

Press release

Reliable measurements for crash tests – with no interruptions

Universal measuring system from Kistler combines data acquisition and battery

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The [KiDAU](#) data acquisition system and [KiBAT](#), the rugged special battery: a combination from [Kistler](#) that adds up to a universal system for efficient, successful measurements in crash tests – a major factor in vehicle safety.

During a crash test, several thousand sensors operate simultaneously to deliver reliable measurement data. The strong forces and accelerations that act during these tests demand measurement technology with high levels of efficiency, reliability and shock resistance. KiDAU – the new data acquisition system from the Kistler Group – is used in demanding conditions such as these. To complement the universal KiDAU technology, the rugged KiBAT battery management system is the key to guaranteed data protection.

Special battery as backup

Even the best data acquisition system is useless if measurements are interrupted during a crash test. To prevent this from happening, Kistler has developed [KiBAT K3885](#) – an intelligent onboard battery. If the cabled power supply fails, the special battery from Kistler cuts in: it buffers all the onboard components via the CrashLink2 bus. This gives customers 400 Watts of power for a ten-minute period – so measurements can continue without interruption and the system captures reliable data. Five colored LEDs indicate status and if the energy level is low, KiBAT also emits an acoustic signal.

The case for KiBAT is very robust, making it ideal for demanding crash test applications. The battery can be switched on either automatically via the CrashLink2 bus, or manually – to ensure ease of handling in different application situations.

As an additional link in the onboard data acquisition chain, KiBAT ensures that the processes for preparing and conducting crash tests will run smoothly. Kistler draws on its extensive experience of safety system trials and tests in a wide variety of vehicles to continue improving safety for vehicles and traffic.

Efficient vehicle safety measurements – also available for the laboratory

[KiDAU Stationary K3880AS](#) combines multiple measurement technologies in one 19" rack carrier with various plug-in modules that can be used with one another. Kistler developed this universal data acquisition system for use in preparing and certifying dummies, and also for component tests. Now, thanks to this innovation, the high performance and reliability standards of mobile onboard devices are also available in a stationary application for laboratory use.

The base unit includes integrated interfaces with the external crash test infrastructure. Existing onboard devices can be connected directly via four CL2 interfaces. The case for KiDAU is executed in the standard 19" design and is cooled without a fan. Modular architecture allows it to accommodate up to eight plug-in I/O modules. There is also a unit with 16 digital input channels that can save data in a cycle of 1,800 seconds with a sampling rate of 100 kHz – so recording can begin even before the test starts. And in addition, the KiDAU K3880AS features 8-channel plug-in cards for analog inputs: each one is equipped with a programmable input amplifier, bridge excitation circuit, low-pass filter and a 16-bit analog-to-digital converter. All settings can be made via software, either automatically or with commands. The extensive range of technical equipment makes this data acquisition system suitable for universal use – a straightforward, reliable solution that guarantees the availability of measurements on dummies and components.

Image material (please name the Kistler Group as picture source)



The KiDAU universal data acquisition system from Kistler was specifically developed for crash test dummy preparation and certification, and also for component tests.



The KiBAT battery management system from Kistler provides guaranteed data protection in case the cabled power supply fails.



The THOR crash test dummy – a proprietary development – features sensors and DTI single-cable technology from Kistler, making it the leading complete system for crash tests.

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About the Kistler Group

Kistler is the global market leader for dynamic pressure, force, torque and acceleration measurement technology. Cutting-edge technologies provide the basis for Kistler's modular solutions. Customers in industry and scientific research benefit from Kistler's experience as a development partner, enabling them to optimize their products and processes so as to secure sustainable competitive edge. Unique sensor technology from this owner-managed Swiss corporation helps to shape future innovations not only in automotive development and industrial automation but also in many newly emerging sectors. Drawing on our extensive application expertise, and always with an absolute commitment to quality, Kistler plays a key part in the ongoing development of the latest megatrends. The focus is on issues such as electrified drive technology, autonomous driving, emission reduction and Industry 4.0. Some 2,200 employees at more than 60 facilities across the globe are dedicated to the development of new solutions, and they offer application-specific services at the local level. Ever since it was founded in 1959, the Kistler Group has grown hand-in-hand with its customers and in 2019, it posted sales of CHF 466 million. About 7% of this figure is reinvested in research and technology – with the aim of delivering better results for every customer.