

Gas Delivery Modules

Integrated, custom configured gas delivery system

- » Increases flow stability with embedded PTI technology
- » Fast response to control set-point with STEP™ technology
- » Flexibility in reconfiguration of gases and ranges with MultiFlo™ technology
- » Reduces inventory requirements
- » Reduces footprint
- » Reduces cost of ownership by 15%–25%



Features at a glance

Celerity is a leading provider of gas delivery modules and components to the process industry. With advanced technology solutions and vast experience in fluid delivery dynamics, we offer industry-leading gas modules that increase performance, reduce cycle time, and lower cost of ownership. Our modules are highly configurable with standard options, which enables our OEM customers to use Celerity modules interchangeably across multiple product platforms.

Our design team works closely with our customers' research, development, engineering, and manufacturing teams to develop products of the highest precision and control. Based on specified molecule delivery requirements, we move from schematic to production volumes in record time, all while optimizing design and providing the ideal technology solutions for best of breed performance. If current technologies do not meet our customer's objectives, we leverage our internal resources to develop the needed technology solutions.

Celerity proprietary technologies



PTI Technology

Gas delivery systems commonly experience pressure fluctuations that create flow variations up to 100% of full scale. Our PTI (pressure transient insensitive) technology provides flawless flow control and output stability under the most adverse conditions. PTI benefits include:

- Integrated pressure transducer eliminates cross-talk
- Eliminates need for line pressure regulation
- Reduces down-time
- Provides fast response
- Reduces footprint
- Reduces cost of ownership

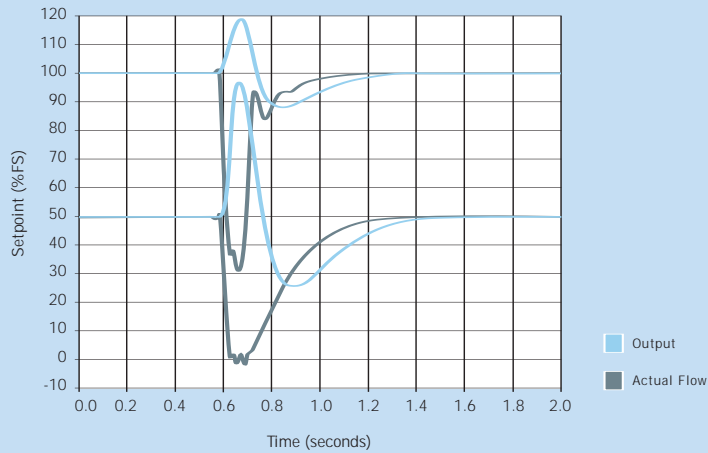


Step Technology

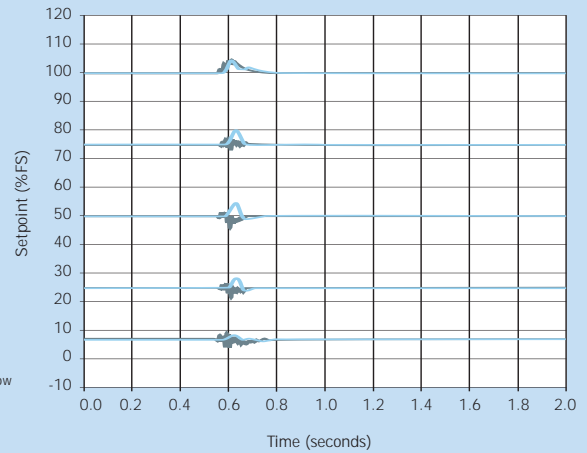
Step is an embedded technology that enables fast response in critical processing applications. Step utilizes a high speed DSP (digital signal processor) and employs an optimized sensor drive circuit to deliver industry leading flow stabilization times. Step benefits include:

- Improves delivery at low setpoints
- Increases sample rate by 5x
- Shrink dead volume of sensor
- Use of high speed micro controller

STANDARD MODULE RESPONSE TO PRESSURE TRANSIENT
(50 sccm, 2 psi step change)



MODULE WITH PTI RESPONSE TO PRESSURE TRANSIENT
(50 sccm, 2 psi step change)



MultiFlo Technology

MultiFlo technology is an embedded technology that enables users to reconfigure a module to a gas and range of choice, anywhere, anytime using a bundled software package. Modules with MultiFlo cover 85% of gases and ranges employed in a typical fab. Some of the MultiFlo benefits include:

- Dramatically reduces inventory requirements
- Covers 85% of gases and ranges in a typical fab (from 3 sccm to 30 slm)
- Enables in situ configuration within a few minutes
- Reduces down-time
- Reduces cost of ownership

Capabilities overview

Celerity's gas delivery modules are offered with the following standard options:

- PTI technology which provides improved performance by eliminating the effect of upstream pressure instability
- MultiFlo technology which reduces cost of ownership, manufacturing cycle time, MTTR, and tool down-time
- Step technology which provides fast response to control setpoints
- Footprint shrink and weight reduction
- Optimized system designs using standard sticks or customer-specific configurations as appropriate
- Advanced design methods using proven technology for the high-performance required by future semiconductor applications



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