## Ultimag® Size 6EM

### Part Number: 197126-0XX

#### Specifications

- **Dielectric Strength**: 1000 VRMS (23 awg); 1200 VRMS (24-33 awg)
- **Recommended Minimum Heat Sink**: Ultimag are based on an unrestricted flow of air at 20°C, with the Ultimag mounted on the equivalent of an aluminum plate measuring 12-3/8” square by 1/8” thick (31.43 cm sq x 0.32 cm)
- **Thermal Resistance**: 3.58°C/watt with heatsink; 8.52°C/watt without heatsink
- **Rotor Inertia**: $5.676 \times 10^{-4}$ (kgm$^2$)
- **Peak Torque Rating (Tp)**: 225 oz.in. (1.6 Nm)
- **Power Input**: 320 watts (stalled at Tp: 25°C, Pp)
- **Number of Phases**: 1
- **Recommended Minimum Heat Sink**: Based on an unrestricted flow of air at 20°C, with the Ultimag mounted on the equivalent of an aluminum plate measuring 12-3/8” square by 1/8” thick (31.43 cm sq x 0.32 cm)
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- **Peak Torque Rating (Tp)**: 225 oz.in. (1.6 Nm)
- **Power Input**: 320 watts (stalled at Tp: 25°C, Pp)
- **Number of Phases**: 1
- **Static Friction (Tf)**: 1 oz.in. max. (7mNm)
- **-3dB Closed Loop**: 12.8 Hz
- **Maximum Winding**: 180°C
- **Number of poles**: 6
- **Weight**: 1.6 lbs. (0.73 kg)
- **Dimensions**: Ø2.312” x 1.60” L (Ø58.72 mm x 40.6 mm L) See page B10.

#### How to Order

Add the coil awg number (0XX) to the part number (for example: to order a 25% duty cycle rated at 25.4 VDC, specify 197126-024).

Please see www.ledex.com (click on Stock Products tab) for our list of stock products available through our North American distributors.

#### Performance

<table>
<thead>
<tr>
<th>Performance</th>
<th>100%</th>
<th>50%</th>
<th>25%</th>
<th>10%</th>
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<tbody>
<tr>
<td><strong>Maximum Duty Cycle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maximum ON Time (sec)</strong></td>
<td>∞</td>
<td>40</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td><strong>when pulsed continuously</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maximum ON Time (sec)</strong></td>
<td>∞</td>
<td>143</td>
<td>47</td>
<td>11</td>
</tr>
<tr>
<td><strong>for single pulse</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Typical Energize Time (msec)</strong></td>
<td>17</td>
<td>12</td>
<td>10.5</td>
<td>8.5</td>
</tr>
<tr>
<td><strong>Watts (@ 20°C)</strong></td>
<td>32</td>
<td>64</td>
<td>128</td>
<td>320</td>
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<tr>
<td><strong>Ampere Turns (@ 20°C)</strong></td>
<td>980</td>
<td>1386</td>
<td>1960</td>
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#### Coil Data

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<th>Coil Data</th>
<th>awg</th>
<th>Resistance (@20°C)</th>
<th># Turns$^5$</th>
<th>VDC (Nom)</th>
<th>VDC (Nom)</th>
<th>VDC (Nom)</th>
<th>VDC (Nom)</th>
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<tr>
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<td>23</td>
<td>2.65</td>
<td>267</td>
<td>9.2</td>
<td>13.0</td>
<td>18.4</td>
<td>29.1</td>
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<td>24</td>
<td>5.02</td>
<td>396</td>
<td>12.7</td>
<td>17.9</td>
<td>25.4</td>
<td>40.1</td>
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<tr>
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<td>25</td>
<td>7.03</td>
<td>444</td>
<td>15.0</td>
<td>21.2</td>
<td>30.0</td>
<td>47.4</td>
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<tr>
<td></td>
<td>26</td>
<td>12.60</td>
<td>625</td>
<td>20.1</td>
<td>28.4</td>
<td>40.2</td>
<td>63.5</td>
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<tr>
<td></td>
<td>27</td>
<td>17.60</td>
<td>700</td>
<td>23.8</td>
<td>33.6</td>
<td>47.5</td>
<td>75.1</td>
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<td>28</td>
<td>29.90</td>
<td>936</td>
<td>30.9</td>
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<td>61.9</td>
<td>97.8</td>
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<td>29</td>
<td>49.50</td>
<td>1225</td>
<td>39.8</td>
<td>56.3</td>
<td>80.0</td>
<td>126.0</td>
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<td>30</td>
<td>79.70</td>
<td>1560</td>
<td>51.0</td>
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<td>101.0</td>
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<td>306.20</td>
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<td>99.0</td>
<td>140.0</td>
<td>198.0</td>
<td>313.0</td>
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</tbody>
</table>

1. Continuously pulsed at stated watts and duty cycle
2. Single pulse at stated watts (with coil at ambient room temperature 20°C)
3. Typical energize time based on no load condition. Times shown are for half of full rotary stroke starting at center-off position.
4. Other coil awg sizes available — please consult factory
5. Reference number of turns

**WARNING:** Exposed Magnet may affect pacemakers.

In the event a product unit’s magnet is exposed due to product disassembly, Pacemaker Wears should distance themselves 10 feet from exposed magnet.

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All specifications subject to change without notice.

Ledex® Solenoids

B8

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Graph 1 shows three position operation. In any mode, the armature seeks center of stroke at zero power. Applying a positive or negative voltage causes the shaft to rotate clockwise or counterclockwise. When power is removed, the restoring torque is applied to the load, or alternatively, the shaft can be driven to center under power.

Graph 2 shows operation end-to-end. Note the high starting torque for high starting acceleration or for stopping the load by means of reverse voltage at the end of the stroke. If the device is used in a full stroke application, the load can be externally latched, detented, or biased to either end of stroke.

Graph 3 shows how speed varies with load. Each curve represents a different inertial load, which is a multiple of the armature inertia.

Calculate the inertia of your system, then use this chart to determine Ultimag speed in your application. Inertia determination of simple shapes is shown in most engineering handbooks; complex shapes are calculated in solid modeling software or are measured empirically. This graph represents half of the full rotary stroke starting at the center-off position.
### Ultimag® Dimensions

#### 4EM

**Inches (mm)**

- **4EM**
  - **6-32 UNC-2A (2) pl**
  - **Rotation**
  - **6.05 ± 0.031**
  - **(15.38 ± 0.787)**
  - **0.015 ± 0.015**
  - **(4.04 ± 0.5)**

- **10.0 ± 0.015**
  - **(Ø25.4 ± 0.381)**

- **1.397 ± 0.015**
  - **(55.78 ± 0.381)**

- **0.016**
  - **(4.06 ± 0.1)**

- **10.0 ± 0.015**
  - **(Ø25.4 ± 0.381)**

- **0.625 ± 0.0031**
  - **(15.88 ± 0.787)**

- **0.325 ± 0.015**
  - **(8.26 ± 0.381)**

- **0.5 ± 0.015**
  - **(13.0 ± 0.381)**

- **1.062 ± 0.015**
  - **(26.97 ± 0.381)**

- **0.16**
  - **(4.06 ± 0.4)**

**Specifications**

- **Feeder**
  - **12.0 ± 0.015**
  - **(Ø30.48 ± 0.381)**

- **0.016**
  - **(4.06 ± 0.1)**

**Notes**

- **All specifications subject to change without notice.**

#### 5EM

**Inches (mm)**

- **5EM**
  - **8.32 UNC-2A (2) pl**
  - **Rotation**
  - **6.05 ± 0.031**
  - **(15.38 ± 0.787)**
  - **0.015 ± 0.015**
  - **(4.04 ± 0.5)**

- **1.66 ± 0.015**
  - **(Ø42.67 ± 0.381)**

- **1.25**
  - **(31.75 ± 0.787)**

- **10.0 ± 0.015**
  - **(Ø25.4 ± 0.381)**

- **0.528 ± 0.015**
  - **(13.41 ± 0.381)**

- **0.19 ± 0.015**
  - **(4.82 ± 0.5)**

- **1.397 ± 0.015**
  - **(55.78 ± 0.381)**

- **1.062 ± 0.015**
  - **(26.97 ± 0.381)**

**Specifications**

- **Feeder**
  - **12.0 ± 0.015**
  - **(Ø30.48 ± 0.381)**

- **0.016**
  - **(4.06 ± 0.1)**

**Notes**

- **All specifications subject to change without notice.**

#### 6EM

**Inches (mm)**

- **6EM**
  - **10-32 UNC-2A**
  - **Rotation**
  - **6.05 ± 0.031**
  - **(15.38 ± 0.787)**

- **0.25 ± 0.015**
  - **(6.35 ± 0.381)**

- **0.719 ± 0.015**
  - **(18.26 ± 0.381)**

- **1.438 ± 0.015**
  - **(36.5 ± 0.381)**

- **1.397 ± 0.015**
  - **(55.78 ± 0.381)**

- **0.016**
  - **(4.06 ± 0.1)**

- **1.250 ± 0.015**
  - **(31.75 ± 0.787)**

- **1.062 ± 0.015**
  - **(26.97 ± 0.381)**

**Specifications**

- **Feeder**
  - **12.0 ± 0.015**
  - **(Ø30.48 ± 0.381)**

- **0.016**
  - **(4.06 ± 0.1)**

**Notes**

- **All specifications subject to change without notice.**