

## 3-phase AC Current Transducer

### Instructions

#### CE-IJ31-##DS5-0.5

#### 1 Overview

This device is a 3-phase AC current isolation transducer. Using the principle of electromagnetic isolation, can sampling the three-phase AC current, isolate and linearly output standard DC voltage or DC current signal. The signal of input and output are electrically isolated from each, there is a complete linear relationship between them. The product is with good precision, high isolation pressure, low temperature drift, small size, easy installation, etc., can be widely used in electric power, communications, railway, industrial control and other fields.

#### Features:

- Ø High precision: better than 0.5
- Ø Frequency response: 40Hz ~ 400Hz
- Ø High stability: obvious advantages of temperature drift, bandwidth and accuracy
- Ø Easy to use: standard industrial signal output can be directly connected with the PLC device
- Ø Easy installation: the use of standard rail mounting and screw mounting

#### 2 Case Style



Figure 1 product outline

#### 3 Part Number

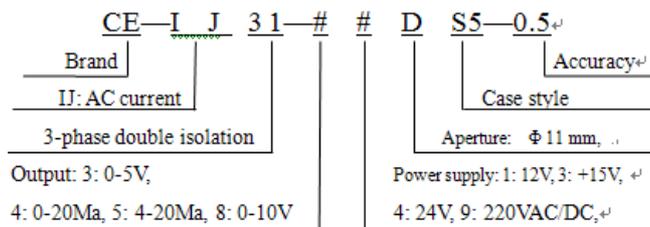


Figure 2 Product Selection Table

#### 4 Specifications

- Power supply: 12VDC, 15VDC, 24VDC, 220VAC (optional);
- Input range: 0~200AAC;

- Output: 0~5V, 0~20mA, 4~20mA, 0~10V (optional) ;
- Accuracy: 0.5;
- Load capacity: voltage output ≥ 1KΩ, current output ≤ 300Ω;
- Temperature drift: <300ppm/°C;
- Isolation voltage: DC 2500V;
- Response time: ≤300 mS;
- Rated power consumption: ≤1W, ≤2W
- Output ripple: ≤10mV
- Frequency range: 45~65Hz (up to 5K, please specify when ordering)
- Surge Immunity:
- Power port level± 0.5KV (L-N / 2Ω / integrated)
- Analog I / O port a ± 0.5KV (L-N / 40Ω / integrated wave);
- Impulse immunity: input / power port ± 2KV
- Analog I / O port ± 1KV
- Input overload capacity: 20 times the nominal value of the measured current (maximum 500A), apply a second (repeat 5 times, interval 300S).
- Operating temperature: -20°C ~ +70°C;
- Storage temperature: -55 ~ +65°C; humidity: ≤95% (no dew).
- Installation: rail or screw installation.

#### 5 Connections Diagram

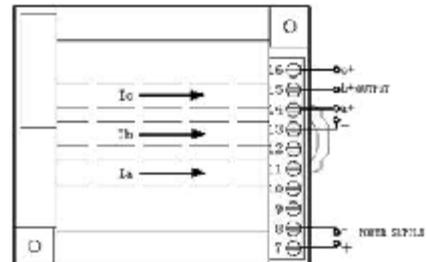


Figure 3 Product wiring diagram (current punch input)

#### 6 Mounting Diagram

Rail mounting dimensions: 35mm; screw mounting dimensions: 76X57.8mm. As shown in Figure 5 (in mm).

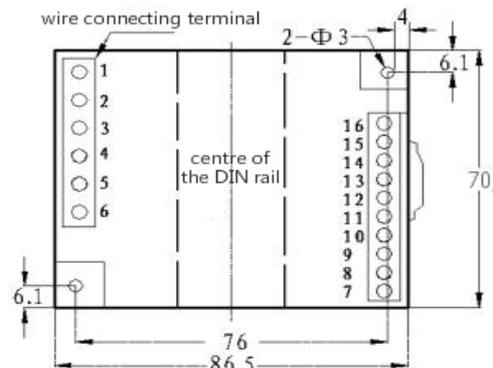


Figure 4 installation dimensions

**7 Product's Service**

1 Installation

1.1 DIN rail mounting method:

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

1.2 Screw mounting method:

- ①4mm diameter hole in the fixed plate according to the screw hole position shown in Fig. 4;
- ② Use the screw smaller than Φ3.5 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 ≥ 2000VAC, AC ripple <10mV.

5 The transducers output 0-20mA (or 4-20mA), the RL standard is ≤250Ω, and 0-5V voltage output RL standard is ≥ 1KΩ, can guarantee the output accuracy and linearity over the entire rated input range.

6 The transducer should only be used in environment having no static electricity, excessive dust, corrosive or explosive gases.

7 When measure the voltage or current with the multi meter, the terminal screw should be screwed to the end, otherwise the voltage or current output value may not be measured.

**8 Example of product accuracy level verification**

1 According to the transducer terminal definition to connect the circuit

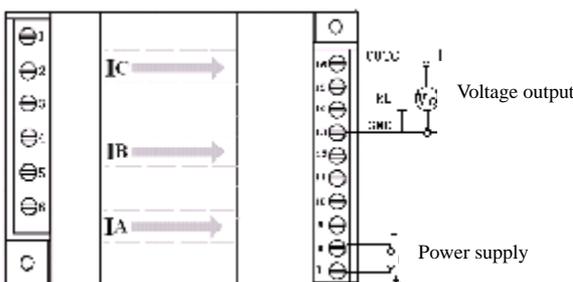


Figure 5 Accuracy test wiring diagram of voltage output

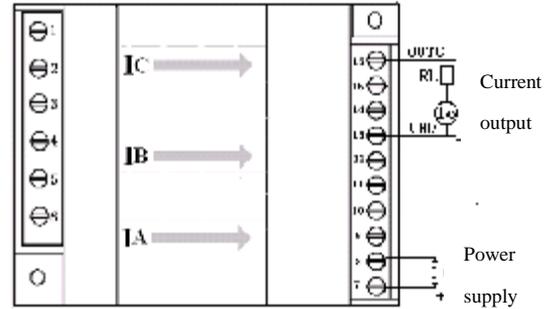


Figure 6 accuracy test wiring diagram of current output

**Note:** only for the C phase output wiring diagram, if you want to measure A, B phase output, connect the output to the corresponding positive phase. The voltage output is measured with a voltmeter and the current output is measured with an Io meter.

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

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

3 Power preheat 2min;

4 Current I input and monitoring methods

Directly input current with the standard signal source and record the standard signal source display data;

Assuming that the transducer input is 0-50AAC, the output is 0-5VDC, give an input value I, within the range of the transducer, the expected theoretical output (Vz) of the transducer is calculated as follows:

$$Vz = i \div 50 \times 5V$$

If the output is 4-20mA, then  $Iz = 4 + i \div 50 \times 16mA$ ;

If the output is 0-20mA, then  $Iz = i \div 50 \times 20mA$ ;

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

| Vo-Vz | ≤25mV is normal, or excessive (0-5V output);

| Io-Iz | ≤80uA is normal, or excessive(4-20mA output);

| Io-Iz | ≤100uA is normal, or excessive(0-20mA output, 0.5).

6 Repeat 5 and 6 two operations, the resulting point | Vo-Vz | value are ≤25mV or | Io-Iz | ≤80uA, the accuracy of the transducer level is qualified.

**Note:** The Other technical indicators of the verification methods detailed consultation with our company.

**9 Notes**

1 Please pay attention to the power supply information on the product

label, and the power supply used grade of the transducer, otherwise it will cause the product to be damaged.

2 Transducer for the integrated structure, not 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 refers to the RMS value of the ac signal.

5 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.

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.

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.

8 The transducers use flame-retardant ABS plastic shell package. which limit temperature is +75 °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.