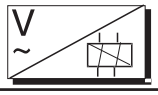
Data Sheet

Phase Balance Relay

Models Available

	
Function / System	Product Type
Phase loss and unbalance	252-PSF
Phase loss, unbalance and under voltage	252-PSG

Applications

The phase unbalance feature will protect motors of any size against:-

Excessive temperature rise due to unbalanced supplies (e.g. a 10% unbalanced supply can increase the temperature rise by 150%)

The regenerated voltage generated during a single phase failure when running at low load.

- Portable pumps
- Portable compressors
- Motors - Single Phasing
- Gensets - correct engine rotation
- All portable equipment
- All rotating machines

Features

- Adjustable set point
- Adjustable time delay
- LED trip indication
- 2 pole relay contacts
- Internal Differential
- Auto Reset

Introduction

The Rishabh Protector phase Balance relay provides continuous surveillance of a 3 phase, 3 or 4 wire system and protects against :-

- Phase Loss
- Phase Reversal
- Sequence
- Phase Unbalance
- System Under Voltage

The protector de-energizes a relay should any one of the above faults occur. It is fitted with an adjustable time delay to eliminate premature operation on short duration supply fluctuations.

A red LED indicates that the supply is within limits & that the output relay is energised. The relay will not energise if the supply is connected in the wrong sequence.

Specification

System	:	3 phase, 3 or 4 wire
Frequency	:	50 or 60Hz
Nominal Voltage	:	100, 110, 120, 220, 230, 240, 380, 400, 415 & 440V (57 to 480V)
Burden	:	3VA approx.
Voltage Withstand	:	1.2 x rating continuously 1.5 x rating for 10 seconds

Set Points

Unbalance	:	Adjustable 5% to 15%
Time Delay	:	Up to 10 seconds adjustable, 30 seconds maximum.
Under Voltage (Type 252-PSG only)		Internally preset at 15% of nominal voltage (other values between 10% and 30% available on request)

Output Relay

Type	:	DP changeover
Rating		
A.C	:	240V, 5A non-inductive
D.C	:	24V 5A resistive
Operations	:	0.2 million at the above load
Reset	:	Automatic

Other Specifications

Operating temperature	:	0^0 C to $+60^0$ C
Storage temperature	:	-20^0 C to $+70^0$ C
Temp. co-efficient	:	0.05% per ^{0}C
Interference immunity	:	Electrical stress surge withstand and non function to ANSI/IEEE C37 90a
Enclosure style	:	DIN-rail with wall mounting facility
Material	:	Flame retardant polycarbonate /ABS
Enclosure integrity	:	IP 50
Model 252 dimensions	:	55mm(2.2")wide x 70mm(2.8")H x 112mm (4.4") deep
Weight	:	Approximately - 0.4 kg

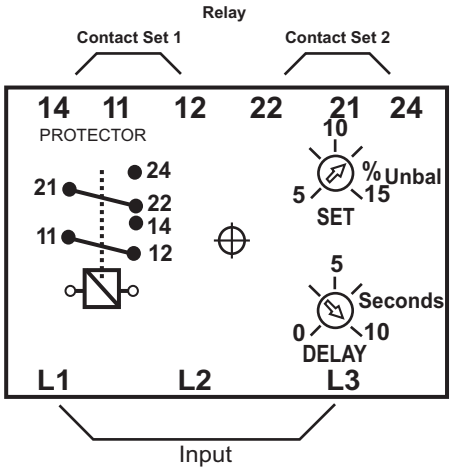
Principle of Operation

The protector comprises monitoring circuits for voltage phase reversal and phaseunbalance. Outputs from these circuits are fed to a comparator which changes state under fault conditions.

When the comparator trips, the output relay will de-energise after a preset time delay & the red LED will then no longer be lit.

The relay and LED will automatically energise again when all the supply parameters have returned to safe and acceptable limits.

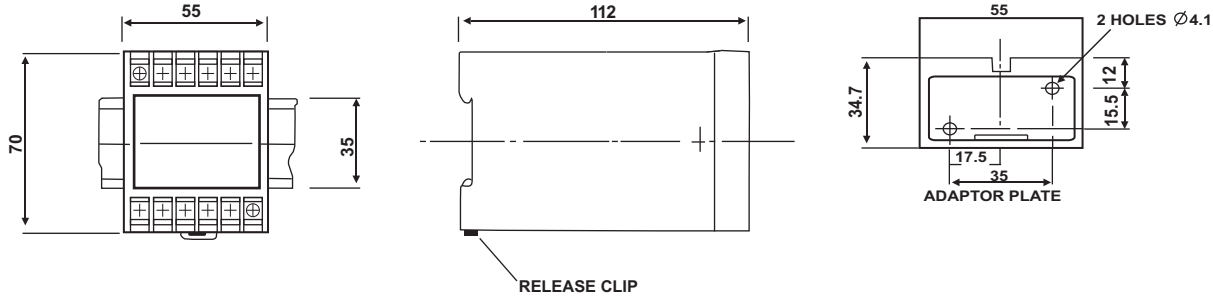
Connection diagram



252-PSF & 252-PSG

Dimensions

Model 252



Ordering Information

Please quote :

1. Product Type.
2. Function i.e. Under or Over.
3. Relays normally de - energise on under trip and energise on over trip.
4. Please specify standard or non standard trip. An energised relay is indicated by a “Lit” red LED. Setpoint can be factory adjusted to your requirements.
5. System Voltage and/or Current where applicable.
6. System Frequency.
7. Preset Differential where required.
8. Time delay where applicable.

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