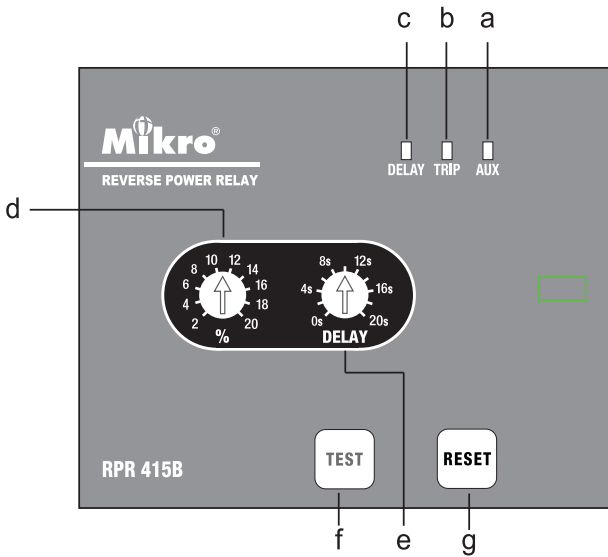


RPR 415B 3-Phase/Single-Phase Reverse Power Relay User Manual V3



Front panel overview

- a – AUX LED
- b – TRIP LED
- c – DELAY LED
- d – Reverse current setting
- e – Delay time setting
- f – TEST Button
- g – RESET Button

1. General Description

RPR 415B relay is a directionally controlled timing relay used to protect AC generators from motoring. When such condition occurs and the reverse current exceeded the reverse current setting, Delay LED blinks and countdown started. After longer than delay time setting, the relay trips, Trip LED on and trip contact energised to disconnect the circuit.

The trip contact will be released once the reverse current fall below the preset limit. However, the TRIP light is latched. Press the reset button to reset the light indicator to normal

Test Button

Press the test button for 2 seconds to simulate a trip condition.

Reset Button

Reset button is for resetting the relay after tripping. To reset, press Reset button once.

Connection Setting

a) 3-Phase 4-wire (star) Connection

In this configuration, L1 and Neutral wire is connected directly to the relay.

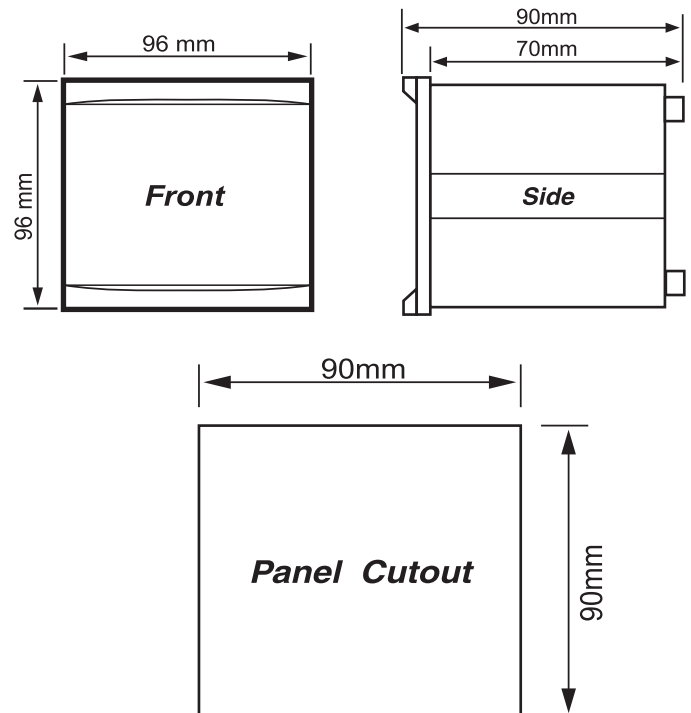
To set to 3-Phase 4-wire (star) system, power up the relay while pressing Test Button and hold the button for more than 2 seconds. After 2 seconds, Delay LED on, release the button to run normally.

b) 3-Phase 3-wire (delta) Connection

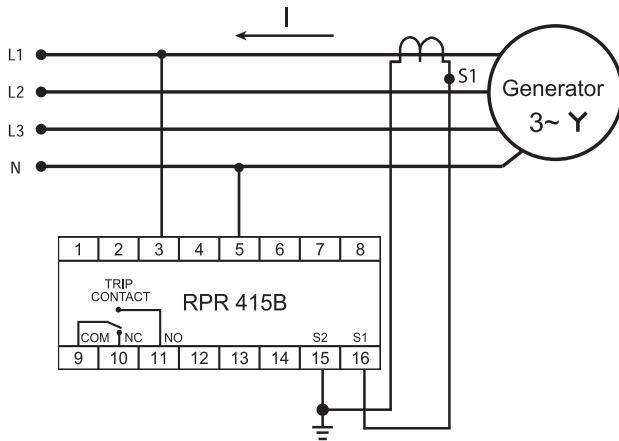
In this configuration, L2 and L3 is stepped down to 240V and connected to the relay. The relay is internally offset 90° for this connection.

To set to 3-Phase 3-wire (delta) system, power up the relay while pressing Reset button and hold the button for more than 2 seconds . After 2 seconds, Trip LED on, release the button to run normally.

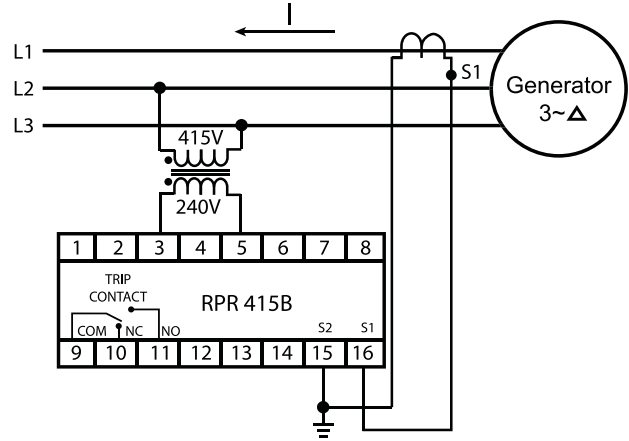
Case Dimensions



Typical Application Diagram



3-Phase 4-wire / single-phase system



3-Phase 3 wire system

Technical Data

Input

Rated Phase-neutral voltage : 220V to 240V AC
 Rated Phase-phase voltage : 380V to 415V AC
 Rated frequency : 50 or 60Hz
 Rated current (In) : 5A
 Burden : < 0.3 VA at In
 Thermal withstand : 1.2 x Un, 2 x In continuous
 : 1.2 x Un, 10 x In for 3 sec
 Power consumption : 3 VA maximum

Output Contacts

Rated voltage : 250V AC
 Contact rating : 5A
 Expected electrical life : 100,000 operations at
 rated current
 Expected mechanical life : 5×10^6 operations

Setting Ranges

Reverse Power : 2% to 20% reverse
 current with 1% hysteresis
 Delay time : 0 sec to 20 sec
 3-Phase 4-wire (star) or 3-Phase 3-wire (delta)

Accuracy

Protection thresholds: $\pm 3\%$
 Hysteresis : 1%
 Delay time : 0-0.5s, $\pm 15\%$,
 40ms minimum.
 >0.5s, $\pm 3\%$
 Measurements : $\pm 3\%$

Indicators

Power supply On : Green indicator
 Delay : Red indicator
 Trip : Red indicator

Environmental Conditions

Temperature : -5°C to $+55^{\circ}\text{C}$
 Humidity : 56 days at 93% RH and
 40°C non-condensing

Mechanical

Mounting : Panel mounting
 Dimension (mm): Standard
 DIN96mmx96mm
 Weight : 0.6kg

IMPORTANT

The setting for this relay is a potentiometer knob or analogue/mechanical in nature. User will need to confirm the accuracy of the settings by using a calibrated current injector and injecting a reference current and check the pick up value and the tripping timing during commissioning. To have a precise setting model, user can consider to switch to digital setting type protective relay.