

MODEL AT-8100

## STATIC EXCITER GROUND FAULT DETECTION

- Continuous on-line monitoring of faults –while rotating or at standstill
- Trending of fault severity resistance
- Indication of fault location for ease of diagnosis and repair
- Ongoing monitoring of field excitation voltage
- Alarm relay contact outputs for multiple resistance limits

### TYPICAL APPLICATIONS

- Continuous trending of insulation fault resistance and field voltages
- Predictive maintenance for large generators and motors

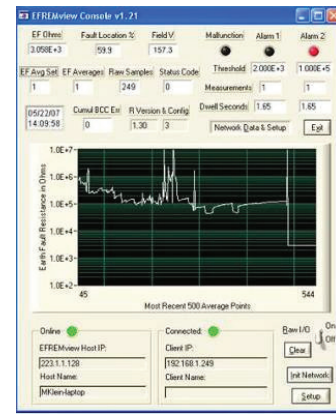
## CONTINUOUS ON-LINE MONITORING AND RESISTANCE TRENDING

Accumetrics' Ground Fault Detection (GFD) system provides statically excited field ground fault detection technology. Building on the success of the Accumetrics' Earth Fault Resistance Monitoring (EFREM) products for brushless generator designs, the GFD system provides continuous on-line monitoring for brushed style excitation generators and motors.

Conventional field ground detectors may detect the occurrence of faults but provide no advance warning or indication of the fault's severity. In fact, the severity at the detection threshold may vary by several orders of magnitude, depending on fault location. Now, by combining 16-bit digital measurement technology with the most sophisticated technique available for generator ground fault measurements, Accumetrics overcomes these limitations with the GFD - Static Exciter.

Measurement of actual resistance allows users to monitor trends over time and track the progression of ground faults from their onset. This provides an early warning of impending failure and allows for predictive maintenance of a machine. Ground fault severity data can be used to make operational and maintenance decisions. In addition, the technique yields a location factor, which indicates where the fault occurs along the length of the field winding.

SPECIFICATIONS	
Rotor Connections	Field Positive Terminal
	Field Negative Terminal
	Rotor Earth/Ground
<b>Field Voltage</b>	
Measurement Range	0 to 500 VDC (contact factory for other ranges)
Maximum Transient without Damage	1000 V for 5 seconds
<b>Resistance Measurement</b>	
Measurement Range	0 to 80 MΩ
Accuracy	±250 Ω ±0.5% of Reading 0 to 500 kΩ (exclusive of the effects of AC content and noise from the excitation system)
<b>Ground/Earth Fault Location Factor</b>	
Range	40 to 100% representing ratio of potential at fault to total field voltage (0 at negative terminal and 100% at positive terminal)
Accuracy	±1% for a 10 kW fault and field excitation ≥25 V
<b>Receiver Alarm Outputs</b>	
Ground/Earth Fault	Two independent alarm resistances, user selectable via computer interface from 500 W to 1 MΩ
Malfunction	Active upon detection of a malfunction in monitor operation or loss of receiver power
Alarm Interfaces	Form C relay: 10 A / 24 VDC, 0.3 A / 240 VDC, 10 A / 250 VAC resistive
<b>Receiver Analog Outputs</b>	
Analog Outputs	Dual analog output of Fault Location, Log Resistance (4-20 mA)
<b>Receiver Digital Interface</b>	
Computer Interfaces	RS232, Ethernet
Output Data	Ground/Earth Fault Resistance, Field Voltage, Location Factor when faults occur, Alarm and error conditions
User Settings	Ground/Earth Fault Alarm Resistance Thresholds, Alarm Dwell Time, Network Settings
<b>Environment</b>	
Ambient Temperature	0 °C to 50 °C
<b>System Power</b>	
85 VAC to 250 VAC 50/60 Hz, < 20 W	



EFREM Console Software v1.21



Receiver in NEMA 4 Enclosure

**System Outputs**

- 3 alarm relays
- Ethernet
- RS232 outputs
- Optional 4-20 mA outputs

**RS232, Ethernet Output**

- Software for charting/ trending display of fault resistance and display of rotor field voltage
- PC archive software optional