One input one output signal isolator（with power distribution）user manual

One input two output signal isolator（with power distribution）user manual

CE-*Z*8 - **MS3-*

1 Overview

This device is a DC signal isolator with standard signal isolation and power output distribution function. Using principles of linear optocoupler isolation, the input DC voltage or current signal can output DC voltage or current signal through the electrical isolation. This device is treble isolation, that is, its input, output and power supply isolated from each other. Especially suitable used together with the sensor/transducer and instrument which needs electrically isolate. Can widely used in computer, PLC measurement and control system and a variety of automatic control systems.

Features:

* Power port, output port can respectively withstand the surge impact 4KV and 2KV, safe and reliable.
* Product with high stability, high accuracy, high isolation, low drift, wide temperature range and other characteristics.
* Strong electrical interference, all the input、power supply、output isolated from each other, solving sensor or instrument signal common-mode interference during transmission, strong electrical interference and other problems.

2 Case Style

Length×Width×Height=83mm×36mcm×76mm

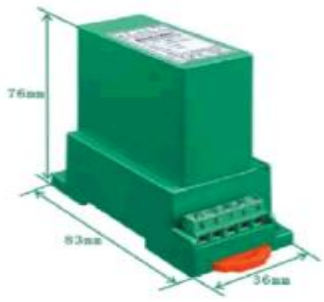

Figure1 MS3 style

3 Part Number

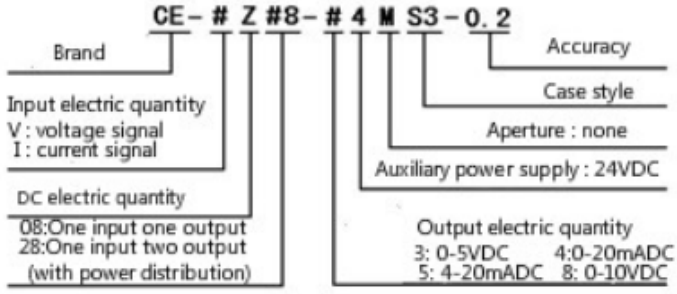

Figure 2 Product model selection table

4 Specifications

* Test conditions: auxiliary power supply :+24V, room temperature25℃
*Input range: 0～4～20 mADC、0～300VDC
* Input: 4～20mADC、0～20mADC、0～5VDC、0～10VDC、0～15VDC
* Auxiliary power supply : +24VDC
*Accuracy: class 0.2 (one input one output)、class 0.5 (one input two output)
* Load capacity: Load≥2KΩ(voltage output) Load≤250Ω(current output)
* Power distribution output: rated voltage: +24VDC rated current: 30mA
* Temperature drift: ≤200ppm/℃
* Isolation voltage: 2500VDC
* Response time: ≤300mS
* Rated power consumption:＜2.3W
* Output ripple: ≤15mV；
* Frequency range: none
* Surge impact immunity:

Power port Four-level 4KV (L-N/2Ω/intergrated wave)
Output port two-level 2KV (L-N/40Ω/intergrated wave)

* Input overload capacity:

Voltage：2 times the nominal value, lasts for 1 second, interval of 10 seconds, repeat 10 times;
Current：2 times the nominal value and <10A，5 times per second;

* Surge impact immunity: none
* Operating condition: temperature: -10 ～ 60℃;
Humidity: ≤95%(No dew)
* Storage temperature: -40~+70℃

5 Connections Diagram

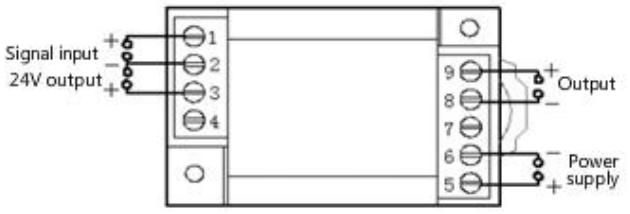

Figure 3 IZ08/VZ08 connection diagram

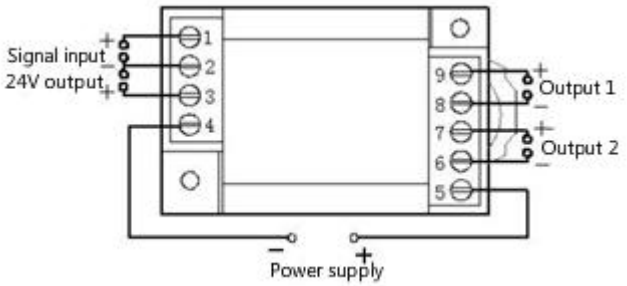

Figure 4 IZ28/VZ28 connection diagram

6. Mounting Diagram

DIN35rail mounting size: card slot width 35.5mm;

Screw mounting size: 73 mm×26.8mm;

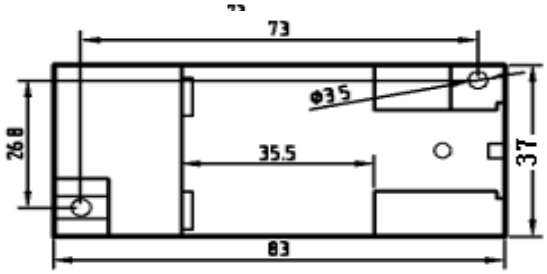

Figure 5 Dimension drawing of installation

7. Product's Service

7.1 DIN rail installation method:

① The transducer fixed on the side of the card slot and hook on the mounting rail;

② Pull the spring pin down（as show in the bottom of figure1 the red spring pin）;

③ Clip the transducer mount on the mounting rail;

④ Release the spring pin and clip the transmitter on the mounting rail.

7.2 Screw mounting method:

①M3 screw hole in the fixed plate according to the screw hole position shown in Figure 4;

②Use the M3 screw to insert into hole and fix it.

7.3 Products has been accurately calibrated according to the "product standard" before delivery. Apply power after determine the correct wiring.

7.4 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. Then tighten the screw.

7.5 Product supply power requires the isolation voltage ≥ 2000VAC, AC ripple <10mV. Multiple transducers can share a common set of power supply, 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.

7.6 The transducers output 0-20mA (or 4-20mA), load resistance R_L≤250Ω, and 0-5V voltage output load resistance R_L ≥1KΩ, can guarantee the output accuracy and linearity over the entire rated input range.

8. Example of product accuracy level verification

8.1 According to the transducer terminal definition to connect the circuit as shown:

(Take VZ08-54MS3 as an example)

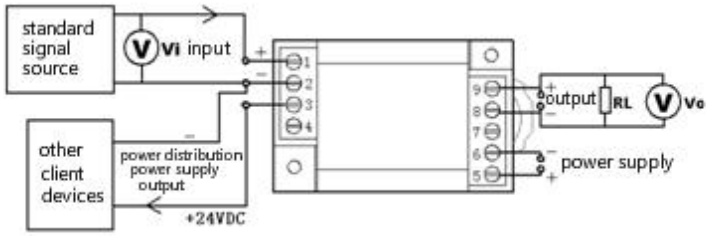

Figure 6 Voltage output product accuracy test wiring diagram

Note: Use Vo meter to measure the voltage output, use Io meter to measure the current output.

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

- Power supply: nominal ± 5%, ripple ≤ 10mV;
- Ambient temperature: 25 ℃ ± 5 ℃;
- Relative humidity: RH (45 ~ 80)%;
- The accuracy of the signal source and measuring instrument is0.05 class above;

8.3 power preheat 2min;

8.4 Voltage Vi input and monitoring methods:

Using high precision voltage meter calibrator directly

input voltage Vi to the product, and record the display data of the meter calibration instrument.

8.5 Suppose transducer's input is 0-100VDC,output is 0-5VDC,any given input value Vi within the range of the transducer, then the expected theoretical output value of the transducer (Vz) is calculated in the following formula:

$$Vz = Vi \div 100V \times 5V$$

If input 50VDC， then Vo =50÷100×5=2.5VDC；

8.6 Measure the DC voltage output value Vo with an output monitoring table:

$|Vo-Vz| \leq 10mV$ is normal, otherwise exceeding (0 - 5V output, class 0.2);

8.7 Repeat operations 4 and 5, average of all the get points $|Vo-Vz|$ is $\leq 10mV$, then the accuracy of the transducer is qualified.

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

9. Notes

9.1 Please pay attention to the power supply information on the product label, and the power supply grade used by the transducer, otherwise it will cause damage to the product.

9.2 Integrated structure of the transducer, non-removable, and should avoid collision and fall.

9.3 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.

9.4 Can 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.

9.5 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.

9.6 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.

9.7 The transducers use flame-retardant ABS plastic shell package. which limit temperature tolerance is +75 ℃. The shell will be deformed with high-temperature baking, and will affect product performance. Do not use or store the product near the heat source. Do not bake the product in a high-temperature oven.

9.8 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. The terminal block wiring wire diameter ≤ 1.4mm, otherwise it may cause terminal screw slipped.