



GOLDWIND

MWPS World

**Goldwind S48/750 wind turbine technical
parameter**

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1. General specification

Goldwind 48/750 adopted the Danish design concept that is horizontal axis turbines , three bladed upwind rotor , blades are attached rigidly to the hub. The rotor operates at constant speed and drives a asynchronous generator. it is one of relatively simple, reliable and robust design principle in the world. All performance should be accord with IEC61400-1 and Germanischer Lloyd. The main shaft and the gearbox is separated, this design is very simple with lighten weight and is convenient to maintain .The gearbox also uses separated design and it is more easy to be replaced. There is a torsion ally stiff backlash-free coupling between generator and gearbox, this coupling has the following advantages.

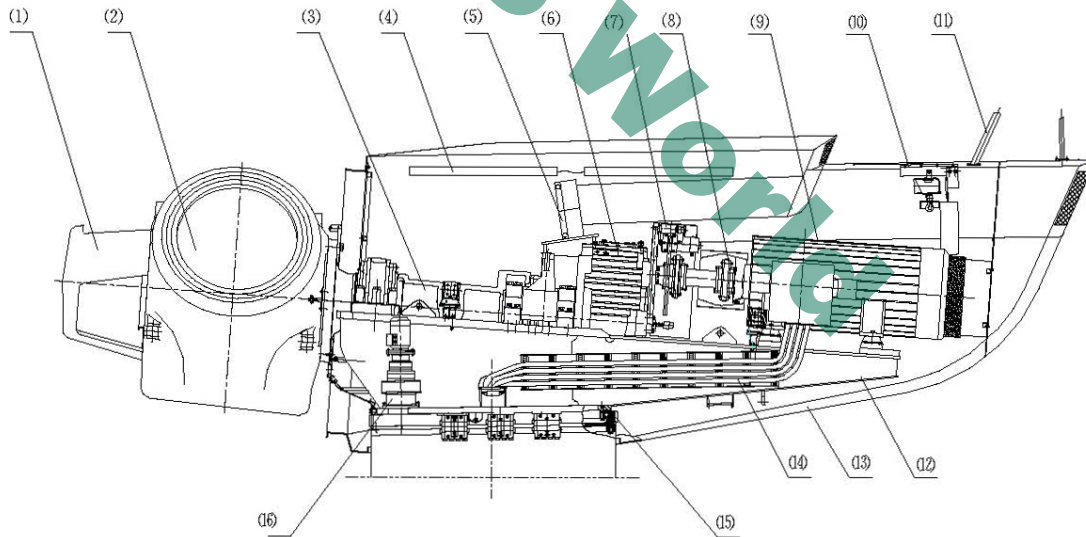
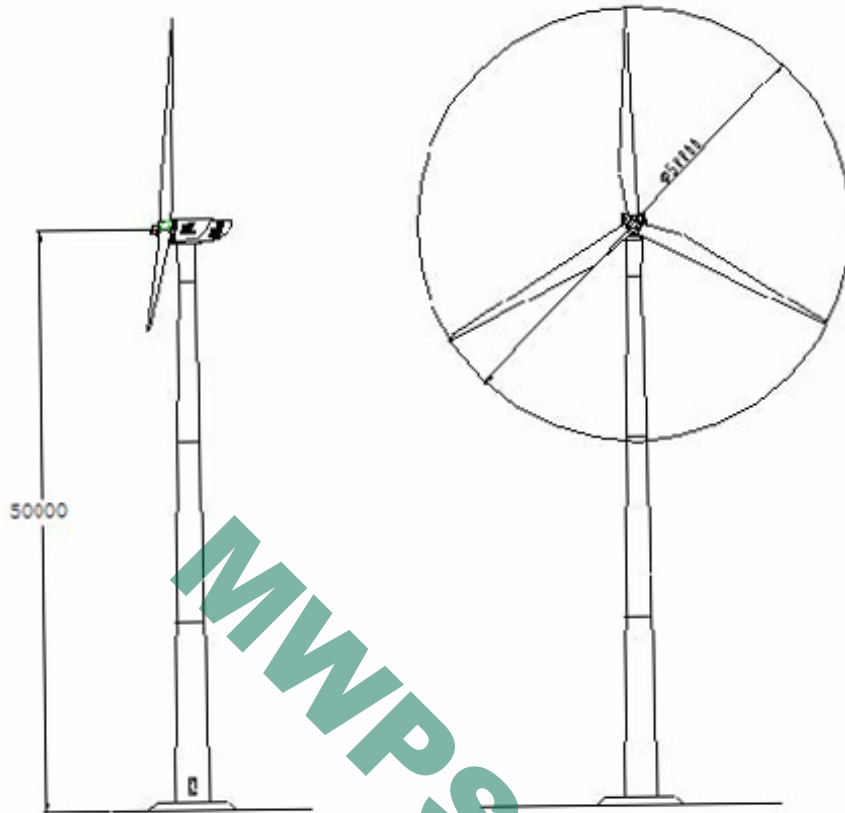
- Single cardanic design
- Only angular and axial misalignment permitted
- High tensional stiffness
- Compact design

Active yawing system and it adjusts the wind turbine to face wind automatically according to the wind direction. There is a damping control when turbine is yawing at an optimum yawing speed and this control makes the turbine steady. Soft-brake system: using the soft-brake system and make the brake process more steadier. In order to prevent the impact load, generator has enough safety factor and wide scope of efficiency. And it also has a suitable slip factor which makes the rotation steadier. In the designing, we also think about turbines operates in the complex weather condition, so the gearbox was designed more strong. The whole system has lubrication heating system , force to lubricate , air cooling system and heating system of generator, cooling system and so on. It is suitable for strong gust , turbulence wind , high temperature , low temperature and other desert, coastal areas conditions. Nacelle is humanistic design, the space is large and is convenient for maintenance.

There is also lift equipment that is convenient for lifting tools and spare parts.

- Control system includes local control and remote control. Local control has soft-grid and reactive power compensates equipments .The soft-grid equipment will limited the current under 1.5 times rated current. The reactive power compensate will guarantee the power coefficient above 0.98. The remote system has information system, and it can plot report, data analysis, etc.
- Control by computer: data acquisition and running automatically. The safety system is individual, and it including independent, fail-safe aerodynamic brake and two mechanical brakes.

Wind turbine and every component are designed and manufactured according to GL regulation, DIN standards or other equivalent standards.



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|----------------------|-------------------|----------------------------|----------------------|--------------|------------------|--------------------|------------------|
| (1) entering support | (2) rotor blade | (3) main shaft | (4) lightning system | (5) cooler | (6) gearbox | (7) brake | (8) coupling |
| (9) generator | (10) chain lifter | (11) wind vane, anemometer | (12) base frame | (13) nacelle | (14) power cable | (15) yawing system | (16) yaw reducer |

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2. Goldwind S48/750 wind turbine technical parameter

	Item	Unit	Specification
Wind turbine	Manufacturer		Goldwind science & technology Co., Ltd
	Safety class		IEC Class I
	Type		Goldwind S48/750(60Hz)
	Rated power	kW	750
	Power adjustable type		Stall
	Rotor diameter	m	48
	Hub height (suggestion)	m	50
	Cut-in wind speed	m/s	3.5
	Rated wind speed	m/s	14~15
	Cut-out wind speed (10 minutes average)	m/s	25
	Life	Y	20
	Survival wind speed (3 seconds average)	m/s	70
Grid	Voltage	V	690±10%
	Frequency	Hz	50±2%
	Voltage unstable extent		≤2%
	Max grid interruptive duration	Day	7
	Interruptive time	time/year	20
Rotor	Type		HT24
	Blade material		Reinforced Fiber Glass Resin
	Number		3
	Direction		Horizontal axis
	Rotational	r/min	21.7
	Inclination angle	°	5
	Cone angle	°	0
	Wind direction		Upwind
Rotational direction (upwind)		Clock-wise	
Gearbox	Type		FDG-00R1

Item		Unit	Specification	
	Steps		Two stage with planetary and spur gear	
	Transmission ratio		1:83.916	
	Rated power	kW	825	
	Rated torque (input)	kN.m	363	
	Lubrication		Mobil SHC XMP 320	
	Lubricative type		Pressure-Forced	
Generator	Type		3 phase Asynchronous Generator	
	Rated power	kW	750	
	Rated voltage	V	690	
	Rated current	A	690	
	Rated rotational speed	r/min	1822	
	Rated power coefficient		0.90	
	Connection		Δ	
	Insulation level		H	
	Protection level		IP54	
	Cooling system		IC411	
	Center height	mm	450	
	Work style		S1	
Yawing System	Type		Active yawing	
	Driving system		1.5kW four stage planetary gearbox generator	
	Bearing		External Gear Ring Four Points Ball Bearing	
	Yaw generator	Rated power	kW	1.5
		Rated voltage	V	400/690
		Rated current	A	4.25/2.46
		Rated rotational speed	r/min	835
		Power factor		0.68
		Connection		Δ/Y
		Insulation level		F
		Protection level		IP55
		Work style		S4
	Electromagnetic brake moment	N.m	30	
Reducer	Rated input power	kW	1.5	

		Rated input rotational speed	r/min	835
		Rated output rotational speed	r/min	1.116
		Transmission ratio		748
		Rated input torque	N.m	17.15
	Brake	Pressure range	bar	140~160
		Urn diameter	mm	80

Item		Unit	Specification
	Frictional coefficient		≥0.4
Control system	Type		Computer control
Tower	Type		Conical tubular steel tower 、 three segments
	Height	m	47.28
Brake and lighting protection	Primary Brake System		3 Aerodynamic Tip
	Secondary Brake System		2 Brake Discs on High-Speed Shaft
	Lighting protection design standard		IEC61024/61312/61400,GB50057-1994
	Lighting protection		Blade tip arrester, nacelle arrester, electric element
High speed brake	Brake moment	N.m	6283.2
	Rated moment on high speed end of gearbox	N.m	3927
Hydraulic pump generator	Rated power	kW	1.27
	Rated voltage	V	690
	Rated current	A	1.7
	Rated rotational speed	r/min	1680
	System flux	L/min	3.7
Lubricant pump generator	Rated power	kW	4
	Rated voltage	V	690
	Rated current	A	6.3
	Rated rotational speed	r/min	1120
Radiator generator	Rated power	kW	1.73
	Rated voltage	V	690
	Rated current	A	2.4
	Rated rotational speed	r/min	1130

Weight	Blade	kg/piece	3200
	Hub	kg	4500
	Rotor	kg	14700
	Gearbox	kg	6400
	Generator	kg	4450
	Nacell	kg	22500

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