



The 373-GFR is designed to detect dangerous ground fault currents before damage is caused to expensive power assets. An undetected fault current may lead to cables overheating, which could start a fire. If high fault currents are involved, hazardous voltages may also appear on grounded equipment, putting lives at risk. The 373-GFR ground fault relay allows the fault current to be continuously monitored and compared with the user selectable trip level. Should the fault exceed this level, the relay will trip to indicate a fault condition. With a very fast response time of under 40ms, the supply can be disconnected before serious damage can occur. This product is intended to provide a high degree of ground fault protection and monitoring for any type of electrical equipment, specifically switchboards, generator sets and transformers.

Features

- Precision digital settings
- LED bargraph display
- 10 selectable trip levels – 100 to 1200 Amps
- 16 selectable time delay – 0ms to 10 seconds
- Less than 40ms response time
- 0-1mA analog output
- User selectable input range of 0.2mΩ or 2mΩ
- User selectable latching/self-resetting
- Single pole change over relay
- 8 Amp 250V rated relay contacts

Benefits

- DIN rail 43880 enclosure
- Switched mode supply accepts a wide range of auxiliary voltages
- Isolation of faulty circuits
- Insulation monitoring
- Advanced warning of faults
- Protection of expensive power assets
- Current transformer not required

Applications

- Switchgear
- Distribution systems
- Generator sets
- Control panels
- Utility power monitoring
- Transformer protection

Approvals

- UL 3111-1 File No: E203000
- CSA compliant
- EMC and LVD

Operation

The 373-GFR offers a single pole change over relay contact incorporating a single setpoint, which will de-energize on trip. The relay senses the ground current by measuring the voltage developed across the N-G link impedance under a fault condition. Link selection of two standard N-G impedances, 0.2mΩ or 2mΩ. This is a very cost effective method, since a current transformer is not required.

The 373-GFR features two incremental rotary selector switches on the front panel and a series of LED annunciators. The 10 position trip current switch offers selectable ground fault current settings from 100 to 1200 Amps, and the 16 position time delay setpoint switch offers additional delay for fault discrimination, selectable from 0 to 10 seconds.

Once the trip current and time delay selections have been made, a green LED provides indication of mains healthy supply. The red LED will automatically illuminate if the pre-set fault level has been exceeded, after any selected time delay. The unit also incorporates a bargraph of 5 yellow LEDs providing indication of the level of fault in 20% increments. When all 5 LEDs are illuminated the fault level has reached 100% of the setpoint setting.

The unit features a combined reset and test button. A short press of the button will reset the unit after a trip, and one long press initiates an electronic confidence check. The relay latches on to a fault until the test/rest button is pressed or the auxiliary power is removed. However, automatic reset can be achieved by fitting a wire between two terminals. The relay will de-energize on trip (fail safe) as standard.

Analog Outputs

The 373-GFR unit incorporates an 0/1mA analog output which equals 0 to 100% of the selected tripping level. It can be used to drive an external test meter or panel meter, thus providing measurements for test commissioning and a useful indication of potential problems. The analog output also enables fault level diagnosis to be communicated into building management or intelligent SCADA systems, whereby insulation deterioration can be monitored over a period of time and preventative maintenance arrangements made prior to expensive equipment failure.

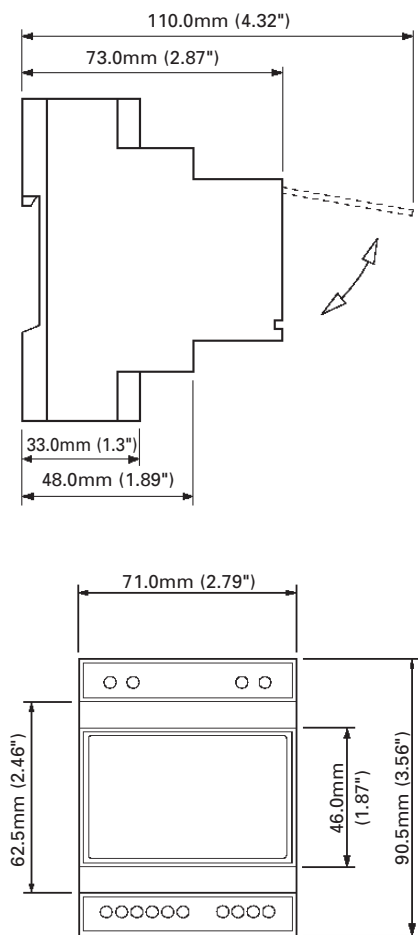
Product Codes – Single Pole Change Over Relay

Frequency	Auxiliary Supply	Catalog No.
50Hz	12-48V DC	373-GFRW-SHC5-A1-SP
50Hz	24-48V AC/DC	373-GFRW-SHC5-A2-SP
50Hz	100-250V AC/DC	373-GFRW-SHC5-A3-SP
60Hz	12-48V DC	373-GFRW-SHC6-A1-SP
60Hz	24-48V AC/DC	373-GFRW-SHC6-A2-SP
60Hz	100-250V AC/DC	373-GFRW-SHC6-A3-SP

373-GFR Ground Fault Relay



Dimensions to DIN 43880

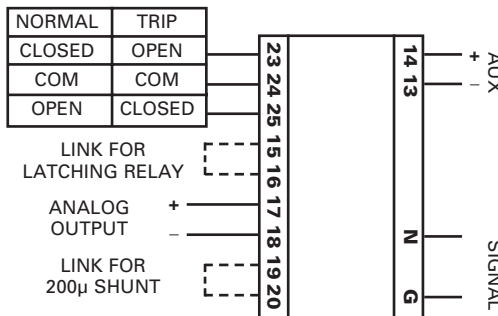


Specification

Measuring Input	A.C. voltage developed across N-G link
Measuring Range	0.2Ω or 2Ω shunt impedance link selectable
Overload	Maximum input voltage 600V
Frequency	50/60Hz
Auxiliary Voltage	12 - 48V D.C. , 24 - 48V A.C & D.C.or 100 - 250V A.C.& D.C.
Auxiliary Burden	Less than 1.5 Watts
Trip Current Settings	Selectable 100A, 150A, 200A, 250A, 300A, 450A, 600A, 750A, 800A, 1200A
Trip Accuracy	50% < trip point current ≤100% in accordance with IEC 1543
Trip Response Time	< 40ms (at 5 x rated trip current, ignoring the selected time delay)
Time Delay Setpoints	Selectable 0ms, 50ms, 100ms, 150ms, 200ms, 300ms, 400ms, 500ms, 600ms, 700ms, 800ms, 900ms. 1 second, 2 seconds, 5 seconds, 10 seconds.
Indication	5 yellow LED bargraph for fault levels Red LED indicated trip function Green LED indicated auxiliary power presence
Relay Contacts	Single pole change over (SPCO or NO+NC) contacts
Relay Contact Rating	8 Amps at 250V A.C. 8 Amps at 30V D.C. resistive
Relay Mechanical Life	> 100,000 operations
Analog Output	0 to 1 mA = 0 to 100% of selected tripping level. Compliance 1V, accuracy 10%
Enclosure Style	DIN 43880, rail width 70mm
Compliant With	EMC and LVD, UL 3111-1 File No: E203000, CSA 22.2/1010.1-92, BSEN 50081-1, BSEN 50082-2, IEC 60255-22-1 (BS5992), IEC 60255-11, BSEN 61543 (IEC 1543), BSEN 61010 (IEC 1010), EN 60068 (IEC 68)
Material	Flame retardant UL94V0
Terminals	1 to 4 mm ² solid or stranded conductors. IP20 protection
Operating Temperature	-10 to +60°C
Storage Temperature	-20 to +70°C
Relative Humidity	0 .. 95% non condensing
Weight	<250g
Dimensions	71mm wide x 90.5mm high x 73mm deep 2.79" wide x 3.56" high x 2.87" deep

Connections

Install the neutral to ground shunt resistor in a suitable location. Connect the shunt sense wires directly to terminals N (neutral side) and G (ground side) on the relay. Cabling between the shunt resistor and the ground fault relay should be kept to a minimum.



Terminal No.

- N Neutral input
- G Ground input
- 13 Fused auxiliary supply (-)
- 14 Fused auxiliary supply (+)
- 15 Default operation is non-latching
- 16 Fit link to enable relay latch on trip
- 17/18 Analog output 0/1 mA
- 19 Default input range is for 2mΩ shunt
- 20 Link to select 200μΩ shunt input
- 25 Relay (NO)
- 24 Relay (COM)
- 23 Relay (NC)