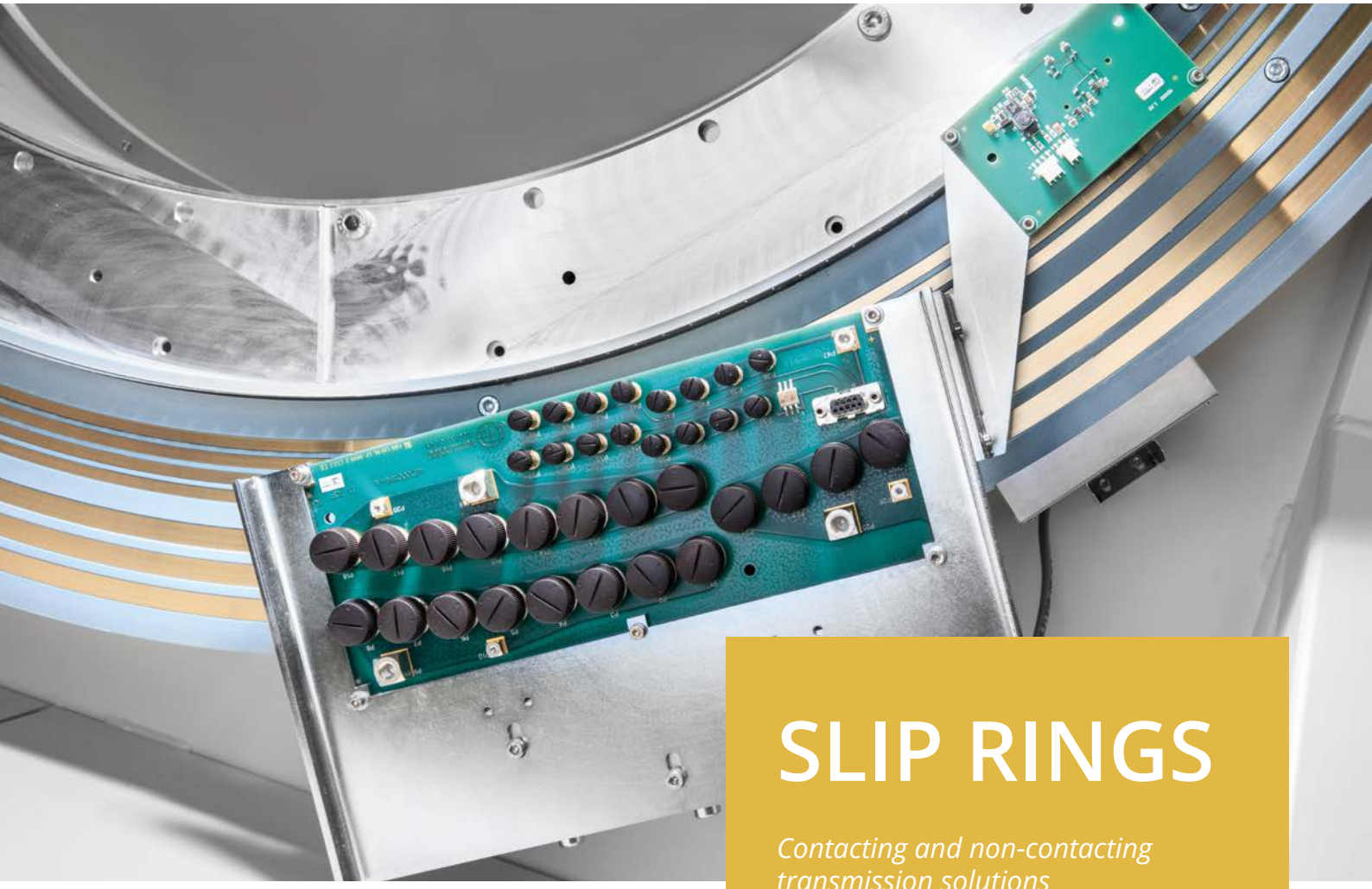
venturetec
ROTATING SYSTEMS



SLIP RINGS

Contacting and non-contacting transmission solutions

member of berndorf group

CONTACT US

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Venturetec Rotating Systems is a specialist in development and production of mechanical components, complete electro-mechanical systems as well as slip rings and rotating transmission systems.

ABOUT US

WHAT WE DO

Venturetec Rotating Systems manufactures complex electro-mechanical units and systems in a production area of more than 5000 square meters.

As a well-known partner of the high-tech industry we support leading companies in the following markets: medical technology, industry automation, robotics, aviation & surveillance, off-shore and environmental technology.

FACTS & FIGURES

CEO
Stephan Neubauer

STAFF
Approximately 60 employees are working in the divisions development, construction, manufacturing, assembly, service and administration

AREA
5100 square meters

QUALITY CERTIFICATION
ISO 9001:2015

LOCATIONS

- Kaufbeuren, Germany (Headquarter)
- commercial agencies in Sweden, France, Israel, Italy, Spain, USA and China

BUSINESS AREAS

Our company is focused on selected markets providing contacting and non-contacting slip rings, rotary joints and linear transmission systems.

GREEN TECHNOLOGIES

INDUSTRY AUTOMATION

ROBOTICS

AVIATION & SURVEILLANCE

OFFSHORE

MEDICAL TECHNOLOGIES

TRANSMISSION TECHNOLOGIES

Venturetec Rotating Systems offers a wide knowledge of transmitting power, signals, video, data and media.

CONTACTING TRANSMISSION

POWER

Our contacting transmission know-how is based on long-term experience. Depending on your requirements we may use gold/gold, silver/silver or others.

SIGNAL

Our rotating signal transmission systems are usually based on gold wires and gold plated tracks. Special alloys used in qualified combinations guarantee excellent results in the transmission of high speed signals and data.

NON-CONTACTING TRANSMISSION

POWER (inductive technology)

An inductive transmission system consists of a transmitter and receiver coil which forms a system of magnetically coupled inductors. The inductive technology offers the possibility of adding a data transmission on top. This can be achieved by modulation of the signal on to the carrier frequency of the power link.

SIGNAL

Our innovative optical non-contacting transmission technology permits data transmission rates up to 1.250 Mbit/s per channel. Through our capacitive link data transmission rates up to 10 Gbit/s per channel are possible. Venturetec technologies enable a free inner diameter (off axis).

OPTICAL (passive solution)

- Singlechannel singlemode/multimode (on axis)
- Multichannel singlemode/multimode (on axis)
- 1/2 Channel POF (on axis)
- Multichannel POF with free inner bore
- Media converters (Cu-SiO_2/POF or others)
- MUX/De-MUX technologies

MICROWAVE

Microwave technology in a frequency spectrum from 1 GHz to 50 GHz. In cooperation with leading partners, Venturetec Rotating Systems offers systems with integrated microwave transmissions.

COMPONENTS

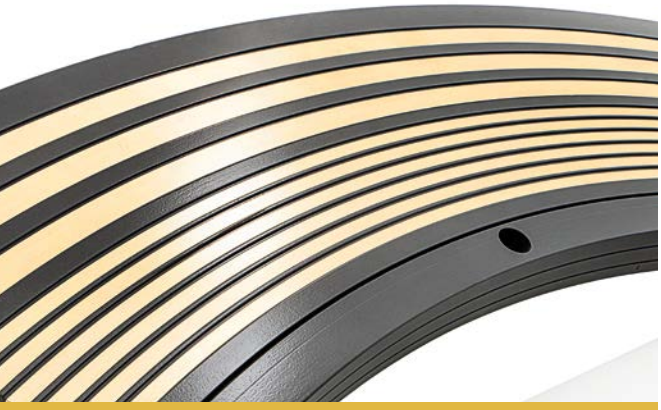
MEDIA ROTARY JOINTS

Venturetec Rotating Systems provides hybrid systems. We supply technical solutions for media rotary joints of different fluids such as coolants, water, oil and gases.

ENCODER, RESOLVER

Encoder and resolver solutions in accordance to your requirements are part of our service range. In adaption to the characteristics of the respective rotating transmission system our solutions may be employed e.g. for devices positioning or control of the driving speed.

MEDICAL TECHNOLOGIES



We offer a wide range of sophisticated solutions that fulfill your specific requirements.

GANTRY ROTOR COMPONENTS

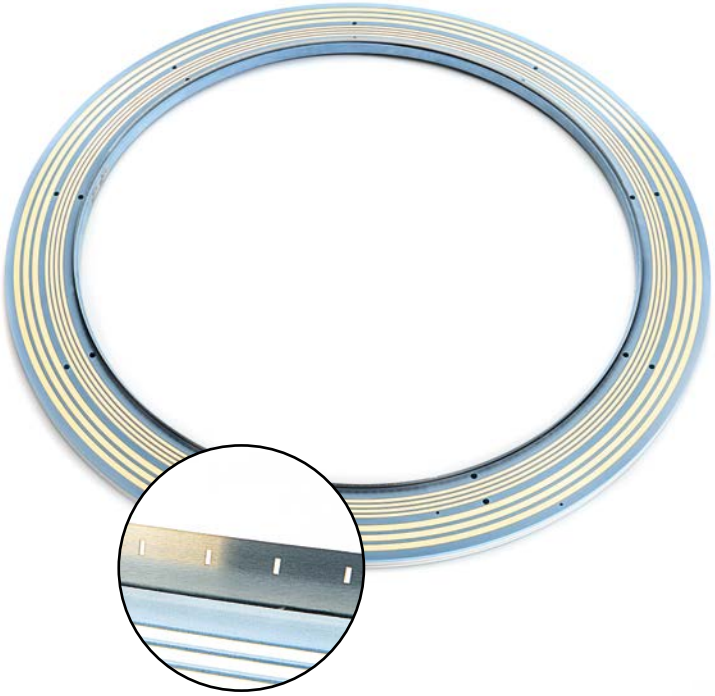
- Rotor frame
- Collimator box
- Rotor mechanics (e. g. DMS) and electronics
- Slip rings (contacting and non-contacting)
- Rotor cabling (electrical, optical)
- Light markers

GANTRY STATOR COMPONENTS

- Stator frame
- Rotational drive and encoder
- Main bearing
- Miscellaneous gantry mechanics and electronics
- Temperature control
- Gantry wiring (electrical, optical)

APPLICATION AREAS

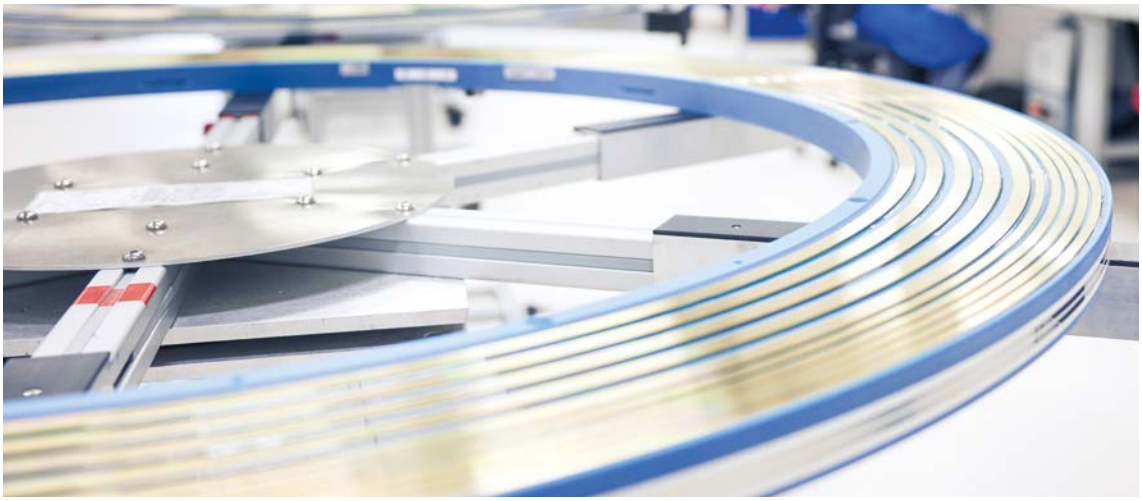
Slip ring technologies for CT and EDS scanners enable a continuous rotation of the x-ray tube transmitting the image date.



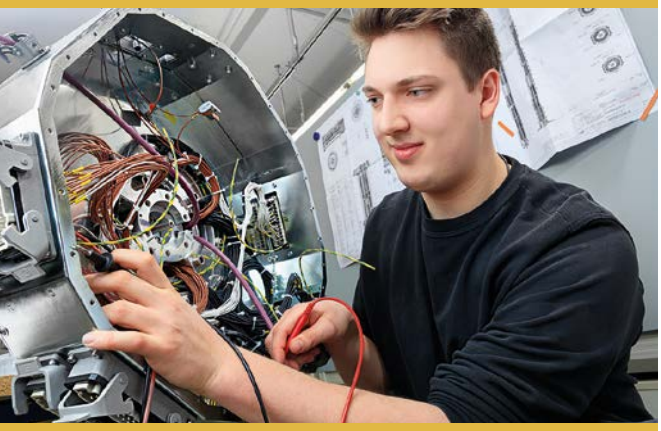
TICK FENCE

- Contacting power transmission of voltages up to 1000 V and 300 A
- Contacting signal transmission (CAN, RS422, RS232 or others)
- Rotational speeds up to 300 rpm
- Non-contacting data transmission systems 100 Mbit/s up to 10 GBit/s
- Optionally integrated encoder systems
- Typical in platter technology
- Design lifetime of 10 years
- Dimensions up to 1800

BRUSH BLOCK WITH EXTENDED BRUSH LIFETIME



INDUSTRY AUTOMATION



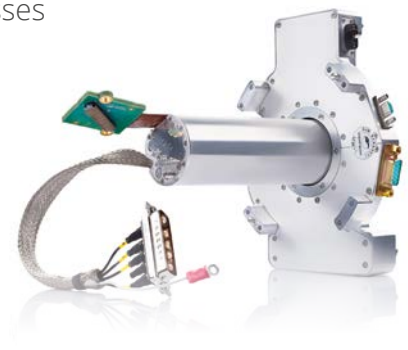
Venturetec Rotating Systems supplies customized slip ring solutions for a wide range of applications in the industrial field.

Our systems are designed to meet challenging environmental conditions in every aspect.

In times of a special focus on **smart manufacturing**, the demand for more intelligent automation solutions is growing steadily. Venturetec slip rings stand for rapid production times and outstanding efficiencies.

EXEMPLARY APPLICATIONS

- Automated packaging and filling machines
- Cranes (onshore)
- Industrial control systems
- Milling heads
- Mining machines
- Pick & Place systems
- Printing machines
- Rotary type presses
- Turntables

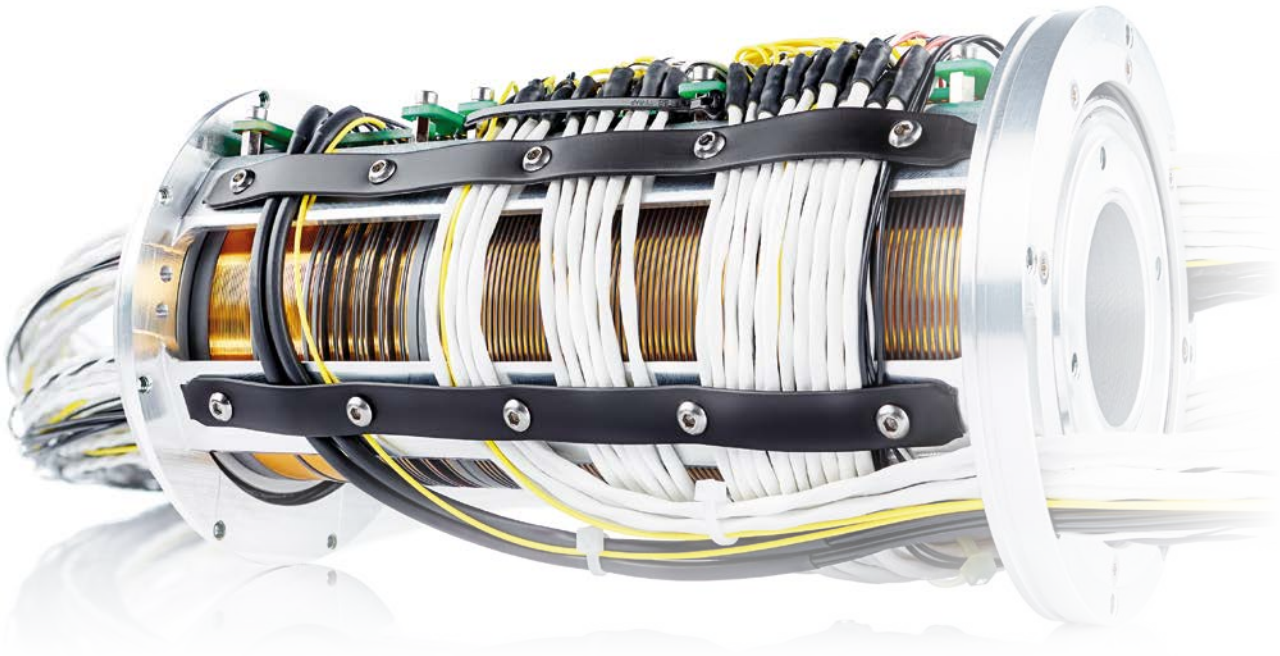


Application example

5-AXIS MILLING HEADS

To achieve an unlimited 360 degrees rotation of the milling head, a slip ring is used to transmit mainly power, machine control signals and measurement signals.

22-WAY SLIP RING FOR LOW-POWER AND SIGNALS



5-axis machining centers have three linear axes and two additional rotary axes. They offer the ability to machine extremely complex shapes in a single setup.

CHARACTERISTICS

The depicted slip ring system enables the transmission between the following units:

- Machine control, for instance DRIVE-CLiQ
- Encoder signals, such as EnDat
- Various measuring signals, for instance vibration, temperature and many more.
- Power: high-power, low-power or a combination of both

OPTIONAL FEATURES

- Free inner bore
- Integration of a media rotary joint
- Integration of an encoder system

ROBOTICS

The steadily boosting level of automation leads to an increase of the requisition on complex robot applications.

Venturetec Rotating Systems supplies a wide range of reliable transmission solutions.

Robots operating with rotational movements of more than 360 degrees generally require a slip ring system for power and multiple signal transmission.

EXEMPLARY APPLICATIONS

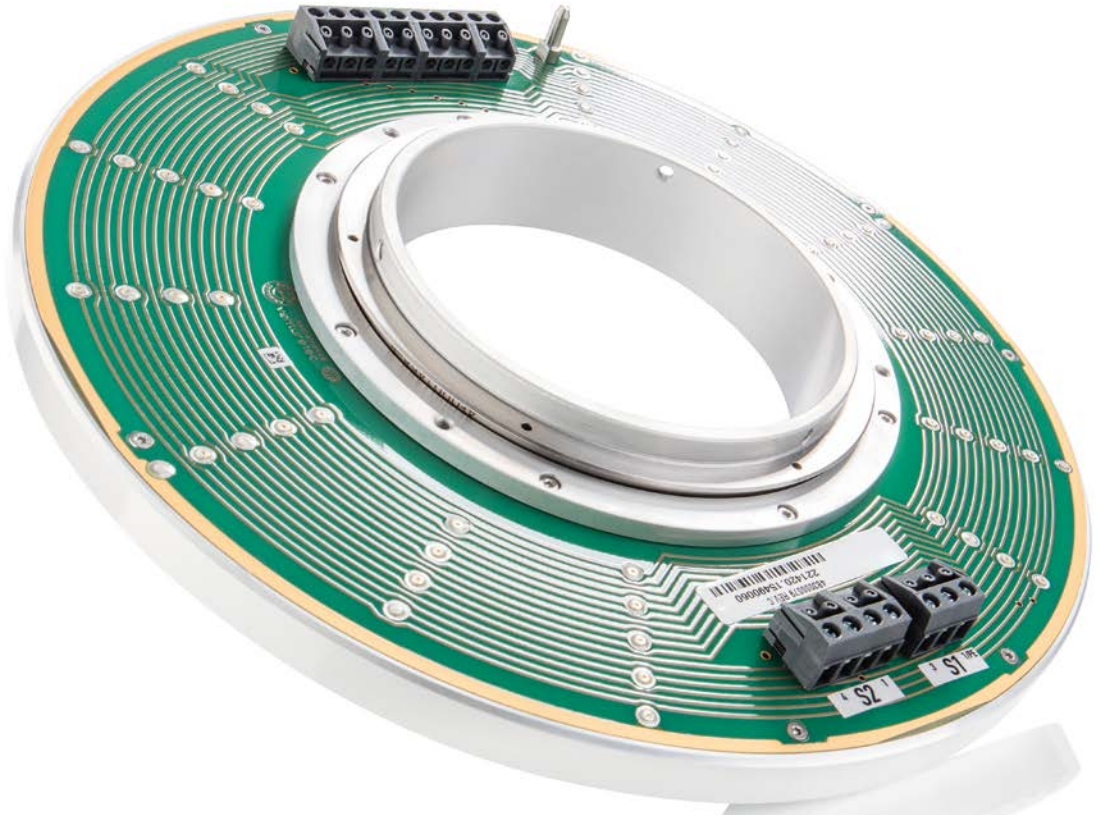
- Agricultural robots
- Assembly robots
- Entertainment robots
- Material handling robots
- Positioners
- Surgical robots
- Underwater robots
- Welding robots

Application example

WELDING ROBOTS

Intelligent robot systems require a large number of rotating axes. Slip ring applications provide a long-term and reliable transmission of low-power and signals.

18-WAY PANCAKE SLIP RING FOR LOW POWER AND SIGNAL



CHARACTERISTICS

The pictured slip ring system is equipped with the following features:

- Exceeded reliability and lifetime in comparison to cable solutions
- Transmission of the most common industrial buses
- Low-power transmission
- Innovative contact materials
- Lightweight design

OPTIONAL FEATURES

- Free inner bore

AVIATION & SURVEILLANCE

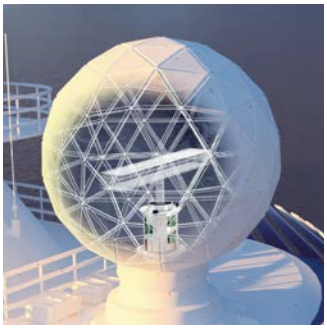
Applications in the fields of aviation and surveillance require a reliable and secure transmission under extreme environmental conditions.

Venturetec Rotating Systems offers customized solutions for highly complex applications.

Operational areas in aviation and surveillance are various and always require a high degree of security.

EXEMPLARY APPLICATIONS

- Air traffic control radar systems
- FLIRs
- Helicopters
- High altitude applications
- Marine radar systems
- Radio telescopes
- Satellite communication
- Stabilized platforms
- Weather radar systems

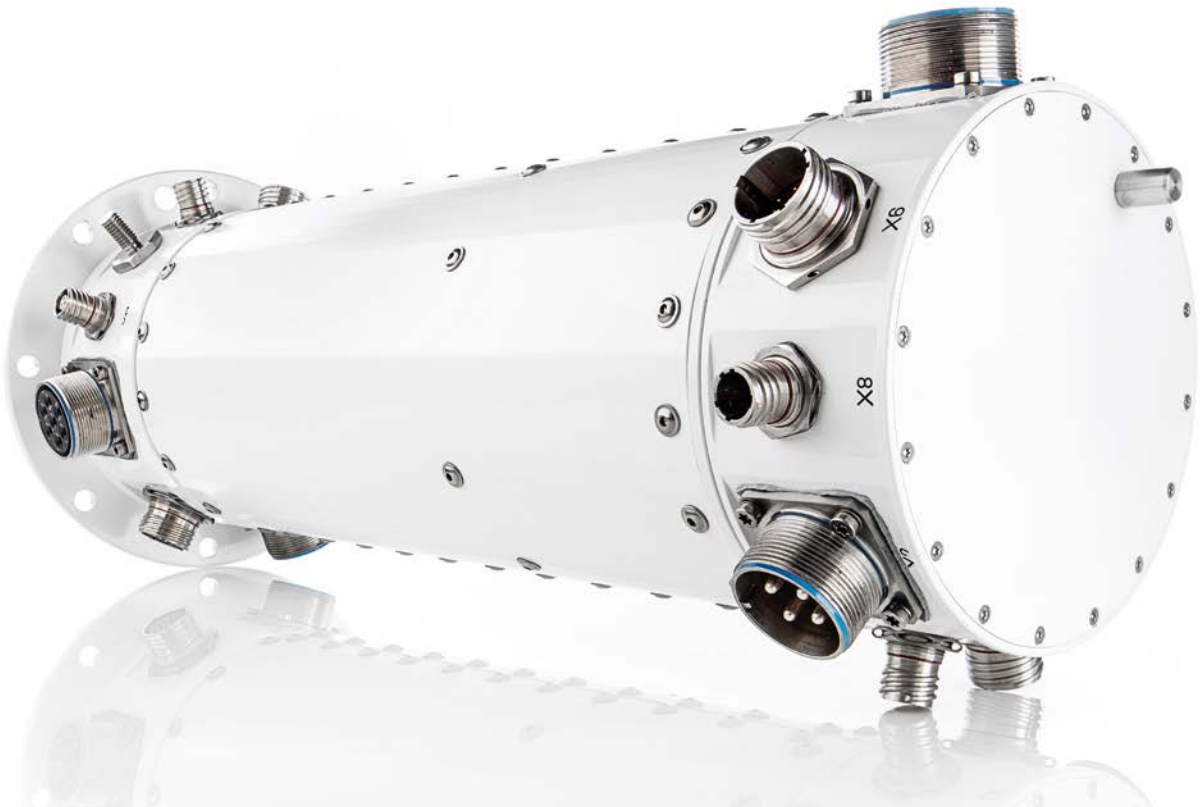


Application example

WEATHER RADARS

Weather radar systems are observing and forecasting extreme weather conditions. They are not only installed to display the current condition but also to calculate the motion and to estimate the type (rain, snow, hail e.g.) The entire data has to be transmitted by slip ring systems.

34-WAY LOW-POWER AND SIGNAL SLIP RING



Due to the consistent operating time of radar systems, the respective slip rings require a long lifetime and low maintenance efforts.

CHARACTERISTICS

The depicted slip ring component can be integrated into to a complete system and offers the following attributes:

- Safe and secure transmission under challenging environmental conditions
- Transmission of low-power, high-power and signals

OPTIONAL FEATURES

- Free inner bore
- Integration of a fiber optic rotary joint (FORJ) and/or a microwave rotary joint
- Integration of a media rotary joint
- Integration of an encoder system

OFFSHORE

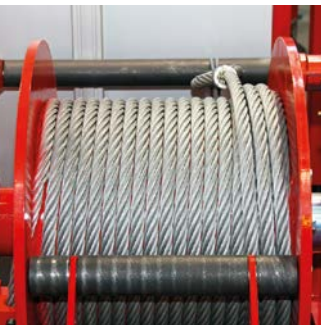
Slip rings are a very important component for many different offshore applications.

A major challenge is the reliable transmission of very high power and data under extreme environmental conditions and in rough seas.

Venturetec Rotating Systems' transmission solutions for the usage in offshore environments are resistant to salt spray and moisture as well as high humidity and temperature ranges. In addition, they are withstanding high forces and payloads and are optionally designed to ex-proof requirements.

EXEMPLARY APPLICATIONS

- Azimuth thrusters
- Cranes (offshore)
- Floating Production Storage and Offloading Units (FPSOs)
- Maritime buoys
- Oil platforms
- Remotely operated vehicles (ROVs)
- Winches



Application example

AZIMUTH THRUSTERS

An azimuth thruster is a configuration of one or more marine propellers placed in pods that can be rotated 360 degrees continuously to any horizontal angle (azimuth). A slip ring is needed to transmit high-power, low-power and signals from the machine room to the pod.

12-WAY HIGH-POWER SLIP RING, 84-WAY SIGNAL SLIP RING AND 10-CHANNEL MEDIA ROTARY JOINT INTEGRATED INTO ONE SYSTEM

GREEN TECHNOLOGIES

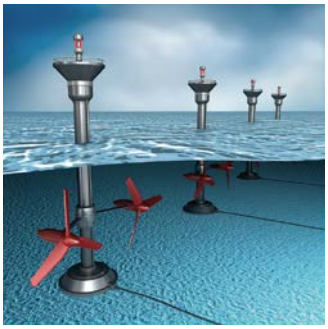
As manufacturer committed to sustainability we perfectly match the requirements of various green energy sectors, especially the wind industry.

Venturetec Rotating Systems is part of the leading suppliers offering technical elaborated, environmental friendly technologies.

Our customized solutions are characterized by durability, operational reliability, compatibility and are free of maintenance.

EXEMPLARY APPLICATIONS

- Heliostats
- Horizontal wind turbines
- Hydroelectric power plants
- Tidal power plants
- Vertical wind turbines



SPECIAL PROJECTS

In addition Venturetec Rotating Systems also offers flexible solutions for special projects. Our service ranges includes consulting and design to on-site installation.

Nowadays the potential areas of slip ring applications are very diverse. Special projects focusing on the economic feasibility, require the transmission of power, signals and media can be realized smoothly and reliable in cooperation with our engineers.

Below are some exemplary project fields:

EXAMPLES

THEATER STAGES

Modern turntables need in addition to the power supply, the transfer of complex audio and video signals. This can be realized by using different transmission technologies.

ROTATING ARCHITECTURE

No matter if either rotating viewing platforms or even complete floors that rotate in the opposite direction. With the use of the latest slip ring technology creative architectures can easily be put into reality.

ENTERTAINMENT

New perspectives in TV broadcasts, such as sports or concerts, require new camera technologies (e. g. Skycam) under the use of slip rings. We offer very compact and reliable systems even for the highest data rates.

AMUSEMENT RIDES

Whether classic fairs wheels or innovative amusement rides, our slip rings safely provide the demanded supply of power and data.

SPARE PARTS

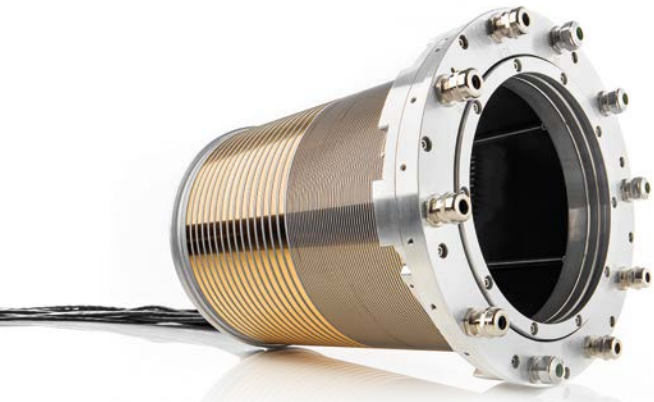
Venturetec Rotating Systems supplies spare parts for a variety of applications for power and signal transmission.

Below an exemplary selection of our complementary slip ring components and spare parts:

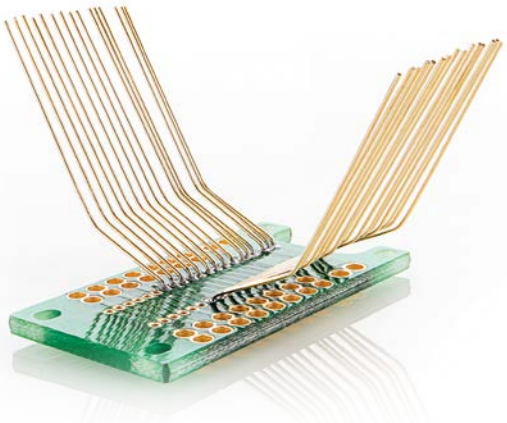
SELECTION OF OUR SPARE PARTS

- Transmitter-receiver-electronics
- Brush blocks
- Signal brushes
- Carbon brushes
- Slip ring modules

CARBON BRUSHES



SLIP RING MODULE

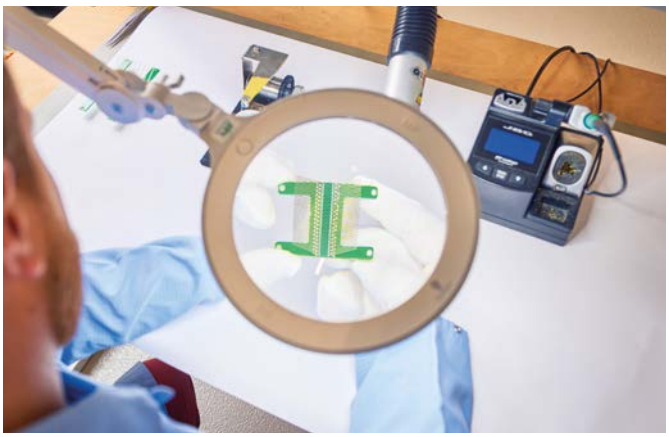


SIGNAL BRUSH

DESIGN, SERVICE & MAINTENANCE

Venturetec Rotating Systems refurbishes and repairs all types of rotating transmission systems, slip rings, brush holders and related components.

With our broad technical expertise we can reverse engineer to redesign worn parts and prolong the lifetime of your system with our technology.



1 VALUE-ADDED SERVICES

Our well experienced staff offers comprehensive consulting and technical support throughout the development phase to after sales activities. If required, we assist in determining the specification for your system.

2 ANALYSES OF EXISTING SYSTEMS

Does your system work as intended? Are you dissatisfied with the performance of your existent system? Venturetec Rotating Systems offers error diagnosis by analyzing different parameters from the mechanical and electrical design down to the chemical composition of track abrasion. This approach enables us to provide constructive feedback and expert action proposals on how to improve the performance.

3 INSTALLATION AND MAINTENANCE

Venturetec Rotating Systems offers technical support and maintenance over the entire life cycle of your system. Our installation, maintenance and upgrade services ensure that your systems work efficiently for years to come.

C SERVICE CONTACT

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