



- Precision High / Low Frequency Protection
- Ranges 45-55, 55-65 and 45-65Hz
- Quartz Controlled Frequency Protection and Meter
- Definite time trip delays
- Complies with G59 requirements
- Optional very fast analogue output (<50mS), (F-versions)

**Specifications**

Monitored voltage range:	100-120, 200-240, 380-415 or 440-460VAC, 40-70Hz (Fuse 0.5A)	
Optional Auxiliary Voltage:	24 or 110VDC (Fuse 2A)	
Contact rating:	AC: 100VA - 250V/2A max. DC: 50W - 100V/1A max.	
Standard scale:	45 - 55Hz / 55 - 65Hz / 45 - 65Hz	
Adjustments:	Trip level	Delay
Trip level High:		
45-55Hz & 55-65Hz	0% to +10%	0-30 Sec
45-65Hz	0% to +20%	0-30 Sec
Trip level Low:		
45-55Hz & 55-65Hz	0% to -10%	0-30 Sec
45-65Hz	0% to -20%	0-30 Sec
Analogue outputs:	Up to 20mA, max 500ohm	
F-versions	Up to 10V, min 10kohm (other on request)	
Temperature:	-20 to +70°C	
Weight:	0.6kgs	
Front protection:	IP52 (IP65 optional)	

**Description**

The digitally controlled KPF221E provide precision (0.2%) high/low frequency protection.

A digital, crystal controlled frequency window discriminator controls operation and delay of the frequency low/high alarm relays. The unit measures the zero point crossing of the voltage true r.m.s. value, and accuracy is independent of any wave form distortion.

The auxiliary voltage is supplied from the unit voltage input. ADC auxiliary voltage input is optionally available. A green LED indicates POWER on. Start of monitoring function is delayed when power is switched on (default 2 secs delay). In this way false tripping during power up is avoided. The precision DIN96 meter reads the frequency directly in Hz, and has low-reflection glass to ease reading at a distance.

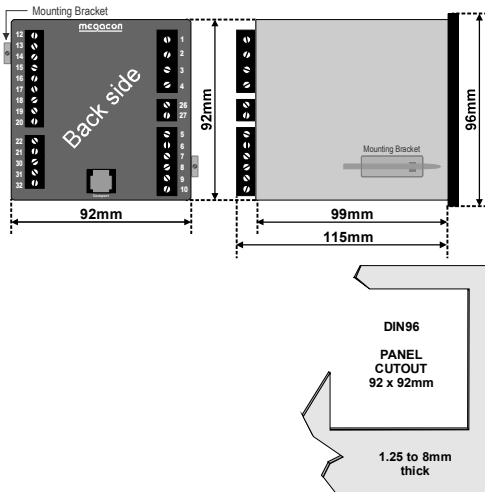
The frequency meter and the triple-zone status LEDs at a glance gives the clear safety message:

- HIGHALARM
- NORMAL
- LOWALARM

The unit has C/O relay outputs for Frequency High Trip (R1) and Frequency Low Trip (R2). A trip LED flashes when the trip level is passed, the relay trips after elapsed delay. The frequency differential set points can be user-adjusted to suit most applications. Trip levels and delays are settable on unit rear.

Red alarm lamps FREQUENCY LOW or FREQUENCY HIGH flash instantly (approx. 1 flash per second) on passing the frequency differential set points. The lamp changes state and the alarm relay operates after the pre-set delay. If a fault condition ends during the delay interval, the timer will automatically reset.

The F-versions have an fast response mA output signal proportional to the Hz range.



	High	Low	Fail safe	Latch
R1	✓		✓**	*✓
R2		✓	✓**	*✓

**Relay Reset**  
Any latched relay is reset by linking terminals 30 and 31.

Models	Latch	Output	Fail safe
KPF221E	-	-	X
KPF221F	-	X	X
KPF221G*	X	-	X
KPF221GF*	X	X	X
KPF221H**	-	-	-
KPF221HF**	-	X	-
KPF221HG**	X	-	-
KPF221HGF**	X	X	-

(E is the standard model)

