GARD

Unparalleled Protection

GCHK-100

To service the specific needs of the mining industry I-Gard has developed the GCHK-100 ground fault relay to improve safety for personnel and equipment in underground or above ground applications. Detection of ground faults is important where safety from electric shock and fire risk can occur and cause serious equipment and personnel hazards.

The relay is designed for use with resistance grounded systems up to 4160 V but could be used with grounded systems in branch circuit applications where load current is limited to 800 Amps.

Operator safety from electrical shock depends to a large extent on the integrity of the grounding of the equipment when it is energized. It is vital, therefore to know if this grounding has been compromised; to do this a second auxiliary ground conductor is incorporated in the trailing cable to the mobile equipment.

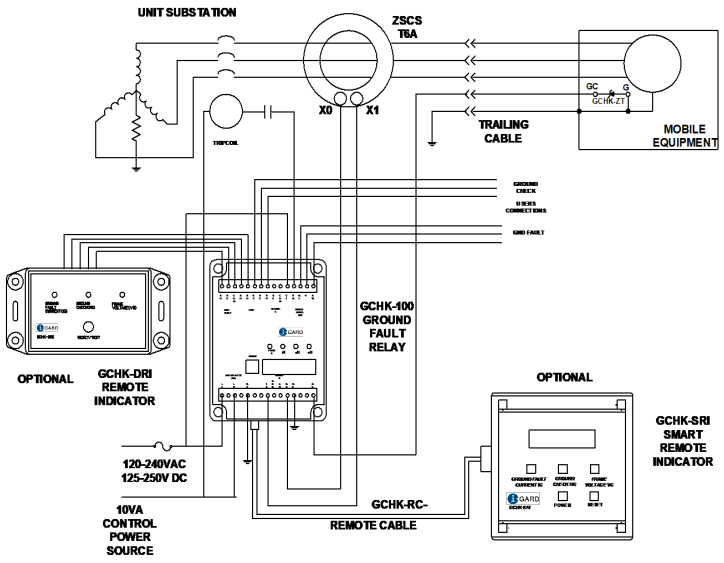
GCHK-100

- Ground fault detection with thirteen adjustable pickup settings from 0.25-12.5 A, and eight adjustable time delay settings from 0.02-10 seconds.
- Ground circuit checking through the use of an auxiliary pilot ground detector.
- Frame touch voltage protection with four adjustable pickup levels from 40-60-80-100 V.

To service the special needs of the mining industry the I-Gard GCHK-100 offers superior accuracy and flexibility for users. The micro controller-based design reduces the likelihood of false tripping and the relay has been designed to operate with three industry standard current sensors with ratios of 1000, 600 and 40:1.

Additionally, the relay will detect if the ground loop has become shorted or has opened. In the event of a ground connection failure and internal leakage within the mobile equipment, it is possible for the frame of the equipment to become live and present a shock hazard.

For extra protection, GCHK-100 detects high equipment frame voltages and quickly trips the relay. This feature will cause a trip twice as fast as the ground check and five times quicker for frame voltages exceeding 100 V.



TECHNICAL SPECIFICATIONS

Power Requirements	GCHK-100, 10 VA AC or 10 W DC	
Normal Voltage	110-240 VAC/DC	
Maximum Range	-45% - +10%, (60-264 VAC/DC)	
Dimensions	Height: 120 mm Width: 90 mm Depth: 86 mm	
Dielectric	Relay contacts to chassis - 1500 Vrms for 1 minute Control terminals to chassis - 1500 Vrms for 1 minute	
Ground Fault	Pick-up Range: 0.25 A - 12.5 A Delay Range: Instant - 10 seconds	
Zero Sequence Sensors	Ratios supported 1000:1, 600:1 and 40:1 toroidal, with window diameter up to 225 mm	
Ground Check Resistance	10 - 50 Ohms, ±15% Trip Delay: 200 ms, ±0.1%	
Voltage Trip	Range 40 to 100 V, -15% - +0% Trip Delay: 0.1 seconds, ±2.5%	
Output Contacts	Main Trip Relay	Trip: Form Z (NO and NC pair) Rating: 10 A @250 VAC, 10 A @30 VDC, 1/2 HP @240 VAC
	Auxiliary Ground (Fault Relay)	Trip: 1 Form C (NO/NC) Rating: 10 A @240 VAC, 8 A @24 VDC, 1/2 HP @240 VAC
	Auxiliary Ground (Ground Relay)	Trip: 1 Form C (NO/NC) Rating: 10 A @240 VAC, 8 A @24 VDC, 1/2HP @240 VAC
Temperature Range	Operating temperature: -40 °C to +60 °C Storage temperature: -40 °C to +80 °C	

C-407EB_GCHK-100

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