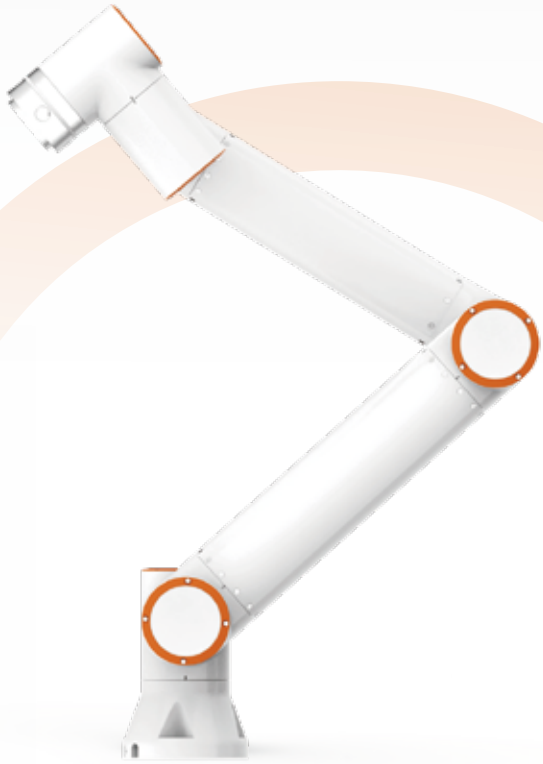
FAIRINO

FR3-WML

New Generation Flexible Collaborative Robot

FAIRINO FR3-WML is a lightweight collaborative robot specifically designed for high-precision welding and flexible production, weighing only 11kg, which can be easily transported and deployed by a single person. The 360° omnidirectional rotation capability of its 6th axis is suitable for welding complex curved surfaces, and the IP65 (optional) industrial-grade protection effectively resists welding slag splashing and oil contamination. Combined with the plug and play feature that eliminates the need for programming and teaching, it provides a safe, efficient, and flexible solution for industrial welding.



3kg
Payload

922mm
Reach

±0.05mm
Repeatability

Feature Advantages

Lightweight Design

Supports single-person handling and rapid deployment across workstations, adapting to the flexible switching requirements of flexible production lines

Safe Human-Robot Collaboration

Built - in high - reliability collision detection system, which can sense contact force in real - time and trigger a safety stop to ensure the safety of human - robot operations

360° Flexible Operation

The 6th axis supports ±360° rotation without blind spots, precisely covering welding positions that are difficult to reach with traditional robot arms

Industrial-grade protection

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

Minimalist operation experience

No programming, no teaching required, supports plug and play, quickly configures welding tasks through a visual interface, and significantly shortens the project debugging cycle time

Application Area

Suitable for industries such as automobile manufacturing, metal processing, and precision instrument manufacturing, especially for high-precision welding tasks of complex curved surfaces and multi-angle grooves, ensuring the processing consistency of precision workpieces.

Contact Us

Address : No.209 Zhuyuan Road, Suzhou New District , Jiangsu Province, China
Tel:+86 400-811-0929
Email:sales@fairino.com

Official Website | Youtube | Linkedin | Download

FR3-WML Technical Specification

Parameter Type	Parameter	
Payload	3kg	
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	±0.05mm	
Axis movement	Working range	Maximum speed
Base	±175°	±150°/s
Shoulder	+85°/-265°	±150°/s
Elbow	±150°	±150°/s
Wrist 1	+85°/-265°	±180°/s
Wrist 2	±175°	±180°/s
Wrist 3	±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	≈11.25kg
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-WML 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	140W
Typical peak power	240W

FR3-WML 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