GOLDWIND

GW165-4.0MW

PMDD Smart Wind Turbine

Product Features

**Next-generation Permanent Magnet Direct-Drive (PMDD) Platform**

- **High Reliability**
  Retain the good qualities of 2S and 3S, Goldwind's mature platforms

- **High Scalability**
  Multiple optional configurations and software & hardware interfaces based on platform and module development

- **Friendly Grid Connection**
  ZVRT and primary frequency modulation realize outstanding grid code compliance even of weak grid

Intelligent All-round Upgrading

- **High Performance**
  The single-turbine and site-level self-learning optimization algorithm, enables autonomous optimization of power generation performance

- **High Adaptability**
  Load shedding technology based on advanced sensing exploit performance potential

- **High Safety**
  Reliable precaution strategies for extreme weather can be delivered based on the exclusively accurate weather data
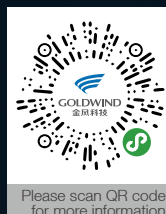
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Operating parameters

Rated power	kW	4000
Wind turbine class	IEC	S
Cut-in wind speed	m/s	2.5
Rated wind speed	m/s	9.7
Cut-out wind speed	m/s	24
Design service life	Year	$\geq$ 20
Operating temperature	℃	-30℃ ~ +40℃
Survival temperature	℃	-40℃ ~ +50℃

Rotor system

Rotor diameter	m	165
Swept area	m^2	21124

Generator

Type	\	Permanent magnet synchronous generator
Rated voltage	V	950

Converter

Type	\	Full power converter
Power factor regulation range	\	Capacitive 0.95~inductive 0.95
Rated output frequency	Hz	50
Rated output voltage	V	900

Brake system

Aerodynamic brake system	\	Aerodynamic brake via feathering
Mechanical brake system		Generator hydraulic brake (for maintenance)

Yaw system

Type/Design	\	Motor-driven/Four-stage planetary gear reducer
Yaw brake	\	Sliding bearing

Control system and lightning protection

Type	\	PLC control system
Lightning protection design standard	\	IEC 61400/24-2010, IEC 62305-2010
Lightning protection strategy	\	Integrated lightning protection system for the turbine (GL certification standards)
Wind turbine ground resistance	Ω	If the average earth resistivity $\rho \leq$ 3000 Ω·m, the power frequency grounding resistance R for each wind turbine should be less than 4 Ω

Tower

Project-specific

Type	\	Steel tower/Concrete tower
Hub height	m	100/140/155