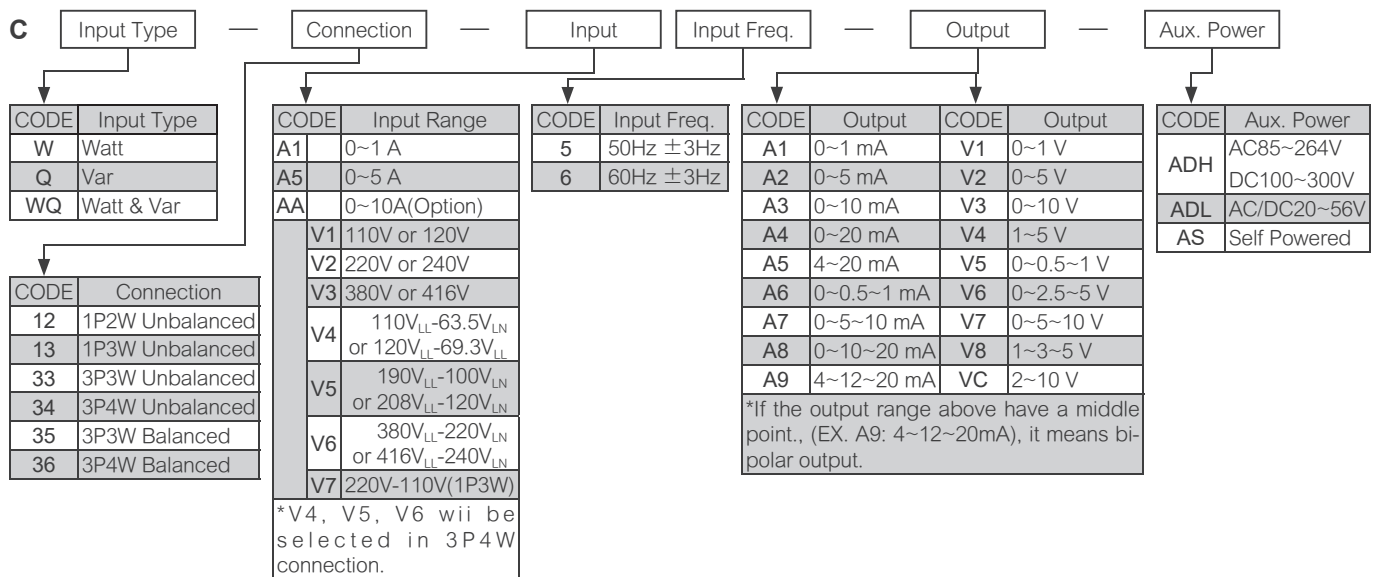


## Features

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



## Ordering Information



## Specification

INPUT: Watt / Var

Connection	AC Input		Bais Ref. Value Watt or Var	Input Burden
	Voltage	Curr		
1P2W	110V or 120V	5A (1A) 10A**	± 0.5 K (± 0.1K)	≤ 0.10VA or ≤ 0.15VA
	220V or 240V		± 1.0 K (± 0.2K)	
1P3W	220V ~ 110V		± 1.0 K (± 0.2K)	
3P3W	110V or 120V		± 1.0 K (± 0.2K)	
	220V or 240V	± 2.0 K (± 0.4K)		
3P4W	380V or 416V	± 3.0 K (± 0.6K)		
	190V <sub>LL</sub> -110V <sub>LN</sub> or 208V <sub>LL</sub> -120V <sub>LN</sub>	± 1.5 K (± 0.3K)		
	380V <sub>LL</sub> -220V <sub>LN</sub> or 416V <sub>LL</sub> -240V <sub>LN</sub>	± 3.0 K (± 0.6K)		

\*The maximum input is 450V and 5A. (10Amax input available in option), 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.  
\*The basic ref. value is base on second of PT & CT, and versus the high range of output

OUTPUT: Watt or Var O/P Programming by Dip Switch inside

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

- Accuracy : ≤ ±0.2% 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  
 Input frequency: 50 Hz ± 3 Hz, 60 Hz ± 3 Hz  
 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:  $\pm 15\%$  rated of input voltage  
 Power effect:  $\leq 0.05\%$  of F.S.  
 Power consumption:  $\leq 8$  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:  $\leq 100$  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  $\mu$  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  
 CE: EMC:EN61326:2003  
 Safety(LVD): EN61010:2001

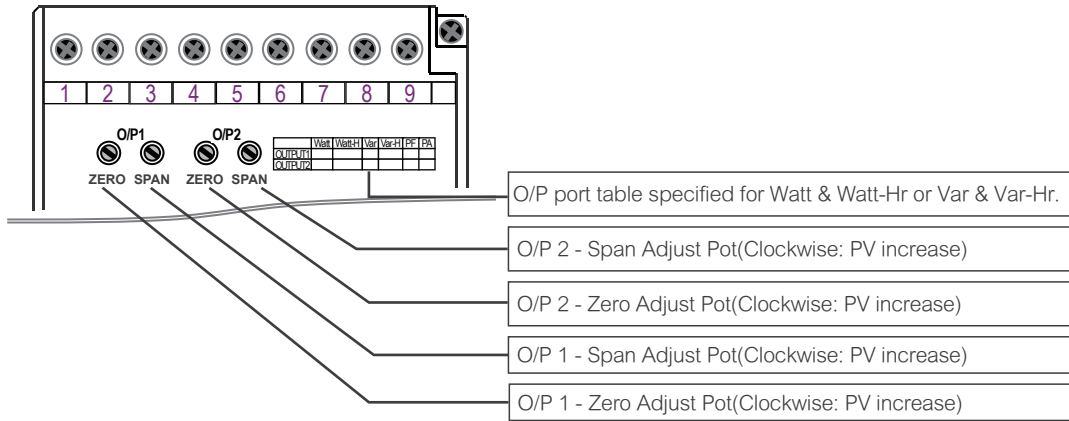
## Mechanical Structure

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

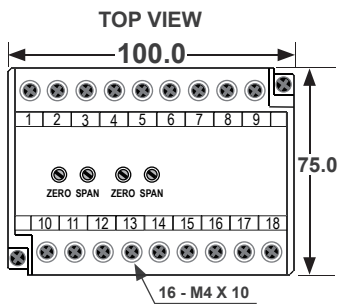
CW/CQ

## Adjustment

Watt & Hatt-Hr / Var & Var-Hr

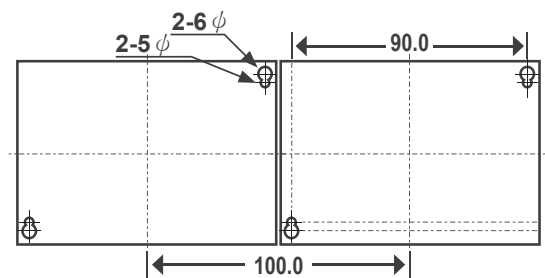


## Dimensions

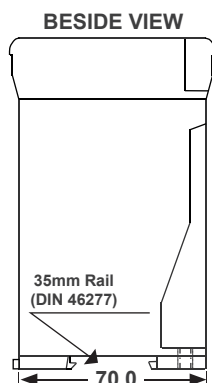
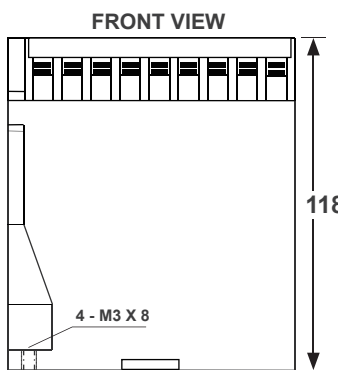


Unit: mm

## Installation



Unit: mm

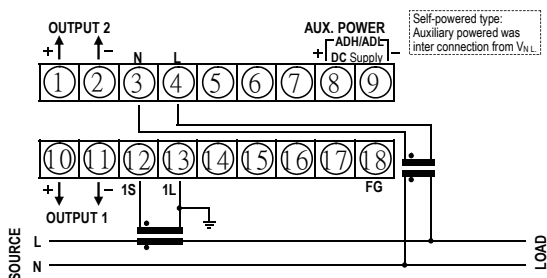


## Output Range Programming

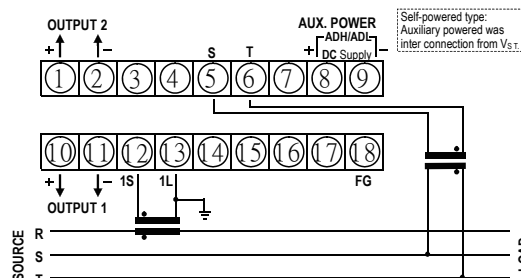
Output	pcb no. WQHP2-2									
	DIP-SWITCH									
	1	2	3	4	5	6	7	8	9	10
0 ~ 1 mA					on					
0 ~ 5 mA					on	on				on
0 ~ 10 mA					on	on				
0 ~ 20 mA					on		on			
4 ~ 20 mA	on				on		on			
0 ~ 0.5 ~ 1 mA					on				on	on
0 ~ 5 ~ 10 mA					on	on			on	on
0 ~ 10 ~ 20 mA					on		on		on	on
4 ~ 12 ~ 20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

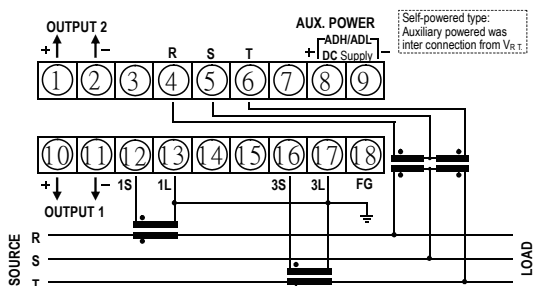
- Watt & Watt-Hr / Var & Var-Hr - 1Φ2W ( Unbalanced Load )



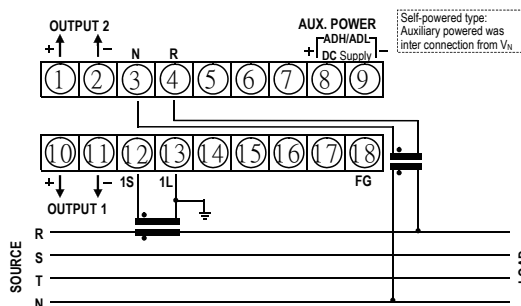
- Watt & Watt-Hr / Var & Var-Hr - 3Φ3W ( balanced Load )



- Watt & Watt - Hr / Var & Var-Hr - 3Φ3W ( Unbalanced )



- Watt & Watt-Hr / Var & Var - Hr - 3Φ4W ( balanced Load )



- Watt & Watt-Hr / Var & Var-Hr - 3Φ4W ( Unbalanced Load )

