

VibroOne (24 MHz version)



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One-box solution for laser vibration analysis
Product brochure



Non-contact vibration measurement for compact setups

VibroOne is the compact vibration sensor solution specifically designed for tightly packed setups, whether in research laboratories, challenging production environments or for non-contact analysis of tiny details on microstructures or biomedical probes.



Highlights

The Polytec VibroOne laser Doppler vibrometer is the one-box solution for non-contact vibration measurement. With VibroOne you analyze acoustics, dynamics and vibration issues in both R&D and industrial quality control with laser precision.

As superior replacement for contact transducers, VibroOne avoids mass-loading while providing a micron-sized laser spot, simple operation, long standoff distances and interferometric accuracy.



- Non-contact measurement of vibration, acoustics and dynamics with laser precision
- Compact and ruggedized design for simple handling in labs and production testing
- Easy setup and test documentation with optionally integrated HD+ camera
- Measure from DC to 24 MHz with highest time resolution
- Synchronous output of displacement, velocity and acceleration
- VibroLink digital interface for convenient setup, data transfer and best SNR

The Polytec company

For more than 50 years and with nearly 500 employees worldwide Polytec develops, produces, and distributes optical measurement systems for research and industry. Our solutions cover vibration measurement, surface metrology, speed and length measurement, process analytics, machine vision as well as optical systems. Our customers obtain products and services through subsidiaries in Europe, North America and Asia and benefit from our worldwide service. Polytec has an excellent reputation thanks to its down-to-earth mentality, high-grade innovation and superior quality.

When compactness meets precision

Large bandwidth and high precision

The VibroOne front-end can measure velocities up to 12 m/s for frequencies up to 24 MHz. All range/filter setting changes can be made via touch screen on the front panel or via remote control. For applications requiring a displacement output such as ultrasonic wire bonding, use the optional displacement signal output. An acceleration output is also available as an option.

VibroLink enables digital transfer of measured velocity data to the VibSoft data acquisition and analysis software via Ethernet. Many different velocity ranges stand for measurement flexibility, while benefiting from the excellent signal-to-noise ratio, a high resolution and a linear response.

Compact sensor

For commercial production testing, the IP40 rated sensor provides protection from dust. Its compact size easily fits into test stands, avoiding special handling systems. With variable stand-off distance, the VibroOne is an excellent choice for 100 % quality testing of products for noise, structural and material properties.

The VibroOne sensor features a variable focus lens from approx. 200 mm to infinity, a compact housing, and a three or five meter fiber cable connection to the front-end.



Expand the capabilities

Use the ample and sophisticated accessories to best meet the requirements of your specific applications. Choose from microscope objectives, different stands, beam deflection units and more.

With the optional integrated HD+ video camera, a precise placing of the laser spot is made easy. Using Polytec's VibSoft data acquisition software, the engineer

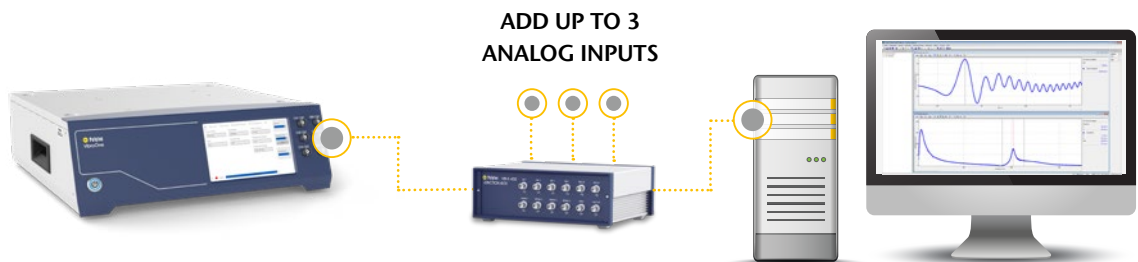
can display video images, position the micron-sized laser spot, facilitate the measurement process on the test structure, and store a video snapshot with the measurement results. The microscope objectives and a super-bright, in-line, LED illumination unit enable measurements even on micro-structures with a laser spot diameter down to $1.5\ \mu\text{m}$.

DIGITAL



**VibSoft data acquisition with the VibroLink Ethernet interface
or using the analog junction box with additional signal inputs**

ANALOG



VibSoft closes the gap between raw signal acquisition and profound analysis of vibration measurement data. Choose the VibroLink interface for direct and fully digital data acquisition via Ethernet. Alternatively choose the multi-channel DAQ unit and connect additional

analog inputs like other sensors. Further options like the powerful SignalProcessor (a Polytec math library for post-processing) or a scripting engine take the flexibility for individual post-processing and control to the next level.



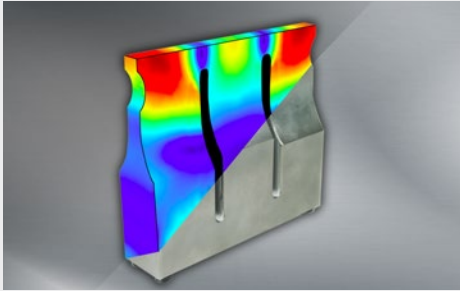
Applications

Covering a large field of applications, this compact vibration sensor system comes with a wide range of accessories to best solve your individual measurement task.



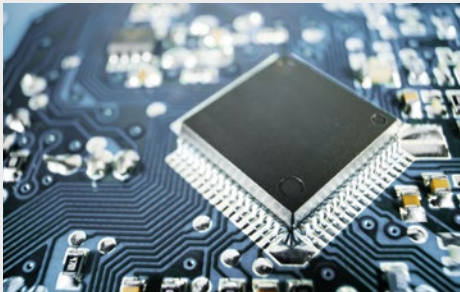
Hard disk drive testing

- Models available up to 24 MHz frequency bandwidth
- High resolution of $0.0015 \mu\text{m s}^{-1}/\sqrt{\text{Hz}}$
- High spatial resolution with microscope objective and HD+ video camera



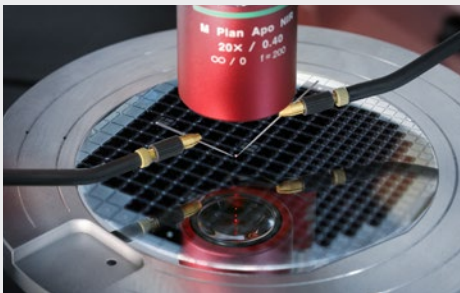
Quality assurance & production testing

- Very compact sensor with optional HD+ video camera
- High optical sensitivity for challenging production environment
- Variable stand-off distance and full remote control
- Precise class 2 laser with electronic laser shutter



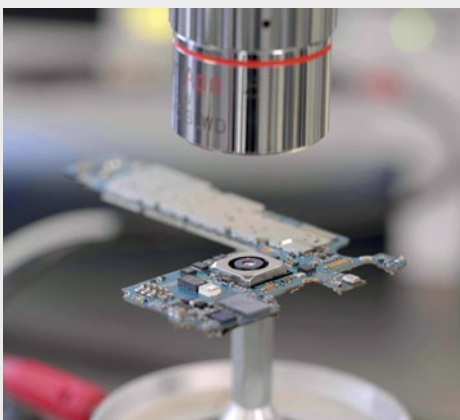
Wirebonding

- Very compact sensor
- Output signal providing a maximum displacement of $\pm 200 \text{ mm}$ (peak) and many different ranges which can be chosen



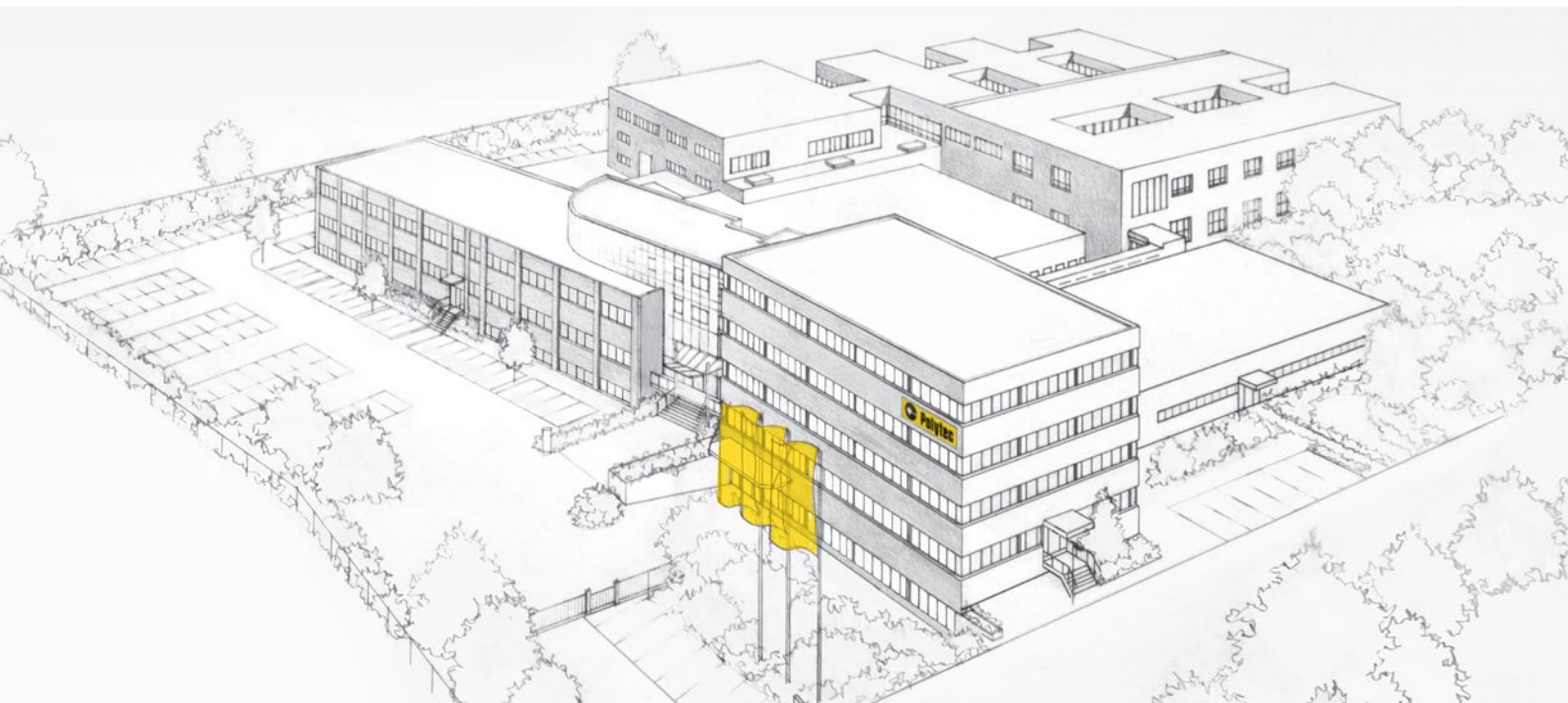
Printers, Inkjet, Ultrasonic Actuators, MEMS

- Frequency bandwidth up to 24 MHz
- $\pm 12 \text{ m/s}$ maximum velocity
- Microscope objective for $1.5 \mu\text{m}$ spot diameter
- Bright LED illumination unit



General R&D

- High optical sensitivity
- Compact design
- Velocity $\pm 12 \text{ m/s}$, many different ranges for optimal setting
- Store image of test object with measurement file in VibSoft data acquisition



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