

OpenAir™ GJD Series Electronic Damper Actuator

UL Listed Fire/Smoke and Smoke Control Dampers 2-Position, 30-second Run Time, 15-second Spring Return Time



Description

The OpenAir direct coupled, fast-acting, two-position, spring return electronic actuators are available as 24 Vac/dc, 120 Vac, and 230 Vac models. They are intended for use on UL-listed smoke control dampers and combination fire/smoke rated dampers.

Features

- (Optional) Built-in auxiliary switches: Fixed switch points at 5° and 85° rotation.
- Electronic Fusible Link (EFL) capability with three temperature ratings: 165°F (74°C), 212°F (100°C), and 250°F (121°C).
- Reversible fail-safe spring return.
- Plenum-rated plastic housing.
- Pre-cabled lead wires.
- 30-second drive/15-second return operation at rated torque, temperature and voltage.



Application

This actuator is used for the control of dampers requiring up to 20 lb-in (2 Nm) driving torque. It is intended for control of UL-listed smoke control dampers and combination fire/smoke HVAC dampers. This actuator is designed to meet the 2002 revisions to the UL 555/555S and the AMCA Standard 520 specifications.

Product Numbers

Product Number*	Torque	Voltage			Control Signal	EFL Capability	3-ft Plenum Cable	Auxiliary Switch
	20 lb-in (2 Nm)	24 Vac/dc	120 Vac	230 Vac	2-Position			
GJD121.1U	●	●	—	—	●	●	●	—
GJD126.1U	●	●	—	—	●	●	●	●
GJD221.1U	●	—	●	—	●	●	●	—
GJD226.1U	●	—	●	—	●	●	●	●
GJD321.1U	●	—	—	●	●	●	●	—
GJD326.1U	●	—	—	●	●	●	●	●

Warning/Caution Notations

WARNING		Personal injury or loss of life may occur if you do not perform a procedure as specified.
CAUTION:		Equipment damage may occur if you do not perform a procedure as specified.

Service



WARNING:

Do not open the actuator. Personal injury may occur if opened. Opening the actuator voids the warranty.

If the actuator is inoperative, replace the unit.

Specifications

Power supply

Operating voltage	24 Vac \pm 20% 24 Vdc +20%, -10%
Frequency	50/60 Hz
Frequency	120 Vac \pm 10%
Frequency	60 Hz
Frequency	230 Vac \pm 10%
Power consumption	50/60 Hz
Running	24 Vac/dc, 120 Vac ~ 10 VA/5W
Holding	~ 5 VA/3W
Power Consumption	230 Vac
Running	~ 12 VA/5W
Holding	~ 7 VA/3W



CAUTION:

Continuous use at voltages above the recommended tolerances may damage the actuator.

Function

Running torque	20 lb-in (2 Nm) (minimum)
Stall torque (minimum)	35 lb-in (4 Nm)
Torque reduction at elevated temperature	Less than 10%
Runtime for 90° closing (on power loss) with spring return	30 seconds nominal 15 seconds maximum
Nominal angle of rotation	95°

Life Expectancy

Minimum 20,000 full stroke cycles

Mounting

Damper shaft size	0.5-inch (12,7 mm) round
Damper shaft length, minimum	1.4-inch (36 mm)

Housing

Enclosure	NEMA 1/IP40
Material	Plenum-rated plastic

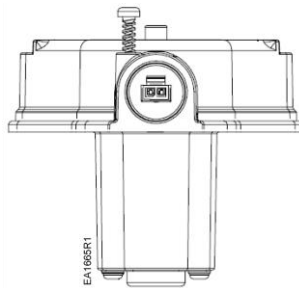
Ambient conditions

Operation	0°F to 130°F (–18°C to 55°C), one time 250°F (121°C) ½ hour per UL555S
Storage and transport	–40°F to 158°F (–40°C to 70°C)
Ambient humidity (non-condensing)	Maximum 95% rh non-condensing
Teflon® cable	400°F (200°C)

Specifications, Continued

Fixed Dual End Switches	Fixed Dual End Switches AC rating	24 Vac to 250 Vac, 24 Vdc 6A resistive/ 2 FLA/12 LRA
	Temperature rating	350°F (177°C)
Agency certification		UL60730
		cUL CSA 60730
		CE conformity for Residential, Commercial, and Industrial environments
		Australian RCM conformity China-RoHS with Environmental Protection Use Period
Miscellaneous	Pre-cabled connection Length:	3 ft (0.9m) 19/30 strand 18 GA
	Dimensions	5.61" H x 2.83" W x 2.48" D (142.6 mm H x 72 mm W x 63 mm D)
	Weight	1.32 lbs. (0.60 kg)
	Country of Origin	USA

Accessories



Electronic Fusible Link (EFL)

ASK791.165 (165°F [74°C] operation)
 ASK791.212 (212°F [100°C] operation)
 ASK791.250 (250°F [121°C] operation)

Figure 1.

Operation

When power is applied, the actuator coupling moves toward the open position, 90°. The actuator opens in 30 seconds nominal, 90° at 60 Hz. In the event of a power failure or when operating voltage is turned off, the actuator returns to the 0 position. The return time is 15 seconds (maximum) for 90°.

The National Fire Protection Association NFPA 92A Standard for Recommended Practice for Smoke-Control System and UL 864 Standard for Control Units and Accessories for Fire Alarm Systems, require weekly self-tests for **dedicated** smoke control equipment used in a smoke control system. The National Fire Protection Association NFPA 72 Standard for National Fire Alarm Codes states that all life-safety systems are to be functionally checked at least annually.

The GJD actuator does not require any periodic cycling to function properly as an integral part of an active smoke control damper system. Check the smoke control damper/actuator every time you functionally check your smoke detectors, emergency lights, and/or power generators for operation.

Installation

See *OpenAir™ GJD Series Electronic Damper Actuator Designed for UL Listed Fire/Smoke and Smoke Control Dampers Installation Instructions (A6V11275436)* for detailed guidelines.



CAUTION:

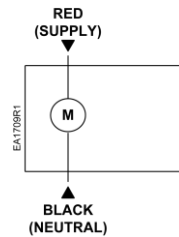
Read and carefully follow the Installation Instructions to avoid equipment damage.

Wiring

All wiring must conform to NEC and local codes and regulations.

Wire Designations

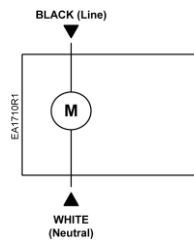
24 Vac/dc



Function	Color
Supply	Red
Neutral	Black

Figure 2.

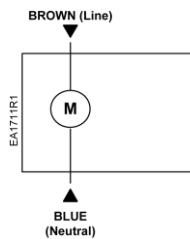
120 Vac



Function	Color
Line	Black
Neutral	White

Figure 3.

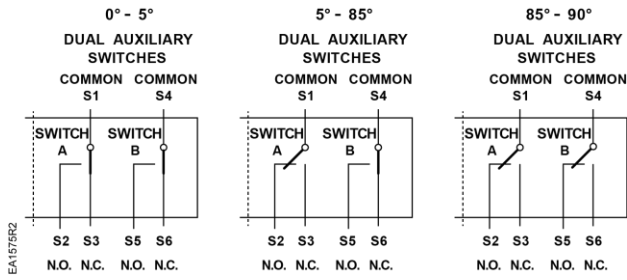
230 Vac



Function	Color
Line	Brown
Neutral	Blue

Figure 4.

Auxiliary Switches



Actuator Position	Switch A Common S1 Connected to	Switch B Common S4 Connected to
0° to 5°	S3	S6
5° to 85°	S2	S6
85° to 90°	S2	S5



CAUTION:

Mixed switch operation to the switching outputs of both dual end switches (5° and 85°) is not permitted.

Either AC line voltage from the same phase must be applied to all six outputs of the fixed dual end switches, or UL-Class 2 voltage must be applied to all six outputs.

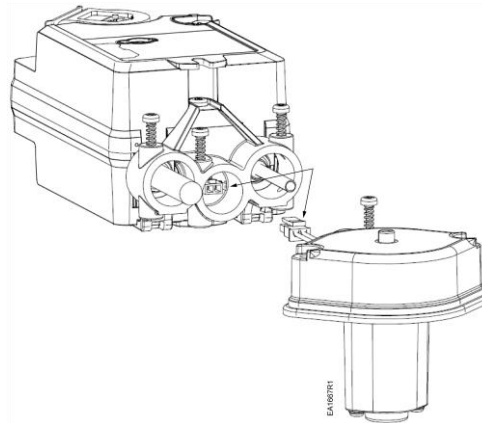


Figure 5. GJD Actuator and EFL.

NOTE:

GJD Damper Actuators are pre-wired for coupling with an EFL sensor.

Dimensions

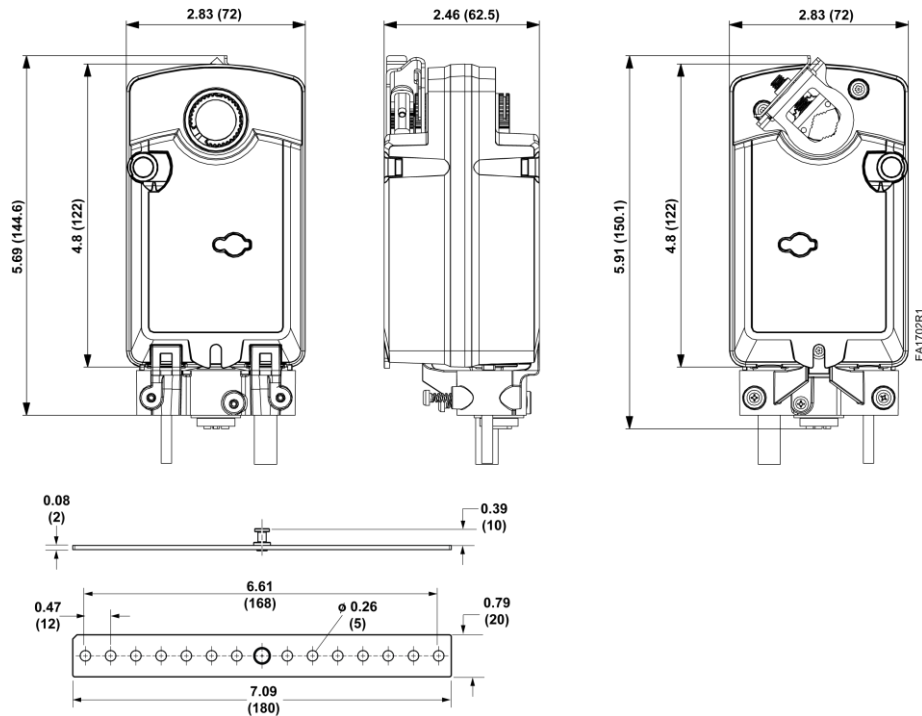


Figure 6. Dimensions of OpenAir GJD Actuator in Inches (Millimeters).

FCC Part 15.21, Information to User

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

FCC Part 15.105, Information to User

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 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.

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