



## PENLINK

### INTRODUCTION

#### REVOLUTIONIZING DEEP-SEA POWER AND DATA TRANSMISSION

Penlink's slip rings redefine the possibilities of subsea power and data transmission, conquering the challenges within the offshore industry. Our solutions not only offer reliability but are also cost-effective, eliminating downtime.

With our slip rings, you can seamlessly transfer power, data, and signals through a full 360-degree rotation without any risk of tear or damage.

#### FIBER OPTICAL COMPATIBILITY

Seamlessly integrating both multi-mode and single-mode fiber optical rotary joints into our solutions, we offer a versatile range of contacts such as ST, SC, LC, and FC, accommodating 1 up to 24 channels.

Integrating fiber optics enhances data transmission capabilities, precisely catering to the unique requirements of offshore winches in the subsea industry.

#### VERSATILE POWER AND DATA CONNECTIVITY

Our slip rings are designed to support various data bus systems, including Profinet, Profibus, Ethercat, and 1GB Ethernet.

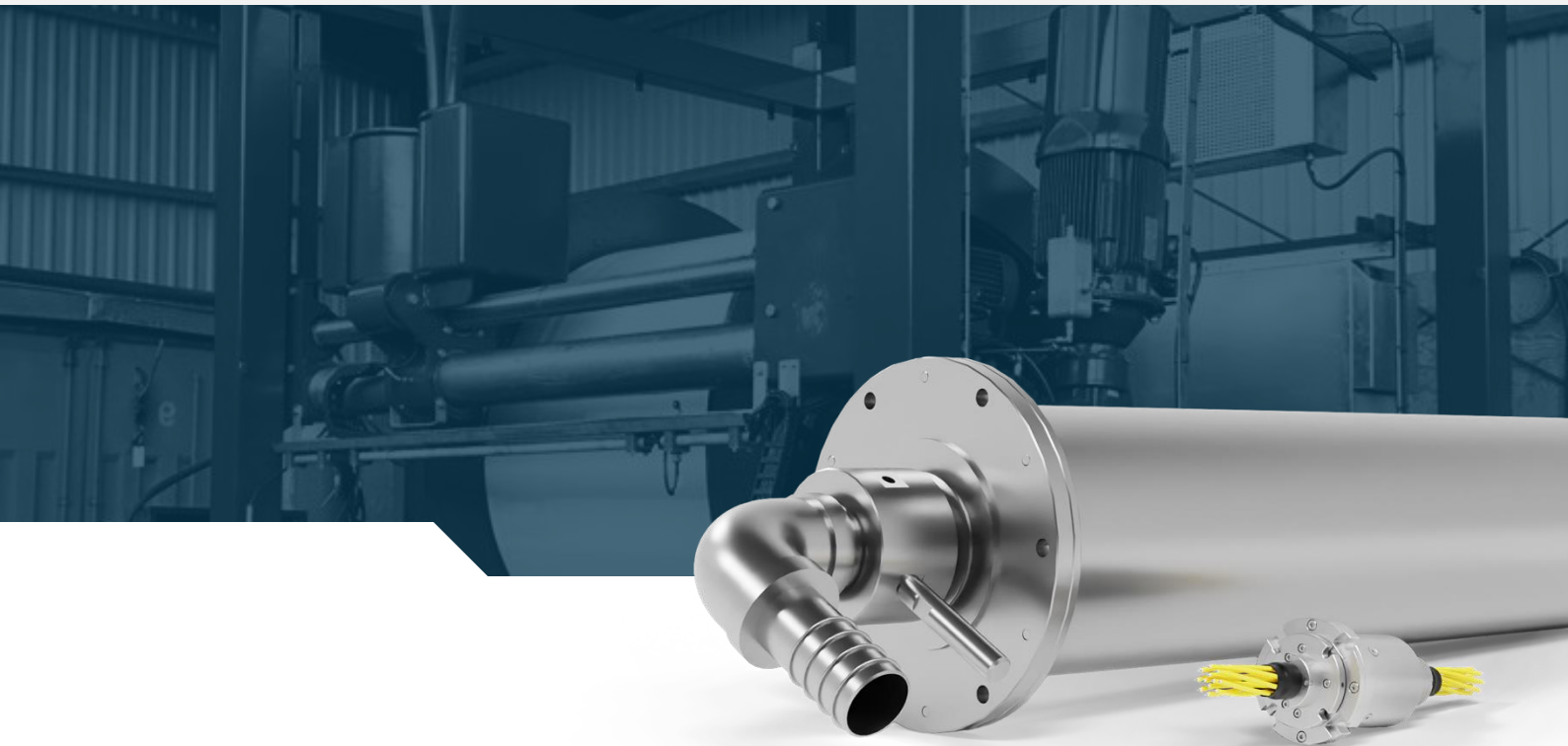
This comprehensive compatibility allows for seamless integration into diverse communication networks, providing flexibility and adaptability tailored to the specific needs of deep-sea operations.

#### HIGH-VOLTAGE OR HIGH-AMPERAGE

Our solutions for efficient power delivery are offered in two distinct approaches to precisely meet your requirements. The seamless transmission they provide is particularly well-suited for deep winch operations, especially during activities like plowing to lay down cables in the ocean.

Regardless of your choice, both solutions ensure the reliable transmission of power, signals, and data vital for running your operation. The key considerations come down to your specific voltage and amperage needs, as well as spatial constraints.

The high-voltage solution, contrary to its name, is more compact, offering a space-efficient design. On the other hand, the high-amperage solution is engineered for robust performance, making it ideal for applications demanding higher power intensity.



#### PENLINK SOLUTION

### HIGH-VOLTAGE SLIP RING SOLUTION

The high-voltage slip ring, with its robust 4500V and 40A power transmission, is pivotal in subsea cable plough operations. Equipped with fiber optics for signals and internal heaters for reliability, this solution serves as the cornerstone, ensuring uninterrupted power to the winch motor.

It enhances operational precision by facilitating real-time signal transmission for depth control and cable laying. In challenging subsea conditions, internal heaters prevent condensation, making the high-voltage slip ring an essential component for efficient and precise subsea cable plough operations.

### A RELIABLE CHOICE FOR DEEP-SEA OPERATIONS

Tailored for deep-sea operations, this solution is engineered to minimize the load on the winch system. With the capability to smoothly transfer power, signals, and data—crucial for real-time equipment control—it emerges as the ideal choice for extreme depths, reaching up to 4000m.

### ENHANCING EFFICIENCY IN SUBSEA TASKS

The reduced cable size not only contributes to the efficiency of subsea tasks but also enhances ease of deployment and retrieval. This streamlined process ensures that your operations run smoothly and optimally, meeting the challenges of deep-sea exploration with unparalleled reliability.

#### KEY FEATURES

- 4500V/40A Power Set-up
- Internal Heaters
- Integration of Fiber Optical Rotary Joints, SM/MM, 1-24 channels
- Integration of Encoders
- 18 square millimeters cables with protection
- Room for modification to fit your projects needs



## PENLINK SOLUTION

### HIGH-AMPERAGE SLIP RING SOLUTION

The high-amperage slip ring solution is purpose-built for applications demanding robust amperage, transmitting 690 volts and 260 amperes. We offer fiber optic slip ring integration for signal transmission and internal heaters to control condensation within the unit.

With a higher kilowatt transmission, larger cables are necessary, but we keep them efficiently compact with 2x70 square millimeters of cross-sectional area. This design ensures effective heat management during high-amperage transmission.

### RELIABLE OPERATION WITH AMPLE POWER

This robust high-amperage solution delivers the necessary amperage for the continuity of your operations. Beyond power transmission, it seamlessly transmits fiber optic signals and data, enabling monitoring, control, and powering of your entire operation.

### THE POWER NEEDED TO RUN THE OPERATION SMOOTHLY

The high-amperage solution's robust design underscores its specialization in power efficiency, making it an optimal choice for systems with large motors that demand substantial power. Although not specifically tailored for extreme depths like its high-voltage counterpart, its focused design excels in delivering high-power transmission efficiency.



### KEY FEATURES

- 690V/260A Power Set-up
- Internal Heaters
- Integration of Fiber Optical Rotary Joints, SM/MM, 1-24 channels
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## PENLINK

### CONCLUSION

### REVOLUTIONIZING SUBSEA CABLE PLOUGH OPERATIONS

In conclusion, our slip rings, stands as a pivotal component in subsea cable plough operations. Its seamless integration of fiber optics for precise signal transmission and internal heaters for environmental reliability positions it as a cornerstone for operational excellence. This technological synergy not only ensures uninterrupted power to the winch motor but also facilitates real-time depth control and cable laying precision.

As we navigate the complexities of subsea environments, the high-voltage slip ring proves to be more than a conduit of energy; it is a critical enabler of efficiency and accuracy in subsea cable plough operations. Its prowess signifies a new frontier in technological innovation, setting the standard for reliability and performance in challenging underwater conditions.

For those eager to delve deeper into our solutions or seek personalized insights into their specific applications, we invite you to contact us. Our team stands ready to provide comprehensive information, tailored solutions, and expert guidance for the evolving needs of subsea projects.

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