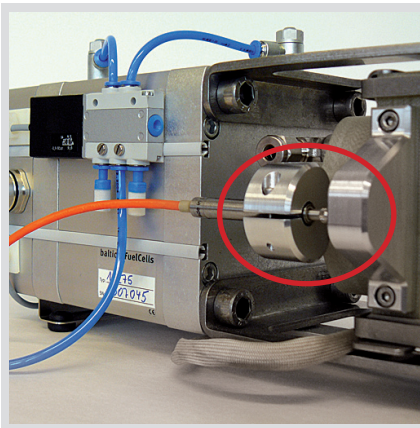
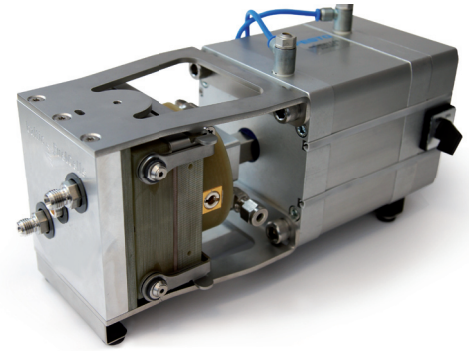


optional equipment for quickCONNECTfixture

- ⇒ **CMD** Compression Measurement Device
- ⇒ **HMT310** Humidity Sensor Electronics
- ⇒ **DHRE 25/50** Pt reference electrode layer
- ⇒ **CSL** current scan lin
- ⇒ **TCU 500** temperature control unit
- ⇒ **More equipment & customer services**
- ⇒ **Core components/ specimens/ expendable items** for use in qCf, PEMFC & PEM-Electrolysis

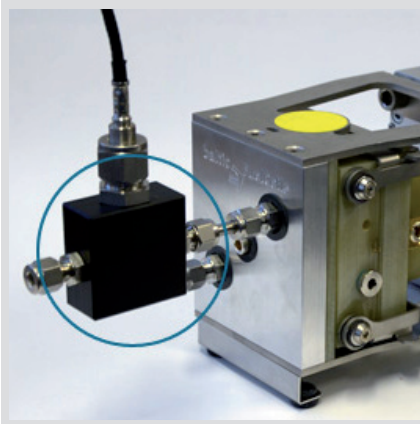
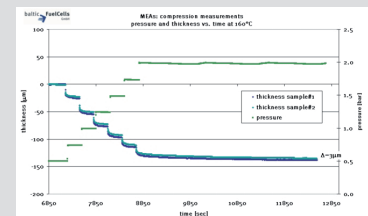
qCf **FC25/100**
qCf **FC50/125**



CMD Compression Measurement Device (for qCf FC25/100 & FC50/125)

Each cellFixture for the qCf can be equipped with a bracket and a sensor for measuring the compression of all integrated fuel cell components. The sensor measures the path length of compression between 0.15 N/mm² and the final contact pressure. The sensor enables a direct correlation between the contact pressure, the compression of the measured components and the performance of the fuel cell. Measuring range: 0 to 2 mm compression, static resolution of 1 µm, max. operation temperature 180 °C

Package includes: USB I/O-measurement interface; precision path length sensor; electric proportional valve for pressure control; adjustable sensor support for installation on qCf and counter surface for installation on a cellFixture; cable set; measurement software environment (Win XP)

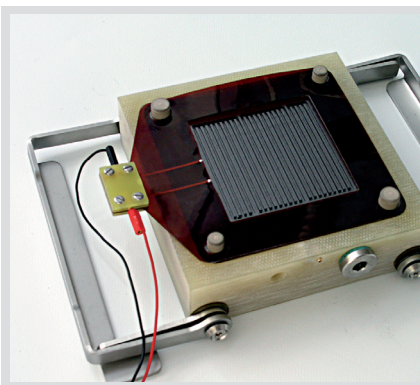


HMT 310 - Humidity Sensor Electronics

- „Code F“-certified for fuel cell applications
- Td+Tdf+x with heated sensor head (sonode)
- diameter sensor head: 12 mm
- mounting plate for HMT317NIK
- voltage supply standard (24 VDC)
- analog-output (CH1&CH2) Output
- current 4...20 mA
- Chanal 2 x (0...500 g/kg d.a.)
- metric units
- plug-in connector M12 8-pin with 5 m cable
- Vaisala HUMICAP@180C Composite-Sensor
- stainless-steel lattice with Teflon-membrane
- thread diameter sensor: ISO 3/8"

Package includes: HMT 310 sensor with 2 m cable +180C, handbook, manual, calibration certificate

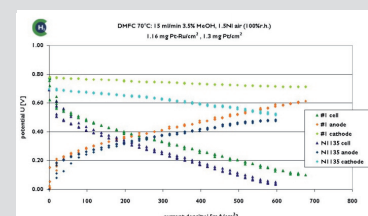
Also available: Manifold for direct integration of humidity sensor HS-HMT310
• for integration of VAISALA sensorhead/ transmitter; type HMT310 • principle: cross-flow configuration in gas-flow • thread diameter for sensor: G 3/8" ISO 12mm (Swagelok) • gas-flow connection: both sides 6mm-Swagelok • humidity measurements in gas-flow (in-situ)



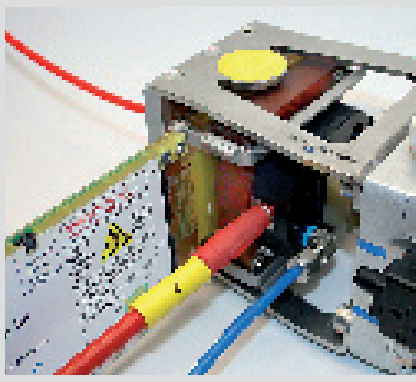
DHRE 25 & DHRE 50 Pt reference electrode layer (for qCf FC25/100 & FC50/125)

The dynamic hydrogen reference electrode (DHRE) from balticFuelCells GmbH is specially designed for use in the quickCONNECT test cell series. With the DHRE, contributions of anode and cathode to the cell overpotential can be separated. Thus, the DHRE is an invaluable tool in designing and optimising electrodes for PEFC & DMFC. Due to the use of a new material (Kapton®), the maximum operation temperature is now 180 °C.

Package includes: Pt reference electrode frame with 0.15 mm thickness, high precision constant current source and cable set



optional equipment for quickCONNECTfixture

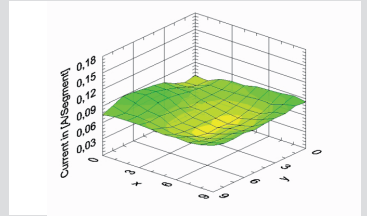


CSL current scan lin - current density distribution sensor (by S++)

For detailed analysis of flow fields and internal components, as well as optimisation and fault diagnostics of fuel cells, a current density distribution sensor can be integrated in the quickCONNECT fixture test cells.

- resolution: 7 x 7 mm (1 x 1 mm in high res version)
- current range: up to 2.5 A/cm²
- temperature range: up to 180 °C

Package includes: cellFixture with intergrated current sensor, USB-interface, USB-cable, auxiliary power supply unit (type 9920) and user interface (using Windows 2000/ XP)



TCU 500 temperature control unit

All qCf's can be delivered with a suitable external heating device. The temperature is controlled by a Pt1000 temperature sensor or a Type K thermocouple. The TCU 500 is needed, if using qCf outside teststand environment.

- mains voltage: AC 230 V/115 V; 50 / 60 Hz
- heating power 0...480 W (el.); working voltage 24 V
- can be used as power supply for qCf
- easy plug- connection to the qCf
- PID-controller; temperature range 20 to 250 °C; accuracy +/- 1K

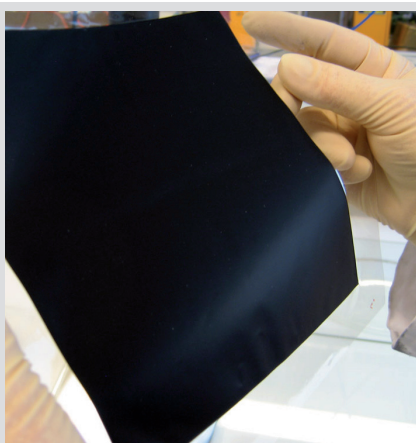


balticFuelCells GmbH also offers

- low resistance cable leads for connection to an electronic load (16 mm² cross-section)
- hollow punches and positioning tools for stamping the MEAs/CCMs and positioning the GDLs
- customised sizes of CCMs, MEAs and GDEs for hydrogen, reformat or methanol use, up to 150 x 150 mm²
- customer designed quickCONNECT fixtures and other measuring devices for quality assurance and Research & Development

Customer services:

- gold plating
- flow field milling / graphite machining/ sealing dispensing
- CAD services
- electronic services



core components, specimens, expendable items

- for use in quickCONNECTfixture qCf, PEM Fuel Cells and PEM Electrolysis

PEFC (hydrogen/reformat and O₂/air)

- CCMs/ MEAs
- GDEs gas diffusion electrodes
- GDLs gas diffusion layers

DMFC (methanol/ ethanol and O₂/air)

- CCMs/ MEAs
- GDEs gas diffusion electrodes
- GDLs gas diffusion layers

PEM-electrolysis (hydrogen and oxygen generation)

- CCMs
- backing materials/ titanium

