Shenzhen Vkinging Electronics Co., Ltd

Vk10P IEPE adapter

Vk10P IEPE/ICP adapter

——Precision Accuracy Reliability

Introduction:

Vk10P is a low-noise IEPE/ICP constant current driving and receiving amplifier. This product adopts low-noise amplification unit, low-noise power supply, optimized power supply, etc., which makes this product have the advantages of high precision, ultra-low noise, high suppression ratio, wide measurement range and low-temperature drift. It is suitable for various occasions of weak signal measurement.

Vk10P amplifier adopts all metal shielding, special anti-interference treatment of internal core unit, and the power supply unit adopts the design of wide input range and high reliability. This product can be used in occasions with strong industrial interference, and has the advantages of moisture-proof and shockproof.

Characteristic:

- **High precision, low noise and small frequency response error**
- **It adopts precision devices with high stability**
- **Compatible with 2mA/4mA mode**
- **Adjustable gain, four gain settings**
- **Metal shielding shell, strong anti-interference ability**
- **Extremely wide voltage input range**
- **BNC in/output, easier to connect instruments**

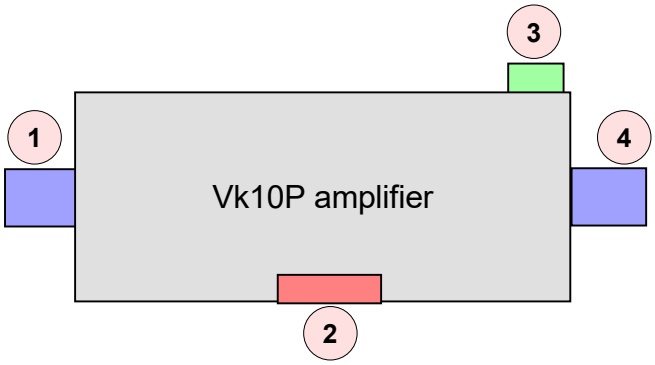
Application:

- EPE / ICP constant current reception
- IEPE / ICP signal receiving and amplification

Basic parameters

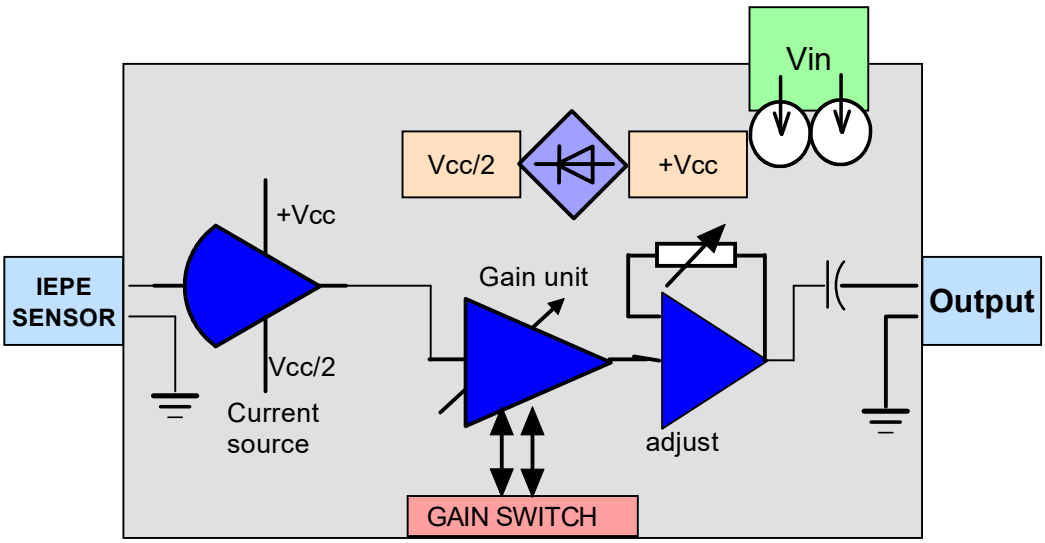
Gain range	x1,x2,x10,x25,x101 switchable
Supply voltage	DC 8~30V
Frequency response	Type L: 0.5Hz ~ 100kHz Type H: 0.5Hz ~ 1MHz
Measurement accuracy	<1%
Input impedance	100Ω
Noise	<1mV

Amplifier port schematic

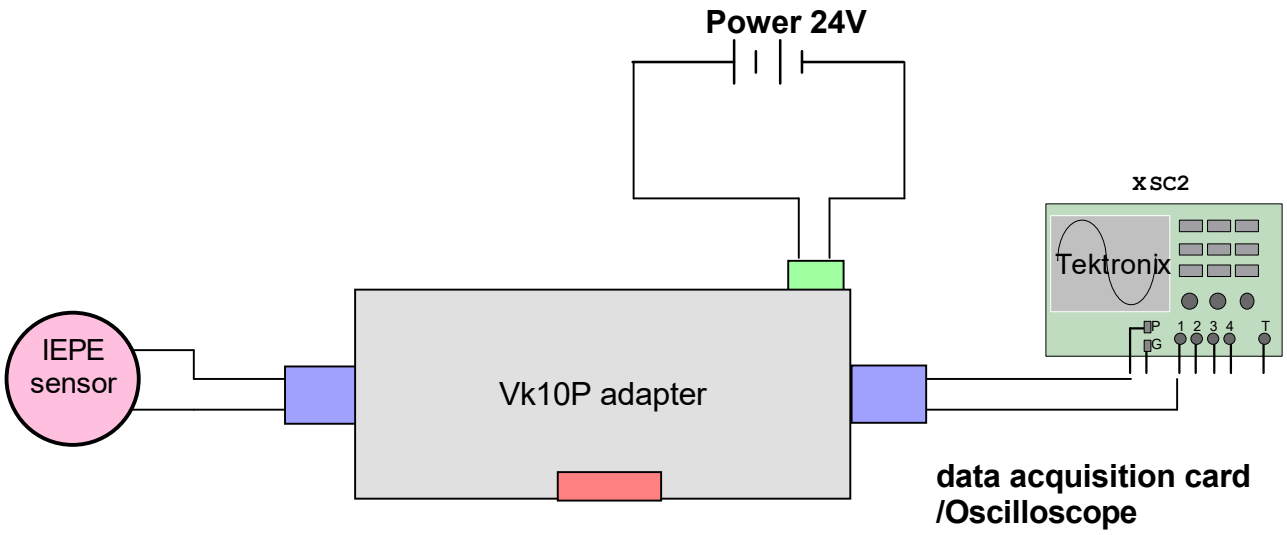


1	**Sensor signal input**
2	**Gain selection switch**
3	**DC power input port**
4	**Signal output**

System block diagram



Typical wiring application diagram



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Comprehensive electrical parameters

ITEM	Uint	Typical	Range
Supply voltage	V	8~30	5~35
Supply current	mA	10	6~20
Input mode		BNC single ended input	
Input range		0~30V	
Frequency response range		Type L: 0.5Hz ~ 100kHz Type H: 0.5Hz ~ 1MHz	
Excitation output current		4mA	Compatible 2mA
Excitation output voltage (suspended)	V	Vcc-1	
Input impedance	Ω	100	
Output mode		BNC single-ended output	
Output impedance	Ω	75	
Output voltage range	V	0~±5V	
Output bias voltage	mV	<1	
Gain accuracy of toggle switch		<1%	
Toggle switch gain range		L:1 ~ 101 times H：1 ~ 11 times	
Working temperature	Centigrade		-40~ 85
Storage temperature	Centigrade		-60~ 105
Dimensions (excluding connectors)	mm	100 (L) * 32 (W) * 32 (H)	
Weight	g	150	

Absolute maximum value for safe use

ITEM	Uint		
Supply voltage	V	-1 ~ +35	***If the absolute maximum value is exceeded, the device may be damaged and irreparable damage may be caused**
Input port	V	35V (with internal protection circuit)	
Output port	V	-1 ~ + 35V (internal protection circuit)	
All ports electrostatic input (ESD)	V	4000	

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Gain switching selection

The amplifier is equipped with fixed amplification stage and adjustable amplification stage. When the output voltage is small, the amplification gain can be used for re amplification

Model: L

Gain	S1	S2	S3	S4
1	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
10	OFF	OFF	ON	OFF
25	OFF	OFF	OFF	ON
101	OFF	OFF	OFF	OFF

Model: H

增益	拨位1	拨位2	拨位3	拨位4
1倍	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
4	OFF	OFF	ON	OFF
8	OFF	OFF	OFF	ON
11	OFF	OFF	OFF	OFF

***Note: if the signal is weak and the acquisition is secondary amplification, it is not recommended that the gain exceed 10If the gain exceeds 10, the sensitivity of the sensor is too low. It is recommended to replace it with a higher sensitivity Replace the sensorHigh frequency and high secondary gain may lead to other instability factors**

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Relationship between adjustable gain and output

If the amplifier and the first signal are V1, the second stage gain is gain

Then the output Vout is equal to the product of V1 and gain

Vout = V1 * Gain

If you want to obtain the maximum signal-to-noise ratio, IEPE sensitivity should be as high as possible. The second stage cannot change the signal-to-noise ratio, The noise and signal of the first stage are amplified at the same time.

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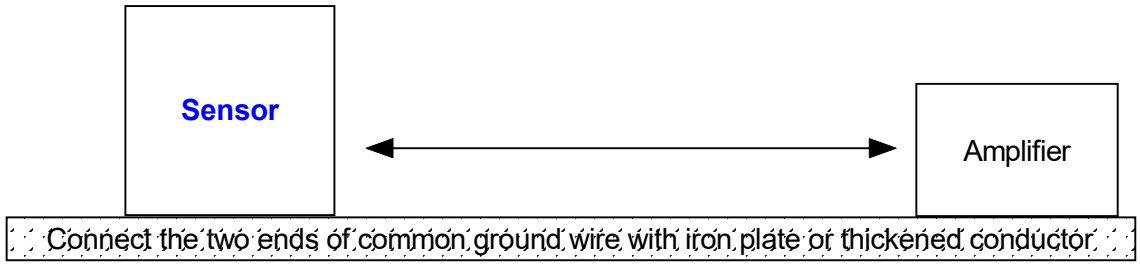
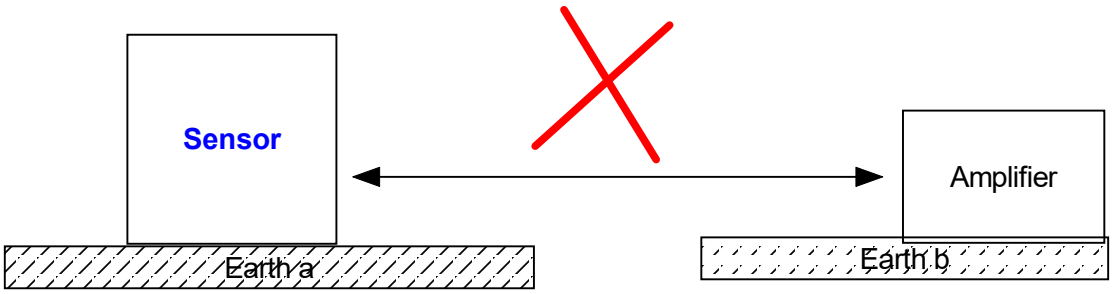
Precautions for use

Electrical reference ground processing

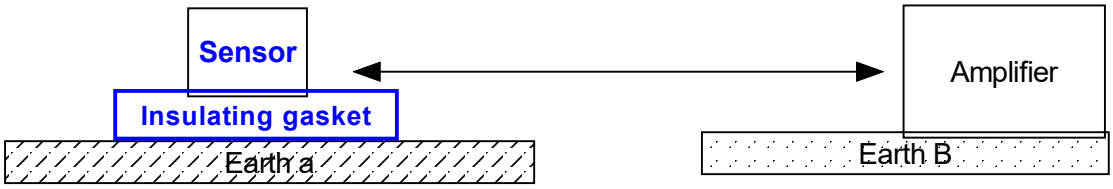
If the measured signal and the amplifier are not firmly grounded, there will be a weak potential difference In measurement, weak potential difference will lead to strong output interference.

Therefore, if the measurement source is far from the amplifier or the common ground is poor, try to improve the common ground conditions to achieve the best effect.

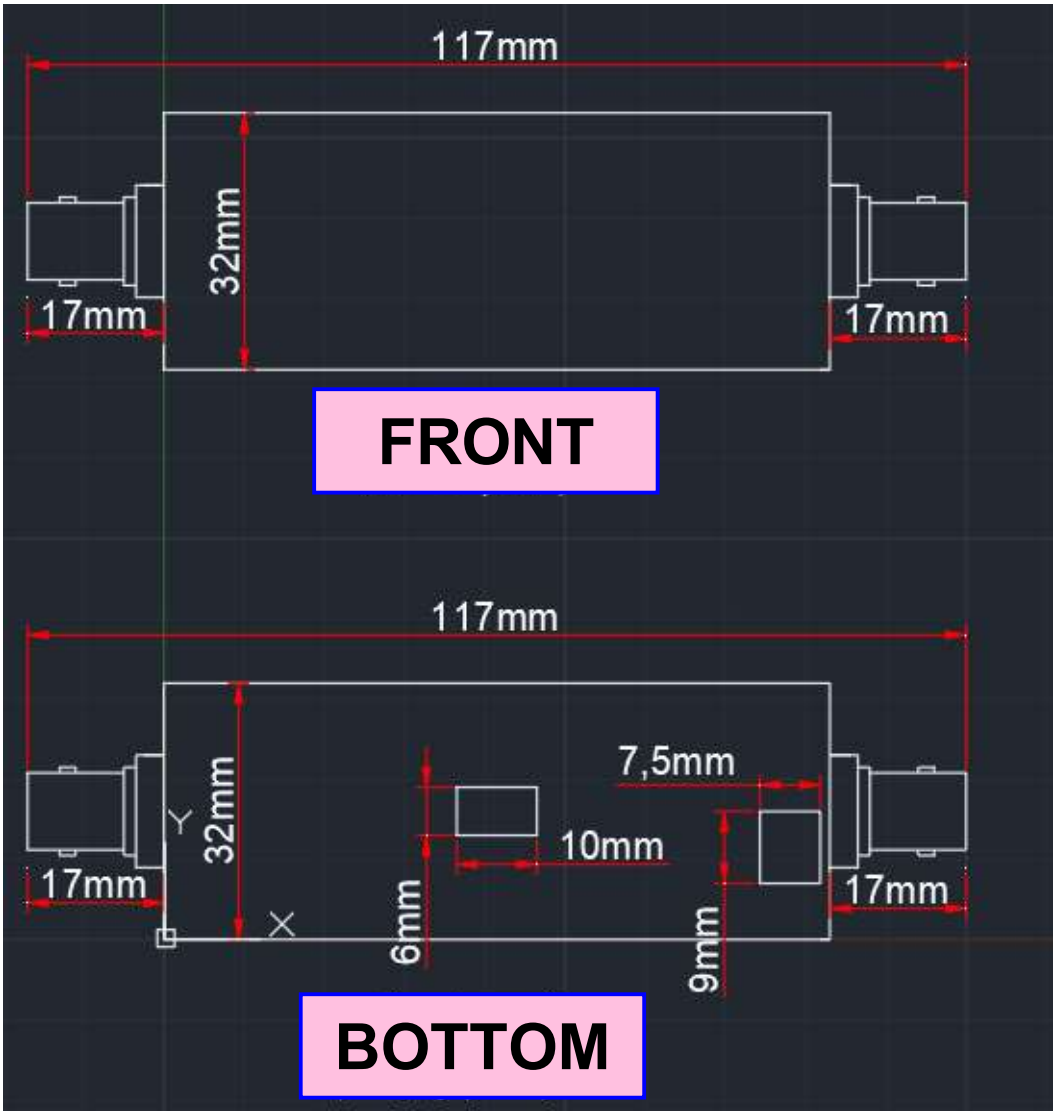


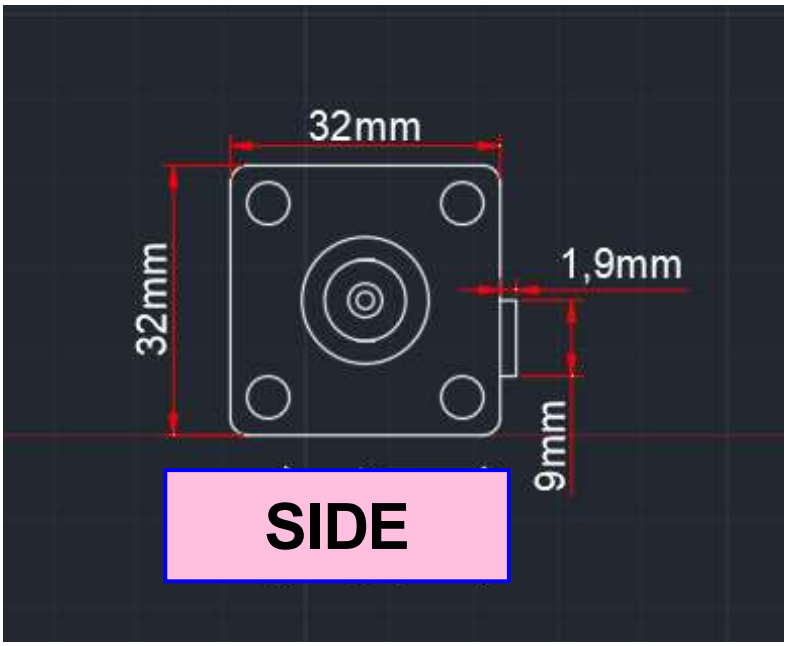


Method 2
If the measurement source is far from the amplifier, the sensor end can be suspended directly without grounding.



Outline dimension drawing





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