



GARD

Unparalleled Protection

MGFR



The MGFR series of ground fault relays are microprocessor based relays that measure the ground fault current from the secondary of a zero sequence current sensor connected to the relay. When a ground fault occurs, the relay computes the RMS value of the fault current. If the fault current is above the level of the pick-up setting of the relay, the trip unit operates to open a circuit breaker in accordance with a set of programmable time current characteristics.

The MGFR series has five basic models each with eight discrete pick-up and time settings. The range of the pick-up settings varies from model to model. The entire series covers the range from 10 mA to 1200 Amps.

Pick-up settings from 10 mA to 1200 Amps with discrete time settings

Visual display of leakage current measured by the zero sequence current sensor

Suitable for use on solidly grounded and resistance grounded systems

Time coordinated protection and zone selective instantaneous trip modes available

Each of the basic five models is designed to be used in both Zone Selective Instantaneous Protection (ZSIP) and Time Coordinated Protection (TCP) modes. A great deal of damage and destruction can be produced by arcing ground faults on grounded systems. Arcing ground fault damage is directly proportional to the current, arc voltage and fault duration. To minimize damage and safety concerns, any one, or all three parameters must be kept to a minimum.

A single ground fault relay on the main disconnect device is the minimum required by the code and leads to power interruption of the entire system if a ground fault occurs in any location.

Where continuity of service is essential, selective ground fault protection should be used. A selective ground fault protection system is one in which each disconnecting means is equipped with a ground fault relay so that only the one nearest the ground fault will be tripped. Selective ground fault protection systems may be either TCP, ZSIP or a combination of both.

ZSIP achieves the objective of instantaneous response to ground faults. Since it is fully coordinated, it minimizes damage and maximizes protection. If there is a ground fault on a circuit protected by a ZSIP relay and the magnitude of the fault current exceeds the pick-up setting, the relay for that zone will trip instantaneously. Selectivity between zones is achieved by a signal generated by the first ground fault relay upstream of the fault, which operates immediately. This signal is sent to all relays further upstream and restrains them from tripping instantaneously. The result is maximum protection with minimum service disruption.