

# ROBOT ARM TECHNICAL SPECIFICATION



>> FR3 SERIES <<

	<b>FR3</b>	<b>FR3-WMS</b>	<b>FR3-WML</b>	<b>FR5</b>	<b>FR10</b>	<b>FR16</b>	<b>FR20</b>	<b>FR30</b>
Payload	3kg(Max:5kg)	3kg	3kg	5kg (Max:7kg)	10kg (Max:14kg)	16kg (Max:20kg)	20kg (Max:25kg)	30kg (Max:35kg)
Reach	622mm	622mm	922mm	922mm	1400mm	1034mm	1854 mm	1403 mm
Degrees of freedom	6 rotating joints	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 or mobile terminal Web App	10.1 inch teach pendant or mobile terminal Web App			10.1 inch teach pendant or mobile terminal Web App		10.1 inch teach pendant or mobile terminal Web App	
Dual arm robotics applications	Mirror versions available to build dual arm robots							
Pose repeatability per ISO 9283	±0.02mm	±0.02mm	±0.05mm	±0.02mm	±0.05mm	±0.03mm	±0.1mm	±0.1mm
Axis movement	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed
Base	±175°	±180°/s	±175°	±150°/s	±175°	±180°/s	±175°	±120°/s
Shoulder	+ 85° / - 265° (Dual Arm: -85° / + 265°)	±180°/s	+ 85° / - 265°	±150°/s	+ 85° / - 265°	±180°/s	+ 85° / - 265°	±120°/s
Elbow	±150°	±180°/s	±150°	±150°/s	±150°	±180°/s	±160°	±180°/s
Wrist 1	+ 85° / - 265° (Dual Arm: -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°	±180°/s	±360°	±180°/s	±360°	±180°/s	±175°	±180°/s
Typical TCP speed	1m/s		1m/s		1m/s		1.5m/s	
IP classification	IP54 (IP65 Optional)		IP54 (IP65 Optional)		IP54 (IP65 Optional)		IP54 (IP65 Optional)	
Noise	<65dB		<65dB		<65dB		<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/1.5A		24V/1.5A		24V/ 1.5A	
Footprint	128mm		128mm		149mm		190mm	
Weight	≈15kg		≈10.5kg		≈11.25kg		≈22kg	
Operating temperature	0-45 °C		0-45°C		0-45°C		0-45°C	
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	no		no		yes		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	FR3WMS payload setting: 3kg, Z-axis: 18mm	FR3WML payload setting: 3kg, Z-axis: 18mm	FR5 payload setting: 5kg, Z-axis: 30mm	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	220W	90W	140W	260W	300W	310W	620W	600W
Typical peak power	280W	130W	240W	310W	500W	410W	810W	910W