Contactless Ethernet Slip Ring Module
Boosting Efficiency through Modern Network Technology

In our quest to deliver innovative solutions to our customers, ACUTRONIC offers state-of-the-art contactless slip ring technology for use with our motion simulators.

The technology at a glance:

Reliability
Due to their working principle of capacitive transmission, Ethernet slip rings are wear-free and resistant to mechanically derived malfunctions. A stable and robust housing adds to their reliability.

Convenience
The technology has all the advantages of modern Ethernet. This means standard RJ45 connectivity, straightforward accessibility, consolidating signal lines, and useful features such as Auto-negotiation and Auto-MDI/X.

Modularity
The housing is custom designed to be combined with our standard modular contacting slip ring. In this way, power, safety, or additional discrete signals can still be “hard-wired” while dramatically reducing the total number of lines.
RF or optical joints can also be used in combination.

EMC/EMI Compatibility
This technology is tested and provides reliable data transmission. This device provides a high level of immunity against induced electro-magnetic interference.

A new dimension of possibilities:

Increased Transmission Speed
Bandwidth restrictions are a known limitation for contacting slip rings. In contrast, our Ethernet slip rings provide a full 1.25 Gbit/s data rate.

Improved Communication Quality
Quality and reliability of data transmission are greatly improved since there is virtually no noise and no loss of data. A bit error rate (BER) of less than 10⁻¹² is guaranteed, which exceeds the IEEE 802.3 requirement for 1000BaseT.

Reduced Cost
Contacting slip rings are wear parts, costly, and difficult to maintain. In contrast, using contactless slip rings significantly reduces the maintenance and spare parts cost, and their performance is not age dependent. Furthermore, the contactless module can be reused when the contacting slip ring capsule needs to be replaced.

Partnership and Dependability
ACUTRONIC has performed comprehensive testing of our contactless Ethernet slip rings using state-of-the-art professional testing equipment. Further testing is available based on customer needs.

Key Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Rate (full-duplex)</td>
<td>Up to 1,25Gbit/s</td>
</tr>
<tr>
<td>Bit Error Rate (BER)</td>
<td>&lt;10⁻¹²</td>
</tr>
<tr>
<td>Mechanical Rate Nom/Max</td>
<td>7'600 / 12'000deg/s</td>
</tr>
<tr>
<td>Lifetime</td>
<td>&gt;1 billion revolutions</td>
</tr>
<tr>
<td>Power Supply</td>
<td>2 x 24VDC-48VDC</td>
</tr>
<tr>
<td>Noise</td>
<td>0 Ohm</td>
</tr>
<tr>
<td>GBit-Ethernet</td>
<td>Yes</td>
</tr>
<tr>
<td>Real-time capability</td>
<td>EtherCAT, Profinet IRT</td>
</tr>
</tbody>
</table>

The specifications identified in this data sheet are representative of standard systems. To satisfy customer specific requirements ACUTRONIC is able to design systems with specifications that are increased or decreased relative to standard systems.