Single phase AC current transducer

CE-IJ03-**EW1-0.5

1 Overview

This device is an AC current transduce. Its input and output are completely isolated from each other, input AC current single, output DC current or DC voltage and other standard signals. The product has good accuracy, high isolation voltage, low temperature drift, small size and easy installation and so on. It can be widely used in real-time detection/monitoring system of AC current signal, especially suitable for the field of coal mine, communication, electric power, railway and industrial control.

Features:

- High precision, better than 0.5;
- Low temperature drift, temperature drift does not exceed the accuracy range, and stable;
- Output for lead-style, simple and reliable;

2 Case style

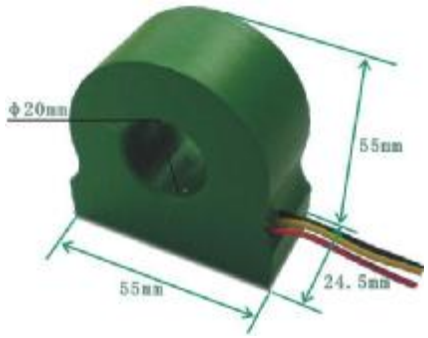
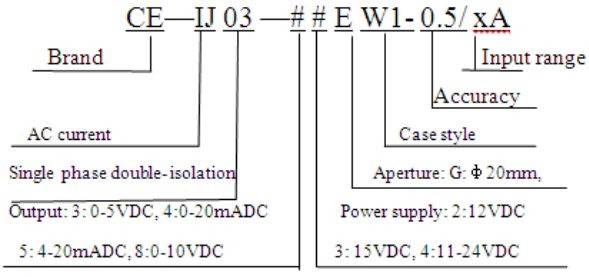


Figure 1, Appearance of CE-IJ03-##EW1

3 part number



4 Specifications

Test conditions: power supply: +24V, room temperature: 25℃;

Input range: 0~5AAC~700AAC

Output: 5VDC, 10VDC, 4~20mA, 0~20mA;

Power supply: 12VDC, 15VDC, 24VDC

Accuracy: 0.5 class

Load capacity: load≥2KΩ (voltage output)

Load ≤250Ω (current output)

Temperature drift: ≤300ppm/℃

Isolation voltage: 2500 V DC

Response time: ≤300 mS

Rated power consumption: ≤0.75W (≤30mA)

Output ripple: ≤10mV

Frequency range: 45~65Hz(Up to 5K, order instructions)

Surge impact immunity:

Power port one–level±0.5KV (L-N/2Ω/integrated wave)

Analog I/O port one-level±0.5KV (L-N/40Ω/integrated wave);

Burst immunity: Input / power port ±2KV

Analog I/O ±1KV

Input overload capacity: 20 times of the measured current nominal value（Maximum 500A）（Apply one second repeat 5 times, interval 300S）;

Operating condition: Temperature:-10~60℃;

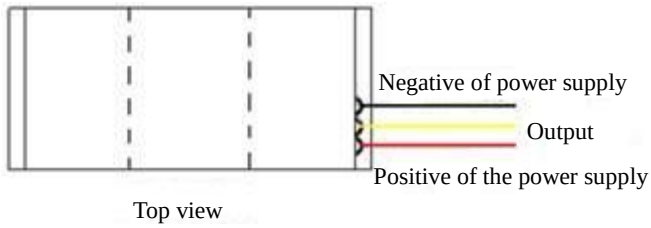
Humidity: ≤95% (no dew)

Storage conditions: Temperature: -55~65℃;

5 Connections Diagram

(For reference only, the actual application please refer to the wiring diagram on the product)

Figure 3, wiring diagram of CE-IJ03-**EW1with voltage and current output



Top view

Product output lead definition: the red lead is the positive of power supply, the yellow lead is the output signal line of the product, the black lead is the negative of the power supply.

6 Installations

Using current-hole screw fixed installation, the current aperture is φ20mm.

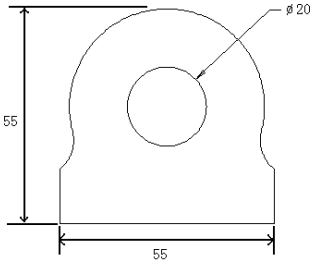


Figure 4, installation dimensions of W1 (unit: mm)

7 Product's Service

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

2 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.

3 0-20mA (or 4-20mA) output, RL standard ≤250Ω, 0-5V voltage output, RL standard ≥2KΩ, to ensure that the output accuracy and linearity of entire rated input range.

8 Example of product accuracy level verification

1 Connect the test circuit as shown.

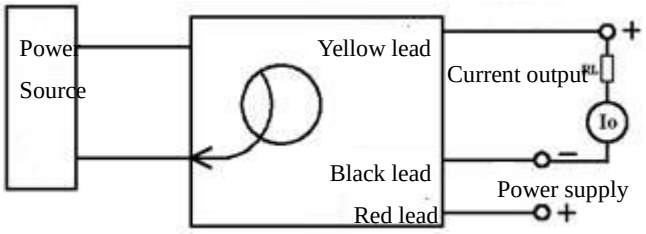
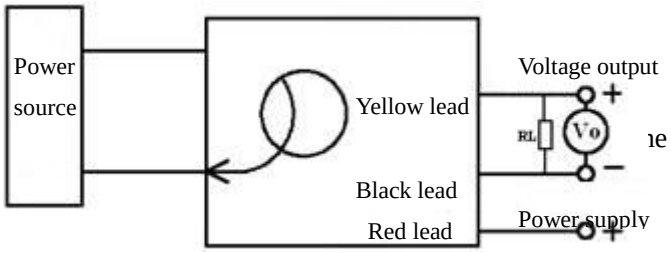


Figure 5, accuracy test wiring diagram of current output



- Ø Ambient temperature: 25 ℃ ±5 ℃;
- Ø Relative humidity: RH (45 ~ 80)%;
- Ø The accuracy of the signal source and measuring instrument is 0.05 class above.

3 Power preheat 2min;

4 Current I input and monitoring methods:

①A high-precision high-current meter calibrator can directly input AC current I, and record the display data of the meter calibration instrument.

②No high-current high-precision instrument calibrator, but there is an ordinary high-precision instrument calibrator. Use ampere-turn method to output small current (5A, 10A or higher), and input it to the transducer input coil. The precision ammeter is tandem connection to the calibrator output end to detect input current, and convert the input current I value according to the ampere-turn method.

5 Suppose transducer's input is 0-300AAC, output is 0-5VDC, given any input value I within the range of the transducer, then the expected theoretical output value of the transducer (Vz) is calculated in the following formula:

$$Vz = I \div 300 \times 5V$$

If the output is 4-20mA, then Iz = 4+I÷300×16mA;

If the output is 0-20mA, then Iz = I÷300×20mA;

6 Measure the DC voltage output Vo or the current output Io with the output monitoring table.

$|Vo-Vz| \le 25mV$ is normal, otherwise exceeding (0-5V output, 0.5class);

$|Io-Iz| \le 90uA$ is normal, otherwise exceeding (4-20mAoutput, 0.5class);

$|Io-Iz| \le 100uA$ is normal, otherwise exceeding (0-20mA output, 0.5class);

Repeat the two operations 4 and 5, the resulting error value of each point $|Vo-Vz| \le 25mV$ or $|Io-Iz| \le 90uA$, the accuracy of the transducer level is qualified.

Note: please consult with our company for the verification method of other technical indicators.

9 Notes

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.

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

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.

4 The input value given on the transducer label is the RMS value of the ac signal.

5 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.

6 The transducers use flame-retardant ABS plastic shell package. which limit temperature tolerance is +75 ℃. 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.