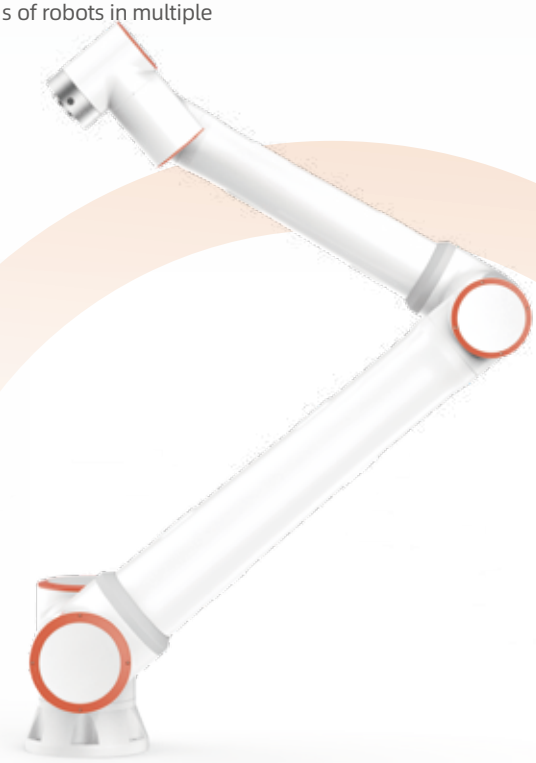
FAIRINO

FR20

New Generation Flexible Collaborative Robot

FR20 is a new generation of platform-based flexible collaborative robot developed by FAIRINO, which combines powerful operational performance, flexible expansion capabilities, and sustainable iterative advantages. It can efficiently connect key automation nodes in production lines and deeply empower iystem Integrators and end-user enterprises. The product breaks through the boundaries of intelligent flexible applications of robots in multiple scenarios with high versatility,achieves deep integration with real production production scenarios, addresses the pain points of non-standardized and flexible production in the industry in a targeted manner, and significantly lowers the threshold for enterprise intelligent transformation and robot use. It can handle various high-demand tasks such as handling, assembly, pick & place, and palletizing.



Rtd 20kg Max 25kg
Payload

1854mm
Reach

±0.1mm
Repeatability

Feature Advantages

Extreme Safety, Stability, and Reliability

Core components are self-developed and self-produced, paired with patented design solutions, with a repeatability of ±0.1mm, and adopt modular design to ensure long-term operational stability.

High-Efficiency Protection, Perfect Adaptability

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

Improved ecosystem, comprehensive empowerment

Supports secondary development of ROS, self-developed open platform, meets diverse production needs, supports multiple communication protocols, and provides convenience for equipment manufacturers and integrator partners.

Flexible deployment, zero usage threshold

Adopts graphical programming, supports intuitive teaching, smooth dragging, and multi-axis integration.

Application Area

Improved ecosystem, comprehensive empowerment:Supports secondary development of ROS, self-developed open platform, meets diverse production needs, supports multiple communication protocols, and provides convenience for equipment manufacturers and integrator partners.

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FR20 Technical Specification

Parameter Type	Parameter	
Payload	20kg(Max:25kg)	
Reach	1854mm	
Degrees of freedom	6 rotating joints	
HMI	10.1 inch teach pendant (Optional)or mobile terminal Web App	
Pose repeatability per ISO 9283	±0.1mm	
Axis movement	Working range	Maximum speed
Base	±175°	±120°/s
Shoulder	+85°/-265°	±120°/s
Elbow	±160°	±120°/s
Wrist 1	+85°/-265°	±180°/s
Wrist 2	±175°	±180°/s
Wrist 3	±175°	±180°/s
Typical TCP speed	2m/s	
IP lassification	IP54 (IP65 Optional)	
Noise	<70dB	

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	240mm
Weight	≈85kg
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 :	
FR20 payload setting: 20kg, Z-axis: 120mm	
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	620W
Typical peak power	810W

FR20 Controller Specification



DC MINI Controller



AC MINI Controller 5kw

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*89mm (No protrusions)
Weight	2.044 kg (Weight without wire)	3.6kg (Weight without wire)
Materials	Galvanized plate	Galvanized plate
Power supply	30-60VDC	100-240VAC/16A/Single-phase/50-60Hz
Output power	48VDC / 104Amax	48VDC / 104Amax