One input four output DC current signal isolator

Istructions

CE-S*17-****4MD4-0.2

1Overview

This series of products use professional MCU and 24-bit high-precision AD for data acquisition, Measuring the DC input signal, while isolated output four-way standard DC signal of 0 ~ 20mA or 0 ~ 5V or 4 ~ 20mA or 1 ~ 5V. It is with high precision, high isolation, low power consumption, low drift, wide temperature range, strong anti-interference ability and so on. The transducer uses a fully isolated design, that is, input, output and power are isolated from each other, eliminating the mutual interference between the signals. This product is widely used in electric power, communication, railway, mining, metallurgy, transportation, instrumentation and other industries because of its ultra-thin housing DIN rail card-mounted structure, plug-in terminal wiring, installation and maintenance convenience.

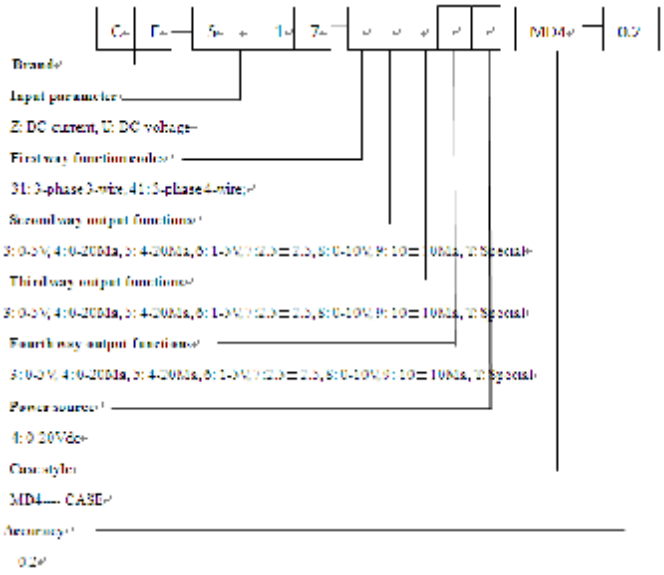
Features:

- Ø It can switch the analog signal output to 0-20mA (0-5V) or 4-20mA (1-5V) output through the internal DIP switch. The four-way output signals are independent of each other.;
- Ø The internal is used digital adjustment, no potentiometer adjustment technology, the advantages of using the technical: product debugging convenience and product output has no influence from external mechanical vibration, product performance and stability.
- Ø The use of advanced digital-analog conversion circuit for DA conversion with stability output, low temperature drift.

2 Case style

Figure 1, MD4 case

3 Part number



4 Specifications

Test conditions: auxiliary power: +24 V, room temperature: 25 ℃;

Input range: 0-20mA/4-20mA/0-5A/0-10V/1-10V/0-500V or Custom Input Type (Voltage Max 500V, Current Max 5A)

Output: 0-5V, 1-5V, 0-10V, 2.5±2.5V, 0-20mA, 4-20mA, 10±10mA;

Power supply: +24VDC (-15%~+20%)

Accuracy: 0.2 class;

Load capacity: current output ≤500Ω; voltage output ≥1kΩ;

Temperature drift: ≤100ppm/℃;

Isolation voltage: 2500VDC;

Response time: ≤200 mS;

Rated power consumption: <3W;

Output ripple: ≤10mV;

Frequency response range: none;

Surge immunity:

Power port two ±1KV (L-N/2Ω/ integrated wave)

Output port three ±2KV (L-N/40Ω/integrated wav);

Impulse immunity:

input/power port ± 2KV, analog I/O port ± 1KV;

Input overload capacity:

2 times nominal value for the measured (apply a second, repeat 10 times, interval 10S);

Weight: 144g, size:: L*W*H = 115*96*18mm

Operating temperature: 20~70℃; humidity: ≤95% (no dew)

Storage temperature: -40~+70℃.

5 Connections Diagram

(Only for reference only, the actual application to the product wiring diagram shall prevail)

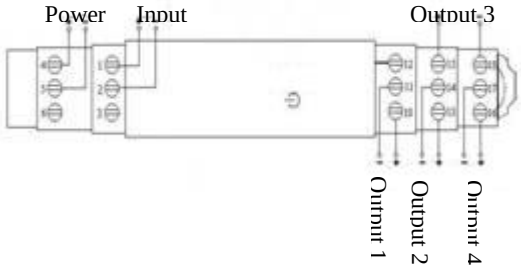


Figure 2 wiring diagram of CE-S#17-####4MD4

6 Output settings

Opening the side shell to configure the analog signal 0-20mA (0-5V) or 4-20mA (1-5V) output, the specific settings are shown in Table 1 below. The main function of this switch is zero output configuration, If the current output, the switch setting function can only be switched between 0-20mA and 4-20mA, if the voltage output, it can only be switched between 0-5V and 1-5V. Please note that the other bits of the DIP switch cannot be toggle.

Table 1 Output parameter setting method

SW1.1=	Switch to ON, the first way output 4-20Ma(1-5V); switch to OFF, output 0-20Ma(0-5V)
SW1.2=	Switch to ON, the second way output 4-20Ma(1-5V); switch to OFF, output 0-20Ma(0-5V)
SW1.3=	Switch to ON, the third way output 4-20Ma(1-5V); switch to OFF, output 0-20Ma(0-5V)
SW1.4=	Switch to ON, the fourth way output 4-20Ma(1-5V); switch to OFF, output 0-20Ma(0-5V)
SW1.5=	None
SW1.6=	None

7 Installations

DIN35 rail-mounted or screw-mounted installation, the installation size is as shown in figure 3(in mm).

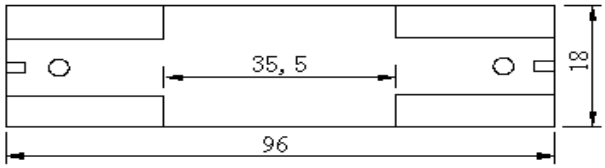


Fig.3

8 Product's Service

1 Installation

1.1 DIN rail installation 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 position of the screw hole shown in Fig. 9;

② Use the screw 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. Multiple transducers can share a common set of power supplies, but the power circuit can no longer be used to drive relays and other can produce spikes in the load, in order to avoid interference signal transmission to the transducer.

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.

9Example of product accuracy level verification

1 According to the definition of the transducer terminals to connect the test circuit.

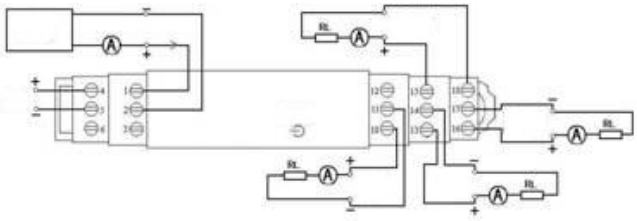


Figure 4, test wiring diagram of accuracy of one input four output isolator.

(Take the **CE-SZ17-55554MD4-0.2** as an example)

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

- Power supply: nominal ± 5%, ripple ≤ 10mV;
- Ambient temperature: 25 °C ± 5°C;
- Relative humidity: RH (45 ~ 80)%;
- The accuracy of the signal source and measurement instrument is 0.05% above.

3 Power preheat 5~20mins;

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 isolator input range is 0-20mADC, output is four-way 0-20mADC, give an input value Ii within the range of the isolator, the expected theoretical output (Iz) of the isolator is calculated as follows:

$$Iz = Ii \div 20 \times 20$$

6 Measure current output Io with the output monitoring table.

|Iz-Io|≤40uA is normal, or excessive (0-20mADC output, 0.2);

7 Repeat NO.5and NO.6 operations, the resulting phase error in each point are within the specified accuracy, the transducer accuracy level is qualified.

Note: please consult with our company for the verification method of other technical indicators.

10 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 in extreme bad environments, must take 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, return, repair) services.

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

9 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.