Coriolis Mass Flow

STABLE, HIGH-ACCURACY, ULTRA-LOW FLOW

For PEM fuel cell and PEM electrolysis applications in particular, Coriolis instruments can prove to be an ideal choice to meet key process demands.

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Features

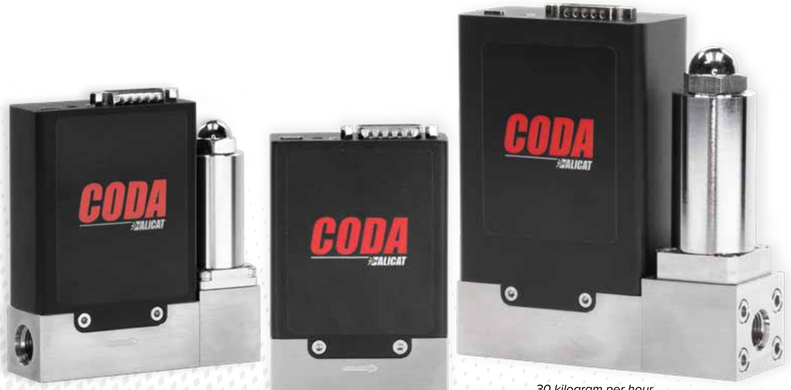
- **Accurate & repeatable low-flow control** of DI water with NIST-traceable accuracy down to 0.08 g/h and up to 250 kg/h.
- **Low long term cost of ownership** with no annual re-calibration required for CODA.
- **Compatible with electrolysis conditions** using a range of wetted materials and wide operating ranges that enable accurate, precise flow and pressure control.
- **High zero stability** and significantly more resistant to external vibrations and bumps than competing Coriolis products, without the need for a mass block.

Do what you want, faster.

Since 1991, Alicat has worked closely with those at the forefront of scientific discovery and technological development. We provide fast instruments, fast delivery, and fast answers so you can focus on getting fast results.

Alicat offers:

- Custom-engineered mass flow and pressure devices with multivariate measurement and control
- NIST-traceable calibrations, ISO and ATEX certifications, ROHS compliance, and CE marks
- Lifetime warranty and free technical support from our skilled applications engineers



10 kilogram per hour CODA-Series mass flow controller

100 gram per hour CODA-Series mass flow meter

30 kilogram per hour CODA-Series mass flow controller

US Headquarters:
+1.888.290.6060

Shanghai Office & Service Center:
+86.21.60407398

European Office:
+31(0)262.031.651

Mumbai Office:
(+91) 22-46081434

alicat.com/hydrogen

Building

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Hydrogen

Systems

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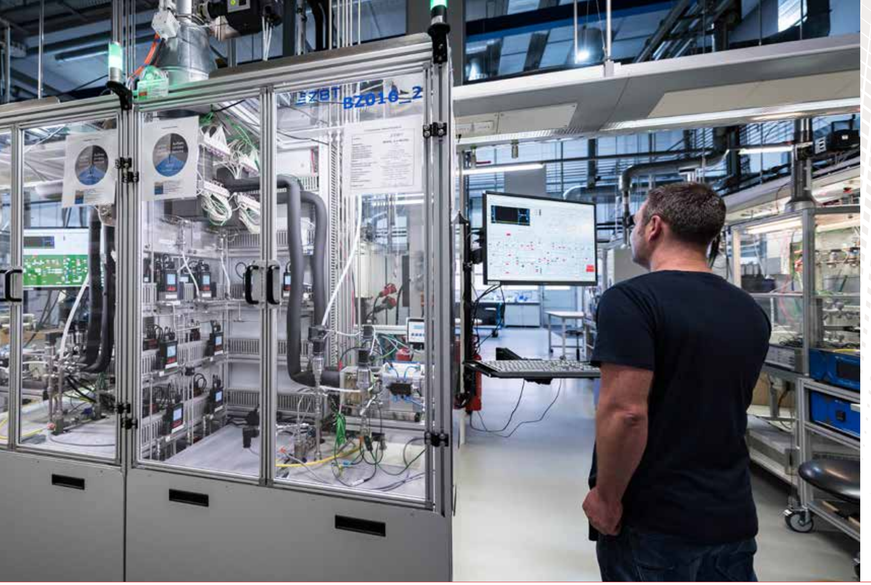


Photo courtesy of ZBT GmbH

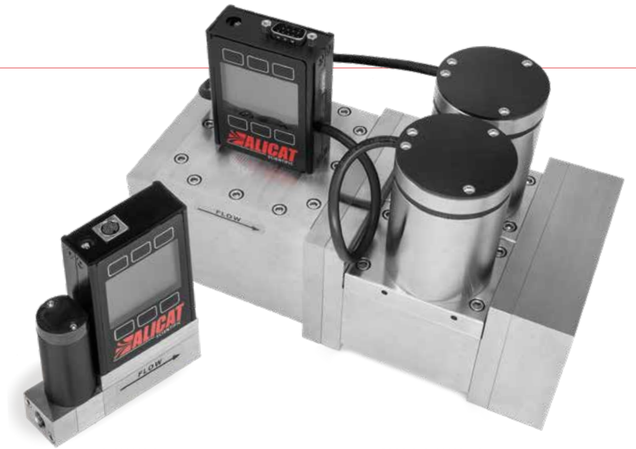
DP Mass Flow

FAST, FLEXIBLE, ACCURATE

Fast, precise control and differential pressure-based measurement of gas flows in fuel cell test stands to ensure minimal waste and accurate results.

Features

- **Maximize control stability of gas delivery in test stands** with custom orifice sizing on proportional control valves, onboard PID adjustment, ability to specify tuning conditions at the time of order.
- **Adaptable to your process**, controllers can work as standalone devices or be integrated into proprietary software systems.
- **Custom on-demand gas mixing** and the ability to store 20 custom gas mixtures with Composer™.
- **Compatible with a wide range of process conditions** such as non-humid reactant gases, custom gas mixes, and temperature regulation gases flowing into a fuel cell system.
- **Easy gas switching between 98+ gasses** at any time without the need for recalibration with Gas Select™.
- **0.5 SCCM full scale to 5,000 SLMP full scale**, our devices are custom ranged for your process.



1-SLPM MC-Series mass flow controller

5000-SLPM MCRH-Series mass flow controller

Developing cutting edge, scalable hydrogen infrastructure requires instruments that reflect the unique needs of the hydrogen industry.

Alicat provides mass flow and pressure regulation solutions for hydrogen applications.

From direct regulation of electrolysis and fuel cell system processes to test benches for membrane and catalyst verification, we provide process solutions so you can focus on creating a more sustainable future.

Alicat Device Advantages

- Custom solutions
- High accuracy & reliability
- Fast response time
- Wide flow & pressure ranges
- Lifetime warranty and technical support

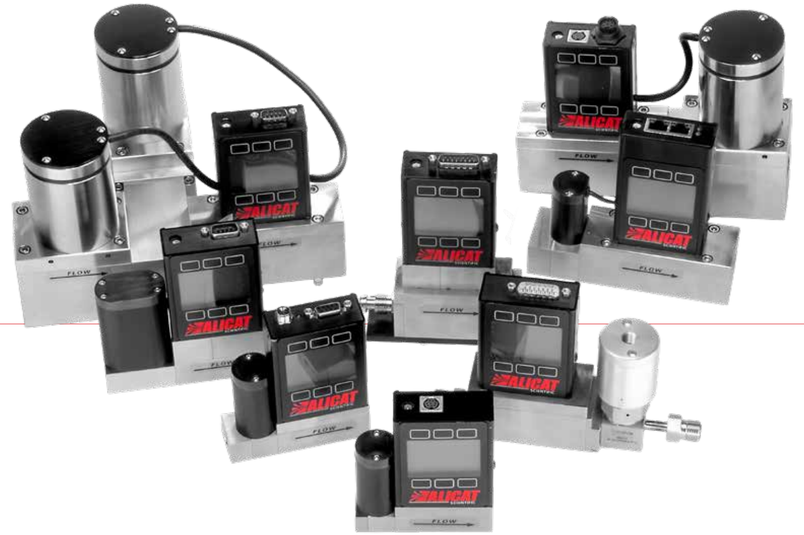
Applications

- Multi-gas control in fuel cell test stands
- Back pressure of hot-wet hydrogen from fuel cell stacks
- DI water flow regulation in electrolysis
- Reactant & exhaust flow regulation in fuel cell stacks
- Electrolysis & fuel cell system pressure regulation
- System leak checking
- Membrane permeability testing
- Catalyst verification analysis

Pressure Control

ACCURATE, VERSATILE, CUSTOMIZABLE

Accurate, repeatable pressure control is key to maintaining efficiency in PEM electrolysis and fuel cell stack testing, while regulating other hydrogen system pressures.



Features

- **Reach pressure setpoints in milliseconds** and maintain control with NIST-traceable accuracy to ±0.125% of full scale.
- **Versatile regulation** with gauge, absolute, or differential pressure regulation for either flowing or fixed volumes up to 3,000 PSIG.
- **Solutions scale with your process** with a 0.01-100% of full scale control range.
- **Custom configurations with remote valving** allows for insensitivity to multi-phase flows and frictionless, stable back pressure control even in high-moisture environments with temperatures of up to 450°C.
- **User-friendly operation** with the ability to control devices using the front panel display and buttons, analog signal, and a range of industrial protocols.