



# PCE-FM 1000 Force Tester



## **Force tester for measuring traction and compression up to 100 kg / 981N, with dynamometric external loading cell and RS-232 interface**

The PCE-FM1000 force tester is controlled by a microprocessor which can quickly and accurately read traction and compression. The display of the force tester is easy to read thanks to its large clear digits, thus avoiding errors when taking traction or compression readings. The force tester has a dynamometric casing with a 2 m cable to connect the tester to the casing.

The dynamometric cell can be attached using clasps which come with the device. The clasps can be unscrewed and removed from both sides of the dynamometric cell in such a way that the cell can also be fastened to other elements such as a test position. The force tester is powered by batteries or by a mains adaptor (300mA power source is available as an accessory).

The force tester also has RS-232 port allowing to connect it to a computer. With optional software and RS-232 cable, data can be transferred to a computer for being evaluated at a later point in time. The force tester transfers data at a rate of 4 readings per second. If data is saved simultaneously to a computer. This should be done through the Windows hyperterminal as a data logger. The data transfer rate to the computer is the same. [Here](#) you can see the optional software package. To learn more about the dynamometric cell, go to [LTS-20 test position](#). The test position is ideal for measuring traction and compression in quality control and laboratory experiments.

- Maximum traction and compression  
function (Peak Hold)

- Data port

- Optional Software and data cable
- Zero reset
- Maximum value recovery
- Auto shut-off
- Holes on the back of the device
- 6 mm fixing positions on both sides for attaching the hooks and clasps and the test position
- Battery level indicator
- Overload protection = 150%
- Optional adaptor to attach dynamometric cell to the LTS-20 test position

## Specifications:

Measurement range	0 to 100 kg/0 to 981N
Resolution	0.05 kg/0.2N
Accuracy	±0.5% +2 digits/±5N
Measuring units	Grams/Newton
Maximum overload	50% (up to 150 kg)
Connection port	RS-232
Software and RS-232 cable	optional
Data transmission rate of software	Data is transferred to a computer, using the software, at a rate of one reading every 2 seconds. The force tester can transfer data at a quicker rate when transferring from memory to a computer, one reading every 0.25 seconds using Windows hyper terminal.
Display	5 digit LCD; 10 mm
Measurement functions	measures traction and compression with Peak Hold function
Power	6 AA batteries or mains adaptor
Dimensions	dynamometric cell: 130 x 51 x 19 mm (from clasp to clasp) 64 x 51 x 19 mm

Weight

(without hook/clasp)  
force tester: 227 x 83 x 39 mm  
external dynamometric cell: 380 g  
force tester: 450 g

## Delivery Scope

1 x PCE-FM1000 force tester with external cell, 1 x 2 m cable, 1 x carrying case and user manual

## Optional accessories

- Software and RS-232 cable to transmit data to a computer
- LTS 20 manual test position (must be used with a mounting base)
- Mounting base for the test position and cell
- Mains adaptor: 230V/50Hz
- Laboratory calibration to DIN ISO standards
- RS-232 to USB adaptor



Optional software, in conjunction with an RS-232 cable, allows data to be transferred to a computer. The force tester transfers data at a rate of 4 readings per second. If data is saved simultaneously to a computer, this should be done through the Windows hyperterminal as a data logger. The data transfer rate to the computer is the same.

### Test Position

The force tester can be combined with any of the three test positions we have available. Two test positions are equipped with a crank and the other one has a motor. The effective use of the test position is in daily testing of materials in a laboratory and you wish to maintain the same conditions, eliminating the possibility of human error.

The technical specifications of the various items are available at this link: [Test Positions](#).

Or you can see the details of the test items in the respective description of the online category: [force testers](#).



### Calibration and certification of Force tester

An ISO calibration certificate can be acquired with our force tester. It includes a control document containing the company contact details consisting and a certification to meet DIN ISO 9000 standards. This means that force tester meet the minimum requirements of the national body of measurement and it can be included in your internal set of measuring instruments. The calibration process takes between 3 and 5 working days.

Further information:

**Calibration:** control of measurement magnitudes correction of measuring instruments without the intervention in the measurement system, or the determination of the systematic display deviation in relation to the real value of the measuring magnitude.

**Calibration document or certificate:** document with the technical properties of the device according to the national organization of measurement.

**Calibration interval:** to perform correct measurements, devices must be calibrated at regular intervals. This period of time is called calibration interval. It's difficult to determine this period with accuracy but you should consider the following factors:

- Measuring magnitude and permitted tolerance limit
- Performance of the measuring instruments
  - Frequency of use
  - Operating conditions
  - Previous calibrations stability
  - Measuring accuracy required
  - Determining factors of the quality control systems used by companies

This means that the user is in charge to check and control the interval between calibrations. We recommend that this interval between calibrations should be between 1 and 3 years. We can also offer our expert advice to solve any questions relating to the process of establishing a calibration interval.