FAIRINO

FR3

New Generation Flexible Collaborative Robot

While comprehensively upgrading flexibility, safety, and ease of use, FAIRINO FR3 also combines industrial-grade precision, speed, and protection level. With its leading performance that combines strength and flexibility, it redefines the standards for collaborative robots and provides efficient and reliable solutions for flexible intelligent manufacturing.



Rtd 3kg Max5kg
Payload

622mm
Reach

±0.02mm
Repeatability

Feature Advantages

High-Efficiency Performance

Equipped with EtherCAT bus architecture, it comprehensively enhances production efficiency in multiple scenarios with high real-time performance and high stability

Safe and Reliable

Self-developed components + modular design, combined with full closed-loop joint torque feedback technology, build a safety defense line for human-robot collaboration

Simple Deployment

Supports graphical programming, intuitive teaching, and flexible drag-and-drop operations, combined with multi-axis control, significantly lowering the usage threshold

High-Efficiency Protection

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

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 operation scenarios such as welding, industrial gluing application, inspection, labeling, scanning, and new retail.

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FR3 Technical Specification

Parameter Type	Parameter	
Payload	3kg(Max:5kg)	
Reach	622mm	
Degrees of freedom	6 rotating joints	
HMI	10.1 inch teach pendant (Optional)or mobile terminal Web App	
Dual arm robotics applications	Mirror versions available to build dual arm robots	
Pose repeatability per ISO 9283	±0.02mm	
Axis movement	Working range	Maximum speed
Base	±175°	±180°/s
Shoulder	+85°/-265° (Dual Arm:-85°/+265°)	±180°/s
Elbow	±150°	±180°/s
Wrist 1	+85°/-265° (Dual Arm:-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	128mm
Weight	≈15kg
Operating temperature	0-45℃
Operating humidity	90%RH(non-condensing)
Materials	Aluminium 、 Steel
Black Optional	no
■ Typical power test payload settings, different loads are set according to robot models, payload configuration parameters are as follows :	
FR3 payload setting: 3kg, Z-axis: 18mm	
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	220W
Typical peak power	280W

FR3 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