



APPLICATIONS

WIND POWER

When good enough just isn't good enough

Weidmüller 



OUR MISSION

SUPPORTING YOUR IDEAS

Weidmüller is one of the world's leading companies providing solutions for wind power applications. With more than five decades of expertise in industrial connectivity, the company designs and manufactures products for both onshore and offshore installation.

Weidmüller's design and manufacturing facilities are located in Detmold, Germany, and in Suzhou, China. Our manufacturing facilities are ISO 9001-certified and Six Sigma quality processes are utilized to provide ongoing product and process improvement.

Coming from this background, Weidmüller is prepared for the increased demand for renewable energy sources fulfilling global energy requirements.

As a result of the increased environmental awareness of the public, the political conditions are changing in favour of renewable energy. The technologies for realisation of such concepts are available. Our mission is to work together with dedicated partners towards a much wider role for renewable energy. Wind projects are complex wherever they are installed. We see these complexities as a challenge which we convert into quick, custom-made, and above all, flexible solutions.

In cooperation with our international subsidiaries, we can always draw on experience on site for logistics, legal issues and technological support.

Weidmüller's current product line embraces connectivity including conversion and protection. The products feature robust designs for long, reliable performance to enable full optimisation of a wide variety of wind sites for cost-effective operation and maintenance.

Weidmüller can therefore provide you with a one-stop shop service, with a wide range of products.

The result is

- Slimmer, lighter and more compact solutions
- Increased reliability and performance
- Environmental friendliness
- Increased safety
- More value for money
- Off-shore technology for system reliability
- Reduced installation times
- Minimal maintenance

PARTNERSHIP WITH WEIDMÜLLER

Through the years, we have built up many long-term relationships by providing complete, custom-made solutions which don't just perform to the highest standards, but also offer commercial viability for the future.

Decades of experience in the design and manufacturing of state-of-the-art solutions have provided us with know-how, but also make us your worldwide partner due to:

- Technology leadership in components and systems
- Experience and global resources for optimal solutions
- Solutions instead of split approach
- All key components from one source

By translating extensive knowledge into innovative solutions, Weidmüller has established a business concept that the company believes will make it the preferred professional partner in the wind energy industry.

At Weidmüller, we are focused on providing service to you. We welcome any opportunity to apply our knowledge and experience to your requirements and specifications.

SERVICE

Weidmüller focuses on providing service for your applications by:

- Products certified according to international standards
- Product reliability for best turbine availability
- Self-extinguishing materials which guarantee safety
- Shock- and vibration-proof electrical connections
- Product approvals for maritime applications
- Worldwide support for the globalisation of our customers

COMPETENCE

We want to add to your know-how, relieve the pressure on your resources and reduce your time to market with:

- A supply of selected and approved products or modules
- Pluggable connections for fast and faultless installations
- Carrying-out part of detail engineering
- Extensive on- and off-shore experience
- An international subcontracting model
- Advice concerning industrial standards and directives

INSTALLATION AND MAINTENANCE

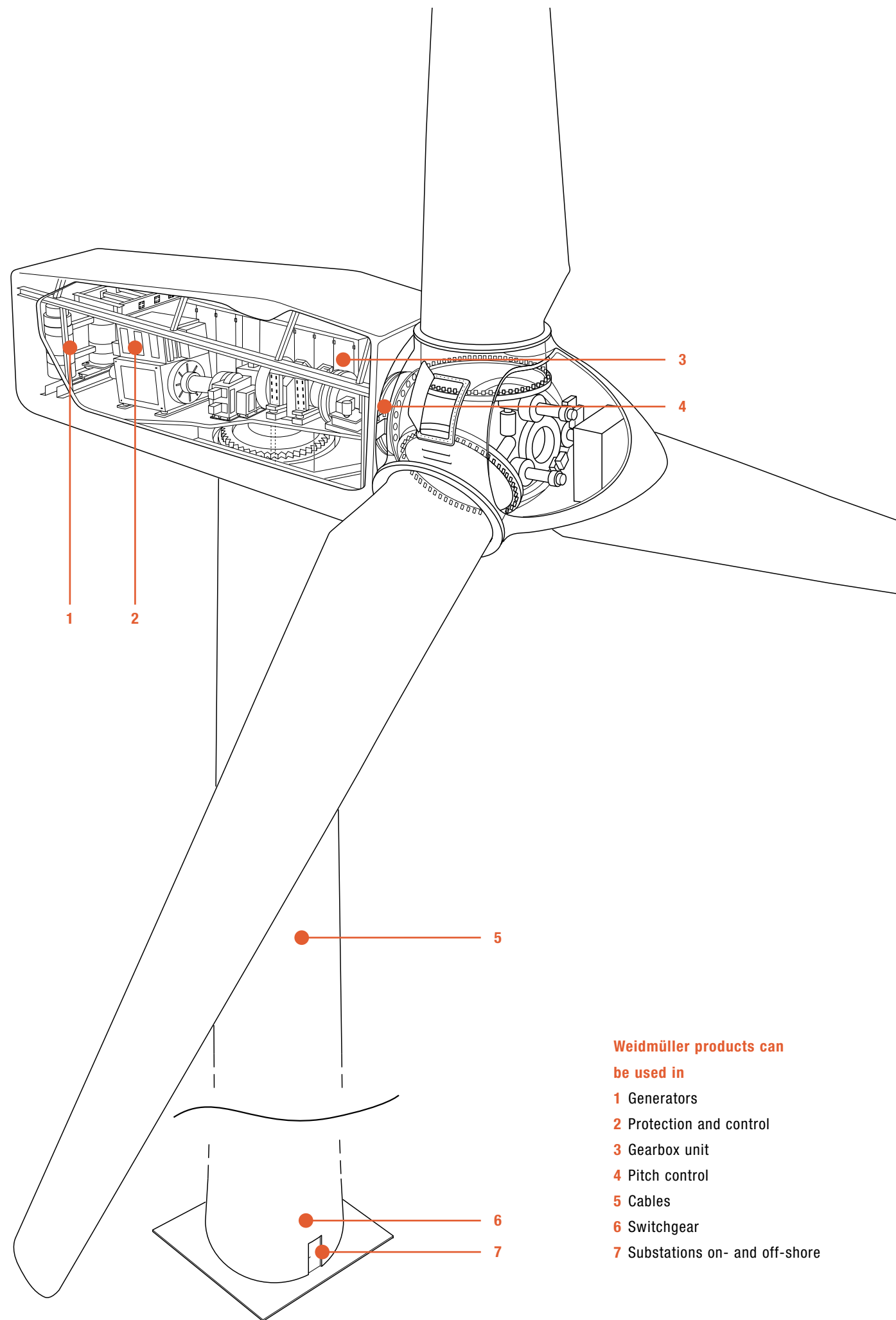
Over the years Weidmüller has built up global experience and local expertise, along with a worldwide sales and service network. As a result, working relationships with wind turbine manufacturers and owners do not end with delivery.

Accessibility for wind farms, especially off-shore, is not always easy and is time-consuming. Stoppages and failures inevitably lead to energy losses and therefore also to lower financial revenues, so availability needs to be maximised. That is why increasing attention is being paid to reliability, as fewer unwanted stoppages also mean fewer visits by repair teams.

Maintaining the value chain of a wind energy project is achieved by providing a professional service and competitive, proven wind technology.

KNOWLEDGE





PRE-ASSEMBLED SOLUTIONS

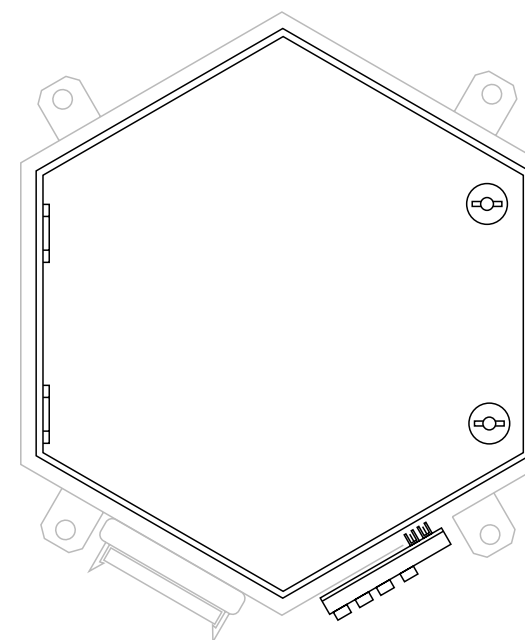
As a supplier with a comprehensive range of products, Weidmüller offers a wide spectrum of customer-specific solutions to provide you with reliable protection for your components.

- Customer- and project-specific solution
- Supply of pre-assembled and in-house tested units
- Integration of third-party products
- Pre-assembled plug and play solution
- Shock- and vibration-proof
- Wide range of enclosures
- Pre-assembled connection cable
- Project documentation, marking system
- Close coordination with main- and subcontractors
- Easy maintenance



WIND TURBINES

THE RIGHT SOLUTION FOR ALL APPLICATIONS



Just one of many examples: the hexagonal IP65 housing for electronic products

- Hexagonal design:
1,000 mm x 1,000 mm x 300 mm
- Material: 1.2 mm sheet steel (18SWG)
- 4 external fixing lugs
- RAL 7032 coated surface
- Sealed neoprene gasket
- Removable lid with internal hinges
- Two double locks
- Internal and external M6 earth screws
- Mounting plate with fixing studs,
2 mm galvanised
- Protection class IP65

TIME SAVING THROUGH PLUGGABLE CONNECTION

Sensor-actuator-interface (SAI) is a modular electrical concept with plug and play technology for where space is limited and overvoltage protection is necessary, such as in the nacelle.

- Easy handling and mounting
- SAI with integrated overvoltage protection (2 in 1)
- Reduction of cost for erection and start-up
- Standardisation of modules and components
- Shock- and vibration-proof
- Pluggable connection for signal and power



- Concentrator with fieldbus connection
- Protection class IP67/68
 - Pluggable gateway without changing the sensor/actuator wiring
 - CANopen, Profibus, DeviceNet (UL listed)
 - Modular design
 - Available types 8DI, 8DO, 16DI, 8DI/4DO or 8DI/8DO
 - Addressable on module
 - Reduction of wiring

SAI - active concentrator



- Modular electrical concept with plug and play technology
- SAI with integrated overvoltage protection
- Concentrator for 4, 6 or 8 signals
- Protection class IP67/68
- Single-line concentrator with M8 connections
- M12-compatible concentrator with quick connections (FIXCON®)
- M12 or IDC quick connection HARAX®
- Metal housing variation for analogue signals
- Pre-wired PLC interface cable
- Open-end connection cable or pre-assembled

SAI - passive concentrator

COLLECT AND CONVERT ANALOGUE DATA



- 6.1 mm wide in a closed housing
- Pluggable cross-connections
- Screw or tension clamp connection
- Pluggable relay and optocoupler with different input voltages
- DC, RTD and thermo analogue signal isolators
- International approvals

MICROSERIES - analogue signal

LOAD SWITCHED BY VIBRATION-PROOF COMPONENTS



- 6.1 mm wide
- Complete product portfolio
- Input range from 24 to 230 Vdc/Vac
- Pluggable cross-connections
- Rail-mountable
- Vibration-proof
- International approvals

Miniconditioner MCZ R - relay and optocoupler

COLLECT AND CONVERT ANALOGUE DATA



- Complete product portfolio
- Screw or tension clamp connection
- Power supply-cross connectable
- Active and passive signal isolators
- In- and output adjustable via DIP switches
- International approvals

WAVESERIES - analogue signal conditioner in a compact design

DEFLECT LIGHTNING AND PROTECT EQUIPMENT

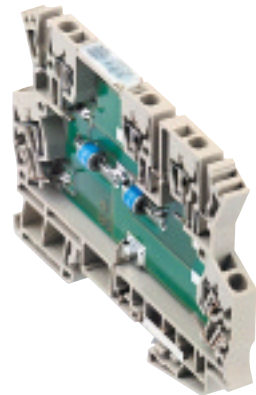


Lightning protection

CLASS I LIGHTNING PROTECTION TO PROTECT WIND TURBINES ABOVE AND BELOW 60 M

- Suitable for 690 V TN or IT networks
- Applications in all protection zones of the turbine
- Lightning protection (10/350 μ s) up to 50 kA
- Triggered and encapsulated spark gap
- Suppression voltage lower 1,500 V
- UL approval
- Short circuit strength up to 50 kA eff
- Spark gap units connected in series to shut off short circuits even in 690 V IT networks, (3 x 2)+0, (3 x 2)+1 circuits

DEFLECT OVERVOLTAGE AND PROTECT EQUIPMENT



OVERVOLTAGE PROTECTION FOR SENSORS AND ACTUATORS IN WIND TURBINES

- Space-saving 6 mm housing
- Screw or tension clamp connection
- PE contact for the mounting rail
- Overvoltage protection for digital or analogue signals
- Low suppression voltage by TAZ diode
- Rated voltage 24 V, 48 V, 115 V and 230 V
- 3-step protection with gas tube, MOV and TAZ diode and slim noise filter
- Sensor/actuator concentrators with 3-step overvoltage protection

Overvoltage protection

CLASS II OVERVOLTAGE PROTECTION FOR NETWORK SYSTEMS

- Complete overvoltage protection for 4- and 5-wire network systems with monitoring.
- Surge current up to 100 kA (8/20 μ s)
- Available for different voltages
- Pluggable varistor with short response time
- 3 + 1 connection

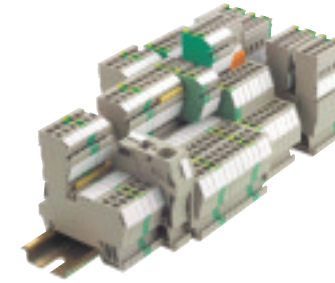
CLASS III OVERVOLTAGE PROTECTION FOR ELECTRONICS

- Slim overvoltage protection up to 16 A with monitoring
- Single- and three-phase units up to 16 A with monitoring
- Rated voltage of 24 V, 48 V, 115 V and 230 V
- PO DS for direct assembly
- Overvoltage protection for socket outlet

OVERVOLTAGE PROTECTION FOR DATA SIGNALS

- Protection for industrial data systems
- RS 232 protection
- RS 485 protection

PLUG AND PLAY ON TERMINATION LEVEL



WeiCoS

- Signals and power, WeiCoS pluggable 690 V terminals for fast assembly on site
- Shock- and vibration-proof electrical connections
- Converter ST4000 stud terminals (4 kV), for fast and cost-efficient disconnection
- WFF stud terminal for main power circuit
- Robust and pressure-tight for extreme applications
- Rock-Star connectors
- Products certified according to international standards
- Products approved for maritime applications

STABILISED POWER SUPPLY FOR ALL ELECTRONIC COMPONENTS



Switched-mode power supply for use in wind turbines

- Wide input voltage range, adjustable output voltage
- High capacitive loads
- Excellent MTBF times
- Special functions such as fault contacts or remote on/off inputs
- Active PFC according to EN 61000-3-2
- Direct mounting or vibration-proofed assembled on mounting rail

IMPROVED AVAILABILITY BY REDUNDANT POWER SUPPLY



Power supply solution with remote control

- Switched-mode power supply units for protection of 24 Vdc outputs
- Floating contact for fuse status
- Additional visual red/green indicator
- In addition to manual reset, reactivation can be remote-controlled via the reset input (remote reset)
- Rated currents up to 20 A

PROTECT ELECTRIC AND ELECTRONIC COMPONENTS



Mild steel and stainless steel enclosures for wind turbines

- Approved for many off-shore applications
- Safe protection for electronics, references available
- Different sizes and project-specific shapes
- Wide range of accessories
- Standard and individual versions assembled with terminals, heavy-duty connectors and cable glands
- GL, DET NORSKE VERITAS, UL, CSA and other certifications according to model

Argentina
Australia
Austria
Bahrain
Belarus
Belgium
Bosnia-Herzegovina
Brazil
Bulgaria
Canada
Chile
China
Colombia
Costa Rica
Croatia
Czech Republic
Denmark
Egypt
El Salvador
Estonia
Finland
France
Germany
Greece
Guatemala
Honduras
Hong Kong
Hungary
Iceland
India
Indonesia
Iran
Ireland
Israel
Italy

Japan
Jordan
Kuwait
Latvia
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Lithuania
Luxembourg
Macedonia
Malaysia
Morocco
Mexico
Netherlands
New Zealand
Nicaragua
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Oman
Pakistan
Panama
Peru
Philippines
Poland
Portugal
Qatar
Romania
Russia
Saudi Arabia
Singapore
Slovakia
Slovenia
South Africa
South Korea
Spain
Sweden
Switzerland
Syria

Taiwan
Thailand
Turkey
Ukraine
United Arab Emirates
United Kingdom
USA
Yemen
Yugoslavia
Venezuela
Vietnam



Weidmüller is the leading manufacturer of components for electrical connection technology. The Weidmüller product portfolio ranges from terminal blocks, PCB connectors and terminals, protected components and relay sockets to power supply and overvoltage protection modules suitable for all applications. Electrical installation and marking material, basic I/O components and a variety of tools round off the range. As an OEM supplier, the company sets global standards in the field of electrical connection technology.

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