

## Two-wire passive 4-20mA isolation amplifier conditioning module

### Features:

- ◆ Low cost, small size, SIP package with UL94-V0 flame retardant standard
- ◆ Isolation voltage 3000VDC/60s between input and output
- ◆ 4-20mA current input and output, high accuracy(distortion <0.2%);
- ◆ Industrial class temperature range: -45 ~ +85 °C
- ◆ High accuracy (0.1% F.S,0.2% F.S);
- ◆ Full scale high linearity (non-linearity <0.1%)
- ◆ working without external power supply, Two-wire distribution loop output
- ◆ Wide range voltage input (7.5~32VDC)

### applications:

- ◆ analog signal data isolation, acquisition
- ◆ industrial field signal isolation
- ◆ Long-distance lossless transmission
- ◆ analog signal ground interference suppression
- ◆ 4 ~ 20mA isolated signal transmission
- ◆ instrumentation and sensor signal transceiver
- ◆ power monitoring, medical equipment, isolation barrier

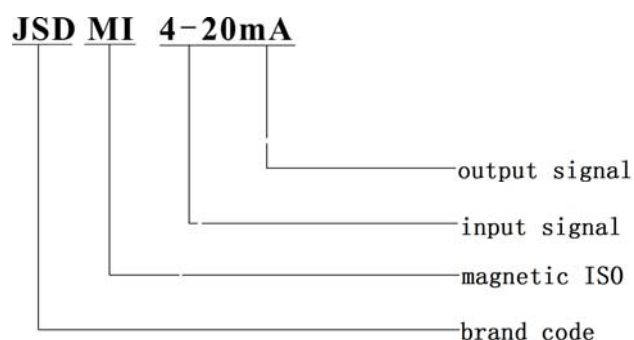
### General Description:

Jie Shengda Technology JSD OI 4-20mA-P series isolation amplifier is a two-wire 4 ~ 20mA current isolation conditioner module, and the isolation conditioner module belongs JSD MI 4 ~ 20mA series isolation amplifiers, But this product adopts optical isolation technology, it has better anti-jamming ability than magnetic isolation product. The isolation conditioner IC internal has current signal modulation and demodulation circuit, coupled converter circuits and so on. The isolation conditioner IC's input voltage reaches the wide range (7.5 ~ 32V) by small input equivalent resistance to meet the user does not need an external power supply to realize long-distance signal lossless transmission requires. The isolation conditioner IC output is design for 24VDC and sampling resistor (or load resistance) in series with the two-wire power supply circuit . Matching with the current popular analog input interface board (PC), PLC, DCS, PC or other instrumentations with analog input port internal ceramic substrates, printed resistor technology and new isolation technologies make the products' high isolation voltage (3000VDC) and wide temperature, in humidity, it is available to work in wet, harsh vibration environments to meet industrial environmental requirements.

Jie Shengda Technology JSD OI 4-20mA-P series isolation amplifier has PCB board soldering and standard DIN 35mm rail mounting ,rail mounting can be achieved analog signal one in one out、two in two out、three in three out , users just need to wiring can be used.

Jie Shengda Technology JSD OI 4-20mA-P product is very easy to use, just add a 50KΩ multi-turn potentiometer ADJ to correct, you can achieve two-wire 4-20mA signal isolation, transmission and conversion capabilities, and to achieve signals long-distance lossless transmission. The product simplifies the user's design, greatly improves the PCB board space utilization.

Selections and definitions:





Product Selection Parameter List:				
JSD	OI	4~20mA	P	Detailed description
code				Brand code
isolation code				Optical isolation
current signal				4~20mA current signal
Current signal output				4~20mA current signal
Two-wire distribution loop output code				Two-wire distribution loop output code

**Selection example:**

example1: signal input: 4~20mA; signal output: 4~20mA; model NO: JSD OI 4-20mA-P

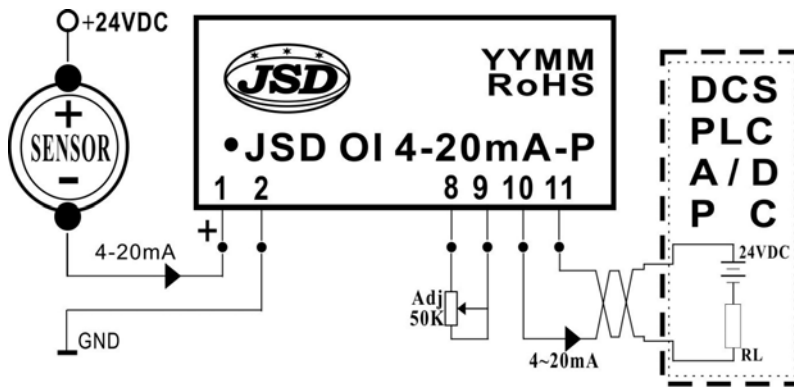
**ELECTRICAL CHARACTERISTICS:**

signs	Item	Test Condition	Min	Type	Max	Units	
<b>Isolation characteristics</b>	Isolation voltage	AC,50Hz,(Tested for 1 minute humidity<70% ,leakage current < 1mA,)		3000		V(rms )	
	Insulation resistance	500VDC (input/output)		100		MΩ	
<b>Transmission characteristics</b>	Gain drift			±50		ppm/	
	Non-linearity			±0.1	±0.2	%FSR	
	Output voltage range		7.5	24	32	VDC	
	Signal input	current		4		24	mA
	Signal output	current		4		24	mA
	Load capacity	current	$RL \leq (U_s - 5) / 0.02$ $U_s$ : Loop power supply voltage			250	Ω
	Frequency Response		( Small-signal bandwidth ) $I_o=20mA$		2		Hz
<b>Power input characteristics</b>	Power supply	voltage		---	---	—	VDC
		Power loss		---	---	—	W
		Range		---	---	—	%
<b>Other characteristics</b>	Soldering Temperature	Solder from the shell 1.5mm,10s			300	°C	
	Operating Temperature		-45		85	°C	
	storage temperature		-55		105	°C	
	Weight		7.5	8		g	

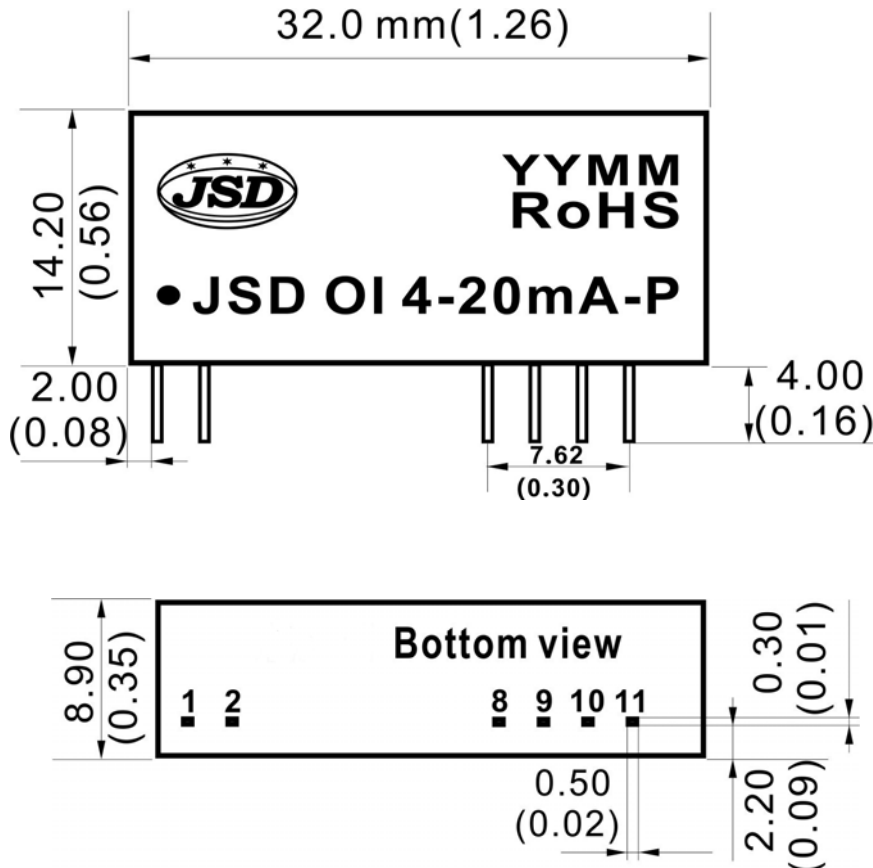
**Pins function:**

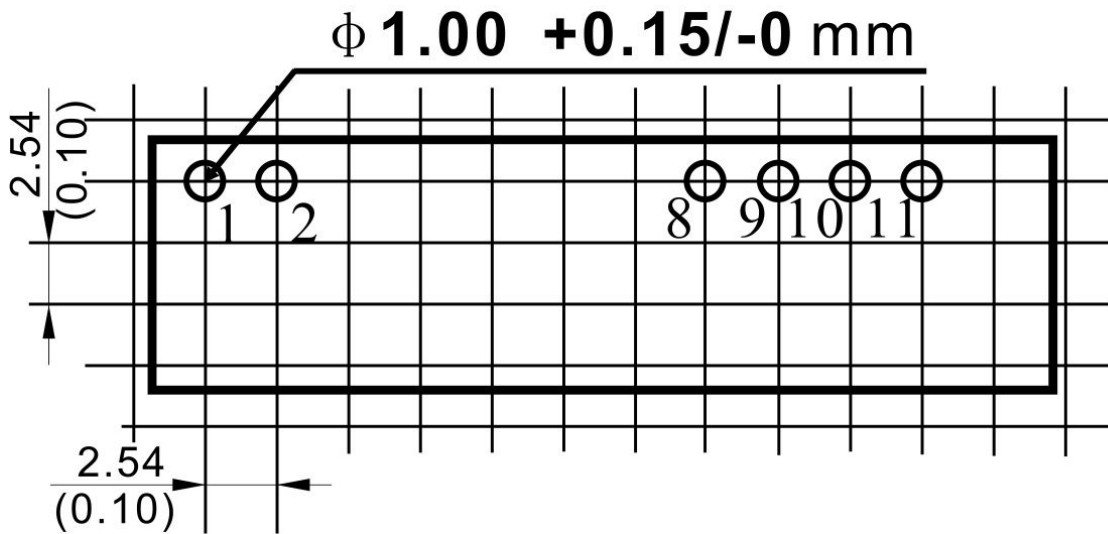
outputting types	Pin	Function	Pin	Function	Storage
Passive 4-20mA	1	signal input+	7	NO PIN	Single Inline 12Pin
	2	signal input-	8	Full-scale calibration	
	3	NO PIN	9	Full-scale calibration	
	4	NO PIN	10	signal input+	
	5	NO PIN	11	Power supply in+	
	6	NO PIN	12	No pin	

**Wiring diagram Application:**



**PCB layout dimensions:**





**Notes:**

- 1、 Please read the user manual carefully before using. If any question please contact our technical support department.
- 2、 Please do not use this product in hazardous area. The power supply of this product should be 24VDC power source. It is forbidden to use 220VAC power supply. This product's layout size diagram is "mm" and "inch" as the unit, within "[ ]" is inch
- 3、 Calculating from the date of delivery, during normal use of the product, any quality problems are free repair or replacement by Company during 3 years warranty,
- 4、 To avoid invalid, or any failure, users disassemble this product is forbidden
- 5、 the product is strictly forbidden demolish without permission for not damage
- 6、 All specifications measured at  $T_a=25^\circ\text{C}$ , humidity < 75%, nominal input voltage and rated output load unless otherwise specified.
- 7、 In this datasheet, all the test methods of indications are based on corporate standards.