ROGA Instruments INTELLIGENT TESTING EQUIPMENT

8201T

IEPE Signal Conditioner

Product Manual

Contents

Friendly Reminder:

This product is a precision instrument, ensure that you can use it correctly, please read the manual carefully before use. Without man-made damage, the warranty period is 12 months.

1. Introduction

8201T Portable Constant Current Conditioner is an instrument specially designed for using with IEPE sensors. Small size, light weight and easy to use, it has a wide range of applications in scientific research, teaching and many other fields.

This instrument has the following features:

1) Full metal housing with strong anti-interference
2) Constant gain optional
3) Small size and light weight
4) Wide frequency range and reliable operation
5) Built-in exciting circuit to provide suitable operating voltage for IEPE sensor

2. Technical parameters

1) Input characteristics

Input channel: 1

Input sensor: IEPE sensor

Input range: ±5Vp

2) Excitation source

Voltage: +24±2 VDC

Current: 4mA

3) Frequency characteristics

Upper frequency limit: 300kHz (-0,5dB)

Lower frequency limit: ≤0.3Hz (-3dB±1dB)

Attenuation slope: -12dB±1dB/oct

4) Output characteristics

Gain: ×1 mV/mV (factory setting)(optional)

Output range: ≤±5Vp

Accuracy：≤±0.5%

Noise: ≤1mVrms

5) Environmental conditions

Temperature:

Operating temperature: 0℃～40℃

Storage temperature: -55℃～85℃

Humidity: 80% R.H. max.

6) Power mode

Power supply: External: DC+24V

7) External features

Dimensions:48mm (L)×45mm (W)×19mm (H)

Weight: approx. 55grams

8) Connection:

Input: BNC Jack (Female)

Output: BNC Jack (Female)

3. Principle of operation

The 8201T is an amplifier that provides power to the IEPE sensor and amplifies and filters the output signal of the IEPE sensor:

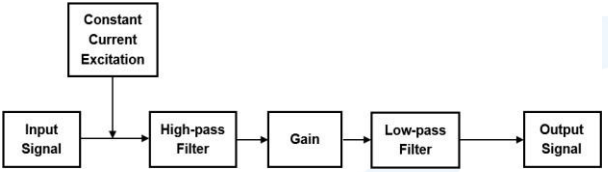

Figure 1 8201T Principle Diagram

1) Power supply section: the external 24V DC power supply is transformed to provide the power required for the normal operation of the instrument.
2) Constant current source section: provides the power required for the normal operation of the IEPE sensor, which is supplied directly to the IEPE sensor via the input cable.
3) High-pass filtering section: the signal is filtered to remove the DC bias voltage from the sensor output.
4) Amplification section: the input signal is amplified by constant gain.

5) Low-pass filtering section: the signal is filtered by 100kHz through LPF selections(cut-off frequency-3dB, -12dB/oct). The low-pass filter is a second-order Butterworth-type active filter with good flatness in the bandwidth.

4. Panel function

4.1. Front panel

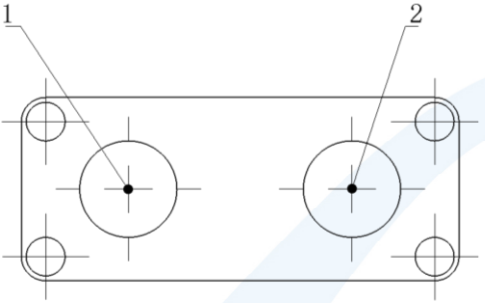

Figure 2 8201T Front Panel Diagram

1) IEPE sensor input

The IEPE sensor is fed through this input.

2) Signal output

The signal output of the 8201T constant current conditioner can be connected to subsequent instruments such as voltmeters, oscilloscopes, collectors, etc.

4.2. Back panel

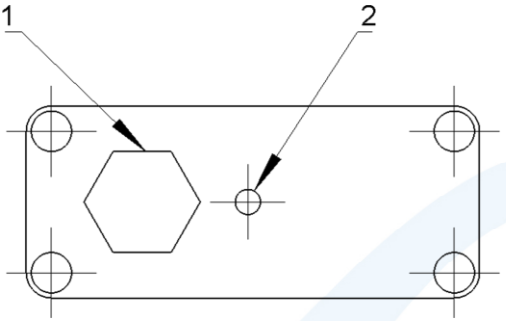

Figure 3 8201T Back Panel Diagram

1) Input socket for the power adapter

Input socket for external power adapter. The external adapter power supply can be used as a normal operating power supply for the 8201T.

Note: Please use suitable adapter supplied.

2) Operation indicator

When the charger adapter is working, the red light is on.

5. How to use

1) Connect the IEPE sensor to the input jack.

2) External power supply.

3) Connect the output to subsequent instruments with the output cable.

6. Accessories

1) 8201T IEPE signal conditioner:	1ea
2) Power adapter:	1ea
3) Certificate:	1ea