RECOVIB

TINY S2

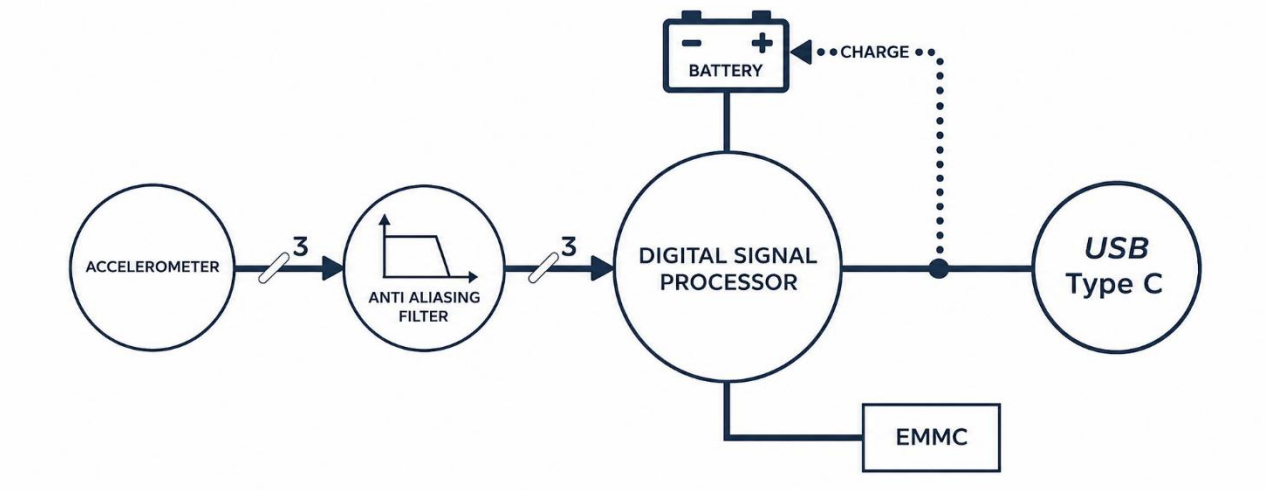
3-AXIS SHOCK & VIBRATION DATA LOGGER

SYNCHRONISATION | STAND ALONE | IP65 ROBUST & SOLID | PRECISE | MINIATURE

PROPERTIES

- 3 axes
- DC to 1 kHz useful bandwidth
- Low noise
- 24-hours battery autonomy
- Range of ±4 g / ±8 g / ±16 g
- Wireless during vibration measurement
- Compact and rugged design
- IP65
- Synchronisation < 1ms between sensors

BLOCK DIAGRAM



OPERATION

The RECOVIB Tiny S2 is configured by connecting it to a PC or smartphone via USB. The supplied software allows time synchronization, measurement range selection, sampling frequency, and start/stop interval programming.

Five sampling frequencies up to 4 kHz and three acceleration ranges are available to suit a wide range of applications, from low-frequency structural monitoring to high-frequency shock measurements.

Once configured and disconnected, the sensor records autonomously for up to 24 hours, entering sleep mode automatically at the preset stop time.

Recording can also be triggered by simply placing a magnet near the sensor, allowing measurement to start once the equipment is properly in place.

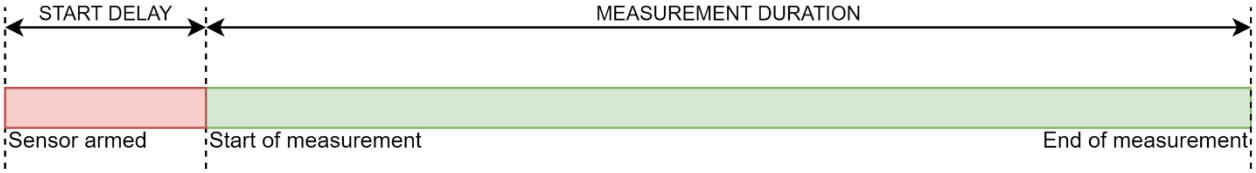
After the measurement session, the sensor is reconnected to a PC or smartphone where it is recognized as an external storage device. The supplied software converts the recorded data into standard formats including text, CSV, MATLAB™ and LabVIEW™.

When multiple synchronized sensors are used simultaneously, all data are consolidated into a single file with a unified timestamp, simplifying post-processing and analysis.

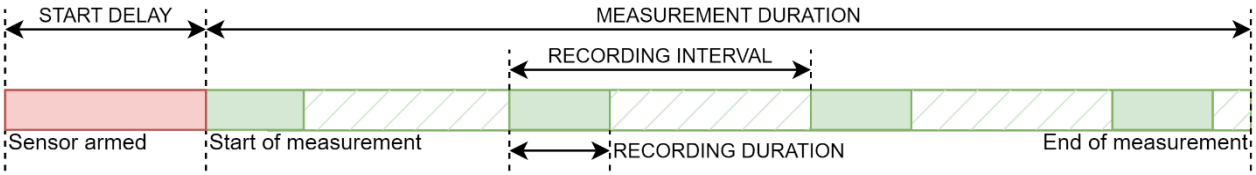
OPERATION MODES

The RECOVIB Tiny S2 offers four recording modes: **continuous mode** for uninterrupted data acquisition, **periodic mode** for scheduled measurements at defined intervals, **threshold mode** which automatically triggers recording when a vibration level exceeds a predefined value, and **manual mode** to start and stop the recording by hand using the magnet.

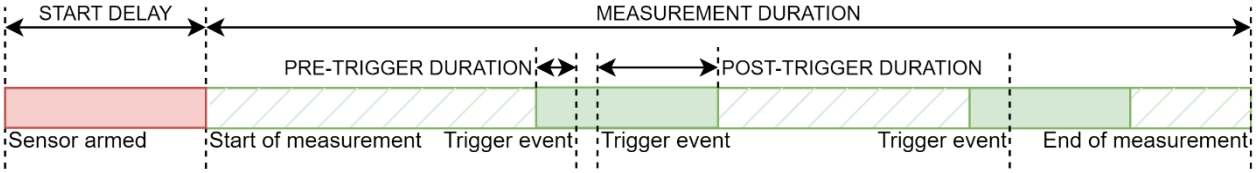
1. Continuous Mode



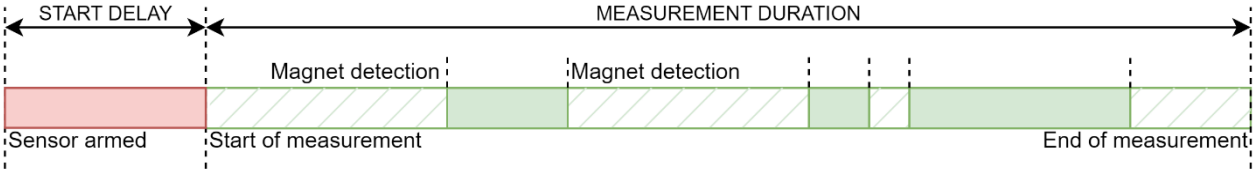
2. Periodic mode



3. Threshold mode



4. Manual mode

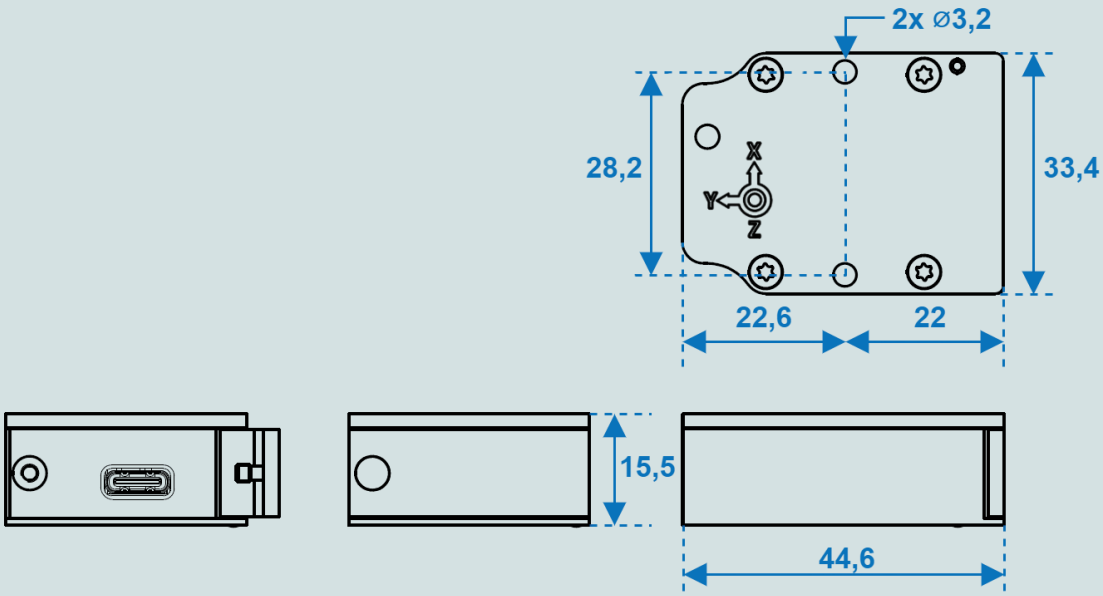


USE CASES

The RECOVIB Tiny S2 is suited for a wide range of industrial and field applications. Its compact form factor, simple installation, and high-quality data capture make it easy to deploy in demanding environments. Typical applications include:

- Structural analysis and health monitoring
- Vibration modal analysis
- Machine vibration diagnostics
- Rotating machinery measurements
- Transport and packaging monitoring
- Automotive testing
- Temporary field monitoring

DIMENSIONS



CERTIFICATIONS

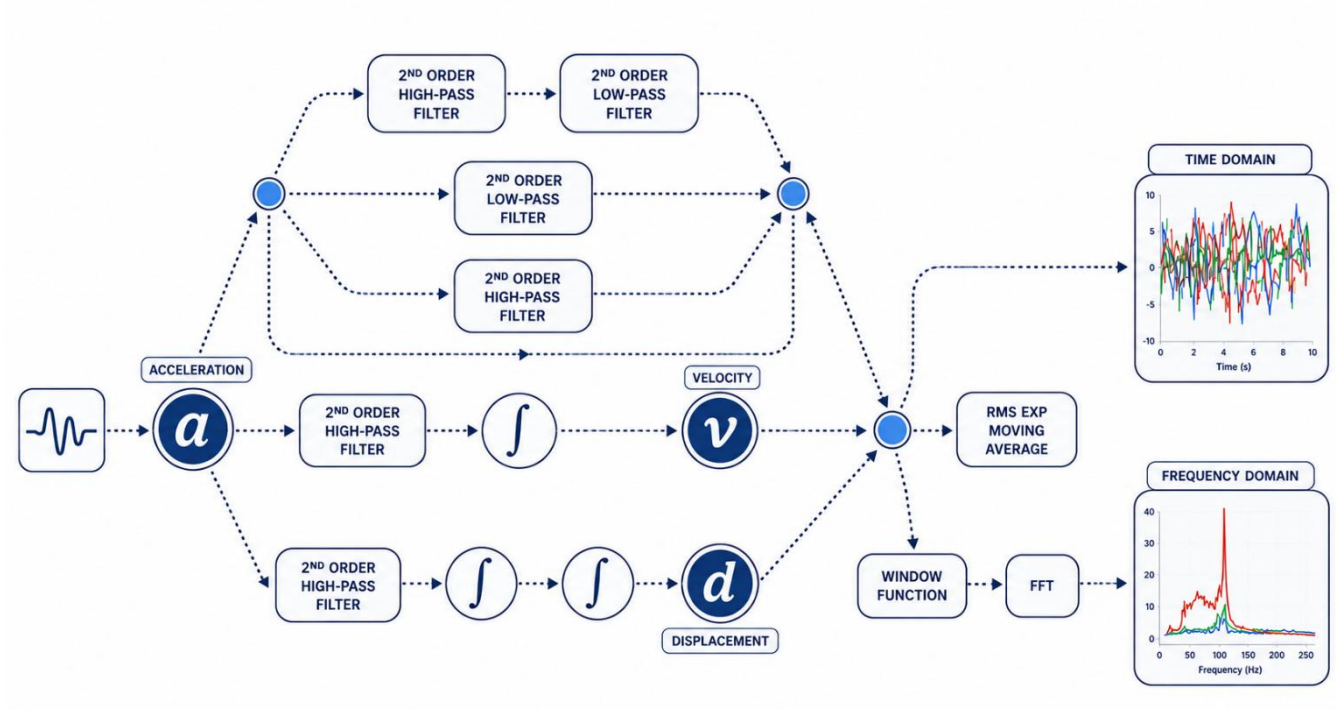
	STANDARD	STANDARD REFERENCE	LIMIT LEVEL
EMC COMPLIANCE	Radiated Emission	EN 55016-2-3/CISPR 16-2-3	EN/IEC 61000-6-3 30MHz - 1GHz
	Electrostatic Discharge Immunity	EN / IEC 61000-4-2	4 kV by contact; 2, 4 & 8kV in air - Criterion B
	Magnetic Field Immunity	EN / IEC 61000-4-8	80 A/m 50 & 60 Hz - Criterion A
	Radiated, radio-frequency, electromagnetic field immunity	EN/IEC 61000-4-3	80 MHz - 1 GHz: 10 V/m 1.4 - 2.0 GHz: 3 V/m 2.0 - 2.7 GHz 1 V/m AM 80% 1 KHz - Criterion A
DUST & WATER INGRESS PROTECTION LEVEL	Degree of Protection provided by enclosures (IP code)	IEC 60529	IP 65

SPECIFICATIONS

FUNCTIONALITIES	Start of Measurement	Time-based start or Magnet-triggered start
	Recording Mode	Continuous Periodic Threshold Manual
	Configurable measurement range	±4 g ±8 g ±16 g
	Configurable sampling frequency (SF) and bandwidth(BW)	SF: 4000 Hz / BW: 1000 Hz SF: 2000 Hz / BW: 500 Hz SF: 1000 Hz / BW: 250 Hz SF: 500 Hz / BW: 125 Hz SF: 100 Hz / BW: 25 Hz
	Synchronization Offset	1 ms (typical)
	Synchronization drift (continuous recording mode only)	0.3 ms/h (typical)
	Data download speed	USB High Speed (480 MB/s) 5 minutes for a recording of 24h at 4 kHz (~2.7 GB)
MEASUREMENT CHARACTERISTICS	Lower frequency limit	0Hz (DC)
	Passband frequencies (per channel)	Up to 1000 Hz
	Storage rates (per channel)	Up to 4000 samples per second
	Output unit	m/s^2 - g
	Non-linearity	±0.1 % (4, 8 g) ±0.4 % (16 g)
	Residual noise density	30 µg/√Hz
	Residual noise (derived)	calculated over flat bandwidth : 949 µg (1000 Hz BW) 671 µg (500 Hz BW) 474 µg (250 Hz BW) 335 µg (125 Hz BW) 150 µg (25 Hz BW)
	Transverse sensitivity	± 2 % (typical)
	Sensor technology	MEMS
	Sensitivity Change due to Temperature	± 0,02 %/°C (typical)
	0 g offset vs temperature	± 1 mg/°C (typical)
	Additional measurement	Temperature @ 1 Hz
AUTONOMY	Battery (Continuous, Threshold and Manual modes)	more than 24 hours (continuous recording @ 4 kHz)
	Battery (Periodic mode) – Examples with typical values	10 minutes of recording every hour will last up to 5 days. 1 minute of recording every hour will last up to 13 days. 10 minutes of recording every day will last up to 14 days.
	Storage	eMMC 8 GB
OUTPUTS FORMATS	Binary, txt, CSV, NI LabVIEW, MATLAB (Level 5 MAT-file)	
ENVIRONMENTAL CHARACTERISTICS	Operating Temperature range	-10 .. 50°C
	Protection grade	IP65
MECHANICAL DATA	Weight	46 g
	Case Material	Aluminum

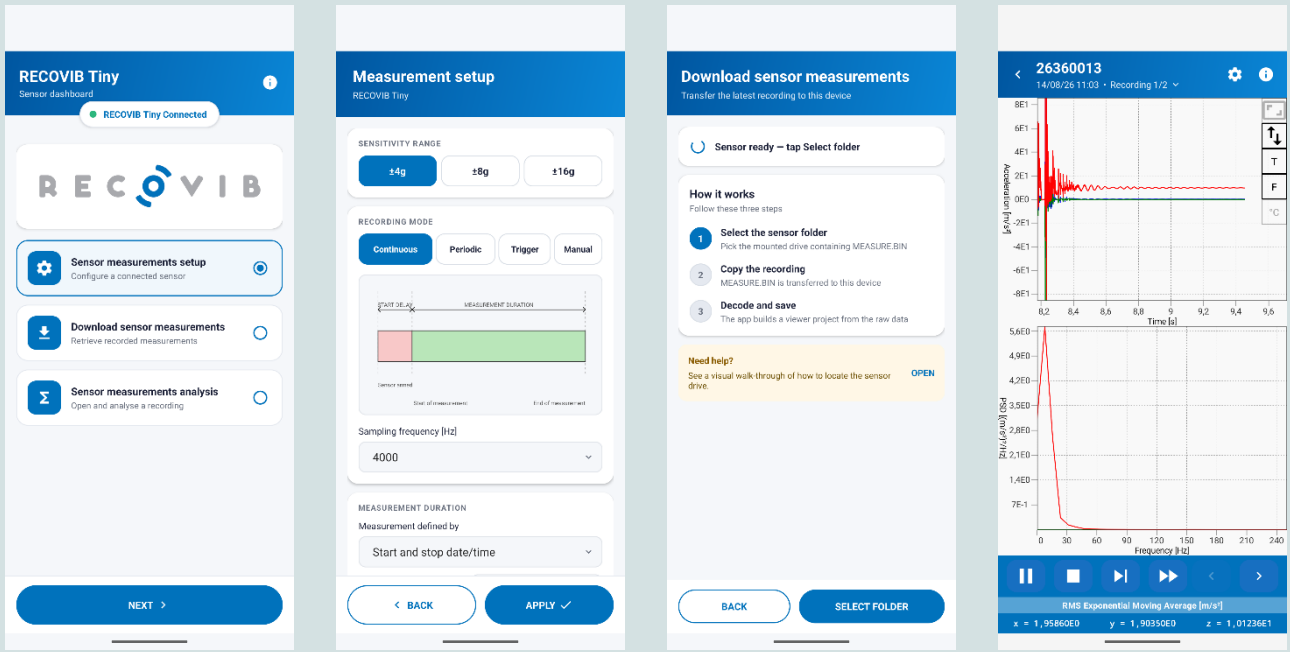
SIGNAL PROCESSING BLOCK DIAGRAM

Used in the Recovib SUITE Software and in the Tiny App.



RECOVIB TINY APP

Monitor your Tiny Vibration Recorder on your mobile phone. Set up your Tiny S2 device, define the recording period, then download and analyze the data.



Downloadable on your Android devices via Google Play Store free of charge.

RECOVIB SUITE SOFTWARE

A free desktop application to configure the recorders, download measurement campaigns and analyze the data.

Modules for the Recovib Tiny S2 :

Recovib Tiny

Set up the Tiny S2, define the recording period and download the recorded data to the host PC.

Recovib Converter

Export the recorded data in various formats: txt, wav, MATLAB, LabVIEW, HDF5 and more.

Recovib Viewer

Replay and analyse the recorded data in both the time and frequency domain.

The Suite also includes the Recovib Feel and Recovib Monitor modules, used with the other RECOVIB sensors.

Signal processing options (Recovib viewer)

Time domain	Frequency domain (FFT-based)
• High-pass filter • Low-pass filter • Band-pass filter • Integrator filter (velocity mode) • Dual-integrator filter (displacement mode)	• Amplitude spectrum • Peak and RMS • Power spectrum • Power spectral density • Amplitude spectral density

Available free of charge and delivered with the product. / Downloadable via our website.

Android smartphone - Minimum configuration

VERSION	Current minimum : Android 12[(1)] (EOL Dec 2026, grace until Dec 2028)
RAM Memory	2 GB (Recommended: 4 GB or more)
USB	USB OTG – USB Host required

(1) The minimum supported Android version corresponds to the Google End-of-Life (EOL) date + 24 months of grace period. This rule applies at each app update.

Windows Computer - Minimum configuration

VERSION	Windows 10 64-bit operating system, x64-based processor
RAM Memory	2 GB (Recommended: 8 GB or more for large projects)
GPU	Recommended: DirectX10 compatible GPU

Accessories

The Tiny S2 is delivered in a complete box including all the necessary accessories.
A standard suitcase contains:

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