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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

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

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

**LC Model**

***See data sheets for specific types

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<th>Damper Type</th>
<th>Damper Leakage at 1° H₂O (240 Pa) Static Pressure</th>
<th>Damper Torque for Approach Air of 1200 ft./min. (6 m/s) or less</th>
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<td>More than 10 CFM/ft.² (50.8 l/s per m²)</td>
<td>2.5 lb.-in./ft.² (0.3 Nm/m²)</td>
</tr>
<tr>
<td>Low Leakage</td>
<td>5 to 10 CFM/ft.² (25.4 to 50.8 l/s per m²)</td>
<td>5.0 lb.-in./ft.² (0.6 Nm/m²)</td>
</tr>
<tr>
<td>Very Low Leakage</td>
<td>Less than 5 CFM/ft.² (Less than 25.4 l/s per m²)</td>
<td>7.0 lb.-in./ft.² (0.8 Nm/m²)</td>
</tr>
</tbody>
</table>

For detailed damper actuator sizing information, please refer to Engineering, Section G.

www.usa.siemens.com/hvac
**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

**Description**

The OpenAir 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.
GQD Series Specifications

**Operating Voltage** .................................................. 24 Vac/dc ±20%
120 Vac ±15%

**Frequency** ............................................................... 50/60 Hz

**Power Consumption**
- **GQD121.1P (24 Vac/24 Vdc)**
  - Running .................................................. 6.5 VA (4.5W)
  - Holding .................................................. 4 VA (2.5W)
- **GQD131.1P (24 Vac/24 Vdc)**
  - Running .................................................. 4 VA (2.5W)
  - Holding .................................................. 3 VA (1.5W)
- **GQD151.1P (24 Vac/24 Vdc)**
  - Running .................................................. 4.5 VA (3W)
  - Holding .................................................. 3.5 VA (2W)
- **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°
  - 24 to 250 Vac
    - AC Rating ............................................. 24 to 250 Vac
      - AC 6A resistive
    - DC Rating (Standard/Plenum Cable) ............. 12 to 30 Vdc
      - DC 2A
- AC 6A resistive
- AC 2A General Purpose
- 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 to 130°F (-32 to 55°C)
- Storage and Transport ..................................... -40 to 158°F (-40 to 70°C)

**Ambient Humidity** .............................................. 95% RH, non-condensing

**Agency Approvals** ............................................. UL873, 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)

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GQD Series Product Ordering

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<td>GQD126.1P</td>
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<td>Plenum Cable/Bulk</td>
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<tr>
<td>2-position (Open/Closed), 120 Vac</td>
<td>Standard Cable</td>
<td>GQD221.1U</td>
<td>GQD226.1U</td>
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<tr>
<td></td>
<td>Standard Cable/Bulk</td>
<td>GQD221.1U/B</td>
<td>—</td>
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<tr>
<td>Floating, 24 Vac/dc</td>
<td>Plenum Cable</td>
<td>GQD131.1P</td>
<td>GQD136.1P</td>
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<td></td>
<td>Plenum Cable/Bulk</td>
<td>GQD131.1P/B</td>
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<tr>
<td>2 to 10 Vdc/10 to 2 Vdc, (Modulating), 24 Vac/dc</td>
<td>Plenum Cable</td>
<td>GQD151.1P</td>
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<td>Plenum Cable/Bulk</td>
<td>GQD151.1P/B</td>
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**Ordering Note** Bulk packages contain 10 actuators unless otherwise noted.
GQD Series Open Air Spring Return Electronic Damper Actuator

Dimensions shown in inches (mm).
Our customer support teams are accessible and happy to assist you with ordering, fulfillment, and shipping questions. Call a representative at 1-800-516-9964 from 7 am to 5:30 pm (CST) Monday through Friday.

Contact Customer Support or your Account Executive with any questions. We appreciate your business and look forward to helping you!
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

Description
The OpenAir 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
- Precabled
- UL60730, cUL (C22.2 No. 24-93), and CE listed
- All modulating types contain built-in feedback
- Assembled in the U.S.A

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

Applications
The OpenAir GMA 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 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.
GMA Series Specifications

**GMA Series Product Ordering**

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<td>Plenum Cable</td>
<td>GMA161.1P</td>
<td>GMA163.1P</td>
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<td>GMA166.1P</td>
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<td>Modulating, 24 Vac/dc 2 to 10 Vdc/10 to 2 Vdc (Signal inversion)</td>
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<td>Plenum Cable</td>
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<tr>
<td>2-position, 120 Vac</td>
<td>Standard</td>
<td>GMA221.1U</td>
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<td>—</td>
<td>GMA226.1U</td>
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<tr>
<td>Floating, 24 Vac/Vdc</td>
<td>Plenum Cable</td>
<td>GMA131.1P</td>
<td>—</td>
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<td>GMA136.1U</td>
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Ordering Note: Bulk packages contain 10 actuators.

www.usa.siemens.com/hvac
GMA Series Dimensions

GMA/GEB Series OpenAir Damper Actuator

Dimensions shown in inches (mm).
Find products and our complete offering online

The Siemens Webshop helps you save time:

- Search for products by part number or description
- Check availability and pricing
- Print out product information for submittals
- Link to technical documentation
- Download installation instructions
- Create a reusable template order form for frequently ordered parts

Order from our complete portfolio at:
www.usa.siemens.com/buildingtechnologiesonlineordering
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

**Description**
Designed for control of building HVAC dampers, the OpenAir 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 U.S.A.
- Manual override
- Precabled
- All modulating types contain built-in feedback

**Applications**
The OpenAir GCA 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 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.

**Options**
- Independently adjustable dual auxiliary switches
- Potentiometer for floating models
- Adjustable span and offset
- Signal inversion
### GCA Series Specifications

#### Operating Voltage (1–2)
- GCA1x: 24 Vac ±20%, 24 Vdc ±10%
- GCA2x: 120 Vac ±10%

#### Frequency
- 50 to 60 Hz

#### Power Consumption
- GCA15x.xx & GCA16x.xx
  - Running: 9 VA (7 W)
  - Holding: 5 VA (4 W)
- GCA12x.xx AC 24 Vac/dc
  - Running: 8 VA (6 W)
  - Holding: 3 VA (3 W)
- GCA22x.xx AC 120 Vac
  - Running: 9 VA (7 W)
  - Holding: 9 VA (7 W)
- GCA13x.xx AC 24 Vac/dc
  - Running: 8 VA (6 W)
  - Holding: 5 VA (4 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)

- **GCA15x/6xx**
  - 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

### GCA Series Product Ordering

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<thead>
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<th>Cabling</th>
<th>Part No.</th>
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<td>Standard</td>
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<tr>
<td>0 to 10 Vdc, 24 Vac/dc</td>
<td>Plenum Cable/Bulk</td>
<td>GCA161.1P/B</td>
</tr>
<tr>
<td>0 to 10 Vdc or 2 to 10 Vdc Modulating 24 Vac/dc, (Signal Inversion)</td>
<td>Standard</td>
<td>GCA151.1U, GCA151.1P</td>
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<tr>
<td>2-position, 24 Vac/dc</td>
<td>Standard/Bulk</td>
<td>GCA121.1U, GCA121.1U/B</td>
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<td>2-position, 120 Vac</td>
<td>Standard/Bulk</td>
<td>GCA221.1U, GCA221.1U/B</td>
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<td>Floating, 24 Vac/dc</td>
<td>Standard</td>
<td>GCA131.1U, GCA131.1P</td>
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#### Ordering Note
- Bulk packages contain 8 actuators.

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**www.usa.siemens.com/hvac**
Siemens damper actuators ship ready to install, with built-in time and cost-saving features such as a patented self-centering shaft adapter, standardized wiring, and brushless motor technology. With torques ranging from 20 to 310 lb-in., this powerful and flexible line-up delivers out-of-the-box performance and long-lasting reliability for all types of HVAC applications.

Fast acting GNP/GAP rotary actuators bring the proven OpenAir™ platform to critical environment control. Their addition is perfectly suited for Supply Terminals, Exhaust Terminals, and Fume Hoods.
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 OpenAir direct-coupled fail safe/fail-in-place electronic actuators are available in modulating, two-position, and floating control of laboratory fume hoods, supply and exhaust units.

Features
• Fast operation, 2 seconds 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 U.S.A.
• 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.
GNP/GAP Series Specifications

Operating Voltage (1–2) .................................................... 24 Vac/dc ±20%
Frequency ........................................................................ 50 to 60 Hz
Power Consumption
  GNP19x
    Running ................................................................. 20 VA/13W
    Holding ................................................................. 8 VA/5W
  GAP19x
    Running ................................................................. 28 VA/19W
    Holding ................................................................. 8 VA/5W
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 ...................................................... >100K 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 ......................................... ± 1mA
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 ......................................... ± 1mA
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 OpenAir™ GNP/GAP Series Installation Instructions, 129-541.

GNP/GAP Series Product Ordering

<table>
<thead>
<tr>
<th>Input Signal</th>
<th>Standard Model w/Plenum Cable</th>
<th>Dual Adjustable Auxiliary Switches</th>
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<tr>
<td><strong>Fail Safe</strong></td>
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<tr>
<td>2P, Floating, 0-10 Vdc, 2-10 Vdc, 4-20 mA</td>
<td>GNP191.1P</td>
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<td><strong>Fail-in-place</strong></td>
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<td>GAP191.1P</td>
<td>GAP196.1P</td>
</tr>
</tbody>
</table>

www.usa.siemens.com/hvac
SimpleSelect quickly narrows your search from our entire portfolio of valves down to the products you need. It features a robust cross-reference that searches through 8,000 competitive and obsolete Siemens part numbers to find the exact replacement.

Quickly build a valve schedule from our complete portfolio of valves & actuators: PICV, Zone, Globe, Ball, Magnetic, and Butterfly Valves.

• An intuitive, easy-to-use interface helps you quickly size the valve you need with menus that allow you to:
  • Select type of valve from the portfolio
  • Choose the medium being controlled
  • Determine the correct Cv or required flow (gpm)
  • Calculate pressure drop and quantity of steam

Go to www.usa.siemens.com/simpleselect to put this time-saving tool to work for you today!
Electronic Damper Actuator
Non-spring Return

Easily Replaces:
• Belimo LM Series

44 lb.-in. Torque
24 Vac, Floating Control
0 to 10 Vdc, Modulating Control

Description
The OpenAir GDE Series Direct-coupled 24 Vac Non-spring Return Rotary Electronic Actuator is designed for 0 to 10 Vdc or floating control of building HVAC dampers.

Features
• Compact design
• Easy-to-see position indicator
• 0 to 10 V or floating models
• Self-adapting capability for maximum flexibility in damper positioning
• UL, cUL, CE listed
• Quiet, low-power operation
• Rated NEMA 2
• Assembled in the U.S.A.
• 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/stop
• Standard or plenum cable
• Available in bulk packs for additional savings
• Potentiometer on floating control

Applications
The OpenAir 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.
GDE Series Specifications

Operating Voltage .............................................. 24 Vac
Frequency .................................................... 50/60 Hz
Power Consumption ....................................... 2 to 3 VA

Input signal (8–2)
Voltage-Input .................................................. 0 to 10 Vdc
Input Resistance ............................................ 100K Ohms

Position Output Signal (9–2)
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) ........................................ 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
GDE132.1P .................................................. 0 to 1000 Ohm <10 mA

GDE Series Product Ordering

<table>
<thead>
<tr>
<th>Input Signal</th>
<th>Standard</th>
<th>With Potentiometer</th>
<th>Slope/Offset Adjustable</th>
<th>Dual Aux. Switches &amp; Slope/Offset Adjustable</th>
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<td>0 to 10 Vdc</td>
<td>GDE161.1P</td>
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<td>GDE161.1P/B (24 pk)</td>
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<td>Post Header AMP</td>
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Cables compatible with the GDE131.1N and GDE161.1N sold separately on page B-53.

www.usa.siemens.com/hvac
GDE Series Dimensions

GDE/GLB Series OpenAir Electronic Damper Actuator

Dimensions shown in inches (mm).
Online order tracking

This handy online feature stores all your past and current orders online for quick and easy reference. The Order Tracker function lets you access information such as:

- Ordered By
- Order No.
- Shipping Date
- Date Placed
- Acknowledgement of Order
- Shipment Tracking

To view your history and status, register online at www.usa.siemens.com/buildingtechnologiesonlineordering
Electronic Damper Actuator
Non-spring Return

Easily Replaces:
- Belimo NM Series

88 lb.-in. Torque
24 Vac, Floating Control
0 to 10 Vdc, Modulating Control

Description
The OpenAir GLB Series Direct-coupled 24 Vac Non-spring Electronic Actuator is designed for 0 to 10 Vdc or floating control of building HVAC dampers.

Features
- Compact design
- Easy-to-see position indicator
- 0 to 10 V or floating models
- Self-adapting capability for maximum flexibility in damper positioning
- UL, cUL, CE listed
- Quiet, low-power operation
- Rugged all metal housing, rated NEMA 2
- Assembled in the U.S.A.
- Manual override
- Plenum-rated cable
- Modulating actuators contain built-in feedback

Applications
The OpenAir 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.

Options
- Independently adjustable dual auxiliary switches
- Adjustable start/span
- Potentiometer on floating control
GLB Series Specifications

Operating Voltage .................................................. 24 Vac
Frequency .......................................................... 50 to 60 Hz
Power Consumption ............................................ 3.3 VA (modulating)
                          ............................................. 2.3 VA (floating)
Input Signal (8–2)  Voltage-Input .............................................. 0 to 10 Vdc
                          Voltage-Output ............................................ 0 to 10 Vdc
Input Resistance .............................................. 100K Ohms
Position Output Signal (9–2) 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) ........................................ 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
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
GLB132.1P .......................................................... 0 to 1000 Ohm <10 mA

GLB Series Product Ordering

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<td>3' Plenum Cable</td>
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<td>GLB136.1P</td>
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<td>6' Plenum Cable</td>
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<tr>
<td>0 to 10 Vdc</td>
<td>3' Plenum Cable</td>
<td>GLB161.1P</td>
<td>GLB163.1P</td>
<td>GLB164.1P</td>
<td>GLB166.1P</td>
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<td>6' Plenum Cable</td>
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</table>

Accessories & Service Kits

Refer to page B-21 for Dimensions.
Electronic Damper Actuator
Non-Spring Return

Easily Replaces:
- Belimo NM Series

132 lb.-in. Torque
24 Vac, Floating Control
0 to 10 Vdc or 2 to 10 Vdc, Modulating Control

Description
The OpenAir GEB Series Direct-coupled, Non-spring Return Electronic Damper Actuators provide modulating and floating control of building HVAC dampers.

Features
- Integral 1/2-inch conduit connector
- Unique self-centering shaft coupling
- All metal housing
- Manual override
- DIP switches GEB16x.1x
  - Direction of rotation
  - Adaptation of rotational angle range
  - Selection of 0 to 10 or 2 to 10 Vdc control signal
- Mechanical range adjustment capability
- Easily visible position indicator
- Precabled
- UL60730, cUL (C22.2 No. 24-93) and CE listed
- Brushless motor technology
- All modulating types contain built-in feedback
- Assembled in the U.S.A.

Applications
The OpenAir 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 dampers that require up to 132 lb.-in. of torque.

Options
- Dual independently adjustable auxiliary switches
- Adjustable offset/span
- Floating control models available with feedback potentiometer
GEB Series Specifications

Power Supply .............................. 24 Vac
Operating Voltage .......................... 24 Vac ±20%
Frequency ................................... 50/60 Hz
Runtime for 90° ......................... 125 seconds (60 Hz)
150 seconds (50 Hz)
Power Consumption GEB16x.1x
Running ..................................... 5 VA/4W
Holding ..................................... 1 VA
Power Consumption GEB13 x.1x
Running ..................................... 3 VA/3W
Holding ..................................... 1 VA
Equipment Rating (24 Vac) ................ Class 2 per UL/CSA
Control Signal
Input Signal (wires 8-2) ................... GEB16x.xx
Voltage Input .............................. 0 to 10 Vdc or 2 to 10 Vdc (max. 35 Vdc)
Input Resistance ................................... >100K Ohms
Feedback Signal .......................... Position output signal (wires 9-2)/GEB16x.xx
Voltage Output .............................. 0 to 10 Vdc
Max. Output Current ........................... ±1 mA
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 Range
AC Rating ................................... 24 to 250 Vac
AC 6A Resistive .............................
AC 2A General Purpose
DC Rating ................................... 12 to 30 Vdc
DC 2A
Plenum Cable ......................... 4A resistive, 2A, 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°
Recommended Range .............. 45 to 90°
Switching Hysteresis ................. 2°
Position Feedback
GEB132.1U .......................... 0 to 1000 Ohm <10 mA
Torque
Running Torque ...................... 132 lb.-in. (16 Nm)
Spring Return Torque .............. 132 lb.-in. (16 Nm)
Max. Torque ........................... >265 lb.-in. (30 Nm)
Nominal Angle of Rotation .................. 90°, 95° max.
Shaft Dimensions ..................... 3/4-in. (20 mm)
1/4 to 3/4-in. (6 to 20.5 mm) Dia.
Min. Shaft Length ...................... 3/4-in. (20 mm)
Temperature
Operating .......................... -25 to +130°F (-32 to +55°C)
Storage .............................. -40 to +158°F (-40 to +70°C)
Humidity ................................ 95% RH, non-condensing
Pre-cabled Connection ................. 18 AWG, 3 ft. (0.9 m) long
Housing
Enclosure .................................. NEMA 1
Material ................................ Die-cast Aluminum alloy
Gear Lubrication ........................ Silicone free
Agency Certifications ................ UL60730, (Replaces UL873)
cUL C22.2 No. 24-93
CE
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 ....................... 2.2 lbs. (1.0 kg)

GEB Series Product Ordering

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<tr>
<th>Input Signal</th>
<th>Cabling</th>
<th>Part No.</th>
<th>Dual Aux. Switches &amp; Offset/Span Only</th>
<th>Position Feedback Only</th>
<th>Dual Aux. Switches Only</th>
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<tbody>
<tr>
<td>Modulating, 0 to 10 Vdc</td>
<td>Plenum Cable</td>
<td>GEB161.1P</td>
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<tr>
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<td>Standard</td>
<td>GEB161.1U</td>
<td>GEB164.1U</td>
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<td>GEB132.1U</td>
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<tr>
<td>Floatating, 24 Vac</td>
<td>Plenum Cable</td>
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<td>GEB131.1U</td>
<td>GEB136.1U</td>
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</tbody>
</table>

Refer to page B-9 for Dimensions.

Accessories & Service Kits B-49
Rotary Electronic Damper Actuator
Non-spring Return

Easily Replaces:
• Belimo SM/AM Series

221 lb.-in. Torque
0 to 10 Vdc, Modulating Control
Floating Control

Description
Designed for control of building HVAC dampers, the OpenAir GBB Series Direct-coupled 24 Vac Non-spring Return Electronic Damper Actuators are available in 0 to 10 Vdc and 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 U.S.A.
• 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 OpenAir 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.
GBB Series Specifications

Operating Voltage ............................................... 24 Vac ± 20%
Frequency ............................................................ 50 to 60 Hz
Power Consumption
0 to 10 Vdc.............................................................. 8 VA
Floating................................................................. 7 VA
Input Signal (8–2)
Voltage-input....................................................... 0 to 10 Vdc (max. 35 Vdc)
Input Resistance.................................................... 100 K Ohms
Position Output Signal (9–2)
Voltage-output...................................................... 0 to 10 Vdc
Max. Output Current.............................................. ±1 mA
Equipment Rating for Operating Voltage .......................... Class 2
Runtime for 90° Opening or Closing
60 Hz .................................................................. 125 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°
Switching Hysteresis .............................................. 2°

Position Feedback .................................................. 0 to 1000 Ohm <10 mA
Torque ................................................................. 221 lb.-in. (25 Nm)
Torque
Operating............................................................. 25 to +130°F (-32 to +55°C)
Storage and Transport ........................................... 40 to +158°F (-40 to +70°C)
Humidity ............................................................. 95% RH, non-condensing
Agency Approvals .................................................. UL873
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 ............................................... NEMA 2*
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.

GBB Series Product Ordering

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<td>GBB132.1P</td>
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</table>

Accessories & Service Kits

www.usa.siemens.com/hvac
**OpenAir™ GIB Series**

**Electronic Damper Actuator**

**Non-spring Return**

**Easily Replaces:**
- Belimo GM Series

**310 lb.-in. Torque**
0 to 10 Vdc, Modulating Control
Floating Control

---

**Description**

The OpenAir GIB Series Direct-coupled 24 Vac 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 U.S.A.
- 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 OpenAir 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.

---

**Siemens**
GIB Series Specifications

Operating Voltage (1–2) ........................................... 24 Vac ±20%
Frequency ......................................................... 50/60 Hz
Power Consumption
0 to 10 Vdc ....................................................... 8 VA Floating .................................................. 7 VA
Input signal (8–2)
Voltage-Input ...................................................... 0 to 10 Vdc
Input Resistance ................................................. 100k Ohms
Position Output Signal (9–2)
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) ............................................. 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°
Switching Hysteresis .......................................... 2°
Position Feedback ............................................ 0 to 1000 Ohm <10 mA

GIB Series Product Ordering

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 10 Vdc</td>
<td>Standard</td>
<td>GIB161.1U</td>
<td>GIB163.1U</td>
<td>GIB164.1U</td>
<td>GIB166.1U</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Plenum Cable</td>
<td>GIB161.1P</td>
<td>GIB163.1P</td>
<td>GIB164.1P</td>
<td>GIB166.1P</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Floating</td>
<td>Standard</td>
<td>GIB131.1U</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Plenum Cable</td>
<td>GIB131.1P</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Function
Torque ....................................................... 310 lb.-in. (35 Nm)
Runtime for 90° Opening or Closing
60 Hz ......................................................... 125 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 .................................................... NEMA 2*
Material ..................................................... Die-cast Aluminum alloy
Temperature
Operation .................................................... 25 to +130°F (-32 to +55°C)
Storage and Transport ................................... 40 to +158°F (-40 to +70°C)
Humidity ..................................................... 95% RH, non-condensing
Agency Approvals ......................................... UL873 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-13 for Dimensions.

GIB Series Product Ordering

Accessories & Service Kits


**Electronic Damper Actuator**

Designed for UL Listed Fire/Smoke and Smoke Control Dampers

---

53 lb.-in. Torque
2-position, 15-second Run Time
15-second Spring Return Time

---

**Description**

Intended for use on UL listed smoke control dampers and combination fire/smoke rated dampers, the OpenAir GND Series Direct Coupled, Fast-Acting, Two-position, Spring Electronic Actuators are available in 24 Vac/dc, 120 Vac, and 230 Vac models.

**Features**

- Manual override
- 24 Vac/dc, 120 Vac and 230 Vac models available
- Reversible fail-safe spring return
- All metal housing
- Pre-cabled Teflon® insulated lead wires
- Fifteen-second operation at rated torque, temperature and voltage
- Assembled in the U.S.A.

**Options**

- Optional built-in auxiliary switches: Fixed switch points at 5° and 85° rotation
- Optional built-in Electronic Fusible Link (EFL) capability with four temperature ratings: 165°F (74°C), 212°F (100°C), 250°F (121°C), 350°F (177°C)

---

**Applications**

The GND Series Spring Return Electronic Actuator is used for the control of dampers requiring up to 53 lb-in (6 Nm) driving torque. It is intended for control of UL listed smoke control dampers and combination fire/smoke HVAC dampers. This actuator is designed to meet the 2002 revisions to the UL 555/555S and the AMCA Standard 520 specifications.
**GND Series Specifications**

- **Operating Voltage**: 24 Vac ±20%, 24 Vdc ±20%, -10%, 120 Vac ±10%, 230 Vac ±10%
- **Frequency**: 50/60 Hz
- **Power Consumption**:
  - Running: 24 Vac/dc 20 VA/12W
  - Holding: 8 VA/6W
  - 120 Vac/230 Vac Running and Holding: 20 VA/9VA
- **Torque**:
  - Running Torque: 53 lb.-in. (6 Nm) (minimum)
  - Stall Torque (minimum): 160 lb.-in. (18 Nm)
  - Runtime for 90°: 15 sec. nominal
  - Closing (on power loss) with Spring Return: 15 sec. Max.
  - Nominal Angle of Rotation: 95°
- **Life Expectancy**: Minimum 35,000 full stroke cycles
- **Mounting**:
  - Damper Shaft Size: 0.5” (12.7 mm) round
  - Damper Shaft Length, Minimum: 1.4” (36 mm)
- **Housing**:
  - Enclosure: NEMA 1
  - Material: Die-cast Aluminum Alloy

**Temperature**

- Operation: 0 to 140°F (-18 to +60°C) One time 350°F (177°C)
- Storage and Transport: -40 to +158°F (-40 to +70°C)
- Humidity: Max. 95% RH, non-condensing
- Teflon Cable: 400°F (200°C)

**Agency Certification**

- cUL C22.2 No. 24-93
- AS/NZS 2064 1/2:1997
- Conforms to CE requirements for the EMC and low voltage directives
- Australian Electromagnetic Compatibility (EMC) per AS/NZS 4251.1/2:1999 (C-tick)

**Pre-cabled Connection**: 18 AWG, 3 ft. (0.9 m) 3/8” (0.5mm) flexible conduit connector

**Dimensions**:

- 9” H × 3.25” W × 3” D (229 mm H × 83 mm W × 76 mm D)

**Shipping Weight**: 4 lb. (1.8 kg)

*Refer to the Installation Instructions for acceptable mounting positions.

---

**GND Series Product Ordering**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cabling</th>
<th>24 Vac/dc</th>
<th>120 Vac</th>
<th>230 Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-position</td>
<td>Standard</td>
<td>GND121.1U</td>
<td>GND221.1U</td>
<td>GND321.1U</td>
</tr>
<tr>
<td>2-position with aux. switches</td>
<td>Standard</td>
<td>GND126.1U</td>
<td>GND226.1U</td>
<td>GND326.1U</td>
</tr>
</tbody>
</table>

**Ordering Note**

- EFL Electronic Fusible Links must be ordered separately (see table below).
- All products are available in bulk packages of 10. Add /B to part number to order a bulk pack.

---

**Electronic Fusible Links**

<table>
<thead>
<tr>
<th>Temperature Range</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>165°F (74°C)</td>
<td>ASK79.165</td>
</tr>
<tr>
<td>212°F (100°C)</td>
<td>ASK79.212</td>
</tr>
<tr>
<td>250°F (121°C)</td>
<td>ASK79.250</td>
</tr>
<tr>
<td>350°F (177°C)</td>
<td>ASK79.350</td>
</tr>
</tbody>
</table>
GND Series Dimensions

GND Series OpenAir Damper Actuator

Dimensions shown in inches (mm).
Online 24/7 ordering convenience

Use this Master HVAC Catalog and Siemens online ordering to maximize ordering efficiency. Go online to:

• Place orders
• Browse this catalog online
• Check product availability and pricing
• Specify FREE valve tagging
• Download invoices
• Track shipments
• Print out product information for submittals
• Link to technical documentation
• Download installation instructions
• Create a reusable template order form for frequently ordered parts

See how easy it is to save time and money. Register today at:
www.usa.siemens.com/buildingtechnologiesonlineordering
Electronic Damper Actuator
Designed for UL Listed Fire/Smoke and Smoke Control Dampers

142 lb.-in. Torque
2-position, 15-second Runtime, 15-second Spring Return Time

Description
Intended for use on UL listed smoke control dampers or combination fire/smoke rated dampers, the OpenAir GGD Series Direct-coupled, Fast Acting, Two-position, Spring Return Electronic Actuators are available in 24 Vac, 115 Vac, and 230 Vac models.

Features
- High temperature rated drive system
- Reversible fail-safe spring return
- All metal housing
- Teflon® insulated lead wires
- Manual override
- Mechanical range adjustment
- Multiple shaft couplings available; will accommodate up to 1.05-inch shafts
- 15-second nominal open time
- 15-second nominal spring return time
- 24, 115 and 230 Vac models
- Assembled in the U.S.A

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

Applications
The GGD Series Spring Return Actuator is used for the control of dampers requiring up to 142 lb.-in. (16 Nm) 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 555S rating up to 350°F (177°C) and AMCA 500-D specifications.

OpenAir™ GGD Series

www.usa.siemens.com/hvac
GGD Series Specifications

Operating Voltage ............................................... 24 Vac ±20%
115 Vac ±15%
230 Vac ±10%

Frequency .......................................................... 50/60 Hz

Power Consumption
Running .................................................................... 150 VA
Holding ................................................................. 10 VA

Torque
Running ..................................................................... 142 lb.-in. (16 Nm)
Spring Return ......................................................... 108 lb.-in. (12 Nm)
Minimum Stall .......................................................... 350 lb.-in. (39 Nm)

Runtime for 90°
Operating with motor at 60 Hz......................... 15 seconds nominal
Closing (on power loss) with spring return .... 15 seconds maximum

Nominal Angle of Rotation ......................................... 95°

Life Expectancy .................................................. Minimum 35,000 full stroke cycles

Damper Shaft Size
Standard ............................................................. 3/8 to 1-in. (8 to 25.6 mm)
Oversized .............................................................. 1.05-in. max. (26.6 mm)

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

Housing
Enclosure ............................................................. NEMA 1
Material .............................................................. Die-cast Aluminum Alloy

Temperature
Operation .............................................................. 0 to 130°F (-18 to +55°C)
One time 350°F (177°C) for 1/2 hour (per UL555S)

Storage and Transport ........................................... 25 to +158°F (-32 to +70°C)
Humidity ............................................................. Maximum 95% RH, non-condensing

Agency Certifications .............................................. UL listed to UL873
C-UL certified to Canadian standard
C22.2 No. 24-93
Australian EMC Framework (C-tick)
with the limits per AS/NZS 2064 1/2:1997

Pre-cabled Connection ........................................... AWG 18

Dimensions .......................................................... 12" H x 4.76" W x 2.88" D
(305 mm H x 120 mm W x 72 mm D)

Shipping Weight
Single Pack .......................................................... 7.0 lbs. (3.2 kg)
Bulk Pack ............................................................ 56 lbs. (25.4 kg)

GGD Series Product Ordering

<table>
<thead>
<tr>
<th>Description</th>
<th>Shaft Adapter</th>
<th>24 Vac</th>
<th>115 Vac</th>
<th>230 Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Self-centering</td>
<td>GGD121.1U</td>
<td>GGD221.1U</td>
<td>GGD321.1U</td>
</tr>
<tr>
<td>Standard/Bulk</td>
<td>Self-centering</td>
<td>GGD121.1U/B</td>
<td>GGD221.1U/B</td>
<td>GGD321.1U/B</td>
</tr>
<tr>
<td>Auxiliary Switches 5° and 85°</td>
<td>Self-centering</td>
<td>GGD126.1U</td>
<td>GGD226.1U</td>
<td>GGD326.1U</td>
</tr>
<tr>
<td>Standard</td>
<td>Oversized</td>
<td>GGD121.3U</td>
<td>GGD221.3U</td>
<td>GGD321.3U</td>
</tr>
</tbody>
</table>

Ordering Note  Bulk packages contain 8 actuators.

Accessories & Service Kits
GGD Series Dimensions

GGD Series OpenAir Damper Actuator

OPENING FOR 3/8" FLEX CONDUIT

mm

1-1/8 in.
28 mm

3-1/16 in.
100 mm

7-3/4 in.
197 mm

3-3/8 in.
86 mm

OPENING FOR 3/8"

30 mm

1-23/32 in.

11 in.
279 mm

7-3/4 in.
197 mm

3-3/8 in.
86 mm

1-1/8 in.
28 mm

min. 1/4 in.
7 mm

EAO053R1

min. 4 in.
100 mm

min. 8 in.
200 mm

1-11/32
34 mm

1-19/32
37 mm

2-1/2 in.
60 mm

95

100 mm

2-1/2 in.

60 mm

1-11/32
34 mm

1-19/32
37 mm

2-1/2 in.

60 mm

1-11/32
34 mm

1-19/32
37 mm

2-1/2 in.

60 mm

1-11/32
34 mm

1-19/32
37 mm

2-1/2 in.

60 mm

1-11/32
34 mm

1-19/32
37 mm

2-1/2 in.

60 mm
## Global Actuator Program

<table>
<thead>
<tr>
<th>Type</th>
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<tbody>
<tr>
<td>Laboratory Fail In Place 53 Lb-IN</td>
<td>A</td>
</tr>
<tr>
<td>Non Spring Return 221 Lb-IN</td>
<td>B</td>
</tr>
<tr>
<td>Spring Return 160 Lb-IN</td>
<td>C</td>
</tr>
<tr>
<td>Non Spring Return 44 Lb-IN</td>
<td>D</td>
</tr>
<tr>
<td>Non Spring Return 132 Lb-IN</td>
<td>E</td>
</tr>
<tr>
<td>Fire And Smoke 142 Lb-IN</td>
<td>G</td>
</tr>
<tr>
<td>Non Spring Return 310 Lb-IN</td>
<td>I</td>
</tr>
<tr>
<td>Non Spring Return 88 Lb-IN</td>
<td>L</td>
</tr>
<tr>
<td>Spring Return 62 Lb-IN</td>
<td>M</td>
</tr>
<tr>
<td>Fire And Smoke Or Laboratory Fail Safe 53 Lb-IN</td>
<td>N</td>
</tr>
<tr>
<td>Spring Return 20 Lb-IN</td>
<td>Q</td>
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<table>
<thead>
<tr>
<th>Running Time</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>90 Sec. At 50/60 Hz</td>
<td>A</td>
</tr>
<tr>
<td>150(125) Sec At 50/60 Hz</td>
<td>B</td>
</tr>
<tr>
<td>15 Sec/30 Sec. At 50/60 Hz</td>
<td>D</td>
</tr>
<tr>
<td>108(90) Sec. At 50/60 Hz</td>
<td>E</td>
</tr>
<tr>
<td>2 Sec. At 50/60 Hz</td>
<td>P</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Voltage</th>
<th></th>
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<tbody>
<tr>
<td>24 VAC/DC SR/ 24VAC NSR</td>
<td>1</td>
</tr>
<tr>
<td>120 Vac</td>
<td>2</td>
</tr>
<tr>
<td>230 Vac</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Functionality</th>
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<tbody>
<tr>
<td>2Pt</td>
<td>2</td>
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<tr>
<td>Floating</td>
<td>3</td>
</tr>
<tr>
<td>Modulating 0-10Vdc/2-10Vdc/Signal Inversion</td>
<td>5</td>
</tr>
<tr>
<td>Modulating 0-10Vdc</td>
<td>6</td>
</tr>
<tr>
<td>2Pt, Floating ,0-10Vdc, 2-10Vdc,4-20Ma, and 0-20Ma</td>
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<tr>
<th>Optional Features</th>
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<tbody>
<tr>
<td>Standard Version</td>
<td>1</td>
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<tr>
<td>Potentiometer 1KΩ</td>
<td>2</td>
</tr>
<tr>
<td>Signal Adjustable</td>
<td>3</td>
</tr>
<tr>
<td>Switches+Signal Adjustable</td>
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</tr>
<tr>
<td>Switches</td>
<td>6</td>
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<table>
<thead>
<tr>
<th>Action</th>
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<tbody>
<tr>
<td>Rotary self-cent. Shaft adapter</td>
<td>1</td>
</tr>
<tr>
<td>Linear</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cabling</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Appliance Cable</td>
<td>U</td>
</tr>
<tr>
<td>Plenum Cable</td>
<td>P</td>
</tr>
</tbody>
</table>
No. 3 Pneumatic Actuator

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.

### Nominal Spring Ratings

<table>
<thead>
<tr>
<th>Nominal Spring Rating</th>
<th>Max. Thrust lb. (N)</th>
<th>Torque Rating lb.-in (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Stroke Forward</td>
<td>Spring Return (No Stroke)</td>
</tr>
<tr>
<td></td>
<td>15 psi (103 kPa)</td>
<td>18 psi (124 kPa)</td>
</tr>
<tr>
<td>3 to 7 psi (21 to 48 kPa)</td>
<td>64 (285)</td>
<td>88 (391)</td>
</tr>
<tr>
<td>5 to 10 psi (35 to 69 kPa)</td>
<td>40 (178)</td>
<td>64 (285)</td>
</tr>
<tr>
<td>8 to 13 psi (55 to 90 kPa)</td>
<td>16 (71)</td>
<td>40 (178)</td>
</tr>
</tbody>
</table>

*With maximum hysteresis of 2.5 psi (17.2 kPa) @ 90° rotation.*
No. 3 Pneumatic Specifications

Effective Diaphragm Area ................................................. 8 in.² (51.5 cm²)
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)
8 to 13 psi (55 to 90 kPa)
Ambient Temperature Range
Operating................................................................. 35 to +140°F (2 to 60°C)
Storage................................................................. -20 to +140°F (-29 to +60°C)

Materials
Housing (totally enclosed) .................................................... Aluminum
Stem ........................................................................... Plated Steel
Diaphragm ................................................................. Ozone-resistant EPT rubber
Spring ........................................................................... Steel
Bearing ........................................................................ Delrin
Air Connection ............................................................... 1/8" NPT Female 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)

No. 3 Pneumatic Product Ordering

<table>
<thead>
<tr>
<th>Description</th>
<th>Mounting Style</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuator</td>
<td>Front</td>
<td>331-4310</td>
</tr>
<tr>
<td>Actuator, Bracket</td>
<td>Fixed</td>
<td>331-4313</td>
</tr>
<tr>
<td>Actuator, Bracket, Clevis</td>
<td>Fixed</td>
<td>331-4314</td>
</tr>
<tr>
<td>Actuator, Integral Pivot</td>
<td>Pivot</td>
<td>331-4312</td>
</tr>
<tr>
<td>Actuator, Integral Pivot with pivot post. Mounted on plate for extended shaft with Shaft Clevis and Crank for 3/8&quot; (10 mm), 7/16&quot; (11 mm), 1/2&quot; (13 mm) diameter shaft.</td>
<td>Extended Shaft</td>
<td>331-4311</td>
</tr>
<tr>
<td>Actuator, Integral Pivot with pivot post. Mounted on plate for extended shaft with Clevis and Crank for 3/8&quot; (10 mm), 7/16&quot; (11 mm), 1/2&quot; (13 mm) diameter shaft.</td>
<td>Extended Shaft with Positioning Relay</td>
<td>—</td>
</tr>
<tr>
<td>Actuator, Bracket, ball joint connector</td>
<td>Fixed</td>
<td>331-4331</td>
</tr>
<tr>
<td>Actuator, Bracket, ball joint connector with Positioning Relay</td>
<td>Fixed</td>
<td>332-4831</td>
</tr>
</tbody>
</table>

If inoperative, replace the entire actuator.

Ordering Note
* 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.

No. 3 Pneumatic Dimensions

Dimensions shown in inches (mm).
No. 4 Pneumatic Actuator

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.

<table>
<thead>
<tr>
<th>Nominal Spring Rating</th>
<th>Max. 121 Thrust lb. (N)</th>
<th>Spring Return (No Stroke) 0 psi (0 kPa)</th>
<th>Gradual Operation</th>
<th>Torque Rating lb.-in (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Stroke Forward</td>
<td></td>
<td>2-position Operation or with Positioner</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 psi (103 kPa)</td>
<td>18 psi (124 kPa)</td>
<td>25 psi (172 kPa)</td>
<td>15 psi (103 kPa)</td>
</tr>
<tr>
<td>3 to 7 psi (21 to 48 kPa)</td>
<td>88 (391)</td>
<td>121 (538)</td>
<td>198 (881)</td>
<td>30 (3.4)</td>
</tr>
<tr>
<td>3 to 13 psi (21 to 90 kPa)</td>
<td>22 (198)</td>
<td>55 (245)</td>
<td>132 (587)</td>
<td>30 (3.4)</td>
</tr>
<tr>
<td>5 to 10 psi (35 to 90 kPa)</td>
<td>55 (245)</td>
<td>88 (391)</td>
<td>165 (734)</td>
<td>30 (3.4)</td>
</tr>
<tr>
<td>8 to 13 psi (55 to 90 kPa)</td>
<td>22 (98)</td>
<td>55 (245)</td>
<td>132 (587)</td>
<td>30 (3.4)</td>
</tr>
<tr>
<td>2 to 3, 8 to 13 psi (14 to 20, 55 to 90 kPa) Hesitation</td>
<td>22 (98)</td>
<td>55 (245)</td>
<td>132 (587)</td>
<td>22 (98)</td>
</tr>
</tbody>
</table>

With maximum hysteresis of 2.5 psi (17.2 kPa) @ 90° rotation.
No. 4 Pneumatic Specifications

Effective Diaphragm Area ........................................... 11 in.² (71 cm²)
Stoke ................................................................. 4-in. (102 mm)
Stoke (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 ........................................................... 35 to 140°F (2 to 60°C)
- Storage ........................................................... -20 to +140°F (-29 to +60°C)

Materials
- Housing (totally enclosed) ........................................ Steel, electro-coated epoxy
- Shaft ................................................................. Stainless Steel
- Diaphragm ........................................................ EDPM Rubber
- Spring .............................................................. Steel
- Bearing ........................................................... Delrin
- Air Connection .................................................... 1/8” NPT Female 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)

No. 4 Pneumatic Product Ordering

<table>
<thead>
<tr>
<th>Description</th>
<th>Mounting Style</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuator, Mounting Screws (Non-pivot)</td>
<td>Front</td>
<td>331-2910</td>
</tr>
<tr>
<td>Actuator, Bracket (Non-pivot) 3” stroke for unit ventilator</td>
<td>Fixed</td>
<td>331-2911</td>
</tr>
<tr>
<td>Actuator, bracket (Non-pivot) 2-3/8” stroke for unit ventilator</td>
<td>Fixed</td>
<td>331-2934</td>
</tr>
<tr>
<td>Actuator, Mounting Plate, Ball Joint Conn.</td>
<td>Fixed</td>
<td>331-3015</td>
</tr>
<tr>
<td>Actuator, Mounting Plate, Ball Joint Conn. with Relay</td>
<td>Fixed</td>
<td>331-3018</td>
</tr>
<tr>
<td>Actuator, Integral Pivot</td>
<td>Pivot</td>
<td>331-2904</td>
</tr>
<tr>
<td>Actuator, Integral Pivot, Clevis and Clevis Pin for use with frame mounting accessory</td>
<td>Pivot</td>
<td>331-2929</td>
</tr>
<tr>
<td>Actuator, Integral Pivot with pivot post. Mounted on plate for extended shaft with Clevis and Crank for 3/8” (9.5 mm), 7/16” (11 mm), 1/2” (13 mm) diameter shaft. Parts for frame mounting (blade drive) included with kit.</td>
<td>Universal Kit</td>
<td>331-3000</td>
</tr>
<tr>
<td>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.</td>
<td>Universal Kit with Positioning Relay</td>
<td>331-3001</td>
</tr>
</tbody>
</table>

Ordering Note
1. When the actuator is ordered with universal mounting, 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 manufacturer.
3. Siemens No. 4 Pneumatic Damper Actuator contains a diaphragm with EDPM rubber.

No. 4 Pneumatic Dimensions

Dimensions shown in inches (mm).
No. 6 Pneumatic Actuator

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.

<table>
<thead>
<tr>
<th>Nominal Spring Rating</th>
<th>Max. Thrust lb. (N)</th>
<th>Torque Rating lb.-in (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Stroke Forward</td>
<td>2-position Operation or with Positioner</td>
</tr>
<tr>
<td></td>
<td>15 psi (103 kPa)</td>
<td>18 psi (124 kPa)</td>
</tr>
<tr>
<td>3 to 8 psi (21 to 55 kPa)</td>
<td>125 (556)</td>
<td>179 (796)</td>
</tr>
<tr>
<td>3 to 13 psi (21 to 90 kPa)</td>
<td>36 (160)</td>
<td>89 (396)</td>
</tr>
<tr>
<td>8 to 13 psi (55 to 90 kPa)</td>
<td>36 (160)</td>
<td>89 (396)</td>
</tr>
</tbody>
</table>

With maximum hysteresis of 2.5 psi (17.2 kPa) @ 90° rotation.
### No. 6 Pneumatic Specifications

<table>
<thead>
<tr>
<th>Effective Diaphragm Area</th>
<th>17.9 in² (115 cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>4-in. (102 mm)</td>
</tr>
<tr>
<td>Max. Air Pressure</td>
<td>30 psi (207 kPa)</td>
</tr>
<tr>
<td>Nominal Spring Ranges</td>
<td>3 to 8 psi (21 to 55 kPa)</td>
</tr>
<tr>
<td></td>
<td>3 to 13 psi (21 to 90 kPa)</td>
</tr>
<tr>
<td></td>
<td>8 to 13 psi (55 to 90 kPa)</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>Operating: -20 to +200°F (-29 to +93°C)</td>
</tr>
<tr>
<td></td>
<td>Storage: -20 to +200°F (-29 to +93°C)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Materials</td>
<td>Housing: Aluminum</td>
</tr>
<tr>
<td></td>
<td>Stem: Type 416 Stainless Steel</td>
</tr>
<tr>
<td></td>
<td>Diaphragm: Silicone Rubber</td>
</tr>
<tr>
<td></td>
<td>Spring: Steel</td>
</tr>
<tr>
<td></td>
<td>Bearing: Bronze Oilite</td>
</tr>
<tr>
<td>Air Connection</td>
<td>1/8&quot; NPT Female</td>
</tr>
<tr>
<td>Type of Mounting</td>
<td>Pivot; Universal (extended shaft or frame mount)</td>
</tr>
<tr>
<td>Shipping Weight (Actuator only)</td>
<td>9.0 lb. (4.08 kg)</td>
</tr>
</tbody>
</table>

### No. 6 Pneumatic Product Ordering

<table>
<thead>
<tr>
<th>Description</th>
<th>Mounting Style</th>
<th>3-8 psi (21-55 kPa)</th>
<th>3-13 psi (21-90 kPa)</th>
<th>8-13 psi (55-90 kPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuator, Integral Pivot</td>
<td>Pivot</td>
<td>331-2793</td>
<td>331-2794</td>
<td>331-3060</td>
</tr>
<tr>
<td>Actuator, Integral Pivot and Forward Travel Stops</td>
<td>Pivot</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Actuator with Clevis</td>
<td>Pivot</td>
<td>331-2857</td>
<td>331-2858</td>
<td>331-2856</td>
</tr>
<tr>
<td>Actuator with Clevis and Positioning Relay</td>
<td>Pivot²</td>
<td>—</td>
<td>—</td>
<td>332-2856</td>
</tr>
<tr>
<td>Actuator, Integral Pivot with pivot post. Mounted on plate for extended shaft mounting with Clevis and Crank for 3/8&quot; (10 mm), 7/16&quot; (11 mm) or 1/2&quot; (13 mm) diameter shaft.</td>
<td>Extended Shaft</td>
<td>331-3012</td>
<td>331-3013</td>
<td>331-3011²</td>
</tr>
<tr>
<td>Actuator, Integral Pivot with pivot post. Mounted on plate for extended shaft mounting with Clevis and Crank for 3/8&quot; (10 mm), 7/16&quot; (11 mm) or 1/2&quot; (13 mm) diameter shaft.</td>
<td>Extended Shaft Kit with Positioning Relay</td>
<td>—</td>
<td>—</td>
<td>332-3011</td>
</tr>
<tr>
<td>Actuator, Extended Temperature Range Model</td>
<td>Pivot</td>
<td>—</td>
<td>—</td>
<td>331-3060²</td>
</tr>
</tbody>
</table>

**Ordering Notes**

1. Also order frame mounting kit accessories.
2. When the actuator is ordered with universal mounting, 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.
4. Siemens No. 6 Pneumatic Damper Actuator contains a diaphragm with silicone rubber. For HVAC applications where products containing silicone are unacceptable, contact your Siemens representative for damper actuators with a silicone-free diaphragm.

### No. 6 Pneumatic Dimensions

Dimensions shown in inches (mm).
No. 6 Pneumatic Actuator—Tandem Mounting

Description
A rugged, metal-fabricated device for tandem mounting, the No. 6 Pneumatic Damper Actuator, is piloted by a positioning relay, mounted on a sturdy angle iron frame.

Features
- Adjustable spring span and start point
- Spring return actuators
- Replaceable diaphragms

Arm Length Versus Rotation
If the damper rotation is other than 90°, use the Arm Length vs. Rotation Chart and the Thrust and Torque Ratings to determine the actuator assembly torque rating. Then divide the actuator assembly torque rating by the damper torque rating per unit of area for job conditions to determine the damper area that can be controlled. Make sure the torque units used are the same.

<table>
<thead>
<tr>
<th>Lever or Crank Arm Length In. (mm)</th>
<th>Damper Rotation in Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3” (58 mm)</td>
<td>120°</td>
</tr>
<tr>
<td>2.8” (71 mm)</td>
<td>90°</td>
</tr>
<tr>
<td>3” (76 mm)</td>
<td>84°</td>
</tr>
<tr>
<td>4” (102 mm)</td>
<td>60°</td>
</tr>
<tr>
<td>5” (127 mm)</td>
<td>47°</td>
</tr>
<tr>
<td>6” (152 mm)</td>
<td>39°</td>
</tr>
<tr>
<td>7” (178 mm)</td>
<td>33°</td>
</tr>
<tr>
<td>8” (203 mm)</td>
<td>29°</td>
</tr>
<tr>
<td>9” (229 mm)</td>
<td>25°</td>
</tr>
</tbody>
</table>

Applications
The No. 6 Pneumatic Damper Actuator with tandem mounting is recommended to position inlet vanes on fans or large dampers that use a jack shaft.

Torque Rating

[Graph showing the relationship between lever or crank arm length and damper rotation]
No. 6 Tandem Mounting Specifications

Effective Diaphragm Area ................................................. 35.8 in.² (230 cm²)
Stroke .............................................................................. 4-in. (102 mm)
Max. Air Pressure .......................................................... 30 psi (207 kPa)
Spring Start Point (Adjustable) .................. 3 to 10 psi (21 to 69 kPa)
Spring Span (Adjustable) ........................................... 3 to 12 psi (21 to 83 kPa)
Spring Range  
Factory Setting .......................................................... 8 to 13 psi (55 to 90 kPa)
Temperature Range  
Operating .......................................................... -20 to +200°F (-29 to +93°C)
Storage .......................................................... -20 to +200°F (-29 to +93°C)

Materials
- Housing ................................................................. Aluminum
- Stem ................................................................. Type 416SS
- Diaphragm ........................................................ Silicone rubber
- Spring ................................................................. Steel
- Bearing .............................................................. Bronze Oilite
- Air Connection ...................................................... 1/8" NPT Female
- Type of Mounting ........................................... Pivot; Universal (extended shaft for female)
- Shipping Weight .................................................. 30.0 lb. (13.5 kg)

No. 6 Tandem Mounting Product Ordering

<table>
<thead>
<tr>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damper Actuator with Tandem Mounting</td>
<td>331-3070</td>
</tr>
</tbody>
</table>

No. 6 Tandem Mounting Dimensions

Dimensions shown in inches (mm).
Large Capacity Pneumatic Actuator

Description
Designed to develop very high thrust, the 331 Large Capacity Pneumatic Actuator has the capacity to handle heavy loads.

Features
- Maximum 30 psi (207 kPa) inlet pressure
- All mounting hardware included
- Adjustable start point
- Adjustable span

Applications
The 331 Large Capacity Pneumatic Actuator controls large dampers and equipment that requires high operating thrust.

Caution
Actuator cannot be used when spring return to fail safe position is required.
Large Capacity Pneumatic Actuator Specifications

- **Air Supply Pressure**: 25 psi (172 kPa)
- **Max. Pressure**: 30 psi (207 kPa)
- **Temperature Range**
  - Operating: 50 to 140°F (10 to 60°C)
  - Storage: 20 to +160°F (-29 to +71°C)
- **Effective Piston Area**: 19.6 in.² (126 cm²)
- **Stroke**: 7 in. (18 cm)
- **Span (adjustable)**: 3 to 12 psi (21 to 83 kPa)
- **Response**: 0.5 psi (3.4 kPa)
- **Torque Rating (90° rotation)** with 25 psi (172 kPa) air supply: 130 lb.-ft. (176 Nm)
- **Spring Start Point (adjustable)**: 3 to 10 psi (21 to 69 kPa)
- **Mounting**: Pivot
- **Air Connection**: 1/8” NPT
- **Shipping Weight**: 35.0 lb. (16.0 kg)

Large Capacity Pneumatic Actuator

<table>
<thead>
<tr>
<th>Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Capacity Pneumatic Actuator</td>
<td>331-2882</td>
</tr>
</tbody>
</table>

Accessories & Service Kits

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Dimensions

Dimensions shown in inches (mm).

www.usa.siemens.com/hvac
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<td>Restrictor Kit</td>
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<td>Cable</td>
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<td>Indirect Mounting Kit</td>
<td>B-53</td>
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<td>Rotation Limiter Kit</td>
<td>B-53</td>
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<tr>
<td>Pneumatic Nos. 3, 4 &amp; 6 Damper Actuators</td>
<td></td>
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<td>Damper Shaft Cranks</td>
<td>B-54</td>
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<td>Linkage Kits</td>
<td>B-54</td>
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<tr>
<td>Mounting Hardware</td>
<td>B-55</td>
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<td>Shaft Extensions/Adapters</td>
<td>B-56</td>
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<tr>
<td>Positioning Relays/Kits</td>
<td>B-57</td>
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<tr>
<td>Flange Bearing</td>
<td>B-58</td>
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<td>Pivot Posts</td>
<td>B-58</td>
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<td>Forward Stroke Stop Kits</td>
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<tr>
<td>Replacement Diaphragms</td>
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<tr>
<td>Service Kits</td>
<td>B-58</td>
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</tbody>
</table>

Refer to Valve Accessories & Service Kits, A-262, for Rack & Pinion Linkage.
## Accessories & Service Kits

<table>
<thead>
<tr>
<th>Description</th>
<th>Series</th>
<th>Quantity</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OpenAir</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actuator Commissioning Tool.</td>
<td>GDE GEB GCA GGB</td>
<td>1</td>
<td>985-047</td>
</tr>
<tr>
<td>A portable instrument for exercising, calibrating, and testing resistive, proportional (voltage/current), incremental (floating), and On/Off actuators.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjustment Tool.</td>
<td>GCA GGB</td>
<td>1</td>
<td>985-098P10</td>
</tr>
<tr>
<td>Hex Key.</td>
<td>GEB</td>
<td>Pkg. of 24</td>
<td>985-054P24</td>
</tr>
<tr>
<td><strong>Crank Arm Kit.</strong></td>
<td>GDE GEB GCA GGB</td>
<td>1</td>
<td>ASK71.13</td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crank Arm Kit with Bracket.</strong></td>
<td>GDE GEB GCA GGB</td>
<td>1</td>
<td>ASK71.14</td>
</tr>
<tr>
<td>For use in applications where the actuator can be rigidly surface-mounted and a linear stroke output is required.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rotary to Linear Kit.</strong></td>
<td>GCA GGB</td>
<td>1</td>
<td>ASK71.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rotary to Linear Kit with Universal Mounting Bracket.</strong></td>
<td>GDE GEB GCA GGB</td>
<td>1</td>
<td>ASK71.6</td>
</tr>
<tr>
<td>For linear applications requiring connection to damper shaft when ball joint connection is not possible.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Shaft sizes 3/8 to 1&quot;.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Universal Crank Arm.</strong></td>
<td>GDE GEB GCA GGB</td>
<td>1</td>
<td>ASK71.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Accessories & Service Kits

<table>
<thead>
<tr>
<th>OpenAir</th>
<th>Description</th>
<th>Series</th>
<th>Quantity</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Tandem Mount Bracket.</strong> Provides an extended anti-rotation pin which allows dual mounting of 2-position, floating and GCA15 actuators, and all GIB actuators.</td>
<td></td>
<td>1</td>
<td>ASK73.1</td>
</tr>
<tr>
<td></td>
<td><strong>Tandem Mount Bracket.</strong> For dual mounting of modulating (0 to 10 V) GCA16X actuators.</td>
<td></td>
<td>1</td>
<td>ASK73.2U</td>
</tr>
<tr>
<td></td>
<td><strong>Floor Mount Kit.</strong> 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.</td>
<td></td>
<td>1</td>
<td>ASK71.1U</td>
</tr>
<tr>
<td></td>
<td><strong>Frame Mount Kit.</strong> 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.</td>
<td></td>
<td>1</td>
<td>ASK71.2U</td>
</tr>
<tr>
<td></td>
<td><strong>Combined Foot/Frame Mount Kit.</strong></td>
<td></td>
<td>1</td>
<td>ASK71.11</td>
</tr>
<tr>
<td></td>
<td><strong>Damper Push Rods.</strong> 5/16” (8 mm) dia.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 12” (30 cm) Length</td>
<td>GDE</td>
<td>1</td>
<td>338-041</td>
</tr>
<tr>
<td></td>
<td>• 15” (38 cm) Length</td>
<td>GEB</td>
<td>1</td>
<td>338-042</td>
</tr>
<tr>
<td></td>
<td>• 18” (46 cm) Length</td>
<td>GMA</td>
<td>1</td>
<td>338-043</td>
</tr>
<tr>
<td></td>
<td>• 24” (61 cm) Length</td>
<td>GIB</td>
<td>1</td>
<td>338-044</td>
</tr>
<tr>
<td></td>
<td>• 36” (91 cm) Length</td>
<td>GBB</td>
<td>1</td>
<td>338-045</td>
</tr>
<tr>
<td></td>
<td>• 48” (122 cm) Length</td>
<td></td>
<td>1</td>
<td>338-046</td>
</tr>
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</table>
## Accessories & Service Kits

<table>
<thead>
<tr>
<th>Description</th>
<th>Series</th>
<th>Quantity</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OpenAir</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-rotation Bracket.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Mounting Screws</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-rotation Bracket.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessory &amp; Service Kits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• up to a 1” (25 mm) D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• up to 3/4” (20 mm) D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over-sized Shaft Adapter. Accepts up to 1.05” (27 mm) diameter and can be used for jackshafts that are slightly oversized. Note: When used with a GIB, accepts shaft diameters from 3/4 to 1-1/20” (19 to 27 mm).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement Shaft Adapter Clip.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/8 to 3/4” (10 mm to 19 mm) Actuator Shaft Insert. For use with GIB and Over-sized Shaft Adapter, ASK74.1U.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/8” (8 to 10 mm) Actuator Shaft Insert.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2” (13 mm) Shaft Guide. Note: This part is factory-installed with all GDE/GLB damper actuators.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Position Indicators.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2” (13 mm) Conduit Adapters.</td>
<td></td>
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</tr>
<tr>
<td>1/2” (13 mm) Conduit Adapters—Male.</td>
<td></td>
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</table>

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**B-52**

**Damper Actuators**

www.usa.siemens.com/hvac
<table>
<thead>
<tr>
<th>Description</th>
<th>Series</th>
<th>Quantity</th>
<th>Part No.</th>
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<tbody>
<tr>
<td><strong>OpenAir</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NEMA 3R Rated Weathershield.</strong></td>
<td>GDE</td>
<td>1</td>
<td>ASK75.3U</td>
</tr>
<tr>
<td>Includes cover, base plate with factory-installed gasketing, 15TEK self-drilling screws, and anti-rotation (mounting) bracket. Knockouts for connection of 1/2&quot; conduit also included; NEMA 3R rated.</td>
<td>GLB</td>
<td>1</td>
<td>ASK75.1U</td>
</tr>
<tr>
<td><strong>NEMA 3R Rated Heater and Weathershield.</strong></td>
<td>GDE</td>
<td>1</td>
<td>985-107</td>
</tr>
<tr>
<td>Includes weathershield listed above and heater assembly for operation in temps as low as -58°F; NEMA 3R rated.</td>
<td>GLB</td>
<td>1</td>
<td>985-106</td>
</tr>
<tr>
<td><strong>Heater Assembly.</strong></td>
<td>GDE</td>
<td>1</td>
<td>985-108</td>
</tr>
<tr>
<td>Includes replacement heater assembly.</td>
<td>GLB</td>
<td>1</td>
<td>985-105</td>
</tr>
<tr>
<td><strong>External Auxiliary Switch Kit.</strong></td>
<td>GDE</td>
<td>1</td>
<td>ASC77.2U</td>
</tr>
<tr>
<td>Includes dual switch package rated to 250 Vac, mounting screws and adapter rings. Mounts to the actuator, not damper shaft.</td>
<td>GLB</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>500 Ohm Restrictor Kit.</strong></td>
<td>GDE</td>
<td>1</td>
<td>985-124</td>
</tr>
<tr>
<td>Converts 4-20 mA signal to 2 to 10 Vdc.</td>
<td>GLB</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Floating Input Cable, 3 ft.</strong></td>
<td>GDE</td>
<td></td>
<td>985-131</td>
</tr>
<tr>
<td>For use with GDE131.1N only.</td>
<td>GLB</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>0 to 10 Vdc Input Cable, 3 ft.</strong></td>
<td>GDE</td>
<td></td>
<td>985-133</td>
</tr>
<tr>
<td>For use with GDE161.1N only.</td>
<td>GLB</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Daisy Chain Cable, 12 ft.</strong></td>
<td>GDE</td>
<td></td>
<td>985-134</td>
</tr>
<tr>
<td>For use with GDE131.1N and GDE161.1N only.</td>
<td>GLB</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Daisy Chain Cable, 25 ft.</strong></td>
<td>GDE</td>
<td></td>
<td>985-135</td>
</tr>
<tr>
<td>For use with GDE131.1N and GDE161.1N only.</td>
<td>GLB</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Universal Indirect Mounting Kit</strong></td>
<td>GDE</td>
<td></td>
<td>ASK80.1</td>
</tr>
<tr>
<td>Floor or frame mounting with the GQD actuator series.</td>
<td>GLB</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Rotation Limiter Kit</strong></td>
<td>GDE</td>
<td></td>
<td>ASK74.11</td>
</tr>
<tr>
<td>Limits the rotation angle of the GQD actuator from the standard 90°.</td>
<td>GLB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Accessories & Service Kits

<table>
<thead>
<tr>
<th>Description</th>
<th>Pneumatic Nos. 3, 4 &amp; 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pneumatic Nos. 3, 4 &amp; 6</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **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                       |
|                                                           | 331-941                 |
|                                                           | 5/8”                    |
|                                                           | 1                       |
|                                                           | 333-182                 |
|                                                           | 3/4”                    |
|                                                           | 1                       |
|                                                           | 333-183                 |
|                                                           | 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.                           | • • •                   |
|                                                           | 1                       |
|                                                           | 331-958                 |
| **Linkage Kit.**
  4” (102 mm) rod, ball joint and crank.               | • • •                   |
|                                                           | 1                       |
|                                                           | 331-947                 |
| **No. 3 Pivot Post Kit.**                               | •                       |
|                                                           | 1                       |
|                                                           | 331-657                 |
## Accessories & Service Kits

### Pneumatic Nos. 3, 4 & 6

<table>
<thead>
<tr>
<th>Description</th>
<th>No. 3</th>
<th>No. 4</th>
<th>No. 6</th>
<th>Quantity</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Linkage Kit.</strong></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-671</td>
</tr>
<tr>
<td><strong>No. 3 Pivot Post Kit.</strong></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-006</td>
</tr>
<tr>
<td>For extended shaft mounting plate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• E-ring</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>• Lockwasher</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>• Nut</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Frame Mounting Lug Kit.</strong></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-004</td>
</tr>
<tr>
<td>• Screw</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>• Nut</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Extended Shaft Mounting Plate.</strong></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-033</td>
</tr>
<tr>
<td>May also require pivot post, clevis, crank and miscellaneous mounting hardware.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3&quot; (76 mm) W x 10-1/2&quot; (267 mm) L.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Offset Mounting Bracket.</strong></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>333-176</td>
</tr>
<tr>
<td>For mounting the universal mounting lug, pivot post, clevis, crank, and miscellaneous mounting hardware.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Clevis.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For frame mounting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Forging Clevis (A)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-653</td>
</tr>
<tr>
<td>• Brass Clevis (B)</td>
<td></td>
<td></td>
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<td>1</td>
<td>333-207</td>
</tr>
<tr>
<td>• Clevis Pin (C)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-293</td>
</tr>
<tr>
<td>• Hitch Pin (D)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-807</td>
</tr>
<tr>
<td><strong>Universal Mounting Plate.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>May also require frame mounting lug, pivot post, clevis, crank and miscellaneous mounting hardware.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 3/4&quot; (20 mm)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-623</td>
</tr>
<tr>
<td>• 1&quot; (25 mm)</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-623A</td>
</tr>
<tr>
<td><strong>Actuator Mounting Bracket.</strong></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-916</td>
</tr>
</tbody>
</table>

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Note: The images of the parts are not included in the table.
## Accessories & Service Kits

<table>
<thead>
<tr>
<th>Description</th>
<th>Pneumatic</th>
<th>Pneumatic Nos. 3, 4 &amp; 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pneumatic Nos. 3, 4 &amp; 6</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Pivot Mounting Kit.**  
Pivot mounting bracket and screws included (3). | | |
| **Right Angle Mounting Plate.**  
For mounting actuator to floor.  
*Order separately.* | | |
| **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. | | |
| **Actuator Shaft Extension Kit.**  
Includes push rod, 1/4”-28 ball joint connector, coupling and screws. | | |
| **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).  
Threaded female adapters are 1/2”-14 NPT and 3/8”-24 UNS threads. | | |
| **Long Actuator Shaft Extension Rod.**  
10-1/8” (257 mm) | | |
| **Damper Shaft Extension.**  
1/2” (13 mm) diameter damper shaft extension rod. Rod is 2-1/4” (57 mm) long. | | |
## Accessories & Service Kits

<table>
<thead>
<tr>
<th>Description</th>
<th>No. 3</th>
<th>No. 4</th>
<th>No. 6</th>
<th>Quantity</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pneumatic Nos. 3, 4 &amp; 6</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Damper Shaft Extension.</strong></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>1</td>
<td>333-043-03</td>
</tr>
<tr>
<td>1/2” (13 mm) diameter damper shaft extension rod. Rod is 9” (229 mm) long.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Adapter.</strong></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>1</td>
<td>331-632</td>
</tr>
<tr>
<td>For 3/8” (10 mm) diameter damper shafts. Use with 333-042, Shaft Extension.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Long Shaft Extension.</strong></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>1</td>
<td>333-184</td>
</tr>
<tr>
<td>For a 1/2” (13 mm) hollow damper shaft.</td>
<td></td>
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</tr>
<tr>
<td><strong>Shaft Extension.</strong></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>1</td>
<td>333-194</td>
</tr>
<tr>
<td>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.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Positioning Relay.</strong></td>
<td>•</td>
<td>•</td>
<td>•</td>
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<td>147-2000</td>
</tr>
<tr>
<td><strong>Positioning Relay Actuator Mounting Kit.</strong></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>1</td>
<td>147-104</td>
</tr>
<tr>
<td>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)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Positioning Relay Mounting Kit.</strong></td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>1</td>
<td>147-314</td>
</tr>
</tbody>
</table>

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**Damper Actuators**
## Accessories & Service Kits

### Pneumatic Nos. 3, 4 & 6

<table>
<thead>
<tr>
<th>Description</th>
<th>No. 3</th>
<th>No. 4</th>
<th>No. 6</th>
<th>Quantity</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumatic Nos. 3, 4 &amp; 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positioning Relay Mounting Kit.</td>
<td></td>
<td></td>
<td>•</td>
<td>1</td>
<td>147-276</td>
</tr>
<tr>
<td>Flange Bearing. 1/2&quot; (13 mm) damper shaft bearing for universal mounting plate, 331-623</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-862</td>
</tr>
<tr>
<td>Steel Pivot Post. For service replacement only (short length).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-547</td>
</tr>
<tr>
<td>Steel Pivot Post. For additional clearance (long length) for actuator. Includes steel pivot post lockwasher, nuts (2), and E-rings (2).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>333-045</td>
</tr>
<tr>
<td>Actuator Forward Stroke Stop Kit. Adjustable 3&quot; (76 mm) to 4&quot; (102 mm) Field-assembled.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-938</td>
</tr>
<tr>
<td>Actuator Forward Stroke Stop Kit. Adjustable 2-3/8&quot; (60 mm) to 4&quot; (102 mm) Field-assembled.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>331-939</td>
</tr>
<tr>
<td>Travel Stop Kit. For field assembly. Reduce travel from 4&quot; (102 mm) down to 2-29/32&quot; (73 mm). For Model 3 only.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>333-197</td>
</tr>
<tr>
<td>No. 4 Cast Aluminum Housing, Standard. Discontinued Part Nos. to 331-2885</td>
<td>Pkg. of 5</td>
<td></td>
<td></td>
<td>333-072</td>
<td></td>
</tr>
<tr>
<td>No. 4 Diaphragm for High Ambient Temperature. (Up to 400°F)</td>
<td>Pkg. of 5</td>
<td></td>
<td></td>
<td>333-071</td>
<td></td>
</tr>
<tr>
<td>No. 6 Standard Replacement Diaphragm.</td>
<td>Pkg. of 5</td>
<td></td>
<td></td>
<td>333-572</td>
<td></td>
</tr>
</tbody>
</table>
We’re happy to assist you

Our customer support teams are accessible and happy to assist you with ordering, fulfillment, and shipping questions. Call a representative at 1-800-516-9964 from 7 am to 5:30 pm (CST) Monday through Friday.

Contact Customer Support or your Account Executive with any questions. We appreciate your business and look forward to helping you!