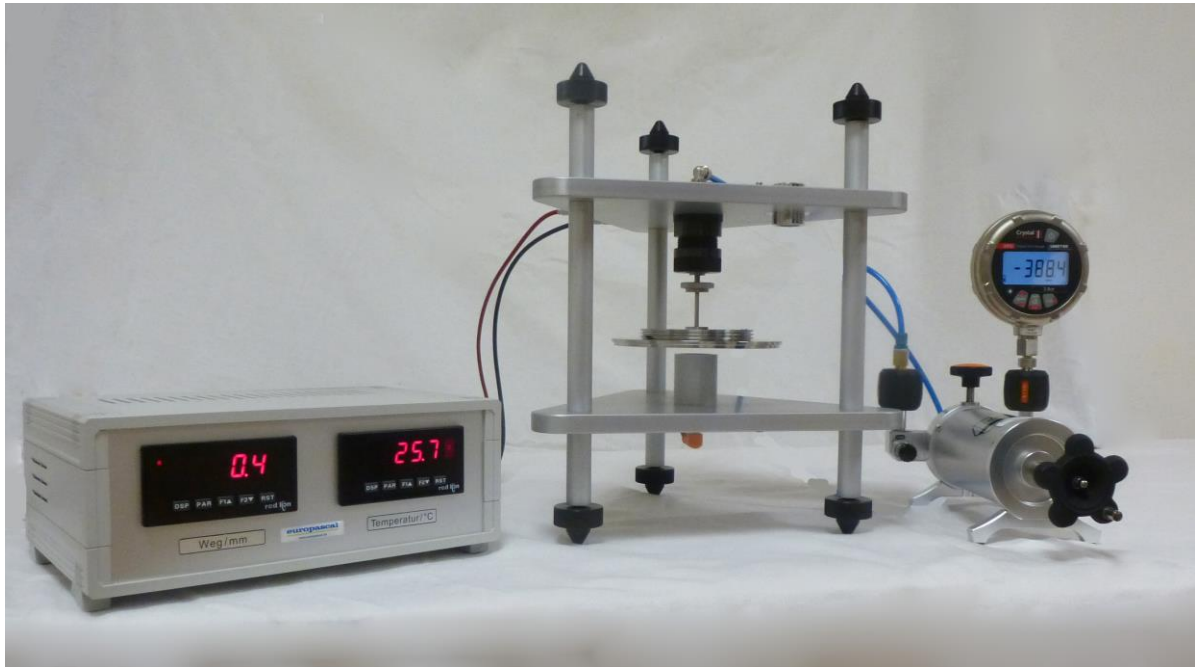


EP-BG100k

Piston Gauge for Bi-Directional Pressures

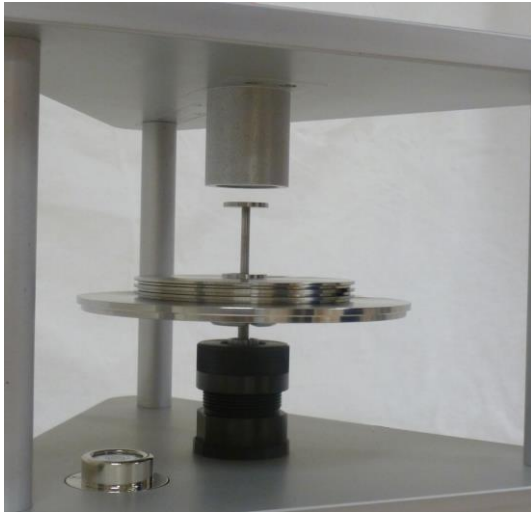


The hand pump (w/o digital gauge) and the rack shown on the side of the picture are parts of the EP-BG100k.

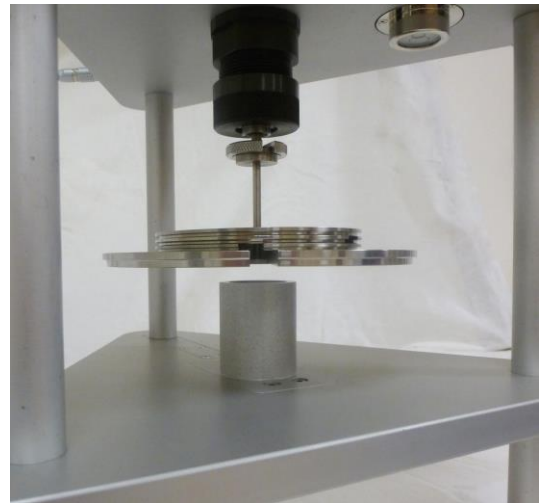
The pneumatic Piston Gauge EP-BG100k is designed for high-precision pressure calibration in the range of -1 bar up to +1 bar (optionally even higher). Notable are the piston position monitoring and the immediate temperature measurement at the piston cylinder unit.

Technical Specifications:

- Pressure types: negative and positive gauge pressure
- Pressure ranges: - 30 mbar down to -1000 mbar
+ 30 mbar up to +1000 mbar
(Optional: +1700 mbar or even higher up to 7 bar/100psi)
- Uncertainty ($k=2$): At pos. pressure up to 40 ppm of rdg. + 2 Pa
At neg. pressure up to 42 ppm of rdg. + 2 Pa

The 2 possible Operating Modes: Negative or Positive Gauge Pressure

Working mode: positive gauge pressure



*Working mode: negative gauge pressure
(due to EP-BG100k turned upside down)*

In working mode “Positive gauge pressure” the operating principle is the same as other common premium deadweight testers, where mass pieces placed over a piston/cylinder system lead to a reliable and precise pressure, when the masses float and rotate.

“Negative gauge pressure” is achieved due to a special and unique design^{*)} which allows operating the piston/cylinder unit up-side-down, so that the specially manufactured mass set can be operated in a suspended position, which results into negative gauge pressure, in the state of equilibrium.

A rack which monitors the temperature (Pt100) of the piston/cylinder unit and also the floating position of the mass pieces completes the calibrator, to the user's full convenience.

Piston/Cylinder Compatibility:

The EP-BG100k is designed to use the piston/cylinder units of an existing Fluke RUSKA Piston Gauge model 2465 and vice versa:

- RUSKA 2465-725 piston/cylinder unit: Low range (*as replacement of the EP-BG100k piston/cylinder unit*)
Pressure range: 14 mbar up to 1.7 bar (0.2 psi up to 25 psi)
- RUSKA 2465-727 piston/cylinder unit: Lower mid-range
Pressure range: 117 mbar up to 7 bar (1.7 psi up to 100 psi)

(Higher pressure ranges optional possible.)

^{*)} Patented

Reference Conditions for Accuracy Specifications:

- ambient temperature: $(20 \pm 3) ^\circ\text{C}$;
- atmosphere pressure: $(101.325 \pm 3) \text{ kPa}$
- relative air humidity: $(50 \pm 20) \%$.

Pressure and Vacuum Supply Requirements:

- The EP-BG100k piston pressure gauge can be operated with nitrogen or compressed air:
- external pressure supply (for positive gauge pressure): 5-10% over FS range
- external vacuum supply (for negative gauge pressure): via a standard vacuum pump

* Clean and dry air of purity class: 1 - 2 - 1 (ISO 8573-1). Although lower quality gas can be used, the frequency of piston/cylinder cleaning will increase.

Pressure control (optional):

For convenient control of external pressure and vacuum, the manual pressure regulator type EP-42000-M is available as an option.



Manual pressure controller (EP-42000-M)

Regarding the pressure and vacuum supply the comparison test pump ADT 912A (vac. up to 4 bar) is part of the system.



Low Pressure Test Pump (ADT 912A)

Dimensions (L x W x H):

EP-BG100k Piston Gauge Base	310 x 280 x 380 mm
EP-BG100k Monitor for temperature and floating position	200 x 290 x 120 mm

Standard Equipment:

- EP- BG100k Piston Gauge Base
- EP-BG100k Monitor for Temperature Pt100 [$U(k=2) = 0.05K$] and sensor for detection of the PCU floating position
- EP-BG100k Mass set which is suitable for positive as well as for negative pressure measurements

- EP-BG100k Piston/Cylinder Unit*

* Not necessary, if the customer has already a RUSKA 2465-725 piston/cylinder unit with the
Pressure range: 14 mbar up to 1.7 bar (0.2 psi up to 25 psi)

Optional Equipment:

- Manual Pressure Controller (EP-42000-M)
- Vacuum pump
- Low Pressure Test Pump (ADT 912A)
- Pressure hoses and adapter sets (EP-BG100k –adapter & tube set)
- EP-Z20-THP Datalogger and environmental monitor (*ambient Temperature, Humidity and Air Pressure*)