



Mianyang Weibo Electronic Co.,Ltd

*Designing, Manufacturing and Supplying WB Series Electric Isolated Sensor and Digital
Electrical Transducer since 1989*

USER MANUAL

WBI414N21 AC Current Sensor

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Fax Line: +86 816 2281934

ISO9001 ISO14000 ISO18000

Certified

Quality Warranty

Any quality problem found in WB series products, we offer

Three years free charge of repair the products, and six months guaranteed free charge of change and return the products.

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WBI414N21 AC Current Sensor

Safety Claim

The information in the safety claim of the equipment documentation is intended to ensure that equipment is properly installed in order to maintain it in a condition.

It is assumed that everyone who would be associated with the equipment should be familiar with the contents of that safety section, or this safety guide.

When electrical equipment is in operation, dangerous voltages will be present in certain parts of the equipment (e.g. the input terminal). Failure to observe warning notices, incorrect use, or improper use may endanger personnel and equipment and cause personal injury or physical damage.

Before working in the terminal strip area, the equipment must be isolated.

Proper and safe operation of the equipment depends on appropriate shipping and handling, proper storage, installation and commissioning, and on careful operation, maintenance and servicing.

The operating manual for the equipment gives instructions for its installation, commissioning, and operation. However, the manual cannot cover all conceivable circumstances or include detailed information on all topics. In the event of questions or specific problem, do not take any action without proper authorization. Contact the appropriate WB technical sales office and request the necessary information.

Standard Application

1. Accuracy

Accurate degree is conformed to IEC688:1992

2. Safety

2.1 Overload capability

Overload capability is conformed to IEC688:1992

2.2 Isolation voltage

Can be endured testing voltage is conformed to Q/72085584-0.1-2004

2.3 Insulation impedance

The insulation impedance is no less than 20M Ohm, is conformed to Q/72085584-0.1-2004

3. Electromagnetic Capability

3.1 Electromagnetic field immunity test according to IEC 61000-4-3:1995

3.2 Power frequency magnetic field immunity test according to IEC 61000-4-8:1993

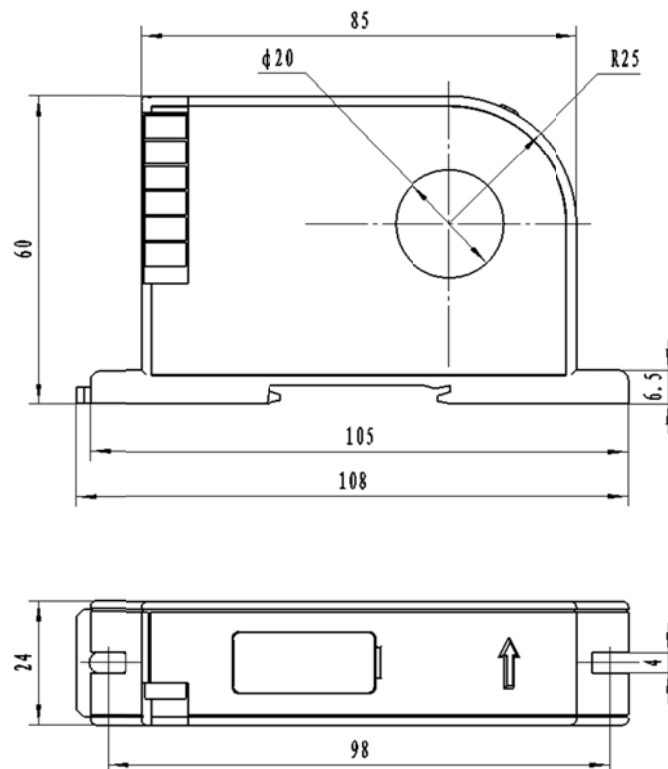
Product Description and Application



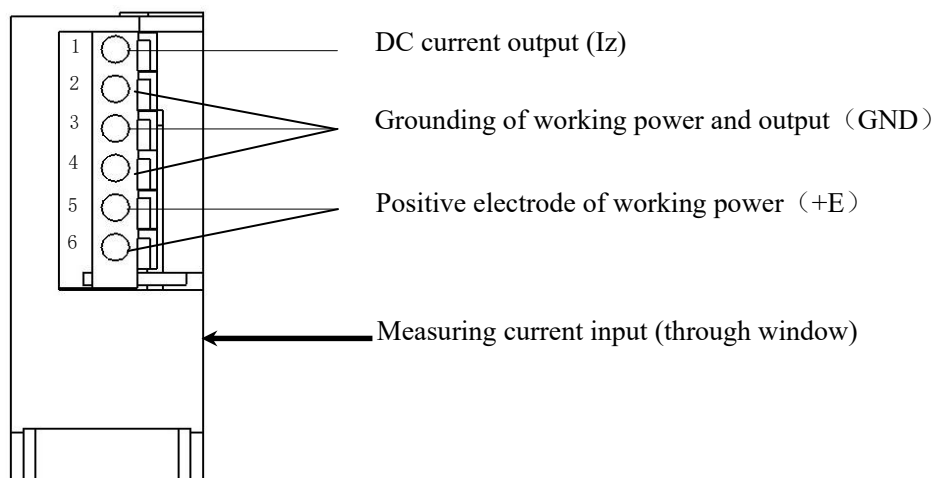
This product adopts the special isolation module for real time measurement of AC current from power grid or circuit. It is converted to 0mA~20mA or 4mA~20mA DC current (I_z) output, and the characteristics of high precision, high isolation, wide frequency response, low drift, low power consumption, wide temperature range and strong anti-interference ability.

This product adopts DIN Mounting Rail structure, convenient installation and disassembly. It is suitable for real-time measurement of power system, post and telecommunications system, railway monitoring system and so on.

Product Dimensional Drawing (unit: mm)



Connecting Terminals Definition Drawing

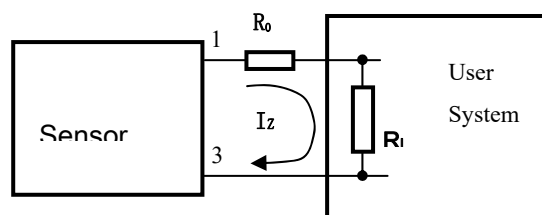


Key Technical Data:

1. Input: AC 30A~400A;
2. Output: DC 0~20mA, 4~20mA;
3. Accuracy : 0.2%;
4. Linear Range: 0%~120% nominal input ;
5. Responding Time: $\leq 300\text{ms}$;
6. Overload Capacity: 20 times of nominal input, hold for 1s, interval of 300s, repeat 5 times;
7. Load Capacity: 6V;
8. Isolation Voltage: AC 2.5kV, 1 minute;
9. Frequency Range: 25Hz~5kHz;
10. Auxiliary Power: DC +12V, +15V, +24V;
11. Static Current: $\leq 15\text{mA}$;
12. Output Ripple: $\leq 10\text{mV}$ (Effective value. When the output load is 250 Ω);
13. Ambient Temperature: $-25^\circ\text{C}\sim+70^\circ\text{C}$;
14. Weight: 120g;
15. MTBF(mean time between failures): $> 50000\text{hours}$;
16. Drifting by Temperature: 150ppm/ $^\circ\text{C}$;
17. Surge (Surging) Immunity: GB/T 17626.5;
18. Electrostatic Discharge Immunity: GB/T 17626.2;
19. Electric Fast Transient Burst Immunity: GB/T 17626.4.

Instruction of Installation and Use

- Installation: DIN Mounting Rail structure, easy installation, suitable for type NS35/7.5, NS35/15 or European type EN50022(standard lead rail).The installation steps are as below:
 - ①Hook the card slot of the sensor on the installation lead rail;
 - ②Pull the spring pin down;
 - ③Rotating sensor, make it mount on the installation lead rail;
 - ④Release the spring pin, make sure the sensor is fixed on the lead rail.
- The sensor has been calibrated according to the **Product Standard**, before out of the factory. After correct wiring, it can be powered and used immediately. The red indicator lights up after the power is added. When it is measured accurately, please sampled after the preheating 3 minutes.
- The sensor has no special requirements for auxiliary power. The ordinary 7800 series 3 terminal voltage regulator can be used for self-control, multiple sensors can share one auxiliary power which's isolation voltage is required $\geq AC2000V$, DC output ripple $< 10mV$.
- Less than AC 10A of the current measurement can use ampere-turn input mode, at this point, the resolution of the sensor is increased and measuring range is narrowed. Other technical index are not affected.
- Please pay attention to the positive direction of the input signal, According to the Connecting Terminals Definition Drawing, when the direction of current specified in the diagram is perforated, the "Iz" output is in phase with the input signal, otherwise the phase difference is 180 degrees.
- Iz output is based on the design of maximum 250Ω standard load resistors. When the load resistor R_L is less than 100Ω , the reducing resistor R_0 should be connected into the current-output loop circuit of the sensor, so that the sum of the load resistance is between 100Ω and 250Ω .



Caution:

- Pay attention to the auxiliary power information, especially the auxiliary power grade, and polarity, otherwise will damage the product.

2. Pay attention to the wire connection; wrong terminal connection will cause malfunction of the product and even damage the product;
3. Don't dismantle the product, and carry with care to avoiding bump and fall of the product;
4. If the product has been using under the environment with strong magnetic field interference, please pay attention to the shield of input wire, and the output signal wire should be as short as possible. For product intensive installation, the space between each product should not be smaller than 10mm.
5. Only use identified terminals.
6. There is no lightening strike prevention circuit design in this product. For out door and hazardous environment using, please add protective alternatives.
7. This product uses fire prevent ABS crust, its temperature withstand is only limited as +85°C, higher than this limitation will cause the product deformation. Please use and store carefully.