FAIRINO

FR5

New Generation Flexible Collaborative Robot

FAIRINO Robot FR5 was the first to obtain the first CR certification in the collaborative robot field, equipped with a self-developed real-time control system, integrating core advantages such as flexibility, safety, ease of use, and flexibility, and combining industrial-grade precision with high stability.It redefines the performance benchmark for collaborative robots and provides high-precision, high-reliability one-stop solutions for flexible intelligent manufacturing scenarios such as 3C electronics and automotive parts.



Rtd 5kg Max 7kg
Payload

922mm
Reach

±0.02mm
Repeatability

Feature Advantages

Safe and reliable

Core components are self-developed and self-produced, combined with patented design solutions, with a repeatability of ±0.02mm, and adopt modular design to ensure stability

High-Efficiency Protection

Protection level IP54 (optional IP65), capable of handling complex industrial scenarios

Minimalist Deployment

Supports graphical programming, intuitive teaching, and flexible drag-and-drop operations, integrates multi-axis linkage control modules, enabling users with no prior experience to quickly complete device debugging and scenario adaptation

Open Ecosystem

Compatible with ROS secondary development, equipped with a self-developed open platform, supporting multiple communication protocols, and providing convenient development interfaces for equipment manufacturers and integrators

Application Area

Covers high-precision repetitive application scenarios such as industrial screw fastening, welding, education, and health care.

Contact Us

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FR5 Technical Specification

Parameter Type	Parameter	
Payload	5kg(Max:7kg)	
Reach	922mm	
Degrees of freedom	6 rotating joints	
HMI	10.1 inch teach pendant (Optional)or mobile terminal Web App	
Pose repeatability per ISO 9283	±0.02mm	
Axis movement	Working range	Maximum speed
Base	±175°	±180°/s
Shoulder	+85°/-265°	±180°/s
Elbow	±160°	±180°/s
Wrist 1	+85°/-265°	±180°/s
Wrist 2	±175°	±180°/s
Wrist 3	±175°(Optional ±360°)	±180°/s
Typical TCP speed	1m/s	
IP lassification	IP54 (IP65 Optional)	
Noise	<65dB	

Parameter Type	Parameter
Robot mounting	Any orientation
I/O Ports	(DI) 2 (DO) 2
	(AI) 1 (AO) 1
Tool I/O power supply	24V/1.5A
Footprint	149mm
Weight	≈22kg
Operating temperature	0-45°C
Operating humidity	90%RH(non-condensing)
Materials	Aluminium 、 Steel
Black Optional	yes
■ Typical power test payload settings, different loads are set according to robot models, payload configuration parameters are as follows :	
FR5 payload setting: 5kg, Z-axis: 30mm	
Select aging test program, connect robot's total power to power meter, set robot to automatic mode,set global speed to 100, click run, if there are no abnormalities after running two cycles, start continuous testing for 24 hours. After 24 hours, respectively, record the peak and average power of the power meter, and then statistically analyze each model :	
Typical average power	260W
Typical peak power	310W

FR5 Controller Specification



DC MINI Controller



AC MINI Controller 2kw

Features

IP classification	IP54	IP54
Operating temperature	0-45°C	0-45°C
Operating humidity	90%RH(non-condensing)	90%RH(non-condensing)
I/O Ports	(DI)16 (DO)16	(DI)16 (DO)16
	(AI)2 (AO)2	(AI)2 (AO)2
	High speed pulse input 2	High speed pulse input 2
I/O power supply	24V/1.5A	24V/1.5A
Standard communication	I/O 、TCP/IP 、Modbus_TCP/RTU	TCP/IP 、I/O 、Modbus_TCP/RTU
Optional communication	CC-Link IE Field Basic、Profinet、Ethernet/IP、EtherCAT	CC-Link IE Field Basic、Profinet、Ethernet/IP、EtherCAT
Communication Board Optional Configuration	MiniPCI Express - real-time Ethernet PC Board	MiniPCI Express - real-time Ethernet PC Board
Software development kit	C#/C++/Python/ROS/ROS2	C#/C++/Python/ROS/ROS2

Physical

L*W*H	245*180*44.5 mm (No protrusions)	245*180*44.5mm (No protrusions)
Weight	2.044 kg (Weight without wire)	2.5kg (Weight without wire)
Materials	Galvanized plate	Galvanized plate
Power supply	30-60VDC	100-240VAC/10A/Single-phase/50-60Hz
Output power	48VDC / 104Amax	48VDC / 42Amax