

# POWER FACTOR / PHASE ANGLE TRANSDUCER

CPF/CPA

## FEATURE

- Measuring Power Factor or Phase Angle  
1P2W, 3P3W, 3P4W Balanced or Unbalanced systems
- Precision measurement even for distorted wave
- Low output ripple
- High impulse & Surge protection
- High stability & low cost



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## SPECIFICATION

### INPUT:

Connection	AC Input		Range	Input Burden
	Voltage	Current		
1P2W	110V or 120V	5A (1A)	Power Factor: 0.5 ~ 1 ~ 0.5 (Lead) (Lag)	≤ 0.10VA or ≤ 0.15VA
	220V or 240V			
3P3W	110V or 120V	5A (1A)	Power Factor: 0.5 ~ 1 ~ 0.5 (Lead) (Lag)	≤ 0.10VA or ≤ 0.15VA
	220V or 240V 380V or 416V			
3P4W	190V <sub>LL</sub> - 110V <sub>LN</sub> or 208V <sub>LL</sub> - 120V <sub>LN</sub>	5A (1A)	Phase Angle: 60° ~ 0° ~ 60° (Lead) (Lag)	≤ 0.10VA or ≤ 0.15VA
	380V <sub>LL</sub> - 220V <sub>LN</sub> or 416V <sub>LL</sub> - 240V <sub>LN</sub>			

\* The maximum input are 450V and 5A. If the input over the level please connects with CT or PT to the transducer.

\* V<sub>LL</sub> means Voltage of line to line; V<sub>LN</sub> means Voltage of line to neutral.

### OUTPUT:

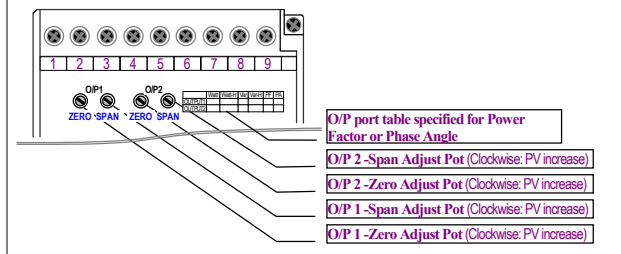
Output Range	Load Resistance	Output Resistance	Output Ripple
0 ~ 0.5 ~ 1 V	≥ 50 ohm	≈ 0.001 ohm	≤ 0.2% R.O.
0 ~ 2.5 ~ 5 V	≥ 250 ohm		
0 ~ 5 ~ 10 V	≥ 500 ohm		
1 ~ 3 ~ 5 V	≥ 250 ohm		
-1~0~+1 V	≥ 75 ohm		
-5~0~+5 V	≥ 375 ohm		
-10~0~+10 V	≥ 750 ohm	≥ 20M ohm	
0 ~ 0.5 ~ 1 mA	0 ~ 15K ohm		
0 ~ 5 ~ 10 mA	0 ~ 1500 ohm	≥ 6M ohm	
0 ~ 10 ~ 20 mA	0 ~ 750 ohm		
4 ~ 12 ~ 20 mA	0 ~ 750 ohm	≥ 20M ohm	
-1~0~+1 mA	0 ~ 11K ohm		
-5~0~+5 mA	0 ~ 2200 ohm	≥ 6M ohm	
-10~0~+10 mA	0 ~ 1100 ohm		
-20~0~+20 mA	0 ~ 550 ohm		

- Accuracy: ≤ ±0.2% R.O. ±0.3°
- Waveform effect: ≤ 0.2% R.O. at 30% distortion
- Max. input over capability: Voltage: 1.5 x rated continuous  
2 x rated for 10 seconds  
4 x rated for 2 seconds  
Current: 3 x rated continuous  
10 x rated for 10 seconds  
50 x rated for 1 second
- Input frequency: 50 Hz ±3 Hz, 60 Hz ±3 Hz
- Response time: ≤ 250 msec.
- Span adjustment: ≤ ±5% of R.O. (or ±20% of R.O. specify)
- Zero adjustment: ≤ ±2% of R.O. (or ±20% of R.O. specify)
- Output load effect: Current output ≤ 0.1% R.O.  
Voltage output ≤ 0.05% R.O.
- Power supply: AC 115/230V ±15%, 50/60 Hz  
Option: AC 380 or 415V ±15%, 50/60 Hz  
Option: DC 24V, 48V, 110V, 220V ±10%  
Self Powered: Interior connection from input volt  
Working volt: ±15% rated of input voltage
- Power effect: ≤ 0.05% R.O.
- Power consumption: ≤ 4VA

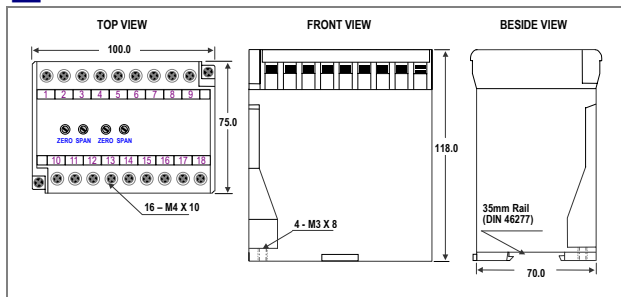
- Mutual interference effect: ≤ 0.1% R.O. between each element
- Magnetic field strength: 400ATM ≤ 0.2% R.O.
- Operating temperature: 0~60 °C
- Operating relative humidity: 20~95 %RH, non-condensing
- Temperature coefficient: ≤ 100 PPM/°C
- Storage temperature: -10~70 °C
- Dielectric Strength: IEC 414, IEC 688:1992, ANSI C37.90a  
Between Input / Output / Power / Case  
AC 4KV, 50/60Hz, 1 min.
- Surge test: IEC 255-4, ANSI C37.90a  
6KV, 1.2 x 50 μsec.  
Common mode & differential mode
- Safety: IEC 414, BS 5458
- Enclosure: IEC 529 (IP50)
- Isolation: Input / Output / Power / Case
- Insulation resistance: ≥ 100M ohm, DC 500V
- Performance: Designed it comply with IEC 688
- Mounting: Wall or DIN rail (EN 50022)
- Weight: Under 650g

## ADJUSTMENT

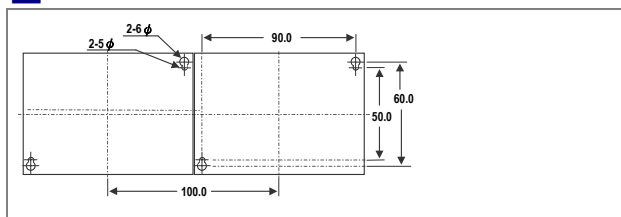
- Power Factor or Phase Angle:



## DIMENSIONS



## PANEL MOUNTING HOLES

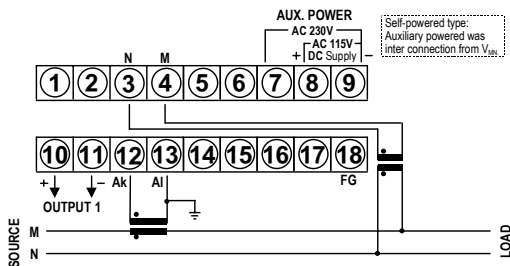


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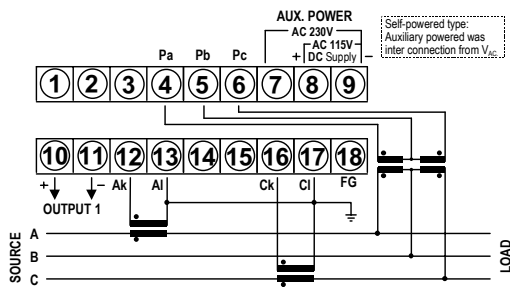
POWER TRUE SYSTEMS CORP.  
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## CONNECTION DIAGRAM

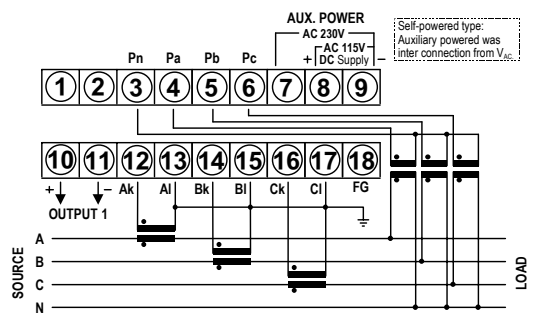
### Power Factor / Phase Angle - 1Φ2W (Unbalanced Load)



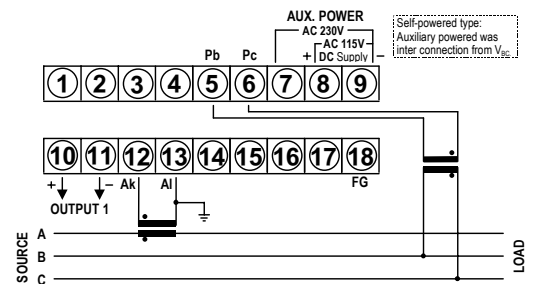
### Power Factor / Phase Angle - 3Φ3W (Unbalanced Load)



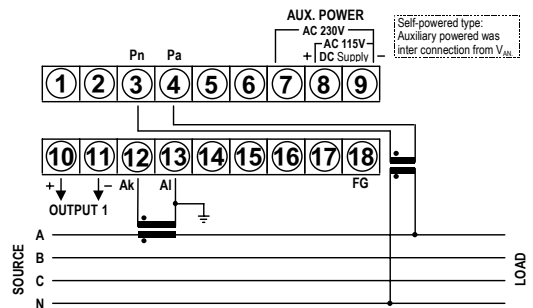
### Power Factor / Phase Angle - 3Φ4W (Unbalanced Load)



### Power Factor / Phase Angle - 3Φ3W (balanced Load)



### Power Factor / Phase Angle - 3Φ4W (balanced Load)



## ORDER INFORMATION

