

Product Name: Smart Standing Desk Control Box

Product Model: HJC32L Series

Document Version: V1.0

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Prepared By: R&D Department

Reviewed / Approved:

1. Document Revision History

Version	Date	Changes	Author	Reviewer
V1.0	2026-01-22	Initial release		

2. Product Overview

2.1 Product Introduction

This product is an intelligent control box specifically designed for electric standing desks. It is suitable for ergonomic height-adjustment applications including office desks, workstations, control consoles, technical workstations, kitchen systems, medical workstations, and similar environments. The product drives electric lifting columns/actuators to achieve smooth and stable desk height adjustment, equipped with soft start/stop, intelligent anti-collision, height memory, overload protection, and other features, providing users with a safe, efficient, and healthy workspace solution.

Core Values:

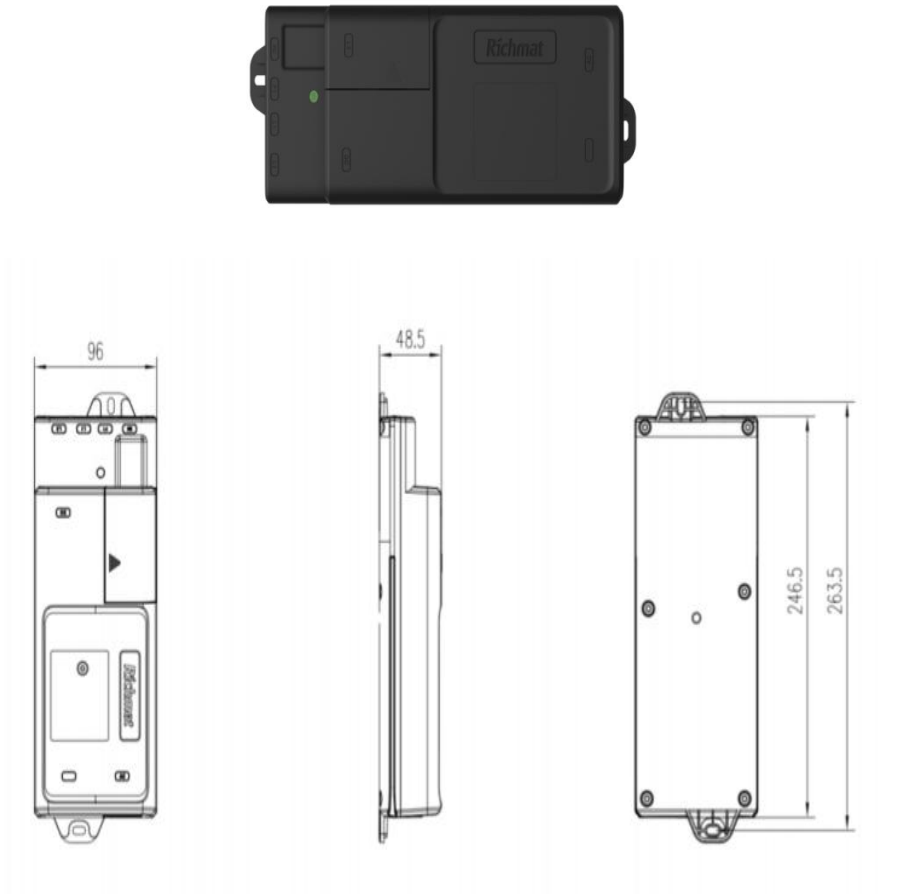
- Supports ergonomic sit-stand working, relieving muscle fatigue and health risks associated with prolonged sitting
- Precise height control with smooth and stable lifting operation and low noise
- Multiple safety protections to ensure user and equipment safety
- Ultra-low standby power consumption, compliant with green energy-saving requirements

2.2 Application Scope

- Smart office desks
- Technical / industrial workstations
- Control consoles and media mounts
- Home office standing desks
- Electric adjustable counters / kitchen systems
- Height-adjustable workbenches (assembly tables, inspection tables)

2.3 Product Appearance

Product appearance image:



3. Product Features

3.1 Core Functions

This product provides the following core functions:

- **Lifting Control:** Precisely controls desk upward and downward movement with smooth operation. Capable of driving 2 lifting columns.
- **Synchronized Driving:** Ensures all lifting columns in a multi-column system maintain height synchronization. The system guarantees zero height deviation after 10,000 operating cycles. With a high-performance controller, speed can reach 30 mm/s.
- **Anti-Collision Detection (Intelligent Obstacle Reversal):** Built-in collision sensing detects resistance during lifting and automatically reverses a certain distance to prevent damage to equipment or objects caused by external forces. An optional gyroscope enhances collision detection accuracy, achieving 5 kg high-precision collision protection.
- **Child Lock Function:** Locks handheld controller operations to prevent accidental activation by children.

- **Overload Protection (EOP):** Independent current limiting provides overload protection. Motors automatically stop under overload or stall conditions, protecting the drive and control box.
- **Tilt and Imbalance Protection:** When the device tilts beyond a set threshold due to uneven flooring or uneven load distribution, the system automatically stops operation or triggers an alarm. Left-right imbalance protection is included.
- **Soft Start / Soft Stop:** Lifting speed gradually ramps up and down during start and stop, avoiding impact and shaking to ensure desk stability.
- **Current / Thermal Overload Protection:** MOSFET-based design with real-time current monitoring automatically switches to intermittent operation mode after 2 minutes of continuous use, effectively preventing overheating.
- **Emergency Stop:** Supports emergency stop function to immediately interrupt all actions in hazardous situations, ensuring personal safety.
- **Overheat Protection:** Built-in temperature sensor automatically stops output when internal temperature exceeds the safety threshold; operation resumes after cooling.

Smart Connectivity and Interaction:

- **Bluetooth Connection:** Wireless control of the standing desk via smartphone app
- **USB Charging:** Supports USB charging for mobile devices
- **External Battery:** Supports connection to a rechargeable external battery, enabling operation without mains power

3.2 Hand Controller Features

The matching hand controller supports height memory function. Users can set up to [3] memory positions (commonly used heights for sitting/standing), enabling one-touch height adjustment. It supports LED/LCD display for real-time height display (switchable between cm and inches), with the display automatically turning off when not in use to reduce power consumption. Some hand controllers also support initialization settings, error code display, child lock, and sedentary alert functions.

4. Technical Specifications

4.1 Hardware Specifications

Item	Specification
Number of Channels	Up to 3 channels
Connectable Lifting Columns	3
Built-in Gyroscope	1
Housing Material	ABS
Color	Black

4.2 Electrical Parameters

Item	Specification
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Rated Input Voltage	AC 100-240V, 50/60Hz / DC 24V
Plug Type	EU / US / AU / UK / JP, etc.
Output Channels	3 channels
Transformer Type	Switching Mode Power Supply (SMPS)
Backup Battery Interface	Supports external battery
Protection Functions	Over-current, over-voltage, over-temperature, independent current limiting overload protection (EOP)

Interface Specifications:

Interface Type	Quantity	Specification
Motor Output	3	DC 32V, 8A per channel
Power Input	1	100-240V AC input
Hand Controller	1	Communication and control signals
Bluetooth	Optional	Smartphone app control (optional)

4.3 Interface Definition

Refer to the interface diagram in Section 2.3 for pin definitions.

4.4 Software Specifications

Item	Specification
Anti-Collision Sensitivity Adjustment	Adjustable via hand controller
Height Limit Setting	Supports upper/lower travel limit settings to prevent exceeding safe range
System Lock	Supports child lock function
Initialization / Learning	Automatic travel learning and reset
Error Code Display	Supports multiple error codes for troubleshooting
Software Upgrade	Supports firmware upgrade via PC software

4.5 Performance Parameters

Item	Specification
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Operating Noise	≤50 dB
Rated Load	1000N-1500N (per column) / 100 kg (desktop)
Lifting Speed	25-40 mm/s (under load)
Synchronization Accuracy	<1 mm (multi-column synchronized operation)
Protection Class	Class II

5. Operating Environment and Reliability

5.1 Environmental Conditions

Item	Specification
Operating Temperature	+5°C to +45°C
Storage Temperature	-20°C to +60°C
Relative Humidity	≤95% non-condensing
Altitude	Normal atmospheric pressure
Atmospheric Pressure	700-1060 hPa

5.2 Protection Features

Item	Specification
Over-Current Protection	Supported (independent current limiting)
Over-Voltage Protection	Supported (automatic shutdown when input voltage exceeds threshold)
Over-Temperature Protection	Supported
Overload Protection	Supported (EOP overload protection, independent current limiting per channel)
ESD Protection	Compliant with IEC standards

6. Dimensions and Installation

6.1 Dimensional Drawing

Item	Dimension (mm)
Total Length (L)	246.5

Total Width (W)	96
Total Height (H)	48.5

Caution:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.