

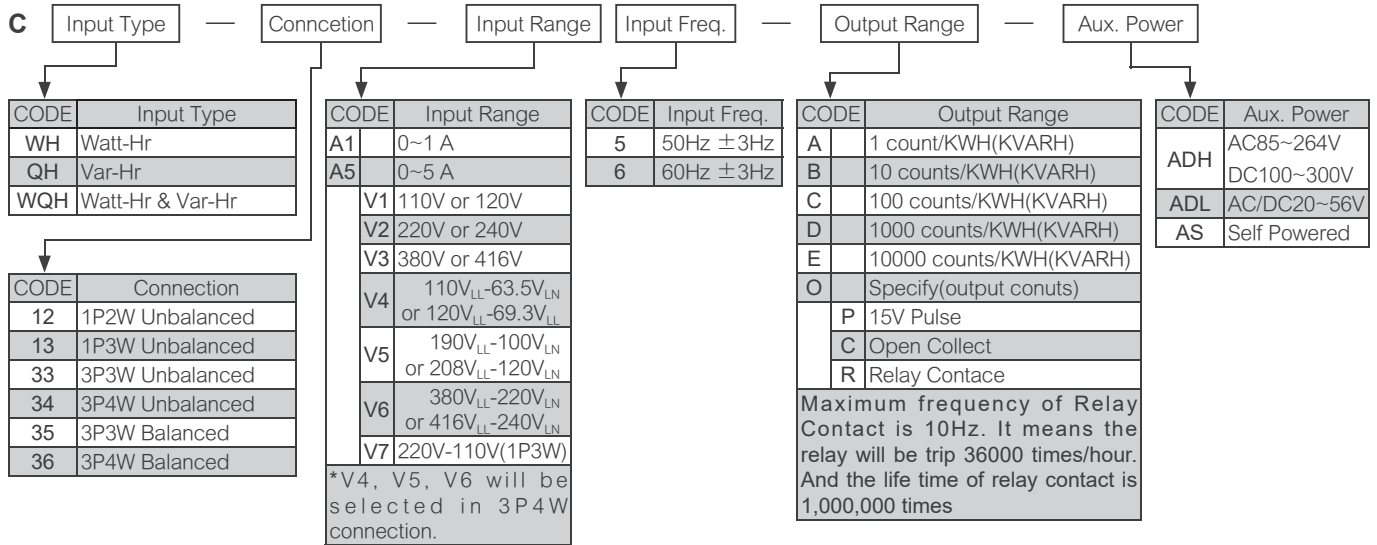
# CWH/CQH AC WATT-Hr & VAR-Hr Transducer ADTEK

## Features

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



## Ordering Information



## Technical Specification

INPUT: Watt / Var

Connection	AC Input		Bais Ref. Value Watt or Var	Input Burden
	Voltage	Current		
1P2W	110V or 120V	5A (1A)	± 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)	
	110V or 120V		± 1.0 K (± 0.2K)	
3P3W	220V or 240V		± 2.0 K (± 0.4K)	
	380V or 416V		± 3.0 K (± 0.6K)	
3P4W	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. 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: Programming by Dip Switch inside

Output Range		Output Mode		
Per KWH or Per KVARH	1 count	V Pulse DC 15V 10mA	Open Collect DC 30V, 100mA (DC 60V, 50mA Specified)	Relay Contact AC 110, 0.5A DC 24V, 1A Max. Freq.: 10Hz
	10 counts			
	100 counts			
	1000 counts			
	10000 counts			

Accuracy :  $\leq \pm 0.2\%$  of F.S.  
 Waveform effect  $\leq 0.01\%$  of F.S. at 15% 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  $\pm 3$  Hz, 60 Hz  $\pm 3$  Hz  
 Response time:  $\leq 250$  ms  
 Span adjustment:  $\leq \pm 5\%$  of F.S. (or  $\pm 20\%$  of F.S. specify)  
 Zero adjustment:  $\leq \pm 2\%$  of F.S. (or  $\pm 20\%$  of F.S. specify)  
 Output load effect: Current output  $\leq 0.1\%$  of F.S.  
                           Voltage output  $\leq 0.05\%$  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: ≤ 100 PPM/°C  
 Storage temperature: -10~70°C

Insulation resistance: ≥ 100MΩ, DC 500V  
 Safety: IEC 414, BS 5458  
 Enclosure: IEC 529 (IP50)  
 Certification Standard: IEC 60688  
 CE: EMC:EN61326:2003  
 Safety(LVD): EN61010:2001

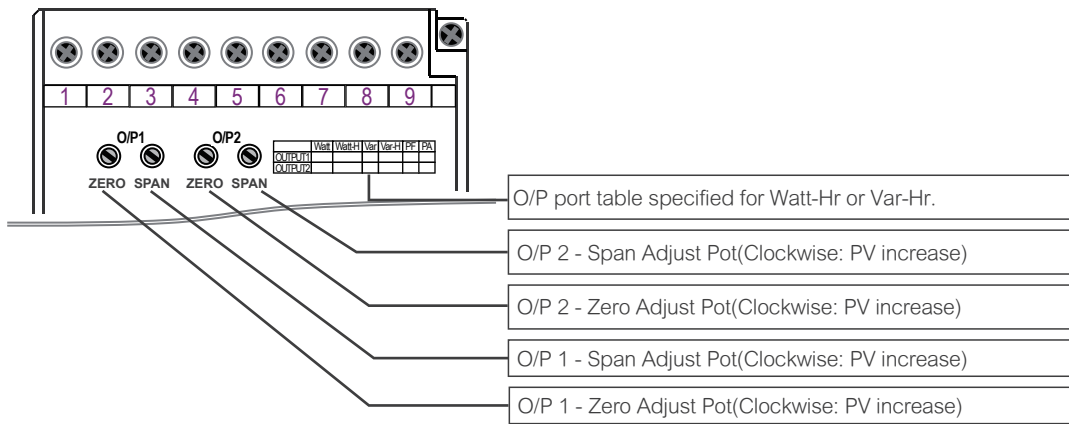
## Electrical Safety

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.  
 Comm on mode & differential mode

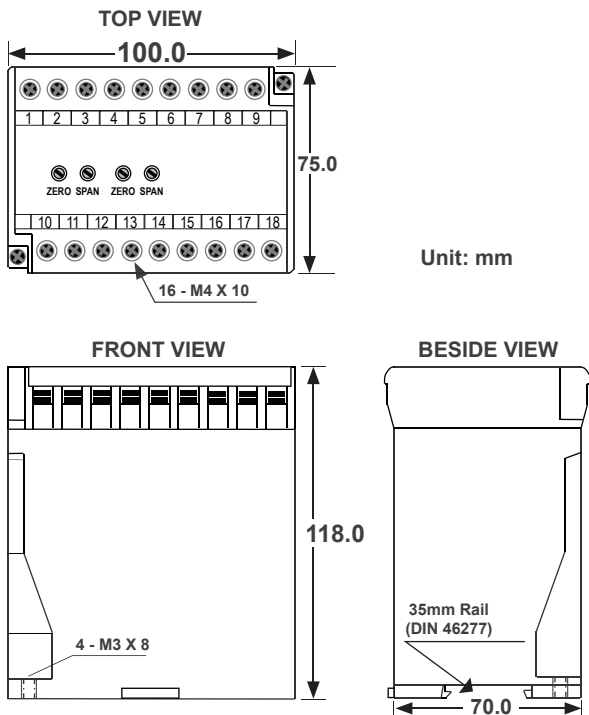
## Mechanical Structure

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

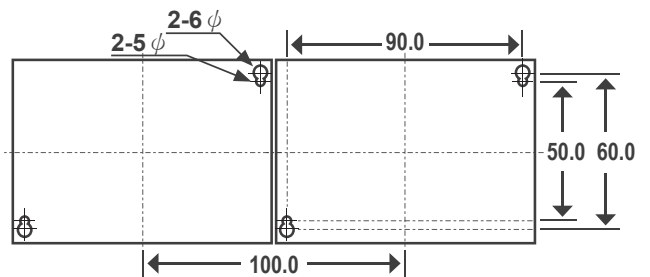
## Adjustment



## Dimensions



## Installation

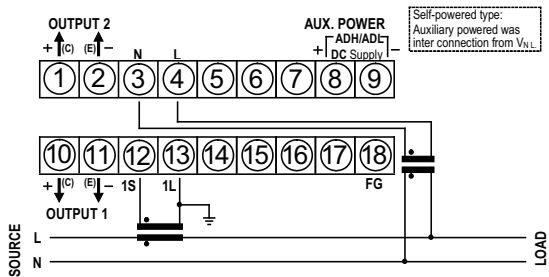


## Output Range Programming

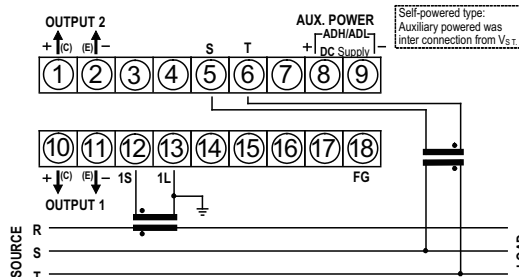
Output	pcb no. WQHP2-2 DIP SWITCH										pcb no. WQHP-HR2 DIP SWITCH								WQHP-HR1 (Test Point)
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	Freq.(T1, Gnd)
1p/kWh (1p/KVARh)	on		on	on	on		on	on	on	on	on	on					on	on	4.6205K Hz
10p/kWh (10p/KVARh)	on	on		on		on	on		on	on							on		9.9556K Hz
100p/kWh (100p/KVARh)			on	on	on	on		on		on						on			9.9556K Hz
1000p/kWh (1000p/KVARh)		on	on				on									on			9.9556K Hz
10000p/kWh (10000p/KVARh)	on	on	on													on			9.9556K Hz

## Pin Assignment

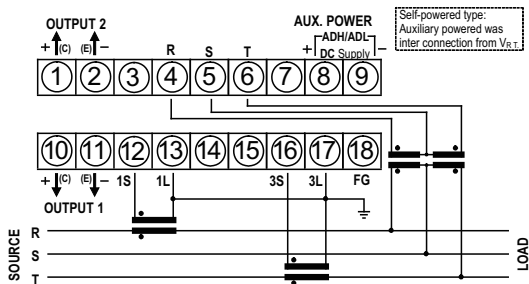
- Watt-Hr / Var-Hr / Watt - Hr & Var-Hr - 1 $\Phi$ 2W ( Unbalanced Load )



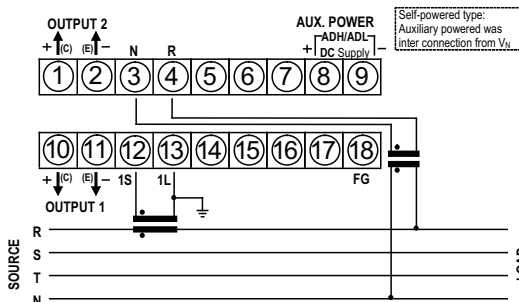
- Watt-Hr / Var-Hr / Watt-Hr & Var-Hr - 3 $\Phi$ 3W (balanced Load)



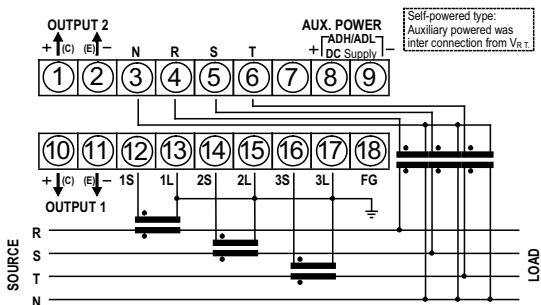
- Watt-Hr / Var-Hr / Watt - Hr & Var-Hr - 3 $\Phi$ 3W (Unbalanced)



- Watt-Hr / Var-Hr / Watt-Hr & Var-Hr - 3 $\Phi$ 4W (balanced Load)



- Watt & Watt-Hr / Var & Var-Hr - 3 $\Phi$ 4W ( Unbalanced Load )



CWH/CQH