

SENSEBOX[®] 7021/22/23+

ULTRA LOW NOISE, FORCE-BALANCE,
SEISMIC ACCELEROMETER

“Beyond the standards”



This force-balance accelerometer is able to sense the natural frequencies of even highly rigid structures under ambient vibration (under daily minor vibration excitation), and therefore is the perfect choice for most Structural Health Monitoring applications. Furthermore, SENSEBOX702X+ perfectly fits the seismic & earthquake monitoring needs. 24-Bit, high dynamic range digitizer which is as sensitive as this accelerometer, should be selected along with this analogue-output sensor to convert the data into digital. TESTBOX2010 Digitizer is fully compatible with this sensor. TESTBOX2010 is a multi-channel digitizer which supports multiple SENSEBOX702X+, depending on the number of axes needed. TDG engineers will guide you to analyze your SHM project and lead you to the most effective system solution. These accelerometers are fully compatible with the national & international structural health monitoring codes and regulations.

SENSEBOX7021+- Uniaxial (1 Component)

SENSEBOX7022+- Biaxial (2 Component)

SENSEBOX7023+- Triaxial (3 Component)

“High Sensitivity Accelerometer Series for
Structural Health Monitoring & Seismic Measurements”

Features

- High Dynamic Range
- Ultra-Low Noise
- Nano-G Level
- Force-Balance / Force-Feedback (Servo)
- Structural Health Monitoring / Ambient Vibration
- Operational Modal Analysis
- Seismic Measurements
- Fully compatible with National / International Codes & Regulations

Applications

- STRUCTURAL HEALTH MONITORING (Ambient Vibration)
 - High-Rise Buildings
 - Apartments
 - Hospitals
 - Historical Structures
 - Bridges & Tunnels
 - Industrial Plants
- OUTPUT-ONLY ANALYSIS
- OPERATIONAL MODAL ANALYSIS
- SEISMIC MONITORING NETWORKS
- ENERGY & UNDERGROUND RESOURCES EXPLORATION



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Technical Specifications

NUMBER OF AXES / SUB MODELS

SENSEBOX7021+	Uniaxial
SENSEBOX7022+	Biaxial
SENSEBOX7023+	Triaxial

MEASUREMENT

Measurement Range	±2 g
Dynamic Range	160 dB
Sensitivity	3.75 V/g
Frequency Bandwidth	DC-200 Hz
Non-Linearity (@ 1Hz)	0.1 %
Cross-Axis Rejection	0.001 g/g
Installation Tilt	Any
Output Impedance	1000 Ohms

POWER/ELECTRICAL

Excitation Voltage	±12-15 V DC
Output Type	Single-Ended/Differential
Power Consumption	17 mA @ 12 V DC

PHYSICAL & ENVIRONMENTAL

Dimensions	Uniaxial: 154x65x59 mm Biaxial/Triaxial: 212x123x85 mm
Connector Interface	IP67 Push/Pull Metal Connector
Operating Temperature	-40°C ... +60°C
Storage Temperature	-40°C ... +60°C
Enclosure	IP67 Plastic Enclosure Metal Enclosure Upon Request

CERTIFICATION

CE	LVD (2014/35/EU) EMC (2014/30/EU)
Local Regulations	Home (Inland) Produce Certification AFAD Structural Health Monitoring Guideline (10.01.2020-76388967-15.20.1-111)
Calibration	Full Compatibility TDG Calibration Lab.

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Teknik Destek Grubu Bilimsel Ölçme Ltd. Şti.

ODTÜ Teknokent Bilişim İnovasyon Merkezi
Mustafa Kemal Mah. Dumlupınar Bul. 280G B-Blok
D:214 Çankaya/Ankara/TURKEY
P : +90 312 473 97 91-92
info@tdg.com.tr
www.tdg.com.tr