

Slip rings & Rotary Joints general informations

Slip rings and Rotary joints enable signals and/or power to be transmitted from a fixed part (stator) to a mobile part (rotor).

The Electromechanical Solutions Strategic Business Unit at EXXELIA GROUP constantly endeavors to raise performance levels through innovation, and develops high-frequency contact Slip rings (>1 GHz), offering signal transmission capability for new video formats such as HD SDI and 3G SDI and Gigabit Ethernet.

Applications:

Aeronautics, Defense, Oil exploration, Medical, Space, Telecommunications

SLIP RINGS

Slip rings transmit information via electric contacts (brushes rubbing against tracks). For over 40 years, the CSA Business Unit at EXXELIA GROUP has developed a wide range of Slip rings available in different versions:

- standard interface,
- hollow shaft interface,
- pancake (monobloc rotor and stator without bearings, rotor guidance being left to the customer),
- rotor and stator sold separately.

EXXELIA GROUP Slip rings can be equipped with different type of position sensors made-in-house (optical encoders, magnetic encoders and precision potentiometric, etc.) to copy positions.

These products can be used in a wide range of applications, from robotic equipment to on-board equipment for civil and military aircraft electronics, armored vehicles, automatic weapon stations, radars, Electro Optronic Systems assemblies, space and exploration instruments used in the Oil and Gas sector.

Applications:

Aeronautics, Defense, Telecommunications, Space, Oil exploration.

EXXELIA GROUP offers a wide range of standard Slip rings. Most of these products are qualified and proven solutions in the field of defense, Aeronautics, Space, Railway, Medical, Oil exploration...

EXXELIA GROUP standard Slip rings can be divided in four categories:

- Compact standard Slip ring,
- Small standard Slip ring,
- Wide standard Slip ring,
- Very wide standard Slip ring.

HIGH FREQUENCY ROTARY JOINTS

EXXELIA GROUP also designs and manufactures High Frequency rotary joints (for frequencies > 1 GHz).

These rotary joints can be:

- Coaxial High frequency Rotary Joints.
- IFF Rotary Joint (Identification Friend / Foe).



SERVO MOTORS

EXXELIA^{GROUP} can design and manufacture very specific electrical motors equipped with its own position sensors (Optical encoder, Magnetic position sensors, precision potentiometers).

Most of these products are used on missiles for different applications: missile fin actuator or missile seeker.

Applications: Defense (seeker, actuator...), Industry...

SLIP RING + FORJ (Fiber Optical Rotary Joint)

When the flow of signals is high, or when the quantity of signals is very important (> 3 Gigabit/s), it can necessary to use optical signals.

EXXELIA^{GROUP} Slip rings can be equipped with FORJ which allows transferring these optical signals (number of optical channels: from 1 up to more than 10 channels).

Applications: Defense (EOS, RCWS, Radar...), Industry...



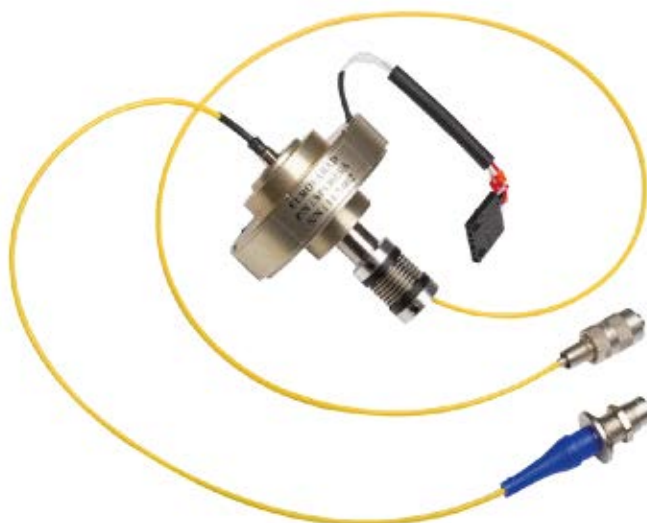
SPECIFIC

Hybrid Systems

ENCODER + FORJ

EXXELIA GROUP's position sensors can be equipped with FORJ (Fiber Optical Rotary Joint). This association allows simultaneously in a low volume the use of a transfer function (transfer of data) with a function of displacement measurement.

Applications: Defense (EOS, RCWS, Radar...), Industry...



HYDRAULIC SLIP RING (ROTARY UNION)

On specific request, EXXELIA GROUP can design and manufacture pneumatic or hydraulic transfer functions. This Specific equipment is called a Rotary Union (RU). EXXELIA GROUP Rotary Unions have from 1 up to more than 4 channels (for a pressure up to 250 bars). Most of the time, a Rotary Union is a part of a Slip ring.

Applications: Defense (Radar, Turret...), Industry...

PLUG & PLAY SOLUTIONS

In order to offer the highest integration of the biggest number of functions in the smallest volume, EXXELIA GROUP can propose PLUG & PLAY Solutions. These solutions are in fact the possibility to integrate and to combine all together the maximum functions offered by the company.

The interest of such a system is to make it more compact by decreasing the weight and the costs of the global system.

List of functions:

- Slip ring,
- Position sensor: Optical encoder, Magnetic position sensor...
- Fiber Optical Rotary Joint (FORJ) / Rotary Union (RU) / Rotary joint (L-Band),
- Mux/Demux electro optical electronics,
- Flexible coupling.

