Description

The Ground Fault Monitor (GFM600) is a battery string ground fault potential monitor. It keeps track of a battery's positive and negative bus connections in relationship to the potential for approaching a ground current flow condition.
Through its local annunciation and relay interface, the GFM600 provides the necessary signals to keep users informed about the condition of the battery buses relative to chassis ground.

The GFM60 ground fault current potential alarm threshold can be adjusted to a user-defined set point. This threshold can be set from 1K ohm resistance to 99K ohms of resistance. A battery bus in optimal condition with no leakage current to ground will have high resistance (i.e. >99K), a battery with leakage current potential to the battery cabinet frame (connected to earth ground) will show a low resistance (i.e.<50k). Although the factory sets the alarm threshold at 99K ohms, it is recommended that this alarm threshold be set by the user based on the specific application.

Theory of Operation

The GFM600 is a **Battery String** Ground Fault monitor (not a **Cell to Cell** Ground fault monitor). The GFM600 monitors the Battery String's Positive and Negative Bus Terminals for leakage current potential by measuring the resistance between each of the terminals and the battery cabinet frame (connected to earth ground). This is done by connecting a balanced bridge network (Transducer) between the positive terminal, negative terminal and the cabinet frame. This bridge network will become imbalanced when a resistance/leakage current change takes place. The Transducer output (normal condition or imbalance) is converted to an equivalent resistance measurement by the GFM600 and is compared to the threshold set by the user. When the measurement falls below the threshold set point, the GFM600 will go into an alarm state and provide notification through an audible alarm, visual indicator and relay output.

Note: Leakage current can be used and translated to a resistive equivalent (for setting the GFM600 threshold) by using the following formula: Resistance Threshold = Bus Voltage/Leakage current.