

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 and piezotron
- Integrated data acquisition
- Incl. Kistler's Calibrate software

Description

The calibrator consists of two Type 5015 charge amplifiers and a data acquisition system, assembled 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 6961C.

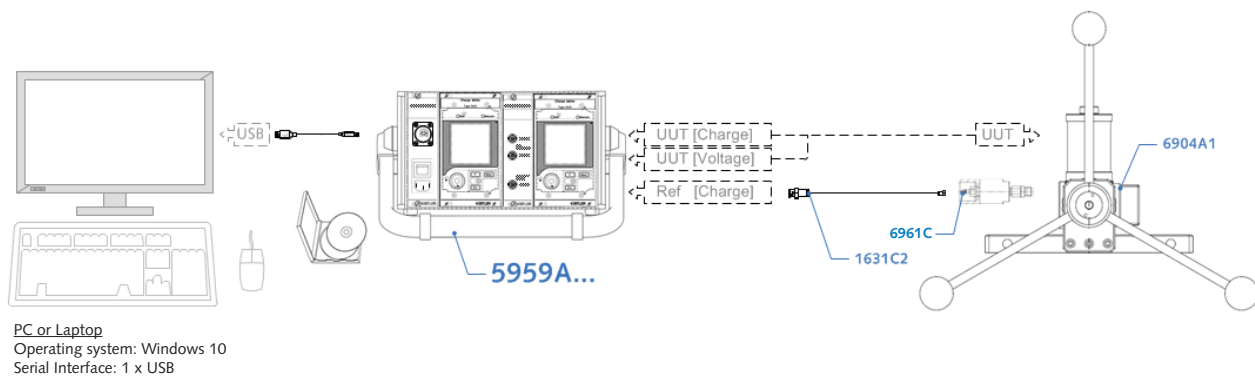


Technical data

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 10 |
| Calibration procedures | | | Continuous Step-wise |

5959A_003-041e-03.22



PC or Laptop
Operating system: Windows 10
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. 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)

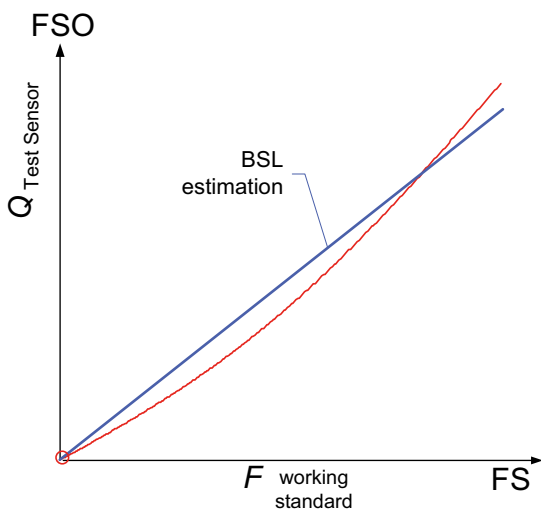


Fig. 2: Continuous calibration

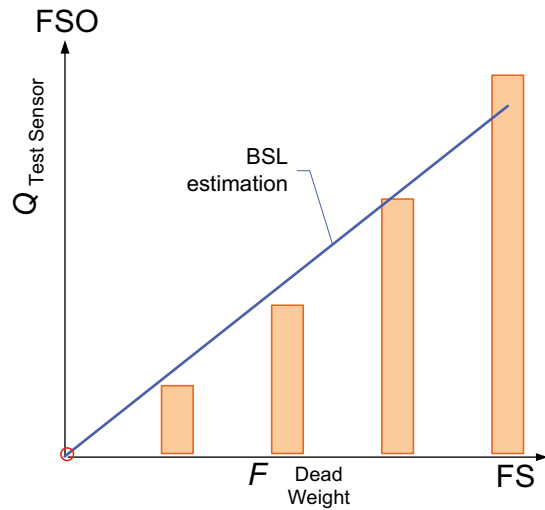


Fig. 3: Step-wise calibration

Included accessories

- Calibrate software for Windows 10
- USB cable (2 m)
- Power cable (1 m)

Type/Art. No.

Z18906C-S0
–
–

Optional accessories

- Carry case

Type/Art. No.

Z21014-0083

Ordering key

| Version | |
|---------|------|
| 230 V | 1000 |
| 115 V | 1010 |

Type 5959A

5959A_003-041e-03.22

Windows is a registered trademark of Microsoft Corporation.