



FEATURES

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

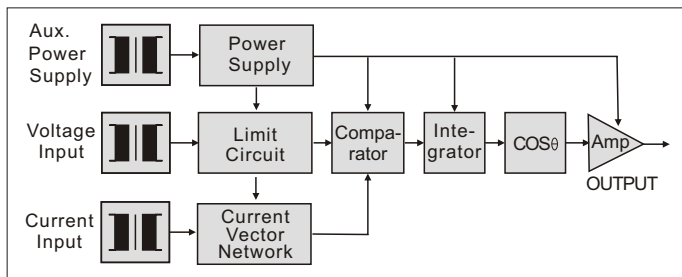
Model: S3-PD-1	1 ϕ 2W, POWER FACTOR ($\cos \theta$)
S3-PD-3	3 ϕ 3W, POWER FACTOR ($\cos \theta$)
S3-PD-3A	3 ϕ 4W, POWER FACTOR ($\cos \theta$)
S3-UD-1	1 ϕ 2W, PHASE ANGLE (ϕ)
S3-UD-3	3 ϕ 3W, PHASE ANGLE (ϕ)
S3-UD-3A	3 ϕ 4W, PHASE ANGLE (ϕ)

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 $\cos \theta$ circuit.

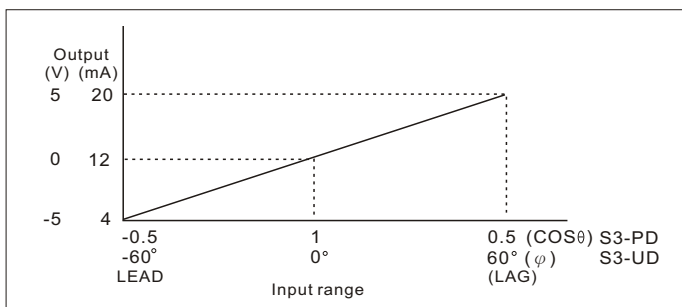
Output amplifier provides constant voltage or current output. Output is unaffected by load resistance provided it is within the specified range.

OUTPUT

DC Output Range	Load Resistance	Output Resistance	Output Ripple	Response Time
-1 ~ 0 ~ 1V	$\geq 1K\Omega$	$\leq 0.05\Omega$	$\leq 0.5\%$ RO. (Peak)	$\leq 400\text{ms}$. 0 ~ 99%
-5 ~ 0 ~ 5V				
1 ~ 3 ~ 5V				
0 ~ 5 ~ 10V				
-1 ~ 0 ~ 1mA	0 ~ 10K Ω	$\geq 20M\Omega$		
-10 ~ 0 ~ 10mA	0 ~ 1K Ω	$\geq 5M\Omega$		
0 ~ 10 ~ 20mA	0 ~ 500 Ω			
4 ~ 12 ~ 20mA				



INPUT - OUTPUT CURVE



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° ~ 0 ~ 60°	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)		

- Accuracy $\pm 0.5\%$ RO. $\pm 0.3^\circ$ (S3 - PD)
 $\pm 1^\circ$ (S3 - UD)
- Input frequency 50HZ ± 3 HZ or 60HZ ± 3 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 ≤ 0.01 PF (PD), $\leq 1^\circ$ (UD)
- Power consumption $\leq 4\text{VA}$, $\leq \text{DC } 3\text{W}$
- Waveform effect ≤ 0.02 PF (PD), $\leq 1^\circ$ (UD)
at distortion factor, 15%
- Output load effect $\leq 0.05\%$ RO.
- Magnetic field strength ≤ 0.02 PF (PD), $\leq 1^\circ$ (UD)400A/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 ≤ 0.02 PF (PD), $\leq 1^\circ$ (UD)
- Max. relative humidity 95%
- Isolation Input/output/power/case
- Insulation resistance $\geq 100M\Omega$, DC 500V
- Dielectric withstand voltage Input/output/power/case
(IEC 414, 688,ANSI C37) AC 2.6KV, 60HZ, 1 min.
- Impulse withstand test 5KV, 1.2 X 50 μ S
(IEC 255-4, ANSI C37 90a) Common mode & differential mode
- Performance Designed to comply with IEC 688
- Safety requirements IEC 414, BS5458



ORDER INFORMATION

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

Model

PD-1 for 1 ϕ 2W, power factor
PD-3 for 3 ϕ 3W, power factor
PD-3A for 3 ϕ 4W, power factor
UD-1 for 1 ϕ 2W, phase angle
UD-3 for 3 ϕ 3W, phase angle
UD-3A for 3 ϕ 4W, phase angle

Input Range

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
6: 60HZ
0: Option

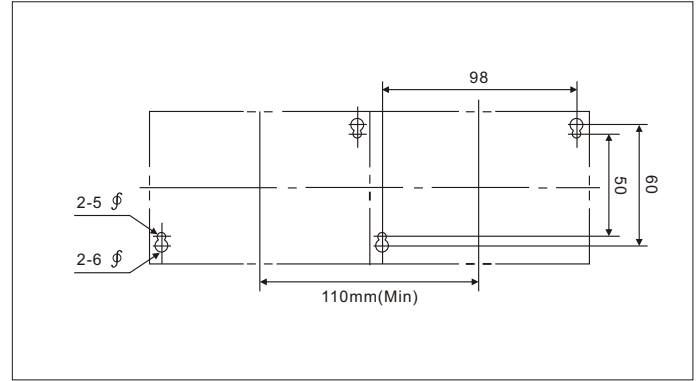
Output Range

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 Supply

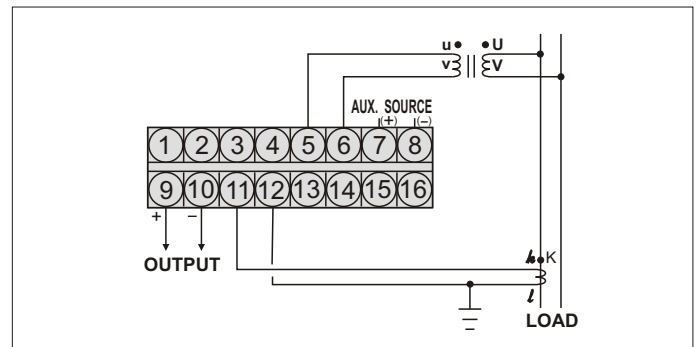
A: AC 110V C: DC 24V
B: AC 220V D: DC 48V
0: Option E: DC 110V

PANEL MOUNTING HOLES (UNIT:mm)

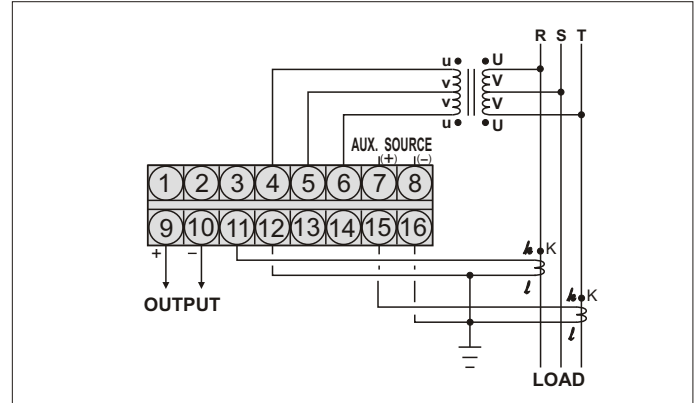


CONNECTION DIAGRAM

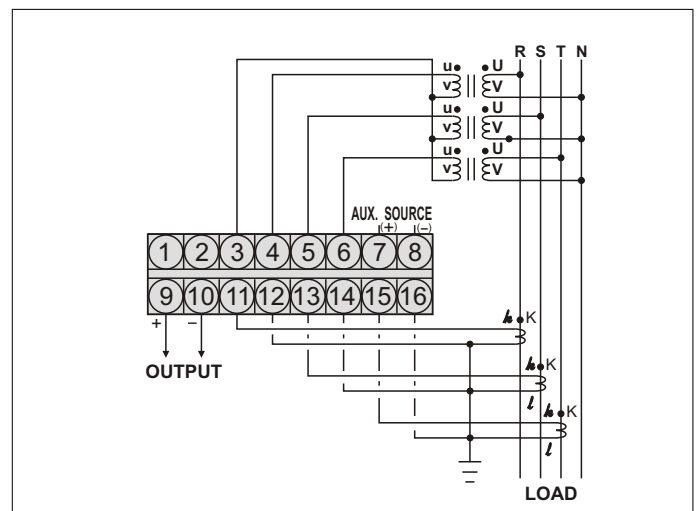
S3-PD-1, S-3-UD-1(1 ϕ 2W)



S3-PD-3, S3-UD-3 (3 ϕ 3W)



S3-PD-3A, S3-UD-3A (3 ϕ 4W)



THE OUTSIDE DIMENSION (UNIT:mm)

