FAIRINO

FR16

New Generation Flexible Collaborative Robot

FR16 is a new generation of flexible collaborative robot developed by FAIRINO for heavy-duty operation scenarios, with "human-robot collaborative safety + industrial-grade heavy-duty operation capabilities" as its core positioning, capable of efficiently meeting the requirements of heavy-duty tasks.



Rtd 16kg Max 20kg
Payload

1034mm
Reach

±0.03mm
Repeatability

Feature Advantages

Stable and Reliable

Core components are self-developed and self-produced, combined with patented structural design, ensuring equipment stability from the source; ±0.03mm repeatability enables precise docking with heavy workpieces, modularization design reduces maintenance costs, and adapts to high-frequency continuous operation

Open Ecosystem

Powered by a self-developed open platform that supports secondary development in multiple programming languages such as Python and C++, and is compatible with mainstream industrial communication protocols including Profinet and EtherCAT. It provides equipment manufacturers and system integrators with flexible custom development interfaces

Flexible Deployment

Using graphical programming, it supports intuitive teaching and smooth drag-and-drop operations, enabling quick configuration of task paths without the need for professional programming knowledge

High-Efficiency Protection

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

Application Area

Suitable for the handling, precision assembly, and processing of heavy workpieces in fields such as automotive manufacturing, metal processing, logistics warehousing, and construction machinery, and adaptable to scenarios involving human-robot collaboration, high-precision requirements, and complex industrial environments.

Contact Us

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FR16 Technical Specification

Parameter Type	Parameter	
Payload	16kg(Max:20kg)	
Reach	1034mm	
Degrees of freedom	6 rotating joints	
HMI	10.1 inch teach pendant (Optional)or mobile terminal Web App	
Pose repeatability per ISO 9283	±0.03mm	
Axis movement	Working range	Maximum speed
Base	±175°	±120°/s
Shoulder	+85°/-265°	±120°/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	190mm
Weight	≈40kg
Operating temperature	0-45°C
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 :	
FR16 payload setting: 16kg, Z-axis: 96mm	
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	310W
Typical peak power	410W

FR16 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