Piezo Driver MTAD2030

Instruction Manual

(Version 0.1)

1 Overview

The Piezo driver MTAD2030 is a linear amplifier with high precision strain conditioning circuit, feedback controller, and ultra-low noise. It is designed to provides all of the necessary functions for high-resolution closed-loop control of piezoelectric actuators with integrated resistive strain sensors.

MTAD2030 produces up to 300mA of output current at frequencies up to 80kHz with exceptionally low noise and is protected against short-circuit, average current overload, and excessive temperature.

2 Parts

This device is composed of the following parts.

2．1 MTAD2030 ・・・・・・・・・・・・・ 1

2．2 DC24V adapter ・・・・・・・・・・ 1

2．3 Instruction manual ・・・・・・・・・ 1

3 Specifications

3.1	Output voltage range	: 0 to 150V
3.2	Output current	
	RMS output current	: 235mA max
	Peak output current	: 300mA max
3.3	Signal Bandwidth	: 180kHz
3.4	Power bandwidth	: 80kHz (150 Vp-p)
3.5	Input impedance	: 10kΩ
3.6	Gain	: 20V / V
3.7	Output noise	: 26uV RMS, 1uF Load, 0.03Hz to 1Mhz
3.8	Protection	: Short-circuit, average current, and under-voltage protection
3.9	Input voltage	: 0 to 7.5V max
3.10	Power supply	: DC 24V
3.11	Dimension	: 160 x 65 x 180 mm
3.12	Weight	: 690g

4 Operation manual

4.1 Operation parts

The operation parts on the front and rear panels are shown as follows.

<Front panel>

① 〔STRAIN GAUGE IN〕 : Piezoelectric actuator strain gauge signal input.

② 〔SIGNAL INPUT〕 : Control signal input.

③ 〔OUTPUT.〕 : Output high voltage.

④ 〔STRAIN〕 : Piezoelectric actuator strain gauge signal output.

<Rear panel>

① 〔DC24V 1.0A〕 : DC power supply input.

② 〔POWER〕 : DC power supply switch.

4.2 Operation Methods

1) Connection

① Make sure the DC power switch is not switched on.

② Connect DC 24V power supply to the〔DC 24V 1.0A〕.

③ Connect the positive wire of the piezoelectric actuators to the positive side of 〔OUTPUT〕.

④ Connect the negative wire of the piezoelectric actuators to the negative side of 〔OUTPUT〕.

⑤ Connect control signals to the〔INPUT〕.

⑥ Connect the strain gauge sensors of the piezoelectric actuators to 〔STRAIN GAUGE IN〕

2) Operation

a) It is recommended to complete the connection with the piezoelectric actuators before switching on the [POWER] switch.

b) Make sure the strain gauge input is connected to MTAD2030 before switching on the [POWER] switch.

c) After switching on the〔POWER〕switch on the front panel, the device will be ready to function in a few seconds. The output voltage can be control with the control input signals.

5 Precautions

5.1 Do not connect or disconnect the loads when the power is on.

5.2 Do not block the ventilation holes created at the enclosures as they are designed for dissipating the heat.

5.3 Do not open the cover. Warranty void if any seal or label is broken.

5.4 Keep away from moisture.

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