

Are you looking for detailed information?

Just enter the bold word in the search facility of our online catalogue (<http://catalog.weidmueller.com>) – you will then be presented with all the relevant product data at a glance. Let's connect.

1. Generator

High-power plug connector
RockStar
Tension clamp terminals
Roofstyle
Connection box with tension clamp technology
Klippon K31
Class I surge protection
PU I / PU R Combi

2. Top-Box

Plug-in modular terminals
WeiCoS
Relay
RIDERSERIES RCI KITP
IE outlets
IE-TO-RJ45-FJ-B
Surge protection
VSPC
IE LINE plug connector
IE-FM

3. Converter

Current and voltage converter terminal
POCON
Relay coupler
MICROSERIES MRZ MCZR
PCB terminals
LXXX
Shield connector terminals
KLBUE

4. Gearbox

Ready-to-fit connection box
Klippon K31
M12 sensor lines
SAIL-M12W-3S1.5Q
Tension clamp terminals (1000 V/UL)
ZDK 4-2/ZAN
PT-100 measuring transducer
MCZ PT100

5. Pitchsystem

Heavy-duty plug connector
RockStar MixMate
Surge protection
MCZ OVP
Power supply unit PRO-M
CP M SNT
IE switch (M12)
IE-SW8-IP67
PCB plug connector
SU/BU

6. Brake system

Sensor-actuator distributor
SAI4-MMS 5P M12
M12 lines
SAIL-M12W-5S1.5Q
M12 screwdriver
Screwy Set
Frequency converter WAVE TTA
WAZ6 TTA

7. Azimuth system

Tension clamp terminals (1000 V/UL)
ZDK 4-2/ZAN
Optocoupler
TERMOPTO TOP
Stripping tool
CST VARIO
Insulation stripping and cutting tool
multi-stripax 6-16

8. Tower installations

GPRS I/O module
IE-GPRS-IO
FieldPower® Box,
FieldPower® LED stripping tool AM 16
Stripping tools
Stud terminals
WFF

9. Bottom-Box

Relay coupler
PLUGSERIES PRZ 2CO
Interface FrontCom®
IE-FCM
IE LINE plug connector
IE-FM
Media converter for Industrial Ethernet
IE-MC

Weidmüller – Partner in Industrial Connectivity.

As experienced experts we support our customers and partners around the world with products, solutions and services in the industrial environment of power, signal and data. We are at home in their industries and markets and know the technological challenges of tomorrow. We are therefore continuously developing innovative, sustainable and useful solutions for their individual needs. Together we set standards in Industrial Connectivity.

Wind is your future We will help you shape it Let's connect.

Energy

Your Partner in Industrial Connectivity for the Wind Energy Industry

Let's connect.

Higher, more powerful and, above all, low in maintenance, suitable for all climate zones as well as in onshore and offshore installations – these are the demands placed on the wind turbines of the future. In line with our ethos of industrial connectivity, we are determined to meet these challenges with future-oriented solutions that are tailored to the requirements of the wind energy industry. Let's connect.

Wind turbines are directly exposed to extreme weather conditions. Consequently, they have to withstand high levels of shocks and vibrations, temperature extremes, changes in humidity levels and, for instance, surges caused by a lightning strike. These conditions and the need for functional safety of a plant place extremely high demands on the mechanical and electrical components of a wind turbine.

It is therefore obvious that our products have been put to the acid test. They have earned the relevant approvals and certifications required for their deployment in wind turbines and guarantee safe and trouble-free operation even in the harshest environments.

In addition to individual components, we offer comprehensive solutions – from lightning and surge protection to integrated tower cabling systems. And in case our standard product range does not suffice, we provide assembly services and modifications and also develop innovative products and concepts that are tailored to your individual needs.

Our global sales staff is by your side to help you plan your applications and select the products and solutions best suited to your requirements. Feel free to contact us.

Weidmüller Interface GmbH & Co. KG
Klingenbergstraße 16
32758 Detmold, Germany
Phone +49 5231 14-0
Fax +49 5231 14-292083
info@weidmueller.com
www.weidmueller.com



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Weidmüller

1. Generator

Durable, permanent vibration-proof and surge-proof connections

Wind turbines are state-of-the-art power plants: generators are responsible for converting wind energy into electricity. The energy output of the plant, in addition to external factors, is largely determined by the ideal design of the generator in terms of efficiency and guaranteed availability. It is therefore important that each individual component operates reliably and is in full working order.

By implementing tension clamp or "PUSH IN" connection technology, our modular terminals and plug-in connectors ensure permanent vibration-proof connections and help optimise assembly and connection times. Our surge protection modules safeguard the systems against faults and failure resulting from lightning strikes.



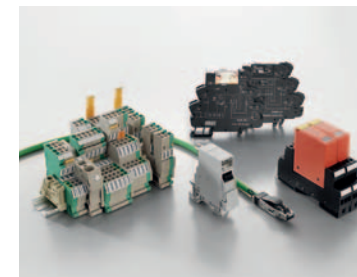
High-power plug connector, tension clamp terminals, connection box with tension clamp technology, class I surge protection (from left to right)

2. Top box

Reliable signal connections in the "heart" of the nacelle

The top box, which houses the plant control system, constitutes the electrical "core" of the nacelle. Important information is gathered here and subsequently processed to facilitate optimum plant operation. Safety and reliability are vital for operation.

Our relays are vibration-proof, switch reliably and are designed to withstand a wide range of temperatures. Our WeiCoS tension clamp modular terminals are universally applicable for voltages up to 690 V and facilitate quick installation, thanks to their excellent plug-in features. The plug-in surge protection module VARITECTOR SPC is an excellent solution for protecting signals, as it identifies and reports errors and can also be tested in accordance with currently applicable industry standards.



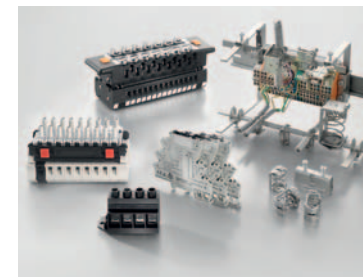
Plug-in WeiCoS modular terminals, relay, IE outlet, IE LINE plug connector, surge protection (from left to right)

3. Converter

An efficient combination of modularity and low maintenance

The inverter unit is the link between the generator and the power grid. It converts the variable rotor speeds into a constant voltage for mains usage. The modular, efficient and low-maintenance design of the components used in the converter facilitates quick assembly and, in several cases, also helps us fulfil customer-specific assembly requirements. Protection systems and proper testing play a decisive role in these applications.

POCON, our current/voltage converter terminal, provides a flexible interface system that allows testing equipment to be connected quickly. The LXXX 15.00, our high-performance PCB terminal, is designed to ensure long turbine service life.



Current and voltage converter terminal, relay coupler, PCB terminal, shield connector terminals (from left to right)

4. Gearbox

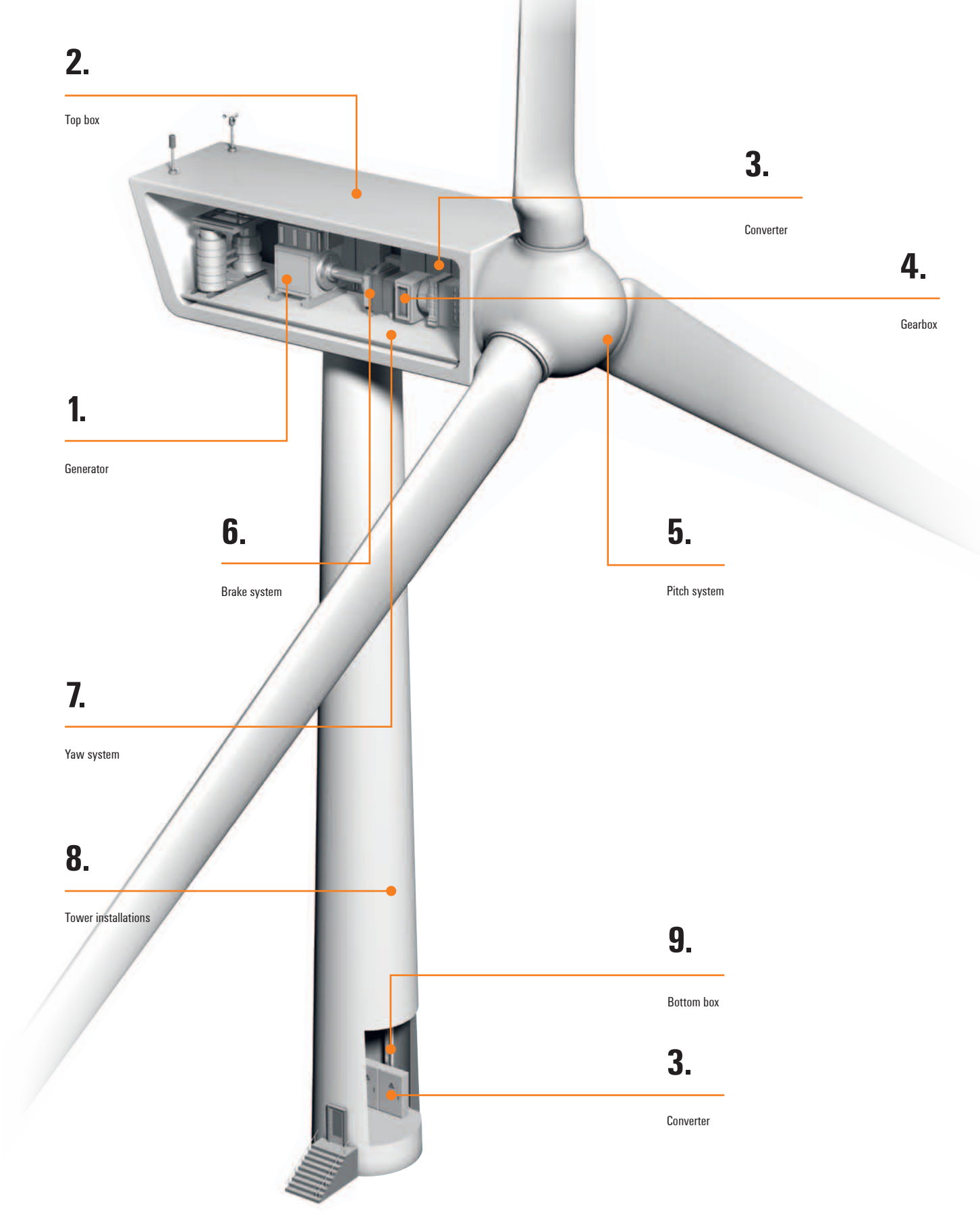
Compact connections with practical extras such as oil resistance

Whether or not a gearbox is used to generate power is a question concerning the overall design of wind turbines that varies from manufacturer to manufacturer. When selecting components for turbines with gearboxes, potential contamination from lubricants must be taken into consideration.

Thanks to the particularly compact design of our components, such as the MCZ PT 100 measuring transducer, which is housed in a 6-mm terminal block and used for temperature measurements, we are able to reduce your space requirements. It goes without saying that it is also equipped with tension clamp connectivity. Our sensor-actuator lines also have a proven oil resistance for these types of applications.



Ready-to-fit connection box, M12 sensor line, tension clamp terminal (1000 V/U/L), PT-100 measuring transducer (from left to right)



5. Pitch system

Excellent protection and mandatory stop in the event of a gust

Optimum aerodynamic positioning of the rotor blades is a particularly important feature of any turbine. As a rotating unit built into the hub, the highest levels of vibration and shock resistance of the pitch system are fundamental requirements for the reliable and efficient operation of a wind turbine.

Equipped with a die-cast aluminium housing, our heavy-duty plug-in connectors offer excellent protection against dirt, moisture and mechanical loads. Some of the outstanding features of the PRO-M series of power supply units for applications in pitch systems include metal feet for vibration-proof attachment and high DC input voltages for operations in conjunction with CAP modules.



Heavy-duty plug connector, surge protection, power supply units PRO-M, IE switch (M12), PCB plug connector (from left to right)

6. Brake system

Secure signal connections that nothing can slow down

Electromechanical or hydraulic brake systems and locking systems that use bolts are safety-related system components. Trouble-free operation in accordance with the relevant guidelines and specifications is essential for protecting investments and ensuring the safety of the service staff during maintenance.

Our sensor-actuator interface modules and the relevant lines ensure the reliable transmission of signals to the system control. By virtue of features such as resistance to sea water and high protection classes (IP 67/68), our modules fulfil the highest safety requirements. Our WAVE TTA measuring signal converter is ideally suited for detecting speeds above and below set thresholds.



Sensor-actuator distributor, M12 lines, M12 screwdriver, frequency converter WAVE TTA (from left to right)

7. Yaw system

Trouble-free operation for maximum energy output

The yaw system controls the alignment of the nacelle in the direction of the wind, thereby ensuring maximum energy output and allowing the turbine to be turned "away from the wind" when maintenance work has to be carried out. Trouble-free functioning of the in-built components of the system is essential to ensure the exact positioning of the turbine.

For electrical isolation and signal conditioning, our TERMOPTO optocouplers, in contrast to electromechanical relays, offer an excellent wear-free alternative to decoupling. TERMOPTO reduces the cost of maintenance, increases system availability and also saves space in the control cabinet, thanks to its 6-mm terminal block format.



Tension clamp terminals (1000 V/U/L), optocoupler, stripping tool, insulation stripping and cutting tool (from left to right)

8. Tower installations

Safely connected from top to bottom with high-speed system solutions

In addition to power and signal cables, it is also necessary to install lighting and power sockets in the tower. When it comes to saving time and costs, high-speed, easy-to-operate system solutions are critical success factors.

Weidmüller's FieldPower® Box reduces the time required for installing electrical components in the tower, thanks to the establishment of high-speed contacts between the tower segments and the lighting systems or power sockets. With its practical FieldPower® LED solution, Weidmüller brings light to the darkness. The high level of flexibility, robust design and easy handling are features that allow reliable individual connections and simultaneously reduce installation costs.



GPRS I/O module, FieldPower® Box, FieldPower® LED, stripping tool, stud terminals (from left to right)

9. Bottom box

Integrated data connections throughout the wind farm

The bottom box houses the essential components required for communicating operational data to the remote operator or for integrating a wind turbine into a wind farm in order to regulate, for instance, the output of the individual turbines.

Our media converters and switches convert electrical Ethernet signals and allow them to be transferred along fibre-optic cables. In doing so, Weidmüller ensures an error-free flow of data within the wind farm. Our FrontCom® service interface allows you to have easy access to the networks, thereby eliminating the need for you to open the control cabinet.



Relay coupler, interface FrontCom®, IE LINE plug connector, media converter for Industrial Ethernet (from left to right)

