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MENHIR

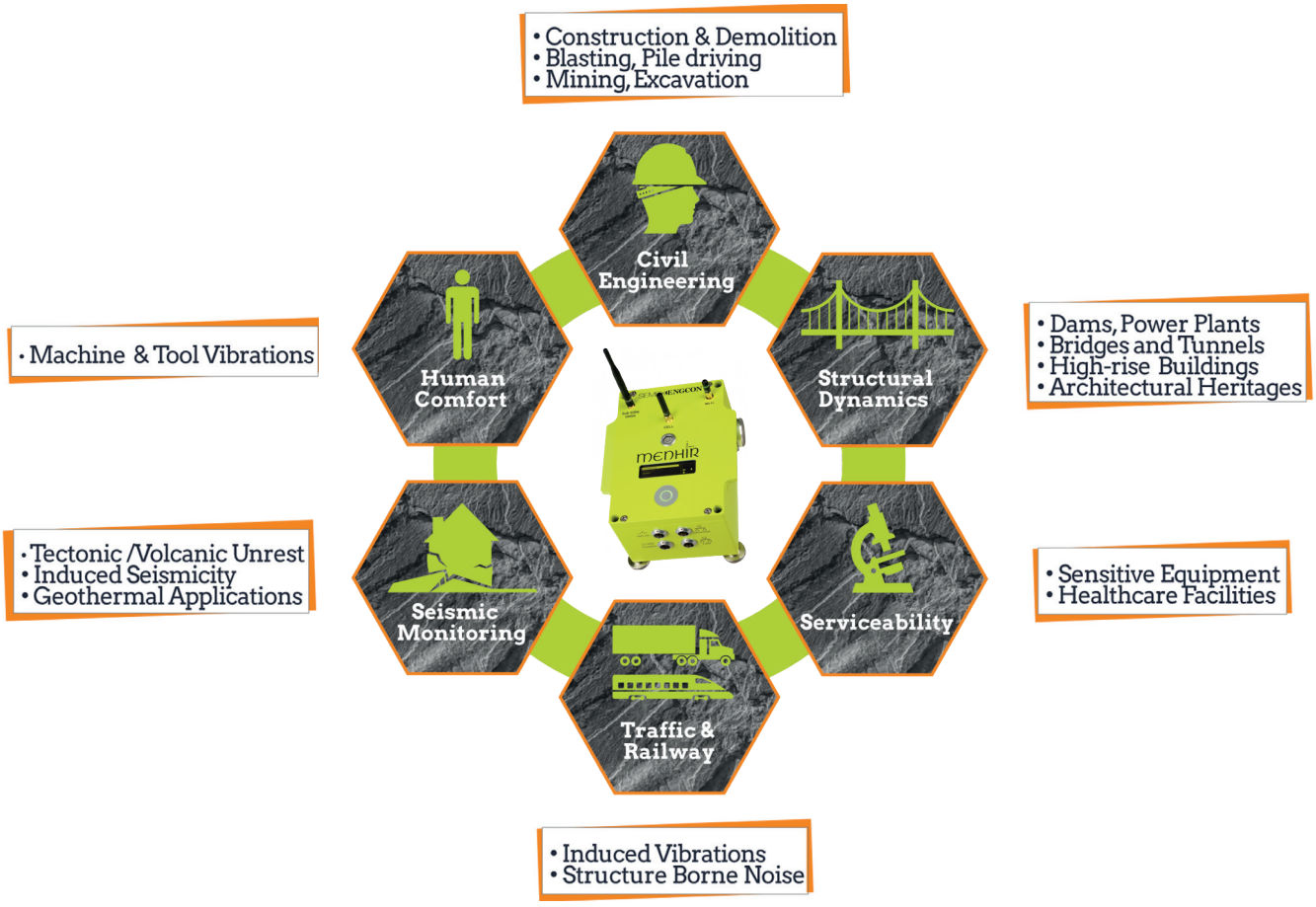
Add an expert to your team

ISO 9001 certified

Vibration Monitoring Solution

MENHIR is a high performance and versatile platform for civil engineering, structural dynamics and seismic monitoring applications requiring easy-to-use but highly reliable instrumentation solutions.

Applications



Benefits

MENHIR provides outstanding measurement performance in full compliance with DIN 45669-1:2020-06.

MENHIR has a very intuitive user interface for quick deployment, remote access and easy configuration.

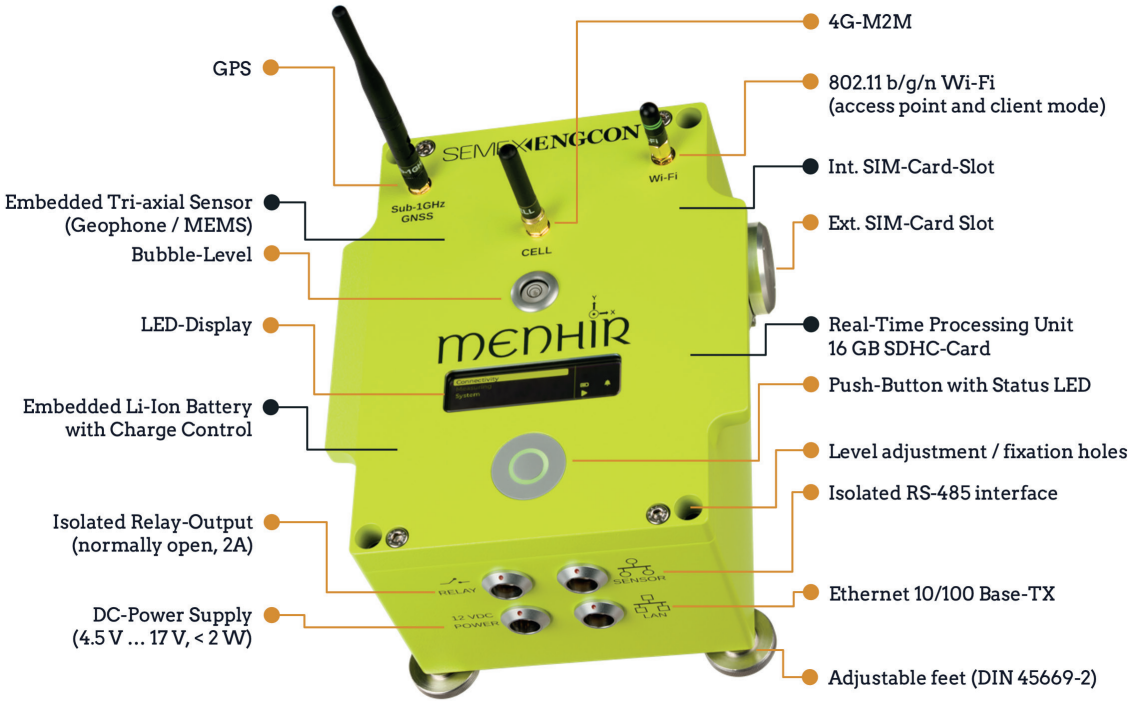
MENHIR comes in a very compact but robust form factor. It can be configured in modern IoT-compliant network topologies using both wired and wireless communication channels.

MENHIR is best deployed along with the SEDRIX cloud application for powerful data management, analysis and visualization. In addition, tailored expert reports can be generated in compliance with a large and growing suite of applicable standards and regulations.

Technical Details

Product specifications and data are subject to change without prior notice!

MENHIR Meter – 200 mm x 140 mm x 108 mm coated aluminum (IP65), 4.5 kg



Operating temperature	-30°C ... 60°C
Humidity	0 ... 95% RH (non-condensing)
Electrical Safety	In compliance with DIN EN 61010-1
EMC	In compliance with DIN EN 61326-1
Conformity	DIN 45669-1:2020-06 Combined standard uncertainty: uc(y) = 2,5 Expanded overall instrumental measurement uncertainty (k=2): U = 5,0

Data Processing

Compliance

Data processing complies with several standards and regulations:

D:	DIN 4150-2/-3	CH:	VSS 40 312
A:	ÖN S 9012/9020	F:	Circulaire '86
NL:	SBR-A/-B	I:	UNI 9614
UK:	BS EN ISO 8041/4866		

Vibration Criteria (VC), VDI 2038-2

Acquisition

High dynamic range tri-axial acquisition (alternative geophone or MEMS configuration)
Selectable measuring ranges [sensitivity]:
Geophone: ± 12.5 mm/s [240 V/(m/s)] up to ± 200 mm/s [15 V/(m/s)]
MEMS: ± 1 g [2 V/g] up to ± 4 g [0.5 V/g]
(1 -80) Hz, (1-315) Hz or user defined signal bandwidth
NTP or GPS synchronized sampling

Processing

Comprehensive suite of vibration data processing and attribute analysis:
Configurable filter, peak values, RMS, FFT and 1/3-octave spectral analysis, Vibration Criteria, VDV, Secondary airborne noise, etc.

Alerting

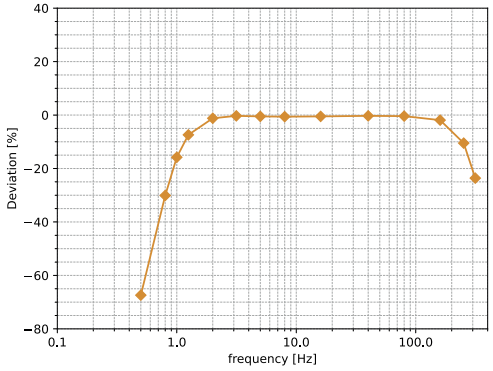
Multi-level alerting (SMS, Email)
Relay output (e.g., opto-acoustical beacon)
Common network alerting, health status alerting

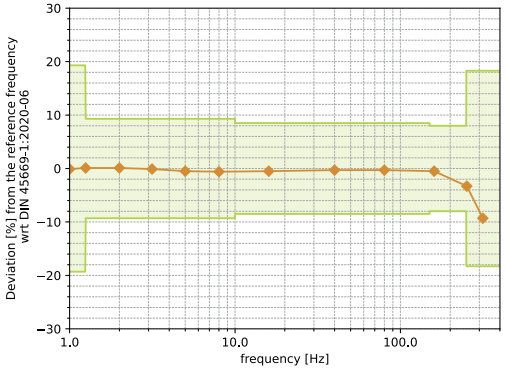
Data Recording & Transmission

Triggered time domain data (events) in full sample resolution
Continuous vibration profiles (PPV, KBF, 1/3-octave spectra, etc.) in sub-sampled resolution
SDHC card 16 GB (default), other capacities on request
Lossless compressed format (MKA), CSV, miniSEED

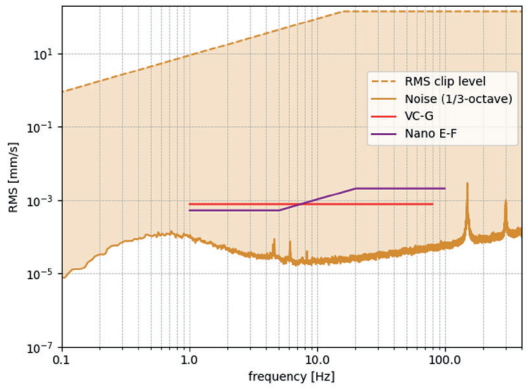
Sensing Characteristics

Geophone frequency response calibrated in compliance with DIN 45669-1:2020-06

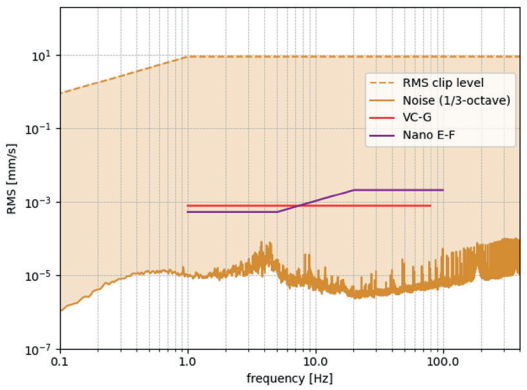




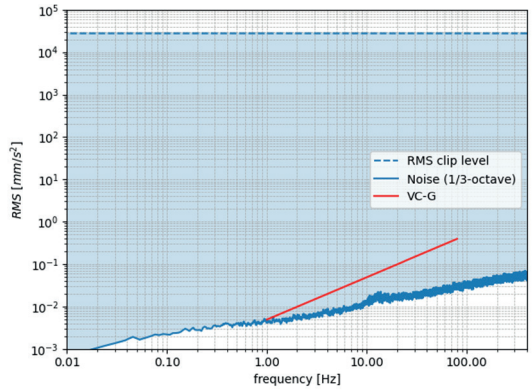
Geophone measuring range ± 200 mm/s



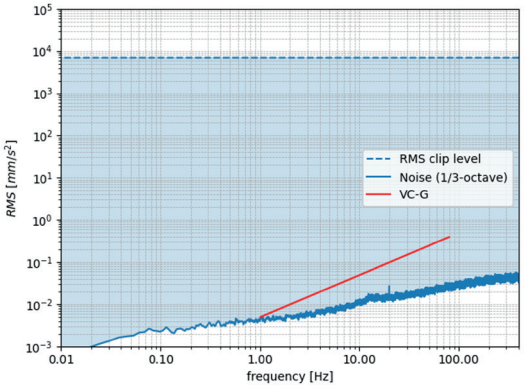
Geophone measuring range ± 12.5 mm/s



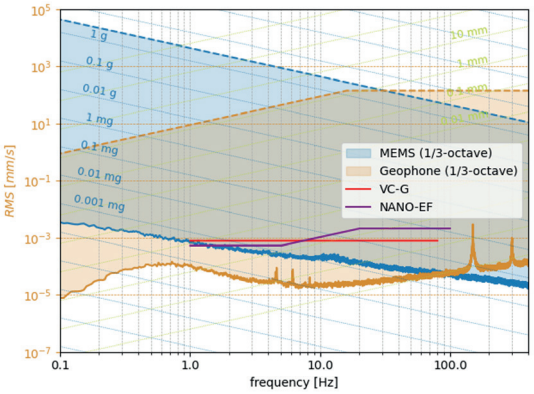
Accelerometer (MEMS) measuring range ± 4g



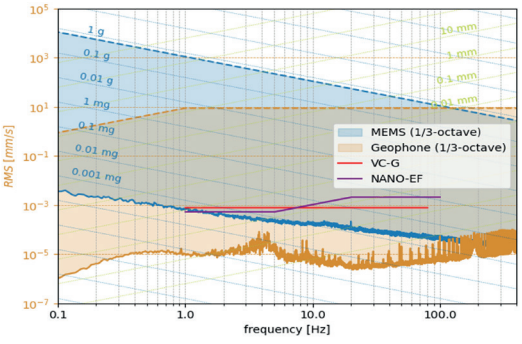
Accelerometer (MEMS) measuring range ± 1g



Geophone (±200 mm/s) - MEMS (±4 g) comparison

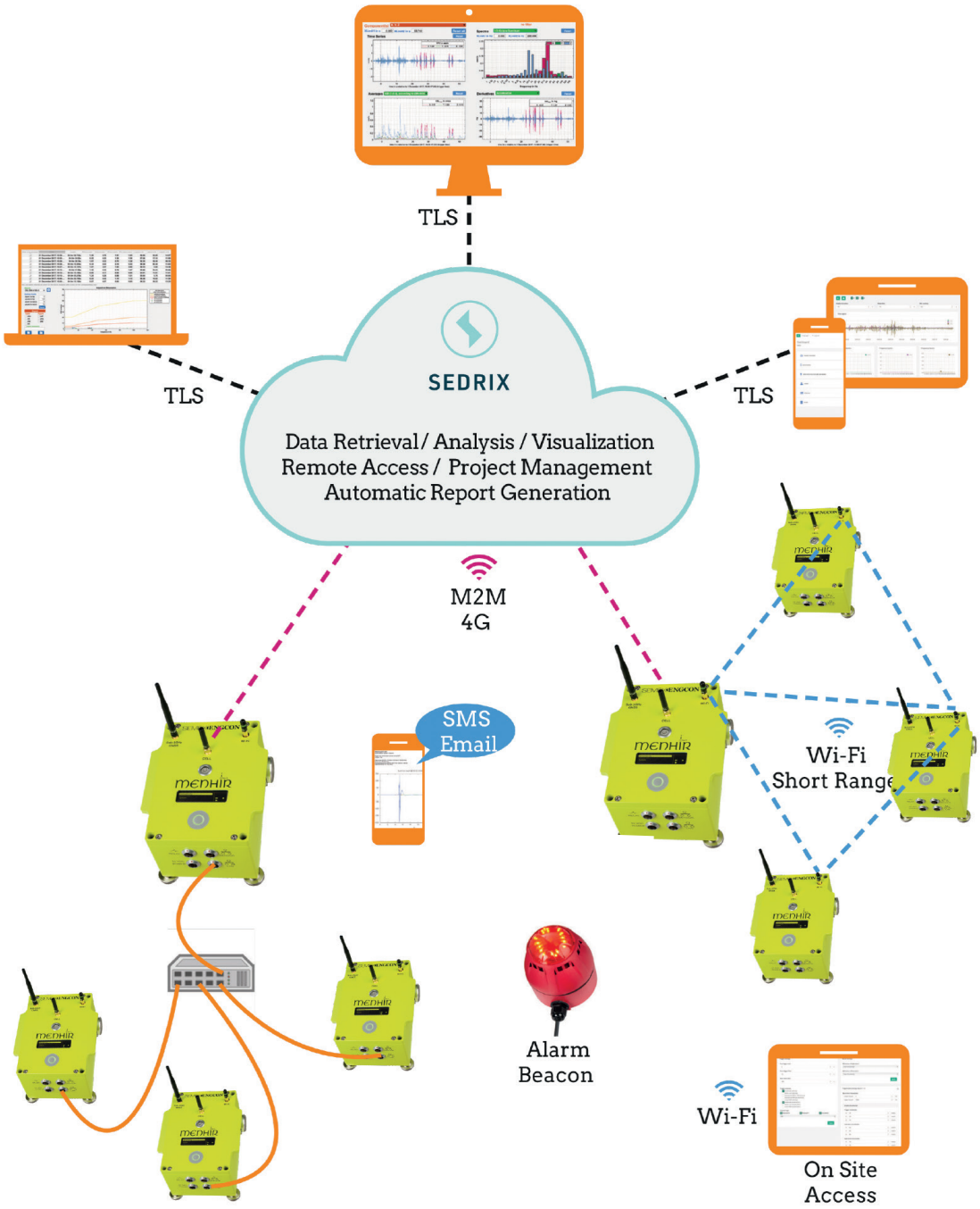


Geophone (±12.5 mm/s) - MEMS (±1 g) comparison



Monitoring Solution

The cloud-based SEDRIX application is ideal for unconstrained and highly secured remote access to all connected MENHIR devices and MENHIR networks. Analysis and visualization of acquired data in compliance with applicable standards allow for fast conclusion of the vibration impact. Report templates provide automatic generation of tailored reports to dedicated stakeholders.



Attachment Options

MENHIR can be extended with further attachments, such as external sensors (surface and downhole versions) and optical/acoustical alarm beacons.

Surface Sensor

Topology	Bi-/Tri-axial	Uni-axial
Mounting	3 adjustable feet with bubble level	
Housing	Coated aluminum, IP65	
Diameter/Height	100 mm / 75 mm	89 mm / 70 mm
Weight	1.8 kg	1.0 kg
Cable Length	3 m (default)	5 m (default)

Downhole Sensor

Mounting	Tri-axial (recoverable)	Uni-axial (vertical)
Housing	Stainless steel, IP68	Aluminum, IP67
Diameter/Height	70 mm / 220 mm	45 mm / (100+95) mm
Weight	3.5 kg	0.7 kg

Submersible Sensor

Topology	Tri-axial
Mounting	3 adjustable feet with bubble level
Housing	Seawater resistant, IP68
Diameter/Height	200 mm (mounting plate) / 90 mm
Weight	5 kg

Optical-Acoustical Alarm Beacon

Connectivity	MENHIR Relay Output	Wireless 433 MHz
Power Supply	MENHIR (4.5 ... 17 VDC)	Transmitter: MENHIR Receiver: 12...24 VDC or 85...260VAC

Anti-Theft Lock Kit

Wall Brackets

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External Sensor

Carrying Case

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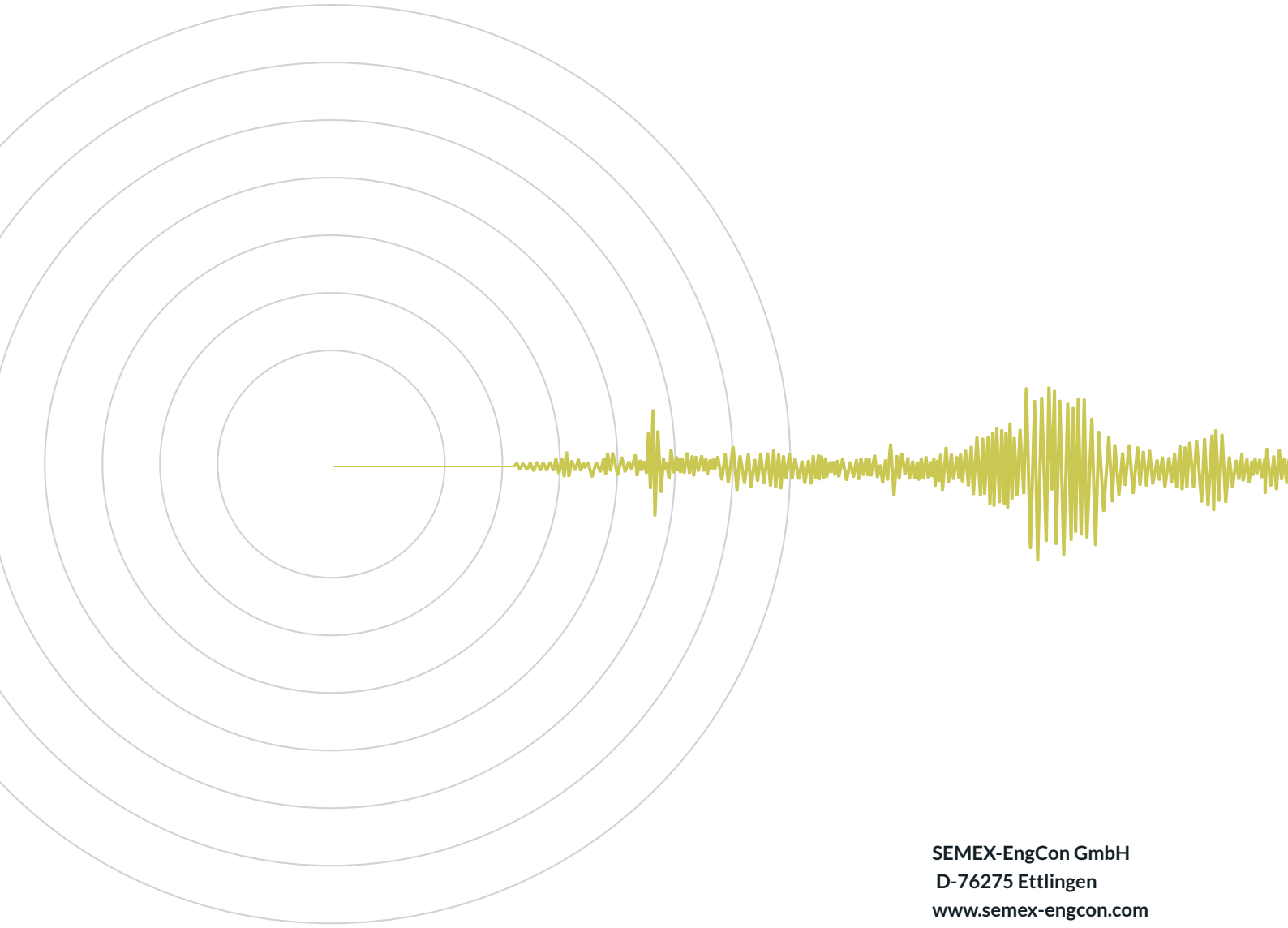

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