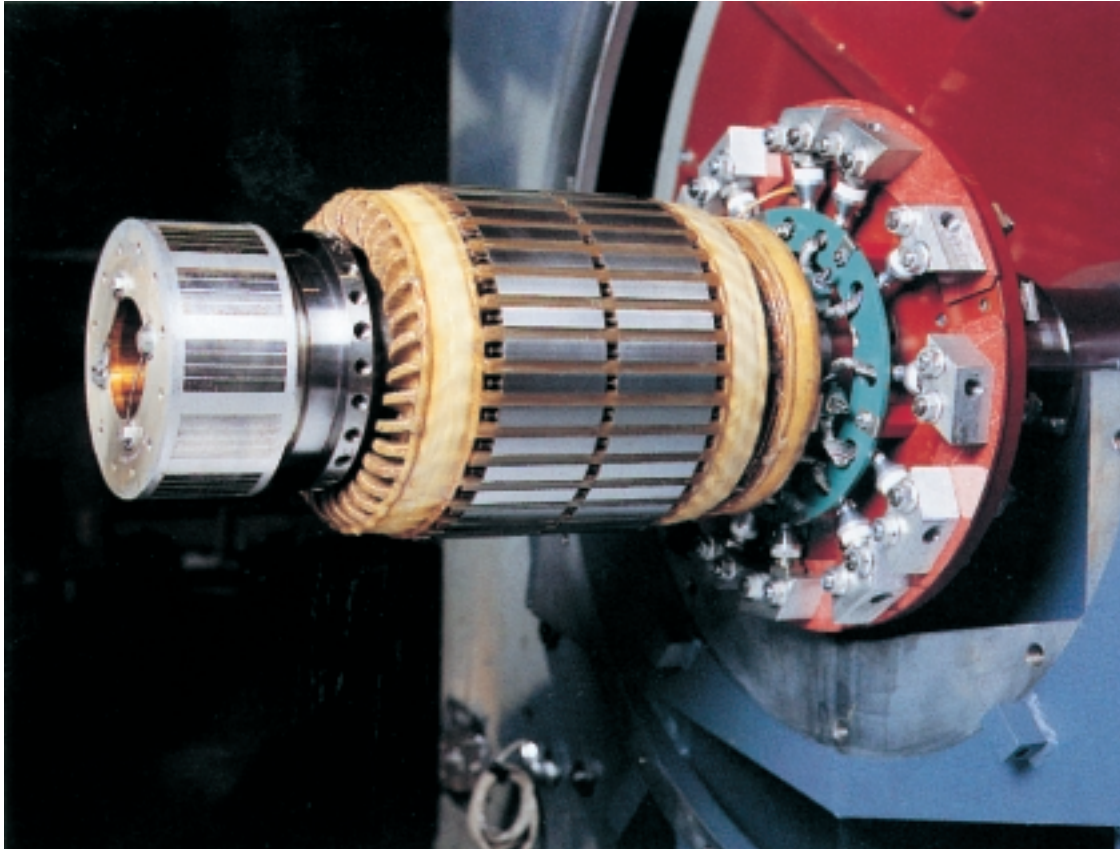




For 2-Pole Turbine Driven Generators



- ▲ Industry leader in brushless excitation for 2-pole turbine generators.
- ▲ EM brushless exciters are utilized by generator manufacturers worldwide to meet their brushless requirements.
- ▲ Various designs available to match voltage and current requirements.
- ▲ Ability to fit various shaft and mounting arrangements.
- ▲ No collector rings, brushes, or commutators which require maintenance, adjustments and inspections.
- ▲ 100% redundant diodes with indicating fuses are provided to ensure continuous service.
- ▲ No exciter outboard bearing is required which eliminates alignment problems associated with three bearing arrangements.
- ▲ No carbon dust problems. The exciter operates in the same enclosure as the generator.
- ▲ The shaft-driven permanent magnet pilot exciter provides a reliable source of exciter field power that eliminates bulky power transformer and dependence on station battery for field flashing.
- ▲ Short circuit sustaining capability provides fault current support.
- ▲ No heavy bus work or cable connections are required between excitation cubicles and the generator, thus simplifying installations.
- ▲ Large expensive field circuit breaker and field discharge resistor are not required.
- ▲ Compact voltage regulator hardware for installation and control panel or switchgear eliminates large excitation cubicles.
- ▲ EM experience...over 500 units installed.

ELECTRIC MACHINERY COMPANY

800 Central Avenue
Minneapolis, MN 55413-2400
(612) 378-8000 Fax: (612) 378-8050

BRUSHLESS EXCITERS

For 2-Pole Turbine Driven Generators

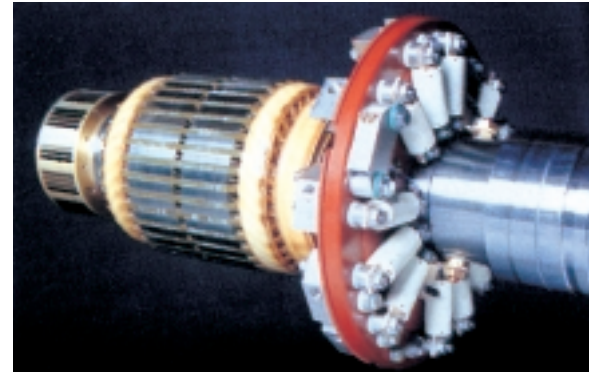
BRUSHLESS EXCITATION SYSTEM

The permanent magnet generator (PMG) supplies high frequency AC power to the voltage regulator. Voltage and reactive current feedback is provided to the regulator from potential and current transformers.

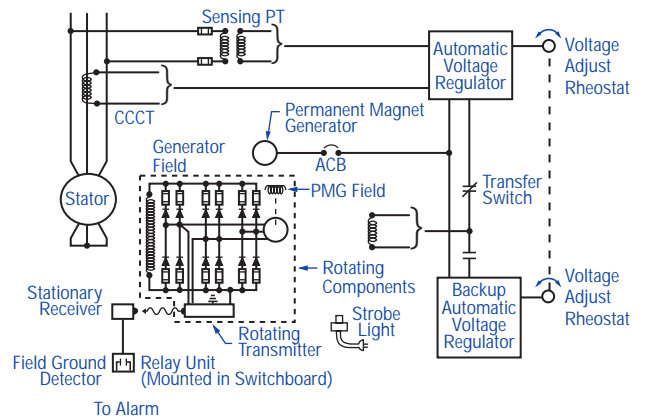
The exciter provides a controlled DC output using feedback signals and a reference point established by the setting of the voltage regulator. A transfer switch provides for selection of automatic or back up automatic regulator control. A back up automatic regulator is a standard feature. Voltage regulator DC output is fed to the stationary field of the rotating exciter. Three phase, high frequency AC output from the rotating armature is rectified and applied to the main generator field.

Fully rated redundant diodes with indicating fuses permit full load operation even with a diode out of service. A strobe light is furnished with unit to view the indicating fuses and determine diode failure. The system is compatible with other manufacturers' voltage regulators.

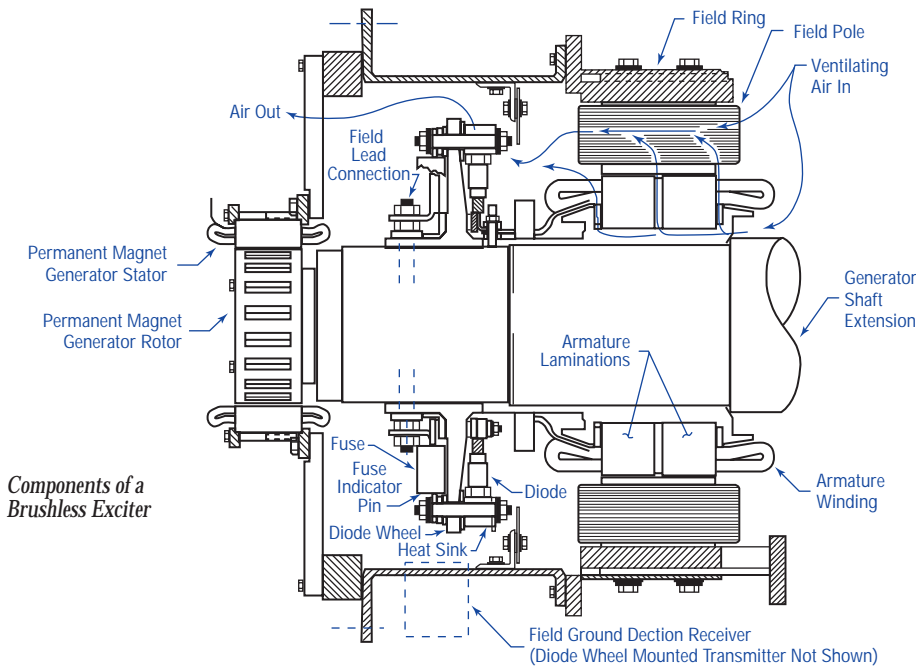
Field ground indication is provided without slip rings by means of a transmitter mounted on the diode wheel assembly. A light signal is sent across the air gap to a stationary receiver and relay to indicated presence of a ground.



Brushless Exciter Rotor



Functional Diagram of Exciter with Permanent Magnet Generator



Components of a Brushless Exciter

BRUSHLESS EXCITERS



2100-PRD-360A

ELECTRIC MACHINERY COMPANY

800 Central Avenue
 Minneapolis, MN 55413-2400
 (612) 378-8000 Fax: (612) 378-8050

