EXPLOSION-PROOF ELECTRIC VALVE ACTUATORS

Service Unique Nice Youthful Energy Honesty

SE / LE / OME series
www.sunyeh.com
Perfect Solution
Sun Yeh Electrical Ind. Co., Ltd. was founded in 1986. We always strive for technical excellence, innovation and the highest quality standards in everything we do. Sun Yeh is committed to providing products conforming to market demands and first class support.

We continue to expand our product ranges to include quarter-turn electric actuators, spring return fail-safe electric actuators, linear electric actuators, and explosion-proof electric actuators. Sun Yeh offers various products, which are widely applied to control flow in various industries, water treatment, HVAC, chemical engineering, food processing, etc.

Sun Yeh electric valve actuators are of high quality and have been certified with SIL, CE, CSA, CCC, TS, ATEX, IECEx, and CNEx approvals, meeting RoHS, REACH and China RoHS environmental regulations, in addition to ISO 9001, ISO 14001, OHSAS 18001, and AEO standards.
Explosion-proof
Spring Return Fail-safe
Electric Valve Actuators
Explosion-proof spring return fail-safe electric actuators, in addition to normal function (floating control, On / Off control, modulating control) are designed for fail-safe positioning of valves and dampers upon loss of power supply. A mechanical spring set is utilized to position the controlled device to either the fully OPEN or fully CLOSED position, without any external power source. For On / Off type actuator, a mechanical BUFFER is employed at the end of the spring stroke, in order to reduce the dynamic effects of the spring return system. Manual override is optional for manual positioning of the controlled device.

SE series explosion-proof spring return fail-safe electric actuators are structured as flame-proof and combustible dust-proof. The directive and standards marking is II 2 GD Ex db IIB T4 Gb, Ex tb IIIIC T130°C Db where it is classified as Zone 1 or Zone 2, containing Group IIA and Group IIB gases, Zone 21 or Zone 22, containing the combustible dust atmospheres or a mixture of explosive gas atmospheres and combustible dust atmospheres. Temperature group T1 to T4.
PRODUCT FEATURES

- Enclosure conforms to IP68 (7 m / 72 hrs) with explosion protection.
- Controls: On / Off, floating (optional), modulating (optional).
- Clutch-less manual override (optional).
- ISO 5211 mounting flange.
- Built-in motor thermal protection.

STANDARD SPECIFICATIONS

- Available supply voltages: 24VAC, 24VDC, 110VAC, 120VAC, 220VAC, 240VAC, 220V / 3PH, 240V / 3PH, 380V / 3PH, 440V / 3PH.
- Dry powder coated aluminum alloy housings.
- Standard 50% duty cycle (In accordance with IEC standard).
- Continuous mechanical position indicator.
- 2 limit switches for operation, fail clockwise spring return and On / Off control are provided as standard.
- Relative humidity: 30 to 95%
- Ambient temperature: -30°C to +70°C (-22°F ~ +158°F)
### TECHNICAL INFORMATION

<table>
<thead>
<tr>
<th>Model</th>
<th>Torque</th>
<th>Nominal Motor Power</th>
<th>Running Time (Sec / 90°)</th>
<th>Spring Return Time (Sec / 90°)</th>
<th>Weight Standard kg</th>
<th>Weight W/ Manual Override kg</th>
<th>Flange Type</th>
<th>Shaft (A)</th>
<th>Depth of Shaft (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE-500</td>
<td>50</td>
<td>50</td>
<td>7</td>
<td>3</td>
<td>28</td>
<td>62</td>
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<td>F07</td>
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<td>SE-1300</td>
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<td>130</td>
<td>7</td>
<td>8</td>
<td>59</td>
<td>130</td>
<td>76</td>
<td>168</td>
<td>F10</td>
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<td>130</td>
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<td>97</td>
<td>214</td>
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<td>F12</td>
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<td>SE-2600</td>
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<td>130</td>
<td>14</td>
<td>12</td>
<td>97</td>
<td>214</td>
<td>137</td>
<td>302</td>
<td>F12</td>
</tr>
</tbody>
</table>

- **Note:** Motor power is based on 110VAC @60Hz, 50% duty cycle, On / Off control.
- Motors are class F insulated.
LE series

Explosion-proof
Linear
Electric Valve Actuators
Explosion-proof linear electric actuators provide thrust ranges of 250 to 2,000 kgf (550 to 4410 lbf). All models are equipped with modulating controllers and are suitable for globe valves, gate valves and linear travel devices. They can be applied to HVAC and industrial processes, especially for steam and high temperature employments.

LE series explosion-proof linear electric actuators are structured as flame-proof and combustible dust-proof. The directive and standards marking are II 2 GD Ex db IIB T4 Gb, Ex tb IIIC T130°C Db. They are control devices for valves and can be used in places, classified as Zone 1 or Zone 2, containing Group IIA and Group IIB gases, Zone 21 or Zone 22, containing combustible dust atmospheres or explosive gas atmospheres and combustible dust atmospheres. Temperature group T1 to T4.
**PRODUCT FEATURES**

- Enclosure conforms to IP68 (7m / 72 hrs) with explosion protection.
- DC motor equipped.
- External stem position indicator.
- Low-power consumption.
- Manual operation can be applied in case of power outage.
- Built-in motor thermal protection.
- All models are equipped with analog feedback.

**STANDARD SPECIFICATIONS**

- Available supply voltages: 24VAC, 24VDC, 110VAC, 120VAC, 220VAC, 240VAC.
- Dry powder coated aluminum alloy housings.
- The actuator will shut off to prevent overload when the output thrust is overrated.
- 2 limit switches for operation are provided as standard.
- Allows adjustment of actuator stroke to match valve stem travel.
- Relative humidity: 30 to 95%
- Ambient temperature: -30°C to +70°C (-22°F ~ +158°F)
### TECHNICAL INFORMATION

<table>
<thead>
<tr>
<th>Model</th>
<th>Thrust</th>
<th>Weight</th>
<th>Nominal Motor Power</th>
<th>Running Speed</th>
<th>Flange Type</th>
<th>Max. Stroke</th>
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</thead>
<tbody>
<tr>
<td>LE-250</td>
<td>250 kgf 550 lbf 2450 N</td>
<td>9.5 kg 21 lb</td>
<td>15 Watt</td>
<td></td>
<td>F07</td>
<td>50</td>
</tr>
<tr>
<td>LE-500</td>
<td>500 kgf 1100 lbf 4900 N</td>
<td>9.5 kg 21 lb</td>
<td>15 Watt</td>
<td>0.46 mm / sec 0.018 inch / sec</td>
<td>F07</td>
<td>50</td>
</tr>
<tr>
<td>LE-1000</td>
<td>1000 kgf 2205 lbf 9805 N</td>
<td>31 kg 68 lb</td>
<td>35 Watt</td>
<td></td>
<td>F10</td>
<td>100</td>
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<tr>
<td>LE-2000</td>
<td>2000 kgf 4410 lbf 19615 N</td>
<td>31 kg 68 lb</td>
<td>35 Watt</td>
<td></td>
<td>F10</td>
<td>100</td>
</tr>
</tbody>
</table>

- Note: Motor power is based on 110VAC @60Hz.
- Motors are class F insulated.
OME series

Explosion-proof
Quarter-turn
Electric Valve Actuators
Explosion-proof quarter-turn electric actuators offer torque ranges from 35 N\(\cdot\)m to 1,500 N\(\cdot\)m (310 in\(\cdot\)lb to 13,280 in\(\cdot\)lb). All models are with ISO 5211 compliant flange and are equipped with a visual position indicator. The manual operation (except OME-A) can be operated without brake and clutch upon power cut. This could increase the mechanical reliability.

OME series explosion-proof quarter-turn electric actuators are structured as flame-proof and combustible dust-proof. The directive and standards marking are II 2 GD Ex db IIB T4 Gb, Ex tb IIIC T130°C Db. They are classified as Zone 1 or Zone 2, containing Group IIA and Group IIB gases, Zone 21 or Zone 22, containing combustible dust atmospheres or explosive gas atmospheres and combustible dust atmospheres. Temperature group T1 to T4.
OME series
Explosion-proof Quarter-turn Electric Valve Actuators

PRODUCT FEATURES
- Enclosure conforms to IP68 (7m / 72hrs) with explosion protection.
- Self-locking gear system.
- Clutch-less manual override for OME-2 to OME-8.
- Externally adjustable mechanical stops for OME-2 to OME-8.
- Continuous mechanical position indicator.
- Built-in motor thermal protection.
- All models are equipped with torque switches (except OME-1, OME-A and OME-AM).

STANDARD SPECIFICATIONS
- Available supply voltages: 24VAC, 24VDC, 110VAC, 120VAC, 220VAC, 240VAC.
- Dry powder coated aluminum alloy housings.
- Standard 30% duty cycle.
- 2 limit switches for operation, torque switches and floating control are provided as standard.
- Relative humidity: 30 to 95%
- Ambient Temperature: -30°C to +70°C (-22°F ~ +158°F)
### TECHNICAL INFORMATION

<table>
<thead>
<tr>
<th>Model</th>
<th>Torque</th>
<th>Weight</th>
<th>Nominal Motor Power</th>
<th>Running Time</th>
<th>Manual Override</th>
<th>Flange Type</th>
<th>Shaft (A)</th>
<th>Depth of Shaft (B)</th>
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<tbody>
<tr>
<td></td>
<td>N•m</td>
<td>in•lb</td>
<td>kg</td>
<td>lb</td>
<td>(Sec / 90°)</td>
<td>ISO 5211</td>
<td>mm</td>
<td>inch</td>
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<tr>
<td>OME-1</td>
<td>35</td>
<td>310</td>
<td>2</td>
<td>4</td>
<td>10</td>
<td>11</td>
<td>Lever</td>
<td>F03 / F05</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>445</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td>21</td>
<td>N / A</td>
<td>F07</td>
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<tr>
<td>OME-AM</td>
<td>50</td>
<td>445</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td>21</td>
<td>Lever</td>
<td>F07</td>
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<tr>
<td>OME-2</td>
<td>90</td>
<td>800</td>
<td>18</td>
<td>40</td>
<td>40</td>
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<tr>
<td>OME-3</td>
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<td>40</td>
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<td>F07</td>
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<td>80</td>
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<td>wheel</td>
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<td>OME-4</td>
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<td>5755</td>
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<td>8855</td>
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<td>101</td>
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<td>OME-7</td>
<td>1500</td>
<td>13280</td>
<td>46</td>
<td>101</td>
<td>120</td>
<td>54</td>
<td>F12 or F14</td>
<td>36</td>
</tr>
</tbody>
</table>

- The motor power and speed data are based on 110VAC @ 60Hz, 30% duty cycle, floating control.
- Motors are class F insulated.
SE series

PHYSICAL DIMENSION

SE-500

2 of 1/2"NPT
46 CTS
Conduit Entries

256 mm
10.157 in

171 mm
6.732 in

87 mm
3.425 in

17 mm
0.669 in

30 mm Depth
1.181 in

360 mm
14.173 in

Ø178 mm
Ø7.008 in

Ø55 mm
Ø2.165 in

100 mm
3.937 in

362 mm
14.252 in

382 mm
15.039 in

5 mm
0.197 in

20 of 1/2"NPT
46 CTS
Conduit Entries

PCD Ø70 mm
Ø2.756 in

M8x1.25P
12 mm Depth
4 Positions
(ISO 5211 F07)
EXPLOSION-PROOF ELECTRIC ACTUATORS

SE-1300 W/ MANUAL OVERRIDE

2 of 1/2" NPT
64 CTS
Conduit Entries

5 mm
0.197 in

Ø70 mm
2.756 in

247 mm
9.724 in

Ø125 mm
4.921 in

237 mm
9.331 in

595 mm
23.425 in

68 mm
2.677 in

41 mm Depth
1.614 in

PCD Ø102 mm
Ø4.016 in
M10 x 1.5 P
15 mm Depth
4 Positions
(ISO 5211 F10)

SE-1300W/ MANUAL OVERRIDE

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EXPLOSION-PROOF ELECTRIC ACTUATORS

SE-1300 W/ MANUAL OVERRIDE

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SE series

PHYSICAL DIMENSION

SE-2000 / 2600

2 of 1/2"NPT 64 CTS Conduit Entries

600 mm 23.622 in

Ø305 mm Ø12.008 in

6 mm 0.236 in

Ø170 mm Ø6.693 in

534 mm 21.024 in

PCD Ø125 mm Ø4.921 in
M12x1.75P
18 mm Depth
4 Positions (ISO 5211 F12)

438 mm 17.244 in

305 mm 12.008 in

133 mm 5.236 in

45 mm Depth 1.772 in

27 mm 1.063 in

45 mm Depth 1.772 in

287 mm 11.303 in

305 mm 12.008 in

349 mm 13.740 in

6 mm 0.236 in

17 mm 0.669 in

12 mm 0.472 in

18 mm 0.709 in

2 of 1/2"NPT 64 CTS Conduit Entries

600 mm 23.622 in

Ø305 mm Ø12.008 in

6 mm 0.236 in

Ø170 mm Ø6.693 in

534 mm 21.024 in

PCD Ø125 mm Ø4.921 in
M12x1.75P
18 mm Depth
4 Positions (ISO 5211 F12)
SE-2000 / 2600 W/ MANUAL OVERRIDE

EXPLOSION-PROOF ELECTRIC ACTUATORS
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LE series

PHYSICAL DIMENSION

LE-250 / 500

- Ø155 mm Ø6.102 in
- 176.5 mm 6.949 in
- 119 mm 4.685 in
- 340 mm 13.386 in
- 383.5 mm 15.098 in
- 285.5 mm 11.240 in
- 124 mm 4.882 in
- 4 mm 0.157 in
- Ø155 mm Ø6.102 in
- M12x1.75P
- 2 of 1/2"NPT 90 CTS Conduit Entries
- PCD Ø70 mm Ø2.756 in M8x1.25P 12 mm Depth
- 4 Positions (ISO 5210 F07)
- Ø155 mm Ø6.102 in
- M8x1.25P 12 mm Depth
- 4 Positions (ISO 5210 F07)
- Ø89 mm Ø3.504 in
- Ø2.165 in
- Ø3.858 in
- Ø55 mm Ø2.165 in
- Ø89 mm Ø3.504 in
- M8x1.25P 12 mm Depth 4 Positions (ISO 5210 F07)
OME series

OME-A

- Apply to modulating control models: Ø 248 mm (9.764 in)

Dimensions:
- Ø90 mm (3.543 in)
- 216 mm (8.504 in)
- Ø113 mm (4.449 in)
- 137 mm (5.394 in)
- 77 mm (3.031 in)
- Ø90 mm (3.543 in)
- 82 mm (3.228 in)
- 41 mm (1.614 in)
- 123 mm (4.843 in)
- 2 of 1/2 " NPT 37 CTS Conduit Entries
- 20 mm Depth 0.787 in
- PCD Ø70 mm Ø2.756 in M8x1.25P 16 mm Depth 4 Positions (ISO 5211 F07)

PCD Ø70 mm Ø2.756 in M8x1.25P 16 mm Depth 4 Positions (ISO 5211 F07)
• Apply to modulating control models. 248 mm (9.764 in)
OME series

PHYSICAL DIMENSION

OME-I

• Apply to modulating control models. 201 mm (7.913 in)
OME-7 / 8

2 of 1/2" NPT 44 CTS Conduit Entries

PCD Ø125 mm Ø4.921 in
M12x1.75P
30 mm Depth
4 Positions
(ISO 5211 F12)

45°

50 mm Depth 1.968 in

36 mm 1.417 in

354 mm 13.940 in

499 mm 19.650 in

350 mm 13.780 in

115 mm 4.528 in

235 mm 9.252 in

429 mm 16.890 in

Ø216 mm Ø8.504 in

Ø177 mm Ø6.969 in

Ø295 mm Ø11.610 in

115 mm 4.528 in

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OPTIONAL ITEMS

COMPANY PROFILE | SE series | LE series | OME series | PHYSICAL DIMENSION | OPTIONAL ITEMS

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## Enclosure

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<tr>
<th>Hazardous Area Enclosures</th>
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</thead>
</table>

### ATEX Certification

<table>
<thead>
<tr>
<th>Directive</th>
<th>Group</th>
<th>Ambient Temperature</th>
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<td>ATEX II 2 GD</td>
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<td>-30°C to +70°C (-22°F to +158°F)</td>
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<td>ATEX II 2 GD</td>
<td>Ex tb IIIC T130°C Db</td>
<td>-30°C to +70°C (-22°F to +158°F)</td>
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Standards: EN 60079-0, EN 60079-1, EN 60079-31

### IECEx International Certification

<table>
<thead>
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<th>Group</th>
<th>Ambient Temperature</th>
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<tr>
<td>Ex db IIIB T4 Gb</td>
<td>-30°C to +70°C (-22°F to +158°F)</td>
</tr>
<tr>
<td>Ex tb IIIC T130°C Db</td>
<td>-30°C to +70°C (-22°F to +158°F)</td>
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Standards: IEC 60079-0, IEC 60079-1, IEC 60079-31
## Enclosure

### Hazardous Area Enclosures

#### CSA Hazardous Area Certification

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<tr>
<th>Zone</th>
<th>National Conformity</th>
<th>Class</th>
<th>Zone</th>
<th>Protection Method</th>
<th>Groups</th>
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<th>Ambient Temperature</th>
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<tr>
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<td>AEx / Ex</td>
<td>I</td>
<td>1</td>
<td>db</td>
<td>IIB, IIA</td>
<td>T4</td>
<td>-30°C to +70°C (-22°F to +158°F)</td>
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<td></td>
<td>AEx / Ex</td>
<td>II</td>
<td>21</td>
<td>tb</td>
<td>IIIC, IIIB, IIIA</td>
<td>T130°C</td>
<td>-30°C to +70°C (-22°F to +158°F)</td>
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Standards: CAN / CSA-C22.2 No. 0-10, CAN / CSA-C22.2 No. 60079-0, CAN / CSA-C22.2 No. 60079-1, CAN / CSA-C22.2 No. 60079-31, UL 60079-0, UL 60079-1, UL 60079-31

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<th>Division</th>
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<th>Groups</th>
<th>T-Code</th>
<th>Ambient Temperature</th>
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<tr>
<td></td>
<td>I</td>
<td>1</td>
<td>C, D</td>
<td>T4</td>
<td>-30°C to +70°C (-22°F to +158°F)</td>
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<td></td>
<td>II</td>
<td>1</td>
<td>E, F, G</td>
<td>T130°C</td>
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Standards: CAN / CSA-C22.2 No. 0-10, CSA C22.2 No. 30-M1986, CSA C22.2 No. 25-17, FM 3600, FM 3615, FM 3616
### Manual Override

- The operator can drive the valve or damper to appropriate position by handwheel upon loss of power supply.
- When the electric motor is operating, for personal safety the handwheel won’t rotate.

### Operating Direction

- The spring return direction cannot be changed. The spring return direction must be configured by the manufacturer. Please select the fail action according to the required application, i.e. based on clockwise or counter-clockwise operation.
  - Standard: Fail clockwise spring return.
  - Optional: Fail counter-clockwise spring return.

<table>
<thead>
<tr>
<th></th>
<th>SE series</th>
<th>LE series</th>
<th>OME series</th>
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<tbody>
<tr>
<td>Manual Override</td>
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<td></td>
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<tr>
<td>Operating Direction</td>
<td></td>
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</tbody>
</table>
Auxiliary Limit Switches
• Actuators come standard with two limit switches, LS1 for fully-open and LS2 for fully-closed positioning. Two auxiliary limit switches are optional for fully-open and fully-closed position feedback.

Anti-condensation Heater
• A heater can increase internal temperatures and keep the inside of the actuator dry to avoid freezing of the lubricant and moisture causing actuator failure under low temperatures or high humidity.
• A heater is not recommended if the ambient temperature is over 35°C (95°F).
• When temperatures vary significantly from day to night or between summer and winter, a heater and thermostat 25±5°C (77±9°F) are recommended.

Heater Thermostat
• This option can switch the anti-condensation heater off when the temperature inside the actuator is over 25±5°C (77±9°F).
Modulating Control

- A proportional control unit that could efficiently control the flow via analog signal and position the valve to open / close in the system as well.
  - Analog signal input: 4-20mA, 1-5V and 2-10V.
  - Analog signal output: 4-20mA and 2-10V.

<table>
<thead>
<tr>
<th>Optional Items</th>
<th>SE series</th>
<th>LE series</th>
<th>OME series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Signal Output</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Floating Control

- The actuator can be controlled by an external signal to open, close or stop at any intermediate positions.
- SE series actuators will fail either clockwise or counter-clockwise to the end position on loss of power.

<table>
<thead>
<tr>
<th>Optional Items</th>
<th>SE series</th>
<th>LE series</th>
<th>OME series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floating Control</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

Analog Signal Output

- This option provides a signal output to a position indicator.
- Analog signal output: 0-20mA, 4-20mA, 0-5V, 0-10V, 1-5V and 2-10V.
Potentiometer Unit

• Recommended to use with an On / Off or floating control actuator to output signal for position indication. Two resistors, 1K ohm or 5K ohm are available for selection.

Extended Duty Cycle Control (IEC standard)

• This option is suggested for extending duty cycle.

Conduit Entries

• Standard: 2 x 1/2” NPT
• Optional: 2 x 3/4” NPT
• Optional: 2 x M20
• Optional: 2 x M25

## EXPLOSION-PROOF ELECTRIC ACTUATORS

<table>
<thead>
<tr>
<th></th>
<th>SE series</th>
<th>LE series</th>
<th>OME series</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentiometer Unit</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Extended Duty Cycle Control</td>
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