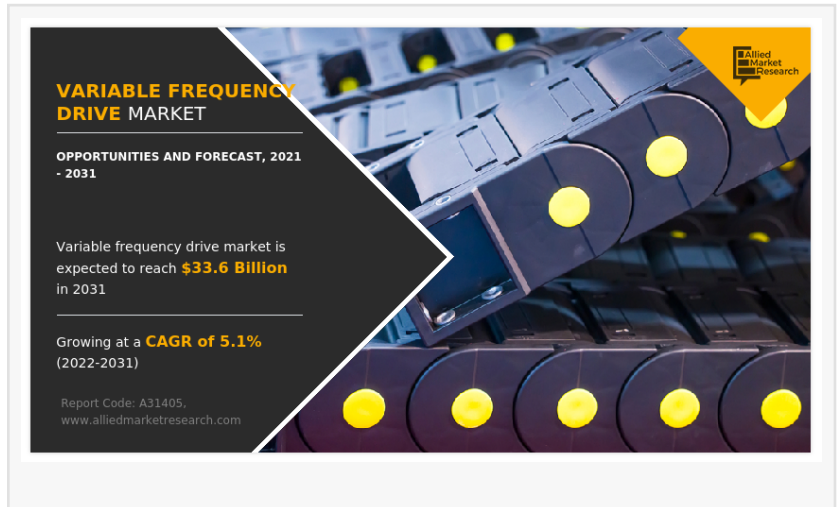


Rising Energy Efficiency Demand Fuels Variable Frequency Drive Market Growth to \$33.6 Billion

Global Variable Frequency Drive Industry Set for \$33.6 Billion Expansion by 2031 Amid Industrial Automation Boom □

WILMINGTON, DE, UNITED STATES, October 8, 2025 /EINPresswire.com/ -- According to a report by Allied Market Research, the global [variable frequency drive market](#) size was valued at \$20.6 billion in 2021 and is projected to reach \$33.6 billion by 2031, growing at a CAGR of 5.1% from 2022 to 2031. The

increasing demand for energy-efficient systems, along with growing automation across industrial and commercial sectors, is fueling the rapid adoption of VFDs worldwide.



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The global variable frequency drive market is projected to reach \$33.6 billion by 2031, growing at a steady CAGR of 5.1%. □□□
Allied Market Research

What is a Variable Frequency Drive?

A variable frequency drive (VFD) is an electronic system used to control the speed and torque of [electric motors](#) by varying the input frequency and voltage. These devices help optimize energy consumption, reduce mechanical stress, and improve the performance of electric motors. VFDs are extensively used in HVAC systems, pumps,

conveyors, compressors, and fans across various industries including oil & gas, power, and infrastructure.

Regional Insights

The Asia-Pacific region dominated the global variable frequency drive market in 2021 and is projected to register the highest CAGR of 5.5% during the forecast period. This growth is

attributed to rapid urbanization, industrial growth, and infrastructure investments in countries like China, India, and Southeast Asia.

North America and Europe are also significant contributors to market growth, driven by sustainable energy goals, automation trends, and power grid upgrades.

Key Market Drivers

1. Energy Efficiency and Cost Savings

One of the major benefits of using VFDs is their ability to reduce power consumption by adjusting motor speed to match the system's actual load. This results in significant energy savings, especially in applications like pumping systems and HVAC, which are key components in commercial and industrial facilities.

2. Industrial Automation

The rise in automation across industries such as manufacturing, automotive, and food & beverage has increased the demand for motor control systems. VFDs enable precise control over motor operation, which enhances process efficiency and production accuracy.

3. Smart Infrastructure and HVAC Demand

The global surge in infrastructure development, particularly in emerging economies, has led to higher demand for HVAC systems. VFDs play a crucial role in regulating HVAC operations to ensure optimal energy performance. This trend is creating lucrative opportunities in the building automation and smart city sectors.

4. Growing Power Demand and Grid Modernization

According to the U.S. Department of Energy (DOE), modernizing aging power infrastructure is essential to handle unpredictable loads and prevent blackouts. VFDs contribute to grid stability by managing load fluctuations, especially in industrial and utility applications.

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Market Segmentation Overview

By Type

AC Drive

DC Drive

Servo Drive

AC drives are expected to dominate the market due to their versatility and compatibility with various industrial applications.

By Voltage

Low Voltage

Medium Voltage

Low voltage VFDs are in high demand due to their cost-effectiveness and wide usage in small to mid-sized industrial setups.

By Power Rating

Micro

Low

Medium

High

Micro and low power segments are preferred in commercial and light industrial settings, while medium and high-power drives are extensively used in heavy industries and utilities.

By Application

Pumps

Fans

Compressors

Conveyors

Others

The pumps segment held the largest share in 2021 and is projected to grow at a CAGR of 4.7%. VFDs in pumping systems help regulate flow and pressure, significantly reducing energy usage.

By End Use

Oil & Gas

Industrial

Power

Infrastructure

Although oil & gas remains a key sector for VFD usage, the industrial and infrastructure segments are expected to see substantial growth due to modernization and electrification efforts.

Key Companies in the Market

Major players operating in the [global VFD industry](#) include:

ABB Ltd.

Siemens AG

Danfoss

Schneider Electric

General Electric

Hitachi

Rockwell Automation

Delta Electronics

Fuji Electric

Honeywell International

Parker Hannifin

SEW-Eurodrive

CG Power

Nord Drive Systems

Techsuppen

Saksun Industries

A.S. Automation

These companies are focusing on digitalization, smart drive systems, and strategic mergers & acquisitions to strengthen their market position.

Impact of COVID-19 on the Variable Frequency Drive Market

The COVID-19 pandemic negatively impacted the VFD market due to disruptions in global supply chains, particularly for components sourced from China, the U.S., and Europe. Reduced demand for electric motors and halted manufacturing operations caused a decline in market activity. However, the market is now rebounding, supported by post-pandemic industrial recovery and a renewed focus on automation and energy management.

Future Outlook

The VFD market is poised for steady growth, driven by:

A rising demand for energy-efficient solutions

Expanding smart city and building automation projects

Modernization of the global electricity grid

Increase in industrial IoT and connected devices

Despite challenges such as high upfront costs and supply chain vulnerabilities, the market holds strong long-term potential.

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Conclusion

As the world moves toward more sustainable and automated systems, variable frequency drives are becoming an integral part of global energy and industrial infrastructure. With increasing

applications in HVAC, manufacturing, oil & gas, and power sectors, the VFD market is expected to witness robust growth through 2031.

Trending Reports in Energy and Power Industry:

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Pawan Kumar, the CEO of Allied Market Research, is leading the organization toward providing high-quality data and insights. We are in professional corporate relations with various companies and this helps us in digging out market data that helps us generate accurate research data tables and confirms utmost accuracy in our market forecasting. Each and every data presented in the reports published by us is extracted through primary interviews with top officials from leading companies of domain concerned. Our secondary data procurement methodology includes deep online and offline research and discussion with knowledgeable professionals and analysts in the industry.

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