

PROVEN PERFORMANCE

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



**Kinco Bus-Based Remote I/O
RP20 Series**

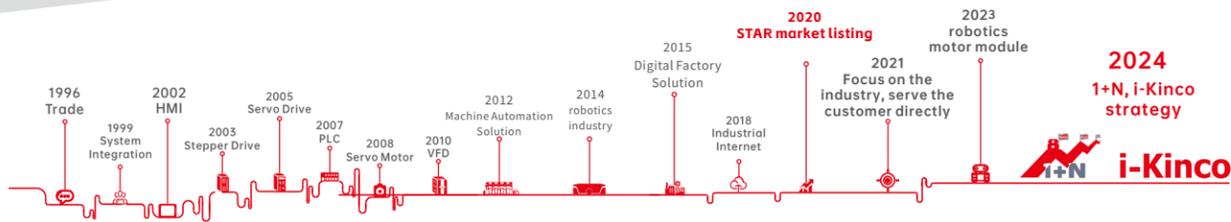


Kinco Automation

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About us



Kinco was founded in 1996, and successfully listed on the Shanghai Stock Exchange in 2020 (abbreviated name: Kinco share, stock code 688160), which is a high-tech, specialized and sophisticated enterprise that attaches great importance to independent research and development and innovation, mainly engaged in the research and development, production, sales and related technical services of industrial automation and robot core components and digital factory hardware and software. It is a leading supplier of automation control, robot power and digital factory solutions in China.

After years of continuous research and development and innovation, Kinco has established a complete product line with independent intellectual property rights, covering a series of products from machine iot to human-machine interaction, control, drive and execution, which are widely used in robots, medical equipment, logistics equipment, packaging equipment, food equipment, clothing equipment, environmental protection equipment, etc. New energy equipment, rail transit equipment and other automation equipment industry.

Based on the comprehensive industrial automation and digital technology platform, the company has in-depth application scenarios in the robot industry, providing display, control, drive and other multi-dimensional solutions for industrial mobile robots, collaborative robots, industrial robots, pan-service robots, and bionic robots. Through the insight of the industry pain points, deep links with robot customers, combined with the advantages of product research and development, the company continues to innovate, and launches industry-leading low-voltage servo products for mobile robots, integrated servo wheel, frameless torque motor for collaborative robots, robot human-machine interfaces, robot controllers and other products. The company has formed a relatively complete robot core parts capability, and after nearly 10 years of hard work in the robot industry, it has become a leading enterprise in the field of mobile robot low-voltage servo, and has a high brand influence in the industry.

Kinco has four research and development centers in Shanghai, Shenzhen, Changzhou and Chengdu, and two manufacturing bases in Shenzhen and Changzhou, a total of 10+ domestic marketing centers, 100+ domestic service providers, 40+ global partners, and products are exported to 70+ countries overseas. In terms of after-sales service, Kinco has established after-sales service centers in Shanghai, Shenzhen and Changzhou.

Four R&D centers and two manufacturing bases



Kinco Bus-Based Remote I/O RP20 Series



Overall

To explore diverse automation application scenarios and provide customers with more comprehensive automation solutions, Kinco launches the RP20 series bus-based I/O. With robust industrial design and manufacturing quality, outstanding performance, and rich functional integration, the RP20 series is not only widely applicable in general industrial automation but also suitable for specialized smart fields such as building automation, agricultural automation, energy monitoring, and energy management. It aims to offer customers highly flexible and versatile solution possibilities.

Key Features

Outstanding Performance

Exclusive RP20 series K-bus extension protocol with a communication speed of up to 100 Mbps.

Supports up to 16 RP20 I/O modules via high-speed LVDS backplane bus, achieving microsecond-level I/O refresh rate.

Flexible Deployment

Supports multiple protocol couplings, including EtherCAT, Profinet, CANopen, and more.

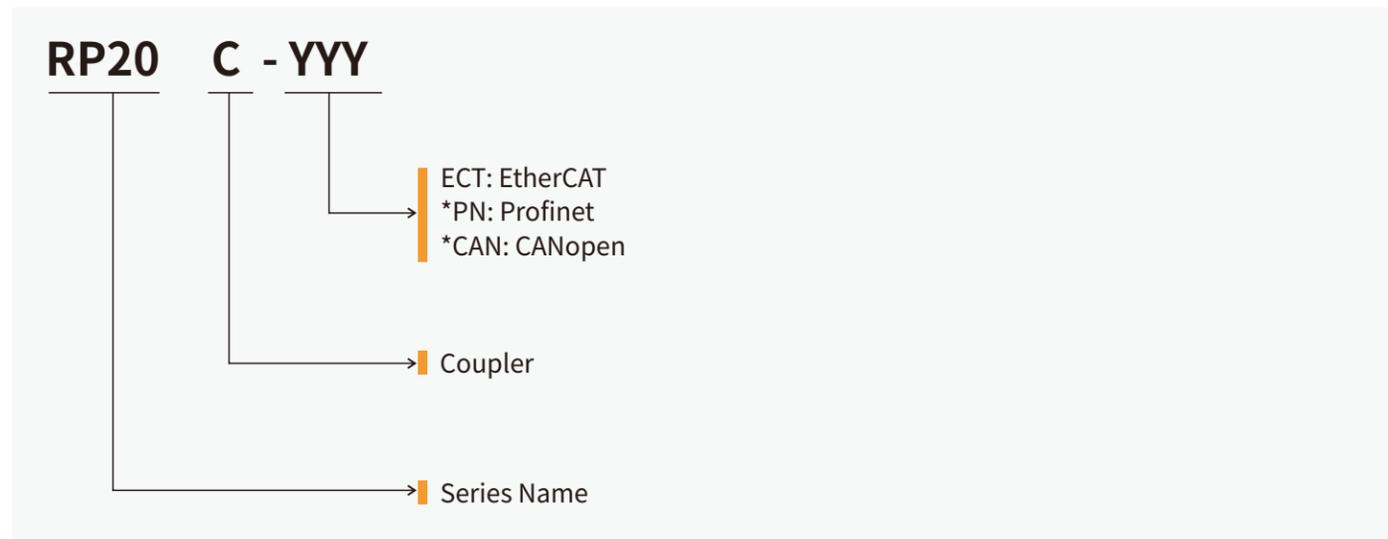
Compatible with various functional modules, including DI/DO, AI/AO, and temperature measurement modules.

Reliable and User-Friendly

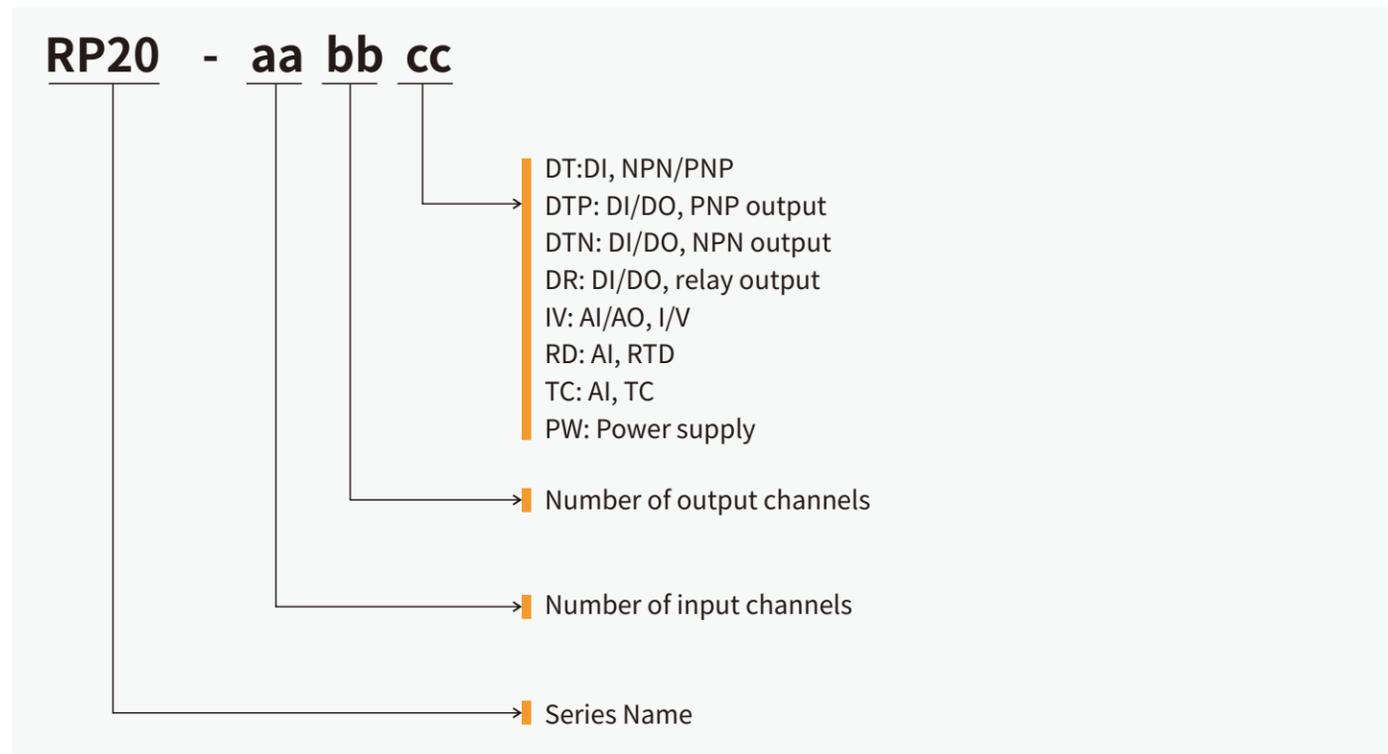
High-quality industrial-grade component design ensures stable operation in harsh environments.

Detachable front-end terminal design minimizes wiring risks to the greatest extent.

CouplerNamingRules



ModuleNamingRules



*Not yet released.

ColorLable

Orange		Coupler	Green		Analog Input, I/V/RTD/TC
Azure		Digital Input	Yellow		Analog Output, I/V
Red		Digital Output	Indigo		Mixed AI/O
Violet		Mixed DI/O	White		Power Supply

General Specifications		
Transportation and Storage Conditions		
Climatic Conditions	Ambient Temperature	-40°C~+70°C
	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°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.
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.
Protection Level	Waterproof and dustproof	IP20
	Cooling Type	Natural air cooling
Installation Type		DIN35 rail mounting
Certification		CE(EN IEC 61000-6-2:2019)

ModelList

Order Model	Description
RP20C-ECT	EtherCAT coupler, connecting up to 16 RP20 series expansion modules.
RP20-0016DTP	DO 16×24V DC,PNP;
RP20-1600DT	DI 16×24V DC, Sourcing/Sinking.
RP20-0808DTP	DI 8×24V DC,Sourcing;DO 8×24V DC,PNP;
RP20-0016DTN	DO 16×24V DC,NPN;
*RP20-0008DR	DO 8× Relay output, normally open contacts(NO)
RP20-0400TC	AI 4×TC, J/K/E/S/T/I/0-99mA
RP20-0400RD	AI 4×RTD, Pt100/Pt1000/Cu50
RP20-0400IV	AI 4×IV,4-20mA/±10V/1-5V/*±20mA
RP20-0004IV	AO 4×IV,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.



RP20C-ECT

Order Model	Description
RP20C-ECT	EtherCAT bus coupler
Technical Specifications	
Supply Power Rated Voltage	24V DC+/-20%
Rated Power	2.5W(CPU unit only)/20W(Full-load)
Rated Output Voltage of K-bus	5V DC (4.75V DC~5.25V DC)
Rated Output Current of K-bus	2.0A(typical value@5V)
Power protection	Overcurrent Protection
	Reverse Polarity Protection
	Surge Absorption
Bus Protocol	EtherCAT
Bus Interfaces	2 × RJ45
Maximum Distance Between Stations	100m
K-Bus Communication Rate	100Mbps
Refresh Mode	DC-Sync mode: Minimum sync-time time at 1ms
	SM-Sync mode
Indicators	PWR:Power supply
	RUN: Operating status of the expansion bus
	ERR: Error status of the ethercat bus
	SF: Error status of the expansion bus
Expansion Capacity	Supports connection of up to 16 RP20 expansion modules
Dimensions (W × H × D)	24.3mm × 100mm × 80mm
Weight	≈ 120g
*The K-Bus mentioned here refers to the dedicated expansion bus protocol for the Kinco-RP20 series.	



RP20-0016DTP

Order Model	Description
RP20-0016DTP	DO 16× DC24V, PNP
Technical Specifications	
Output Channels	16
Output type	Tansistor output, PNP
Turn-On Delay	<50μs
Turn-Off Delay	<50μs
"0" Signal Level	MOSFET off
"1" Signal Level	MOSFET on
On-State Resistance	Typical: 0.15Ω, Maximum: 0.3Ω
Rated Output Voltage	24V DC, allowable range: 20.4V DC - 28.8V DC
Load	Resistive Load: 12A/point, 48W/module
	Inductive Load: 6W/point, 24W/module
	Lamp Load: 5W/point, 20W/module
Maximum Switching Frequency	100Hz (resistive load)
Output Leakage Current	Maximum 10μA
Protection	Short-circuit protection
	Overcurrent protection
Isolation	√
K-Bus Current Consumption	135mA (5V DC, room temperature)
Indicator	The corresponding LED light is on when there is an output signal
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈ 70g

RP20-1600DT



Order Model	Description
RP20-1600DT	DI 16 × 24V DC
Technical Specifications	
Input channels	16
Input type	Sourcing/Sinking
Turn-on Delay	<50μs
Turn-off Delay	<50μs
Rated Input Voltage	24V DC
Logic "0" Max. Input Voltage	5V, 0.8mA
Logic "1" Min. Input Voltage	15V, 2mA
Input Current	3.5mA@ 24V DC
Input Impedance	6.8K
Isolation	√
Indicator	The corresponding LED light is on when there is an input signal
K-Bus Current Consumption	135mA (5V DC, room temperature)
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈ 70g

RP20-0016DTN



Order Model	Description
RP20-0016DTP	DO 16 × DC24V, NPN
Technical Specifications	
Output Channels	16
Output type	Transistor output, NPN
Turn-On Delay	<50μs
Turn-Off Delay	<50μs
"0" Signal Level	MOSFET off
"1" Signal Level	MOSFET on
On-State Resistance	Typical: 0.15Ω, Maximum: 0.3Ω
Rated Output Voltage	24V DC, allowable range: 20.4V DC - 28.8V DC
Load	Resistive Load: 12A/point, 48W/module
	Inductive Load: 6W/point, 24W/module
	Lamp Load: 5W/point, 20W/module
Maximum Switching Frequency	100Hz (resistive load)
Output Leakage Current	Maximum 10μA
Protection	Short-circuit protection, Overcurrent protection
Isolation	√
K-Bus Current Consumption	135mA (5V DC, room temperature)
Indicator	The corresponding LED light is on when there is an output signal
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈ 70g



RP20-0808DTP

Order Model	Description
RP20-0808DTP	DI 8× 24V DC,sourcing,DO 8× 24V DC, PNP;
Digital Input Specifications	
Input channels	8
Input type	Sourcing
Turn-on Delay	<50μs
Turn-off Delay	<50μs
Rated Input Voltage	24V DC
Logic "0" Max. Input Voltage	5V, 0.8mA
Logic "1" Min. Input Voltage	15V
Input Current	3.5mA@ 24V DC
Input Impedance	6.8K
Isolation	√
Indicator	The corresponding LED light is on when there is an input signal
Digital Output Specifications	
Output Channels	8
Output type	Transistor output, PNP
Turn-On Delay	<50μs
Turn-Off Delay	<50μs
"0" Signal Level	MOSFET off
"1" Signal Level	MOSFET on
On-State Resistance	Typical: 0.15Ω, Maximum: 0.3Ω
Rated Output Voltage	24V DC, allowable range: 20.4V DC - 28.8V DC
Load	Resistive Load: 12A/point, 48W/module Inductive Load: 6W/point, 24W/module Lamp Load: 5W/point, 20W/module
Maximum Switching Frequency	100Hz (resistive load)
Output Leakage Current	Maximum 10μA
Protection	Short-circuit protection, Overcurrent protection
Isolation	√
Indicator	The corresponding LED light is on when there is an output signal.
General Specification	
K-Bus Current Consumption	135mA (5V DC, room temperature)
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈ 70g



RP20-0202IV

Order Model	Description
RP20-0202IV	2× AI,IV, 2× AO,IV
Analog Input Specifications	
AI channels	2
Resolution	12-bit
Conversion Rate (per channel)	15 times/second
Signal	4-20mA, 0-20mA, 1-5V, 0-10V
Measurement Accuracy	0.3% F.S.
Input Impedance	Current mode: 100Ω, Voltage mode: 50KΩ
Indicators	Red LED indicates input value exceeds the limit
Signal Limits	Current input: Maximum 24mA, Voltage input: Maximum 12V
Analog Output Specifications	
AO channels	2
Resolution	12-bit
Conversion Rate (per channel)	15 times/second
Signal	4-20mA, 0-20mA, 1-5V, 0-10V
Measurement Accuracy	0.3% F.S.
External load	Current mode: Maximum 500Ω, Voltage mode: Minimum 1KΩ
Terminal Input Power Rated Voltage	24V DC(20.4V DC~ 28.8V DC)
Terminal Input Power Rated Current	80mA(Typical value@24V)
General Specifications	
K-Bus Current Consumption	150mA (5V DC, room temperature)
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈ 70g



RP20-0400RD

Order Model	Description
RP20-0400RD	4 × AI, RTD
Technical Specifications	
AI channels	4
Resolution	24-bit
Sensor type	Pt100, Pt1000, Cu50, Cu100
wiring method	Two-wire or three-wire
Temperature Resolution	0.1°C
Measurement Accuracy	±0.2% F.S.
Conversion Rate (per channel)	1 time/second
Filtering Method	No filtering / Averaging filtering
Isolation	√
K-Bus Current Consumption	160mA (5V DC, room temperature)
Indicators	Red LED indicates input value exceeds the limit
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈68g



RP20-0400TC

Order Model	Description
RP20-0400TC	4 × AI, TC
Technical Specifications	
AI channels	4
ADC Resolution	24-bit
Sensor type	J, K, E, S, T, 0-99mV
wiring method	Two-wire
Temperature Resolution	0.1°C
Cold Junction Compensation	Internal compensation, external compensation
Measurement Accuracy	±0.2% F.S.
Conversion Rate (per channel)	1 time/second
Filtering Method	No filtering / Averaging filtering
Isolation	√
K-Bus Current Consumption	160mA (5V DC, room temperature)
Indicators	Red LED indicates input value exceeds the limit
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈68g

RP20-0400IV



Order Model	Description
RP20-0400IV	4×AI, IV
Technical Specifications	
AI channels	4
Resolution	16-bit
Conversion Rate (per channel)	50 times/second
Signal	4-20mA, 1-5V, ±10V, 0-20mA, *±20mA
Measurement Accuracy	0.2% F.S.
Input Impedance	Current mode: 100Ω, Voltage mode: 50KΩ
Signal Limits	Current input: ±30mA, Voltage input: ±15V
K-Bus Current Consumption	150mA (5V DC, room temperature)
Indicators	Red LED indicates input value exceeds the limit
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈70g

RP20-0004IV



Order Model	Description
RP20-0004IV	4×AO, IV
Technical Specifications	
AO channels	4
Resolution	16-bit
Conversion Rate (per channel)	50 times/second
Signal	4-20mA, 0-20mA, 1-5V, ±10V
Measurement Accuracy	0.2% F.S.
External load	Current mode: Maximum 100Ω, Voltage mode: Minimum 50KΩ
Terminal Input Power Rated Voltage	24V DC(20.4V DC~28.8V DC)
Terminal Input Power Rated Current	80mA (Typical value@24V)
K-Bus Current Consumption	150mA (5V DC, room temperature)
Indicators	None
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈70g



RP20-PW

Order Model	Description
RP20-PW	Power supply module
Technical Specifications	
Supply Power Rated Voltage	24V DC +/-20%
Maximum Power Rate	12W
Rated Output Voltage of K-bus	5V DC(4.75V DC~5.25V DC)
Rated Output Current of K-bus	2.0A(typical value@5V)
Power output derating	At 55°C, derate by 80%, with output not exceeding 1.6A
Power protection	Overcurrent Protection
	Reverse Polarity Protection
	Surge Absorption
Power Isolation	×
Indicator	RP: Power supply normal
	ERR: Power supply abnormal
Dimensions (W × H × D)	12mm × 100mm × 80mm
Weight	≈70g