

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

## Applications

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

## Specifications

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

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### Certification & Compliance

<b>UL</b>	UL Listed (E183688) (1)
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### Ordering Information

ORDERING NUMBER	CONTROL POWER
PGR-6100-120	120 Vac
PGR-6100-240 <sup>(1)</sup>	240 Vac <sup>(1)</sup>

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

#### A SE-CS30 Series Ground-Fault CTs

Required zero-sequence current transformer specifically designed for low level detection. Flux conditioner is included to prevent saturation.

#### B PGA-0500 Analog % Current Meter

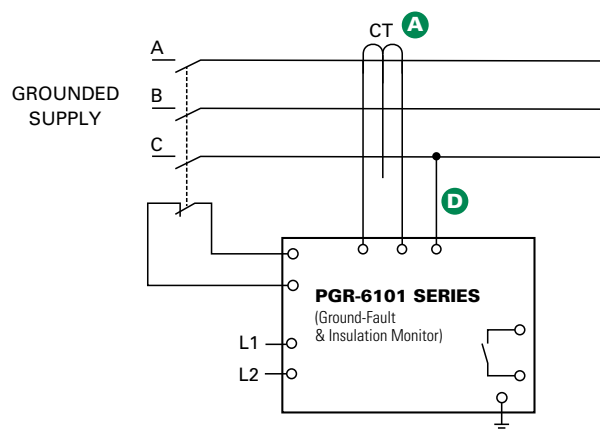
#### C PGA-0510 Analog Ohm Meter

Optional panel-mounted meters display ground-fault current as a percentage of the set-point and insulation resistance.

#### D 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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