

## 250 Series DIN Rail and Wall Mounted - Frequency

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### Features

- » Adjustable setpoint
- » Adjustable differential
- » LED trip indication
- » 2 pole relay contacts

### Application

- » **Gensets** - use these relays to monitor correct operation of the engine speed controller (governer)
- » **Motors** - synchronous motors rotate at speeds proportional to line frequency. Use these relays to ensure correct running speed
- » **Standby supplies** - when the main A.C. supply falls outside the acceptable working frequency, these relays can initiate a change over to an alternate or standby supply



The Crompton frequency Protectors give continuous surveillance of the monitored circuit. When the frequency moves outside the set point limit the relay will operate giving an alarm, control or tripping signal.

An illuminated LED indicates when the relay is energized.

Since speed is proportional to the frequency, this protection can be used to protect for:

- Over and Underspeed
- Standby supplies for Industrial, Hospital or Marine use
- Mains supplies
- Computer supplies
- Other control gear

### Introduction

Crompton Frequency Protectors provide continuous surveillance of the monitored circuit. These products offer user adjustable frequency trip point (setpoint) and differential (hysteresis) settings. The setpoint adjustment range is centred around the nominal 50Hz, 60 Hz or 400Hz system frequency. The differential setting adjustment can be used to reduce nuisance tripping if the measured signal is noisy or unstable.

When the measured Frequency moves outside the setpoint limit, the relay will operate, giving an alarm or initiation signal.

As soon as the monitored frequency moves outside of the setpoint limit, a trip will occur. The units draw their operating power from the measuring inputs.

Combined units offer under and over frequency trips in one compact unit. Single function units are also available.

### Product Function

**Over frequency models:** When the monitored frequency exceeds the setpoint, the relay will energize and the red LED will illuminate to indicate the trip condition. The relay will automatically reset once the monitored frequency falls below the setpoint minus the differential. When reset, the LED will extinguish and the relay de-energizes.

**Under frequency models:** When the monitored frequency falls below the setpoint, the relay will de-energize and the red LED will extinguish to indicate the trip condition. The relay will automatically reset once the monitored frequency rises above the setpoint plus the differential. When reset, the LED will illuminate and the relay energizes.

**Crompton**  
INSTRUMENTS

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### Product customisation options

Please contact the factory.

- **Adjustment ranges** - different adjustment ranges are possible for the setpoint and differential controls
- **Time Delay** - internal fixed time delay before a trip occurs
- **Relay operation** - standard models are fail safe, but the relays can be customised to energise or de-energise on trip

### Specification

<b>Approvals:</b>	U.L. recognized up to 300V	<b>Setpoint Repeatability:</b>	Better than 0.5%
<b>Nominal frequency:</b>	50, 60 or 400Hz	<b>Ranges (50Hz):</b>	40/ 60Hz adjustable
<b>System Voltage:</b>	100, 110,120, 208, 220, 230, 240, 277, 380, 400, 415, 440 or 480V ±20%	<b>Ranges (60Hz):</b>	50/ 70Hz adjustable
<b>Overload:</b>	1.2 x continuously 1.5 x for 10 x 10 seconds	<b>Differential:</b>	0.1 to 3.0Hz adjustable
<b>Burden:</b>	3VA	<b>Range (40Hz):</b>	360/ 440Hz adjustable
		<b>Differential:</b>	10 to 30Hz adjustable

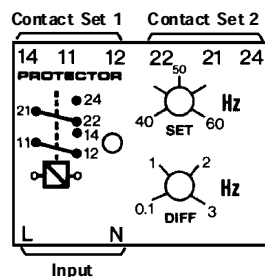
### Product Code Examples

Frequency Relay	Input	Protection	ANSI No.	Cat alogue No.
Single Phase	120V A.C.	Under frequency 55-65 Hz	81U	252-PHUUPQBXC6EB
Single Phase	120V A.C.	Over frequency 55-65Hz	81O	252-PHOUPQBXC6EA
Single Phase	120V A.C.	Under & Over (2 output relays)	810/U	253-PHDUPQBXC6EC

### Connection Diagrams

252-PHU  
252-PHO

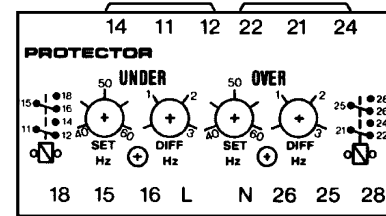
Output Relay



Under or Over Frequency

253-PHD

Under Relay Contact Set 1 Over Relay Contact Set 1



Under Relay Contact Set 2 Input Over Relay Contact Set 2

Combined Under and Over Frequency



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