

DIGITAL INDUSTRIES SOFTWARE

Simcenter Qsources miniature shaker

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Product Information Sheet

Summary

Simcenter Qsources miniature shaker enables dynamic excitation when conventional shakers have no access and impact hammers are unpractical. This vibration exciter has an extremely low mass and stiffness loading of the test object due to its patented internal decoupling suspension.

The miniature shaker is especially suitable for those who plan to perform experimental modal analysis (EMA), transfer path analysis (TPA) and/or frequency-based substructuring (FBS). The miniature shaker provides you with integrated force and acceleration transducers that allow you to quickly obtain driving point frequency response functions (FRFs).

The shaker can be glued directly on the test structure and needs no extra external support. Thanks to the patented internal suspension, the inert mass is dynamically decoupled from the test object and the force is always aligned along the internal stinger axis. This significantly improves the efficiency of testing by eliminating the support and alignment work associated with conventional shaker testing.

BENEFITS

- Provides self-suspending and selfaligning feature
- Provides excitation for any mounting angle
- Covers frequency range from 50 to 5,000 Hz
- Enables internal excitation of assemblies and in hard-to-reach locations

FEATURES

- Integrated 1D force sensor
- Integrated driving point accelerometer
- Patented internal 3D suspension system
- High output-to-size ratio



Additionally, the data acquisition can be executed by only one operator. The miniature shaker can be used with Simcenter Test lab software Spectral Testing or MIMO FRF testing together with the Simcenter Qsources measurement amplifier. The integrated transducers are IEPE type sensors and are compatible with Simcenter SCADAS hardware input modules.

To facilitate the long-term reliable use of the shaker, Siemens Digital Industries offers a sensitivity measurement service for the internal transducers, including a detailed performance check.

Applications

- Transfer path analysis
- Modal analysis (EMA)
- Attachment point mobility measurements
- Vibro-acoustic transfer functions (BNTF)

Physical specifications

- Dimensions Ø 28mm X 38 mm
- Total static mass: 100 grams
- Dynamic mass loading of the test structure: 10 grams
- Sensor connector type: female 10 to 32
- Power cable connector: male banana
- Sensor cable length: 90 centimeters (cm)
- Power cable length: 4 meters
- Performance
- Frequency range for random testing: 50 to 5,000 Hz
- Force level: 2 Newton rms

- Internal sensors type: IEPE

Supplied accessories

- User manual
- Signal and power cables
- Driving point accelerometer
- Shaker mounting tools
- Cleaning tool
- Electronic protection device
- Flight case
- Calibration sheets reference sensors

Product requirements

- Simcenter Qsources measurement amplifier [Q-AMP230V/Q-AMP115V]
- Simcenter Test.LabTM software MIMO FRF Testing, Spectral Acquisition or similar

Options

- Calibration service [Q-SR-SENS]

Simcenter Qsources structural and acoustic excitors

- Low-mid frequency volume source [Q-LMF]
- Mid-high frequency volume source [Q-MHF]
- High frequency shaker [Q-HSH]
- Miniature shaker [Q-MSH]
- Thumper shaker [Q-TMP]
- Low-frequency monopole source [Q-MED]