# FORM + TEST and HBK set common standards in force calibration precision

Traceable reference measurement instruments used in accredited calibration laboratories must meet the highest requirements in terms of precision, reliability, and quality. FORM + TEST Seidner & Co. GmbH counts on Hottinger Brüel & Kjær’s (HBK) reliable and high-precision measurement technology in its ALPHA 2-5000 S compression testing machine for the calibration of force sensors at the calibration laboratory in Singapore.

The calibration institution in Singapore wanted a special solution for carrying out calibrations for static compression force tests. FORM + TEST Seidner & Co. GmbH had the necessary expertise to provide the required highly precise special solution: the ALPHA 2-5000 S compression testing machine. The implemented measurement system guarantees precise calibration of force sensors as well as continuous calibrations in the compressive direction. The system can also cope with the additional requirement of measuring very small force values The measurement solution can be used with a maximum precision of up to 1% of its maximum capacity.

FORM + TEST counted on Hottinger Brüel & Kjær's measurement technology for implementing its compression testing machine, as HBK was the only supplier to guarantee the precision and reliability of its products and the entire measurement chain.

The central element of the measurement system is a custom-built system, BU18, with three C18 ring torsion force transfer standards from HBK with a nominal force of 1.7 kN each. The capacity of the entire system is thus 5 MN. In addition, three type C15 reference force transducers, with a 5 kN, 100 kN and 500 kN measurement range, were integrated into the system for high-precision force measurement. These robust (EMC-tested, stainless-steel, shock and vibration-tested) shear force sensors with nominal measurement ranges between 2.5 kN and 1MN meet the requirements of accuracy class 00 according to DIN EN ISO 376 in the exceptionally broad measurement range of 10 to 100 % of the respective capacity.

The DMP41 reference measuring amplifier completes the measurement system. With its unique accuracy class of 0.0005, the high-precision measuring instrument is the most accurate amplifier for strain-gauge-based measurements worldwide. As a result, HBK’s DMP41 was the first choice for implementing the ALPHA 2-5000 S.

**End**

Read the complete case study online:

<https://www.hbm.com/en/10408/form-and-test-testing-machines-for-calibration-labs-rely-on-hbk/>

**About HBK – Hottinger Brüel & Kjær**

The two market leaders, HBM and Brüel & Kjær, have joined forces as HBK – Hottinger Brüel & Kjaer – to form the world’s foremost provider of integrated test, measurement, control, and simulation solutions.

HBK – Hottinger, Brüel & Kjaer – provides a complete portfolio of solutions across the test and measurement product life cycle, that unite the physical world of sensors, testing and measurement with the digital world of simulation, modelling software and analysis. By creating a scalable and open data acquisition hardware, software and simulation ecosystem, product developers can cut time-to-market, drive innovation and take the lead in a highly competitive global marketplace.

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