

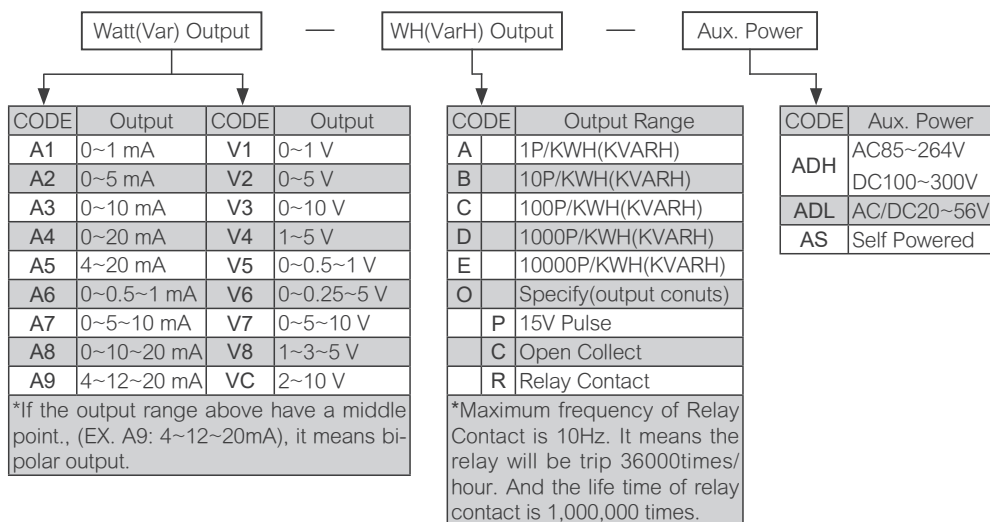
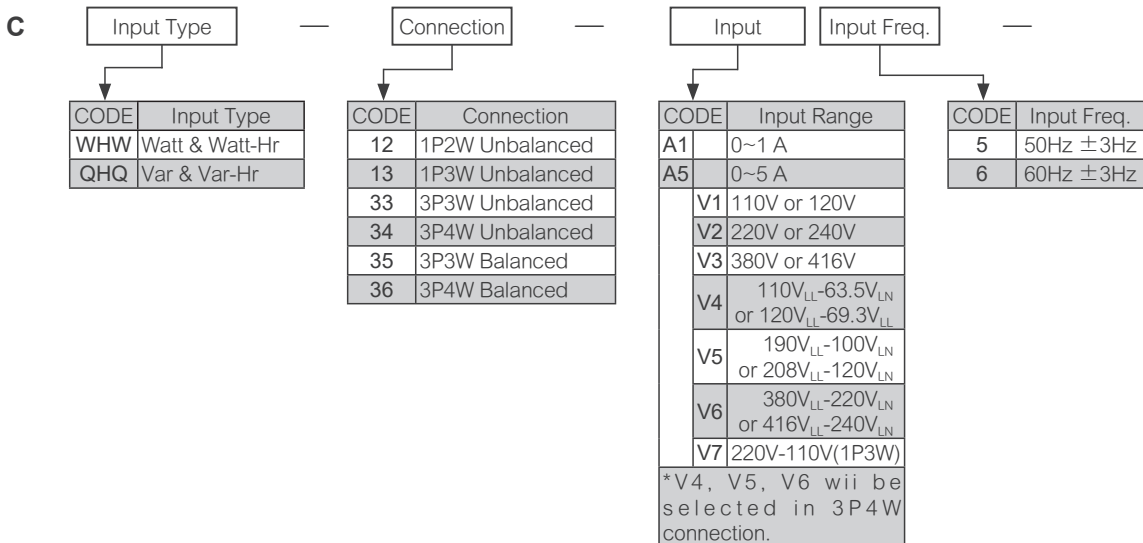
CW(Q)HW(Q) AC Active Power & WATT-Hr Transducer ADTEK

■ Features

- Measuring Watt & Watt-Hr or Var & Var-Hr
1P2W, 1P3W, 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



Technical Specification

INPUT: Watt / Var

Connection	AC Input		Bais Ref. Value Watt or Var	Input Burden
	Voltage	Curr		
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)	
3P3W	110V or 120V		± 1.0 K (± 0.2K)	
	220V or 240V		± 2.0 K (± 0.4K)	
	380V or 416V		± 3.0 K (± 0.6K)	
3P4W	190V _{LL} -110V _{LN} or 208V _{LL} -120V _{LN}	± 1.5 K (± 0.3K)		
	380V _{LL} -220V _{LN} or 416V _{LL} -240V _{LN}	± 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_{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: 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		
0 ~ 1 mA/0 ~ 0.5 ~ 1 mA	0 ~ 12KΩ	≥ 20MΩ	
0 ~ 5 mA	0 ~ 2400Ω	≥ 6MΩ	
0 ~ 10 mA/0 ~ 5 ~ 10 mA	0 ~ 1200Ω		
0 ~ 20 mA/0 ~ 10 ~ 20 mA	0 ~ 600Ω		
4 ~ 20 mA/4 ~ 12 ~ 20 mA	0 ~ 600Ω		

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

Output Range	Output Mode			
Per KWH or Per KVARH	1 count	V Pulse	Open Collect	Relay Contact
	10 counts	DC 15V 10mA	DC 30V, 100mA (DC 60V)	AC 110, 0.5A DC 24V, 1A Max. Freq.: 10Hz
	100 counts			
	1000 counts			
	10000 counts			
100000 counts				

- 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: ± 15% rated of input voltage
- Power effect: ≤ 0.05% of F.S.
- Power consumption: ≤ 8 VA
- Mutual interference effect: ≤ 0.1% of F.S. between each element
- Magnetic field strength: 400ATM ≤ 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

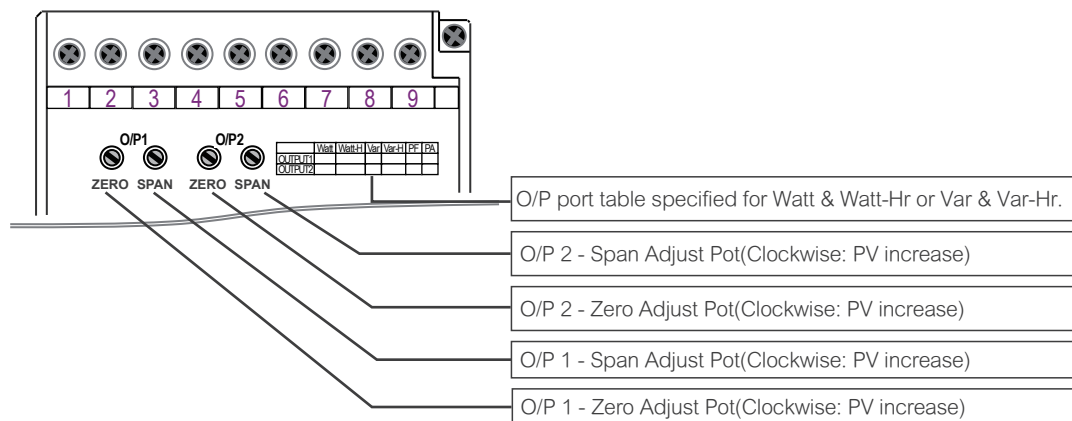
- Dielectric Strength: IEC 414, IEC 688:1992, ANSI C37.90a
Between Input / Output / Power / Case
AC 4KV, 50/60Hz, 1 min.
- Surge test: IEC 255-4, ANSI C37.90a
6KV, 1.2 x 50 μ sec.
Common mode & differential mode
- Insulation resistance: ≥ 100MΩ, DC 500V
- Safety: IEC 414, BS 5458
- Enclosure: IEC 529 (IP50)
- Certification Standard: IEC 60688
- CE: EMC:EN61326:2003
- Safety(LVD): EN61010:2001

Mechanical Structure

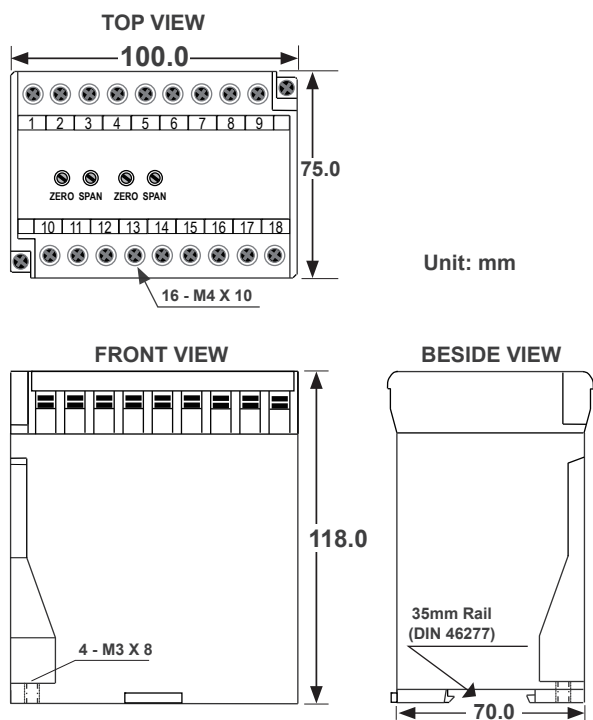
- Case material: ABS Non-flammable (UL 94V-0)
- Mounting: Wall or DIN rail (EN 50022)
- Weight: under 650g

Adjustment

Watt & Hatt-Hr / Var & Var-Hr



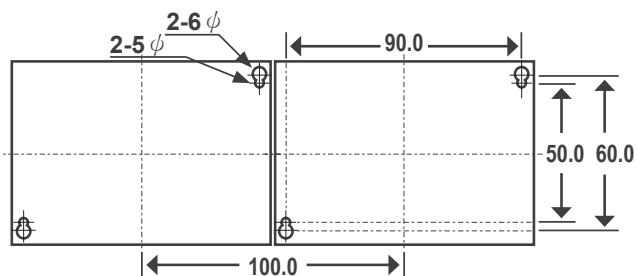
Dimensions



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 on
0 ~ 0.25 ~ 5 V			on	on					on	on on
0 ~ 5 ~ 10 V				on					on	on on
1 ~ 3 ~ 5 V	on		on	on					on	on on
2 ~ 6 ~ 10 V	on			on					on	on on

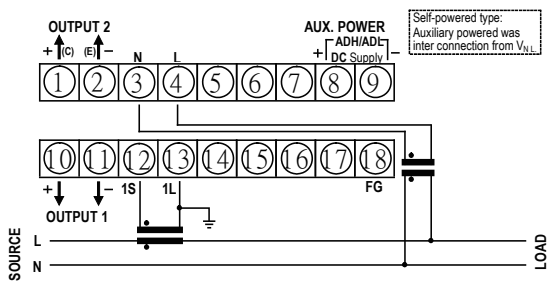
Installation



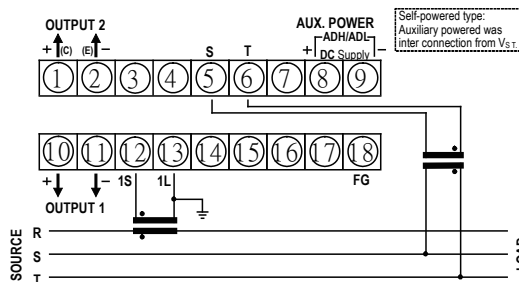
Output	pcb no. WQHP2-2										pcb no. WQHP-HR2								WQHP-HR1	
	DIP SWITCH										DIP SWITCH								(Test Point)	
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	Freq.(T1, Gnd)	
1p/KWh (1p/KVARh)	on		on	on	on	on	on	on	on	on	on							on	on	4.6205K Hz
10p/KWh (10p/KVARh)	on	on		on	on	on	on	on	on	on								on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

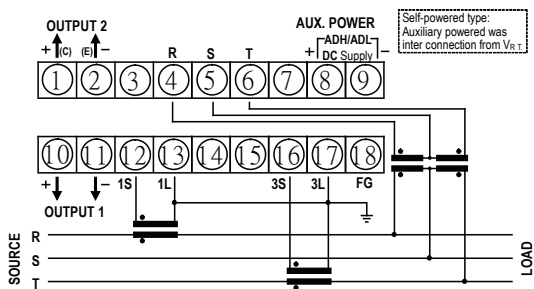
- Watt & Watt-Hr / Var & Var-Hr - 1Φ2W (Unbalanced Load)



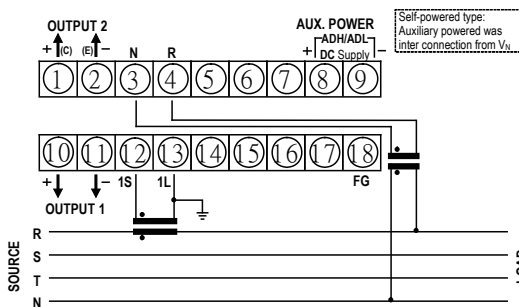
- Watt & Watt-Hr / Var & Var-Hr - 3Φ3W (balanced Load)



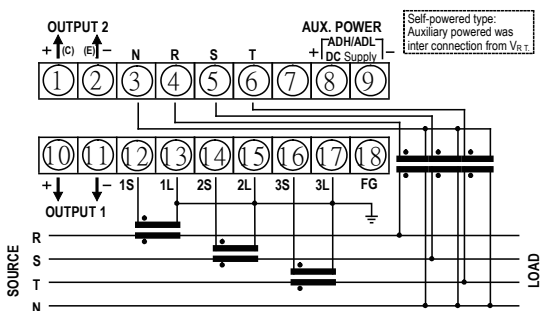
- Watt & Watt - Hr / Var & Var-Hr - 3Φ3W (Unbalanced)



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



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



CW(Q)HW(Q)