

Analog Active Signal Isolated Transmitter/Distributor

Isolated Transmitter with Input End Power Distribution

to Supply Power to Passive Sensors ISO EM-S Series

Features:

- Compact SIP 12Pin, comply with UL94V-0 standard, flame retardant package.
- External potentiometer, zero and gain adjustment is not required (Non-linearity <0.1%).
- 3KVDC Isolation among auxiliary power supply, signal input, output.
- Auxiliary Power Supply: 5V, 12V, 15V, 24VDC, etc single power supply.
- Power distribution in input end for function expansion: 5V, 12V, 15V, 24VDC, etc.
- 0-75mV/0-10V/0-1mA/4-20mA, etc analog signal isolation amplification and conversion.
- Industrial operating temperature range: -40~+85 °C
- In EMC special situation, shielding measures and electro-magnetic rejection circuit are required.

Applications:

- Passive sensor isolated power distribution, signal acquisition & transmission.
- Supply power for preamplifier, weighing bridge to collect signals.
- PLC, DCS analog signal isolation and data acquisition.
- DC current/voltage signal isolation, amplification and conversion.
- Analog signal ground interference rejection and data isolated acquisition.
- Industrial site signal isolation and long-distance transmission.
- Receiving and Transmitting the signals between meters& Instruments and sensors.
- Electric monitoring, medical equipments isolated safety bar.

Product Features

SUNYUAN SIP12 Pin package ISOEM-S Series Analog Active Signal Isolated Transmitter/Distributor is a kind of signal module/ IC with electro-magnetic hybrid integrated circuit inside. There are one multi-isolation DC/DC transformation power and a set of electro-magnetic coupling analog signal isolated amplifier/transmitter in the IC. The transmitters mainly applied in the field without special requirements for EMC (electro-magnetic interference). And by employing internal isolation technique, proper I/O side creepage distance, the isolated voltage of that signal transmitter is up to 3000VDC.

ISO EM-S Series transmitter easily achieves the isolated conversion for the industrial site signals without gain/zero adjustment, external zero and without external gain adjustment potentiometers. The isolated power supply in input end can distribute power to displacement, resistance and other passive two-wire/three-wire sensors, and can also be used as pre-amplification in input end, amplification of weighing bridge, calibration, etc.

- Precision grade: 0.1, 0.2.
- 0-5V/0-10V/0-75mV/0-2.5V/0-1mA/0-10mA/0-20mA/4-20mA, etc international standard signal input.
- Output voltage signal: 0-2.5V/0-5V/0-10V/1-5V. Output current signal: 0-10mA/0-20mA/4-20mA, high load capacity.

Max. Rated Value:

(If the product operates in the max. rated value in the long-term, may affect the durability, if exceed the max. values, may cause unrepairable damage.)

Continuous Isolation Voltage	3KVDC/rms
Power supply Volt. Input Range:	±25%Vdd
Operating Temperature	- 45°C ~ + 85°C
Welding Temperature (<10S)	+300°C
Voltage Signal Output Min. Load	2KΩ

General Parameters:

Precision, Linearity Error Grade----- 0.1, 0.2	Backlash ----- < 0.5%
Auxiliary Power Supply----- 5V,12V,15V,24VDC	Isolation ----- Signal Input/Output/Auxiliary Power supply
Operating Temp. ----- -20 ~ +70°C	Insulation Resistance ----- $\geq 20M\Omega$
Operating Humidity-----10~90%(No condensation)	Withstand Volt.----- 3KV(60HZ / S), leakage current: 1mA
Storage Temp. ----- -45~ +85°C	Impulse Volt. Test----- 3KV, 1.2/50us(Peak Value)
Storage Humidity-----10~95%(No Condensation)	

Technical Parameters:

Items		Testing Conditions	Min.	Typical Value	Max.	Unit
Isolate Volt.		AC,50Hz,1min		3000		VDC
Gain				1		V/V
Gain Temp. Drift				25		ppm/°C
Non-linearity				0.1	0.2	%FSR
Signal Input	Volt.		0		15	V
	Current		0		30	mA
Input Offset Volt.				2	5	mV
Input Impedance	Volt.			1		MΩ
	Current				50	Ω
Distribution Power Supply Output	Volt.		5		24	V
	Current			20		mA
	Ripple Wave			50		mV
	Precision			2		%
Signal Output	Volt.		0		15	V
	Current		0		20	mA
Load Capacity	Volt.	Vout=10V		2		kΩ
	Current		0	350	750	Ω
Frequency Response				1	20	KHz
Signal Output Ripple Wave		No filtering		10	20	mV _{RMS}
Signal Volt. Temp. Drift					1	mV/°C
Auxiliary Power	Volt.	Customized	3.3	12	24	VDC
	Consumption			0.5	1	W
Operating Temp.			-45		85	°C
Storage Temp.			-55		105	°C

Note: For the special requirements on the load capacity of voltage signal and current signal, please do notify us when placing orders.

Output	Output Load Capacity	Response
4-20mA	$\leq 350\Omega$ (If the 650 Ω load is required, please notify us)	$\leq 1\text{ms}$
0-20mA		
0-5V	$\geq 2\text{K}\Omega$	
0-10V		
1-5V		

Product Model Selection Examples:

E.g.1: Input signal: 0-5V, Output signal: 0-5V, Auxiliary power supply: 24VDC, Power distribution: 15VDC.
Product Model No: ISO EM U1-P1-O1-S2

E.g.2: Input signal: 4-20 mA, Output signal: 4-20mA, Auxiliary power supply: 24VDC, Power distribution 24VDC.
Product Model No: ISO EM A4-P1-O1-S3

Product Model Selection:

ISO EM U(A) \square - P \square - O \square - S \square

Signal Input

Current/Voltage

- U1: 0-5V A1: 0—1mA
- U2: 0-10V A2: 0—10mA
- U3: 0-75mV A3: 0—20mA
- U4: 0-2.5V A4: 4—20mA
- U8: Customized A8: Customized

Auxiliary Power Supply

- P1:DC24V P2:DC12V
- P3:DC5V P4:DC15V
- P8: Customized

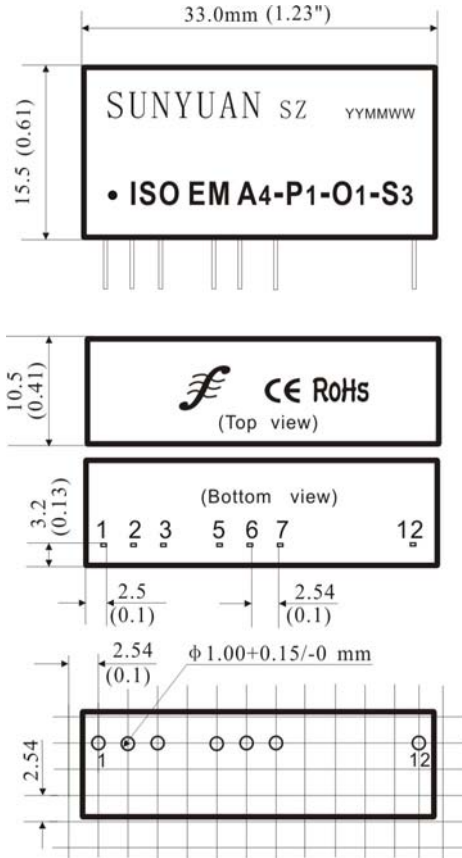
Signal Output

- O1: 4-20mA O2: 0-20mA
- O4: 0-5V O5: 0-10V
- O6: 1-5V O8: Customized

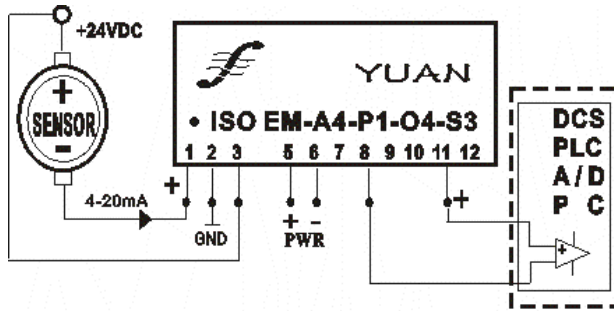
Isolated Distribution Power Supply

- S1: 9VDC S2: 15VDC
- S3: 24VDC S4: 5VDC
- S8: Customized

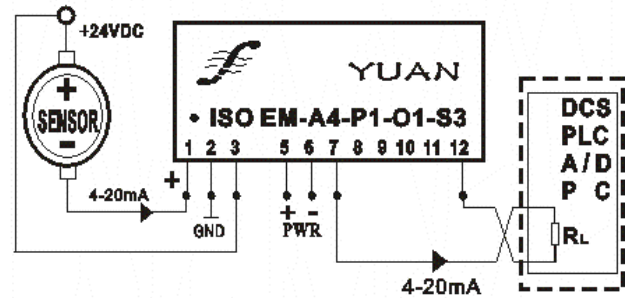
Dimension:



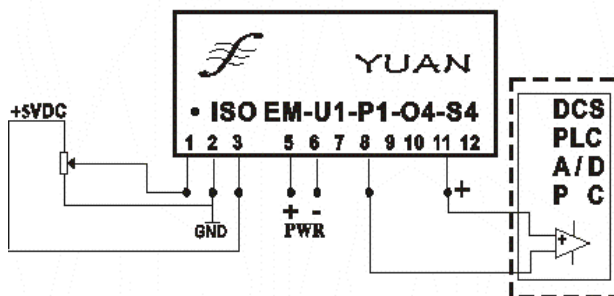
Typical Applications:



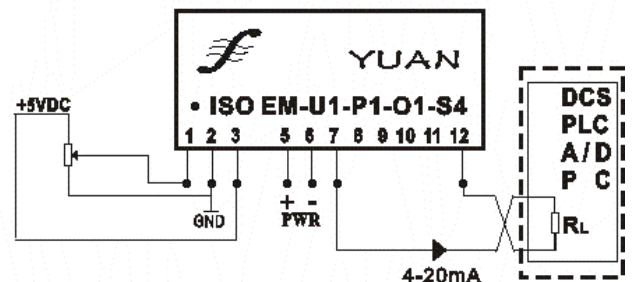
电流输入/电压输出 (I/V转换)



电流输入/电流输出 (I/I) 隔离



电压输入/电压输出 (V/V隔离)



电压输入/电流输出 (V/I转换)

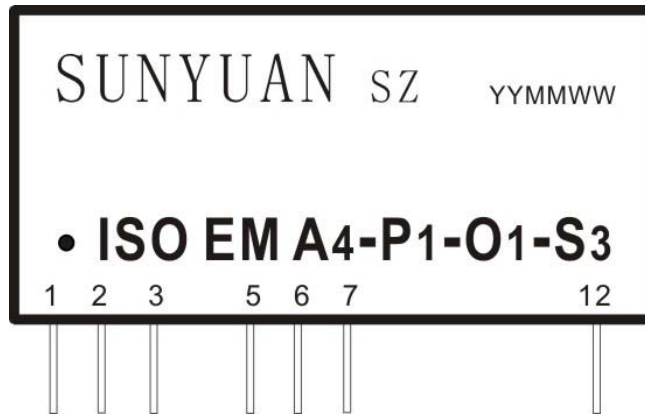
PIN Functions Description:



Voltage Signal Output Transmitter (0-75mV/0-5V/0-10V) PIN Diagram

Voltage Signal Output Transmitter PIN Description: SIP 12 Pin Package without Gain/Zero Adjustment

1	2	3	4	5	6	7	8	9	10	11	12
Signal Input Sin+	Signal Input GND	Distribution Power Output PO+	Null	Auxiliary Power PW+	Auxiliary Power PW-	Null	Signal Output Vo-	Null	Null	Signal Output Vo+	Null



Current Signal Output Transmitter (4-20mA/0-10mA/0-20mA) PIN Diagram

Current Signal Output Transmitter PIN Description: SIP 12 Pin Package without Gain/Zero Adjustment

1	2	3	4	5	6	7	8	9	10	11	12
Signal Input Sin+	Signal Input GND	Distribution Power Output PO+	Null	Auxiliary Power PW+	Auxiliary Power PW-	Signal Output Io+	Null	Null	Null	Null	Signal Output Io-

External View & Optional Packages:

