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SVIAB
SVENSK VINDKRAFT INDUSTRI AB
SWEDISH WIND ENERGY INDUSTRY CO

WIND TURBINE
VK240

This wind turbine has originally been developed for summer cottages in the Swedish archipelago. On remote islands, where no other source of electricity is available, this device is a cost-effective alternative compared to grid connection. The same situation applies to mountainous regions and other remote areas. VK240 has also been used to supply energy for light-houses, radio relay stations, water supply projects and similar applications around the world.

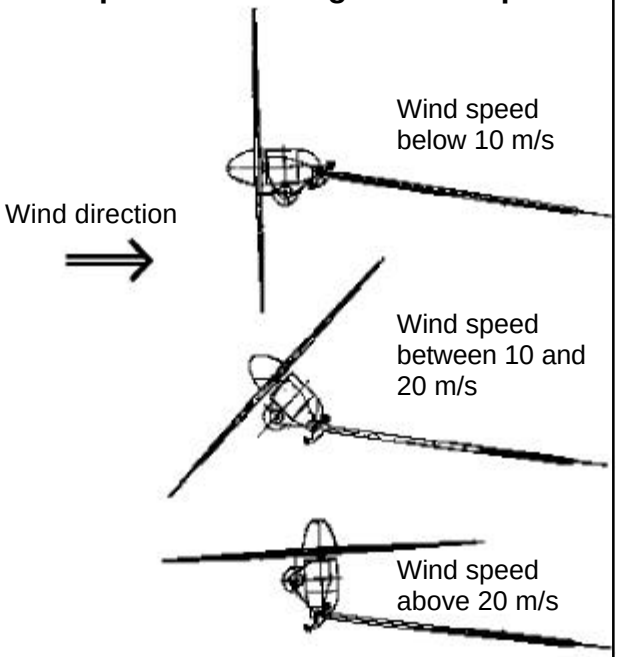
The wind turbine is designed to charge batteries, which in turn can feed e.g. fridge, TV-set, indoor illumination and water pump. Exactly how many appliances it can feed depends on the power of the wind. It also depends on the capacity of the batteries. With larger batteries more energy can be stored, thereby utilising the wind in the best possible way. The wind turbine can of course also be combined with solar cells or a diesel generator.

In order to stand strong winds, the wind turbine is fitted with a robust storm protection that also serves as a regulator of the power produced – the turbine is by itself turned out of the wind when the wind speed is high. This is possible because the tail on the rear side of the turbine is fitted to the machine frame by an oblique joint and the turbine shaft is placed on the side of the yaw axis. When the wind puts pressure on the turbine, a moment is created that has a tendency of turning the turbine horizontally (sideways). When the wind speed reaches about 10 m/s, the turning force will start to swing the machine frame with the generator and the turbine sideways, while the tail stays in the wind direction.

At a wind speed of 11-12 m/s, the generator will produce its maximum power output. At a wind speed of about 20 m/s or more, the turbine is turned completely out of the wind and the rotational speed is somewhat decreased. The generator now produces less than its maximum power output.

In order to prevent over-charging of the batteries, a wind turbine of this size must be fitted with a charge regulator of some kind. Such an electronic charge regulator will be delivered with our VK240. The regulator measures the voltage in the batteries and when they are charged up to a preset value, the power is fed to a resistor to avoid high rotational speed. The surplus energy consumed by the resistor can for example be used for heating purposes.

Storm protection & regulation of power



The wind turbine seen from above

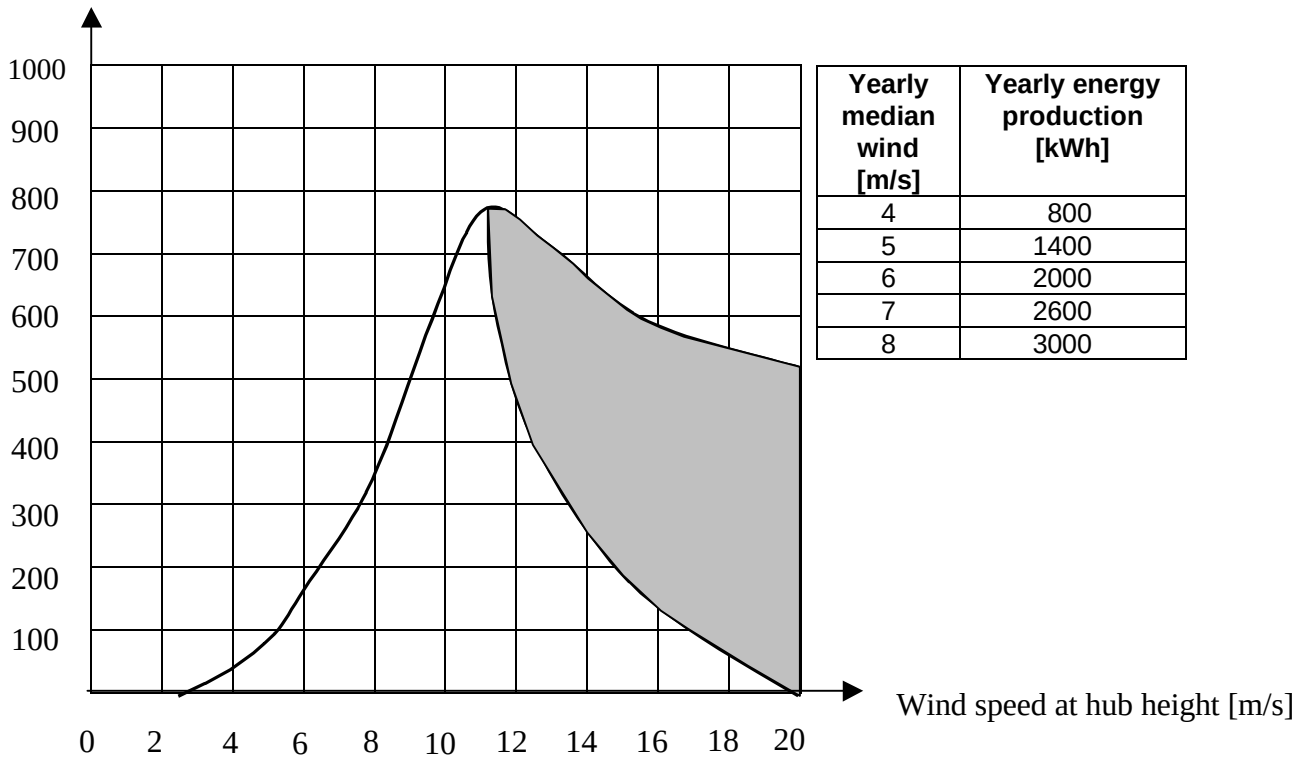
Technical Data

Max power output	750W
Wind speed where charging starts	2-3 m/s
Max power output at wind speed	11-12 m/s
Turbine diameter	2.4 m
Number of turbine blades	3 pcs
Profile of turbine blades	NACA 4412-24
Material in turbine blades	Polyurethane
Generator voltage	24V or 12V
Generator type, number of poles	3 phase synchronous, 6 poles
Generator rotor	Without windings, slip rings and brushes
Protection code	IP 44
Machine frame	Cast aluminium
Yaw shaft	Steel with greased roller bearings
Tail	Galvanised and painted steel
Colour	Black (other colour on request)
Power control	Turbine is automatically turned out of the wind when wind speed is above 10 m/s
Charge regulation	Electronic charge regulator included
Surplus energy	Can be used for heating purposes
Warranty	3 years, if tower according to SVIAB's specifications is used

SVIAB

SVIAB has worked with development, production and marketing of small wind turbines since 1978. We have our main office at Vettershaga, south of the city Norrtälje, 50 km north-east of Stockholm, Sweden. Over the years we have delivered a large number of wind-power systems to projects in many different countries. Our wind turbines have been proven reliable in the most demanding environmental conditions and require a minimum of maintenance. Because of the high reliability and quality of VK240, our customers are mostly professional users, such as maritime administrations of several countries, military, and different kinds of surveillance establishments, etc.

POWER CURVE FOR VK240



Yearly median wind [m/s]	Yearly energy production [kWh]
4	800
5	1400
6	2000
7	2600
8	3000

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