



FEATURES

- Accuracy $\pm 0.5\%$ R.O.(PD) , $\pm 1^\circ$ (UD)
- Excellent long term stability (4 ~ 20mA, 500 Ω)
- 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

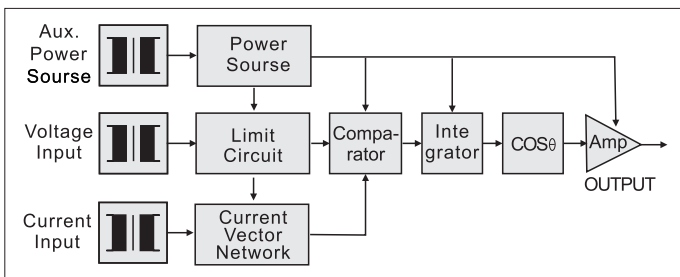


DESCRIPTION

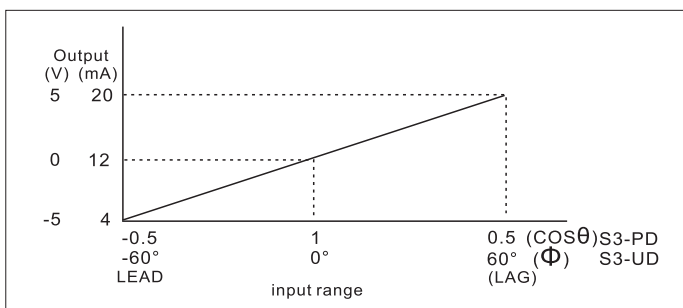
Model: S3-PD-1	1 Φ 2W, POWER FACTOR (COS θ)
S3-PD-3	3 Φ 3W, POWER FACTOR (COS θ)
S3-PD-3A	3 Φ 4W, POWER FACTOR (COS θ)
S3-UD-1	1 Φ 2W, PHASE ANGLE (Φ)
S3-UD-3	3 Φ 3W, PHASE ANGLE (Φ)
S3-UD-3A	3 Φ 4W, PHASE ANGLE (Φ)

These transducers require an auxiliary power supply and offer a highly accurate method of measuring the phase angle of the input. They have a full four quadrant capability. The output is a linear function of the phase angle between the two inputs (which can be current or voltage), the circuit can also be used as power factor transducer only added a COS θ circuit.

The output amplifier provides constant voltage or current output. Output is unaffected by load resistance provided it is within the specified range.



INPUT - OUTPUT CURVE



OUTPUT

DC Output Range	Load Resistance	Output Resistance	Output Ripple	Response Time
-1 ~ 0 ~ 1V	$\cong 1 \text{ K}\Omega$	$\cong 0.05 \Omega$	$\cong 0.5\%$ R.O. (peak)	$\cong 400\text{mS}$. 0 ~ 99%
-5 ~ 0 ~ 5V				
1 ~ 3 ~ 5V				
0 ~ 5 ~ 10V				
-1 ~ 0 ~ 1mA	$\cong 10\text{K}\Omega$	$\cong 20\text{M}\Omega$		
-10 ~ 0 ~ 10mA	$\cong 1 \text{ k}\Omega$	$\cong 5\text{M}\Omega$		
0 ~ 10 ~ 20mA	$\cong 500 \Omega$			
4 ~ 12 ~ 20mA				

- Accuracy $\pm 0.5\%$ Rated of Output $\pm 0.3^\circ$ (S3-PD) $\cong \pm 1^\circ$ (S3-UD)
- Input frequency 50HZ $\pm 3\text{HZ}$ or 60HZ $\pm 3\text{HZ}$
- Input burden $\cong 0.1\text{VA}$ (ampere input) $\cong 0.2\text{VA}$ (voltage input)
- Aux. power source AC 110V $\pm 15\%$, 50/60HZ
AC 220V $\pm 15\%$, 50/60HZ
DC 24V, 48V, 110V $\pm 10\%$
- Power effect $\cong 0.01\text{PF}$ (PD), $\cong 1^\circ$ (UD)
- Power consumption AC $\cong 8\text{VA}$, DC $\cong 6\text{W}$
- Waveform effect $\cong 0.02\text{PF}$ (PD), $\cong 1^\circ$ (UD) at distortion factor 15%
- Output load effect $\cong 0.05\%$ R.O.
- Magnetic field strength $\cong 0.02\text{PF}$ (PD), $\cong 1^\circ$ (UD), 400A/M
- Span adjustment range $\cong 5\%$ R.O.
- Zero adjustment range $\cong 1\%$ R.O.
- Operating temperature range 0 ~ 60 $^\circ\text{C}$
- Storage temperature range -10 ~ 70 $^\circ\text{C}$
- Temperature coefficient $\cong 0.02\text{PF}$ (PD), $\cong 1^\circ$ (UD), 25 $^\circ\text{C}$ $\pm 10^\circ\text{C}$
- Max. relative humidity 95%
- Isolation Input/output/power/case
- Isolation resistance $\cong 100\text{M}\Omega$, DC 500V
- Dielectric withstand voltage Between input/output/power/case
IEC 60688 AC 2.6KV, 60HZ, 1 minute
- Impulse withstand test 5KV, 1.2 $\times 50 \mu\text{s}$
IEC 61000-4-5 Common mode & differential mode
- Performance Designed to comply with IEC 60688

SPECIFICATION

INPUT

Circuit	Input Range			Max. Input Over Capability
	Amp.	Voltage	Range	
Single Phase	5A	110V (120V)	(Lead) (Lag) -0.5 ~ 1 ~ 0.5 or (Lead) (Lag) -60 $^\circ$ ~ 0 ~ 60 $^\circ$	Ampere: 3 x rated continuous 10 x rated 10 sec. 50 x rated 1 sec. Voltage: 2 x rated continuous
		220V (240V)		
3-Phase 3-Wire	5A	110V (120V)		
		220V (240V)		
3-Phase 4-Wire	5A	190V/110V (208/120V)		
		380V/220V (416/240V)		



ORDER INFORMATION

S3-PD-1
S3-PD-3
S3-PD-3A
S3-UD-1
S3-UD-3
S3-UD-3A

Model

PD-1 for 1Φ2W, power factor
PD-3 for 3Φ3W, power factor
PD-3A for 3Φ4W, power factor
UD-1 for 1Φ2W, phase angle
UD-3 for 3Φ3W, phase angle
UD-3A for 3Φ4W, phase angle

Input Current

1: 1A
5: 5A
0: Option

Input Voltage

1: 110V (120V)
2: 220V (240V)
3: 190V/110V (208V/120V)
4: 380V/220V (416V/240V)
0: Option

Input Frequency

5: 50HZ ± 3HZ
6: 60HZ ± 3HZ
0: Option

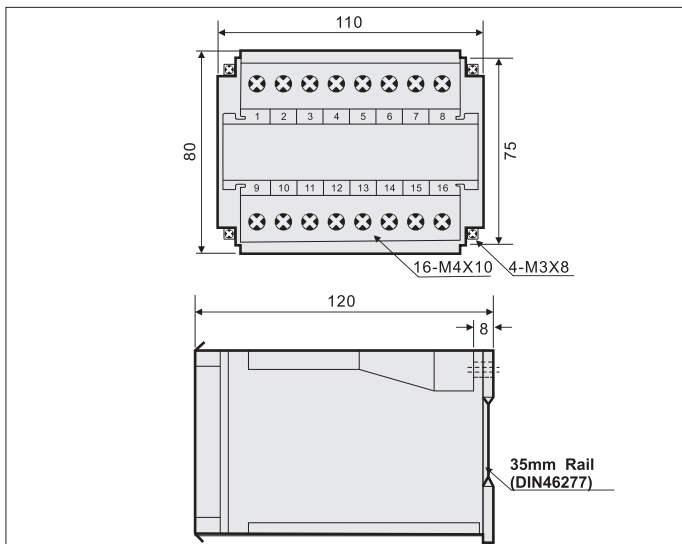
Output Range

V1: -1 ~ 0 ~ 1V	A1: -1 ~ 0 ~ 1mA
V2: -5 ~ 0 ~ 5V	A2: -10 ~ 0 ~ 10mA
V3: 1 ~ 3 ~ 5V	A3: 0 ~ 10 ~ 20mA
V4: 0 ~ 5 ~ 10V	A4: 4 ~ 12 ~ 20mA
00: Option	

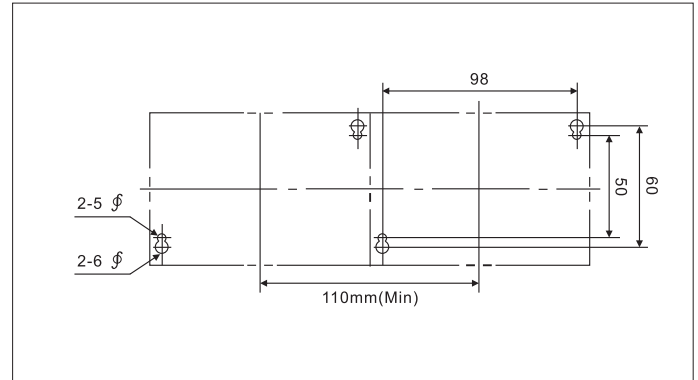
Aux. Power Source

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

THE OUTSIDE DIMENSION (UNIT:mm)

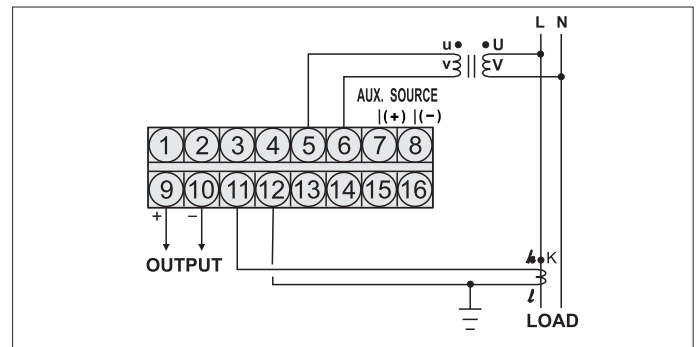


• PANEL MOUNTING HOLES (UNIT:mm)

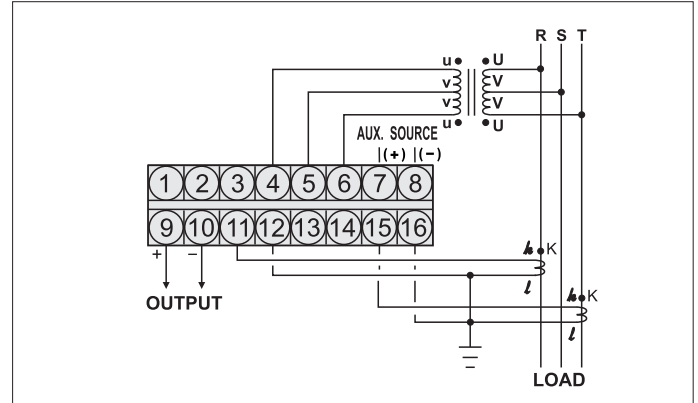


CONNECTION DIAGRAM

S3-PD-1, S3-UD-1 (1Φ2W)



S3-PD-3, S3-UD-3 (3Φ3W)



S3-PD-3A, S3-UD-3A (3Φ4W)

