

HVAC Controls Market by Component (Sensors, Controllers, and Controlled Equipment), System, Implementation Type (New Construction, Retrofit), Application (Residential, Commercial, Industrial) and Region - Global Forecast to 2027

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Abstracts

The HVAC controls market size is estimated to be USD 17.2 billion in 2022 and is projected to reach USD 26.7 billion by 2027; it is expected to grow at a CAGR of 9.2% during the forecast period. According to the Consumer Technology Association (CTA), the number of smart homes in the US is expected to reach ~35.2 million units by 2020. The growth in smart homes is expected to create demand for HVAC controls market. An HVAC controls is used in smart homes for controlling air temperature, humidity, and fresh air intake. It helps maintain better airflow and comfortable temperatures in every room. In a smart home, one can monitor the system performance and respond to system-generated alarms from local or remote locations.

Smart HVAC systems can automate the HVAC controls and predict when maintenance is needed before any major issue starts affecting the system. This new technology trend can change uninterruptedly downtime for regularly scheduled check-ups. New HVAC technologies, which use an Internet of Things (IoT) system are embedded with sensors, software, and connectivity that enables the HVAC system to exchange data with other connected devices. IoT systems improve preventative maintenance by sensing data on air quality and equipment status. New and affordable Internet of Things HVAC technology makes it significantly easier to gain insight across a range of equipment

“Sensors: The fastest component of the HVAC controls market.”

Temperature and humidity sensors are the most widely used sensors in an HVAC

control system. These sensors measure the controlled medium and provide a controller with information related to the changing conditions of the medium in an accurate and repeatable manner. Temperature and humidity sensors are used in the anti-freezing and defrost mechanism of air ducts and refrigerant pipes to avoid condensation and the formation of ice in the HVAC system preventing damage to the system. Controlling humidity in buildings is critical for occupant comfort, and safety and protecting building infrastructure, production processes, stored goods, and environmentally susceptible articles such as artwork in museums.

“Temperature control systems: Largest growing system of HVAC controls market”

In 2016, only 11% of US households owned a smart thermostat. By January 2022, the number reached 24% and is still growing. Energy efficiency and long-term cost savings are usually among the top reasons homeowners are demanding smart thermostats. In January 2022, H2O Degree, a manufacturer of advanced two-way wireless submetering systems for tenant billing, leak/flood detection, utility conservation, and building automation system integration in multi-family and commercial facilities, announced the T1000 Smart Thermostat. The T1000 enables remote visualization and local control of conventional (forced air) heating/cooling, heat pumps, and hydronic heating, which is a direct replacement for conventional 24VAC thermostats. Such developments are expected to fuel the demand for temperature control systems across smart buildings in the future.

“Commercial: Largest application of HVAC controls market”

The commercial application segment is expected to hold the largest market share during the forecast period. HVAC systems consume a considerable amount of energy in commercial places; for instance, about 30% of the energy at a business place is consumed by HVAC systems. Commercial applications of HVAC controls are categorized into office buildings, education centers, healthcare facilities, hospitality centers, retail stores, and others. Office buildings mainly have a centralized HVAC system that is connected to rooftop units; thus, this system is the major consumer of power. An efficiently planned building would reduce energy consumption by HVAC and lighting controls.

“US: The highest market share in North American HVAC controls market.”

The HVAC controls market in the US is driven by the increasing implementation of HVAC controls in existing and new residential and commercial buildings. The US has

the highest implementation of HVAC systems as the climate changes drastically throughout the year from extreme heat waves in summer to cold climates in winter. Residential buildings are also major consumers of HVAC systems. Commercial and residential buildings together account for more than 50% of the electricity consumption in the US. This has led the US government to take efforts to save energy through various means. The US government's initiative to reduce energy consumption includes the incentivization of green buildings and retrofits. The US Green Building Council (USGBC) has developed Leadership in Energy and Environmental Design (LEED) certification for the design, construction, and operation of high-performance green buildings.

The study contains insights from various industry experts, ranging from component suppliers to Tier 1 companies and OEMs. The break-up of the primaries is as follows:

By Company Type: Tier 1– 40%, Tier 2– 25%, and Tier 3 – 35%

By Designation: C-level Executives– 35%, Directors– 28%, and Others – 37%

By Region: North America– 45%, APAC– 30%, Europe– 20%, RoW– 5%

Honeywell International Inc. (US), Johnson Controls (US), Siemens (Germany), Carrier (US), Emerson Electric Co. (US), Schneider Electric (France), Trane Technologies plc, (US), DAIKIN INDUSTRIES (Japan), Delta Controls (Canada), Distech Controls (Canada), Danfoss (Denmark), Lennox (US), Fr. Sauter AG (Switzerland), LG Electronics (South Korea), Mitsubishi Electric Corporation (Japan), KMC Controls (US), Jackson Systems & Supply (US), Astronics Corporation (US), OJ Electronics A/S (Denmark), Regin (Sweden), Azbil Corporation (Japan), Robert Bosch GmbH (Germany), Computrols, Inc (US), Cubic Sensor and Instrument Co., Ltd. (China), and Reliable Controls Corporation (Canada) are among the many players in the HVAC controls market.

Research Coverage:

The report segments the HVAC controls market and forecasts its size, by value, based on Component, System, Implementation Type, Application and Geography.

The report also provides a comprehensive review of market drivers, restraints, opportunities, and challenges in the HVAC controls market. The report also covers

qualitative aspects in addition to the quantitative aspects of these markets.

Key Benefits of Buying the Report

The report will help the leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall market and the sub-segments. This report will help stakeholders and gain more insights to better position their businesses and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the HVAC controls market and provides them information on key market drivers, restraints, challenges, and opportunities.

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About

According to the new market research report "HVAC Controls Market by System (Temperature, Ventilation, Humidity, Integrated Controls), Component (Sensors, and Controllers & Controlled Devices), Implementation Type (New Construction, Retrofit), Application, and Geography - Global Forecast to 2023", the HVAC controls market was valued at USD 13.63 Billion in 2018 and is expected to reach USD 27.04 Billion by 2023, at a CAGR of 12.1% between 2018 and 2023. Factors that support the growth of the market are the need for efficient use of energy in buildings, growing construction market, increasing adoption of IoT in the HVAC industry, and rising demand for building automation systems (BASs).

Major players operating in the HVAC controls market are:

Honeywell (US),

Johnson Controls (US),

Siemens (Germany),

Schneider Electric (France),

Emerson (US),

Delta Controls (Canada),

Ingersoll-Rand (Ireland),

United Technologies (US),

Lennox (US), and

Distech Controls (Canada).

Temperature control system to hold the largest size of the HVAC controls market throughout the forecast period

The temperature control system consists of sensors, controllers, and HVAC equipment. The prime example of a temperature control system is a thermostat. Thermostat constantly measures the temperature of the area and, thus, controls the operation of heater or cooler to maintain the user-defined temperature. The major concern is maintaining energy efficiency, and the efficiency can be achieved by turning off the HVAC equipment periodically to save energy.

Commercial application held a major share of the HVAC controls market in 2017

Commercial application held a major share of the HVAC controls market in 2017. The rise in the adoption of smart buildings and green buildings increases the use of smart sensors and HVAC controls such as programmable thermostat, which would save a lot of energy in commercial buildings. The application of HVAC controls in commercial buildings ensures switching on or off the HVAC equipment in a particular area, which is not currently occupied.

The Federal Energy Policy Act of 2005 set in the US provides tax credit to owners of new or existing commercial buildings on the implementation of heating, cooling, ventilation, or hot water systems, which help in reducing the overall energy consumption of the buildings.

New construction to hold the largest size of the HVAC controls market during the forecast period

Growing urbanization, economic growth, and rising disposable income in Asia, the Middle East, and Africa are fueling the growth of the HVAC controls market for new construction. Governments of various countries are investing in the infrastructure development, which complies with environmental standards. Along with the need for infrastructural development, governments have also realized the need to curb the adverse effects of construction activities on the environment.

HVAC controls market in APAC to grow at the highest CAGR between 2018 and 2023

China, Japan, and India are the major consumers of HVAC controls. Governments of these countries have taken active measures for increasing the adoption of HVAC controls. For example, the Ministry of Housing and Urban Affairs, Government of India, has adopted a smart city mission, which focuses on developing the cities to make them energy-efficient and sustainable along with improving the quality of living in these cities.

Owing to the increasing population and depleting resources, the development of smart cities plays a major role for future sustainability in terms of energy.

Furthermore, Japan is following strict regulation in terms of improving energy conservation. From 2012, it has launched some policies related to buildings that comprise the promotion of the use of higher efficiency products in construction of houses and buildings. It also follows energy efficiency standards for all type of buildings, including new and retrofits.

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