

Offshore

The harsh weather conditions at sea put high demands on your turbine control system. Mita-Teknik develops robust, reliable and intelligent offshore solutions that deliver proven results.

Offshore Challenges

40 years of experience in successfully delivering off- and onshore projects on time and within budget, Mita-Teknik knows exactly what it takes. We maximize the value of each link in the supply chain by thoroughly understanding the complexity and challenges in the offshore business, and by developing the best technology available. Based on our experiences within control, regulation and surveillance of more than 45,000 wind turbines, and offshore projects like Repower 5M, the EU project Offshore M&R and Marine Current Turbines Ltd (MCT) SeaGen, Mita-Teknik is on top of the challenges you will meet when you go offshore.

Our Complete Solution addresses challenges like:

- › Level of redundancy implementation
- › Condition based monitoring
- › Predictive maintenance functions
- › Logging and alarm functions
- › Easy remote service and operation
- › Verification and control of equipment

Outstanding Quality

The harsh offshore environment, the small window for maintenance and repair, combined with extended reliability and availability requirements, set new demands for the equipment to be installed. All of our products are produced in accordance with the ISO 9001-standard. We run burn-in tests on all products and perform automated tests of all electronics. On each of our power panels we run semi-automated tests and we perform audits on our internal processes and suppliers. With our high-level technology and automated testing systems, we continuously ensure the quality of our hardware and software.

Extensive Product Portfolio

Mita-Teknik has an extensive product portfolio, specially designed for offshore wind turbines. Choose Mita-Teknik and benefit from more than 40 years of experience and know-how.

Offshore Turbine and Park Control. The WP4200 Control System Platform is our latest generation of controllers designed for wind turbines. The WP4200 controller and the concept around it ensure optimal operation and advanced data collection of turbines as well as parks. In a market where reliability, security, robustness and high performance are cornerstones, this is of utmost importance to your daily operation. You can perform all tasks remotely as if you were on-site - e.g. uploading application programs, setting parameters and downloading collected data so that service and maintenance can be planned well in advance. Of course, the WP4200 system offers redundancy, both in hardware and software, so your offshore wind turbine can keep on running even if components and communication should fail.

SCADA System - Gateway. Gateway is a PC software package, designed to interact with the turbine controller(s) and to enable the remote user to conduct tasks, as if the person was on-site. The Gateway system collects, handles, analyzes and illustrates the data from the controller with simple graphics and text. The latest version of Gateway offers extended reporting functionality that gives you complete overview of the performance of the individual wind turbines and parks. Users of our Condition Monitoring System also benefit from our Algorithm Toolbox, which enables preventive maintenance features that will help you optimize your service efforts, reduce costs and increase the production.

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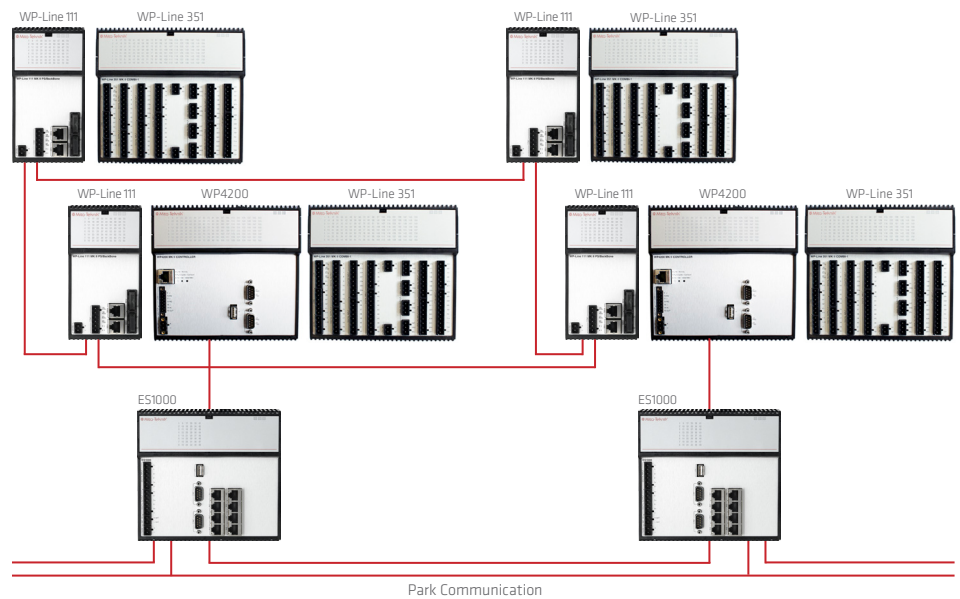
Choosing the right system design is the foundation of safe and reliable operation of your machines. We advise our customers in the fields of both hardware and software.

Redundant Design

Our WP4200 Control System Platform consists of sturdy hardware and is designed for easy on-site maintenance.

Our Plug-and-Play system ensures an easy replacement of modules and includes:

- › Hardware and software redundancy
- › Remote backup of all data
- › Remote upload of application programs and firmware
- › Synchronization of data between redundant controllers



Electrical Pitch System - MDS. The Mita Drive System (MDS) is used for accurate and reliable pitch control of wind turbine rotor blades using sturdy AC motors with batteries or Power capacitors as backup. The MDS is placed in the wind turbine hub, and is designed to resist severe vibrations and rotational forces. To ensure safety and individual pitching, the system is split into one system per blade. If one or more blades are out of order, the wind turbine can still be stopped safely with the remaining blades. Mita-Teknik offers complete pitch solutions, including pitch motors, drives, control encoders, position encoders and limit switches for offshore installations.

CMS/Condition Monitoring - WP4086. The WP4086 Allianz-approved Condition Monitoring System is used for vibration analysis and trending. By means of up to 8 accelerometers placed at critical components like bearings and gear box, the system measures and surveys predetermined critical vibration levels. When a warning or an alarm is detected it is sent back

to the operator or controller that, depending of the severity of the fault, can run the turbine at normal or reduced power until the service team arrives. This secures the availability of the turbine and prevents breakdowns. The WP4086 also offers predictive maintenance functions enabling you to plan service and maintenance well in advance. This ensures time-efficient offshore maintenance.

Power Panels. With our experience in power panels for offshore, we know the potential challenges your equipment may face and we have probably already developed methods for handling them. Our competent engineers, technicians and production staff are dedicated to ensure that your final product is of high quality, always cost-effective, easy to install and maintenance-friendly.

For more information please contact our Sales department: mail@mita-teknik.com or +45 8665 8600.