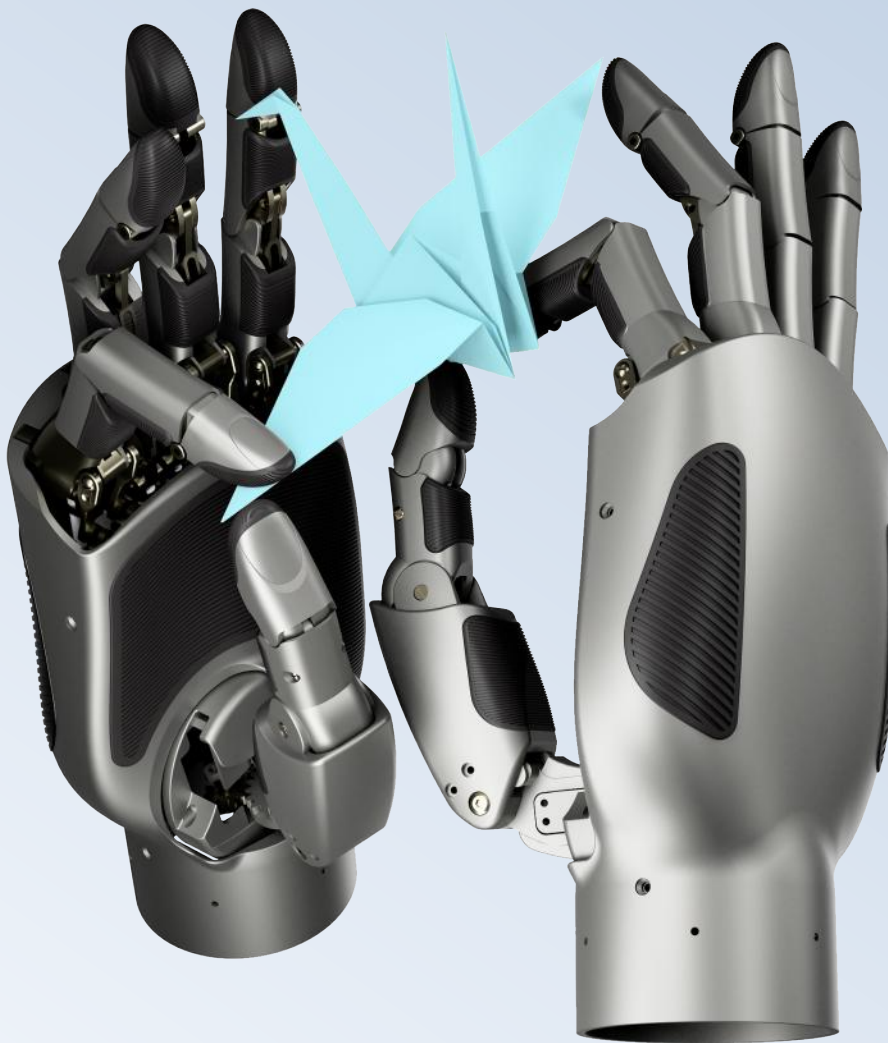


LINKERBOT

Dexterous Hand for Embodied Intelligence

CLEVER HANDS CREATE EVERYTHING



Linkerbot Beijing Technology Co., Ltd.

Linker Hand O6

6 Active + 5 Passive DoF

• Linkage Transmission

Linker Hand O6 is a high-precision biomimetic robotic hand developed by Linkerbot to meet the growing demand for **cost-effective** dexterous manipulation.

Featuring 6 active joints + 5 passive joints, it delivers **strong gripping force**, **high-precision force control**, **compact size**, and **light weight**—ideal for **logistics handling**, **industrial assembly**, and **irregular object grasping**.



Key Features

Strong Gripping Force

Equipped with self-developed high-torque servo motor modules and worm gear drive structure, it ensures high rigidity while achieving greater gripping force with high drive efficiency.

High-Precision Control

Adopts a high-precision servo rigid linkage transmission system, self-developed high-precision joint modules, and optimized force-position hybrid control algorithm, enabling $\leq \pm 0.20\text{mm}$ repeat positioning accuracy for reliable, precise movements.

Compact Size & Lightweight Design

Uses innovative materials for ultra-lightweight design (only 350g). The servo motor module integrates drive and control functions, resulting in a compact structure that matches human hand size—supporting flexible operations and easy compatibility with collaborative robotic arms, service robots, and other systems to boost integration flexibility and motion efficiency.



**Piezoresistive
Sensors**
(Optional)



Vision
(Optional)

Communication Methods

CAN Interface

Protocol: Proprietary Protocol; Baud Rate: 1 Mbps; Default Device ID: Left 0x28 / Right 0x27; Broadcast ID: 0xFF (for addressing, identification, and debugging).

CAN FD Interface

Protocol: Proprietary Protocol; Arbitration Bit Rate: 1 Mbps; Data Bit Rate: 5 Mbps; Default Device ID: Left 0x28 / Right 0x27; Broadcast ID: 0xFF (for addressing, identification, and debugging).

RS485 Interface

Protocol: Modbus; Baud Rate: 115200 bps; Default Device ID: Left 0x28 / Right 0x27; Function Codes: 03/04/06/16; Serial Configuration: 8 data bits, 1 stop bit, no parity.

EtherCAT

Protocol: Proprietary Protocol.



Linker Hand

Linker Hand L6

6 Active + 5 Passive DoF

• Linkage Transmission

Linker Hand L6 is a **high-precision** biomimetic robotic hand designed for fast, accurate, and reliable manipulation. With self-developed joint modules and a rigid **linkage transmission system**, it delivers high structural stiffness in a compact form factor.

From **precision assembly** to **irregular object grasping**, L6 is built for **flexible deployment** across demanding real-world applications.



Key Features

Compact and lightweight design

Weighing only 607g, the compact structure seamlessly integrates with collaborative robotic arms, service robots, and various systems, significantly enhancing integration flexibility and motion efficiency.

High-Precision Control Capability

Equipped with a high-precision servo-driven rigid linkage system and proprietary joint modules to achieve $\pm 0.2\text{mm}$ repeatability, ensuring precise and reliable operation in every movement.

Rapid Response Performance

0.35 second ultra-fast opening/closing response, combined with independent thumb movement control and synchronized four-finger precision actions, delivers human-like flexible operation.



Piezoresistive
Sensors
(Optional)



Vision
(Optional)

Communication Methods

CAN Interface

Utilizes a proprietary protocol; baud rate is 1Mbps; default device IDs: left hand 0x28, right hand 0x27; supports broadcast ID 0xFF (for addressing, identification, and debugging).

RS485 Interface

Adopts the Modbus protocol; baud rate is 115200bps; default device IDs: left hand 0x28, right hand 0x27; supports function codes: 03/04/06/16; UART settings are fixed: 8 data bits, 1 stop bit, no parity.



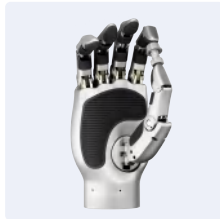
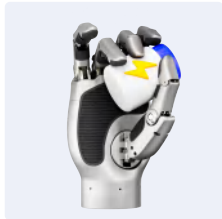
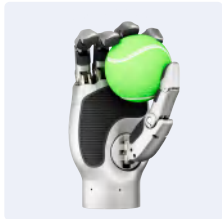
Linker Hand

Linker Hand L20 Lite

10 Active + 10 Passive DoF

• Linkage Transmission

Linker Hand L20 Lite is a high-performance dexterous hand with 20 DoFs. Equipped with **self-developed motors** and **linkage transmission mechanisms**, it ensures traction stability while enabling precise control and smooth movement. Widely used in **education** & **research**, **piano performance**, **household assistance**, and **elderly care**, it drives the advancement and implementation of intelligent robots and human-robot collaboration. It supports **multi-modal environmental perception** via various sensors and is compatible with ROS/QT environments (with standard ROS plugins for secondary development).



Key Features

Highly Bionic Multi-DoF Design

20 DoFs (10 active + 10 passive) enable accurate simulation of human hand movements and fine operations, supporting adaptive object grasping and complex tasks.

Multi-Modal Perception & Intelligent Interaction

Configurable with cameras, electronic skin, and other sensors to build a full-range "vision + touch" perception model—enhancing environment understanding and interaction capabilities for unstructured scenarios.

Edge-Cloud Integration & No-Code Deployment

Leverages edge-cloud architecture for one-click skill deployment from cloud libraries, reducing usage barriers and improving development efficiency.

High-Reliability Structure & Data Support

Self-developed motor and linkage system resists impact and damage, adapting to high-intensity scenarios like embodied intelligence training. It supports efficient data collection for data farm construction and algorithm optimization.



Piezoresistive
Sensors
(Standard)



Vision
(Optional)



Visual-Tactile
Perception
(Optional)

Communication Methods

CAN Interface

Utilizes a proprietary protocol; baud rate is 1Mbps; default device IDs: left hand 0x28, right hand 0x27; supports broadcast ID 0xFF (for addressing, identification, and debugging).

RS485 Interface

Adopts the Modbus protocol; baud rate is 115200bps; default device IDs: left hand 0x28, right hand 0x27; supports function codes: 03/04/06/16; UART settings are fixed: 8 data bits, 1 stop bit, no parity.



Linker Hand

Linker Hand O20

16 Active DoF

• Direct Drive

Linker Hand O20 is a 16-joint dexterous hand that combines **high-performance brushless coreless motors** with **worm gear joint modules**. It replicates precise pinching and stable grasping motions of the human hand while delivering **high power density** and **efficient transmission**. With its **self-locking design**, O20 can maintain a grasp with **zero holding power consumption**, offering a more advanced solution than conventional grippers for industrial applications. O20 delivers **high-precision motion control** and **stable operation**, making it suitable for **high-precision automotive assembly**, **specialized aerospace tasks**, **irregular parcel sorting in logistics**, and **hazardous-environment substitution tasks**. It is a powerful tool for advancing industrial automation.



Key Features

High-Precision Control and Biomimetic Operation

Combining brushless motors with micron-level worm gear transmission, O20 enables precise closed-loop control of position and torque, making it well suited for precision assembly and fragile object handling.

Powerful and Efficient Output

Its brushless motor system delivers ultra-high power density, while efficient worm gear transmission ensures strong and stable performance. With a rated payload of 20 kg and an opening/closing time of 0.88 s, O20 supports efficient and reliable grasp-transfer-place operations.

Energy-Efficient and Reliable Continuous Operation

With a rated static current of only 0.27 A, O20 offers excellent energy efficiency. It supports 24 V industrial power and 24/7 continuous operation, meeting the demands of high-intensity production environments.

Lightweight Design and Fast Integration

Its lightweight overall design enables rapid installation and deployment, making it suitable for 3C electronics, automotive, aerospace, and other high-precision manufacturing scenarios.



Piezoresistive
Sensors
(Standard)

Communication Methods

CAN FD Protocol

High transmission rate (up to 5Mbps) for fast response; Supports 64-byte data per frame to handle more sensor data and joint control commands simultaneously; Enhanced mechanisms (e.g., improved CRC check) for higher communication reliability.



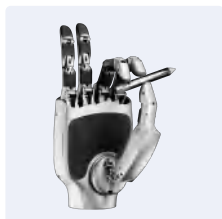
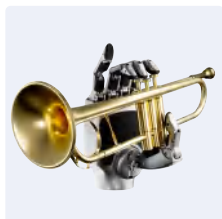
Linker Hand L20

• 16 Active + 5 Passive DoF

• Linkage Transmission

Linker Hand L20 is a 21 DoF dexterous hand that **accurately simulates natural human hand grasping** with delicate operations. It adopts innovative **linkage transmission** and **self-developed motors** for high-precision movement, and supports **force, vision, and tactile sensors**—enhancing environmental adaptability and intelligent interaction via **multi-modal perception**.

With high DoFs, multi-modal perception, and force-position hybrid algorithms, it is widely used in **education & research, industrial automation, household assistance**, and elderly care—providing precise, dexterous operation solutions.



Key Features

Highly Bionic DoFs & Fine Operations

21 DoFs (16 active + 5 passive) mimic human hand movements and grasping to meet complex, fine operation requirements.

Multi-Modal Perception & Intelligent Interaction

Configurable with force and electronic skin sensors to accurately detect contact force, object shape, and close-range images—boosting environmental adaptability and interaction intelligence.

Edge-Cloud Integration & No-Code Deployment

One-click skill deployment from cloud libraries via edge-cloud architecture, lowering thresholds and improving efficiency.

High Reliability & Data Support

Robust structure resists impact, adapting to high-intensity training and industrial scenarios. It supports self-developed data collection for data farm construction and algorithm optimization.



Piezoresistive
Sensors
(Standard)



Capacitive
Sensors
(Optional)



Vision
(Optional)



Visual-Tactile
Perception
(Optional)

Communication Methods

CAN Interface

Utilizes a proprietary protocol; baud rate is 1Mbps; default device IDs: left hand 0x28, right hand 0x27; supports broadcast ID 0x7FF (for addressing, identification, and debugging).

RS485 Interface

Adopts the Modbus protocol; baud rate is 256000bps; default device IDs: left hand 0x28, right hand 0x27; supports function codes: 03/04/06/16; UART settings are fixed: 8 data bits, 1 stop bit, no parity.



Linker Hand

Linker Hand L30

• 17 Active + 4 Passive DoF

• Tendon Drive

Linker Hand L30 is a 21 DoF dexterous hand that **accurately replicates fine human hand movements** with **millimeter-level** operation precision. It adopts advanced **tendon drive** and **highly integrated mechatronic systems** for stable movement and precise control, and supports multi-modal perception (**force, touch, vision**) to enhance real-time perception and interaction reliability.

With high DoFs, multi-modal perception, and leading motion control algorithms, it is widely used in **industrial automation, medical assistance,** and **research experiments**—providing a highly adaptable, reliable end-effector solution.



$\pm 0.20_{\text{mm}}$

Repeat Positioning
Accuracy

15_{kg}

Maximum Load
Capacity

6.5_N

Maximum Thumb
Tip Force

9_N

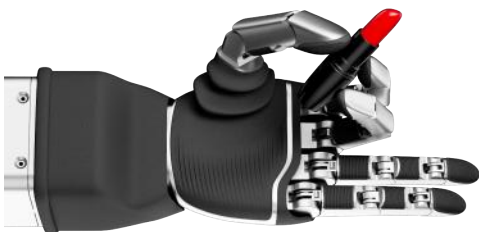
Peak fingertip force
(four-finger)

450°/s

Maximum
Movement Speed

39_N

Grasping Force
Resolution



Key Features

Highly Bionic Precise Operation

21 DoFs (17 active + 4 passive) with independent control of thumb and four fingers, enabling accurate replication of fine human hand movements, high repeat positioning accuracy, and delicate gripping force resolution—suitable for precision tasks.

Fast-Response Tendon Drive

Advanced tendon drive and highly integrated mechatronic systems ensure smooth movement and high maximum speed to meet fast-response needs, while achieving lightweight and high compactness for robotic end-effectors.

Multi-Modal Intelligent Interaction

Supports fusion of force, touch, and other sensors to accurately perceive the environment and provide real-time interaction feedback—greatly enhancing adaptability and collaboration in unstructured scenarios.



Piezoresistive
Sensors
(Optional)

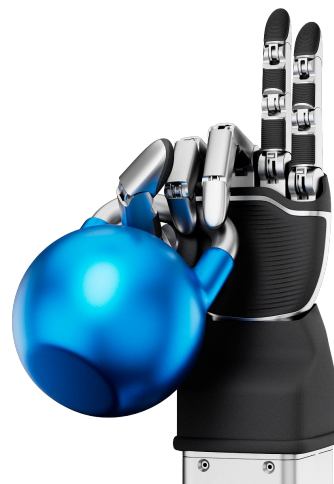


Vision
(Optional)

Communication Methods

CAN FD Protocol

High transmission rate (up to 5Mbps) for fast response; Supports 64-byte data per frame to handle more sensor data and joint control commands simultaneously; Enhanced mechanisms (e.g., improved CRC check) for higher communication reliability.



Linker MCG Motion Capture Glove

- High-Precision Hand Motion Capture
- High-Precision Joint Tracking

Linker MCG (Linker Motion Capture Glove) is a high-precision hand motion capture glove built on **MEMS attitude sensors**. Combining a **MEMS module with accuracy of up to 0.001°** and an **AI gesture recognition algorithm**, it enables high-precision tracking of hand joint posture.

Linker MCG is well suited for professional scenarios such as **virtual reality interaction**, **dexterous hand teleoperation**, **medical simulation training**, and **industrial remote maintenance**, delivering an immersive and high-fidelity hand interaction experience.



Key Features

High-Precision Motion Capture

Each glove integrates 7 sensors, achieving static attitude accuracy of Roll 0.1°, Pitch 0.1°, and Yaw 0.2°. It accurately tracks fine finger movements such as flexion and extension of the thumb, index finger, middle finger, ring finger, and little finger, ensuring realistic and detailed motion reproduction.

Real-Time Dynamic Mapping

Linker MCG supports 200 Hz communication and features a low-latency transmission design. Data transmission and feedback response are controlled at the millisecond level, enabling real-time synchronization between operator input and device response with no perceptible lag.

Long-Endurance Design

Integrated with a 500 mAh lithium battery, Linker MCG supports up to 8 hours of continuous and stable operation, meeting the demands of extended professional use.

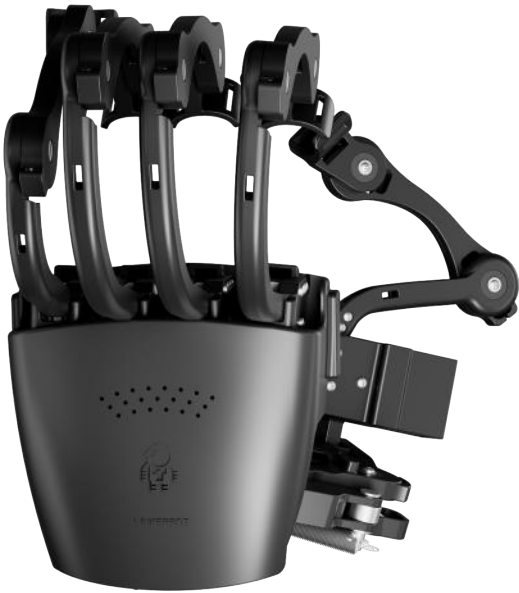
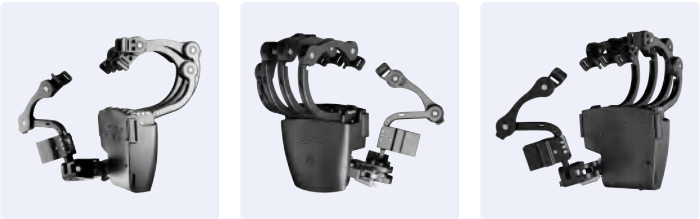
Specifications

Model	LMCG1-01	Glove Weight	95 g (single glove)	Number of Sensors	7 (single glove)
Minimum Resolution	≤ 0.001°	Operating Voltage	3.3 VDC	Rated Power	0.5 W
Battery Capacity	600mAh	Operating Time	8h	Computing Frequency	600Hz
Data Output Frequency	100Hz	Static Attitude Accuracy	≤Roll 0.1°/ Pitch0.1° Yaw 0.2°	Transceiver Dimensions	165*17.8*8.7mm
Power Supply	5VDC	Operating Current	≤ 50mA	Interface Type	USB-A
Operating Frequency	2.4GHz	Transmit Power	20dBm	Omnidirectional Antenna Range	30m

Linker FFG Force Feedback Glove

- High-Precision Motion Capture
- High-Precision Joint Tracking

Linker FFG (Linker Force Feedback Glove) is a professional interaction device that integrates **high-precision hand motion capture** with **grasp force feedback**. It enables accurate tracking of hand joint motion while simulating force feedback during grasping, delivering an immersive and high-fidelity hand interaction experience for **virtual reality**, **dexterous hand teleoperation**, **medical simulation training**, and **industrial remote maintenance**.



Key Features

High-Precision Motion Capture

With full-joint capture across 21 DoF, Linker FFG accurately tracks fine finger movements such as flexion, extension, and abduction. It covers the complete motion dimensions of the thumb, index finger, middle finger, ring finger, and little finger, ensuring realistic and detailed hand motion reproduction.

Real-Time Dynamic Mapping

Linker FFG supports wired 100 Hz and wireless 30 Hz communication, combined with a low-latency transmission design. Data transmission and feedback response are controlled at the millisecond level, enabling real-time synchronization between operator commands and device feedback with no perceptible lag.

Flexible Data Transmission

Linker FFG supports dual-mode communication. Wired serial connection provides stable, interference-resistant transmission for demanding industrial scenarios, while wireless communication improves mobility and ease of use. Users can switch between modes based on application needs.

Specifications

Model	LFFG1-02	Degrees of Freedom	21
Number of Sensors	16 potentiometers + 5 servos	Weight	390g
Capture Accuracy	0.08°	Maximum Torque Output	3.5kg.cm
Data Transmission	Wired or wireless	Data Frequency	Wired 100Hz / Wireless 30Hz
Transmission Range	Indoor ≤5 m	Power Supply	5V Type-C

Linker TA

- 14 DoF
- High-Precision Motion Capture and Reproduction

Linker TA (Linker Teleoperated Arm) features a **14 DoF** design that accurately maps the motion trajectories of the **human shoulder, elbow, and wrist**. Equipped with high-resolution sensors, it enables high-precision motion capture and reproduction, while supporting **millisecond-level low-latency data transmission** for responsive real-time operation.

Built on ergonomic principles, the product adopts a lightweight wearable structure to improve comfort while further optimizing freedom of movement. Linker TA is well suited for advanced development in **dual-arm robot control**, **motion-data collection**, and a variety of system-integration scenarios.



Key Features

High-Precision Motion Capture

Equipped with 12-bit high-resolution encoders, Linker TA delivers sub-millimeter control precision. It not only reproduces complex operational postures with accuracy, but also establishes a stable and reliable high-precision reference for overall robotic-arm control.

Low-Latency Real-Time Synchronization

Powered by a high-speed communication interface, the teleoperated arm supports 200 Hz high-frequency communication, keeping transmission latency at the millisecond level. This enables a stable and reliable low-latency synchronization mechanism, ensuring smooth and responsive teleoperation.

Ergonomic Wearable Design

Built with a lightweight structural design, the teleoperated arm weighs approximately 1.4 kg and features a scientifically optimized 14 DoF configuration. Its contours are refined based on human body dimensions and natural motion patterns to reduce muscle fatigue during extended use, ensuring comfort in human-machine collaboration scenarios.

Wide Range of Motion

With a chest-mounted wearable design, the teleoperated arm supports wide, unobstructed arm movement and can be paired with robotic arms for complex and precise manipulation tasks.

Specifications

Degrees of Freedom	14	Single-Arm Span	658mm
Wearing Method	Chest-Mounted	Communication Interface	Type-C/CAN
Weight	1.53Kg/1.4kg	Rated Voltage	24V/5V
Encoder Type	Absolute Encoder	Encoder Resolution	12Bit

Linker ARM

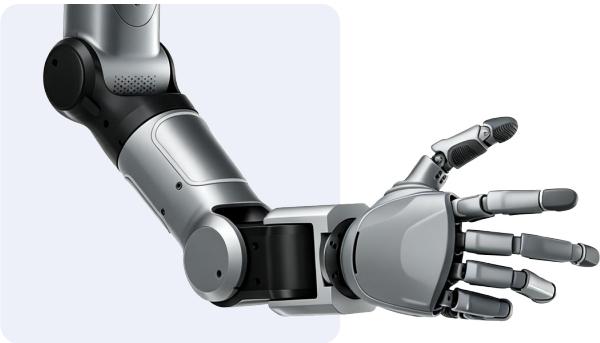
Linker Arm P7 Robotic Arm

- 7 DoF
- Flexible Deployment, Reliable Operation

Linker Arm P7 is a commercial robotic arm designed for **embodied intelligence and lightweight application scenarios**. With its 7 DoF architecture, it supports more **flexible posture adjustment** and **complex motion-trajectory planning**. Its joints integrate the motor, driver, and planetary reducer into a compact all-in-one design for efficient power transmission. Combining a classic mechanical configuration with 7 DoF, Linker Arm P7 adapts to a wide range of complex application scenarios and provides a stable, reliable automation solution for different industries.



Key Features



Flexible Motion for Complex Scenarios

Designed with 7 DoF and large joint rotation ranges, Linker Arm P7 offers excellent flexibility and motion redundancy. It enables precise trajectory planning and agile posture adjustment, making it easy to handle complex operational tasks.

Lightweight Body, Reliable Payload

Weighing only 5.6 kg, the arm is lightweight and easy to deploy or relocate. With a rated payload of 3 kg and a working radius of up to 608 mm, it balances deployment flexibility with reliable task execution in lightweight application scenarios.

High Speed, Higher Efficiency

With a maximum joint speed of up to 100 rpm, Linker Arm P7 delivers fast, smooth motion for high-frequency sorting, assembly, and handling tasks. It improves production rhythm and workflow efficiency, meeting the needs of high-tempo, energy-efficient automated production.

Specifications

Model	Linker Arm P7	Degrees of Freedom	7	Weight	5.6kg
Working Radius	608mm	Rated Payload	3kg	Repeat Positioning Accuracy	±0.043mm
Payload-to-Weight Ratio	1:2	Operating Voltage	48v	Communication Interface	CAN/CAN FD
Static Power	11W	Maximum Power	258W	Operating Temperature	0~50℃

Linker Hand



Linker Hand
O6



Linker Hand
L6



Linker Hand
O20



Linker Hand
L20



Linker Hand
L30

Degrees of Freedom	11	11	16	21	21
Number of Joints	6 Active + 5 Passive DoF	6 Active + 5 Passive DoF	16 Active DoF	16 Active + 5 Passive DoF	17 Active + 4 Passive DoF
Transmission Method	Linkage Drive	Linkage Drive	Direct Drive	Linkage Drive	Bionic Tendon Drive (Tendon-Driven)
Drive Method	Self-Developed Joint Module	Self-Developed Joint Module	Self-Developed Joint Module	Self-Developed Joint Module	Self-Developed Joint Module
Control Interface	CAN/CAN FD/RS485	CAN/RS485	CAN FD	CAN/RS485	CAN FD
Weight	350g	607g	888g	1216g	1192g
Max Load	50kg	28kg	36kg	20kg	15kg
Operating Voltage	24V-48V	DC24V $\pm$ 10%	DC24V $\pm$ 10%	24V-48V	DC24V $\pm$ 10%
Quiescent Current	0.093A @24V	0.2A	0.27A	0.3A @24V	0.16A
Average Current for No-Load Movement	0.2A @24V	0.6A	0.8A	0.374A @24V	0.62A
Maximum Current	2.36A @24V	5.6A	2A	1.82A @24V	2.71A
Repeat Positioning Accuracy	$<\pm 0.20\text{mm}$	$<\pm 0.20\text{mm}$	0.2mm	$\pm 0.20\text{mm}$	$\pm 0.20\text{mm}$
Maximum Thumb Tip Force	20N	12N	6.5N	14N	6.5N
Maximum Four-Finger Tip Force	25N	15N	10N	15N	9N
Thumb Lateral Rotation Range	--	--	1.14rad(65.24°)	1.32rad(75.78°)	0.61rad(35°)
Four-Finger Bending Angle	1.61rad(92.59°)	1.18rad(68°)	1.611rad(92.33°)	1.22rad(69.9°)	1.52rad(87.2°)
Thumb Side-Swing Speed	1.36rad/s(78.10°/s)	3.51rad/s(202°/s)	1.55rad/s(89.07°/s)	3.2rad/s(193.59°/s)	4.92rad/s(282.4°/s)
Four-Finger Bending Speed	1.30rad/s(74.75°/s)	3.5rad/s(201°/s)	2.18rad/s(124.69°/s)	3.5rad/s(200.47°/s)	6.343rad/s(363.6°/s)
Thumb Bending Speed	0.66rad/s(38°/s)	2.28rad/s(131°/s)	2.01rad/s(115.24°/s)	1.52rad/s(87.36°/s)	7.85rad/s(450.35°/s)

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