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Customers in over 50 countries and in diverse markets and sectors.



Kinco

Programmable Logic Controller

Kinco PLC Catalog

- K2 PLC
- K5 PLC - F1-Controller







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Overview of Kinco K2 PLC

Product Features:

K2 series PLC is cost-effective product (without expansion).

K2 is based on K5, but K2 has better performance and lower cost, K2 is product with high cost-performance rate.

Main Features:

- Micro USB for programming and power supplier.
- DIO technic for more applications.
- 4 high speed counters,3 high speed output.
- 2*RS485, max. baudrate 115.2kbps.
- Real time clock.
- · Small size to save space.



Transistor type of DIO (DI, DO multiplexing)

• Based on DIO technology, K2 PLC provides some DIO which can be used as digital input or digital output. It doesn't need to configure in software. It will adapt automatically according to the wirings.

USB programming

- K2 provides MicroUSB port for programming(USB2.0).
- The MicroUSB port can be also used as power supply for K2 PLC. It is compatible with common MicroUSB cables.

High speed counter

- K2 provides 4 high speed counters. Every high speed counter can support maximum 32 PV and support 32"CV=PV" interrupts
- High speed counter support multiple modes: single phase, double phase (up/down), CW/CCW, AB phase(1 multiplication and 4 multiplication).
- Frequency of counters is 10~50KHz.

High speed output

- K2 provides 3 high speed output(Q0.0,Q0.1 and Q0.4). It supports PTO and PWM.
- Output frequency is 10~50KHz.
- The software provides PLS(PWM or PTO), position controlling instructions, PRL0_F(following instructions).

Serial port communication

- K2 provides 2 RS485 communication ports, PORT1 and PORT2. It supports baudrate up to 115.2kbps.
- PORT1 can work as programming port, also supports Modbus RTU protocols(as a slave), free-protocol communication mode.
- PORT2 supports Modbus RTU (as a slave or master) and free-protocol communication mode.

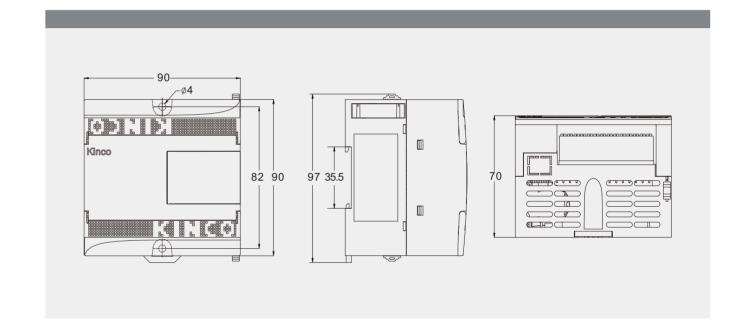
Technical Specifications

Parameter	K205-16DT	K205-16DR	K205EX-22DT	K205EA-18DT		
Power Supply						
Rated Power Supply DC24V. Note: USB port can be used as power supply.						
Built-in I/O and Communication						
Digital channel	6*DI, 6*DO, 4*DIO	6*DI/6*Relay/4*DIO	8*DI/8*DO/6*DIO	8*DI/8*DO		
Analog channel				1*AI/1*AO		
Expansion modules						
Programming Port	Micro USB 2.0					
Communication Port	or master) 、free-protoco	72,Max.baudrate 115.2kbpsbl communication mode, aa slave or master) and free	lso can work as programm	ing port. PORT2 supports		
High-speed counters	4					
Single phase	4, HSC0 and HSC1: Max.	50KHz. HSC2 and HSC3: M	ax. 20KHz.			
Two phase	4, HSC0 and HSC1: Max.	50KHz. HSC2 and HSC3: M	ax. 10KHz.			
High-speed pulse output	3 Q0.0 and Q0.1: Max.50KHz (The resistor of load must be less than 1.5KΩ). Q0.4: Max.10KHz.					
I/O Interrupts	4 rising/falling edge inte	rrupts, I0.0-I0.3.				
Memory Area						
Max. User program	4K instructions					
User Data	M area: 1K bytes; V area: 4K bytes					
DI image area	2 bytes			1byte		
DO image area	2 bytes			1byte		
AI image area				2byte		
AO image area				2byte		
Data Backup	E2PROM , 448 bytes					
Retentive Ranges	4K bytes, lithium cell as backup power, 3 years at normal temperature.					
Others						
	256					
Timers	1ms time-base : 4					
	10ms time-base : 16					
	100ms time-base : 236					
Timed interrupts	2 with 0.1ms time-base					
Counters	256					
Real-time clock	Yes, deviation less than 3 min/month at 25°C					

Mechanical Dimensions (Unit:mm)







K5 series, as upgraded products of K3 series, close to market, provide diverse functions and higher performance, is a kind of cost-effective micro integrated PLC (Programmable Logic Controller). Kinco-K5 CPU provides special I/O functions (high-speed counter, PTO/PWM output), CANopen master, multiple RS485 ports, integrated analog input and output channels and so on. Equiped with diverse extension modules, Kinco-K5 PLC is applicable to fully meet requirements of small devices and process control.

Kinco-K5 combines with MT4000 HMI, CD/FD/JD servo driver and inverter to provider users with easy automation solutions

High-speed Counter



Kinco-K5 PLC provides two high-speed counters with 12 different operation modes, supports single phase frequency up to 60KHz and dual-phase (A/B phase) frequency up to 20KHz.

In different modes, each counter has its own inputs for clock, direction control, start and

reset, and has a 32-bit current value and preset value.

High-speed pulse Output

Kinco-K5 CPU has two built-in pulse generators with frequency up to 200KHz, which support PTO (Pulse Train Output) or PWM (Pulse-Width Modulation).

KincoBuilder software provides absolute position, relative position, homing, jog and quick stop instructions and so on. Kinco-K5, combining with stepper or servo system, can realize position control conveniently.



CAN bus Communication Function

CPU module can provide CANopen master and free protocol function by connecting with CAN bus module K541. CANopen master function complies with Standard DS301. It supports baud rate up to 1Mbps, 72 CANopen slave stations, up to 256 TPDOs and 256 RPDOs. Connect K5 with CD/FD/JD/ED series servo via CANopen bus can realize multi-axis motion control easily with simple wiring and high reliability.

Serial Communication Function

Kinco-K5 CPU provides 1 RS232 port and at most 2 RS485 ports, provides Modbus RTU master/slave and free protocol.

Via RS485 ports, Kinco-K5 can work as Modbus RTU slave to connect with HMI, configuration software or other master station devices, as well as work as Modbus RTU master to connect with PLC, inverter, instrument, actuator. Each RS485 port support at most 32 devices to be interconnected into a network.



Edge Interrupt Function

Kinco-K5 provides edge interrupt, communication port interrupt, time interrupt, high-speed counter interrupt and so on. Interrupt routine run in real time, not affected by PLC cycle.

DI points I0.0-I0.3 on CPU body support edge interrupt function. Kinco-K5 can capture rising/falling edge of DI signal quickly.

Time base of the two ways time interrupts is 0.1mS, Kinco-K5 can meet applications of precise timing.

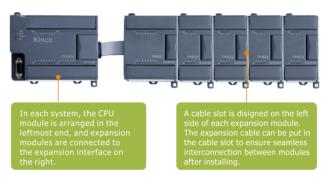
Soft-PID Function

Kinco-K5 provides soft-PID control function by function block(default). User can call at most 4 PID function blocks in program.

The PID function block can take AI signal value as the PV value for PID, meanwhile, send PID output value directly to AO module for output.

Various module types

Kinco-K5 series PLCs comprise of CPU modules and expansion modules. Kinco-K5 provides about 20 kinds of models to meet various applications. CPU modules integrate with a certain number of I/O points on body. If I/O points are not enough for application, user could connect up to 10 expansion modules with up to 200 points to meet most automation applications.



Integrated DC24V Sensor Supply

CPU modules provides DC24V power supply (Terminal name: VO+, VO-), with maximum current 300mA or 500mA. It can supply DC24V for the connected text dispaly panel, HMI, as well as DI points.





K5 serials PLC get awards"best competence product"

Requirement on Application Environment

Climatic conditions, electrical service conditions, mechanical service conditions and so on comply with IEC61131-2 standard.

Climatic	Temperature	Temperature -40°C ~ +70°C			
conditions Relati	Relative humidity	10% ~ 95%, non-condesing			
	,	Correspond to altitude 0~3000m			
	Atmospheric Pressure	·			
Mechanical conditions	Free drop	Away from 1m height drop to cement floor for 5 times with transportation package			
Operation					
Temperature		Opening device with natural ventilation, ambient temperature: -10 ~ 55°C			
Climatic	Relative humidity	10% ~ 95%, non-condensing			
conditions	Atmospheric pressure	Altitude below 2000m			
	Pollution degree	Applicable to pollution degree 2			
Mechanical	Vibrations	5 < f < 8.4Hz, random amplitude: 3.5mm displacement, constant amplitude: 1.75mm displacement			
service		8.4 < f < 150, random amplitude: 1.0g acceleration, constant amplitude: 0.5g acceleration			
conditions	Shock	Half-sine, 15g peak, 11ms duration, three shocks in each direction per axis.			
	Electrostatic discharge	Air: 8kV, Contact: 4kV, Performance criteria B			
		AC supply: 2KV CM, 1KV DM			
	Surge	DC supply: 0.5KV CM, 0.5KV DM			
		I/O and communication port: 1KV CM			
Electromagnetic		Performance criteria B			
compatibility	Fast transient	Power coupling: 2KV, 5KHz			
(EMC)	bursts	I/O and communication port: 1KV, 5KHz			
		Performance criteria B			
	Voltage Dips and	AC supply, @50Hz 0%voltage for 1 period, 40%voltage for 10 periods, 70%voltage for 20 periods.			
	interruptions	Performance criteria A			
	Radiofrequency	80~1000 MHz , I0V/m, modulate by 1KHz sine wave.			
	electromagnetic field	Performance criteria A			
Protection class	Dust and water proof	IP20			
CE Certification					
LVD		Test Standard: Safety requirements of EN 61131-2:2007			
EMC		Test Standard: Clause 8,9 &10 of EN61131-2:2007			

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Kinco-K5 series PLCs are upgraded products of K3 series. Specially, K506EA-30AT CPU module, integrated with analog I/O on body, pulse output, high-speed counter, is a kind of versatile micro integrated PLC (Programmable Logic Controller), and can fully meet requirements of small devices and process control.

Kinco-K5 combines with MT4000 HMI, CD/FD/JD servo driver and inverter to provider users with easy automation solutions.

Name	Order no.	Description
CPU module		
	K504EX-14AT	AC85-265V power supply, DI 8*DC24V, DO 6*DC24V. 2 serial communication ports (1*RS232, 1*RS485), up to 4 expansion modules connectable.
CPU504EX	K504EX-14AR	AC85-265V power supply, DI 8*DC24V, DO 6*Relay. 2 serial communication ports (1*RS232, 1*RS485), up to 4 expansion modules connectable.
CF 0504LX	K504EX-14DT	DC20.4-28.8V power supply, DI8*DC24V, DO6*DC24V, 2 serial communication ports (1*RS232, 1*RS485), up to 4 expansion modules connectable.
	K504EX-14DR	DC20.4-28.8V power supply, DI8*DC24V, DO6*Relay. 2 serial communication ports (1*RS232, 1*RS485), up to 4 expansion modules connectable.
	K506-24AT	AC85-265V power supply, DI 14*DC24V, DO 10*DC24V. 3 serial communication ports (1*RS232, 2*RS485), up to 10 expansion modules connectable.
CPU506	K506-24AR	AC85-265V power supply, DI 14*DC24V, DO 10* Relay. 3 serial communication ports (1*RS232, 2*RS485) , up to 10 expansion modules connectable.
Crosoo	K506-24DT	DC20.4-28.8V power supply, DI 14*DC24V, DO 10*DC24V. 3 serial communication ports (1*RS232, 2*RS485) . , up to 10 expansion modules connectable.
	K506-24DR	DC20.4-28.8V power supply, DI 14*DC24V, DO 10*Relay. 3 serial communication ports (1*RS232, 2*RS485) , up to 10 expansion modules connectable.
CPU506EA	K506EA-30AT	AC85-265V power supply, DI 14*DC24V, DO 10*DC24V, AI 4*IV, AO 2*IV. 3 serial communication ports (1*RS232, 2*RS485), up to 10 expansion modules connectable.
CPOSOCEA	K506EA-30DT	DC20.4-28.8V power supply, DI 14*DC24V, DO 10*DC24V, AI 4*IV, AO 2*IV. 3 serial communication ports (1*RS232, 2*RS485), up to 10 expansion modules connectable.
	K508-40AT	AC85-265V power supply, DI 24*DC24V, DO 16*DC24V. 3 serial communication ports (1*RS232, 2*RS485), up to 10 expansion modules connectable.
	K508-40AX	AC85-265V power supply, DI 24*DC24V, DO 4*DC24V+12*Relay. 3 serial communication ports (1*RS232, 2*RS485) , up to 10 expansion modules connectable.
CPU508	K508-40AR	AC85-265V power supply, DI 24*DC24V, DO 16*Relay. 3 serial communication ports (1*RS232, 2*RS485), up to 10 expansion modules connectable.
	K508-40DT	DC20.4-28.8V power supply, DI 24*DC24V, DO 16*DC24V. 3 serial communication ports (1*RS232, 2*RS485) , up to 10 expansion modules connectable.
	K508-40DR	DC20.4-28.8V power supply, DI 24*DC24V, DO 16*Relay. 3 serial communication ports (1*RS232, 2*RS485) , up to 10 expansion modules connectable.

Note: CPU modules with relay output (The last letter of order No. is "R", for example K506-24AR) do not support pulse output.



Name	Order no.	Description		
Expansion I/O module				
PM521	K521-08DX	DI 8*DC24V		
PIVISZI	K521-16DX	DI 16*DC24V		
	K522-08XR	DO 8*relay		
PM522	K522-16XR	DO 16*relay		
PIVIJZZ	K522-08DT	DO 8*DC24V		
	K522-16DT	DO 16*DC24V		
	K523-16DR	DI 8*DC24V , DO 8*relay		
PM523	K523-08DR	DI 4*DC24V , DO 4*relay		
PIVISZS	K523-16DT	DI 8*DC24V , DO 8*DC24V		
	K523-08DT	DI 4*DC24V , DO 4*DC24V		
	K531-04IV	4 analog input channels , 4-20mA/1-5V/0-20mA/0-10V		
PM531	K531-04RD	PT100, PT1000, Cu50, Resistor		
	K531-04TC	4 thermocouple input channels, internal/external compensation selectable, J type, K type, E type, S type		
PM532	K532-02IV	2 analog output channels , 4-20mA/1-5V/0-20mA/0-10V		
PM533	K533-04IV	2 analog input channels , 4-20mA/1-5V/0-20mA/0-10V 2 analog output channels , 4-20mA/1-5V/0-20mA/0-10V		
Expansion function module				
SM541 K541 CAN communication expansion module, supports CANopen master and CAN free protocol.				
Power supplier module				
PS580	K580	Input voltage:AC85~265V;output rated current:5V 1A/24V 250mA		

Kinco-K5 provides common I/O types, main parameters of each I/O type are shown in the following tables.

DI channel parameter

Input type	Source/Sink optional
Input voltage	Rated DC24V, allowable maximum DC30V
Rated input current	3.5mA@24VDC
Minimum input voltage of logic 1	Normal channel: 11V@2.0mA; High-speed channel: 18V@2.5mA
Maximum input voltage of logic 0	5V@0.7mA
Input delay	
· off-to-on	Common channel 12 µ s; High-speed channel 8 µ s
· on-to-off	Common channel 40 µ s; High-speed channel 12 µ s
Isolation between input and internal circuit	
• Mode	Opto-electrical isolation
· Voltage	500VAC/1minute

DO channel parameter (Transistor Type)

Output type	Source
Output voltage	Rated DC24V. Allowable range: DC20.4V—28.8V (Consistent with power supply)
Output current per channel	Maximum 500mA @24VDC
Parallel connection of output channels	Yes
Protection function:	
 Power supply access polarity protection 	Yes
 Inductive load protection 	Yes
Short-circuit protection	Yes
 Output reverse polarity protection 	Yes, allow applying reverse polarity signal at the output end no more than 10s
Isolation between output and internal circuit	
• Mode	Opto-electrical isolation
Voltage	500VAC/1minute

DO channel parameter (Relay Type)

Output type	Relay
Maximum load voltage	DC 30V/AC250V
Maximum allowable load current	2A (DC 30V/AC250V)
Output off-to-on delay	Max. 10ms
Output on-to-off delay	Max. 5ms
Expected life of the contacts	
 Mechanical life (no-load) 	12,000 times/min
Electrical life (rated load)	100 times/min
Expected life of the contacts	
 Mechanical life (no-load) 	20,000,000 times (12,000 times/min)
Electrical life (rated load)	100,000 times (6 times/min)
Output isolation	
• Mode	Relay
 Between coil and contact 	2000Vrms
Between contacts	1000Vrms

AI channel parameter(Current/Voltage Type)

Resolution	12 bits		
Measurement accuracy	0.3% F.S.		
Signal form	4~20mA、1~5V、0~20mA、0~10V. Bearable maximum input voltage is DC15V		
Conversion rate	About 30 times/min.		
Input impedance	Current mode: <250 Ω		
	Voltage mode: >4M Ω		
Anti common-mode voltage	(Signal voltage + common-mode voltage)≤12V. Exceed this range,		
	the channel will be in protection state		
Status indication The red LED of each channel indicates 4~20mA or 1~5V input signal			
	exceeds measurement range		

AO channel parameter(Current/Voltage Type)

Resolution	12 bits
Output signal accuracy	0.3% F.S.
Signal form	4~20mA、1~5V、0~20mA、0~10V
Conversion rate	About 30 times/min.
External load	Current mode: <500 Ω
	Voltage mode: >1KΩ
Status indication	No

RTD channel parameter

Signal form	Pt100、Pt1000、Cu50、Resistor
Connection	2–wire or 3–wire
Resolution	24 bits
Measurement accuracy	Temperature ± 0.5°C, Resistance ± 1 Ω
Input impedance	>1MΩ
Status indication	The red LED of each channel indicates input signal exceeds measurement range.

TC Channel parameter

Signal form	J type, K type, E type, S type
Compensation	Internal/ external compensation selectable by software
Resolution	24 bits
Measurement accuracy	0.1% F.S.
Input impedance	>20K Ω
Status indication	The red LED of each channels indicates input signal exceeds measurement range.

SUMMARY: CPU module is the core of Kinco-K5 series PLCs, which combines a MCU, I/O unit, power supply and kinds of communication interfaces. K5 provides different CPU models to meet varied applications. The following table describes the main specifications of each type of CPU.

Parameter	CPU504EX	CPU506	CPU506EA	CPU508	
I/O and communication port					
Built-in digital points	8*DI / 6*DO	14*DI / 10*DO	14*DI / 10*DO	24*DI / 16*DO	
Built-in analog points			4*AI / 2*AO		
Number of connectable	4	10	10	10	
expansion modules	4	10	10	10	
·	2, PORT0:RS232,	3, PORT0: RS232,			
Communication	PORT1: RS485	PORT1、PORT2: RS485			
ports	PORT0 supports progr	ramming protocol, Modb	us RTU slave, free proto	ocol	
	PORT1/PORT2 suppo	rt RTU master and slave	e, free protocal		
High-speed counter	2				
Single-phase	2, Max. 60KHz				
Dual-phase	2, Max. 20KHz				
Pulse output	2, Max. 200KHz (load	should be less than $1.5K\Omega$, other	herwise the maximum frequenc	y will be less than 200KHz.)	
Memory area					
User program memory	Max. 4K steps				
user data memory	M area 1KB; V area 4k	KB			
DI mapping area	10 bytes (80*DI) 32 bytes (256*DI)				
DO mapping area	10 bytes (80*DO)	32 bytes (256*DO)			
Al mapping area	32 bytes (16*AO)	64 bytes (32*AI)			
AO mapping area	32 bytes (16*DO) 64 bytes (32*AO)				
Data backup characteristic	FRAM, 448 bytes				
Data retention characteristic	4K bytes. Lithium batte	ery, 3 years at normal ter	mperature		
Others					
	256				
Timer	1ms time base: 4				
	10ms time base: 16				
	100ms time base: 236				
Timer interruption	2, time base: 0.1ms				
Counter	256				
Real-time clock	Yes, with an error not greater than 2 minutes/month under temperature of 25℃				
DC24V Output supply	300mA, short circuit protection	500mA, short circuit p	protection		

CPU504EX



K504EX-14AT

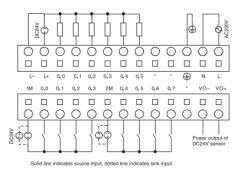
Power supply: AC85–265V power supply
Built-in I/O points: 14 I/O, DI 8*DC24V, DO 6*DC24V, transistor output
Communication port: 1 RS232
Connectable expansion modules: Yes. At most 4 expansion modules
Real-time clock: Yes
Installation size(mm): $97 \times 114 \times 70 \ (L \times W \times H)$



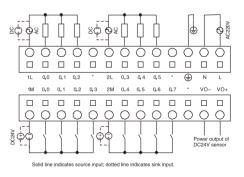
K504EX-14AR

Power supply: AC85–265V power supply	
Built-in I/O points: 14 I/O, DI 8*DC24V, DO 6*Relay, relay output	
Communication port: 1 RS232, 1 RS485	
Connectable expansion modules: Yes. At most 4 expansion modules	
Real-time clock: Yes	
Installation size(mm): 97 × 114 × 70 (L × W × H)	

K504EX-14AT



K504EX-14AR



CPU504EX



K504EX-14DT

Power supply: DC20.4–28.8V power supply

Built-in I/O points: 14 I/O, DI 8*DC24V, DO 6*DC24V, transistor output

Communication port: 1 RS232, support programming, Modbus RTU(slave), free protocol

Connectable expansion modules: Yes. At most 4 expansion modules

Real-time clock: Yes

Installation size(mm): $97 \times 114 \times 70 \ (L \times W \times H)$



K504EX-14DR

Power supply: DC20.4-28.8V power supply

Built-in I/O points: 14 I/O, DI 8*DC24V, DO 6*Relay, relay output

Communication port: 1 RS232, support programming, Modbus RTU(slave), free protocol

Connectable expansion modules: Yes. At most 4 expansion modules

Real-time clock: Yes

Installation size(mm): $97 \times 114 \times 70 (L \times W \times H)$

CPU506



K506-24AT

Power supply: AC85–265V power supply

Built-in I/O points: 24 I/O, DI 14*DC24V, DO 10*DC24V, transistor output

Communication ports: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

Real-time clock: Yes

Installation size(mm): $125 \times 114 \times 70 \text{ (L} \times W \times H)$



K506-24AR

Power supply: AC85-265V power supply

Built-in I/O points: 24 I/O, DI 14*DC24V, DO 10*Relay, relay output

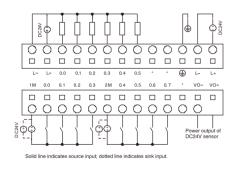
Communication ports: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

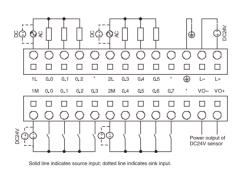
Real-time clock: Yes

Installation size(mm): $125 \times 114 \times 70 \text{ (L} \times \text{W} \times \text{H)}$

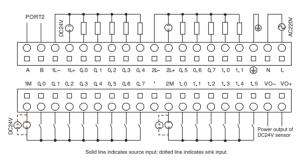
K504EX-14DT



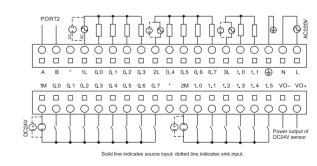
K504EX-14DR



K506-24AT



K506-24AR



CPU506



K506-24DT

Power supply: DC20.4–28.8V power supply

Built–in I/O points: 24 I/O, DI 14*DC24V, DO 10*DC24V, transistor output

Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

Real–time clock: Yes

Installation size(mm): 125 × 114 × 70 (L × W × H)



K506-24DR

Power supply: DC20.4–28.8V power supply

Built–in I/O points: 24 I/O, DI 14*DC24V, DO 10*Relay, relay output

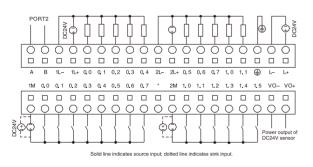
Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

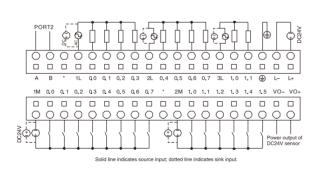
Real–time clock: Yes

Installation size(mm): 125 × 114 × 70 (L × W × H)

K506-24DT



K506-24DR



CPU506EA



K506EA-30AT

Power supply: AC85–265V power supply

Built–in I/O points: 30 I/O, DI 14*DC24V, DO 10*DC24V, DO is transistor output,

AI 4*IV, AO 2*IV,

AI/AO support 4–20mA/1–5V/0–20mA/0–10V signal forms

Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

Real–time clock: Yes

Installation size(mm): 200 × 114 × 70 (L × W × H)



K506EA-30DT

Power supply: DC20.4–28.8V power supply

Built–in I/O points: 30 I/O, DI 14*DC24V, DO 10*DC24V, DO is transistor output,

AI 4*IV, AO 2*IV,

AI/AO support 4–20mA/1–5V/0–20mA/0–10V signal forms

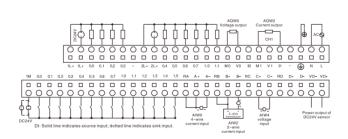
Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

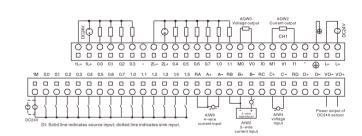
Real–time clock: Yes

Installation size(mm): 200 × 114 × 70 (L × W × H)

K506EA-30AT



K506EA-30DT



CPU508



K508-40AT

Power supply: AC85–265V power supply

Built-in I/O points: 40 I/O,DI 24*DC24V, DO 16*DC24V, transistor output

Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

Real-time clock: Yes

Installation size(mm): $200 \times 114 \times 70 \text{ (L} \times W \times H)$



K508-40AR

Power supply: AC85-265V power supply

Built-in I/O points: 40 I/O, DI 24*DC24V, DO 16*Relay, relay output

Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

Real-time clock: Yes

Installation size(mm): $200 \times 114 \times 70 \text{ (L} \times \text{W} \times \text{H)}$



K508-40AX

Power supply: AC85–265V power supply

Built-in I/O points: 40 I/O, DI 24*DC24V, DO 12*Relay+4*DC24V

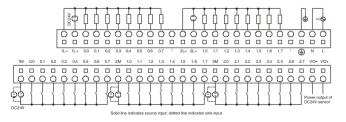
Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

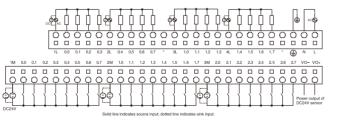
Real-time clock: Yes

Installation size(mm): $200 \times 114 \times 70 \text{ (L} \times W \times H)$

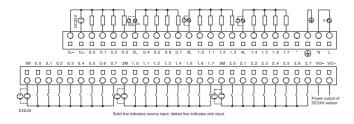
K508-40AT



K508-40AR



K508-40AX



CPU508



K508-40DT

Power supply: DC20.4–28.8V power supply

Built-in I/O points: 40 I/O, DI 24*DC24V, DO 16*DC24V, transistor output

Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

Real-time clock: Yes

Installation size(mm): $200 \times 114 \times 70 \text{ (L} \times \text{W} \times \text{H)}$



K508-40DR

Power supply: DC20.4–28.8V power supply

Built-in I/O points: 40 I/O, DI 24*DC24V, DO 16*Relay, relay output

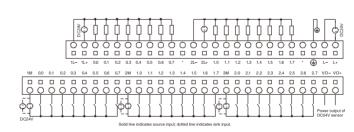
Communication port: 1 RS232, 2 RS485

Connectable expansion modules: Yes. At most 10 expansion modules

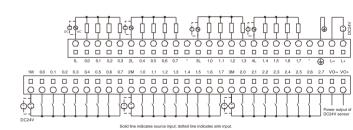
Real-time clock: Yes

Installation size(mm): $200 \times 114 \times 70 \ (L \times W \times H)$

K508-40DT



K508-40DR



Digital Input Module PM521



K521-08DX

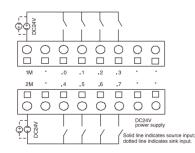
Input points: 8, divided into 2 groups, each group with 4 channels
Input type: Source (common–cathode)/sink (common–anode)
Input voltage: Rated DC24V, voltage range of logic "1" is DC11 ~ 30V
Isolation mode: Opto–electrical isolation between input signal and internal circuit,
isolation voltage 500VAC/1 min
Signal indication: Separated LED indicates for each channel
Module width: 50mm



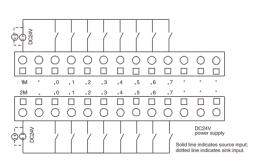
K521-16DX

Input points: 16, divided into 2 groups, each group with 8 channels
Input type: Source (common–cathode)/sink (common–anode)
Input voltage: Rated DC24V, voltage range of logic "1" is DC11 ~ 30V
Isolation mode: Opto–electrical isolation between input signal and internal circuit,
isolation voltage 500VAC/1 min
Signal indication: Separated LED indicates for each channel
Module width: 75mm

K521-08DX



K521-16DX



Digital Output Module PM522



K522-08DT

Output points: 8, divided into 2 groups, each group with 4 channels

Output type: source (common-cathode)

Output voltage: Rated DC24V, max. output current of each channel is 500mA

Circuit protection: Power supply access polarity protection, output short-circuit

protection, inductive load protection

Isolation mode: Opto-electrical isolation between input signal and internal circuit,
isolation voltage 500VAC/1 min

Signal indication: Separated LED indicates for each channel

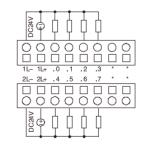
Module width: 50mm



K522-16DT

Output points: 16, divided into 4 groups, each group with 4 channels
Output type: source (common-cathode)
Output voltage: Rated DC24V, max. output current of each channel is 500mA
Circuit protection: Power supply access polarity protection, output short-circuit
protection, inductive load protection
Isolation mode: Opto-electrical isolation between input signal and internal circuit,
isolation voltage 500VAC/1 min
Signal indication: Separated LED indicates for each channel
Module width: 75mm

K522-08DT



K522-16DT

1L- 1k+ 0 .1 .2 .3 2L- 2k+ .4 .5 .6 .7 *

3L- 3k+ .0 .1 .2 .3 4L- 4k+ .4 .5 .6 .7 *

Digital Output Module PM522



K522-08XR

Output points: 8, divided into 2 groups, each group with 4 channels.

Output type: source (common-cathode).

Load voltage: Max. DC30V/AC250V, max. load current of each channel is 2A.

Isolation mode: Opto-electrical isolation between coil and contact,

isolation voltage 2000Vrms.

Signal indication: LED indicates for each separated channel.

Module width: 50mm.



K522-16XR

Output points: 16, divided into 4 groups, each group with 4 channels.

Output type: source (common-cathode).

Load voltage: Max. DC30V/AC250V, max. load current of each channel is 2A.

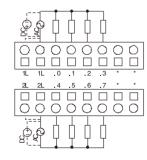
Isolation mode: Opto-electrical isolation between coil and contact,

isolation voltage 2000Vrms.

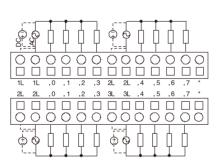
Signal indication: Separated LED indicates for each channel.

Module width: 75mm.

K522-08XR



K522-16XR



Digital Input/output Module PM523



K523-08DR

Input point: 4, totally classified into 1 group

Input type: Source (common-cathode)/sink (common-anode)

Input voltage: Rated DC24V, voltage range of logic "1" is DC11 ~ 30V

Output point: 4, totally classified into 1 group

Output type: Relay

Load voltage: Max. DC30V/AC250V, max. load current of each channel is 2A

Isolation mode: DI channels adopt opto-electrical isolation,

DO channels adopt relay isolation

Signal indication: Separated LED indicates for each channel

Module width: 50mm



K523-16DR

Input point: 8, totally classified into 1 group

Input type: Source (common-cathode)/sink (common-anode)

Input voltage: Rated DC24V, voltage range of logic "1" is DC11 ~ 30V

Output point: 8, divided into 2 groups, each group with 4 channels

Output type: Relay

Load voltage: Max. DC30V/AC250V, max. load current of each channel is 2A

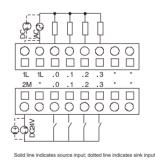
Isolation mode: DI channels adopt opto-electrical isolation.

DO channels adopt relay isolation

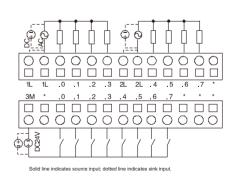
Signal indication: Separated LED indicates for each channel

Module width: 75mm

K523-08DR



K523-16DR



Digital Input/output Module PM523



K523-08DT

I/O point: 8, DI 4*DC24V, DO 4*DC24V

Input type: Source (common-cathode)/sink (common-anode)

Input voltage: Rated DC24V, voltage range of logic "1" is DC11 ~ 30V

Output type: Transistor

Output voltage: Rated DC24V, max. output current of each channel is 0.5A

Isolation mode: Opto-electrical isolation

Signal indication: Separated LED indicates for each channel

Module width: 50mm.



K523-16DT

I/O point: 16, DI 8*DC24V, DO 8*DC24V

Input type: Source (common-cathode)/sink (common-anode)

Input voltage: Rated DC24V, voltage range of logic "1" is DC11 ~ 30V

Output type: Transistor

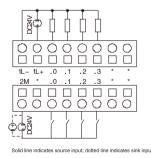
Output voltage: Rated DC24V, max. output current of each channel is 0.5A

Isolation mode: Opto-electrical isolation

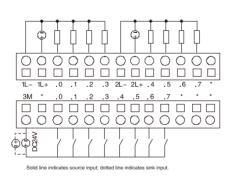
Signal indication: Separated LED indicates for each channel

Module width: 75mm

K523-08DT



K523-16DT



Analog Input Module PM531



K531-04IV

Input channel: 4

Input signal: 4-20mA, 1-5V, 0-20mA, 0-10V signals are optional

Measurement accuracy: 0.3% F.S

Parameter configuration: Parameters of each channel can be configured by Kincobuilder software separately Signal limitation: Signal limitation: Input current of each channel shall not exceed 24mA, input voltage shall not exceed 12V

Error indication: Red LED of each channel indicates input signal exceeds measurement range

Module width: 50mm



K531-04RD

Input channel: 4

Input signal: Pt100, Cu50, Pt1000, Cu100, Resistor are selectable, 2-wire or 3 wire

Measurement range: Pt 100 –200~850°C, Cu50 –50~150°C, Pt1000 –50~300°C, Resistor 0~2000 Ω

Measurement accuracy: Temperature $\pm 0.5^{\circ}$ C, Resistance $\pm 1^{\circ}$ D

Parameter configuration: Independent parameter configuration can be made for each channel by KincoBuilder software

Error indication: Red LED of each channel indicates input signal exceeds measurement range

Module width: 50mm

K531-04TC

Input channel: 4

Input signal: J type, K type, E type, S type, internal/external compensation selectable

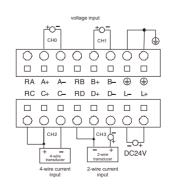
Measurement range: J type −210~1200°C, K type −270~1300°C, E type −120~1000°C, S type −50~1600°C Measurement accuracy: 0.1%F.S.

Parameter configuration: Independent parameter configuration can be made for each channel by KincoBuilder software

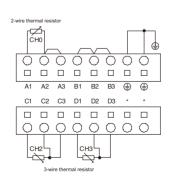
Error indication: Red LED of each channel indicates input signal exceeds measurement range

Module width: 50mm

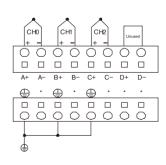
K531-04IV



K531-04RD



K531-04TC



Analog Output Module PM532



K532-02IV

Output channel: 2

Signal type: 4-20mA, 1-5V, 0-20mA, 0-10V signals are optional

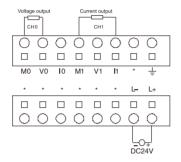
Output accuracy: 0.3%F.S.

Parameter configuration: Parameters of each channel can be configured by Kincobuilder software separately

Signal limitation: The value of output channel is not allowed to exceed chosen range

Module width: 50mm

K532-02IV



Analog Input/output Module PM533



K533-04IV

Input channel: 2. 4-20mA, 1-5V, 0-20mA, 0-10V signals are optional

Measurement accuracy: 0.3% F.S

Output channel: 2. 4–20Ma, 1–5V, 0–20mA, 0–10V signals are optional

Output accuracy: 0.3%F.S.

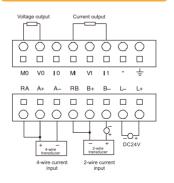
Parameter configuration: Parameters of each channel can be configured by Kincobuilder software separately

Signal limitation: Input current of each channel shall not exceed 24mA, input voltage shall not exceed 12V

The value of output channel is not allowed to exceed chosen range

Error indication: Red LED of each channel indicates input signal exceeds measurement range

K533-04IV



CAN Communication Module **SM541**



K541

Function: CANopen master station and CAN free protocol communication

Communication baudrate: Support 10K~1Mbps

Electrical isolation: Power supply, communication circuit are separated from external, Isolation voltage is max. 2500VAC/1 min.

Signal indication:Separated LED indicates power, working status, communication status. Module width: 50mm

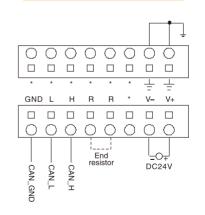
Specification of CANopen master station

- Adopt CAN2.0 standard. Comply with standard CANopen protocol DS301 V4.2.0;
- Support NMT(Network management), and as NMT master;
- support up to 72 CANopen slave stations. Users could configurate boot-up by KincoBuilder;
- Support PDO: each slave station support up to 8 TPDOs and 8 RPTOs; Up to 256 TPDOs and 256 RPDOs in total;
- Support client-end CANopen message, provide SDO read,
 write: SDO instructions support standard accelerated transfer mode;
- Support preset emergency message, node protection, heartbeat message;
- With perfect network error handling function.

Specification of CAN free protocol communication

- Support CAN2.0A and CAN2.0B standard;
- Support standard communication baudrate up to 10K~1Mbps;
- Provide CAN_Write, CAN_Read, CAN_Rx and so on free communication instructions.

K541



25 | 25

Expansion Power Supplier Module **PS580**



K580

Voltage: AC85-265V

Output rated current: 5V 1A/24V 250mA

Signal display: PW light will be on when the power supplier is correct.

Module width: 75mm

Main Features:

- PS580 doesn't need to configure in software.
- PS580 doesn't use the address of I/O image area.
- PS580 won't be counted as CPU expansion module.
- If the expansion modules is over 7 pieces, we suggest to use PS580.



A "Product name" is determined according to the following principle:

Module type + 5 + Sub-type + Serial number

Where:

Module type: expressed in the following English letters:

CPU main control module

PM expansion I/O module

SM expansion function module

SW software

AS accessories

PS expansion Power Supplier Module

5: indicates Kinco-K5 series compact and integrated PLCs.

Sub-type: One of digits 0~9 is used to indicate the sub-type of a module.

- O CPU module
- 1 Reserved
- 2 Digital data module
- 3 Analog data module
- Communication module
- 6 System software
- 7 Accessories
- 8 Power module

Serial number: One of digits 0~9 is used to indicate the serial number of a sub-type. The serial numbers in each sub-type are defined as follows:

CPU module

- 4 indicates the CPU has 14 I/O channels
- 6 indicates the CPU has 24 I/O channels
- 8 indicates the CPU has 40 I/O channels

Digital data module

- 1 indicates digital input module
- 2 indicates digital output module
- 3 indicates mixed digital input/output module

Analog data module

- 1 indicates analog input data
- 2 indicates analog output data
- 3 indicates mixed analog input/output module

Communication module

- indicates serial communication module
- 1 indicates CAN bus communication module

System software

o indicates programming software

Software and accessories

• indicates programming cable

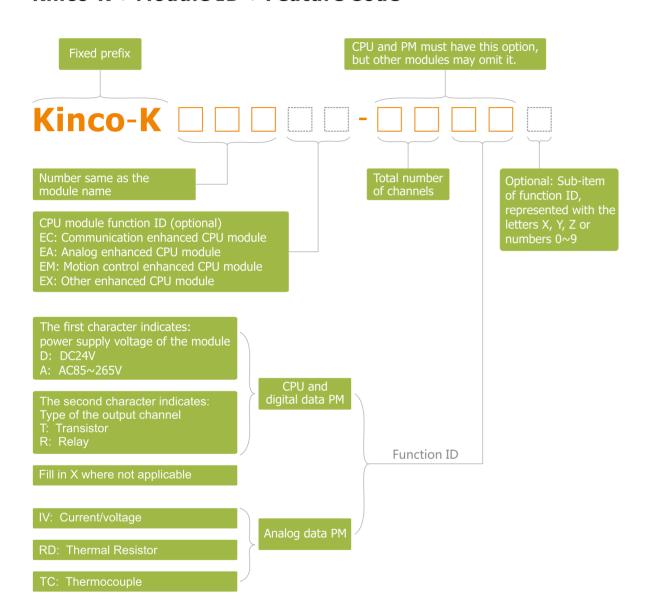
Based on the above principle, **CPU506** indicates a CPU module with 24 I/O channels; **PM521** indicates an expansion digital input module; **AS360** indicates the KincoBuilder programming software, and so on.

Kinco Builder

Different from the "product name", each product(module) has a unique"order number". To order, a user only needs to tell us the order number for the necessary product. The "order number" of a product is defined according to the following principles:

Order number:

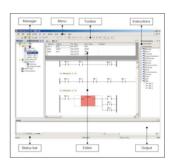
Kinco-K + Module ID + Feature Code

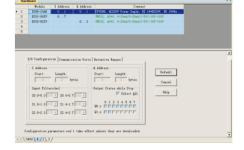


Based on the above principles, **Kinco-K506-24DT** indicates a CPU module with DC24V power supply and 24 I/O channels (where the output channel type is a transistor), and **Kinco-K521-08DX** indicates an expansion module with 8*DC24V digital input channels.

KincoBuilder is the programming software for the Kinco-K5. It complies with IEC61131-3 standard and is also compatible with PLC tradition, and its project architecture complies with the IEC61131-3 software model. It supports IL(instruction list) and LD(ladder diagram) languages, including 114 basic instructions and 420 expansion instructions. Meanwhile, it supports a number of special functions, such as interrupt (I/O interrupt, communication interrupt and time interrupt), and special I/O functions (high-speed counter, PTO/PWM output, etc.) Therefore, it is application to control applications in a diversity of fields.

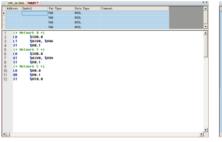
By KincoBuilder, users could monitor online, force variable, program update(3-level password protection), check diagnosis information and so on. The windows style interface facilitate users to manage program, and by workplace and tool bar to realize quick operation, for example add, delete, debugging, cross reference, print and backup.

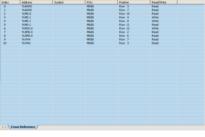


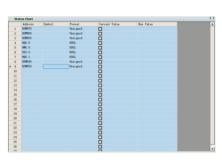


LD Editor and Online Monitoring

Hardware Configuration







IL Editor Cross Reference Table

Variable Status Table

Data Type Supported by KincoBuilder

Category	Keyword	Description	Size in bits	Default Value
BOOL/bit string type	Bool	Boolean	1	false
	Byte	Bit string of length 8	8	0
	Word	16-bit string	16	0
	Dword	32-bit string	32	0
Numeric type	Int	Integer, signed	16	0
	Dint	Double integer, signed	32	0
	Real	Real	32	0.0

(KincoBuilder software is free, users could download the newest version from company website www.kinco.cn)

Installation Mode

Two modes can be used to install a Kinco-K5 into a control cabinet:

1.DIN rail clamping

2.M4 screw installation

Upon installation, the module can either be horizontally or vertically arranged, or even a lengthened extension cable can be used for connection if the CPU module and extension module needs distributed installation in the case of nocentralized space in the control cabinet.

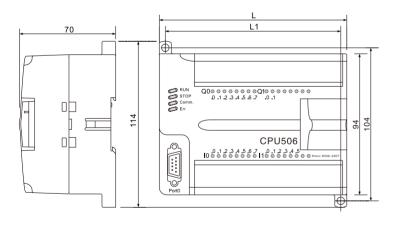


Wiring Connecting Terminal

The K5 series PLC is designed with pluggable terminal blocks to facilitate wiring.



Installation Diagram for Modules of Different Dimensions



Size of module installation hole (hole diameter:4.2mm)

If L=200mm, L1=190mm If L=125mm, L1=115mm If L=97mm, L1=87mm If L=75mm, L1=65mm If L=50mm, L1=40mm

For dimensions of each module, refer to the module performance parameters table.

Kinco F1-Controller



Kinco RP2 I/O

F122-D1608T controller is a new member of Kinco CAN bus solution family, it is integrated with 3S company's software called CoDeSys which has a strong function and stable performance. It uses the standard CANopen communication protocol, so it can connect with the devices that support this protocol freely. Combining with Kinco's other bus products, it can provide customer a low cost system solution.

Kinco F1-Controller

• F122-D1608T



Kinco RP2 I/O module is a new member of Kinco CAN bus solution family. It adopts standard CANopen communication protocol, then can communicate with most devices that support this protocol. Combining with Kinco other CANopen bus products, it can provide users with a low cost system solution.

Kinco RP2 I/O

- RP2D-1608C1
- RP2D-0016C1
- RP2A-0402C1

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Features:

1. High performance CPU

- High performance CPU of 32 bits 520MHz RISC;
- Excellent in processing the Boolean data and easy to operate the integer and float data:
- Use the multi-task operation system(Main task, fast task and event task), the processing of millisecond timescale task will be very simple, you can regulate it according to the application, and needn't consider other factors.

2. Strong developing function

- Use the Codesys software of German 3S Company to program. Which is the most famous company for PLC core software development:
- Provide 6 IEC programming languages, graphical programming tool, senior online help and amount of data inputting help guide. You can test the program in the simulator after developing. Users can customize library functions, all the commonly functions are appear in fixed form to reduce the user's programming time and difficulty:
- Support remote downloading/monitoring, it is easy for users to remote debugging.

3. Perfect hardware protection measures

- Short-circuit protection for power supply, the module use resettable fuse, it can reset itself after the module got a short-circuit.
- Short-circuit protection for inputting, digital input module use

resettable fuse, it can break when the input gets a short cut, and when the short-circuit recovers, it can reset itself, so that protect the input circuit from burning out.

4. CANopen bus communication ability

Support CANopen 2.0 protocol that is defined by the CIA organization , so it can communicate with devices which support this protocol, like remote I/O module, servo, inverter, meter and so on. It can apply to various production lines, mechanical equipments, intelligent buildings and so on.

5. Support various communication speed

Satisfy various application situations, support the followings baud rates: 10k/20k/50k/125k/250k/500k/800k/1M

6. Perfect CANopen software function

- Support the NMT message
- Support the Node Protection message
- Support the Heart beat message

7. Perfect PDO communication mode

- Support asynchronous communication mode
- Support synchronous message communication mode, real time of data exchanging is very high.

Model Parameters

Software Technical Data						
Scanning Period	Min.1ms					
Program Capacity	2M					
Execution Speed	Arithmetic operation time for integers: min 3.4µs/1000AWL					
	Arithmetic operation time for floating points: min 0.13ms/1000AWL					
	Arithmetic operation time for triangle function: min 6.0ms/1000AWL					
Programming Language	According with the IEC61131-3 standard					
Com Port	2 CAN ports, 1 Ethernet port, 2 serial ports(RS232, RS485)					
Communication Protocol	CANopen 2.0A					
Synchro Message	Support					
Nmt Message	Support					
Pdo Communication	Asynchronous, synchronous and remote requests					
Baud Rate(bps)	10K(1,000 m)/20K(800 m)/50K(600 m)/125K(500m)/250K(250m)/500K(100m)/					
	800K(50 m)/1M(25 m)					
Station Number	1-127					
Hardware Technical Data						
Power Supply	Rated: +24V/1A, (<+20V <u<+30v), 10ms<="" electric="" for="" is="" itself,="" longest="" losing="" reset="" td="" the="" time=""></u<+30v),>					
Can Power Supply	Provide power by internal +5V power supply itself					
Digital Input\Output	16DI\8DO					
Digital Input Type	Photoelectric isolation, supports both low and high level					
Digital Output Type	Photoelectric isolation, Transistor high level output, the maximum output current is					
	500mA; Over current protection (Recover by itself)					
Voltage Range of Digital Output	±24V (15~36VDC), Input current>3mA					
Digital Output Frequency	1KHz@24V500mA					
Operating Temperature	-10℃~55℃					
Storage Temperature	-20℃~70℃					



Features:

1. CANopen bus communication ability

RP2 I/O module is base on CAN bus communication. The application layer adopt CANopen protocol defined by CIA, and complies with DS301(communication subordinate protocol) and DS401(I/O module communication subordinate protocol). These modules can communicate with most controllers, inverters, servo and so on. It is very suitable for applications of various production lines, mechanical devices, building automation and so on.

2. Flexible multiple nodes networking

RP2 I/O module has 7 IP DIP switches, up to 127 RP2 modules can be configurated in CAN network. It is very suitable for wide range of distributed data acquisition system.

3. Support various communication speed

Satisfy various application situations, support the following baudrate:

20K/50K125K/250K/500K/800K/1M.

4. Perfect hardware protection measures

- -Short-circuit protection for power supply: the module use resettable fuse, it can reset itself after the module got a short-circuit.
- -Short-circuit protection for output, digital output module use resettable fuse, it can break when the output gets a short-circuit, and when the short-circuit recovers, it can reset itself, so that protect output circuit from burning out.

5. Perfect CANopen software function

- -Support the NMT message;
- -Support the Node protection message/Heart beat message;
- -Support master station configurates the boot-up of RP2 module;
- -Send message when power up/down.

6. Perfect PDO communication mode

- -Support asynchronous communication mode;
- -Support sychronous message communication mode, real time of data exchanging is very high;
- -Support remote communication request.

Model Parameters

Model	RP2D-1608C1	RP2D-0016C1	RP2A-0402C1			
Software Technical Data						
Communication Protocol	CANopen 2.0A, comply to DS301 and DS401 protocols					
Synchro Message	Support					
NMT Message	Support					
PDO Communication	Asynchronous, synchronous and remote requests					
Baud Rate(bps)	20K(800m)/ 50K(600m)/ 125K(500m)/ 250K(250m)/ 500K(100m)/					
	800K(50m)/ 1M(25m)					
Station Number	1-127					
Hardware Technical Da	ta					
Power Supply	≥300mA, 20V~28V					
CAN Power Supply	Provide power by internal +5V power supply itself					
Digital Input/output	16DI\8DO	0DI\16DO	_			
Analog Input/output	-	_	4AI\2AO			
Digital Input Type	Photoelectric isolation, supports both low and high level	_	_			
Digital Output Type	Photoelectric isolation, NPN open-collector output	Photoelectric isolation, NPN open-collector output	_			
Voltage Range of Digital Output	12~24VDC, input current>4mA	_	-			
Digital Output Frequency	>1KHz	>1KHz	_			
Analog Input Accuracy	_	_	≤0. 3%F.S.			
Analog Input Type	-	_	-10~10V, 0~20mA			
Analog Output Accuracy	_	_	12bit			
Analog Output Type	-	_	-10~10V, 0~20mA			
Operating Temperature	-10℃~55℃					
Storage Temperature	-20℃~70℃					



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