

ER3 ER7 ER3 Pro ER7 Pro

Specifications

Payload	3 kg	7 kg	3 kg	7 kg
Reach	1,010 mm	1,125 mm	1,010 mm	1,125 mm
Weight (including built-in controller)	About 21 kg	About 27 kg	About 22 kg	About 29 kg
Degrees of freedom	6	6	7	7
MTBF	> 50,000 h	> 50,000 h	> 50,000 h	> 50,000 h
Power supply	90-264VAC, 47-63Hz/48VDC			
Programming	Direct teaching control and graphical interface			

Performance

Typical Power	200 w	300 w	300 w	350 w
Safety	Over 20 adjustable safety features including collision detection, virtual walls, and collaboration mode.			
Certification	EN ISO 13849-1, Cat.3, PL d, EN ISO 10218-1, and EU CE marking requirements			
Force sensing (tool flange)	Force, x-y-z	Torque, x-y-z	Force, x-y-z	Torque, x-y-z
Force measurement resolution	0.1 N	0.02 Nm	0.1 N	0.02 Nm
Relative accuracy of force control	0.5 N	0.1 Nm	0.5 N	0.1 Nm
Adjustable range of Cartesian stiffness	0~3,000 N/m, 0~300 Nm/rad		0~3,000 N/m, 0~300 Nm/rad	
Operating temperature	0°C~45°C		0°C~45°C	
Humidity	≤ 90% RH (non-condensing)		≤ 90% RH (non-condensing)	

Motion

Repeatability	±0.03 mm				±0.03 mm			
Motion joint	Working range		Maximum speed		Working range		Maximum speed	
Axis 1	±170°	180°/s	±170°	90°/s	±170°	180°/s	±170°	90°/s
Axis 2	±120°	150°/s	±120°	90°/s	±120°	150°/s	±120°	90°/s
Axis 3	±120°	180°/s	±120°	180°/s	±170°	180°/s	±170°	120°/s
Axis 4	±170°	225°/s	±170°	180°/s	±120°	180°/s	±120°	120°/s
Axis 5	±120°	225°/s	±120°	180°/s	±170°	225°/s	±170°	120°/s
Axis 6	±360°	225°/s	±360°	180°/s	±120°	225°/s	±120°	120°/s
Axis 7	—		—		±360°	225°/s	±360°	120°/s
Maximum speed at tool end	≤3.0m/s		≤2.8m/s		≤3.0m/s		≤2.5m/s	

Features

IP rating	IP54
ISO cleanroom class	5
Noise	≤ 70 dB(A)
Robot installation	At any angle
Tool I/O ports	2 Digital outputs, 2 Digital inputs
Tool communication interface	RS485
Tool I/O power supply	24V 1A
Pedestal common I/O ports	4 Digital outputs, 4 Digital inputs, 4 safety I/O
Pedestal communication interface	2 channels Ethernet
Pedestal output power supply	24V, 1.5A

ER Series

Flexible Cobots

Your best interactive and cooperative partner



ROKAE Robotics

400-010-8700
www.rokae.com
sales@rokae.com



ER Series

Flexible Cobots

The xMate ER series flexible collaborative robots feature torque sensors for all joints. Powered by direct force control with full state feedback, they excel in obstacle avoidance and collision detection, and ensure high precision of position control without sacrificing the highly dynamic force control and compliance control function.

Practical direct teaching control and RL programming language provide users with a simpler and more comprehensive programming experience. Open RCI low-level control satisfies the requirements of high-end users in such fields as education, research, medical care, and automatic process development.



Applications

xMate ER Series Flexible Collaborative Robots, closer to human hands in sensitivity and flexibility, have been widely used in education, research, health care, etc.:

- Ultrasound Diagnosis
- Orthopedic Surgery
- Sterilization
- Robot Algorithm Verification
- Visual Servo Control
- Teaching and Training



Features

More Compliant

Human-like compliance enabled by the next-generation unified force-position hybrid control framework and built-in high-precision torque sensors in every joint, enables real-time adjustment of stiffness, ensuring a safer and more intelligent interaction with the environment.



More Agile

7 degrees of freedom enables the robot to reach the same end-effector position with different configurations, allowing for flexible and intelligent obstacle avoidance in limited space and therefore enlarging the effective workspace greatly.



Safer

Position holding accuracy of ± 0.1 mm powered by suction contracting brake and dynamic feedforward compensation; Ultrasensitive collision detection by torque sensors makes one-touch stop possible without safety fences required, ensuring a safer human-machine collaboration.



Lighter

Cabinet-free and highly integrated modular joint design simplifies deployment in limited space and complex operating environments. Light and compact design also facilitates the collaboration with AGVs.



Easier to Use

Direct teaching control, precise simulation of motion trajectories, and graphical programming, allow easy operation by beginners; Open low-level API interfaces make secondary application development easier than ever; Medical process kits are available for medical applications, including customized virtual walls, remote control of force feedback, etc.

