Qsources

QsIs Suspended Large Shaker

FEATURES
Compact due to very high power density
Patented self-supporting, self-aligning and decoupled
Accurate internal force sensor
BENEFITS
Fast, efficient placement and ready to test
Limited space, any position and inclination
Controlled and repeatable accuracy
POTENTIAL APPLICATION AREAS
Electric power generation and power distribution
Marine and Off Shore
Large size mechatronics including production machinery
Building, including built infrastructure
Defense
Railway rolling stock
Mining, agriculture, earth moving equipment
Large space and aero structures
POTENTIAL MEASUREMENT TECHNIQUES
Vibro-acoustic transfer functions
Structural transfer functions
Transfer path analysis
Inverse load identification
Experimental modal analysis
Power insertion, SEA methods
CAE, simulation, model correlation
Waveform replication

RANGE INDICATION FOR THE TEST OBJECT	
Typical minimum test object weight	50 kg*
Typical maximum test object weight	40000 kg*
Advised minimal test object damping	1%*

Qsources QsIs Suspended Large Shaker is a self-suspending, self-aligning low frequency shaker developed to carry out consistent repeatable structural excitation on large stuctures. Mining, large production-line machinery, off-shore, metal bridges, railway infrastructure,... can be excited up to 1000 Hz.

The very high power density and patented internal suspension system allow this shaker to be portable, fast and easy to install. This shaker is supported by (the much larger) test structure without any need for external support and no requirement to align the shaker, force sensor and test object. An accurate internal force signal is provided. Excitation in any orientation/inclination is possible as the shaker is either glued onto the test structure or, if desired, can be connected through a threaded connection.

Given the compact size of the shaker it can be used in limited spaces allowing excitation of structures in locations which cannot be reached through alternative excitation methods such as sledgehammers or externally supported classical shakers. The 210 N (sine 20 Hz) force level allows excitation of large structures with typical weight of the test objects ranging between 50 and 40000 kg.

Ketelwinning 38, 3293 Diest, Belgium - BTW/MWST/VAT 0478212968

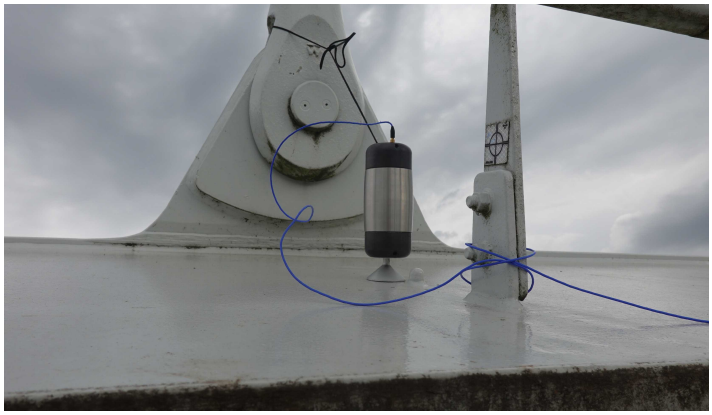
Qsources

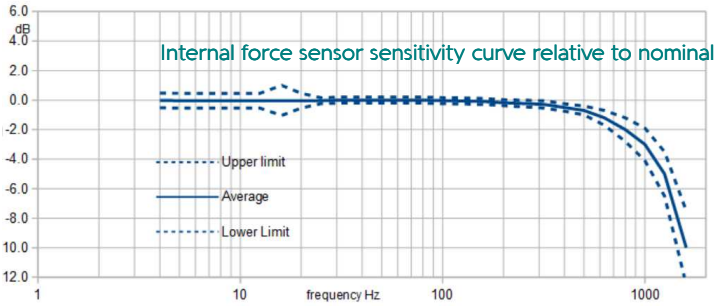
Qsls
Suspended Large Shaker

The Qsls is tuned for high accuracy on a very wide range of test-objects between 22 and 1000 Hz. This is the core frequency range. In practice it is well possible to use the shaker outside of this range. In this case either the mass of the test-object has to be large enough and the accuracy remains or, alternatively, the accuracy is reduced on lighter objects in the extended part of the frequency range. In many applications the high accuracy delivered in the core range is not required.

SPECIFICATIONS**	
Core Frequency Range	22-1000 Hz
Low frequency extension down to ***	6 Hz
Axial mass coupled to the test-object in the advised frequency range	115 gram
Radial mass coupled to the test-object in the advised frequency range	25 gram
Force level (random pink in core frequency range)	80 N RMS
Force level sine (20 Hz)	210 N sspk
Internal friction or non-linearity maximum	2 N
Stroke maximum peak to peak	16 mm
Advised ambient temperature range for application	10 to 45 degrees celsius**
Length	175 mm
Diameter	70 mm
Weight	2800 gram
Footprint on test-object, diameter	40 to 80 mm
Force signal curve stability, temperature range of 10 to 60 degrees Celsius	+- 0.5 dB
Nominal force signal sensitivity	3.5 mV/N
Force signal conditioning	IEPE
AMPLIFIER REQUIREMENTS**	
Suggested minimal continuous power:	500 Watt at 4 ohm load
Suggested minimal stable peak voltage	45 Volt sspk (single sided peak)
Minimal shaker impedance	5 Ohm
Built in protections for Qsls	Qam-sls
Protection module for other amplifiers	Qprot-sls
PROVIDED SHAKER PROTECTIONS	
Thermal protection	internal
Electric overload protection	Qam-sls amplifier integrated
Overstroke protection	internal
Attachment break-away protection	drop rope provided

**The application range can be wider, or narrower depending on the test-object nature and type of sensors used.*
***These specifications may be adapted if necessary to improve the quality of the product.*
**** Lower frequency extension applies to test objects typically more than 1000 kg*
***** Use the Qsls only with the dedicated Qma-sls amplifier, or use the Qprot protection module between shaker and amplifier*





Ketelwinning 38, 3293 Diest, Belgium - BTW/MWST/VAT 0478212968