

# **DEUBLIN @Wind Power**

**HOERBIGER Rotary Solutions**

**PERFORMANCE IN ROTATION**

Deublin, the leading manufacturer of high quality rotating unions and electrical slip rings. For more than 20 years Deublin is an approved and accepted development partner and solution provider to the wind industry.

Worldwide over 75.000 wind turbine pitch systems are powered using Deublin products.

Reliable component function supports maximum turbine uptime along with minimum service cost. This combination of features results in a low total cost of owner ship (TCO).

Wind turbine manufacturers benefit from a global product availability with Deublin production localized on four continents. To *DEUBLIN*, being a partner in the wind industry means utilizing only customized solutions that can meet highest expectations in terms of reliability and longevity. The rotating

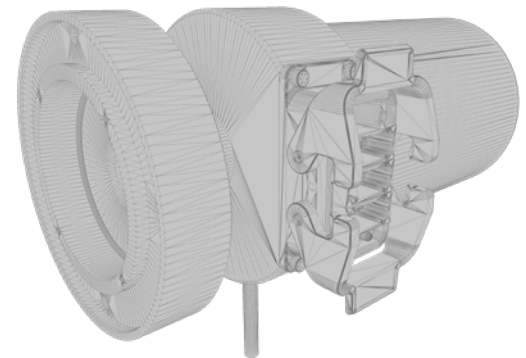
union and electrical slip ring are critical components to the wind turbine hydraulic pitch control system.

Deublin is constantly investing in talented people, modern machines and lean processes. The DPS culture includes lean Kanban production and Kaizen tools for continuous process improvements.

Deublin rotating unions and electrical slip rings are at the cutting edge of technology today. Quality standards according to ISO 9001 and ISO EN 14001 are a cornerstone of our corporate culture.

Deublin is an Authorized Economic Operator (AEO) offering lean logistic operation and simplified customs clearance.





## SLIP RING

### ELECTRICAL SLIP RING

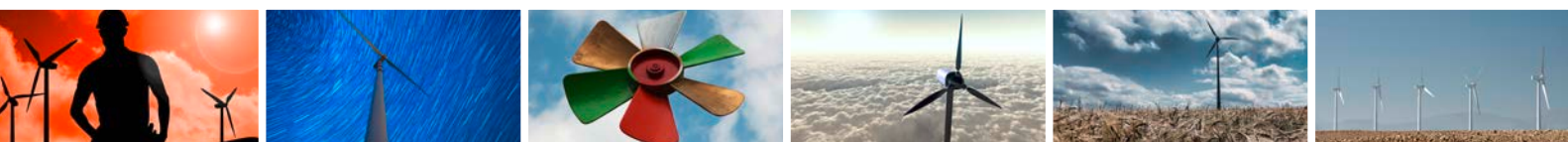
Deublin's versatile electrical slip ring designs can be easily configured for both power and signal channels and offer multitude connection options. The signal portion of the slip rings are designed for compatibility with Ethernet, Profinet, RS-232, RS-485, RS-422, CAN as well as generic sensing and 24V control signals. Deublin slip rings are designed to ensure the integrity of the electrical signal as it passes through the slip ring. The power connection channels of the slip ring can operate up to 1000 VAC/DC at up to 250 amps continuous.

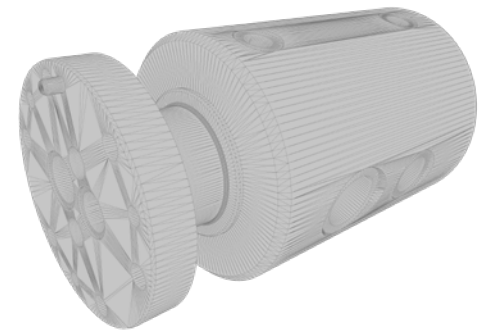
The slip ring enclosures can be designed to surpass the IEC-60529 IP-66 protection. Deublin slip rings will continue to operate while exposed to mechanical shock and sinusoidal vibration limits of IEC-60721-3-3 class 3M5. Deublin slip rings are designed for high reliability and long life.

Deublin slip rings can be designed to operate in both hot and cold climates. They can also be utilized for auxiliary operations, for example blade heating.

### KEY DATA

- > 0-35 rpm
- > -40 °C to +70 °C ambient operating temperature
- > High shock resistance
- > Multiple channels for data and power transmission
- > Easy lifting, light weight
- > Customized marking, tracking barcode
- > Customized connectors
- > Full integration with hydraulic rotating union





## ROTATING UNION

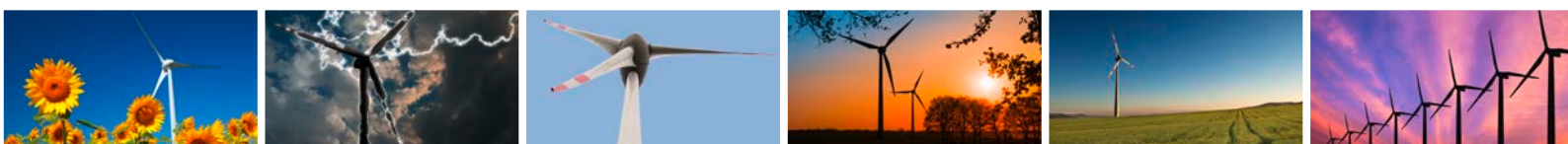
### HYDRAULIC ROTATING UNION

*DEUBLIN* rotating unions allow reliable fluid flow between stationary and rotating systems. Approved technology combined with global availability makes Deublin preferred supplier for many leading wind turbine manufacturers.

The rotating union is a precision mechanical component performing a critical function to turbine operation. Rotating unions must be designed considering a wide range of media, viscosities, temperatures and pressure ranges as well as fluid velocities, while meeting highest standards of reliability and service life.

### KEY DATA

- > 0-25 rpm
- > 0-350 bar peak pressure
- > -40 °C to +70 °C ambient operating temperature
- > Corrosion classes up to C5M for severe off shore conditions
- > High shock resistance
- > Multiple passages for fluid and cable
- > Easy lifting
- > Customized marking, tracking barcode
- > 25 years design life



### ROTATING UNION SERVICE PROGRAM

Deublin offers a diversified union service program with **inspection, maintenance and repair**.

This service is available at five service centers located on four continents.

Maintained or repaired unions are returned with a refreshed 12 month warranty. Serviced goods are always analysed for future improvement plans.



## YOUR BENEFITS WORKING WITH DEUBLIN

**Approved high quality** product that has a proven track record for a reliable performance over 20 years (TCO) in wind energy based on a 25 year design life.

**Reliable components that secures the turbine uptime** to ensure a maximum harvesting of wind energy.

## Multilingual customer service teams

located around the world to support you when needed.

**Global production foot print** with localized manufacturing sites situated in Chicago/USA, Mainz/Germany, Dalian/China, Bologna/Italy and Sao Paulo/Brazil.

**High supply chain safety**, Deublin has a low dependency rate on any single industry

segments which mean a strong asset for your risk management survey. All Deublin sites run by globally aligned production methods and processes which support **global contingency plans**.

**DPS Deublin Performance System**, Kanban inventory with lean production value streams ensure minimized stock and support a just in time delivery concept.



### DEUBLIN Asia Pacific

51 Goldhill Plaza  
#17-02 Singapore 308900  
Phone: +65 6259-92 25  
Fax: +65 6259-97 23  
E-Mail: [deublin@singnet.com.sg](mailto:deublin@singnet.com.sg)

### DEUBLIN Austria

Lainzer Straße 35  
1130 Wien, Austria  
Phone: +43 1-8768450  
Fax: +43 1-876845030  
E-Mail: [info@deublin.at](mailto:info@deublin.at)

### DEUBLIN Brazil

Rua Fagundes de Oliveira, 538 - Galpão A11  
Piraporinha  
09950-300 – Diadema - SP - Brasil  
Phone: +55 11-2455 3245  
Fax: +55 11-2455 2358  
E-Mail: [deublinbrasil@deublinbrasil.deublin.com.br](mailto:deublinbrasil@deublinbrasil.deublin.com.br)

### DEUBLIN China

No. 2, 6th DD Street,  
DD Port Dalian, 116620, China  
Phone: +86 411-8754 9678  
Fax: +86 411-8754 9679  
E-Mail: [info@deublin.cn](mailto:info@deublin.cn)

### Shanghai Branch Office

Room 15A07, Wangjiao Plaza  
No. 175 East Yan'an Road, Huangpu District  
Shanghai 200002  
Phone: +86 21-5298 0791  
Fax: +86 21-5298 0790  
E-Mail: [info@deublin.cn](mailto:info@deublin.cn)

### DEUBLIN France

61 Bis, Avenue de l'Europe  
Z.A.C de la Malnoue  
77184 Emerainville, France  
Phone: +33 1-64616161  
Fax: +33 1-64616364  
E-Mail: [service.client@deublin.eu](mailto:service.client@deublin.eu)

### DEUBLIN Germany

Florenz-Allee 1  
55129 Mainz, Germany  
Phone: +49 6131-49980  
E-Mail: [info@deublin.de](mailto:info@deublin.de)

### DEUBLIN Italy

Via Guido Rossa 9 - Loc. Monteveglio  
40053 Comune di Valsamoggia (BO), Italy  
Phone: +39 051-835611  
Fax: +39 051-832091  
E-Mail: [info@deublin.it](mailto:info@deublin.it)

### DEUBLIN Japan

2-13-1, Minamihanayashiki, Kawanishi City  
Hyogo 666-0026, Japan  
Phone: +81 72-757 0099  
Fax: +81 72-757 0120  
E-Mail: [customerservice@deublin.jp](mailto:customerservice@deublin.jp)

2-4-10-3F, Ryogoku, Sumida-ku  
Tokyo 130-0026, Japan  
Phone: +81 35-625 0777  
Fax: +81 35-625 0888  
E-Mail: [customerservice@deublin.jp](mailto:customerservice@deublin.jp)

1-9-2-4F, Mikawaanjo-cho, Anjo City  
Aichi 446-0056, Japan  
Phone: +81 566-71 4360  
Fax: +81 566-71 4361  
E-Mail: [customerservice@deublin.jp](mailto:customerservice@deublin.jp)

### DEUBLIN Korea

Star Tower #1003, Sangdaewon-dong 223-25,  
Jungwon-gu, Seongnam-si, Gyeonggi-do, South Korea  
Phone: +82 31-8018 5777  
Fax: +82 31-8018 5780  
E-Mail: [customerservice@deublin.co.kr](mailto:customerservice@deublin.co.kr)

### DEUBLIN Mexico

Norte 79-A No. 77, Col. Claveria  
02080 Mexico, D.F.  
Phone: +52 55-5342 0362  
Fax: +52 55-5342 0157  
E-Mail: [deublinmexicocs@deublin.com](mailto:deublinmexicocs@deublin.com)

### DEUBLIN Poland

ul. Bierutowska 57-59  
51-317 Wrocław, Poland  
Phone: +48 71-3528152  
Fax: +48 71-3207306  
E-Mail: [info@deublin.pl](mailto:info@deublin.pl)

### DEUBLIN Spain

C/ Lola Anglada, 20  
08228 Les Fonts (Terrassa), Spain  
Phone: +34 93-221 1223  
E-Mail: [deublin@deublin.es](mailto:deublin@deublin.es)

### DEUBLIN United Kingdom

6 Sopwith Park, Royce Close, West Portway  
Andover SP10 3TS, UK  
Phone: +44 1264-33 3355  
Fax: +44 1264-33 3304  
E-Mail: [info@deublin.co.uk](mailto:info@deublin.co.uk)

### DEUBLIN USA

2050 Norman Drive  
Waukegan, IL 60085-6747 U.S.A  
Phone: +1 847-689 8600  
Fax: +1 847-689 8600  
E-Mail: [cs@deublin.com](mailto:cs@deublin.com)

Production locations are marked in **red letters**.

**Call us or send your e-mail**