

High DC Voltage Transducer

CE-VZ01-*4MSK-0.2

1 Overview

This product is a DC high voltage isolation transducer. It can be used to measure high DC voltage up to 5000Vdc, with full isolation between input, output and power supply, high isolation voltage, safe and reliable. This product is with the advantage of high precision, fast response, simple installation etc. It can be widely used in high DC voltage signal real-time detection or monitoring, data acquisition, industrial control, PLC monitoring and control and other automatic control system.

Features:

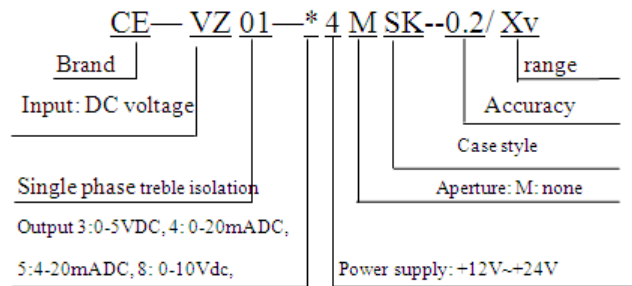
- Ø **High detection voltage:** up to 5000VDC;
- Ø **Wide power supply:** wide power supply, making the product can work well in the 12V ~ 36VDC power supply voltage range;
- Ø **High isolation voltage:** full isolation between the input, output and power supply;
- ⌌ Between the input and the output, isolation voltage is 10KVDC;;
- ⌌ Between the input and the power supply, isolation withstand voltage is 10KVDC;
- ⌌ Between output signal and auxiliary power supply, isolation voltage 6KVDC;
- Ø **High precision, small temperature drift:** ensure linear and long-term stability in accuracy range;
- Ø **Easy installation:** standard rail mounting and screw mounting;

2 Case Style



Figure 1, MSK product outline

3 Part Number



4 Specifications

Input range: 0~5000VDC;

Output: 0~20mA, 4~20mA, 10V, ±10V, 5V, ±5V;

Power supply: +12~24V DC;

Accuracy: 0.2;

Load capacity: ≥2KΩ (voltage output); ≤250Ω (current output);

Temperature drift: ≤100ppm/°C;

Isolation voltage:

Between the input signal and the output signal, isolation voltage 10KVDC, leakage less than 1mA, duration of 60 seconds;

Between the input signal and the auxiliary power supply, isolation voltage 10KVDC, leakage less than 1mA, duration of 60 seconds;

Between the output signal and the auxiliary power supply, isolation pressure 6KVDC, leakage less than 1mA, duration of 60 seconds;

Response time: ≤300 uS ;

Rated power consumption: <2.5W;

Output ripple: ≤10mV;

Surge impact immunity:

Input port: four 6000V (L-N / 2Ω / integrated wave)

Power port: four 4000V (L-N / 2Ω / integrated wave)

Analog I / O port: three 2000V (L-N / 40Ω / integrated wave)

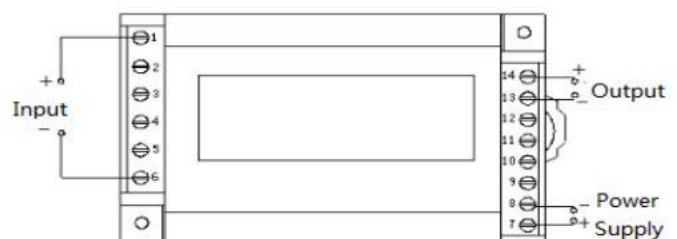
Input overload capacity: the maximum input voltage of 8KV, applied to repeat 10 times a second, interval 10S;

Operating temperature: -20~70°C; Humidity: ≤ 90% (no dew);

Storage temperature: -40 ~+70°C.

5 Connections Diagram

Figure 2, wiring diagram of CE-VZ01- * 4MSK with voltage or current output



6 Installations

DIN35 rail mounting or screw mounting, the installation size

as shown in figure 3 (in mm)..

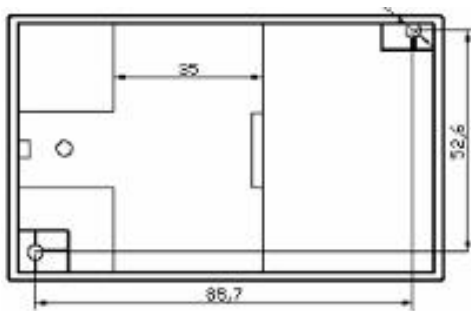


Figure 3, SK shape installation dimensions

7 Product's Service

1 Installation

1.1 DIN rail installation method:

- ① Fix the transducer on the side of the card slot and hook on the mounting rail;
- ② Pull the spring pin down;
- ③ Clip the transducer mount on the mounting rail;
- ④ Release the spring pin and clip the transmitter on the mounting rail.

1.2 Screw mounting method:

- ① 4mm diameter hole in the fixed plate according to the screw hole position shown in Fig. 3;
- ② Use the screw $\Phi 3.5$ to insert into hole and secure it.

2 Products factory has been accurately set according to the "product standard". Apply power after determine the correct wiring.

3 The maximum wire diameter of the terminal block is 2mm (16-26AWG). Remove the 4mm ~ 5mm insulation layer from the end of the mounting wire and insert it into the terminal block, then tighten the screw.

4 Product supply power requires the isolation voltage $\geq 2000\text{VAC}$, AC ripple $< 10\text{mV}$. Multiple transducers can share a common set of power supplies, but the power circuit can no longer be used to drive relays and other can produce spikes in the load, in order to avoid interference signal transmission to the transducer.

5 The transducers output 0-20mA (or 4-20mA), the RL standard is $\leq 250\Omega$, and 0-5V voltage output RL standard is $\geq 2\text{K}\Omega$, can guarantee the output accuracy and linearity over the entire rated input range.

6 The transducers should only be used in environment having no

static electricity, excessive dust, corrosive or explosive gases.

7 When measuring the voltage or current with the multi meter pen, please screw the terminal screw in the end, otherwise it may not measure the voltage or current output value.

8 Example of product accuracy level verification

1 According to the definition of the transducer terminal to connect the test circuit as shown.

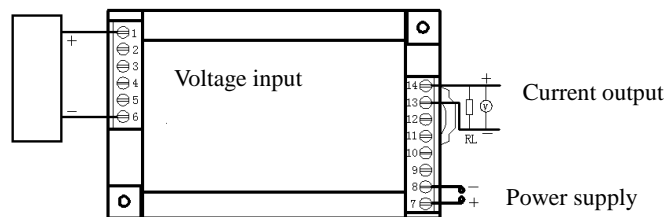


Figure 4, wiring diagram of accuracy test when voltage output

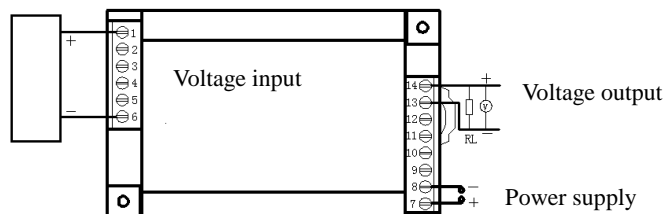


Figure 5, wiring diagram of accuracy test when current output

Note: The voltage output is measured with a voltmeter and the current output is measured with an I_o meter.

2 The test shall be carried out under the following environmental conditions:

- u Ambient temperature: $25^\circ\text{C} \pm 5^\circ\text{C}$;
- u Relative humidity: RH (45 ~ 80)%;
- u The accuracy is 0.05 above of the signal source and measurement instrument.

3 Power preheat 2min;

4 Voltage V input and monitoring methods:

Using the standard signal source to directly input voltage V, and record the standard signal source of the display data.

5 Assuming the transducer input is 0-3000VDC, the output is 0-5VDC, given an input value V in the transducer range, the theoretical output value (V_z) of the transducer is calculated as follows: (10V, $\pm 10\text{V}$, $\pm 5\text{V}$)

$$V_z = V \div 3000 \times 5\text{V}$$

If the output is 0-10V, then $V_d = V \div 3000 \times 10\text{V}$

If the output is 4-20mA, then $I_y = 4 + V \div 3000 \times 16\text{mA}$;

If the output is 0-20mA, then $I_z = V \div 3000 \times 20\text{mA}$;

6 The monitoring table measures the DC voltage output value V_o or the current output value I_o ;

$|V_o - V_z| \leq 10\text{mV}$ is normal, or excessive (0-5V output, 0.2);

$|I_o - I_z| \leq 20\mu\text{A}$ is normal, or excessive (0-10V output, 0.2);

$|I_o - I_z| \leq 32\mu\text{A}$ is normal, or excessive (4-20Ma output, 0.2);

$|I_o - I_z| \leq 40\mu\text{A}$ is normal, or excessive (0-20mA output, 0.2);

7 Repeat of 5,6 two operations, the resulting point error values are within the specified accuracy, the transmitter accuracy level qualified.

Note: Please consult with our company about the verification method detailed of other technical indicators.

9 Notes

1 Transducer for the integrated structure, not removable, and should avoid collision and fall.

2 The transducers are used in environments with strong electromagnetic interference. Standard precaution such as shielding the input and /or output lines should be observed. All lines should be as short as possible. If a group of transducers are mounted together, keep a space more than 10mm between adjacent units.

3 Only use the effective terminal of the transducer. The other terminals may be connected with the internal circuit of the transducer, and can't be used for other purposes.

4 Transducer has a certain anti-lightning ability, but when the transducer input and output feeders exposed to extreme bad environments, must be taken lightning protection measures.

5 Don't damage or modify the product label and logo. Don't disassemble or modify the transducer, otherwise the company will no longer provide the product "three guarantees" (replacement, returns, repair) services.

6 The transducers use flame-retardant ABS plastic shell package. which limit temperature is $+75^\circ\text{C}$. The shell will be deformed with high-temperature baking, and will affect product performance. Do not use or save the product near the heat source. Do not bake the product in a high-temperature oven.