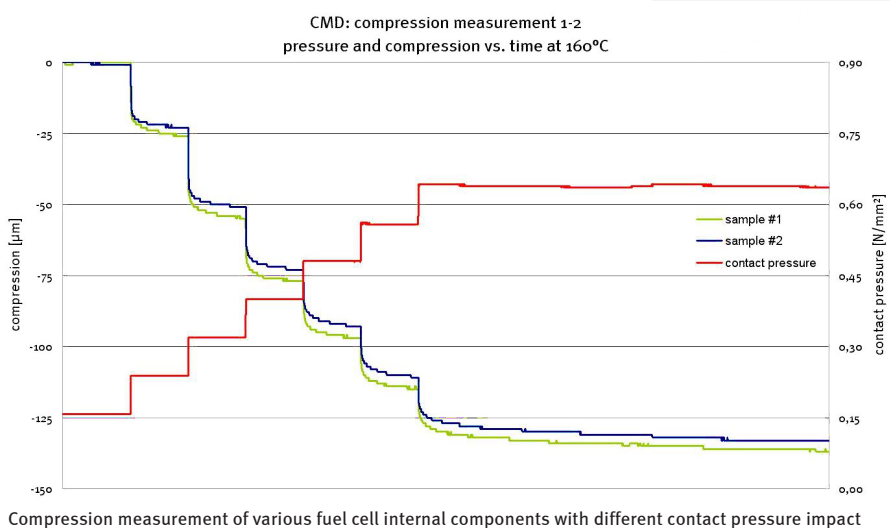
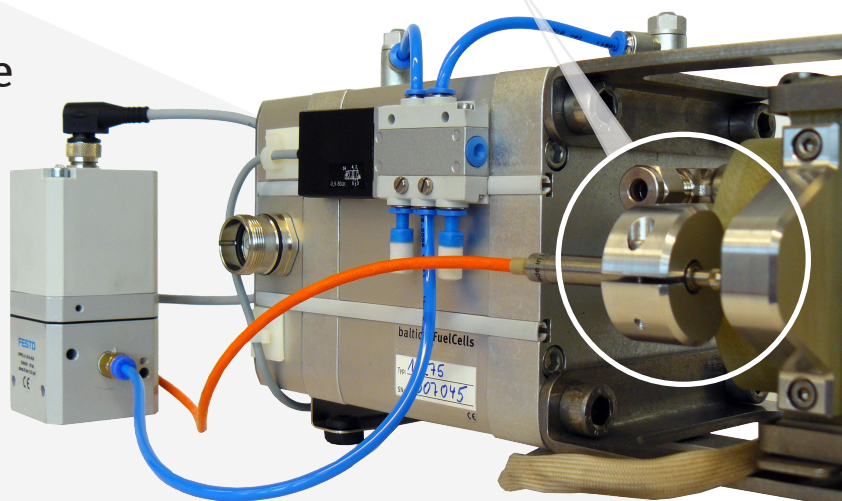


CMD V1.0

compression measurement device for quickCONNECTfixture

- ⇒ compression of specimens
- ⇒ thinning/ creeping effects
- ⇒ swelling/ shrinking effects
- ⇒ resolution $\pm 1 \mu\text{m}$



Compression Measurement Device (CMD) direct evaluation of sample thickness with a resolution of $\pm 1 \mu\text{m}$

The CMD is an invaluable tool in investigating the compression of fuel cell internal components like GDLs, GDEs, CCMs, MEAs as a function of the force applied to the active area. Furthermore, swelling and shrinking of the MEA in dependence of the humidification can be investigated. In long-term measurements it can also be very helpful in determining thinning and creeping behaviour of the MEA.

features

- ⇒ path length sensor and fully automatic evaluation unit for measuring the compression of all specimens in the cellFixture: determination of path length or force, between 0.2 N/mm^2 and maximum contact pressure, makes it possible for the user to correlate and optimize the contact force on the active cell area [N], the sample compression [μm] and the performance parameters of the specimen under investigation
- ⇒ in situ measurements (compression and path length)
- ⇒ labView-based software environment for evaluation, graphic display and data acquisition
- ⇒ constant force: determination of the specimen's compression [μm], using a constant force working on the active area (constant contact pressure)
- ⇒ measuring range: 2 mm total path length, resolution $\pm 1 \mu\text{m}$
- ⇒ operating temperature up to 180 °C

system requirements

PC with Windows 10 operating system, cellFixture and SFPU Gen. 1.1 or higher

the CMD package contains

- evaluation electronic with USB-connector
- precision path length sensor
- electric proportional valve for pressure control
- adjustable sensor support and counter surface for installation on a cellFixture
- cable set and software environment

