Alt-Bionics

Robotics Hand – Technical Datasheet

Release Version 1.6
October 2026

Product Name: Surge

Key Features:



- Lift Capacity up to 18 kg / 40 lbs. (Per Hand)
- 400ms (~200° / sec) Closing Speed
- 6 Powered Degrees of Freedom (DoF)
- Fully Modular Fingers
- Manus Glove Compatibility
- 48V DC Input (28 – 58V Range)
- Modbus RTU over RS-485 Communication
- < 1mm Finger Position Repeatability
- No Cost SDK: ROS - C++ - python



Product Summary:

Surge is a 6-DoF robotic hand designed for humanoid and robotic arm platforms, combining human-inspired dexterity with robust engineering to give robots reliable, practical interaction in real-world environments.

SDK Compatibility Ecosystem:



realman



MANUS™



Meta Quest



KINOVA



FRANKA

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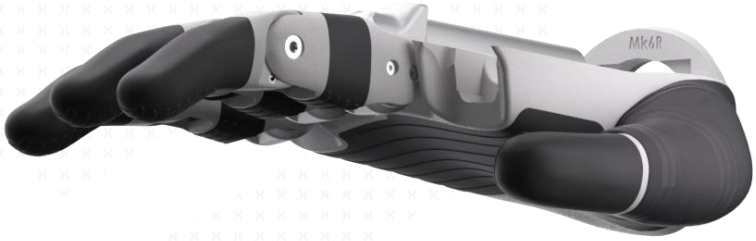
Modular Finger Overview











Modularity Benefits:

- Enhanced Overall Hand Durability
- Motor Health Tracking
- Preventative Maintenance Alerts
- 5-Minute Repair Time
- Future-proof design

Benefits Summary:

Our modular design enables **fast, tool-minimal repairs in under five minutes**, reducing downtime and maintenance costs. Swappable finger modules allow for quick replacements without full-hand disassembly, ensuring continuous operation and extended lifespan. This design enhances efficiency, durability, and long-term reliability, so **your robots spend more time working and less time in repair**.

Replacement fingers can be ordered separately and overnight shipped anywhere in the U.S.

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Surge

Mechanical Specifications

Height	7.4” (18.78cm)
Width	3.6” (9.14cm)
Palm Thickness (Widest)	1.5” (3.81cm)
Weight	1.19 lbs. (540g)
Max Grip Force (4 Fingers)	8 lbf. (35.5N)
Minimum Closing Time	0.4 seconds (400ms)
Single Finger Carrying Strength (Distal)	5 lbs. / finger (2.6kg) – Max
Single Finger Carrying Strength (Proximal)	15 lbs. / finger (6.8kg) – Max
Palm Carrying Strength	80 lbs. – *Dependent on humanoid or multiaxis wrist*
Thumb Carrying Strength	15 lbs. (6.8kg) – Max
Single Finger Max Lateral Strength (at Distal)	15 lbs. (6.8kg) – Max
Finger Range of Motion	100°
Thumb Range of Motion	100° Flexion | 90° Rotation
Actuator Type	Gear-driven (Non-Overhauling)

Electrical Specifications

Nominal Input Voltage	48 VDC
Input Voltage Range	28 – 58 VDC
Nominal Input Power	25W
Peak Input Current	1 A
Electrical Protection	Reverse input, overvoltage, and overcurrent protection
Communication Interface Types	Modbus RTU over RS-485
Write Parameters	Individual finger joint angles & Move to preset grip