1 ENCLOSURE
The low profile weatherproof actuator is UL listed Type 4,4x and IP65. Polyester powder coated die-cast aluminium 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 exposing a yellow stripe around the handwheel shaft. This 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 CONDUIT ENTRIES
Two connections in either metric or NPT threads. One entry is for power, the other for control wiring.

8 MOTOR GEAR
High torque start motor assembly. Designed for fast inspection and maintenance.

9 OUTPUT DRIVE
Self-locking worm shaft and worm gear assembly holds the valve in desired position.

10 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.

11 TERMINAL STRIP
Actuator limit switches are pre-wired to an easily accessible and clearly marked terminal block for customer wiring. The terminal strip has been placed near the two conduit entries with ample room for running wire leads. An easily accessible green plated ground screw is provided. A wiring diagram is included inside the cover for easy reference.

12 LIMIT SWITCH BRACKET
Simple and secure design to firmly hold limit switch assemblies for accurate and repeatable valve position feedback.

13 LIMIT SWITCH CAMS
Bray’s patented CAM design includes standard green (open) and red (close) CAMs which are adjustable with finger touch or screwdriver with no additional tools. Standard factory setting allows 90° travel between open and close positions.

14 ROLLER BEARING
Provides low friction while securely aligning actuator indicator shaft and CAMs for reliable valve position feedback.

15 OLDHAM COUPLER
Corrects any misalignment between the valve and actuator without introducing side load to the position indicator shaft assembly.

16 ACTUATOR CONTROL
Standard:
- Interposing Relay Board (I.R.B.)
  120/220 VAC 50/60Hz On/Off control
Option:
- Servo NXT Modulating Controller
  120, 220, 24 VAC 50/60 Hz, 1 phase 24 VDC
  24V On/Off Controller (not shown)
BRAY’S SERIES 70 ELECTRIC ACTUATOR HAS MANY ADVANTAGES OVER OTHER ACTUATORS INCLUDING:

- Voltages: 120, 220, 24 VAC 50/60 Hz, 1-phase, 24 VDC
- Output torque 34 Nm to 2,034 Nm
- UL, CSA and CE certification on most units
- Low profile, light weight
- High visibility position indicator
- Simple manual override handwheel system
- On-off or modulating control
- Terminal strip for cable terminations
- Hand or screw driver adjustment of travel limit cams
- ISO 5211 for direct mounting
- Optional hazardous location model available
- Optional Seacorr coating for harsh environments

SERVO NXT FEATURES / SPECIFICATIONS

- Servo is available for modulating service, continuous duty actuators only.
- Actuator Voltage 120, 220, 24 VAC 50/60 Hz, 1 phase 24 VDC
- Input Signal Configurable 4-20 mA, 0-10, 2-10, 0-5 VDC
- Retransmission signal Configurable 4-20 mA, 0-10, 0-5 VDC
- Independent Isolation Control signal input and output Control signals and power
- Display Menu driven auto dimming LED
- Menu Navigation Up/Down arrows with select (✓) buttons
- Configuration Menu selectable to non-volatile memory
- Calibration Auto calibration sequence for travel limits
- Deadband Configurable 1% - 6%
- Reverse Acting Configurable for inverted input signal
- Speed Control Independent for open and close direction
- Fail Position (loss of input signal) Configurable close, open, last
- Manual Mode Local operation via Servo NXT user interface
- Fault Indications Loss of command signal Limit switch Handwheel engaged Feedback pot Torque switch Jammed valve / motor stalled
- Health Monitor Heartbeat - Backlit blinking Bray logo

“Configurable” means the customer, or the factory, can modify the Servo NXT.

THE SERVO NXT OFFERS PRECISE MODULATING SERVICE FOR ACCURATE POSITION CONTROL.

- One touch automatic calibration
- User-friendly interface
- Advanced control of proportional band and dead band
- Automatic pulsing mode for precise positioning
- Self diagnostics
- Action on loss of command signal
- Go to position commands

BRAY CONTACT | T. +44 141 812 5199 | BCUK.SALES@BRAY.COM
SERVO NXT

Hazardous Location

Sizes 130 - 180

Sizes 003 - 065

BRAY SERIES 70 ELECTRIC ACTUATORS
1 CONTROL STATION
The optional control station features a local-off-remote control switch, an open-stop-close switch, and two lights which locally indicate open and close valve position. This weatherproof aluminium enclosure is easily bolted to the four mounting holes located on the S70 conduit entry panel. The Control Station cover includes captive bolts and may be rotated in 90° increments allowing the customer to easily operate and view the control station. Two cable entries are available in M25 or 3/4" NPT in the base of the control station. Two different multi-pin, weatherproof electrical cable connections are also available.

2 BATTERY BACKUP UNIT (BBU)
Designed for use with 24V actuators, the optional BBU provides power to permit the actuator to reach its fail-open or fail-close position in the event of a main power failure. Upon reaching the fail position, the BBU turns off until external power is restored. After main power has been restored, the actuator returns to normal operation.

3 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. 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.

4 POTENTIOMETER
Optional gear driven 10k ohm potentiometer provides continuous position feedback for a customer control system.

5 AUXILIARY SWITCHES
Up to four additional dry-contact (voltage free) SPDT mechanical switches can be added to indicate travel position for remote customer control systems.

6 TORQUE SWITCH
Optional torque switches provide protection for the automated valve assembly in the event of an over-torque event.

7 ELECTRICAL CABLE CONNECTIONS
Pre-wired multi-pin weatherproof cable receptacles allow quick-connect field installation and prevent internal cabling errors which could occur during commissioning. Cord sets can be supplied with connection/flying leads or connection/connexion on cord set ends to plug directly into the actuator receptacle.

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**OPTIONS TECHNICAL SPECIFICATIONS**

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<th>S70-003</th>
<th>S70-006</th>
<th>S70-008</th>
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<td>F07/F12</td>
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<td>Weight (Approximate) kg</td>
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**24VDC**

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<td>Current Draw in Amps</td>
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<td>LRA</td>
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**TRAVEL TIME - MOTORS**

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<th>Travel Time 90° (Sec)</th>
<th>30, 60, 110 seconds motors are continuous duty</th>
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<td>Current Draw in Amps</td>
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For all other information such as dimensional drawings, wiring diagrams, and EDS files please visit www.bray.com or contact your local Bray representative.
**BRAY INTERNATIONAL**

**PRIMARY SALES AND SERVICE LOCATIONS**

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