

## OVERVIEW

High performance without compromise. The Series 76 is a heavy-duty, quarter turn electric actuator ideal for industrial valve automation. Available in various power voltage supplies and designed for on/off and modulating applications for a wide range of markets and industries.

The Bray series 76 is a quarter-turn industrial electric actuator with manual override for use on any quarterturn valve or damper requiring up to 79k in-lbs (9,000 Nm) of torque. Operating speeds vary between 17 to 130 seconds depending on torque, voltage, and frequency.

## APPLICATIONS

- > On/Off
- > Modulating Control

## KEY FEATURES

- > Torque up to 79,000 in-lbs (9,000 Nm)
- > 3-Phase, 1-Phase, & DC Power
- > Special High torque induction motor with built in thermal protection to protect against overheating
- > Direct mounts to most quarter turn valves according to EN ISO 5211, resulting in a lower profile
- > Continuous valve position indication even on loss power
- > Padlockable declutch system for manual operation
- > Integral control station options
- > Removable blank bushing for ease of machining
- > Self-locking worm gear design eliminating the need for a motor brake
- > 4 Limit Switches standard on most sizes
  - Additional auxiliary limit switches available
- > Torque switches standard in actuator size 2 and above
- > Anti condensation heater
- > Permanently lubricated
- > Up to 28 point terminal strip

## OVERVIEW

### PERFORMANCE

<b>Output Torque</b>	See Torque Chart
<b>Voltages</b>	See Motor Chart
<b>Ambient Temperature</b>	-4°F   -20°C to 140°F   +60°C -40°F   -40°C to 140°F   +60°C Opt.
<b>On/Off Applications</b>	Per EN 22153 Class A
<b>Modulating Applications</b>	Per EN 22153 Class C

### SPECIFICATIONS

<b>Voltage</b>	<ul style="list-style-type: none"> <li>&gt; 3 Phase: 220V, 380V &amp; 460V</li> <li>&gt; 1 Phase: 110V, 220V &amp; 240VAC</li> <li>&gt; 24V DC, 24V AC/DC</li> </ul>
<b>Torque rating</b>	<ul style="list-style-type: none"> <li>&gt; 3 Phase: Torque up to 79,000 in-lbs (9,000 Nm)</li> <li>&gt; 1 Phase: Torque up to 26,500 in-lbs (3,000 NM)</li> </ul>
<b>Certifications</b>	<p><b>Weatherproof:</b> FCC, ICES, CE, UKCA, CSA</p> <p><b>Explosionproof:</b> FCC, ICES, ATEX, IECEx, CSA</p>
<b>Enclosure Ratings</b>	<p>NEMA: 4, 4X, 6</p> <p>Ingress Protection: 66/67</p> <p>Submersible: IP68 (Optional)</p>
<b>Main Housing</b>	<ul style="list-style-type: none"> <li>&gt; High grade aluminum alloy</li> <li>&gt; Anodized interior and exterior</li> <li>&gt; Polyester powder top coated</li> </ul>
<b>Position Indicator</b>	Top mount visual position indicator
<b>Travel</b>	90 degrees +/- 5°
<b>Motor</b>	<p><b>Squirrel Caged AC Induction Motor</b></p> <ul style="list-style-type: none"> <li>&gt; Class F Motor Insulation 311F(155C)</li> <li>&gt; Embedded thermal protection 275F (135C)</li> </ul> <p><b>DC Brushed Motor</b></p> <ul style="list-style-type: none"> <li>&gt; Class B Motor Insulation 266F (130C)</li> </ul>
<b>Duty Cycle</b>	<ul style="list-style-type: none"> <li>&gt; <b>S2 (On-Off)</b> Per EN 60034-1</li> <li>&gt; <b>S4 (Modulating)</b> Per EN 60034-1</li> </ul>
<b>Control Options</b>	<ul style="list-style-type: none"> <li>&gt; Potentiometer: 1K Ohm</li> <li>&gt; Position Transmitter: Output Signal: 4-20mA dc</li> <li>&gt; Modulating: 0-20mA, 4-20mA, 0-5V, 1-5V, 0-10V, 2-10V</li> <li>&gt; Local Control Stations</li> </ul>
<b>Conduit Entries</b>	<p><b>Weatherproof:</b></p> <p>Sizes 1 thru 5 = 3x 3/4" NPT or 3x M20</p> <p>Sizes 6 thru 7 = 2x 3/4" NPT + 1x 1"NPT or 2x M20 + 1x M25</p> <p><b>Explosionproof:</b></p> <p>2x 3/4" NPT or 2x M25</p>
<b>Drive Bushing</b>	Removable Drive Bushing
<b>Mounting</b>	ISO 5211/MS SP-101
<b>Lubrication</b>	Grease moly EP type
<b>Manual Override</b>	Declutch Mechanism, which can be padlocked.

## FEATURES & BENEFITS

### FEATURES

**1 High Visibility Position Indicator:** The display indicates valve position through the full range of travel. The O-ring sealed dome is made of high impact, heat, chemical and ultraviolet resistant clear polycarbonate and designed to withstand caustic wash down ensuring excellent corrosion protection.

**Weatherproof:** Sizes 1 through 4 and size 6 have top mount dome, prominently labeled and color coded yellow for open, red for close. **See Fig. 1.**

Sizes 5 and 7 using 3:1 auxiliary gear, will have a clear dome with green markings indicate open while red indicates closed. **See Fig. 2.**

**Explosionproof:** Sizes 1 through 5 uses flat indicator window dial. **See Fig 3.**

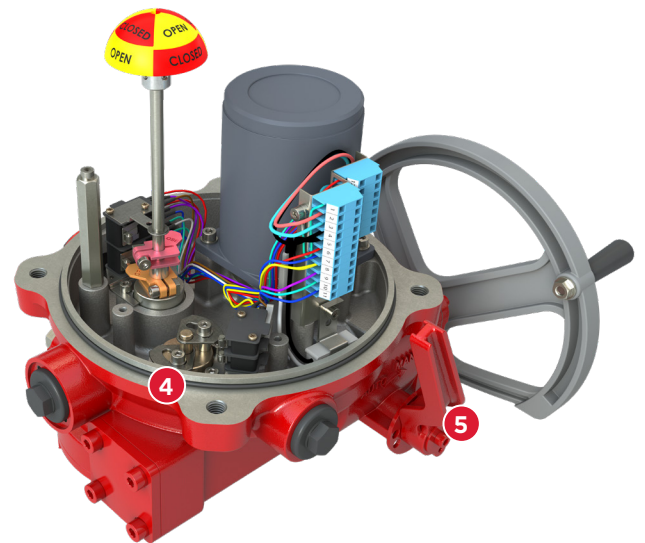
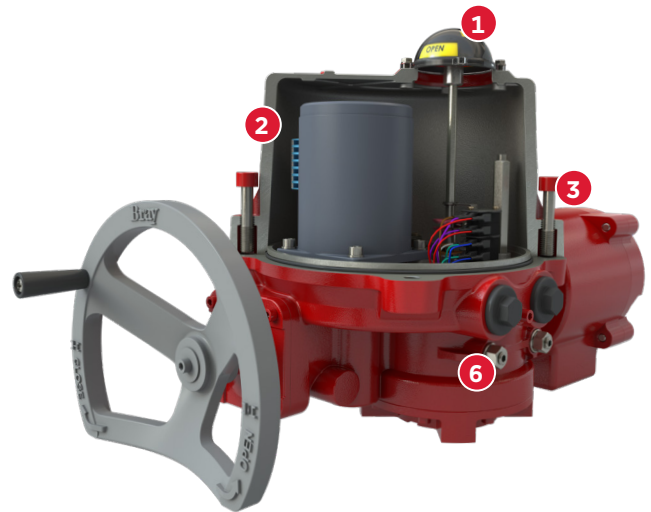
**2 Enclosure:** The housing is fully anodized internally and externally, with a polyester powder topcoat applied to ensure corrosion, wear, and UV resistance in the harshest environments.

**3 Captive Cover Bolts:** The cover is attached to the base by captive stainless-steel bolts placed outside the sealing area.

**4 O-ring Seal:** The o-ring between the cover and base provides environmental sealing preventing internal corrosion.

**5 Manual Override:** Hand-operated declutch lever physically disconnects the motor drive from the handwheel for manual operation. The lockable lever prevents any unauthorized operation.

**6 Mechanical Travel Stops:** Designed to prevent over-travel in the open or close direction during manual operation. Travel stops bolts include a locknut to prevent loosening, and seals to prevent water ingress.



**Figure 1:** Sizes 1-4, and Size 6.



**Figure 2:** Sizes 5 & 7.



**Figure 3:** Sizes 1-5.

## FEATURES & BENEFITS

### FEATURES

- 7 Motor:** Fan cooled, high torque, squirrel Caged AC Induction Motor. Class F insulation. Or DC brushed type.
- 8 Limit Switches:** Rotary switch type for easy configuration. 4 limit switches standard.
  - > 2 Available for position feedback.
  - > Additional limit switches available
- 9 Torque Switches:** Open and close torque switches protect the valve for actuator sizes 2 and above. Switches are set at unit rating to eliminate nuisance tripping.
- 10 Heater:** Thermostatically controlled to combat condensation build-up in the unit.
- 11 Local Control Station:** Integral to actuator housing. Local(Lo)-Off-Remote(Re) selector, Open-close selector, Power (white), Open/ Opening (Red), Remote (Blue), Close/Closing (Green) and Fault (Yellow) LED lights. Available as an option for 1 and 3 Phase.
- 12 Output Drive:** Double reduction worm gear design allows output motor torque to be transmitted to the valve. The design incorporates a self-locking feature preventing external forces adversely effecting desired valve position and equipped with anti-rotation mechanism.
  - > Worm: Alloy Steel
  - > Worm Gear: Bronze
- 13 Mounting:** Optional flange sizes for easy installation to any valve type and size per ISO 5211
- 14 Conduit Entries:** Incoming power and control cable connections. Standard protective plastic covers.

