

Quality Leader in Thermal Analysis depends on Axetris Mass Flow Solutions

Pushing the limits of Thermal Analysis using Axetris MFCs

An international quality leader for Thermal Analysis solutions relies on Axetris mass flow controllers (MFCs) and has done so for many years. Axetris mass flow solutions help maximize performance while using analysis techniques such as Thermogravimetric Analysis (TGA) and Differential Scanning Calorimetry (DSC).

The challenging world of thermal analysis

Various thermal analysis (TA) techniques are used in a number of challenging material characterization applications today (e.g., in pharmaceutical, semiconductor, and medical industries).

Recent developments in instrument design have meant that differential mass can be measured down to a few nanograms! Such developments have helped customers worldwide define tighter processes, research the use of new materials and develop innovative products.

Accurate gas flow control helps achieve performance gains

In order to achieve this quantum leap in thermal analysis performance, a number of critical parameters have to be tightly controlled – e.g., furnace atmosphere composition, sample vapor pressure, heating rate and radiation effects. Accurate gas flow control is critical toward achieving this tight control, and, as a result, a homogenous sample temperature profile.

Axetris mass flow solutions the ideal choice

Axetris mass flow solutions were chosen for use in a number of thermal analysis products. The main advantages offered were:

- ✓ **Unmatched Stability:** For achieving minuscule detection limits.
- ✓ **Reliability:** Robust products, long lifetime, quick resolution of technical issues.
- ✓ **Ultrafast Response Time:** Ideal for integration into process control loops.
- ✓ **Partnership:** Lastly (but not least), an attitude of partnership – from the development phase, through after-sales service and support.



Accurate and ultrafast gas flow control in thermal analysis instruments helps achieve differential mass resolution of a few nanograms

“Accurate results from our thermal analysis instruments depend on the homogeneity of the temperature profile that can be achieved – mass flow control solutions from Axetris have helped us in achieving the desired detection performance reliably.”

Project Lead

World-leading supplier of thermal analysis instruments

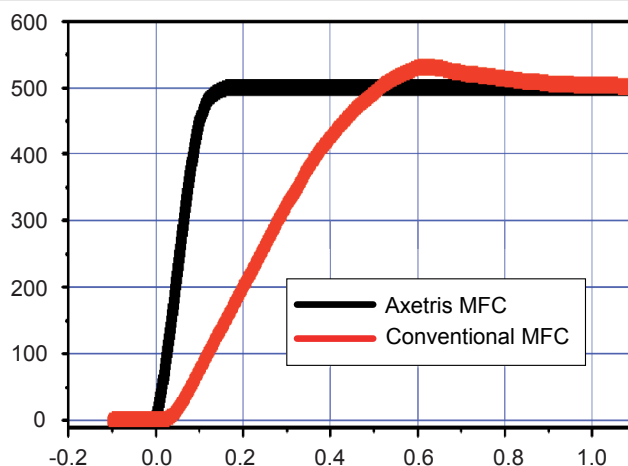
Axetris Mass Flow Meters and Controllers *The ideal choice for your Analytical Instrument*

Axetris Mass Flow Meters and Controllers are designed keeping the strict demands of analytical instruments, e.g., for thermal analysis, in mind.

Performance benefits at a glance:

- ✓ Repeatability < 0.15% O.R.
- ✓ Turndown Ratio > 1000:1
- ✓ High Accuracy < 0.2% F.S. 0-10% F.S.
< 1% F.S. 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.
- ✓ Long-Term Stability +/- 0.25% F.S. per/year

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



An ultrafast settling time of 150 ms (typical value achieved without overshoot) means Axetris mass flow devices can be integrated into quick control loops for controlling critical parameters within analytical instruments

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.



Contact

Headquarters

Axetris AG, Switzerland
Schwarzenbergstrasse 10
CH-6056 Kaegswil
Switzerland
phone +41 41 662 76 76
fax +41 41 662 75 25
axetris@axetris.com
www.axetris.com

USA

Leister Technologies LLC
1275 Hamilton Parkway
Itasca, IL 60143
USA
phone +1 844 293 8747
fax +1 630 760 1001
axetris.usa@axetris.com
www.axetris.com

China

Leister Technologies Ltd.
Building 11, 155 Yuanke Road
Shanghai 201 109
China
phone +86 21 6442 2398
fax +86 21 6442 2398
axetris@axetris.cn
www.axetris.cn

Japan

Leister Technologies KK
Shinyokohama Bousei Bldg 1F
3-20-12, Shinyokohama, Kohoku-ku
Yokohama 222-0033 / Japan
phone +81 45 447 36 37
fax +81 45 477 36 38
axetris@axetris.jp
www.axetris.jp

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