

Vibration monitoring system scheme(SCQ-CZY-ZL)

Vibration monitoring system is composed of data acquisition instrument, piezoelectric acceleration sensor and software. The equipment features two acceleration sensors, which can measure the vibration of the optical table, experimental environment and experimental instrument, and obtain accurate real-time vibration state.

It is mainly used in precision optical experiments or other experiments and equipment that require high stability.

Main function:

- Environmental vibration detection
- Optical table vibration detection
- Optical table vibration isolation efficiency curve test
- Vibration transmission measurement
- Real-time vibration monitoring

Data acquisition instrument

iPotest-04IA



•Model

- Acquisition module parameter
- Number of channels: 4 channels
- Collection mode: synchronous collection
- Input: AC/DC/ICP with a constant current source, 24VDC 4mA, which can be connected to ICP sensor
- ADC resolution: 24-bit ADC
- Sampling efficiency rate: 2KSPS, 5KSPS, 10KSPS
- Power output: standard 24VDC(can be customized), can provide power to the sensor
- Measuring range: $\pm 100\text{mV}$, ± 1 , $\pm 5\text{V}$, $\pm 10\text{V}$. Multiple software are available
- Input terminal: 4-core plug

Broadband

- Linearity (typical value)
- Input impedanc
- SNR(Signal to Noise Ratio)
- Channel crosstalk
- Maximum non-distortion voltage
- Module power supply and working environment
- Power supply DC 9 ~36V (19.5VDC)
- Working temperature -20°C to $+60^{\circ}\text{C}$
- Storage temperature -40°C to $+80^{\circ}\text{C}$

Record storage processing module (optional configuration)

- CPU A53 4 coresX1.5GHZ+A722 coresX1.8GHZ
- GPU Mail-T8604 cores
- NPU Support 8bit/16bit operation, support TENSORFLOW, CAFFE modeling
- RAM 6GB DDR4
- Memory space Onboard 16GB+SD card (storage capacity can Be added as needed, up to 128GB)
- Compatible system Android8.1/Linux
- Digital interface GPIO, RS-485
- Communication interface 100M cable network and WiFi wireless network transmission

Sensor



IEPE high sensitivity acceleration sensor(B12A01)

- Built-in low noise integrated circuit
- Wide sensitivity design, can be used for bridge, building and other structural testing.
- Special core structure design, to ensure large sensitivity and low interference.
- The shape structure can be customized according to the test requirements.

The main technical parameters of the sensor are as follows:

- Sensitivity: 10000 mV/g ($\pm 5\%$)
- Measuring range: 0.5g
- Frequency response rate $\pm 5\%$: 0.5-0.8kHz. $\pm 10\%$ 0.3-1 KHZ
- Resonant frequency: $\geq 2.2\text{kHz}$
- Time constant: $\geq 10 \text{ s}$
- Lateral sensitivity: $\leq 5\%$
- Wide band resolution: 0.000035grms
- Constant power supply: 20-30 VDC
- Supply constant current: 2-20 mA
- Output impedance: $\leq 100 \Omega$
- DC offset: 8-12 V
- Ultimate acceleration value: 4g peak
- Limit impact value: 10g peak
- Temperature range: -40°C to 80°C
- Sensitivity temperature coefficient: $0.1\%/^{\circ}\text{C}$
- Sensing element: PZT-5 piezoelectric ceramic
- Shell material: stainless steel
- Seal standard: laser welding IP68
- Output connector: Top of M5
- Installation form: M5
- Weight: 68g

