

Leader in sample preparation systems benefits from Axetris MFCs' high dynamic range Split ratio flexibility of GC injector increased 30-fold

A leading manufacturer of analytical sample preparation systems in gas chromatography (GC) switched to Axetris MFCs - and in doing so, simplified their product range, while offering their customers at least 30 times more flexibility in split ratio. The market-leading dynamic range of Axetris mass flow controllers (MFCs)—with their better than 1000:1 turn-down ratio—helped achieve this quantum leap forward in flexibility and performance.

GC sample preparation using Thermal Desorption

Thermal desorption is a popular analytical sample preparation technique used predominantly for Volatile Organic Compound (VOC) analysis – its applications extend into markets such as environmental health and safety, fragrance analysis, forensics and materials emissions.

On modern thermal desorption systems, sample preparation and injection is a multi-stage process where tight and reproducible gas flow control plays a key role.

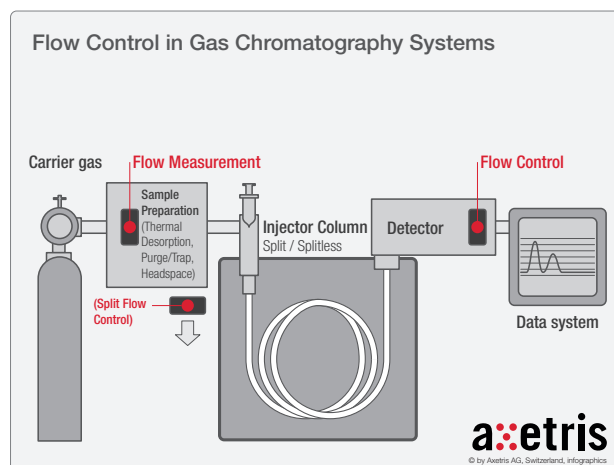
Increasing performance whilst reducing product complexity

Thermal desorption systems need to work with a wide variety of samples over a broad range of concentrations. Converting to Axetris MFCs, with their wider dynamic range, meant that one rather than two models of MFC could be used and still gave a 30-fold improvement in available split ratios.

Axetris Mass Flow Controllers help design a unique GC injector

After testing Axetris MFCs, the main advantages quickly became clear:

- **Reproducibility, speed and stability:** Compared to the previous MFC brand, Axetris products achieved the desired set point more rapidly and reproducibly.
- **High dynamic range:** Allowed the use of one model of MFC where previously two were required.
- **Low flow capability:** Accurate linear flow control even down to a couple of ml/min.
- **Quality and reliability:** Switching to Axetris MFCs has greatly reduced field failure rates and support costs.



Flow control in a typical GC System benefits from high reproducibility and dynamic range of Axetris MFCs.

"Axetris Mass Flow Controllers impressed us with their much broader dynamic range whilst retaining high resolution even at the lowest flows. We also found the MFCs to be far more reliable, greatly reducing field failures and thus impacting our product quality perception. You can't argue with higher performance and reliability at the same cost: I'd recommend trying Axetris MFC products to all product engineers."

Project Lead

Leading producer of analytical sample preparation systems based on thermal desorption.

Axetris Mass Flow Meters and Controllers

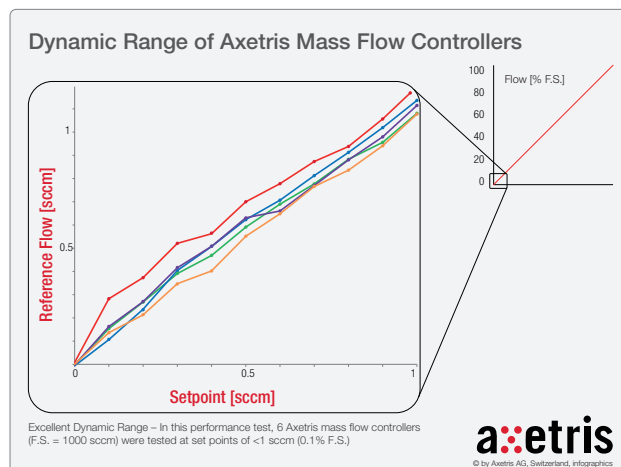
The ideal choice for your Analytical Instrument

Axetris Mass Flow Meters and Controllers are designed keeping the strict demands of analytical instruments, e.g., for GC sample preparation systems, in mind.

Performance benefits at a glance:

- ✓ Repeatability < 0.15% O.R.
- ✓ Turndown Ratio > 1000:1
- ✓ High Accuracy < 0.2% F.S. for 0-10% F.S.
< 1% O.R. for 10-100% F.S.
- ✓ Multigas He, H₂, N₂, Air, Ar, CO₂, O₂, etc.
- ✓ Reaction Time < 4 ms (mass flow sensor)
< 150 ms (mass flow controller)
- ✓ Pressure Coefficient +/- 0.2% O.R./bar
- ✓ Long-Term Stability +/- 0.25% F.S. per year

O.R.: Of Reading; F.S.: Full Scale



Market-leading dynamic range of Axetris MFCs means a single MFC can be used to control flows over a wide range.

About Axetris Mass Flow Meters and Controllers

Axetris offers OEM mass flow meters (MFM) and controllers (MFC) which offer outstanding value to the customer. The proprietary, platinum-based MEMS chip technology guarantees excellent accuracy and repeatability in combination with high speed and an extended dynamic range.

The Axetris mass flow technology is used by many leading companies in the fields of gas chromatography, leak testing, thermal analytics, mass spectroscopy, thin film deposition, plasma engineering and more.



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