

# EDS® Nacelle – Wind Power Generation

FESTO



## Efficient and realistic hands-on training

Maintaining and operating wind turbines requires essential technical and troubleshooting skills. The comprehensive curriculum of the EDS® Nacelle – Wind Power Generation covers the fundamentals of wind energy and offers hands-on training for real-world operation and maintenance situations, preparing students with the skills and training for jobs as wind turbine technicians.

The EDS® Nacelle is a complete scaled-down version of commercial wind turbine nacelles, making it a highly cost-effective and comprehensive training solution. Users are able to fully interact with this space-efficient and affordable trainer, enhancing the learning experience of trainees.

## Benefits

- Large-scale, proportional components perfect for an educational environment
- Representation of each important component of a nacelle
- All behaviors of a nacelle have been programmed into the unit
- Teaches maintenance, preventive maintenance, performance analysis, and troubleshooting, all in one unit
- Fault insertion via the HMI
- Yaw motor, yaw brake, cable twist sensor, slewing ring, encoder
- Complete drive train with gearbox, main shaft, speed sensors, disk brake, and generator
- Full industry-standard electrical and hydraulic schematics are provided

# EDS® Nacelle – Wind Power Generation

## A complete wind power generation training solution

The EDS® Nacelle – Wind Power Generation consists of a complete drive train including the main shaft, a gearbox, speed sensors, its own hydraulic system, hydraulic brake, and an asynchronous generator. The yaw system is fully operational. A manual hydraulic pump and an accumulator, as found in real-world wind turbines, are also included. A Siemens PLC controls the different functions of the Nacelle and is located in an electrical enclosure with all the other electrical components.

A wind vane and an anemometer are located in a transparent enclosure on top of the training system to monitor wind speed and wind direction. The user-managed control system simulates a real-world wind-measurement process. A weather sensor reaction, based on the simulated parameters, then sends the appropriate signals back to the control system. Complete electrical schematics are provided to help develop troubleshooting skills. These schematics follow IEC standards and are similar to what is currently found in the industry.



- Chain-driven rotor hub
- Real 5kW wind turbine gearbox
- Parking disc brake
- 250W induction generator
- Built-in hydraulic unit with hand pump (power failure simulation)
- Industrial electrical panel
- SIEMENS touch-screen
- Profinet / Profibus communication protocols
- Several safety features and training aspects

### Topics covered

- Nacelle Familiarization, Safety, and Control System
- User Interface and Wind Simulation
- Hub and Low-Speed Shaft
- Gearbox, Coupling, and Alignment
- Basic Hydraulic Circuit
- Hydraulic Brakes
- Electrical Circuit and Panel
- Troubleshooting

### Order numbers

230V / 50Hz	8046642
110V / 60Hz	8046643

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