

GROUND FAULT RELAY



Features

- Precision digital settings
- LED bar graph display
- 10 selectable trip levels – 100 to 1200 amps
- 16 selectable time delay – 0ms to 10 seconds
- Less than 40ms response time
- 0-1mA analogue output
- User selectable input range of 0.2m ohms or 2m ohms
- 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

cRUus Approved File Number
E203000

The 373-GFR is designed to detect dangerous ground fault currents before damage is caused to expensive power assets. The 373-GFR continuously monitors the fault current and compares it with the user selectable trip level. When this level is exceeded, the relay will trip. 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.

Operation

The 373-GFR offers a single-pole change over relay contact incorporating a single set point, which will de-energise on trip. The relay senses the ground current by measuring the voltage developed across the N-G link impedance under a fault condition. We offer link selection of two standard N-G impedances, 0.2m ohms or 2m ohms. 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 trip current switch offers selectable settings from 100 to 1200 amps and the time delay set point 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 five yellow LEDs to indicate the level of leakage in 20% increments. With all five LEDs lit, the leakage level has reached 100% of the 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/reset 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-energise on trip (fail safe) as standard.

Analogue Outputs

The 373-GFR unit incorporates a 0/1mA analogue output which equals 0% to 100% of the selected tripping level. It can be used to drive an external meter, thus providing measurements for test commissioning and indication of potential problems. The analogue output also enables fault level diagnosis to be communicated into building management or intelligent SCADA systems.

Product Codes - Single-pole change over relay

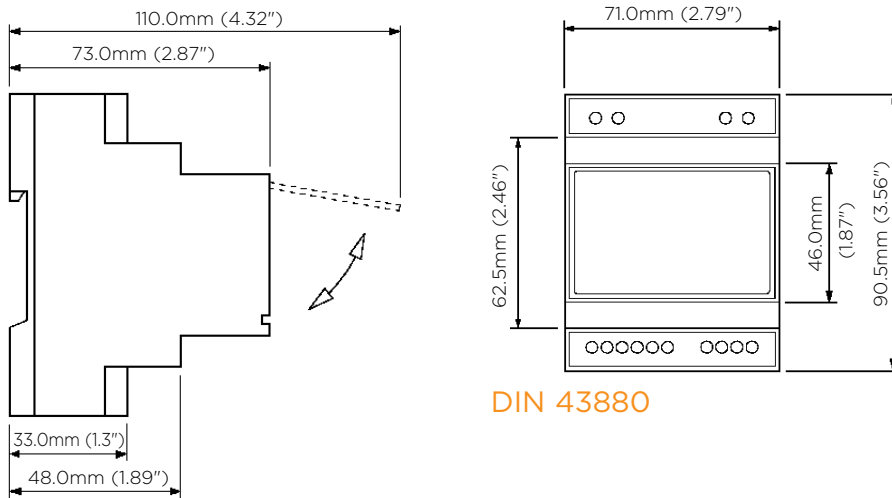
Frequency	Dim A	Part number
50Hz	12-48V DC	373-GFRW-SHC5-A1-SP
50Hz	24-48V AC/DC	373-GFRW-SHC5-A2-SP
50Hz	100-250V AC/DC	373-GFRW-SHC5-A3-SP
60Hz	12-48V DC	373-GFRW-SHC6-A1-SP
60Hz	24-48V AC/DC	373-GFRW-SHC6-A2-SP
60Hz	100-250V AC/DC	373-GFRW-SHC6-A3-SP

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Specifications

Measuring input:	AC voltage developed across N-G link
Measuring range:	0.2 mΩ or 2 mΩ shunt impedance link selectable
Overload:	Maximum input voltage 600V
Frequency:	50/60Hz
Auxiliary voltage:	12-48V DC, 24-48V AC and DC or 100-250V AC and DC
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 set points:	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 bar graph for fault levels. Red LED indicated trip function Green LED indicated auxiliary power presence
Relay contacts:	1-pole change over (SPCO or NO+NC) contacts
Relay contact rating:	8 amps at 250V AC. 8 amps at 30V DC resistive
Relay mechanical life:	>100,000 operations
Analogue output:	0 to 1mA = 0 to 100% of selected tripping level. Compliance 1V, accuracy 10%
Enclosure style:	DIN 43880, rail width 70mm
Material:	Flame retardant UL94V0
Terminals:	1 to 4mm ² solid or stranded conductors. IP20 protection
Operating temperature:	-10°C to +60°C
Storage temperature:	-20°C to +70°C
Relative humidity:	<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

Dimensions



DIN 43880

Terminal No.

- 8 Neutral input
- 6 Ground input
- 2 Fused auxiliary supply (-)
- 1 Fused auxiliary supply (+)
- 4 Default operation is non-latching
- 5 Fit link to enable relay latch on trip
- 9/10 Analogue output 0/1mA
- 11 Default input range is for 2 mΩ shunt
- 12 Link to select 200QΩ shunt input
- 14 Relay (NO)
- 15 Relay (COM)
- 16 Relay (NC)

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.

