



DISCOUNTS FOR EDUCATIONAL USE

## **HBK – Empowering the Next Generation of Engineers and Innovators**

Hottinger Brüel & Kjær (HBK) is proud to support education by providing cutting-edge tools and technologies that bring theory to life. This brochure introduces our wide range of ready-to-use products and applications – perfect for hands-on learning, research, and innovation. Our technology connects the physical world of sensors, data acquisition, and testing with the digital world of simulation, modelling, and analysis. This integration helps students and researchers explore real-world engineering challenges, accelerate innovation, and prepare for success in a competitive, technology-driven world. Whether in the classroom, laboratory, or field, HBK is your trusted partner in education and discovery.

# Sound Level Meters

## B&K 2245 AND HBK 2255

HBK's easy-to-use sound level meters are designed to be focused tools for your specific jobs to do. By combining the sound level meter with a purpose-built suite of apps, HBK provides a targeted approach to measurements, enabling remote control via mobile phones or smart devices.

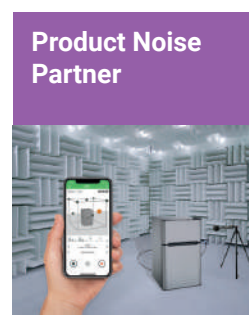
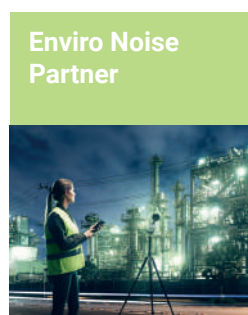
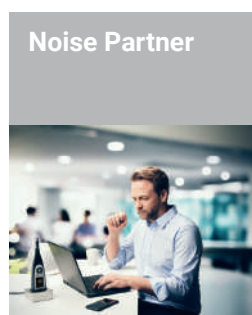
### Uses

- General purpose acoustic measurements
- Building acoustics measurements
- Environmental noise
- Occupational noise
- Product noise level testing
- Exhaust noise testing

### Features

All variants of B&K 2245 and HBK 2255 include:

- Bright, easy-to-read colour display
- Single-handed operation
- IP 55 (B&K 2245) or IP 54 (HBK 2255) body
- Single measurement range – typical 15.8 dB(A) to over 140 dB
- Integrated Bluetooth® and Wi-Fi
- GPS for time and location
- 16 GB internal storage for measurement
- Includes hard-shell carrying case with foam inlay
- The HBK 2255 can record audio in high-quality FLAC and WAV formats for signal post-processing with other tools



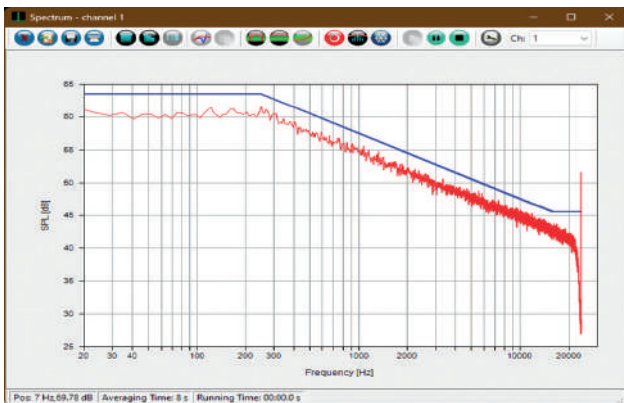


# DIRAC Room Acoustics Software

Room acoustics is a subject of interest for numerous students, researchers, and educational institutions. DIRAC 7 is the latest solution designed specifically for this field, which includes speech intelligibility, scale model measurements, and sound system validations.

NEW: educational license Type 7841, one-year, 10-seat floating license.

When purchasing DIRAC for educational use, HBK includes a free 'Train the Trainer' session to make sure you are fully familiar with the software and its capabilities.

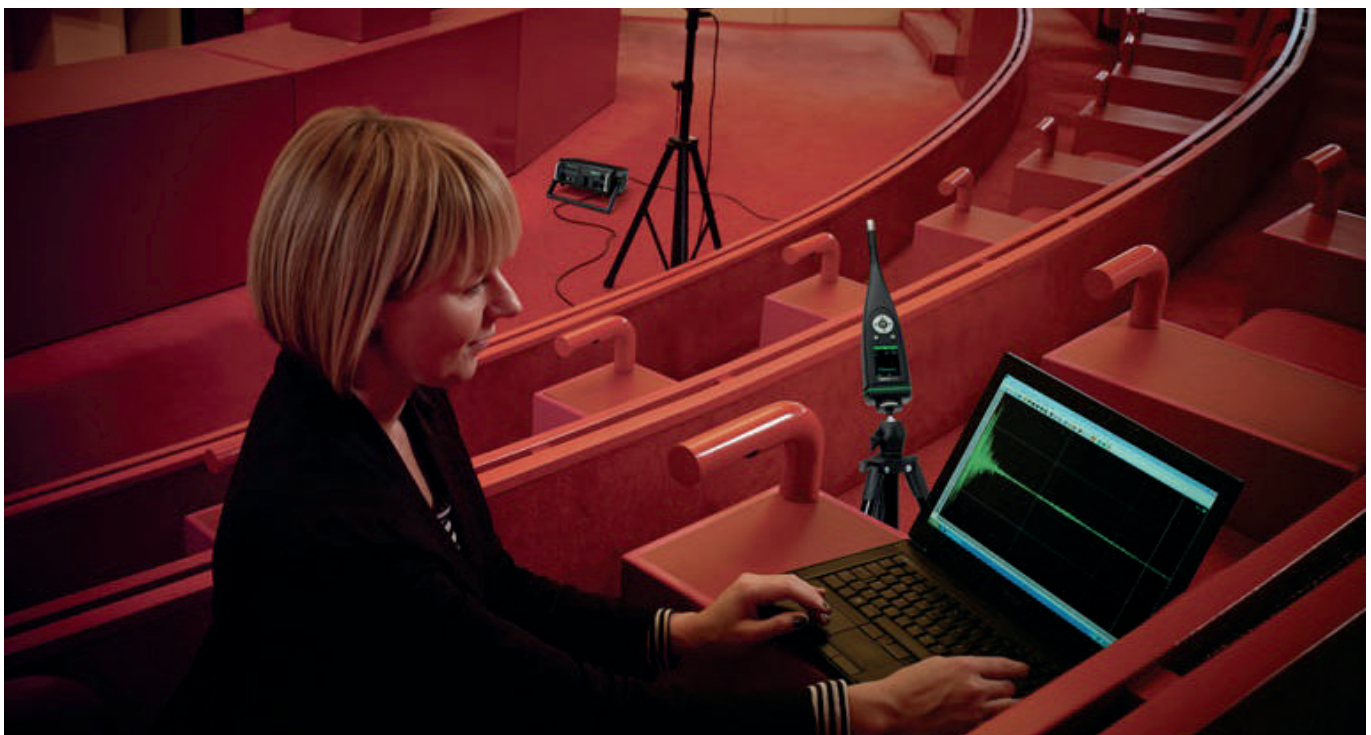


## Uses

- Room acoustics measurement of any room, hall or space
- Speech intelligibility according to IEC 60268-16
- Pre- and post-modification testing
- Comparison of acoustics between two different rooms/spaces
- Scale model measurements for validation of sound systems
- Troubleshooting room acoustics

## Features

- Wireless measurements with HBK 2255 sound level meter and HBK 2755 Smart Power Amplifier
- LAN-XI support for multichannel measurements
- Excitation via loudspeaker or impulsive noise source
- Excitation by sine sweep or MLS (maximum length sequence)
- Calibrated sound source (Type 4720) available for speech intelligibility measurements
- Asynchronous measurement capability
- Auralisation with spatial impulse response
- Determination of short reverberation times via room impulse responses



# LAN-XI and Fusion-LN Data Acquisition Systems

HBK's LAN-XI and Fusion-LN data acquisition hardware is a trusted platform in academic and research environments worldwide. Their modular design offers exceptional flexibility – supporting everything from single-module setups to large, distributed systems with over 1000 synchronised channels. Whether you're in the lab or out in the field, they deliver reliable, high-precision measurements with minimal setup time. Fusion-LN and LAN-XI are fully interoperable allowing cost-efficient upgrades of existing systems.

With features like plug-and-play connectivity, Power over Ethernet (PoE), and support for smart sensors, LAN-XI and Fusion-LN simplify complex experiments while ensuring accurate results from the very first test. They are the ideal solution for teaching, research, and advanced testing across engineering and science disciplines.

## Applications

- General sound and vibration measurement and analysis
- Noise source identification
- Sound power determination
- Electroacoustics
- Acoustic material testing
- Structural dynamics
- Machine analysis and diagnostics
- Source path contribution
- Calibration systems



## Features

- Ultra high precision and reliability
- Extremely low noise floor
- 2 to 1000+ measurement channels
- Scalable configurations
- Interchangeable front panels
- Frequency ranges up to 204.8 kHz
- Absolute maximum input 60 Vpeak without damage
- Recording to SD memory card (WAV or BKC format)
- Silent operation
- Full compatibility with PULSE™ LabShop, BK Connect® and Tescia®
- Automatic detection of hardware and transducers with support of IEEE 1451.4-capable TEDS transducers
- Platform-independent API
  - Open API for LAN-XI
  - openDAQ™ for Fusion-LN
  - Modules with 4, 6 and 12 channels available
  - Modules with signal generator output available (sine, swept sine, random, user defined waveform,...) for shaker excitation or electroacoustic applications
- Fusion-LN and LAN-XI are fully compatible. Existing systems can be expanded and upgraded



## BATTERY MODULE TYPE 2831

### Uses

- Field use
- Powers a frame or individual LAN-XI modules
- Backup power supply (UPS)
- Stand-alone recording with LAN-XI Notar™ software
- Wireless front-end for Sonoscout™

## 1-MODULE WIRELESS LAN FRAME TYPE 3660-A

### Uses

- Sonoscout front-end
- In-vehicle NVH recordings
- Wireless front-end for PULSE™ LabShop and PULSE Time Data Recorder
- Remote control of LAN-XI Notar stand-alone recorder
- For applications where LAN cables are not practical

## LAN-XI NOTAR STAND-ALONE RECORDER

### Uses

- Confident recording in shock-inducing environments such as during transportation of objects – from consumer goods to satellites
- NVH recording under demanding conditions such as on a motorcycle on a vehicle test track
- Stand-alone, battery-operated recording in the field, such as traffic noise

## LAN-XI OPEN APPLICATION PROTOCOL INTERFACE (API)

### Uses

- Set up one or more modules as single data-acquisition front end(s) using a variety of synchronisation methods such as Precision Time Protocol (PTP). This could potentially be a completely detached program in C# for basic setup
- Configure module(s), including use of channels, bandwidth, filter settings, CCLD and polarisation voltage
- Stream 24-bit samples in real time, or record to an SD card in BKC or WAV format
- Manage generator output, CAN functionality and bridge measurements
- Perform TEDS detection and read back the results
- Write raw data from your LAN-XI front end to, for example, MATLAB®





# QuantumX Data Acquisition System

## UNIVERSAL DATA ACQUISITION SYSTEM

The QuantumX data acquisition (DAQ) system is the ideal tool for all your testing and measurement tasks. It is the first choice for reliably capturing a wide range of physical quantities and sensor technologies. QuantumX offers unique capabilities for acquiring all types of signals and sensor data. PROFINET/CAN FD and data recorders are available.

### Flexible

- Each module is a data acquisition unit
- Data recorder for mobile and autonomous DAQ
- Integrated in real time at the test bench via EtherCAT, PROFINET IRT and CAN
- Permanently installed in monitoring applications

### Reliable

- Established in the market for many years and used by thousands of customers
- High measurement accuracy thanks to patented technology
- Outstanding long-term stability by patented routines
- Integrated calibration certificate

### Easy to use

- Small and portable
- Intuitive to operate with HBK's catman software
- Open for integration with many other software programs including LabVIEW, Visual Studio .NET, DIAdem, CANape, and DASylab
- The common API allows you to integrate into your own software

**30%**  
off DAQ  
modules

**20%**  
off bundles

**10%**  
off accessories



# catman<sup>®</sup>

## Data Acquisition Software

With catman data acquisition software, you can easily acquire, visualise and analyse your measurement data – either in real time or during post-processing. Whether you are conducting mobile field tests, lab-based component testing, bench testing or monitoring tasks: catman is up to any challenge.

### INTERESTED? FREE TRIAL AVAILABLE!

Experience the full potential of catman data acquisition software with a free trial version, allowing up to 25 program starts.

Benefit from intuitive DAQ setup, powerful data visualisation and flexible data analysis including the following highlights:

- Support of optical and electrical DAQ
- Easy integration of external devices
- Online computations like rainflow analysis and rosette calculations
- Video recording
- Remote control
- Scripting for feature extension and workflow automation

### CHOOSE THE RIGHT CATMAN PACKAGE FOR YOUR NEEDS

- catman Easy is the basic version and includes online and offline setup, online visualisations, and online maths as well as recording functionalities. catman Easy can be combined with two different add-on modules:
  - EasyMath: Mathematics module and auto sequences for catman Easy
  - EasyScript: Free programming under VBA in measurement and analysis mode
- catman AP adds powerful modules to the full catman Easy software package, such as:
  - GNSS/GPS data visualisation on maps
  - Video recording
  - Wheelforce transducer integration
  - Parallel recording
  - Cloud data streaming
- catman PostProcess offers various post-process tools to process, analyze and report your results, such as:
  - Curve operations (peak value detection, cut and smooth data, remove peaks)
  - Math functions (for example, strain gauge rosette calculation, electric power calculation)
  - Data visualisation
  - Video replay
  - Statistics and classifications (for example, rainflow counting, time-at-level)
  - Data export and report



# Starter Kit for Experimental Stress Analysis

## STARTER KIT FOR EXPERIMENTAL STRESS ANALYSIS

Product package consisting of an MX1615B measurement amplifier, Ethernet cable, power supply, sensor connectors, and catman Easy software (including 12-month software maintenance).

### 16-channel bridge amplifier of the QuantumX family

- Strain gauge full or half bridge (DC or 1200 Hz carrier frequency)
- Strain gauge quarter bridge (DC or 1200 Hz carrier frequency, 120/350  $\Omega$  completion resistors)
- Voltage ( $\pm 10$  V)
- Resistance thermometers (Pt100)
- Resistor
- Potentiometer (Poti)
- Individually configurable measuring rates up to 20 kS/s
- Automated sensor detection and setup via TEDS

### catman Easy

- Channel setup via TEDS or sensor database
- Powerful online visualisations
- Measurement job parameterisation
- Event and alarm handling
- Live data analysis
- Save data in multiple different file formats



### DAK1 Set: simple and affordable

Starter kit DAK1, is the cost-effective complete set for the installation of strain gauges. The handy and robust case contains all the materials required for the first installation.

The original package contains 25 strain gauges and X60 and Z70 cold-curing adhesives, providing the best possible results in various measurements during experimental stress analysis. In addition to the practical accessories included in starter kit DAK1, the reference book 'An Introduction to Measurements using Strain Gauges', by Karl Hoffmann – an experienced expert in strain gauge technology – is also part of the delivery scope.

### Content

- 10  $\times$  strain gauges LY11-6/120A
- 10  $\times$  strain gauges LY61-6/350A
- 5  $\times$  strain gauges 6/120 LY41 with 1 m TPE ribbon cable attached
- 2 cold-curing adhesives: Z70 y X60
- 2 protective coatings: AK22 y ABM75
- Solder terminals
- Connecting wire
- Sandpaper
- Cleaning agent RMS 1 and cleaning pads
- Solder, lead-free
- 1 specialist book on strain gauges 'An Introduction to Measurements using Strain Gauges'
- 1 petri dish

**30% OFF**





# Electric Power Testing – Genesis HighSpeed Data Acquisition System

## POWER ANALYZER GEN4TB OR GEN2TB

A single system acquires and displays the battery voltage and current (input to the inverter), the three-phase (or six-phase) pulse width modulated voltages and currents (output from the inverter), plus the torque, speed and angle of the electric motor.

### Features

- Scalable from 3 to 51 electric phases
- One system for electric and mechanical power, CAN Bus/CAN FD, temperature and NVH
- Simultaneous acquisition and recording of all signals
- Easy system integration through software interfaces and through open data format
- Performs real-time power calculations per half cycle (even based on your own formulas for 'special' setups)
- Continuous recording or snapshots per setpoint for mapping, verification, and analysis
- Advanced analysis capabilities like space vector, dq0 transformation or air gap torque
- Genesis HighSpeed Transient Recorder and Data Acquisition System

### Example of package:

A Genesis HighSpeed based Electric Power Analyzer consists of the following Genesis HighSpeed components:

- Mainframe Gen2tB or Gen4tB (w local SSD)
- 3, 6 or 9 power channels by GN310B
- Perception Enterprise including eDrive option
- Torque transducer splitter box G070A
- Artificial star adapter

This flexible power analyzer can be equipped with further cards that enable you to measure signals from a wide variety of sensors like accelerometers, microphones, charge sensors or IEPE sensors or to integrate fieldbuses like EtherCAT or CAN.\*

\*Discount for power analyzer only



# BK Connect® Acquisition and Analysis Software

## BK CONNECT, EDUCATIONAL SOFTWARE LICENSE

Universities have two options for obtaining the BK Connect software:

1) Purchase individual license components according to their needs, including Software Support and Maintenance Contracts, which come with full support and a university discount.

2) Rent special Educational License 8400-U-F for a three-year period.

Type 8400-U-F is a complete 25-seat floating license package (FlexLM) with all components listed below, valid for three years, for a small administration fee.

The license includes software renewals for the full three-year period at no additional cost. However, it does not include support.

Users are required to sign a document stating that the system will be used exclusively for educational purposes.

## Features include, among many other things:

- Time Data Recorder
- Data Processing
- Advanced Frequency Analysis
- Digital Filter Analysis for Acoustic Applications: CPB Analysis/1/n-octave Analysis
- Sound Quality Metrics
- Order Analysis
- Angle Domain Analysis
- Shock Response Analysis
- Structural Measurements – Hammer and Shaker
- Experimental Modal Analysis (EMA)
- Operational Deflection Shapes (ODS) in Time and Frequency domains
- Data Export and Import in different formats like UFF, WAVE, HDF5 (for MATLAB) and many others



# Calibrators

As the first step in any measurement chain, it's essential to ensure that your sensors are functioning properly before use. Whether in the lab or in the field, a quick check with our hand-held calibrators provide the confidence you need.

## SOUND CALIBRATOR TYPE 4231

A handy, portable sound source for calibration of sound level meters and other sound measurement equipment. The calibrator is robust and stable and conforms to EN/IEC 60942 (2017) Class 1, and ANSI S1.40-2006.

### Features

- Robust, pocket-sized design with highly stable level and frequency
- Calibration accuracy  $\pm 0.2$  dB
- 94 dB SPL or 114 dB SPL for calibration in noisy environments
- Minimal influence of static pressure and temperature
- Sound pressure independent of microphone equivalent volume
- 1 kHz calibration frequency for correct calibration level independent of weighting network
- Fits Brüel & Kjær 1-inch microphones ( $\frac{1}{2}$ -inch,  $\frac{1}{4}$ -inch and  $\frac{1}{8}$ -inch microphones with a microphone adaptor)
- Switches off automatically when removed from the microphone



## VIBRATION CALIBRATOR TYPE 4294

Vibration calibrator for accurate acceleration, velocity and displacement calibration of vibration instrumentation. The calibrator is portable, hand-held and battery-powered for everyday use in harsh environments.

### Features

- Small, lightweight, and battery-driven
- Leather case for impact protection
- Designed for everyday use in harsh environments
- Acceleration, velocity and displacement calibration
- High-precision, crystal-controlled servo operating at 159.15 Hz ( $1000 \text{ rad s}^{-1}$ )
- Drop- and environment-tested according to IEC 60068
- Splash-proof according to IP54 (IEC 60529)



25%  
OFF



# Measurement Exciters

HBK offers compact, robust, and versatile high-performance permanent magnet measurement exciters designed for long and trouble-free operation.

## MEASUREMENT EXCITERS TYPES 4808, 4809, 4810

### Applications

- General vibration testing
- Experimental modal analysis
- Mechanical impedance and mobility measurements
- Fatigue and resonance testing

### Features

- Low-mass, high-rigidity, spring-suspended armatures for high-quality force measurements
- Small physical dimensions and weight relative to the force ratings
- Robust construction for reliable daily use
- Trunnions available for flexible and precise positioning of the exciters
- Matching power amplifiers available for optimum test performance

Type 4810: 10 N sine peak.  
Frequency range up to 18 kHz. Weight 1.1 kg.

Type 4809: 45 N sine peak, 60 N with air cooling.  
Frequency range up to 20 kHz. Weight 8.3 kg.

Type 4808: 112 N sine peak, 187 N with air cooling.  
Frequency range up to 10 kHz. Weight 35 kg.

Power Amplifier Type 2718 is recommended for use with Types 4809 and 4810, and Power Amplifier Type 2719 with Type 4808. They provide a wide frequency range and low harmonic distortion and have extensive control and monitoring functions. Type 2719 can operate in either voltage or current mode.

## HAND-HELD EXCITER TYPE 5961

Type 5961 is a battery-operated exciter with a built-in power amplifier. Weighing only 500 grams, including the battery, it combines the versatility of a shaker test – ideal for optimising the excitation signal – with the mobility of an impact hammer test making it easy to rove around the test structure.

Type 5961 can be used for various applications including modal analysis where only force levels up to 2 N sine peak are required. Frequency range: 45 Hz to 15 kHz.



# Modal Excitation Systems

Our dedicated modal excitation systems are used for advanced modal testing, where accuracy and flexibility are the focus. They come with matching power amplifiers and accessories, providing an uncompromising balance of modal test performance, user-friendliness, and reliable, long-term operation. With force ratings up to 1 kN sine peak and up to 2-inch peak-to-peak displacement, they excel in low-frequency excitation.

## Features

- Matching power amplifiers, push/pull stingers and accessories included
- Small physical dimensions relative to the force ratings
- Hole-through exciter design that significantly eases setup and makes it possible to use tension wires or traditional push/pull stingers with ease
- Low armature weight minimising force drop-offs at the test specimen's resonance frequencies
- High-quality materials, rugged construction and stringent quality control ensure versatile means of modal excitation for any experimental modal test
- Trunnions included for flexible and precise positioning of the exciters

Optional accessories include robust lateral modal exciter stands, push/pull stingers, tension wires, cables, and an array of adaptors to suit diverse testing needs.

Available systems (sine peak force): Type 3624 (100 N), Type 3625 (200 N), Type 3626 (400 N), Type 3627 (650 N) and Type 3628 (1.000 N).



# Empowering Innovation Through Vibration: The Permanent Magnet Shaker Advantage

At the heart of cutting-edge research and engineering education lies precision, reliability, and innovation. A permanent magnet shaker is more than just a tool – it's a gateway to discovery.

- **Unmatched precision:** Delivers consistent, high-fidelity vibration for structural testing, modal analysis, and materials research
- **Compact and versatile:** Ideal for labs with limited space, yet powerful enough to support a wide range of experimental setups
- **Real-world applications:** From aerospace to civil engineering, students gain hands-on experience with technology used in industry-leading research
- **Future-ready learning:** Equips students with the tools to explore dynamic systems, validate simulations, and innovate with confidence

The LDS V100 and V200 series are miniature units designed to reproduce a vibration environment under laboratory conditions. They are also suitable as non-seismic pick-ups and are widely used in educational and research establishments to investigate the dynamic behaviour of structures and materials. The LDS LPA100 amplifier is especially recommended for this purpose.

The LDS V400 series shakers are wide-frequency band, electrodynamic transducers capable of producing a sine force up to 196 N. They are also suitable as non-seismic pick-ups and are widely used in educational and research establishments to investigate the dynamic behaviour of structures and materials.



Learn more about our LDS shaker systems



The shakers' efficient armature design enables them to deliver impressive peak forces and accelerations over a wide frequency range. The LDS LPA100 and LPA600 amplifiers are especially recommended for this purpose, depending on the application.

The LDS V450 Series are wide frequency band, electrodynamic transducers capable of producing sine force of 311 N (V450/V451) and 489 N (V455/V456) when forced air-cooled. The shakers can be driven by any suitable oscillator/amplifier combination, but the LDS LPA600 and LPA1000 amplifiers are especially recommended for this purpose.

## Applications

- Modal and structural analysis
- Electronic assembly testing
- Laboratory experiments
- Fatigue and resonance testing
- Use as a velocity transducer or high-speed actuator

## Features

- Lightweight, high-performance armature delivers excellent acceleration and velocity performance
- Powered by compact, quiet and energy efficient amplifiers
- Robust, lightweight suspension provides excellent torsional and transverse stiffness with minimal impact on system acceleration
- Proven reliability maximises system availability
- Vertical and horizontal operations





# Sensors

## STRAIN GAUGES

Strain gauges are essential for measuring fatigue and testing materials to develop better and safer products. Whether in structural durability testing, structural health monitoring, or the production of OEM transducers, HBK's optical and electrical strain gauges are the preferred choice.



## LOAD CELLS

HBK weighing technology is synonymous with precision, safety, dependability, and quality. Its reputation is built on innovation, as well as flexible and cost-effective solutions that meet virtually any customer requirement. We are also committed to the promotion and advancement of hygiene in relevant industries.

Whether for use in checkweighers, dosing applications, filling systems or ordinary scales – the choice is yours! With us, you'll not only find the right analogue or digital load cell, but also the corresponding weighing electronics and software – all components from a single source, tailored to your application.

- OIML certifications
- Multiple variants of digital interfaces, such as IO-Link
- High-quality in large quantities
- Explosion protection classes available



Learn more about our full range of load cells



## FORCE SENSORS

HBK offers force sensors with measurement ranges from 10 N to 20 MN. We provide both strain gauge based transducers and piezoelectric force sensors. In addition to a wide range of sensors for mechanical testing and test stands, we also provide a comprehensive selection of calibration force sensors that meet the requirements of the ISO376 class '00'. Our TOP transfer sensors beat this by a factor of 10.

### Features:

- Different interfaces, 4 – 20 mA, 0 – 10 V or IO-Link
- In-house calibration service
- Rust free materials, suitable for harsh environments
- Multiaxial sensors with up to six measurement axes
- TEDS (Transducer Electronic Data Sheet) on request



Learn more about our full range of force sensors

## TORQUE SENSORS

HBK has been providing torque transducers since the early 1950s. The world's steadily growing energy demands, combined with increasing expectations for machines and drive systems to use resources efficiently and protect the environment, call for innovative technologies to operate these systems. Torque is a key parameter in the performance of machines and drive systems. Driven by the need to improve efficiency, highly accurate and reliable torque transducers have become indispensable.

HBK delivers a broad range of torque transducers – from high-end applications requiring maximum precision to industrial applications with an HBK accuracy class of 0.1. Our standard portfolio covers measurement ranges from 0.5 Nm to 300 kNm.

### Features:

- Accuracy class 0.05
- Speed up to 24000 rpm
- Speed measuring system
- Compact design



Learn more about our full range of torque sensors



## MICROPHONES

HBK began producing Brüel & Kjær microphones in 1945. By the late 1950s, we had established ourselves as a leading supplier of measurement microphones – renowned for accuracy, reliability and long-term stability.

Our global reputation is built on decades of experience and expertise, supported by meticulous testing and rigorous quality control. This ensures that every microphone delivers the performance and durability you expect.

Our 1/8-inch, 1/4-inch, 1/2-inch and 1-inch microphones are optimised for specific acoustic environments – whether free-field, pressure-field, or diffuse-field. In addition, we provide specialised microphones tailored to meet unique measurement requirements.

Explore our full range of microphones and discover the right solution for your application.

- Frequency correction curves for extending microphone usage
- Influence of humidity is not measurable in the absence of condensation
- Charge injection calibration to remotely check microphone health
- HBK microphone handbooks and Microphone Viewer help you master microphone technology



Learn more about our full range of microphones



## ACCELEROMETERS

Did you know that the world's first commercial piezoelectric accelerometer was launched by HBK (Brüel & Kjær) in 1943?

With more than 80 years experience in designing and manufacturing piezoelectric accelerometers, HBK delivers accelerometers that you can trust and rely on for precision, durability, and performance.

Among our most widely used CCLD accelerometers are triaxial types with TEDS, capable of continuous operation up to 165°C, and non-TEDS variants that operate up to 180°C. You can also use them as uniaxial or biaxial if needed.

Our accelerometers are designed to simplify your measurement setups – making your work more efficient and reliable.

- Individual calibration with 1600-line FFT secures the integrity of measurements
- Comprehensive environmental specifications



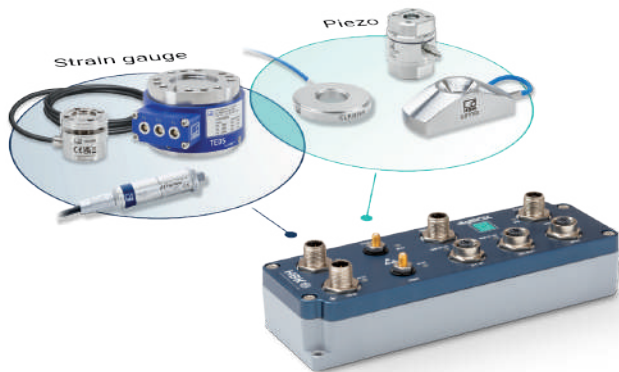
Learn more about our full range of accelerometers





# Industrial Amplifier for Smart Factory and Data Acquisition

- Single- and multichannel data acquisition systems measure mechanical quantities with up to 0.01% accuracy – including force, torque, speed, pressure, temperature, and displacement – and provide real-time control. These systems are ideal for production processes and asset monitoring, such as in test benches, machines, and plants used for quality control
- Bridging the gap with an easy-to-use web interface and multiple interfaces for automation (OT), such as fieldbuses, and data analytics (IT), including DAQ software like catmanEASY/AP, LabVIEW, MATLAB, and many more
- Included IoT protocols such as OPC UA and MQTT enable easy integration with local data servers, on-premise cloud solutions, and internet-based platforms – supporting advanced analytics and digital twins



## digiBOX Industrial

The new, high-precision multi-channel strain gauge and charge amplifier impresses with modern automation and cloud interfaces, an intuitive web server and integrated real-time measurement data pre-processing (including a calibration certificate).

- High-quality measurements with an accuracy class of 0.01 for strain gauges and 0.5 for piezoelectric sensors
- Integrated web server for easy parameterisation and visualisation with day and night modes
- OT connectivity for machine control and IT connectivity for data and process analysis and optimisation
- Real-time functions for various industrial applications

## ClipX

This precise, one-channel signal conditioner offers all modern automation interfaces, an intuitive web interface and smart functions.

- **Accuracy class:** 0.01
- **Measurement inputs:** Full-bridge and half-bridge strain gauges, piezoresistive transducer, potentiometer, Pt100, current, and voltage
- **Interfaces:** PROFINET, EtherCAT®, PROFIBUS, Ethernet/IP \*, Modbus-TCP, analogue (V/mA), digital-I/O, and Ethernet (TCP/IP)
- **IIoT (Industrial Internet of Things):** Remote diagnostics, health monitoring and web integration; includes an integrated OPC-UA server

## PMX

Measure and control in real time: PMX is a high-precision, multichannel data acquisition system particularly well-suited for measurement and monitoring tasks in test benches, machines and plants used for quality control.

- **2 – 16 channels** per module (individually extendable)
- **Accuracy class** of 0.05 with an integrated calibration certificate
- **Interfaces:** Profinet, EtherCAT, Ethernet IP, Ethernet (TCP/IP)
- **IoT-ready (Internet of Things):** For applications such as remote diagnostics and web integration



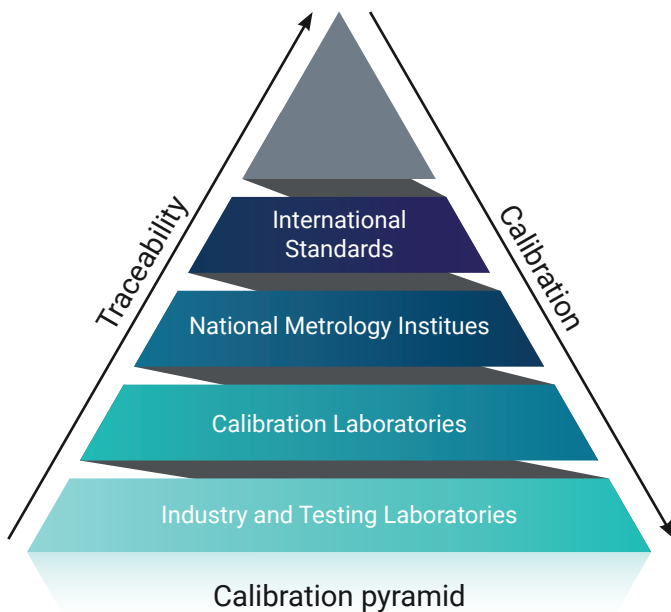
Learn more about our industrial amplifiers

# Calibration Services for Sensors and Instruments

- Regular calibration of measurement equipment is essential to ensure measurement results. It reduces the risk of errors, and helps minimise costs associated with maintaining product quality
- HBK offers extensive calibration services that comply with national and international regulations as well as legal requirements. Calibrations can be performed in local service centres around the world or directly at customer sites to reduce turnaround times
- Services range from cost-effective calibration compliant with industrial standards to high-precision transfer standards that meet the most demanding requirements
- The higher you go in the calibration pyramid, the more accurate the calibration becomes



Learn more about our calibration services



## Highest precision

- Reliable DAKKS calibration.
- Specification of measurement error and OK/NOK assessment (conformity statement)
- Adjustment of measurement equipment supported by the manufacturer's expertise
- Direct applicability for assessing measurement uncertainty
- Maximum precision for your processes, based on accurate knowledge of measurement error for inclusion in the measurement uncertainty assessment

## Industry-standard compliant

- Reliable calibration backed by globally recognised ISO 17025 accreditation
- Meets the requirements of key industry standards such as ISO 9001 and IATF 16949
- Streamlined audits due to comprehensive calibration
- Calibration certificate compliant with worldwide standards

## Comprehensive service

- Easy handling thanks to calibration performed directly by HBK
- Worldwide on-site calibration is available via a mobile calibration system
- Complete calibration of all amplifier signals
- Attractive price-to-performance ratio
- Maximum availability of your measuring amplifiers through on-site calibration

## TERMS AND CONDITIONS

The licenses are subject to the general terms and conditions of Hottinger Brüel & Kjær as available on the website:  
[Terms and Conditions](#) | [Legal](#) | [HBK](#)

The licenses are made available on a voluntary basis and the programme may end or be withdrawn at any time. Currently, this offer begins on September 1, 2025, and the license remains valid through December 31, 2026.

This offer cannot be combined with any other discounts or promotions.

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