4-Channel E70 Piezo Controller Software
User Manual

Version: V1.0

This document describes the following products:

- E70.C4K   Piezo Controller   Open loop   4 channels
- E70.D4S   Piezo Controller   SGS sensor   4 channels

Contents

1.Security

1.1 Purpose

▷ The surface of 4-Channel E70 should be kept clean and dry, do't operate in humid or static environment.

▷ 4-Channel E70 is used to drive capacitive loads (such as piezo actuator).

▷ 4-Channel E70 can't be used in the manuals of other products with the same name.

▷ Pay attention to 4-Channel E70 can't be used to drive inductive or impedance loads.

▷ 4-Channel E70 can be used for static and dynamic operating applications

1.2 Safety instructions

4-Channel E70 is based on nationally recognized safety standards. Improper use may cause personal injury or damage it. Operator is responsible for correct installation and operation of it.

▷ Please read the user manual in detail.

▷ Please immediately eliminate any malfunctions and safety hazards caused by malfunctions.

If the protective grounding wire is not connected or connected incorrectly, there will be possibility of electric leakage. Maybe it will cause serious or even fatal injuries when touch 4-Channel E70 at this time.

If open 4-Channel E70 privately, touching live parts may cause electric shock, resulting in serious or even fatal injury or damage to the piezo controller.

▷ Only authorized professional could open 4-Channel E70.

▷ When opening 4-Channel E70, please disconnect the power plug.

▷ Please do not touch any internal parts when operating in an exposed state.

1.3 User Manual Notes

▷ The contents described in user manual are standard product descriptions, special product parameters are not described in detail in this manual.

▷ User manual is available for download on CoreMorrow website(www.coremorrow.com).

▷ When using 4-Channel E70, the user manual should be placed near the system for easy reference in time. If the user manual is lost or damaged, please contact our customer service department.

▷ Please timely add all the information given in the manufacturer's user manual, such as supplements or technical descriptions.

▷ If your user manual is incomplete, it will miss a lot of important information, cause serious or fatal injuries, and cause property damage. Please read and understood the contents of the user manual before installing and operating 4-Channel E70.

▷ Only authorized professionals who meet the technical requirements could install, operate, maintain and clean 4-Channel E70.

2. Software purpose

Through the software to realize visual drive control of 4-Channel E70 piezo controller. The software separately controls the functions of 4-Channel E70 through the classic single point, classic waveform, classic configuration, analog array/open and closed loop settings, and phase angle waveform functions to achieve convenient, intuitive and fast control purposes.

3. Software Installation

3.1 Serial Port Setup

Notice! The serial port cable should be plugged and unplugged when the computer and the piezo controller interface are closed or one end is closed, otherwise it may damage the computer serial port or the serial chip of the controller interface!

Rear panel of 4-Channel E70 provides a 9-pin D-SUB connector (2/3/5 is serial port direct connection, 6/7/8/9 is RS-422 communication interface, please refer to the user manual of 4-Channel E70 piezo controller for details).

Pleae use the serial cable provided by the manufacturer to connect 4-Channel E70 and the PC, which could easily communicate with the PC through the terminal program.

If the PC has only one serial port, the default is COM1.

When the computer software is controlled through the RS-232 serial port, it could be selected the serial port channel and baud rate on the software interface. Before connecting the computer, please ensure that the COM port and baud rate are consistent with 4-Channel E70. Otherwise, the connection fails.

Select the input mode of the controller as software control mode, switch the control switch on the panel to M, turn on the computer, and run the interface software of the controller for corresponding control. Please see section 4 for details.

## 3.2 USB Communication

3.2.1 Hardware requirement

▷ Windows system computer.

▷ 4-Channel E70 piezo controller.

▷ USB 2.0 connection cable.

▷ Install the USB driver software when the above parts are working properly.

4-Channel E70 front panel provides a micro USB interface, please connect the PC and 4-Channel E70 through the USB cable, and then open the system.

Select the input mode of the controller as software control mode, switch the control switch on the panel to M, turn on the computer, and run the interface software of the controller for corresponding control. Please see section 4 for details.
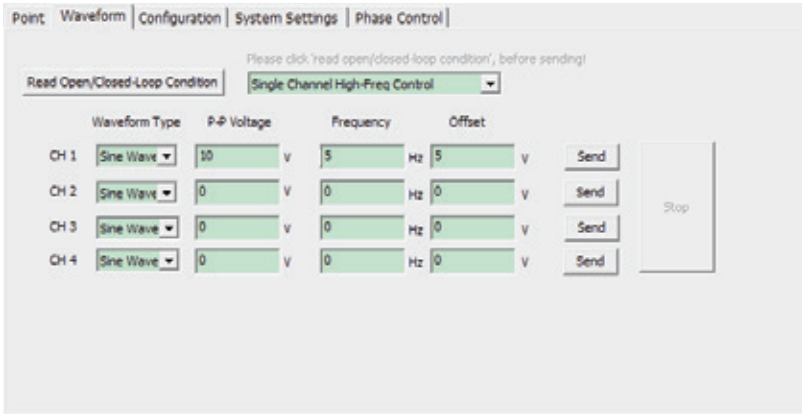
4. Software Instruction

4.1 Point
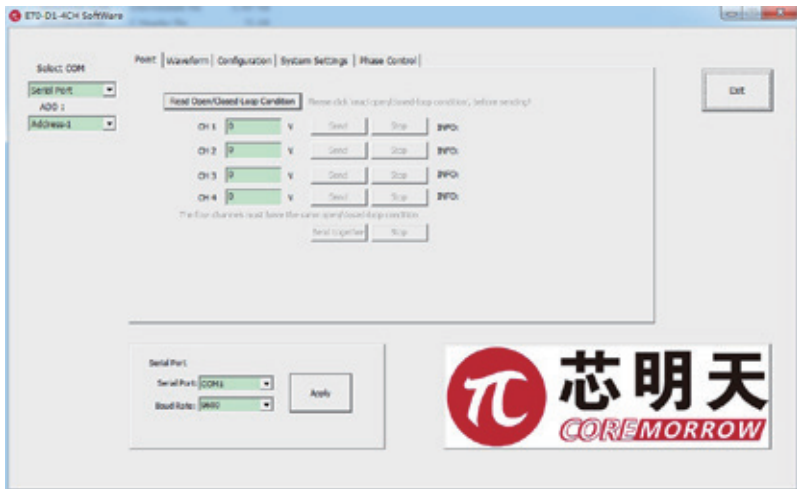
CH1 send point data:

Select "Point", then click "Read Open/Closed-Loop Cordition ", fill in 10 in the edit box (10V for open loop, 10μm/mrad for closed loop), and click "Send" to complete the send task. Click "Stop" and the controller stops output.

Similarly, CH2, CH3, and CH44 send corresponding data.

4.2 Waveform

1. Click"Read Open/Closed-Loop Condition" , read the open/closed loop data, and match the piezo controller state.

2. Select "Single Channel High-Freq Control".

    ▷ Single Channel high-freq, the frequency could be up to 1kHz~4kHz.

3. Click"Wave Type", select the send waveform, e.g. sine wave, square wave, triangular wave, sawtooth wave.

4. Fill in the data of P-P voltage, frequency, offset(usually half of the P-P voltage), waveform transmission meets $U^2 \times f \times C <$ Power.

U = voltage, V

f = frequency, Hz

C = capacitance, F

5. Check the entered data values and click "Send". CH1 data waveform is sent.

6. Click the "Stop" to complete the waveform output stop.

## 4.3 Configuration

Click "Read System Information". After the data is transmitted from the piezocontroller to the software, click "Save As Default" to complete the matching work between the computer control software and the piezo controller. (Note: after the same computer read system information read successfully and save as the default, when using the software again, there is no need to carry out configuration, read system information and other operations!)

4.4 System Settings

▷ Analog control: external analog signal control, at this time, the software control failure.

▷ Digital control: software control, at this time, the analog control failure.

▷ Switch to digital control: select the digital control from the drop down box, then click "Start", the setting button lights up, click "Setting", complete the setting to the digital control! Please see the figure below:
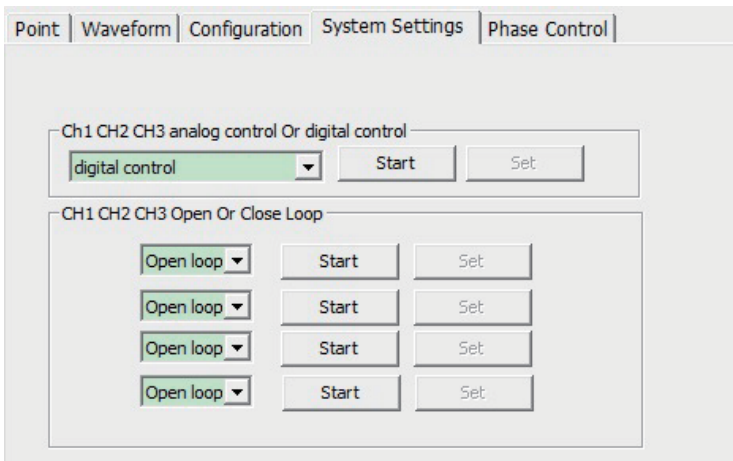
4.5 Phase Control
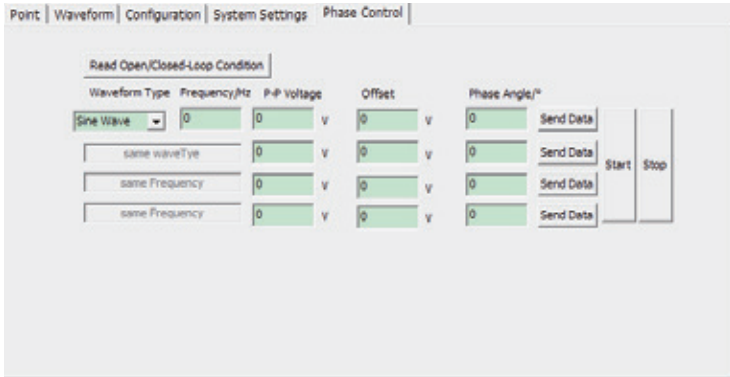
▷ Phase control: the waveform and the frequency must be the same, P-P voltage and offset could be different, phase Angle range from 0.0 to 360.0 degrees.

▷ Phase wavefor control mode: select the waveform, then fill in the frequency, P-P voltage, offset, phase angle and then fill in the related data of other channels, click" Send data"(this time just store the waveform data value of the data to be sent to the piezo controller), click"Start", the piezo controller receive the execution waveform sending command of the trigger command.

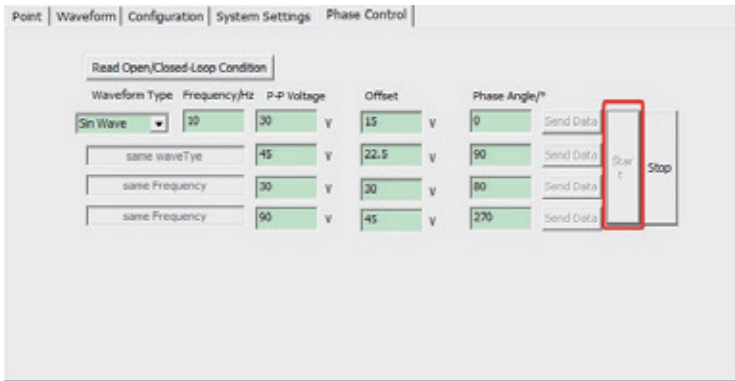▷ Stop sending waveform: Click "Stop" to stop outputting the waveform.

Fill in the relevant data of the waveform to be sent:

Send waveform data to the piezo controller:
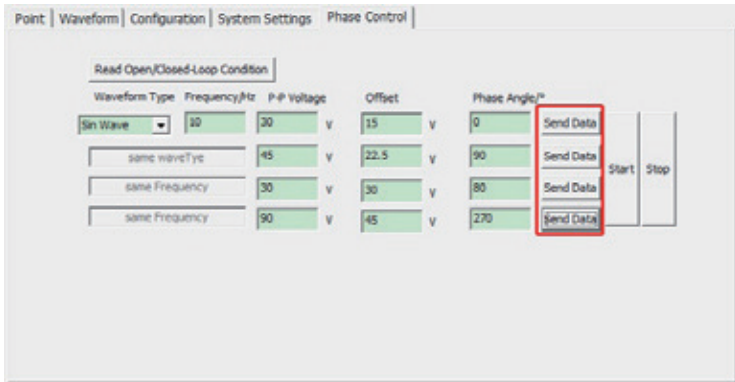
Click "Start" to send the phase angle waveform:

Stop sending multi-channel waveform:

5.Contact us

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