



Mianyang Weibo Electronic Co.,Ltd

Designing, Manufacturing and Supplying WB Series Electric Isolated

Transducer and Digital Electrical Transducer since 1989

USER MANUAL

WBT2C4CU05 Standard Signal Regulator

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ISO9001 ISO14000 ISO18000

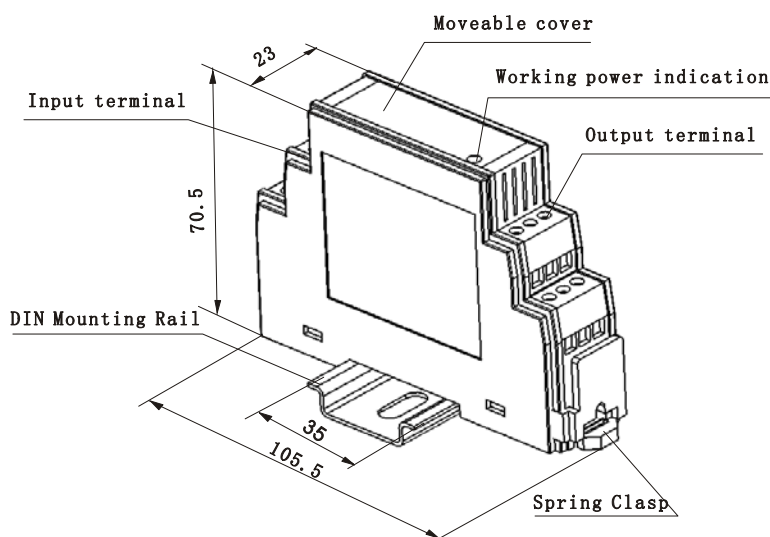
Certified

WBT2C4CU05 Standard Signal Regulator

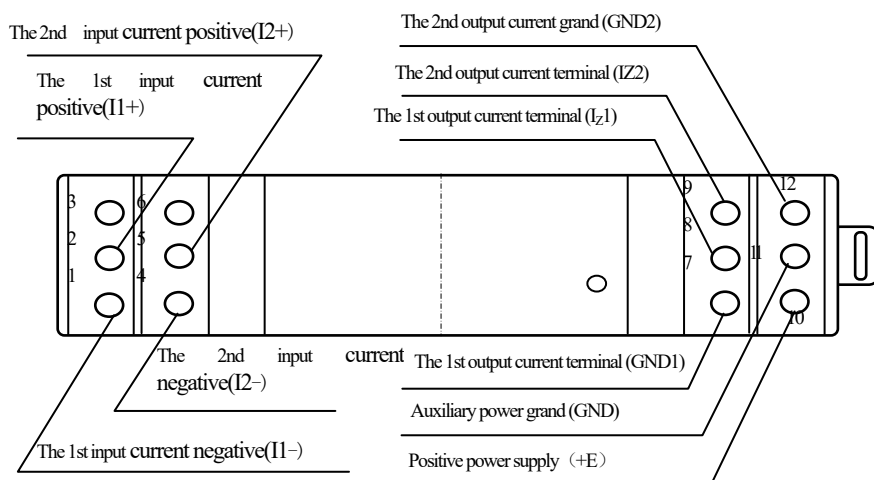
Product Description and Application

This product uses linear photoelectric isolation technology to isolate and transmit 2 channel 4mA~20mA DC current signals. This product is an independent two-way three-isolation product, that is, the input, output and auxiliary power supply of each channel are electrically isolated from each other. This product has the characteristics of high accuracy, high isolation, low drift and low power consumption. Solve the common mode interference in the signal transmission process of sensors or meters, overcome the ground loop interference and strong electrical interference caused by the long transmission distance of scattered collected signals, especially suitable for use with sensors/transmitters and meters that require electrical isolation .

Product Dimensional Drawing (unit: mm)



Product Terminal Identification Drawing



Terminals not defined in the figure can't be used.

Key Technical Data:

1. Input specifications: dual-channel DC 4mA~20mA;
2. Output specifications: dual-channel DC 4mA~20mA;
3. Accuracy level: 0.2;
4. Equivalent input impedance: about 250Ω;
5. Linear range: 0%~120% nominal input;
6. Response time: 120ms;
7. Overload capacity: 2 times the nominal input current, lasting 5s;
8. Maximum load capacity:
 - When the auxiliary power supply of the product is +24V, 500Ω;
9. Auxiliary power supply: DC 24V;
10. Quiescent current: 50mA;
11. Isolation withstand voltage: between input and output>DC 1kV, 1min,
 - Between power supply and output>DC 1kV, 1min,
 - Between power supply and input>DC 1kV, 1min,
 - Between two inputs>DC 1kV, 1min,
 - Between two outputs> DC 1kV, 1min;

12. Output ripple: $<10\text{mV}$ (effective value, when the output load is 250Ω);
13. Temperature drift: $150 \times 10^{-6}/^{\circ}\text{C}$;
14. Ambient temperature: commercial grade: $0^{\circ}\text{C} \sim 50^{\circ}\text{C}$,
Industrial grade: $-25^{\circ}\text{C} \sim +70^{\circ}\text{C}$.

Instruction of Installation and Use

1. The product has adopted structure compliance with EN50022; suitable for DIN rail mounting NS35/7.5, NS35/15. Installation steps are as following (please reference to dimensional drawing):

Step 1: Immobilize one side of product's mounting trough to the DIN mounting rail;

Step 2: Pull out the spring clasp;

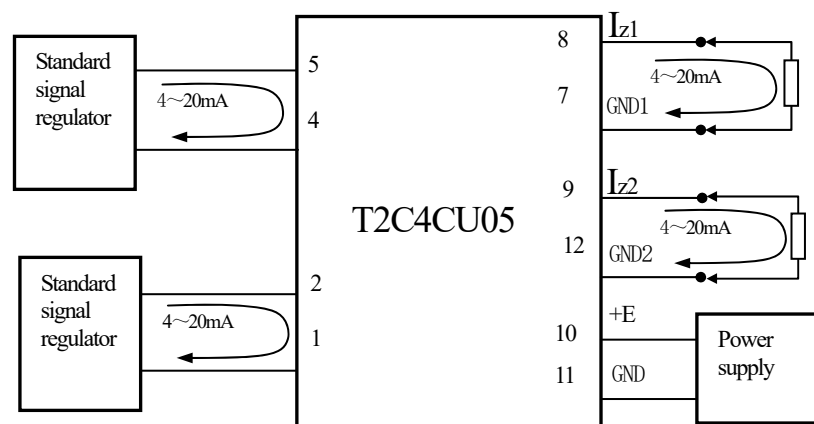
Step 3: Place whole mounting trough to the DIN mounting rail properly;

Step 4: Release spring clasp to make sure the installation.

2. The product has calibrated before out of factory. After correctly wiring, it can be powered and used immediately. But for further precise signal sampling, user needs to warm-up the product for 3 minutes before use.

3. The I_z output is designed according to the 250Ω standard load resistance. When the load resistance R_L is less than 100Ω , a loss-reducing resistor should be connected in series in the current output loop to make the sum of the load resistance between $100\Omega \sim 300\Omega$.

4. Wiring diagram of the regulator:



5. Basic testing method for accuracy

(1) According to the terminal definition table to connect the testing circuit;

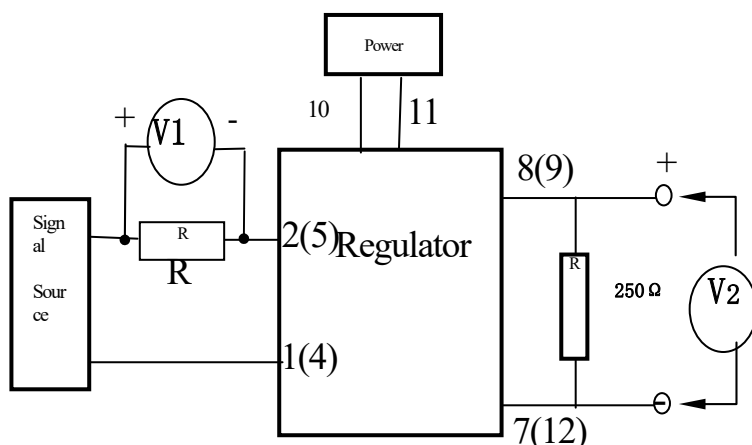
(2) The testing must to be done by under the following conditions;

Auxiliary power: $24V \pm 5\%$, ripple $\leq 5mV$

Ambient temperature: $25^{\circ}C \pm 5^{\circ}C$

Relative humidity: RH(45~75)%

Accuracy for Signal Power Source instrument: 0.05



(3) Warming up the transducer for 3 minutes

(4) Use the input monitoring table V1 to monitor the output of the signal source. If an input value I_r is arbitrarily given within the range of the conditioner, the expected output value I_z of the conditioner is calculated as follows:

$$I_z = I_r$$

(5) Use the output monitoring table V2 to measure the DC voltage value U_o at both ends of the standard resistor. The basic quoted error γ of the conditioner is calculated as follows:

$$\gamma = (U_o - I_z \times 250 \Omega) / [(20mA - 4mA) \times 250 \Omega] \times 100$$

(6) Repeating step (4) (5), if calculated absolute value is less than the given accuracy value of the regulator, it shows the regulator's

accurate grade is qualified.

Product Input-Output characteristic curve

