Flowserve is the World’s Premier Provider of flow management services. Flowserve manufactures Automax Valve Automation Systems to provide full service valve and damper automation to the worldwide oil and gas, pulp and paper, chemical, processing and energy related industries. We provide maximum value to the end user through a broad offering of products, services, application engineering and our systematic approach to automation.

Sales and service facilities are strategically located in industrial centers throughout the world.
When Productivity Counts
Automax electric actuators are the first choice of plant superintendents and maintenance personnel the world over. In hostile
environments where only the best will do and working conditions where safety, durability and ease of operation are not only required,
but are essential.

Automax CENTURA Series actuators have proven themselves tough and reliable in oil and gas, pulp and paper, chemical processing
and metal producing industries, to name a few.

Dependable CENTURA Series electric rotary actuators are the result of Automax's proven technologies and quality manufacturing
processes. The Centura Series is ideal for On/Off and modulating services, and for use with any quarter turn valve. Models range in
output torques from 100 to 3500 inch pounds.

Automax CENTURA • Tough • Dependable • Safe !

CENTURA CE Series
The Centura CE electric rotary actuator is available with output torques from 250
to1500 inch-pounds, ideal for use in a wide range of industrial applications. The
CE Series is UL listed and CSA Approved for NEMA 4, 4x, 7, 9 and is available with
an optional ESP3 controller card for modulating service.

CENTURA CPL Series
The Centura CPL Series electric rotary actuator is available with output torques of
100 and 225 inch-pounds. It is an excellent choice for small ball ball valves and
butterfly valves. The corrosion resistant Zytel housing is CSA approved for NEMA 4
and 4x.

CENTURA “E” Series
The “E” Series electric rotary actuator is available with output torques of 1500 and
3500 inch-pounds. “E” Series actuators are designed to meet NEMA 4 and 4X
requirements. Options available include heaters, handwheels and ESP3 controller
card for modulating applications.

CENTURA ESP3 Modulating Card
When used in conjunction with Automax electric actuators, the ESP card provides
valve positioning in response to variable signals generated by process control
devices. The ESP3 card is designed to fit easily inside all “CE” and “E” series
 housings, and can also be supplied in a NEMA 4 or NEMA 7 enclosure for use with
other Automax actuators.

Control Boxes
Control Boxes provide various local control options for local/remote, Open-Off-Close
or jogging for manual operation.

AutoBrakits
Automax custom mounting hardware packages permit mounting adaption to most
valves and dampers.
The Automax CE Series electric rotary actuators are ideal for heavy duty applications where failure is not an option. Watertight and explosion proof, the CE’s electrostatic powder coated, die cast aluminum housing resists attack by corrosives and meets all NEMA 4, 4x, 7 and 9 standards. The Centura CE’s precision cut, hardened steel gears transmit a maximum of 1500 inch-pounds of torque from its powerful gearmotor, providing safe, accurate control of valves and dampers. Simple to mount and easy to adjust, Centura CE actuators can also be fitted with Automax ESP servo positioners to give positive, modulating control.

**CENTURA CE Series**

1. **NEMA 4, 4X, 7, 9 Design.** The housing of the Automax CENTURA CE Series Actuator is both explosion proof and weatherproof. The aluminum die-cast housing is electro-static polyester powder coated for superior corrosion resistance.

2. **Motor.** The CENTURA CE Series Rotary Actuator contains a rugged, single phase permanent split capacitor gearmotor. The AC motor contains an automatically resetting thermal cut-out. An extended duty version of the gearmotor is also available for modulating applications.

3. **Massive Gear Train.** All models contain a permanently lubricated, precision cut, heat treated alloy steel gear train for a long, reliable cycle life and are designed to withstand motor stall torque.

4. **3/4 NPT Conduits.** One 3/4-14 NPT conduit connection is supplied as standard, however an additional conduit connection is available.

5. **Simple Mounting Arrangements.** Standard mounting is interchangeable with the Automax SuperNova SNA100. Additional mounting pads and shafts including a 70mm ISO bolt circle are available on request.

6. **Quickset Cams.** Travel limit switch cams are extra wide, spring loaded and splined so that the Open/Close positions can be quickly set without special tooling. The cams also contain a micro adjust screw for very precise applications.

7. **Captive Cover Bolts.** The cover contains 8 stainless steel captive cover bolts to prevent loss of bolts when the cover is removed.

8. **Electrical Cut-Off Switch.** An automatic electrical cut-off switch is provided to prevent electrical operation while the manual override is engaged.

9. **Heavy Duty Brake.** An optional heavy duty positive latching brake is available for rubberlined butterfly and damper applications. The brake is declutched during manual operation and is continuous duty rated during electrical operation.
### Options

#### Manual Override Handwheel

- **Dimensions:** 11.04" (280mm)
- **Options:**
  - Optional 6" dia. Handwheel
  - 3/4" NPT
  - 5/16-18UNC x 0.50 deep on 1.563 square
  - 3/8-16UNC x 0.50 deep on 1.03 square

#### Heavy Duty Brake for Dampers and Rubber Lined Valves

- **Features:**
  - To Eliminate Condensation

#### Heater & Thermostat

- **Function:**
  - For remote position feedback

#### Auxiliary Switches for Remote Position Feedback

- **Options:**
  - Pharos Visual Position Indicator
  - ESP3 Modulating Option

### How to Order (Select from each column)

<table>
<thead>
<tr>
<th>Valve Interface Mounting</th>
<th>Output Torque in-lbs (N-m)</th>
<th>Supply Voltage</th>
<th>Switches</th>
<th>Positioning</th>
<th>Other Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE</td>
<td>2 250 (28)</td>
<td>115Vac 50/60</td>
<td>1</td>
<td>Input Control</td>
<td>X (2) 3/4NPT Connections</td>
</tr>
<tr>
<td>CI7</td>
<td>4 400 (45)</td>
<td>115Vac 50/60</td>
<td>2</td>
<td>ESP3 Electronic Positioner (4/20mA, 0-10V, etc.)</td>
<td></td>
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<tr>
<td>CI5</td>
<td>7 700 (79)</td>
<td>12VDC</td>
<td>3</td>
<td>ESP3 with TX option</td>
<td></td>
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<tr>
<td></td>
<td>1 1000 (113)</td>
<td>24VDC</td>
<td>4</td>
<td>0-135 Ohm ESP3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 1500 (180)</td>
<td>230Vac 50/60</td>
<td>5</td>
<td>DC Motor Speed &amp; Torque Controller</td>
<td></td>
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<tr>
<td></td>
<td>230Vac 50/60 extended duty</td>
<td></td>
<td></td>
<td>Low Power DC Controller</td>
<td></td>
</tr>
<tr>
<td></td>
<td>J 24Vac</td>
<td></td>
<td></td>
<td>X21 (2) Pg 21 Connections</td>
<td></td>
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</tbody>
</table>

#### Connections

- X (2) 3/4NPT Connections
- X21 (2) Pg 21 Connections
- E Food Grade
- White Epoxy Coating
- Z Manual Handwheel
- H Heater & Thermostat
- G Breather & Drain
- P Pharos Indicator
- R Heavy Duty Brake
- S Two Wire Relay Control
- R CW Relay
- S CCW Relay
The Centura CPL electric actuator is the specifier’s choice for reliable, trouble free control of small ball and butterfly valves. Centura CPL actuators with their quick-set cams are characterized by ease of setup and adjustment, and by their ability to resist attack in harsh corrosive environments, such as those found in chemical plants and pulp and paper operations. The CPL Series also incorporates automatic resetting thermal protection to prevent motor overload.

1. Corrosion Resistant Housing. Reinforced Zytel enclosure. Unique Labyrinth cover design with O-ring ensures a tight seal.


3. Gear Train. Enclosed, permanently lubricated, hardened steel gear trains providing 100 inch-lbs. (CPL1) and 225 inch-lbs. (CPL2) of torque means zero maintenance of moving parts over the CPL’s useful life.

4. 3/4 NPT Conduit Entry. One 3/4-14 NPT conduit connection is supplied as standard.

5. Simple Mounting Arrangements. Standard mounting includes nickel plated brass threaded inserts. The mounting pattern is interchangeable with the Automax SuperNova SNA050.

6. Quickset Cams. Travel limit switch cams are extra wide, spring loaded and splined so that the Open/Close positions can be quickly set without special tooling. The cams also contain a micro adjust screw for very precise applications.

7. Captive Cover Bolts. The cover contains 4 stainless steel captive cover bolts to prevent loss of bolts when the cover is removed.
# Options

**Heater and Thermostat to Eliminate Condensation**

**Auxiliary Switches for Position Feedback**

**ESP3 Modulating Option**

**DC Motor**

---

## How to Order (Select from each column)

<table>
<thead>
<tr>
<th>Valve Interface</th>
<th>Output Torque in-lbs (N-m)</th>
<th>Supply Voltage</th>
<th>Switches</th>
<th>Positioning</th>
<th>Other Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPL UNC Thread</td>
<td>1 100 11 2 225 25</td>
<td>Blank 115VAC 50/60 B 12VDC C 24VDC D 230VAC 50/60 J 24VAC</td>
<td>1: One extra (dry contact) 2: Two extra 5: Dribble Control Three Position</td>
<td>Input Signal: TA 4-20mA ESP3 TT 4-20mA ESP3 with TX TB 0-135 Ohm ESP3 Output Signal: TX 4-20mA transmitter P1 0-135 Ohm Potentiometer P2 0-1K Ohm Potentiometer P3 0-5K Ohm Potentiometer P4 0-10 Ohm Potentiometer P5 0-10 Ohm Potentiometer P6 0-1K, 0-10K Dual Potentiometer</td>
<td>H: 25W Heater/Thermostat G: Breather &amp; Drain R: 115VAC CW S: 115VAC CCW T: 24VDC CW</td>
</tr>
</tbody>
</table>
CENTURA “E” Series

The Automax “E” Series electric rotary valve actuators are ideal for larger torque applications where flows must be controlled with accuracy and dependability. The two standard “E” Series actuators boast of 1500 and 3500 inch-pounds of torque. All “E” Series actuators are designed to provide maximum performance in a very compact package, thus providing complete control of quarter turn valves, dampers and other rotary devices. “E” Series electric actuators offer a permanently lubricated, sealed gear train, which protects against the disabling effects of moisture, corrosion and breakage. Long life and dependability are designed into every Automax “E” Series electric actuator.

1. Corrosion Resistant Housing. The housing of the Automax “E” Series actuator is cast aluminum and polyurethane coated for superior corrosion resistance.


3. Massive Gear Train. All models contain a permanently lubricated, precision cut, heat treated alloy steel gear train for a long, reliable cycle life and are designed to withstand motor stall torque.

4. 1/2 NPT Conduits. One 1/2” NPT conduit connection is supplied as standard.

5. Quickset Cams. Travel limit switch cams are extra wide, spring loaded and splined so that the Open/Closed positions can be quickly set without special tooling. The cams also contain a micro adjust screw for very precise applications.

6. Captive Cover Bolts. The cover contains 6 stainless steel captive cover bolts to prevent loss of bolts when the cover is removed.

7. Manual Override. A protected manual override is provided as standard and a hand wheel option is available.

8. Brake. A positive latching brake is provided as standard. The brake is continuous duty rated during electrical operation.
Options

Heater & Thermostat
To Eliminate Condensation

Manual Override Handwheel

ESP3 Modulating Option

Auxiliary Switches for Position Feedback

How to Order (Select from each column)

<table>
<thead>
<tr>
<th>Valve Interface Mounting</th>
<th>Output Torque in-lbs (N-m)</th>
<th>Supply Voltage</th>
<th>Switches</th>
<th>Positioning</th>
<th>Other Options</th>
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</thead>
<tbody>
<tr>
<td>CE UNC Tread</td>
<td>E1500 1500 (169)</td>
<td>115Vac 50/60 extended duty</td>
<td>1 One extra (dry contact)</td>
<td>Input Control</td>
<td></td>
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<tr>
<td></td>
<td>E3500 3500 (395)</td>
<td></td>
<td>2 Two extra</td>
<td>ESP3 Electronic Positioner (4/20mA, 0-10V, etc.)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 Three extra</td>
<td>ESP3 with TX option</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 Four extra</td>
<td>0-135 Ohm ESP3</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>5 Dribble Control</td>
<td>4-20mA Transmitter</td>
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<td></td>
<td>P1</td>
<td>0-135 Ohm Potentiometer</td>
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<td>P2</td>
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<td>P3</td>
<td>0-5K Ohm Potentiometer</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>P4</td>
<td>0-10 Ohm Potentiometer</td>
</tr>
</tbody>
</table>

E = Food Grade
Z = Manual Handwheel
H = Heater & Thermostat
G = Breather & Drain
R = CW Relay
S = CCW Relay

“E” Series Dimensions

A 12.94
B 1.19
C 1.38
D 7
E 25.75
F 1.06
G 2.63
H 8.25
J 10.1
K 1.25

2 1/2 NPT CONDUIT

(4) 5/16-18 UNC MOUNTING HOLES
The ESP3 is a servo positioner that allows Automax electric actuators to be used in modulating applications. The ESP3 is activated by variable input signals sent by process monitoring devices including: flow meters, liquid level sensors, programmable controllers and computers.

The ESP3 Positioner compares incoming command signals with a position feedback signal from a self-contained potentiometer to determine precise modulating settings.

The ESP3’s servo amplifier directs the unit’s reversing motor to realign the valve or damper until the two signals are reconciled and the required rate of flow is achieved. In this way, valve and damper settings are continually corrected to optimize flow rates.

The compact ESP3 fits easily inside many Automax actuators, when used with smaller actuators, the ESP3 can be supplied with a NEMA 4X housing of its own. Calibration of the ESP3 is always quick and easy, with separate deadband, span and zero adjustments.

Where precise modulating control is required, Automax’s ESP3 is the answer.

**CENTURA Series/ESP3 Positioner Specification**

- **Power Requirement**
  - 110-125VAC, 60Hz
  - 5W @ 115 VAC

- **Input Signals**
  - 4-20mA DC into 250 Ohm
  - 4-12mA DC into 250 Ohm
  - 1-5mA DC into 1000 Ohm
  - 0 to 5 VDC
  - 2 to 10 VDC
  - 0 to 10 VDC
  - 1.5 to 1000 Ohm
  - 1.5 to 135 Ohm (Special)
  - 10 to 50mA DC into 1000 Ohm (Special)

- **Adjustments**
  - Zero, Span, and Deadband

- **Temperature**
  - -40° F (-40° C) when used with optional heater to 160° F (70° C)

- **Isolation**
  - Control to Power Line: 1500 V 10M Ohm
  - Control to Output: 1500 V 1000M Ohm

- **Transmitter PCB 4-20mA DC (Optional)**
  - with Zero and Span Adjustments
  - 600 Ohm Load Impedance

- **ESP3 Features**
  - Jumper Select: Direct/Reverse Acting
  - Input Signal Conditioning
  - CW/CCW LED Drive Indicators
  - Linear Characteristic

- **CENTURA Series/ESP3 Positioner**
  - Jumper Select: Direct/Reverse Acting
  - CW/CCW LED Drive Indicators
  - Linear Characteristic
Control Boxes

Control boxes are available for a variety of local control options, such as Local/Remote Open-Off-Close and jogging control. NEMA 4 housings are used as standard, but other housings are available upon request.

AutoBrakits

Automax custom mounting hardware packages are designed to close tolerances to assure consistency and proper alignment, which are essential to ensure maximum actuator and valve life. The designs allow for proper fit and easy assembly in the field, or Automax will assemble and calibrate actuators and controls to customers’ valves.
Flowserve Corporation has established industry leadership in the design and manufacture of its products. When properly selected this Flowserve product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Flowserve products should be aware that Flowserve products might be used in numerous applications under a wide variety of industrial service conditions. Although Flowserve can (and often does) provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of Flowserve products. The purchaser/user should read and understand the Installation Operation Maintenance (IOM) instructions included with the product, and train its employees and contractors in the safe use of Flowserve products in connection with the specific application.

While the information and specifications contained in this literature are believed to be accurate they are supplied for informative purposes only and should not be considered certified or as a guarantee of satisfactory results by reliance thereon. Nothing contained herein is to be construed as a warranty or guarantee, express or implied, regarding any matter with respect to this product. Because Flowserve is continually improving and upgrading its product design, the specifications, dimensions and information contained herein are subject to change without notice. Should any question arise concerning these provisions, the purchaser/user should contact Flowserve Corporation at any one of its worldwide operations or offices.

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