

Smart Irrigation Sensors Market Forecasts to 2034 – Global Analysis By Sensor Type (Soil Moisture Sensors, Weather Sensors, Flow Sensors, Rain Sensors, and Temperature Sensors), Installation Type, Connectivity, Technology, Application, End User, and By Geography

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Abstracts

According to Statistics MRC, the Global Smart Irrigation Sensors Market is accounted for \$3.4 billion in 2026 and is expected to reach \$12.8 billion by 2034 growing at a CAGR of 18.0% during the forecast period. Smart irrigation sensors refer to soil moisture monitoring devices, weather station instruments, flow measurement sensors, rain detection systems, and temperature sensing equipment integrated with wireless communication protocols and AI-powered irrigation management software to enable precision irrigation scheduling that applies water only when and where crop needs require it, reducing agricultural water consumption by 20 to 50 percent compared to conventional timer-based irrigation while improving crop yield and quality through optimal soil moisture maintenance across commercial farming, horticulture, sports turf, and landscape irrigation applications.

Market Dynamics:

Driver:

Water Scarcity Regulatory Pressure

Agricultural water allocation regulatory restrictions across drought-prone regions in California, Australia, Spain, and India are compelling farmers to adopt smart irrigation

sensor systems that document compliance with water use permit limits while optimizing crop production within constrained allocation volumes. Mandatory irrigation water metering and reporting requirements in regulated agricultural water districts create institutional demand for sensor-based irrigation monitoring infrastructure that provides verified water use data for regulatory compliance documentation.

Restraint:

Sensor Calibration Maintenance Requirements

Smart irrigation sensor calibration drift and maintenance requirements creating accuracy degradation over deployment lifetime add ongoing operational cost and labor demand that reduces total system economic performance relative to initial deployment projections, particularly for soil moisture sensor technologies requiring periodic recalibration against laboratory-determined reference values to maintain measurement accuracy sufficient for precision irrigation management decision support across diverse soil type conditions.

Opportunity:

Precision Viticulture Adoption

Precision viticulture smart irrigation sensor adoption represents a premium-value specialty crop market opportunity as wine grape growers implementing controlled water deficit irrigation strategies for berry quality optimization invest in comprehensive soil moisture monitoring networks enabling the spatial irrigation variability management that premium wine quality consistency requirements demand across heterogeneous vineyard block soil moisture conditions that uniform irrigation scheduling cannot adequately address.

Threat:

Low-Cost Competitor Sensor Proliferation

Proliferation of low-cost commodity soil moisture sensors from Chinese manufacturers entering precision agriculture markets at prices substantially below established smart irrigation sensor brand offerings creates commoditization pressure that compresses margin profiles for premium sensor vendors while creating product quality and reliability uncertainty that may generate negative smart irrigation category experiences for

farmers adopting inexpensive sensors with inadequate accuracy, durability, or connectivity performance for commercial precision irrigation management.

Covid-19 Impact:

COVID-19 supply chain disruptions affecting agricultural input availability and amplified awareness of food production system resilience vulnerabilities generated farmer investment in production efficiency technologies including smart irrigation that reduces dependency on water-intensive conventional farming practices. Post-pandemic agricultural water security investment programs across drought-prone regions and expanding precision agriculture technology adoption are driving smart irrigation sensor market growth as water management becomes an increasingly strategic agricultural resource management priority.

The temperature sensors segment is expected to be the largest during the forecast period

The temperature sensors segment is expected to account for the largest market share during the forecast period, due to wide deployment of air and soil temperature sensors across agricultural weather station networks, crop disease prediction models, frost protection irrigation management systems, and greenhouse climate control applications that collectively generate the highest sensor unit volume within the smart irrigation sensor market, with temperature sensing representing a foundational measurement requirement across virtually all precision crop production management systems.

The surface sensors segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the surface sensors segment is predicted to witness the highest growth rate, driven by rapid expansion of surface-mounted soil moisture sensor deployment in commercial horticultural, vineyard, and row crop irrigation management applications where cost-effective installation without soil excavation enables economical sensor density deployment across diverse field zones, combined with improving wireless connectivity and battery life enabling reliable long-term surface sensor networks in remote agricultural environments.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest

market share, due to the United States hosting extensive commercial agriculture, turf, and landscape irrigation markets adopting smart sensor technology, leading smart irrigation companies including The Toro Company, Hunter Industries, and Rain Bird generating substantial domestic revenue, and strong state-level water conservation incentive programs in California, Arizona, and Texas funding smart irrigation system adoption across agricultural and urban landscape irrigation applications.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to India, China, and Australia implementing large-scale national agricultural water use efficiency programs requiring precision irrigation monitoring, rapidly growing commercial horticulture and viticulture sectors adopting smart irrigation management across Asia Pacific, and government subsidized smart agriculture programs in China and India creating institutional demand for irrigation sensor technology deployment across millions of smallholder and commercial farm operations.

Key players in the market

Some of the key players in Smart Irrigation Sensors Market include The Toro Company, Hunter Industries, Rain Bird Corporation, Netafim, Valmont Industries, Jain Irrigation Systems, Trimble Inc., Deere & Company, Lindsay Corporation, HydroPoint Data Systems, Rachio, Weathermatic, Galcon, Sensoterra, Manna Irrigation, CropX, and AquaSpy.

Key Developments:

In March 2026, Netafim launched an AI-powered precision irrigation management platform integrating real-time soil moisture sensor data with crop evapotranspiration models for automated irrigation scheduling across large-scale commercial crop production.

In February 2026, CropX expanded its agronomic farm management platform with new multi-depth soil moisture sensor integration enabling three-dimensional soil water profile monitoring for precision irrigation depth management.

In January 2026, Rachio introduced a new professional agricultural smart irrigation controller integrating weather forecast data with soil moisture sensor inputs for automated irrigation decision support across commercial orchard and vineyard

applications.

In October 2025, Sensoterra secured a major water utility partnership deploying its wireless soil moisture sensor network across thousands of municipal landscape irrigation sites for automated water conservation verification and reporting.

Sensor Types Covered:

Soil Moisture Sensors

Weather Sensors

Flow Sensors

Rain Sensors

Temperature Sensors

Installation Types Covered:

Surface Sensors

Subsurface Sensors

Connectivities Covered:

Wi-Fi

Bluetooth

LPWAN

Technologies Covered:

IoT-Based Systems

Wireless Sensors

AI-Based Irrigation Control

Cloud Integration

Applications Covered:

Agriculture

Landscaping

Golf Courses

Greenhouses

Residential Irrigation

End Users Covered:

Farmers

Municipalities

Commercial Landscapers

Golf Course Managers

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL SMART IRRIGATION SENSORS MARKET, BY SENSOR TYPE

- 5.1 Soil Moisture Sensors
- 5.2 Weather Sensors
- 5.3 Flow Sensors
- 5.4 Rain Sensors
- 5.5 Temperature Sensors

6 GLOBAL SMART IRRIGATION SENSORS MARKET, BY INSTALLATION TYPE

- 6.1 Surface Sensors
- 6.2 Subsurface Sensors

7 GLOBAL SMART IRRIGATION SENSORS MARKET, BY CONNECTIVITY

- 7.1 Wi-Fi
- 7.2 Bluetooth
- 7.3 LPWAN

8 GLOBAL SMART IRRIGATION SENSORS MARKET, BY TECHNOLOGY

- 8.1 IoT-Based Systems
- 8.2 Wireless Sensors
- 8.3 AI-Based Irrigation Control
- 8.4 Cloud Integration

9 GLOBAL SMART IRRIGATION SENSORS MARKET, BY APPLICATION

- 9.1 Agriculture
- 9.2 Landscaping
- 9.3 Golf Courses
- 9.4 Greenhouses
- 9.5 Residential Irrigation

10 GLOBAL SMART IRRIGATION SENSORS MARKET, BY END USER

- 10.1 Farmers
- 10.2 Municipalities
- 10.3 Commercial Landscapers
- 10.4 Golf Course Managers

11 GLOBAL SMART IRRIGATION SENSORS MARKET, BY GEOGRAPHY

- 11.1 North America
 - 11.1.1 United States
 - 11.1.2 Canada
 - 11.1.3 Mexico
- 11.2 Europe
 - 11.2.1 United Kingdom
 - 11.2.2 Germany
 - 11.2.3 France
 - 11.2.4 Italy
 - 11.2.5 Spain
 - 11.2.6 Netherlands
 - 11.2.7 Belgium
 - 11.2.8 Sweden
 - 11.2.9 Switzerland
 - 11.2.10 Poland
 - 11.2.11 Rest of Europe
- 11.3 Asia Pacific
 - 11.3.1 China
 - 11.3.2 Japan
 - 11.3.3 India
 - 11.3.4 South Korea
 - 11.3.5 Australia
 - 11.3.6 Indonesia
 - 11.3.7 Thailand
 - 11.3.8 Malaysia
 - 11.3.9 Singapore
 - 11.3.10 Vietnam
 - 11.3.11 Rest of Asia Pacific
- 11.4 South America
 - 11.4.1 Brazil
 - 11.4.2 Argentina

- 11.4.3 Colombia
- 11.4.4 Chile
- 11.4.5 Peru
- 11.4.6 Rest of South America
- 11.5 Rest of the World (RoW)
 - 11.5.1 Middle East
 - 11.5.1.1 Saudi Arabia
 - 11.5.1.2 United Arab Emirates
 - 11.5.1.3 Qatar
 - 11.5.1.4 Israel
 - 11.5.1.5 Rest of Middle East
 - 11.5.2 Africa
 - 11.5.2.1 South Africa
 - 11.5.2.2 Egypt
 - 11.5.2.3 Morocco
 - 11.5.2.4 Rest of Africa

12 STRATEGIC MARKET INTELLIGENCE

- 12.1 Industry Value Network and Supply Chain Assessment
- 12.2 White-Space and Opportunity Mapping
- 12.3 Product Evolution and Market Life Cycle Analysis
- 12.4 Channel, Distributor, and Go-to-Market Assessment

13 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 13.1 Mergers and Acquisitions
- 13.2 Partnerships, Alliances, and Joint Ventures
- 13.3 New Product Launches and Certifications
- 13.4 Capacity Expansion and Investments
- 13.5 Other Strategic Initiatives

14 COMPANY PROFILES

- 14.1 The Toro Company
- 14.2 Hunter Industries
- 14.3 Rain Bird Corporation
- 14.4 Netafim
- 14.5 Valmont Industries

- 14.6 Jain Irrigation Systems
- 14.7 Trimble Inc.
- 14.8 Deere & Company
- 14.9 Lindsay Corporation
- 14.10 HydroPoint Data Systems
- 14.11 Rachio
- 14.12 Weathermatic
- 14.13 Galcon
- 14.14 Sensoterra
- 14.15 Manna Irrigation
- 14.16 CropX
- 14.17 AquaSpy

List Of Tables

LIST OF TABLES

Table 1 Global Smart Irrigation Sensors Market Outlook, By Region (2023-2034) (\$MN)

Table 2 Global Smart Irrigation Sensors Market Outlook, By Sensor Type (2023-2034) (\$MN)

Table 3 Global Smart Irrigation Sensors Market Outlook, By Soil Moisture Sensors (2023-2034) (\$MN)

Table 4 Global Smart Irrigation Sensors Market Outlook, By Weather Sensors (2023-2034) (\$MN)

Table 5 Global Smart Irrigation Sensors Market Outlook, By Flow Sensors (2023-2034) (\$MN)

Table 6 Global Smart Irrigation Sensors Market Outlook, By Rain Sensors (2023-2034) (\$MN)

Table 7 Global Smart Irrigation Sensors Market Outlook, By Temperature Sensors (2023-2034) (\$MN)

Table 8 Global Smart Irrigation Sensors Market Outlook, By Installation Type (2023-2034) (\$MN)

Table 9 Global Smart Irrigation Sensors Market Outlook, By Surface Sensors (2023-2034) (\$MN)

Table 10 Global Smart Irrigation Sensors Market Outlook, By Subsurface Sensors (2023-2034) (\$MN)

Table 11 Global Smart Irrigation Sensors Market Outlook, By Connectivity (2023-2034) (\$MN)

Table 12 Global Smart Irrigation Sensors Market Outlook, By Wi-Fi (2023-2034) (\$MN)

Table 13 Global Smart Irrigation Sensors Market Outlook, By Bluetooth (2023-2034) (\$MN)

Table 14 Global Smart Irrigation Sensors Market Outlook, By LPWAN (2023-2034) (\$MN)

Table 15 Global Smart Irrigation Sensors Market Outlook, By Technology (2023-2034) (\$MN)

Table 16 Global Smart Irrigation Sensors Market Outlook, By IoT-Based Systems (2023-2034) (\$MN)

Table 17 Global Smart Irrigation Sensors Market Outlook, By Wireless Sensors (2023-2034) (\$MN)

Table 18 Global Smart Irrigation Sensors Market Outlook, By AI-Based Irrigation Control (2023-2034) (\$MN)

Table 19 Global Smart Irrigation Sensors Market Outlook, By Cloud Integration

(2023-2034) (\$MN)

Table 20 Global Smart Irrigation Sensors Market Outlook, By Application (2023-2034) (\$MN)

Table 21 Global Smart Irrigation Sensors Market Outlook, By Agriculture (2023-2034) (\$MN)

Table 22 Global Smart Irrigation Sensors Market Outlook, By Landscaping (2023-2034) (\$MN)

Table 23 Global Smart Irrigation Sensors Market Outlook, By Golf Courses (2023-2034) (\$MN)

Table 24 Global Smart Irrigation Sensors Market Outlook, By Greenhouses (2023-2034) (\$MN)

Table 25 Global Smart Irrigation Sensors Market Outlook, By Residential Irrigation (2023-2034) (\$MN)

Table 26 Global Smart Irrigation Sensors Market Outlook, By End User (2023-2034) (\$MN)

Table 27 Global Smart Irrigation Sensors Market Outlook, By Farmers (2023-2034) (\$MN)

Table 28 Global Smart Irrigation Sensors Market Outlook, By Municipalities (2023-2034) (\$MN)

Table 29 Global Smart Irrigation Sensors Market Outlook, By Commercial Landscapers (2023-2034) (\$MN)

Table 30 Global Smart Irrigation Sensors Market Outlook, By Golf Course Managers (2023-2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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