Diakont’s aviation actuation systems are ideal for replacing hydraulic systems to increase performance while decreasing weight and maintenance. Daikont’s landing gear door actuation system employs electromechanical actuators (EMA) and dual redundant motors to provide industry leading torque in an ultra-compact size envelope.
Diakont has developed several unique dual redundant actuation systems that utilize roller screw technology and permanent magnet synchronous motors (PMSM) for various civil aerospace applications. Actuation of the landing gear doors incorporates a fully electric chain of motors and reducers that exert high force in an ultra-compact envelope. Each of these components form the backbone of Diakont’s portfolio of advanced motion control products.

Diakont’s landing gear actuation system is comprised of a dual-redundant closed looped kinematic chain that utilizes roller screw gears able to withstand single failures if the situation were ever to arise. Each roller screw gear is installed on a shaft that is connected to a dual redundant motor. Multiple roller screws are used to evenly distribute motor torque throughout the physical system. By utilizing the fully electric design, aircraft dynamics are optimized due to decreased system weight, increased safety features, and minimal maintenance.

Landing Gear Door Actuation Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Ø2.56”</td>
</tr>
<tr>
<td>System weight</td>
<td>265 lb</td>
</tr>
<tr>
<td>Torque per reducer</td>
<td>1106 ft lb</td>
</tr>
<tr>
<td>Ratio</td>
<td>367</td>
</tr>
<tr>
<td>Time required for opening</td>
<td>6 seconds</td>
</tr>
<tr>
<td>Actuation angle</td>
<td>130°</td>
</tr>
</tbody>
</table>

Advantages

- High accuracy
- Ultra smooth, quiet operation
- Low maintenance
- Backlash-free option
- Compact size
- High torque

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