Basic mounting rules

Max. +65 °C
+150 °F

Min. -25 °C
-15 °F

IP44

Mounting points
Only install the actuator in these points!

Temperature limits
Min. -25 °C
-15 °F
Max. +65 °C
+150 °F

Protection degree
IP44

Restraining torque
Torque needed to prevent the extension tube from rotating.

PPAxx-18B65 = 11 Nm (100 lbf-in)
PPAxx-58B65 = 22 Nm (200 lbf-in)
**Thomson**

**Electrical connections**

### 12, 24 and 36 VDC actuators

![Diagram of electrical connections for 12, 24, and 36 VDC actuators]

- **12 VDC**
- **24 VDC**
- **36 VDC**

**STOP**

**Legend:**
- Black: **+** (positive)
- Red: **–** (negative)
- Yellow/green: **PE** (ground)
- Red: **C**
- Blue: **C**
- Yellow (white): **yellow (white)**
- Black: **blue (black)**

---

### 115 and 230 VAC actuators without electrical brake

![Diagram of electrical connections for 115 and 230 VAC actuators without electrical brake]

**115 VAC**

**STOP**

**230 VAC**

**Legend:**
- **PE** (ground)
- **L**
- **N**
- **red**
- **yellow/green**
- **blue (black)**
- **yellow (white)**

---

### 115 and 230 VAC actuators with electrical brake

![Diagram of electrical connections for 115 and 230 VAC actuators with electrical brake]

**115 VAC**

**STOP**

**230 VAC**

**Legend:**
- **PE** (ground)
- **L**
- **N**
- **red**
- **yellow/green**
- **blue (black)**
- **black**
- **orange** (brake)
- **white**

---

**Connection of limit switches (option)**

![Diagram of limit switch connection]

**Cam stop extend**

**Cam stop retract**

**Limit switches**

**Cam locking screws**

**min. stroke = stop retract**

**max. stroke = stop extend**

The limit switches are set from factory to actuate the limit switches at the fully extended and fully retracted positions. Do NOT rotate the extension tube as that will re-set the setting of the limit switch positions. To get access to the connection terminals the rear cover of the actuator must be removed.

---

* Old (new motor).

** A capacitor must be installed to between the motor windings to able to run the actuator. 115 VAC actuator = 25 microF, p/n 5704687, 230 VAC actuator = 6 microF, p/n 7825261.

---

* A capacitor must be installed to between the motor windings to able to run the actuator. 115 VAC actuator = 25 microF, p/n 5704687, 230 VAC actuator = 6 microF, p/n 7825261.
### Electrical connections

#### Connection of potentiometer (option)

![Diagram of potentiometer connection]

- Min. stroke = 0 Ohm
- Max. stroke = 10 kOhm

Resistance increase between white and brown when extending actuator.

To get access to the connection terminals the rear cover of the actuator must be removed.

#### Connection of hall effect sensor (option)

![Diagram of hall effect sensor connection]

- Input voltage: 4.5 - 12 Vdc
- Output: 0 Vdc
- 1.18 pulse/mm (30 pulse/inch)

Pulses will be generated on the output when the actuator is moving. The output voltage will change from the input voltage to just above 0 Vdc as the pulses are generated.

To get access to the connection terminals the rear cover of the actuator must be removed.

#### Connection of limit switches + hall effect sensor (option)

![Diagram of limit switches connection]

- Min. stroke = stop retract
- Max. stroke = stop extend
- 1.18 pulse/mm (30 pulse/inch)

Pulses will be generated on the output when the actuator is moving. The output voltage will change from the input voltage to just above 0 Vdc as the pulses are generated.

The limit switches are set from factory to actuate the limit switches at the fully extended and fully retracted positions. Do NOT rotate the extension tube as that will re-set the setting of the limit switch positions.
Wire cross section

12, 24 and 36 VDC actuators

<table>
<thead>
<tr>
<th>Current</th>
<th>12 VDC</th>
<th>24 / 36 VDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>[A]</td>
<td>mm²(AWG)</td>
<td>mm²(AWG)</td>
</tr>
<tr>
<td>0 – 15</td>
<td>1.5 (15)</td>
<td>1.5 (15)</td>
</tr>
<tr>
<td>16 – 20</td>
<td>2.5 (13)</td>
<td>2.5 (13)</td>
</tr>
<tr>
<td>21 – 28</td>
<td>4 (11)</td>
<td>4 (11)</td>
</tr>
</tbody>
</table>

The tables are based on ambient temperature = 30 °C (86 °F) or less.

115 and 230 VAC actuators

<table>
<thead>
<tr>
<th>Current</th>
<th>115 / 230 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>[A]</td>
<td>mm²(AWG)</td>
</tr>
<tr>
<td>0 – 2</td>
<td>1.5 (15)</td>
</tr>
</tbody>
</table>

Always install fuse and / or thermal breaker between motor and power supply to protect actuator, wiring and other items.
## Thomson

### Technical data

<table>
<thead>
<tr>
<th></th>
<th>PPA 12, 24, 36 Vdc</th>
<th>PPA 110, 230 Vac</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motor</strong></td>
<td>DC-motor</td>
<td>AC-motor with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>auto reset thermal switch</td>
</tr>
<tr>
<td><strong>Supply voltage</strong></td>
<td>see label on actuator</td>
<td></td>
</tr>
<tr>
<td><strong>Max. current</strong></td>
<td>see label on actuator</td>
<td></td>
</tr>
<tr>
<td><strong>Max. static load @ fully retracted</strong></td>
<td>13 350 N (3000 lbs)</td>
<td></td>
</tr>
<tr>
<td><strong>End play max.</strong></td>
<td>1 mm (0.04 inch)</td>
<td></td>
</tr>
<tr>
<td><strong>Duty cycle</strong></td>
<td>30 % @ 25 °C (77 °F)</td>
<td></td>
</tr>
<tr>
<td><strong>Restraining torque</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPAxx-18B65</td>
<td>11 Nm (100 lbf-in)</td>
<td></td>
</tr>
<tr>
<td>PPAxx-58B65</td>
<td>22 Nm(200 lbf-in)</td>
<td></td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>– 25 to + 65 °C (– 15 to + 150 °F)</td>
<td></td>
</tr>
<tr>
<td><strong>Lubrication</strong></td>
<td>for life</td>
<td></td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td>IP54</td>
<td>IP22</td>
</tr>
<tr>
<td><strong>Slip clutch</strong></td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td><strong>Brake options</strong></td>
<td>• No brake option (code N–)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Anti coast brake (code SB)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Electrical brake (code EB)</td>
<td></td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>• No option (code XX)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Limit switches (code LS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Potentiometer feedback (code PO)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hall effect sensor feedback (code HS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Hall effect sensor feedback + limit switches (code HL)</td>
<td></td>
</tr>
</tbody>
</table>

* See position 15 and 16 on the actuator’s type designation label.

** See position 17 and 18 on the actuator’s type designation label.

---

**CAUTION!**

Always turn the power off before working on the actuator.

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