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Overview

Damper Actuators

Damper Actuators provide control, either electronically or pneumatically, for a variety of HVAC applications, including:

- VAV Systems
- Mixing Boxes
- Central Fan Systems
- Exhaust Dampers
- Fire/Smoke Dampers
- Rooftop Units
- Air Handling Units
- Economizer Dampers



Selection Guide Square footage is approximate, based on 4 lb-in/ft²

Application	Electronic																	Pneumatic*		
	Spring Return									Non-Spring Return								Spring Return		
	GQD 5 ft²	GJD 5 ft²	GRD 8 ft²	GPC 9 ft²	GNP 12 ft²	GMA 16 ft²	GKD 20 ft²	GCA 40 ft²	GVD 50 ft²	GSD 5 ft²	GDE 11 ft²	GAP 12 ft²	GLB 22 ft²	GEB 32 ft²	GBB 55 ft²	GIB 77 ft²	DXR1 22 ft²	No.3 12 ft²	No.4 16 ft²	No.6 24 ft²
Terminal Units (VAV)	●			●		●				●	●		●				●	●		
Fan Powered Box (FPB)											●		●				●			
Face and Bypass											●		●						●	
Multi-Zone Mixing Boxes								●			●		●		●	●				
Bypass Dampers											●		●							
Makeup Air Damper											●		●			●				
Outside Air Dampers	●			●		●		●		●				●	●	●				
Small Rooftop Units (RTU)	●			●		●				●				●						
Economizer Dampers	●			●		●		●												
Rooftop Units (RTU)								●							●	●		●		
Zone Isolation Dampers	●			●		●		●		●				●	●	●				
Vortex Dampers								●							●	●				
Inlet Vane Dampers								●							●	●				●
Return Air Dampers	●			●		●		●		●				●	●	●				
Unit Ventilators	●			●		●				●										
Central VAV Fans								●											●**	
Fire/Smoke Dampers		●	●				●		●									●***		●***
Fume Hoods/Supply and Exhaust Dampers					●							●								

* Estimates for pneumatic actuators are based on the maximum stroke of the actuator and the 90° damper rotation

** LC Model

*** See data sheets for specific types

Damper Type	Damper Leakage at 1" H ₂ O (240 Pa) Static Pressure	Damper Torque for Approach Air of 1200 ft./min. (6 m/s) or less
Standard Leakage	More than 10 CFM/ft. ² (50.8 l/s per m ²)	2.5 lb.-in./ft. ² (0.3 Nm/m ²)
Low Leakage	5 to 10 CFM/ft. ² (25.4 to 50.8 l/s per m ²)	5.0 lb.-in./ft. ² (0.6 Nm/m ²)
Very Low Leakage	Less than 5 CFM/ft. ² (Less than 25.4 l/s per m ²)	7.0 lb.-in./ft. ² (0.8 Nm/m ²)

▶ For detailed damper actuator sizing information, please visit usa.siemens.com/HIT.

Electronic Damper Actuators Spring Return

Easily Replaces:

- Belimo TF Series



20 lb.-in. Torque

- 24 Vac/dc, 2-Position (Open/Closed) Control
- 120 Vac, 2-Position (Open/Closed) Control
- 24 Vac/dc, Floating Control
- 24 Vac/dc, 2 to 10 Vdc/10 to 2 Vdc, (Modulating) Control



GQD Series Spring Return
Direct Coupled Electronic Damper Actuator

Description

The GQD Series direct-coupled, spring return electronic damper actuators are 24 Vac/dc and 120 Vac rated and available in 2-position, floating and 2 to 10 Vdc control.

Features

- Bi-directional, fail-safe spring return
- Modulating actuators contain built-in feedback
- Pre-cabled
- Plenum rated
- Signal inversion capability on modulating type (2 to 10 Vdc/10 to 2 Vdc)
- Small footprint for installation flexibility
- UL, cUL, CE rated
- Quiet operation

Options

- Available with optional built-in dual auxiliary switches fixed at 5° and 85°

Applications

The small footprint and torque make this actuator ideal for small HVAC dampers, economizer units, or residential zone dampers requiring fail safe operation.

B-3

Damper Actuators

Specifications

Operating Voltage 24 Vac/dc $\pm 20\%$
120 Vac $\pm 15\%$

Frequency 50/60 Hz

Power Consumption

GQD121.1P (24 Vac/24 Vdc)
Running 6.5 VA (4.5 W)
Holding 4 VA (2.5 W)

GQD131.1P (24 Vac/24 Vdc)
Running 4 VA (2.5 W)
Holding 3 VA (1.5 W)

GQD151.1P (24 Vac/24 Vdc)
Running 4.5 VA (3 W)
Holding 3.5 VA (2 W)

GQD221.1U (120 Vac)
Running 10 VA
Holding 7 VA

Function

Torque 20 lb.-in. (2 Nm)
Runtime for 90° 30 sec.
Spring Return 15 sec. nominal
Nominal Angle of Rotation 90°

Dual Auxiliary Switches Fixed at 5° and 85°
AC Rating 24 to 250 Vac
AC 6A resistive
AC 2A General Purpose

DC Rating (Standard/Plenum Cable) 12 to 30 Vdc
DC 2A

Shaft Size 3/8 to 1/2-in. (8 to 13.4 mm) round/square ● ■

Min. Shaft Length 3/4-in (20 mm)

Conduit Connection (GQD221.1U only) 1/2" NPT

Housing Enclosure NEMA 1

Material Plenum-rated rugged plastic

Ambient Temperature

Operating -25°F to 130°F (-32°C to 55°C)
Storage and Transport -40°F to 158°F (-40°C to 70°C)

Ambient Humidity 95% RH, non-condensing

Agency Approvals UL 873, cUL, CE rated

Pre-Cabled Connection AWG 18

Cable Length 3 ft. (0.9m)

Dimensions <4.72" H x <2.75" W x <2.5" D
(<120 mm H x <70 mm W x <63 mm D)

Shipping Weight <1.5 lbs. (<.68 kg)

B-4

Product Ordering

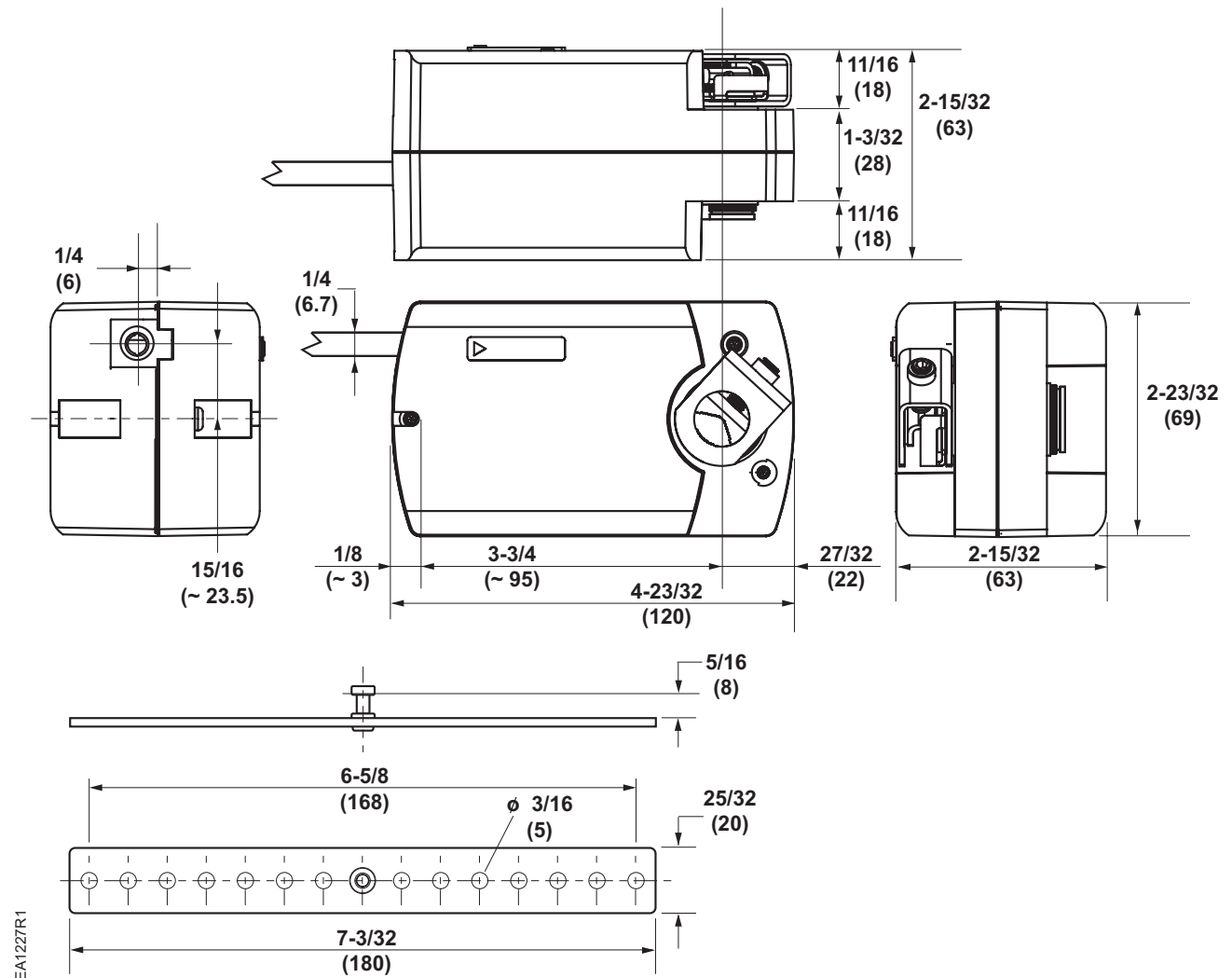
Control Signal	Cabling	Standard	Dual Auxiliary Switches
2-Position (Open/Closed), 24 Vac/dc	Plenum Cable	GQD121.1P	GQD126.1P
	Plenum Cable/Bulk	GQD121.1P/B	—
2-Position (Open/Closed), 120 Vac	Standard Cable	GQD221.1U	GQD226.1U
	Standard Cable/Bulk	GQD221.1U/B	—
Floating, 24 Vac/dc	Plenum Cable	GQD131.1P	GQD136.1P
	Plenum Cable/Bulk	GQD131.1P/B	—
2 to 10 Vdc/10 to 2 Vdc, (Modulating), 24 Vac/dc	Plenum Cable	GQD151.1P	GQD156.1P
	Plenum Cable/Bulk	GQD151.1P/B	—

Ordering Notes:

Bulk packages contain 10 actuators unless otherwise noted.

Dimensions

GQD Series Electronic Damper Actuators



Dimensions shown in inches (mm)

B-5

Damper Actuators

Maximize energy savings



B-6



Reach your **energy goals** with low-torque actuators for butterfly valves

Siemens expands its actuator line with a low-torque industrial actuator with an output of 530 lb-in for butterfly valves. It is designed for valve sizes 2" to 5" and replaces the current 600 lb-in actuator used on these sizes. Available in 24V and 120V options, the actuator uses much less power than its predecessor.

Visit usa.siemens.com/valves to learn more.

SIEMENS

Electronic Damper Actuators Spring Return

Easily Replaces:

- Belimo LF Series



35 lb.-in. Torque

- 24 Vac/dc, 2-Position (Open/Closed) Control
- 100 to 240 Vac, 2-Position (Open/Closed) Control
- 24 Vac/dc, Floating Control
- 24 Vac/dc, 0(2) to 10 Vdc/10 to 0(2) Vdc, (Modulating) Control



GPC Series Spring Return
Direct Coupled Electronic Damper Actuator

Description

The GPC Series direct-coupled, spring return electronic damper actuators are 24 Vac/dc and 100 to 240 Vac rated. Available in 2-position, floating and 0(2) to 10 Vdc control.

Applications

The small footprint and torque make this actuator ideal for small HVAC dampers, economizer units, or residential zone dampers requiring fail safe operation.

Features

- Bi-directional, fail-safe spring return
- Selectable modulating control (0 to 10 Vdc or 2 to 10 Vdc)
- Modulating actuators contain built-in feedback (0 to 10 Vdc or 2 to 10 Vdc)
- Pre-cabled
- Integral 1/2 inch conduit connection
- Plenum rated
- Manual override with easy lock function
- 24 Vac/dc compatible
- Flexible 2-position line voltage (100 to 240 Vac)
- Signal inversion capability on modulating type (2 to 10 Vdc/10 to 2 Vdc)
- Small footprint for installation flexibility
- UL, cUL, CE rated
- Very energy efficient

Options

- Available with optional built-in dual auxiliary switches fixed at 5° and 85°

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Damper Actuators

Specifications

Operating Voltage	24 Vac/dc ±20%
	100-240 Vac (-15/+10%)
Frequency	50/60 Hz
Power Consumption	
GPC121.1P (24 Vac/24 Vdc)	
Running	3.4 VA (2.0 W)
Holding	2.6 VA (1.6 W)
GPC131.1P (24 Vac/24 Vdc)	
Running	3.5 VA (2.1 W)
Holding	2.8 VA (1.7 W)
GPC161.1P (24 Vac/24 Vdc)	
Running	3.5 VA (2.1 W)
Holding	2.8 VA (1.6 W)
GPC321.1U (120 Vac)	
Running	4.6 VA (2.4 W)
Holding	3.5 VA (1.7 W)
Function	
Torque	35 lb.-in. (4 Nm)
Runtime for 90°	60 sec.
Spring Return	15 sec. nominal
Nominal Angle of Rotation	90°

Dual Auxiliary Switches	
Fixed at 5° and 85° AC Rating	24 to 250 Vac
	AC 6A resistive
	AC 2A General Purpose
DC Rating (Standard/Plenum Cable)	12 to 30 Vdc
	DC 2A
Shaft Size	3/8 to 1/2-in. (8 to 13.4 mm) round ●
	1/4 to 7/16-in. (6 to 11 mm) square ■
Min. Shaft Length	3/4-in (20 mm)
Conduit Connection	1/2" NPT
Housing Enclosure	NEMA 1
Material	Plenum-rated rugged plastic
Ambient Temperature	
Operating	-25°F to 130°F (-32°C to 55°C)
Storage and Transport	-40°F to 158°F (-40°C to 70°C)
Ambient Humidity	95% RH, non-condensing
Agency Approvals	UL 60730, cUL, CE rated
Pre-Cabled Connection	AWG 18
Cable Length	3 ft. (0.9m)
Dimensions	<5.6" H x <2.83" W x <2.5" D
	(<142 mm H x <72 mm W x <63 mm D)
Shipping Weight	<1.5 lbs. (<.68 kg)

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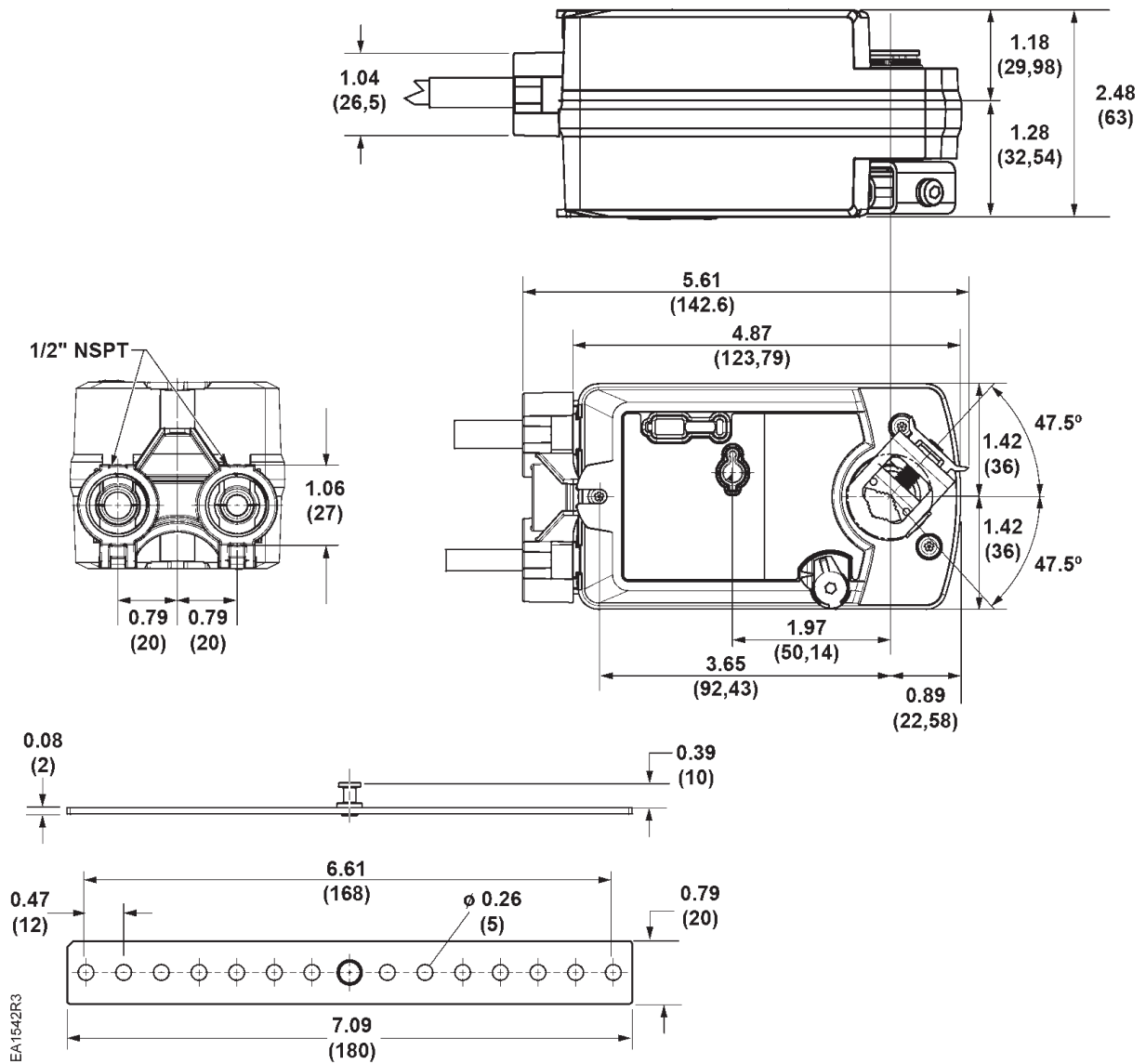
Damper Actuators

Product Ordering

Control Signal	Cabling	Standard	Dual Auxiliary Switches
2-position (Open/Closed), 24 Vac/dc	Plenum Cable	GPC121.1P	GPC126.1P
Floating, 24 Vac/dc	Plenum Cable	GPC131.1P	GPC136.1P
0(2) to 10 Vdc/10 to 0(2) Vdc, (Modulating), 24 Vac/dc	Plenum Cable	GPC161.1P	GPC166.1P
2-position (Open/Closed), 100-240 Vac	Standard Cable	GPC321.1U	GPC326.1U

Dimensions

GPC Series Electronic Damper Actuators



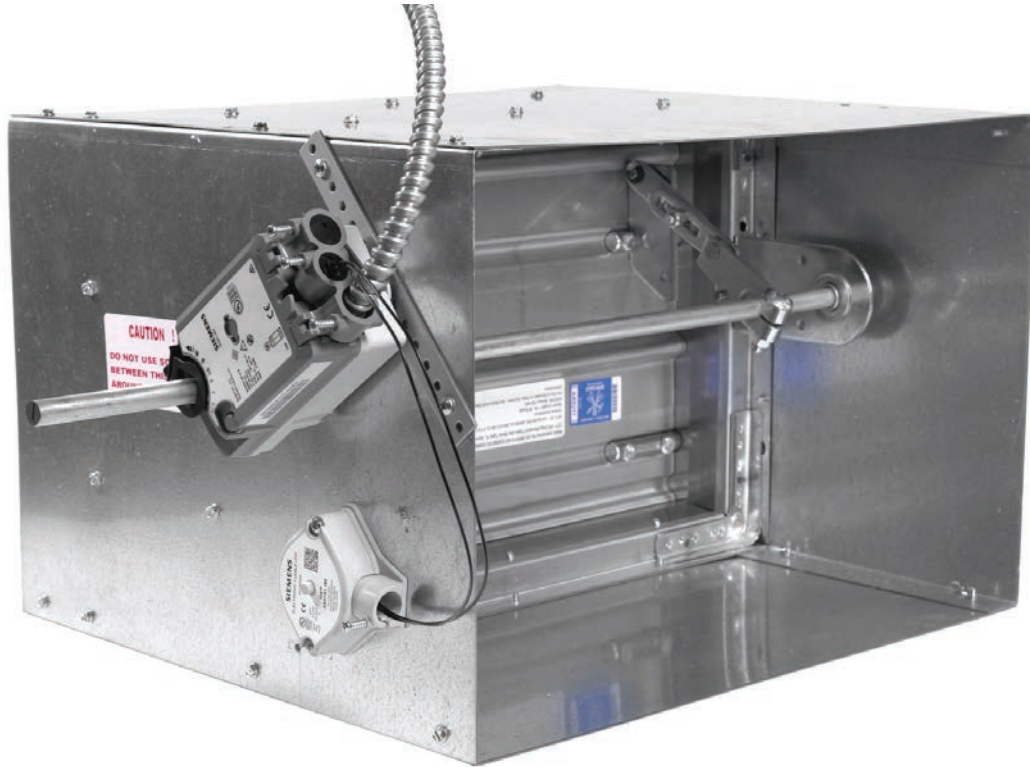
Dimensions shown in inches (mm)

B-9

Damper Actuators



Siemens offers a 5-year warranty on damper actuators.



B-10

The right device matters when lives matter.

Fire and smoke electronic damper actuators are designed to reduce risk and deliver better life safety performance. Keep people and property protected with Siemens reliable fire and smoke damper actuators designed to meet both UL 555 and UL 555S certification requirements.

Visit usa.siemens.com/damperactuators to learn more.

SIEMENS

Electronic Damper Actuator Spring Return

Easily Replaces:

- Belimo LN/NF Series



62 lb.-in. Torque

24 Vac/Vdc, 2-Position Control
120 Vac, 2-Position Control
24 Vac/dc, Floating Control
0 to 10 Vdc, Modulating Control
2 to 10 Vdc/10 to 2 Vdc, Modulating Control



GMA Series Spring Return
Direct-coupled Electronic Damper Actuator

Description

The GMA Series Direct-coupled, Spring Return Electronic Damper Actuators provide modulating, two-position and floating control of building HVAC dampers.

Features

- 24 Vac/dc compatible
- Integral 1/2-inch conduit connector
- Small actuator footprint with 62 lb.-in. of torque
- Bi-directional fail-safe spring return
- Unique self-centering shaft coupling
- Floating control models available with feedback potentiometer
- Manual override
- Mechanical range adjustment capability
- Easily visible position indicator
- Brushless DC motor technology
- Pre-cabled
- UL 60730, cUL (C22.2 No. 24-93), and CE listed
- All modulating types contain built-in feedback
- Assembled in the USA

Options

- Dual independently adjustable auxiliary switch
- Adjustable offset and span
- Signal inversion

Applications

The GMA Series Damper Actuators are ideal for rooftop unit economizer dampers and constant or variable air volume installations for the control of return air, mixed air, exhaust, and face and bypass dampers that require up to 62 lb.-in. of torque.

The actuators are designed for applications where the damper is required to return to a fail-safe position when there is a power failure.

Models are available with either an appliance cable for wiring in conduit or a plenum-rated cable.

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Damper Actuators



Siemens offers a
5-year warranty on
damper actuators.

Specifications

Operating Voltage

GMA12x, GMA13x, GMA16x, GMA15x 24 Vac $\pm 20\%$; 24 Vdc $\pm 15\%$
GMA22x 120 Vac $\pm 10\%$

Frequency 50/60 Hz

Power Consumption 24 Vac/dc

Running 5 VA (3.5 W)

Holding 4 VA (3 W)

Equipment Rating Class 2, in accordance with UL/CSA

Control Signal

Input Signal (wires 8-2) GMA16x

Voltage Input

GMA16x 0 to 10 Vdc (max. 35 Vdc)

GMA15x 2 to 10 Vdc (max. 35 Vdc)

Input Resistance >100K Ohms

Control Signal Adjustment

Offset (Start Point) 0 to 5 Vdc

Factory Setting 0 V

Span 2 to 30 Vdc

Factory Setting 30 V

Dual Auxiliary Switch

Contact Rating

AC Rating 24 to 250 Vac

AC 6 A resistive

AC 2A General Purpose

DC Rating 12 to 30 Vdc

DC 2 A

Position Feedback 0 to 1000 Ohm <10 mA

Feedback Signal Position output signal (wires 9-2) GMA16x.xx/
GMA15x.xx

Voltage Output

GMA16x 0 to 10 Vdc

GMA15x 2 to 10 Vdc

Max. Output Current (both) +1 mA, -0.5 mA

Running Torque 62 lb.-in. (7 Nm)

Spring Return Torque 62 lb.-in. (7 Nm)

Max. Torque 186 lb.-in. (21 Nm)

Runtime for 90° operating with motor 90 sec.

Closing on power loss 15 sec. typical

(60 sec. Max. at -25°F)

Nominal Angle of Rotation 90°, 95° max.

Shaft Dimensions 1/4 to 3/4-in. (6 to 20.5 mm) Dia. ●

1/4 to 1/2-in. (6 to 13 mm) Sq. ■

Min. Shaft Length 3/4-in. (20 mm) min. length

Temperature

Operating -25°F to 130°F (-32°C to 55°C)

Storage -25°F to 158°F (-32°C to 70°C)

Humidity 95% RH, non-condensing

Agency Approvals UL listed UL 60730 (Replacing UL 873)

C-UL certified to Canadian Standard

C22.2 No. 24-93

CE

Housing

Enclosure NEMA 1

Material Die-cast Aluminum Alloy

Gear Lubrication Silicone free

Pre-cabled Connection 18 AWG, 3 ft. (0.9 m)

Life Cycle Designed for over 60,000 full strokes

at rated torque and temperature

Dimensions 8.38" H x 3.25" W x 2.67" D

(212 mm H x 83 mm W x 68 mm D)

Shipping Weight 2.86 lbs. (1.3 kg)

B-12

Damper Actuators

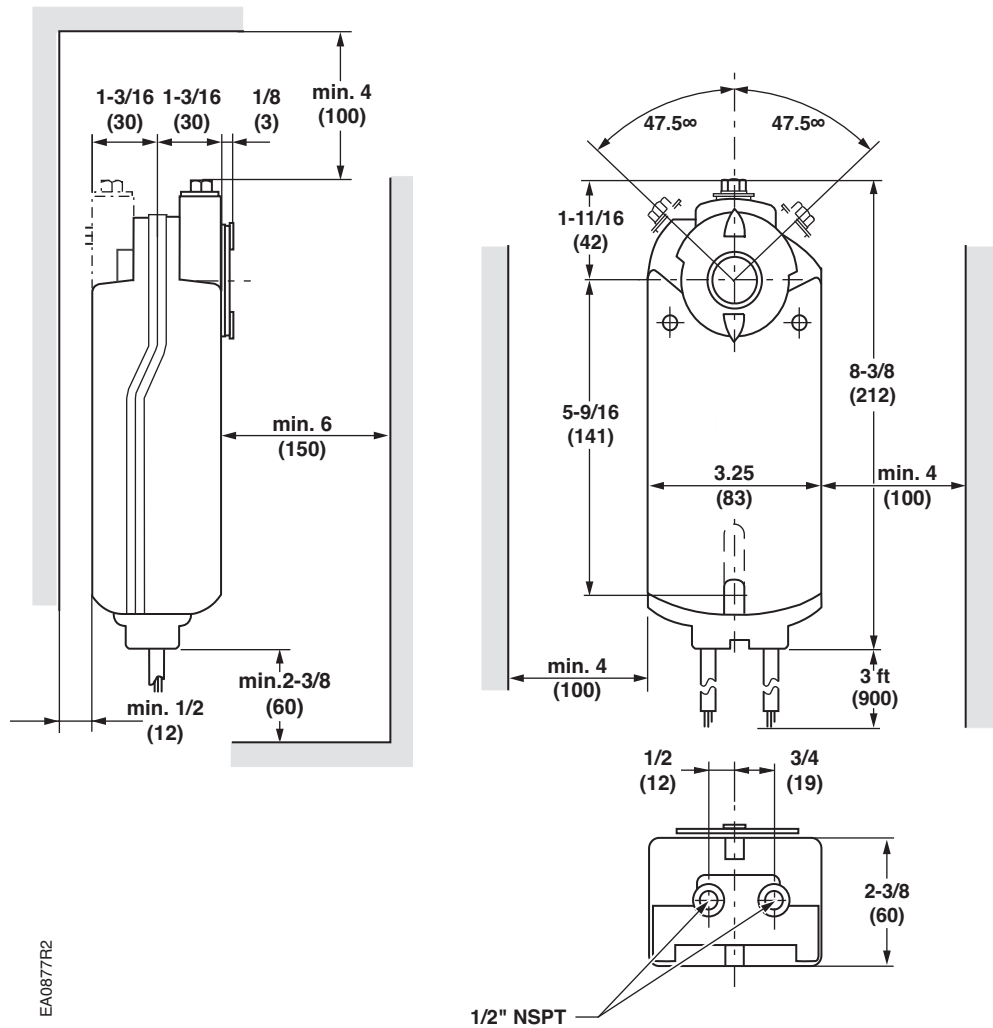
Product Ordering

Input Signal	Cabling	Part No.				
		Standard	Span/Offset Adjustable	Dual Aux. Switches & Span/Offset Adjustable	Dual Aux. Switches Only	Position Feedback Only
Modulating, 0 to 10 Vdc, 24 Vac/dc	Plenum Cable	GMA161.1P	GMA163.1P	—	GMA166.1P	—
	Plenum Cable/Bulk	GMA161.1P/B	—	—	—	—
	Standard Cable	GMA161.1U	GMA163.1U	GMA164.1U	GMA166.1U	—
Modulating, 24 Vac/dc 2 to 10 Vdc/10 to 2 Vdc (Signal inversion)	Plenum Cable	GMA151.1P	—	—	GMA156.1P	—
	Standard Cable	GMA151.1U	—	—	GMA156.1U	—
2-position, 24 Vac/Vdc	Plenum Cable	GMA121.1P	—	—	GMA126.1P	—
	Plenum Cable/Bulk	GMA121.1P/B	—	—	—	—
	Standard Cable	GMA121.1U	—	—	GMA126.1U	—
	Standard/Bulk	GMA121.1U/B	—	—	—	—
2-position, 120 Vac	Standard Cable	GMA221.1U	—	—	GMA226.1U	—
	Standard/Bulk	GMA221.1U/B	—	—	—	—
Floating, 24 Vac/Vdc	Plenum Cable	GMA131.1P	—	—	—	—
	Standard Cable	GMA131.1U	—	—	GMA136.1U	GMA132.1U

Ordering Notes:

Bulk packages contain 10 actuators.

GMA Series Damper Actuator



Dimensions shown in inches (mm)



Bull Valley grew their membership by 100%
in 2020, due in part to the peace of mind afforded by
the Climatix RTU fresh air purge functionality.



Better efficiency

Climatix RTU solution monitors performance to drive energy efficiency, enhance system lifespan, and improve uptime.



Automatic indoor air quality

Climatix RTU monitors carbon dioxide and increases fresh air supply when CO2 levels become too high (demand-controlled ventilation).



Remote access for better control

The Climatix RT controller and mobile app create a combined, cloud-based solution that enables remote monitoring, which means fewer truck rolls for service and maintenance.



Fresh air purge

Created in response to the COVID-19 pandemic this feature enables maximum fresh air intake into buildings without using mixed or return air.

50% Labor savings
"It's plug and play. You don't need to be a seasoned technician with tons of controls experience. You just work through the steps on the app, which is fairly intuitive. They're quick too. **We can do each one in about two to three hours. It's fair to say it's at least a 50% reduction in labor,**" says contractor, Mark Stranges.

B-14

Bull Valley achieves **energy efficiency and comfort** for their guests



With dozens of events and thousands of people visiting the clubhouse every year, Bull Valley Golf Club needed to address some deficiencies within the HVAC system — rooftop units in particular.

Bull Valley owners knew the Climatix RTU Solution was a no-brainer. They jumped on the opportunity knowing that it would save them money on their energy bills and provide a safer indoor environment for members.

Visit usa.siemens.com/bullvalley to learn more.

We have not seen anything else on the market that is as easy to use as this product. It is something we can train our people on at a national level, making it a very good fit for our business model."

— **Mark Stranges**

Contractor / Owner Rabine Mechanical

SIEMENS

Electronic Damper Actuator Spring Return

Easily Replaces:

- Belimo AF Series



160 lb.-in. Torque

- 24 Vac/dc, 2-Position Control
- 120 Vac, 2-Position Control
- 24 Vac/dc, Floating Control
- 24 Vac/dc, 0 to 10 Vdc/2 to 10 Vdc, Modulating Control



GCA Series Spring Return
Electronic Damper Actuator

Description

Designed for control of building HVAC dampers, the GCA Series Direct-coupled, Spring Return Electronic Actuators are available in 0 to 10 Vdc or 2 to 10 Vdc modulating, floating and two-position (on/off) control models.

Features

- 24 Vac/dc compatible
- Visible position indication
- Self-centering shaft coupling
- Bidirectional fail-safe spring return
- Rugged all metal housing
- Accepts shaft diameters up to 1" (25 mm)
- Quiet, low-power operation
- Brushless DC motor technology with stall protection
- Assembled in the USA
- Manual override
- Pre-cabled
- All modulating types contain built-in feedback

Options

- Independently adjustable dual auxiliary switches
- Potentiometer for floating models
- Adjustable span and offset
- Signal inversion

Applications

The GCA Series Damper Actuators are ideal for large economizer dampers, constant or variable air volume installations for the control of return air, mixed air, exhaust, and face and bypass dampers that require up to 160 lb.-in. (18 Nm) torque.

The actuators are designed for applications where the damper is required to return to a fail-safe position when there is a power failure.

Models are available with either an appliance cable for wiring in conduit or a plenum-rated cable for applications where conduit is not required.

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Damper Actuators

Specifications

Operating Voltage (1–2)

GCA1xx	24 Vac ±20%, 24 Vdc ±10%
GCA22x	120 Vac ±10%

Frequency 50 to 60 Hz

Power Consumption

GCA15x.xx & GCA16x.xx	
Running	7 VA (5 W)
Holding	5 VA (3 W)
GCA12x.xx AC 24 Vac/dc	
Running	7 VA (5 W)
Holding	5 VA (3 W)
GCA22x.xx AC 120 Vac	
Running	8 VA
Holding	6 VA
GCA13x.xx AC 24 Vac/dc	
Running	7 VA (5 W)
Holding	5 VA (3 W)

Input Signal (8–2)

GCA16x	
Voltage-input	0 to 10 Vdc (max. 35 Vdc)
Input Resistance	>100 K Ohms
GCA15x	
Voltage-input	0 to 10 Vdc or 2 to 10 Vdc (max. 35 Vdc)
Input Resistance	>100 K Ohms

Position Output Signal (9–2)

GCA16x/GCA15x	
Voltage-output	0 to 10 Vdc
Max. Output Current	±1 mA

Equipment Rating for Operating Voltage, Input Signal, and Position Output Signal Class 2

Control Signal Adjustment

Offset (start point)	0 to 5 Vdc
Factory setting	0 V
Span	2 to 30 Vdc
Factory setting	10 V

Dual Auxiliary Switch

Contact Rating	
Standard Cable	6 A resistive, 2 A General Purpose
Plenum Cable	4 A resistive, 2 A General Purpose

Voltage

Standard Cable	24 to 250 Vac
Plenum Cable	24 Vac

Switch Range

Switch A	0° to 90° with 5° intervals
Recommended Range	0 to 45°
Switch B	0° to 90° with 5° intervals
Recommended Range	45° to 90°

Switching Hysteresis 2°

Position Feedback

GCA132.1x	0 to 1000 Ohm <10 mA
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Torque

Running Torque	160 lb.-in. (18 Nm)
Spring Return	160 lb.-in. (18 Nm)
Max. Torque	<360 lb.-in. (40 Nm)

Runtime for 90° operating with motor

Closing (on power loss) with Spring Return	15 seconds
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Nominal Angle of Rotation 90°

Max. Angular Rotation 95°

Temperature

Operation	-25°F to 130°F (-32°C to 55°C)
Storage and Transport	-40°F to 158°F (-40°C to 70°C)

Humidity 95% RH, non-condensing

Shaft Size 3/8 to 1-in. (8 to 25 mm) Dia. ●
1/4 to 3/4-in. (6 to 18 mm) Sq. ■

Min. Shaft Length 3/4-in. (20 mm)

Housing Enclosure NEMA 2*

Material Die-cast Aluminum alloy

Pre-cabled Connection AWG 18

Cable Length 3 ft. (0.9 m)

Agency Approvals UL 60730
cUL C22.2 No. 24-93
CE

Dimensions 12" H x 4.75" W x 2.88" D
(305 mm H x 121 mm W x 73 mm D)

Shipping Weight 4.85 lb. (2.2 kg)

*Refer to Installation Instructions for acceptable mounting positions.

B-16

Damper Actuators

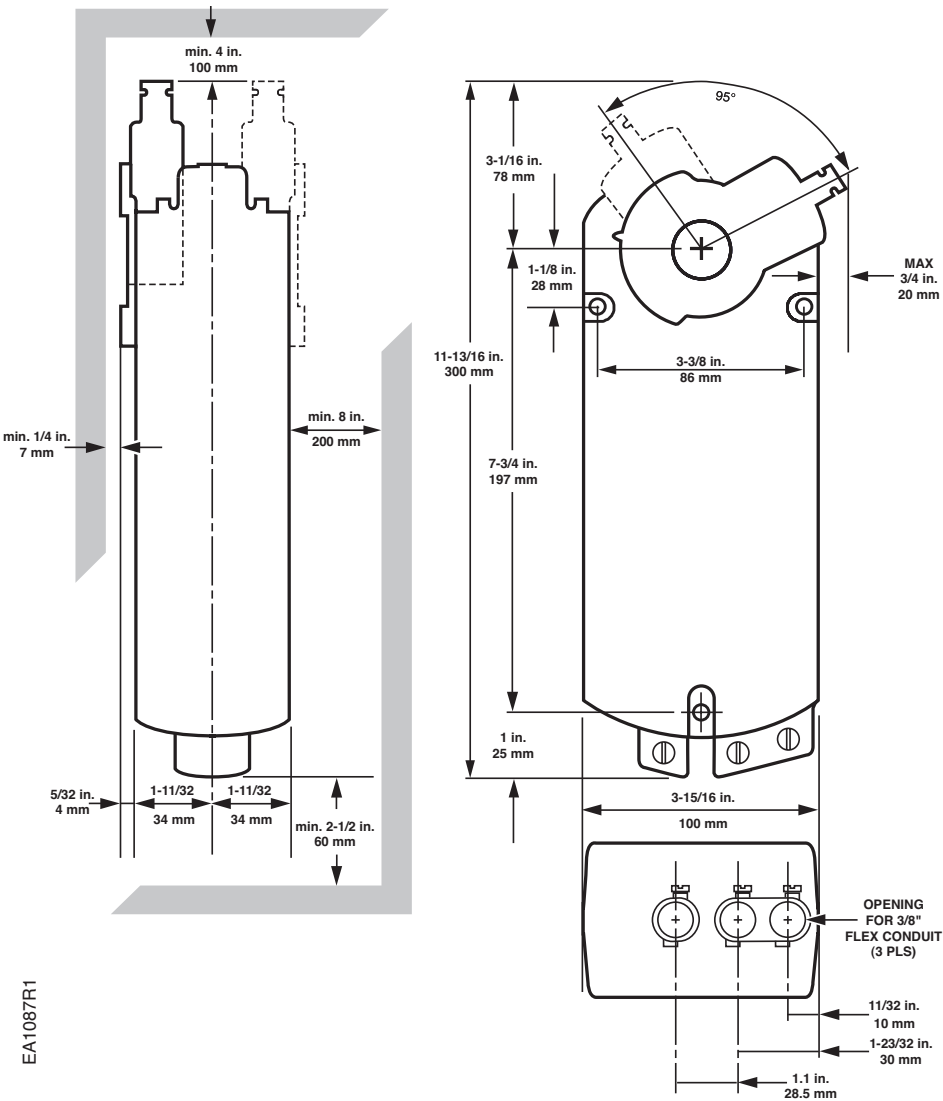
Product Ordering

Input Signal	Cabling	Part No.						
		Standard	Span/Offset Adjustable	Dual Aux. Switches & Span/Offset Adjustable	Dual Aux. Switches Only	Position Feedback Only	Oversized Shaft Adapter Only	Oversized Shaft Adapter & Dual Aux. Switches
0 to 10 Vdc, 24 Vac/dc	Standard Cable	GCA161.1U	GCA163.1U	GCA164.1U	GCA166.1U	—	GCA161.3U	—
	Plenum Cable	GCA161.1P	GCA163.1P	GCA164.1P	GCA166.1P	—	—	—
	Plenum Cbl/Bulk	GCA161.1P/B	—	—	—	—	—	—
0 to 10 Vdc or 2 to 10 Vdc, Modulating 24 Vac/dc, (Signal Inversion)	Standard Cable	GCA151.1U	—	—	GCA156.1U	—	—	—
	Plenum Cable	GCA151.1P	—	—	GCA156.1P	—	—	—
2-position, 24 Vac/dc	Standard Cable	GCA121.1U	—	—	GCA126.1U	—	GCA121.3U	GCA126.3U
	Standard/Bulk	GCA121.1U/B	—	—	—	—	—	—
	Plenum Cable	GCA121.1P	—	—	GCA126.1P	—	—	—
2-position, 120 Vac	Standard Cable	GCA221.1U	—	—	GCA226.1U	—	GCA221.3U	GCA226.3U
	Standard/Bulk	GCA221.1U/B	—	—	—	—	—	—
Floating, 24Vac/dc	Standard Cable	GCA131.1U	—	—	GCA136.1U	GCA132.1U	—	—
	Plenum Cable	GCA131.1P	—	—	GCA136.1P	—	—	—

Ordering Notes:

Bulk packages contain 8 actuators

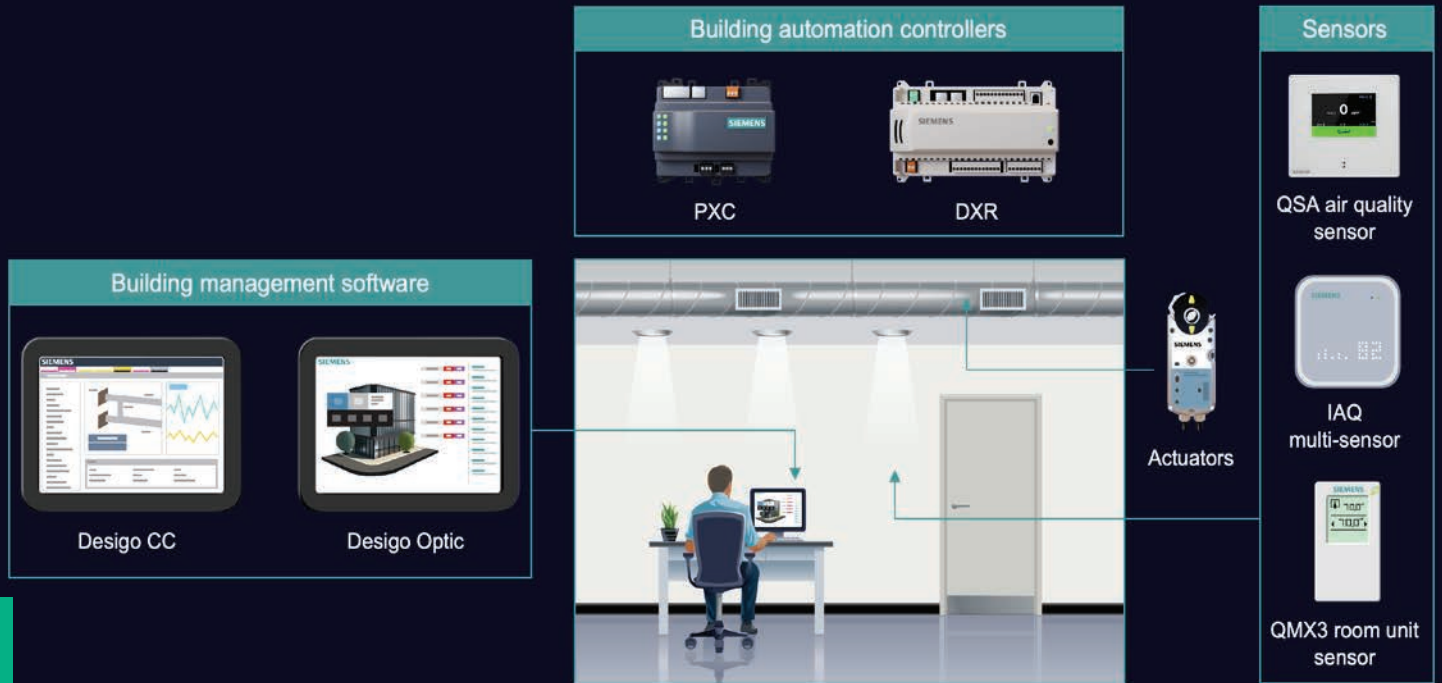
GCA Series Damper Actuator



EA1087R1

B-17

Damper Actuators



Accelerate **healthy** building performance

Fresh air may be invisible, but you will feel its impact: It turns rooms into spaces that give room for thought, productivity and well-being. Creating optimum indoor air quality (IAQ) has many factors to consider including air circulation, inside and outside temperatures, humidity, CO₂ levels, volatile organic compounds (VOCs) and fine dust (PM2.5) levels. At the same time, the challenge can be finding the right balance to improve IAQ while achieving energy efficiency and sustainability goals.

Gain better visibility and control of IAQ with our sensors, automation controls, damper actuators and data management applications. Design the right solution to fit your building's need no matter the size.

Be efficient. Be productive. Be well.

Visit usa.siemens.com/IAQ to learn more.

SIEMENS

Rotary, Electronic Damper Actuators Fail Safe and Fail-In-Place



53 lb.-in. Torque
 2-Position Control
 Floating Control
 0-10/2-10 Vdc Modulating Voltage Control
 (0) 4-20 mA Modulating Current Control



GNP/GAP Series Spring Return and
Non-Spring Return Electronic Damper Actuator

Description

Designed for control of critical environments, the direct-coupled fail safe/fail-in-place electronic actuators are available in modulating, two-position, and floating control for laboratory fume hoods, supply and exhaust units.

Features

- Fast operation, 2-second runtime
- One model performs all control signals:
 - 2-position
 - Floating
 - Modulating (0(2) to 10 Vdc and 4 (0) to 20 mA)
- 24 Vac/dc compatible
- Selectable fail-safe position (fail open or closed)
- Feedback standard on all models
- Highly accurate positioning
- Self centering
- Unique self-centering shaft coupling
- Assembled in the USA
- Plenum rated
- UL and cUL listed, CE certified
- Manual Override
- Precabled

Options

- Available with dual, independently adjustable auxiliary switches

Applications

Used in laboratory fume hoods, constant or variable air volume installations for the control of supply and exhaust air terminals; 53 lb-in (6 Nm) torque.

Models designed for applications that require the damper to return to a fail-safe position when there is a power failure; or models for fail-in-place.

B-19

Damper Actuators

Specifications

Operating Voltage (1-2)	24 Vac/dc $\pm 20\%$
Frequency	50 to 60 Hz
Power Consumption	
GNP19x/GAP19x	
Running	28 VA (19 W)
Holding	8 VA (5 W)
Control Signal Y/Y1 (Wires 8-2)	
Modulating Input Signal	
Voltage Input Signal	0 to 10 Vdc (Max. 35 Vdc) or 2 to 10 Vdc (Max. 35 Vdc)
Current Input Signal	4-20 mA or 0-20 mA
Input Resistance	
GNP	$\leq 15k$ ohms
GAP	$\leq 20k$ ohms
Floating Input Signal	0 or 24 Vac/dc Clockwise
Control Signal Y2 (Wires 7-2)	
Floating Input Signal	0 or 24 Vac/dc Clockwise
Position Output Signal (Wires 9-2)	
Voltage-Output	0 to 10 Vdc
Maximum Output Current DC	± 1 mA
Equipment Rating	Class 2, in Accordance with UL/CSA Class III per EN 60730
Dual Auxiliary Switches	
Contact Loading	6 A resistive, 2A inductive
Voltage (No Mixed Operation 24 Vac/230 Vac)	24 to 250 Vac
Switch Range	5° to 90°
Step Increments	5°
Feedback Signal (Wires 9-2)	
Position Output Signal	0 to 10 Vdc
Maximum Output Current	DC ± 1 mA
Torque	
Running Torque	53 lb-in (6 Nm)
Maximum Torque	142 lb-in (16 Nm)

Runtime for 90° Operating with Motor	< 2 seconds
Fail-safe position on power loss (for GNP19x only)	2 seconds
Nominal Angle Of Rotation	90°
Maximum Angular Rotation	95°
Fail-Safe Operation	
GNP Actuator Series	On initial power-up, and after a power-fail event, the GNP actuators require up to 90 seconds for the capacitors to fully charge. During this time the actuator will respond to positioning commands, but will not power-fail until the capacitors are fully charged.
Temperature	
Operation	-0°F to 122°F (-18°C to 50°C)
Storage and Transport	-26°F to 158°F (-32°C to 70°C)
Humidity	95% RH, Non-condensing
Shaft Size	1/4 to 3/4-inch (6.4 to 20.5 mm) dia. ● 1/4 to 1/2-inch (6.4 to 13 mm) square ■
Minimum Shaft Length	3/4-inch (20 mm)
Housing Enclosure	NEMA 1 IP54 according to EN 60 529*
Material	Die-cast Aluminum Alloy
Cable Length	3 Ft. (0.9 m)
Agency Approvals	UL 873 cUL C22, 2 No. 24-93 CE
Dimensions	8-3/8" H x 3-1/4" W x 2-3/8" D (212 mm H x 83 mm W x 60 mm D)
Shipping Weight	3 lbs 6 oz

*Limited positions; refer to GNP/GAP Series Installation Instructions, 129-541.

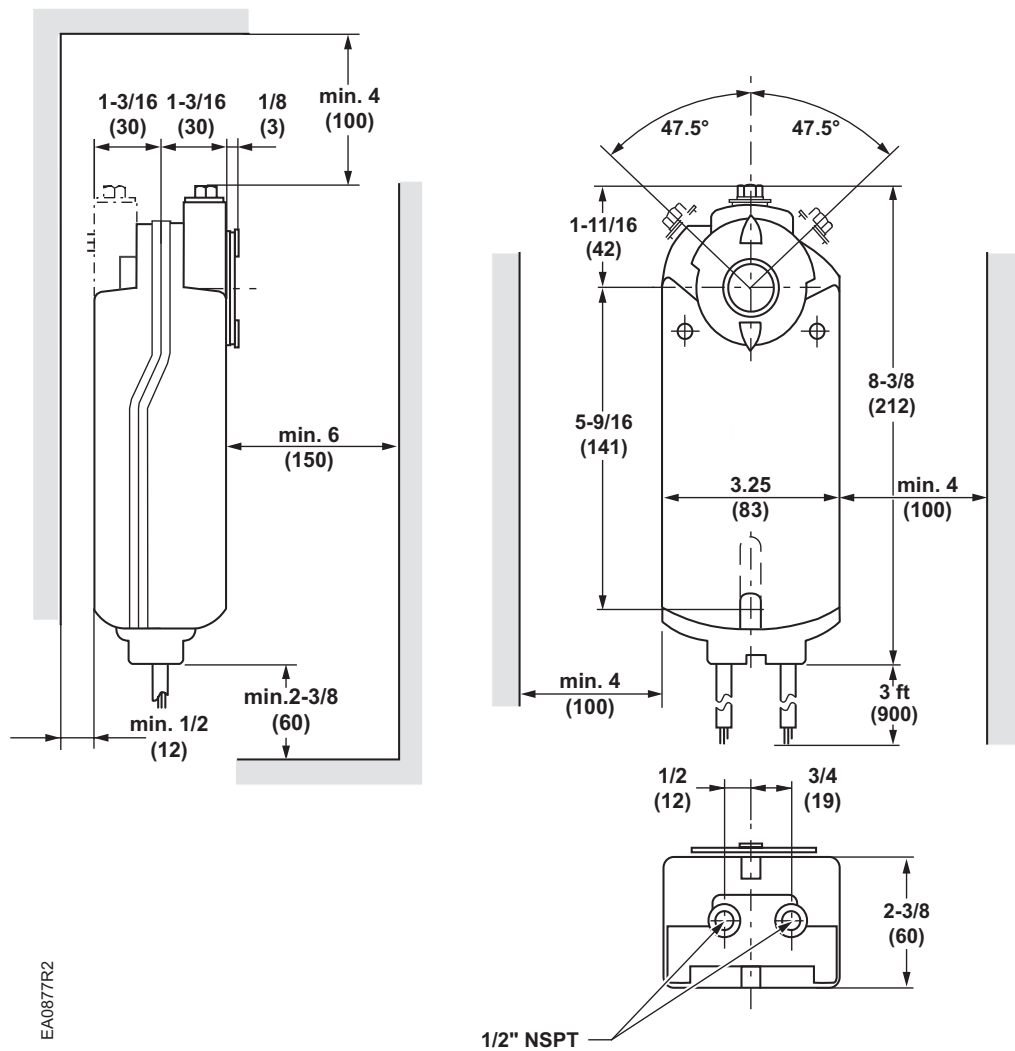
Product Ordering

Input Signal	Standard Model with Plenum Cable	Dual Adjustable Auxiliary Switches
Fail Safe 2P, Floating, 0-10 Vdc, 2-10 Vdc, 4-20 mA	GNP191.1P	GNP196.1P
Fail-in-place 2P, Floating, 0-10 Vdc, 2-10 Vdc, 4-20 mA	GAP191.1P	GAP196.1P

B-20

Damper Actuators

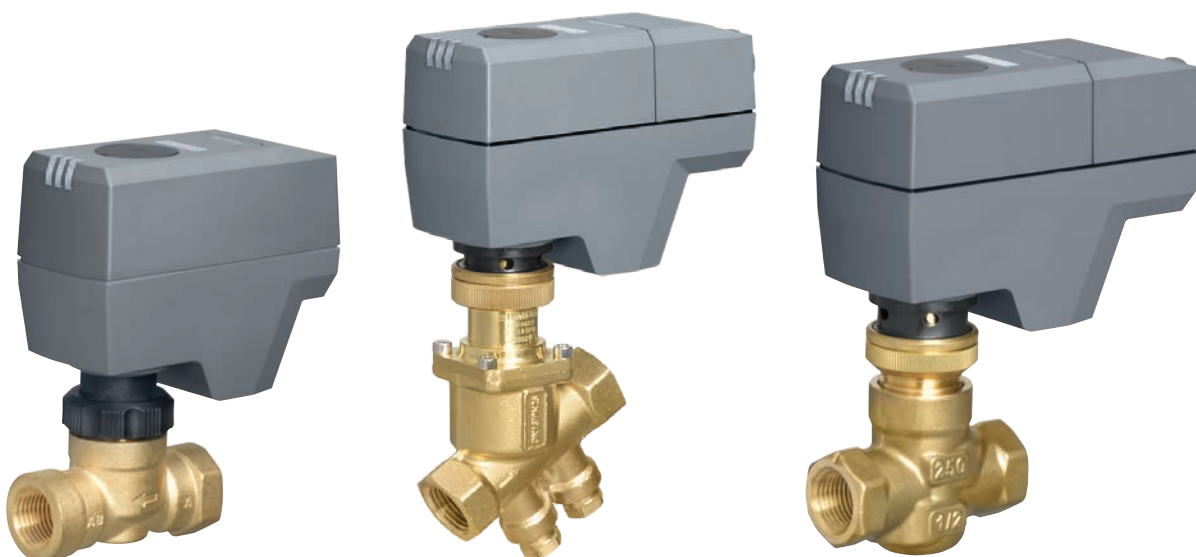
GNP/GAP Series Rotary, Electronic Damper Actuators



Dimensions shown in inches (mm)



Siemens offers a 5-year warranty on valves and actuators.



B-22

More functions. More applications. **More opportunities.**

Designed with you in mind, the new line of SS series modulating room actuators used with pressure independent control valves (PICVs), zone valves, and Powermite globe valve assemblies have enhanced performance features to improve building operations.

The self-calibrating actuators with three LED indicators for position and actuator motion provide status and actuator information for easier troubleshooting and improved

productivity. More application opportunities await with actuators that have a low noise level, are pre-configured out of the box, and boast a modern and compact design.

Discover the difference with Siemens innovations for efficient flow control to optimize comfort.

Visit usa.siemens.com/valves to learn more.

SIEMENS

Electronic Damper Actuators Non-Spring Return

Easily Replaces:

- Belimo CM Series



20 lb.-in. Torque

- 24 Vac/dc, 2-Position (Open/Closed) Control
- 24 Vac/dc, Floating Control
- 24 Vac/dc, 2 to 10 Vdc/10 to 2 Vdc, (Modulating) Control



GSD Series Non-Spring Return
Direct Coupled Electronic Damper Actuator

Description

The GSD Series direct-coupled, non-spring return rotary electronic damper actuators are 24 Vac/dc rated and available in 2-position, floating, and modulating [0(2) to 10 Vdc or 10 to 0(2) Vdc] control.

Features

- Pre-cabled
- Plenum-rated models available
- Optional built-in auxiliary switches with fixed switch points at 5° and 85° rotation
- 30-second run time
- Signal inversion capability on modulating type [0(2) to 10 Vdc or 10 to 0(2) Vdc]
- Small footprint for installation flexibility
- UL and cUL listed; CE certified
- Approved for installation in plenum areas by Underwriters Laboratories, Inc. per UL 2043.
- Low voltage models are 24 Vac/dc compatible
- 100 to 240 Vac models available
- Fixed Dual End Switches
24 Vac to 250 Vac/12 to 30 Vdc
6A resistive/2A inductive @ AC
4A resistive/2A inductive @ 30 Vdc
0.8A resistive, 0.5A inductive @ 60 Vdc
- 1/2" NPT conduit

Applications

The small footprint and torque make this actuator ideal for VAV boxes, small HVAC dampers, or residential zone dampers.

B-23

Damper Actuators

Specifications

Operating Voltage	
GSD1x	24 Vac/dc ±20%
GSD3x	100 to 240 Vac ±10%
Frequency	50/60 Hz
Power Consumption	
GSD14x (24 Vac/dc 60 Hz)	
Running	2.2 VA (1.2 W)
Holding	1.0 VA (0.5 W)
GSD14x (24 Vac/dc 60 Hz)	
Running	2.4 VA (1.4 W)
Holding	1.2 VA (0.7 W)
GSD14x (24 Vac/dc 60 Hz)	
Running	4.5 VA (1.8 W)
Holding	2.4 VA (0.9 W)
Function	
Torque	20 lb.-in. (2 Nm)
Runtime for 90°	30 sec.
Nominal Angle of Rotation	90°
Auxiliary Switches	Fixed at 5° and 85°
AC Rating	24 to 250 Vac
	AC 6A resistive
	AC 2A General Purpose
DC Rating (Standard/Plenum Cable)	12 to 30 Vdc
	DC 2A

Shaft Size	3/8 to 1/2-in. (8 to 13 mm) round ● 1/4 to 7/16-in. (6 to 11 mm) square ■
Min. Shaft Length	3/4-in (20 mm)
Housing Enclosure	NEMA 1
Material	Plenum-rated rugged plastic
Ambient Temperature	
Operating.....	-25°F to 130°F (-32°C to 55°C)
Storage and Transport.....	-25°F to 158°F (-32°C to 70°C)
Ambient Humidity	95% RH, non-condensing
Agency Approvals	UL listed per UL 60730, cUL listed to CSA C22.2 N. 24-93; CE certified
120 through 240 Vac	EMC and Low Voltage Directives
Pre-Cabled Connection	AWG 18
Cable Length	3 ft. (0.9m)
Dimensions	5.46" H x 2.83" W x 2.45" D (138.8 mm H x 72 mm W x 62.5 mm D)
Shipping Weight	1.54 lbs. (0.55 kg)

B-24

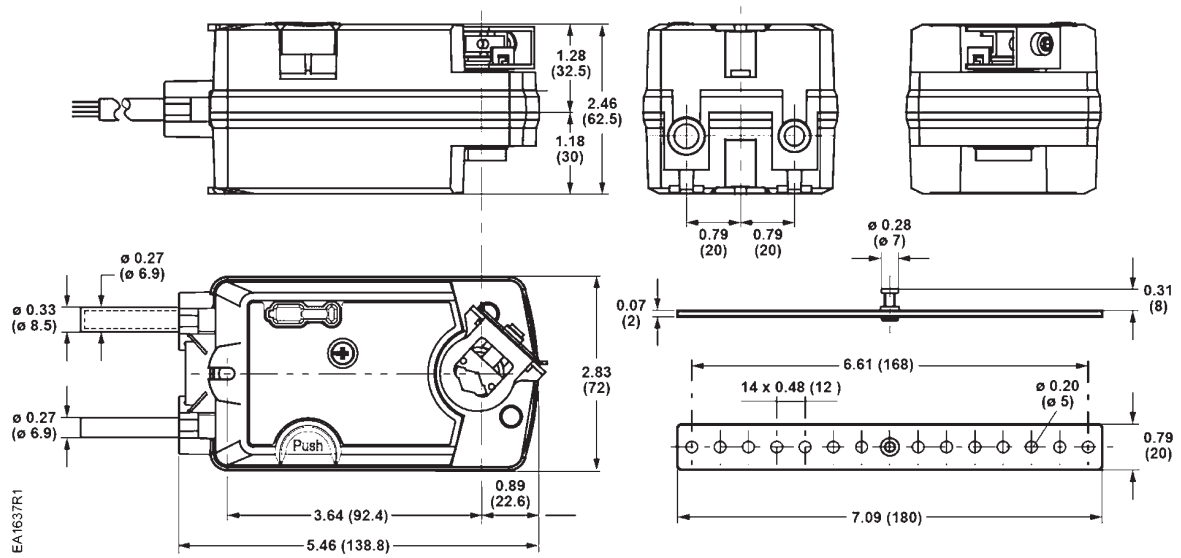
Damper Actuators

Product Ordering

Control Signal	Cabling	Part No.	
		Standard	Aux. Switch
2-position/Floating, 24 Vac/dc	Plenum	GSD141.1P	GSD146.1P
2-position/Floating, 100 to 240 Vac	Appliance	GSD341.1U	GSD346.1U
0 to 10 Vdc or 2 to 10 Vdc	Plenum	GSD161.1P	GSD166.1P
Modulating 24 Vac/dc			

Dimensions

GSD Series Actuators with Mounting Bracket



Dimensions shown in inches (mm)

B-25

Damper Actuators



B-26

We're **happy** to assist you

Our customer support team is ready to assist you with general inquiries, ordering, fulfillment, shipping questions, and more.

Call your dedicated support specialist at 800-516-9964 from 6:30 am–5:30 pm Central time Monday–Friday.

Additionally, product information and order support is available online for your convenience at usa.siemens.com/iMall.

Terms and conditions information can be found [here](#).

SIEMENS

Electronic Damper Actuator Non-Spring Return

Easily Replaces:

- Belimo LM Series



44 lb.-in. Torque

24 Vac/dc, 2-Position/Floating Control
120 Vac, 2-Position/Floating Control
0(2) to 10 Vdc/10 to 0(2) Vdc, Modulating Control



GDE Series Non-Spring Return
Electronic Damper Actuator

Description

The GDE Series Direct-coupled Non-Spring Return Rotary Electronic Actuator is designed for 0 to 10 Vdc or 2-position/floating control of building HVAC dampers.

Features

Enhanced Features

- 141 models perform both 2-position and floating control
- Selectable modulating control (0 to 10 Vdc or 2 to 10 Vdc)
- 24 Vac/dc compatible
- Line voltage 341 models for 100 to 240 Vac 2-position/floating control
- Integral 1/2 inch conduit connection (No conduit on auxiliary switch types – use ASK76.1U bracket)

Standard Features

- Compact design
- Easy-to-see position indicator
- Self-adapting capability for maximum flexibility in damper positioning
- Energy efficient
- UL, cUL, CE listed
- Quiet operation
- Rated NEMA 2
- Assembled in the USA
- Manual override
- Modulating actuators contain built-in feedback
- N Versions designed for under floor installation (pluggable cable connections)

Options

- Independently adjustable dual auxiliary switches
- Adjustable start/span
- Standard or plenum cable
- Available in bulk packs for additional savings
- Potentiometer on 2-position/floating control

Applications

The GDE Series Damper Actuators are used in Constant or Variable Air Volume installations for the control requiring up to 44 lb.-in. (5 Nm) torque.

Models are available with either a universal cable for wiring in conduit or a plenum-rated cable for applications where conduit is not required.

B-27

Damper Actuators

Specifications

Operating Voltage	24 Vac/dc 100 to 240 Vac (GDE34x)
Frequency	50/60 Hz
Power Consumption	
GDE14x	
Running	1.1 VA, 0.7 W
GDE34x	
Running	5 VA (1.6 W)
GDE16x	
Running	1.3 VA, 0.9 W
Input signal (8–2)	
Voltage-Input	0(2) to 10 Vdc
Input Resistance	100K Ohms
Position Output Signal (9–2)	
Voltage-Output	0(2) to 10 Vdc
Max. Output Current	1 mA
Equipment Rating for Operating Voltage, Input Signal, and Position Output Signal	Class 2
Control Signal Adjustment	
Offset (Start Point)	Between 0 to 5 Vdc
Factory Setting	0 V
Span	Between 2 to 10 Vdc
Dual Auxiliary Switch	
Contact Rating	4 A resistive, 2 A General Purpose
Voltage	24 Vac
Switch Range	
Switch A	0° to 90° with 5° intervals
Recommended Range Usage	0 to 45°
Factory Setting	5°
Switch B	0° to 90° with 5° intervals
Recommended Range Usage	45° to 90°
Factory Setting	85°
Switching Hysteresis	3°

Position Feedback	
GDE142.1P	0 to 5000 Ohm <10 mA
Function	
Torque	44 lb.-in. (5 Nm)
at 50/60 Hz	90 sec.
Nominal Angle of Rotation	90°
Max. Angular Rotation	95°
Shaft Size	3/8 to 5/8-in. (8 to 16 mm) Dia. ● 1/4 to 1/2-in. (6 to 13 mm) Sq. ■
Min. Shaft Length	3/4-in. (20 mm)
Housing Enclosure	NEMA Type 2
Material	Plenum-rated Rugged Plastic
Temperature	
Operation	-25°F to 130°F (-32°C to 55°C)
Storage and Transport	-25°F to 140°F (-30°C to 60°C)
Humidity	95% RH, non-condensing
Agency Approvals	UL 873 cUL C22.2 No. 24-93 CE
Pre-cabled Connection	AWG 18
Cable Length	3 ft. (0.9 m)
Dimensions	6.6" H x 2.7" W x 2.3" D (167 mm H x 68 mm W x 59.2 mm D)
Weight	1.35 lb. (0.61 kg)

B-28

Damper Actuators

Product Ordering

Input Signal	Part No.					Pre-Cabled	No Cables
	Standard	With Potentiometer	Slope/Offset Adjustable	Dual Aux. Switches & Slope/Offset Adjustable	Dual Aux. Switches Only		
Enhanced Models							
2-position/Floating 24 Vac/dc	GDE141.1U	—	—	—	—	Standard	—
	GDE141.1U/B						
	GDE141.1P	GDE142.1P	—	—	GDE146.1P	Plenum	—
	GDE141.1P/B (24 ea)						
	GDE141.1Q	—			—	6 ft Plenum	
2-position/Floating 100 to 240 Vac	GDE341.1U	—	—	—	GDE346.1U	Standard	—
Modulating 0(2) to 10 Vdc 24 Vac/dc	GDE161.1P	—	GDE163.1P	GDE164.1P	GDE166.1P	Plenum	—
	GDE161.1P/B (24 pk)						
	GDE161.1Q	—	—	—	—	6 ft Plenum	—
Standard Models							
Floating 24 Vac	GDE131.1U	—	—	—	—	Standard	—
	GDE131.1U/B (24 pk)						
	GDE131.1P	—	—	—	—	Plenum	—
	GDE131.1P/B (24 pk)						
	GDE131.1N	—	—	—	—	—	Post Header AMP
	GDE131.1T	—	—	—	—	—	Terminal Strip
	GDE131.1T/B (24 pk)						
0 to 10 Vdc 24 Vac	GDE161.1N	—	—	—	—	—	Post Header AMP
	GDE161.1T	—	—	—	—	—	Terminal Strip
	GDE161.1T/B (24 pk)						

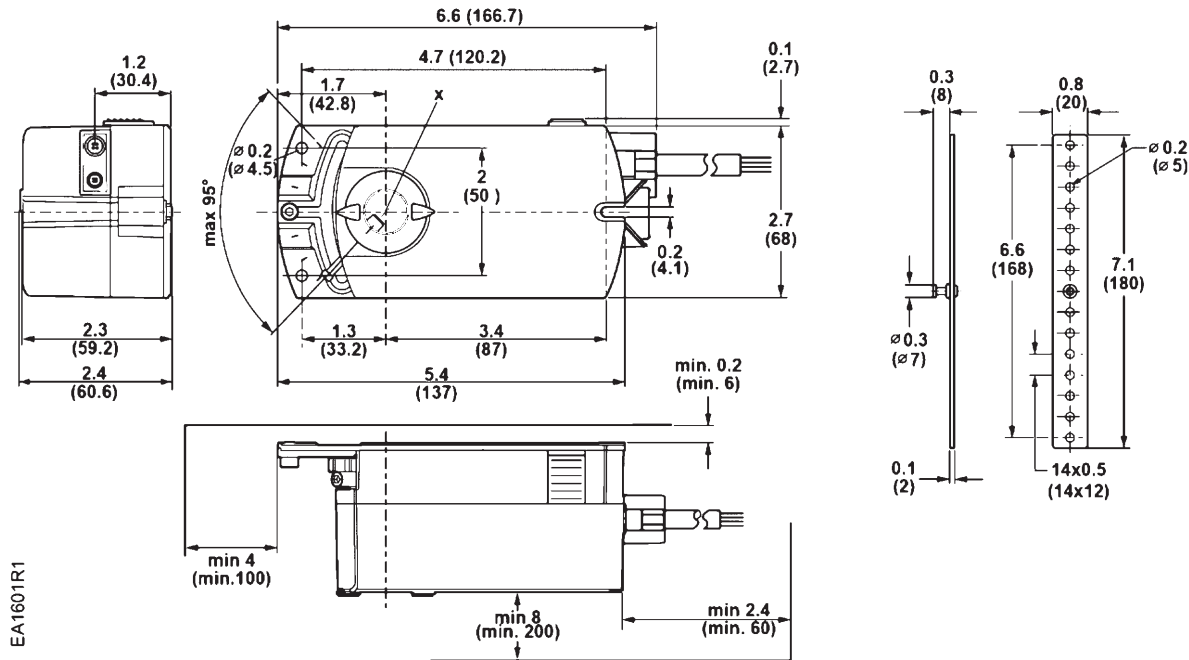
Cables compatible with the GDE131.1N and GDE161.1N sold separately in Accessories section.

B-29

Damper Actuators

Dimensions

GDE/GLB Series Electronic Damper Actuator and Mounting Bracket



Dimensions shown in inches (mm)

EA1601R1

B-30

Damper Actuators

Electronic Damper Actuator Non-Spring Return

Easily Replaces:

- Belimo NM Series



88 lb.-in. Torque

24 Vac/dc, 2-Position/Floating Control
100 to 240 Vac, 2-Position/Floating Control
0(2)-10 Vdc, Modulating Control



GLB Series Non-Spring Return
Electronic Damper Actuator

Description

The GLB Series Direct-coupled Non-Spring Electronic Actuator is designed for 0 to 10 Vdc or floating control of building HVAC dampers.

Features

Enhanced Features

- 141 models perform both 2-position and floating control
- Selectable modulating control (0 to 10 Vdc or 2 to 10 Vdc)
- 24 Vac/dc compatible
- Line voltage 341 models for 100 to 240 Vac 2-position/floating control
- Integral 1/2 inch conduit connection (No conduit on auxiliary switch types – use ASK76.1U bracket)

Standard Features

- Compact design
- Easy-to-see position indicator
- Self-adapting capability for maximum flexibility in damper positioning
- UL, cUL, CE listed
- Quiet operation
- Rugged all metal housing, rated NEMA 2
- Assembled in the USA
- Manual override
- Plenum-rated cable
- Modulating actuators contain built-in feedback
- Energy efficient

Options

- Independently adjustable dual auxiliary switches
- Adjustable start/span
- Potentiometer on 2-position/floating control

Applications

The GLB Series Damper Actuators are used in constant or variable air volume installations for the control requiring up to 88 lb.-in. (10 Nm) torque.

B-31

Damper Actuators



Siemens offers a
5-year warranty on
damper actuators.

Specifications

Operating Voltage	24 Vac/dc 100 to 240 Vac (GLB34x)
Frequency	50 to 60 Hz
Power Consumption	
GLB14x	
Running	1.3 VA, 0.8 W
GLB34x	
Running	5.8 VA (1.9 W)
GLB16x	
Running	1.5 VA, 1.0 W
Input Signal (8–2)	
Voltage-Input	0(2) to 10 Vdc
Input Resistance	100K Ohms
Position Output Signal (9–2)	
Voltage-Output	0(2) to 10 Vdc
Max. Output Current	1 mA
Equipment Rating for Operating Voltage, Input Signal, and Position Output Signal	Class 2
Dual Auxiliary Switch	
Contact Rating	4 A resistive, 2 A General Purpose
Voltage	24 Vac
Switch Range	
Switch A	0° to 90° with 5° intervals
Recommended Range Usage	0 to 45°
Factory Setting	5°
Switch B	0° to 90° with 5° intervals
Recommended Range Usage	45° to 90°
Factory Setting	85°
Switching Hysteresis	3°

Function	
Torque	88 lb.-in. (10 Nm)
at 50/60 Hz	125 sec.
Nominal Angle of Rotation	90°
Max. Angular Rotation	95°
Shaft Dimensions	3/8 to 5/8-in. (8 to 16 mm) Dia. ● 1/4 to 1/2-in. (6 to 13 mm) Sq. ■
Min. Shaft Length	3/4-in. (20 mm)
Housing Enclosure	NEMA 2
Material	Plenum-rated Rugged Plastic
Temperature	
Operation	-25°F to 130°F (-32°C to 55°C)
Storage and Transport	-40°F to 158°F (-40°C to 70°C)
Humidity	95% RH, non-condensing
Agency Approvals	UL 873 cUL C22.2 No. 24-93 CE
Pre-cabled Connection	AWG 18
Cable Length	3 ft. (0.9 m)
Dimensions	6.6" H x 2.7" W x 2.3" D (167 mm H x 68 mm W x 59.2 mm D)
Weight	1.35 lb. (0.61 kg)

Refer to page B-30 for Dimensions.

Product Ordering

Input Signal	Cabling	Part No.	
		Standard	Dual Aux. Switches Only
Enhanced Models			
2-position/Floating, 24 Vac/dc	3' Plenum Cable	GLB141.1P	GLB146.1P
	6' Plenum Cable	GLB141.1Q	—
2-position/Floating, 100 to 240 Vac	Standard	GLB341.1U	GLB346.1U
0(2) to 10 Vdc	3' Plenum Cable	GLB161.1P	GLB166.1P
	6' Plenum Cable	GLB161.1Q	—

Electronic Damper Actuator Non-Spring Return



177 lb-in Torque
24Vac/Vdc or 100 to 240 Vac

Combined On/Off & Floating Control and
Modulating 0 to 10 Vdc or 2 to 10 Vdc Control



Enhanced GEB Series Electronic Damper Actuator

Description

The direct-coupled, 24 Vac/Vdc, Non-Spring Return Electronic Damper Actuators are designed for modulating and combined on/off and floating control of building HVAC dampers.

Features

- Brushless motor technology with stall protection
- Unique self-centering shaft coupling
- Manual override button built-in
- 177 lb-in (20 Nm) torque
- 5° preload as shipped from factory
- 5-year warranty
- Mechanical adjustable span between 0 and 90 degrees
- Operating voltage 24 Vac/Vdc; or 100 to 240 Vac
- UL and cUL listed, CE Certified

Options

- Optional built-in Auxiliary Switches: fixed switch points at 5° and 85° rotation

Applications

The GEB Series Damper Actuators are ideal for Constant or Variable Air Volume installations for the control of return air, mixed air, exhaust, and face and bypass.

B-33

Damper Actuators

Specifications

Operating Voltage	24 Vac/dc +20%
Frequency	50/60 Hz
Power Consumption	24Vac/Vdc
On/Off & Floating	
Running	2.3 VA / 1.1 W
Holding	0.5 W
Modulating	
Running	2.5 VA / 1.2 W
Holding	0.65 W
Power Consumption	100 to 240 Vac
On/Off & Floating	
Running	4 VA / 1.6 W
Holding	0.9 W
Modulating	
Running	3.4 VA / 1.3 W
Holding	0.6 W
Torque	
Running	177 lb-in (20 Nm)
Minimum Stall	310 lb-in (35 Nm)
Runtime for 90°	
Nominal Runtime for 90° opening or closing	150 seconds nominal
Nominal Angle of Rotation	90°
Maximum Angle of Rotation	95° +/- 2°
Life Expectancy	50,000 full stroke cycles
Damper Shaft Size	1/4-inch to 3/4-inch (6.4 mm to 20.5 mm) round 1/4-inch to 1/2-inch (6.4 mm to 13 mm) square Min. Shaft Length 3/4-inch (20 mm)
Housing	
Enclosure	NEMA 1/IP54 according to EN 60 529
Material	Die cast aluminum alloy
Temperature	
Operation	-25°F to 130°F (-32°C to 55°C)
Storage and Transport	- 40°F to 158°F (-40°C to 70°C)
Humidity	Maximum 95% rh non-condensing

Dual Auxiliary Switch

Contact Rating	
AC Rating	24 to 250 Vac AC 6A Resistive AC 2A General Purpose
DC Rating	12 to 30 Vdc DC 2A
Voltage	
Standard Cable	24Vac/Vdc; 24 to 250 Vac
Plenum Cable	24 Vac/ Vdc
Switch Range	
Switch A	0 to 90° with 5° intervals
Recommended Range	0 to 45°
Switch B	0 to 90°
Recommended Range	45° to 90°
Switching Hysteresis	2°

Position Feedback

GEB16x Models	
	Voltage Output 0 to 10 Vdc Maximum output current +- 1 mA

Feedback Potentiometer

GEB142.1U0 to 1000 ohm <10 mA

Agency Certifications

	UL 60730 cUL CAN/CSA E60730 CE Conformity for Residential, Commercial and Industrial Environments Low Voltage Directive 2006/95/EC EN 60 730-2-14 (type 1) EMC 2004/108/EC Emmissions EN 61000-6-3
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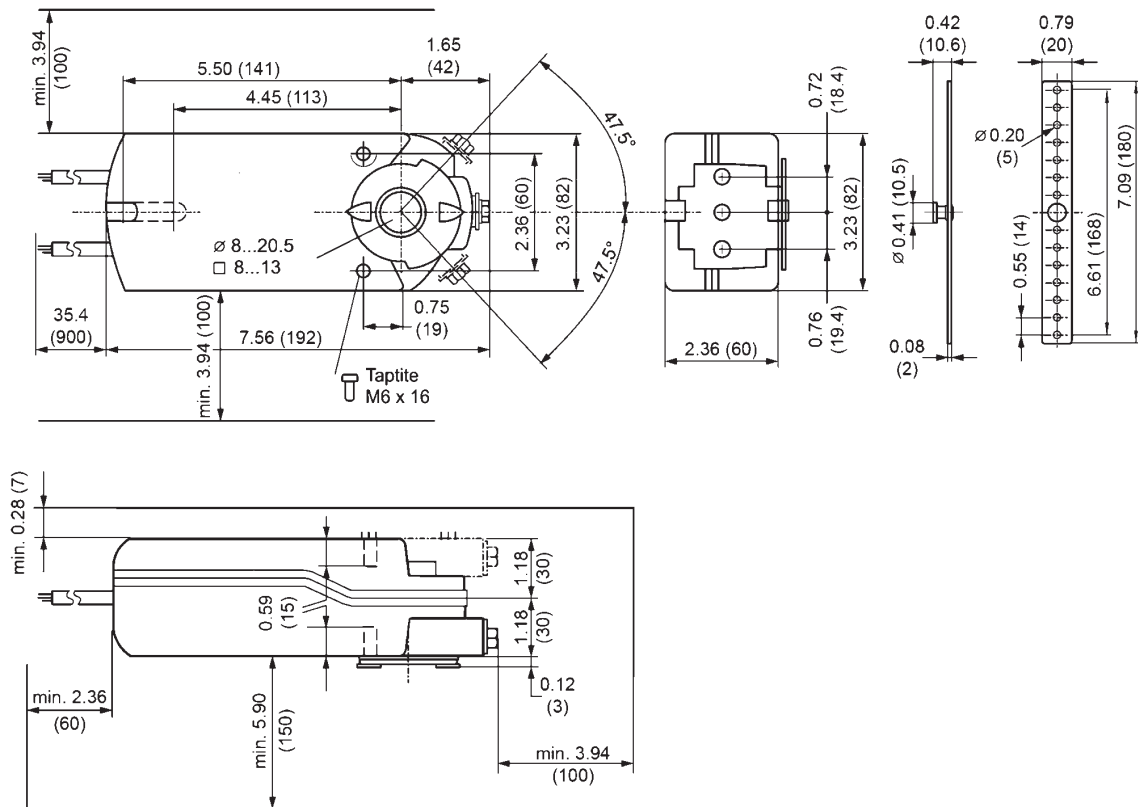
Pre-cabled Connection	18 GA, 3 ft (0.9m) length
Dimensions	7.56-in H x 3.23-in W x 2.36-in D (192 mm H x 82 mm W x 60 mm D)

Shipping Weight

Non-Switch Models	2.4 lbs (1.0 kg)
Switch Models	2.9 lbs (1.3 kg)

Product Ordering

Voltage	Description	Cabling	Part No.			
			Standard	Dual Aux. Switches Only	Dual Aux. Switches & Offset/ Span Only	Feedback Potentiometer
24 Vac/Vdc	On/Off & Floating Control	Plenum Cable	GEB141.1P	—	—	GEB142.1U
		Standard	GEB141.1U	GEB146.1U	—	—
	Modulating Control 0 (2) to 10 Vdc	Plenum Cable	GEB161.1P	—	—	—
		Standard	GEB161.1U	GEB166.1U	GEB164.1U	—



Dimensions shown in inches (mm)



Siemens offers a 5-year warranty on damper actuators.



B-36

Built for long-lasting performance

Our actuator series provides more torque sizes to meet all of your needs. With over 40 years of innovating control actuators, Siemens is a recognized global leader in HVAC damper actuators. Energy efficient, robust, flexible, and reliable — save time and costs with Siemens actuators.

Visit usa.siemens.com/damperactuators to learn more.



40+ Years
Innovating control actuators



25%
Lower power consumption



20%
More torque than the competition



100%
Factory tested



1.5+ Million
Reposition operations for longer life



60+ Thousand
Full strokes at rated torque and temperature

SIEMENS

Rotary Electronic Damper Actuator Non-Spring Return

Easily Replaces:

- Belimo SM/AM Series



221 lb.-in. Torque

Enhanced models feature combined
On/Off & Floating Control and
Modulating 0 to 10 Vdc or 2 to 10 Vdc Control



GBB Series Non-Spring Return
Electronic Damper Actuator

Description

Designed for control of building HVAC dampers, the Enhanced GBB Series Direct-coupled 24VAC/VDC Non-Spring Return Electronic Damper Actuators are available in 0/2-10VDC modulating and On/ Off & floating control.

Features

- Brushless motor technology with stall protection
- Self-centering shaft coupling
- Rugged all metal housing
- Quiet, low-power operation
- Accepts shaft diameters up to 1" (25 mm)
- Manual override
- Assembled in the USA
- UL, cUL and CE listed
- Modulating actuators contain built-in feedback

Options

- Independently adjustable dual auxiliary switches
- Adjustable offset and span
- Potentiometer built in for floating controls

Applications

The GBB Series Damper Actuators are used in constant or variable air volume installations for the control of return air, mixed air, exhaust, and face and bypass dampers that require up to 221 lb.-in. (25 Nm) torque.

Models are available with either an appliance cable for wiring in conduit or a plenum-rated cable for applications where conduit is not required.

B-37

Damper Actuators

Specifications

Operating Voltage	24 VAC/VDC ± 20%
Frequency	50 to 60 Hz
Power Consumption	
0/2-10 Vdc	2 VA/1.5W
Floating	2.1 VA/1.4W
Input Signal (8–2)	
Voltage-input	0(2)-10 Vdc (max. 35 Vdc)
Input Resistance	100 K Ohms
Position Output Signal (9–2)	
Voltage-output	0 to 10 Vdc
Max. Output Current	DC ±1 mA
Equipment Rating for Operating Voltage	Class 2
Runtime for 90° Opening or Closing	
60 Hz	150 sec.
50 Hz	150 sec.
Nominal Angle of Rotation	90°
Max. Angular Rotation	95°
Dual Auxiliary Switch	
Contact Rating	
Standard Cable	6 A resistive, 2 A General Purpose
Plenum Cable	4 A resistive, 2 A General Purpose
Voltage	
Standard Cable	24 to 250 Vac
Plenum Cable	24 Vac
Switch Range	
Switch A	0° to 90° with 5° intervals
Recommended Range	0° to 45°
Switch B	0° to 90° with 5° intervals
Recommended Range	45° to 90°

Position Feedback	0 to 1000 Ohm <10 mA
Torque	221 lb.-in. (25 Nm)
Temperature	
Operating	-25°F to 130°F (-32°C to 55°C)
Storage and Transport	-40°F to 158°F (-40°C to 70°C)
Humidity	95% RH, non-condensing
Agency Approvals	UL 873
cUL C22.2 No. 24-93	CE
Shaft Size	3/8 to 1-in. (8 to 25 mm) Dia. ● 1/4 to 5/8-in. (6 to 16 mm) Sq. ■
Min. Shaft Length	3/4-in. (20 mm)
Housing Enclosure	IP54
Material	Die-cast aluminum alloy
Cable Length	3 ft. (0.9 m)
Dimensions	12" H x 4.75" W x 2.88" D (305 mm H x 121 mm W x 73 mm D)
Shipping Weight	4.4 lb. (2.0 kg)

*Refer to Installation Instructions for acceptable mounting positions.

Refer to page B-17 for Dimensions.

Product Ordering

Input Signal	Cabling	Part No.				
		Standard	Span/Offset Adjustable	Dual Aux. Switches & Span/Offset Adjustable	Dual Aux. Switches Only	Position Feedback
Enhanced Models (available Q3 2024)						
Modulating Control 0 (2) to 10 Vdc	Standard	GBB161.1U, GBB161.1U/PS	GBB163.1U	GBB164.1U	GBB166.1U	—
	Plenum Cable	GBB161.1P	GBB163.1P	GBB164.1P	GBB166.1P	—
On/Off & Floating Control	Standard	GBB141.1U	—	—	GBB146.1U	GBB142.1U
	Plenum Cable	GBB141.1P	—	—	GBB146.1P	—

Electronic Damper Actuator Non-Spring Return

Easily Replaces:

- Belimo GM Series



310 lb.-in. Torque

0/2-10VDC modulating and floating control
Enhanced models feature combined
On/Off & Floating Control and
Modulating 0/2-10VDC control



GIB Series Non-Spring Return Electronic
Damper Actuator

Description

The GIB Series Direct-coupled 24VAC/VDC Non-Spring Return Electronic Actuators are designed for modulating and floating control of building HVAC dampers.

Features

- Visible position indication
- Unique self-centering shaft coupling
- Rugged all metal housing
- Shaft diameters up to 1-inch (25 mm)
- All modulating types include built-in feedback
- Brushless motor technology
- Assembled in the USA
- Manual Override
- Tandem mount capability with standard GIB actuators
- Modulating actuators contain built-in feedback

Options

- Independently adjustable dual auxiliary switches
- Adjustable offset and span
- Potentiometer built in for floating control

Applications

The GIB Series Damper Actuators are used in constant or variable air volume installations for the control of return air, mixed air, exhaust, and face and bypass dampers requiring up to 310 lb.-in. (35 Nm) torque.

Models are available with either an appliance cable for wiring in conduit or a plenum-rated cable for applications where conduit is not required.

B-39

Damper Actuators

Specifications

Operating Voltage (1–2)	24VAC/VDC ±20%
Frequency	50/60 Hz
Power Consumption	
0/2-10 VDC	2.7VA/1.9W
Floating	2.6VA/1.8W
Input signal (8–2)	
Voltage-Input	0(2)-10 Vdc
Input Resistance	100K Ohms
Position Output Signal (9–2)	
Voltage-Output	0 to 10 Vdc
Max. Output Current	DC 1 mA
Equipment Rating for Operating Voltage, Input Signal, and Position Output Signal	Class 2
Control Signal Adjustment	
Offset (Start Point)	Between 0 to 5 Vdc
Factory Setting	0 V
Span	Between 2 to 30 Vdc
Dual Auxiliary Switch	
Contact Rating	
Standard Cable	6 A resistive, 2 A General Purpose
Plenum Cable	4 A resistive, 2 A General Purpose
Voltage	
Standard Cable	24 to 250 Vac
Plenum Cable	24 Vac
Switch Range	
Switch A	0° to 90° with 5° intervals
Recommended Range Usage	0 to 45°
Factory Setting	5°
Switch B	0° to 90° with 5° intervals
Recommended Range Usage	45° to 90°
Factory Setting	85°
Position Feedback	0 to 1000 Ohm <10 mA

Function	
Torque	310 lb.-in. (35 Nm)
Runtime for 90° Opening or Closing	
60 Hz	150 sec.
50 Hz	150 sec.
Nominal Angle of Rotation	90°
Max. Angular Rotation	95°
Noise Level	<45 dBA
Shaft Dimensions	3/8 to 1-in. (8 to 26 mm) Dia. ● 1/4 to 5/8-in. (6 to 16 mm) Sq. ■
Min. Shaft Length	3/4-in. (20 mm)
Housing	
Enclosure	IP54
Material	Die-cast Aluminum alloy
Temperature	
Operation	-25°F to 130°F (-32°C to 55°C)
Storage and Transport	-40°F to 158°F (-40°C to 70°C)
Humidity	95% RH, non-condensing
Agency Approvals	UL 873 cUL C22.2 No. 24-93 CE
Pre-cabled Connection	AWG 18
Cable Length	3 ft. (0.9 m)
Dimensions	12" H x 4.75" W x 2.88" D (305 mm H x 121 mm W x 73 mm D)
Shipping Weight	4.4 lb. (2.0 kg)

*Refer to the Installation Instructions for acceptable mounting positions.

Refer to page B-17 for Dimensions.

Product Ordering

Input Signal	Cabling	Part No.				
		Standard	Span/Offset Adjustable	Dual Aux. Switches & Span/Offset Adjustable	Dual Aux. Switches Only	Position Feedback
Enhanced Models (available Q3 2024)						
Modulating Control 0 (2) to 10 Vdc	Standard	GIB161.1U	GIB163.1U	GIB164.1U	GIB166.1U	—
	Plenum Cable	GIB161.1P, GIB161.1P/PS	GIB163.1P	GIB164.1P	GIB166.1P	—
On/Off & Floating Control	Standard	GIB141.1U, GIB141.1U/PS	—	—	GIB146.1U	GIB142.1U
	Plenum Cable	GIB141.1P	—	—	GIB146.1P	—

Electronic Damper Actuator

Designed for UL Listed Fire/Smoke and Smoke Control Dampers

20 lb-in Torque
2 position, 15-second run time
15-second Spring Return Time



GJD Series Electronic Damper Actuator

Description

The 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 and combination fire/smoke rated dampers.

Features

- 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
- 5-year warranty
- Made in the USA
- Compact design for tight-fitting spaces

Options

- Optional built-in Auxiliary Switches: fixed switch points at 5° and 85° rotation

Applications

The GJD Series Spring Return Fire and Smoke Damper Actuator is used for the control of dampers requiring up to 20 lb-in driving torque. It is intended for control of UL listed smoke control dampers or combination fire/smoke HVAC dampers. This actuator is designed to meet the 2002 revisions to the UL 555/555S and the AMCA Standard 520 applications.

B-41

Damper Actuators

Specifications

Operating Voltage	24Vac ±20%
	24 Vdc +20%, -10%
	120 Vac ±10%
	230 Vac ±10%
Frequency	50/60 Hz
Power Consumption.....	24Vac/dc / 120Vac
	Running..... ~ 10 VA/ 5W
	Holding..... ~ 5 VA/ 3W
Power Consumption.....	230 Vac
	Running..... ~ 12 VA/ 5W
	Holding..... ~ 7 VA/ 3W
Torque	
	Running.....20 lb-in (2 Nm) (minimum)
Minimum Stall.....35 lb-in (4 Nm)	
Runtime for 90°	
Operating with motor at 60hz.....30 seconds nominal	
Closing (on power loss) with spring return.....15 seconds nominal	
Nominal Angle of Rotation	95°
Life Expectancy	Minimum 20,000 full stroke cycles
Damper Shaft Size	0.5-inch (12.7 mm) round
Min. Shaft Length	1.4-inch (36 mm)

Housing	
Enclosure	NEMA 1/ IP40
Material.....	Plenum-rated Plastic
Temperature	
Operation..... 0°F to 130°F (-18°C to 55° C)	
One time 250°F (121°C) 1/2 hour per UL 555S	
Storage and Transport..... - 40°F to 158°F (-40°C to 70°C)	
Humidity	
Maximum 95% rh non-condensing	
Teflon Cable	
400°F (200°C)	
Agency Certifications.....	
UL 60730	
cUL CSA 60730	
CE Conformity for Residential, Commercial and Industrial Environments	
Australian RCM Conformity	
Pre-cabled Connection	19/30 strand 18 GA, 3 ft (0.9m)
Dimensions	5.61-in H x 2.83-in W x 2.48-in D
	(142.6 mm H x 72 mm W x 63 mm D)
Shipping Weight	
Single Pack	
1.32 lbs (0.60 kg)	

B-42

Product Ordering

Description	Part No.		
	24Vac	120Vac	230Vac
Standard	GJD121.1U	GJD221.1U	GJD321.1U
Aux Switches 5° and 85°	GJD126.1U	GJD226.1U	GJD326.1U

* All GJD actuators come with built-in capability to have an Electronic Fusible Link directly connected

Compatible Electronic Fusible Links

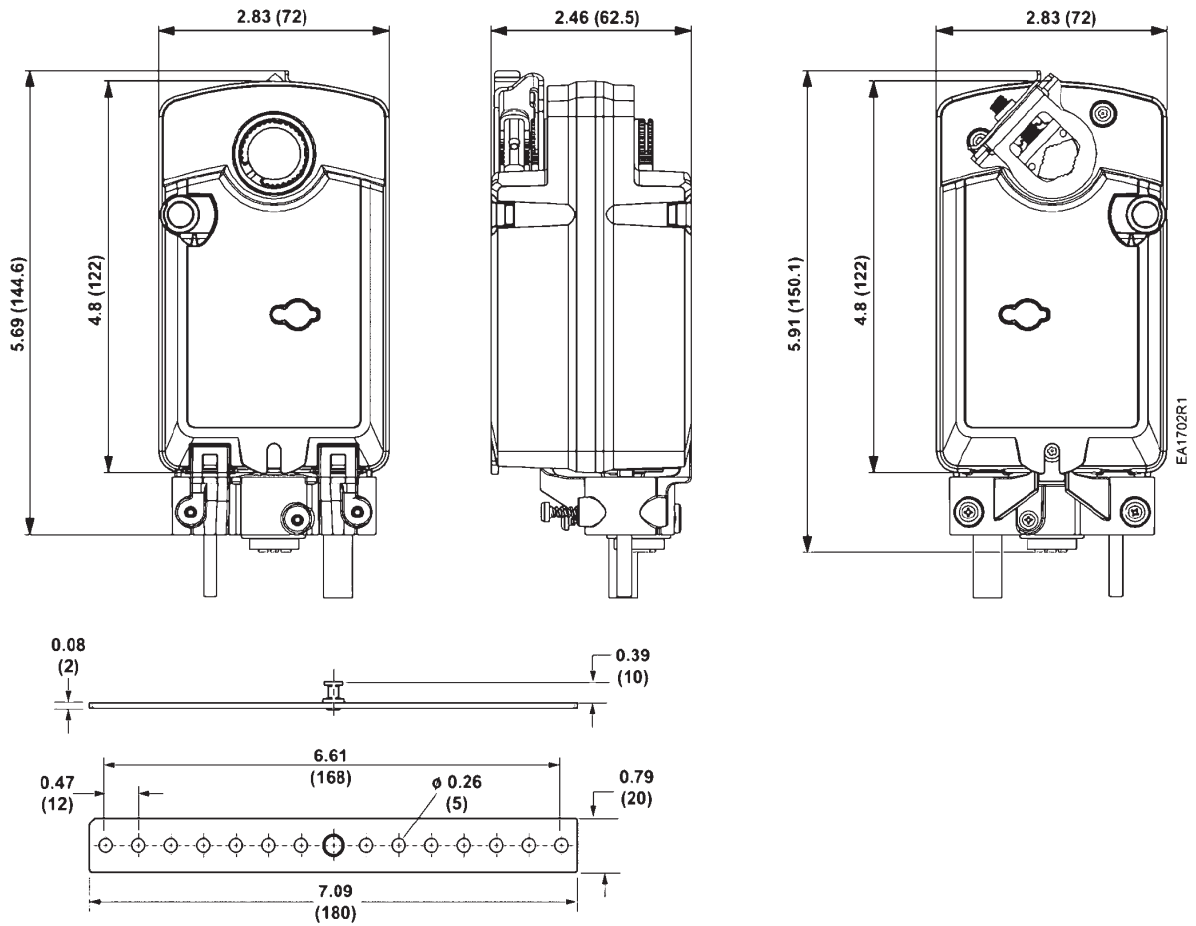
Temperature Range	Part No.
165°F (74°C)	ASK791.165
212°F (100°C)	ASK791.212
250°F (121°C)	ASK791.250

* Determine and order appropriate actuator before selecting an EFL



Damper Actuators

GJD Series Damper Actuators



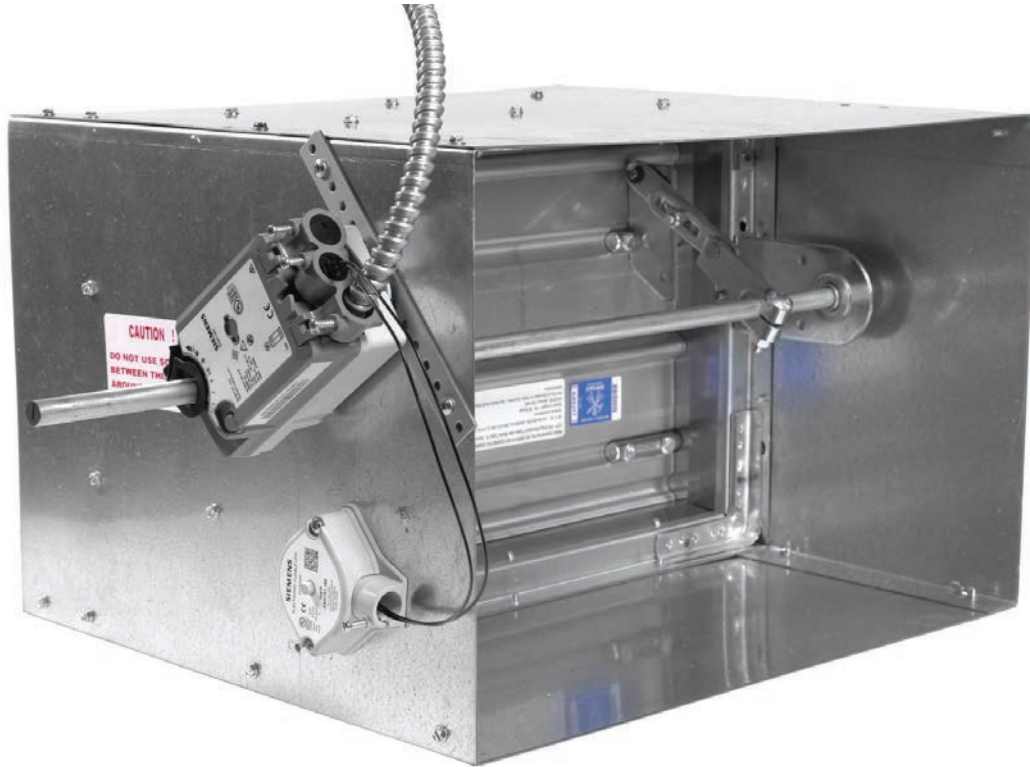
Dimensions shown in inches (mm)

B-43

Damper Actuators



Siemens offers a 5-year warranty on damper actuators.



B-44

The right device matters when lives matter.

Fire and smoke electronic damper actuators are designed to reduce risk and deliver better life safety performance. Keep people and property protected with Siemens reliable fire and smoke damper actuators designed to meet both UL 555 and UL 555S certification requirements.

Visit usa.siemens.com/damperactuators to learn more.

SIEMENS

Electronic Damper Actuator

Designed for UL Listed Fire/Smoke and Smoke Control Dampers

30 lb-in Torque

2 position, 30-second run time

15-second Spring Return Time



GRD Series Electronic Damper Actuator

Description

The 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 and combination fire/smoke rated dampers.

Features

- Electronic Fusible Link (EFL) capability with four temperature ratings: 165° F (74° C), 212° F (100° C), 250° F (121° C), and 350° F (177° C)
- Reversible fail-safe spring return
- High-temperature polymer housing
- Pre-cabled lead wires
- 30-second drive/15-second return operation at rated torque, temperature and voltage
- 5-year warranty
- Made in the USA
- Compact design for tight-fitting spaces

Options

- Optional built-in Auxiliary Switches: fixed switch points at 5° and 85° rotation

Applications

The GRD Series Spring Return Fire and Smoke Damper Actuator is used for the control of dampers requiring up to 30 lb-in driving torque. It is intended for control of UL listed smoke control dampers or combination fire/smoke HVAC dampers. This actuator is designed to meet the 2002 revisions to the UL 555/555S and the AMCA Standard 520 applications.

B-45

Damper Actuators



Siemens offers a 5-year warranty on damper actuators.

Specifications

Operating Voltage	24 Vac ±20%
	24 Vdc +20%, -10%
	120 Vac ±10%
	230 Vac ±10%
Frequency	
24Vac/dc & 120 Vac	50/60 Hz
230 Vac	60 Hz
Power Consumption	24 Vac/dc
Running.....	~ 14 VA/ 8W
Holding	~ 4 VA/ 2W
Power Consumption	120 Vac
Running.....	~12 VA
Holding	~4 VA
Power Consumption	230 Vac
Running.....	~ 12 VA
Holding	~ 4 VA
Torque	
Running.....	30 lb-in (3.4 Nm) (minimum)
Minimum Stall.....	80 lb-in (9 Nm)
Runtime for 90°	
Operating with smotor at 60hz	30 seconds nominal
Closing (on power loss) with spring return	15 seconds nominal
Nominal Angle of Rotation	95°

Life Expectancy	Minimum 20,000 full stroke cycles
Damper Shaft Size	0.5-inch (12.7 mm) round
Min. Shaft Length	1.4-inch (36 mm)
Housing	
Enclosure	NEMA 1/ IP40
Material	High-temperature polymer
Temperature	
Operation	0°F to 140°F (-18°C to 55° C)
	One time 350°F (177°C) 1/2 hour per UL 555S
Storage and Transport	- 40°F to 158°F (-40°C to 70°C)
Humidity	Maximum 95% rh non-condensing
Teflon Cable	400°F (200°C)
Agency Certifications	
	UL 60730
	cUL CSA 60730
	CE Conformity for Residential, Commercial and Industrial Environments
	Australian RCM Conformity
Pre-cabled Connection	19/30 strand 18 GA, 3 ft (0.9m)
Dimensions	8.5-in H x 3.5-in W x 3-in D
	(215.9 mm H x 88.9 mm W x 76.2 mm D)
Shipping Weight	
Single Pack	~ 4.0 lbs (1.8 kg)

B-46

Product Ordering

Description	Part No.		
	24Vac	120Vac	230Vac
Standard	GRD121.1U	GRD221.1U	GRD321.1U
Aux Switches 5° and 85°	GRD126.1U	GRD226.1U	GRD326.1U

* All GRD actuators come with built-in capability to have an Electronic Fusible Link directly connected

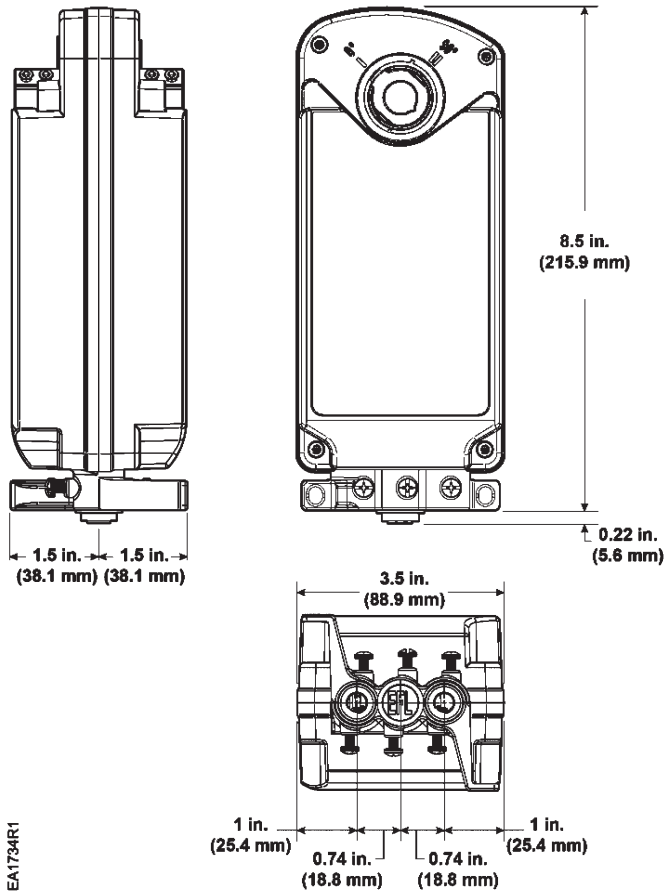
Compatible Electronic Fusible Links

Temperature Range	Part No.
165°F (74°C)	ASK791.165
212°F (100°C)	ASK791.212
250°F (121°C)	ASK791.250
350°F (177°C)	ASK791.350

* Determine and order appropriate actuator before selecting an EFL



GRD Series Damper Actuators



EA1734R1

Dimensions shown in inches (mm)

A photograph of two men in a server room. The man on the left, with a beard and wearing a dark blue polo shirt and jeans, is holding a laptop. The man on the right, wearing a light blue polo shirt and jeans, is pointing at the laptop screen. They are standing in front of large, silver, cylindrical server racks. The room has a clean, industrial look with a light-colored floor.

B-48

Your job made easier with Siemens HVAC solutions

Siemens HVAC solutions transform building operations, energy efficiency and comfort. Increase productivity with innovations that simplify installation and commissioning to improve building performance and indoor air quality. Rely on Siemens solutions — built to last for buildings of all sizes.

Visit usa.siemens.com/hvac to learn more.



Siemens offers a 5-year warranty on valves, actuators, damper actuators, sensors and thermostats.

SIEMENS

Electronic Damper Actuator

Designed for UL Listed Fire/Smoke and Smoke Control Dampers

80 lb-in Torque
2 position, 30-second run time
15-second Spring Return Time



GKD Series Electronic Damper Actuator

Description

The 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 and combination fire/smoke rated dampers.

Features

- Electronic Fusible Link (EFL) capability with four temperature ratings: 165° F (74° C), 212° F (100° C), 250° F (121° C), and 350°F (177°C)
- Reversible fail-safe spring return
- High-temperature polymer housing
- Pre-cabled lead wires
- 30-second drive/15-second return operation at rated torque, temperature and voltage
- 5-year warranty
- Made in the USA
- Compact design for tight-fitting spaces

Options

- Optional built-in Auxiliary Switches: fixed switch points at 5° and 85° rotation

Applications

The GKD Series Spring Return Fire and Smoke Damper Actuator is used for the control of dampers requiring up to 80 lb-in driving torque. It is intended for control of UL listed smoke control dampers or combination fire/smoke HVAC dampers. This actuator is designed to meet the 2002 revisions to the UL 555/555S and the AMCA Standard 520 applications.

B-49

Damper Actuators

Specifications

Operating Voltage	24Vac ±20%
	120 Vac ±10%
	230 Vac ±10%
Frequency	50/60 Hz
	120 Vac & 230 Vac
Power Consumption	24Vac/dc
	Running
	Holding
Power Consumption	120Vac
	Running
	Holding
Power Consumption	230 Vac
	Running
	Holding
Torque	80 lb-in (2 Nm) (minimum)
	Minimum Stall
	130 lb-in (14.6 Nm)
Runtime for 90°	30 seconds nominal
	Operating with motor at 60hz
	Closing (on power loss) with spring return
Nominal Angle of Rotation	95°

Life Expectancy	Minimum 20,000 full stroke cycles
Damper Shaft Size	0.5-inch (12.7 mm) to 1-inch (25 mm)round
Min. Shaft Length	3.0-inch (76.2 mm)
Housing	Enclosure
	Material
Temperature	Operation
	One time 350°F (121°C) 1/2 hour per UL 555S
	Storage and Transport
Humidity	Maximum 95% rh non-condensing
	Teflon Cable
Agency Certifications	UL 60730
	cUL CSA 60730
	CE Conformity for Residential, Commercial and Industrial Environments
Pre-cabled Connection	Australian RCM Conformity
	19/30 strand 18 GA, 3 ft (0.9m)
Dimensions	10.7-in H x 3.4-in W x 3.8-in D
	(272.8 mm H x 101.5 mm W x 96.4 mm D)
Shipping Weight	~ 9.0 lbs (4.1kg)
	Single Pack

B-50

Product Ordering

Description	Part No.		
	24Vac	120Vac	230Vac
Standard	GKD121.1U	GKD221.1U	GKD321.1U
Aux Switches 5° and 85°	GKD126.1U	GKD226.1U	GKD326.1U

* All GKD actuators come with built-in capability to have an Electronic Fusible Link directly connected

Compatible Electronic Fusible Links

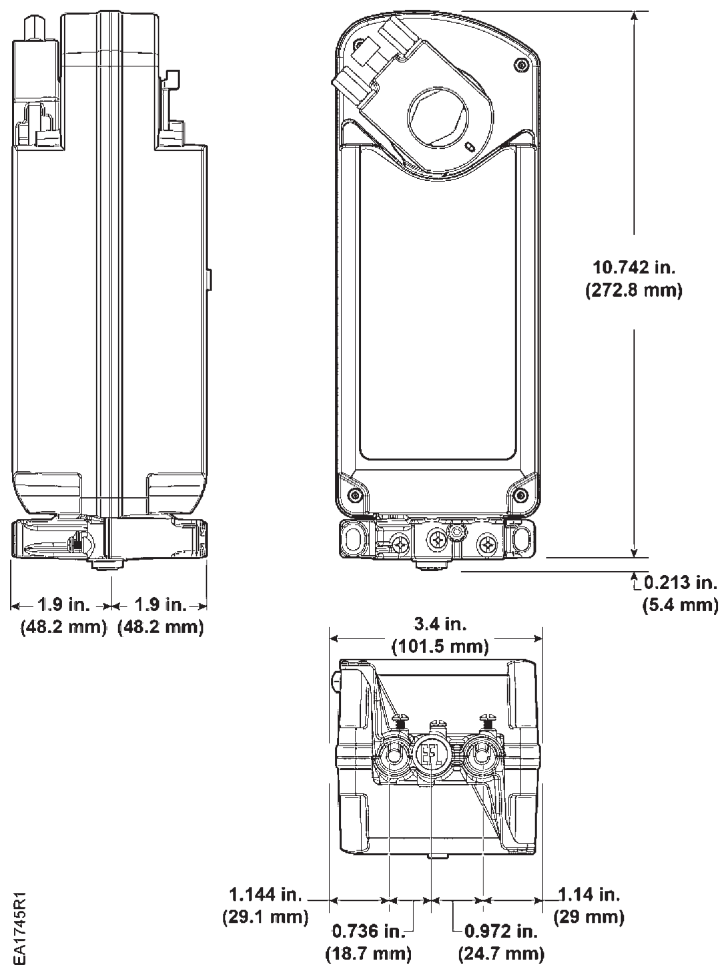
Temperature Range	Part No.
165°F (74°C)	ASK791.165
212°F (100°C)	ASK791.212
250°F (121°C)	ASK791.250
350°F (177°C)	ASK791.350

* Determine and order appropriate actuator before selecting an EFL



Damper Actuators

GKD Series Damper Actuators



Dimensions shown in inches (mm)



B-52



Track the invisible with the **IAQ multi-sensor**

We all know how important indoor air quality is, especially after experiencing the COVID-19 pandemic. But how do you measure something you can't see? The answer is simple — Siemens IAQ multi-sensor.

Siemens 7-in-1 IAQ multi-sensor measures everything needed to ensure the highest comfort and safety for occupant well-being and productivity. Accurately measure temperature, humidity, PM2.5, CO₂, TVOCs, noise and light with one device. Complete with BACnet IP/ MSTP and LoRaWAN connectivity for simple connection and installation.

Visit usa.siemens.com/sensors to learn more.

SIEMENS

Electronic Damper Actuator

Designed for UL Listed Fire/Smoke and Smoke Control Dampers

200 lb-in Torque
2 position, 30-second run time
15-second Spring Return Time



GVD Series Electronic Damper Actuator

Description

The 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 and combination fire/smoke rated dampers.

Features

- Electronic Fusible Link (EFL) capability with four temperature ratings: 165° F (74° C), 212° F (100° C), 250° F (121° C), and 350°F (177°C)
- Reversible fail-safe spring return
- High-temperature polymer housing
- Pre-cabled lead wires
- 30-second drive/15-second return operation at rated torque, temperature and voltage
- 5-year warranty
- Made in the USA
- Compact design for tight-fitting spaces

Options

- Optional built-in Auxiliary Switches: fixed switch points at 5° and 85° rotation

Applications

The GVD Series Spring Return Fire and Smoke Damper Actuator is used for the control of dampers requiring up to 200 lb-in driving torque. It is intended for control of UL listed smoke control dampers or combination fire/smoke HVAC dampers. This actuator is designed to meet the 2002 revisions to the UL 555/555S and the AMCA Standard 520 applications.

B-53

Damper Actuators

Specifications

Operating Voltage	24Vac ±20%
	120 Vac ±10%
	230 Vac ±10%
Frequency	50/60 Hz
	120 Vac & 230 Vac 60 Hz
Power Consumption	24Vac/dc
	Running ~ 35 VA
	Holding ~ 9 VA
Power Consumption	120Vac
	Running ~ 35 VA
	Holding ~ 9 VA
Power Consumption	230 Vac
	Running ~ 35 VA
	Holding ~ 9 VA
Torque	
	Running 200 lb-in (23 Nm) (minimum)
	Minimum Stall 280 lb-in (32 Nm)
Runtime for 90°	
	Operating with motor at 60hz 30 seconds nominal
	Closing (on power loss) with spring return 15 seconds nominal
Nominal Angle of Rotation	95°

Life Expectancy	Minimum 20,000 full stroke cycles
Damper Shaft Size	0.5-inch (12.7 mm) to 1-inch (25 mm)round
Min. Shaft Length	3.0-inch (76.2 mm)
Housing	
	Enclosure NEMA 1/ IP40
	Material Plenum-rated Plastic
Temperature	
	Operation 0°F to 130°F (-18°C to 55° C)
	One time 350°F (121°C) 1/2 hour per UL 555S
Storage and Transport	- 40°F to 158°F (-40°C to 70°C)
	Humidity Maximum 95% rh non-condensing
Teflon Cable	400°F (200°C)
Agency Certifications	UL 60730
	cUL CSA 60730
	CE Conformity for Residential, Commercial and Industrial Environments
Pre-cabled Connection	Australian RCM Conformity
	19/30 strand 18 GA, 3 ft (0.9m)
Dimensions	10.7-in H x 3.4-in W x 3.8-in D
	(272.8 mm H x 101.5 mm W x 96.4 mm D)
Shipping Weight	
	Single Pack ~ 9.0 lbs (4.1kg)

B-54

Product Ordering

Description	Part No.		
	24Vac	120Vac	230Vac
Standard	GVD121.1U	GVD221.1U	GVD321.1U
Aux Switches 5° and 85°	GVD126.1U	GVD226.1U	GVD326.1U

* All GVD actuators come with built-in capability to have an Electronic Fusible Link directly connected

Compatible Electronic Fusible Links

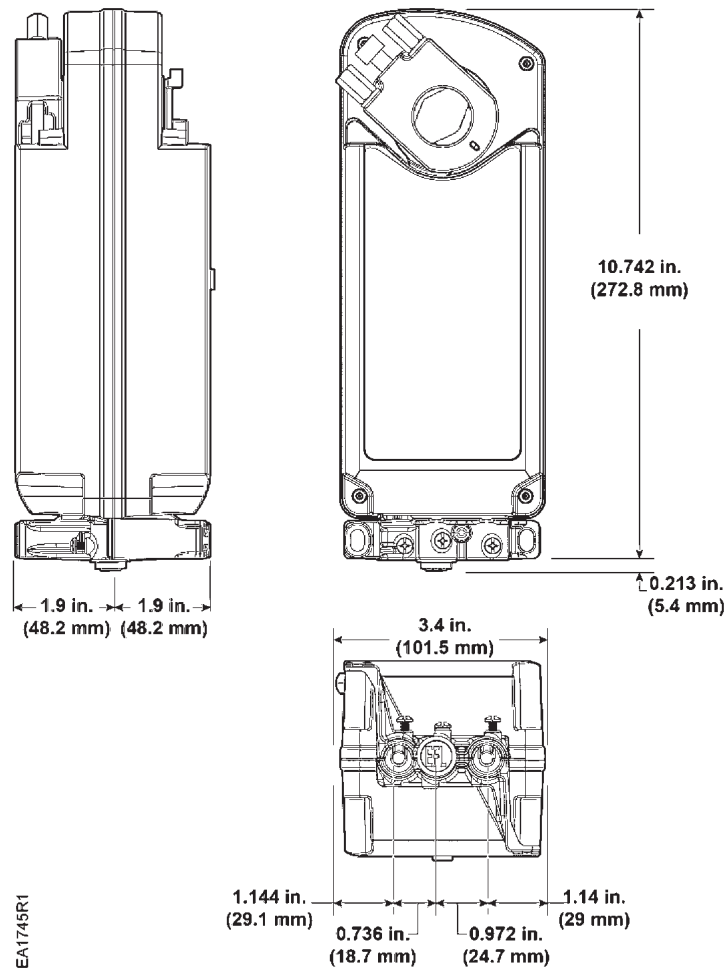
Temperature Range	Part No.
165°F (74°C)	ASK791.165
212°F (100°C)	ASK791.212
250°F (121°C)	ASK791.250
350°F (177°C)	ASK791.350

* Determine and order appropriate actuator before selecting an EFL



Damper Actuators

GVD Series Damper Actuators



Dimensions shown in inches (mm)

B-55

Damper Actuators

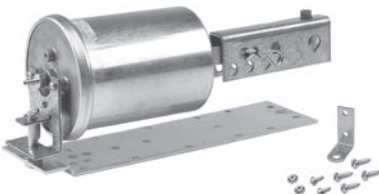
Part No. Nomenclature

Global Actuator Program		G	C	A	1	6	1	.	1	P
Type	Laboratory Fail In Place 53 Lb-in	A								
	Non-Spring Return 221 Lb-in	B								
	Spring Return 160 Lb-in	C								
	Non-Spring Return 44 Lb-in	D								
	Non-Spring Return 177 Lb-in	E								
	Non-Spring Return 310 Lb-in	I								
	Fire and Smoke 20 Lb-in	J								
	Fire and Smoke 80 Lb-in	K								
	Non-Spring Return 88 Lb-in	L								
	Spring Return 62 Lb-in	M								
	Laboratory Fail Safe 53 Lb-in	N								
	Spring Return 35 Lb-in	P								
	Spring Return 20 Lb-in	Q								
	Fire and Smoke 30 Lb-in	R								
	Non-Spring Return 20 Lb-in	S								
	Fire and Smoke 200 Lb-in	V								
Running Time	90 Sec. At 50/60 Hz	A								
	150(125) Sec. At 50/60 Hz	B								
	60 Sec. At 50/60 Hz	C								
	30 Sec. At 50/60 Hz	D								
	108 (90) Sec. At 50/60 Hz	E								
	2 Sec. At 50/60 Hz	P								
Voltage	24Vac/Vdc or 24Vac	1								
	120 Vac	2								
	230Vac / 100 to 240 Vac	3								
Functionality	2pt (On/Off)	2								
	3pt (Floating)	3								
	2pt (On/Off), 3pt (Floating)	4								
	Modulating 0-10 Vdc/2-10 Vdc/Signal Inversion	5								
	Modulating 0-10 Vdc	6								
	2pt (On/Off), 3pt (Floating), 0-10Vdc, 2-10 Vdc, 4-20mA, 0-20mA	9								
Optional Features	Standard Version	1								
	Potentiometer 1k Ω	2								
	Signal Adjustable	3								
	Switches + Signal Adjustable	4								
	Switches	6								
Action	Rotary self-center. Shaft Adapter	1								
	Over-sized Shaft Adapter	3								
Cabling	Universal Appliance Cable	U								
	Plenum Cable	P								
	6' Plenum Cable	Q								
	Post Header Amp	N								
	Terminal Strip	T								
Packaging	Bulk Packaging	/B								
	Multi-packs	/M10								
	Multi-packs	/M24								
	Multi-packs	/M8								

B-56

Damper Actuators

No. 3 Pneumatic Actuator



331-4311 Actuator, clevis and rocker arm.
Mounting for extended shaft



331-4312 Actuator with
pivot mounting bracket



331-4314 Actuator with fixed
mounting bracket and clevis

Description

Designed with a 2-3/8-inch (60 mm) stroke, the No. 3 Pneumatic Actuator is a rugged, metal-fabricated device that provides gradual or positive actuation of HVAC dampers. The actuator is available in a variety of spring ranges for energy optimizing and sequencing with other devices.

Features

- Ozone-resistant rolling rubber diaphragm
- Variety of installation options, including:
 - Fixed bracket mounting
 - Direct front mounting
 - Pivot mounting for extended shaft
- Available with positioning relay

Applications

Recommended for control of mixing box dampers or air valves and damper control for unit ventilators, unit conditioners and small HVAC systems. The No. 3 Pneumatic Actuator is also available with 2-3/4-inch (70 mm) stroke in the three spring ranges.

For more information, contact your local Siemens Building Technologies representative.

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Damper Actuators

Nominal Spring Rating	Max. Thrust lb. (N)				Torque Rating lb.-in (Nm)			
	Full Stroke Forward			Spring Return (No Stroke) 0 psi (0 kPa)	Gradual Operation	2-position Operation or with Positioner		
	15 psi (103 kPa)	18 psi (124 kPa)	25 psi (172 kPa)			15 psi (103 kPa)	18 psi (124 kPa)	25 psi (172 kPa)
3 to 7 psi 21 to 48 kPa)	64 (285)	88 (391)	144 (641)	24 (107)	10 (1.1)	20.2 (2.3)	20.2 (2.3)	20.2 (2.3)
5 to 10 psi (35 to 69 kPa)	40 (178)	64 (285)	120 (534)	40 (178)	10 (1.1)	33.6 (3.8)	33.6 (3.8)	33.6 (3.8)
8 to 13 psi (55 to 90 kPa)	16 (71)	40 (178)	96 (427)	64 (285)	10 (1.1)	53.8 (6.1)	53.8 (6.1)	53.8 (6.1)

With maximum hysteresis of 2.5 psi (17.2 kPa) @ 90° rotation.



Siemens offers a 5-year warranty on damper actuators.

Specifications

Effective Diaphragm Area	8 in. ² (51.5 cm ²)
Stroke	2-3/8-in. (60 mm)
Max. Air Pressure	30 psi (210 kPa)
Nominal Spring Ranges	3 to 7 psi (21 to 50 kPa) 5 to 10 psi (35 to 69 kPa) 8 to 13 psi (55 to 90 kPa)

Ambient Temperature Range

Operating.....	-20°F to 160°F (-29°C to 71°C)
Storage.....	-20°F to 160°F (-29°C to 71°C)

Materials

Housing (totally enclosed)	Aluminum
Stem	Plated Steel
Diaphragm	Ozone-resistant EPT rubber
Spring	Steel
Bearing	Delrin

Air Connection 1/8" NPT Internally Threaded with a

straight dual barb fitting for
1/4" (6 mm) OD tubing

Type of Mounting Front, bracket, pivot, extended shaft

Shipping Weight (Actuator only)1.3 lb. (0.58 kg)

Product Ordering

No. 3 Actuator Description	Mounting Style	No. 3 Part Number		
		Nominal Spring Range		
		3-7 psi (21-48 kPa)	5-10 psi (35-69 kPa)	8-13 psi (55-90 kPa)
Actuator, Basic	Front	331-4310¹	331-4510¹	331-4810¹
Actuator, Basic, for "332" models with Positioning Relay, (difference is elbow air fitting)	Front	—	—	331-4809¹
Actuator, Bracket	Fixed	331-4313	331-4513	331-4813
Actuator, Bracket, Clevis	Fixed	331-4314	—	331-4814
Actuator, Bracket, Ball Joint Connector	Fixed	—	331-4531	—
Actuator, Bracket, Ball Joint Connector with Positioning Relay	Fixed with Positioning Relay	—	—	332-4831
Actuator, Integral Pivot	Pivot	331-4312	331-4512	331-4812
Actuator, Integral Pivot with Pivot Post. Mounted on plate for Extended Shaft ² with Clevis and Crank Arm for 3/8" (10 mm), 7/16" (11 mm), or 1/2" (13 mm) diameter shaft.	Extended Shaft ²	331-4311	331-4511	331-4811
Actuator, Integral Pivot with Pivot Post. Mounted on plate for Extended Shaft ² with Clevis and Crank Arm for 3/8" (10 mm), 7/16" (11 mm), 1/2" (13 mm) diameter shaft.	Extended Shaft ² with Positioning Relay	—	—	332-4811

If the actuator is inoperative, replace the entire actuator.



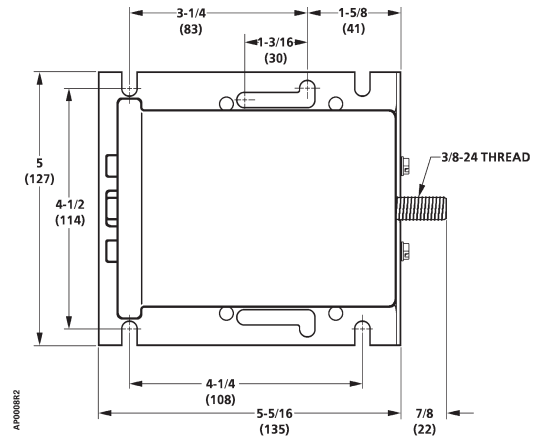
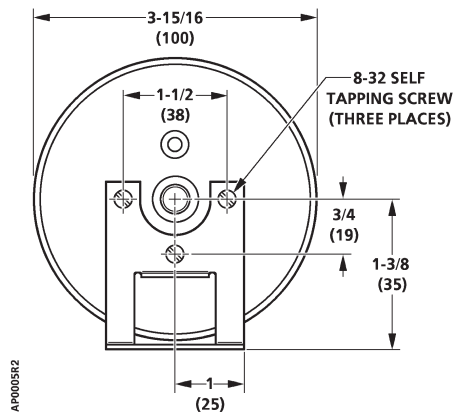
The No. 3 damper actuator part numbers noted above all utilize pneumatic damper actuators that are UL Recognized Components for fire/smoke applications under UL's Damper Actuator category EMKU2, referencing standards UL555 and UL555S. This category covers pneumatic damper actuators used in fire dampers and leakage rated dampers for smoke control.

Ordering Notes:

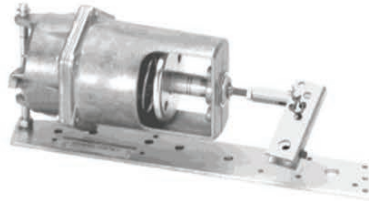
¹ These No. 3 pneumatic basic damper actuator devices are UL component recognized. These same basic damper actuator devices are used in all of the actuator assemblies following the base model in each column.

² When the actuator is ordered with Extended Shaft Mounting, the mounting plate, pivot post and hardware, clevis, damper crank, rocker arm and all screws/nuts are included. Order other frame mounting accessories as required if not supplied by damper manufacturer.

Dimensions



Dimensions shown in inches (mm)



B-60

Reliable Powers™ Controls that meet pneumatic and mechanical needs

To continue providing consistent control and years of service, Siemens maintains a full line of Powers pneumatic and mechanical controllers and actuators. These rugged and reliable devices fulfill a wide variety of customer requirements. They're energy efficient, cost-effective, and simple to operate.

Visit usa.siemens.com/HVACPneumatics to learn more.

SIEMENS

No. 4 Pneumatic Actuator



331-2929 No. 4
Pneumatic Actuator
for frame mounting



331-2904 No. 4
Pneumatic Actuator with
pivot mounting bracket



331-2973 No. 4
Pneumatic Actuator with clevis, and crank.
Universal Mounting Plate for extended shaft
or frame mounting

Description

Designed with a 4-inch (102 mm) stroke, the No. 4 Pneumatic Actuator is a rugged, metal-fabricated device that provides gradual or positive actuation of HVAC and fire/smoke dampers.

Features

- Replaceable diaphragm
- Positioning relay (optional)
- Forward travel stops (optional)
- Hesitation model (provides minimum ventilation without separate damper/actuator)
- Variety of spring ranges for sequencing with other control devices
- Stainless steel actuator shaft

Applications

Recommended for control of outdoor, return air, exhaust, face and bypass, fan discharge, and static pressure control dampers, the No. 4 Pneumatic Actuator also is excellent for controlling specialized dampers and air valves in terminal units, such as unit ventilators and mixing boxes.

The No. 4 actuator hesitation model is frequently used to operate the outdoor air damper on unit ventilators and mixing boxes.

An actuator marked with an asterisk (*) is a component recognized under UL's Damper Actuator category (EMKU2) for use on fire dampers and leakage-related dampers.

Nominal Spring Rating	Max. 121 Thrust lb. (N)				Torque Rating lb.-in (Nm)			
	Full Stroke Forward			Spring Return (No Stroke) 0 psi (0 kPa)	Gradual Operation	2-position Operation or with Positioner		
	15 psi (103 kPa)	18 psi (124 kPa)	25 psi (172 kPa)			15 psi (103 kPa)	18 psi (124 kPa)	25 psi (172 kPa)
3 to 7 psi (21 to 48 kPa)	88 (391)	121 (538)	198 (881)	33 (147)	30 (3.4)	46 (5.2)	46 (5.2)	46 (5.2)
3 to 13 psi (21 to 90 kPa)	22 (198)	55 (245)	132 (587)	33 (147)	30 (3.4)	46 (5.2)	46 (5.2)	46 (5.2)
5 to 10 psi (35 to 90 kPa)	55 (245)	88 (391)	165 (734)	55 (245)	30 (3.4)	77 (8.7)	77 (8.7)	77 (8.7)
8 to 13 psi (55 to 90 kPa)	22 (98)	55 (245)	132 (587)	88 (391)	30 (3.4)	123 (14)	123 (14)	123 (14)
2 to 3, 8 to 13 psi (14 to 20, 55 to 90 kPa) Hesitation	22 (98)	55 (245)	132 (587)	22 (98)	23 (2.6)	—	—	—

Table Notes:
With maximum hysteresis of 2.5 psi (17.2 kPa) @ 90° rotation.

Specifications

Effective Diaphragm Area	11 in. ² (71 cm ²)
Stroke	4-in. (102 mm)
Stroke (hesitation models)	3-in. (76 mm)
Max. Air Pressure	30 psi (207 kPa)
Nominal Spring Ranges	3 to 7 psi (21 to 48 kPa) 3 to 13 psi (21 to 90 kPa) 5 to 10 psi (35 to 69 kPa) 8 to 13 psi (55 to 90 kPa)
Nominal Spring Range (hesitation model)	2 to 3, 8 to 13 psi (14 to 21, 55 to 90 kPa)
Temperature Range	
Operating.....	-20°F to 200°F (-29°C to 93°C)
Storage.....	-20°F to 200°F (-29°C to 93°C)

Materials

Housing (totally enclosed)	Steel, electro-coated epoxy
Shaft	Stainless Steel
Diaphragm	EDPM Rubber
Spring	Steel
Bearing	Delrin

Air Connection 1/8" NPT Internally Threaded with a dual barb elbow fitting for 1/4" (6 mm) OD tubing

Type of Mounting Front, bracket, pivot; universal (extended shaft or frame mount)

Shipping Weight (Actuator only) 3.66 lb. (1.66 kg)

Product Ordering

No. 4 Actuator Description ³	Mounting Style	No. 4 Actuator Part Number			
		Nominal Spring Range			
		3-7 psi (21-48 kPa)	3-13 psi (21-90 kPa)	5-10 psi (35-69 kPa)	8-13 psi (55-90 kPa)
Actuator, Basic with Integral Pivot	Pivot	331-2904¹	331-2905¹	331-2906¹	331-2961¹
Actuator, Basic with Integral Pivot and Positioning Relay	Pivot	—	—	—	332-2961
Actuator with Integral Pivot, Clevis and Clevis Pin for use with frame mounting accessory	Pivot	331-2929	331-2930	—	331-2968
Actuator, Mounting Screws (Non-Pivot)	Front	—	—	—	331-2963
Actuator, Mounting Plate, Ball Joint Connector	Fixed	—	331-3018	—	331-3017
Actuator, Integral Pivot with Pivot Post. Mounted on plate for Extended Shaft ² with Clevis and Crank Arm for 3/8" (9.5 mm), 7/16" (11 mm) or 1/2" (13 mm) diameter shaft. Parts for frame mounting (blade drive) included with kit.	Universal Kit ²	331-3000	331-3001	331-3002	331-2973
Actuator, Integral Pivot with pivot post and Positioning Relay. Mounted on plate for extended shaft with Clevis and Crank for 3/8" (10 mm), 7/16" (11 mm), 1/2" (13 mm) diameter shaft. Parts for frame mounting (blade drive) included with kit.	Universal Kit ² with Positioning Relay	—	—	—	332-2973

If the actuator is inoperative, replace the entire actuator.



The No. 4 damper actuator part numbers noted above all utilize pneumatic damper actuators that are UL Recognized Components for fire/smoke applications under UL's Damper Actuator category EMKU2, referencing standards UL555 and UL555S. This category covers pneumatic damper actuators used in fire dampers and leakage rated dampers for smoke control.

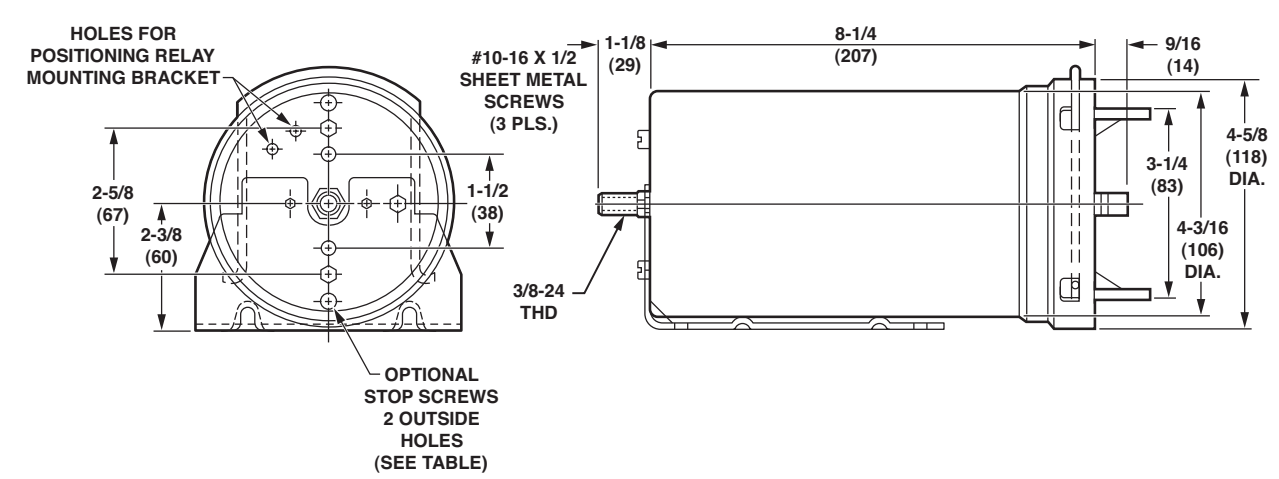
Ordering Notes:

- ¹ These No. 4 pneumatic basic damper actuator devices are UL component recognized. These same basic damper actuator devices are used in all of the actuator assemblies following the base model in each column.
- ² When the actuator is ordered with Universal Kit Mounting, the mounting plate, pivot post and hardware, clevis, damper crank, rocker arm, and all screws/nuts are included. Order other frame mounting accessories as required if not supplied by damper manufacturer.
- ³ The No. 4 pneumatic damper actuator contains a replaceable diaphragm with EPDM rubber. See Siemens document #129-089 to replace.

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Damper Actuators

Dimensions



Dimensions shown in inches (mm)

B-63

Damper Actuators



B-64

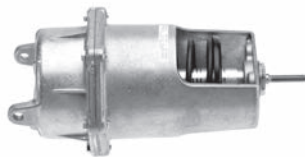
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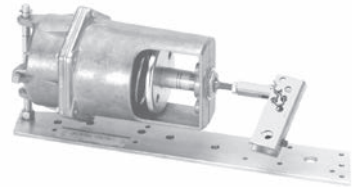
No. 6 Pneumatic Actuator



331-3060 No. 6
Pneumatic Actuator,
pivot mounting type



331-2856 No. 6
Pneumatic Actuator and
clevis for frame mounting



331-3011 No. 6 Pneumatic Actuator,
clevis, crank and rocker arm. Universal mounting
for extended shaft or frame mounting

Description

Designed with a 4-inch (102 mm) stroke, the No. 6 Pneumatic Actuator is a rugged, metal-fabricated device that provides gradual or positive actuation of HVAC and fire/smoke dampers.

Features

- Replaceable diaphragm
- Variety of spring ranges for sequencing with other control devices
- High torque

Options

- Positioning relay
- Forward travel stops

Applications

Recommended for multiple applications, the No. 6 Pneumatic Actuator is excellent for control of outdoor air, return air, mixed air, exhaust, face and bypass, fan discharge, multisection, static pressure control, fan inlet vanes and other special applications.

An actuator marked with an asterisk is recognized under UL's Damper Actuator category (EMKU2) for use on fire dampers and leakage-rated dampers.

B-65

Damper Actuators

Nominal Spring Rating	Max. Thrust lb. (N)				Torque Rating lb.-in (Nm)			
	Full Stroke Forward			Spring Return (No Stroke) 0 psi (0 kPa)	Gradual Operation	2-position Operation or with Positioner		
	15 psi (103 kPa)	18 psi (124 kPa)	25 psi (172 kPa)			15 psi (103 kPa)	18 psi (124 kPa)	25 psi (172 kPa)
3 to 8 psi (21 to 55 kPa)	125 (556)	179 (796)	304 (1352)	54 (240)	50 (5.6)	75 (8.5)	75 (8.5)	75 (8.5)
3 to 13 psi (21 to 90 kPa)	36 (160)	89 (396)	214 (952)	54 (240)	50 (5.6)	75 (8.5)	75 (8.5)	75 (8.5)
8 to 13 psi (55 to 90 kPa)	36 (160)	89 (396)	214 (952)	144 (640)	50 (5.6)	202 (22.8)	202 (22.8)	202 (22.8)

Table Notes:
With maximum hysteresis of 2.5 psi (17.2 kPa) @ 90° rotation.



Specifications

Effective Diaphragm Area	17.9 in. ² (115 cm ²)
Stroke	4-in. (102 mm)
Max. Air Pressure	30 psi (207 kPa)
Nominal Spring Ranges	3 to 8 psi (21 to 55 kPa) 3 to 13 psi (21 to 90 kPa) 8 to 13 psi (55 to 90 kPa)
Temperature Range	
Operating.....	-20°F to 200°F (-29°C to 93°C)
Storage.....	-20°F to 200°F (-29°C to 93°C)

Materials

Housing	Aluminum
Stem	Type 416 Stainless Steel
Diaphragm	Silicone Rubber
Spring	Steel
Bearing	Bronze Oilite

Air Connection 1/8" NPT Internally Threaded

Type of MountingPivot; Universal (extended shaft or frame mount)

Shipping Weight (Actuator only)9.0 lb. (4.08 kg)

Product Ordering

No. 6 Actuator Description ³	Mounting Style	No. 6 Actuator Part Number		
		Nominal Spring Range		
		3-8 psi (21-55 kPa)	3-13 psi (21-90 kPa)	8-13 psi (55-90 kPa)
Actuator, Basic, Integral Pivot	Pivot	331-2793 ¹	331-2794 ¹	331-3060 ¹
Actuator, Integral Pivot and Forward Travel Stops	Pivot	—	—	331-2988
Actuator with Clevis	Pivot	331-2857	331-2858	331-2856
Actuator with Clevis and Positioning Relay	Pivot	—	—	332-2856
Actuator, Integral Pivot with pivot post. Mounted on plate for Extended Shaft ² mounting with Clevis and Crank for 3/8" (10 mm), 7/16" (11 mm) or 1/2" (13 mm) diameter shaft.	Extended Shaft ²	331-3012	331-3013	331-3011
Actuator, Integral Pivot with pivot post. Mounted on plate for Extended Shaft ² mounting with Clevis and Crank for 3/8" (10 mm), 7/16" (11 mm) or 1/2" (13 mm) diameter shaft.	Extended Shaft Kit ² with Positioning Relay	—	—	332-3011
If the actuator is inoperative, replace the entire actuator.				

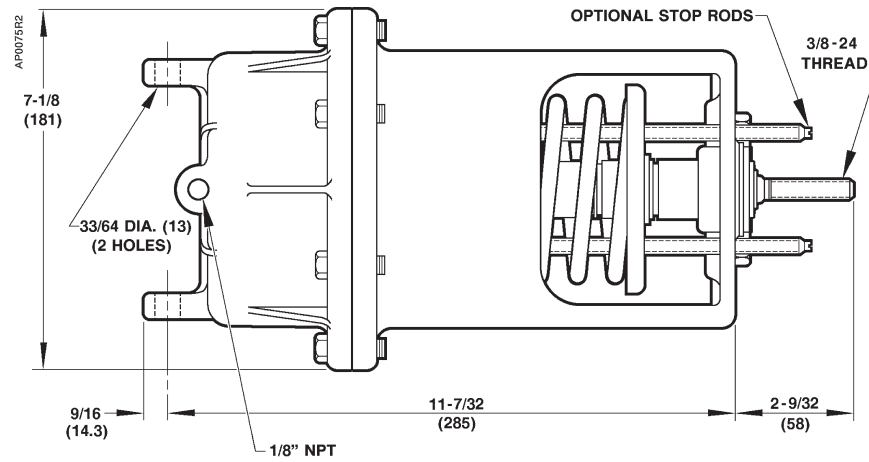


The No. 6 damper actuator part numbers noted above all utilize pneumatic damper actuators that are UL Recognized Components for fire/smoke applications under UL's Damper Actuator category EMKU2, referencing standards UL555 and UL555S. This category covers pneumatic damper actuators used in fire dampers and leakage rated dampers for smoke control.

Ordering Notes:

- ¹ These No. 6 pneumatic basic damper actuator devices are UL component recognized. These same basic damper actuator devices are used in all of the actuator assemblies following the base model in each column.
- ² When the actuator is ordered with universal mounting, the mounting plate, pivot post and hardware, clevis, damper crank, rocker arm, and all screws/nuts are included. Order other frame mounting accessories as required if not supplied by damper manufacturer.
- ³ Siemens No. 6 Pneumatic Damper Actuator contains a replaceable diaphragm with silicone rubber. See Siemens document #129-089 for replacement instruction for this diaphragm.

Dimensions



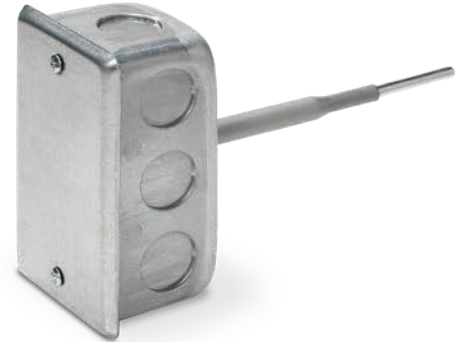
Dimensions shown in inches (mm)

B-67

Damper Actuators



Siemens offers a 5-year warranty on sensors.*



B-68

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Less Effort

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System Performance

Optimize building efficiency

* Not applicable to PL-link devices, IAQ multi-sensor or Series 2200/3200 units with display.

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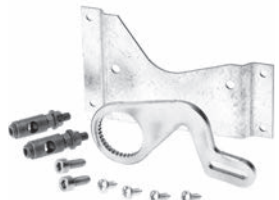
Refer to Valve Accessories & Service Kits, A-309, for Rack & Pinion Linkage.

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Damper Actuators

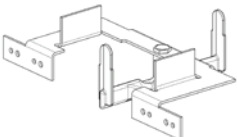
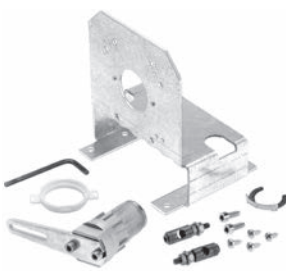
Accessories & Service Kits

	Description	Series	Qty	Part No.
		DXR1		
	Mini USB to Standard USB adapter USB Adapter to mini-USB adapter for WLAN stick.	●	1	POL-HMI-MUSB
	WLAN stick USB - WLAN adapter for temporary WLAN connectivity during commissioning workflow with mobile devices.	●	1	S55803-Y130-A100

	Description	Series			Quantity	Part No.
		GDE GLB	GEB GMA	GCA GIB GBB		
	Hex Key	●			Pkg. of 24	985-054P24
	Crank Arm Kit Allows a direct-coupled actuator to provide an auxiliary linear drive; can be used to simultaneously drive a set of opposing or adjacent dampers with a single actuator.		●		1	ASK71.13
				●	1	ASK71.3
	Crank Arm Kit with Bracket For use in applications where the actuator can be rigidly surface-mounted and a linear stroke output is required.		●		1	ASK71.14
				●	1	ASK71.4
	Rotary to Linear Kit For use with GDE, GLB, and GDB actuators.	●			1	ASK71.5
	Rotary to Linear Kit with Universal Mounting Bracket For use with GDE, GLB, and GDB actuators	●			1	ASK71.6
	Universal Crank Arm For linear applications requiring connection to damper shaft when ball joint connection is not possible. • Shaft sizes 3/8 to 1"	●	●	●	1	ASK71.9

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Damper Actuators

	Description	Series			Quantity	Part No.
		GDE GLB	GEB GMA	GCA GIB GBB		
	Tandem Mount Bracket For dual mounting of modulating (0 to 10 V) GCA16X actuators.			●	1	ASK73.2U
	Floor Mount Kit For airstream applications and where a foot-mounted actuator can be used. Ideal replacement of a Honeywell MOD motor. Includes crank arm, Teflon support-bearing ring, and mounting fasteners.			●	1	ASK71.1U
	Frame Mount Kit For direct mounting to damper frame. Includes a crank arm to generate a linear stroke, a Teflon support-bearing ring to minimize side-loading on the actuator's output bearing, and other mounting fasteners.			●	1	ASK71.2U
	Combined Foot/Frame Mount Kit		●		1	ASK71.11
	Damper Push Rods 5/16" (8 mm) dia.	●	●	●		
	• 12" (30 cm) Length				1	338-041
	• 15" (38 cm) Length				1	338-042
	• 18" (46 cm) Length				1	338-043
	• 24" (61 cm) Length				1	338-044
	• 36" (91 cm) Length				1	338-045
	• 48" (122 cm) Length				1	338-046

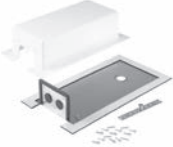
Accessories & Service Kits

	Description	Series			Quantity	Part No.
		GDE GLB	GEB GMA	GCA GIB GBB		
	Anti-rotation Bracket	●			Pkg. of 24	985-055P24
	• Mounting Screws	●			Pkg. of 48	985-053P48
	Anti-rotation Bracket			●	1	985-006
	Anti-rotation Bracket		●			985-092
	Standard Shaft Adapter Replacement for a standard self-centering shaft adapter.			●	1	985-004
	• up to a 1" (25 mm) D					
	• up to 3/4" (20 mm) D		●		1	985-093
	Over-sized Shaft Adapter Accepts up to 1.05" (27 mm) diameter shaft and can be used for jackshafts that are slightly oversized. <i>Note: When used with a GIB, accepts shaft diameters from 3/4 to 1-1/20" (19 to 27 mm).</i>			●	1	ASK74.1U
	Replacement Shaft Adapter Clip		●		Pkg. of 20	985-242P20
				●	Pkg. of 20	985-241P20
	5/8 to 3/4" (10 mm to 19 mm) Actuator Shaft Insert For use with GIB and Over-sized Shaft Adapter, ASK74.1U.			●	Pkg. of 20	985-052P20
	3/8" (8 to 10 mm) Actuator Shaft Insert For use with GDE, GLB, and GDB actuators.	●			Pkg. of 10	ASK78.3U
	1/2" (13 mm) Shaft Guide <i>Note: This part is factory-installed with all GDE/GLB damper actuators.</i>	●			Pkg. of 25	985-101P25
	Standard Position Indicators For use with GDE, GLB, and GDB actuators.	●			Pkg. of 10	985-051P10
			●		Pkg. of 10	985-094P10
				●	Pkg. of 10	985-003
	1/2" (13 mm) Conduit Adapters For use with select GDE and GLB standard actuators. See data sheet for more info.	●			1	ASK76.1U
		●			Pkg. of 20	ASK76.1UP20
	1/2" (13 mm) Conduit Adapters			●	Pkg. of 20	985-008P20
	1/2" (13 mm) Conduit Adapter – Externally Threaded			●	Pkg. of 25	985-035P25

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Damper Actuators

Accessories & Service Kits

	Description	Series				Quantity	Part No.
		GDE GLB	GEB GMA	GCA GIB GBB	GPC GQD		
	NEMA 4X Rated Weathershield Includes the NEMA Type 4X Weathershield Enclosure Assembly and NEMA 4X Cover, plus 3 anti-rotation brackets that accommodate all control adaptor types, and all the screws and standoffs needed to mount kit to equipment.	●	●	●	●	1	ASK75.7U
	NEMA 3R Rated Weathershield Includes cover, base plate with factory-installed gasketing, 15TEK self-drilling screws, and anti-rotation (mounting) bracket. Knockouts for connection of 1/2" conduit also included; NEMA 3R rated.		●			1	ASK75.3U
				●		1	ASK75.1U
	NEMA 3R Rated Heater and Weathershield Includes weathershield listed above and heater assembly for operation in temps as low as -58°F; NEMA 3R rated.		●			1	985-107
				●		1	985-106
	Heater Assembly Includes replacement heater assembly.		●			1	985-108
				●		1	985-105
	External Auxiliary Switch Kit Includes dual switch package rated to 250 Vac, mounting screws and adapter rings. Mounts to the actuator, not damper shaft.		●	●		1	ASC77.2U
	500 Ohm Restrictor Kit Converts 4-20 mA signal to 2 to 10 Vdc.	●	●	●		1	985-124
	0 to 10 Vdc Input Cable, 3 ft. For use with GDE161.1N only.	●				Pkg. of 12	985-133
	Daisy Chain Cable, 12 ft. For use with GDE131.1N and GDE161.1N only.	●				Pkg. of 12	985-134
	Daisy Chain Cable, 25 ft. For use with GDE131.1N and GDE161.1N only.	●				Pkg. of 12	985-135
	Universal Indirect Mounting Kit Floor or frame mounting with the GQD actuator series.				●	1	ASK80.1
	Rotation Limiter Kit Limits the rotation angle of the GQD actuator from the standard 90°.				●	Pkg. of 10	ASK74.11

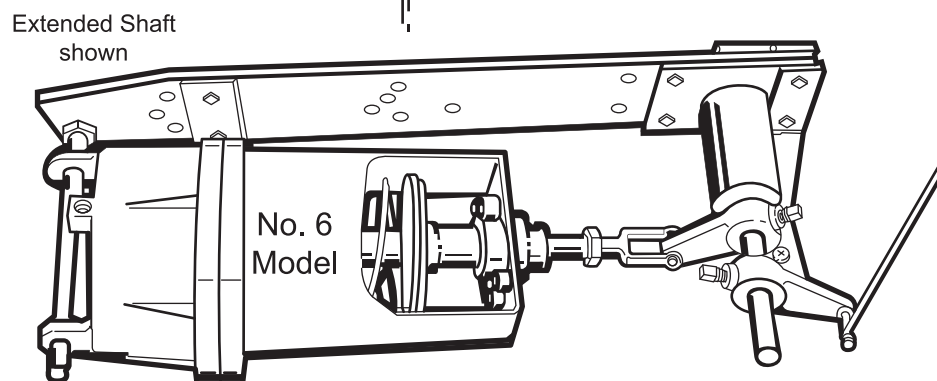
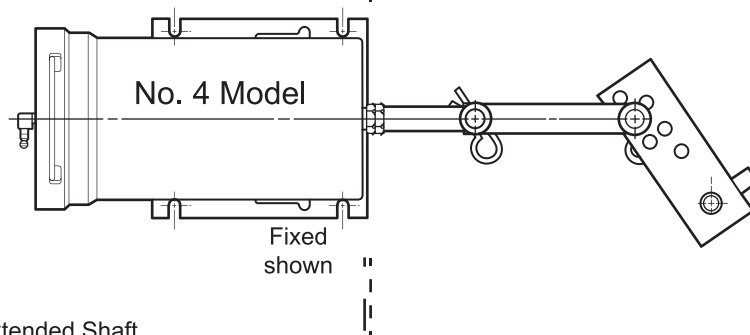
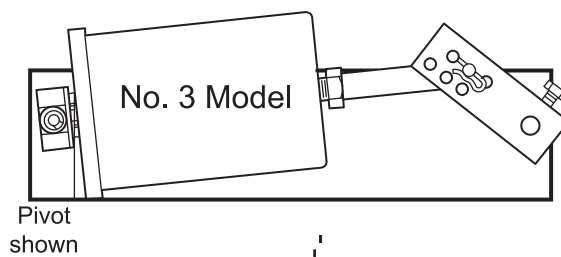
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Damper Actuators

Damper Actuator Accessories Location Diagram

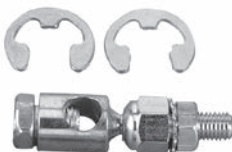
Mounting
Style

Connections
Damper Fittings



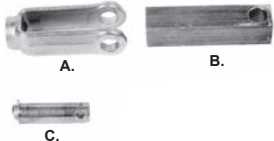
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Damper Actuators

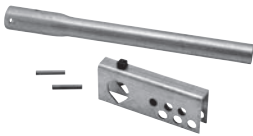
	Description	Used with Pneumatic Actuator Models			Quantity	Part No.
		No. 3	No. 4	No. 6		
Connection Hardware and Damper Fittings						
	Damper Shaft Crank Adjustable radius, 3/4" (19 mm) to 4-5/8" (117 mm), for 3/8" (10 mm) diameter dampershaft.	●	●		1	331-805
	Damper Shaft Crank Selectable radius, 45°, 60°, and 90° angular rotation, for 3/8" (10 mm) to 1/2" (13 mm) diameter damper shaft.	●	●			
	• 1/2"				1	331-941
	• 5/8"				1	333-182
	• 3/4"				1	333-183
	• 1"				1	333-181
	Cast Iron Crank and Set Screws For 1/2" (6 mm) OD shaft.			●	1	333-078
	Linkage Kit 4" (102 mm) link and crank. For 3/8 inch (10 mm) to 1/2 inch (13 mm) diameter damper shafts.	●	●	●	1	331-958
	Linkage Kit 4" (102 mm) rod, ball joint and crank. For 3/8 inch (10 mm) to 1/2 inch (13 mm) diameter damper shafts.	●	●	●	1	331-947
	Ball Joint Connector	●	●		1	331-656
	Pivot Post Kit For use with No. 3 actuator. 1/4-28 x 7/16 inch bolt and nut 5/16 inch rod receiver.	●			1	331-657

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Damper Actuators

	Description	Used with Pneumatic Actuator Models			Quantity	Part No.
		No. 3	No. 4	No. 6		
Connection Hardware and Damper Fittings						
	Ball Joint Connector Linkage Kit For Trane and Nesbitt units • 3/8-24 ball joint connector • 1/4-20 ball joint connector • 8 inch (202 mm) long, 5/16 inch push rod • Bracket, lockwashers, nuts	●	●		1	331-671
	Clevis and Components for Frame Mounting • Forged Steel Clevis, 2 in. long (A)	●	●	●	1	331-653
	• 5/8" Square Steel Clevis, 2.6 in. long (B)				1	333-207
	• Clevis Pin (C)				1	331-293
	Steel Pivot Post For additional clearance (long length) for actuator. Includes steel pivot post lockwasher, nuts (2), and E-rings (2).		●	●	1	333-045
Actuator Shaft Extensions and Damper Push Rods						
	Actuator Shaft Extension Kit Includes push rod, 1/4"-28 ball joint connector, coupling and screws.	●	●		1	331-674
	Actuator Shaft Extension Kit Includes shaft/clevis adapter (2 required), clevis adapter rod and nuts. Field-assembled actuator shaft extension kit with field fabricated 1/2" NPT threaded pipe (not provided). Internally Threaded adapters are 1/2"-14 NPT and 3/8"-24 UNS threads.		●	●	1	333-030
	Damper Shaft Extension 1/2" (13 mm) diameter damper shaft extension rod. Rod is 2-1/4" (57 mm) long.	●	●	●	1	331-631
	Damper Shaft Extension 1/2" (13 mm) diameter damper shaft extension rod. Rod is 9" (229 mm) long.	●	●	●	1	333-043-03

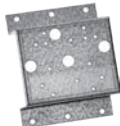
Accessories & Service Kits

	Description	Used with Pneumatic Actuator Models			Quantity	Part No.
		No. 3	No. 4	No. 6		
Actuator Shaft Extensions and Damper Push Rods						
	Long Shaft Extension For a 1/2" (13 mm) hollow damper shaft.		●		1	333-184
	Shaft Extension 1" (25 mm) diameter shaft extension 11-5/8" (295 mm) long for Ruskin dampers. Includes 1" (25 mm) diameter crank and 2 roll pins for assembly.		●	●	1	333-194
	Flange Bearing 1/2" (13 mm) damper shaft bearing for universal mounting plate, 331-623.		●	●	1	331-862
	Damper Push Rods 5/16" (8 mm) dia.	●	●	●		
	• 12" (30 cm) Length				1	338-041
	• 15" (38 cm) Length				1	338-042
	• 18" (46 cm) Length				1	338-043
	• 24" (61 cm) Length				1	338-044
	• 36" (91 cm) Length				1	338-045
	• 48" (122 cm) Length				1	338-046
	Adjustable Yoke End Adapter • 1/2–20 thread to 1/2 inch NPT				1	331-351
	No. 3 Pivot Post Kit For extended shaft mounting plate.	●			1	331-006
	• E-ring				2	
	• Lockwasher				2	
	• Nut				2	
	Frame Mounting Lug Kit	●	●	●	1	331-004
	• Screw				2	
	• Nut				2	

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Damper Actuators

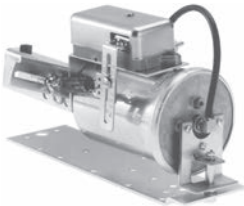
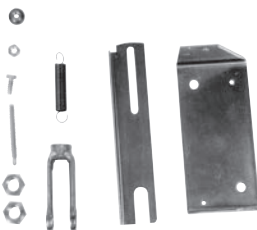
Accessories & Service Kits

	Description	Used with Pneumatic Actuator Models			Quantity	Part No.
		No. 3	No. 4	No. 6		
Actuator Shaft Extensions and Damper Push Rods						
	Extended Shaft Mounting Plate May also require pivot post, clevis, crank and miscellaneous mounting hardware. 3" (76 mm) W x 10-1/2" (267 mm) L.	●			1	331-033
	Offset Mounting Bracket For mounting the universal mounting lug, pivot post, clevis, crank, and miscellaneous mounting hardware.		●	●	1	333-176
	Universal Mounting Plate May also require frame mounting lug, pivot post, clevis, crank and miscellaneous mounting hardware.		●	●		
	• 3/4" (20 mm)				1	331-623
	• 1" (25 mm)				1	331-623A
	Actuator Side Mounting Bracket For side mounting of No. 3 or No. 4 actuators.	●	●		1	331-916
	Pivot Mounting Kit Pivot mounting bracket and screws included (3).	●			1	333-148
	Remote Mounting Kit For use with actuator/clevis assembly. Allows connection to damper shaft when damper shaft and actuator pivot post are mounted on different planes. Field fabricated 3/8" (10 mm) diameter push rod not included. Cut to length as needed.		●	●	1	331-618
	Right Angle Mounting Plate For mounting actuator to floor. <i>Order separately.</i>		●	●	1	333-208
	Copper to Polyethylene Tubing Adapters 24" length. Adapts 1/4 inch (6 mm) OD poly tubing to 1/4 inch (6 mm) OD copper tubing. Eliminates the need for compression fitting.	●	●	●	Pkg. of 50	141-426

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Damper Actuators

Accessories & Service Kits

	Description	Used with Pneumatic Actuator Models			Quantity	Part No.
		No. 3	No. 4	No. 6		
Positioning Relay and Relay Mounting Kits						
	Positioning Relay A compact, pneumatic device designed to provide positive positioning of a pneumatic actuator. The positioned provides supply air pressure against the actuator diaphragm to initiate stem or shaft movement. The actuator spring reverses the stem or shaft movement.	●	●	●	1	147-2000
	Positioning Relay Actuator Mounting Kit for No. 3 Damper Actuator Can also be factory-assembled to extended shaft mounted actuators. If using cast iron crank, it must be replaced with a 331-941 crank. (mfg. after 1/93)	●			1	147-104
	Positioning Relay Mounting Kit for No. 4 Damper Actuator		●		1	147-314
	Positioning Relay Mounting Kit for No. 6 Damper Actuator			●	1	147-276

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Damper Actuators

Accessories & Service Kits

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Damper Actuators

	Description	Used with Pneumatic Actuator Models			Quantity	Part No.
		No. 3	No. 4	No. 6		
Replacement 147 Feedback Springs for Positioning Relay						
	Small Red Travel Range: 3/4" (19 mm) to 1" (25 mm) • VP 591 8 in. Valve Act. (147-333) • Flowrite Series 599 8-inch (599-00426) • Flowrite Series 599 12-inch (599-00423) • Flowrite 8-inch models 1 and 2 (147-277) • VP 591/3 Flowrite Valve Act. (147-311) • Super Flowrite Valves, 1/2" – 4"				1	147-290
	2" Red Travel Range: 2-3/8" (60 mm) to N/A • No. 3 Damper Actuator (147-104)	●			1	147-105
	Long Zinc Plate Travel Range: 3" (76 mm) to 3-1/4" (83 mm) • No. 6 Damper Actuator (147-276)			●	1	147-292
	Blue Travel Range: 4" (102 mm) to 4-1/4" (108 mm) • No. 6 Damper Actuator (147-276)			●	1	147-293
	Zinc Pl. or Yell. Chr. Travel Range: 4" (102 mm) to 6" (152 mm) • No. 4 Damper Actuator (147-314)		●		1	147-313
Actuator Service and Repair Accessories						
	No. 4 Cast Aluminum Housing, Standard Legacy actuators with part numbers lower than or equal to 331-2885.		●		Pkg. of 5	333-072
	No. 4 Diaphragm for High Ambient Temperature For newer models with part numbers 331-2888 and higher (Up to 400°F diaphragm).		●		Pkg. of 5	333-071
	No. 6 Standard Replacement Diaphragm			●	Pkg. of 5	333-572