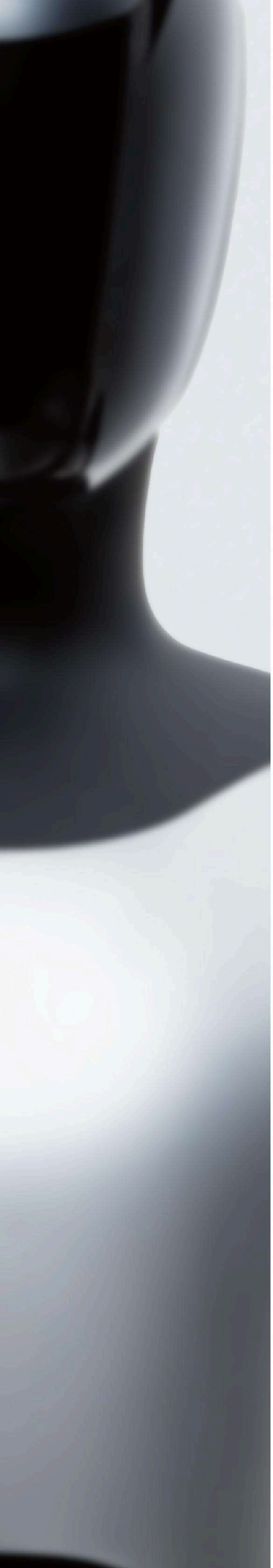
因时机器人
INSPIRE-ROBOTS

Génération ROBOTS

THE DEXTEROUS HANDS

PIONEERING HUMANOID ROBOTIC HAND



因时机器人
INSPIRE-ROBOTS

ABOUT INSPIRE-ROBOTS

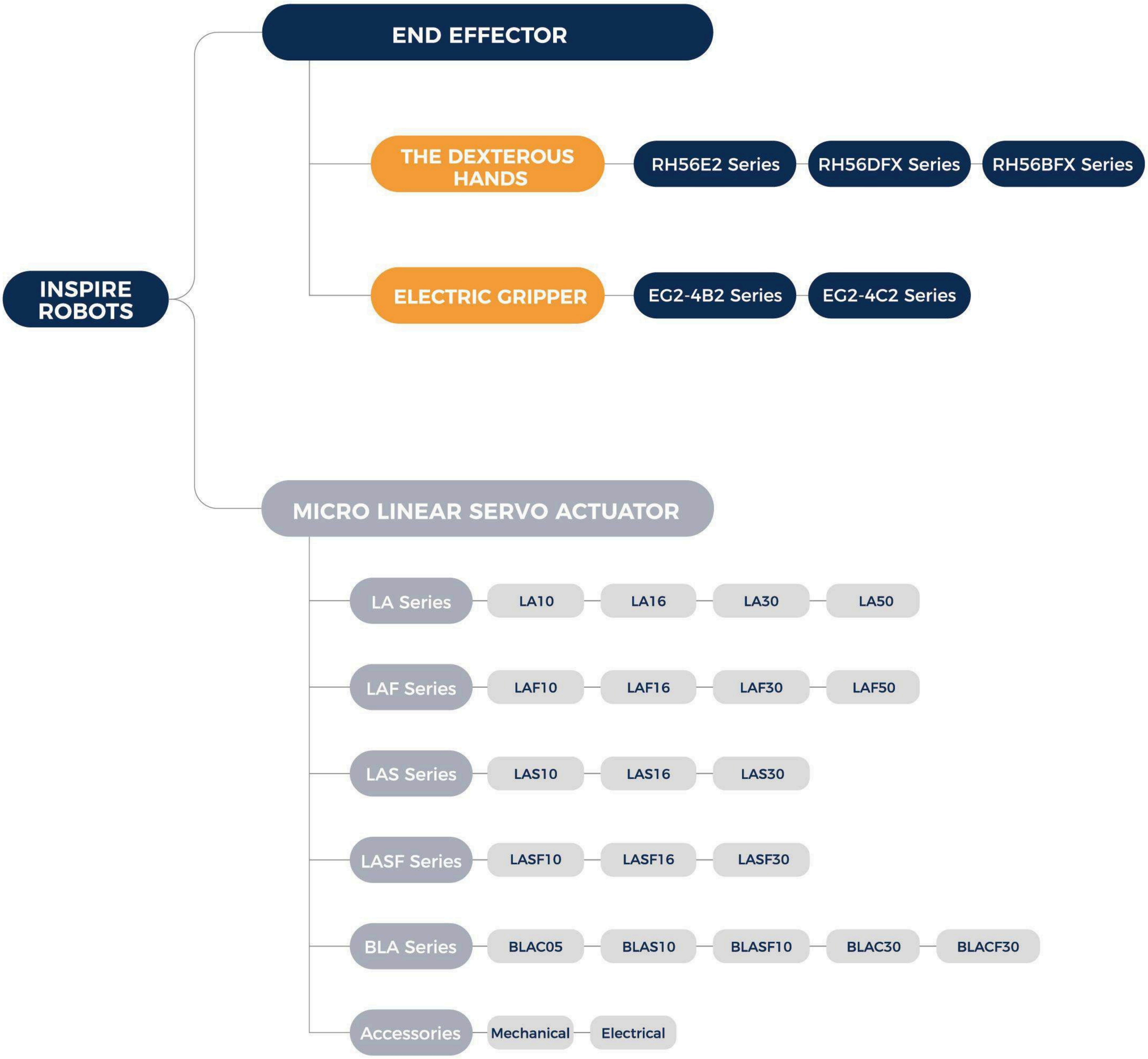
Smaller and Higher-precision Motion Control Experts

Founded in 2016, INSPIRE ROBOTS is a leading manufacturer of core robotic components. The signature products include Micro Linear Servo Actuator and Dexterous Hands. With unique advantages in micro size, high precision and force control technology, our products are widely used in robotics, new energy, semiconductors, 3C electronics and biomedical fields.

Micro Linear Servo Actuator | The Dexterous Hands | Electric Gripper

Products

All product lines feature in-house R&D and manufacturing of critical components, delivering exceptional application value across Robotics, Precision manufacturing, Biomedical engineering, and Educational research sectors.

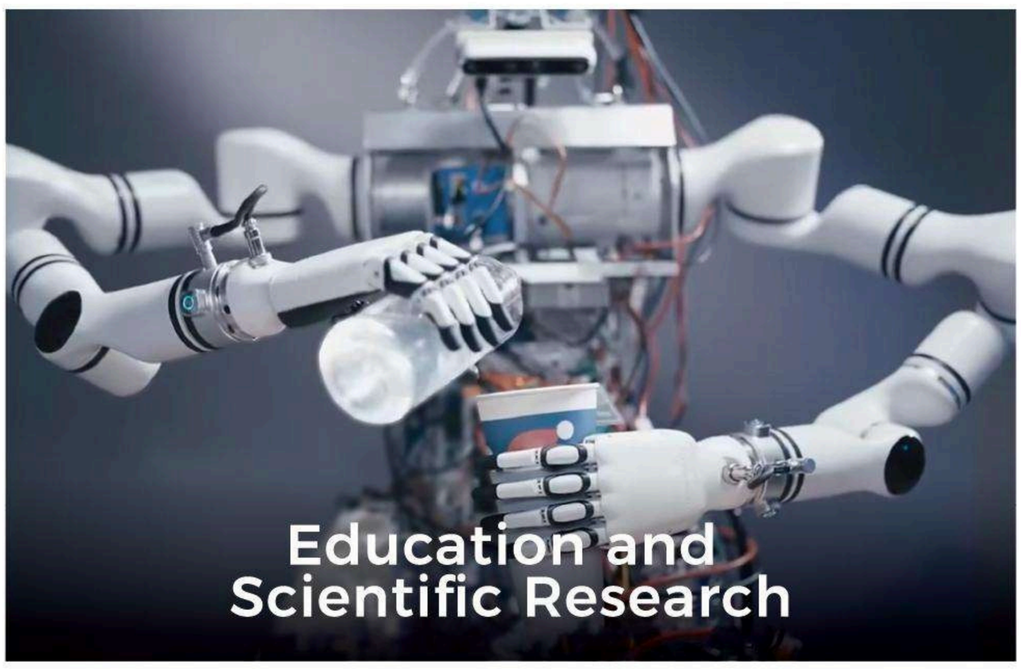


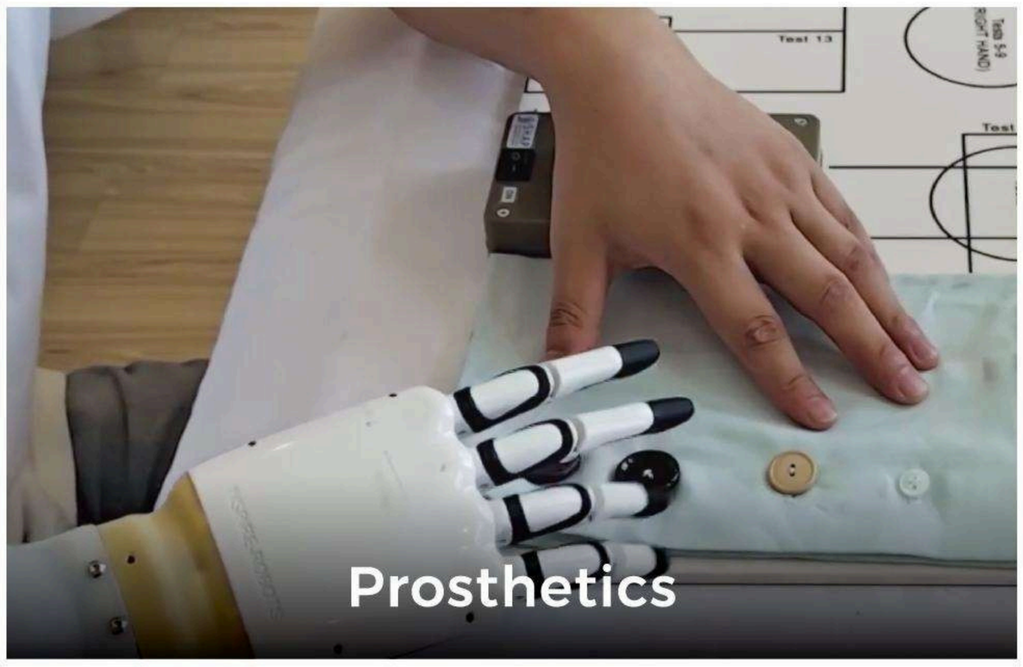
CONTENTS

The Dexterous Hands

The dexterous hands employ an innovative linear drive design, with micro linear servo actuator as its core motion parts.Integrated with a hybrid force-position control algorithm, it delivers ±0.2mm positioning precision,several kilograms grasping force ,real-time force feedback control.Additionally, the dexterous hand was launched in 2020. It is China's first commercial mass-produced dexterous hand.

APPLICATIONS





The Dexterous Hands

EG2-4B series

EG2-4C series

RH56E2 series

RH56BFX series

RH56DFX series

Small size and light weight	Strong grasping	High repeatability	Force control	Power off self locking
231g+	3KG per finger	±0.2mm	0.5N	

About Dexterous Hands

The dexterous hands employ an innovative linear drive design, with micro linear servo actuator as its core motion parts.Integrated with a hybrid force-position control algorithm, it delivers ±0.2mm positioning precision,payload capacity of several kilograms,real-time force feedback control. Additionally, the dexterous hand was launched in 2020. It is China's **first** commercial mass-produced dexterous hand.

RH56E2 Series

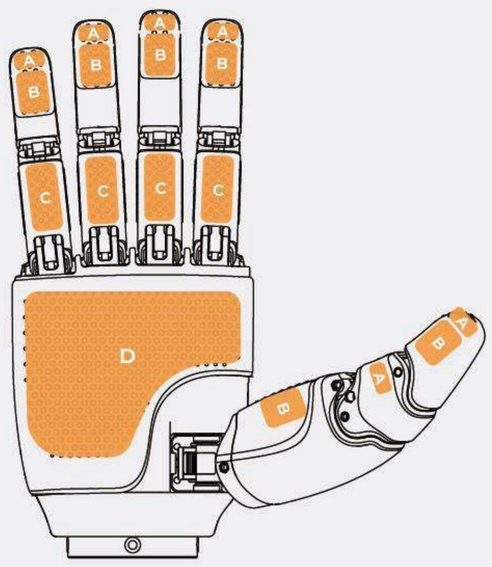
Building upon the existing force sensors,it's integrated a tactile sensor array across the palm surface. This upgrade enables real-time acquisition of localized tactile data, enhancing operational precision. With 3kg fingertip force output and human-like gripping capability.

- **Accurate tactile real-time perception**
- **Strong grip comparable to manual labor**
- **Power off self-locking is stable and reliable**

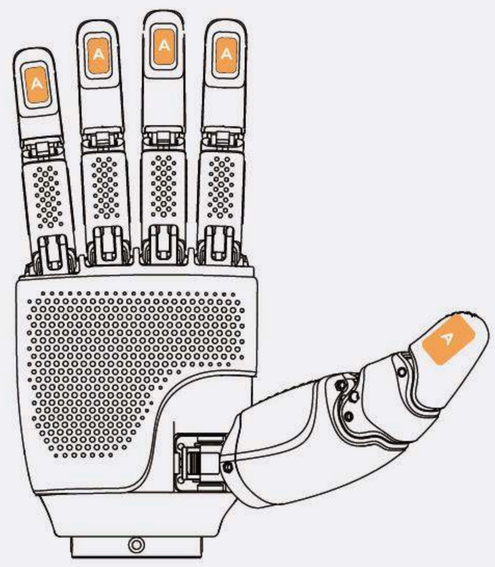

INSPIRE-ROBOTS

Model 0-CAN 2-RS485 T1-Resistance T2-Capacitance	RH56E2-0R-T1（Right hand model） RH56E2-0L-T1（Left hand model） RH56E2-2R-T1（Right hand model） RH56E2-2L-T1（Left hand model）	RH56E2-0R-T2（Right hand model） RH56E2-0L-T2（Left hand model） RH56E2-2R-T2（Right hand model） RH56E2-2L-T2（Left hand model）
Control interface	RS485、CAN、ModbusTCP	RS485、CAN、ModbusTCP
Degrees of freedom	6	6
Numbers of joints	12	12
Weight	790g±10g	790g±10g
Operating voltage	24V±10%	24V±10%
Quiescent current	0.25A	0.25A
Peak current	4A	4A
Repeatability	±0.20mm	±0.20mm
Fingertip Strength	30N	30N
Thumb Fingertip Strength	28N	28N
Force resolution	±0.05N	±0.05N
Lateral rotation range of thumb	75°~170°	75°~170°
Lateral rotation speed of thumb	>130°/s	>130°/s
Flexion speed of thumb	>130°/s	>130°/s
Flexion speed of four finger	>200°/s	>200°/s
Range of tactile sensor	**0~30N**	**0~20N**
Tactile sensor accuracy	≤5%FS	≤5%FS
Number of tactile sensors	**17**	**5**
Hand closing time	0.8S	0.8S

Distribution of tactile sensors



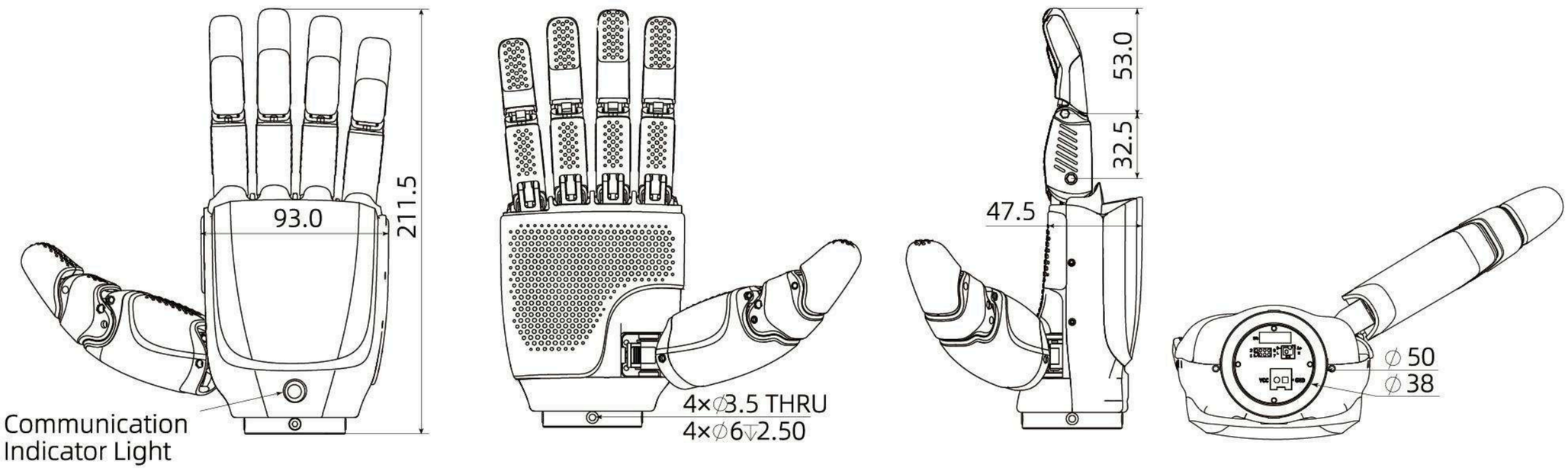
T1-Resistance



T2-Capacitance

Model 0-CAN 2-RS485	RH56E2-0L（Left hand model） RH56E2-2L（Left hand model）	RH56E2-0R（Right hand model） RH56E2-2R（Right hand model）
Control interface	RS485、CAN、ModbusTCP	RS485、CAN、ModbusTCP
Degrees of freedom	6	6
Numbers of joints	12	12
Weight	770g±10g	770g±10g
Operating voltage	24V±10%	24V±10%
Quiescent current	0.2A	0.2A
Peak current	4A	4A
Repeatability	±0.20mm	±0.20mm
Fingertip Strength	30N	30N
Thumb Fingertip Strength	28N	28N
Force resolution	±0.05N	±0.05N
Lateral rotation range of thumb	75°~170°	75°~170°
Lateral rotation speed of thumb	>130°/s	>130°/s
Flexion speed of thumb	>130°/s	>130°/s
Flexion speed of four finger	>200°/s	>200°/s
Hand closing time	0.8S	0.8S
Number of tactile sensors	/	/

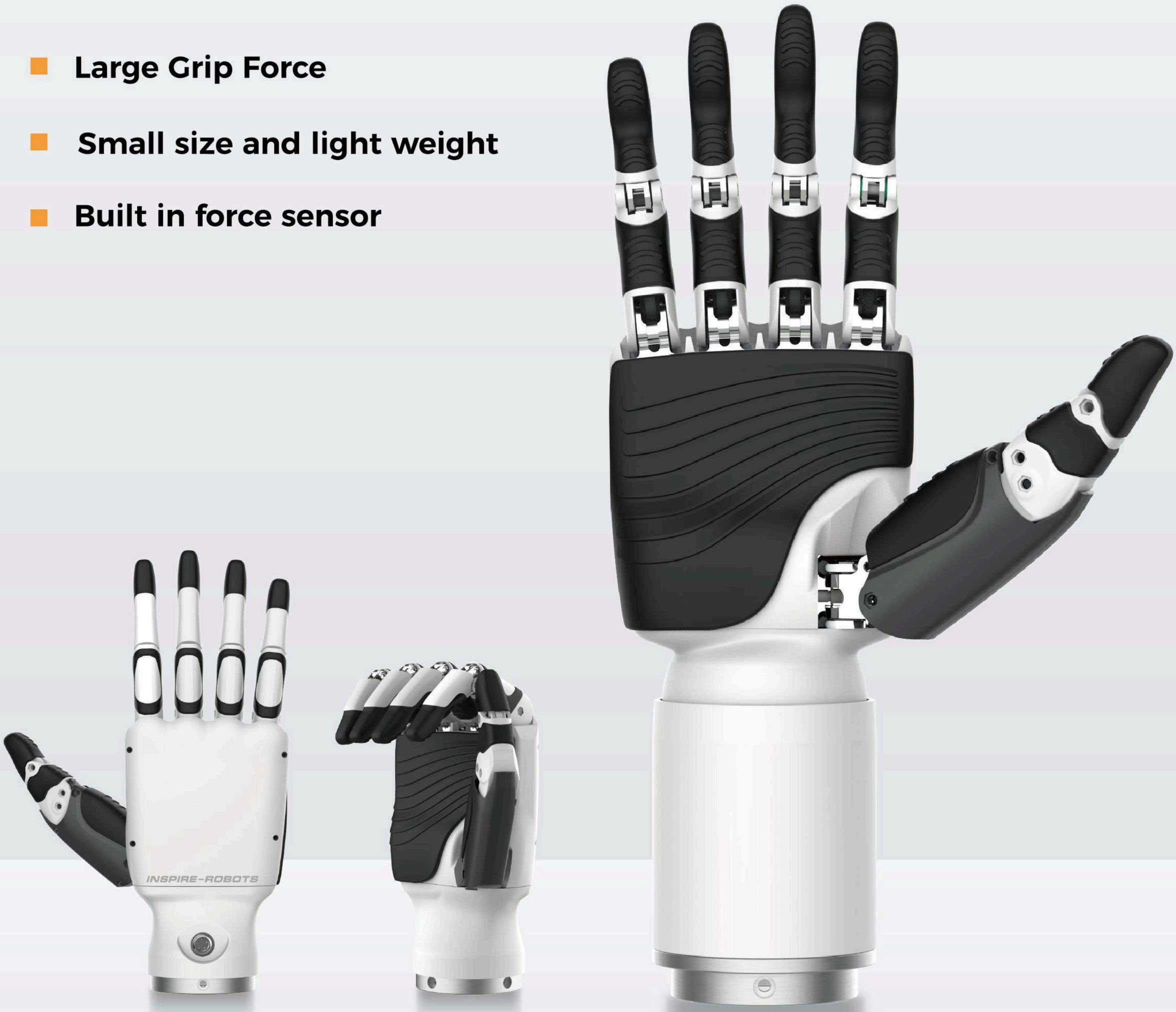
Dimensions



RH56DFX Series

The DFX series humanoid five finger dexterous hand is a perfect combination of strength and speed, with a thumb active output force of 1.5KG and a four finger fingertip output force of 1KG. Integrated absolute position sensors and force sensors, it provides real-time force feedback . Power off self-locking, no need to change position when powering on.

- Large Grip Force
- Small size and light weight
- Built in force sensor

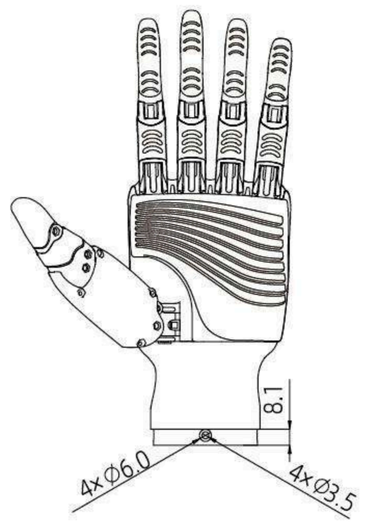


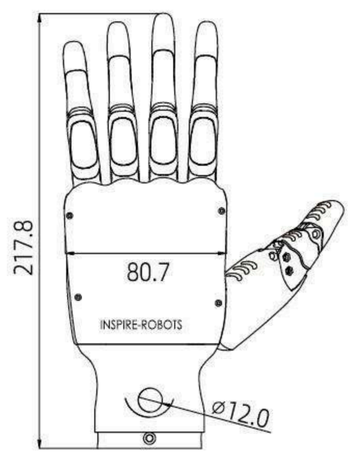
[The Dexterous Hands]

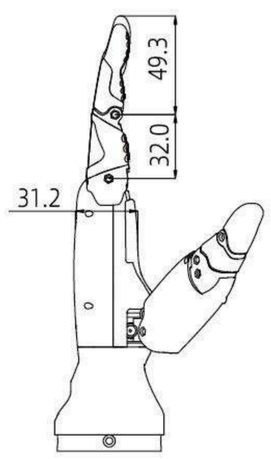
[The Dexterous Hands + Wrist]

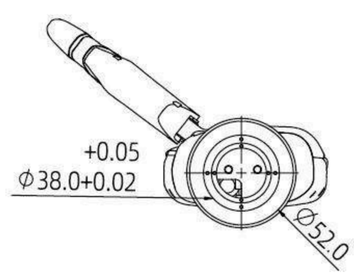
Model	RH56DFX-2L（left hand model） RH56DFX-2R（Right hand model）	RH56DFXW-2L（left hand model） RH56DFXW-2R（Right hand model）
Wrist	null	include
Control interface	RS485	RS485
Degrees of freedom	6	6+2
Numbers of joints	12	12
Weight	540g	650g
Operating voltage	DC24V±10%	DC24V±10%
Quiescent current	0.09A	0.1A
Peak current	2A	2A
Repeatability	±0.20mm	±0.20mm
Fingertip Strength	15N	15N
Thumb Fingertip Strength	10N	10N
Force resolution	0.50N	0.50N
Lateral rotation range of thumb	>65°	>65°
Lateral rotation speed of thumb	107°/s	107°/s
Flexion speed of thumb	70°/s	70°/s
Flexion speed of four finger	260°/s	260°/s
Wrist Yaw movement	/	±27°
Wrist Pitch movement	/	±22°
Wrist Load torque	/	2NM（Excluding hand weight）

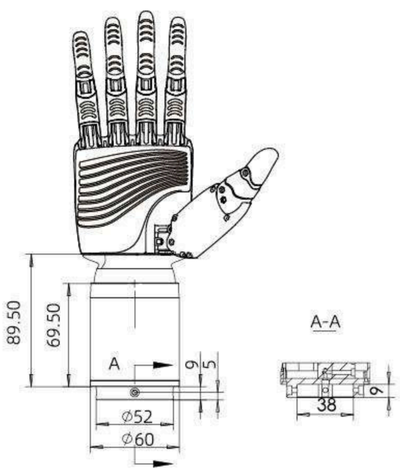
Dimensions



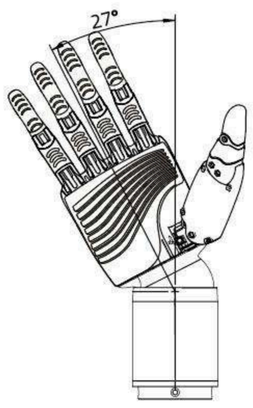




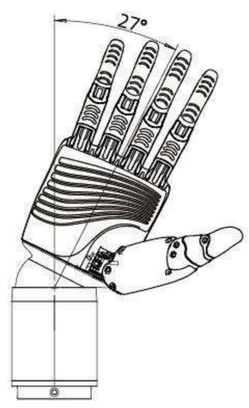




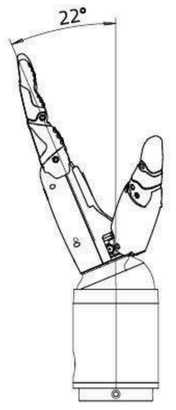
left view



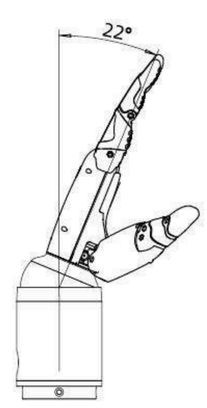
right view



vertical view



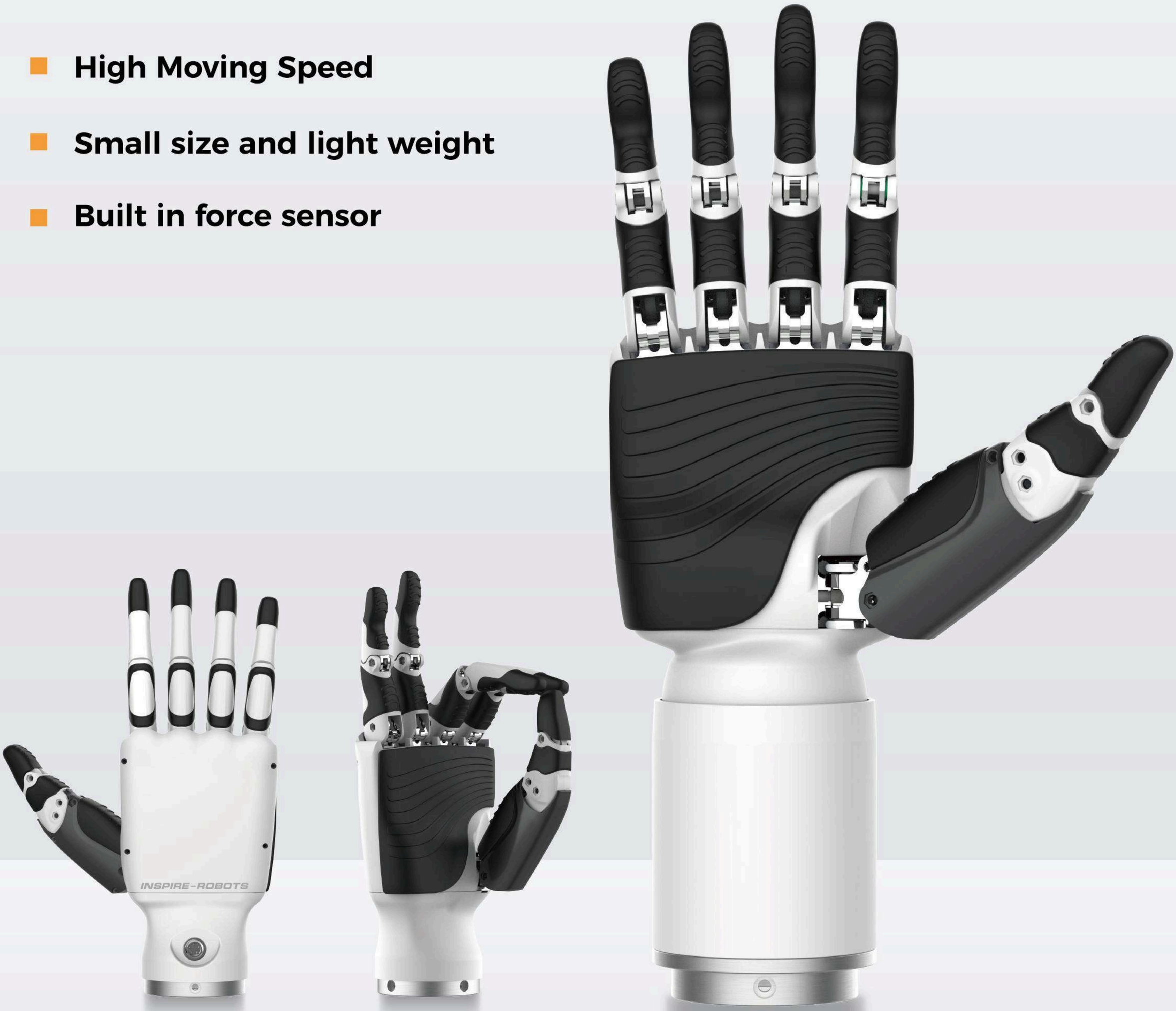
top view



RH56BFX Series

The BFX series renowned as the "Piano Hand", achieves a peak flexion speed of 570°/s in its four fingers.This enables a 100% win rate against humans in vision-guided rock-paper-scissors games. Integrated absolute position sensors and force sensors, it provides real-time force feedback . Power off self-locking, no need to change position when powering on.

- **High Moving Speed**
- **Small size and light weight**
- **Built in force sensor**

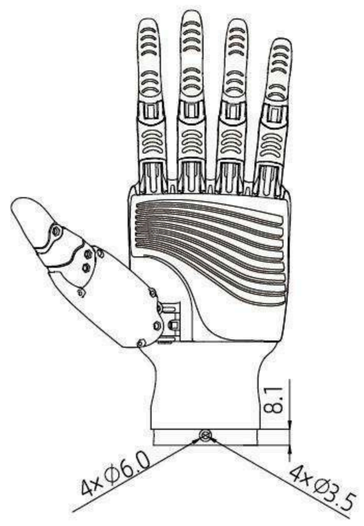


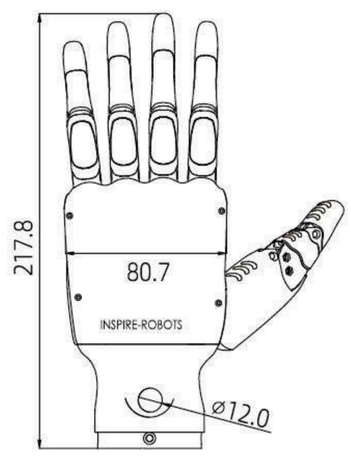
[The Dexterous Hands]

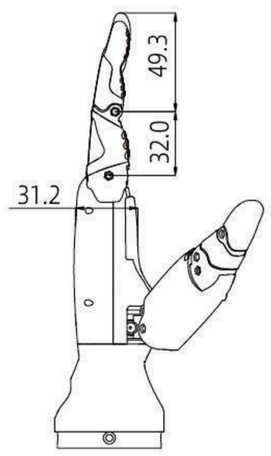
[The Dexterous Hands + Wrist]

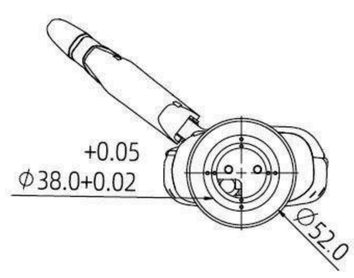
Model	RH56BFX-2L（left hand model） RH56BFX-2R（Right hand model）	RH56BFXW-2L（left hand model） RH56BFXW-2R（Right hand model）
Wrist	null	include
Control interface	RS485	RS485
Degrees of freedom	6	6+2
Numbers of joints	12	12
Weight	540g	650g
Operating voltage	DC24V±10%	DC24V±10%
Quiescent current	0.09A	0.1A
Peak current	2A	2A
Repeatability	±0.20mm	±0.20mm
Fingertip Strength	6N	6N
Thumb Fingertip Strength	4N	4N
Force resolution	0.50N	0.50N
Lateral rotation range of thumb	＞65°	＞65°
Lateral rotation speed of thumb	235°/s	235°/s
Flexion speed of thumb	150°/s	150°/s
Flexion speed of four finger	570°/s	570°/s
Wrist Yaw movement	/	±27°
Wrist Pitch movement	/	±22°
Wrist Load torque	/	2NM（Excluding hand weight）

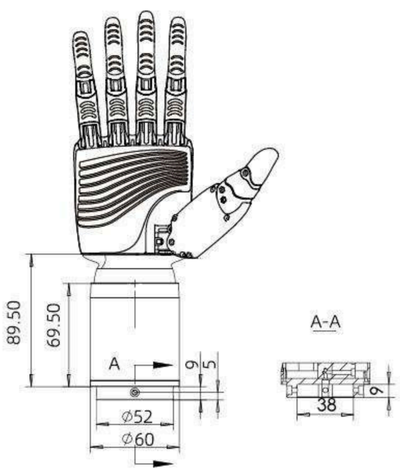
Dimensions

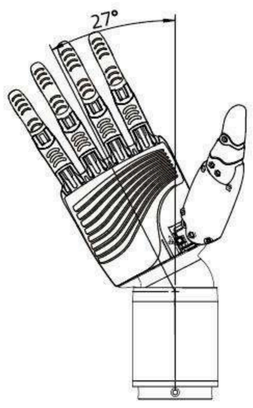




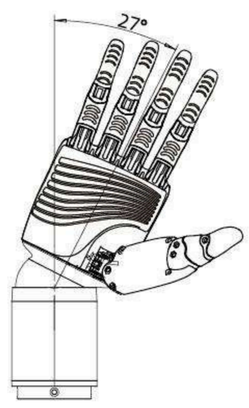




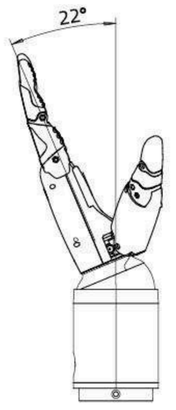




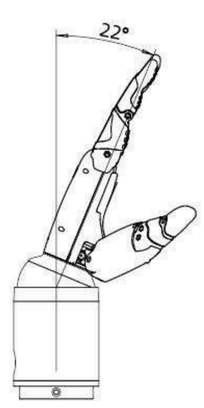
left view



right view



vertical view



top view

Electric gripper

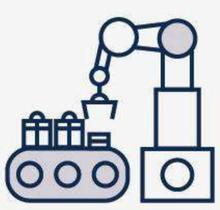
Electric Gripper features controller integrated design, large stroke range, precise force and position control, drop detection, and self-lock even during power loss. Application includes biomedical automated inspection, automated sorting and loading/unloading on production lines, precision assembly, unmanned retail, service robotics, etc.

APPLICATIONS

- 3C semiconductor
- Precision machining and assembly
- Automotive parts
- New energy industry
- Unmanned retail
- Biomedical laboratory

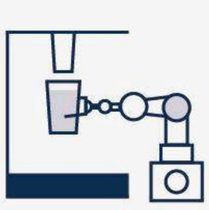
EXAMPLES

Loading and unloading

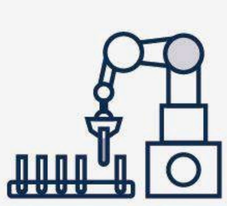


Sorting

Parts assembly



Unmanned retail



Scientific research experiments

FEATURES OF ELECTRIC GRIPPER

Controller integrated

Large stroke, precisely

Grip force precisely and controllable

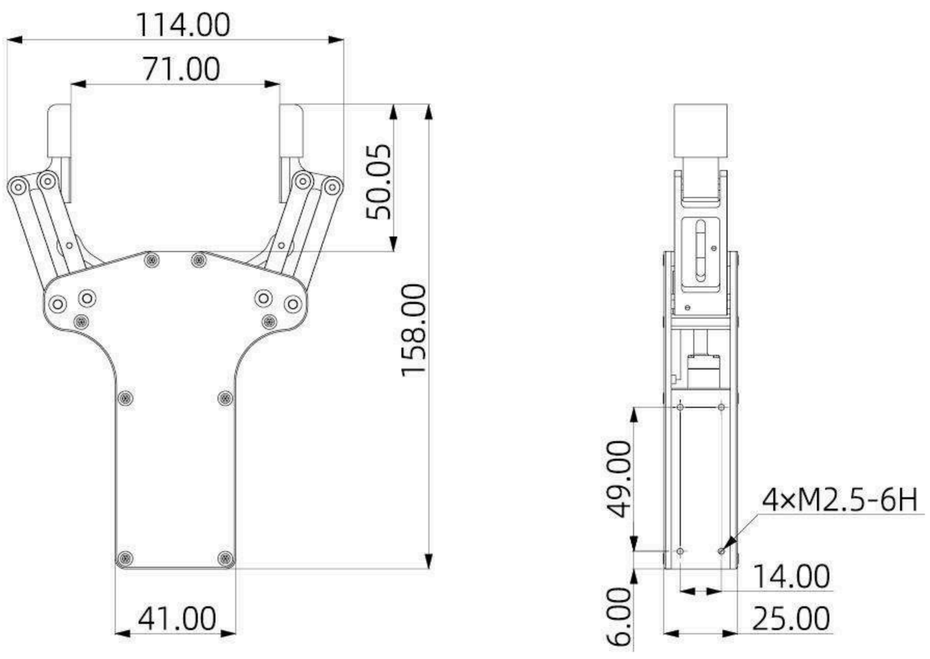
Power-off Self-locking

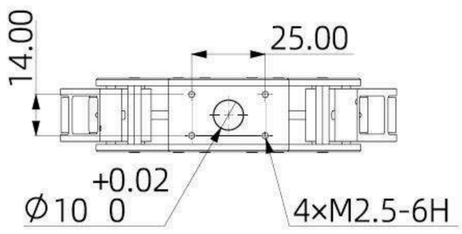
EG2-4B2

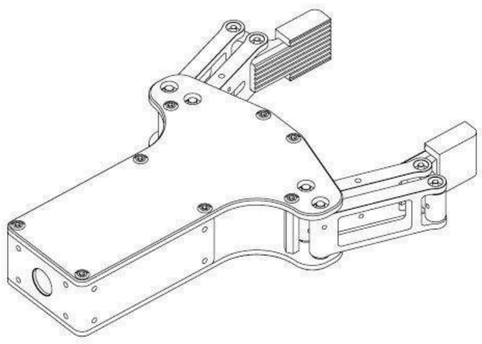
Features: Innovative linear mechanical linkage design, force and position control, large stroke, light weight, power off self-locking.

Model	EG2-4B2
Communication interface	RS485
Full stroke（both side）	70mm
Weight	223g
Grip force	0-15N
Force repeatability	±1N
Operating voltage	DC24V±10%
Idling current	30mA
Peak current	0.70A
Positioning repeatability	± 0.50mm
Full stroke closing time	0.85s
Unloaded current	200mA
Protection level	IP40
Recommended working temperature	0-40℃
Maximum speed	97mm/s

Dimensions





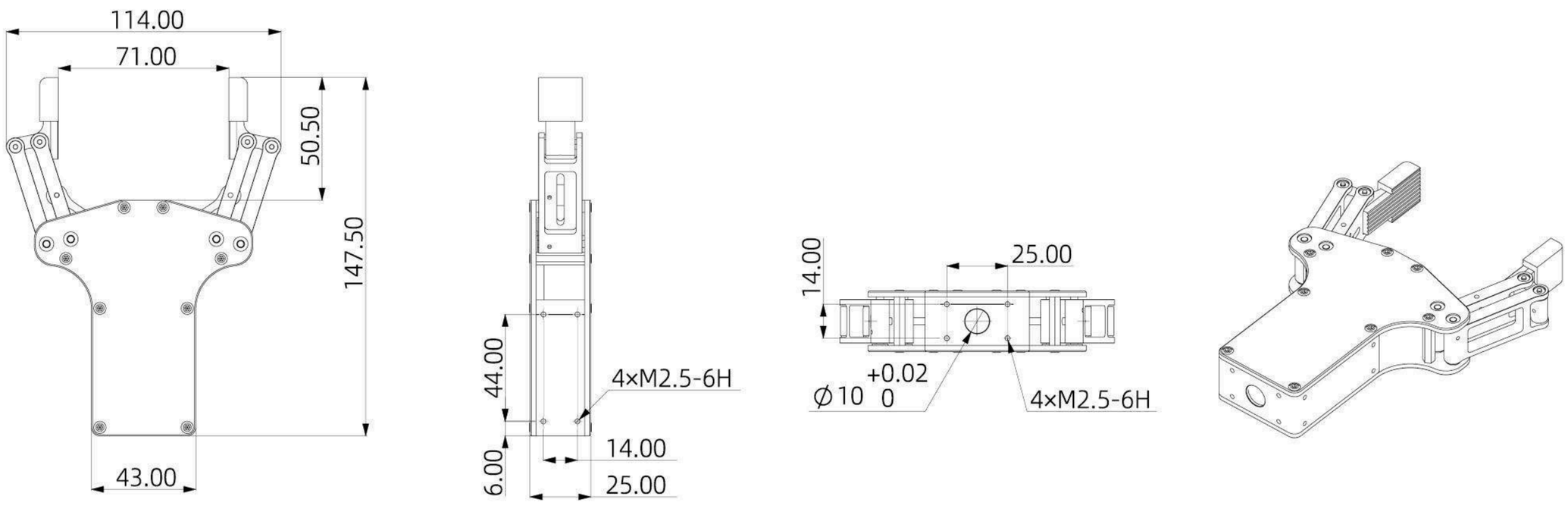


EG2-4C2

Features: Innovative linear mechanical linkage design, force and position control, large stroke, light weight, power off self-locking.

Model	EG2-4C2
Communication interface	RS485
Full stroke（both side）	70mm
Weight	231g
Grip force	0-20N
Force repeatability	±1N
Operating voltage	DC24V±10%
Idling current	30mA
Peak current	0.70A
Positioning repeatability	± 0.50mm
Full stroke closing time	1.3s
Unloaded current	200mA
Protection level	IP40
Recommended working temperature	0-40℃
Maximum speed	70mm/s

Dimensions



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