DG SERIES
DC Ground Fault Relay

DG Series Ground Fault Relays keep machinery and their operators safe from accidental shocks. The one-piece, solid-core design allows for installation over wires feeding loads to about fifty amps. The output relay will change state at factory setpoint between 5 and 40 mA of DC current to earth. DG Series is intended for use on earth ground systems only.



Ground Fault Relay Applications

Monitor Solar Panels
- Detect fault currents before damage can occur. Connect the output to a shunt trip breaker operating solenoid or to the circuit powering a contactor coil.

Water Delivery and Treatment
- Detect moisture ingress in submersible pumps .

Heating Processes
- If an element shorts to ground, the sensor will activate to de-energize the circuit, keeping safety at the forefront.

Communications Towers
- Notification if a battery powered supply is allowing current to earth.

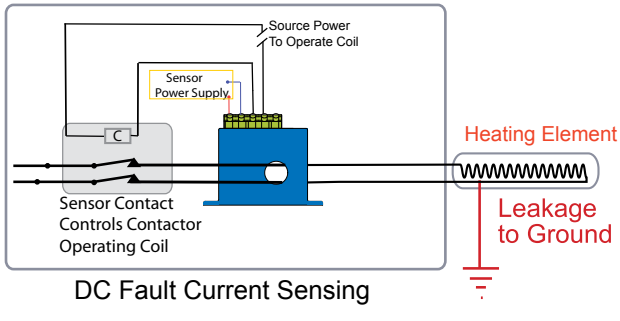
Ground Fault Relay Features

Electromechanical Relay Output
- Auto reset models have both normally open and normally closed contacts.
- Latching models have one normally open or one normally closed contact.
- Compatible with most automation and control systems.

Externally Powered
- A choice of fail safe or standard auto reset operation, or latching contact.

Solid-core Case
- Sensing window provides ample space for multiple conductors.

DC Fault Current Sensing



DC Fault Current Sensing

Contact Action Table

	No Power		Powered		Fault Detected	
	NO	NC	NO	NC	NO	NC
DEN	open	closed	open	closed	closed	open
ENE	open	closed	closed	open	open	closed
LA	open	closed	open	closed	closed	open

LED ACTION TABLE

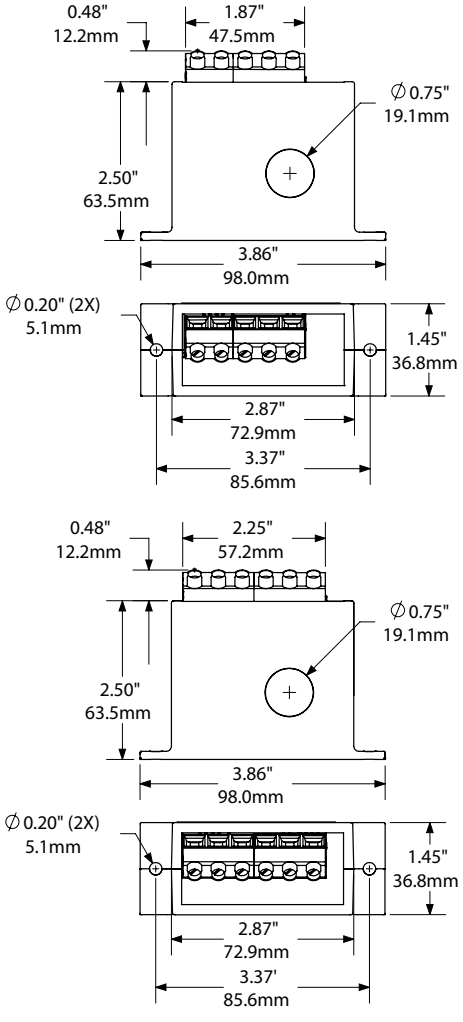
	Power	Status	Power	Status	Power	Status
DEN	Off	Off	On	Off	On	On
ENE	Off	Off	On	On	On	Off
LA	Off	Off	On	Off	On	On

Note that the Power LED indicates that the sensor is energized
Note that the Status LED indicates that the output contacts have changed state: NO has closed, NC has opened.

OEMs **Test & Evaluation Units for OEMs**
Free program expedites evaluation process. See page 3 for details.

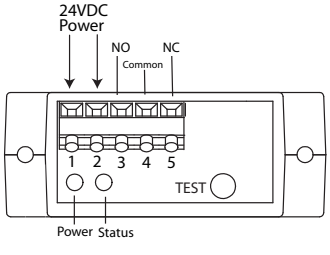
NK Technologies

Ground Fault Relay Dimensions

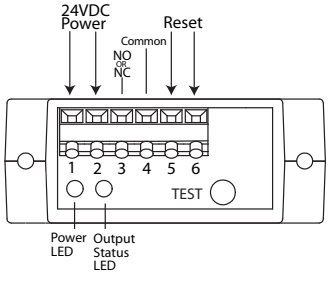


Ground Fault Relay Connections

Auto Reset Connection



Latching Connection



Ground Fault Relay Specifications

Power Supply	24 VDC (20–26 V)
Power Consumption	<4VA
Output Rating	Electromechanical relay 1 A @ 120 VAC, 2 A @ 30V DC Max.
Output Operation	Normally energized (ENE)
	Normally de-energized (DEN)
	Latching (LA)
Input Range	5-40 mA (factory set)
Response Time	55 ms maximum
Max. Monitored Voltage	Up to 1500 VDC (monitored circuit)
Isolation Voltage	Tested to 3 KV
Frequency Range	DC
Case	UL94 V-0 Flammability Rated
Environmental	-4 to 122°F (-20 to 50°C) 0–95% RH, non-condensing

Ground Fault Relay Ordering Information

Sample Model Number: DG1-SDT-24D-ENE-010

DC ground fault relay, SPDT relay output, 24 VDC powered, normally energized, 010 factory set trip point for 10 mA.

	(1)		(2)			(3)			(4)			(5)		
DG	1	-				2	4	D						

(1) Range

1	5-40 mA

(2) Output Type

SDT	Single pole, double throw relay (Auto Reset Only)
NCR	Normally Closed, latching model only
NOR	Normally Open, latching model only

(3) Power Supply

24D	24 VDC

(4) Contact Action

DEN	Normally de-energized output
ENE	Normally energized output
LA	Latching output

(5) Trip Point

005–040	Factory set trip point

Ground Fault Protection