wieland

Wind power

Electrical solutions for
wind power plants

▲ Plant II, Rodezstraße in Bamberg

▲ Company headquarters in Bamberg

▲ STOCKO main plant in Wuppertal

wieland group

AT HOME ALL OVER THE WORLD

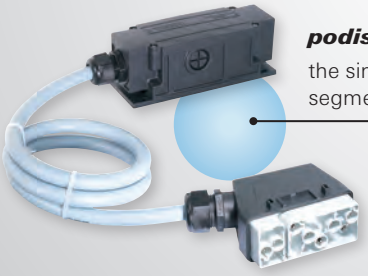
Wieland Electric GmbH is a medium-sized family-run electrical and electronics company headquartered in Bamberg. Founded in 1910, Wieland is one of the pioneers of electrical connection technology.
This family business with its international outlook is a market leader in pluggable installation technology for functional buildings, with subsidiaries worldwide and production lines not only in Bamberg but also in the Czech Republic and China.
The Wieland Group, which has included STOCKO Contact GmbH & Co. KG since 1998, is therefore represented in over 70 countries and employs some 2,200 people.

Solutions for

- ***Building technology***
- ***Wind power***
- ***Machine building***
- ***Lighting technology***
- ***Heating, ventilation, air conditioning***

Windpower.

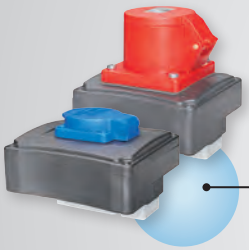
Electrotechnical
solutions for
wind power plants



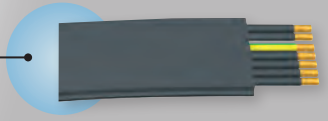
podis®
the simple
segment coupling

podis® – perfect for use in steel tube or hybrid towers

podis®LED
for optimal
illumination



podis®CON
sockets for
every application



podis®
Flat ribbon cable

Ready for wind. podis®

Open and shut matter: simple, fast and safe installation worldwide

The innovative **podis®** flat cable system enables quick and easy installation of lighting and maintenance sockets. **podis®** provides various system components capable of being tailored specifically to tower construction requirements while also enabling space-saving and extremely clearly arranged cable management.

Features

- Fast and flexible installation
- Clearly laid out cable routing
- Easily expanded or modified
- Safe to install and operate
- Robust components
- Protection class IP65
- International approvals (UL, CCC, VDE)

Ready to go. podis®

Clearly advantageous: for planners, engineers, plant operators, plant manufacturers and tower manufacturers

Planners, engineers

- Shorter planning time
- Reduced planning complexity
- Fewer versions thanks to a uniform basic installation worldwide
- 3D data for all components can be easily integrated into each planning tool
- Few system components

Plant operators and service

- Low maintenance luminaires
- Central UPS with only one battery
- Standard, uniform, non-dazzle and flicker-free lighting
- Rapid replacement without the use of tools in the event of a failure
- Full power output immediately, even at low temperatures

Plant manufacturers

- Shorter tower delivery times
- Greater flexibility
- Fewer versions internationally
- Easy to modify tower fittings e.g. change luminaire spacing / maintenance sockets on the construction site

Tower manufacturers

- One standard tower for all clients/regions
- Only one order number rather than hundreds
- Variation possible in the final work step
- 70% reduction in installation time

podis®CON – always connected, the flat cable system

podis®LED for optimal illumination, 5 and 20 Watt luminaires

podis®CON – always live, 230 V and 400 V sockets

podis® – innovative installation system for lighting and power distribution in a steel tube or hybrid tower

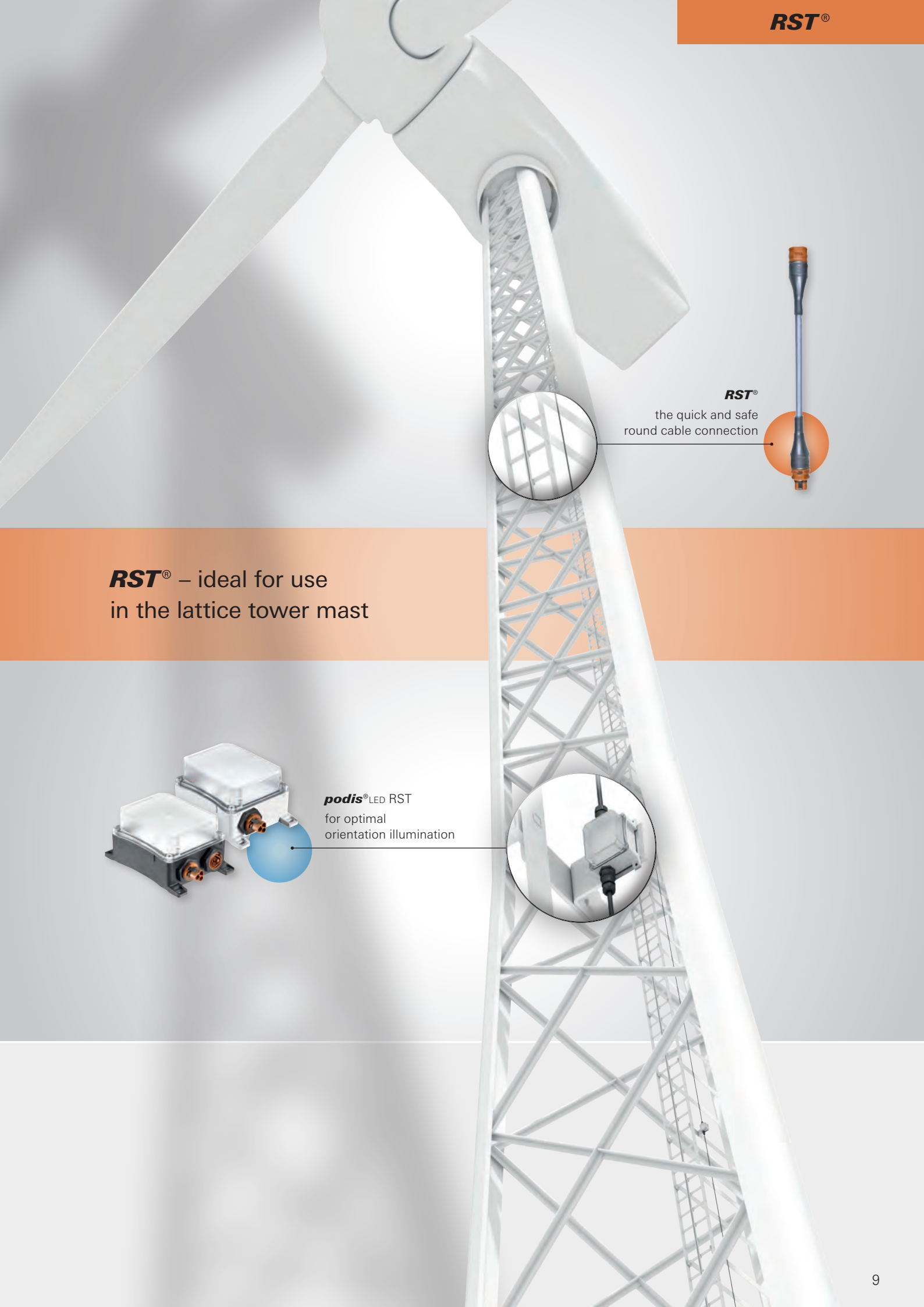
Ready for energy. RST®

Round cable system: for more demanding protection class requirements

The ***RST***® round cable system creates completely new installation possibilities. Complete plant components can be pre-assembled and tested independently of their intended destination. The individual modules are then simply joined together on site. This cuts assembly time, reduces potential errors and increases safety. Even changes required at short notice can be implemented without difficulty. Installations with a tower height in excess of 140 m can be achieved.

Features

- Safe to touch and reusable
- Clearly laid out cable routing
- Weather and UV resistant
- Easily expanded or modified
- Integrated locking devices and strain relief
- Protection class IP65 for the entire system including the functional modules
- IP66/68 (3m; 2h)/69K for the connectors
- Cable diameter up to 5G6 (6 mm^2 fine-strand)



RST®
the quick and safe
round cable connection

RST® – ideal for use in the lattice tower mast

podis®LED RST
for optimal
orientation illumination


RST®
Connecting cable
podis®LED RST
5 Watt luminaire
RST®
Connection cable

Ready to run. RST®

Clearly advantageous: for planners, engineers, plant operators, plant manufacturers and tower manufacturers

Planners

◊ Shorter planning time
◊ Reduced planning complexity
◊ 3D data for all components can be easily integrated into each planning tool
◊ The available 6 mm² connection supports installations of a height exceeding 140 m

Plant operators and service

◊ Maintenance-free luminaires
◊ Central UPS concept enables simple battery replacement
◊ Component replacement without the use of tools
◊ Full power output immediately, even at low temperatures

Plant manufacturers

◊ Reduction in project duration
◊ Shorter delivery times by the tower manufacturer
◊ Use of weather resistant cables and components for outdoor use

Tower manufacturers

◊ Reduction in installation time
◊ Shorter tower delivery times
◊ Mechanical codings for different voltages prevent mistakes when installing cabling for lighting and power socket circuits

RST® – the round, safe connection cable

podis®LED RST for optimal illumination, 5 and 20 Watt luminaires

podis®CON RST – always live, 230 V and 400 V sockets

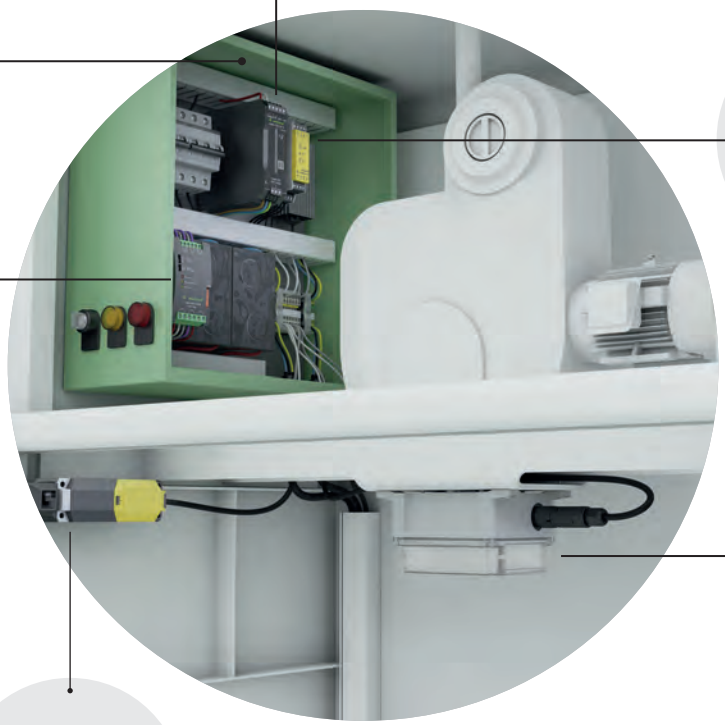
The service lift – safe even in an emergency

Safety inside.

All system components are matched with one another, thereby offering the required safety for humans. The integrated UPS also ensures sufficient power supply for lighting the lift in an emergency.

Advantages

- Maintenance-free, energy-efficient LED lighting of the lift including emergency lighting
- UPS and emergency lighting solution – pluggable, ready to connect
- Country specific requirements configurable depending on region
- Clear and unambiguous marking of the connecting terminals
- Pluggable connection level – device is easy to replace without having to interfere with the wiring
- Push-in spring-loaded contacting with two connection points per terminal



wipos
Switched-mode power supply

safe RELAY
SNA – emergency stop, safety door monitoring

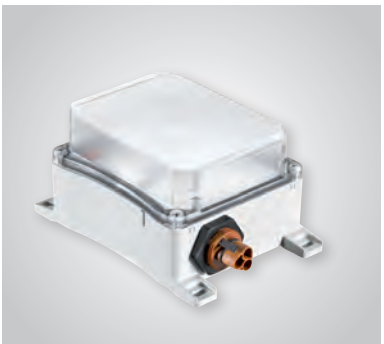
wipos
Uninterrupted power supply

podis® LED RST
5 Watt lighting incl. emergency lighting

sensor PRO
SIN – mechanical safety switch actuator

wipos – the power supply with UPS for powering emergency lighting

safety – the safety components for protecting people and machinery



podis® LED RST – 1 luminaire – 2 functions: lighting and emergency lighting

Nacelle

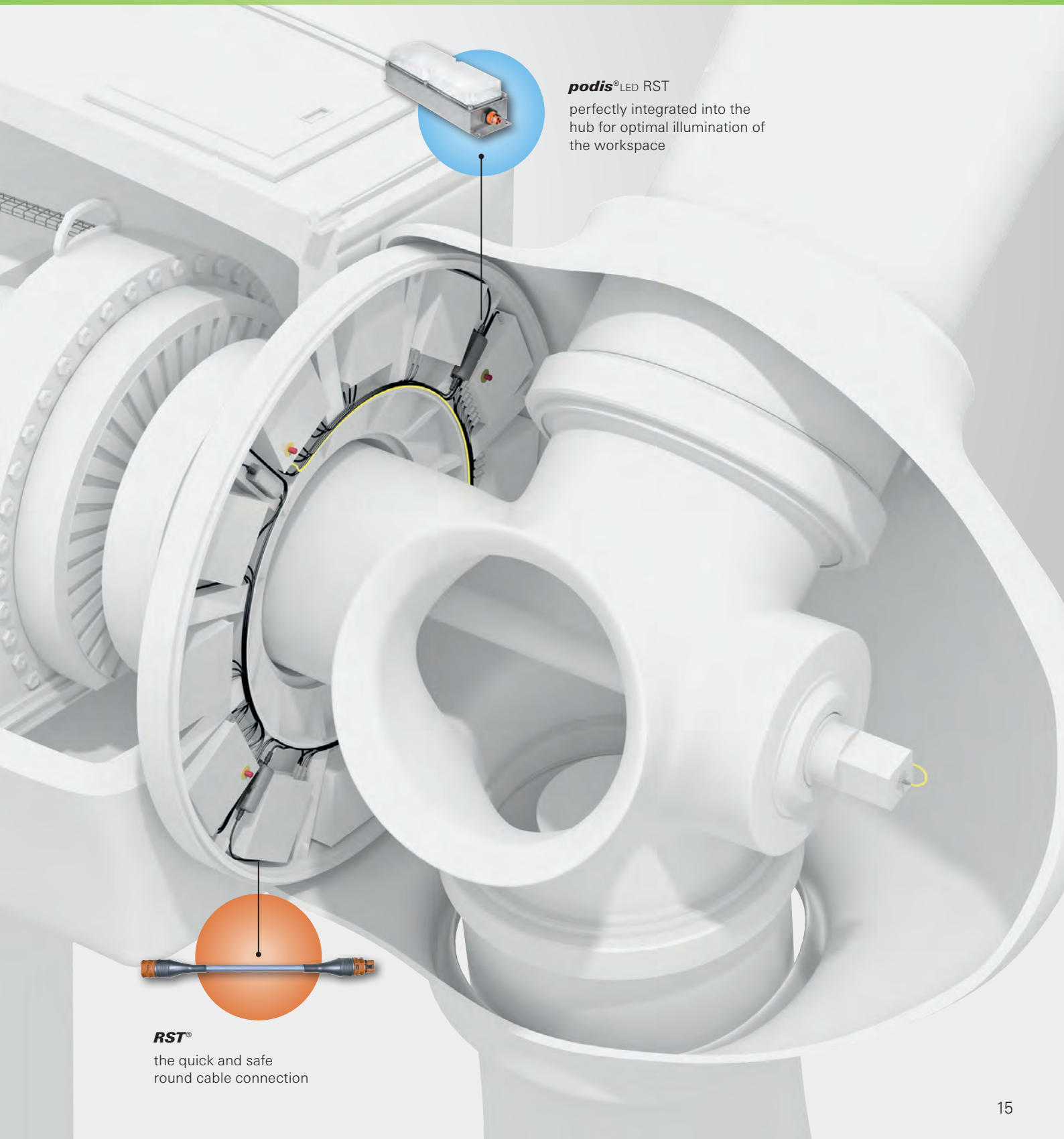
podis®LED
uniform illumination,
only one type of luminaire
for tower and nacelle

Advantages

- ◊ Maintenance-free, energy-efficient LED lighting for working areas
- ◊ Vibration and corrosion-resistant stainless steel housings allow offshore use
- ◊ UL approved – can be used internationally
- ◊ 90–250V AC/DC LED luminaire wide-range universal input enables one luminaire to be used in all networks worldwide
- ◊ Reliable illumination of the entire plant with just a few luminaires.
- ◊ Available as a 24V DC and 90-250V AC/DC LED luminaire

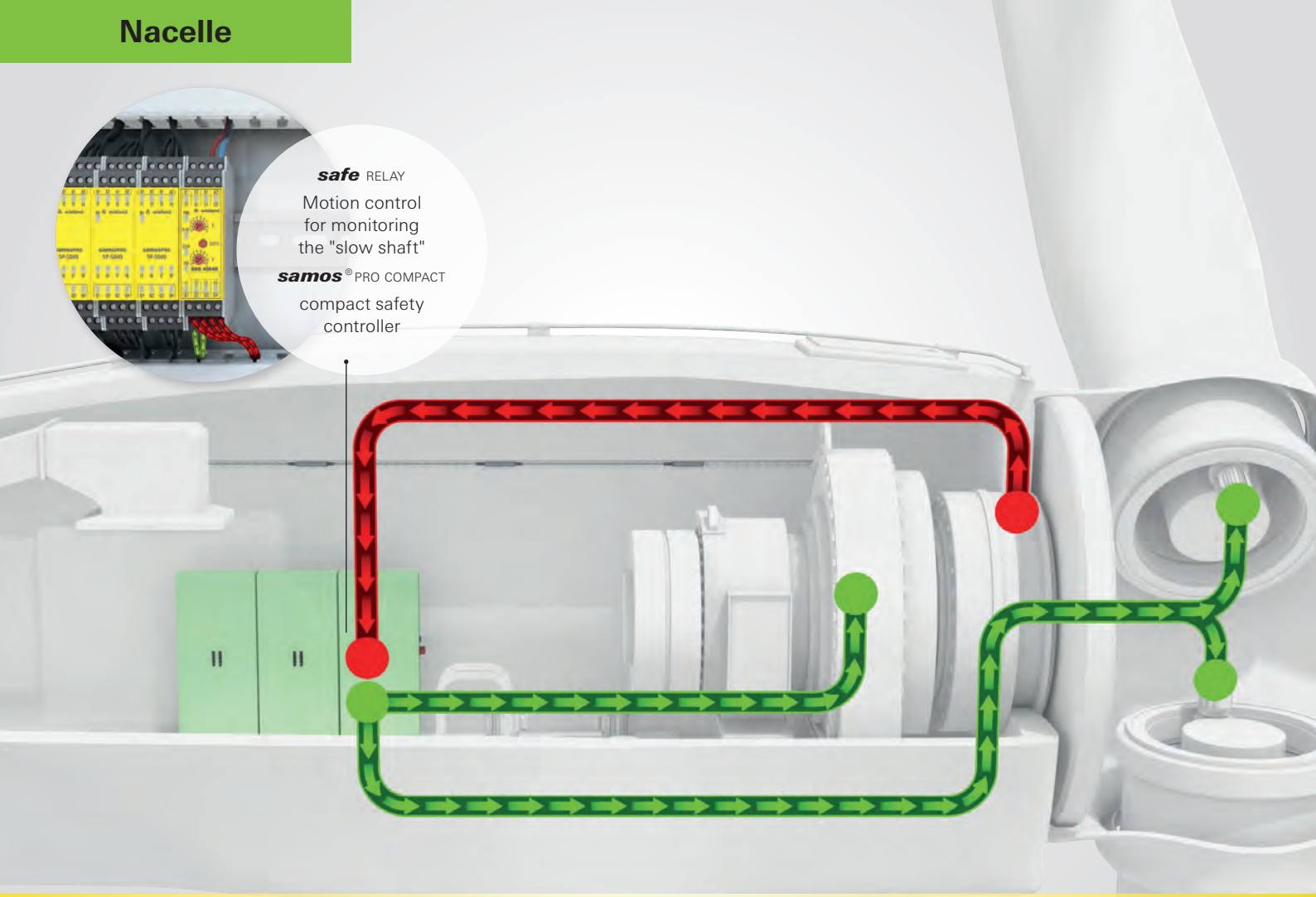
In the Air.

The nacelle – perfect illumination even at the highest point



podis®LED RST
perfectly integrated into the hub for optimal illumination of the workspace

RST®
the quick and safe round cable connection



Safe speed monitoring made simple

Maximum. *safety*

safe RELAY and ***samos***® PRO COMPACT for professional monitoring

safe RELAY SNS 4084K
motion control with start-up
suppression function

Advantages

- Space-saving design thanks to the 22.5 mm wide housing
- Safe speed monitoring of the slow shaft up to PL e of EN 13849-1 possible
- Inexpensive thanks to the use of standard initiator technology and toothed pulley/perforated disk as the encoder
- Variably adjustable frequency range from 8–17.9 Hz with no special tool
- Superior corrosion protection through the use of varnished PCBs

wienet
VPN industrial router for high-speed communication

directRemote: direct access with any browser via a unique URL

Wie-Service24
VPN portal

Wie-Service24
VPN portal – mobile access to all devices behind the routers via smart-phone or Tablet PC

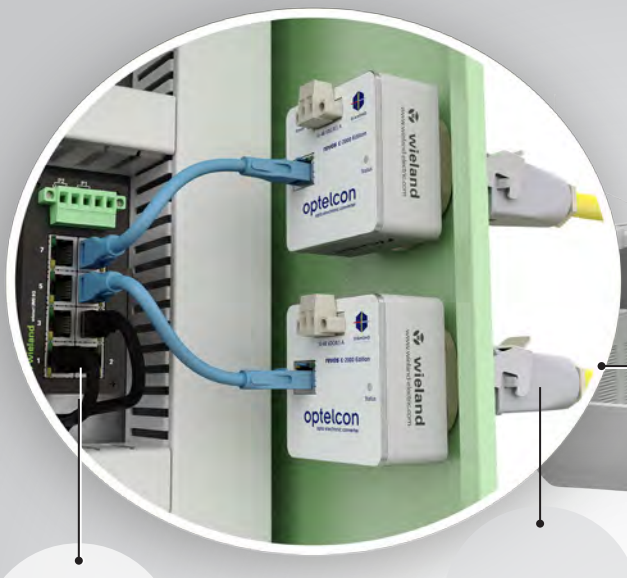
wienet – as the communication interface with the plant systems

Unlimited communication.

A perfect team – connect everything safely and reliably, – from individual devices to entire plants

Advantages

- The wind turbine can be conveniently accessed exclusively by means of the Wie-Service24 VPN server portal – thereby ensuring maximum security against third-party access from the Internet
- The VPN routers feature integrated GPS receivers – the plant systems can be located using geo-data
- Extended operating temperature range from -40 °C to +75 °C – one router for both cold climate and hot climate regions reduces the number of variants
- The robust aluminum housings are ideally suited for the harsh environment in wind turbines
- Scalable use of the Wie-Service24 VPN server portal - from free VPN licenses to one's own VPN server with unlimited VPN licenses



The media converter ***revos*** E-2000 Optelcon BIDI realizes signal transmission via the optical rotary transmitter to the hub of the wind energy turbine.

wienet
IP switch UMS 8 -G

revos E-2000
Connector

revos E-2000
fiber optic duplex cable in single- or multi-mode models

wienet
HSPA+ or LTE industrial mobile wireless router

Advantages of the system

- The ***revos*** E-2000 Optelcon is a rugged and compact media converter in protection class IP65.
- Compact design (100x60x60 mm) for simple mounting on housing walls up to 4 mm with IP65 sealing of the M50 cutout
- Rugged ***revos*** E-2000 connector with low insertion loss, typically 0.1 dB, single mode, so very wide distances (up to 60 km) can be bridged
- The integrated aperture and protection cap closes automatically when pulled out.
- RJ45 network connection with 10/100 Mbit/s transmission power
- Wavelengths used: 1,310 nm and 1,550 nm for transmitting and receiving
- ***revos*** E-2000 Optelcon is available in BIDI or duplex variants.

revos E-2000 – high-performance fiber optic technology in robust housings

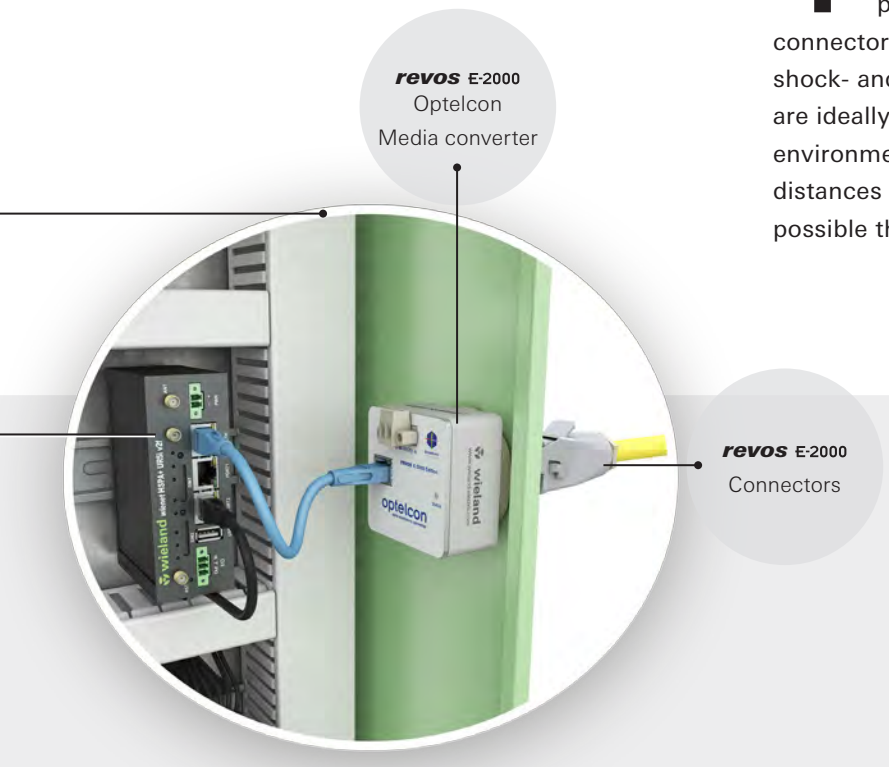
revos E-2000 – industrial connector with fiber optic technology

wienet – VPN industrial router – unlimited M2M communication

revos E-2000 Optelcon – media converter, single- or multi-mode, BIDI (bidirectional/WDM)

Perfectly Connected.

The ***revos*** E-2000 fiber optic cable connector system enables fiber-optic signal transmission with the exceptional characteristics of our proven ***revos*** E-2000 connectors. These connectors are integrated within a compact, rugged, shock- and vibration-resistant metal housing and are ideally suited for data transmission in rough environments. Secure data transmission over long distances between the top and bottom boxes is also possible throughout the entire wind farm.



About the bottom.

The tower base – perfectly equipped through-and-through with Wieland products

wipos ensures an uninterrupted power supply for the tower lighting

podis® – the flat cable system for luminaires and sockets

revos and ***RST***® – the ideal connection with the control cabinet

Additional.

Here you will find yet further innovative power distribution and connection technology products in the control cabinet.

selos WRT
High-tension terminals for safe and maintenance-free energy transmission.

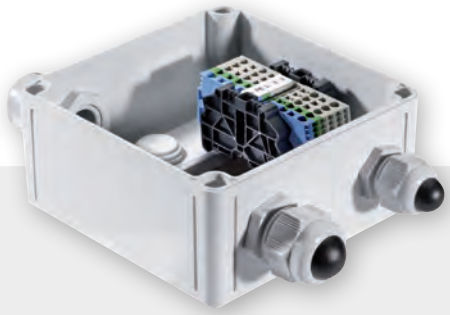
interface
Whenever power flows and signals are processed, ***interface*** products demonstrate their unique strength.

safety
With ***safety*** you always get the right product for protecting man and machine.

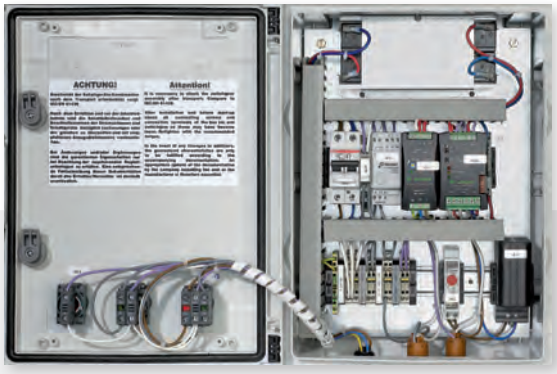
Hardware.

Hardware solutions tailored to your plant systems

We also offer special hardware solutions for your plant systems such as the prefabricated compact UPS or the E-box with rail terminal blocks.



Variably equipped E-boxes, here a variant with rail terminal blocks



Our compact UPS is fully prefabricated and can be easily connected with your plant systems using connectors.

Always at your side.

"One of our core competencies at Wieland Electric is the development and manufacturing of electrical power distribution systems that are simple, safe and quick to install."

STEFAN KADUR
GLOBAL INDUSTRY MANAGER WINDPOWER

Wieland has more than 100 years experience in the electrical connection technology field and in building automation. This knowledge benefits our service for wind power projects.

Our wind power experts will support you from the planning phase to the manufacturing and commissioning of the plant.
We will be happy to propose concrete solutions and contribute our expertise to your planning with proposals, functional diagrams or bills of materials, until a final concept is decided on.

The parts that are prefabricated and assembled in the factory are supplied directly as ready-to-install equipment packages. What this means for you is quick and easy on-site assembly.

Good to know: Wieland products possess the most important approvals, enabling them to be used in wind power projects worldwide.

"*The plant systems' availability underpins economic success – functioning emergency lighting is the prerequisite for maintenance personnel safety*."

MEINRAD BRAUN
PRODUCT MANAGER ENERGY BUS SYSTEMS

We offer you

- Tailor-made solutions for each project
- Prefabricated, ready-to-install equipment packages per section
- Direct delivery to the tower manufacturer
- On-site installer instruction and training

Technical consultation and general information

Hotline – one call is all it takes

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E-Mail **AT.TS@wieland-electric.com**

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contacts are green.