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	±150°	180°/s
J2	±90°	180°/s
J3	±90°	180°/s
J4	±160°	180°/s
J5	±90°	180°/s
J6	±162°	180°/s

290.2mm

97.2mm

350mm

95mm

[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.
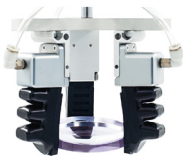
♟ Application

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.

Unitree

SMART & LIGHTWEIGHT