

A close-up, high-angle shot of the Unitree Z1 dextrous collaborative robot arm. The arm is dark grey or black with a matte finish. The end effector is a complex, multi-fingered gripper with several joints and sensors. The background is black, making the robot stand out. The lighting highlights the mechanical details and the smooth curves of the arm.

Unitree

Z1

**DEXTEROUS
COLLABORATIVE ROBOT**



Compact & Lightweight



Dexterous & Flexible



Sufficient Payload



Sufficient Accuracy



Support Joint Force Control



With Collision Protection



Joint Parameter

FUNCTION	PARAMETER
Backlash	~6 arcmin
Maximum Torque	33N·m
Weight	405g
Size	φ65*50mm
Reducer	Harmonic Reducer
Reduction Ratio	60+
Voltage	24V (Recommend)
Communication Method	RS 485
Encoder Resolution	15bit
Bearing	Industrial grade cross roller
Motor Sensing Feedback	Torque, angle, angular velocity
Motor Control Command	Torque, angle, angular velocity, stiffness, damping
Force Control Accuracy	~0.2N·m
Control Frequency	1KHz





Parameter

Model	Z1 AIR	Z1 PRO
DOF	6	6
Weight	4.1kg	4.3kg
Payload	2 kg	3–5 kg
Reach	700mm	
Repeatability [1]	~0.1mm	
Power Supply	Voltage 24V Current > 20A	
Interface	Ethernet	
User Operating System	Ubuntu	
Force Feedback and Collision Detection	Provide	
Power	MAX 500w	
Control Interface [2]	Position + Force Control	

Joint	Range	Max Speed
J1	$\pm 150^{\circ}$	$180^{\circ}/s$
J2	$\pm 90^{\circ}$	$180^{\circ}/s$
J3	$\pm 90^{\circ}$	$180^{\circ}/s$
J4	$\pm 160^{\circ}$	$180^{\circ}/s$
J5	$\pm 90^{\circ}$	$180^{\circ}/s$
J6	$\pm 162^{\circ}$	$180^{\circ}/s$

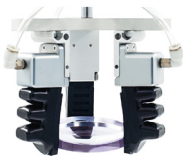


[1] It depends on the actual test according to the use requirements (the test standards of manipulator vary greatly, and the accuracy varies greatly under different test conditions)

[2] Since the reduction ratio used by each joint is relatively low, the position control stiffness of the whole machine is low. If the control mode is not optimized, there will be large position control error and shaking when the manipulator moves.

Open Programming Interface and Extended Interface

The manipulator control program and control interface will be successively opened, and different actuators can be quickly replaced at the end of the manipulator.



Application

Various mobile robots' onboard manipulator, e-commerce logistics, new consumption, daily life, etc.



Synergy

It can cooperate with Aliengo or B1 quadruped and other mobile robots to complete complex tasks and explore various application scenarios.



The background of the entire page is a high-contrast, black and white photograph of several robotic arms. The arms are sleek and modern, with visible joints and end effectors. They are arranged in a way that creates a sense of depth and movement, with some arms in sharp focus and others blurred in the background.

Unitree



SMART & LIGHTWEIGHT

www.unitree.com

400 626 6518

sales_global@unitree.cc

Hangzhou Yushu Technology Co., Ltd.,

3rd floor, building 1, Fengda Creative Park, No. 88, Dongliu Road,
Xixing street, Binjiang District, Hangzhou, Zhejiang, China

