

# SCHLEIFRING



slip ring & rotary joint applications

**: OFFSHORE**

## high voltage - total safety

### Features

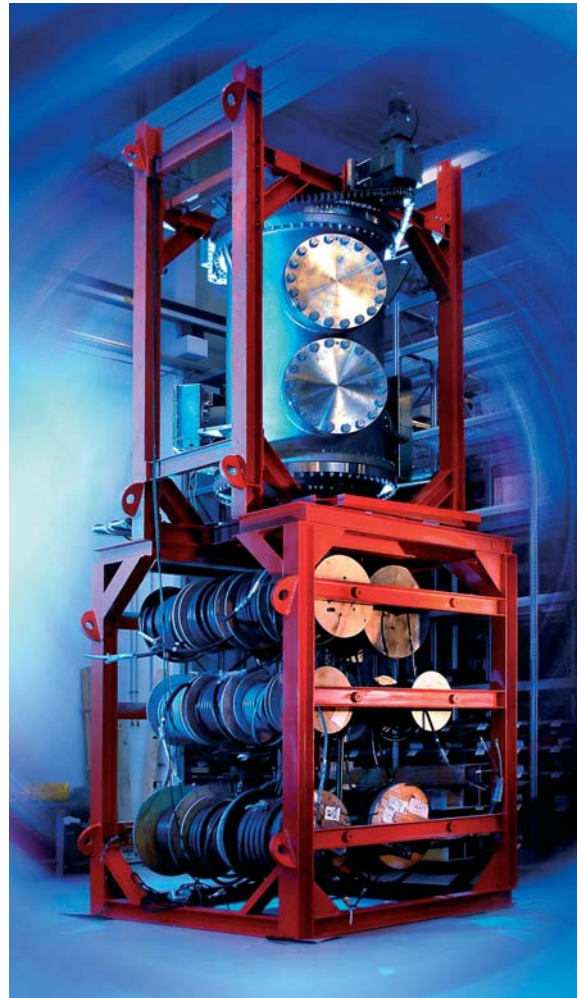
Electrical high voltage, low voltage and signal slip rings are parts of a swivel stack system used for oil and gas deep sea production. They are transmitting power for oil pumps and valves located on the bottom of the sea as well as data for control systems.

Designed for extreme environmental conditions and long lifetime. The enclosure is rolled and welded out of stainless steel SS 316 L. All parts have been machined with oversized milling and lathe machines at SCHLEIFRING. On axis systems and swivels with free inner bore are available.

The complete swivels are tested up to IP 68, certified for EEx d or EEx p and verified by BV, DNV, Lloyds or ABS.

Elaborate manufacturing facilities, most modern (CNC) machinery, top class material and components, a highly skilled and experienced work force added by a total sense of perfection form the foundation for products with high precision and dependability.

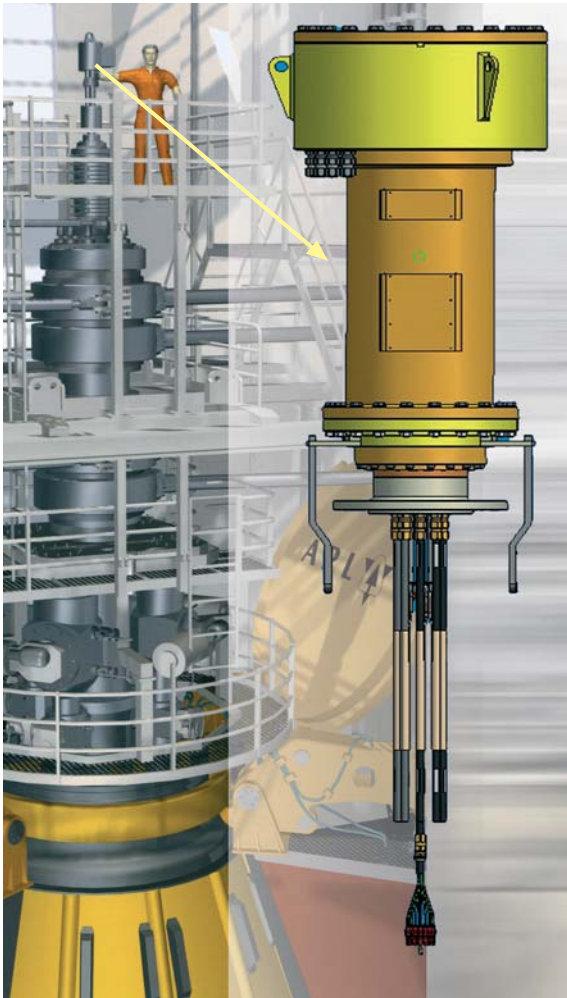
SCHLEIFRING is ISO DIN EN 9001:2000 certified.



### Specification

- Number of Rings: 4 - 400
- Rated Voltage: 5 V - 10,5 kV
- Performance: Power, signal and data transmission
- Rated Current: 1 - 800 A
- Brushes: silver-graphite for power transmission  
goldwire for signal & data transmission
- Short Circuit Level: 16 kA for 1sec.
- Hazardous Area Spec: EEx d or EEx p
- Protection class: IP 56; IP 66 and OP 68
- Weight: up to 20 tons
- Free inner bore: up to 1 m
- Enclosures and junction boxes: Stainless steel

# fiber optical rotary joints



## Innovation

A compact 4 to 21 pass fiber optical rotary joint for Single- or Multi-Mode fibers in an EEx d certified stainless steel housing facilitates the transmission of electrical signals and databus-signals even under most demanding use in offshore applications. The technical features – passive, bidirectional and unaffected by EMI, EMP and ESD – allow for the transfer of data rates >10 GBit/s even under extreme environmental conditions or in explosive atmosphere. An integrated connector box allows the access of customized reinforced cables and connection with the fiber optical rotary joint by FC/SC-connectors.

## Options

- Integration into conventional offshore slip rings
- WDM and DWDM with 2 to 8 separate channels
- Customized mounting parts

Due to the increasing volume of data transmitted today, fiber optical communication is becoming more and more popular and necessary. Whenever a system with extremely high data rates or a system which operates in an explosive atmosphere has a rotating interface, optical signals must be transmitted between the stationary and the rotating part by a fiber optical rotary joint.

Our product range includes highly compact passive and active rotary joints for plastic optical fibers, Multi-Mode or Single-Mode multi-pass configurations.



# Underwater applications

## Fiber optical transmission Multi-Mode 4 to 21 pass

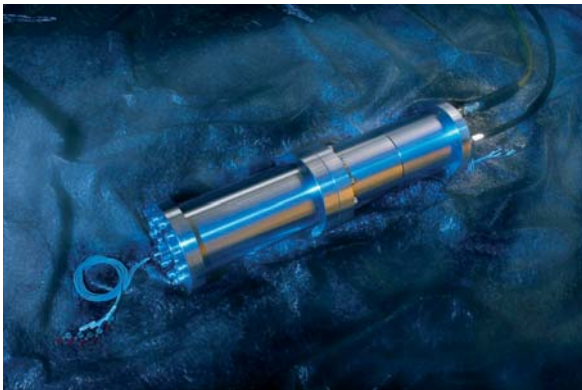
Underwater and deep sea applications demand for special technical features. SCHLEIFRING offers two variations:

- Fluid-filled and pressure compensated system up to 6000 psi (400 bar)
- Pressure tight system including dynamic seals for dry use up to 3000 psi (200 bar).

At data rates of >10 GBit/s and a rotational speed of 100 rpm the fiber optical rotary joint allows for extremely low insertion loss of typically 2.0 dB valid for all channels.

## Hybrid units

The combination of electrical slip rings and fiber optical rotary joints for underwater applications are available as pressure tight systems as well as pressure compensated systems.



: [www.schleifring.de](http://www.schleifring.de)

**SCHLEIFRING und APPARATEBAU GmbH**  
Am Hardtanger 10  
82256 Fürstentfeldbruck  
Deutschland  
Telefon: +49 8141 403 0  
Fax: +49 8141 403 45  
Email: [sales@schleifring.de](mailto:sales@schleifring.de)  
URL: [www.schleifring.de](http://www.schleifring.de)

**SCHLEIFRING Systems Ltd.**  
Abex Road  
Newbury Berks. RG14 5EY  
Great Britain  
Phone: +44 1635 36363  
Fax: +44 1635 38334  
Email: [sales@schleifring.co.uk](mailto:sales@schleifring.co.uk)

**SCHLEIFRING Medical Systems, LLC**  
1420 Crispin Drive  
Elgin Illinois 60123-5533  
USA  
Phone: +1 847 741 9600  
Fax: +1 847 741 0022  
Email: [sales-med@schleifring.com](mailto:sales-med@schleifring.com)

**SCHLEIFRING North America, LLC**  
1420 Crispin Drive  
Elgin Illinois 60123-5533  
USA  
Phone: +1 847 741 9600 Ext. 202  
Fax: +1 847 741 0022  
Email: [sales-ind@schleifring.com](mailto:sales-ind@schleifring.com)