

### Features

- Option of Three Different Frequencies
- Eliminate Monitor Crosstalk
- Remove Multiple Ground Problems
- Extended Cable Lengths Are Possible
- Monitor and Control Over Power Cables



The GAI-TRONICS GM8950 combined Ground Check Monitor / Ground Fault Relay (GFR) consists of a GM8900 Ground Check Monitor (Ground Sentinel) and a GFR in a shared housing. They are intended to be used on the same three-phase AC mine electrical circuit. The trip contacts of the Ground Sentinel and GFR are internally pre-wired for series or shunt trip of the mine circuit breaker. The GAI-TRONICS Ground Sentinel along with the associated filters is designed to monitor the continuity of the ground circuit of electrical power circuits in mines. The three-phase wires or the pilot wire are used as a return signal path for the Ground Sentinel. If the ground circuit has 15 ohms or less loop resistance, the internal relay will be energized and the circuit breaker that feeds power

to the cable can be energized if the Ground Fault Relay is not tripped. A disruption of the ground circuit that lasts longer than one-fourth of a second will de-energize the relay and trip the circuit breaker. The time delay prevents false trips. Three LED's indicate the condition of the ground check circuit. The three-frequency system is intended for applications on circuits where the ground circuit can't be isolated by ARC TRAPS or elimination of two ARC TRAPS is desired. The GAI-TRONICS GFR along with its associated GAI-TRONICS Current Transformer is designed to trip when ground fault currents exceed preset thresholds. Trip occurs within a few cycles of the onset of the excessive ground fault current.

# GM8950 Ground Check Monitor / Ground Fault Relay

## Specifications

### Mechanical:

Size (LWH) ..... 7.46" x 2.32" x 5.62" (189.5 x 58.9 x 142.7mm)  
(Fits on a GM1000 Foot Print)

Construction..... Stainless Steel  
Serviceability..... One plug-in board contains all electronics, including relay

### Power:

Supply Voltage ..... 117V  $\pm$  15% 60 Hz (105-135)  
Supply Voltage Dip For One Minute  
No Trip w/Good Loop ..... Down to 84V

### Transmitter:

Frequency..... 4000, 3125 or 2250 Hz (NOM)  
(Request Frequency When Ordering)

### Receiver:

Loop Resistance for Trip  
(over voltage and temperature range)..... 13 ohms  $\pm$  2 ohms  
Trip Time Delay (after loop opened)..... 250 msec (max)  
Instantaneous Trip..... Opens relay coil circuit  
Loop Resistance for Pickup ..... 15 ohms  $\pm$  2 ohms  
Output Short Circuit Trip..... 0-1 ohm  
Loop Current Indication..... YEL LED brightness proportional to loop resistance

### Ground Fault Relay:

Power ..... 84-135 VAC  
Supply Current ..... 82 ma no fault 168 ma tripped

## Ordering Information

Ground Sentinel ..... GM8950/2250 Hz  
GM8950/3125 Hz  
GM8950/4000 Hz

Filter, 3 Phase, 1000V, 2250 Hz ..... FI2567

Filter, 3 Phase, 1000V, 3125 Hz ..... FI2569

Filter, 3 Phase, 1000V, 4000 Hz ..... FI2559

Ground Wire Trap ..... GM1004

Pilot Wire Filter ..... FI2560

Pilot Wire Choke ..... FI2558

Current Transformer, 1/0 ..... CO4449

Current Transformer, 500 MCM..... CO4450

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Quality Management System Certified by DNV - ISO 9001:2008

The policy of GAI-Tronics is one of continuous improvement; therefore the company reserves the right to change specifications without notice.