COREMORROW
Piezo Nano Motion

E71.D4E-H Piezo Motor Servo Controller

User Manual

Version: V1.0

This document describes the following products:

■ E71.D4E-H Servo controller Grating sensor

DECLARATION

Declaration!

This user manual is a integrated user manual of the E71.D4E-H series piezoelectric controller. Please read this user manual carefully before using this controller. Follow the instructions in the manual during use. If there is any problem, please contact us for technical support. If you do not follow this manual or disassemble and modify the product yourself, the company will not be liable for any consequences arising therefrom.

Please read the following to avoid personal injury and to prevent damage to this product or any other product connected to it. In order to avoid possible hazards, this product can only be used within the specified range.

Notice!

Do not touch any exposed ends of the product and its accessories.

There is high voltage inside. Do not open the case without permission.

Do not connect or disconnect input, output, or sensor cables with power on.

Please keep surface of E71.D4E-H clean and dry, don't operate in humid or static environment.

After use, output voltage should be cleared to zero before turning off the controller switch, such as switching the servo state to the open-loop state.

Danger!

The piezoelectric power amplifier described in this manual is a high-voltage device capable of outputting high currents, which can cause serious or even fatal damage if not used properly.

It is strongly recommended that you do not touch any parts that connect to the high voltage output.

Special Note: If you connect it with other products in addition to our company, please follow the general accident prevention procedures.

Operating the high-voltage amplification requires training professional operators.

Warning!

If the voltage exceeds the PZT's tolerable range, it will cause permanent damage to the PZT. Before adding voltage to the PZT poles, it must be ensured that the positive and negative poles of the PZT are connected correctly and the operating voltage is within the allowable range of this PZT.

Cautious!

E71.D4E-H housing should be installed on a horizontal surface in an area with a 3CM air flow area to prevent internal convection in the vertical direction.

Insufficient airflow can cause equipment to overheat or premature instrument damage.

Contents

1. Introduction

1.1 Features

- 4 channels compact design
- 20V~30V power supply
- Peak current 1A
- Ave current 60mA
- Unload bandwidth 10KHz
- Output short circuit protection

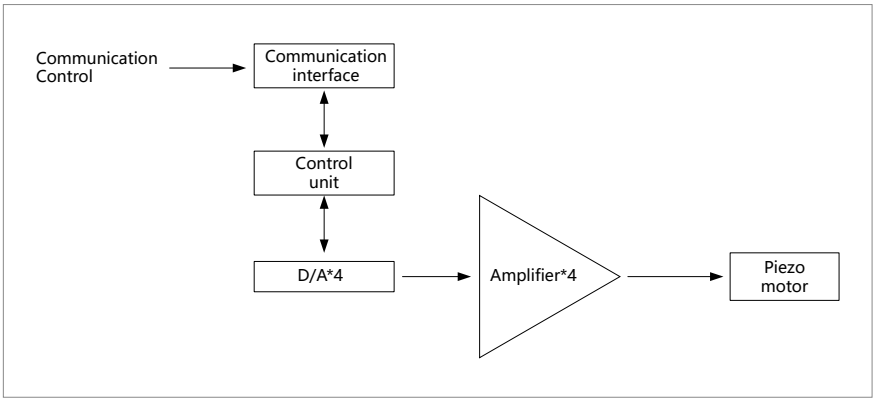
1.2 Applicaitons

- Driving piezo actuators

1.3 Order Information

- E71.D4E-H Piezo motor controller Software

2.Driving Principle



3.Appearance

Front panel

Rear panel

4.Parameter

Type	E71.D4E-H	Units
Servo control	Servo control	
Power supply	24VDC/4A(20V~30V)	
Static power consumption	<10	W
Processor	32bit 168MHz	
D/A converter	16bit	
Serial port baud rate	115200	
Communication Interface	USB, RS-422, RS-232	
Peak current	1	A
Average current	75	mA
Ripple	10（@2.2μF)	mVpp
Rated output power	50	W
Operating temperature range	0~50	℃
Output short-circuit current	60	mA
PZT connector	DB25	
Communication connector	DB9, MicroUSB	
Size	162.5×162×45.5	mm3
Mass	1.3	kg

5.Power Calculation

● Average output（Sine wave operation mode）

Pa ≈ Upp • Us • f• Cpiezo

Pa=Average output[W]

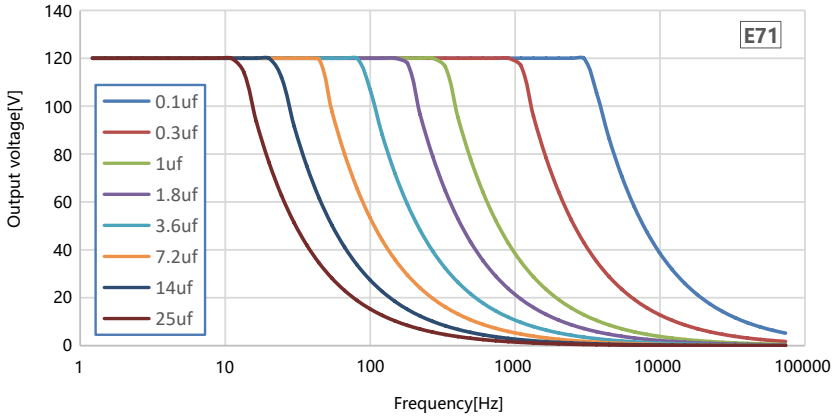
Upp=Peak and peak drive voltage [V]

Us=Drive voltage[V]（（Vs+）-（Vs-））

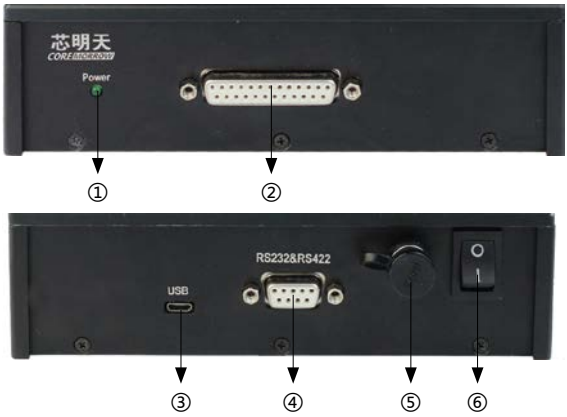
Cpiezo=Piezo actuator capacitance[F]

f=Operating frequency of the sine wave[Hz]

Frequency, Voltage and Load Curves

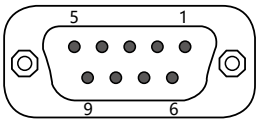


6.Interface



No.	Function	Description
①	Power	LED green
②	Piezo motor connector	Piezo motor interface
③	USB interface	
④	RS232/422 interface	Refer to pin definition
⑤	Power supply	24V power supply
⑥	Switch	Power switch

Pin No.	Pin Definition
1	-
2	RS-232 TxD
3	RS-232 RxD
4	-
5	GND
6	RS-422 RxD+
7	RS-422 RxD-
8	RS-422 TxD-
9	RS-422 TxD+



RS232/422 Pin Definition

7.Caution

- E71.D4E-H can only be used with matching piezo motor.

8.Contact us

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