



# WATTHOUR/WATT TRANSDUCER

**S3-WHW**  
SERIES

## FEATURES

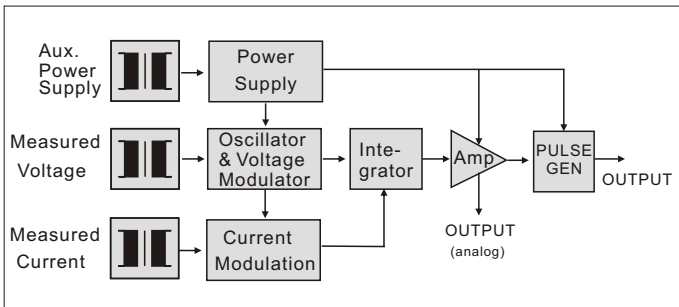
- Accuracy:  $\pm 0.2\%$  RO.
- Watthour, Watt packaged in one case
- Precision measurement for unbalance system
- Precision measurement even for distorted wave
- High impulse & surge protection (5KV)
- The case can be mounted on a 35mm rail which complies with DIN 46277



## DESCRIPTION

**Model:** S3-WHW-1 1  $\phi$  2W, WATTHOUR/WATT  
 S3-WHW-3 3  $\phi$  3W, WATTHOUR/WATT  
 S3-WHW-3A 3  $\phi$  4W, WATTHOUR/WATT

For kilowatt-hour-measurement, we build in another Linear integrator Circuit. This circuit accepts signal from Watts portion and integrates with respect to time, to produce a pulse output via volt free contacts, result in pulse proportional to kilowatt-hours.



## • OUTPUT FOR WATT

DC Output Range	Load Resistance	Output Resistance	Output Ripple	Response Time
0 ~ 1V	$\geq 1K\Omega$	$\leq 0.05\Omega$	$\leq 0.5\%$ RO. (Peak)	$\leq 400\text{ms}$ . 0 ~ 99%
0 ~ 5V				
1 ~ 5V				
0 ~ 10V				
0 ~ 1mA	0 ~ 10K $\Omega$	$\geq 20M\Omega$		
0 ~ 10mA	0 ~ 1K $\Omega$	$\geq 5M\Omega$		
0 ~ 20mA	0 ~ 500 $\Omega$			
4 ~ 20mA				

Accuracy ..... WATT,  $\pm 0.2\%$  Rated of Output  
 WATTHOUR  $\pm 0.2\%$  RD.  
 Input frequency ..... 50HZ  $\pm 3\text{HZ}$  or 60HZ  $\pm 3\text{HZ}$   
 Input burden .....  $\leq 0.1\text{VA}$  (ampere input)  
 $\leq 0.2\text{VA}$  (voltage input)  
 Aux. power supply ..... AC 110V  $\pm 15\%$ , 50/60HZ  
 AC 220V  $\pm 15\%$ , 50/60HZ  
 DC 24V, 48V, 110V,  $\pm 15\%$ ,  
 Power effect .....  $\leq 0.1\%$  RO.  
 Power consumption .....  $\leq 4.5\text{VA}$ ,  $\leq \text{DC } 3\text{W}$   
 Waveform effect .....  $\leq 0.2\%$  RO. at distortion factor 15%  
 Electromagnetic balance effect .....  $\leq 0.1\%$  RO.  
 Mutual interference effect .....  $\leq 0.1\%$  RO. between element  
 Magnetic field strength ..... 0.2%RO.,  $\leq 400\text{A/M}$   
 Span adjustment range .....  $\geq 5\%$  RO.  
 Zero adjustment range .....  $\geq 1\%$  RO.  
 Operating temperature range ..... 0 ~ 60 °C  
 Storage temperature range ..... -10 ~ 70 °C  
 Temperature coefficient .....  $\leq 100$  PPM, 25 °C  $\pm 10$  °C  
 Max. relative humidity ..... 95%  
 Isolation ..... Input/output/power/case  
 Insulation resistance .....  $\geq 100M\Omega$ , DC 500V  
 Dielectric withstand voltage ..... Between input/output/power/case  
 (IEC 414, 688, ANSI, C37) AC 2.6KV, 60HZ, 1 min.  
 Impulse withstand test ..... 5KV, 1.2 X 50  $\mu\text{S}$   
 (IEC 255-4, ANSI C37 90a) Common mode & differential mode  
 Performance ..... Designed to comply with IEC 688  
 Safety requirements ..... IEC 414, BS5458

## SPECIFICATION

### • INPUT

Input Range				
Circuit	Amp.	Voltage	Basic KWH	Basic Watt
Single Phase	5 A	110V (120V)	0~0.5KWH	0~0.5KW
		220V (240V)	0~1KWH	0~1KW
3-Phase 3-Wire	5 A	110V (120V)	0~1KWH	0~1KW
		220V (240V)	0~2KWH	0~2KW
3-Phase 4-Wire	5 A	190V/110V (208/120V)	0~1.5KWH	0~1.5KW
		380V/220V (416/240V)	0~3KWH	0~3KW

Max. Input over Capability as S3-WD, S3-RD.

### • OUTPUT FOR WATTHOUR

Output Range		Output Mode		
Per 1KWH	100counts	Pulse	Open Collect	SPDT Relay Contacts
	1000counts			
	10000counts	DC 15V, 10mA	DC 30V, 100mA	AC 110V, 0.5A DC 24V, 1A
	100000counts			



# WATTHOUR/WATT TRANSDUCER

## S3-WHW SERIES

### ORDERING INFORMATION

S3-WHW-1  
S3-WHW-3  
S3-WHW-3A

**Model:**

S3-WHW-1 for 1  $\phi$  2W  
S3-WHW-3 for 3  $\phi$  3W  
S3-WHW-3A for 3  $\phi$  4W

**Input Range**

5: 5A  
0: Option

**Input Voltage**

1: 110V (120V)    3: 190V/110V  
2: 220V (240V)    4: 380V/220V  
0: Option

**Input Frequency**

5: 50HZ  $\pm$  3HZ    6: 60HZ  $\pm$  3HZ  
0: Option

**Output Range(Watt)**

V1: 0 ~ 1V            A1: 0 ~ 1mA  
V2: 0 ~ 5V            A2: 0 ~ 10mA  
V3: 1 ~ 5V            A3: 0 ~ 20mA  
V4: 0 ~ 10V           A4: 4 ~ 20mA  
0: Option

**Output Range (per KWH)**

1: 100 counts            3: 10000 counts  
2: 1000 counts          4: 100000 counts  
0: Option

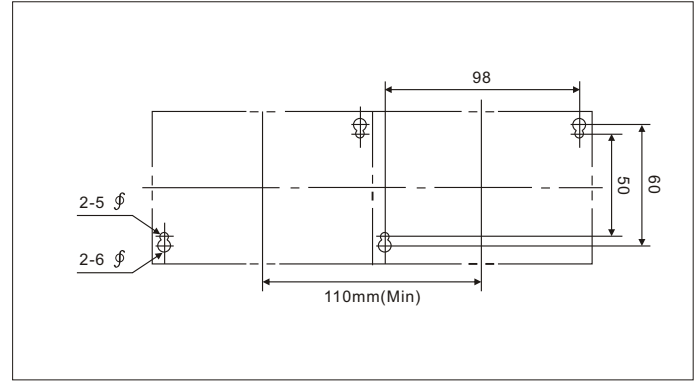
**Output Mode (per KWH)**

P: Pulse                    C: Open collecte  
R: Relay contact

**Aux. Power Supply**

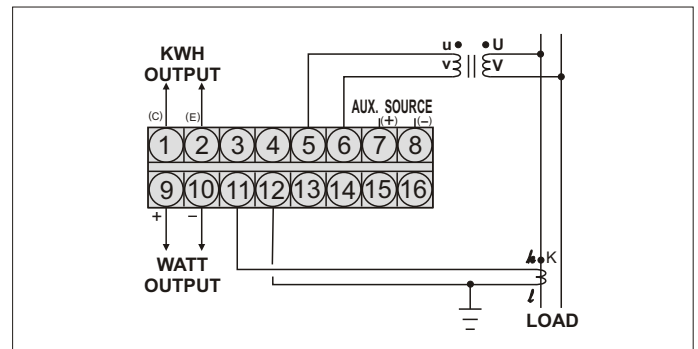
A: AC 110V                C: DC 24V  
B: AC 220V                D: DC 48V  
0: Option                    E: DC 110V

### • PANEL MOUNTING HOLES (UNIT:mm)

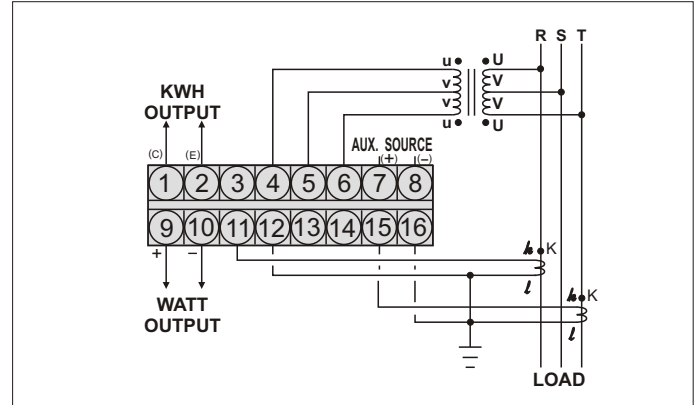


### CONNECTION DIAGRAM

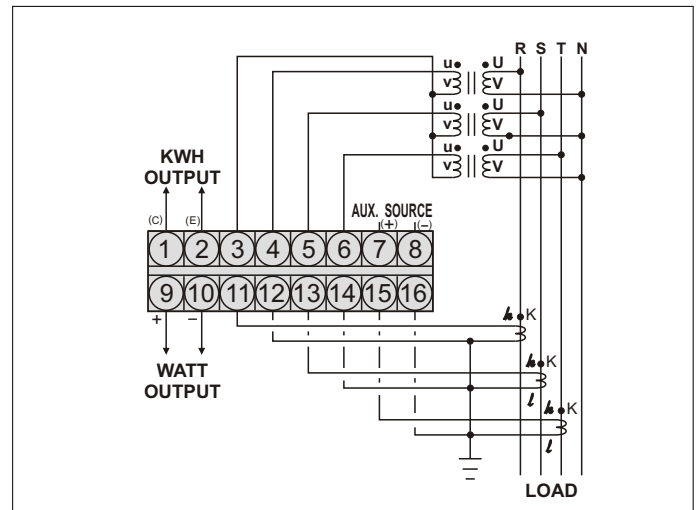
#### S3-WHW-1 (1 $\phi$ 2W)



#### S3-WHW-3 (3 $\phi$ 3W)



#### S3-WHW-3A (3 $\phi$ 4W)



### THE OUTSIDE DIMENSION (UNIT:mm)

