

ML8824 Series

Linear Electric Actuator

Honeywell ML8824 series Linear electric actuators are used to operate electric linear valves in heating, ventilation and air conditioning systems.

ML8824 series linear electric actuators have two versions: standard version (SKU starts with ML8824A) and NFC version (SKU starts with ML8824B). Except for the NFC function, the products of the two versions have the same parameters of the products with the same thrust force and stroke.

The NFC version actuator cooperates with the mobile phone APP (Android system) to set and read the dead zone, sensitivity, and maximum opening of the actuator on the APP.



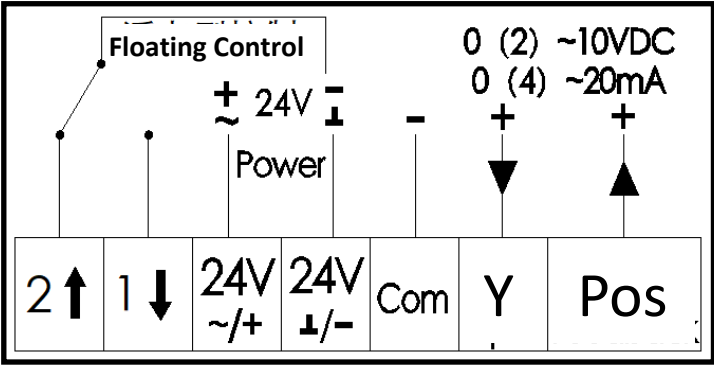
Features

- Self-adaption mode
- Low power consumption
- Quick and easy installation
- Manual operation with override functions
- DIP switch for configuring multiple parameters and functions (e.g. run time, run direction, input signal and feedback signal, etc.)

Technical Parameters

SKU (Standard)	ML8824A0620	ML8824A1820	ML8824A1840
SKU (NFC)	ML8824B0620	ML8824B1820	ML8824B1840
Thrust Force	≥600N	≥1800N	≥1800N
Stroke	26mm	26mm	46mm
Running time	3s/mm or 4s/mm	2s/mm or 3s/mm	2s/mm or 3s/mm
Power Consumption	10VA	18VA	18VA
Power Supply	24Vac ± 15% ,50/60Hz; 24Vdc +15% ,-10%;		
Input Signal	0(2)~10 Vdc , 0(4)~20 mA Voltage input impedance: >100KΩ, Current input impedance: <0.2KΩ		
Feedback Signal	0(2)~10 Vdc , 0(4)~20 mA		
Operation Environment	-10℃ to +55 ℃, 5% to 95% RH (Non-)		
Storage Environment	-40℃ to +65 ℃, 5% to 95% RH (Non-condensing)		
Available Medium Temperature	Water: up to 130℃; Steam: up to 180℃		
Protection Class	IP54 (EN60730)		
Electrical Protection Class	III (EN60730-1)		
Certification	CE(EN60730)		
Wiring Terminals	1.5mm ²		
Cable Connector	PG13.5, Reserved PG13.5 and PG9		
Material	Cover: PC Plastic Housing: Plastic Bracket: Cast aluminum	Cover: PC Plastic Housing: Cast aluminum Bracket: Cast aluminum	Cover: PC Plastic Housing: Cast aluminum Bracket: Cast aluminum
Weight	1.3kg	2.3kg	2.4kg

Wiring



Illustrate :

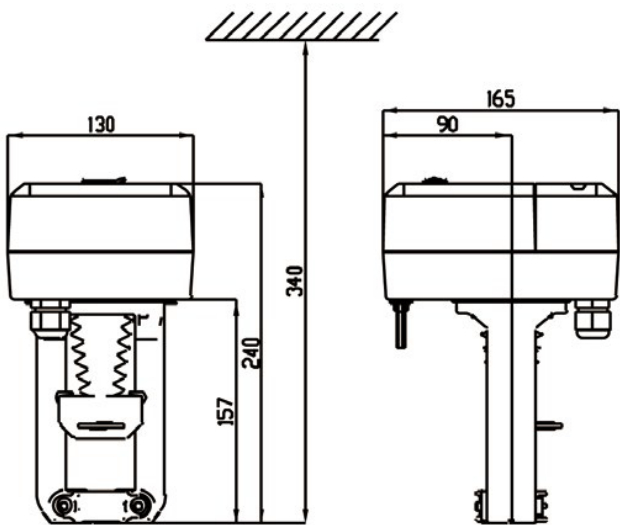
- 1. Pos: feedback signal
- 2. Y : Input signal

Floating type:

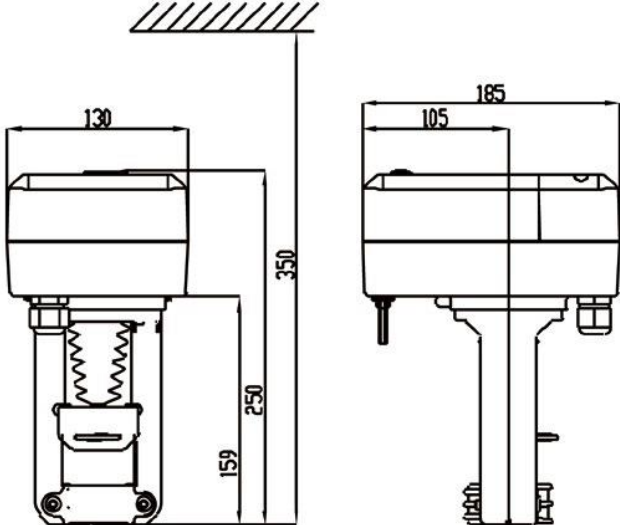
*In floating control mode, S2-8 DIP switch is set to ON. the input signal (Y) will be invalid.

Terminal #	Actuator action
#1	Move downwards
#2	Move upwards

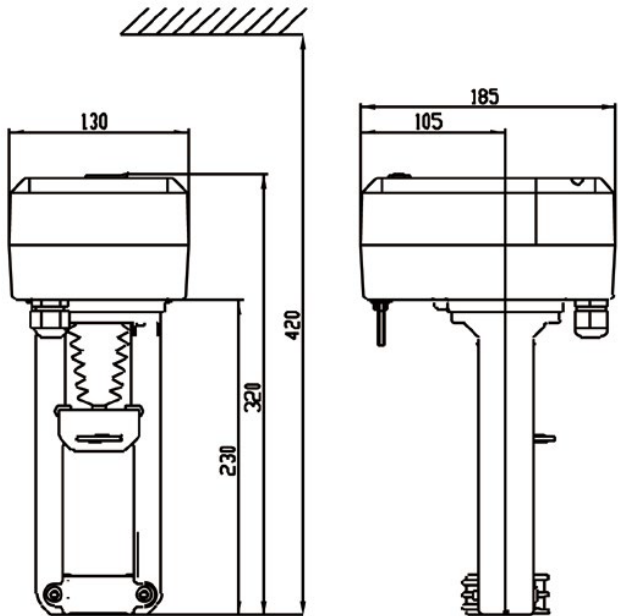
Dimension(mm)



ML8824A0620 /ML8824B0620



ML8824A1820 /ML8824B1820



ML8824A1840 /ML8824B1840

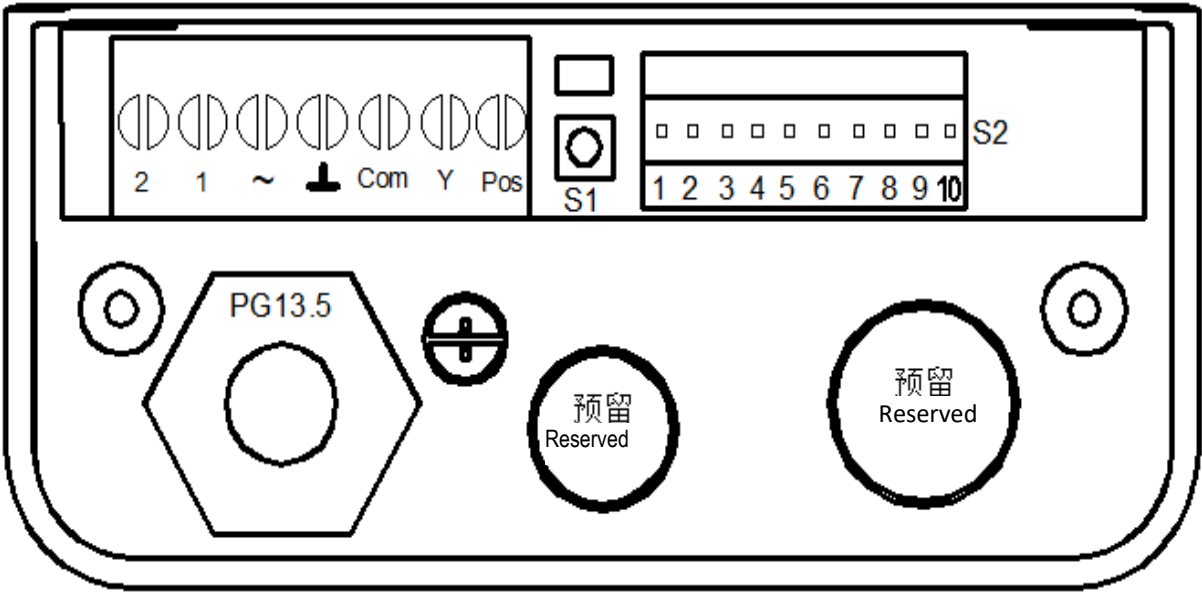
Function Operation Instructions

Function	Instruction
Manual operations	The ML8824 series actuator can be operated manually using the supplied hexagon wrench and features a manual override function. For safety reasons, the actuator automatically cuts off the power supply to the motor when manual operations are performed. Note: The self-adaption process must be repeated after completing manual operations when the actuator is switched off! Rotate the hexagon wrench clockwise to shift the actuator connector downwards; rotate anticlockwise to shift the actuator connector upwards.
Enabling floating control	The ML8824 series actuator features a floating control function (see wiring diagram, page 5). When the S2-8 DIP switch on the PCB is set to ON (see Table of DIP Switch Settings, page 6), this indicates that floating control is enabled and the actuator will travel to the fully open or fully closed position without being controlled by the input signal (0/2–10VDC, 0/4–20mA). This ensures that manual operations can be completed safely.
Input /feedback signal	The analog input/feedback signal can be selected using the DIP switch (see Table of DIP Switch Settings). The default input/feedback signal is 0...10 Vdc. You can select 2–10VDC, 0–20mA and 4–20mA input/output signals using the DIP switches on the PCB.
Wiring	The actuator comes with a pre-assembled PG13.5 cable gland, with spaces reserved for PG13.5 and PG9 connectors. Note: To prevent the actuator from malfunctioning, connect it to a 24 V/AC power supply with a ground connection (see wiring diagram).
Self-adaption mode	Assemble the actuator and the valve and power the actuator with a 24 VAC/DC power supply. Automatic self-adaption: The actuator will automatically enter self-adaption mode when it is supplied with power. The yellow indicator light on the PCB will blink (1Hz) and the actuator will fully close (travel to the lowest position) and then fully open (travel to the highest position). The indicator light will stop blinking when the self-adaption process is complete. The actuator will then travel to the position designated by the control signal. Manual self-adaption: To enable self-adaption mode, press and hold the S1 button on the PCB for at least 5 seconds (see PCB Layout Diagram) until the indicator starts blinking (1Hz). The actuator will fully close (travel to the lowest position) and then fully open (travel to the highest position). The indicator light will stop blinking when the self-adaption process is complete. The actuator will then travel to the position designated by the control signal. Note: Travel calibration takes approximately 3 minutes for the 600 N actuator and approximately 4 minutes for the 1800 N actuator (when the default settings are enabled).
Actuator operating mode when input signal is interrupted	Use No. S2-9 DIP switch (see Table of DIP Switch Settings) to set actuator operation mode as the first step when input signal is interrupted. If the DIP switch is ON, actuator will keep the position when the input signal is interrupted. If the DIP switch is OFF, actuator will reset when the input signal is interrupted. Selecting actuator resetting requires the second step of signal interruption mode setting: setting the S2-6-digit DIP switch. No. S2-6 DIP switch is ON: when the controlling input signal is interrupted, if the input signal is a voltage signal, the actuator will automatically generate a 0(2) V/DC input signal; If the input signal is a current signal, the actuator will automatically generate a 0 (4) mA input signal. (factory default) No. S2-6 DIP is OFF: when the controlling input signal is interrupted, if the control signal is a voltage signal, the actuator will automatically generate a 10 V/DC input signal; if the input signal is a current signal, the actuator will automatically generate a 0 (4) mA input signal. Note: 1. The setting of DIP No. S2-9 takes priority over DIP No. S2-6. 2. The actuator keeps the position when input signal is interrupted is limited to input signal and feedback signal are 4-20mA.

Function Operation Instructions

Function	Instruction
Setting the direction of travel	The direction of travel can be configured using the S2-5 DIP switch (see Table of DIP Switch Settings, page 6). When the DIP switch is set to ON and the input signal is set to 0(2) VDC or 0(4) mA, the actuator will travel to the highest position. When the DIP switch is set to OFF and the input signal is set to 0(2) VDC or 0(4) mA, the actuator will travel to the lowest position (factory default).

DIP Setting

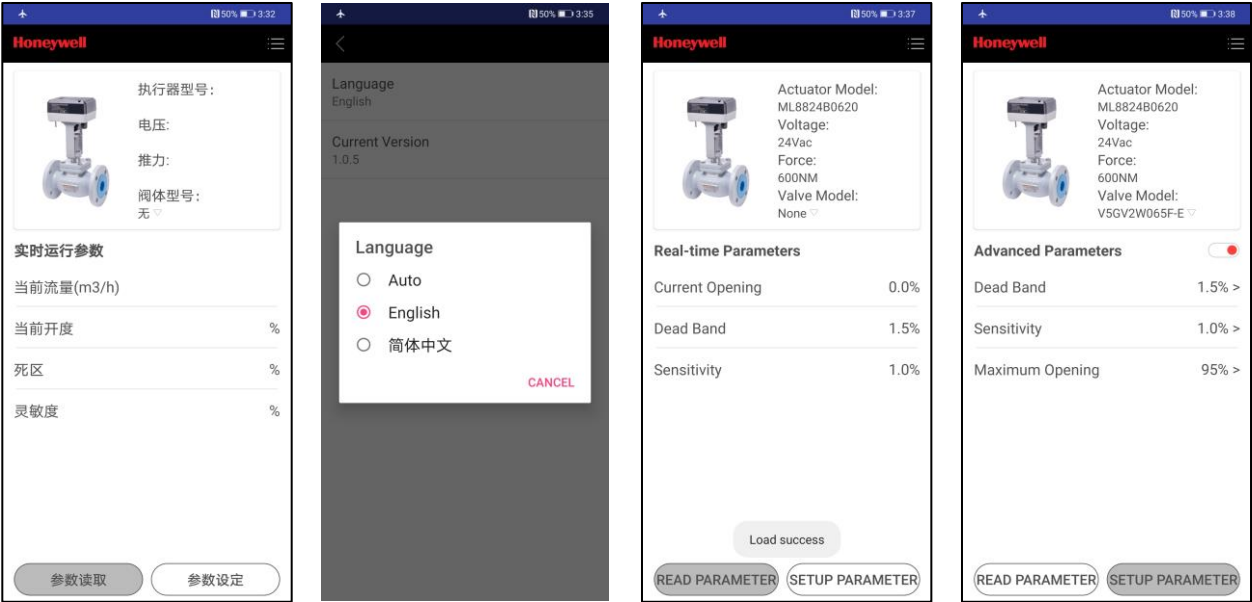


DIP	Function	Functional description of set value	
S2-1	Set starting point of control/feedback signal	ON	4–20 mA or 2–10 V/DC control/feedback signal
		OFF	0–20 mA or 0–10 V/DC control/feedback signal (factory default)
S2-2	Set control signal type	ON	II: Current control
		OFF	UI: Voltage control (factory default)
S2-3	Setting input impedance matching for control signal	ON	UI: The control signal is a voltage signal (factory default)
		OFF	II: The control signal is a current signal
S2-4	Set the valve position feedback signal type	ON	IO: Feedback current signal
		OFF	UO: Feedback voltage signal (factory default)

DIP Setting

DIP	Function	Functional description of set value	
S2-5	Set the operatingmode	ON	DA: When the control signal increases, the actuator moves downwards. When the control signal decreases, the actuator moves upwards.
		OFF	RA: When the control signal increases, the actuator moves upwards. When the control signal decreases, the actuator moves downwards. (Factory default)
S2-6	Set signal mode for actuator reset operation when input signal is interrupted	ON	DW: When the control signal is a voltage or current signal, the actuator will automatically generate a minimum control signal if the input signal cable is cut (factory default).
		OFF	UP : 1) When the control signal is a voltage signal, the actuator will automatically generate a maximum control signal if the input signal cable is cut. 2) When the control signal is a current signal, the actuator will automatically generate a minimum control signal if the input signal cable is cut.
S2-7	Set self-adaption mode	ON	DF: Power-on self-adaption mode (factory default).
		OFF	RF: Manual self-adaption mode
S2-8	Set control mode	ON	Floating control
		OFF	Modulating control (factory default)
S2-9	Actuator operating mode when input signal is interrupted	ON	Actuator keeps the position when input signal is interrupted. Notes: only for input signal and feedback signal are 4-20mA.
		OFF	Actuator reset when input signal is interrupted and need to set No. S2-6 DIP switch together. Note: 1. The setting of DIP No. S2-9 takes priority over DIP No. S2-6. (factory default)
S2-10	Speed setting	ON	High speed: 600 N (3 s/mm), 1800 N (2 s/mm)
		OFF	Low speed: 600 N (4 s/mm), 1800 N (3 s/mm) (factory default)

NFC Setting



1. Language selection

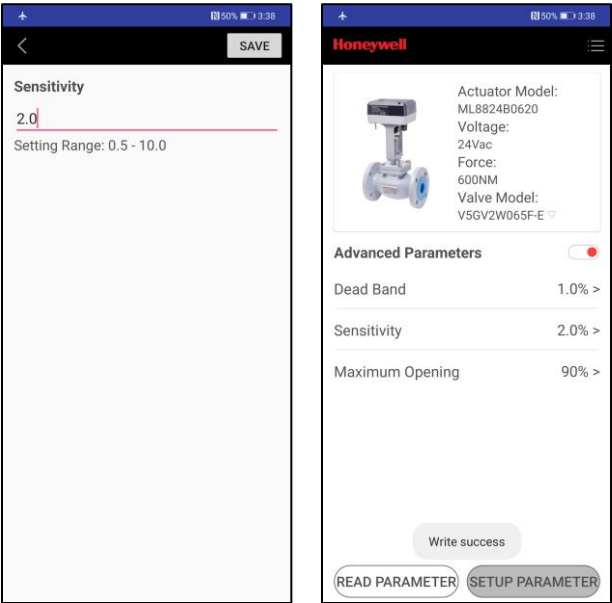
Enter the APP interface, click the menu icon in the upper right corner to set the language.

2. Parameter reading

Use the mobile phone to approach the "NFC" area of the actuator, and the interface will display "read successfully" to read the model, current opening, dead zone and sensitivity of the actuator.

3. Parameter setting

In the parameter setting interface, activate the advanced parameter setting, and you can set the three parameters of dead zone, sensitivity and maximum opening. After setting, put the mobile phone close to the "NFC" area of the actuator, and the APP interface will display "write success", indicating that the set parameters have been successfully written into the actuator. Put the mobile phone close to the "NFC" area of the actuator again, and the set parameters can be read.



Parameter	Setting Range
Language	中文, English, Auto
Dead Zone	1.0~10.0
Sensitivity	0.5~10.0
Max Open	30%~100%