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- **Xring Technologies GmbH** — Fuerstenfeldbruck Germany
- **Schleifring Transmission Technology (Beijing) Co. Ltd.** — Beijing | China
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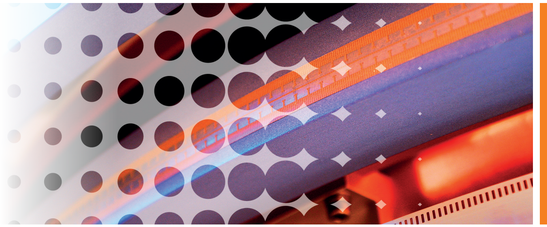
03/2014

SCHLEIFRING

Slip Ring Solutions | **Technology**



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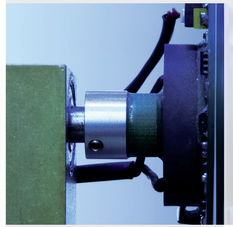
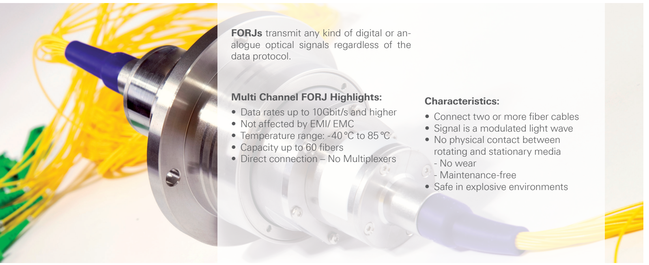


In virtually all high-tech industries our slip ring and rotary joint solutions successfully provide the rotating interface behind the process.
The outstanding quality of our precision products lead the field and are proven in the medical, defence, surveillance, automation and industrial markets.
We maintain a global network of sales and service establishments so that we can be close to our customers in over fifty countries throughout the world.

More than 3,000 customers rely on SCHLEIFRING solutions.
Our customers are specialists in complex technical products in aerospace, energy industry and automation markets as well as the medical sector.

SCHLEIFRING offers a wide range of slip rings and rotary joints ranging from simple standard designs to highly complex customer specific systems often using several hundred rings.
These slip rings and rotary joints facilitate the transfer of power, electrical signals, all common data signals, Gigabit Ethernet, optical signals and media through a rotating interface from stationary to rotating elements.

Fiber-Optic Rotary Joints | **Different Fiber Types**



FORJs transmit any kind of digital or analogue optical signals regardless of the data protocol.

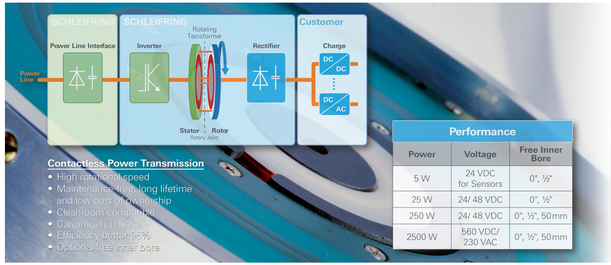
Multi Channel FORJ Highlights:

- Data rates up to 10Gbit/s and higher
- Not affected by EMI/ EMC
- Temperature range: -40 °C to 85 °C
- Capacity up to 60 fibers
- Direct connection – No Multiplexers

Characteristics:

- Connect two or more fiber cables
- Signal is a modulated light wave
- No physical contact between rotating and stationary media
  - No wear
  - Maintenance-free
- Safe in explosive environments

Contactless Transmission | **Power and Data** GigaCAP®

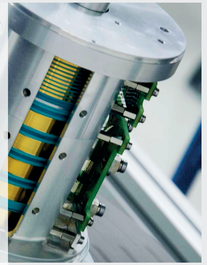


Contactless Power Transmission

- High rotational speed
- Maintenance-free, long lifetime and low cost of ownership
- Cleanroom compatible
- Galvanically isolated
- Efficiency better 95%
- Optional free inner bore

Performance		
Power	**Voltage**	**Free Inner Bore**
5 W	24 VDC for Sensors	0", ½"
25 W	24/ 48 VDC	0", ½"
250 W	24/ 48 VDC	0", ½", 50mm
2500 W	560 VDC/ 230 VAC	0", ½", 50mm

Contacting Transmission | **Power, Data & Media**



Operating as rotary interfaces continually transferring electrical power in any direction, **contacting slip rings** provide the dynamic electrical connection between static and rotating mechanical elements.

Slip rings are produced in various types and sizes depending on:

- Electrical requirements
- Mechanical property requirements
- Operating environment
- Customer needs

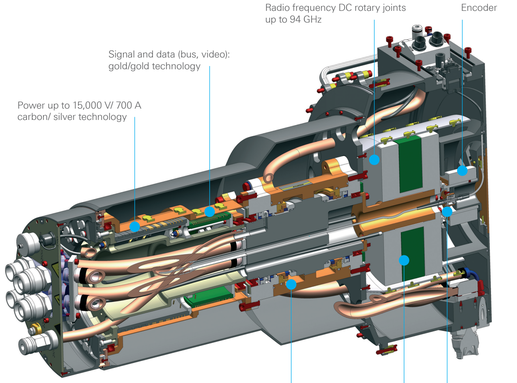
From low to high power

SCHLEIFRING's silver braid brushes or silver-graphite brushes on silver rings as well as the gold wire technology provide for optimum power transmission.

Depending on the technical requirements, they allow excellent transmission from low power up to above 1,000 A at high rotational speeds and with a long service life.

SCHLEIFRING's gold wire on gold ring technology and silver-graphite brushes on brass or silver rings allow excellent **signal and data transmission**:

- Extremely low electrical noise and contact resistance
- Long, low-maintenance service life
- High contact reliability
- Crosstalk isolation
- Reliable operation under shock, vibration and extreme temperatures
- Transmission of all common bus systems

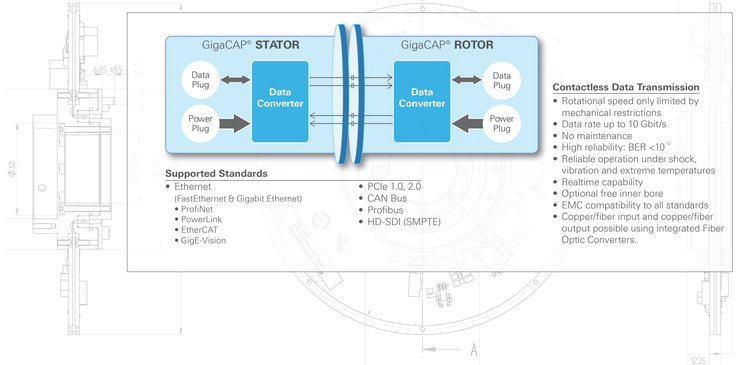


Single-channel optical rotary joints achieve optimum insertion and return loss figures due to the use of high-quality collimators aligned in four axes. Precision ball bearings allow high speed rotation in combination with long service life.

Technologies such as bi-directional (BiDi) tranceivers or Coarse Wavelength Division Multiplexing (CWDM) allow up to 16 channels to be passed through one fiber.

Special characteristics:

- Small size
- High rotational speeds
- Identical mechanical interface for single-mode and multi-mode units

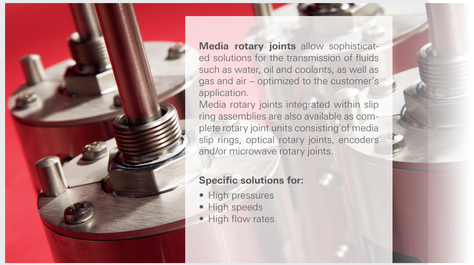


Contactless Data Transmission

- Rotational speed only limited by mechanical restrictions
- Data rate up to 10 Gbit/s
- No maintenance
- High reliability: BER $<10^{-12}$
- Reliable operation under shock, vibration and extreme temperatures
- Realtime capability
- Optional free inner bore
- EMC compatibility to all standards
- Copper/fiber input and copper/fiber output possible using integrated Fiber Optic Converters.

Supported Standards

- Ethernet
  (FastEthernet & Gigabit Ethernet)
  - ProfiNet
  - PowerLink
  - EtherCAT
  - GigE-Vision
- PCIe 1.0, 2.0
- CAN Bus
- Profibus
- HD-SDI (SMPTE)



Media rotary joints allow sophisticated solutions for the transmission of fluids such as water, oil and coolants, as well as gas and air – optimized to the customer's application.
Media rotary joints integrated within slip ring assemblies are also available as complete rotary joint units consisting of media slip rings, optical rotary joints, encoders and/or microwave rotary joints.

Specific solutions for:

- High pressures
- High speeds
- High flow rates