COMPACT SLIP RING SOLUTIONS

High-Performance Power, Signal and Media Transmission
**CAPSULATED**

High-quality encapsulated miniature slip rings for power and signal transmission to be used for space-critical applications. Mechanical and electrical specifications can be customized according to individual requirements. Combined power and signal versions possible.
- Diameter: 5.5mm - 54mm
- Number of Rings: 2-200 (1A/2A each)
- Housing: Plastic, Aluminum, Stainless Steel
- Protection Degree: IP40-IP69
- Lifetime: 5-100 million rotations
- Maintenance free

**AUTOMATION**

Compact slip rings for complex industrial power and signal transmission. Advanced fiber-brush technology for long lifetime and low contact resistance. Combined power and signal versions possible.
- Number of Rings: 2-108 (5A/10A each)
- Housing: Aluminum, Stainless Steel
- Rotation Speed: 0-3000 rpm
- Protection Degree: IP40-IP69
- Lifetime: 15-100 million rotations
- Maintenance free

**THROUGH-BORE**

Small, medium and large size slip rings with hollow shaft and premium bearings for long lifetime and high speed rotation. Standardized and modularized design. Combined power and signal versions possible.
- Number of Rings: 2-108 (5A/10A each)
- Hollow Shaft: 3mm-300mm
- Rotation Speed: 0-1200 rpm
- Protection Degree: IP40-IP69
- Lifetime: 15-100 million rotations

**FASTON**

Highly compact slip rings with advanced fiber-brush technology and faston connections for easy assembling. High power ratings and long lifetime. Standardized and modularized design.
- Number of Rings: 2-8 (5A/25A each)
- Housing: Plastic
- Rotation Speed: 0-300 rpm
- Protection Degree: IP40-IP69
- Lifetime: 50 million rotations

**SEPARATE**

Rotor and brush holder delivered separately for flexible integration into customer machines. Rotor unit also available as through bore version with different inner diameters. Screw or glue fastening. Customized, combined power and signal versions possible.
- Number of Rings: 2-36 (2A/10A each)
- 9.5-186mm hollow shaft
- Separate rotor and stator unit
- Rotation Speed: 0-3000 rpm
- V-groove gold-plated design, anti-oxidation
- Lifetime: 10-400 million rotations

**PANCAKE WITH HOUSING**

Ultra-flat slip rings for minimum height applications. Flat aluminum or stainless steel housing with hollow shaft design. Advanced fiber-brush technology and gold-to-gold multi-contacting for high contact quality and low resistance. Combined power and signal versions possible.
- Number of Rings: 2-48 (5A/20A each)
- Housing: Aluminum, Stainless Steel
- Up 80mm through hole
- Rotation Speed: 0-300 rpm
- Protection Degree: IP40-IP69
- Lifetime: 15-50 million rotations

**PANCAKE WITHOUT HOUSING**

Printed circuit board slip rings without housing in ultra-flat design. Rotor PCB and brush holder for integration into customer machines. Screw or glue fastening. Customized, combined power and signal versions possible.
- Number of Rings: 2-17 (5A/10A/30A each)
- PCB slip ring without housing
- Up 50mm through hole
- Only 6mm total thickness
- Rotation Speed: 0-300 rpm
- Lifetime: 5-30 million rotations
**MINIATURE PNEUMATIC**

Smallest hybrid slip rings for combined transmission of liquid or gas and electrical power or signals. Only 36mm housing diameter and up to 4 x medium passage plus 8 or 12 electrical rings. High power ratings and long lifetime. Standardized and modularized design.

- Number of Rings: 6-12 (2A each)
- 1-4 media passages
- Liquid/Gas Connection: M5 (max 50Bar)
- Rotation Speed: 0-300 rpm
- Protection Degree: IP51-IP66
- Lifetime: 10-30 million rotations

**PNEUMATIC + LIQUID**

Medium and large size hybrid slip rings for combined transmission of liquid or gas and electrical power or signals. Housing diameter 56mm - 107mm. Max. 16 medium passages plus 96 electrical rings. Customized, combined power and signal versions possible.

- Number of Rings: 2-96 (2A/5A each)
- 1-16 media passages (max 100Bar/10MPa)
- Rotation Speed: 0-300 rpm
- Protection Degree: IP51-IP69
- Lifetime: 10-30 million rotations

**ETHERNET**

Small, medium or large slip rings for combined industrial fieldbus and power transmission. 100Mbit up to 100GBit transmission via standard or fiber glass cables. Advanced contacting technology for low contact resistance and optimized signal quality.

- Number of Rings: 2-46 (2A/5A each)
- available with up to 50mm through bore hole
- Up to 10 channels Ethernet, Profinet, Ethercat, sercos III, CANbus and more
- Rotation Speed: 0-600 rpm
- Protection Degree: IP40-IP59
- Lifetime: 10-30 million rotations

**USB**

Hybrid sliprings for USB and electrical power/signals transmission. USB1.0, USB2.0 and USB3.0, USB3.1, USB3.2 transmission up to transmission rates of 20Gbit/s. Capsulated or through-bore housing design for individual implementation. Standardized and modularized design.

- Number of rings: 2-34 (2A/20A each)
- 1 or 2 USB connections
- available with up to 50 mm through hole
- Rotation Speed: 0-600 rpm
- Protection Degree: IP40-IP69
- Lifetime: 10-20 million rotations

**COAX**

High-frequency coax slip rings for transmission of high-speed data rates of analog (GHz) or digital (Gbps) signals. Strong crosstalk attenuation between lines, high lifetime and optimized VSWR. Customized, combined power and signal versions possible.

- Number of rings: 2-72 (5A/10A each)
- High Frequency 2.5-30GHz
- 1-4 COAX Channels
- Rotation Speed: 0-150 rpm
- Protection Degree: IP40-IP69
- Lifetime: 50 million rotations

**FIBER OPTICAL / FORJ**

Hybrid fiber optical rotary joints for transmission of analog or digital optical signals with data rates up to 106Gbit. Single-mode or multimode fibers for single-channel or multi-channel transmission. Customized, combined power and signal versions possible.

- Number of rings: 2-200 (2A/10A each)
- Single-Mode, Multi-Mode
- 1-26 Optical Fiber Channels
- Rotation Speed: 0-1000 rpm
- Protection Degree: IP51-IP69
- Lifetime: 20-5000 million rotations

**HD-SDI**

High-definition video signal transmission of HD-SDI signals (1080P, 4K) with up to 36GHz high-frequency. Advanced fiber-brush technology and gold-to-gold multi-contacting for high contact quality and low resistance. Customized, combined power and signal versions possible.

- Number of rings: 2-72 (5A/10A each)
- HDMI up to 4K, 8K, speed 10.26Gbps(1.2756B/s)
- Frequency 36GHz
- Rotation Speed: 0-250 rpm
- Protection Degree: IP51-IP69
- Lifetime: 10-200 million rotations