

PROVEN PERFORMANCE

Customers in over 60 countries and in diverse markets and sectors.



Kinco

➔ Kinco iFMH Rotary Joint Module

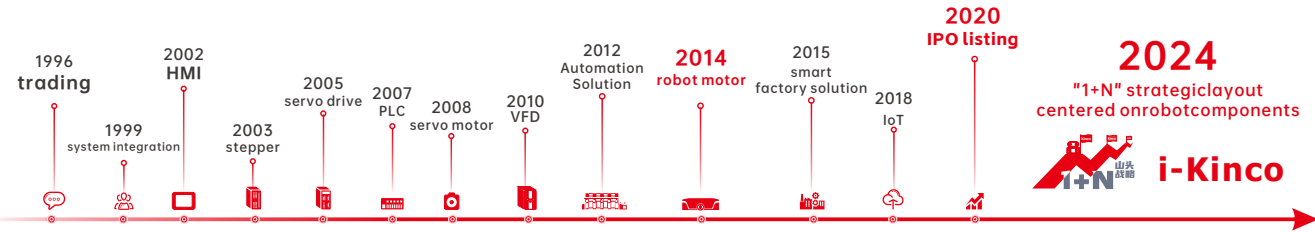


Kinco® Automation

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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.



iFMH Series Rotary Joint Module

The humanoid robot rotary joint module is a precision unit that integrates the motor, gearbox, sensors, and drive electronics, and can be regarded as the "muscles and bones" of a robot. In line with the ongoing trend toward highly integrated drive systems, frameless motor solutions better meet engineers' expectations for high performance and high system integration. They eliminate the need to separately consider the matching of multiple components and provide a one-stop solution for a more highly integrated system design.

To meet customers' increasing requirements for core joint components, Kinco has introduced the iFMH Series rotary joint modules. Powered by Kinco's flagship frameless torque motor and paired with precision harmonic gearing from leading manufacturers, the iFMH Series features an elegant and compact design. Within a compact footprint, it integrates key components such as the servo drive, motor-side absolute encoder, output-side absolute encoder, frameless torque motor, and precision harmonic gearbox. This helps customers significantly reduce the labor and time required for the selection, design, procurement, and assembly of numerous mechanical and electronic components.



Key Features of the Rotary Joint Module:

- High torque density: Optimized motor electromagnetic design, lightweight harmonic gearing and structural components, and a reduced drive footprint maximize the torque density of the joint module.
- High rotational speed: The rotary joint module series supports speeds of up to 50 rpm.
- Modular and highly integrated design: Fewer parts, lower overall weight, and improved reliability.
- Precise thermal management: The product is equipped with low-latency, high-accuracy temperature sensors for real-time motor temperature monitoring and over-temperature protection of the joint module.
- Available outer diameters: 55 mm, 60 mm, 70 mm, and 80 mm. (For more specifications and models, please contact the regional sales of Kinco)

The B Series includes models such as iFMH55, iFMH60, iFMH70, and iFMH80. Featuring a compact and highly integrated design, these products integrate key components such as the servo drive, motor-side absolute encoder, output-side absolute encoder, frameless torque motor, brake, and precision harmonic gearbox within a compact structure. This helps customers significantly reduce the labor and time required for the selection, design, procurement, and assembly of numerous mechanical and electronic components.

Naming Rules

iFMH 55 H 100 - D C A B

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① **Product Series**
iFMH:iFMH series Joint Modules

② **Outer Dimension(diameter)**
55:Φ55mm
60:Φ60mm
70:Φ70mm
80:Φ80mm

③ **Gear Type**
H:Harmonic Gear

④ **Gear Ratio**
100: 100:1
101: 101:1

⑤ **Power Supply**
D:DC48V

⑥ **Communication**
C: CAN FD

⑦ **Brake**
A:Without brake

⑧ **Variant Code**
B:B version

Parameter Table

Specifications	iFMH55H	iFMH60H	iFMH70H	iFMH80H
Rated Voltage (VDC)	48	48	48	48
Gear Ratio	100:1	100:1	100:1	101:1
Peak Start-Stop Torque (N·m)	19	37	57	70
Rated Torque (N·m)	7.7	27	34	51
Maximum Momentary Torque (N·m)	35	71	95	143
Rated Speed (rpm)	37	35	31	35
Maximum No-Load Speed (rpm)	50	48	38	45
Rated Power (W)	29.8	99	110.4	186.9
Peak Torque Density (Nm/Kg)	79	109	117	127
Input Voltage Range (VDC)	20~72	20~72	20~72	20~72
Encoder Type	Absolute Encoder	Absolute Encoder	Absolute Encoder	Absolute Encoder
Encoder Resolution	19-bit	19-bit	19-bit	19-bit
Dimensions (mm)	Φ55*70	Φ62*76	Φ70*76	Φ80*84
Hollow Bore Diameter (mm)	Φ8.4	Φ8.5	Φ12	Φ16
Weight (g)	445	650	815	1130

Recommended tightening torque for Version B

Model	iFMH55H		iFMH60H		iFMH70H		iFMH80H	
Mounting Face	Fixed Side	Output Side	Fixed Side	Output Side	Fixed Side	Output Side	Fixed Side	Output Side
Bolt Size and Quantity	8-M3	4-M3	8-M3	8-M4	8-M3	10-M4	12-M3	16-M3
Bolt Circle Diameter / mm	49.5	23	56	30	64	35	74	54
Recommended Tightening Torque / N·m	2.2	2.2	2.2	5.1	2.2	5.1	2.2	2.2

Installation Precautions:

General Principle

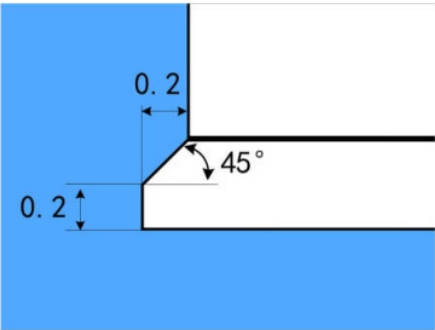
When designing the mounting structure, avoid any abnormal or excessive force that may deform the mounting surfaces. Deformation of the mounting surfaces may result in degraded performance, abnormal noise, or reduced service life. To ensure optimum performance of the iFMH Series Joint Modules, observe the following precautions.

Specific Precautions

- Warpage or deformation of the mounting surfaces
- Obstruction caused by foreign matter
- Burrs, raised material, or positional inaccuracies around the threaded mounting holes
- Insufficient chamfer at the mounting interface
- Abnormal roundness of the mounting interface

Special Installation Recommendation

It is recommended to provide a relief cut at the corner of the mating boss on the fixed mounting part, as shown in the figure. The dimensions shown in the figure are in millimeters (mm). The recommended relief depth is 0.2 mm with a 45° angle.



Surface Finish Specification

Item	iFMH55H	iFMH60H	iFMH70H	iFMH80H
Housing	Black Anodized	Black Anodized	Black Anodized	Black Anodized
Exposed Parts of Harmonic Gear	Black Oxide(Circular Spline)	Black Oxide(Circular Spline)	Black Oxide(Circular Spline)	Black Oxide(Circular Spline / Flexspline)
Output Flange	Black Anodized	Black Anodized	Black Anodized	Black Anodized
Hollow Shaft	Black Anodized	Black Anodized	Black Anodized	Black Anodized