

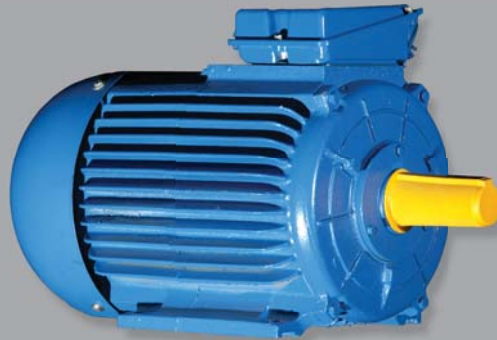


  
**MOTOR  
PROTECTION  
RELAYS**



# Littelfuse Startco

Reliable Protection for Over 35 Years



MP

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## MOTOR PROTECTION

### Typical Applications

MOTORS

PUMPS

VARIABLE FREQUENCY DRIVES

SWITCHGEAR

MOTOR CONTROL CENTERS

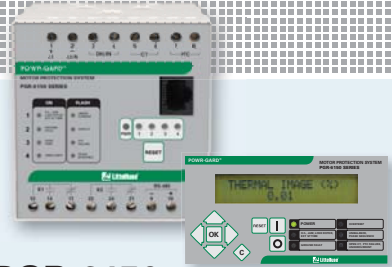
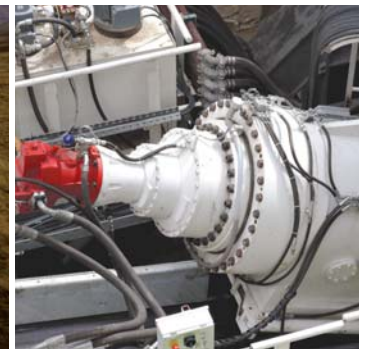
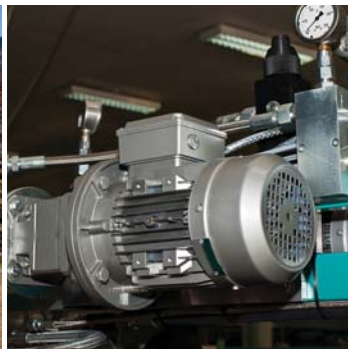
PORTABLE POWER CABLES

ELECTRICAL DISTRIBUTION

PROCESS CONTROL PANELS

POWER DISTRIBUTION PANELS

# From Basic to Reliable Protection



## PGR-6100 Motor Ground-Fault & Insulation Relay

### Features/Benefits

- On-line monitoring to detect ground faults
- Off-line monitoring of insulation resistance
- Continuously monitors for predictive maintenance
- CT loop monitoring
- 2 separate Form C alarm contacts to monitor insulation failure and ground-fault current
- 2 analog outputs to indicate insulation resistance and ground-fault current

### Specifications

**IEEE Device Numbers:** 50G, 50N, 51G, 51N, 64

**Dimensions:**  
**H** 99.7 mm (3.9");  
**W** 75 mm (3");  
**D** 110 mm (4.3")

**Communications:** 2 Analog Outputs  
**Warranty:** 5 years

### Accessories

PGA-0500 Series Analog Meters  
 PGC-5000 Family Current Transformers  
 PGH Family High Tension Couplers

### Web Resources

[www.startco.ca/pgr-6100](http://www.startco.ca/pgr-6100)

## PGR-6130 Motor Protection Relay

### Features/Benefits

- Integrated CT for currents up to 90 A
- Thermal overload protection
- Cause-of-trip indication
- N.O. and N.C. alarm contacts
- Adjustable overload trip class setting
- Adjustable current pickup
- Overtemperature (PTC) protection

### Specifications

**IEEE Device Numbers:** 46, 49, 51

**Dimensions:**  
**H** 83 mm (3.3")  
**W** 78 mm (3.1")  
**D** 99 mm (3.9")

**Warranty:** 5 years

### Accessories

PGB-6130 Remote Indication &  
 Reset Assembly

### Web Resources

[www.startco.ca/pgr-6130](http://www.startco.ca/pgr-6130)

## PGR-6150 Motor Protection System

### Features/Benefits

- Integrated CT for currents < 25 A
- Thermal protection through starting, running, overload and cooling cycles
- 13 protective functions
- 2 relay outputs, 1 digital input
- Optional 40-character LCD display
- RS-485 interface with Modbus® RTU
- Data logging

### Specifications

**IEEE Device Numbers:** 37, 46, 49, 50, 50G, 50N, 51, 51G, 51N, 66

**Dimensions (Relay):**  
**H** 83 mm (3.3")  
**W** 78 mm (3.1")  
**D** 99 mm (3.95")  
**Dimensions (OPI):**  
**H** 56 mm (2.2")  
**W** 106 mm (4.2")  
**D** 23 mm (0.9")

**Communications:** RS-485 with Modbus® RTU  
**Warranty:** 5 years

### Accessories

PGR-6150-OPI Operator Interface

### Web Resources

[www.startco.ca/pgr-6150](http://www.startco.ca/pgr-6150)

# Advanced— for Small, Medium and Large Motors

## Basic & Standard Motor Protection Relays

Protection for low-voltage motors (<1000 V) including ground-fault protection, overload, and overtemperature.

**PGR-6100**  
**PGR-6130**  
**PGR-6150**

## Advanced Motor Protection Relays

Multi-function protection for low- and medium-voltage motors including dynamic thermal modeling, metering, and overcurrent reduction setting for maintenance.

**MPU-32**  
**MPS**

## Pump Protection Relay

Multi-function protection for low-voltage pumps including overload, undercurrent, and phase sequence.

**PGR-6800**



**MPU-32**  
Motor Protection Unit

### Features/Benefits

- Overcurrent reduction setting for maintenance
- Monitors current and temperature
- Dynamic thermal modeling
- 80-character LCD
- Communications for different networks
- Data logging
- Optional RTD protection
- Optional differential protection
- Conformal coating
- Modular system and compact design makes installation easy for new or retrofit applications

### Specifications

**IEEE Device Numbers:** 37, 38, 46, 49, 50, 50G, 50N, 51, 51G, 51N, 66, 74, 86, 87

**Dimensions:** **H** 96 mm (3.78");  
**W** 96 mm (3.78");  
**D** 132 mm (5.2")

**Communications:** RS-232 (Standard); RS-485, DeviceNet™, Ethernet (Optional)

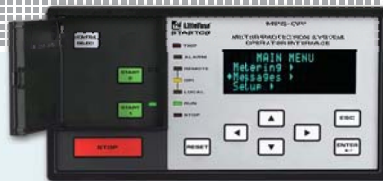
**Warranty:** 10 years

### Accessories

Current Transformers  
MPS-RTD RTD Module  
MPS-DIF Differential Module  
MPU-CIM Current Input Module

### Web Resources

[www.startco.ca/products/mpu-32](http://www.startco.ca/products/mpu-32)



**MPS**  
Motor Protection System

### Features/Benefits

- Overcurrent reduction setting for maintenance
- Monitors voltage, current, and temperature
- 80-character vacuum fluorescent display
- 22 motor protection functions
- Conformal coating
- Dynamic thermal modeling
- Starter control, metering, and data logging
- Optional RTD protection with hazardous location certified RTD module
- Optional differential protection
- Modular design makes installation easy

### Specifications

**IEEE Device Numbers:** 1, 2, 3, 5, 9, 14, 18, 19, 27, 34, 37, 38, 46, 47, 48, 49, 50, 50G, 50N, 51, 51G, 51N, 55, 59, 66, 74, 81, 86, 87, 94

**Dimensions (OPI):** **H** 98 mm (3.86");  
**W** 192 mm (7.56");  
**D** 0.42 mm (1.65")

**Communications:** Allen-Bradley® DF1 and Modbus® RTU (Standard); DeviceNet™, Profibus®, Ethernet (Optional)

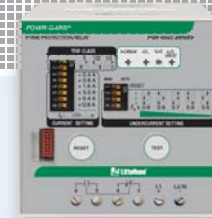
**Warranty:** 10 years

### Accessories

Current Transformers  
MPS-RTD RTD Module  
MPS-DIF Differential Module

### Web Resources

[www.startco.ca/products/mps](http://www.startco.ca/products/mps)



**PGR-6800**  
Pump Protection Relay

### Features/Benefits

- Integrated CT for currents up to 90 A
- Cause-of-trip indication
- Phase sequence, phase unbalance, and phase-loss protection
- N.O. and N.C. alarm contacts
- Adjustable overload trip class setting
- Adjustable current pickup
- Undercurrent protection
- Thermal overload protection

### Specifications

**IEEE Device Numbers:** 37, 46, 49, 51

**Dimensions:** **H** 83 mm (3.3")  
**W** 78 mm (3.1")  
**D** 99 mm (3.9")

**Warranty:** 5 years

### Accessories

PGB-6800 Remote Indication & Reset Assembly

### Web Resources

[www.startco.ca/pgr-6800](http://www.startco.ca/pgr-6800)

# Optimizing Processes and Reducing Downtime

Industrial operations cannot tolerate unscheduled shutdowns, as each lost hour of production can be extremely expensive. In addition, repairing and replacing damaged equipment, such as electrical motors, is a costly and time consuming process, which increases downtime and expends maintenance resources. Combined, the cost of downtime, lost or scrapped production, replacement parts and troubleshooting, is quite significant.



## IMPROVE SAFETY

- FIRE HAZARDS
- ARC-FLASH HAZARDS
- INJURY TO PERSONNEL



## REDUCE COST

- EQUIPMENT REPLACEMENT
- MOTOR REWINDS
- FAULT DAMAGE
- LOST PRODUCTION



## MINIMIZE DOWNTIME

- UNSCHEDULED SHUTDOWNS
- REPLACEMENT TIME
- UNRELIABLE PROTECTION

## Motor Protection Comparison Chart

FEATURE	BENEFIT	PGR-6100	PGR-6130	PGR-6150	MPU-32	MPS	PGR-6800
OVERLOAD (49, 51)	Prevent insulation damage and fires. Extends motor life.		✓	✓	✓	✓	✓
OVERCURRENT / JAM (50, 51)	Prevents catastrophic failures and fires. Extends motor life.			✓	✓	✓	
UNDERCURRENT (37)	Detects low-level or no-load conditions.			✓	✓	✓	✓
CURRENT UNBALANCE / PHASE LOSS / PHASE REVERSE (46)	Prevents overheating and extends motor life.		✓	✓	✓	✓	✓
GROUND FAULT (50G/N, 51G/N)	Prevents catastrophic failures and fires.	✓		✓	✓	✓	
OVERTEMPERATURE (49)	Extends motor life by ensuring that cooling is effective.		✓	✓	✓	✓	
OVERVOLTAGE (59)	Prevents stress to insulation.					✓	
UNDERVOLTAGE (27)	Prevents a start attempt when it will damage the motor.					✓	
VOLTAGE UNBALANCE (47)	Detects unhealthy supply voltage.					✓	
DIFFERENTIAL (87)	Provides sensitive protection for high-resistance winding faults.				✓	✓	
STARTER CONTROL	Simplifies the installation by reducing component count.					✓	
METERING	Alphanumeric display of conditions.			✓	✓	✓	
DATA LOGGING	Record of trips and starts.			✓	✓	✓	
INTEGRATED CTs	External current transformers not required.		✓	✓			✓
OFF-LINE MONITORING	Continuously monitors motor windings when de-energized.	✓					
REDUCED OVERCURRENT	Minimizes Arc-Flash Hazards during maintenance.				✓	✓	
COMMUNICATIONS	Provides means to interface with the relay remotely.			✓	✓	✓	

NOTE: IEEE Device Numbers are shown in parenthesis after the applicable features.

As part of the world's #1 brand in circuit protection, Littelfuse Startco offers protection relays, custom products, and a global network of technical support backed by more than 35 years of application design expertise. Littelfuse Startco products can help:

- Improve uptime and reliability
- Reduce risk of fire and shock hazards
- Minimize dangerous operating conditions

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Phone: (306) 373-5505



Littelfuse is committed to helping OEM engineers, consulting engineers and end users select the right products to protect critical electrical equipment—supported by our full line of product catalogues and reference materials.

**Littelfuse Startco Catalogue** Our protection relays and custom electrical products safeguard equipment and personnel to prevent expensive damage, downtime or injury due to electrical faults.

**Fuses and Fuseholders Catalogue** Littelfuse offers a complete circuit protection portfolio of industrial power fuses, including time-saving indication products for an instant visual blown-fuse identification, even on de-energized systems.

**Up-LINK™ Fuseholder Brochure** The Up-LINK™ patented remote indication technology is incorporated in a growing number of fuseholders and other products that improve productivity by providing necessary information to monitoring sites.

**OEM Design Brochure** Design engineers can work with Littelfuse POWR-GARD® to add value to their products with standard or custom circuit protection solutions.

To view all Littelfuse product catalogues, visit our website at [www.startco.ca/catalogues](http://www.startco.ca/catalogues)

