Dual-Channel Synchronous Controller

FD-SYNC-2

Description

FD-SYNC-2 is a high-power dual-channel linear actuator synchronous controller that can be easily and quickly applied in scenarios requiring linear actuator synchronous control. It supports wireless remote control, wired hand control, and switch mode. It features precise position control, and through parameter configuration, it can match various electric linear actuator products with Hall signals. The controller also supports motor soft start and stop functions, reducing the impact of high current on the motor hardware during sudden start-up, thereby extending the motor's lifespan.

Key Features

- **Perfect Synchronization:** Seamlessly synchronize the movement of two electric linear actuators, ensuring they operate in harmony for your most important projects.
- **Flexible Control Options:** Choose between wired control with an intuitive touch handle or enjoy the freedom of wireless control using a remote. Enhance your control range and flexibility by adding an external antenna.
- **Real-Time Monitoring:** Stay informed with the LED display on the control handle, providing real-time updates on stroke positions and controller alerts for each actuator, keeping you in command.
- **Easy-to-Use Touch Controls:** Navigate effortlessly using six touch buttons. The ▲ and ▼ buttons allow precise extension and retraction, while the 1, 2, and 3 buttons provide quick access to three pre-set positions. The R button offers a reset function, ensuring system safety and reliability.
- **Actuator Protection:** Our controller is designed to extend the life of your actuators. It automatically slows them down as they near the end positions and retains 1mm of travel at full retraction to prevent damage.
- **Memory Function:** The hand controller includes a position memory feature, enabling one-touch control for raising or lowering the electric linear actuators.

Product parameters

Product Model	FD-SYNC-2
Dimensions	126*103*38mm
Power supply	DC:12~48V
Maximum number of linear actuators	2 Units
Single channel output current	15A
Working environment	-20℃ ~ 80℃
Working frequency	10%

Controller Interface Description

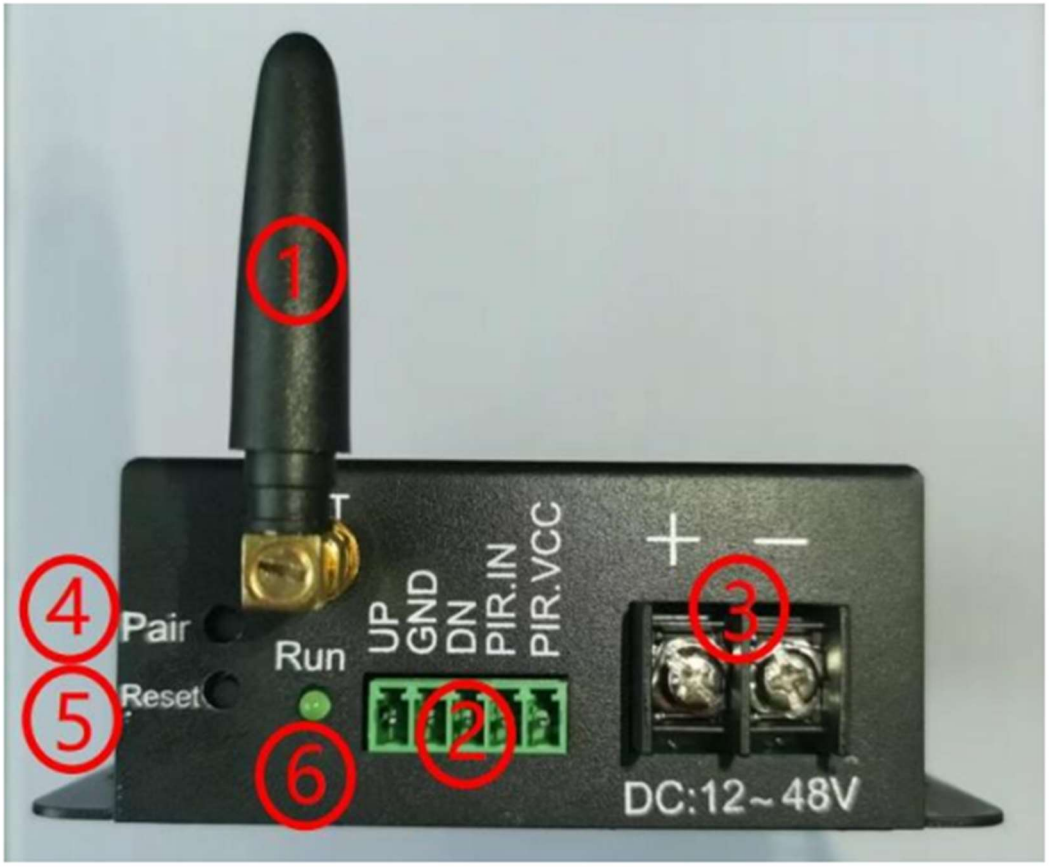


Figure 1: Power supply interface

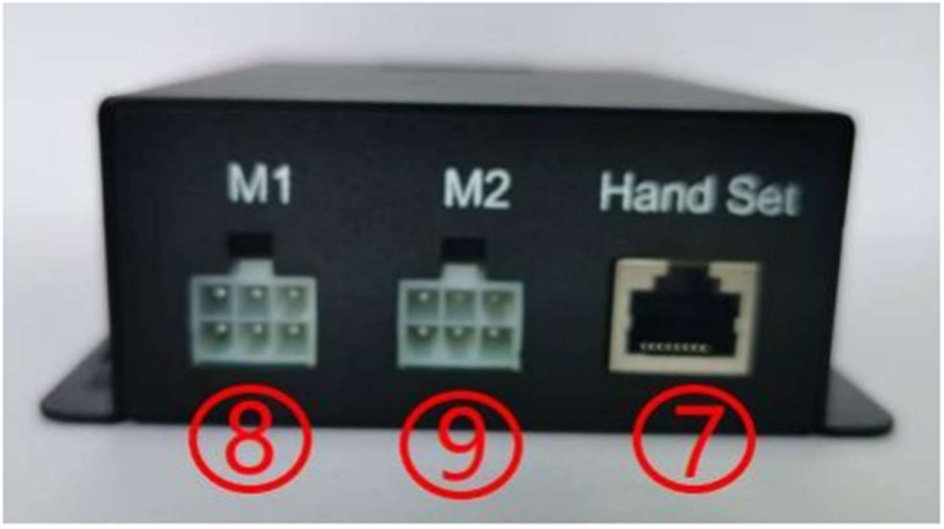
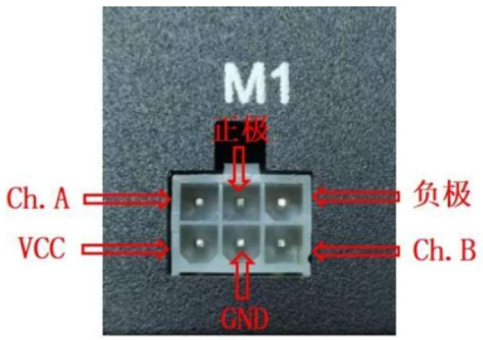


Figure 2: Electric linear actuator interface

Controller Interface Definition

1: Remote control antenna;
2: Human body sensor: Wiring ports are "GND", "PIR.IN", "PIR.VCC"; Switch: Switch interface is "UP", "GND", "DN". Refer to the shell silkscreen information for detailed signal definitions;
3: Power supply interface, only allows input of 12~48V DC voltage;
4: A. Remote control pairing: Press the button, the indicator light changes from not blinking to blinking, and the buzzer "beep, beep, beep" sounds. The controller then enters remote pairing mode. Pair the remote within 5 seconds by pressing the "UP" or "DN" button, and the buzzer will stop. The indicator light stops blinking, indicating successful pairing;
B. Hall HS1 and HS2 switching: Long press this button for 3 seconds to switch between Hall HS1 and HS2 modes;
5: Linear actuator reset button: Long press this button for 5 seconds to start resetting the linear actuator. Do not release the button during the reset process until it is completed. If released midway, the linear actuator will stop;
6: Controller power indicator, system running indicator;
7: Hand controller interface;
8: Channel 1 electric linear actuator interface;
9: Channel 2 electric linear actuator interface.

Electric Linear Actuator Interface Definition

Signal	Function description	Interface label
Positive	Linear actuator motor positive wiring	
Negative	Linear actuator motor negative wiring	
VCC	Hall power supply positive wiring	
GND	Hall power supply negative wiring	
Ch.A	Hall signal A	
Ch.B	Hall signal B	

Wired Controller Instructions

The hand controller controls the linear actuator's lift through buttons, with a display function to show the linear actuator height information or controller error messages in real-time. It supports 7 button functions. The hand controller connects to the controller's HandSet port via a crystal head to achieve communication control.

①	Display area	Shows the current linear actuator height position or system error codes in real-time.
②	Up button	Long press for linear actuator to rise; release to stop.
③	Down button	Long press for linear actuator to lower; release to stop.
④	Memory button #1	Long press the memory key: Press "M" button, the display flashes, press memory button to store the current position. Short press the memory key: the linear actuator automatically moves to the position memorized by this key
⑤	Memory button #2	
⑥	Memory button #3	
⑦	Memory button #4	
⑧	Reset button	Long press to reset linear actuator. Required during first installation or when the controller triggers an error alarm.
	Height Adjustment	Press "M" and "V" simultaneously to show "5--", then press "1" four times to display the previously set height. Use "^" or "V" to adjust the height. Press "M" to exit the setting.
	Synchronous Mode Switching	Press "M" and "^" simultaneously to switch to synchronous mode. The display shows "Hd5" for same action mode, and the real-time height "00.0cm" for synchronous mode.

2.4G Remote Control Instructions

No.	Function description
①	Data information display area
②	Up button
③	Stop/reset button
④	Down button

Remote control instructions

1. The network icon on the upper left corner of the display screen is always on, indicating normal communication, and flashing indicates abnormal communication
2. The battery power icon on the upper right corner of the display screen indicates the current remaining battery power of the remote control
3. The up/down button realizes inching/continuous operation according to the setting of the controller parameter "remote control type"
4. During the movement of the linear actuator, short press the stop button to stop the linear actuator, and long press 5S to reset the linear actuator

Remote control pairing process description

1. First operate the controller to enter the remote control pairing mode.
2. Simultaneously operate the up and down buttons, press them quickly 5 times in a row, and the remote control enters the pairing mode
3. In pairing mode, the position where the remote control height information is displayed will flash "---"
4. The process of the number at the CH position increasing from 1 to 50 indicates that the pairing data is being successfully sent
5. After pairing is completed, the remote control and controller automatically exit the pairing mode

Note: A 2.4G remote control can only operate one controller, and a controller can be paired with multiple 2.4G controllers. However, multiple 2.4G remote controls paired with the same controller cannot be used at the same time.

Error Code

Error code	Processing logic
E01: Linear actuator 1 overcurrent	Check if the linear actuator load exceeds the allowable range.
E02: Linear actuator 2 overcurrent	Check if the linear actuator load exceeds the allowable range.
E05: Linear actuator m1+m2 retract overcurrent	The linear actuator encounters resistance during movement, error code automatically clears after rollback.
E11: Linear actuator 1 signal failure	No Hall signal from a single linear actuator, check the connection between the linear actuator and controller, and ensure the linear actuator is not stalled. Reset the system to clear the error code.
E12: Linear actuator 2 signal failure	No Hall signal from a single linear actuator, check the connection between the linear actuator and controller, and ensure the linear actuator is not stalled. Reset the system to clear the error code.
E41: Linear actuator 1 not connected	Check the connection between the linear actuator and control box, and ensure the interface corresponds correctly. The error code clears automatically after proper connection.
E42: Linear actuator 2 not connected	Check the connection between the linear actuator and control box, and ensure the interface corresponds correctly. The error code clears automatically after proper connection.
E50: Human detected	Check the sensing area for any personnel. The error code clears after the person leaves the area.
E20: Height difference	In extreme cases, linear actuators are not synchronized, with a Hall deviation exceeding the set value, causing an alarm.
E30: Power loss	The input voltage is below the minimum allowable voltage (10.5V), check if the power supply is normal.

Support

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