

AC Signal to DC (AC/DC) Low Cost Isolation Transmitter

Frequency AC Signal to Analog Signal Dual Isolation Transmitter

SY AC-P-O Series

Features	Applications
<ul style="list-style-type: none"> ● Accuracy/linearity error grade:0.5 ● AC transformer Input:0-1Vrms AC current (50~60Hz) ● Single power supply:5V/12V/15V/24VDC,etc. ● International standard output signal: 0-10mA /4-20mA/0-5V/0-10V,etc. ● Low cost,small size,high reliability. ● SIP12PIN, UL94V-0 flame-retardant package ● Industrial temperature range: - 20 ~ + 70 °C 	<ul style="list-style-type: none"> ● AC signal acquisition and transformation ● High-precision monitoring used for power transmission and distribution ● AC small-signal amplification and conversion ● sensor AC signal converter to standard DC Signal ● No distortion in long distance signal transmission ● Can be used with external ac transformers to compose the single-phase or multiphase isolation transmitter.

Introduction

SUNYUAN SY Series AC-DC signal transmitter IC is a kind of hybrid integrated circuits that convert the AC signal correspondingly into the linear DC signal. This circuit integrates a group of multi-channel high-isolation DC / DC power supplies and a group of AC / DC signal converter circuit on one chip. It can convert 0-1Vrms (50 ~ 60HZ) AC signal (collected from ac transformer) into 4-20mA/0-10mA / 0-20mA DC current signal or 0-1V/0-2.5V/0-5V/0- 10V DC voltage signal in proportional. It can be used with external ac transformers to compose the single-phase or multiphase isolation transmitter with 3kvisolation between the input and output signal isolation. That AC-DC signal transmitter IC is widely applied in the electrical, instrumentation, medical equipment, industrial automation, etc.

Product Model Selection

DIN 1X1	SY	AC	- P□ - O□
Installation package	Input		Auxiliary power supply Output O
DIN 1X1: 35mm Rail-mounted Omitted: PCB-mounted type	AC: 0-1Vrms		P P1: DC24V P2: DC12V P3: DC5V P4: DC15V P5: AC220V P8: Customized
			O O1: 4-20mA O2: 0-20mA O3: 4-12-20mA O4: 0-5V O5: 0-10V O6: 1-5V O8: Customized

Model selection examples

E.g.1: Input: 0-1Vrms	Power supply: 24VDC	Output: 4-20mA	Model No: DIN 1X1 SY-AC-P1-O1
E.g.2: Input: 0-1Vrms	Power supply:24VDC	Output: 0-5V	Model No:DIN 1X1 SY-AC-P1-O4
E.g.3: Input: 0-1Vrms	Power supply:12VDC	Output: 4-20mA	Model No: SY AC-P2-O1
E.g.4: Input: 0-1Vrms	Power Supply: 5VDC	Output: 0-10V	Model No: SY AC-P3-O5

Max operation range

Continuous Isolation Voltage	Non-isolation
PW	±25%Vdd
Junction Temperature	- 45°C ~ + 85°C
Lead Temperature	+300°C
Output Voltage Load Min	2KΩ

General Parameters

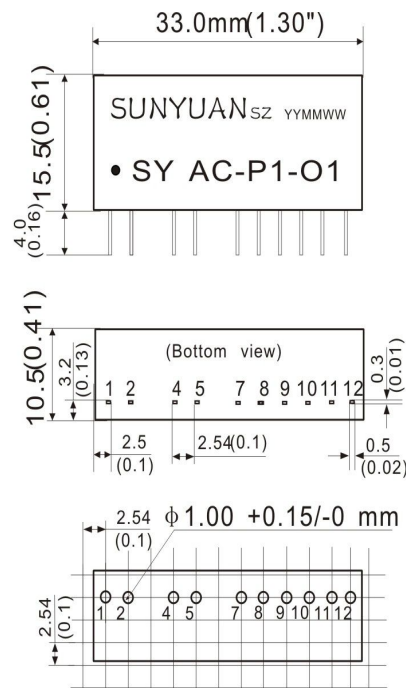
Accuracy ----- 0.2%, 0.5%	Isolation ----- Signal channel/auxiliary power
Auxiliary power----- DC5V, 12V, 24V, ±10%	insulation resistance ----- ≥20MΩ
Operating temperature----- -20 ~ +70°C	withstand voltage----- Signal channel and auxiliary power 3KVDC, 50Hz, 1mA
Operating temperature-----10-90% Non-condensation	
Operating temperature----- -45 ~ +85°C	Impact resistance voltage----- 3KV, 1.2/50us
Operating temperature----- 10-95% Non-condensation	

Application parameters

Input item	Input impedance	Input over load
0~1Vrms	≥500KΩ	2.0 times of rated:Continuous

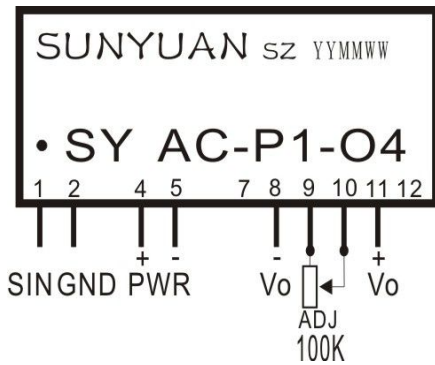
Output item	Input over load	Response time
4-20mA	≤350Ω (If load 650 Ω is required, please notify us.)	≤400mS
0-20mA		
4-12-20mA		
0-5V	> 2KΩ	
0-10V		
1-5V		

Physical Dimension and Footprint Description

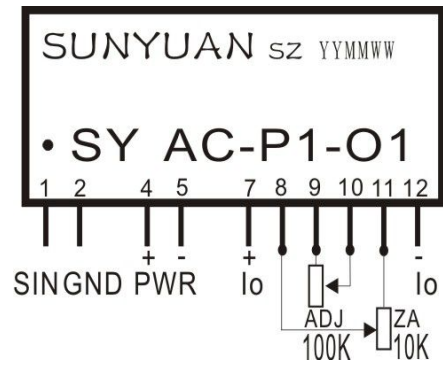


IC封装SIP12PinPCB布板参考

(1) Current output type



(2) Voltage output type



(1) Current output type product pin description: SIP 12Pin Package

1	2	3	4	5	6	7	8	9	10	11	12
Signal input +	Signal input -	NC	Aux. PWR +	Aux. PWR-	NC	Signal output +	Zero adjust	Gain adjust	Gain adjust	Zero adjust.	Signal output
Sin	GND	NC	PW+	PW-	NC	Io+	Za	Adj	Adj	Za	Io-

(2) Voltage output type product pin description: SIP 12Pin Package

1	2	3	4	5	6	7	8	9	10	11	12
Signal input +	Signal input -	NC	Aux. PWR	Aux. PWR	NC	NC	Signal output	Gain adjust	Gain adjust	Signal output +	NC
Sin	GND	NC	PW+	PW-	NC	NC	GND	Adj	Adj	Vo+	NC

SIP 12PIN IC Package Typical Applications

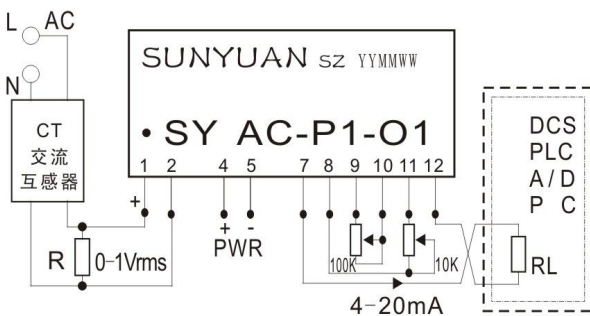


图1 0-1Vrms输入/电流输出型典型应用

Fig.1 0-1Vrms input/Current output type

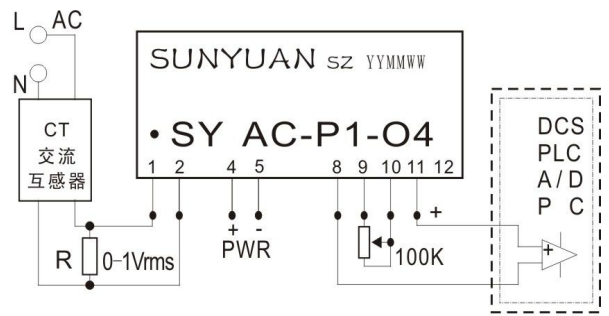
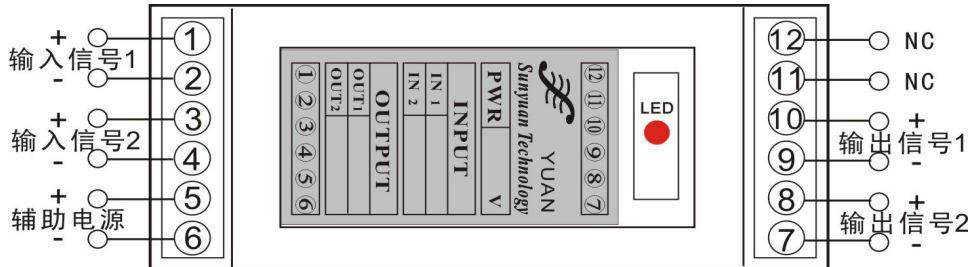


图2 0-1Vrms输入/电压输出型典型应用

Fig.2 1 0-1Vrms input/Voltage output type

Multi-channel 35mm DIN Rail-mountec type DIN 1X2 / 2X2 SY Series Typical Applications

SUNYUAN SY Series I Type DIN35 Rail-mounted Dual-isolation AC/DC Converter has several sets of SY AC-P-O series IC modules integrated inside. The converter can be 1-input 1-output (DIN1X1), 1-input 2-output (DIN1X2), 2-input 2-output (DIN2X2) to achieve multi-channel AC voltage to DC current or voltage signal conversion. There is anti-surge protection circuits inside to make sure that the products is much more reliable. (Notes: Calibration work already done before ex-factory, users do not need to do adjustment, If adjustment is required, please adjust the potentiometers in the right/left side of the converter.)

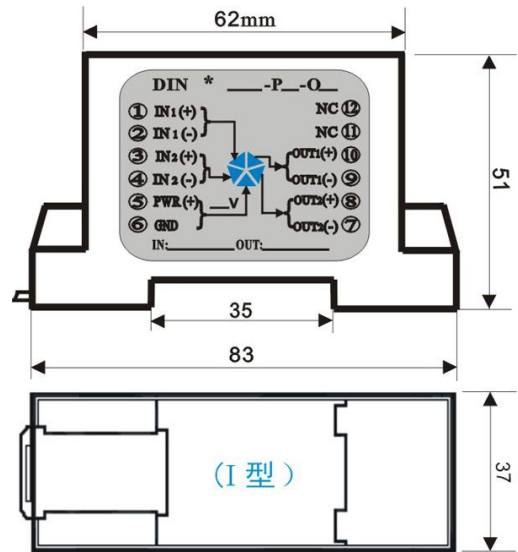


DIN 1X1 / 2X2 / 1X2 (有源型) 多路隔离放大器

DIN1X1/2X2/1X2 Active type multi-channel isolation amplifier

DIN 1X1 / DIN 1X2 / DIN 2X2 SY Series Dimension & PIN Definition

Pin	PIN Function description	
1	Signal in1 +	Input signal #1+
2	Signal in1 -	Input signal #1-
3	Signal in2 +	Input signal #2+
4	Signal in2 -	Input signal #2-
5	Power +	Auxiliary power supply+
6	Power -	Auxiliary power supply-
7	Vout2 -	Output signal #2-
8	Vout2+	Output signal #2+
9	Vout1 -	Output signal #1-
10	Vout1+	Output signal #2+
11	NC	No Connection
12	NC	No connection



* The specification is subject to change without notice.