wt5500df and wt5500fc

Capitalize on the rise of offshore wind

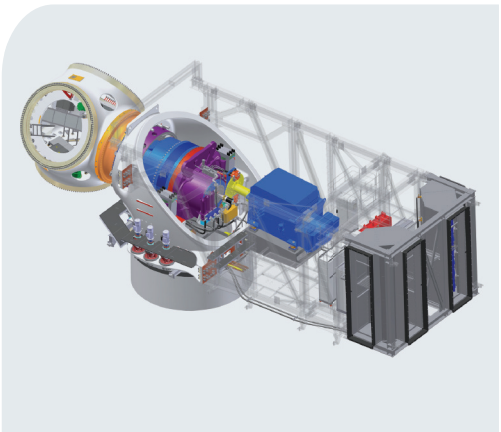
AMSC's Windtec Solutions include wind turbine designs that enable our partners to launch best-in-class wind turbines quickly, effectively and profitably. The wt5500df (doubly-fed) and wt5500fc (full-scale conversion) models have been designed for customers seeking to manufacture 5.5 MW wind turbines with the best in quality design, efficiency and performance. The wt5500 design focuses on the lowest cost of energy and highest reliability, supported by active turbine and condition monitoring.

High efficiency for offshore generation
The wt5500 design uses an advanced electrical individual pitch control system design. It is available in 50 or 60 Hz, for various climate conditions and in different hub heights, different rotor diameters and blade types to meet all type classes.

The wt5500df features a doubly-fed, three-phase induction generator. The wt5500fc uses a permanent magnet synchronous generator (PMSG), electrical excited synchronous generator or asynchronous generator with a full-scale converter. The generator works with high efficiency over the entire speed range. This is ensured by the IGBT-based converter with advanced power electronics.

Compliance with international grid codes
The wt5500 wind turbines fulfill the most demanding international grid code requirements and have low voltage ride-through (LVRT) capability.

Real-time information with continuous monitoring and alarm handling
AMSC's advanced wtCMS condition monitoring system provides continuous monitoring of the key system components. This gives operators real-time information about the turbine status as well as detailed and comprehensive analysis tools to optimize maintenance activities. The fully integrated system allows intelligent measurement, turbine control interaction and the analysis of monitoring and performance data. In addition, wtSCADA remote operation and wtDataCenter analyzing packages are available to provide a harmonized control system with supervisory control and data acquisition to actively monitor, analyze and operate entire wind parks.



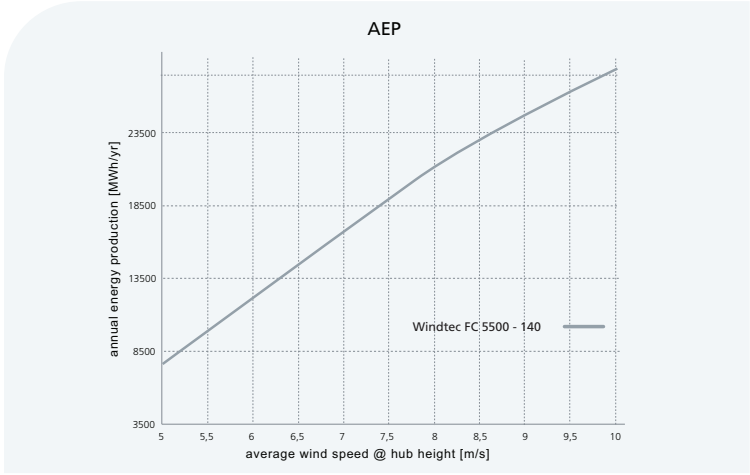
Windtec Solutions™

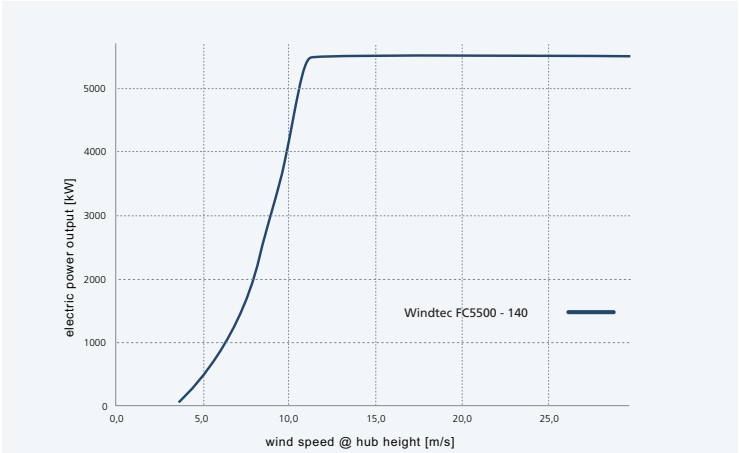
- Customized wind turbine designs
- Reliable operation in various climate conditions
- Excellent component supply chain and localization support
- Fast entry to the offshore wind business
- Well-suited for both onshore and offshore
- Blueprints available for rotor blade technology transfer

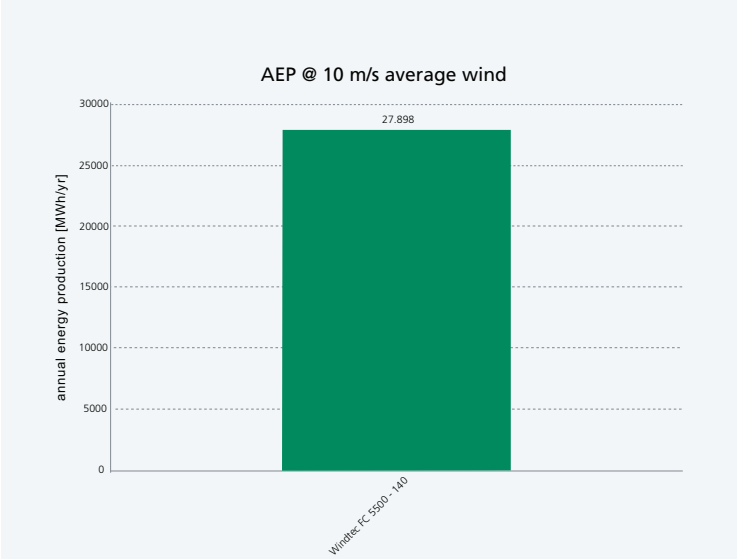
The wt5500 turbine solutions are fully designed by AMSC® and are currently in the process of being certified by Germanischer Lloyd. Comprehensive certification support is available.

Wind Turbine Designs – wt5500df/fc

Windtec Solutions™







GENERAL	TC I	
Type:	wt5500df	wt5500fc
Grid frequency:	50 Hz / 60 Hz	
Tilt angle rotor axis:	5°	
Hub height:	100 m	
Hub type / material:	cast iron	
Mainframe type:	cast iron	
Type of tower construction:	tubular steel tower	
Rotor diameter:	140 m	
Lightning conductor:	integrated	
OPERATING DATA		
Cut-in wind speed:	3.5 m/s	
Rated wind speed:	11.75 m/s	
Cut-out wind speed:	30 m/s	
GENERATOR AND POWER ELECTRONICS		
Generator type:	doubly-fed induction	synchronous/asynchronous
Rated driving power:	5500 kW	
Cooling:	water cooling	
Converter type:	IGBT, 4-quadrant	
Generator rated power:	0.95 inductive to 0.95 capacitive at 690V ph-ph	
DRIVETRAIN SPECIFICATION		
Type of gearing:	planetary/parallel shaft gear	
Gear lubrication:	forced lubrication	
Connection gear/generator:	flexible coupling	
BRAKING SYSTEM		
Operational brake:	individual blade pitching	
Type of construction:	gear/servomotor	
Mechanical brake:	disc brake	
YAW SYSTEM		
Type of yaw bearing:	single row (slewing) ball bearing	
Drive unit:	gear motor	
Number of drive units:	8	
Brake:	active brake plus motor brake	
AMBIENT TEMPERATURE RANGE		
Normal:	During operation:	-10°C to 40°C
	Survival range:	-20°C to 50°C

www.amsc.com/windtec
sales@amsc.com

wt5500_DS_A4_0212

smarter, cleaner ...better energy

amsc