

ADP400 AC WATT / VAR Transducer

- Measure 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 protection against spikes & surges
- High stability



Connection	AC Input		Basic Ref. Value	Input
	Voltage	Current	Watt or Var	Burden
1P2W	110V or	5A	$\pm 0.5 \text{ K } (\pm 0.2 \text{ K})$	$\leq 0.10 \text{ VA}$
	220V or 240V		$\pm 1.0 \text{ K } (\pm 0.2 \text{ K})$	or
1P3W	220V-	10A**	$\pm 1.0 \text{ K } (\pm 0.2 \text{ K})$	$\leq 0.15 \text{ VA}$
3P3W	110V or		$\pm 1.0 \text{ K } (\pm 0.2 \text{ K})$	
	220V or 240V		$\pm 2.0 \text{ K } (\pm 0.4 \text{ K})$	
	380V or 416V		$\pm 3.0 \text{ K } (\pm 0.6 \text{ K})$	
3P4W	190V _{LL} - 110V _{EN} or 208V _{LL} - 120V _{EN}		$\pm 1.5 \text{ K } (\pm 0.3 \text{ K})$	
	380V _{LL} - 220V _{EN} or 416V _{LL} - 240V _{EN}		$\pm 3.0 \text{ K } (\pm 0.6 \text{ K})$	

* The maximum input is 450V and 5A as standard (**10Amax input available as special**).

* V_{LL} = Voltage of line to line; V_{EN} = 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, programmable O/P by Dip Switches

Output Range	Load Resistance	Output Resistance	Output Ripple
0 ~ 1 V / 0 ~ 0.5 ~ 1 V	≧ 50 ohm	≧ 0.001 ohm	≦0.2% of F.S.
0 ~ 5 V / 0 ~ 2.5 ~ 5 V	≧ 250 ohm		
0 ~ 10 V / 0 ~ 5 ~ 10 V	≧ 500 ohm		
1 ~ 5 V / 1 ~ 3 ~ 5 V	≧ 250 ohm		
-1 ~0~+1 V	≧ 75 ohm		
-5~0~+5 V	≧ 375 ohm		
-10~0~+10 V	≧ 750 ohm		
0 ~ 1 mA / 0 ~ 0.5 ~ 1	0 ~ 15K	≧ 20M ohm	
0 ~ 5 mA	0 ~ 3000	≧ 6M ohm	
0 ~ 10 mA / 0 ~ 5 ~ 10	0 ~ 1500		
0 ~ 20 mA / 0 ~ 10 ~ 20	0 ~ 750		
4 ~ 20 mA / 4 ~ 12 ~ 20	0 ~ 750	≧ 20M ohm	
-1~0~+1 mA	0 ~ 11K		
-5~0~+5 mA	0 ~ 2200		
-10~0~+10 mA	0 ~ 1100	≧ 6M ohm	
-20~0~+20 mA	0 ~ 550 ohm		

Accuracy :

$\leq \pm 0.2\%$ of F.S.

Waveform effect:

$\leq 0.2\%$ 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:

$\leq 250 \text{ m-sec.}$

Span adjustment:

$\leq \pm 5\%$ of Span

Zero adjustment:

$\leq \pm 2\%$ of Span

Output load effect:

Current output $\leq 0.1\%$ of F.S.

Voltage output $\leq 0.05\%$ of F.S.

Power supply:

AC 115/230V $\pm 15\%$, 50/60 Hz

AC 380 or 415V $\pm 15\%$, 50/60 Hz

Option: DC 24V

Self Powered: From input volt

Working volt: $\pm 15\%$ of I/P V.

Power effect:

$\leq 0.05\%$ of F.S.

Power consumption:

$\leq 4 \text{ VA}$

Magnetic field strength:

400ATM $\leq 0.2\%$ of F.S.

Operating temp:

0~60 °C

Relative humidity:

20~95 % RH, non-condensing

Temp coefficient:

$\leq 100 \text{ PPM/}^\circ\text{C}$

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 $\mu\text{sec.}$

Common mode & differential mode

Safety:

IEC 414, BS 5458

Enclosure:

IEC 529 (IP50)

Isolation:

Input / Output / Power / Case

Insulation R:

$\geq 100 \text{ M ohm}$, DC 500V

Performance:

Designed it comply with IEC 688

Mounting:

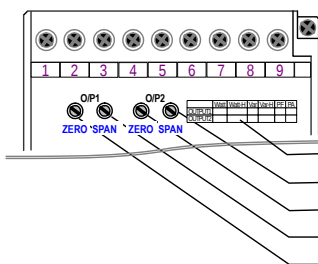
Wall or DIN rail (EN 50022)

Weight:

< 650g

ADJUSTMENT

Watt / Var / Watt & Var:



O/P port table specified for Watt, Var or Watt & Var.

O/P 2 -Span Adjust Pot (Clockwise: PV increase)

O/P 2 -Zero Adjust Pot (Clockwise: PV increase)

O/P 1 -Span Adjust Pot (Clockwise: PV increase)

O/P 1 -Zero Adjust Pot (Clockwise: PV increase)

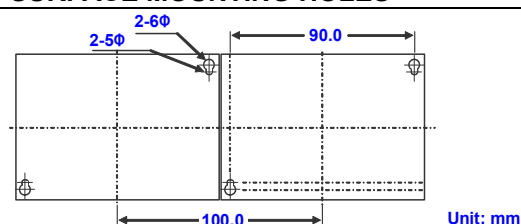
OUTPUT RANGE PROGRAMMING

OUTPUT	PCB: WQHP2-2										JUMPER	
	DIP SWITCH										C N 1 0	C N 1 1
	1	2	3	4	5	6	7	8	9	10		
0 ~ 1 mA					0							X
0 ~ 5 mA					0	0				0		X
0 ~ 10 mA					0	0						X
0 ~ 20 mA					0		0					X
4 ~ 20 mA	0				0		0					X
0 ~ 0.5 ~ 1 mA					0				0	0		X
0 ~ 5 ~ 10 mA					0	0			0	0		X
0 ~ 10 ~ 20 mA					0		0		0	0		X
4 ~ 12 ~ 20 mA	0				0		0		0	0		X
-1 ~ 0 ~ +1 mA					0							X
-5 ~ 0 ~ +5 mA					0	0				0		X
-10 ~ 0 ~ +10 mA					0	0						X
-20 ~ 0 ~ +20 mA					0		0					X
0 ~ 1 V		0	0	0				0				X
0 ~ 5 V			0	0				0				X
0 ~ 10 V				0				0				X
1 ~ 5 V	0		0	0				0				X
2 ~ 10 V	0			0				0				X
0 ~ 0.5 ~ 1 V		0	0	0				0	0	0		X
0 ~ 2.5 ~ 5 V			0	0				0	0	0		X
0 ~ 5 ~ 10 V				0				0	0	0		X
1 ~ 3 ~ 5 V	0		0	0				0	0	0		X
2 ~ 6 ~ 10 V	0			0				0	0	0		X
-1 ~ 0 ~ +1 V		0	0	0				0				X
-5 ~ 0 ~ +5 V			0	0				0				X
-10 ~ 0 ~ +10 V				0				0				X

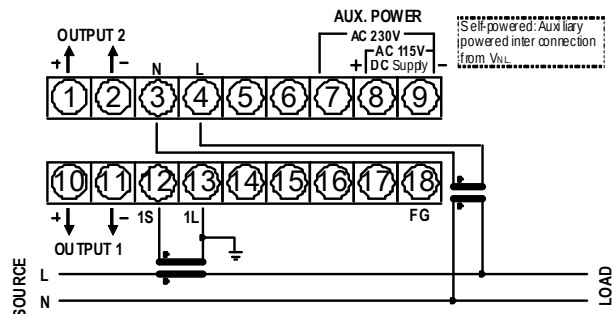
* JUMPER: (1) x = Jumper Link; (2) blank field mean open.

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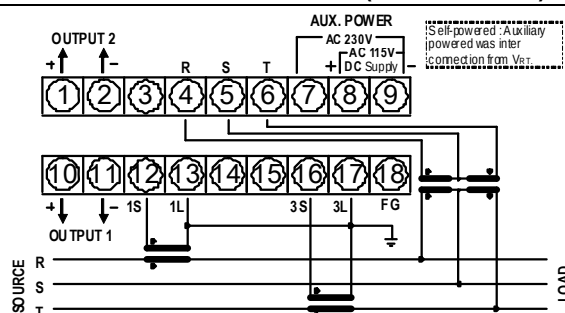
SURFACE MOUNTING HOLES



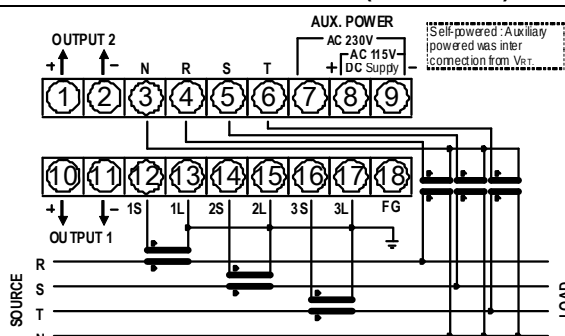
Watt / Var / Watt & Var - 1Φ2W (Unbalanced Load)



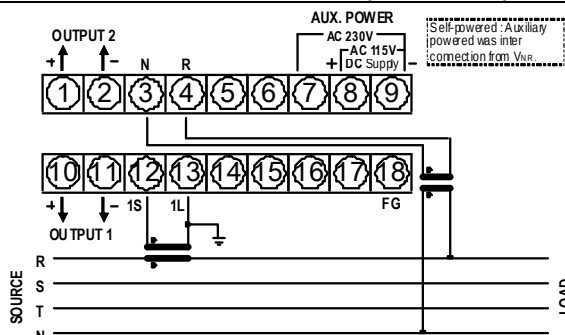
Watt / Var / Watt & Var - 3Φ3W (Unbalanced)



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



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



DIMENSIONS

