

Calibrator

Type 5959A...

2-Channel Calibration System

Portable signal conditioning system for the calibration of piezoelectric sensors.

- Charge inputs for piezoelectric sensors
- Voltage input for measurement chains
- Integrated data acquisition
- Incl. Kistler's Calibrate™ software

Description

The calibrator consists of two Type 5015 charge amplifiers and a data acquisition system, packaged together with Kistler's Calibrate™ calibration software suite. It forms the backbone of calibration systems for piezoelectric pressure and force sensors.

Application

Calibration systems built around the Type 5959A... are used in all areas where piezoelectric sensors need to be calibrated on-site or in a customer-site calibration laboratory.

Such a calibration system typically consists of the calibrator, a pressure (or force) generator, a reference sensor and the Unit Under Test (UUT) i.e. the sensor to be calibrated. An example of such a system is shown in Fig. 1, which depicts a calibration system for piezoelectric pressure sensors with a Type 5959A... Calibrator in combination with a Type 6904A1 pressure generator and a reference sensor Type 6961A... .

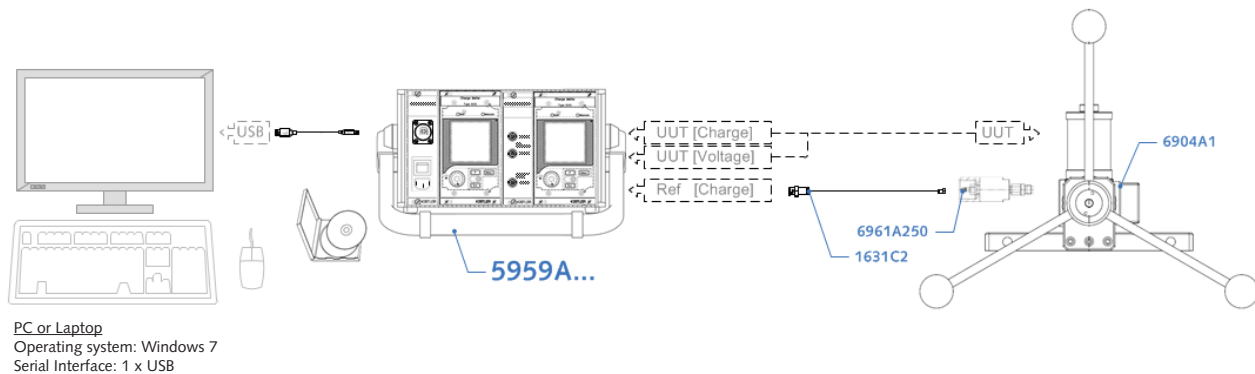


Technical Data

Calibrator Type 5959A... with Calibrate™

Input signals	Reference		Charge
	UUT		Charge or voltage
Input range	Reference	pC	±2 ... 2 200 000
	UUT	pC	±2 ... 2 200 000
		V	±0 ... 10
Sensor connections			BNC neg.
Number of UUT			1
ADC Resolution		bit	16
ADC Sampling rate		kHz	400
Supply voltage		V~	110/230
PC Interface			USB
Dimensions		mm	235x135x420
PC Requirements			Windows® 7
Calibration procedures			Continuous
			Step-wise

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PC or Laptop
Operating system: Windows 7
Serial Interface: 1 x USB

Fig. 1: Typical pressure calibration system

Calibrate™ Software

The Type 5959A... with Kistler's Calibrate™ software suite is a comprehensive tool for the calibration of piezoelectric pressure and single component force sensors. The system is also well suited to calibrate most measurement chains and transmitters with a high level output (0 ... 10 V), such as Joining Modules and Force Transmitters.

Calibration procedures, typical sensor properties and tolerances are defined and managed in so-called Type Definitions. The Type Definition also describes the Calibration Procedure, Ranges, and the documentation of calibration results in a calibration certificate.

Quasi-Static Calibration

The 5959A... is ideally suited to quasi-static calibration procedures as typically used for piezoelectric pressure and force sensors, i.e. calibration under transient conditions. The system accommodates so-called continuous and step-wise quasi-static calibration procedures:

- **Continuous calibration procedure:**
The output of the UUT is compared with that of a reference sensor, while continuously ramping the load from 0 to full scale and back. (Fig. 2)
- **Stepwise calibration procedure:**
The output of the UUT is taken at discrete steps, spanning the calibration range. The magnitude at each step is derived from direct loading or measured with a reference sensor. (Fig. 3)

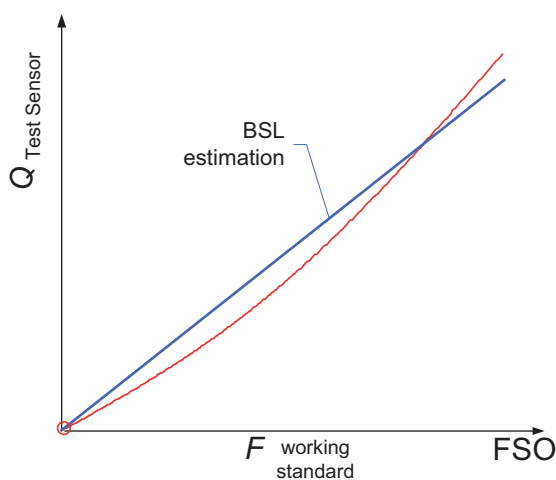


Fig. 2: Continuous calibration

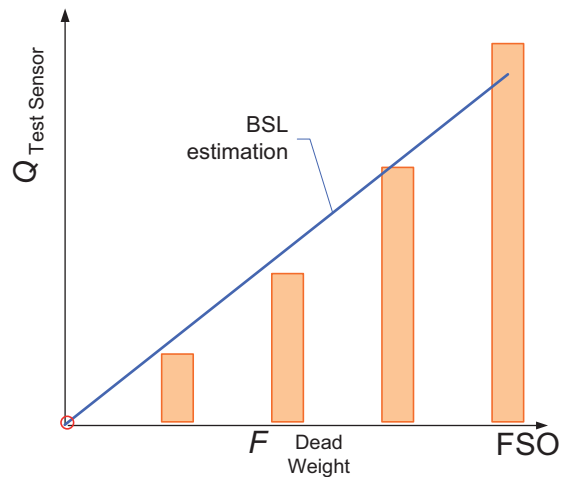


Fig. 3: Step-wise calibration

Included Accessories

- Calibrate™ software for Windows® 7
- USB cable (l = 2 m)
- Power cable (l = 1 m)

Type/Art. No.

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Optional Accessories

- Transport case

Type/Art.No.

Z21014-0031

Ordering Key

Version

230 V	1000
115 V	1010

Type 5959A

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