



# Middle-high Frequency Vibration Transducer Calibration System

Technical Specifications

***ECS-1816***



Econ Technologies Co., Ltd.

## Overview

ECS-1816 Middle-high Frequency Vibration Transducer Calibration System is designed according to ISO 16063-21:2003, for calibrating the sensitivity, frequency response, amplitude linearity and transverse sensitivity of acceleration transducer, velocity transducer, displacement transducer, vibration meter, bearing vibration meter and foundation pile dynamic meter.

ECS-1816 is working based on comparison method (back to back), consisting of ECI programmable calibrator, standard shaker, power amplifier, reference transducer, high precision conditioning amplifier, and computer, with high precision and automation in calibration. The system automatically measures the frequency and amplitude of reference transducer and the transducer under test, and then calculates the sensitivity, frequency response and amplitude linearity, etc., and finally automatically generates the calibration report.

ECS-1816 is an excellent calibration partner applied in the R&D, manufacture, metrology and use procedure of transducer or vibration meter.

## Features

- ✓ Compliant with ISO 16063-21:2003 Methods for the calibration of vibration and shock transducers Part 21: Vibration calibration by comparison to a reference transducer.
- ✓ Accredited to NIMC (National Institute of Metrology, China)
- ✓ Back-to-back calibration procedure.
- ✓ Support calibration on various of vibration accelerometers (optional velocity transducers, displacement transducers, and vibration meters).
- ✓ Calibration contents include sensitivity, frequency response, amplitude linearity and transverse sensitivity.
- ✓ Accurate and professional calibration software based on loop control.
- ✓ Calibration frequency range up to 10,000 Hz.
- ✓ Extended uncertainty degrees <1% (@160Hz, 100m/s<sup>2</sup>).
- ✓ Support Substitution calibration method and extension calibration method.
- ✓ Support “Shoulder to shoulder” calibration method.
- ✓ Automatic calibration procedure save engineers calibration time significantly.
- ✓ Generate calibration report in Word or PDF format automatically, and the report is compliant with ISO 17025 and can be customized as per customer’s request.

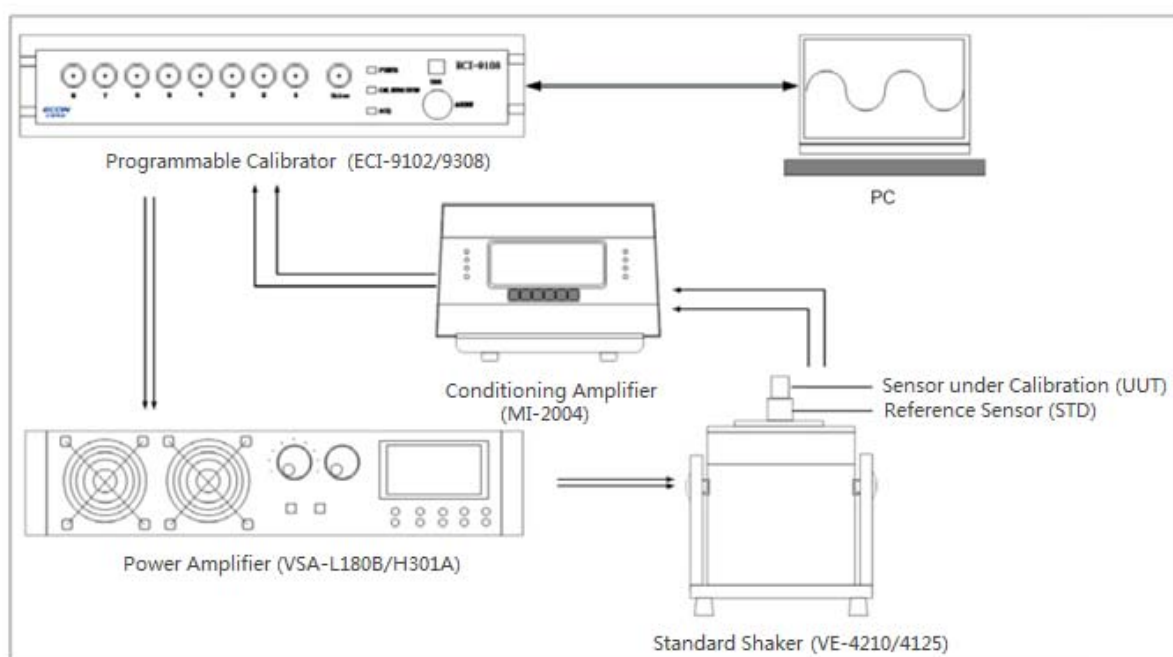


**Components**

ECS-1816 Mid-frequency Transducer Calibration System consists of the following parts:

- ✧ VE-4210 Standard shaker and VSA-L180B linear amplifier.
- ✧ ECI-9102 Programmable calibrator (ECI-9108 optional)
- ✧ Reference transducer (STD).
- ✧ Conditioning amplifier (MI-2004).
- ✧ Calibration software bundle.

**Working Diagram**



The calibration course is compliant with ISO 16063-21:2003, back to back mode. Programmable calibrator generates standard signal which is amplified by the power amplifier and drive the standard shaker. The signal measured from standard transducer is regarded as a close-loop control signal, and the signals measured from standard transducer and under-test transducer will be back to programmable calibrator used for vibration comparison. Then the programmable calibrator automatically makes calculation, generates curves based on the data, and finally these results are displayed on the computer screen.

**System Parameter**

ECS-1816 Technical parameters



Composing

Programmable Calibrator	ECI-9102 or 9108
Standard Shaker	VE-4210
Power Amplifier	VSA-L180B
Reference Transducer (STD)	As required
Conditioning Amplifier	MI-2004

Performance

Rated Force	100 N
Calibration Frequency Range	5~10,000Hz
Max. Acceleration	10 g
Max. Velocity	0.5 m/s
Max. Displacement	5 mm(p-p)
Max. Load	2kg
Diameter of Table	Φ70 mm
Effective Moving Mass	0.5 kg
Amplifier Power	180VA
Amplifier Frequency Range	DC-10,000Hz
Calibration Channels	2 or 8
Max. Input	10 <sup>6</sup> pC or ±10V
Transducer Input Compliance	Voltage, IEPE or Charge
Calibration Software Options	Sensitivity, Frequency Response, Amplitude Linearity Transverse Sensitivity, etc.
Transducer Compliant	Accelerometer (Velocity Transducer, Displacement Transducer, Vibration Meter, Bearing Vibration Meter, Pile Dynamic Meter optional)

Mechanical

Dimension	Shaker Φ3000×300mm, Amplifier 445x435x90mm (LxWxH)
Weight	Shaker 50kg, Amplifier 20kg

Electrical

Power supply	220V AC, 50-60 Hz
Power Consumption	300VA

Environmental

Temperature	0~40℃
Humidity	0~90%RH, non-condensing (20℃)

## About Us

ECON is a world-wide one station manufacturer and supplier for equipment and solution of vibration testing, measurement and calibration.

Founded in 2002, ECON have been dedicated in developing better quality and higher cost-efficiency equipment and solutions to help customers to meet market crucial demand on their products quality and reliability. More than 20 years experiences and innovative ambition support us to fulfill this vision into reality.

Today ECON is well-known and taking leading role in China to produce and supply Electro-dynamic Shaker, Servo-hydraulic Shaker, Vibration Controller, Measurement Instrument and Transducer Calibration system.

*ECON is supplying products, solution and service to customers under support of our local partners and sales representatives. Also ECON is looking forward to more global partners for promotion in their area.*



- Headquarter
- R&D Center
- Sales and Market Center
- CNAS and CMA qualified Testing lab
- 5,000 sqm Facility



- Factory
- Product Center
- Logistics Center
- 20,000 sqm Facility

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