S82-1.5 MW
Technical overview

SUZLON

S82-1.5 MW

S82-1.5 MW is designed for generating the optimal power output even at sites with a modest wind speed regime. The wind turbine concept is based on robust design with pitch regulated blade operation, a 3-stage gearbox with 1650 kW rating and flexible coupling to the asynchronous induction generator. The Suzlon Flexi-slip System provides efficient control of the load and power control. 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. The S82-1.5 MW is designed to withstand extreme conditions and operate effectively with low maintenance cost.

BLADES

As all other Suzlon blades, the AE40 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 manufac-turing plants in India and China.

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 S82-1.5 MW allows optimal power output as well as fast and safe braking of the rotor.

GEARBOX

The design of the gearbox has always been given special attentionin 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 S82-1.5 MW is actually 1.65 MW. 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 and complement our own training resources by using highly respected and reputable industry training consultants to tutor and train our 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.

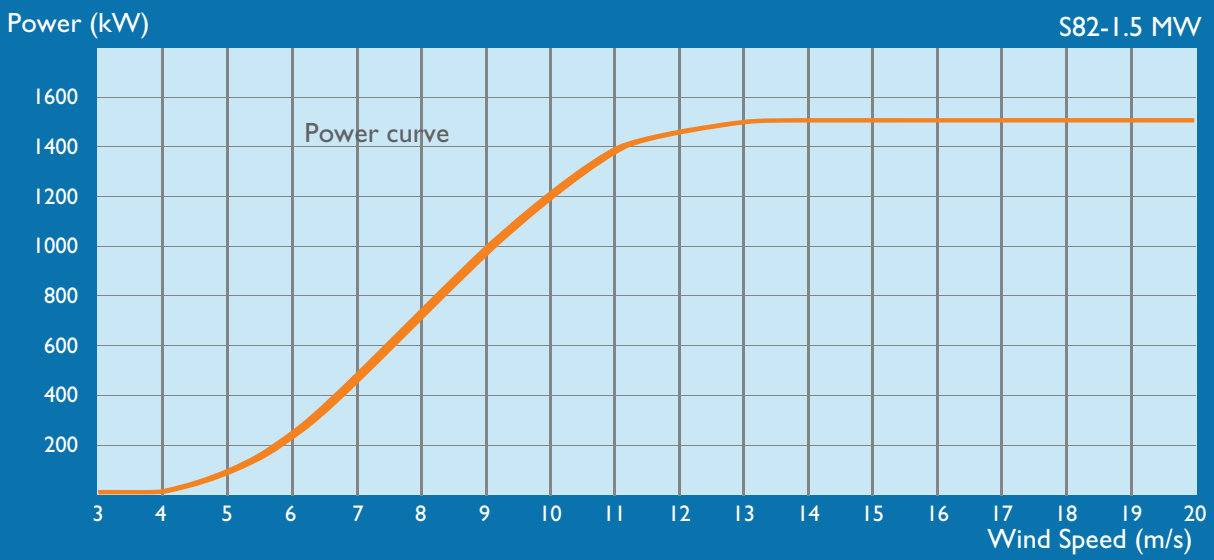
END TO END SOLUTIONS SINCE 1995

The End-to-End solution pattern is built on Suzlon's expertise in technology, processes and thorough understanding of the 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 projects. Customers therefore do not have to engage extra manpower for their wind projects. Suzlon brought about a paradigm shift in the wind energy market with the End-to-End solutions. It made setting up wind energy projects simple, hassle-free and enabled hundreds of customers including small/medium/big enterprises, Indian and multinational corporates, public sector companies and even individuals set-up their own wind energy projects with confidence and ease.




World's 5th largest and fastest growing integrated wind turbine manufacturer | 600 kW to 2.1 MW capacity wind turbines | Workforce of 14,000 people and a global presence in 21 countries across 5 continents | Manufacturing units in 3 continents | R&D facilities in Germany and The Netherlands

MODEL	S82-1500kW
OPERATING DATA	
Rated power	1500 kW
Cut-in wind speed	4 m/s
Rated wind speed	14 m/s
Cut-off wind speed	20 m/s
Survival wind speed	52.5 m/s
ROTOR	
Type	3 Blades, Upwind / Horizontal axis
Diameter	82 m
Rotational speed at rated power	15.6 to 18.4 rpm
Rotor blade material	Epoxy bonded fiber glass
Swept area	5281 m2
Power regulation	Active pitch regulated with Suzlon Flexi Slip System
GEARBOX	
Type	1 planetary stage / 2 helical stages
Ratio	1 : 95.09
Nominal load	1650 kW
Type of cooling	Forced oil cooling lubrication system
GENERATOR	
Type	Single speed induction generator with slip rings, variable rotor resistance via Suzlon Flexi slip system
Speed at rated power	1511 rpm
Rated power	1500 kW
Rated voltage	690 V AC (phase to phase)
Frequency	50 Hz
Insulation	Class H
Enclosure	IP 54 / IP 23 (slip ring unit)
Cooling system	Air cooled
TOWER	
Type	Tubular tower (corrision proof painting on inner and outer surface) with welded steel plates
Tower height	76 m
Hub height (including foundation)	Aproximately 78.5 m
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 Deg
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	III a
Certification & Standards	GL (T-GL-009A-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.

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 Árhus V
Denmark
Tel.: +45 8943 8943
Email: info-europe@suzlon.com

India

Suzlon Energy Ltd.
10, 3rd Floor, Wellington Plaza
90, Anna Salai
Chennai 600 002, India
Ph.: +91-44-28606006 / 43520353
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@suzlon-usa.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.
Paseo de la Castellana 155, 2°A
28046 Madrid, Spain
Tel.: +34 915 794 727
Email: info-europe@suzlon.com

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

SUZLON

POWERING A GREENER TOMORROW

www.suzlon.com