

## OVERVIEW

Series 70 family of actuators is the result of Bray's proven innovation and engineering design in electric actuators. The Series 70 features on/off, modulating or network control with many advantages:

- > UL, CSA and CE certification of most units
- > Wiring directly to the terminal strip without interference from other components
- > Simple and unique manual override hand wheel system
- > Reliable and durable design
- > Simple hand 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)  
24V & 220V: CE Approved

### NOTES

For a complete list of certifications by product, please consult your local Bray representative.

## APPLICATIONS

- > On/Off Control
- > Modulating Control

## INDUSTRIES

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

## NETWORK COMMUNICATION PROTOCOLS

- > EtherNet/IP™

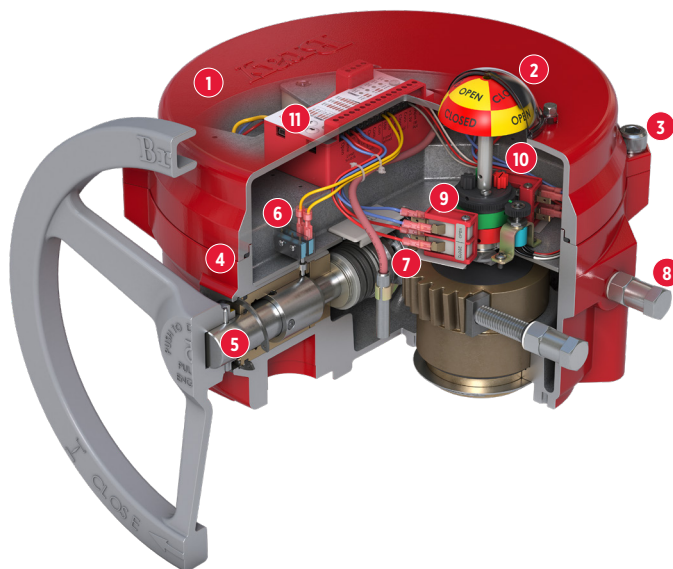


## SPECIFICATIONS

<b>Output Torque</b>	120V AC, 220V AC	300 to 18,000 lb-in (34-2034 Nm)
	24V AC/DC	S70-E06: 600 lb-in (68 Nm)
		S70-E08: 800 lb-in (90 Nm)
		S70-E20: 2,000 lb-in (226 Nm)
<b>Control Options</b>	On/Off	Interposing Relay Board (I.R.B) 120V AC, 220V AC
		On/Off NXT Controller 24V AC/DC
	Modulating	Servo NXT Controller 120V AC, 220V AC, 24V AC/DC
<b>Communication Protocols</b>	EtherNet/IP™ 120V AC, 220V AC, 24V AC/DC	
<b>Voltages</b>	120V, 220V AC, 50/60 Hz, 1-phase	
	24V AC/DC	
<b>Enclosure Ratings</b>	NEMA Type 4, Type 4X, IP65, IP67 (IP67 does not include S70-130/131 and 180/181)	
<b>Mounting</b>	IS05211 & MSS SP-101	
<b>Motor</b>	120V, 220V AC, 1-phase, reversible, permanent split capacitor induction motor	
	24V: Permanent magnet brushed DC Motor	
<b>Temp. Range</b>	-22°F to +150°F (-29°C to +65°C)	
<b>Switch Options</b>	2 SPDT mechanical switches standard	
	Additional auxiliary switches available (up to 6 total)	
	Optional torque switches available Torque switches are standard in S70-130/131, S70-180/181	
<b>Duty Rating</b>	Continuous Duty	Will operate 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
  - > Type 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 water ingress.
- 5 Manual Override:** Standard on all models. The declutchable manual override prevents hand wheel movement during motor operation. When manual operation is desired, pull the hand wheel out to expose the yellow stripe around the hand wheel shaft, which indicates the hand wheel is engaged and manual operation is available.
- 6 Manual Override Switch:** Interrupts power to the motor when hand wheel 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 hand or screwdriver. No additional tools necessary. Standard factory setting allows 90° travel between open and close positions.



**11 Actuator Controllers**

Standard On/Off I.R.B. Controller: 120V, 220V AC  
 Optional On/Off NXT Controller: 24V AC/DC  
 Optional Servo NXT Controller: Modulating 120V, 220V AC, 24V AC/DC  
 Optional Servo NXT EtherNet/IP Controller: 120V, 220V AC, 24V AC/DC

**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.

