High frequency signal transducer

Istructions

CE-F02-*4MS*-0.5

1 Overview

This product is a high-frequency signal detection isolation transducer. Using the optocoupler isolation and convert the input frequency signal into a linear output of 0 ~ 5V, 0 ~ 20mA, 4 ~ 20mA and other standard signals. This product uses two isolation methods that the input and output are isolated from the power supply. A variety range of input and output can be option, and built-in function switch free to choose. The product is simple to install, can be widely used in communications, electricity, railways, industrial control and other fields.

Features:

- Ø Frequency range support self-setting;
- Ø DC wide power supply, input + 11V ~ + 28V;
- Ø With 0-5V or 1-5V, 0-20mA or 4-20mA free selection function; can be freely set the zero output;
- Ø Using digital technology, high stability, the accuracy up to 0.2.

2 Case Style

Figure 1: product appearance of S1 case of +11~+28V auxiliary power supply

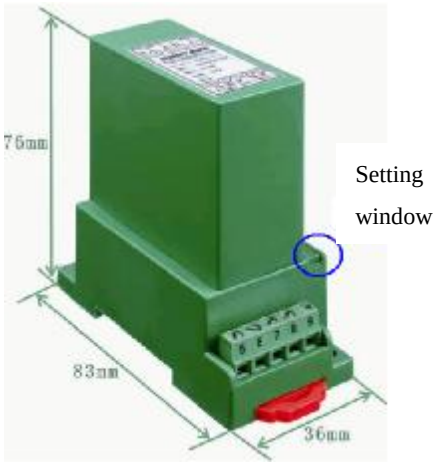

Figure 2: product appearance of S3 case with 220V power supply

3 Part Number

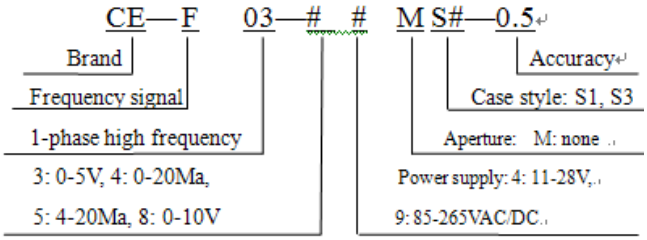

Figure 3 Product Selection Guide

4 Specifications

Power supply: DC +11V~+28V, AC/DC 85V～265V;

Input range: frequency: 0-6KHz～400KHz;

Amplitude: 5V (amplitude change of 70% -120%);

Transmit output: 0-5V, 0-20mA, 1-5V, 4-20mA, 0-10V;

The zero point of voltage or current output can be set freely;

Accuracy class: 0.5 (up to 0.2);

Load capacity: voltage output ≥ 500Ω,

Current output ≤ 300Ω (24V power supply can reach 800Ω);

Temperature drift: <250ppm/C;

Isolation voltage: DC 2500V;

Response time: ≤100 mS;

Rated power consumption: <1.7W;

Output ripple: <10mV

Frequency range: 6kHz～400kHz;

Surge immunity:

Input / Power Ports Four 4KV (L-N / 2Ω / complex);

Output port two 2KV (L-N / 40Ω / integrated wave);

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

Input overload capacity: continuous overload: 120%; short-term overload: 2 times the rated voltage input value for 1 second;

Operating temperature: -30°C~+70°C;

Storage conditions: -40°C~+70°C.

5 Connections Diagram

Figure 4, wiring diagram of +11V~+28V power supply

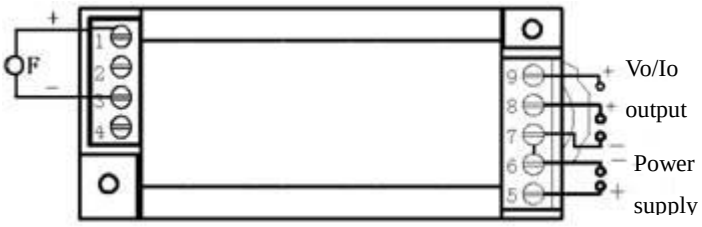

Figure 4

Figure 5, wiring diagram of 220V power supply

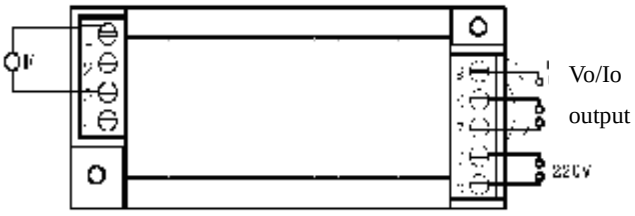

Figure 5

6 Installations

Rail mounting dimensions: 35mm; screws installation size: 73X26.8mm; as shown in Figure 6 (in mm).。

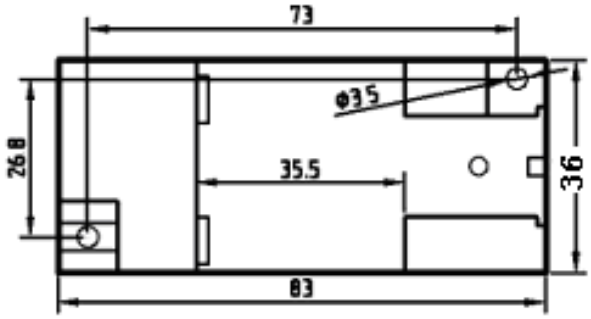

Figure 6: Mounting dimensions

7 Function Settings

As shown in Figure 1 (Figure 2) to open the product shell on the settings window, there is a four-digit DIP switch, bit 4 sets the output zero to 0V (0mA) or 1V (4mA) as shown in Figure 7.

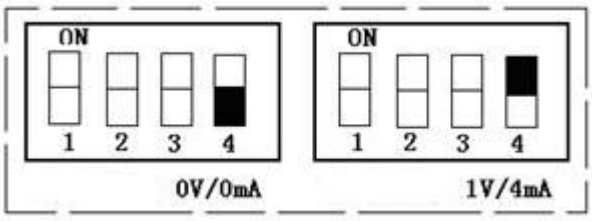

Figure 7 Output zero setting

The third switch is used for range automatically setting as shown in Figure 8. Range change can be freedom to set in 5KHZ-100KHZ and 100KHZ-400KHZ two ranges. If the order is 50KHZ transducer and the user needs to modify the range, the transducer can only be free to set by the user in the range of 5KHZ-100KHZ, if the order is 200KHZ can only be set within the 100KHZ-400KHZ.

Setting method:

1, The customer must provide a standard rated frequency signal.

2, According to figure 4 and 5 to connect the power and signal source, and according to figure 8 to set the calibration state of the switch, input the rated frequency signal after power on, the internal red LED light of transducer is lighting. Press the SW2 button, it is lighting after the red light flashes 5 times, then calibration is successful.

3 According to figure 8, the switch is set to be output state, (when switching rated range below 20KHz there will be a few seconds delay) when there is a frequency input the red light flashes, then it's normal for use.

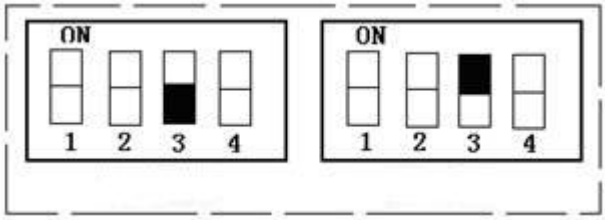

Figure 8 function state setting

8Example of product accuracy level verification

1 According to the definition of the transducer terminals to connect the test circuit as shown in figure 9.

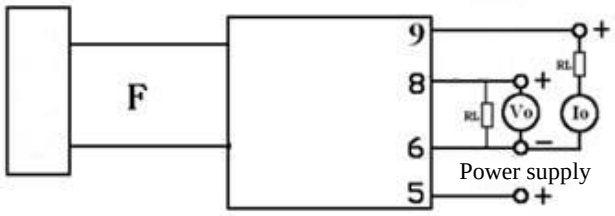

Figure 9, test wiring diagram of accuracy of voltage or current output

Note: The voltage output is measured with a voltmeter and the current output is measured with an Io meter.

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 2min;

4 Assuming the transmitter input frequency range is 0-10KHz, he output is 0-5VDC, given any input value F in the transducer range, the theoretical output value (Vz) of the transducer is calculated as follows:

Vz=(F÷10KHz)×5V

If the output is 4-20mA, then Iz=4+F÷10KHz×16mA;

If the output is 0-20mA, then Iz=F÷10KHz×20mA;

5 The monitoring meter measures the DC voltage output value Vo or the current output value Io.

| Vo-Vz | ≤25mV is normal, or excessive(0-5V output, 0.5);

| Io-Iz | ≤80uA is normal, or excessive(4-20mA output, 0.5);

| Io-Iz | ≤100uA is normal, or excessive(0-20mA output, 0.5);

6 Repeat the NO.4 and NO.5 operations, the resulting point value |Vo-Vz|≤25mV or |Io-Iz|≤80uA (100uA), the accuracy level of

transducer is qualified.

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

9 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. 6;

② Use the screw Φ3 to insert into hole and secure it.

2 Products have 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.

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.

3The 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 to extreme bad environments, must be taken 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.