Powerful.
Heavy-duty.

ELECTROMECHANICAL ACTUATORS

100-8P
Electromechanical actuators

Cascade Drives’ electromechanical actuators use a rack and pinion configuration to achieve a combination of high load and high speed operation. The patented load distribution mechanism enables the use of multiple pinions on a single rack, resulting in a compact unit with high positional accuracy capable of absorbing shock loads.

- Linear position control.
- Customizable stroke length.
- Precision <±10 μm.
- Modular design.
- Industry standard communication protocols.
- IP67/IP6K9K classification available.
- Holding brake available.

Customization

Cascade Drives’ electromechanical actuators are designed to be customizable. The modular design allows for different types of position sensors, electric motors and holding brakes. Contact Cascade Drives for more information.

Construction equipment

Industrial

Commercial trucks

Material handling

Mining

Marine

Steering
Tipping
Lifting

Isostatic presses
Forging presses
Stamping presses

Steering
Tipping
Gearbox clutch actuation

Steering
Lifting
Spreading
Tilting

Tipping
Articulated steering
Boom actuation

Luffing cranes
Cascade Drives’ range of electromechanical actuators comprises four different sizes: 50-4P, 100-8P, 150-4P and 200-8P. Each size is available in three different configurations.

**Configuration A**
Housing mounted, double ended, motor mounted opposite axis to reduce actuator axis profile.

**Example application:** Fork lift actuator.

**Configuration B**
Housing mounted, double ended, motor mounted over axis to increase clearance to surrounding components.

**Example application:** Steering in automated vehicles.

**Configuration C**
End mounted, single ended, motor mounted parallel to axis to reduce overall actuator profile.

**Example application:** Boom actuation in an excavator.

### Size selection

The choice of actuator size is dependent on the particular load case of the intended application. Important first is to identify whether the application contains unidirectional load (left), or load in both directions (right). The mechanical life is presented in relation to the continuous equivalent load for each actuator size.


One load cycle is equivalent to two strokes of one meter each.
### Performance

#### Linear force, kN
- 10
- 20
- 30
- 40
- 50
- 60
- 70

#### Linear speed, mm/s
- 50
- 100
- 150
- 200
- 250
- 300
- 350

#### Maximum force
- Rated force

#### Expected life for intended equivalent load

<table>
<thead>
<tr>
<th>Continuous equivalent load, kN</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cycles</td>
<td>10,000</td>
<td>1,000,000</td>
<td>10,000,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Mechanical life

#### Stroke length

The maximum stroke length in a pushing application is limited by buckling, which is a function of the maximum axial load. In a pulling load case the maximum stroke is determined by other factors since buckling cannot occur. Contact Cascade Drives for more information.

### Mechanical specifications

<table>
<thead>
<tr>
<th>A100-8P</th>
<th>B100-8P</th>
<th>C100-8P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum stroke / installation length, Pulling, mm</td>
<td>7100/9150</td>
<td>7100/9150</td>
</tr>
<tr>
<td>Maximum stroke / installation length, Pushing, mm</td>
<td>700/1400</td>
<td>700/1400</td>
</tr>
<tr>
<td>Gear rack diameter, mm</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Maximum static force, kN</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>Maximum speed, mm/s</td>
<td>325</td>
<td>325</td>
</tr>
<tr>
<td>Weight, kg</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td>Ambient operating temperature range, °C</td>
<td>-40/+50</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Rack: grease, Gearbox: oil</td>
<td></td>
</tr>
<tr>
<td>Linear position sensor</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Holding brake</td>
<td>Optional</td>
<td></td>
</tr>
</tbody>
</table>

1 The maximum stroke length for pushing is based on buckling at the maximum static force. For maximum permissible pushing loads for longer stroke lengths see "Stroke length".

2 The given weights are based on a stroke length of 225 mm.

### Electrical specifications

| Maximum input power, kW | 8.0 |
| Power supply voltage, V(AC) | 100-480 |
| Power supply voltage, V(DC) | 24-750 |
| Auxiliary supply voltage, V(DC) | 24 |
100-8P

**Dimensions**

A100-8P

B100-8P

C100-8P

Coming soon
cdMotion

The cdMotion software contains algorithms developed for applications requiring robust and precise control of linear motion. cdMotion provides absolute position control without the need for a homing sequence.

Faster and more efficient control processes are achieved when compared to equivalent hydraulic control solutions. cdMotion also supports speed control with position monitoring, and position reference points can be set to speed up repeating processes. The position controller is typically used for vehicle steering applications and industrial processes, and is well suited for various material handling applications such as forklift trucks.