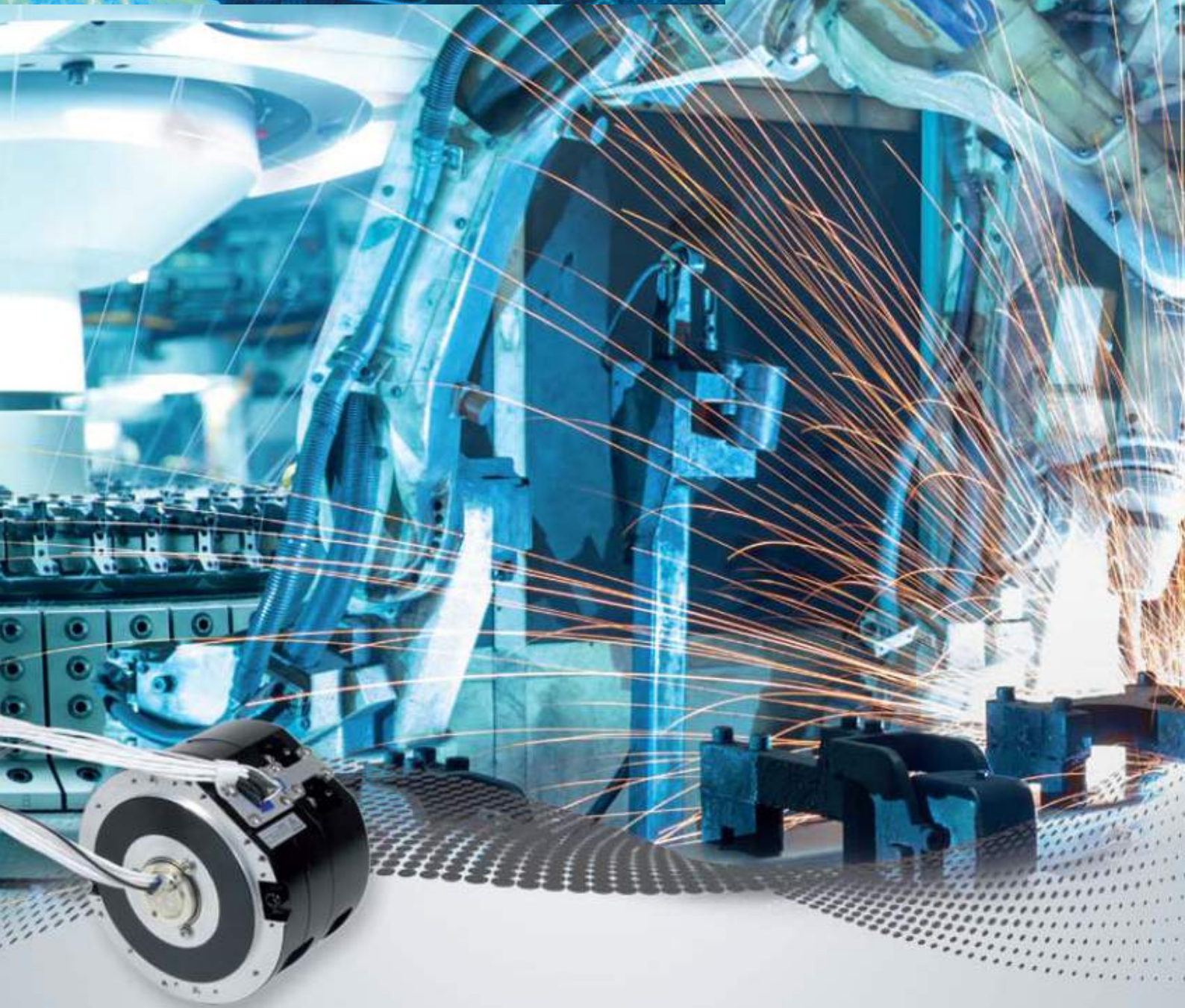


コンタクトレス ロータリージョイント



◆非接触回転コネクタ◆
高速データ・DC・光ファイバー

Rev. A. 2017



非接触 コンタクトレス DATA/DC



ドイツ SPINNER 社は 70 年以上の歴史を持つ、回転製品のリーディングカンパニーです。

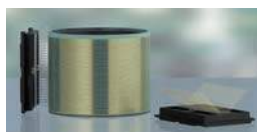
従来、データ・DC 伝送にはスリップリングを使用しておりましたが、品質・耐久性等様々な問題がありました。

SPINNER 社の回転製品は、独自技術を用いた非接触方式で信号・DC 伝送を行うことで、回転部の使用で画期的な問題解決をご提供致します。

また、SPINNER 社は、長年培った技術を生かし、ご要望に合わせ、データ、DC、光、RF 等を組み合わせたハイブリッドタイプの回転製品を提供することができ、世界でも稀な回転製品総合メーカーです。

◆従来スリップリングとの比較・特徴

従来スリップリング技術 (Slip Ring)



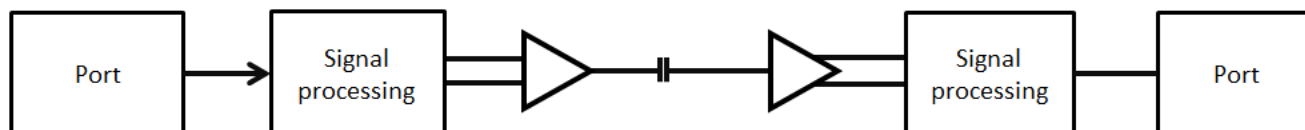
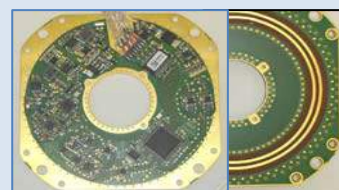
- 機械的接触→メンテナンスが必要
- 低速データ通信 Low Speed Data
- 低速回転 Low Speed Rotation

Spinner 非接触ロータリージョイント

- **メンテナンスフリー・長寿命** Maintenance free
- **高速データ通信が可能** High Speed data (up to 1Gbit/S)
- **高速回転が可能** High Speed Rotation (up to 3600 rpm)
- **データ通信方式**

1000BASE-T Ethernet / Powerlink Channel, 2x 100BASE-TX Ethernet-Channel, CAN-Channel, Profinet IRT (100 Mbit), EtherCAT, RS 485

- **DC 伝送** 100W@24VDC, 300W@24VDC 対応
- カスタム品対応



光ファイバー (Single/Multi Mode)



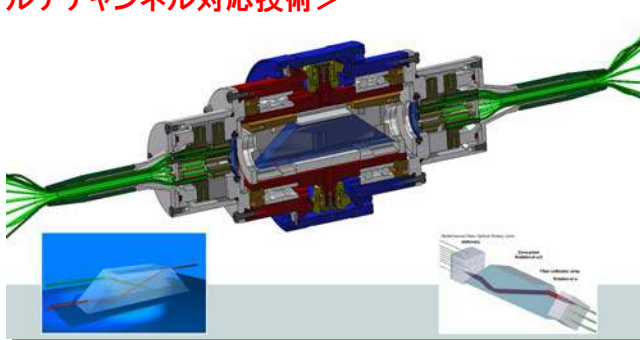
Spinner 社では、最大 52ch まで対応した高性能・光ロータリージョイント（Fiber Optics Rotary Joint）をご提供致します。

独自技術により、非常に小型且つ低損失の光伝送が可能になります。

標準品からカスタム品まで幅広く対応しております。

◆SPINNER Fiber Optics Rotary Joint 特徴

<マルチチャンネル対応技術>



Spinner FORJ

- **多チャンネル仕様が可能**（～52ch）
- Single-Mode E9 /125, Multi-Mode G50 / 125 (or Multi-Mode G62.5 / 125)
- Wavelength:1310 nm / 1550 nm (SM) or 850 nm / 1300 nm (MM)
- コネクタ: FC, SC, ST, LC, LSA, LuxCis, Molex/LC, Stratos S900
- **安定した電気特性** (Low insertion loss, High return loss, Low variation over rotation)
- サイズ/形状: **コンパクト設計**
- カスタム品対応

Number of Channel	1	2	3-6	7-52
Housing diameter	Ø 14 mm IP54 Ø 17 mm IP68 Ø 22 mm IP65	Ø 28 mm IP54	Ø 40 mm IP54	Ø 60 mm IP54 Ø 65 mm IP65
Shape	I shape, L shape Ø14mm: FlexFlange	I shape	I shape	I shape

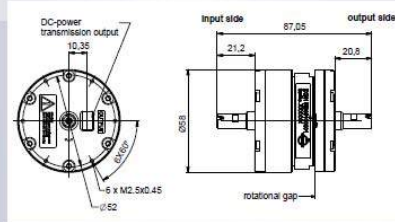
◆FA 多関節ロボット



For 24/7 long lifetime applications that require DC power and a high data throughput, SPINNER provides a fully non-contacting rotary joint system. With a compact form factor integrating the fibre optic channels into the DC Power module with rotation velocities up to 3000 rpm. This hybrid rotary joint is typically implemented into high end imaging systems and industrial machining applications.

The fibre optic transmission channel provide the highest flexibility with communications protocols and data channels enabled by wavelength division multiplexing (WDM) technologies. As an additional advantage of the new system, SPINNER has implemented FC/PC – adapters instead of flying cables. This allows ease of integration in rough environments without handling of sensitive optical fibers and possibility to choose connecting fiber types.

The nominal output voltage of this system is 24 V DC, however the applied technology allows flexible adoption to higher or lower voltage and current.



◆海上◆



◆360° 回転カメラ 4K/8K 対応 高品質データ



Application – 4K / 8K Video
Transmission over 360°

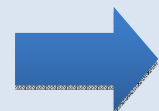
The miniature slip ring FORJ combinations of SPINNER with diameters down to 22mm, enable interference-free data communication at video applications in 4K and 8K quality – even in fast-moving images. The small slip ring diameter paired with SPINNER FORJ 1.14 is the perfect match for low profile applications as it saves the critical fiber bending radius in addition to the unit length. That's why manufacturers of cutting edge cameras rely on SPINNER for cable-suspended camera systems.



SPINNER FORJ 1.14

★こんな時には………….

- ・従来のスリッピングでトラ
- ・回転部で高速データ通信が必
- ・メンテナンスフリーにしたい
- ・高品質な光ファイバーの回転
- ・光/DC/データ/RF すべての



非接觸回轉



掘削システム



1 Channel
FORJ

ブルが多く、困っている・・・。
要・・・。
・・・。
製品を探している・・・。
伝送を1つの製品で・・・。

ジョイントをご検討下さい！



◆風力発電 ピッチコントロール

Application – Wind Power

In wind power stations, digital, contactless transmission systems can also contribute to increased reliability. In order to control and monitor wind power stations, BUS systems such as Ethernet, Profinet and CAN are used. These signals are currently transmitted by means of slip rings.

Due to the natural wear of the slip rings, down-times for maintenance purposes are inevitable. SPINNER's contactless data transmitters for common BUS systems help to minimize down-times and reduce operating & maintenance costs.

Similar compact, digital data transmission units for Ethernet 1 Gbit and CAN are currently produced and delivered for use in wind power stations. A combination with a FORJ rotary joint is also possible.



◆レーダー/アンテナ

Application – Civil and Military Radar Systems

In the radar technology sector, the trend towards installing active components directly on the antenna is continuing.

The radical reduction in cabling saves weight and increases the efficiency of the system. However, ever increasing amounts of data with high transmission rates also require demanding digital data transmission solutions.

For radar rotary joints, this means that traditional HF modules for the different frequency bands are replaced by diverse media couplers, power current and signal transmission paths.

Transmission amplifiers, now installed on the rotatable part of the radar antenna, require media couplers to create a cooling circuit in order to ensure cooling. Power current is traditionally supplied by means of a slip ring.

The electrical signals to and from the active antenna equipment are no longer transmitted by a contacting slip ring but via a multi-channel fiber optical rotary joint or means of a contactless coupler.

As the newly developed, contactless modules can be provided with virtually any inner diameter, all conceivable versions of hybrid rotary joints are possible.





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Rev. A. 2017

SPINNER GmbH HIGH FREQUENCY PERFORMANCE WORLDWIDE



<http://www.spinner-group.com>
<http://www.comcraft.co.jp/products/spinner/spinner.html>

■ 製品に関するお問合せ・ご相談はお気軽にどうぞ