

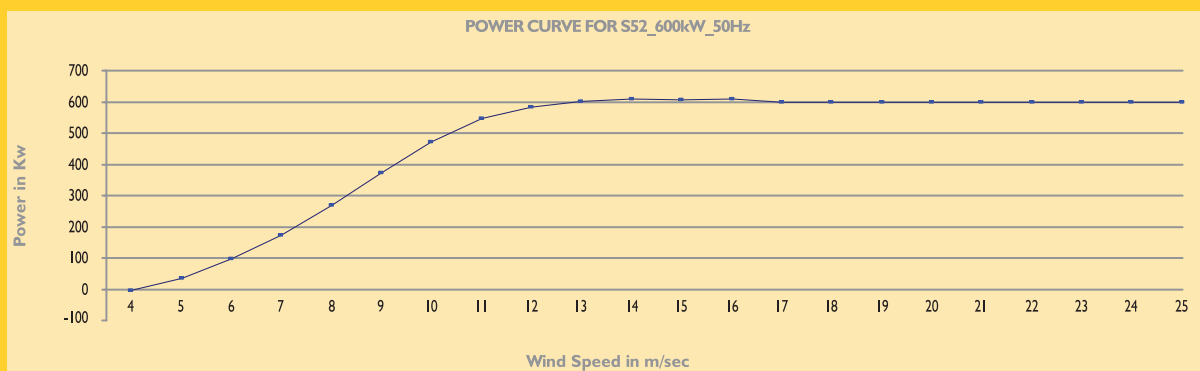
S52

S52-600 kW
Technical overview



SUZLON

MODEL	S52-600kW
OPERATING DATA	
Rated power	600 kW
Cut-in wind speed	4 m/s
Rated wind speed	13 m/s
Cut-off wind speed	25 m/s
Survival wind speed	59.5 m/s
ROTOR	
Type	3 Blades, Upwind / Horizontal axis
Diameter	52 m
Rotational speed at rated power	24.19 rpm (fix speed machine, max over speed 28.29 rpm)
Rotor blade material	Epoxy bonded fiber glass
Swept area	2124 m ²
Power regulation	Active pitch regulated
GEARBOX	
Type	1 planetary stage / 2 helical stages
Ratio	1 : 63.6
Nominal load	660 kW
Type of cooling	Forced oil cooling lubrication system
GENERATOR	
Type	Single speed induction generator (asynchronous)
Speed at rated power	1539 rpm
Rated power	600 kW
Rated voltage	690 V AC (phase to phase)
Frequency	50 Hz
Insulation	Class H
Enclosure	IP 56
Cooling system	Air cooled
TOWER	
Type	Lattice tower (hot dip galvanised)
Tower height	73m
Hub height (including foundation)	Approximately 75m
BRAKING SYSTEM	
Aerodynamic braking	3 Independent systems with blade pitching
Mechanical braking	Hydraulic fail safe disk brake system
YAW SYSTEM	
Type	Active electrical yaw motor
Bearing	Polyamide slide bearing with gear ring & automatic greasing system
Protection	Cable twist sensor, proximity sensor
PITCH SYSTEM	
Type	3 independent blade pitch control with battery backup for each blade
Operating range	-5 ° to +90 °
Resolution	0.1 ° to 10 °
CONTROLLER	
Suzlon Control System with following salient features:	
- Park slave	
- Power output control / limitation	
- Reactive power control	
- Grid measurement	
- Low voltage ride through (LVRT)	
- Weather measurement	
- Time synchronization	
- Statistics	
Wind Class	II a
Certification & Standards	GL (T-GL-020-2007)
Quality System	ISO 9001:2000



Under given set of parameter and conditions.

Subject to change without notice due to difference in parameters, conditions and/or change in equipment or technological requirements.

S52-600 kW



The S52- 600 kW has a well-suited ratio between rotor diameter and generator for most sites in a medium wind speed regime. The wind turbine concept is based on robust design with pitch-regulated blade operation, a three-stage gearbox with 660 kW rating and a safe peak load damping with a flexible coupling to the asynchronous induction generator. The turbine operation is efficiently controlled by the Suzlon controller. These technologies are all well-known in the wind power industry and have proven themselves. With more than 400 units of the 600 kW turbines installed in very harsh and remote areas in India, the S52- 600 kW wind turbine is designed to withstand the most extreme conditions and operate effectively.

BLADES

As all other Suzlon blades, the AE25 blade is a fully integrated design. The blade manufacturing system from mould engineering to state-of-the-art Resin Infusion Moulding (RIM) is done in close co-operation between the Dutch design team and the manufacturing plants in India from the local Suzlon blade manufacturing facility located in Puducherry, India.

PITCH SYSTEM

The full-span blade pitching system is based on electrical motors with individual power backup which allows fast and efficient pitching of the blades. With a resolution of 0.1° and a special fast-pitching mode, the S52- 600 kW allows optimal power output as well as fast and safe braking of the rotor.

GEARBOX

The design of the gearbox has always been paid special effort in Suzlon. The design philosophy is based on years of experience with wind turbines in harsh environments and the internal design standard well exceeds the industry standards. The power rating of the gearbox for the S52- 600 kW is actually 660 kW. With the recent acquisition of Hansen Transmission, Suzlon will also in the future secure in-house design and development of superior gearbox technology for the customer's benefit.

SERVICE AND MAINTENANCE

Suzlon has teams of trained wind farm technicians around the globe who focus on excellence in service, maintenance and monitoring. Our

service technicians aim to maximise energy production from the wind, and ensure the turbines operate reliably and with minimal maintenance costs during their life span. The key emphasis is on maximizing availability and efficiency in operation thus providing ease of mind for our clients. Suzlon provides intensive and continuous training programs for its wind farm technicians, both in and out of field. Moreover the expertise of highly respected industry training consultants is used to tutor technicians and technical support engineers.

MANUFACTURING

Suzlon's manufacturing facilities for wind turbine generator components and rotor blades are currently located in India, China, Belgium and the USA. As part of Suzlon's strategic growth plans to significantly increase manufacturing capacity of all key turbine components, a number of new facilities are currently planned or under construction. This meets our objective to vertically integrate the entire supply chain, ensuring that Suzlon brings to the market the most cost efficient and reliable technology. It also enables us to control the supply chain to secure quality, volume and growth, as well as deliver long term service support.

END TO END SOLUTION SINCE 1995

The End-to-End solution is built on Suzlon's expertise in technology, processes and thorough understanding of Indian wind energy market. It is a unique combination of proven technology and a bundle of value added services. Under this successful and proven business model, Suzlon undertakes the complete turn-key responsibility - from arranging land; to equipment supply & EPC; to nodal agency clearances; to life-cycle operations & maintenance of project. Customers therefore do not have to engage extra manpower for their wind projects. Suzlon brought about a paradigm shift in India's wind energy market with the End-to-End solution. It made setting-up wind energy projects simple, hassle-free and enabled hundreds of Indian customers including small/medium/big enterprises, Indian and MNC corporate, public sector companies and even individuals to set-up their own wind energy projects with confidence and ease.



Suzlon Sales Offices

Australia

Suzlon Energy Australia Pty Ltd
Level 42, 80 Collins Street Melbourne,
Victoria 3000 Australia
Tel: +61(3) 8660 6555
Fax: +61(3) 8660 6500
Email: info-au@suzlon.com

Brazil

Suzlon Energia Eólica
do Brazil Ltda
Rua Eduardo Sabóia, 399, Papicú
CEP 60175145, Fortaleza, Ceará, Brazil
Tel.: +55 85 3265 1308
Email: suzlon@suzlon.com.br

China

Suzlon Energy (Tianjin) Ltd.
Beijing Branch
Room 1808, NCI Tower, A12
Jianguomenwai Avenue
Chaoyang District, Beijing, 100022, China
Tel.: +86 10 65695688
Email: info-china@suzlon.com

EMEA# + CASA* Sales HQ

Suzlon Wind Energy A/S
Bredskifte Allé 13
8210 Århus V
Denmark
Tel.: +45 8943 8943
Email: info-europe@suzlon.com

India

Suzlon Energy Ltd.
104-106, Delta Wing
Raheja Towers, Anna Salai
Chennai 600 002, India
Ph.: +91-44-28602345 - 49
Email: info-india@suzlon.com

Suzlon Energy Ltd.
9th Floor, Eros Corporate Tower
Nehru Place
New Delhi 110 019, India
Ph.: +91-11-41805501 / 41805502
Email: info-india@suzlon.com

Suzlon Energy Ltd.
I L & F S Financial Centre, 6th Floor
East Quadrant, Bandra Kurla Complex
Plot No. 22, 'G' Block, Bandra (E)
Mumbai 400 051, India
Ph.: +91-22-26533737 / 66393200
Email: info-india@suzlon.com

Suzlon Energy Ltd.
5th Floor, Godrej Millennium
9 Koregaon Park Road
Pune 411 001, India
Tel.: +91 20 4012 2000
Email: info-india@suzlon.com

Italy

Suzlon Wind Energy Italy S.r.l.
Viale Città d'Europa, 681
00144, Rome, Italy
Tel.: +39 06 5262481
Email: info@suzlon.it

North America

Suzlon Wind Energy Corporation
8750 Bryn Mawr Ave., Ste. 720
Chicago, IL 60631, USA
Tel.: +1 773 328 5077
Email: info-northamerica@suzlon.com

Portugal

Suzlon Energy Portugal, Lda.
Av. do Forte, No 3
Edifício Suécia - Piso 3 – Sala 3.38
2794 038 Carnaxide, Portugal
Tel.: +351 21 4184565
Email: info-europe@suzlon.com

Spain

Suzlon Wind Energy España S.L.U.
Paseo de la Castellana 155, 2ªA
28046 Madrid, Spain
Tel.: +34 915 794 727
Email: info@suzlon.es

Europe, Middle East, Africa * Central America and South America

