



ORBEX GROUP

Revolution in Motion



Custom Slip Rings To Meet Specialized Challenges

Slip rings are implemented in a wide range of industries and their applications are varied. From environmental considerations to operational and performance specifications, custom slip rings tailored to specific application requirements often outclass standard options in effectiveness. Furthermore, making do with a standard slip ring to comply with the demands of specialized, high-performance applications can lead to greater costs and loss of productivity down the line.

The modular nature and design of Orbex slip rings allow for customization to meet precise application requirements without incurring extra costs. And, we offer fast lead times to ensure deadlines are met. This whitepaper details some examples where we successfully implemented our custom slip rings.

Applications Requiring Custom Designs

Industrial Networks

Today's data-driven production plants need components that can communicate across a wide range of industrial network protocols and quickly transmit critical information. We offer slip rings that support protocols such as Ethernet/IP, EtherCAT, Profibus and more. In addition to this widespread connectivity, our slip rings offer fast data transmission at speeds of up to 1 Gbps.

Satellite Communications

Satellite communication requires accurate, high-speed and high-throughput data transmissions. And the operational environments require maximum space optimization. We offer modifications in features such as power, signal and data circuit criteria to best solve unique satellite communications challenges. These applications often require slip rings with large through-holes. We have designed units with 200-millimeter through-holes and can produce larger diameters if required.

For one customer, we designed an electrical slip ring with dual-channel radio frequency (RF) capabilities up to five gigahertz, as well as four-channel Ethernet at 100 megabytes per second. To address space concerns, we put everything together in a compact package and included custom SMA connectors to make installation and integration easier. For other data channel requirements, we supply slip rings with various types of coax cables.

Aerospace

Aerospace applications need highly durable components that meet stringent reliability and safety standards. To meet the requirements of one of our aerospace customers, we increased the durability of a slip ring's design by including stainless steel in the housing, increasing the through-hole diameter to 250 millimeters and customizing the wire gauge and lead length. We also extended the operating temperature range to 160°C.

Industrial Welding

Our slip rings can be modified to suit industrial welding applications. In one case, we modified a standard slip ring to fit a pipe welding machine. We altered the through-hole diameter and length to accommodate the installation space according to our customer's exact specifications. As for data and power connections, we also added 12 power channels at 600 volts, 45 signal channels and a high-speed coaxial data channel.

Washdown-ready Slip Rings Available as Standard

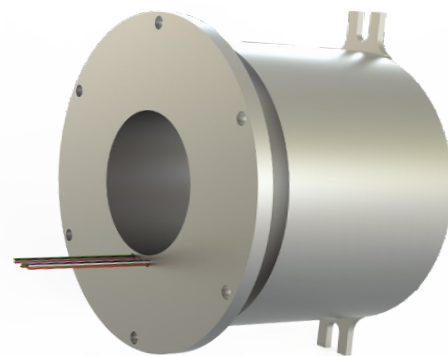
Some modifications are in such high demand, we develop a standard offering that meets sought after specifications. Washdown slip rings, ideal for chemical processing and food and beverage applications, are a popular custom product.

We often customize slip rings that excel in harsh environments where they are regularly exposed to hazards like caustic fluids, moisture and high temperatures. Now we offer a line of standard washdown-ready slip rings that thrive in these conditions and feature fast deliveries to meet short project deadlines.

For increased environmental resistance, our slip rings for washdown applications feature stainless steel housings with an aluminum option also available. An IP65-rated, sealed design offers enhanced protection from dust and fluids.

To ensure smooth installation, these slip rings offer flexible mounting options with through-hole diameters ranging from 25 to 100 millimeters, and a capsule package if a through-hole is not required. This standard offering also includes four and six wires for power and signal, respectively.

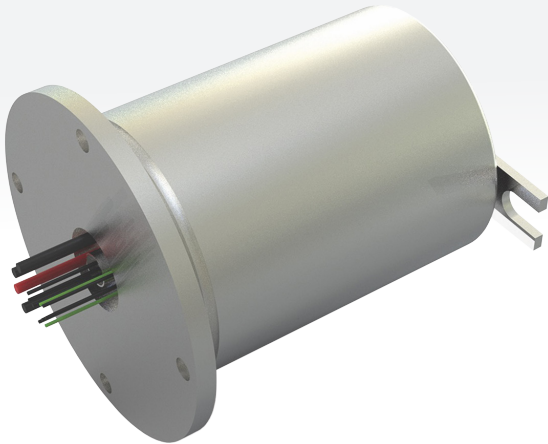
Like all of our standard products, the modular nature of our washdown slip rings allows us to easily configure a standard solution to better fit your needs if required. You can even work with our engineers to add additional features like more power or signal circuits, all while benefiting from lead times as short as four to six weeks.



Washdown slip ring with through-hole.

Custom Modifications Available:

- Cable lengths
- Wire gauges and connectors
- IP rating
- Housing material
- Temperature range
- Data channels
- Through-hole size
- Signal type
- Form factor



Washdown slip ring capsule.



Custom slip ring for aerospace test fixture.

We can include even more signal and power channels by increasing the slip ring diameter. Most of our customers require slip rings that can handle 600 VAC, but we have also designed units capable of 1,000 volts and can go even higher.

Food processing

Equipment in food and beverage environments must handle washdowns without succumbing to corrosion or water damage from caustic fluids. We raised the protection rating of one of our standard slip rings to IP65 and provided it with a stainless steel housing to make it more suitable for a food processing application. We also included a 100 megabyte-per-second Ethernet data channel and 20 power rings. Multiple through-hole sizes are also available.

Packaging equipment

To maintain high productivity in packaging applications, machines require high cycle speeds and round-the-clock operation. For these reasons, your slip rings must be able to withstand demanding conditions, all while reliably transferring power and electrical signals between your machines and control system. Our slip rings feature proprietary channeled brush technology, creating multiple contact points and reducing contact forces to minimize wear.

Easy Pathway to Modified Slip Rings

We make configuring a custom slip ring a simple process. Our [online tool](#) assists in specifying the exact product you need for your application. All of our products, custom or standard, are subject to our fast lead times, so you receive the parts you need in as little as three to four weeks.

[Learn more about our custom slip rings on our product page.](#)