Specification
Futurenergy, 12V 1kW Permanent Magnet Generator

Prepared By
D. Nangle, Sept 2016
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## Specification

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nominal Rated Power</strong></td>
<td>1 kW</td>
</tr>
<tr>
<td><strong>Nominal RPM</strong></td>
<td>750 RPM</td>
</tr>
<tr>
<td><strong>Line / Line RMS Open Voltage</strong></td>
<td>30V (12V DC @ 300 RPM)*</td>
</tr>
<tr>
<td><strong>Nominal Line Current</strong></td>
<td>34 Amps**</td>
</tr>
<tr>
<td><strong>Configuration</strong></td>
<td>3 Phase, Star wound AC output</td>
</tr>
<tr>
<td><strong>Line / Line Winding Resistance</strong></td>
<td>0.145 Ohms</td>
</tr>
<tr>
<td><strong>Nominal Self Inductance</strong></td>
<td>0.439 mH</td>
</tr>
<tr>
<td><strong>Maximum Over-Load Power</strong></td>
<td>1.5 kW</td>
</tr>
<tr>
<td><strong>Efficiency</strong></td>
<td>92 %</td>
</tr>
<tr>
<td><strong>Maximum Cogging Torque (Excluding Shaft Seals)</strong></td>
<td>&lt;0.5 Nm</td>
</tr>
<tr>
<td><strong>Duty @ Nominal Power</strong></td>
<td>100%</td>
</tr>
<tr>
<td><strong>Insulation Class</strong></td>
<td>H</td>
</tr>
<tr>
<td><strong>Mounting</strong></td>
<td>Any</td>
</tr>
<tr>
<td><strong>Shaft Material</strong></td>
<td>Stainless Steel</td>
</tr>
<tr>
<td><strong>Magnet Material</strong></td>
<td>NdFeB</td>
</tr>
<tr>
<td><strong>Shell Material</strong></td>
<td>LM25 Aluminium</td>
</tr>
<tr>
<td><strong>Protection</strong></td>
<td>IP54</td>
</tr>
<tr>
<td><strong>Poles</strong></td>
<td>12</td>
</tr>
<tr>
<td><strong>Winding code</strong></td>
<td>P123-T9-W2.24</td>
</tr>
</tbody>
</table>

* DC Voltage requires an additional bridge rectifier

** Voltage and current will depend on connected electrical system. For example; a system charging 12V battery bank will reduce generator voltage to the battery charge voltage and increase current. Values quoted assume fixed resistance loads.
Graph: Power vs RPM @ Load Resistances (Ω)
Graph: Terminal Voltage vs RPM @ Load Resistances

Terminal Voltage v RPM at load resistance

- 0.89
- 1
- 2
- 4
Graph: Terminal Current vs RPM @ Load Resistances

Terminal Current vs RPM at load resistance

- 0.89
- 1
- 2
- 4
Graph: DC Load Voltage vs RPM @ Load Resistances

DC Load Voltage v RPM at load resistance
Graph: DC Load Current vs RPM @ Load Resistances

DC Load Current vs RPM at load resistance
Graph: Open RMS L/L Voltage vs RPM

Open Line / line Voltage With No Load

RPM

Open L/L Voltage
Graph: Open DC Voltage vs RPM

Open DC Voltage With No Load

RPM

Open DC Voltage

0
1
2
3
Graph: Fundamental Frequency vs RPM
Graph: Efficiency vs Current @ 750 RPM Constant
Graph: Cogging Torque