MAKE INTELLIGENT ROBOTIC ARM
ACCESSIBLE TO EVERYONE

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Tiktok Account

Facebook Official Account

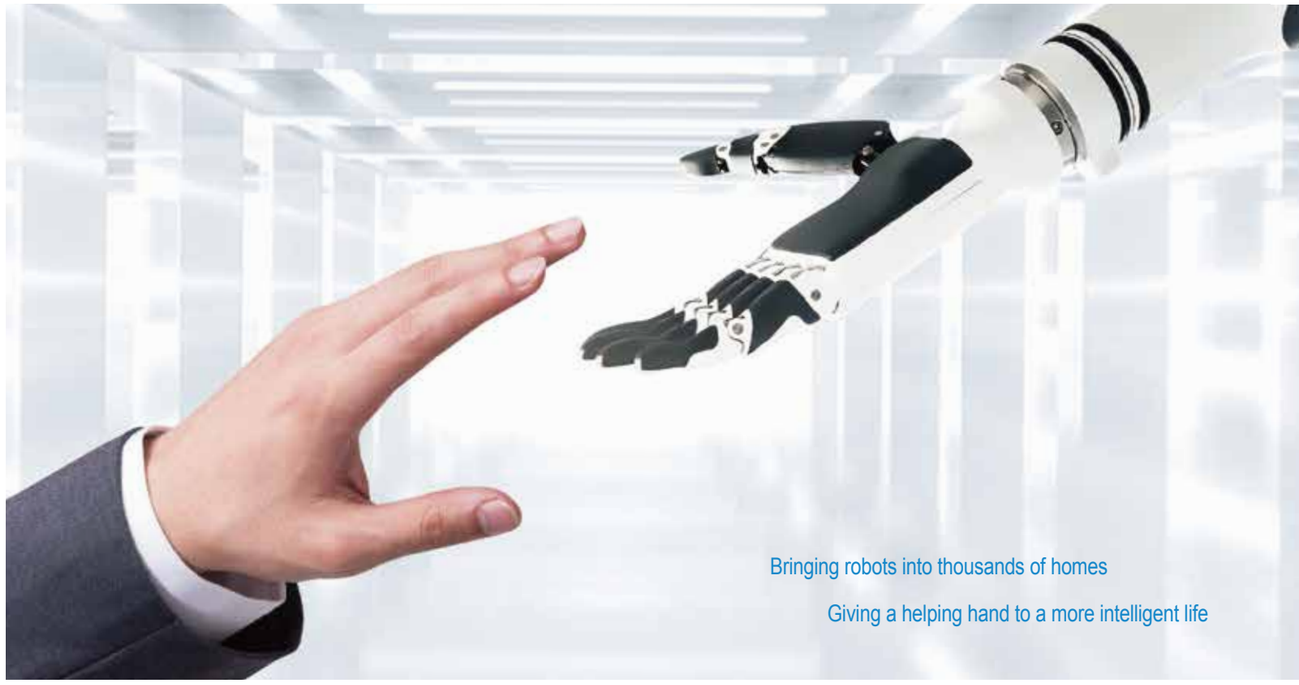


ULTRA-LIGHT HUMANOID ROBOTIC ARM

LEADER OF

Company Introduction

- RealMan Intelligent Technology (Beijing) Co., Ltd. (hereinafter referred to as RealMan) is a national high-tech enterprise that focuses on the research and development, production, and sales of the ultra-lightweight humanoid robotic arm. The headquarters are located in Shijingshan Shoute Steel Industrial Park, Beijing City, and the production base is located in the Intelligent Digital Industrial Park of Changzhou Science and Education City, Jiangsu Province. Furthermore, we have a wholly-owned subsidiary in Shenzhen with a total yearly production capacity of over 5000 units.
- RealMan, a pioneer in the field of ultra-lightweight humanoid robotic arms, has always prioritized product development and technological innovation. The core members of the team are from the early robot technology research and development team in China, who have been engaged in this field for more than 10 years and have profound technical backgrounds and research and development experience. They have truly achieved prototype design of robotic arms as well as independent research and development of underlying components at the genetic level and made revolutionary breakthroughs in the four core components of controllers, drivers, motors, and reducers, creating ultra-lightweight humanoid robotic arms with fully independent intellectual property rights. At present, products have been widely used in a variety of industries, including new retail, new catering, commercial services, intelligent inspection, medical health, inspection and quarantine, scientific research and education, industrial production, aerospace, etc.
- RealMan starts with an intelligent and general modular robotic arm body and integrates advanced software and hardware with human-machine interaction technology to provide customers with high-performance, high-reliability, and simple-to-use ultra-lightweight humanoid robotic arms and integrated solutions via independent research and continuous innovation. RealMan not only has years of experience in robot-related product research and development but has also established strategic partnerships with multiple universities, including Beijing University of Aeronautics and Astronautics, Beijing Institute of Technology, and China Agricultural University, forming a comprehensive and complementary innovation research and development platform.
- RealMan is dedicated to making intelligent robotic arm accessible to everyone, bringing robots into thousands of homes and giving a helping arm to a more intelligent life!



Company Qualifications



ZL 2018 2 0872838.3 | ZL 2018 2 1125798.2 | ZL 2019 2 0470772.x | ZL 2018 2 1118657.8 | ZL 2018 2 1117539.5 | ZL 2018 2 1120730.5 | CE Certificate | EMC Certificate | ZL 2021 2 0962150.6 | ZL 2021 2 1846372.8 | ZL 2022 2 1407266.4 | 02022Q1302R0M | 2021SR1438402 | ZL 2018 1 0577552.7 | ZL 2018 1 0778977.4 | ZL 2018 1 0171900.0



RM65 series/RM75 series

Ultra-lightweight Humanoid Robotic Arm

Product Introduction

RealMan currently offers three key series of robotic arms, the RM65, RM75, and RML63, which can satisfy the needs of users with varying degrees of freedom and arm spans while integrating the controller at the bottom of the robotic arm. The robotic arm is lightweight and has a high load-to-selfweight ratio. The ultra-small volume, coupled with a multi-platform interface system, makes it more suitable for a wide range of composite application scenarios. Simultaneously, the robotic arm has rich expansion interfaces and secondary development packages to fulfill the expansion needs of many industries.



RML63 series

long-arm-span robotic arm

realman 睿尔曼智能

Advanced control algorithms enable the robotic arm to have functions such as drag teaching and collision stopping. The powerful expansion ability and wireless communication function of the robotic arm enable control of the mobile chassis and end effectors through its own controller, making integration with the lifting guide and mobile chassis possible. Based on ultra-lightweight humanoid robotic arms, RealMan also provides users with a variety of solutions, including dual arm compound robots, dual arm lifting robots, single arm compound robots, compound lifting robots, and compound robots.













Product Advantages

Ultra-high Load-to-self weight Ratio

Ultra-light body, with the weight of the standard robotic arm (including controller) being only 7.2 Kg, payload up to 5 Kg, peak load of 9 Kg (full arm span), 1:1.44 load-to-weight ratio, and an effective working radius of up to 610 mm.

Flexible Deployment

Ultra-small volume, with a maximum robotic arm diameter of 11.5 cm and a base installation diameter of 11 cm. The size of humanoid robotic arm greatly reduces the installation space requirements, making it more convenient and flexible.

Integrated Modularization

Integrated and modular design, easier disassembly and assembly, lower maintenance costs, and higher efficiency.

Integrated Controller

No traditional control cabinet, perfectly integrating the controller with the robotic arm.

Ultra-high Compatibility

The end offers a general interface that is expandable and plug-and-play. The integrated robotic arm has rich interfaces to meet the expansion of application needs in a variety of industries.

Ultra-low Power

DC power supply of 20 to 30 V, suitable for mobile power supply, with a maximum power consumption of ≤ 200W and a comprehensive power consumption of ≤ 100W under full load and can be applied in various scenarios.

Safe and Sensitive

Sensitive drag and drop programming, which can fully reproduce the drag trajectory; The protection level can be set, and the robotic arm will stop immediately when the collision reaches the maximum torque limit, thereby avoiding injury to personnel or equipment.

Open System

Open API function library, supporting C/C++/C #/Python programming language, and supporting Windows/Linux/ROS robot operating systems and various communication protocols.

Wireless and Convenient Connection

Connection and control of the robotic arm by wired and wireless means, easy and quick switching, and liberation from the limits of control cables

New-version Controller



Performance Upgrade

1KHZ servo communication frequency

The new-version controller has increased the servo communication frequency to 1 KHZ, with better joint synchronization motion and more stable trajectory operation ability.

Hardware Interface Upgrade

Gigabit wired network interface

The gigabit wired network interface provides a more stable and efficient hardware foundation for users to control the robotic arm and supports modifying IP addresses, making it easy to access users' original network environment.

Fast Ethernet Wi-Fi

Wi-Fi supports AP mode and STA mode with flexible configuration, free configuration of hotspot names and passwords and support for high-gain antenna expansion, meeting the needs of users in complex wireless scenarios.

IO multiplexing interface

Users can freely arrange IO functions based on scenario needs using four digital input and output multiplexing interfaces.

Interactive RGB indicator

The RGB indicators on the controller panel can display information about the robotic arm's operation in real time through color, constant light, flashing, etc., such as system startup status, system initialization status, system normal status, system warning status, system error status, etc.

More interfaces

The controller has more widely used communication interfaces, including the RS485, FDCAN and power interfaces, etc. The power interface has the ability to prevent reverse plug and incorrect reverse connection protection, continuously ensuring the security of personnel and equipment.

Expansion Upgrade

The new-version controller offers more expansion capabilities, including native wireless handle remote control, Modbus-TCP slave interface, remote control, 5G wireless communication expansion and other functions, providing users with more options.

Self-propelledchassis

Teaching Software (General Cross-platform Version)

The RealMan robotic arm not only offers an ultra-high load-to-weight ratio, but it is also simple to use from a software design standpoint. It abandons traditional physical teaching pendants in favor of a general cross-platform version of online teaching software that can be utilized on a variety of platform terminals without user installation or configuration.

Features

1. Easy to use

Support platforms such as Windows, Linux, MacOS and Android, requiring only a browser and network, without the need to configure and install any software, but with strong compatibility.

2. High simulation 3D view

Provide a large-scale view space for the robotic arm model, with a 1:1 restoration of the material, color and other appearances of the model and the real robotic arm. In the event of any abnormalities in the robotic arm, color change prompts will appear at the corresponding positions of the model, making it more intuitive.

3. Graphical programming

Adopt graphical programming without the need for learning. It can be programmed by simply dragging and dropping the robotic arm or by directly dragging the virtual robotic arm model on the teaching page to any position with a mouse or finger, greatly simplifying the teaching mode.

4. Easy for secondary development

Complete functional task development by editing code using script programming functions that support the Python language for scenarios requiring secondary development or more complex control logic. Simultaneously, the teaching pendant gives commonly used code segment examples for selecting functional modules based on needs, automatically generating code, and assisting with rapid functional development.

5. Track and point management

Support the storage and management of user dragged trajectories and teaching points, which can be added, edited, deleted, queried, and used in graphical programming. The trajectory has a cropping feature that you may use to create the desired new trajectory by choosing the dragged trajectory for cropping.

6. User Rights Management

Support permission management for different users. Various user interfaces can be accessed by logging in with various users to protect device operation and maintenance security.



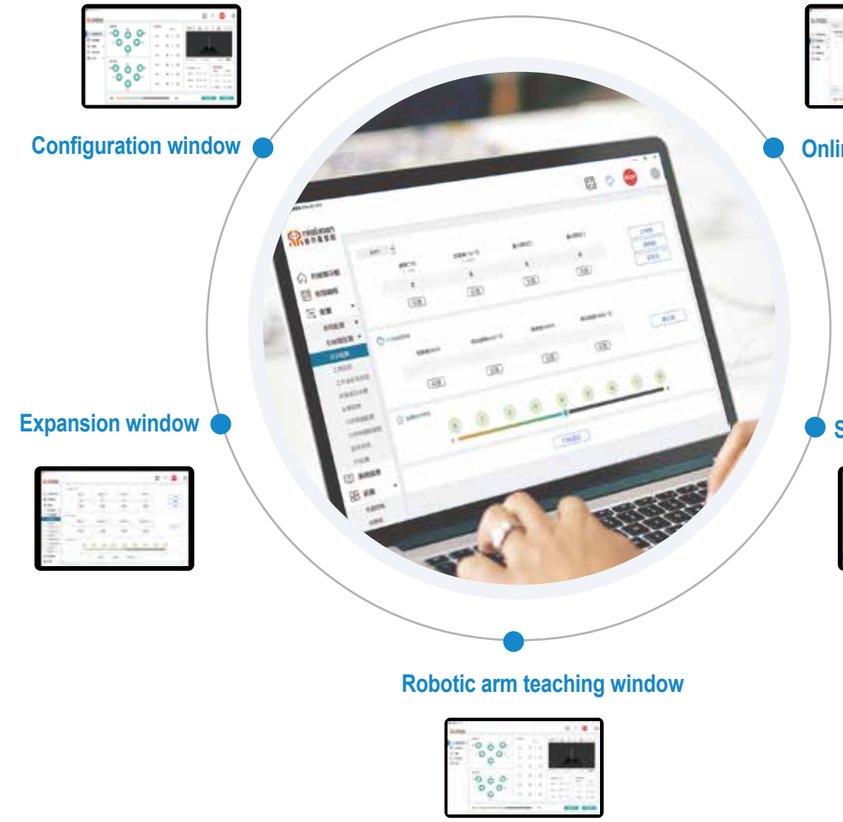








Teaching Software (Windows Version)



Advantages of Teaching Pendant

- Run directly on Windows systems without installation
- Graphical interface that is simple to use and doesn't require any prior experience
- Contain a 3D simulation window that supports switching between simulation and real robotic arms, making program running and testing easier.
- Have features such as robotic arm IO settings, collision protection level settings, virtual wall settings, safety speed settings, end force sensor data reading and curve drawing, claw control and mobile guide control, which are complete and easy to operate.

RM65 series ultra-lightweight humanoid robotic arm

Basic version



One-axis force version



Six-axis force version



RM65-B

Degree of freedom	6
Payload	5 kg
Body weight	7.2 kg
Repeatability	±0.05 mm
Working radius	610 mm
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Control mode	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1 ± 178°, J2 ± 130°, J3 ± 135°
	J4 ±178°、J5 ±128°、J6 ±360°
Joint maximum speed	J1-J2 180°/s, J3-J6 225°/s

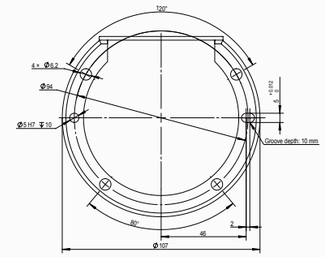
RM65-ZF

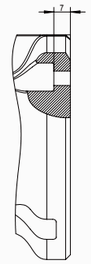
Degree of freedom	6
Payload	5 kg
Body weight	7.3 kg
Repeatability	±0.05 mm
Working radius	618 mm
One-axis force range	200N
One-axis force accuracy	< 0.1%FS
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Control mode	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1 ±178°、J2 ±130°、J3 ±135°
	J4 ± 178°, J5 ± 128°, J6 ± 360°
Joint maximum speed	J1-J2 180°/s, J3-J6 225°/s

RM65-6F

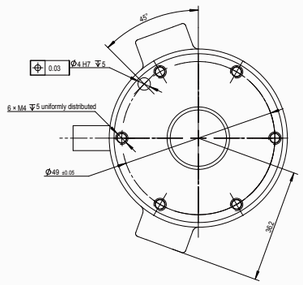
Degree of freedom	6
Payload	5 kg
Body weight	7.3 kg
Repeatability	±0.05 mm
Working radius	638.5 mm
Six-axis force range	200 N/7 Nm
Six-axis force accuracy	< 0.1%FS
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Control mode	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1 ± 178°, J2 ± 130°, J3 ± 135°
	J4 ± 178°, J5 ± 128°, J6 ± 360°
Joint maximum speed	J1-J2 ± 180°, J3-J6 225°/s

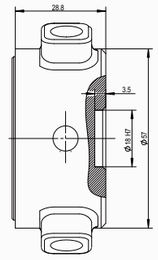
Robotic arm base installation dimension diagram



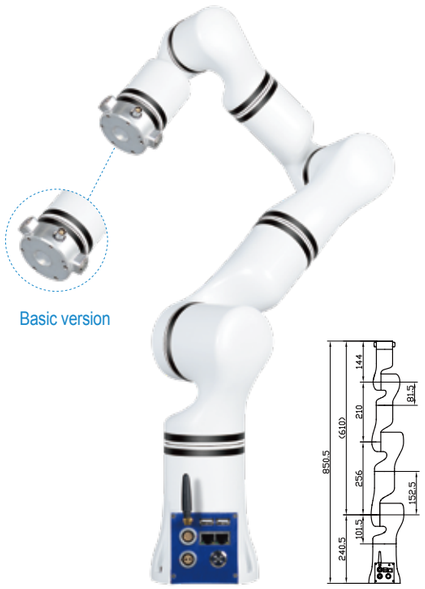


Robotic arm end installation dimension diagram

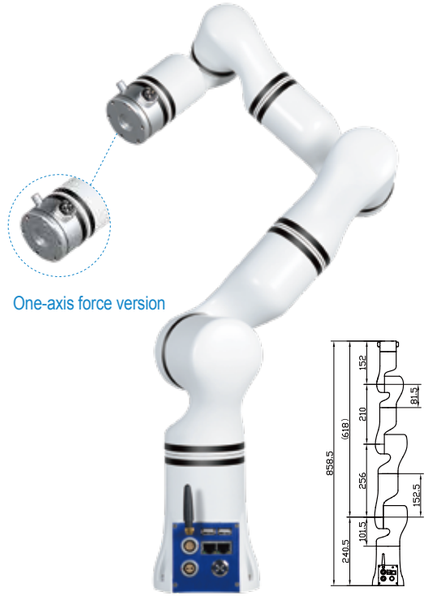




RM75 series ultra-lightweight humanoid robotic arm



Basic version



One-axis force version



Six-axis force version

RM75-B

Degree of freedom	7
Payload	5 kg
Body weight	7.8 kg
Repeatability	±0.05 mm
Working radius	610 mm
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Control mode	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1 ± 178°, J2 ±130°, J3 ± 178°, J4 ± 135°
	J5 ± 178°, J6 ± 128°, J7 ± 360°
Joint maximum speed	J1-J2 180°/s, J3-J7 225°/s

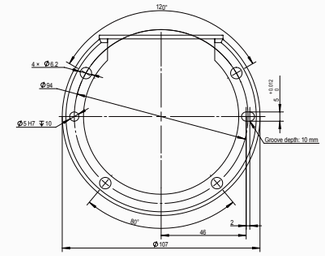
RM75-ZF

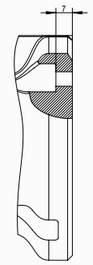
Degree of freedom	7
Payload	5 kg
Body weight	7.9 kg
Repeatability	±0.05 mm
Working radius	618 mm
One-axis force range	200N
One-axis force accuracy	< 0.1%FS
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Control mode	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1 ± 178°, J2 ±130°, J3 ± 178°, J4 ± 135°
	J5 ± 178°, J6 ± 128°, J7 ± 360°
Joint maximum speed	J1-J2 180°/s, J3-J7 225°/s

RM75-6F

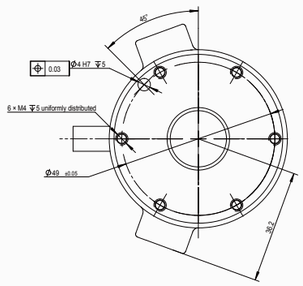
Degree of freedom	7
Payload	5 kg
Body weight	7.9 kg
Repeatability	±0.05 mm
Working radius	638.5 mm
Six-axis force range	200 N/7 Nm
Six-axis force accuracy	< 0.1%FS
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Control mode	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1±178°, J2 ±130°, J3 ±178°, J4 ±135°
	J5±178°, J6 ±128°, J7 ±360°
Joint maximum speed	J1-J2 ± 180°, J3-J7 225°/s

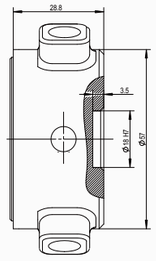
Robotic arm base installation dimension diagram





Robotic arm end installation dimension diagram





RML63 series long-arm-span robotic arm



RML63-B

Degree of freedom	6
Payload	3 kg
Body weight	10 kg
Repeatability	±0.05 mm
Working radius	900 mm
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Teaching control	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1 ± 178°, J2 ±178°, J3 +145° to -178°
	J4 ±178° , J5 ±178°, J6 ±360°
Joint maximum speed	J1-J2 ± 180°, J3-J6 225°/s



RML63-ZF

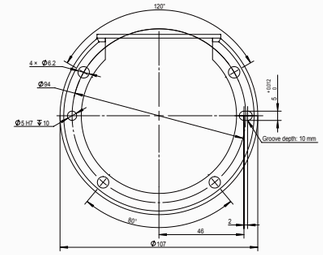
Degree of freedom	6
Payload	3 kg
Body weight	10.1 kg
Repeatability	±0.05 mm
Working radius	908 mm
One-axis force range	200N
One-axis force accuracy	< 0.1%FS
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Teaching control	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1 ± 178°, J2 ±178°, J3 +145° to -178°
	J4 ±178° , J5 ±178°, J6 ±360°
Joint maximum speed	J1-J2 ± 180°, J3-J6 225°/s



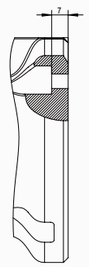
RML63-6F

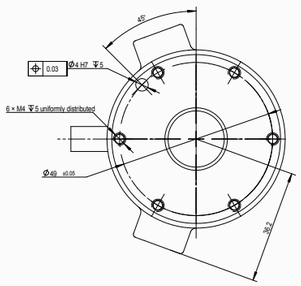
Degree of freedom	6
Payload	3 kg
Body weight	10.1 kg
Repeatability	±0.05 mm
Working radius	928.5 mm
Six-axis force range	200 N/7 Nm
Six-axis force accuracy	< 0.1%FS
Power supply voltage	DC 20 to 30 V, rated DC 24 V
Power consumption	Maximum power consumption ≤ 200 W, comprehensive power consumption ≤ 100 W
Protection level	IP54 (robotic arm body)
Materials	Aluminum alloy
Controller	Integrated
Communication mode	WIFI/network interface/Bluetooth/USB serial port/RS485
Teaching control	Drag and drop teaching/teaching pendant/API/JSON
Joint motion range	J1 ± 178°, J2 ±178°, J3 +145° to -178°
	J4 ±178° , J5 ±178°, J6 ±360°
Joint maximum speed	J1-J2 ± 180°, J3-J6 225°/s

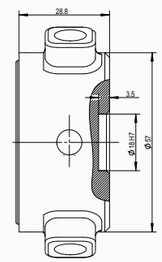
Robotic arm base installation dimension diagram



Robotic arm end installation dimension diagram







Healthcare robot

Nowadays, whether students or office workers or even middle-aged and elderly people, it is inevitable to sit, stand, or bow heads for a long time, accompanied by more and more people suffering from lumbar pain, decreased digestion and absorption function caused by long-term sitting, as well as cervical acid swelling pain, shoulder and neck stiffness, dizziness, numbness, headache, and nausea caused by long-term head bending.

RealMan has developed and designed a healthcare robot to solve these challenges. This robot can generate massage trajectories based on binocular depth vision, cooperate with flexible force control and automatic temperature control of the robotic arm, reproduce master-level human massage techniques. It quickly enhances the body's sub-health by releasing nerve compression, promoting qi and blood flow, relaxing the shoulder, and back muscular groups. When used with essential oils, it can improve their absorption and stimulate the skin-tightening creation of dermal collagen.

Parameters

Product name	Healthcare robot
Power supply	Single-phase three-wire 220 V ± 10% 50 Hz
Platform size	850 × 470 × 1450 mm
Security protection	Collision detection, emergency stop, overcurrent protection, undervoltage protection
External interface	Network interface, USB interface, HDMI
Working environment	Temperature 0°C to 50°C, relative humidity ≤ 85% (25°C), altitude < 4000 m

Main control module

CPU	GPU	Memory	Storage
6-core NVIDIA Carmel ARM® v8.2 64-bit CPU 6MB L2 + 4MB L3	NVIDIA Volta™ Architecture mounted with 384 NVIDIA® CUDA® cores and 48 Tensor cores	8 GB 128-bit LPDDR4x 51.2 GB/s	128G solid state drive
Number of network interfaces	**Number of USB3.0 interfaces**	**Other interfaces**	**Size**
1 (Gigabit Ethernet card)	4	HDMI × 1, DP × 1, WiFi, USB2.0 Micro-B	90 × 103 × 35 mm



Vision sensor

The 3D structured-light camera is used, which has the advantages of high precision and low power consumption, as well as the ability to capture 3D information about objects in real time. It can recognize a distance of 25 to 150 CM and is used to identify the massage personnel physical characteristics.

Touch screen

The massage area and efficacy can be selected and set using the touch screen, which also has a voice broadcasting capability. It includes a variety of application scenarios such as shoulder and neck relaxation, lumbar relaxation, and spinal compression.

RML63-6F

The RML63-6F long-arm-span robotic arm is selected, with a six-axis force sensor integrated at the end.

Massage tools

The robotic arm can integrate a variety of massage ends, clean and change them rapidly, and ensure the cleanliness and hygiene of the massage process, giving users feel more at ease.

Main control module

The main control module is the control center of the entire system, mainly responsible for the following functions.

(1) Communicate with users through the network interface or WIFI, receive user commands, and upload system status;

(2) Communicate with the robotic arm through the network interfaces, send control commands to the robotic arm, and obtain status information;

(3) Conduct secondary development and robotic arm motion control.

※ Images shown here are indicative only. Detailed configuration is subject to the actual product.

Dual arm compound robot

People's demand for robotic arms is growing in pace with the advancement of society and technology. The dual arm compound robot has emerged to meet the complexity, intelligence, and adaptability requirements of tasks.

The dual arm compound robot is an intelligent general platform based on the RealMan ultra-lightweight humanoid robotic arm. The platform is equipped with two 7-axis robotic arms, which can work freely like human arms and can operate independently with one arm while cooperating with both arms. The bottom is equipped with a mobile robot, which has the ability of movement, navigation and obstacle avoidance. At the same time, the platform integrates a voice module and depth vision, providing the dual arm compound robot with voice interaction and visual perception.

Parameters

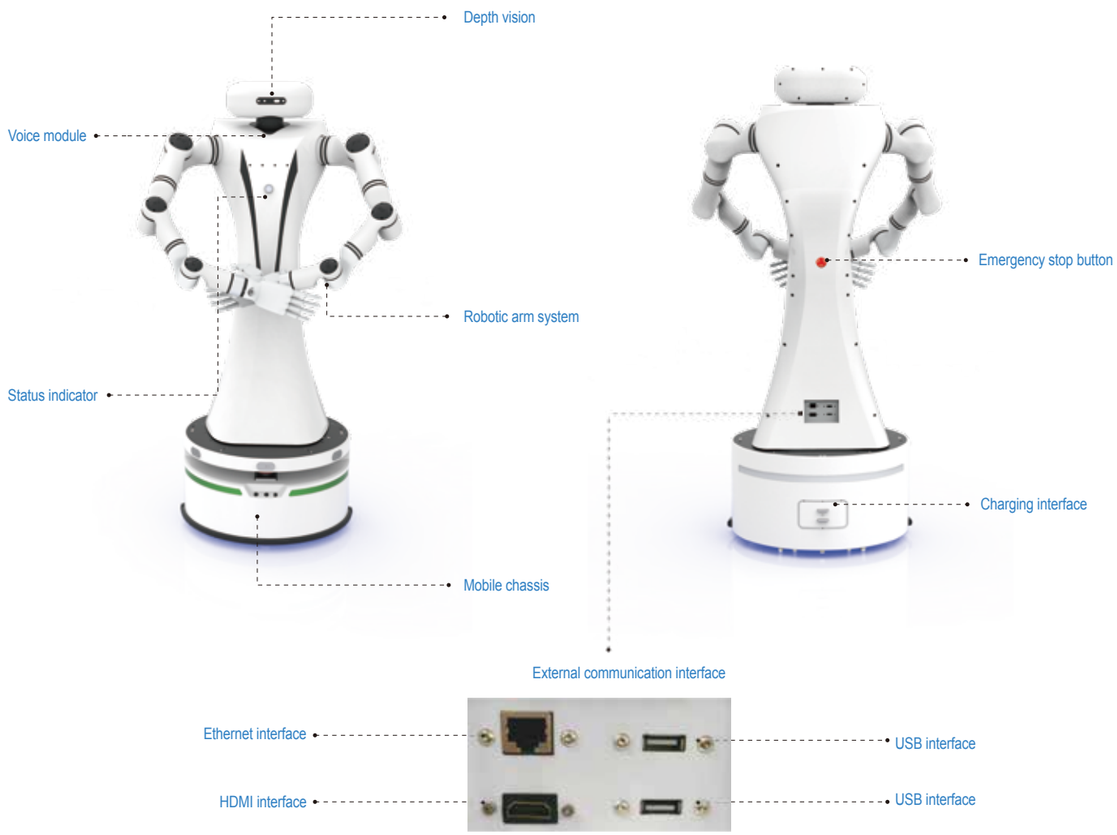
Product name	Dual arm Compound robot
Model	RMC-DA
Platform size	Platform height 1350 mm, maximum arm span 2070 mm
Weight	About 80 Kg
Charging power supply	Single-phase three-wire 220 V ± 10% 50 Hz
Positioning accuracy	±5 cm
Security protection	Functions of laser scanning obstacle avoidance, visual obstacle avoidance, force sensors, emergency stop, etc.
External interface	Network interface, USB interface, HDMI
Working environment	Temperature 0 °C to 50 °C, relative humidity ≤ 85% (25 °C), altitude < 4000 m
Moving speed	1 m/s
Control system	Ubuntu18.04

Main control module

CPU	GPU	Memory	Storage	Number of network interfaces
6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6MB L2 + 4MB L3	NVIDIA Volta™ Architecture mounted with 384 NVIDIA® CUDA® cores and 48 Tensor cores	8 GB 128-bit LPDDR4x 51.2 GB/s	128G solid state drive	1

Number of USB3.0 interfaces	Number of USB2.0 interfaces	Other interfaces	Size
4	1	GPIO, I2C, I2S, SPI, UART	90 mm × 103 mm × 35 mm

Structure and Components



Single arm compound robot

The single arm compound robot platform of RealMan can realize robot mapping navigation, path planning, robotic arm kinematics, dynamics, trajectory planning, visual recognition, and other algorithms and applications, as well as provide rich control cases and an open software framework to support users in carrying out application development according to application scenarios.

Parameters

Product name	Single arm compound robot
Model	RMC-SA
Platform size	Platform height 1360 mm, maximum arm span 1040 mm
Weight	About 72 kg
Charging power supply	Single-phase three-wire 220 V ± 10% 50 Hz
Positioning accuracy	±5 cm
Security protection	Functions of laser scanning obstacle avoidance, visual obstacle avoidance, force sensors, emergency stop, etc.
External interface	Network interface, USB interface, HDMI
Working environment	Temperature 0 °C to 50 °C, relative humidity ≤ 85% (25 °C), altitude ＜ 4000 m
Voice module	MIC: Linear array 4 microphone
Moving speed	1 m/s
Control system	Ubuntu18.04

Number of network interfaces

Main control module

CPU	GPU	Memory	Storage	Number of network interfaces
6-core NVIDIA Carmel ARM® v8.2 64-bit CPU 6MB L2 + 4MB L3	NVIDIA Volta™ Architecture mounted with 384 NVIDIA® CUDA® cores and 48 Tensor cores	8 GB 128-bit LPDDR4x 51.2 GB/s	128G solid state drive	1

Number of USB3.0 interfaces	Number of USB2.0 interfaces	Other interfaces	Size
4	1	GPIO, I2C, I2S, SPI, UART	90 mm × 103 mm × 35 mm

Structure and Components





Compound lifting robot

The compound lifting robot of RealMan integrates the mobile chassis , vertical guide, robotic arm, visual sensor, and end tools through a main control module. Compared with the traditional compound robot, it has added a lifting system, further expanding the robot's workspace. At the same time, the end of the robotic arm is not only equipped with execution tools, but also integrated with an open-source 3D visual sensor, ensuring that the robot has higher task accuracy and flexibility in a sufficient workspace.

Parameters

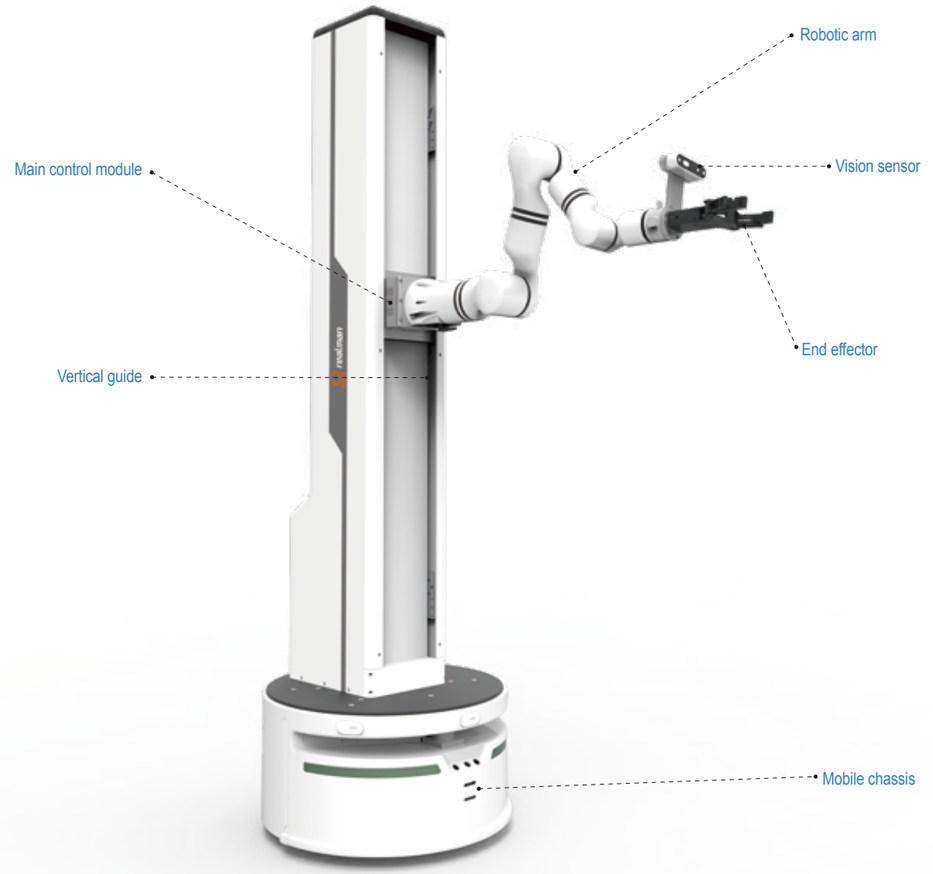
Product name	Compound lifting robot	
Model	RMC-LA	
Platform size	Total height 1630 mm	Total height 2430 mm
Weight	About 85 kg	About 95 kg
Charging power supply	Single-phase three-wire 220 V ± 10% 50 Hz	Single-phase three-wire 220 V ± 10% 50 Hz
Positioning accuracy	±5 cm	
Security protection	Functions of laser scanning obstacle avoidance, visual obstacle avoidance, force sensors, emergency stop, etc.	
External interface	Network interface, USB interface, HDMI	
Working environment	Temperature 0 °C to 50 °C, relative humidity ≤ 85% (25 °C)	Altitude ＜ 4000 m
Effective lifting distance	1 m	1.8 m
Moving speed	1 m/s	1 m/s
Lifting speed	250 mm/s	250 mm/s

Main control module

CPU	GPU	Memory	Storage	Number of network interfaces
6-core NVIDIA Carmel ARM® v8.2 64-bit CPU 6MB L2 + 4MB L3	NVIDIA Volta™ Architecture mounted with 384 NVIDIA® CUDA® cores and 48 Tensor cores	8 GB 128-bit LPDDR4x 51.2 GB/s	128G solid state drive	1

Number of USB3.0 interfaces	Number of USB2.0 interfaces	Other interfaces	Size
4	1	GPIO, I2C, I2S, SPI, UART	90 mm × 103 mm × 35 mm

Structure and Components



Compound robot

The compound robot integrates the AGV mobile robot and robotic arm, and can be mounted with automated grippers, visual systems, intelligent screwdrivers, and other execution units. In future intelligent scenarios, the compound robot is more refined, capable of adapting to environments of high complexity and precision, and has mobility, autonomy, and cooperation. Compared with the traditional robot, it can complete the moving of materials , as well as join the production line to perform specific processing operations for specific types of work, which is something that non-standard automation equipment cannot do.

Parameters

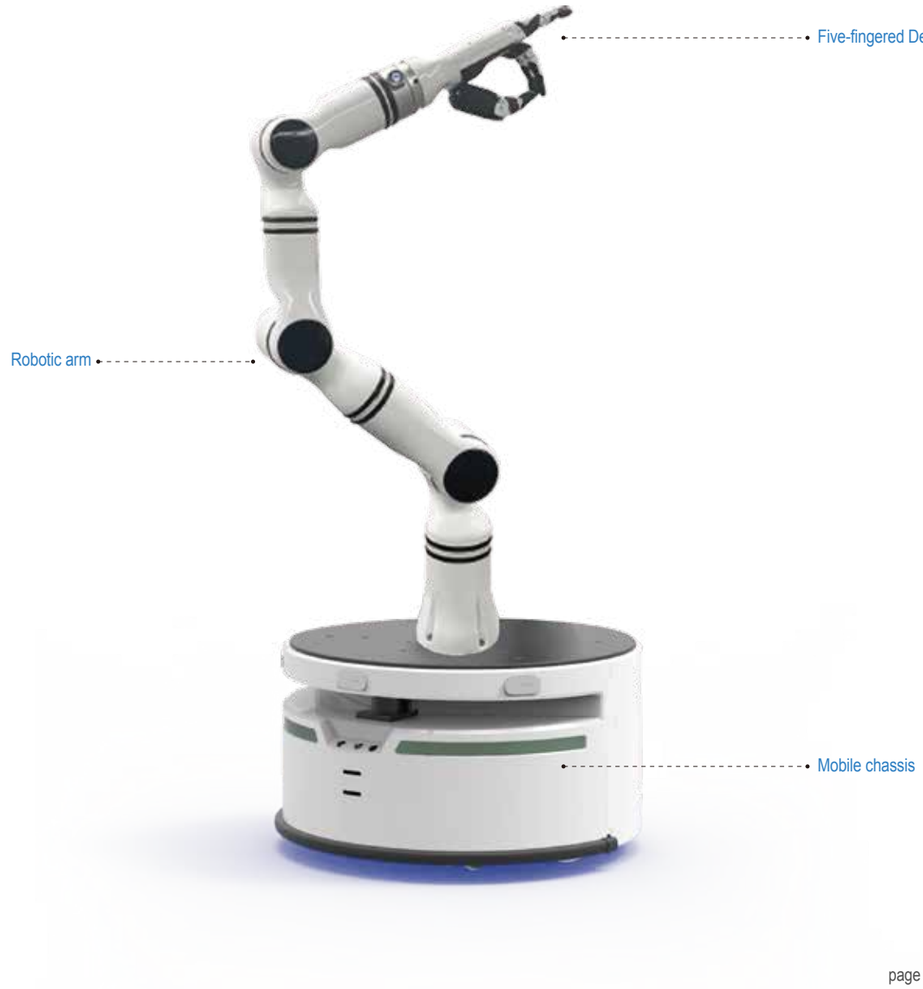
Product name	Compound robot
Model	RMC-BA
Platform size	Total height 1355 mm
Weight	About 53 kg
Charging power supply	Single-phase three-wire 220 V ± 10% 50 Hz
Positioning accuracy	±5 cm
Security protection	Functions of laser scanning obstacle avoidance, visual obstacle avoidance, force sensors, etc.
External interface	Network interface, USB interface, HDMI
Working environment	Temperature 0 °C to 50 °C, relative humidity ≤ 85% (25 °C), altitude < 4000 m
Moving speed	1 m/s

Main control module

CPU	GPU	Memory	Storage	Number of network interfaces
6-core NVIDIA Carmel ARM®v8.2 64-bit CPU 6MB L2 + 4MB L3	NVIDIA Volta™ Architecture mounted with 384 NVIDIA® CUDA® cores and 48 Tensor cores	8 GB 128-bit LPDDR4x 51.2 GB/s	128G solid state drive	1

Number of USB3.0 interfaces	Number of USB2.0 interfaces	Other interfaces	Size
4	1	GPIO, I2C, SPI, UART, I2S	90 mm x 103 mm x 35 mm

Structure and Components



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End effector (dexterous hand)	Total number of joints	12
	Number of drive shafts	6
	Weight	530 g
	Force resolution	0.5N
	Four-finger grip	0-10N
	Thumb grip	0-15N

Mobile chassis	Size (diameter x height)	505 mm x 280 mm
	Load (Kg)	50
	Driving mode	Eight wheels (2 drive wheels + 4 universal wheels + 2 auxiliary wheels) Differential drive + active suspension 250W hub servo motor x 2
	Navigation mode	Lidar navigation
	Navigation accuracy (cm)	±5
	Battery parameters	35Ah
	Externally Powered	24V/20A
	Communication interface	Network interface/WIFI
	Working hours (hours)	Run for 20 hours at rest and 11 hours without load (0.7 m/s)

Force

End effector (gripper)	Control mode	RS485
	Opening size	70 mm
	Weight	231 g
	Gripping force	0-20N
	Force control accuracy	± 1 N
	Repeatability	±0.5 mm
	Maximum speed	70 mm/s

Vertical guide	Effective lifting distance	1.8 m, 1 m
	Lifting speed	250 mm/s
	Working voltage	24V
	Width	125 mm
	Repeatability	1 mm

Vision sensor	Depth field of view	87° x 58° x 95°
	Depth resolution	1280 x 720@90fps
	Ideal service range	0.3 m to 3 m
	Size	90 mm x 25 mm x 25 mm
	Power supply	5V
	Communication	USB3.0

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Industry Applications

01 New catering
02 Domestic service
03 Commercial service
04 Medical industry
05 Health and wellness
06 New retail
07 Exhibition
08 Scientific Research and Education































09 3C Industry
10 Spraying
11 Industrial Production
12 Construction
13 Logistics Warehousing
14 Special Industry
15 Intelligent Inspection
16 Agriculture