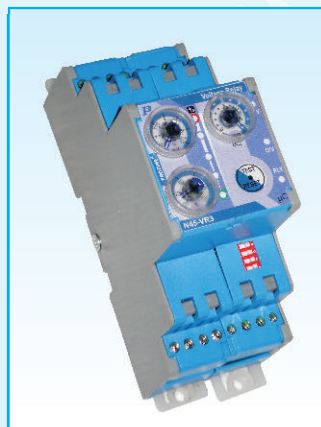


PROTIME<sup>®</sup>



## N45 Series Relay

**N45 - FR**

### Special Features

- Micro controller based True RMS Measurement
- Under & /or Over frequency user selectable with auto range selection
- Two Time delay ranges
- User selectable Normal/Fail safe Modes
- User selectable Auto/Manual Reset
- Wide power supply range from 90-270V AC/DC
- Dynamic 5 LED Bar Graph status indicator
- RS 232/485 output-(Optional)
- 0-5V Analog Output-(Optional)

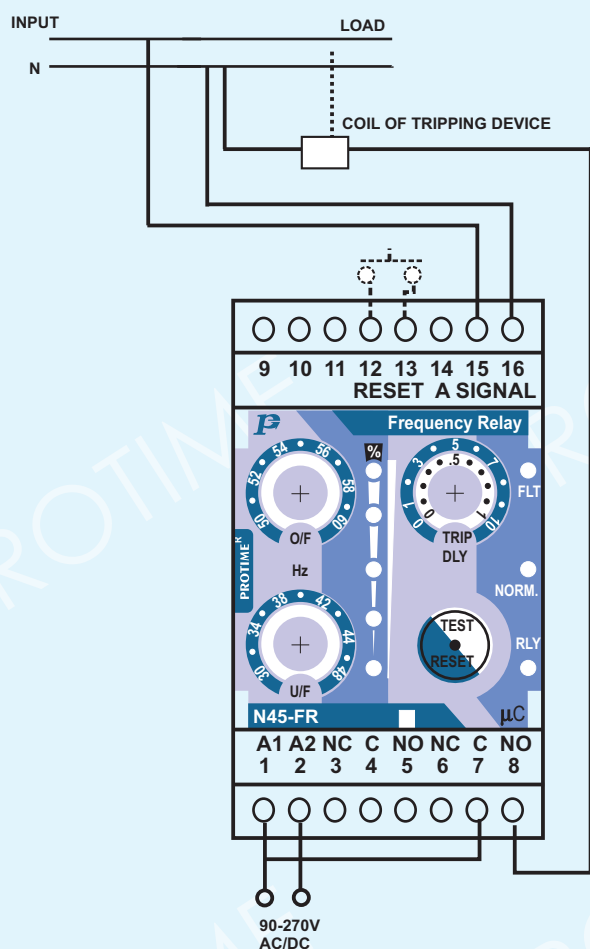
### Technical Data

- |                        |  |
|------------------------|--|
| 1) supply Voltage      | - 90-270V AC/DC  |
| 2) Output Contacts     | - Two change over (potential free)   |
| 3) Switching duty      | - 6A resistive at 250V AC or 24V DC  |
| 4) Electrical Life     | - 10 <sup>5</sup> operation at designed switching duty                                       |
| 5) Relay Status        | - Normal - De-energised in normal conditions<br>Fail Safe - De-energised in fault conditions |
| 6) Signal              | - 230V / 415VAC  |
| 7) Ranges              | - U/F = 30 - 48Hz<br>O/V = 50 - 60Hz   |
| 8) Time Delays         | - Trip= 0.1 - 1 Sec / 1 - 10Sec<br>- Pick up = 1 - 10Sec                                     |
| 9) Mode of operation   | - Under Frequency/Over Frequency/Under-Over combined   |
| 10) Reset              | - User selectable Auto/Manual Reset  |
| 11) Mounting           | - Din channel  |
| 12) Approximate Weight | - 150gm  |
| 13) Dimension          | - 45mm(W) X 110(D) X 73.5mm(H)   |

## OPERATION:

PROTIME's N45-FR senses the frequency of line. N45-FR energises / de-energises an internal relay based on Mode of operation selected by user (i.e. Normal or Fail Safe) when frequency goes out of the range selected on the dial. N45-frequency Relays are provided with user selectable two Tripping Ranges, and also two Trip Time delay ranges in one unit. In Fail safe mode P.Up time delay is active, which can be set by DIP Switches. It also has provision for RS 232/485 connectivity or 0-5V Analog output proportional to fault current. The Relay has 2 Changeover contacts. The Dynamic 5 LED bar graph gives an indication of fault level in terms of % of Settings selected.

## Connection Details



## HOW TO ORDER ?

Ordering Pattern (example)- **N45-FR-1**

N45-FR	-	1
Code		UF=30-48Hz OF=50-60Hz