

Asia Pacific Thermal Mass Flow Controller Market Size and Forecast (2021 - 2031)

<https://marketpublishers.com/r/A0EA314007A4EN.html>

Date: April 2026

Pages: 178

Price: US\$ 3,450.00 (Single User License)

ID: A0EA314007A4EN

Abstracts

The Asia Pacific Thermal Mass Flow Controller Market is projected to grow significantly, reaching an estimated US\$ 584.5 million by 2031, up from US\$ 383.8 million in 2024, with a compound annual growth rate (CAGR) of 6.4% anticipated from 2025 to 2031.

Executive Summary and Market Analysis

The Asia Pacific region is recognized as the fastest-growing market for thermal mass flow controllers, fueled by rapid industrialization, increased manufacturing capabilities, and substantial investments in high-tech sectors. Key players in this market include China, Japan, South Korea, Taiwan, and India, which are leading the global electronics and semiconductor manufacturing industries—primary application areas for mass flow controllers. The construction of new semiconductor fabrication plants, along with significant investments in chemical processing, pharmaceuticals, water treatment, and renewable energy, has led to a heightened demand for precise gas flow measurement and control devices.

Governments in the region are actively promoting industrial automation, quality enhancement, and energy efficiency, creating a conducive policy environment for the adoption of advanced process instrumentation. The manufacturing boom in Asia Pacific is not only about increasing capacity but also about enhancing technological sophistication. Factories are increasingly integrating IoT-based monitoring, digital control systems, and AI-driven optimization, which depend on high-accuracy sensors and controllers like mass flow controllers.

The cost-competitive manufacturing landscape encourages producers to adopt high-precision instrumentation to reduce waste, improve yields, and comply with export-

quality standards. The diverse range of industries utilizing mass flow controllers—including automotive, petrochemicals, environmental monitoring, and hydrogen energy—ensures a broad-based demand. Many facilities in the region are newly constructed, resulting in a demand for new installations rather than retrofits, further driving market growth.

Market Segmentation

The Asia Pacific Thermal Mass Flow Controller Market is segmented by flow rate into Low, Medium, and High categories, with the Low segment leading the market in 2024. By application, the market is divided into Semiconductors, Food and Beverage, Chemicals, Pharmaceuticals and Healthcare, Oil and Gas, and Others, with the Semiconductors segment also dominating in 2024.

Market Outlook

Increasing regulatory and sustainability pressures across global industries are pivotal in driving the growth of the thermal mass flow controller market. Governments and international bodies are enforcing stringent regulations related to emissions control, energy efficiency, and environmental protection, compelling industries to adopt advanced instrumentation for precise process monitoring and optimization. Thermal mass flow controllers are known for their exceptional accuracy and stability in measuring and controlling gas flow, which is essential for compliance with evolving environmental standards.

These controllers enable accurate mass flow measurement, independent of temperature and pressure variations, helping industries maintain optimal gas-to-process ratios, thereby minimizing excess gas consumption, leakage, and emissions. This capability is crucial in sectors such as chemical processing, oil and gas, pharmaceuticals, and semiconductor manufacturing, where the management of toxic or greenhouse gases is critical. For instance, in semiconductor fabrication or chemical vapor deposition processes, thermal mass flow controllers regulate the precise amount of reactive gases, reducing waste and improving yield while ensuring emissions remain within regulated limits.

The global shift towards sustainability and energy conservation is transforming thermal mass flow controllers from mere process instruments to strategic enablers of green manufacturing. Industrial facilities face increasing pressure to adopt technologies that lower carbon intensity and energy consumption while supporting circular economy

initiatives. Thermal mass flow controllers contribute to these goals by enabling precise flow control that reduces gas and energy wastage, enhances reaction efficiency, and improves system reliability, thus lowering the environmental impact of operations.

Country Insights

The Asia Pacific Thermal Mass Flow Controller Market is further segmented by country, including China, Japan, South Korea, India, Australia, and the Rest of APAC, with China holding the largest market share in 2024. China's thermal mass flow controller market is among the largest and fastest-growing globally, driven by rapid industrialization, significant technological investments, and the expansion of high-tech manufacturing. The country leads in semiconductor fabrication, solar panel production, and chemical processing, all of which require precise control of gas and liquid flow.

Government initiatives, such as the Made in China 2025 strategy, along with investments in renewable energy and hydrogen, are accelerating the demand for precision flow instruments in both research and industrial applications. The rise of automation and digital manufacturing is prompting Chinese factories to integrate mass flow controllers into smart, IoT-enabled production lines, further enhancing market growth.

Company Profiles

Key players in the Asia Pacific Thermal Mass Flow Controller Market include Parker Hannifin Corporation, Avantor Inc, Dwyer Instruments, Sensirion Holding AG, Teledyne Technologies Inc, Horiba Ltd, Azbil Corp, Axetris AG, MKS Instruments Inc, and Brooks Instrument. These companies are employing various strategies such as expansion, product innovation, and mergers and acquisitions to enhance their market presence and offer innovative products to consumers.

Contents

1. INTRODUCTION

- 1.1 Report Guidance
- 1.2 Market Segmentation

2. EXECUTIVE SUMMARY

- 2.1 Key Insights
- 2.2 Market Attractiveness

3. RESEARCH METHODOLOGY

- 3.1 Secondary Research
- 3.2 Primary Research
 - 3.2.1 Hypothesis formulation:
 - 3.2.2 Macroeconomic factor analysis:
 - 3.2.3 Developing base number:
 - 3.2.4 Data Triangulation:
 - 3.2.5 Country-level data:

4. THERMAL MASS FLOW CONTROLLER MARKET LANDSCAPE

- 4.1 Market Overview
- 4.2 PEST Analysis
- 4.3 Ecosystem Analysis
 - 4.3.1 List of Vendors in the Value Chain

5. ASIA PACIFIC THERMAL MASS FLOW CONTROLLER MARKET - KEY MARKET DYNAMICS

- 5.1 Market Drivers
- 5.2 Market Restraints
- 5.3 Market Opportunities
- 5.4 Future Trends
- 5.5 Impact of Drivers and Restraints:

6. THERMAL MASS FLOW CONTROLLER MARKET - ASIA PACIFIC MARKET

ANALYSIS

6.1 Asia Pacific Thermal Mass Flow Controller Market Revenue (US\$ Million), 2024 - 2031

6.2 Asia Pacific Thermal Mass Flow Controller Market Forecast and Analysis

7. ASIA PACIFIC THERMAL MASS FLOW CONTROLLER MARKET REVENUE ANALYSIS - BY FLOW RATE

7.1 Low

7.1.1 Overview

7.1.2 Low: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

7.2 Medium

7.2.1 Overview

7.2.2 Medium: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

7.3 High

7.3.1 Overview

7.3.2 High: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8. ASIA PACIFIC THERMAL MASS FLOW CONTROLLER MARKET REVENUE ANALYSIS - BY APPLICATION

8.1 Semiconductors

8.1.1 Overview

8.1.2 Semiconductors: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8.2 Food and Beverage Industry

8.2.1 Overview

8.2.2 Food and Beverage Industry: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8.3 Chemicals

8.3.1 Overview

8.3.2 Chemicals: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8.4 Pharmaceutical and Healthcare Industry

8.4.1 Overview

8.4.2 Pharmaceutical and Healthcare Industry: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8.5 Oil and Gas

8.5.1 Overview

8.5.2 Oil and Gas: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8.6 Others

8.6.1 Overview

8.6.2 Others: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9. ASIA PACIFIC THERMAL MASS FLOW CONTROLLER MARKET - COUNTRY ANALYSIS

9.1 Asia Pacific

9.1.1 Asia Pacific Thermal Mass Flow Controller Market Revenue and Forecast and Analysis - by Country

9.1.1.1 Asia Pacific Thermal Mass Flow Controller Market Revenue and Forecast and Analysis - by Country

9.1.2.2 China: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.1.2.2.1 China: Asia Pacific Thermal Mass Flow Controller Market Share - by Flow Rate

9.1.2.2.2 China: Asia Pacific Thermal Mass Flow Controller Market Share - by Application

9.2.3.3 Japan: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.2.3.3.1 Japan: Asia Pacific Thermal Mass Flow Controller Market Share - by Flow Rate

9.2.3.3.2 Japan: Asia Pacific Thermal Mass Flow Controller Market Share - by Application

9.3.4.4 South Korea: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.3.4.4.1 South Korea: Asia Pacific Thermal Mass Flow Controller Market Share - by Flow Rate

9.3.4.4.2 South Korea: Asia Pacific Thermal Mass Flow Controller Market Share - by Application

9.4.5.5 India: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.4.5.5.1 India: Asia Pacific Thermal Mass Flow Controller Market Share - by Flow Rate

9.4.5.5.2 India: Asia Pacific Thermal Mass Flow Controller Market Share - by Application

9.5.6.6 Australia: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.5.6.6.1 Australia: Asia Pacific Thermal Mass Flow Controller Market Share - by Flow Rate

9.5.6.6.2 Australia: Asia Pacific Thermal Mass Flow Controller Market Share - by Application

9.6.7.7 Rest of APAC: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.6.7.7.1 Rest of APAC: Asia Pacific Thermal Mass Flow Controller Market Share - by Flow Rate

9.6.7.7.2 Rest of APAC: Asia Pacific Thermal Mass Flow Controller Market Share - by Application

10 COMPETITIVE LANDSCAPE

10.1 Heat Map Analysis by Key Players

10.2 Company Market Share Analysis, 2024

11 INDUSTRY LANDSCAPE

11.1 Overview

11.2 New Product Development

11.3 Merger and Acquisition

11.4 Other Strategic Developments

12 COMPANY PROFILES

12.1 Parker Hannifin Corporation

12.1.1 Key Facts

12.1.2 Business Description

12.1.3 Products and Services

12.1.4 Financial Overview

12.1.5 SWOT Analysis

12.1.6 Key Developments

12.2 Avantor Inc

- 12.2.1 Key Facts
- 12.2.2 Business Description
- 12.2.3 Products and Services
- 12.2.4 Financial Overview
- 12.2.5 SWOT Analysis
- 12.2.6 Key Developments
- 12.3 Dwyer Instruments, Inc.
 - 12.3.1 Key Facts
 - 12.3.2 Business Description
 - 12.3.3 Products and Services
 - 12.3.4 Financial Overview
 - 12.3.5 SWOT Analysis
 - 12.3.6 Key Developments
- 12.4 Sensirion Holding AG
 - 12.4.1 Key Facts
 - 12.4.2 Business Description
 - 12.4.3 Products and Services
 - 12.4.4 Financial Overview
 - 12.4.5 SWOT Analysis
 - 12.4.6 Key Developments
- 12.5 Teledyne Technologies Inc
 - 12.5.1 Key Facts
 - 12.5.2 Business Description
 - 12.5.3 Products and Services
 - 12.5.4 Financial Overview
 - 12.5.5 SWOT Analysis
 - 12.5.6 Key Developments
- 12.6 Horiba Ltd
 - 12.6.1 Key Facts
 - 12.6.2 Business Description
 - 12.6.3 Products and Services
 - 12.6.4 Financial Overview
 - 12.6.5 SWOT Analysis
 - 12.6.6 Key Developments
- 12.7 Azbil Corp
 - 12.7.1 Key Facts
 - 12.7.2 Business Description
 - 12.7.3 Products and Services
 - 12.7.4 Financial Overview

12.7.5 SWOT Analysis

12.7.6 Key Developments

12.8 Axetris AG

12.8.1 Key Facts

12.8.2 Business Description

12.8.3 Products and Services

12.8.4 Financial Overview

12.8.5 SWOT Analysis

12.8.6 Key Developments

12.9 MKS Instruments Inc

12.9.1 Key Facts

12.9.2 Business Description

12.9.3 Products and Services

12.9.4 Financial Overview

12.9.5 SWOT Analysis

12.9.6 Key Developments

12.10 Brooks Instrument

12.10.1 Key Facts

12.10.2 Business Description

12.10.3 Products and Services

12.10.4 Financial Overview

12.10.5 SWOT Analysis

12.10.6 Key Developments

13. APPENDIX

13.1 About The Insight Partners

List Of Tables

LIST OF TABLES

Table 1. Asia Pacific Thermal Mass Flow Controller Market Segmentation

Table 2. List of Vendors

Table 3. Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Table 4. Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Flow Rate

Table 5. Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Application

Table 6. Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Country

Table 7. China: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Flow Rate

Table 8. China: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Application

Table 9. Japan: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Flow Rate

Table 10. Japan: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Application

Table 11. South Korea: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Flow Rate

Table 12. South Korea: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Application

Table 13. India: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Flow Rate

Table 14. India: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Application

Table 15. Australia: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Flow Rate

Table 16. Australia: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Application

Table 17. Rest of APAC: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Flow Rate

Table 18. Rest of APAC: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Application

Table 19. Heat Map Analysis by Key Players

List Of Figures

LIST OF FIGURES

Figure 1. Asia Pacific Thermal Mass Flow Controller Market Segmentation - Country

Figure 2. PEST Analysis

Figure 3. Ecosystem: Thermal Mass Flow Controller Market

Figure 4. Asia Pacific Thermal Mass Flow Controller Market - Key Market Dynamics

Figure 5. Impact Analysis of Drivers and Restraints

Figure 6. Asia Pacific Thermal Mass Flow Controller Market Revenue (US\$ Million), 2024 - 2031

Figure 7. Asia Pacific Thermal Mass Flow Controller Market Share (%) - by Flow Rate, 2024 and 2031

Figure 8. Low: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 9. Medium: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 10. High: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 11. Asia Pacific Thermal Mass Flow Controller Market Share (%) - by Application, 2024 and 2031

Figure 12. Semiconductors: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 13. Food and Beverage Industry: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 14. Chemicals: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 15. Pharmaceutical and Healthcare Industry: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 16. Oil and Gas: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 17. Others: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 18. Asia Pacific Thermal Mass Flow Controller Market Breakdown by Key Countries, 2024 and 2031 (%)

Figure 19. China: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 20. Japan: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 21. South Korea: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 22. India: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 23. Australia: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 24. Rest of APAC: Asia Pacific Thermal Mass Flow Controller Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 25. Company Market Share Analysis, 2024

I would like to order

Product name: Asia Pacific Thermal Mass Flow Controller Market Size and Forecast (2021 - 2031)

Product link: <https://marketpublishers.com/r/A0EA314007A4EN.html>

Price: US\$ 3,450.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/A0EA314007A4EN.html>