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Crankshaft Sensor Market Forecasts to 2034 – Global Analysis By Type (Magnetic, Hall Effect, Optical and Other Types), By Technology (Analog and Digital), Sales Channel, Application, and By Geography

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Abstracts

According to Stratistics MRC, the Global Crankshaft Sensor Market is accounted for $3.69 billion in 2026 and is expected to reach $7.00 billion by 2034 growing at a CAGR of 8.4% during the forecast period. A crankshaft sensor is an automotive sensor that monitors the rotational speed and position of the crankshaft in an internal combustion engine. It detects the crankshaft's revolutions per minute (RPM) and provides crucial data to the engine control unit (ECU). This information aids in optimizing ignition timing, fuel injection and other engine functions. The crankshaft sensor is vital for engine performance, fuel efficiency and emission control in modern vehicles.

According to a report of IBEF, in FY21, passenger vehicles sales reached 27.11 lakhs units in India. Such growth in sales of vehicle helps in driving the demand for crankshaft position sensors in India.

Market Dynamics:

Driver:

Increasing demand for fuel efficiency and emission reduction

The rising demand for fuel efficiency and emission reduction is a key driver in the crankshaft sensor market. As automotive regulations become more stringent, the need for precise engine control systems intensifies. Crankshaft sensors play a crucial role in monitoring engine speed and position, optimizing combustion and enhancing fuel

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efficiency. Manufacturers are thus investing in advanced sensor technologies to meet environmental standards, driving the market's growth as the automotive industry strives for cleaner and more efficient vehicles.

Restraint:

Fluctuations in raw material prices

The key components of crankshaft sensors are sensitive to material costs. Price volatility can disrupt manufacturing processes and increase production expenses. Manufacturers may face challenges in maintaining profit margins and competitive pricing. Additionally, uncertainty in raw material costs can hinder long-term strategic planning, impacting investment decisions and overall market stability.

Opportunity:

Growing popularity of hybrid and electric vehicles

The growing popularity of hybrid and electric vehicles presents a significant opportunity in the crankshaft sensor market. As these vehicles become increasingly prevalent, the demand for advanced sensor technologies, including crankshaft sensors, rises. Crankshaft sensors play a crucial role in monitoring engine performance, enhancing efficiency, and enabling optimal functioning of hybrid and electric powertrains. This expanding market signifies a key growth avenue for sensor manufacturers, creating opportunities for innovation and development in response to the evolving automotive landscape.

Threat:

Increasing competition from low-cost manufacturers

The crankshaft sensor market faces a significant threat from increasing competition among low-cost manufacturers. As these competitors enter the market with cost-effective solutions, established manufacturers may experience pricing pressure and reduced profit margins. The influx of lower-priced alternatives can compromise the perceived value of existing products, leading to a potential loss of market share for established players, which limits market growth.

Covid-19 Impact:

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The COVID-19 pandemic has significantly impacted the crankshaft sensor market by disrupting global supply chains, causing production delays, and affecting consumer demand. This has resulted in a reduced demand for crankshaft sensors, affecting the market's growth. However, companies are adapting strategies to navigate these challenges, emphasizing resilience, digital solutions and strategic partnerships to mitigate the pandemic's adverse effects on the crankshaft sensor market.

The OEM (Original Equipment Manufacturer) segment is expected to be the largest during the forecast period

The OEM (Original Equipment Manufacturer) segment is anticipated to dominate during the forecast period in the crankshaft sensor market due to its direct association with automotive and machinery production. As OEMs are integral to the initial manufacturing of vehicles and equipment, the demand for crankshaft sensors is inherently linked to their production volumes. The growth in automotive manufacturing, coupled with the increasing integration of advanced sensor technologies in new vehicles, is expected to drive segment growth.

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

The digital segment is projected to experience a significant growth rate during the forecast period in the crankshaft sensor market. This growth is attributed to the increasing adoption of digital sensor technologies, which offer enhanced precision, reliability and performance compared to their traditional analog counterparts. Furthermore, the automotive industry's shift towards more sophisticated engine management systems and the demand for higher efficiency and accuracy in sensing applications contribute to the anticipated rapid growth of the segment.

Region with largest share:

The Asia-Pacific region is poised to secure the largest market share in the crankshaft sensor market due to robust industrialization, rapid economic growth and a thriving automotive sector. Countries like China and India are witnessing substantial demand for automobiles, driving the need for advanced engine management systems. Additionally, increasing awareness of fuel efficiency and environmental regulations contributes to the adoption of crankshaft sensors in the region, positioning Asia-Pacific as a key player in the global crankshaft sensor market.

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Region with highest CAGR:

The Europe region is poised for rapid growth in the crankshaft sensor market due to stringent emission regulations and the automotive industry's inclination towards adopting advanced technologies. As European countries prioritize environmental concerns and fuel efficiency, the demand for sophisticated engine management systems, is on the rise. Additionally, the region's focus on electric and hybrid vehicles further propels the demand for precise sensing technologies, contributing to the anticipated growth in the crankshaft sensor market in Europe.

Key players in the market

Some of the key players in Crankshaft Sensor market include Continental AG, CTS Corporation, Delphi Technologies, Denso Corporation, HELLA GmbH & Co. KGaA, Hitachi Astemo, Ltd., Infineon Technologies AG, Mitsubishi Electric Corporation, Robert Bosch GmbH, Schaeffler AG, Sensata Technologies, Standard Motor Products, Inc., Stoneridge, Inc. and Yamaha Motor Co., Ltd.

Key Developments:

In May 2022, TwinPower announced a new line of Crankshaft Position Sensors (CPS), including seven part numbers with fitments for Harley-Davidson models dating from the 1999 model year through current models using the Milwaukee 8 engine. TwinPower was the first aftermarket company to create a line of these original equipment manufacturer (OEM)-quality sensors and this launch is a significant expansion of the company’s CPS offering.

In October 2020, Yamaha introduced its new product, the 2021 MT-09, an all-new street naked motorcycle that's lighter, more powerful and packs more tech than its predecessor. Yamaha made major changes to the crossplane inline-triple engine. For instance, the engine got new forged pistons, camshaft fracture-split connecting rods, and crankshaft. These changes made this product more advanced than others.

Types Covered:

- Magnetic
- Hall Effect

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- Optical
- Piezoelectric
- Other Types

Technologies Covered:

- Analog
- Digital

Sales Channels Covered:

- OEM (Original Equipment Manufacturer)
- Aftermarket

Applications Covered:

- Internal Combustion Engines
- Hybrid and Electric Vehicles
- Off-Highway Vehicles
- Marine Engines
- Industrial Machinery
- Other Applications

Regions Covered:

- North America

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- US
- Canada
- Mexico

Europe

- Germany
- UK
- Italy
- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

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Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & 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:

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- 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

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