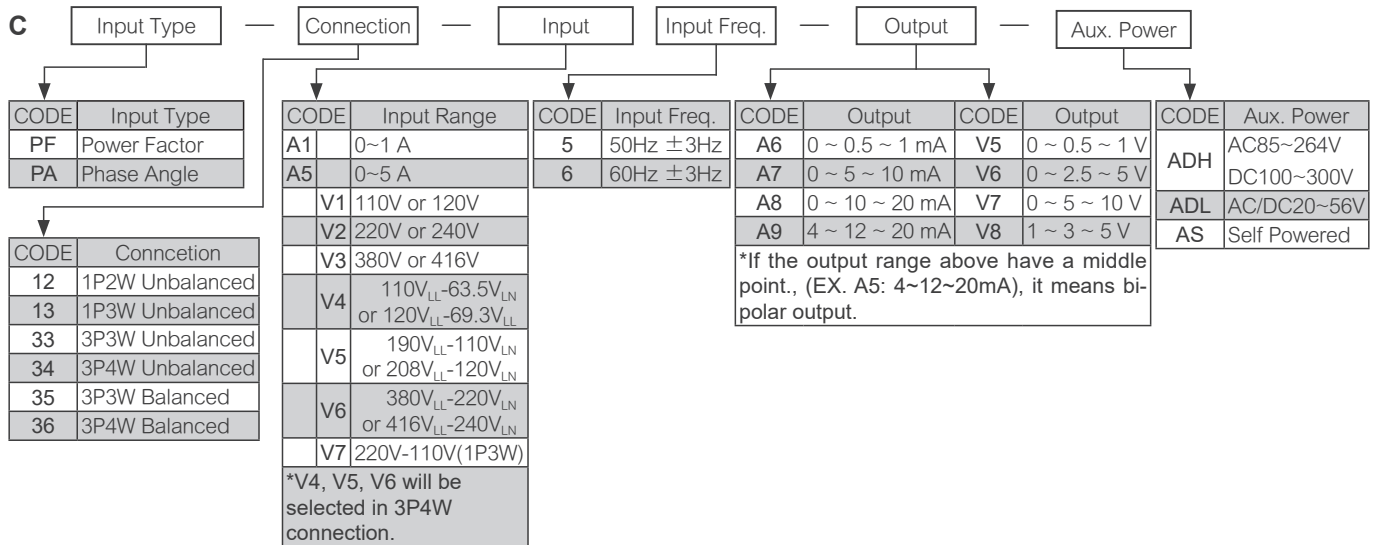


Features

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



Ordering Information



CPF/CPA

Specification

Input: Power Factor / COS θ

| 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 | | | |
| 1P3W | 220V ~ 110V | 10A** | Phase Angle: 60 ~ 0 ~ 60 (Lead) (Lag) | |
| 3P3W | 110V or 120V | | | |
| | 220V or 240V | | | |
| 3P4W | 380V or 416V | | | |
| | 190V _{LL} -110V _{LN} or 208V _{LL} -120V _{LN} | | | |
| | 380V _{LL} -220V _{LN} or 416V _{LL} -240V _{LN} | | | |

* The maximum input is 450V and 5A in standard (10Amax input available in option), If the input over the level please connects with CT or PT to the transducer.
 * V_{LL} means Voltage of line to line; V_{LN} means Voltage of line to neutral.
 * The basic ref. value is base on second of PT & CT, and versus the high range of output.

OUTPUT: Power Factor or COS θ O/P Programming by Dip Switch inside

| Output Range | Load Resistance | Output Resistance | Output Ripple |
|----------------|-----------------|-------------------|----------------|
| 0 ~ 0.5 ~ 1 V | ≥ 500Ω | ≤ 0.001Ω | ≤ 0.2% of F.S. |
| 0 ~ 2.5 ~ 5 V | ≥ 500Ω | | |
| 0 ~ 5 ~ 10 V | ≥ 1000Ω | | |
| 1 ~ 3 ~ 5 V | ≥ 500Ω | ≥ 20MΩ | |
| 0 ~ 0.5 ~ 1 mA | 0 ~ 12KΩ | | |
| 0 ~ 5 mA | 0 ~ 2400Ω | ≥ 6MΩ | |
| 0 ~ 5 ~ 10 mA | 0 ~ 1200Ω | | |
| 0 ~ 10 ~ 20 mA | 0 ~ 600Ω | | |
| 4 ~ 12 ~ 20 mA | 0 ~ 600Ω | | |

Accuracy : ≤ ±0.7% of F.S.
 Waveform effect ≤ 0.2% of F.S. at 30% distortion
 Max. input over: 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

Response time: ≤ 250 ms
 Span adjustment: ≤ ±5% of F.S. (or ±20% of F.S. specify)
 Zero adjustment: ≤ ±2% of F.S. (or ±20% of F.S. specify)
 Output load effect: Current output ≤ 0.1% of F.S.
 Voltage output ≤ 0.05% of F.S.

Power Supply

Power supply: ADH : AC 85~264V , DC 100~300V
 ADL : AC / DC 20~56V
 Self Powered: Interior connection from input volt
 Working volt: ±15% rated of input voltage

Power effect: $\leq 0.05\%$ of F.S.
 Power consumption: ≤ 8 VA
 Mutual interference effect: $\leq 0.1\%$ of F.S. between each element
 Magnetic field strength: 400ATM $\leq 0.2\%$ of F.S.

Environmental Conditions

Operating temperature: 0~60°C
 Operating relative humidity: 20~95 %RH, non-condensing
 Temperature coefficient: ≤ 100 PPM/°C
 Storage temperature: -10~70°C

Electrical Safety

Dielectric Strength: IEC 414, IEC 688:1992, ANSI C37.90a
 Between Input / Output / Power / Case
 AC 4KV, 50/60Hz, 1 min.

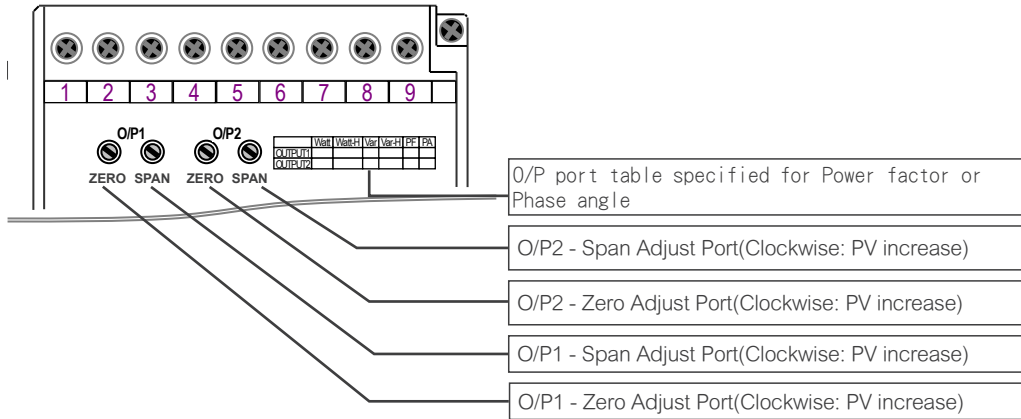
Surge test: IEC 255-4, ANSI C37.90a
 6KV, 1.2 x 50 μ sec.
 Common mode & differential mode
 Insulation resistance: $\geq 100M\Omega$, DC 500V
 Safety: IEC 414, BS 5458
 Enclosure: IEC 529 (IP50)
 Certification Standard: IEC 60688(Except 3P3W)
 CE: EMC:EN61326:2003
 Safety(LVD): EN61010:2001

Mechanical Structure

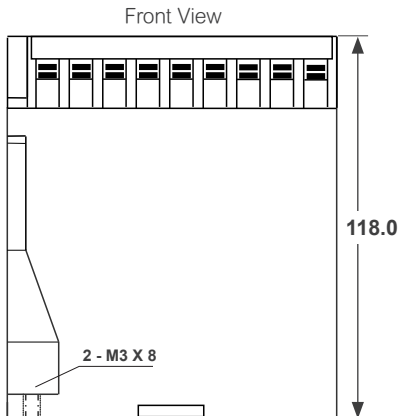
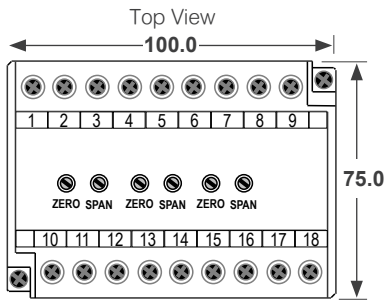
Case material: ABS Non-flammable (UL 94V-0)
 Mounting: Wall or DIN rail (EN 50022)
 Weight: under 650g

Adjustment

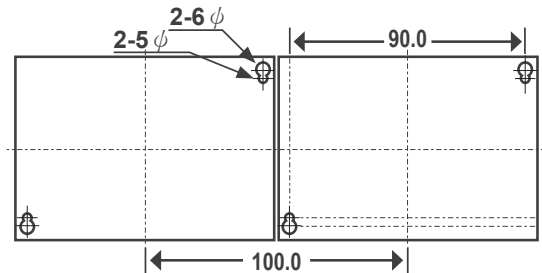
Power Factor or Phase Angle:



Dimensions



Installation



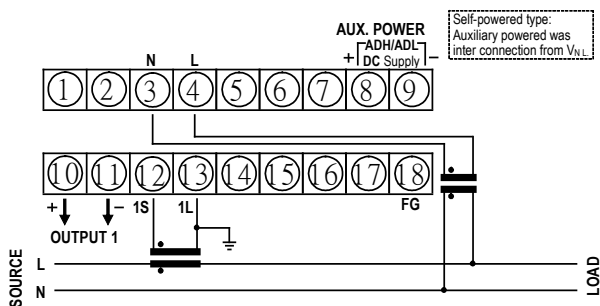
Unit: mm

Output Range Programming

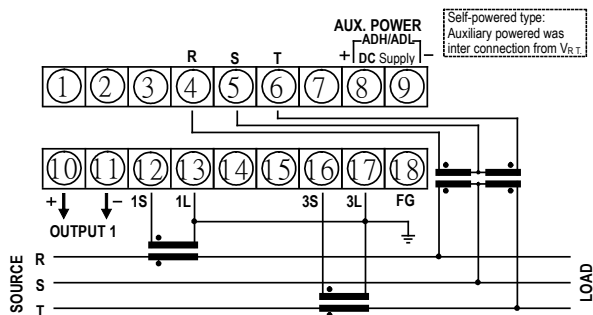
| Output | PCB no. WQHP2-2 | | | | | | | | | |
|----------------|-----------------|----|----|----|----|----|----|---|----|----|
| | DIP Switch | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0 ~ 0.5 ~ 1 mA | | | | | on | | | | on | on |
| 0 ~ 5 ~ 10 mA | | | | | on | on | | | on | on |
| 0 ~ 10 ~ 20 mA | | | | | on | | on | | on | on |
| 4 ~ 12 ~ 20 mA | on | | | | on | | on | | on | on |
| 0 ~ 0.5 ~ 1 V | | on | on | on | | | | | on | on |
| 0 ~ 2.5 ~ 5 V | | | on | on | | | | | on | on |
| 0 ~ 5 ~ 10 V | | | | on | | | | | on | on |
| 1 ~ 3 ~ 5 V | on | | on | on | | | | | on | on |
| 2 ~ 6 ~ 10 V | on | | | on | | | | | on | on |

Pin Assignment

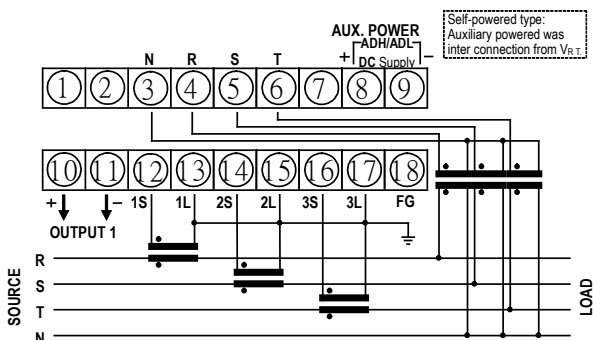
- Power Factor/Phase Angle - 1 Φ 2W (Unbalanced Load)



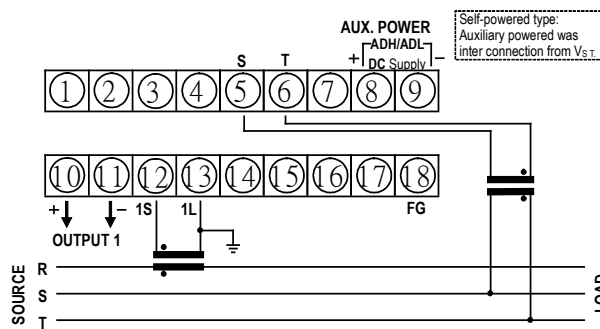
- Power Factor/Phase Angle - 3 Φ 3W (Unbalanced Load)



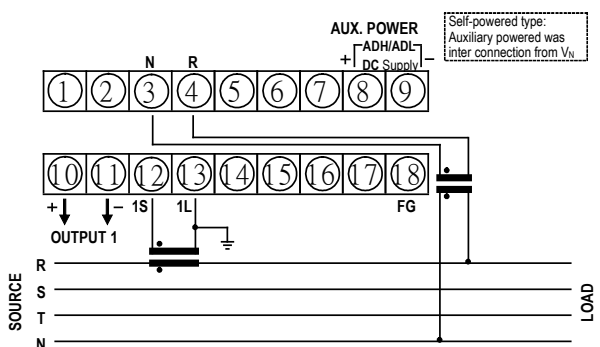
- Power Factor/Phase Angle - 3 Φ 4W (Unbalanced Load)



- Power Factor/Phase Angle - 3 Φ 3W (Unbalanced Load)



- Power Factor/Phase Angle - 3 Φ 4W (Balanced Load)



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