

Sizing a wind generator system for a cathodic protection station means determining how much energy is required for continuous system operation. A wind generator system must provide enough energy to replace that being consumed daily by the cathodic protection station.

Meteorological data from the proposed CP location is analysed and computerised design is used to optimise the type of wind generator, battery storage capacity, external circuit and anode grounded parameters.

Wind generator - WINDSEEKER 503

For a decade, Windseeker wind turbines have set the standard for affordable, reliable wind power. With their unique, patented upward-furling design, they dependably generate power year after year, in conditions from low wind to the extreme wind of stormy mountain tops.

Models available

- 3-bladed model - for smoother and quieter operation with glass reinforced polypropylene blades as standard
- Marine version - for coastal saltwater environments
- Industrial - for extreme conditions where winds are expected to exceed 120 mph

Features

- Double ball-bearing yaw shaft
- Durable powder-coated finish
- Light weight, corrosion-resistant cast aluminum and stainless steel construction
- Brushless neodymium permanent magnet alternator
- Precision, computer designed aircraft quality rotor
- Intelligent voltage regulator provides protection against dangerous voltage surges
- Military specification safety protection electronics regulates voltage and rotor RPM
- Polyurethane UV prop tape protects leading edge
- Easy-to-install, low-cost tower designs available

Operation

The Windseeker has an internal permanent magnet brushless alternator that rectifies the voltage and regulates the output. This allows better control of the alternator and minimises connections to the battery. This safety feature prevents turbine damage and safeguard operating personnel against excess voltage.



Regulation and control electronics

The electronics perform several functions to assure maximum output and safety. The control electronics maintain a constant load on the alternator to prevent turbine over speed regardless of battery condition. As the battery is charged, the sophisticated regulator periodically checks the line, compensating for voltage loss and monitoring the charge rate. Once the battery has reached its optimum charge level, the regulator shuts the current off, thus preventing the battery from being overcharged while still maintaining a continuous load on the alternator to prevent overspeeding.

Solid state DC-DC converters are used to control the output of the wind generator/battery system to provide constant current, constant voltage or constant pipe-to-soil potential, using a permanent reference electrode to provide a feedback signal.

CP-output regulator

CORROCONTROL OUTPUT REGULATOR (CCOR)
Further technical details can be found in Chapter 10
Document 10-100-R0

Mounting kits

Guyed tower kits, poles and anchors are available on request.

Specifications

Rotor diameter	1.52 m (60")
Weight	9 kg (20 lbs)
Start up wind speed	2 m/s (5 mph)
Voltage	12, 24, 48 V
Output	500 W
Output voltage (adjustable)	Preset 14.8 - 12 V model Preset 29.5 - 24 V model
Voltages available	12, 24, 48 V DC (standard)
Alternator	PM 3 phase brushless

* Generators with outputs > 500 W available on request