

# 4-20mA Current Loop Isolator

ISO 4-20mA(0-20mA) Analog Signal Isolator

## Features :

- 4-20mA current input/output, high precision (distortion <0.2%)
- High linearity in the full span(non-linearity<0.2%).
- Isolation between signal input and output: 3KV or 6KVDC
- Low impedance (volt. drop<2V), no external instruments or power supply required.
- SIP 12Pin small size, UL94V-0 standard for flame retardant encapsulation.
- 4-20mA signal extra-wide range volt. Input (8.5~28VDC).
- Frequency response (small signal band-width): 2KHZ (I<sub>o</sub>=20mA)
- Industrial operating temperature: - 45°C ~ + 85°C

## Applications :

- 4-20mA signal long-distance transmission in industrial site
- PLC, DCS analog signals data acquisition and isolation
- Ground loop elimination
- Transmission and Monitoring of signals of instruments and meters, sensors,etc
- Analog signal data acquisition, isolation and long distance non-distortion transmission.
- Monitor and control electrical instruments and meters, medical equipments, isolated safety bar.
- Isolated safety bar in rail transit DC high voltage monitoring

## Generalization:

**SunYuan** SIP12 Pin current loop isolated module: ISO 4-20mA module is a kind of single-chip two-wire isolated interface IC chip. Inside the IC, there are current signal modulation circuit, magnetoelectric isolation transform circuit and signal reduction demodulation circuit,etc. The low input equivalent resistance makes the IC module achieve wide range input voltage (8.5~28VDC) to realize the long-distance, non-distortion transmission of signals without external power supply. By adopting SMD technological structure and new isolation technology, the modules posses the features: 3KVDC isolation between signal input and output (total isolation type), and operates in normal in abominable industrial conditions like wide temperature, humidity and vibration.

## Maximum Rated Values:

(If exceed the value below, may cause irremediable defect.)

Continuous Isolation Volt.:	3KVDC/rms
Input Signal Volt. (Max.):	32VDC
Operating Ambient Temp.:	- 45°C ~ + 85°C
Welding Temp.(<10S):	+300°C
Output Short-circuit Time:	Main-tenability

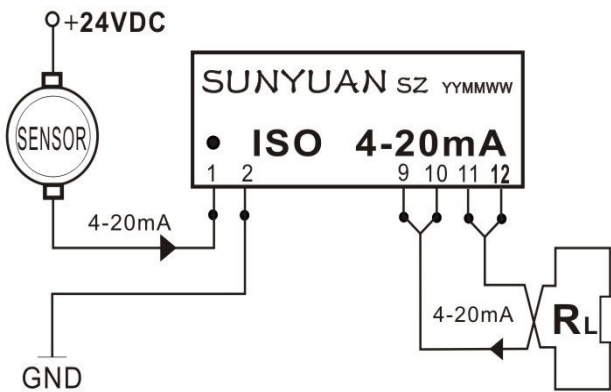
## General Technical Parameters:

Accuracy, linearity error grade ----- 0.1, 0.2	Hysteresis error ----- < 0.5%
Auxiliary power----- No	Isolation ----- signal input and output
Operating Temp. ----- -20 ~ +70°C	Insulation Resistance ----- ≥20MΩ
Operating Humidity -----10~90% (no condensation)	Withstand Voltage ----- 3KV(60HZ/S), leak current 1mA
Storage Temp.----- -20 ~ +70°C	Impact Resistance Volt. ----- 3KV, 1.2/50us (peak value)
Storage Humidity -----10 ~ 95% (no condensation)	

**Specifications:**

Parameter	Conditions	Min.	Typical Value	Max.	Unit
Isolation Volt. AC, 60Hz	10S	1000	2500	6000	Vrms
Insulation Impedance			$10^{12} \parallel 1$		$\Omega \parallel Pf$
Leak current	240Vrms, 60Hz		0.5		$\mu A$
Temp. Drift	-45~+85°C		$\pm 50$	$\pm 100$	PPm/°C
Non-linearity	In range of full span		$\pm 0.1$	$\pm 0.2$	%FSK
Input Signal Volt. Range		7.5	12	32	V
Output Linearity Range		0	4	20	mA
Output Current $I_o$		0.1		40	mA
Output Voltage Drop $V_{oh}$	$I_o=20mA$		2		V
Output Signal Ripple			5		mV
Frequency Response (small signal bandwidth)	$I_o=20mA$		2		KHz

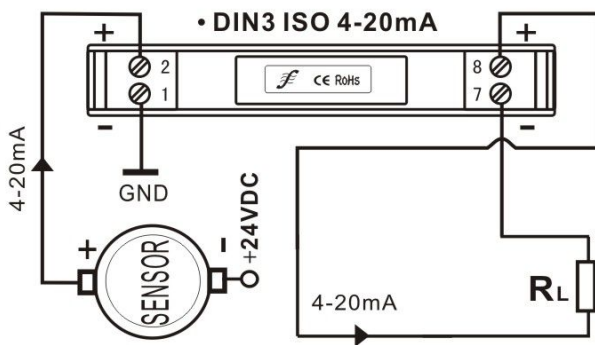
**Typical Applications:**



ISO 4-20mA Signal Isolator IC Typical Connection Diagram



SIP12PIN PCB-mounted Package



DIN3 ISO 4-20mA Signal Isolator Typical Application Diagram

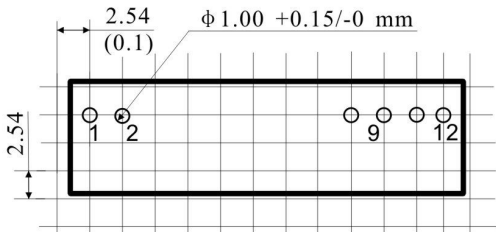
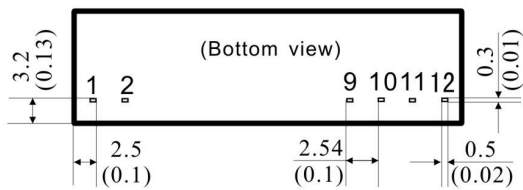
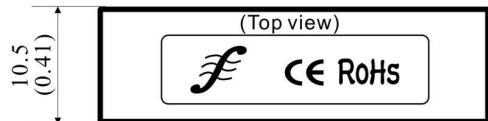
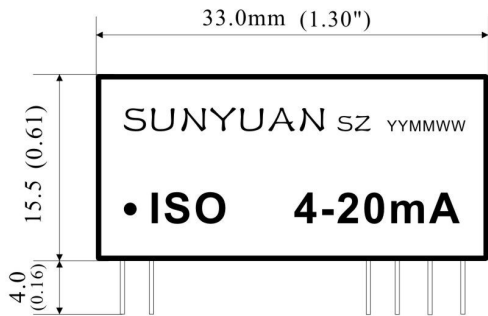


25mm DIN Rail-mounted Package

**PIN Description:**

PIN	PIN Definition	
1	lin+	Signal Input
2	GND	Signal Input
3~8		Null
9	lo-	Signal Output
10	lo-	Signal Output
11	lo+	Signal Output
12	lo+	Signal Output

**Outline Dimensions:**



**External Forms and Dimensions**

