

A portable 24-bit vibration analyzer with automatic fault diagnosis of rotating machinery. The Android and Windows app recognises five fault types on its own, computes fault frequencies from a database of over 30,000 bearings, confirms bearing damage and creates a report per ISO 20816.

**±100 g**

RANGE · 24-BIT A/D

**2 Hz–15 kHz**

FREQUENCY BAND

**31.2 kSPS**

SAMPLING RATE

**USB-C**

27 KG MAGNET · 120 G

TECHNICAL PARAMETERS

**Hardware**

Sensor	MEMS accelerometer
Measuring range	±100 g
A/D converter	24 bit
Frequency band	2 Hz – 15 kHz
Sampling rate	31.2 kSPS
Magnet pull	27 kg
Weight	120 g
Interface	USB-C · no batteries
Platforms	Android · Windows · iOS*
Warranty	24 months

\* iOS version in development.

DIAGNOSTICS

**Detected faults**

- ✓ Rotor imbalance
- ✓ Coupling misalignment
- ✓ Mechanical looseness
- ✓ Bearing damage (BPFO / BPFI / BSF / FTF)
- ✓ Motor electrical fault

MEASUREMENT TYPES

**Measurement & analysis**

- ✓ FFT spectrum and time signal
- ✓ Envelope spectrum (gE) for bearings
- ✓ Run-up / coast-down
- ✓ Bump test (natural frequency)
- ✓ On-site rotor balancing

STANDARDS & DATABASE

ISO 20816-3

ISO 14694

ISO 21940

ISO 18436-2

30,000+ bearing database (SKF, FAG, NSK...)

**Diagnosis without a vibration specialist**

The result (OK / Warning / Danger) and the VIBE AI report are clear even without a trained analyst. Full spectra and tools are available for advanced users.

**Remote evaluation within 24 h**

For unclear cases, upload the recording and our analyst confirms the fault type within 24 hours. Ten evaluations are included with every device.

## KEY FUNCTIONS

### What the app does

#### Automatic fault detection (VIBE AI)

The algorithms analyse the measured spectra and automatically detect five fault types — imbalance, misalignment, mechanical looseness, bearing damage and motor electrical faults. Each fault is given a confidence score and the machine is classified as Normal / Warning / Alarm. Even a technician without vibration-analysis training understands the result.

#### VIBE AI report

Every measurement produces a professional PDF report: machine and bearing identification, severity per ISO 20816-3 / 14694, diagnostic-model scores, a bearing frequency-match table (BPFO / BPF1 / BSF / FTF), wear phase and a specific recommendation with a deadline. Generated instantly after the measurement, with no extra software.

#### Smart route

Identify measurement points with the built-in QR-code scanner or by tapping an NFC tag. Assign a specific bearing and both custom and standard limits to each point. The RMS/Peak trend is recorded automatically and shown in a graph; the cascade FFT waterfall reveals how vibration develops over time. Share data between devices (export/import, FTP).

#### Dynamic balancing (VIBE BALANCER)

Balance the rotor in place, without disassembly. The app guides you through the measurement step by step, performs the calculations and delivers a ready correction-weight proposal — single- or two-plane. When finished, it instantly generates a PDF protocol with polar diagrams and a residual-imbalance check per ISO 21940.

#### Complete machine report

Measures every defined point of a machine and creates a single report — the status of each point per ISO 20816 (zone A–D), RMS velocity, acceleration and gE envelope trends, statistical indicators and an estimated time-to-alarm for every point.

#### Route report

A one-page summary of the whole plant: number of machines, points and readings, the split into zones A / B / C / D, priority actions, a status map and a ranking of worsening trends with estimated time-to-alarm (ETA). Optionally a detailed version with charts for every point.

#### ANYONE UNDERSTANDS THE RESULT · INSTANTLY

##### ● Normal

Vibration within normal limits, the machine runs safely.

##### ● Warning

Elevated vibration; detailed analysis and a planned intervention are advised.

##### ● Alarm

High vibration, unsafe operation, immediate action required.

#### Envelope analysis (gEnv) — save hundreds of thousands

The gEnv indicator reveals wear of bearing raceways long before it shows up in the machine's overall running, preventing catastrophic failures and costly unplanned downtime.

#### Condition trend under control

The trend is recorded into the route and shown in a graph for easy assessment. The cascade FFT chart also gives a spatial visualisation of how the vibration evolves over time.

## OPERATIONAL FUNCTIONS

### For everyday operation

#### Bump test (natural frequency)

A tap on the stopped machine reveals hidden structural resonances and shows whether the structure itself amplifies the vibration.

#### Run-up and coast-down

Analysing the machine's behaviour during start-up and shutdown safely identifies critical speeds with dangerous resonances.

#### Lubrication module

Monitors the vibration signal in real time and helps determine the correct lubrication of a bearing — preventing bearings ruined by incorrect lubrication.

#### API integration (ERP / CMMS)

A built-in HTTP server exposes data in JSON for seamless integration with enterprise ERP and CMMS systems.

#### No batteries

The device needs no charging — power and data both run over USB-C straight from a phone (Android) or PC (Windows).

#### Czech product, CZ/EN

Developed and manufactured in the Czech Republic. Full Czech and English localisation, firmware updates directly through the app.

#### Remote evaluation included

Upload recordings with a single click to the VibeDynamics server or your own FTP and our analyst advises remotely. Each new analyzer includes 10 data evaluations.

#### Training and service

Basic vibration-diagnostics and operation training (2 h) is part of every package. We also offer complete machine service — from bearing replacement to balancing.

## LICENSING (PRICES EXCL. VAT)

### Editions

#### VIBE BASIC

**CZK 79,000**

excl. VAT

Automatic fault detection, VIBE AI, ISO evaluation, time signal, FFT, QR/NFC route, bump test.

#### VIBE EXPERT

**CZK 109,000**

excl. VAT

Everything in BASIC + envelope spectrum and a 30,000+ bearing database (SKF, FAG, NSK...), BPFO/BPFI/BSF/FTF, FFT waterfall, API.

#### VIBE BALANCER

**CZK 139,000**

excl. VAT

Everything in EXPERT + dynamic balancing, single/two-plane, ISO 21940 polar diagrams, run-up/coast-down, PDF protocol.

Basic measurement is available without a licence; advanced functions unlock with a licence key. The hardware is identical across all editions. Cloud Expert: CZK 1,900/mo. Trial: 7 days free, or 14 days with training (CZK 5,000, credited towards the purchase).

#### SALES

**Zdeněk Lenc**  
+420 770 434 350  
zlenc@vibedynamics.cz

#### TECHNICAL

**Michal Fröhr**  
+420 725 895 908  
mfrohr@vibedynamics.cz

#### VIBEDYNAMICS S.R.O.

Milevsko, Czech Republic  
vibedynamics.cz  
analyzatorvibraci.cz