

LEFOO

LFZ05 Series

Standard Air Damper Actuator

Product Manual



Technical Specifications

1. Electrical Specifications

Rated Supply Voltage	AC/DC 24 V, 50/60 Hz	AC 100...240 V, 50/60 Hz
Operating Voltage Range	AC/DC 19.2...28.8 V	AC 85...264 V
Power Consumption(Operating)	Operating: < 4.5 W	Standby: < 1 W
Electrical Protection Class	Class III (SELV – Safety Extra Low Voltage)	Class II (Double Insulated)
Electrical Connection	Terminal connection (14–22 AWG)	
Control Type	On/Off control 2-point control 3-point control	0(2)–10 V DC 0(4)–20 mA RS485
Position Feedback Signal	None	0(2)–10 V DC 0(4)–20 mA RS485
Auxiliary Switch Contacts	2 × SPDT, 250 V / 3 A	
Safety Precautions	When using RS485 output with an AC power supply, an isolated power supply is required.	

2. Functional Specifications

Output Torque	5 Nm
Damper Area	0.8 m²
Direction of Rotation	Selectable via rotary switch
Manual Override	Gear disengagement via push button, with manual reset
Rotation Angle	≤95°
Operating Time	110 s
Noise Level	≤ 40 dB (at 1 m distance)
Position Indicator	Mechanical
Operating Life	100,000 cycles (full stroke)

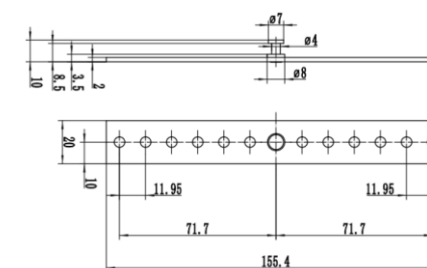
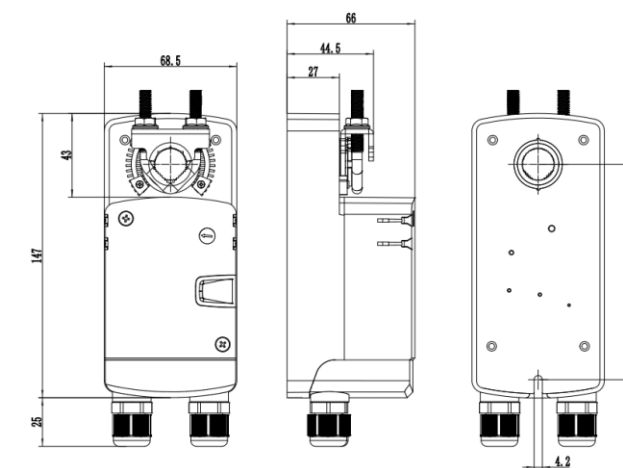
3. Environmental Conditions

IP Rating	IP54
Ambient Temperature	–20...60 °C
Storage Temperature Range	–40...80 °C
Max. Ambient Humidity	5%...95% RH, non-condensing, compliant with EN 60730-1

4. Dimensions & Weight

Overall Dimensions	See dimensional drawing for details
Damper Shaft Length	> 50 mm
Compatible Shaft Size	Ø6...16 mm Square: 8×8...12×12 mm
Net Weight	0.65 kg (24 V On/Off model)

Overall Dimensions

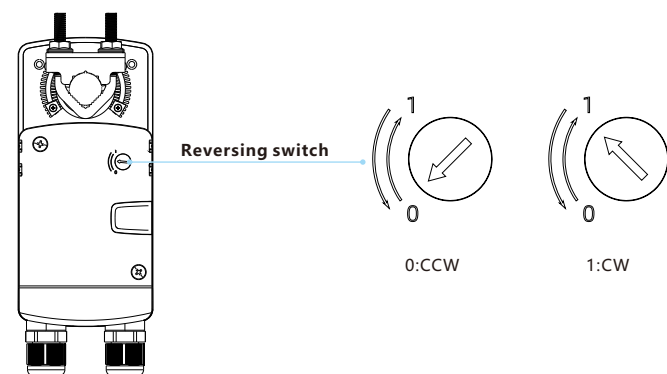


Selection Guide

Code & Description		Remarks
LFZ05	Damper actuator, 5 Nm torque	Model
	24 AC/DC 24V	Power supply
	230 AC 100 ... 240V	
	A Analog Control	Type
	D On/Off Control	
	M RS485	
	N/A Not Applicable	Analog signal
	0V 0-10V	
	2V 2-10V	
	0A 0-20mA	
	4A 4-20mA	
	N/A Without built-in auxiliary switches	Built-in Auxiliary Switches
	S With two built-in auxiliary switches	
LFZ05	24 A 0V -S	Example configuration
1. Model Code Example: LFZ0524A0V-S indicates a model with 24 VAC/DC power supply, analog control, 0–10 V input/output signal, and two built-in auxiliary switches. 2. Selection Rules: The analog signal option is available only when the control type is set to “A” (Analog Control). When the control type is On/Off or RS485, this option must be set to N/A (Not Applicable) and will not be included in the model code.		

Adjustable auxiliary switches DIP switch settings

Reversing switch



Adjustment of –S–type auxiliary switches

The diagram shows the internal components of an actuator. At the top, there is a lever with a black handle and a white knob. Below it, a circular dial is visible. Two blue arrows point to specific internal components: 'Switch a' points to a circular switch mechanism, and 'Switch b' points to a smaller, more complex switch mechanism below it.

Switch a	Terminal 01,05	Terminal 01,06
0-80°	Open circuit	Closed circuit
80-90°	Closed circuit	Open circuit

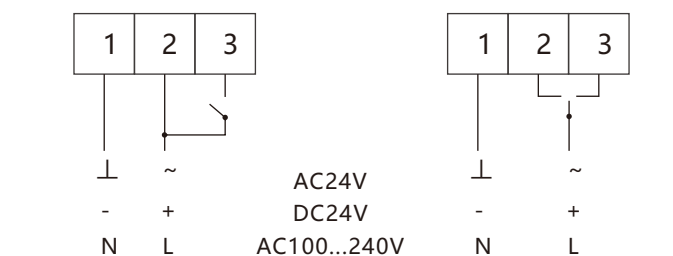
Switch b	Terminal 01,02	Terminal 01,03
0-10°	Open circuit	Short circuit
10-90°	Short circuit	Open circuit

DIP Switch 1 (Set Feedback Signal Type)	DIP Switch 2 (Set Input Signal Starting point)	DIP Switch 3 (Set Input Signal Type)	Default Settings

Rs485 Termination Resistor DIP Switch	
	Termination Resistor: None
	Termination Resistor: 120Ω

Wiring Instructions

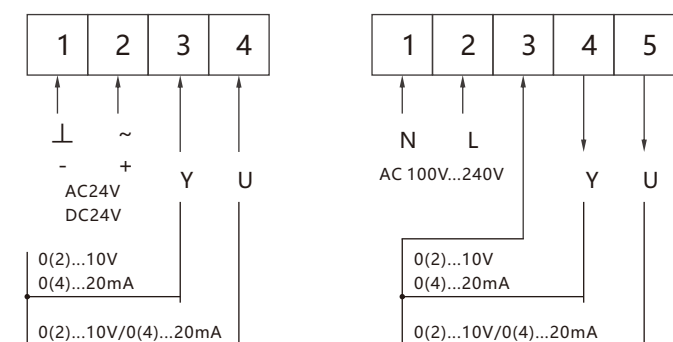
Digital Output Type



Two-Wire Connection

Three-Wire Connection

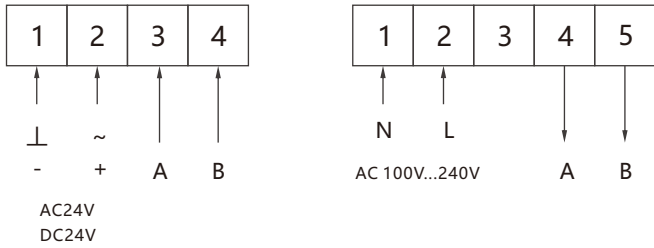
Analog Output Type



24V Actuator

230V Actuator

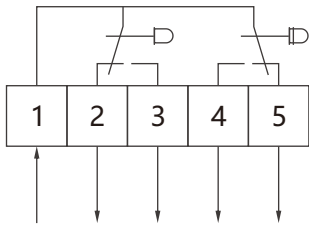
RS485Type



24V Actuator

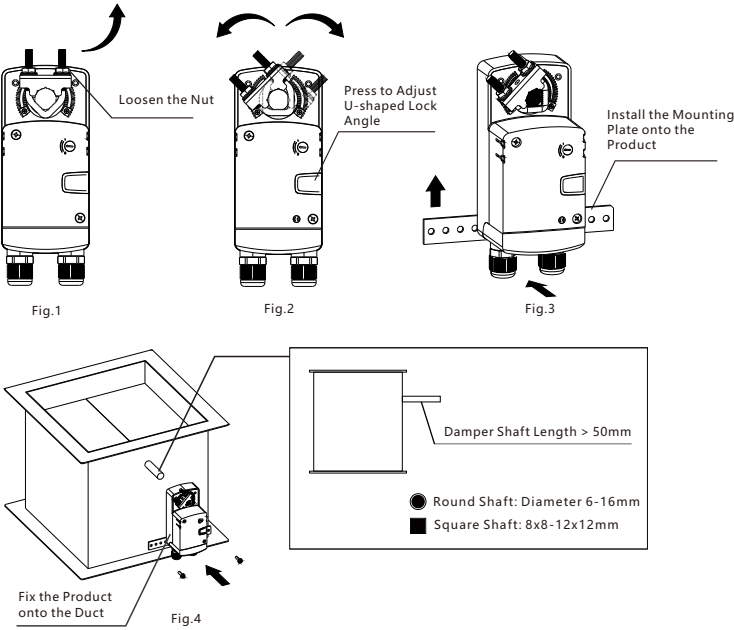
230V Actuator

Built-in Feedback Switch



Resistive Load: 3A, 230V
Inductive Load: 1.5A, 230V

Installation Instructions



1. As shown in Fig. 1, loosen the U-shaped clamp nut before installation.
2. As shown in Fig. 2, press the manual button and manually rotate the actuator to the 0 scale position (closed position).
3. As shown in Fig. 3, the actuator is compatible with the connection shaft specifications shown; pass the clamp through the damper connection shaft and, as shown in Fig. 4, insert the mounting bracket into the product's hole positions.
4. After synchronizing the damper angle, use a wrench to tighten the U-shaped clamp nut to securely fix the damper connection shaft, then use the self-tapping screws to fix both ends of the mounting bracket onto the damper connection surface.
5. Open the actuator wiring box, perform the electrical connection according to the wiring diagram, and once connected, tighten the screws and secure the waterproof connector to ensure protection performance.

Cautions

Cautions	
	Before Use, Please Confirm: Ensure the power supply voltage is correct before connecting the actuator. Always power off the device during installation and wiring to avoid electrical hazards.
	Installation Precautions: Do not press the manual button when the actuator is powered on. Do not press the manual button during power-up testing or normal operation, as doing so may cause abnormal output that cannot recover automatically and may damage the actuator.
	The damper actuator must not be used outside its specified application range, especially not for use on aircraft.
	Non-professional personnel should not open the actuator housing. Wiring must never be done with power on.
	This damper actuator contains electronic components and must not be disposed of as regular household waste. It must be disposed of in accordance with local regulations.

Troubleshooting and Solutions

Fault Symptoms	Cause Analysis	Troubleshooting Methods
RS485 Communication Failure	1. Reversed A and B communication lines. 2. Incorrect power supply or loose wiring. 3. Mismatched address, baud rate, or parity settings. 4. Communication not following the protocol.	1. Check and ensure correct wiring. 2. Check the power supply. 3. Verify the communication testing software settings; check if the product address and baud rate are correctly configured. 4. Communicate according to the protocol.
No Output from Analog Signal	1. Product not powered. 2. Incorrect output wiring.	1. Provide power according to the correct power source. 2. Rewire according to the wiring diagram.
Incorrect Rotation Direction	1. Rotation direction switch is reversed. 2. Incorrect wiring for switch type. 3. Incorrect analog/RS485 input signal.	1. Correctly adjust the rotation direction switch. 2. Rewire according to the wiring diagram. 3. Input the correct control signal based on the corresponding angle.
Actuator Fails to Operate	1. Incorrect supply voltage 2. Control signal error 3. Load torque exceeds the rated torque of the actuator	1. Power the actuator with the correct voltage 2. Check if the control signal matches 3. Check if the installation is correct or if the load exceeds the rated torque, or if the load is stuck

Packaging Accessories

