

Self Power 3-element AC High Current Transducer

Instructions

CE-IJ31-80RW6-0.5

1 Overview

This device is a self-power 3-element AC high current isolation transducer. The input and output are electrically isolated from each other, there is a complete linear relationship between them. It can be widely used in motor current real-time monitoring, and motor over current protection equipment/system, such as motor in coal mine excavator.

Features:

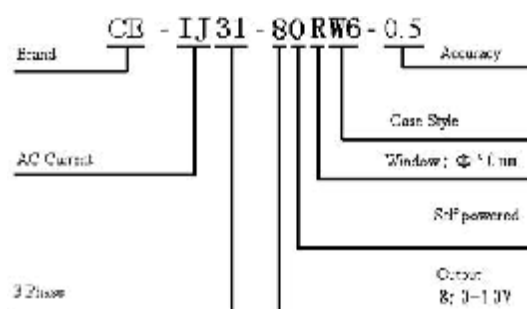
- Ø High impact current, detect the instantaneous current up to 3000A, can be used for motor starting current detection and motor short-circuit current protection.
- Ø Use the electromagnetic isolation technology, stable performance, low temperature drift.
- Ø The terminal uses the compression spring way, does not need the screw knob, the lead wire installment simple convenient.
- Ø high precision, accuracy is better than 0.5.

1 Case Style



Figure 1, RW6 case shape

2 Part Number



4 Specifications

Input range: 0~3000A (Long-term input current 1500A) ;
 Output range: 0-10V;
 Accuracy: 0.5;
 Load capacity: load $\geq 2K\Omega$;
 Temperature drift: $\leq 50\text{ppm}/^\circ\text{C}$
 Isolation voltage: AC 6000V (50Hz). Leakage less than 1mA, last

60 seconds;

Response time: 40 mS ~300mS (Response time increases as input range decreases)

Rated power consumption: none

Output ripple: $\leq 10\text{mV}$;

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

Surge impact immunity:

Power port level $\pm 2\text{KV}$ (L-N/2 Ω /integrated wave)

Analog I/O port level $\pm 2\text{KV}$ (L-N/40 Ω /integrated wave);*

Impulse immunity: input / power port $\pm 2\text{KV}$

analog I/O port $\pm 1\text{KV}$;

Input overload capacity: 20 times the nominal value of the measurement current (maximum 500A)

(Applying a repetition of five times a second, interval 300S);

Operating temperature: -20~ 75 $^\circ\text{C}$; humidity: $\leq 95\%$ (no dew);

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

Installation: screw installation.

5 Connections Diagram

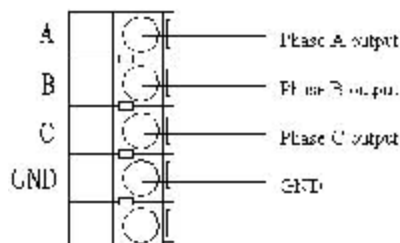


Figure 2, CE-IJ31-80RW6 self power 3-phase AC current isolation transducer wiring diagram.

6 Installations

Screw mounting, the installation size shown in Figure 3 (in mm).

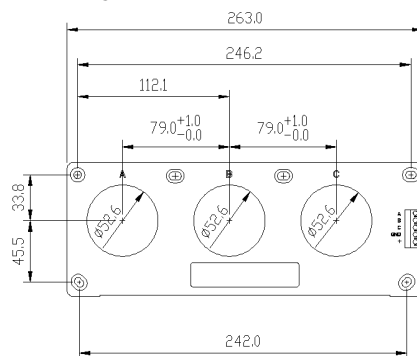


Figure 3: installation drawings

7 Product's Service

- 1 When mounting, use a screw to secure it through the screw holes in the product housing.
- 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 1.3mm (16-26AWG). Remove the 4mm ~ 5mm insulation layer from the end of the mounting wire. Press the compression spring of terminal, insert the installation wire into the terminal hole, release the compression spring terminal of terminal, you can install the lead.

8 Example of product accuracy level verification

1 According to the transducer terminal definition, connect the experimental circuit as shown.

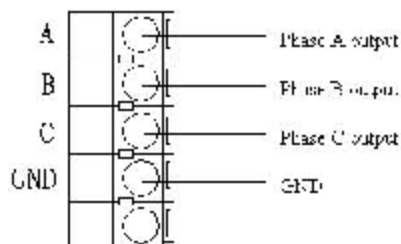


Figure 4 CE-IJ31-80RW6 precision test wiring diagram

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

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

3 Power preheat 2min;

4 Current I input and monitoring methods:

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

5 Assuming that the transducer input is 0-1000AAC, the output is 0-10VD, Give an input value I_{in1} , within the range of the transducer, the expected theoretical output (V_z) of the transducer is calculated as follows:

$$V_z = I_{in} \div 1000 \text{AAC} \times 10 \text{VDC}$$

6 Measure the DC voltage output value V_o with the output monitoring table.

$|V_z - V_o| \leq 50 \text{mV}$ for normal, or excessive(output 0-10VDC, 0.5) ;

7 Repeat 5 and 6 two operations, the resulting point error values are within the specified accuracy range, the transmitter accuracy level pass.

Note: other technical indicators of the verification method detailed consultation with our company.

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 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 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.
- 8 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.