



## FREQUENCY PROTECTOR TRIP RELAYS

### DIGITAL METERING SYSTEM

#### KEY FEATURES

- LED fault indication
- Adjustable nominal voltages, trip points, time delay and differentials
- Compact DIN- rail enclosure
- Power on LED (Green)
- Designed to avoid nuisance tripping

TE Connectivity's (TE) Crompton Instruments frequency protector trip relay provides a continuous surveillance of the monitored circuits and offers user adjustable trip points (set points) with time delay and differential (hysteresis) settings. When the frequency moves outside the set point limits for longer than the time delay, the relay will operate giving an alarm control or tripping signal. Since speed is proportional to frequency, this protector can be used to monitor under and over speed to protect mains, computers supplies and standby supplies.

The frequency protector set point adjustment range is centred around the nominal system frequency of 50, 60 or 400Hz. The adjustable differential setting can be used to reduce nuisance tripping if the measured signal is noisy or unstable. Under normal conditions, with the supply frequency close to the nominal set point, both red LEDs are off with the under relay energised and the over relay de-energised. Should the supply fall below the opening threshold, both relays will de-energise and both red LEDs will flash slowly to indicate insufficient supply voltage.

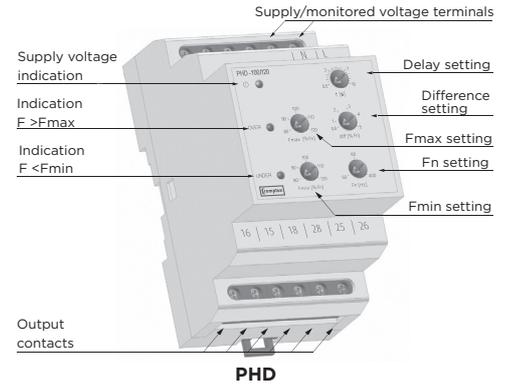
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# Frequency Protector Trip Relays

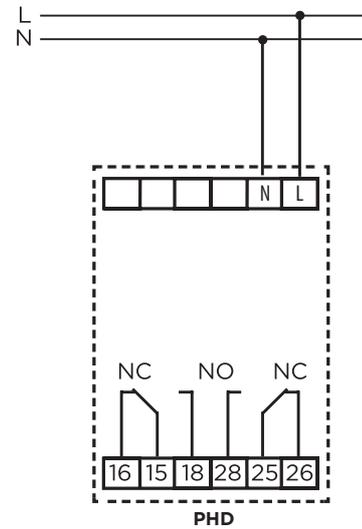


SPECIFICATION				
Technical parameters	PHD-100/120	PHD-173/240	PHD-380/480	PHD-280/860
Under frequency protection (de-energise on trip)	●	●	●	●
Over frequency protection (en-energise on trip)	●	●	●	●
System type	1-phase (1-)	1-phase (1-)	1-phase (1-)	1-phase (1-)
Supply input terminals	L, N			
Supply voltage	43 - 87V	71 - 174V	161 - 346V	161 - 500V
Rated frequency Fn	50/60/400 Hz			
Supply input burden (max)	1.6VA / 1W approx			
Supply opening threshold Uopen	43V	71V	161V	161V
Under frequency range Fmin	Adjustable 80 - 120% In			
Over frequency range Fmax	Adjustable 80 - 120% In			
Overload capacity -continuous -max. 10s	87V 104V	174V 209V	346V 416V	500V 550V
Differential (hysteresis)	Adjustable 0.5 - 5% Fn			
Time delay	Adjustable 0.5 - 10s			
Output relay-contact	2x change over (AgNi) plated			
Output relay-contact terminals	Under 15, 16, 18/Over 25, 26, 28			
Load capacity AC	250V/8A, max .2 kVA			
Load capacity DC	30V / 8A			
Mechanical life	3x10 <sup>6</sup> by rated load			
Relay reset	Automatic			
ANSI no.	810 / U			
Operating temperature	-20 + 55°C			
Storage temperature	-30 + 70°C			
Insulation	4 kV / 1min.			
Overvoltage category	III.			
Pollution degree	2			
Enclosure integrity	IP40 from the front panel/IP20 terminals			
Enclosure style	DIN-rail, 3 module			
Case material	Flame retardant polycarbonate			
Connecting conductors profile (mm <sup>2</sup> )	max .2 x 1.5 mm <sup>2</sup> / 1 x 2.5 mm <sup>2</sup>			
Dimensions	H 90 x W 52 x D 64 mm			
Weight	124 g approx			
Standards	EN 60255-6, EN 60255-27, EN61000-6-2, EN6100-6-4			

## PROTECTOR OVERVIEW



## CONNECTION



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