



## PROK DEVICES PRIVATE LIMITED

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### MICROPROCESSOR BASED REVERSE POWER RELAY

#### FEATURES

- ❖ Micro controller based, hence accurate and precise.
- ❖ Protection of generator / prime movers against reverse power
- ❖ Visual indication of power, pick-up and relay tripping.
- ❖ Display of reverse power on the LCD.
- ❖ Continuous display of sensing voltage, current, frequency and power factor with lead/lag indication.
- ❖ Wide Auxiliary voltage range from 85 – 275 VAC/DC.
- ❖ Cost effective and highly reliable compact design.
- ❖ Test Facility, allowing the user to check the NO and NC contacts of the relay.

#### SPECIFICATION

<b>Rated Current</b>	5Amps
<b>Trip Level</b>	4 % – 20 % In in steps of 1%
<b>Delay</b>	0 – 20 Sec in steps of 0.1 Sec
<b>Sensing Voltage Range</b>	50 – 500 V
<b>Frequency Range</b>	40 – 60 Hz
<b>Accuracy</b>	± 5 %
<b>Repeatability</b>	± 1 %
<b>Operating Voltage</b>	85 – 275 V AC/DC
<b>Enclosure Dimensions</b>	144 * 144 * 105 mm

#### APPLICATIONS

The reverse power relay prevents the generator from running as a motor, thus protecting the prime mover (eg. A diesel engine) by tripping the generator breaker, and at the same time avoiding overload on the remaining generators.

## FUNCTION

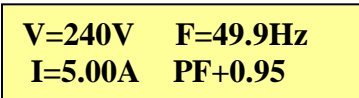
The reverse power relay measures the phase voltage (L – N operation) and the current of that phase through the current transducer. It calculates  $I \cos \theta$  representing the active power. If the active power becomes negative and exceeds the preset level (4 – 20 %) the pickup, **RED LED** will blink and the delay timer will start. After the preset time (0 – 20 sec) the relay will trip and the **RED LED** will glow. The reverse power ( $-I * \cos \theta$ ) is displayed on the LCD. During the healthy condition the **GREEN LED** glows,


## SETTING PROCEDURE

Connect the auxiliary supply, sensing voltage and current to the reverse power relay. The display shows



After few seconds, the display shows the sensing voltage, current, frequency and power factor (only if both voltage & load current above 100ma available at the sensing input).




To enter the setting mode, press the mode/set key . At first display comes for setting of reverse current. The display shows



*Range is from 4% to 20% at steps of 1%*

Press the increment  and decrement  key to make the desired setting.

Press the set  key to store the value. The display changes as shown



*Range is from 0 sec to 20 sec at steps of 0.1 sec*

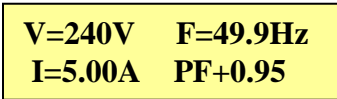
Press the increment  and decrement  key to make the desired setting.

Press the set  key to store the value. The display shows




Prok DV's  
RPR In-5A


For a while and then displays the sensing voltage, current, frequency and power factor.



V=240V F=49.9Hz  
I=5.00A PF+0.95

### Relay Testing

Press and hold the decrement/test  key for 3 seconds. The relay goes into the test mode. The display shows



**Relay Test**  
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At first the relay trips, then the GREEN LED switches OFF and at last the RED LED switches ON, with a definite time gap of 2 seconds. It goes to **LOCK MODE**. The **Relay Test** blinks till

the **RESET** key  is pressed.

# WIRING DIAGRAM

