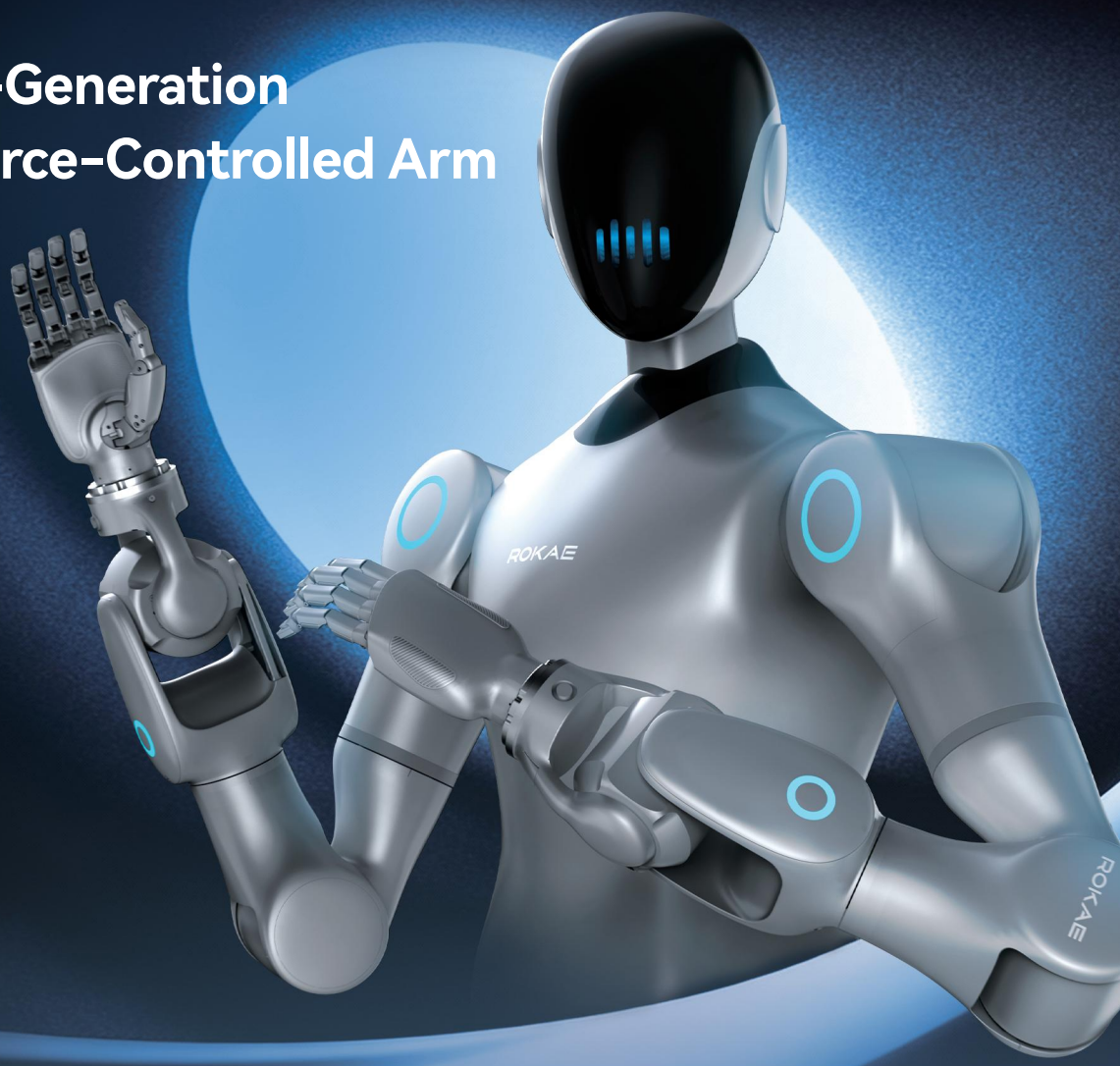
ROKAE

ROKAE New-Generation Humanoid Force-Controlled Arm

AR Series



Ultra-lightweight · Humanoid Arm

New-Generation HSA Series
Ultra-lightweight Integrated Force-Controlled Joint

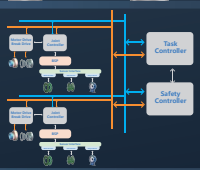
Payload	Weight	Payload-weight ratio
5kg	10kg	1:2

7 DoF · Bionic Design

Crossed-Axis Wrist
Directly maps human arm movements

Industrial-Verified Product · High Safety & Reliability

Based on world's top-selling full force-controlled cobot
Electromagnetic Brake, Sensitive Collision Detection, 22 TÜV-Certified Safety Functions



Comprehensive Functions · Open Ecosystem

Comprehensive Advanced SDK Algorithm Functions
Rich End Interfaces & Support for Mainstream Protocols (EtherCAT, CAN FD, RS485)

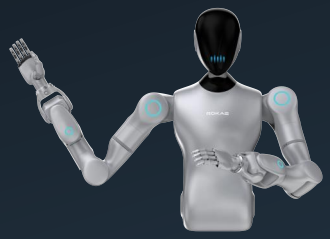
Full-joint high-precision force sensing & high-dynamic force control tech

Overall force control bandwidth	Overall force control accuracy
>10Hz	≤0.15N, ≤0.05N.m

Full-Joint Torque Sensing Technology

Supports built-in camera cables
Visual sensing plug-and-play

Parameter Specifications



AR5

AR5-P

Requirement	Requirement definition	Force control arm parameters	
Specifications	Rated load	5 kg	
	Weight	≤10 kg	
	DoF	7	
	Operating radius	683 mm	650 mm
	Repeated positioning accuracy	±0.1 mm	
	Absolute positioning accuracy	±1 mm	
	TCP maximum speed	1.5 m/s	
	Joint hollow aperture	≥9 mm	
	IP rating	IP54	
Brake	Brake	Joint with the brake	
Force control	Joint torque sensor	Standard configuration	
	End 6-DoF force sensor	Optional (range 200 N/7 Nm, accuracy ≤ 2% F.S.)	
	Force control accuracy	≤0.15 N, ≤ 0.05 Nm (reference value)	
	Force control resolution	≤0.05 N, ≤ 0.02 Nm (reference value)	
	Overload capacity of force sensor	≥300% F.S.	
	Comprehensive accuracy of force control	≤1% F.S.	
	Sampling frequency of force sensor	≥5 kHz	
	Torque closed loop	In initial scheme, controller performs torque closed loop, while in advanced scheme, joint performs torque closed loop	
	Admittance control	Single arm admittance is used alone. Update admittance control parameters in real time during admittance execution	
	Load recognition	Automatic recognition of load	
Input power supply	Power voltage	48 V DC(±15%)	
Encoder	Encoder	Dual encoder	
Communication	Communication mode	EtherCAT	
	Communication cycle	1±0.1 ms	
Noise	Noise	≤60 dB	≤60 dB
Temperature	Operating temperature	0℃-50℃	
	Temperature rise	The temperature rise shall not exceed 30℃, and the overall temperature of the machine shall not exceed 60℃	
Humidity	Operating humidity	10%-90% RH (non-condensing)	
Debugging	Debugging software	Host computer debugging software adapts to 7-axis arm for visual debugging	
Vibration	Vibration resistance	Refer to GB/T 4798.5-2007 Severity: 5M2	
	Impact strength	Refer to GBT39266-2020 Impact acceleration: 10 g	

Application

Applicable to humanoid robots, dual-arm wheeled robots; for AI, data collection, learning & training, factory applications, etc.

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