MagicHand S01

magiclab 魔法原子

魔法原子11自由度触觉灵巧手，重新定义灵巧抓取与操作！

极致灵巧与感知，赋能精细操作

- **拟人级灵巧**：11自由度驱动，流畅执行捏、抓、按、提、推等丰富人手动作，精准应对复杂操作场景。
- **融合感知**：集成ToF接近觉与三维触觉（分辨率达0.1N），赋予“指尖”真实触感，自主抓握、精细操作得心应手。

强劲负载与可靠耐久，胜任工业需求

- **强力抓取**：四指握力9.1kg，整手负载5kg，轻松抓取工业、商用常见物体，刚需任务无忧。
- **工业级可靠**：航空级铝合金 + 一体化压铸工艺，结构坚固轻量；通过100,000+次严苛耐久测试，保障长期稳定运行。

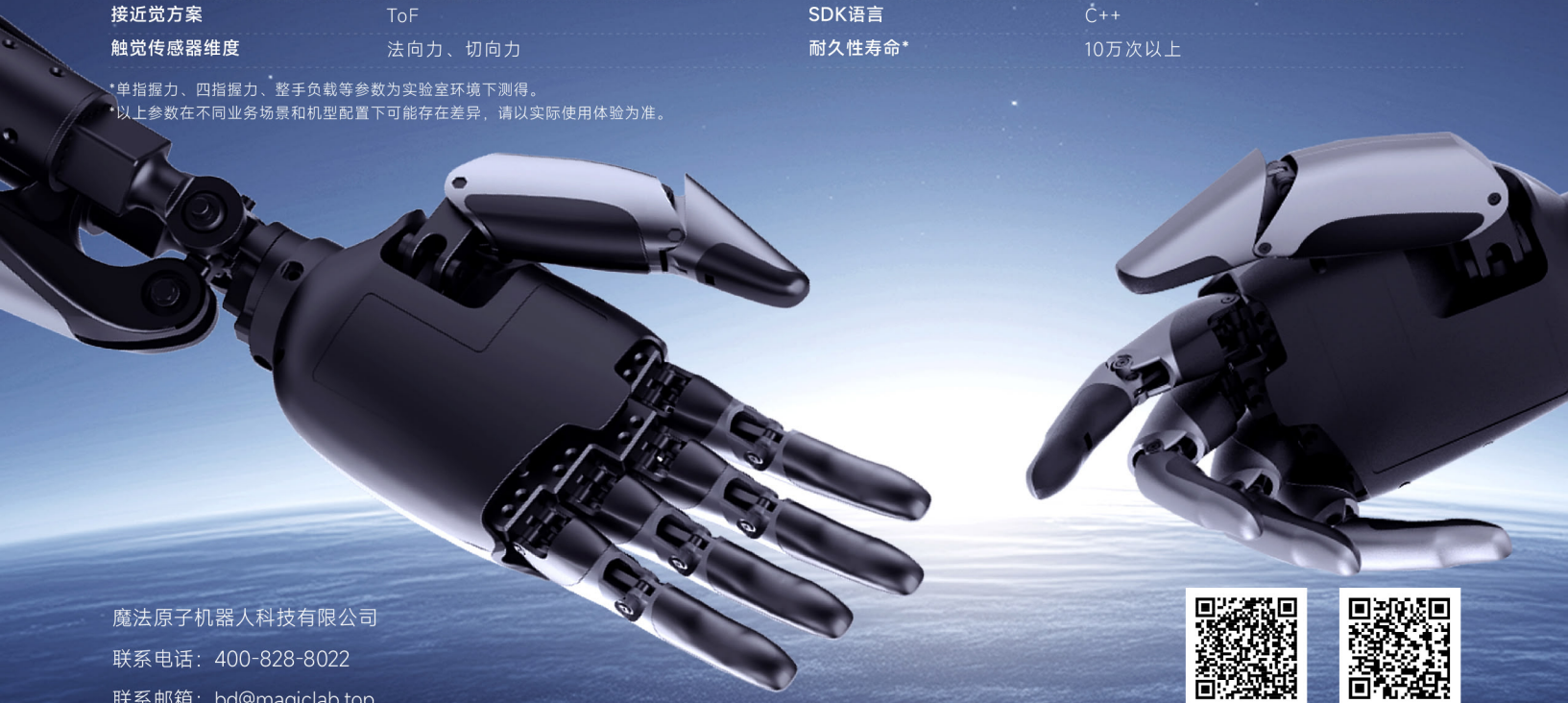
极速集成与开发，加速产品落地

- **开放易联**：原生支持 RS485 ，可转接 EtherCAT 通讯接口。
- **敏捷开发**：提供简洁高效API指令集，助您快速对接机器人/协作臂，灵巧操控，即刻实现。

参数介绍

长宽厚	200mmx87mmx55mm	触觉传感器分辨率*	0.1N
整手重量	≤650g	触觉传感器量程	0.1-10N
指数	5	单指握力*	2.5kg
总自由度（关节数）	11	四指握力*	9.1kg
主动自由度（电机数）	6	整手负载*	5kg
驱动方式	空心杯电机+减速齿轮箱+T型丝杆	末端重复定位精度*	0.1mm
传动方式	连杆传动	张合时间*	1.2s
可实现动作	捏合、抓握、按、提、推等拟人动作	拇指侧摆速度*	112°/s
工作电压	DC12V	拇指弯曲速度*	106°/s
静态电流	0.1A@12V	四指弯曲速度*	150°/s
最大电流	3A@12V	通讯接口	RS485、EtherCAT
接近觉方案	ToF	SDK语言	C++
触觉传感器维度	法向力、切向力	耐久性寿命*	10万次以上

*单指握力、四指握力、整手负载等参数为实验室环境下测得。
*以上参数在不同业务场景和机型配置下可能存在差异，请以实际使用体验为准。



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了解详情　联系我们

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MagicLab's 11-DOF Tactile Dexterous Hand: Redefining Dexterous Grasping and Manipulation!

Ultimate Dexterity and Perception, Empowering Precision.

- **Human-like Dexterity**: 11-DOF actuation enables smooth motion of pinching, grasping, pressing, lifting, and pushing — perfectly handling complex manipulation tasks
- **Perception Integration**: Featuring ToF proximity sensing and 3D tactile feedback (with 0.1N Resolution), bringing realistic fingertip sensation for fluid autonomous grasping and precise operations.

Powerful Load Capacity and Reliable Durability—Built for Industrial Demands.

- **Powerful Grasp**: 9.1 kg four-finger grip force and 5 kg payload—effortless handling of common industrial and Commercial Objects, Ready for Critical Tasks.
- **Industrial-Grade Reliability**: Aerospace-grade aluminum alloy + integrated die-casting for a strong yet lightweight structure. Proven by 100,000+ rigorous durability tests to ensure long-term stable operation.

Rapid Integration and Development—Accelerating Products Application Deployment

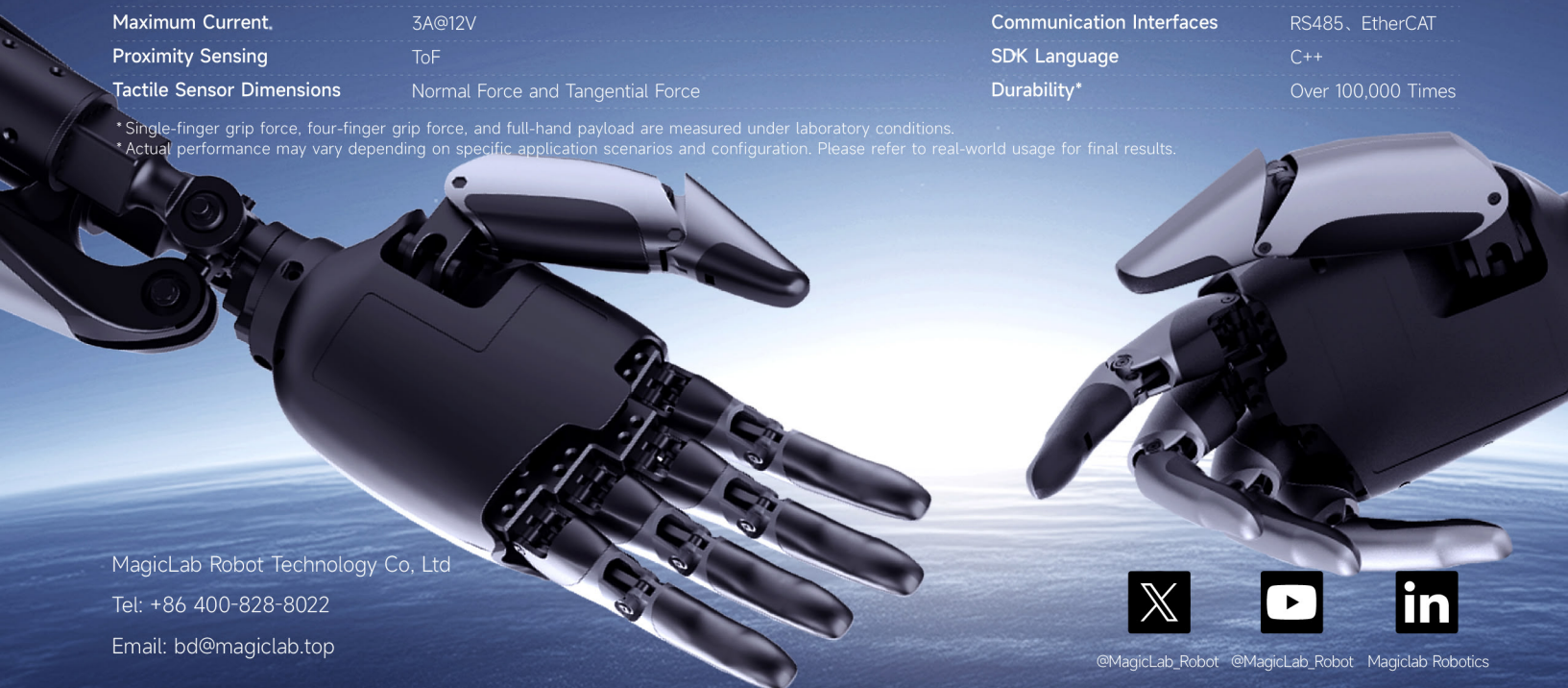
- **Open Connectivity**: Native support for RS485. Adaptable to EtherCAT communication interfaces.
- **Agile Development**: Offering a concise and efficient API command set and enabling quick integration with robots/cobots for instant dexterous control.

Parameter Introduction

Dimensions	200mmx87mmx55mm
Total Weight	≤650g
Index Finger Count	5
Total Degrees of Freedom(Joints)	11
Active Degrees of Freedom(Motors)	6
Drive System	Coreless DC Motor + Reduction Gearbox + T-type Lead Screw
Transmission Mechanism	Linkage Transmission
Supported Motions	Pinching, Grasping, Pressing, Lifting, Pushing, and other Human-like Actions.
Operating Voltage	DC12V
Static Current	0.1A@12V
Maximum Current.	3A@12V
Proximity Sensing	ToF
Tactile Sensor Dimensions	Normal Force and Tangential Force

Tactile Sensor Resolution*	0.1N
Tactile Sensor Range	0.1-10N
Single-Finger Grip Force*	2.5kg
Four-Finger Grip Force*	9.1kg
Full-Hand Payload*	5kg
Repeatability at Fingertip*	0.1mm
Open/Close Time*	1.2s
Thumb Abduction Speed*	112°/s
Thumb Flexion Speed*	106°/s
Four-Finger Flexion Speed*	150°/s
Communication Interfaces	RS485、EtherCAT
SDK Language	C++
Durability*	Over 100,000 Times

* Single-finger grip force, four-finger grip force, and full-hand payload are measured under laboratory conditions.
* Actual performance may vary depending on specific application scenarios and configuration. Please refer to real-world usage for final results.



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