

# MEMS Devices for Industrial Sensing

ANMD-MRS7-070 · Advanced Semiconductor Applications

A Global Sustainability Due Diligence & Market Research Study

History 2020–2024 · Base Year 2025 · Forecast 2025–2032 · Outlooks 2035 / 2040 / 2050 · Currency US\$

## WHY THIS REPORT

MEMS devices for industrial sensing are the micro-electromechanical building blocks of Industry 4.0 — the accelerometers, gyroscopes, pressure and acoustic sensors that instrument machines, processes and infrastructure for monitoring, control and predictive maintenance. This decision-grade study sizes the global market three ways — value, unit volume and sensors-per-system — across device type, application and end user, across seven regions and four scenarios to 2032, with outlooks to 2050.

## SUSTAINABILITY & SDG IMPACT — THE ANMD LENS

Sustainability is this report's backbone, not an afterthought. Industrial MEMS' core contribution is the efficiency, uptime and resource savings unlocked by monitoring — less energy, fewer failures and longer asset life across the plants they instrument.

Mapped Sustainable Development Goals:

<b>SDG 9</b> Industry & Innovation	<b>SDG 12</b> Responsible Consumption	<b>SDG 13</b> Climate Action
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Measurable sustainability outcomes assessed:

- Energy and resource savings through monitoring
- Fewer failures and longer asset life
- Predictive-maintenance and uptime gains
- Embodied carbon in fabrication, material sourcing and electronics end-of-life as material risks

**Framework alignment:** Double materiality mapped to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, with greenwashing and SDG-washing screens applied throughout.

## WHAT'S INSIDE AT A GLANCE

<b>53</b> Chapters	<b>9</b> Report Parts	<b>7</b> Regions Covered	<b>40+</b> Country Markets
<b>2025–32</b> Forecast Horizon	<b>4</b> Forward Scenarios	<b>25+</b> Companies Profiled	<b>3</b> SDGs Mapped

## REPORT COVERAGE

**Geographic scope:** North America, Europe, Asia Pacific, Latin America, Africa, Middle East and Rest of World — with named country intelligence. North America is the research leader (United States) on platform programmes and edge-AI silicon; Europe is the innovation hub (Germany, Netherlands, United Kingdom) on R&D and startups; Asia Pacific is the scale engine; other regions assessed on their own merits.

## MARKET OVERVIEW

**From discrete sensors to sensor-fusion modules — where industrial sensing goes rugged, integrated and predictive.**

Industrial MEMS are scaling with factory digitalisation. Demand is driven by predictive maintenance, process automation, condition monitoring and industrial IoT — with reliability, ruggedness and integration central to value. The market is read three ways — value, unit volume and sensors-per-system — and forecast under four scenarios, each region reported separately.

- **Asia Pacific is the scale engine** — China, Japan and South Korea, on MEMS manufacturing and volume
- **Europe is the technology leader** — Germany, France and United Kingdom, on industrial-sensing and reliability
- **North America is the value leader** — United States, on Industry 4.0 and high-reliability sensing
- **Reliability and integration are the differentiators** — sensor-fusion modules plus application-specific engineering

## REGIONAL OUTLOOK

Across seven reporting regions, the report separates early commercialisation leaders from high-growth and emerging markets — each profiled in full rather than aggregated into Rest of World.

Region	Stage	Lead Markets & Drivers
North America	Research leader	United States — platform programmes, edge-AI silicon
Europe	Innovation hub	Germany, Netherlands, United Kingdom — R&D, startups
Asia Pacific	Scale engine	China, South Korea, Japan — foundry, device integration
Middle East	High-growth	Israel, UAE — chip design, deep-tech investment
Latin America	Emerging	Brazil, Mexico — electronics assembly, adoption
Africa	Emerging	South Africa, Egypt — electronics, industrial adoption

## KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
<ul style="list-style-type: none"> <li>• Factory-digitalisation + Industry-4.0 convergence</li> <li>• Predictive-maintenance &amp; uptime value</li> <li>• Policy &amp; efficiency drivers (industrial decarbonisation)</li> <li>• Reliability, ruggedness &amp; integration premium</li> <li>• Sensor-fusion, MEMS+ASIC &amp; packaging gains</li> </ul>	<ul style="list-style-type: none"> <li>• Reliability &amp; qualification burden in harsh environments</li> <li>• Integration, calibration &amp; system-design complexity</li> <li>• Embodied-carbon &amp; material-sourcing scrutiny</li> <li>• Component, supply-chain &amp; cost pressures</li> <li>• Standards, interoperability &amp; repairability gaps</li> </ul>

## SEGMENTATION SNAPSHOT

<b>By Device Type</b>	Accelerometers · gyroscopes · pressure sensors · acoustic sensors
<b>By Application</b>	Predictive maintenance · process control · condition monitoring · safety · robotics
<b>By Industry</b>	Manufacturing · energy · aerospace · automotive · infrastructure
<b>By End User</b>	Industrial OEMs · system integrators · plant operators
<b>By Integration</b>	Discrete MEMS · MEMS+ASIC · sensor-fusion modules
<b>By Business Model</b>	Device sale · IP licensing · foundry · co-design

## TABLE OF CONTENTS — PARTS & CHAPTERS

The full report is organised into nine parts across 53 chapters, listed below. Detailed sub-headings, country tables and directories are provided in the full report.

### Part I — Report Foundation, Discovery and Strategic Intelligence

- › Chapter 1. Scope, Methodology and Report Architecture
- › Chapter 2. Industry Discovery Summary — MEMS Devices for Industrial Sensing
- › Chapter 3. Executive Intelligence and Decision Dashboard
- › Chapter 4. Strategic Findings, Materiality and Investment Verdict Preview

### Part II — Market Intelligence, Sizing, Forecasting and Segmentation

- › Chapter 5. Industry Overview and Market Evolution
- › Chapter 6. Market Dynamics
- › Chapter 7. Global Market Size and Forecast, 2020–2032
- › Chapter 8. Market Segmentation Analysis
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### Part III — Regional and Country Intelligence

- › Chapter 11. Global Regional Intelligence Framework
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### Part IV — Technology, Innovation and Category-Specific Intelligence

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- › Chapter 22. Research, Innovation and Funding Landscape

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## Part VI — Sustainability, ESG, SDG, Climate and Natural-Capital Intelligence

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## Part VII — Supply Chain, Policy, Legal, Economics and Finance

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## Part VIII — Scenario, Future Intelligence and Final Due Diligence Verdict

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- › Chapter 44. Risk Register, RAG Rating and Anti-Greenwashing Screen
- › Chapter 45. Bottom-Line Verdict and Strategic Recommendations
- › Chapter 46. Implementation Roadmap and Stakeholder Playbooks

## Part IX — Annexes, Directories and Reference Material

- › Chapter 47. Methodology Annex
- › Chapter 48. Corporate Directory and Company Intelligence Annex
- › Chapter 49. Patent Directory and Patent Intelligence Annex
- › Chapter 50. Project Intelligence Annex
- › Chapter 51. Forecast Annex
- › Chapter 52. Sustainability KPI Annex
- › Chapter 53. Reference Annexes

## COMPETITIVE & INVESTMENT SNAPSHOT

The competitive field spans global semiconductor majors, specialist mems devices for industrial sensing makers, and emerging innovators. Deal activity — M&A, technology acquisition and platform expansion — signals a market consolidating around scalable, platform and software maturity.

### Representative players profiled in the full report:

Robert Bosch GmbH (Bosch Sensortec GmbH) · STMicroelectronics N.V. · Analog Devices, Inc. · Infineon Technologies AG · Honeywell International Inc. · TE Connectivity plc · Murata Manufacturing Co., Ltd. · and 20+ further profiled players across platform leaders, in-memory startups and emerging innovators.

**Investment intelligence:** venture, infrastructure, development, climate and blended finance, green bonds and sustainability-linked loans — culminating in a bankability assessment and a Go / No-Go / Conditional-Go investment verdict.

## KEY QUESTIONS THIS REPORT ANSWERS

- ? How large is the global mems devices for industrial sensing market, and how fast will it grow to 2032?
- ? Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- ? How does energy-per-inference (or sensing efficiency) change value versus conventional silicon?
- ? Who leads, and where is the competitive and patent white space?
- ? Is the investment case bankable — and under what conditions?
- ? How does the category align with the SDGs, digital-equity and energy-efficiency and disclosure regulation?

## WHY ANMD — THE DIFFERENCE

*Most market studies stop at units and revenue. This report is built as a sustainability due diligence instrument — fusing market sizing with ESG, SDG, climate, water and natural-capital intelligence and a decision-ready bankability verdict in a single architecture.*

- **Triangulated sizing** — every market read three ways so value, volume and efficiency views reconcile rather than conflict.
- **Region-honest forecasting** — Latin America, Africa and the Middle East reported in full, never hidden inside Rest of World, every forecast resolved to the 2025 base year.
- **Integrated evidence base** — company, patent and project databases linked to the analysis, with published-filing patents and FTO treated as an indicator, not a legal conclusion.
- **No-fabrication discipline** — every estimate carries a data-confidence rating and disclosed sources; gaps are flagged for further diligence, never filled with invented numbers.
- **Anti-greenwashing rigour** — SDG-washing and greenwashing screens plus claim-substantiation checks built into the ESG and project analysis.
- **Decision-first structure** — 9 Parts and 53 Chapters culminating in stakeholder playbooks and a clear Go / No-Go / Conditional-Go investment verdict.

## WHO SHOULD BUY THIS REPORT

Investors and deep-tech / PE funds, semiconductor and device OEMs, foundries and IP licensors, system integrators and industrial users, research labs and defence buyers, regulators and lenders, and corporate strategy and ESG teams.

### Access the Full Report

The complete report delivers all 53 chapters in full, with every sub-heading, country table, company and patent directory, forecast model and due diligence checklist.

Purchase at [www.anewmarketdynamics.com](http://www.anewmarketdynamics.com) · Standard & Premium licences · Single-Site (SSL) and Global-Site (GSL) options at checkout.

### Want the Complete Detailed Table of Contents?

This prospectus lists the nine parts and 53 chapters. The complete detailed table of contents — every sub-heading, country table, exhibit, company and patent directory and annex — is available on request to registered users. To receive it, register with your official company email at [www.anewmarketdynamics.com](http://www.anewmarketdynamics.com). The full detailed table of contents will be sent directly to your registered company email address.