Bray’s wide variety of commercial electric actuator choices increases flexibility when choosing peripheral products for Building Automation Systems. We offer many different torque outputs and optional features to ensure you have the best actuator for the application. Jumper or DIP switch selectable features allow versatility in the field. The actuators are maintenance-free, which means fewer call backs after installation and start-up. In addition, our actuators are manufactured to ISO 9001 and Six Sigma Standards making them the highest quality on the market today.

Options include:
- Metal or plastic housings
- Spring return or non spring return operation
- Auxiliary Switches (optional)
- Master/slave operation
- Weather Shields for outdoor use
- 24V and line voltage models
- On/Off, Floating, or Modulating operation
- Analog feedback on all modulating models
- UL, CSA and CE listings
- 5-year warranty on selected models
- Flying lead or terminal strip electrical connections

All of our commercial electric actuators are applicable to Bray characterized ball valves, globe valves and butterfly valves, depending on the torque requirements of the valves. And all actuators are linkage free when applied to dampers ranging for small VAV box dampers all the way up to large outdoor air and return air dampers. For butterfly valves and large globe valves, tandem arrangements are also available, factory mounted, calibrated and synchronized for smooth and long lasting operation.
Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or (SELV) (Europe), 4.7 VA Running, 2.7 VA Holding Position</td>
</tr>
<tr>
<td>DC 24 V (DC 21.6 V to 28.8 V): Class 2 or SELV, 1.8 W, Running, 1 W Holding Position</td>
<td></td>
</tr>
<tr>
<td>Minimum Transformer Size</td>
<td>6 VA per Actuator</td>
</tr>
<tr>
<td>Control Input Impedance</td>
<td>100k Ohms</td>
</tr>
<tr>
<td>Input Signal/Adjustments</td>
<td>Factory Set at DC 0 to 10 V, CW Rotation with Signal Increase Selectable DC 0 (2) to 10 V or 0 (4) to 20 mA with Field-Furnished 500 ohm 0.25 W Min. Resistor. Switch Selectable Direct or Reverse Action with Signal Increase</td>
</tr>
<tr>
<td>Feedback Signal</td>
<td>DC 0 (2) to 10 V for Desired Rotation Range up to 95°. Corresponds to Rotation Limits, 0.5 mA at 10 V Maximum</td>
</tr>
<tr>
<td>Auxiliary Switch Rating</td>
<td>(-A) Models) One SPDT, Double Insulated Switch with Silver Contacts – AC 24V, 50 VA Pilot Duty</td>
</tr>
<tr>
<td>Spring Return</td>
<td>Direction is Selectable with Mounting Position of Actuator: Actuator Side A is away from damper or valve: CCW Spring Return Actuator Side B is away from damper or valve: CW Spring Return</td>
</tr>
<tr>
<td>Equipment Rating</td>
<td>Class 2 or Safety Extra-Low Voltage (SELV)</td>
</tr>
<tr>
<td>Rotation Range</td>
<td>Maximum Full Stroke: 95° Adjustable Stop: 35 to 95° Maximum Position</td>
</tr>
<tr>
<td>Electric Stall Detection</td>
<td>Protects from overload at all angles of rotation</td>
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<tr>
<td>Torque</td>
<td>27 lb·in. (3 N-m)</td>
</tr>
<tr>
<td>Time: 90° of Rotation</td>
<td>Power On (Running) 150 Seconds Constant for 0 to 27 lb·in. (3 N-m) Load, at All Operating Conditions</td>
</tr>
<tr>
<td>Power Off (Returning)</td>
<td>12 to 17 Seconds for 0 to 27 lb·in. (3 N-m) Load, at Room Temperature</td>
</tr>
<tr>
<td></td>
<td>16 Seconds Nominal at Full Rated Load</td>
</tr>
<tr>
<td>Enclosure</td>
<td>NEMA 2 (IP54) for all mounting orientations</td>
</tr>
<tr>
<td>Ambient Conditions</td>
<td>Standard Operating -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td></td>
<td>Storage -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td>Electrical Connections</td>
<td></td>
</tr>
<tr>
<td>Without Aux Switches</td>
<td>120 in. UL 444 Type CMP Plenum Rated Cable w/ 19 AWG (0.75 mm²) Conductors &amp; 0.25 in. (6 mm) Ferrule Ends</td>
</tr>
<tr>
<td>With Aux Switches</td>
<td>48 in. UL 758 Type AWM Halogen-Free Cable w/ 18 AWG (0.85 mm²) Conductors &amp; 0.25 in. (6 mm) Ferrule Ends</td>
</tr>
<tr>
<td>Conduit Connections</td>
<td>Integral 1/2 in. (13 mm) Threaded Conduit Connector(s)</td>
</tr>
<tr>
<td>Mechanical Connections</td>
<td>Round Shafts 1/4 in. to 1/2 in. (6 to 12 mm) Square Shafts 1/4 in. to 5/16 in. (6 to 8 mm)</td>
</tr>
<tr>
<td>Life Cycle</td>
<td>60,000 Full Stroke Cycles with 27 lb·in. (3 N-m) Load, 1,500,000 Repositions with 27 lb·in. (3 N-m) Load</td>
</tr>
<tr>
<td>Noise Rating</td>
<td>Running &lt;28 dBA at 27 lb·in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)</td>
</tr>
<tr>
<td></td>
<td>Holding &lt;20 dBA at a Distance of 39-13/32 in. (1 m)</td>
</tr>
<tr>
<td></td>
<td>Returning &lt;56 dBA at 27 lb·in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>6-3/8&quot; (L) x 3-15/16&quot; (W) x 2-1/4&quot; (H)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.0 lb. (2.4 lb w/ Aux. Switches)</td>
</tr>
<tr>
<td>Agency Certification</td>
<td>UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators.</td>
</tr>
</tbody>
</table>

Wiring: (Cable)

### IMPORTANT:
Do not install multiple DS-27 Series Actuators connected to the same mechanical load. Master-Slave application of DS-27 Series Actuators requires that each actuator be connected to independent loads.

### DC 0(2)...10 V Control

<table>
<thead>
<tr>
<th>DC 0(2)...10 V Control</th>
<th>Modulating</th>
<th>0(4)...20 mA Control with External Resistor</th>
<th>(-A) Auxiliary Switches</th>
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<td>BLK/GRY</td>
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</tr>
</tbody>
</table>

**NOTE:** WARNING: All DS-27 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

**Power Supply**
AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or SELV (Europe), 5 VA Running, 1.6 VA Holding Position
DC 24 V (DC 21.6 V to 28.8 V): Class 2 (North America) or SELV (Europe), 2.8 W Running, 0.8 W Holding Position
Minimum Transformer Size: 6 VA per Actuator

**Auxiliary Switch Rating**
(-A) Models) One Single-Pole, Double-Throw (SPDT), Double-Insulated Switch with Silver Contacts:
AC 24 V, 50 VA Pilot Duty

**Spring Return**
Direction is Selectable with Mounting Position of Actuator:
Actuator Side A is away from damper or valve: CCW Spring Return
Actuator Side B is away from damper or valve: CW Spring Return

**Equipment Rating**
Class 2 or Safety Extra-Low Voltage (SELV)

**Rotation Range**
Maximum Full Stroke: 95°
Adjustable Stop: 35 to 95° Maximum Position

**Electric Stall Detection**
Protects from overload at all angles of rotation

**Torque**
27 lb·in. (3 N·m)

**Time: 90° of Rotation**
Power On (Running) 53 to 71 Seconds for 0 to 27 lb·in. (3 N·m) Load, at Room Temperature
60 Seconds Nominal at Full Rated Load (0.25 rpm)
Power Off (Returning) 19 to 23 Seconds for 0 to 27 lb·in. (3 N·m) Load, at Room Temperature
22 Seconds Nominal at Full Rated Load
28 Seconds Maximum with 27 lb·in. (3 N·m) Load at -22°F (-30°C)

**Enclosure**
NEMA 2 (IP54) for all mounting orientations

**Ambient Conditions**
Standard Operating -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing
Storage -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing

**Electrical Connections**
48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends
Conduit Connections Integral 1/2 in. (13 mm) Threaded Conduit Connector(s)

**Mechanical Connections**
Round Shafts 1/4 in. to 1/2 in. (6 to 12 mm)
Square Shafts 1/4 in. to 5/16 in. (6 to 8 mm)

**Life Cycle**
60,000 Full stroke cycles (1,500,000 repositions) at full working load at Rated Running Torque Audible

**Noise Rating**
Running <36 dBA at 27 lb·in. (3 N·m) Load, at a Distance of 39-13/32 in. (1 m)
Holding <20 dBA at a Distance of 39-13/32 in. (1 m)
Spring Returning <51 dBA at 27 lb·in. (3 N·m) Load, at a Distance of 39-13/32 in. (1 m)

**Dimensions**
6-3/8” (L) x 3-15/16” (W) x 2-1/4” (H)

**Weight**
2.0 lb. (2.4 lb w/ Aux. Switches)

**Agency Certification**
UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators.

**Wiring: (Cable)**

**IMPORTANT:**
Do not install multiple DS-27 Series Actuators connected to the same mechanical load. Master-Slave application of DS-27 Series Actuators requires that each actuator be connected to independent loads.

**NOTE:**
WARNING: All DS-27 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
**Spring Return - DS-27 Series**

### Submittal/Technical Data

#### 27 lb-in. — Spring Return — On/Off and Floating — Auxiliary Switch Option

**Specifications:**

| **Power Supply** | AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or (SELV) (Europe), 4.7 VA Running, 2.7 VA Holding Position  
DC 24 V (DC 21.6 V to 28.8 V): Class 2 or SELV, 1.8 W, Running, 1 W Holding Position  
Minimum Transformer Size: 6 VA per Actuator |
| **Input Signal** | AC 19.2 to 28.8 V at 50/60 Hz or DC 24 V +20%/-10% Class 2 or SELV. Minimum Pulse Width: 500 msec  
(-A) Models One SPDT, Double Insulated Switch with Silver Contacts — AC 24V, 50 VA Pilot Duty |
| **Auxiliary Switch Rating** | Direction is Selectable with Mounting Position of Actuator:  
Actuator Side A is away from damper or valve: CCW Spring Return  
Actuator Side B is away from damper or valve: CW Spring Return |
| **Equipment Rating** | Class 2 or Safety Extra-Low Voltage (SELV) |
| **Rotation Range** | Maximum Full Stroke: 95° |
| **Electric Stall Detection** | Protects from overload at all angles of rotation  
Adjustable Stop: 35 to 95° Maximum Position |
| **Torque** | 27 lb·in. (3 N·m) |
| **Time: 90° of Rotation** | Power On (Running) 150 Seconds Constant for 0 to 27 lb-in. (3 N-m) Load, at All Operating Conditions  
Power Off (Returning) 12 to 17 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature  
16 Seconds Nominal at Full Rated Load  
22 Seconds Maximum with 27 lb-in. (3 N-m) Load at -22°F (-30°C) |
| **Enclosure** | NEMA 2 (IP54) for all mounting orientations |
| **Ambient Conditions** | Standard Operating: -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing  
Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing |
| **Electrical Connections** | Without Aux Switches: 120 in. UL 444 Type CMP Plenum Rated Cable w/ 19 AWG (0.75 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends  
With Aux Switches: 48 in. UL 758 Type AWM Halogen-Free Cable w/ 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends |
| **Mechanical Connections** | Round Shafts: 1/4 in. to 1/2 in. (6 to 12 mm)  
Square Shafts: 1/4 in. to 5/16 in. (6 to 8 mm) |
| **Life Cycle** | 60,000 Full Stroke Cycles with 27 lb-in. (3 N-m) Load, 1,500,000 Repositions with 27 lb-in. (3 N-m) Load |
| **Noise Rating** | Running: <28 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)  
Holding: <20 dBA at a Distance of 39-13/32 in. (1 m)  
Returning: <56 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m) |
| **Dimensions** | 6-3/8” (L) x 3-15/16” (W) x 2-1/4” (H) |
| **Weight** | 2.0 lb. (2.4 lb w/ Aux. Switches) |
| **Agency Certification** | UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators. |

**Wiring: (Cable)**

**IMPORTANT:**

Do not install multiple DS-27 Series Actuators connected to the same mechanical load. Master-Slave application of DS-27 Series Actuators requires that each actuator be connected to independent loads.

**Floating Control, Four Wire Control**

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<td>2</td>
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<td>~</td>
<td>24 VAC</td>
<td>24 VDC</td>
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</tr>
</tbody>
</table>

**Open/Close, Single Wire Control**

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<td>24 VAC</td>
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**On/Off Control, Two Wire**

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</tr>
<tr>
<td>4</td>
<td>~</td>
<td>24 VAC</td>
<td>24 VDC</td>
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</tr>
</tbody>
</table>

**(-A) Auxiliary Switches**

**NOTE:** WARNING: All DS-27 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
## Spring Return - DS-27 Series

### DSU20-27-(A) — Submittal/Technical Data

27 lb-in — 120/240 V — Spring Return — On/Off — Auxiliary Switch Option

### Specifications:

**Power Supply**

- AC 100 to 240 V (AC 85 V to 264 V) at 50/60 Hz: 0.06 A Running, 0.02 A Holding Position

**Auxiliary Switch Rating**

- (-A) Models: One Single-Pole, Double-Throw (SPDT), Double-Insulated Switch with Silver Contacts:
  - AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty
  - AC 240 V, 5.0 A Resistive, 1/4 hp, 275 VA Pilot Duty

**Spring Return**

- Direction is Selectable with Mounting Position of Actuator:
  - Actuator Side A is away from damper or valve: CCW Spring Return
  - Actuator Side B is away from damper or valve: CW Spring Return

**Rotation Range**

- Maximum Full Stroke: 95°
- Adjustable Stop: 35 to 95° Maximum Position

**Electric Stall Detection**

- Protects from overload at all angles of rotation

**Torque**

- 27 lb-in. (3 N-m)

**Time: 90° of Rotation**

- Power On (Running) 24 to 28 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature
- 27 Seconds Nominal at Full Rated Load (0.5 rpm)
- Power Off (Returning) 19 to 23 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature
- 22 Seconds Nominal at Full Rated Load
- 28 Seconds Maximum with 27 lb-in. (3 N-m) Load at -22°F (-30°C)

**Enclosure**

- NEMA 2 (IP54) for all mounting orientations

**Ambient Conditions**

- Standard Operating: -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing
- Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing

**Electrical Connections**

- 48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends

**Conduit Connections**

- Integral 1/2 in. (13 mm) Threaded Conduit Connector(s)

**Mechanical Connections**

- Round Shafts: 1/4 in. to 1/2 in. (6 to 12 mm)
- Square Shafts: 1/4 in. to 5/16 in. (6 to 8 mm)

**Life Cycle**

- 60,000 Full stroke cycles (1,500,000 repositions) at full working load at Rated Running Torque Audible

**Noise Rating**

- Running <45 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)
- Holding <20 dBA at a Distance of 39-13/32 in. (1 m)
- Spring Returning <51 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)

**Dimensions**

- 6-3/8” (L) x 3-15/16” (W) x 2-1/4 (H)
- Weight: 2.0 lb. (2.4 lb w/ Aux. Switches)

**Agency Certification**

- UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators.
- UL Listed, CCN XAPX7, File E27734; to UL 60730-1:02-CAN/CSA: July 2002, 3rd Ed., Automatic Electrical Controls for Household and Similar Use; and CSA C22.2 No. 24-93 Temperature Indicating and Regulating Equipment
- CE Mark — This product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC.

### Wiring: (Cable)

**IMPORTANT:**

Do not install multiple DS-27 Series Actuators connected to the same mechanical load. Master-Slave application of DS-27 Series Actuators requires that each actuator be connected to independent loads.

**NOTE: WARNING:** All DS-27 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

- **Power Supply**: AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or (SELV) (Europe), 5.1 VA Running, 2.8 VA Holding Position
- DC 24 V (DC 19.2 V to 28.8 V): Class 2 or SELV, 1.9 W, Running, 1.1 W Holding Position
- **Minimum Transformer Size**: 6 VA per Actuator
- **Control Input Impedance**: 100k Ohms
- **Input Signal/Adjustments**: Factory Set at DC 0 to 10 V, CW Rotation with Signal Increase Selectable DC 0 (2) to 10 V or 0 (4) to 20 mA with Field-Furnished 500 ohm 0.25 W Min. Resistor. Switch Selectable Direct or Reverse Action with Signal Increase
- **Feedback Signal**: DC 0 (2) to 10 V for Desired Rotation Range up to 95°. Corresponds to Rotation Limits, 0.5 mA at 10 V Maximum
- **Auxiliary Switch Rating**: (-A) Models) One SPDT, Double Insulated Switch with Silver Contacts – AC 24V, 50 VA Pilot Duty
- **Spring Return**: Direction is Selectable with Mounting Position of Actuator:
  - Actuator Side A is away from damper or valve: CCW Spring Return
  - Actuator Side B is away from damper or valve: CW Spring Return
- **Equipment Rating**: Class 2 or Safety Extra-Low Voltage (SELV)
- **Rotation Range**: Maximum Full Stroke: 95°
- **Electric Stall Detection**: Protects from overload at all angles of rotation
- **Torque**: 27 lb-in. (3 N·m)
- **Time**: 90° of Rotation Power On (Running) 90 Seconds Constant for 0 to 27 lb-in. (3 N-m) Load, at All Operating Conditions Power Off (Returning) 12 to 17 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature 16 Seconds Nominal at Full Rated Load 22 Seconds Maximum with 27 lb-in. (3 N-m) Load at -22°F (-30°C)
- **Enclosure**: NEMA 2 (IP54) for all mounting orientations
- **Ambient Conditions**: Standard Operating -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing Storage -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing
- **Electrical Connections**:
  - **Without Aux Switches**: 120 in. UL 444 Type CMP Plenum Rated Cable w/ 19 AWG (0.75 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends
  - **With Aux Switches**: 48 in. UL 758 Type AWM Halogen-Free Cable w/ 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends
- **Conduit Connections**: Integral 1/2 in. (13 mm) Threaded Conduit Connector(s)
- **Mechanical Connections**: Round Shafts 1/4 in. to 1/2 in. (6 to 12 mm) Square Shafts 1/4 in. to 5/16 in. (6 to 8 mm)
- **Life Cycle**: 60,000 Full Stroke Cycles with 27 lb-in. (3 N-m) Load, 1,500,000 Repositions with 27 lb-in. (3 N-m) Load
- **Noise Rating**:
  - **Running**: <37 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)
  - **Holding**: <20 dB at a Distance of 39-13/32 in. (1 m)
  - **Returning**: <56 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)
- **Dimensions**: Actuator Only - 6-3/8” (L) x 3-15/16” (W) x 2-1/4 (H) Weight Actuator Only - 2.0 lb. (2.4 lb w/ Aux. Switches)
- **Agency Certification**: UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators.

**Wiring: (Cable)**

- **IMPORTANT**: Do not install multiple VAS-27 Series Actuators connected to the same mechanical load. Master-Slave application of VAS-27 Series Actuators requires that each actuator be connected to independent loads.

- **DC 0(2)...10 V Control**:
  - BLK: 1
  - RED: 2
  - GRY: 3
  - ORN: 4

- **Modulating**:
  - AC/DC 24 V
  - DC 0(2)...10 V

- **0(4)...20 mA Control with External Resistor**
  - U (+)
  - Y (+)

- **(A) Auxiliary Switches**

**NOTE**: WARNING: All VAS-27 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - VAS-27 Series

Specifications:

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or (SELV) (Europe), 5 VA Running, 1.6 VA Holding Position DC 24 V (DC 21.6 V to 28.8 V): Class 2 (North America) or SELV (Europe), 2.8 W Running, 0.8 W Holding Position Minimum Transformer Size: 6 VA per Actuator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auxiliary Switch Rating</td>
<td>(-A) Models) One Single-Pole, Double-Throw (SPDT), Double-Insulated Switch with Silver Contacts: AC 24 V, 50 VA Pilot Duty</td>
</tr>
<tr>
<td>Spring Return</td>
<td>Direction is Selectable with Mounting Position of Actuator: Actuator Side A is away from damper or valve: CCW Spring Return Actuator Side B is away from damper or valve: CW Spring Return</td>
</tr>
<tr>
<td>Equipment Rating</td>
<td>Class 2 or Safety Extra-Low Voltage (SELV)</td>
</tr>
<tr>
<td>Rotation Range</td>
<td>Maximum Full Stroke: 95° Adjustable Stop: 35 to 95° Maximum Position</td>
</tr>
<tr>
<td>Electric Stall Detection</td>
<td>Protects from overload at all angles of rotation</td>
</tr>
<tr>
<td>Torque</td>
<td>27 lb·in. (3 N·m)</td>
</tr>
<tr>
<td>Time: 90° of Rotation</td>
<td>Power On (Running) 53 to 71 Seconds for 0 to 27 lb·in. (3 N·m) Load, at Room Temperature 60 Seconds Nominal at Full Rated Load (0.25 rpm) Power Off (Returning) 19 to 23 Seconds for 0 to 27 lb·in. (3 N·m) Load, at Room Temperature 22 Seconds Nominal at Full Rated Load 28 Seconds Maximum with 27 lb·in. (3 N·m) Load at -22°F (-30°C)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>NEMA 2 (IP54) for all mounting orientations</td>
</tr>
<tr>
<td>Ambient Conditions</td>
<td>Standard Operating -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing Storage -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td>Electrical Connections</td>
<td>48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (.85 mm²) Conductors &amp; .25 in. (6 mm) Ferrule Ends</td>
</tr>
<tr>
<td>Mechanical Connections</td>
<td>Round Shafts 1/4 in. to 1/2 in. (6 to 12 mm) Square Shafts 1/4 in. to 5/16 in. (6 to 8 mm)</td>
</tr>
<tr>
<td>Life Cycle</td>
<td>60,000 Full stroke cycles (1,500,000 repositions) at full working load at Rated Running Torque Audible</td>
</tr>
<tr>
<td>Noise Rating</td>
<td>Running &lt;36 dBA at 27 lb·in. (3 N·m) Load, at a Distance of 39-13/32 in. (1 m) Holding &lt;20 dBA at a Distance of 39-13/32 in. (1 m) Spring Returning &lt;51 dBA at 27 lb·in. (3 N·m) Load, at a Distance of 39-13/32 in. (1 m)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Actuator Only - 6-3/8” (L) x 3-15/16” (W) x 2-1/4” (H)</td>
</tr>
<tr>
<td>Weight</td>
<td>Actuator Only - 2.0 lb. (2.4 lb w/ Aux. Switches)</td>
</tr>
<tr>
<td>Agency Certification</td>
<td>UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators.</td>
</tr>
</tbody>
</table>

Wiring: (Cable)

IMPORTANT: Do not install multiple VAS-27 Series Actuators connected to the same mechanical load. Master-Slave application of VAS-27 Series Actuators requires that each actuator be connected to independent loads.

NOTE: WARNING: All VAS-27 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

**Power Supply**
- AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz; Class 2 or (SELV) (Europe), 5.1 VA Running, 2.8 VA Holding Position
- DC 24 V (DC 19.2 V to 28.8 V); Class 2 or SELV, 1.9 W Running, 1.1 W Holding Position
- Minimum Transformer Size: 6 VA per Actuator

**Input Signal**
- AC 19.2 to 28.8 V at 50/60 Hz or DC 24 V ±20%/-10% Class 2 or SELV. Minimum Pulse Width: 500 msec

**Auxiliary Switch Rating**
- (-A) Models) One SPDT, Double Insulated Switch with Silver Contacts — AC 24V, 50 VA Pilot Duty

**Spring Return**
- Direction is Selectable with Mounting Position of Actuator:
  - Actuator Side A is away from damper or valve: CCW Spring Return
  - Actuator Side B is away from damper or valve: CW Spring Return

**Equipment Rating**
- Class 2 or Safety Extra-Low Voltage (SELV)

**Rotation Range**
- Maximum Full Stroke: 95°
- Adjustable Stop: 35 to 95° Maximum Position

**Electric Stall Detection**
- Protects from overload at all angles of rotation

**Torque**
- 27 lb-in. (3 N·m)

**Time: 90° of Rotation**
- Power On (Running) 90 Seconds Constant for 0 to 27 lb-in. (3 N·m) Load, at All Operating Conditions
- Power Off (Returning) 12 to 17 Seconds for 0 to 27 lb-in. (3 N·m) Load, at Room Temperature
- 16 Seconds Nominal at Full Rated Load
- 22 Seconds Maximum with 27 lb-in. (3 N·m) Load at -22°F (-30°C)

**Enclosure**
- NEMA 2 (IP54) for all mounting orientations

**Ambient Conditions**
- Standard Operating: -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing
- Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing

**Electrical Connections**
- Without Aux Switches: 120 in. UL 444 Type CMP Plenum Rated Cable w/ 19 AWG (0.75 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends
- With Aux Switches: 48 in. UL 758 Type AWM Halogen-Free Cable w/ 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends
- Conduit Connections: Integral 1/2 in. (13 mm) Threaded Conduit Connector(s)

**Mechanical Connections**
- Round Shafts: 1/4 in. to 1/2 in. (6 to 12 mm)
- Square Shafts: 1/4 in. to 5/16 in. (6 to 8 mm)

**Life Cycle**
- 60,000 Full Stroke Cycles with 27 lb-in. (3 N·m) Load, 1,500,000 Repositions with 27 lb-in. (3 N·m) Load

**Noise Rating**
- Running: <37 dBA at 27 lb.in. (3 N·m) Load, at a Distance of 39-13/32 in. (1 m)
- Holding: <20 dBA at a Distance of 39-13/32 in. (1 m)
- Returning: <56 dBA at 27 lb-in. (3 N·m) Load, at a Distance of 39-13/32 in. (1 m)

**Dimensions**
- Actuator Only: 6-3/8” (L) x 3-15/16” (W) x 2-1/4 (H)

**Weight**
- Actuator Only: 2.0 lb. (2.4 lb w/ Aux. Switches)

**Agency Certification**
- UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: Ed. 1, Part 2, Particular Requirements for Electric Actuators.

**Wiring:** (Cable)

### Floating Control, Four Wire
- Wiring Diagram

### On/Off and Floating
- Wiring Diagram

### On/Off Control, Two Wire
- Wiring Diagram

### (-A) Auxiliary Switches
- Wiring Diagram

**NOTE:** WARNING: All VAS-27 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - VAS-27 Series

**Specifications:**

**Power Supply**
AC 100 to 240 V (AC 85 V to 264 V) at 50/60 Hz: 0.06 A Running, 0.02 A Holding Position

**Auxiliary Switch Rating**
(-A) Models: One Single-Pole, Double-Throw (SPDT), Double-Insulated Switch with Silver Contacts:
- AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty
- AC 240 V, 5.0 A Resistive, 1/4 hp, 275 VA Pilot Duty

**Spring Return**
Direction is Selectable with Mounting Position of Actuator:
- Actuator Side A is away from damper or valve: CCW Spring Return
- Actuator Side B is away from damper or valve: CW Spring Return

**Rotation Range**
Maximum Full Stroke: 95°
Adjustable Stop: 35 to 95° Maximum Position

**Electric Stall Detection**
Protects from overload at all angles of rotation

**Torque**
27 lb-in. (3 N·m)

**Time: 90° of Rotation**
- Power On (Running): 24 to 28 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature
- 27 Seconds Nominal at Full Rated Load (0.5 rpm)
- Power Off (Returning): 19 to 23 Seconds for 0 to 27 lb-in. (3 N-m) Load, at Room Temperature
- 22 Seconds Nominal at Full Rated Load
- 28 Seconds Maximum with 27 lb-in. (3 N-m) Load at -22°F (-30°C)

**Enclosure**
NEMA 2 (IP54) for all mounting orientations

**Ambient Conditions**
- Standard Operating: -22 to 140°F (-30 to 60°C); 90% RH Maximum, Noncondensing
- Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing

**Electrical Connections**
- Power Supply: AC 85...264 V 50/60 Hz
- Conduit Connections: Integral 1/2 in. (13 mm) Threaded Conduit Connector(s)
- Mechanical Connections: Round Shafts 1/4 in. to 1/2 in. (6 to 12 mm)
- Square Shafts 1/4 in. to 5/16 in. (6 to 8 mm)

**Noise Rating**
- Running <45 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)
- Holding <20 dBA at a Distance of 39-13/32 in. (1 m)
- Spring Returning <51 dBA at 27 lb-in. (3 N-m) Load, at a Distance of 39-13/32 in. (1 m)

**Dimensions**
- Actuator Only: 6-3/8" (L) x 3-15/16" (W) x 2-1/4 (H)

**Agency Certification**
UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1,
Part 2, Particular Requirements for Electric Actuators.

**Wiring:** (Cable)

**IMPORTANT:** Do not install multiple VAS-27 Series Actuators connected to the same mechanical load. Master-Slave application of VAS-27 Series Actuators requires that each actuator be connected to independent loads.

**On/Off**

```
WHIT  BLK
  1  2
```

**(-A) Auxiliary Switches**

```
COM NC NO
21 22 23
```

AC 85...264 V 50/60 Hz

**NOTE:** WARNING: All VAS-27 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DS-70 Series

DMS24-70-(A) — Submittal/Technical Data

70 lb-in. — Spring Return — Modulating — Auxiliary Switch Option

Specifications:

Power Supply
- AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or SELV, 7.9 VA Running, 5.5 VA Holding Position
- DC 24 V (DC 21.6 V to 28.8 V): Class 2 or SELV, 3.5 W Running, 1.9 W Holding Position
- Minimum Transformer Size: 8 VA per Actuator

Input Signal
- Factory Set at DC 0 to 10 V, CW Rotation with Signal Increase; Selectable DC 0 (2) to 10 V or 0 (4) to 20 mA with Field Furnished 500 Ohm, 0.25 W Minimum Resistor; Switch Selectable Direct or Reverse Action with Signal Increase

Control Input Impedance
- 100k Ohms, Current Input: 500 Ohms with Field Furnished 500 Ohm Resistor

Feedback Signal
- DC 0 (2) to 10 V for Desired Rotation Range up to 95°, Corresponds to Rotation Limits, 0.5 mA at 10 V Maximum

Auxiliary Switch Rating
- (-A) Models) Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts:
  - AC 24 V, 50 VA Pilot Duty

Spring Return
- Direction is Selectable with Mounting Position of Actuator:
  - Actuator Side A is away from damper or valve: CCW Spring Return
  - Actuator Side B is away from damper or valve: CW Spring Return

Equipment Rating
- Class 2 or Safety Extra-Low Voltage (SELV)

Rotation Range
- Maximum Full Stroke: 95°

Electric Stall Detection
- Protects from overload at all angles of rotation

Torque
- 70 lb-in. (8 N-m)

Time: 90° of Rotation
- Power On (Running) 150 Seconds Constant for 0 to 70 lb-in (8 N-m) Load, At All Operating Conditions
- Power Off (Spring Running) 17 to 25 Seconds for 0 to 70 lb-in (8 N-m) Load, at Room Temperature

Enclosure
- NEMA 2 (IP54) for all mounting orientations

Manual Override
- Hex Head Screw

Ambient Conditions
- Standard Operating: -40 to 140°F (-40 to 60°C); 90% RH Maximum, Noncondensing
- Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing

Electrical Connections
- 48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends

Conduit Connections
- Integral Connectors for 3/8 in. (10 mm) Flexible Metal Conduit

Mechanical Connections
- Round Shafts: 5/16 to 5/8 in. (8 to 16 mm)
- Square Shafts: 1/4 to 1/2 in. (6 to 12 mm)

Life Cycle
- 60,000 Full Stroke Cycles with 70 lb-in. (8 N-m) Load — 1,500,000 Repositions with 70 lb-in. (8 N-m) Load

Noise Rating
- Running: < 35 dBA at 70 lb-in (8 N-m) Load, at a Distance of 39-13/32 in. (1 m)
- Holding: < 20 dBA at a Distance of 39-13/32 in. (1 m)
- Spring Returning: <52 dBA at 70 lb-in. (8 N-m) Load — (All at a Distance of 39-13/32 in. (1 m))

Dimensions
- 6.33 (L) x 3.90 (W) x 2.26 (H)

Weight
- 3.43 lb. (3.8 lb w/ Aux. Switches)

Agency Certification
- UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

Wiring: (Cable)

Modulating

Master-Slave Application

(-A) Auxiliary Switches

NOTE: WARNING: All DS-70 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against and/or warn of control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DS-70 Series

DS120-70-(A) — Submittal/Technical Data
70 lb-in. — 120 V — Spring Return — On/Off — Auxiliary Switch Option

Specifications:

- **Power Supply**: AC 120 V (AC 102 V to 132 V) at 60 Hz; 0.05 A Running, 0.03 A Holding Position
- **Auxiliary Switch Rating** (-A) Models: Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts: AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty
- **Spring Return**: Direction is Selectable with Mounting Position of Actuator:
  - Actuator Side A is away from damper or valve: CCW Spring Return
  - Actuator Side B is away from damper or valve: CW Spring Return
- **Rotation Range**: Maximum Full Stroke: 95°
  - Adjustable Stop: 35 to 95° Maximum Position
- **Electric Stall Detection**: Protects from overload at all angles of rotation
- **Torque**: 70 lb-in. (8 N·m)
- **Time: 90° of Rotation**:
  - Power On (Running): 55 to 71 Seconds for 0 to 70 lb-in (8 N·m) Load, at All Operating Conditions
  - Power Off (Spring Returning): 13 to 26 Seconds for 0 to 70 lb-in (8 N·m) Load, at Room Temperature
  - 21 Seconds Nominal at Full Rated Load (0.25 rpm)
  - 108 Seconds Maximum with 53 lb-in (6 N·m) Load at -20°F (-20°C)
  - 108 Seconds Maximum with 53 lb-in (6 N·m) Load at -20°C

- **Enclosure**: NEMA 2 (IP54) for all mounting orientations
- **Manual Override**: Hex Head Screw
- **Ambient Conditions**:
  - Standard Operating: -40 to 140°F (-40 to 60°C); 90% RH Maximum, Noncondensing
  - Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing
- **Electrical Connections**: 48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (.85 mm²) Conductors & .25 in. (6 mm) Ferrule Ends
- **Conduit Connections**: Integral Connectors for 3/8 in. (10 mm) Flexible Metal Conduit
- **Mechanical Connections**: Round Shafts 5/16 to 5/8 in. (8 to 16 mm)
  - Square Shafts 1/4 to 1/2 in. (6 to 12 mm)
- **Life Cycle**: 60,000 Full Stroke Cycles with 70 lb-in. (8 N·m) Load — 1,500,000 Repositions with 70 lb-in. (8 N·m) Load
- **Noise Rating**:
  - Running: < 47 dBA at 70 lb-in (8 N·m) Load, at a Distance of 39-13/32 in. (1 m)
  - Holding: < 20 dBA at a Distance of 39-13/32 in. (1 m)
  - Spring Returning: < 52 dBA at 70 lb-in. (8 N·m) Load - (All at a Distance of 39-13/32 in. (1 m))
- **Dimensions**: 6.33 (L) x 3.90 (W) x 2.26 (H)
- **Weight**: 4.15 lb.
- **Agency Certification**: UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

Wiring: (Cable)

![On/Off Aux Switch Wiring Diagram]

NOTE: WARNING: All DS-70 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

**Power Supply**
- AC 24 V (AC 18 V to 30 V) at 50/60 Hz: Class 2 or SELV, 6.1 VA Running, 1.2 VA Holding Position
- DC 24 V (DC 21.6 V to 28.8 V): Class 2 or SELV, 3.5 W Running, 0.5 W Holding Position

Minimum Transformer Size: 7 VA per Actuator

**Auxiliary Switch Rating**
(-A) Models Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts:
- AC 24 V, 50 VA Pilot Duty

**Spring Return**
- Direction is Selectable with Mounting Position of Actuator:
  - Actuator Side A is away from damper or valve: CCW Spring Return
  - Actuator Side B is away from damper or valve: CW Spring Return

**Equipment Rating**
- Class 2 or Safety Extra-Low Voltage (SELV)

**Rotation Range**
- Maximum Full Stroke: 95°
- Adjustable Stop: 35 to 95° Maximum Position

**Electric Stall Detection**
- Protects from overload at all angles of rotation

**Torque**
- 70 lb·in. (8 N·m)

**Time:**
- Rotation Power On (Running) 55 to 71 Seconds for 0 to 70 lb·in. (8 N·m) Load, at All Operating Conditions
- 60 Seconds Nominal at Full Rated Load (0.25 rpm)
- Power Off (Spring Returning) 13 to 26 Seconds for 0 to 70 lb·in. (8 N·m) Load, at Room Temperature
- 108 Seconds Maximum with 53 lb·in (6 N·m) Load at -4°F (-20°C)

**Enclosure**
- NEMA 2 (IP54) for all mounting orientations

**Manual Override**
- Hex Head Screw

**Ambient Conditions**
- Standard Operating: -40 to 140°F (-40 to 60°C); 90% RH Maximum, Noncondensing
- Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing

**Electrical Connections**
- 48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends

**Conduit Connections**
- Integral Connectors for 3/8 in. (10 mm) Flexible Metal Conduit

**Mechanical Connections**
- Round Shafts: 5/16 to 5/8 in. (8 to 16 mm)
- Square Shafts: 1/4 to 1/2 in. (6 to 12 mm)

**Life Cycle**
- 60,000 Full Stroke Cycles with 70 lb·in. (8 N·m) Load — 1,500,000 Repositions with 70 lb·in. (8 N·m) Load

**Noise Rating**
- Running: < 47 dBA at 70 lb·in. (8 N·m) Load, at a Distance of 39-13/32 in. (1 m)
- Holding: < 20 dBA at a Distance of 39-13/32 in. (1 m)
- Spring Returning: < 52 dBA at 70 lb·in. (8 N·m) Load - (All at a Distance of 39-13/32 in. (1 m))

**Dimensions**
- 6.33 (L) x 3.90 (W) x 2.26 (H)

**Weight**
- 3.43 lb. (3.8 lb w/ Aux. Switches)

**Agency Certification**
- UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

**Wiring:** (Cable)

**(-A) Auxiliary Switches**

**NOTE:** WARNING: All DS-70 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against and/or warn of control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DS-70 Series

Specifications:

Power Supply
- AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or SELV, 7.9 VA Running, 5.5 VA Holding Position
- DC 24 V (DC 21.6 V to 28.8 V): Class 2 or SELV, 3.5 W Running, 1.9 W Holding Position

Minimum Transformer Size: 8 VA per Actuator

Input Signal
- AC 19.2 to 28.8 V at 50/60 Hz or DC 24 V +20%/-10%, Class 2 or SELV, Minimum Pulse Width: 500 ms

Auxiliary Switch Rating
- (-A) Models Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts:
  - AC 24 V, 50 VA Pilot Duty

Spring Return
- Direction is Selectable with Mounting Position of Actuator:
  - Actuator Side A is away from damper or valve: CCW Spring Return
  - Actuator Side B is away from damper or valve: CW Spring Return

Equipment Rating
- Class 2 or Safety Extra-Low Voltage (SELV)

Rotation Range
- Maximum Full Stroke: 95°
- Adjustable Stop: 35 to 95° Maximum Position

Electric Stall Detection
- Protects from overload at all angles of rotation

Torque
- 70 lb-in. (8 N·m)

Time: 90° of Rotation
- Power On (Running) 150 Seconds Constant for 0 to 70 lb-in (8-N·m) Load, at All Operating Conditions
- Power Off (Spring Returning) 17 to 25 Seconds for 0 to 70 lb-in (8-N·m) Load, at Room Temperature
- 22 Seconds Nominal at Full Rated Load, 94 Seconds Maximum with 70 lb-in (8 N·m) Load, at -40°F (-40°C)

Enclosure
- NEMA 2 (IP54) for all mounting orientations

Manual Override
- Hex Head Screw

Ambient Conditions
- Standard Operating: -40 to 140°F (-40 to 60°C); 90% RH Maximum, Noncondensing
- Storage: -40 to 185ºF (-40 to 85ºC); 95% RH Maximum, Noncondensing

Electrical Connections
- 48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends

Conduit Connections
- Integral Connectors for 3/8 in. (10 mm) Flexible Metal Conduit

Mechanical Connections
- Round Shafts 5/16 to 5/8 in. (8 to 16 mm)
- Square Shafts 1/4 to 1/2 in. (6 to 12 mm)

Life Cycle
- 60,000 Full Stroke Cycles with 70 lb-in. (8 N·m) Load — 1,500,000 Repositions with 70 lb-in. (8 N·m) Load

Noise Rating
- Running: < 35 dBA at 70 lb-in (8 N·m) Load, at a Distance of 39-13/32 in. (1 m)
- Holding: < 20 dBA at a Distance of 39-13/32 in. (1 m)
- Spring Returning: < 52 dBA at 70 lb-in. (8 N·m) Load - (All at a Distance of 39-13/32 in. (1 m))

Dimensions
- 6.33 (L) x 3.90 (W) x 2.26 (H)

Weight
- 3.43 lb. (3.8 lb. w/ Aux. Switches)

Agency Certification
- UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

Wiring: (Cable)

Floating Control, Four Wire
- Open/Close, Single Wire Control
- On/Off Control, Two Wire
- Floating Control, Multiple Actuators with One Transformer

(-A) Auxiliary Switches

NOTE: WARNING: All DS-70 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - VAS-70 Series

VAMS24-70-(A) — Submittal/Technical Data
70 lb-in. — Direct Mount — Spring Return — Modulating — Auxiliary Switch Option

Specifications:

Power Supply
AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or SELV, 7.9 VA Running, 5.5 VA Holding Position
DC 24 V (DC 21.6 V to 28.8 V): Class 2 or SELV, 3.5 W Running, 1.9 W Holding Position
Minimum Transformer Size: 8 VA per Actuator

Input Signal
Factory Set at DC 0 to 10 V, CW Rotation with Signal Increase; Selectable DC 0 (2) to 10 V or 0 (4) to 20 mA with Field Furnished 500 Ohm, 0.25 W Minimum Resistor; Switch Selectable Direct or Reverse Action with Signal Increase

Control Input Impedance
100k Ohms, Current Input: 500 Ohms with Field Furnished 500 Ohm Resistor

Feedback Signal
DC 0 (2) to 10 V for Desired Rotation Range up to 95°, Corresponds to Rotation Limits, 0.5 mA at 10 V Maximum

Auxiliary Switch Rating
(-A) Models) Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts:
AC 24 V, 50 VA Pilot Duty

Spring Return
Direction is Selectable with Mounting Position of Actuator:
Actuator Side A is away from damper or valve: CCW Spring Return
Actuator Side B is away from damper or valve: CW Spring Return

Equipment Rating
Class 2 or Safety Extra-Low Voltage (SELV)

Rotation Range
Maximum Full Stroke: 95°

Electric Stall Detection
Protects from overload at all angles of rotation

Torque
70 lb-in. (8 N-m)

Time: 90° of Rotation
Power On (Running) 150 Seconds Constant for 0 to 70 lb-in (8 N-m) Load, At All Operating Conditions
Power Off (Spring Running) 17 to 25 Seconds for 0 to 70 lb-in (8 N-m) Load, at Room Temperature
22 Seconds Nominal at Full Rated Load, 94 Seconds Maximum with 70 lb-in (8 N-m) Load, at -40°F (-40°C)

Enclosure
NEMA 2 (IP54) for all mounting orientations

Manual Override
Hex Head Screw

Ambient Conditions
Standard Operating: -40 to 140°F (-40 to 60°C); 90% RH Maximum, Noncondensing
Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing

Electrical Connections
48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends

Conduit Connections
Integral Connectors for 3/8 in. (10 mm) Flexible Metal Conduit

Mechanical Connections
Round Shafts 5/16 to 5/8 in. (8 to 16 mm)
Square Shafts 1/4 to 1/2 in. (6 to 12 mm)

Life Cycle
60,000 Full Stroke Cycles with 70 lb-in. (8 N-m) Load — 1,500,000 Repositions with 70 lb-in. (8 N-m) Load

Noise Rating
Running < 35 dBA at 70 lb-in (8 N-m) Load, at a Distance of 39-13/32 in. (1 m)
Holding < 20 dBA at a Distance of 39-13/32 in. (1 m)
Spring Returning <52 dBA at 70 lb·in. (8 N·m) Load - (All at a Distance of 39-13/32 in. (1 m))

Dimensions
Actuator Only - 6.33 (L) x 3.90 (W) x 2.26 (H)

Weight
Actuator Only - 3.43 lb. (3.8 lb w/ Aux. Switches)

Agency Certification
UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

Wiring: (Cable)

Master-Slave Application

NOTE: WARNING: All DS-70 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
## Spring Return - VAS-70 Series

### Specifications:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Supply</strong></td>
<td>AC 120 V (AC 102 V to 132 V) at 60 Hz; 0.05 A Running, 0.03 A Holding Position</td>
</tr>
<tr>
<td><strong>Auxiliary Switch Rating</strong></td>
<td>(-A) Models Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts: AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty</td>
</tr>
<tr>
<td><strong>Spring Return</strong></td>
<td>Direction is Selectable with Mounting Position of Actuator: Actuator Side A is away from damper or valve: CCW Spring Return. Actuator Side B is away from damper or valve: CW Spring Return.</td>
</tr>
<tr>
<td><strong>Rotation Range</strong></td>
<td>Maximum Full Stroke: 95°. Adjustable Stop: 35° to 95° Maximum Position</td>
</tr>
<tr>
<td><strong>Electric Stall Detection</strong></td>
<td>Protects from overload at all angles of rotation</td>
</tr>
<tr>
<td><strong>Torque</strong></td>
<td>70 lb-in. (8 N-m)</td>
</tr>
<tr>
<td><strong>Time: 90° of Rotation</strong></td>
<td>Power On (Running) 55 to 71 Seconds for 0 to 70 lb-in (8 N-m) Load, at All Operating Conditions. Power Off (Spring Returning) 13 to 26 Seconds for 0 to 70 lb-in (8 N-m) Load, at Room Temperature 21 Seconds Nominal at Full Rated Load, 39 Seconds Maximum with 70 lb-in (8 N-m) Load at -4°F (-20°C) 108 Seconds Maximum with 53 lb-in (6 N-m) Load at -40°F (-40°C)</td>
</tr>
<tr>
<td><strong>Enclosure</strong></td>
<td>NEMA 2 (IP54) for all mounting orientations</td>
</tr>
<tr>
<td><strong>Manual Override</strong></td>
<td>Hex Head Screw</td>
</tr>
<tr>
<td><strong>Ambient Conditions</strong></td>
<td>Standard Operating: -40 to 140°F (-40 to 60°C); 90% RH Maximum, Noncondensing. Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td><strong>Electrical Connections</strong></td>
<td>48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors &amp; 0.25 in. (6 mm) Ferrule Ends</td>
</tr>
<tr>
<td><strong>Conduit Connections</strong></td>
<td>Integral Connectors for 3/8 in. (10 mm) Flexible Metal Conduit</td>
</tr>
<tr>
<td><strong>Mechanical Connections</strong></td>
<td>Round Shafts 5/16 to 5/8 in. (8 to 16 mm) Square Shafts 1/4 to 1/2 in. (6 to 12 mm)</td>
</tr>
<tr>
<td><strong>Life Cycle</strong></td>
<td>60,000 Full Stroke Cycles with 70 lb-in. (8 N-m) Load — 1,500,000 Repositions with 70 lb-in. (8 N-m) Load</td>
</tr>
<tr>
<td><strong>Noise Rating</strong></td>
<td>Running &lt; 47 dBA at 70 lb-in (8 N-m) Load, at a Distance of 39-13/32 in. (1 m) Holding &lt; 20 dBA at a Distance of 39-13/32 in. (1 m) Spring Returning &lt; 52 dBA at 70 lb-in. (8 N-m) Load - (All at a Distance of 39-13/32 in. (1 m))</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>Actuator Only - 6.33 (L) x 3.90 (W) x 2.26 (H)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Actuator Only - 4.2 lb.</td>
</tr>
<tr>
<td><strong>Agency Certification</strong></td>
<td>UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.</td>
</tr>
</tbody>
</table>

### Wiring: (Cable)

#### On/Off (-A) Auxiliary Switches

![Wiring Diagram](image_url)

**NOTE:** WARNING: All DS-70 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.

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CA-36

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Spring Return - VAS-70 Series

VAS24-70-(A) — Submittal/Technical Data
70 lb-in. — Direct Mount — Spring Return — On/Off — Auxiliary Switch Option

Specifications:

- **Power Supply**
  - AC 24 V (AC 18 V to 30 V) at 50/60 Hz: Class 2 or SELV, 6.1 VA Running, 1.2 VA Holding Position
  - DC 24 V (DC 21.6 V to 28.8 V): Class 2 or SELV, 3.5 W Running, 0.5 W Holding Position
- **Minimum Transformer Size:** 7 VA per Actuator
- **Auxiliary Switch Rating**
  - (-A) Models: Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts:
    - AC 24 V, 50 VA Pilot Duty
- **Spring Return**
  - Direction is Selectable with Mounting Position of Actuator:
    - Actuator Side A is away from damper or valve: CCW Spring Return
    - Actuator Side B is away from damper or valve: CW Spring Return
- **Equipment Rating**
  - Class 2 or Safety Extra-Low Voltage (SELV)
- **Rotation Range**
  - Maximum Full Stroke: 95°
  - Adjustable Stop: 35 to 95° Maximum Position
- **Electric Stall Detection**
  - Protects from overload at all angles of rotation
- **Torque**
  - 70 lb·in. (8 N·m)
- **Time: 90° of Rotation**
  - Power On (Running) 55 to 71 Seconds for 0 to 70 lb-in (8 N-m) Load, at All Operating Conditions
  - Power Off (Spring Returning) 13 to 26 Seconds for 0 to 70 lb-in (8 N-m) Load, at Room Temperature
  - 21 Seconds Maximum with 53 lb-in (6 N-m) Load at -4°F (-20°C)
- **Enclosure**
  - NEMA 2 (IP54) for all mounting orientations
- **Manual Override**
  - Hex Head Screw
- **Ambient Conditions**
  - Standard Operating: -40 to 140°F (-40 to 60°C); 90% RH Maximum, Noncondensing
  - Storage: -40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing
- **Electrical Connections**
  - 48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends
- **Conduit Connections**
  - Integral Connectors for 3/8 in. (10 mm) Flexible Metal conduit
- **Mechanical Connections**
  - Round Shafts: 5/16 to 5/8 in. (8 to 16 mm)
  - Square Shafts: 1/4 to 1/2 in. (6 to 12 mm)
- **Life Cycle**
  - 60,000 Full Stroke Cycles with 70 lb-in. (8 N-m) Load — 1,500,000 Repositions with 70 lb-in. (8 N-m) Load
- **Noise Rating**
  - Running: < 47 dBA at 70 lb-in (8 N-m) Load, at a Distance of 39-13/32 in. (1 m)
  - Holding: < 20 dBA at a Distance of 39-13/32 in. (1 m)
  - Spring Returning: <52 dBA at 70 lb-in. (8 N-m) Load - (All at a Distance of 39-13/32 in. (1 m))
- **Dimensions**
  - Actuator Only - 6.33 (L) x 3.90 (W) x 2.26 (H)
  - Actuator Only - 3.43 lb. (3.8 lb w/ Aux. Switches)
- **Agency Certification**
  - UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

Wiring: (Cable)

- **On/Off**
  - S2S1
- **(-A) Auxiliary Switches**
  - COM NC NO

NOTE: WARNING: All DS-70 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

Power Supply  AC 24 V (AC 19.2 V to 28.8 V) at 50/60 Hz: Class 2 or SELV, 7.9 VA Running, 5.5 VA Holding Position
DC 24 V (DC 21.6 V to 28.8 V): Class 2 or SELV, 3.5 W Running, 1.9 W Holding Position
Minimum Transformer Size: 8 VA per Actuator

Input Signal  AC 19.2 to 28.8 V at 50/60 Hz or DC 24 V +20%/-10%, Class 2 or SELV, Minimum Pulse Width: 500 ms

Auxiliary Switch Rating  (-A) Models) Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold over Silver Contacts:
AC 24 V, 50 VA Pilot Duty

Spring Return  Direction is Selectable with Mounting Position of Actuator:
Actuator Side A is away from damper or valve: CCW Spring Return
Actuator Side B is away from damper or valve: CW Spring Return

Equipment Rating  Class 2 or Safety Extra-Low Voltage (SELV)

Rotation Range  Maximum Full Stroke: 95°
Adjustable Stop: 35 to 95° Maximum Position

Electric Stall Detection  Protects from overload at all angles of rotation

Torque  70 lb-in. (8 N·m)

Time: 90° of Rotation
Power On (Running) 150 Seconds Constant for 0 to 70 lb-in (8 N·m) Load, At All Operating Conditions
Power Off (Spring Returning) 17 to 25 Seconds for 0 to 70 lb-in (8 N·m) Load, at Room Temperature
22 Seconds Nominal at Full Rated Load, 94 Seconds Maximum with 70 lb-in (8 N·m) Load, at -40°F (-40°C)

Enclosure  NEMA 2 (IP54) for all mounting orientations

Manual Override  Hex Head Screw

Ambient Conditions  Standard Operating
-40 to 140°F (-40 to 60°C); 90% RH Maximum, Noncondensing
Storage
-40 to 185°F (-40 to 85°C); 95% RH Maximum, Noncondensing

Electrical Connections  48 in. UL 758 Type AWM Halogen-Free Cable with 18 AWG (0.85 mm²) Conductors & 0.25 in. (6 mm) Ferrule Ends
Conduit Connections

Mechanical Connections  Round Shafts 5/16 to 5/8 in. (8 to 16 mm)
Square Shafts 1/4 to 1/2 in. (6 to 12 mm)

Life Cycle  60,000 Full Stroke Cycles with 70 lb-in. (8 N·m) Load — 1,500,000 Repositions with 70 lb-in. (8 N·m) Load
Noise Rating  Running  < 35 dBA at 70 lb-in (8 N·m) Load, at a Distance of 39-13/32 in. (1 m)
Holding  < 20 dBA at a Distance of 39-13/32 in. (1 m)
Spring Returning  < 52 dBA at 70 lb-in. (8 N·m) Load - (All at a Distance of 39-13/32 in. (1 m))

Dimensions  Actuator Only - 6.33 (L) x 3.90 (W) x 2.26 (H)

Weight  Actuator Only - 3.43 lb. (3.8 lb. w/ Aux. Switches)

Agency Certification  UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

Wiring: (Cable)

Floating Control, Four Wire
Open/Close, Single Wire Control
On/Off Control, Two Wire
Floating Control, Multiple Actuators with One Transformer

(-A) Auxiliary Switches

NOTE: WARNING: All DS-70 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

- **Power Supply**: 24 VAC ±20%; 24 VDC ±15% at 50/60 Hz; Class 2, Class III per EN 60730, 5 VA/3.5W Running, 4 VA/3W Holding Position
- **Auxiliary Switch Rating**: Control signal adjustment - Offset (start point) Between 0 to 5 Vdc; Span Between 2 to 30 Vdc
- **AC Rating**: (standard cable) 24 to 250 Vac, AC 6A resistive, AC 2A general purpose
- **DC Rating**: (Standard/Plenum cable) 12 to 30 Vdc, DC 2A
- **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°
- **Spring Return**: Direction is Selectable with Mounting Position of Actuator
- **Control Input Impedance**: >100k Ohms
- **Input Signal**: 0 to 10 Vdc (max. 35 Vdc)
- **Feedback Signal**: Voltage output signal GMA16x 0 to 10 Vdc; Maximum output current +1 mA, -0.5 mA
- **Rotation Range**: Nominal angle of rotation 90°; Maximum angular rotation 95°
- **Torque**: 62 lb·in. (7 N·m)
- **Time: 90° of Rotation**
  - Power On (Running) 90 Seconds for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])
  - Power Off (Returning) 15 Seconds Typical for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])
- **Enclosure**: NEMA 1 (IP54) limited mounting orientations
- **Manual Override**: Hex Head Screw
- **Ambient Conditions**
  - Standard Operating: -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing
  - Storage: -40°F to 158°F (-40°C to 70°C); 95% RH Maximum, Noncondensing
- **Electrical Connections**: 36 in. (.9 m) Plenum Cable with 18 AWG (0.75 mm2) Wire Leads
- **Conduit Connections**: Integral Connectors for 1/2 in. NPT
- **Mechanical Connections**: Round Shafts 1/4 to 3/4-inch (6.4 to 20.5 mm)
  - Square Shafts 1/4 to 1/2-inch (6.4 to 13 mm)
- **Life Cycle**: 60,000 Full stroke cycles (1,500,000 repositions)
- **Noise Rating**: 40 dBA
- **Dimensions**: 8-3/8” (L) x 3-1/4” (W) x 2-2/3 (H)
- **Weight**: 2.9 lb (1.3 kg)
- **Agency Certification**: UL listed to UL60730 (to replace UL873) cUL certified to Canadian Standard C22.2 No. 24-93
  - Low voltage directive (LVD) 2006/95/EC - EN 60 730-2-14 (Type 1)

Wiring: (Cable)

- **Modulating with AUX Switches**

NOTE: WARNING: All DCS-62 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DCS-62 Series

Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>24 VAC ±20%; 24 VDC ±15% at 50/60 Hz; Class 2, Class III per EN 60730, 5 VA/3.5W Running, 4 VA/3W Holding Position</td>
</tr>
<tr>
<td>Control Input Impedance</td>
<td>&gt;100k Ohms</td>
</tr>
<tr>
<td>Input Signal</td>
<td>0 to 10 Vdc (max. 35 Vdc)</td>
</tr>
<tr>
<td>Feedback Signal</td>
<td>Voltage output signal GMA16x 0 to 10 Vdc; Maximum output current +1 mA, -0.5 mA</td>
</tr>
<tr>
<td>Rotation Range</td>
<td>Nominal angle of rotation 90°; Maximum angular rotation 95°</td>
</tr>
<tr>
<td>Torque</td>
<td>62 lb-in. (7 N·m)</td>
</tr>
<tr>
<td>Time: 90° of Rotation</td>
<td>Power On (Running) 90 Seconds for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C]) Power Off (Returning) 15 Seconds Typical for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])</td>
</tr>
<tr>
<td>Enclosure</td>
<td>NEMA 1 (IP54) limited mounting orientations</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Hex Head Screw</td>
</tr>
<tr>
<td>Ambient Conditions</td>
<td>Standard Operating -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing Storage -40°F to 158°F (-40°C to 70°C); 95% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td>Electrical Connections</td>
<td>36 in. (.9 m) Plenum Cable with 18 AWG (0.75 mm²) Wire Leads</td>
</tr>
<tr>
<td>Conduit Connections</td>
<td>Integral Connectors for 1/2 in. NPT</td>
</tr>
<tr>
<td>Mechanical Connections</td>
<td>Round Shafts 1/4 to 3/4-inch (6.4 to 20.5 mm) Square Shafts 1/4 to 1/2-inch (6.4 to 13 mm)</td>
</tr>
<tr>
<td>Life Cycle</td>
<td>60,000 Full stroke cycles (1,500,000 repositions)</td>
</tr>
<tr>
<td>Noise Rating</td>
<td>40 dBA</td>
</tr>
<tr>
<td>Dimensions</td>
<td>8-3/8&quot; (L) x 3-1/4&quot; (W) x 2-2/3 (H)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.9 lb (1.3 kg)</td>
</tr>
<tr>
<td>Agency Certification</td>
<td>UL listed to UL60730 (to replace UL873) cUL certified to Canadian Standard C22.2 No. 24-93 Low voltage directive (LVD) 2006/95/EC - EN 60 730-2-14 (Type 1)</td>
</tr>
</tbody>
</table>

Wiring: (Cable)

Modulating

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+------------------+
| INPUT            |
|                 |
| 8                |
|                 |
| OUTPUT          |
| 9                |
|                 |
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NOTE: WARNING: All DCS-62 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DCS-62 Series

DCS120-62-(A)— Submittal/Technical Data

62 lb-in. — 120 V — Spring Return — On/Off — Auxiliary Switch Option

Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>120 Vac ±10% at 50/60 Hz, 7 VA/5W Running, 7 VA/5W Holding Position</td>
</tr>
<tr>
<td>Auxiliary Switch Rating</td>
<td>Control signal adjustment - Offset (start point) Between 0 to 5 Vdc; Span Between 2 to 30 Vdc</td>
</tr>
<tr>
<td>AC Rating (standard cable)</td>
<td>24 to 250 Vac, AC 6A resistive, AC 2A general purpose</td>
</tr>
<tr>
<td>DC Rating (Standard/Plenum cable)</td>
<td>12 to 30 Vdc, DC 2A</td>
</tr>
<tr>
<td>Switch Range</td>
<td>Switch A: 0° to 90° with 5° intervals; Recommended range usage 0° to 45°; Factory setting 5°</td>
</tr>
<tr>
<td>Switch B: 0° to 90° with 5° intervals; Recommended range usage 45° to 90°; Factory setting 85°</td>
<td></td>
</tr>
<tr>
<td>Switching Hysteresis</td>
<td>2°</td>
</tr>
<tr>
<td>Spring Return</td>
<td>Direction is Selectable with Mounting Position of Actuator</td>
</tr>
<tr>
<td>Rotation Range</td>
<td>Nominal angle of rotation 90°; Maximum angular rotation 95°</td>
</tr>
<tr>
<td>Torque</td>
<td>62 lb·in. (7 N·m)</td>
</tr>
<tr>
<td>Time: 90° of Rotation</td>
<td>Power On (Running) 90 Seconds for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])</td>
</tr>
<tr>
<td></td>
<td>Power Off (Returning) 15 Seconds Typical for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])</td>
</tr>
<tr>
<td>Enclosure</td>
<td>NEMA 1 (IP54) limited mounting orientations</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Hex Head Screw</td>
</tr>
<tr>
<td>Ambient Conditions</td>
<td>Standard Operating -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td></td>
<td>Storage -40°F to 158°F (-40°C to 70°C); 95% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td>Electrical Connections</td>
<td>36 in. (.9 m) Standard Cable with 18 AWG (0.75 mm2) Wire Leads</td>
</tr>
<tr>
<td>Conduit Connections</td>
<td>Integral Connectors for 1/2 in. NPT</td>
</tr>
<tr>
<td>Mechanical Connections</td>
<td>Round Shafts 1/4 to 3/4-inch (6.4 to 20.5 mm)</td>
</tr>
<tr>
<td></td>
<td>Square Shafts 1/4 to 1/2-inch (6.4 to 13 mm)</td>
</tr>
<tr>
<td>Life Cycle</td>
<td>60,000 Full stroke cycles (1,500,000 repositions)</td>
</tr>
<tr>
<td>Noise Rating</td>
<td>40 dBA</td>
</tr>
<tr>
<td>Dimensions</td>
<td>8-3/8” (L) x 3-1/4” (W) x 2-2/3 (H)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.9 lb (1.3 kg)</td>
</tr>
<tr>
<td>Agency Certification</td>
<td>UL listed to UL60730 (to replace UL873) cUL certified to Canadian Standard C22.2 No. 24-93</td>
</tr>
</tbody>
</table>

Wiring: (Cable)

NOTE: WARNING: All DCS-62 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
## Spring Return - DCS-62 Series

### Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Supply</strong></td>
<td>24 VAC ±20%; 24 VDC ±15% at 50/60 Hz; Class 2, Class III per EN 60730, 5 VA/3.5W Running, 4 VA/3W Holding Position</td>
</tr>
<tr>
<td><strong>Auxiliary Switch Rating</strong></td>
<td>Control signal adjustment - Offset (start point) Between 0 to 5 Vdc; Span Between 2 to 30 Vdc</td>
</tr>
<tr>
<td><strong>AC Rating</strong></td>
<td>24 to 250 Vac, AC 6A resistive, AC 2A general purpose</td>
</tr>
<tr>
<td><strong>DC Rating</strong></td>
<td>(Standard/Plenum cable) 12 to 30 Vdc, DC 2A</td>
</tr>
<tr>
<td><strong>Switch Range</strong></td>
<td>Switch A (start point) Between 0 to 5° intervals; Recommended range usage 0° to 45°; Factory setting 5°</td>
</tr>
<tr>
<td><strong>Switch B</strong></td>
<td>0° to 90° with 5° intervals; Recommended range usage 45° to 90°; Factory setting 85°</td>
</tr>
<tr>
<td><strong>Switching Hysteresis</strong></td>
<td>2°</td>
</tr>
<tr>
<td><strong>Spring Return</strong></td>
<td>Direction is Selectable with Mounting Position of Actuator</td>
</tr>
<tr>
<td><strong>Rotation Range</strong></td>
<td>Nominal angle of rotation 90°; Maximum angular rotation 95°</td>
</tr>
<tr>
<td><strong>Torque</strong></td>
<td>62 lb-in. (7 N·m)</td>
</tr>
<tr>
<td><strong>Time: 90° of Rotation</strong></td>
<td>Power On (Running) 90 Seconds for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])</td>
</tr>
<tr>
<td><strong>Enclosure</strong></td>
<td>NEMA 1 (IP54) limited mounting orientations</td>
</tr>
<tr>
<td><strong>Manual Override</strong></td>
<td>Hex Head Screw</td>
</tr>
<tr>
<td><strong>Ambient Conditions</strong></td>
<td>Standard Operating -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing Storage -40°F to 158°F (-40°C to 70°C), 95% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td><strong>Electrical Connections</strong></td>
<td>36 in. (.9 m) Standard Cable with 18 AWG (0.75 mm2) Wire Leads</td>
</tr>
<tr>
<td><strong>Conduit Connections</strong></td>
<td>Integral Connectors for 1/2 in. NPT</td>
</tr>
<tr>
<td><strong>Mechanical Connections</strong></td>
<td>Round Shafts 1/4 to 3/4-inch (6.4 to 20.5 mm)</td>
</tr>
<tr>
<td><strong>Life Cycle</strong></td>
<td>60,000 Full stroke cycles (1,500,000 repositions)</td>
</tr>
<tr>
<td><strong>Noise Rating</strong></td>
<td>40 dBA</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>2.9 lb (1.3 kg)</td>
</tr>
<tr>
<td><strong>Agency Certification</strong></td>
<td>UL listed to UL60730 (to replace UL873) cUL certified to Canadian Standard C22.2 No. 24-93 Low voltage directive (LVD) 2006/95/EC - EN 60 730-2-14 (Type 1)</td>
</tr>
</tbody>
</table>

### Wiring: (Cable)

**NOTE:**

**WARNING:** All DCS-62 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DCS-62 Series

DCS24-62-P— Submittal/Technical Data
62 lb-in. — Spring Return — On/Off — Plenum Cable

Specifications:

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>24 VAC ±20%; 24 VDC ±15% at 50/60 Hz: Class 2, Class III per EN 60730, 5 VA/3.5W Running, 4 VA/3W Holding Position</td>
</tr>
<tr>
<td>Rotation Range</td>
<td>Nominal angle of rotation 90°; Maximum angular rotation 95°</td>
</tr>
<tr>
<td>Torque</td>
<td>62 lb-in. (7 N·m)</td>
</tr>
<tr>
<td>Time: 90° of Rotation</td>
<td>Power On (Running) 90 Seconds for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])</td>
</tr>
<tr>
<td></td>
<td>Power Off (Returning) 15 Seconds Typical for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])</td>
</tr>
<tr>
<td>Enclosure</td>
<td>NEMA 1 (IP54) limited mounting orientations</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Hex Head Screw</td>
</tr>
<tr>
<td>Ambient Conditions</td>
<td>Standard Operating: -25°F to 130°F (-32°C to 55°C): 95% RH Maximum, Noncondensing Storage: -40°F to 158°F (-40°C to 70°C): 95% RH Maximum, Noncondensing</td>
</tr>
<tr>
<td>Electrical Connections</td>
<td>36 in. (.9 m) Plenum Cable with 18 AWG (0.75 mm²) Wire Leads</td>
</tr>
<tr>
<td>Conduit Connections</td>
<td>Integral Connectors for 1/2 in. NPT</td>
</tr>
<tr>
<td>Mechanical Connections</td>
<td>Round Shafts 1/4 to 3/4-inch (6.4 to 20.5 mm) Square Shafts 1/4 to 1/2-inch (6.4 to 13 mm)</td>
</tr>
<tr>
<td>Life Cycle</td>
<td>60,000 Full stroke cycles (1,500,000 repositions)</td>
</tr>
<tr>
<td>Noise Rating</td>
<td>40 dBA</td>
</tr>
<tr>
<td>Dimensions</td>
<td>8-3/8&quot; (L) x 3-1/4&quot; (W) x 2-2/3 (H)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.9 lb (1.3 kg)</td>
</tr>
<tr>
<td>Agency Certification</td>
<td>UL listed to UL60730 (to replace UL873) cUL certified to Canadian Standard C22.2 No. 24-93 Low voltage directive (LVD) 2006/95/EC - EN 60 730-2-14 (Type 1)</td>
</tr>
</tbody>
</table>

Wiring: (Cable)

![Wiring Diagram](image)

NOTE: WARNING: All DCS-62 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DCS-62 Series

**Specifications:**

- **Power Supply**: 24 VAC ±20%; 24 VDC ±15% at 50/60 Hz; Class 2, Class III per EN 60730, 5 VA/3.5W Running, 4 VA/3W Holding Position
- **Auxiliary Switch Rating**: Control signal adjustment - Offset (start point) Between 0 to 5 Vdc; Span Between 2 to 30 Vdc
  - AC Rating (standard cable) 24 to 250 Vac, AC 6A resistive, AC 2A general purpose
  - DC Rating (standard/plenum cable) 12 to 30 Vdc, DC 2A
- **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°
- **Spring Return**: Direction is Selectable with Mounting Position of Actuator
- **Rotation Range**: Nominal angle of rotation 90°; Maximum angular rotation 95°
- **Torque**: 62 lb·in. (7 N·m)
- **Time: 90° of Rotation**
  - Power On (Running) 90 Seconds for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])
  - Power Off (Returning) 15 Seconds Typical for 62 lb-in (7 Nm) at (60 seconds max. at -25°F [-32°C])
- **Enclosure**: NEMA 1 (IP54) limited mounting orientations
- **Manual Override**: Hex Head Screw
- **Ambient Conditions**
  - Standard Operating: -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing
  - Storage: -40°F to 158°F (-40°C to 70°C); 95% RH Maximum, Noncondensing
- **Electrical Connections**
  - 36 in. (.9 m) Standard Cable with 18 AWG (0.75 mm2) Wire Leads
- **Conduit Connections**: Integral Connectors for 1/2 in. NPT
- **Mechanical Connections**
  - Round Shafts: 1/4 to 3/4-inch (6.4 to 20.5 mm)
  - Square Shafts: 1/4 to 1/2-inch (6.4 to 13 mm)
- **Life Cycle**: 60,000 Full stroke cycles (1,500,000 repositions)
- **Noise Rating**: 40 dBA
- **Dimensions**: 8-3/8” (L) x 3-1/4” (W) x 2-2/3 (H)
- **Weight**: 2.9 lb (1.3 kg)
- **Agency Certification**: UL listed to UL60730 (to replace UL873) cUL certified to Canadian Standard C22.2 No. 24-93
  - Low voltage directive (LVD) 2006/95/EC - EN 60 730-2-14 (Type 1)

**Wiring:** (Cable)

**CAUTION:** WARNING: All DCS-62 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall).

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

- **Power Supply**: 24 VAC ±20%; 24...48 VDC ±10% at 50/60 Hz; Class 2 per UL/CSA,
- **Input Signal**: 0 to 10 VDC (max. 35 Vdc)
- **Control Input Impedance**: >100K Ohms
- **Feedback Signal**: 0 to 10 VDC; maximum output current ±1 mA
- **Auxiliary Switch Rating**
  - **AC Rating**: 24 Vac to 250 Vac
  - **DC Rating**: 12 Vdc to 30 Vdc
  - **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°
- **Spring Return**: Direction is Selectable with Mounting Position of Actuator
- **Rotation Range**: Nominal angle of rotation 90°; Maximum angular rotation 95°
- **Torque**: 160 lb-in. (18 N-m)
- **Time: 90° of Rotation**
  - Power On (Running): 90 Seconds
  - Power Off (Returning): 15 Seconds
- **Enclosure**: NEMA 2, IP54 per EN 60 529 - in vertical to horizontal 90°
- **Manual Override**: Hex Head Screw
- **Ambient Conditions**
  - Standard Operating: -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing
  - Storage: -40°F to 158°F (-40°C to 70°C); 95% RH Maximum, Noncondensing
- **Electrical Connections**
  - Standard Cable with 18 AWG (0.75 mm²) Wire Leads
- **Conduit Connections**: Integral Connectors for 3/8 in. Flex
- **Mechanical Connections**
  - Round Shafts: 3/8-in to 1-in (8 to 25.6 mm)
  - Square Shafts: 1/4-in to 3/4-in (6 to 18 mm)
- **Life Cycle**: 60,000 Full stroke cycles
- **Noise Rating**: 45 dBA (running)
- **Dimensions**: 11-13/16" (L) x 4-3/4" (W) x 2-7/8 (H)
- **Weight**: 4.85 lb (2.2 kg)
- **Agency Certification**: UL listed to UL60730 (to replace UL873)
  - cUL certified to Canadian Standard C22.2 No. 24-93

Wiring: (Cable)

<table>
<thead>
<tr>
<th>Pin</th>
<th>Cable Labeling</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Color</td>
<td>Abbr.</td>
</tr>
<tr>
<td>1</td>
<td>red</td>
<td>RD</td>
</tr>
<tr>
<td>2</td>
<td>black</td>
<td>BK</td>
</tr>
<tr>
<td>6</td>
<td>purple</td>
<td>VT</td>
</tr>
<tr>
<td>7</td>
<td>orange</td>
<td>OG</td>
</tr>
<tr>
<td>8</td>
<td>grey</td>
<td>GY</td>
</tr>
<tr>
<td>9</td>
<td>pink</td>
<td>PK</td>
</tr>
</tbody>
</table>

**NOTE:** **WARNING:** All DCS-140 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DCS-140 Series

Specifications:
- Power Supply: 120 Vac ± 10% at 50/60 Hz; Running: 8 VA; Holding: 6 VA
- Auxiliary Switch Rating: AC Rating — AC 6 A Resistive, AC 2A FLA, 12 LRA; DC Rating — DC 2A
- 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°
- Spring Return: Direction is Selectable with Mounting Position of Actuator
- Rotation Range: Nominal angle of rotation 90°; Maximum angular rotation 95°
- Torque: 160 lb-in. (18 N·m)
- Time: 90° of Rotation: Power On (Running) 90 Seconds; Power Off (Returning) 15 Seconds
- Enclosure: NEMA 2, IP54 per EN 60 529 - in vertical to horizontal 90°
- Manual Override: Hex Head Screw
- Ambient Conditions:
  - Standard Operating: -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing
  - Storage: -40°F to 158°F (-40°C to 70°C); 95% RH Maximum, Noncondensing
- Electrical Connections: Power Supply 120 Vac ± 10% at 50/60 Hz: Running: 8 VA; Holding: 6 VA
- Conduit Connections: Integral Connectors for 3/8 in. Flex
- Mechanical Connections:
  - Round Shafts: 3/8-in to 1-in (8 to 25.6 mm)
  - Square Shafts: 1/4-in to 3/4-in (6 to 18 mm)
- Life Cycle: 60,000 Full stroke cycles
- Noise Rating: 45 dBA (running)
- Dimensions: 11-13/16" (L) x 4-3/4" (W) x 2-7/8 (H)
- Weight: 4.85 lb (2.2 kg)
- Agency Certification: UL listed to UL60730 (to replace UL873); cUL certified to Canadian Standard C22.2 No. 24-93

Wiring: (Cable)

120 V On/Off with Optional AUX Switches

NOTE: WARNING: All DCS-140 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against and/or warn of, control failure.

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DCS-140 Series

Specifications:

- **Power Supply**: 24 VAC ±20%; 24...48 VDC ±10% at 50/60 Hz; Class 2 per UL/CSA,
- **Input Signal**
- **Auxiliary Switch Rating**
  - AC Rating: 24 Vac to 250 Vac; AC 6 A Resistive, AC 2A FLA, 12 LRA
  - DC Rating: 12 Vdc to 30 Vdc; DC 2A
- **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°
- **Spring Return**: Direction is Selectable with Mounting Position of Actuator
- **Torque**: 160 lb-in. (18 N-m)
- **Time: 90° of Rotation**
  - Power On (Running): 90 Seconds
  - Power Off (Returning): 15 Seconds
- **Enclosure**: NEMA 2, IP54 per EN 60 529 - in vertical to horizontal 90°
- **Manual Override**: Hex Head Screw
- **Ambient Conditions**
  - Standard Operating: -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing
  - Storage: -40°F to 158°F (-40°C to 70°C); 95% RH Maximum, Noncondensing
- **Electrical Connections**
  - 36 in. (.9 m) Standard Cable with 18 AWG (0.75 mm2) Wire Leads
  - Conduit Connections: Integral Connectors for 3/8 in. Flex
- **Mechanical Connections**
  - Round Shafts: 3/8-in to 1-in (8 to 25.6 mm)
  - Square Shafts: 1/4-in to 3/4-in (6 to 18 mm)
- **Life Cycle**: 60,000 Full stroke cycles
- **Noise Rating**: 45 dBA (running)
- **Dimensions**: 11-13/16” (L) x 4-3/4” (W) x 2-7/8 (H)
- **Weight**: 4.85 lb (2.2 kg)
- **Agency Certification**
  - UL listed to UL60730 (to replace UL873)
  - cUL certified to Canadian Standard C22.2 No. 24-93

### Wiring: (Cable)

#### Pin | Cable Labeling | Meaning
--- | --- | ---
Actuators | 1 | red | RD
| 2 | black | BK
DC 24...48 V | 6 | purple | VT
| 7 | orange | OG
| 8 | grey | GY
| 9 | pink | PK
| 3 | brown | BN
AC 120/230 V | 4 | blue | BU
| S1 | grey/red | GY RD
| S2 | grey/blue | GY BU
| S3 | grey/pink | GY PK
| S4 | black/red | BK RD
| S5 | black/blue | BK BU
| S6 | black/pink | BK PK

**NOTE:** WARNING: All DCS-140 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return - DCS-140 Series

DCS24-140-T(A)— Submittal/Technical Data
160 lb-in. — Spring Return — Floating — Auxiliary Switch Option

Specifications:

**Power Supply**
- 24 VAC ±20%; 24…48 VDC ±10% at 50/60 Hz: Class 2 per UL/CSA

**Feedback Signal**
- 0 to 1000 ohms <10 Ma

**Auxiliary Switch Rating**
- AC Rating: 24 Vac to 250 Vac; AC 6 A Resistive, AC 2A FLA, 12 LRA
- DC Rating: 12 Vdc to 30 Vdc; DC 2A

**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°

**Spring Return**
- Direction is Selectable with Mounting Position of Actuator

**Rotation Range**
- Nominal angle of rotation 90°; Maximum angular rotation 95°

**Torque**
- 160 lb-in. (18 N-m)

**Time: 90° of Rotation**
- Power On (Running) 90 Seconds
- Power Off (Returning) 15 Seconds

**Enclosure**
- NEMA 2, IP54 per EN 60 529 - in vertical to horizontal 90°

**Manual Override**
- Hex Head Screw

**Ambient Conditions**
- Standard Operating: -25°F to 130°F (-32°C to 55°C); 95% RH Maximum, Noncondensing
- Storage: -40°F to 158°F (-40°C to 70°C); 95% RH Maximum, Noncondensing

**Electrical Connections**
- 36 in. (.9 m) Standard Cable with 18 AWG (0.75 mm2) Wire Leads

**Conduit Connections**
- Integral Connectors for 3/8 in. Flex

**Mechanical Connections**
- Round Shafts: 3/8-in to 1-in (8 to 25.6 mm)
- Square Shafts: 1/4-in to 3/4-in (6 to 18 mm)

**Life Cycle**
- 60,000 Full stroke cycles

**Noise Rating**
- 45 dBA (running)

**Dimensions**
- 11-13/16" (L) x 4-3/4" (W) x 2-7/8 (H)

**Weight**
- 4.85 lb (2.2 kg)

**Agency Certification**
- UL listed to UL60730 (to replace UL873)
- cUL certified to Canadian Standard C22.2 No. 24-93

### Wiring: (Cable)

**Floating with Optional AUX Switches**

**Pin** | **Cable Labeling** | **Abbr.** | **Meaning**
--- | --- | --- | ---
Actuators | 1 red RD | System potential AC 24 V / DC 24…48 V
| 2 black BK | System neutral
| 3 brown BN | Phase AC 120/230 V
AC 24 V | 6 purple VT | Pos. signal AC 0 V / AC 24 V / DC 24…48 V, "open"
| 7 orange OG | Pos. signal AC 0 V / AC 24 V / DC 24…48 V, "close"
| 8 grey GY | Pos. signal DC 0…10 V, 0…35 V
| 9 pink PK | Position indication DC 0…10 V
AC 24…48 V | 1 grey/blue BU | Switch A normally-closed contact
| 2 grey/red RD | Switch B normally-closed contact
| 3 grey/pink GY PK | Switch A normally-open contact
| 4 black/blue BK BU | Switch B normally-open contact
| 5 black/red BK RD | Switch A normally-open contact
| 6 black/pink BK PK | Switch B normally-open contact

**NOTE:** WARNING: All DCS-140 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

**Power Requirements**
AC 24 V (19.2 to 30 V) at 50/60 Hz: Class 2, 15.5 VA Running, 7.7 VA Holding Position;
DC 24 V (21.6 to 26.4 V): Class 2, 6.7 W Running, 2.9 W Holding Position

**Auxiliary Switch Rating**
Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold Flash Contacts:
AC 24 V, 50 VA Pilot Duty;

**Transformer Sizing**
20 VA Minimum per Actuator

**Control Input Impedance**
100k Ohms

**Input Signal**
Factory Set DC 0 to 10 V, CW Rotation with Signal Increase;
Select a DC 0 (2) to 10 V or 0 (4) to 20 mA with Field Furnished 500 Ohm, 0.25 W Minimum Resistor;
Switch Selectable Direct or Reverse Action with Signal Increase

**Feedback Signal**
0 (2) to 10 VDC for Desired Rotation Range up to 90°; Corresponds to Rotation Limits, 1 mA Maximum

**Spring Return**
Direction is Selectable with Mounting Position of Actuator:
Side A, Actuator Face Away for CCW Spring Return;
Side B, Actuator Face Away for CW Spring Return

**Rotation Range**
Maximum Full Stroke: 95° (Adjustable Stop: 35 to 95° Maximum Position)

**Electric Stall Detection**
Protects from overload at all angles of rotation

**Torque**
177 lb-in. (20 N·m)

**Time: 90° of Rotation**
Power On (Running) 150 Seconds for 0 to 177 lb-in (0 to 20 N-m) at All Operating Conditions; Independent of Load
Power Off (Returning) 20 Seconds for 0 to 177 lb-in (0 to 20 N-m) at Room Temperature

**Enclosure**
NEMA 2, IP54 - for all mounting directions

**Manual Override**
Hex Head Screw

**Ambient Conditions**
Standard Operating -40 to 131°F (-40 to 55°C); 90% RH Maximum, Noncondensing
Storage -85 to 185°F (-65 to 85°C); 95% RH Maximum, Noncondensing

**Electrical Connections**
48 in. (1.2 m) Halogen-Free Cable with 18 AWG (0.75 mm²) Wire Leads

**Conduit Connections**
Integral Connectors for 3/8 in. Flexible Metal Conduit

**Mechanical Connections**
Round Shafts 1/2 to 3/4 in. or 12 to 19 mm
Square Shafts 3/8 and 1/2 in. or 10, 12, and 14 mm

**Life Cycle**
60,000 Full stroke cycles (1,500,000 repositions)

**Noise Rating**
Running < 40 dBA at 39-13/32 in. (1 m)
Holding < 20 dBA at 39-13/32 in. (1 m)
Returning < 55 dBA at 39-13/32 in. (1 m)

**Dimensions**
10" (L) x 4" (W) x 3-3/16 (H)

**Weight**
6.4 lb (2.9 kg)

**Agency Certification**
UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

### Wiring: (Cable)

For Override Wiring please refer to our Install Instructions

**Modulating:**
DC 0...10 V Control
1 2 3 4
BLK RED GRY ORN

**0(4)...20mA Control with External Resistor**
5 6 7 8
AC/DC 24 V (+)

**Auxiliary Switch Wiring**
S1 S2 21 22 23 24 25 26
BLK BLK BLK WHT WHT WHT

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The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
**Specifications:**

- **Power Supply**: AC 120 V (AC 102 to 132 V) at 60 Hz; 0.25 A Running, 0.13 A Holding Position
- **Auxiliary Switch Rating**: Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold Flash Contacts: AC 120 V, 5.8 A Resistive, 1/4 hp, 275 VA Pilot Duty
- **Transformer Sizing**: 25 VA Minimum per Actuator
- **Spring Return**: Direction is Selectable with Mounting Position of Actuator:
  - Side A, Actuator Face Away for CCW Spring Return
  - Side B, Actuator Face Away for CW Spring Return
- **Rotation Range**: Maximum Full Stroke: 95° (Adjustable Stop: 35 to 95° Maximum Position)
- **Electric Stall Detection**: Protects from overload at all angles of rotation
- **Torque**: 177 lb-in. (20 N-m)
- **Time: 90° of Rotation**:
  - Power On (Running) 24 to 57 Seconds for 0 to 177 lb-in (0 to 20 N-m) at All Operating Conditions;
  - 35 Seconds Nominal at Full Rated Load
  - Power Off (Returning) 11 to 15 Seconds for 0 to 177 lb-in (0 to 20 N-m) at Room Temperature;
  - 35 Seconds Maximum for 0 to 177 lb-in (0 to 20 N-m) at -22°F (-30°C)
  - 130 Seconds Maximum for 0 to 177 lb-in (0 to 20 N-m) at -40°F (-40°C)
- **Enclosure**: NEMA 2, IP54 - for all mounting directions
- **Manual Override**: Hex Head Screw
- **Ambient Conditions**:
  - Standard Operating: -40 to 131°F (-40 to 55°C); 90% RH Maximum, Noncondensing
  - Storage: -85 to 185°F (-65 to 85°C); 95% RH Maximum, Noncondensing
- **Electrical Connections**: 48 in. (1.2 m) Halogen-Free Cable with 18 AWG (0.75 mm²) Wire Leads
- **Conduit Connections**: Integral Connectors for 3/8 in. Flexible Metal Conduit
- **Mechanical Connections**: Round Shafts 1/2 to 3/4 in. or 12 to 19 mm
  - Square Shafts 3/8 and 1/2 in. or 10, 12, and 14 mm
- **Life Cycle**: 60,000 Full stroke cycles (1,500,000 repositions)
- **Noise Rating**:
  - Running: < 66 dBA at 39-13/32 in. (1 m)
  - Holding: < 18 dBA at 39-13/32 in. (1 m)
  - Returning: < 66 dBA at 39-13/32 in. (1 m)
- **Dimensions**: 10” (L) x 4” (W) x 3-3/16” (H)
- **Weight**: 7.6 lb (3.5 kg)
- **Agency Certification**: UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

**Wiring: (Cable)**

- **On/Off**: M
  - WHIT 1
  - BLK 2
  - N L1
  - AC 120 V 60 Hz

- **Auxiliary Switch Wiring**
  - S1
    - 21→22
    - 23
    - 24→25
    - S2
    - 21→22
    - 23
    - 24→25
    - COM NC NO

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The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Specifications:

Power Supply
- AC 24 V (19.2 to 30 V) at 50/60 Hz: Class 2, 24.6 VA Running, 7.7 VA Holding Position
- DC 24 V (21.6 to 26.4 V): Class 2, 17.6 W Running, 2.8 W Holding Position

Auxiliary Switch Rating
- Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold Flash Contacts:
  - AC 24 V, 50 VA Pilot Duty
- Transformer Sizing
  - 25 VA Minimum per Actuator

Spring Return
- Direction is Selectable with Mounting Position of Actuator:
  - Side A, Actuator Face Away for CCW Spring Return
  - Side B, Actuator Face Away for CW Spring Return

Rotation Range
- Adjustable from 30 to 90° CW or CCW with Optional Adjustable Stop Kit; Mechanically Limited to 90°

Electric Stall Detection
- Protects from overload at all angles of rotation

Torque
- 177 lb·in. (20 N·m)

Time: 90° of Rotation
- Power On (Running) 24 to 57 Seconds for 0 to 177 lb·in (0 to 20 N·m) at All Operating Conditions;
  - 35 Seconds Nominal at Full Rated Load
- Power Off (Returning) 11 to 15 Seconds for 0 to 177 lb·in (0 to 20 N·m) at Room Temperature;
  - 35 Seconds Maximum for 0 to 177 lb·in (0 to 20 N·m) at -22°F (-30°C)
  - 130 Seconds Maximum for 0 to 177 lb·in (0 to 20 N·m) at -40°F (-40°C)

Enclosure
- NEMA 2, IP54 - for all mounting directions

Manual Override
- Hex Head Screw

Ambient Conditions
- Standard Operating: -40 to 131°F (-40 to 55°C); 90% RH Maximum, Noncondensing
- Storage: -85 to 185°F (-65 to 85°C); 95% RH Maximum, Noncondensing

Electrical Connections
- 48 in. (1.2 m) Halogen-Free Cable with 18 AWG (0.75 mm²) Wire Leads

Conduit Connections
- Integral Connectors for 3/8 in. Flexible Metal Conduit

Mechanical Connections
- Round Shafts: 1/2 to 3/4 in. or 12 to 19 mm
- Square Shafts: 3/8 and 1/2 in. or 10, 12, and 14 mm

Life Cycle
- 60,000 Full stroke cycles (1,500,000 repositions)

Noise Rating
- Running < 66 dBA at 39-13/32 in. (1 m)
- Holding < 18 dBA at 39-13/32 in. (1 m)
- Returning < 66 dBA at 39-13/32 in. (1 m)

Dimensions
- 10" (L) x 4" (W) x 3-3/16 (H)

Weight
- 6.4 lb (2.9 kg)

Agency Certification
- UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and

Wiring: (Cable)

**NOTE:** WARNING: All DS-180 Series actuators are designed for use only in conjunction with operating controls. Where an operating control failure would result in personal injury and/or loss of property, it is the responsibility of the installer to add safety devices or alarm systems that protect against, and/or warn of, control failure.

To avoid excessive wear or drive time on the motor, use a controller and/or software that provides a time-out function to remove the signal at the end of rotation (stall). The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.
Spring Return  DS-180 Series

Specifications:

Power Supply  AC 24 V (19.2 to 30 V) at 50/60 Hz; Class 2, 15.5 VA Running, 7.7 VA Holding Position; DC 24 V (21.6 to 26.4 V); Class 2, 6.7 W Running, 2.9 W Holding Position

Auxiliary Switch Rating  Two Single-Pole, Double-Throw (SPDT), Double-Insulated Switches with Gold Flash Contacts: AC 24 V, 50 VA Pilot Duty;

Transformer Sizing  20 VA Minimum per Actuator

Input Signal  DC 0 (2) to 10 V or 0 (4) to 20 mA with Field Furnished 500 Ohm Resistor;
Switch Selectable Direct or Reverse Action with Signal Increase, 500 ms Minimum Pulse Width

Spring Return  Direction is Selectable with Mounting Position of Actuator:
Side A, Actuator Face Away for CCW Spring Return;
Side B, Actuator Face Away for CW Spring Return

Rotation Range  Adjustable from 30 to 90° CW or CCW with Optional Adjustable Stop Kit; Mechanically Limited to 90°

Electric Stall Detection  Protects from overload at all angles of rotation

Torque  177 lb·in. (20 N·m)

Time: 90° of Rotation  Power On (Running) 150 Seconds for 0 to 177 lb·in (0 to 20 N·m) at All Operating Conditions; Independent of Load
Power Off (Returning) 20 Seconds for 0 to 177 lb·in (0 to 20 N·m) at Room Temperature

Enclosure  NEMA 2, IP54 - for all mounting directions

Manual Override  Hex Head Screw

Ambient Conditions  Standard Operating  -40 to 131°F (-40 to 55°C); 90% RH Maximum, Noncondensing
Storage  -85 to 185°F (-65 to 85°C); 95% RH Maximum, Noncondensing

Electrical Connections  48 in. (1.2 m) Halogen-Free Cable with 18 AWG (0.75 mm²) Wire Leads

Conduit Connections  Integral Connectors for 3/8 in. Flexible Metal Conduit

Mechanical Connections  Round Shafts  1/2 to 3/4 in. or 12 to 19 mm
Square Shafts  3/8 and 1/2 in. or 10, 12, and 14 mm

Life Cycle  60,000 Full stroke cycles (1,500,000 repositions)

Noise Rating  Running  < 40 dBA at 39-13/32 in. (1 m)
Holding  < 20 dBA at 39-13/32 in. (1 m)
Returning  < 55 dBA at 39-13/32 in. (1 m)

Dimensions  10" (L) x 4" (W) x 3-3/16 (H)
Weight  6.4 lb (2.9 kg)

Agency Certification  UL Listed, CCN XAPX, File E27734; to UL 60730-1A: 2003-08, Ed. 3.1, Automatic Electrical Controls for Household and Similar Use; and UL 60730-2-14: 2002-02, Ed. 1, Part 2, Particular Requirements for Electric Actuators.

Wiring: (Cable)

Floating Control, Four Wire

Open/Close, Single Wire

On/Off, Two Wire

Auxiliary Switch Wiring

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