

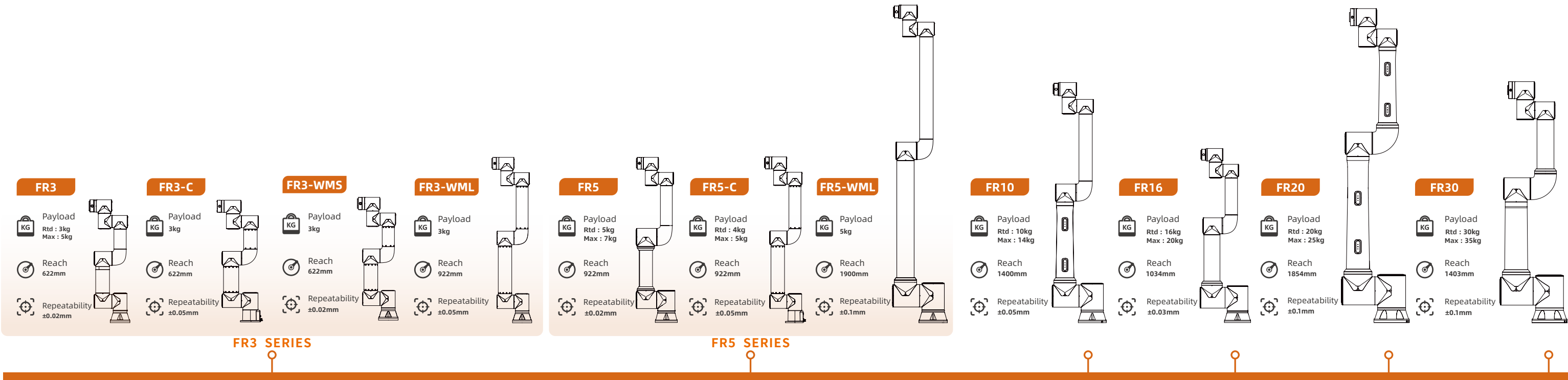
FAIRINO FR SERIES

According to different payload and parameter, FAIRINO collaborative robots FR series are divided into the following models:FR3(Optional Mirror Version), FR3-C, FR3-WMS,FR3-WML, FR5, FR5-C,FR5-WML, FR10, FR16, FR20 and FR30.

To provide partners&customers with better quality assurance,FAIRINO has obtained a more comprehensive range of certificates through international certification organizations.

Quality Management System: ISO 9001 Product Certification: CR, CE, KCs, NRTL, RoHS 2.0, NSF, SEMI, IP65 ISO Functional Safety Certification: ISO10218, ISO13849, ISO15066

Intelligent human-robot cooperation system solutions



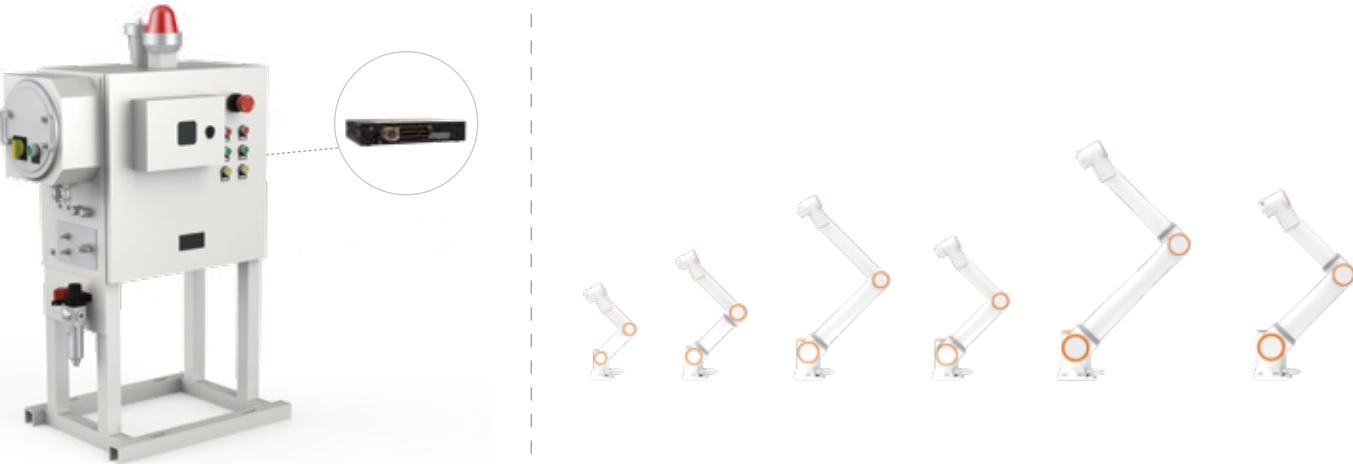
ROBOT ARM TECHNICAL SPECIFICATION

		>> FR3 SERIES <<						>> FR5 SERIES <<						
FR3		FR3-C		FR3-WMS		FR3-WML		FR5		FR5-C		FR5-WML		
Payload	3kg(Max:5kg)	3kg		3kg		3kg		5kg (Max:7kg)		4kg (Max:5kg)		5kg		
Reach	622mm	622mm		622mm		922mm		922mm		922mm		1900mm		
Degrees of freedom	6 rotating joints	6 rotating joints		6 rotating joints		6 rotating joints		6 rotating joints		6 rotating joints		6 rotating joints		
HMI	10.1 inch teach pendant （Optional ） or mobile terminal Web App	Not support teach pendant				10.1 inch teach pendant （Optional ） or mobile terminal Web App				Not support teach pendant				
Dual arm robotics applications	Mirror versions available to build dual arm robots													
Pose repeatability per ISO 9283	±0.02mm	±0.05mm		±0.02mm		±0.05mm		±0.02mm		±0.05mm		±0.1mm		
Axis movement	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed
Base	±175°	±180°/s	±175°	±180°/s	±175°	±150°/s	±175°	±150°/s	±175°	±180°/s	±175°	±150°/s	±175°	±120°/s
Shoulder	+ 85°/ – 265° (Dual Arm: –85°/ + 265°)	±180°/s	+ 85°/ – 265°	±180°/s	+ 85°/ – 265°	±150°/s	+ 85°/ – 265°	±150°/s	+ 85°/ – 265°	±180°/s	+ 85°/ – 265°	±150°/s	+ 85°/ – 265°	±120°/s
Elbow	±150°	±180°/s	±160°	±180°/s	±150°	±150°/s	±150°	±150°/s	±160°	±180°/s	±160°	±150°/s	±170°	±180°/s
Wrist 1	+85°/ – 265° (Dual Arm: –85°/ + 265°)	±180°/s	+ 85°/ – 265°	±180°/s	+ 85°/ – 265°	±180°/s	+ 85°/ – 265°	±180°/s	+ 85°/ – 265°	±180°/s	+ 85°/ – 265°	±180°/s	+ 85°/ – 265°	±180°/s
Wrist 2	±175°	±180°/s	±175°	±180°/s	±175°	±180°/s	±175°	±180°/s	±175°	±180°/s	±175°	±180°/s	±175°	±180°/s
Wrist 3	±175° (Optional ±360°)	±180°/s	±175°	±180°/s	±360°	±180°/s	±360°	±180°/s	±175°(Optional ±360°)	±180°/s	±360°	±180°/s	±360°	±180°/s
Typical TCP speed	1m/s		1m/s		1m/s		1m/s		1m/s		1m/s		2m/s	
IP classification	IP54 (IP65 Optional)		IP54		IP54 (IP65 Optional)		IP54 (IP65 Optional)		IP54 (IP65 Optional)		IP54		IP54 (IP65 Optional)	
Noise	<65dB		<65dB		<65dB		<65dB		<65dB		<65dB		<65dB	
Robot mounting	Any orientation		Any orientation		Any orientation		Any orientation		Any orientation		Any orientation		Any orientation	
I/O Ports	(DI) 2 (DO) 2		(DI) 2 (DO) 2		(DI) 2 (DO) 2		(DI) 2 (DO) 2		(DI) 2 (DO) 2		(DI) 2 (DO) 2		(DI) 2 (DO) 2	
	(AI) 1 (AO) 1		(AI) 1 (AO) 1		(AI) 1 (AO) 1		(AI) 1 (AO) 1		(AI) 1 (AO) 1		(AI) 1 (AO) 1		(AI) 1 (AO) 1	
Tool I/O power supply	24V/1.5A		24V/1.5A		24V/1.5A		24V/1.5A		24V/1.5A		24V/1.5A		24V/1.5A	
Footprint	128mm		125mm		128mm		128mm		149mm		125mm		190mm	
Weight	≈15kg		≈14kg		≈10.5kg		≈11.25kg		≈22kg		≈11.8kg		≤45kg	
Operating temperature	0~ 45℃		0~ 45℃		0~ 45℃		0~ 45℃		0~ 45℃		0~ 45℃		-20~ 45℃	
Operating humidity	90%RH(non-condensing)		20%~90%RH(non-condensing)		90%RH(non-condensing)		90%RH(non-condensing)		90%RH(non-condensing)		90%RH(non-condensing)		90%RH(non-condensing)	
Materials	Aluminium 、 Steel		Aluminium 、 Steel		Aluminium 、 Steel		Aluminium 、 Steel		Aluminium 、 Steel		Aluminium 、 Steel		Aluminium 、 Steel	
Black Optional	no		no		no		no		yes		no		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		FR3-C payload setting: 3kg, Z-axis: 18mm		FR3-WMS payload setting: 3kg, Z-axis: 18mm		FR3-WML payload setting: 3kg, Z-axis: 18mm		FR5 payload setting: 5kg, Z-axis: 30mm		FR5-C payload setting: 4kg, Z-axis: 30mm		FR5-WML 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	220W		260W		90W		140W		260W		190W		270W	
Typical peak power	280W		320W		130W		240W		310W		340W		620W	

ROBOT ARM TECHNICAL SPECIFICATION

FR10			FR16		FR20		FR30	
Payload	10kg (Max:14kg)		16kg (Max:20kg)		20kg (Max:25kg)		30kg (Max:35kg)	
Reach	1400mm		1034mm		1854 mm		1403 mm	
Degrees of freedom	6 rotating joints		6 rotating joints		6 rotating joints		6 rotating joints	
HMI	10.1 inch teach pendant （Optional ） or mobile terminal Web App							
Dual arm robotics applications								
Pose repeatability per ISO 9283	±0.05mm		±0.03mm		±0.1 mm		±0.1 mm	
Axis movement	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed
Base	±175°	±120°/s	±175°	±120°/s	±175°	±120°/s	±175°	±120°/s
Shoulder	+ 85°/ - 265°	±120°/s	+ 85°/ - 265°	±120°/s	+ 85°/ - 265°	±120°/s	+ 85°/ - 265°	±120°/s
Elbow	±160°	±180°/s	±160°	±180°/s	±160°	±120°/s	±160°	±120°/s
Wrist 1	+ 85°/ - 265°	±180°/s	+ 85°/ - 265°	±180°/s	+ 85°/ - 265°	±180°/s	+ 85°/ - 265°	±180°/s
Wrist 2	±175°	±180°/s	±175°	±180°/s	±175°	±180°/s	±175°	±180°/s
Wrist 3	±175°(Optional ±360°)	±180°/s	±175°(Optional ±360°)±180°/s		±175°	±180°/s	±175°	±180°/s
Typical TCP speed	1.5m/s		1m/s		2m/s		2m/s	
IP classification	IP54 (IP65 Optional)		IP54 (IP65 Optional)		IP54 (IP65 Optional)		IP54 (IP65 Optional)	
Noise	<65dB		<65dB		<70dB		<70dB	
Robot mounting	Any orientation		Any orientation		Any orientation		Any orientation	
I/O Ports	(DI) 2 (DO) 2		(DI) 2 (DO) 2		(DI) 2 (DO) 2		(DI) 2 (DO) 2	
	(AI) 1 (AO) 1		(AI) 1 (AO) 1		(AI) 1 (AO) 1		(AI) 1 (AO) 1	
Tool I/O power supply	24V/1.5A		24V/ 1.5 A		24V/ 1.5 A		24V/ 1.5 A	
Footprint	190mm		190mm		240mm		240mm	
Weight	≈40kg		≈40kg		≈85 kg		≈85 kg	
Operating temperature	0 ~45℃		0 ~45℃		0~45℃		0~45℃	
Operating humidity	90%RH(non-condensing)		90%RH(non-condensing)		90%RH(non-condensing)		90%RH(non-condensing)	
Materials	Aluminium 、 Steel		Aluminium 、 Steel		Aluminium 、 Steel		Aluminium 、 Steel	
Black Optional	yes		no		no		no	
■ Typical power test payload settings, different loads are set according to robot models, payload configuration parameters are as follows :								
	FR10 payload setting: 10kg, Z-axis: 60		FR16 payload setting: 16kg, Z-axis: 96mm		FR20 payload setting: 20kg, Z-axis: 120mm		FR30 payload setting: 30kg, Z-axis: 200mm	
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	300W		310W		620W		600W	
Typical peak power	500W		410W		810W		910W	

EXPLOSION-PROOF CABINET [Optional]



Explosion-Proof Cabinets (Integral Explosion-Proof)

Robot (full range explosion-proof)

It has good technical performance. The cabinet must be resistant to vibration, impact, corrosion, dust, water, and radiation to ensure stable and reliable operation of devices. Good usability and safety protection facilities, easy operation, installation and maintenance, and to ensure the safety of the operator.

IP classification	IP65
Operating Environment Temperature	0℃-45℃
Minimum Positive Pressure	100pa
Maximum Positive Pressure	1000pa
Rated Input Voltage	100–240Vac
Maximum Leakage	15L/Min
L*W*H	682*500*1100(Includes alarm light 1286)
Weight	75kg
Materials	Carbon Steel + Stainless Steel
Cabinet Volume	126L
Ventilation Flow Rate	120L/min
Ventilation Time	14min
Protective Gas	AIR
Explosion-proof Cabinet Certificate	CE22.7131