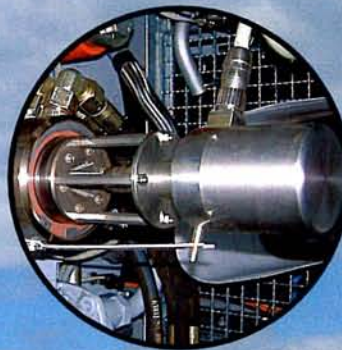


DEUBLIN®
Engineered for Performance

SR084 US



ELECTRICAL SLIP RINGS
for wind energy applications



SLIP RINGS WIND TURBINE APPLICATIONS

DEUBLIN Company is the proven leader for the manufacture of rotary unions for hydraulic pitch control in wind turbine applications. Now *DEUBLIN* provides Slip Rings to serve the demanding requirements of electric or hydraulic wind turbine pitch control applications.

Introducing *DEUBLIN* Electrical Slip Rings utilizing next-generation technology for optimal, long-term operation and unrestrained transmission of power.

DEUBLIN Slip Rings were developed in response to wind turbine manufacturers' demand for longer lifetimes. This integrated system has been optimized with special material configurations that are rated for millions of cycles, which translates into many years of trouble-free operation for unsurpassed performance. This progression of *DEUBLIN* technology has generated unparalleled lifecycle reliability, which in turn, significantly reduces maintenance costs.

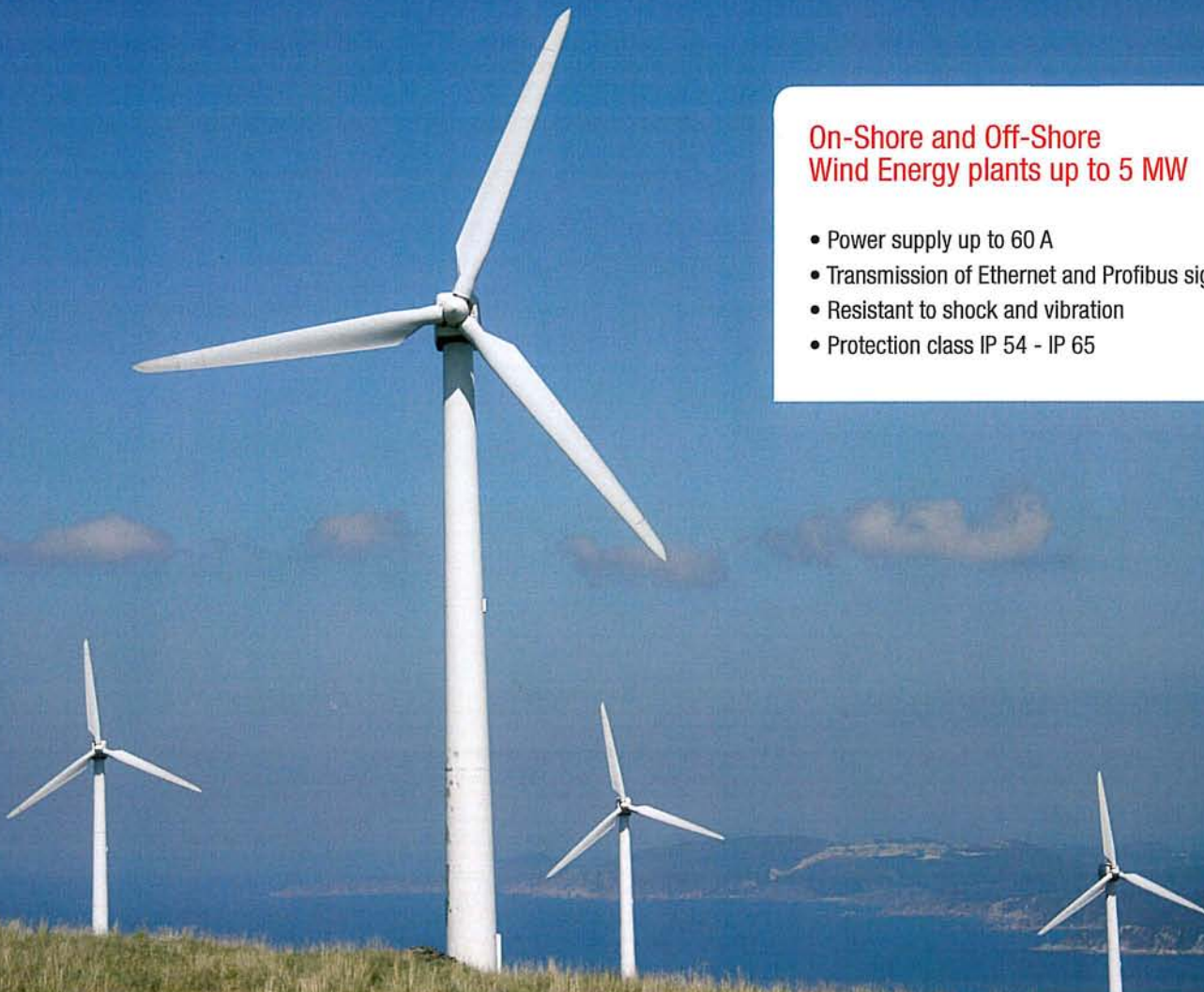
As with all *DEUBLIN* products, our slip ring system is 100% tested prior to installation in the field, and manufactured using high performance production methods. The long-life slip ring technology will provide consistent, reliable service and maintenance-free performance for both on- and off-shore operations.

Wind Energy plays an important role in the world's energy requirements, and *DEUBLIN* is proud to serve the industry.



On-Shore and Off-Shore Wind Energy plants up to 5 MW

- Power supply up to 60 A
- Transmission of Ethernet and Profibus signals
- Resistant to shock and vibration
- Protection class IP 54 - IP 65





ELECTRICAL SLIP RING OVERVIEW

WHAT IS AN ELECTRICAL SLIP RING?

A slip ring is an electrical device that allows the transmission of power and electrical signals from a stationary to a rotating structure. Also called a rotary electrical joint, collector or electric swivel, a slip ring can be used in any electromechanical system that requires unrestrained, intermittent or continuous rotation while transmitting power and/or data.

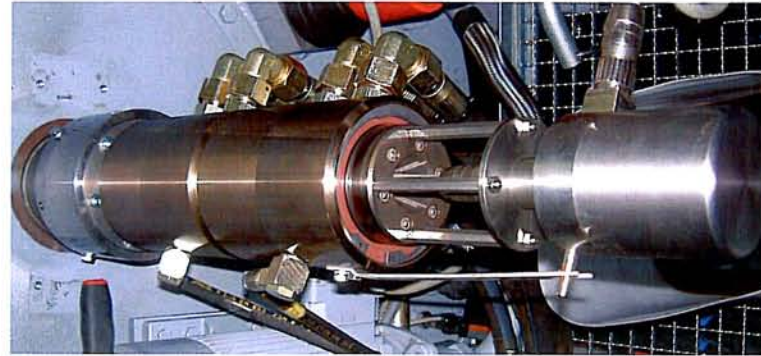
Slip rings are similar in concept to a rotating union, but for transmitting electric current rather than media.

HOW DOES A SLIP RING WORK?

Typically, it is comprised of a graphite or metal contact brush which rubs on the outside diameter of a rotating metal ring. As the slip ring turns, the electrical current or signal is conducted through the stationary brush to the metal ring making the connection. Additional ring/brush assemblies are stacked along the rotating axis if more than one electrical circuit is needed.



Flexible slip ring components without housing, using wires on gold-plated rings



DEUBLIN hydraulic union with integrated Slip Ring

Enclosed Housing

- Mechanically attached to union
- Precious metal brushes on gold plated rings
- Designed for high rotational speed
- Transmission of electrical power and electronic signals

HOW IS THE SLIP RING MOUNTED?

Slip rings are designed for rigid mounting through an adaptor plate or bracket to the end of the hydraulic union. They can be mounted on either the rotor end or opposite end cap depending on the application. Typical mounting configuration is in a horizontal axis.

DEUBLIN Electrical Slip Rings – Features and Benefits

Features	Benefits
Integrated hydraulic union and slip ring assembly	Single source for integrated union/slip ring assembly
DEUBLIN Slip Rings offer replacement of existing slip ring brands	Easy to replace at end user or OEM
17 and 22 channel models, with custom mounting configurations available up to 60 channels	Flexible engineering to support unique requirements
Push pin, solder or custom connector configurations	Simple installation and maintenance



Since its establishment in 1945, the DEUBLIN COMPANY has consistently adhered to a policy of producing the best product of its kind in the market. The result of this policy has been constant growth through the years. For this progress we are grateful to our many loyal customers. We cordially invite you to visit our modern manufacturing facilities in Waukegan, Illinois; Hofheim-Wallau, Germany; Monteveglio, Italy and Dalian, China.

Sincerely,

Donald L. Deubler,
Chairman of the Board



Global Headquarters in Waukegan, Illinois, U.S.A.



Hofheim-Wallau, Germany



Monteveglio, Italy



Dalian, China



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