Shenzhen vkinging Electronics Co., Ltd

Vk10-ICP charge to IEPE amplifier

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Precision Accuracy Reliability

Introduction:

Vk10-ICP is a low noise charge amplification IEPE constant current drive amplifier. This product adopts high-precision charge low-noise amplification unit, optimized power supply of low-noise power supply, IEPE driven transmitter, 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 fields of weak signal measurement.

Vk10-ICP amplifier adopts all metal shielding and special anti-interference treatment of internal core unit. 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**
- **Adopts precision devices with high stability**
- **Metal shielding shell, strong anti-interference ability**
- **High charge conversion accuracy**
- **High frequency response**
- **BNC input and output, which can easily connect various sensors**

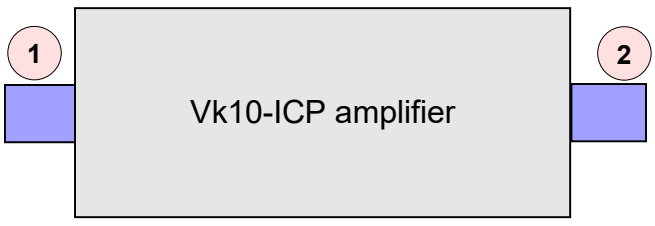
Application:

- IEPE ICP charge to IEPE drive front end
- Where charge transfer to IEPE is required

Basic parameters

Charge range	Type 103: 0 ~ ± 50000pc Type 102: 0 ~ ± 5000pc Type 101: 0 ~ ± 500pc Type 100: 0 ~ ± 50pc
IEPE voltage	DC 12~30V
frequency response	-0-1-2 type: 1Hz ~ 100kHz -3 Type : 1Hz ~ 10kHz
measurement accuracy	<1%
Input impedance	>1TΩ
noise	<1mV

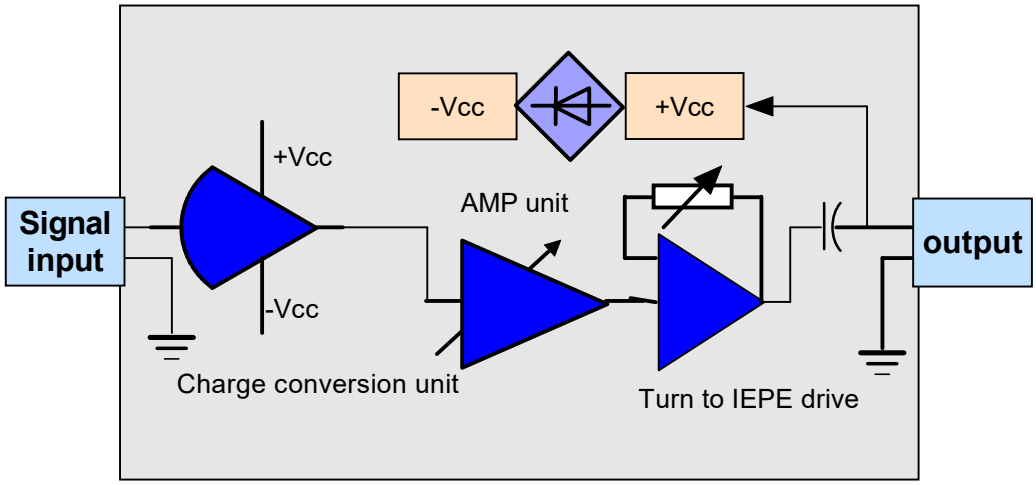
Schematic diagram of acquisition card port



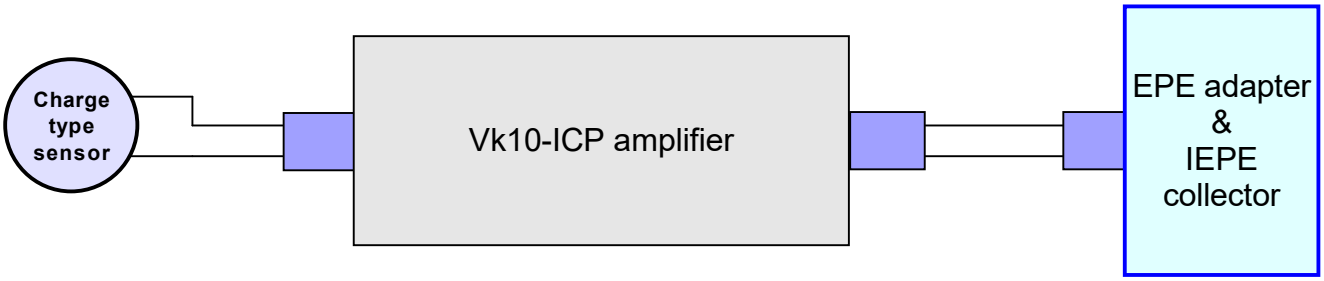
1 **Charge signal input**

2 **IEPE (ICP) port**

System block diagram



Typical wiring application diagram



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Comprehensive electrical parameters

Project	Unit	Typical	Range
Supply voltage	V	12~30	5~35
Supply current	mA	4	1.5~5
Input mode		BNC single ended input	
Charge input range		Type 103: 0 ~ ± 50000pc Type 102: 0 ~ ± 5000pc Type 101: 0 ~ ± 500pc Type 100: 0 ~ ± 50pc	
Frequency response range		-0-1-2 type: 1Hz ~ 100kHz -Type 3: 1Hz ~ 10kHz	
Input impedance	Ω	>1T	
Output mode		BNC single ended output	
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

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

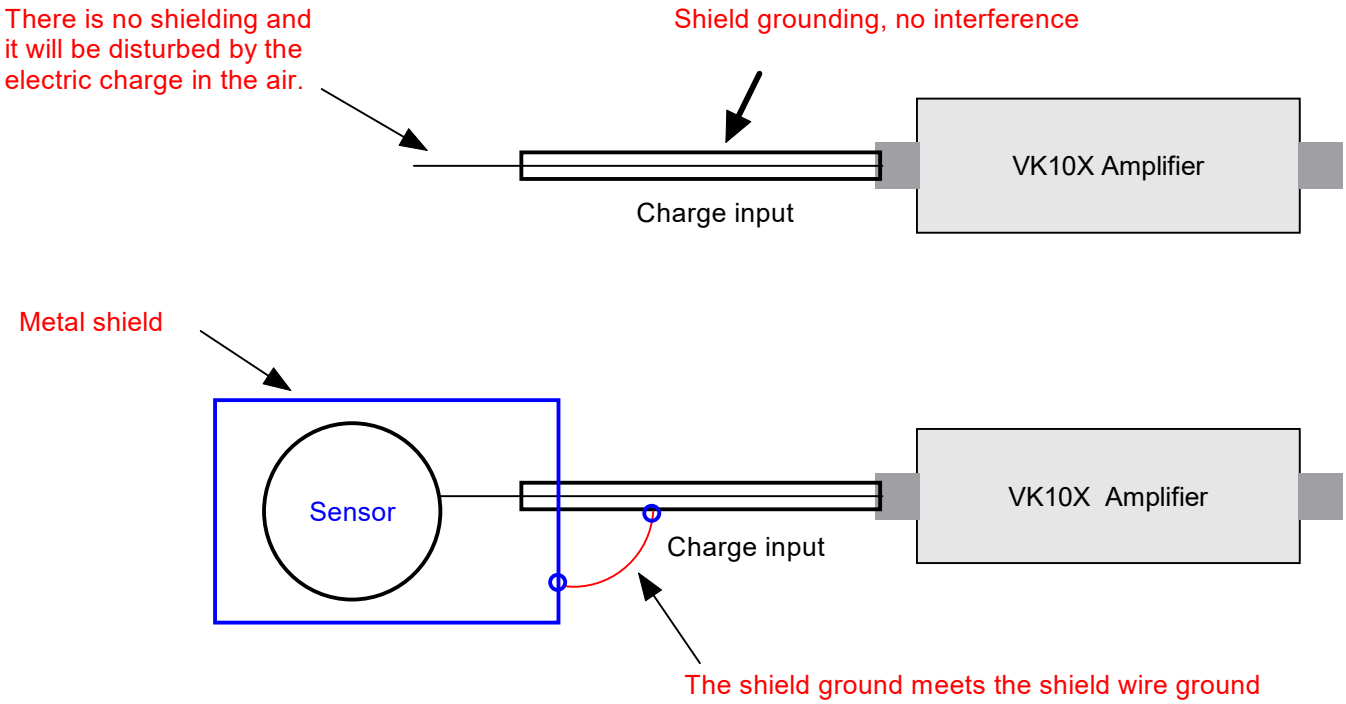
Notes for use

Charge input processing

The input of the charge amplifier is the charge signal, and the unit is coulomb(C), 1 Coulomb(C) = 1,000,000 Micro coulomb(uC)

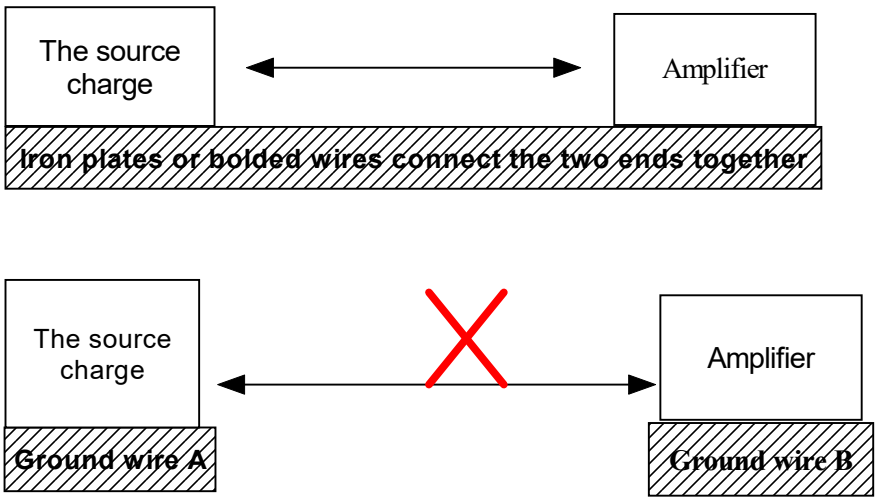
1 uC = 1000 nC = 1,000,000 pC

Charge for limited unit electronic components of the weak signal, so extremely vulnerable to air humidity, temperature and the influence of space charge distribution in. Especially when there are strong electric field in the space, electric conduction through the air charge to charge input resulting in interference. So charge input shielding input wire or the input source device as far as possible, try to avoid input directly exposed to the air.



Reference processing of charge input

If be measured between charge and charge amplifier, if the ground plane is not very strong, there will be a weak electric potential difference. In charge measurements, weak electric potential difference will lead to the output of the strong interference. So if the measurement between the source and amplifier or far altogether to poor circumstances, try to improve the total conditions in order to achieve good results.



Outline dimension drawing