Batteryless Encoder Mechanism

**With battery**
Data in volatile memory is saved with the use of a battery.

- If the battery runs out, the rotational data will be lost.

**Batteryless**
When the motor turns, power is generated by the magnet and coil to store the data in non-volatile memory.

- Batteryless encoders remove worries about the battery running out and losing rotational data.

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**Easier Wiring**
You can eliminate Batteries and Battery Cases used for individual Servo Drives or on the host controller to simplify wiring in the control panel.

**Maintenance-free**

- **No time or effort for replacement**
  There is no need to perform battery replacement during maintenance.

- **No inventory management**
  There is no need to stock batteries.
Series Servomotors with Batteryless Encoders

The code is "6" for the 4th digit of the servomotor with batteryless encoder.

SGM7J-01A 6 A21

Applicable models
- SGM7J
- SGM7P
- SGM7A
- SGM7G

Standard models
- F: 24-bit incremental
- 7: 24-bit absolute
- 6: 24-bit absolute, batteryless

Serial encoder

Specifications

The lineup includes all Σ-7-Series rotary servomotors. You can replace your current motors with no change in performance.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surrounding Air Temperature</td>
<td>0°C to 40°C (With derating, usage is possible between 40°C and 60°C.)</td>
</tr>
<tr>
<td>Impact Acceleration Rate</td>
<td>490 m/s²</td>
</tr>
<tr>
<td>Vibration Acceleration Rate</td>
<td>49 m/s²*</td>
</tr>
<tr>
<td>Motor Service Life</td>
<td>Same as for standard Σ-7-Series servomotors (Data can be saved for the length of the motor service life.)</td>
</tr>
</tbody>
</table>

*: The vibration acceleration rate differs for the following models.
- SGM7A-15 to -50: 24.5 m/s² front to back
- SGM7A-70: 14.7 m/s²
- SGM7G-03 to -44: 24.5 m/s² front to back
- SGM7G-55 to -1E: 24.5 m/s²

Note: Use the cables for incremental encoders.

Motor Length (comparison with 100 W model)

<table>
<thead>
<tr>
<th>Model</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Σ-7 Series SGM7J-01A6</td>
<td>101.5 mm</td>
</tr>
<tr>
<td>Batteryless model</td>
<td></td>
</tr>
<tr>
<td>Σ-7 Series SGM7J-01A</td>
<td>93.5 mm</td>
</tr>
<tr>
<td>Σ-V Series SMVJ-01A</td>
<td>107.5 mm</td>
</tr>
</tbody>
</table>

Note: For 100 W model
- Comparison with Σ-7 standard models:
  - All servomotors are only 8 mm longer than the standard models.
- Comparison with Σ-V:
  - The overall length of the SGM7A or SGM7J has been reduced, but the overall length of the SGM7P or SGM7G has increased.

Compliance with Standards and Directives

YASKAWA ELECTRIC CORPORATION

Product Information Site

In the event that the end user of this product is to be the military and said product is to be employed in any weapons systems or the manufacture thereof, the export will fall under the relevant regulations as stipulated in the Foreign Exchange and Foreign Trade Regulations. Therefore, be sure to follow all procedures and submit all relevant documentation according to any and all rules, regulations and laws that may apply.

Specifications are subject to change without notice for ongoing product modifications and improvements.

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