

**Single phase AC voltage transducer
CE-VJ03-32MH1-0.2**

1 Overview

This product is a pin type single-phase AC voltage transducer. Applying the principle of electromagnetic isolation, the input AC voltage signal is converted to standard analog voltage output signal to realize measurement and monitoring of AC voltage signals. Its output and input have a good linearity. The product is widely used in telecommunications, electricity, railways, industrial monitoring and other fields.

Features:

- I Pin type mounting method, easy to install on the PCB board, reliable and firm installation;
- I Small size, convenient centralized installation, saving space;
- I High precision, low temperature drift and high reliability

2 Case style

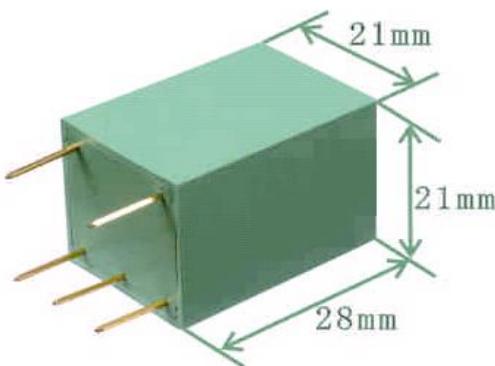


Figure 1: MH1 case style

3 Part Number

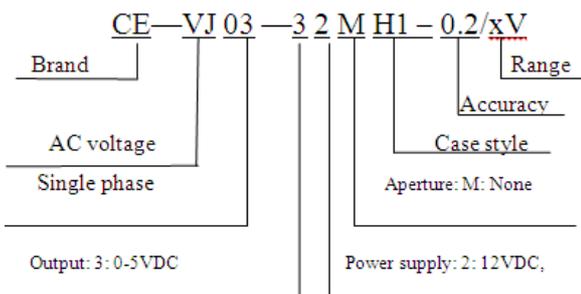


Figure 2 Product Selection Table

4 Specifications

- Test conditions: power supply: 12VDC, room temperature: 25°C.
- Input range: 0~1VAC ~ 300VAC
(The current limiting resistor is additionally provided, rated input current 1mAAC);
- Output: 0~5VDC;
- Power supply: 12VDC
- Accuracy: 0.2 class
- Load capacity: load $\geq 2K\Omega$
- Temperature drift: $\leq 200\text{ppm}/^\circ\text{C}$,
- Isolation voltage: $\geq 2500\text{VDC}$;
- Response time: $\leq 100\text{ms}$;
- Rated power consumption: 0.4W;
- Output ripple: $< 10\text{mV}$;
- Frequency range: 45Hz-65Hz;
- Surge impact immunity:
Power port level three $\pm 0.5\text{KV}$ (L-N/ 2Ω / integrated wave)
Analog port level three I/O $\pm 0.5\text{KV}$ (L-N/ 40Ω / integrated wave)
- Pulse group immunity: Input/power port $\pm 2\text{KV}$
Analog port I/O $\pm 1\text{KV}$
- Input overload capacity: 2 times the nominal value of the measured current;
- Operating temperature: $-10\sim 60^\circ\text{C}$, humidity: $\leq 95\%$ (no dew);
- Storage condition: $-40\sim +70^\circ\text{C}$, humidity: $\leq 95\%$ (no dew).

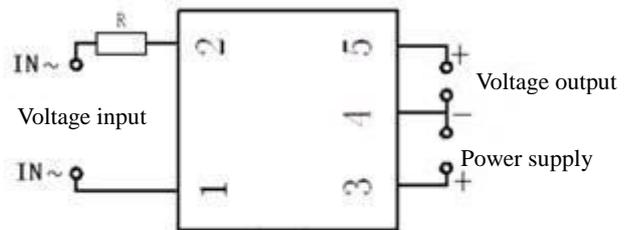


Fig. 3, Wiring diagram of CE-VJ03-32MH1 with voltage output

Remark: R is an external current-limiting resistor. It is specially configured according to the input voltage before shipping and cannot be mixed. Otherwise it will affect the detection accuracy.

6 Mounting Diagram

Pin type PCB board soldering installation

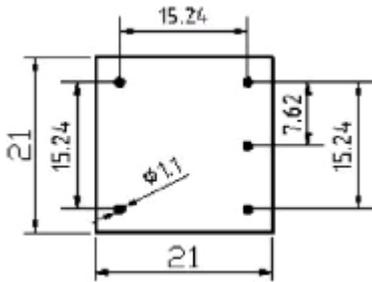


Figure 4, H1 installation dimensions

7 Product service

7.1 Installation method on PCB board: Insert the pins of the transducer into the PCB corresponding pads and solder firmly.

7.2 Products have been accurately calibrated according to the "product standard" before delivery. Apply power after determine the correct wiring.

7.3 The auxiliary power supply required isolation voltage $\geq 2000VAC$ and AC ripple voltage $< 10mV$, Multiple transmitters can share a set of power supplies. However, this power supply can no longer be used to drive spikes such as relays to prevent the transmission of interference signals to the transducer.

7.4 The transducer's output is 0-5V, $R_L \geq 1K\Omega$. Under this output condition can guarantee the output accuracy and linearity over the entire rated input range.

8 Example of product accuracy level verification

8.1 According to the transducer terminal definition to connect the circuit as shown.

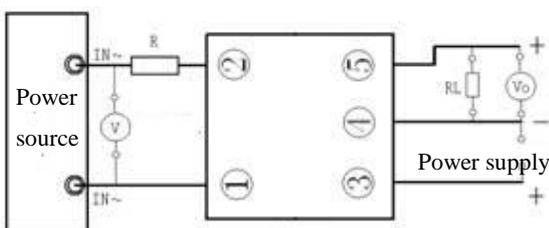


Figure 5, voltage output accuracy test wiring diagram

Note: The voltage output is measured with a Vo meter;

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

- I Power supply: nominal $\pm 5\%$, ripple $\leq 10mV$;
- I Ambient temperature: $25^\circ C \pm 5^\circ C$;
- I Relative humidity: RH(45~80)%;
- I The accuracy of the signal source and measuring instrument is 0.05 class above;

8.3 Power preheat 2min;

8.4 Voltage V input and monitoring methods:

- ① A high-precision voltage meter calibrator can be directly input voltage and record instrument calibrator display data;
- ② No high-voltage high-precision instrument calibrator, can use an ordinary high-precision instrument calibrator input to the transducer's input end. The precision voltmeter is parallel connection to the calibrator output end to detect input voltage.

8.5 Suppose transducer's input is 0-200VAC, External resistance is $200K\Omega$, output is 0-5VDC, given any input value V within the range of the transducer, then the expected theoretical output value of the transducer (V_z) is calculated in the following formula:

$$V_z = V \div 200VAC \times 5VDC$$

8.6 The monitoring meter measures the DC voltage output V_o and calculates the error between the standard value and the corresponding value according to the following formula:

$$|V_o - V_z| \leq 10mV \text{ is normal, otherwise exceeding (0-5Voutput, 0.2 class);}$$

8.7 Repeat 5, 6 two operations, the error value of each point in each phase is within the specified accuracy range, then the accuracy grade of the transducer is qualified.

Note: For verification of other technical indicators, please contact us.

9 Notes

9.1 Please pay attention to the power supply information on the product label, and the power supply grade used

by the transducer, otherwise it will cause damage to the product.

9.2 Integrated structure of the transducer, non-removable, and should avoid collision and fall

9.3 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.

9.4 The input value given on the transducer label refers to the effective value of the AC signal.

9.5 Can 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.

9.6 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.

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

9.8 The transducers use flame-retardant ABS plastic shell package. which limit temperature tolerance is +75 °C. The shell will be deformed with high-temperature baking, and will affect product performance. Do not use or store the product near the heat source. Do not bake the product in a high-temperature oven.