

PROTIME



Frequency Relays

FR-1

Special Features

- Under & Over Frequency relays with calibrated linear scale
- Smart design to fit on any standard mounting channel.
- Choice of screwless terminals
- $\pm 2\%$ Accuracy
- Total wireless interiors
- Test & Auto/Manual Reset facility
- Ideal for DG set applications.
- Designed for high reliability, as relay energizes only under fault conditions

Technical Data

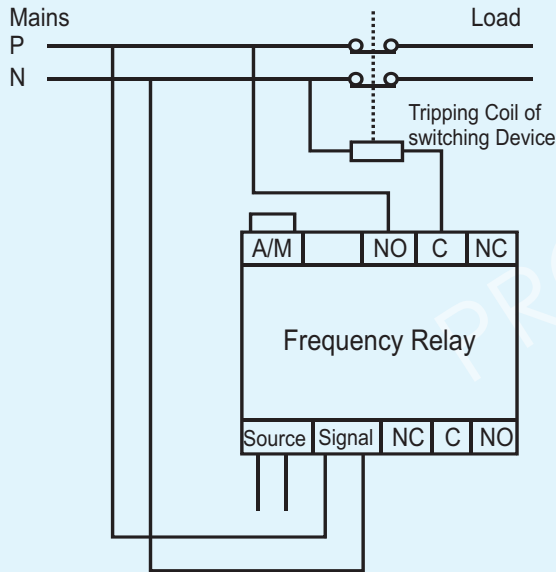
1) supply Voltage	- 110V / 220V / 380V / 415V AC 50Hz or 12 / 24V DC.
2) Permissible Supply Variation	- $\pm 25\%$
3) Output Contacts	- Two change over contacts
4) Switching duty	- 6A resistive at 24V DC or 240V AC
5) Relay Status	- De-energised in normal conditions.
6) Set Point (Range)	- U/F = 30 - 45 Hz O/F = 55 - 60 Hz
7) Time delay (optional)	- 0.1-10 sec settable
8) Mode of operation	- Under Frequency / Over Frequency combined.
9) Reset	- Automatic/Manual.
10) Setting Accuracy	- $\pm 5\%$ of Full Scale.
11) Mounting	- Any standard mounting channel.
12) Dimensions	- 77mm(W) X 90mm(H) X 110mm(D)

OPERATION

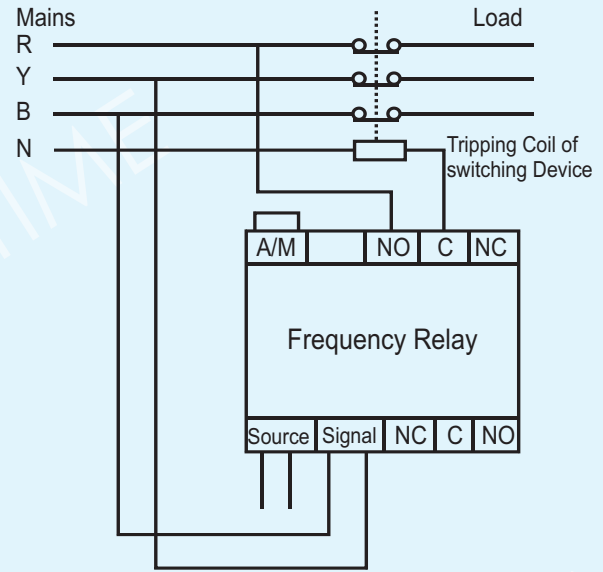
The Frequency relay continuously monitors line frequency. The Line Frequency is compared with highly stable internal crystal based frequency to achieve error-proof result. If the line Frequency goes out of the range selected, relay changes the status after the SET time delay.

Connection Details

For Single Phase supply



For Three Phase Supply



HOW TO ORDER FR-1?

Ordering Pattern (example)-

FR-1 - S - STD - 10S - 1 - 5

Series
FR-1 Frequency Relay in Channel Mounting enclosure.

Terminals
S - Screw type terminals
C - Cage type terminals (Screwless)

Frequency Range
STD - U/F = 33 - 45Hz
O/F = 55 - 60
* Other range can be made on request

Time Range
0 - 10 s.

Modes
1- Under & Over Frequency relay

Aux Supply

- 1-110V AC
- 2-230V AC
- 3-380V AC
- 4-415V AC
- 5-12V DC
- 6-24V DC

Note:- Design & specification may change to our continuous developmental efforts