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:

SDG 9	SDG 12	SDG 13
Industry & Innovation	Responsible Consumption	Climate Action

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

53 Chapters	**9** Report Parts	**7** Regions Covered	**40+** Country Markets
2025–32 Forecast Horizon	**4** Forward Scenarios	**25+** Companies Profiled	**3** 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
• Factory-digitalisation + Industry-4.0 convergence	• Reliability & qualification burden in harsh environments
• Predictive-maintenance & uptime value	• Integration, calibration & system-design complexity
• Policy & efficiency drivers (industrial decarbonisation)	• Embodied-carbon & material-sourcing scrutiny
• Reliability, ruggedness & integration premium	• Component, supply-chain & cost pressures
• Sensor-fusion, MEMS+ASIC & packaging gains	• Standards, interoperability & repairability gaps

SEGMENTATION SNAPSHOT

By Device Type	Accelerometers · gyroscopes · pressure sensors · acoustic sensors
By Application	Predictive maintenance · process control · condition monitoring · safety · robotics
By Industry	Manufacturing · energy · aerospace · automotive · infrastructure
By End User	Industrial OEMs · system integrators · plant operators
By Integration	Discrete MEMS · MEMS+ASIC · sensor-fusion modules
By Business Model	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.

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** · 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**. The full detailed table of contents will be sent directly to your registered company email address.