNC-PLC-K606-24DR



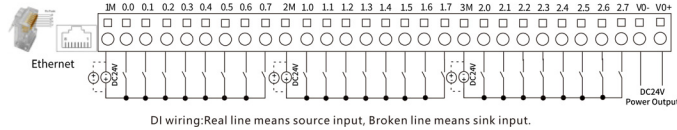
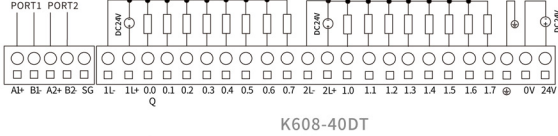
KNC-PLC-K606-24AR



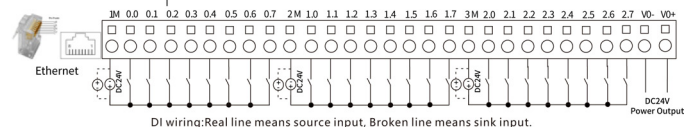
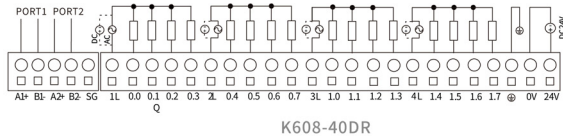
KNC-PLC-K606-24AT



KNC-PLC-K608-40DT

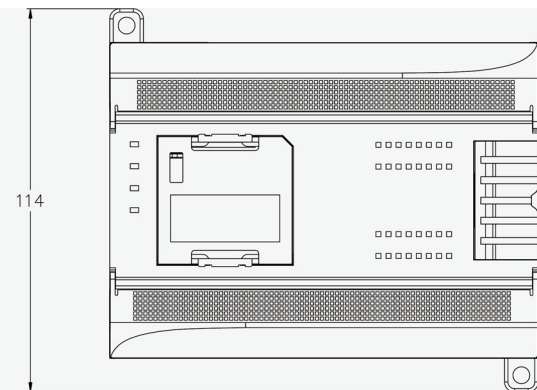
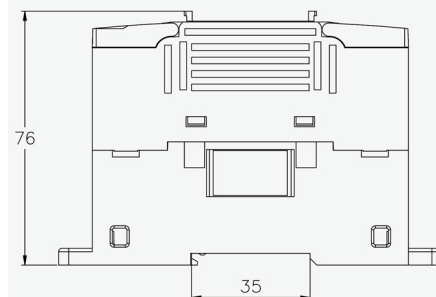
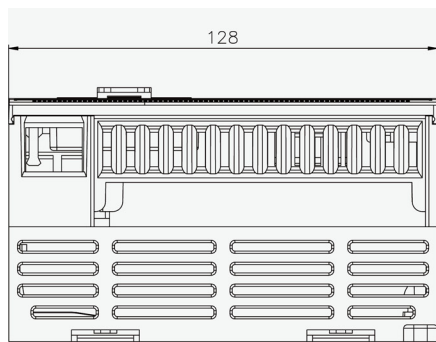


KNC-PLC-K608-40DR



DIMENSIONS

KNC-PLC-K606



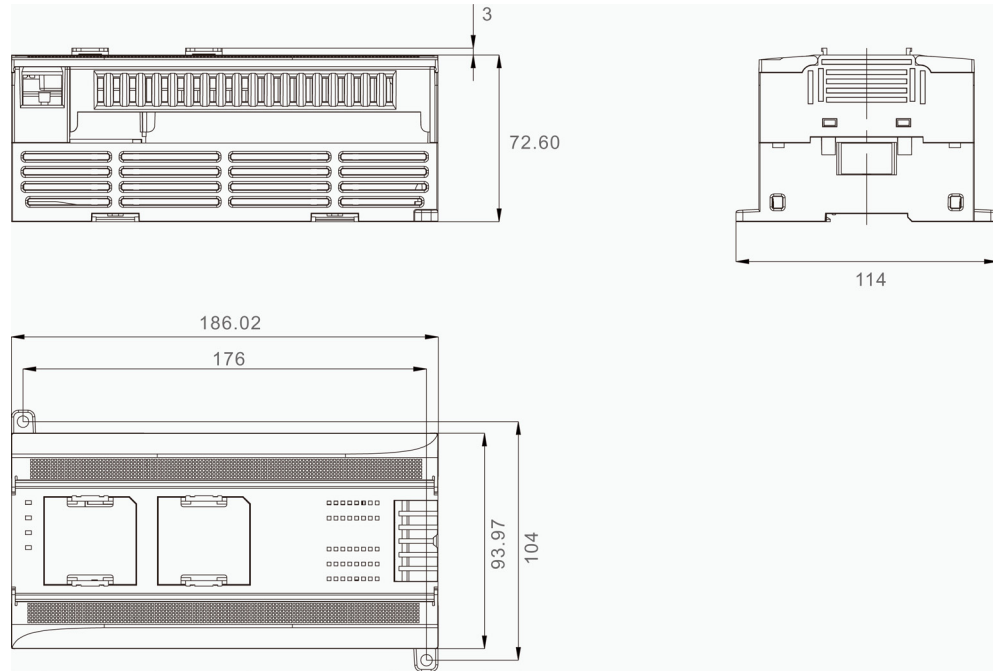
Units are in mm

KNC-PLC-K6 Series



DIMENSIONS

KNC-PLC-K608



Units are in mm