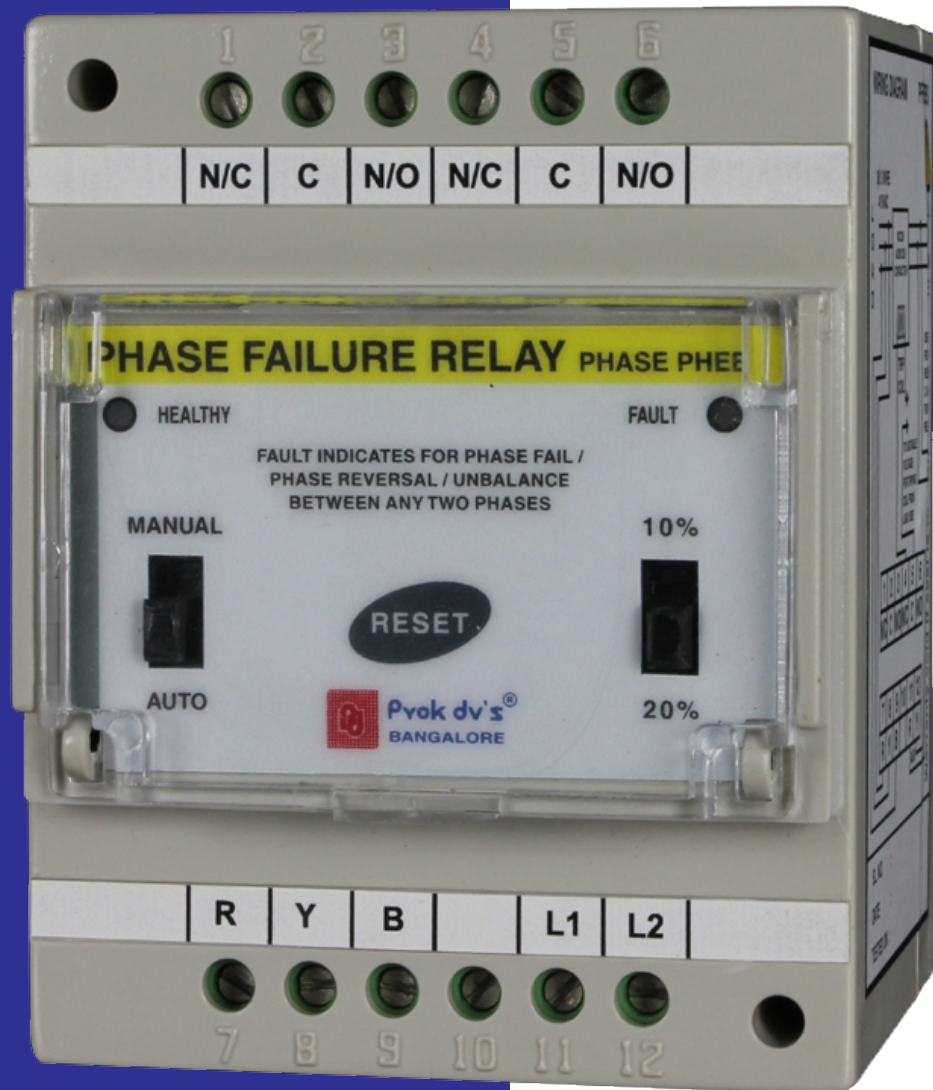


STATIC PHASE FAILURE RELAY



STATIC PHASE FAILURE RELAY

Prok dv's®

An ISO 9001 : 2015 Company

**STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING
PREVENTOR (SPP) – PHASE PHEE IEEE DEVICE CODE – 47**

Features

- Negative phase sequence detection.
- Low power consumption.
- Selectable percentage unbalance settings.
- Auto/Manual reset operation.
- Fail safe system.
- Accurate, reliable and tropicalised.
- Din Rail/surface mounting type.

Applications

- Suitable for motors of any HP ratings.
- Power supply distribution boards.
- Agriculture pump control panels.

Specification

System voltage	:	415VAC 3 Phase 50Hz
Fixed tripping time delay	:	2.5 Sec ± 0.5 Sec.
Unbalance voltage setting	:	10% or 20% (user selectable)
Reset	:	Manual / Auto
Relay Contacts	:	2 C/O , Potential free contacts Normally energized (fail-safe)
Auxiliary voltage	:	110/220/415 VAC 50 Hz
Mounting	:	Din type/surface (Fixing on 35 mm Din Channel)
Dimensions	:	75×95×75mm(L×H×D)

Principles of Operation

STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING PREVENTOR (SPP) from Prok dv's works on the principle of negative phase sequence voltage detection of the incoming supply. Monitoring of the unbalance in the supply voltage is the proven technique which has been adopted in the STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING PREVENTOR (SPP).

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Description

For large motors thermal overload relays provide inadequate protection against overheating of rotor due to the unbalance voltages. Unbalancing of voltages may be due to single phase loading, imperfect transposition of feeders or blown fuses in power factor correction plant. Over loading caused by unbalance voltages or phase failure condition due to fuse failure, loose connections or loss of phase from supply itself is not detected by conventional bi-metallic over load relays, and most of the motor burnouts are because of phase failure (single phasing). The detection of phase failure by sensing the negative phase sequence components of voltage or current.

STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING PREVENTOR (SPP) is fully static and a quality product which is time-tested and safely implemented for a large number of motor applications. The relay also provides a certain degree of under voltage protection when there is a dip in the balanced motor supply voltage.

Prok dv's Product STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING PREVENTOR (SPP) is currently available with a user selection of unbalance voltage setting and selection of manual/auto mode of operation in front fascia of the relay. The reset push button is with soft membrane key pad is operational in the manual mode which is highly reliable and easy to operate. There are two LED's provided on the front fascia of the unit, the green LED will start to glow under the healthy condition of the system, the red LED will glow during single phasing or reversal of phase or unbalanced voltage. After isolating/rectifying the fault by resetting the relay unit, the green LED glows indicating the system is healthy and red fault LED goes off. The unit is compact in size and is suitable for DIN rail or surface mounting.

The negative phase sequence components do not contribute to power output but generate losses in motor. STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING PREVENTOR (SPP) helps in saving the motor from burn-out & in turn reducing the maintenance cost, if the negative phase sequence components are monitored continuously thus tripping the motor circuit when it exceeds the dangerous levels.

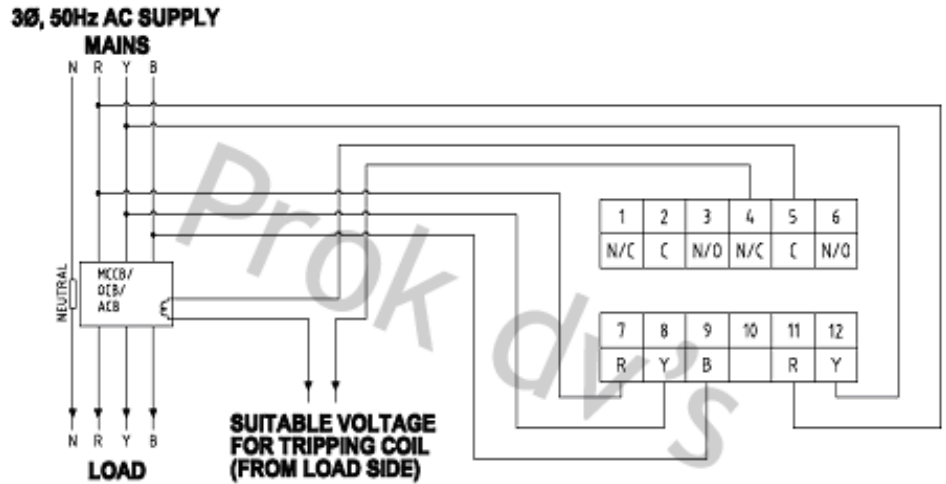
The condition of an open circuit in one line causes the worst form of voltage unbalance resulting in the overheating of the machine windings. To protect motors against the damage caused due to unbalance supply conditions, monitoring of the unbalance in the supply voltage is one of the well proven technique and time tested.

Prok dv's presents STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING PREVENTOR (SPP) designed to protect as a phase failure relay (single phasing) and unbalance preventor for all LT motors. It works on the principle of negative phase sequence voltage detection in the incoming supply

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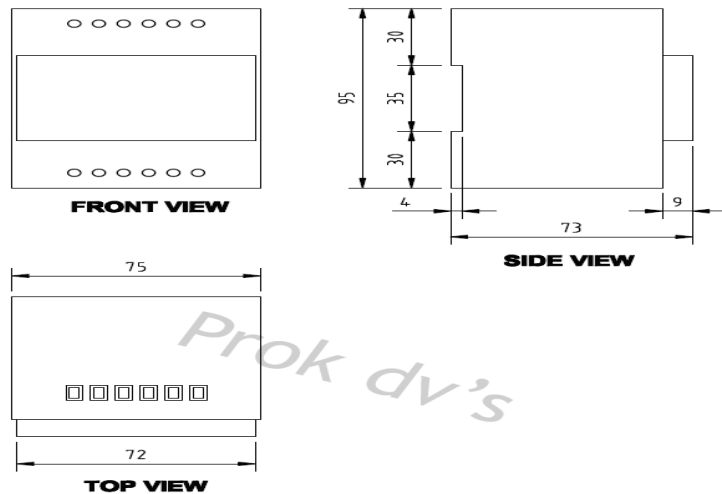
WIRING DIAGRAM OF STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING PREVENTOR (SPP)



NOTE 1: IT IS DESIRABLE TO DERIVE AUXILIARY VOLTAGES/SUPPLY USING SEPERATE AUXILIARY TRANSFORMER FROM MAINS, OF SUITABLE RATING.

NOTE 2: FOR SHUNT RELEASE CONNECT "C" & "N/O" CONTACTS FOR UV RELEASE OR CONTACTOR COIL CONNECT "C" & "N/C" CONTACTS SHOWING IN HEALTHY CONDITION

MECHANICAL DIMENSION OF DIN MOUNTING STATIC PHASE FAILURE (PFR) RELAY / SINGLE PHASING PREVENTOR (SPP)



NOTE: ALL DIMENSIONS ARE IN MM TOLERANCE:- ± 1MM

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