

## Split Core 1-phase AC Current Transducer

### CE-IJ03-\*0GS4-1.0

#### 1 Overview

This device is a split core self-powered 1-element ac current transducer. The input and outputs are electrically isolated from each other. It needs no external power supply, low power consumption, easy installation, and good security. Its opening and closing methods used to easily achieve the current measurement, isolated output standard signal, the output signal and the input signal into a linear relationship. It can be applied widely to various measuring and controlling systems such as communication system, electrical power system, railway and various industrial control systems.

#### Features:

- Ø High accuracy, better than 1.0;
- Ø Low drift, high reliability;
- Ø Opening and closing method of measurement, with self-locking protection, easy on-site installation;
- Ø Built-in toggle switch, can be converted for each three ranges

#### 2 Case Style

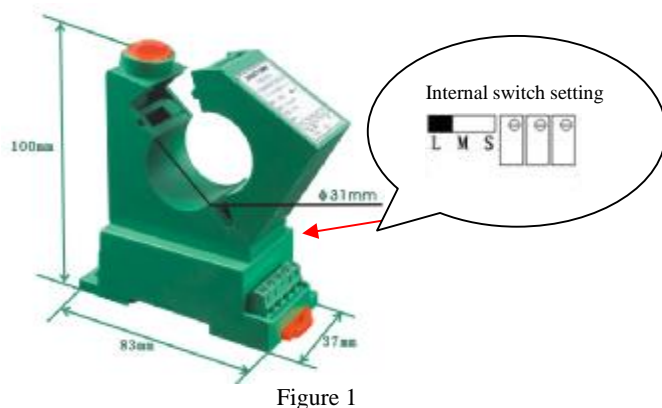
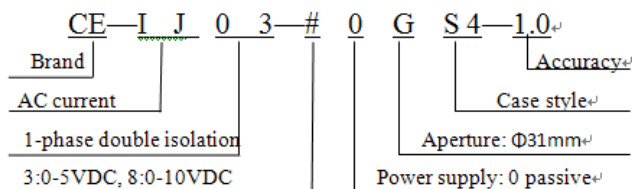


Figure 1

#### 3 Part Number



#### 4 Specifications

Input Range: 0~10AAC~500AAC;

Frequency: 50Hz/60Hz;

Rated output: 0-5V/0-10V

Accuracy: 1.0%

Load capability:  $\geq 1M\Omega$ ;

Temperature drift:  $\leq 100ppm/^{\circ}C$

Isolation voltage:  $\geq 2500V$  DC;

Response time:  $\leq 200ms$ ;

Rated power consumption: none;

Output ripple:  $\leq 5mV$ ;

Frequency range: 45~65Hz (up to 5K, please specify when ordering) ;

Surge impact immunity:

Power port level  $\pm 0.5KV$  (L-N/2 $\Omega$ /integrated wave)

Analog I/O port level  $\pm 0.5KV$  (L-N/40 $\Omega$ /integrated wave);

Impulse immunity: input / power port  $\pm 2KV$ ,

Analog I/O port  $\pm 1KV$ ;

Overload: 20 times of full span and 500A anyway, apply a second (repeat 5 times, interval 300S);

Operating temperature: 0 ~ 50 $^{\circ}C$ ; humidity:  $\leq 95\%$  (no dew);

Storage temperature: -55 ~ +65 $^{\circ}C$ ; humidity:  $\leq 95\%$  (no dew).

#### 5 Connections Diagram

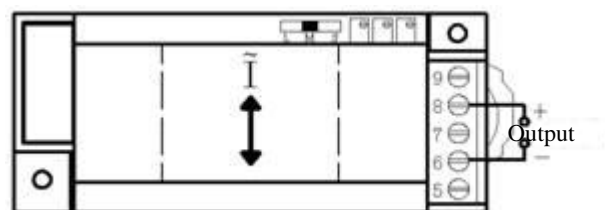


Figure 2 Connections diagram with voltage output

#### 6 Mounting diagram (mm)

DIN35 rail mounting or screw mounting, the installation size shown in Figure 3 (in mm)

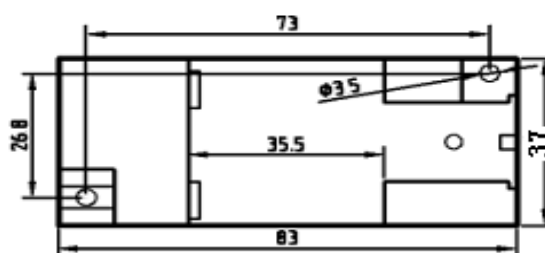


Figure 3, Installation Dimensional Drawing

#### 7 Range setting

Figure 1, open the settings window of product shell, there is a third gear pull switch. Switch to the S-bit is the minimum range, the switch to the M-position is the middle range, and switch to the L-position is the maximum range. Example CE-IJ03-80GS4-1.0 / 200A range setting, as shown in Figure 4. The switch to S-bit represents the minimum input range of 100A, switch to the middle of M represents the middle input range of 150A, switch to the left L-bit represents the maximum the input range is 200A. Other

range setting methods are similar with the example.

See the following table for details.

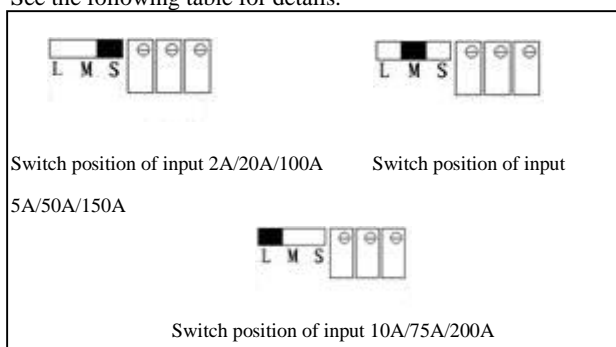


Figure 4 Switch settings

	CE-IJ03-30GS4-1.0/10A	
	input	output
	CE-IJ03-30GS4-1.0/75A	
	input	output
Switch to the right S-bit	20A	0~5V
Switch to the median M-bit	50A	0~5V
Switch to the left L-bit	75A	0~5V
	CE-IJ03-30GS4-1.0/200A	
	input	output
Switch to the right S-bit	100A	0~5V
Switch to the median M-bit	150A	0~5V
Switch to the left L-bit	200A	0~5V

	CE-IJ03-80GS4-1.0/75A	
	input	output
Switch to the right S-bit	20A	0~10V
Switch to the median M-bit	50A	0~10V
Switch to the left L-bit	75A	0~10V

	CE-IJ03-80GS4-1.0/200A	
	input	output
Switch to the right S-bit	100A	0~10V
Switch to the median M-bit	150A	0~10V
Switch to the left L-bit	200A	0~10V

## 8 Product's Service

### 8.1 Installation

#### 8.1.1 Rail installation

①The transmitter 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.

### 8.1.2 Screw mounting method

①3 mm diameter hole in the fixed plate according to the screw hole position shown in Fig. 3;

② Use the screw smaller than  $\Phi 3$  to insert into hole to secure it.

8.2 After the product is fixed, the measured current wire or coil is put into the product opening groove, the open shell is closed, Then push the red arrow on the knob to rotate clockwise to the latch to lock the active opening housing.

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

8.4 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. Tighten the screw.

8.5 RL standard for 0-5V voltage output  $\geq 1M\Omega$ , can guarantee the output accuracy and linearity of entire rated input range.

## 9 Example of product accuracy level verification

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

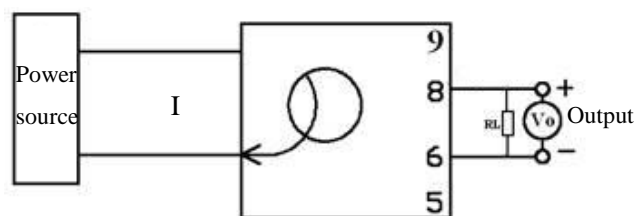


Figure 5 voltage output product accuracy test wiring diagram

**Note:** The voltage output is measured with the voltmeter.

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

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

9.3 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 a 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.

9.4 Assume that the transducer's input is 0-300 AAC and the output is 0-5VDC. Given an input value I within the range of the transducer, the expected theoretical output ( $V_z$ ) of the transducer is calculated as follows:

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

9.5 Measure output  $V_o$  of DC voltage value with output monitor meter:  $|V - V_z| \leq 50mV$  for normal, or excessive (0-5V output, 1.0);

9.6 Repeat 4,5 two operations, the resulting points  $|V_o - V_z| \leq 25mV$ , the verification methods detailed accuracy of the transducer level is qualified.

**Note:** Please consult with our company for the verification methods detailed of other technical indicators

## 10 Notes

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

10.2 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.

10.3 The input value given on the transducer label refers to the RMS value of the ac signal.

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

10.5 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.

10.6 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.

10.7 The transducers use flame-retardant ABS plastic shell package. which limit temperature is  $+75^\circ C$ . 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.

10.8 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.