

CEAST DAS 64K DATA ACQUISITION SYSTEM IMPROVES TEST ACCURACY ON PENDULUM AND DROP WEIGHT IMPACT TESTERS

CEAST DAS64K and DAS64K-SC, two systems designed by Instron for high-speed data acquisition within the framework of instrumented materials and components testing, provide a data acquisition rate of 4 MHz, thus effectively doubling the temporal resolution compared to previous models. This enhancement is particularly advantageous when testing brittle materials or performing drop weight tests at high speeds or tests at low temperatures. The new data acquisition cards are also available for retrofitting on existing systems without impacting the performance characteristics of these systems.



DAS64K-SC provides a single acquisition channel, whereas DAS 64K is designed for simultaneous acquisition of up to four independent channels. Data may originate from a variety of transducers, including standard strain gauged or piezoelectric instrumented tups and hammers, and in the case of the DAS 64K system, from general-purpose transducers supplying a defined voltage or current output. Both models are suitable for use with all current CEAST Series 9000 pendulum impact testers and CEAST 9300 drop towers, as well as with instrumented tups or hammers of legacy models including Instron® Dynatup® drop towers and non-Instron impact testers. For highly convenient machine control, data acquisition and storage, and comprehensive data analysis, Instron has further enhanced the CEAST Visual IMPACT software.

Both data acquisition systems can record and store up to 65,536 data points per test and per channel. Equipped with 14-bit analogue-to-digital converters, they achieve a bandwidth of up to 700 kHz – depending on the acquisition rate. All relevant parameters such as sample rate, gain, number of data points, trigger mode and trigger level, including the selection of a master channel for triggering data acquisition, may be set from a connected PC.

The powerful Visual IMPACT software suite used for this purpose is conceived to control CEAST pendulum type and drop weight impact testers and the associated testing procedures, and supports the use of the new data acquisition systems with a user-friendly interface. It saves load and absorbed energy data, and provides features for visualization and further analysis of acquired data using statistical methods. Only recently the software functionality was further expanded with the capability of defining different user profiles for personalized data acquisition and analysis. The introduction of the CEAST DAS 64K and DAS 64K-SC data acquisition systems has resulted in a number of additional further enhancements. From Visual IMPACT Version 6, the software is able to manage more comprehensive calibration data sets for instrumented tups and hammers and handle DAS configurations involving a higher number of channels.#

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