

## OVERVIEW

Decades of Bray's proven success in electric actuation, combined with innovative engineering, has produced the Series 70 electric actuator. The Series 70 features on/off or modulating control and offers many advantages over other actuators including:

- > UL, CSA and CE certification of most units
- > Wiring directly to the terminal strip without interference from other components
- > Simple and unique manual override handwheel system
- > Lowest profile and lightest weight actuator on the market
- > Simple finger or screwdriver adjustment of travel limit cams without interference from other components
- > Highly visible valve status display on most units

Designed like a junction box, the Series 70 offers by far the easiest access to terminal block wiring, cam adjustments and switch installation. Therefore, the time required for field startup and adjustment is greatly reduced, and maintenance can be performed with assured ease and safety.

## CERTIFICATIONS & APPROVALS

**Certifications** UL, CSA and CE approved (most 120V models)  
70-24V: CE approved

### NOTES

A complete listing of certifications and approvals can be found at [BRAY.COM](http://BRAY.COM)

## NETWORK COMMUNICATION PROTOCOLS

- > Ethernet
- > DeviceNet

## INDUSTRIES

- > Alternative Fuels
- > Chemical & Petrochemical
- > Food & Beverage
- > General Industry
- > HVAC
- > Marine & Shipbuilding
- > Mining & Metals
- > Oil & Gas
- > Pharma & Biotech
- > Power Generation
- > Pulp & Paper
- > Sugar & Ethanol
- > Water & Wastewater

## APPLICATIONS

- > On/Off Application
- > Modulating Control

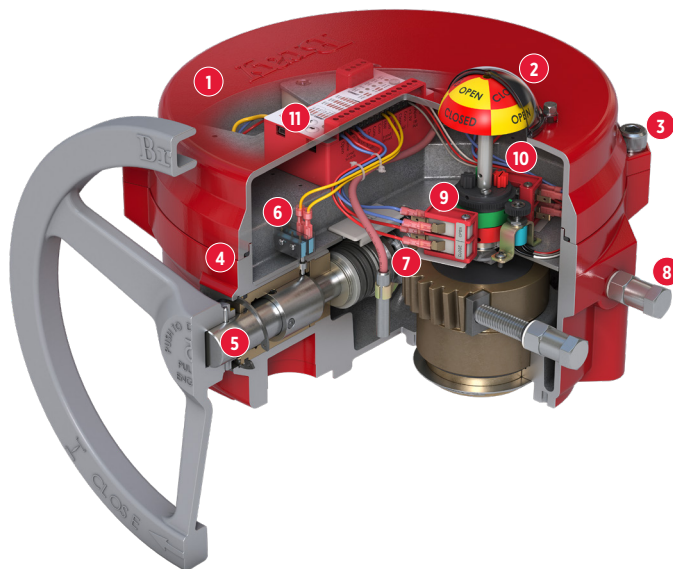


## SPECIFICATIONS

<b>Output Torque</b>	120/230 V	300 to 18,000 lb-in (34-2034 N-m)
	24 V	S70-E06: 600 lb-in (68 N-m)
		S70-E20: 2,000 lb-in (226 N-m)
	S70-050: 5,000 lb-in (565 N-m)	
<b>Control Options</b>	On/Off	Interposing Relay Board (I.R.B) 120/230 VAC
		On/Off NXT Controller 24VAC/DC
	Modulating	Servo NXT Controller 120/230 VAC/24 VAC/DC 4-20 Ma, 0-10 V, 0-5 V, 2-10 V
	Communication Protocols	Analog, DeviceNet, EtherNet/IP
<b>Voltages</b>	120/230 VAC 50/60 Hz, 1-phase	
	24 VAC/VDC	
<b>Enclosure Ratings</b>	NEMA 4, 4x, and IP65, IP67 (IP67 does not include S70-130/131 and 180/181)	
<b>Mounting</b>	ISO5211	
<b>Motor</b>	120/230 VAC: 1-phase, reversable, permanent split capacitor induction motor	
	24 V: Permanent magnet brushed DC Motor	
<b>Temp. Range</b>	-22°F(-29°C) to +150°F(+65°C)	
<b>Switch Options</b>	2 spdt mechanical switches standard	
	Additional auxiliary switches available (up tp 6 total)	
	Optional torque switches available	
<b>Duty Rating</b>	Continious Duty	Will operated continuously at max ambient temperature of 104°F(40°C)
	Intermittent Duty	One motor-on period followed by three motor-off periods

**FEATURES**

- 1 Enclosure:** The low profile weatherproof enclosure is UL listed:
  - > Type 4
  - > 4x
  - > IP65
  - > IP67 (IP67 does not include S70-130/131 and 180/181)
 Polyester powder coated die-cast aluminum cover and base, for exceptional corrosion, wear, impact and ultraviolet resistance.
- 2 High Visibility Position Indicator:** Prominently labeled and color coded yellow for open, red for close – 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.
- 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 For Watertight Enclosure:** The O-ring seal between the cover and base provides a weatherproof seal preventing internal corrosion.
- 5 Manual Override:** Standard on all models. The declutchable manual override prevents handwheel movement during motor operation. When manual operation is desired, pull the handwheel out to expose the yellow stripe around the handwheel shaft, which indicates the handwheel is engaged and manual operation is available.
- 6 Manual Override Switch:** Interrupts power to the motor when handwheel operation is engaged.
- 7 Output Drive:** Self-locking worm shaft and worm gear assembly holds the valve in desired position.
- 8 Mechanical Travel Stop Bolts:** Designed to prevent over-travel in the open or close direction during manual operation. Travel stop bolts include a locknut to prevent loosening, seals to prevent water ingress, and spacers to prevent adjustment between 0° and 90° limit switch settings. Travel stop bolts permit 5° of over travel.
- 9 Limit Switch Bracket:** Simple and secure design to firmly hold limit switch assemblies for accurate and repeatable valve position feedback.



- 10 Limit Switch CAMs:** Bray's patented CAM design includes standard green (open) and red (close) CAMs which are adjustable with finger touch or screwdriver. No additional tools necessary. Standard factory setting allows 90° travel between open and close positions.
- 11 Optional Actuator Controls**  
 Servo NXT Modulating Controller: 120, 220, 24 VAC  
 50/60 Hz, 1 phase 24 VDC  
 24V On/Off NXT Controller: (not shown)

- 12 Optional Heater:** Mounted on the actuator switch plate, a self-regulating heater can be added to prevent potential electrical component damage due to condensation build-up inside the actuator
- 13 Optional Potentiometer:** Optional gear driven 10k ohm potentiometer provides continuous position feedback for a customer control system. Potentiometer is standard with the Servo NXT controller.

