Motor and Pump Protection Relays
PGR-6100 Series (GFR4000)

Ground-Fault & Insulation Monitor



Description

The PGR-6100 monitor combines the features of a ground-fault protection relay and insulation monitor into one unit. The monitor can detect a motor ground fault whether the motor is running (online mode) or stopped (offline mode). It protects against ground faults by monitoring insulation resistance when the motor is de-energized and by monitoring ground-fault current when the motor is energized. The PGR-6100 features two separate analog outputs for optional current and ohm meters and two separate alarm relays. The unit operates on one- or three-phase solidly grounded, resistance grounded, and ungrounded systems up to 6 kV. Selectable fail-safe or non-fail safe operating modes allow connections to shunt or undervoltage breaker coils. The PGR-6100 is unique in that it has predictive as well as protective capabilities.

Features & Benefits

FEATURES	BENEFITS
Adjustable GF pickup (10 mA–3 A)	Trip setting provides a wide range of low-level protection and system coordination
Adjustable insulation pickup (250 kΩ–2 MΩ)	Customizable insulation resistance setpoints for maximum protection
Adjustable time delay (50 ms–1.0 s)	Adjustable trip delay for quick protection and system coordination
Output contacts	Two form C output contacts for ground fault and insulation-resistance fault
Two analog outputs (0–1 mA)	Indicate insulation resistance and ground-fault current
CT-loop monitoring	Alarms when CT is not connected

Applications

- For basic motor protection including ground-fault protection and insulation monitoring

Specifications

IEEE Device Numbers	Ground Fault (50G/N, 51G/N), Ground detector (64), Alarm Relay (74)
Input Voltage	*See ordering information*
Dimensions	**H** 75 mm (3"); **W** 100 mm (3.9"); **D** 115 mm (4.5")
Response delay	< 250 ms
Contact Operating Mode	Selectable fail-safe or non-fail-safe
Harmonic Filtering	Standard feature
Test Button	Standard feature
Reset Button	Standard feature
CT-Loop Monitoring	Standard feature
Output Contacts	Two Form C
Analog Output	0-1 mA
Applicable Standards	UL Listed (E183688) (1)
Warranty	5 years
Mounting	DIN, Surface

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Revised: 09/23/2022

Certification & Compliance

UL	UL Listed (E183688) (1)

Ordering Information

ORDERING NUMBER	CONTROL POWER
PGR-6100-120	120 Vac
PGR-6100-240[1]	240 Vac[1]

ACCESSORIES	REQUIREMENT
PGC-5000 Series	Required
PGH Family	Required >1300 V
PGA-0500	Optional
PGA-0510	Optional

Note (1) - PGR-6100-240 ordering option is not UL Listed.

For optional conformal coating please consult factory.

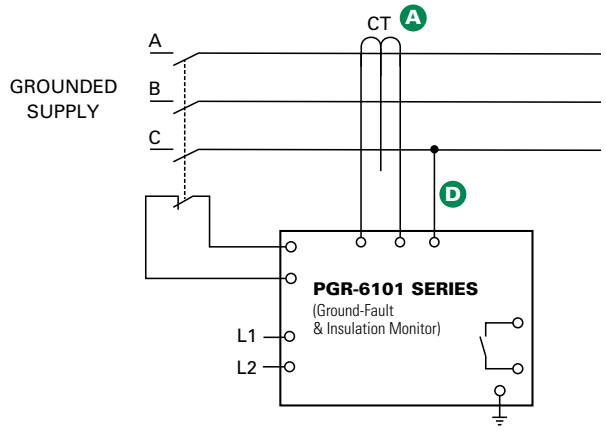
Accessories

Ⓐ SE-CS30 Series Ground-Fault CTs
Required zero-sequence current transformer specifically designed for low level detection. Flux conditioner is included to prevent saturation.

Ⓑ PGA-0500 Analog % Current Meter
Ⓒ PGA-0510 Analog Ohm Meter
Optional panel-mounted meters display ground-fault current as a percentage of the set-point and insulation resistance.

Ⓓ PGH Family High Tension Couplers
Required (for systems >1,300 V) PGH Family high-tension coupler must be connected between the phase conductor and the PGR-6100.

Simplified Circuit Diagram



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