

Automotive Wiring Harness Market by Application (Engine, Chassis, Cabin, Body & Lighting, HVAC, Battery, Dashboard/Cabin, Seat, Sunroof, Door), ICE & EV Transmission Type, Data Rate, Component Material & Region - Global Forecast to 2030

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Abstracts

The global automotive wiring harness market is projected to grow from USD 48.7 billion in 2023 to USD 59.5 billion by 2030, at a CAGR of 2.9% during the forecast period. The global demand for automobiles continues to rise, as does the need for automotive wiring harnesses. The global market for EVs has also increased in recent years as countries have set their EV targets. EVs have complex electrical systems compared to traditional ICE vehicles. They require specialized wiring harnesses to accommodate components such as battery packs, electric motors, and advanced charging systems, which require high voltage wiring harnesses. The growing demand for EVs and ADAS features would boost the technological advancements in the wiring harness.

“Due to increased demand for speed, efficiency in data transmission and electrical connections, optical fiber segment is estimated to be the fastest growing market.”

The growing demand for high-speed data transmission from vehicle manufacturers drives the market for optical fiber cables in vehicles. Optical fibers are known for their reliability and safety and are much lighter and thinner than traditional copper wiring. Optic fiber wires can also help reduce weight, thereby improving fuel efficiency. Modern vehicles are also becoming more sophisticated and equipped with advanced electronic systems to enhance safety, convenience, and connectivity. These systems include ADAS, which relies on various sensors and cameras, and infotainment systems, which provide entertainment, navigation, and communication features. The demand for such advanced electronic systems necessitates a robust and high-speed data transmission

infrastructure, which optical fibers can provide.

Fiber optic cables offer significant bandwidth for signal transmission, surpassing copper cables of similar diameter. Traditional wire harnesses tend to become heavier when handling high-speed, large-capacity communication due to the need for thicker wires. On the other hand, optical fibers, crafted from lightweight materials such as glass and plastic, offer a solution that achieves high-speed, large-capacity communication and reduced weight. Moreover, optical signals demonstrate remarkable noise resistance compared to electrical signals. This innovation results in more efficient and lightweight communication systems. Sumitomo Electric Industries, Ltd. is expediting the development of an optical harness designed for the automotive industry. Anticipated to be available for commercial use in 2026, this innovative product is set to significantly advance the world of connected vehicles and the growing trends encapsulated by CASE (Connected, Autonomous, Shared, and Electric mobility).

“Wires segment in automotive wiring harness market is estimated to be the largest market during the forecast period.”

Wires are indispensable components within automotive wiring harnesses, facilitating power flow and data throughout the vehicle. Automotive wiring harnesses consist of various bundled wires, and each wire is responsible for carrying electrical signals and energy used in the smooth functioning of various automobile subsystems, such as starting the engine, lights, meters, navigation systems, and power windows and doors. A wire has a fixed amount of resistance per foot. This means the longer the wire, the larger the resistance. If the resistance of the wire is too high, much of the power that flows down the wire will be wasted. There is a loss of energy as heat builds up in the wire. Vehicles are becoming increasingly complex, with more and more electronic components. This requires more wires to connect all the components and systems. Due to the need to connect the battery pack, motor controller, and other electronic components, EVs have more wires than traditional gasoline-powered vehicles. Automotive manufacturers are constantly looking for ways to reduce the weight of their vehicles, and wires are a significant component of vehicles. As a result, there is a growing demand for lightweight and durable wires that can withstand the harsh conditions of the automotive environment.

Asia Pacific is projected to be the fastest-growing regional market.

For the market analysis, the Asia Pacific region includes China, India, Japan, Thailand, South Korea, and the Rest of Asia Pacific. China is considered the manufacturing hub

for the automotive industry. According to the MarketsandMarkets, China and India produce 26-29 million economy passenger cars yearly. With an increase in the production of vehicles, the demand for automotive wiring harnesses is expected to increase. India is projected to be the fastest-growing market. The steady rise in disposable incomes among Indian consumers has increased demand for various consumer goods, including automobiles. Mandatory safety feature mandates, including Automatic Emergency Braking (AEB), Lane Departure Warning (LDW), and Speed Assistance Systems (SAS), in the Asia Pacific region are driving the demand for advanced automotive wiring harnesses. These regulations, along with requirements for additional safety features like Daytime Running Lights (DRLs) and Electronic Stability Control (ESC), significantly impact the market, emphasizing the need for sophisticated wiring solutions to support enhanced vehicle safety and performance.

The Asia Pacific region has experienced increased demand for luxury vehicles in the past few years. The luxury/premium segment vehicles have advanced body electronic functions that require additional automotive wiring harnesses for proper functioning. In the Asia-Pacific region, electric vehicles (EVs) have gained substantial traction, primarily led by China, which recorded 6.1 million EV sales in 2022, with notable adoption in South Korea and Japan. This transition towards EVs, driven by the resolve to address these challenges, is poised to impact the automotive wiring harness market significantly. EVs demand intricate and specialized wiring solutions to facilitate their advanced electric systems and functionalities.

In-depth interviews were conducted with CEOs, marketing directors, other innovation and strategy directors, and executives from various key organizations operating in this market.

By Company Type: Automotive wiring harness OEM – 80% and End-user organization– 20%

By Designation: C Level - 30%, Directors- 50%, and Others – 20%

By Region: Asia Pacific - 60%, Europe - 20%, North America –20%

The key players in the automotive wiring harness market are Yazaki Corporation (Japan), Sumitomo Electric Industries (Japan), Aptiv PLC (Ireland), Furukawa Electric (Japan), and Leoni AG (Germany). Major companies' key strategies to maintain their position in the global automotive wiring harness market are strong global networking,

mergers and acquisitions, partnerships, and technological advancement.

Research Coverage

The study segments the automotive wiring harness market. It forecasts the market size based on application (engine harness, chassis wiring harness, body & lighting harness, HVAC harness, dashboard/ cabin harness, battery harness, seat harness, sunroof harness, traction harness and door harness)], component (connectors, terminals, wires, and others), material type (metallic and optical fiber), transmission type (electrical wiring and data transmission), data transmission harness market by data transfer rate (

Contents

1 INTRODUCTION

1.1 STUDY OBJECTIVES

1.2 MARKET DEFINITION

1.2.1 INCLUSIONS AND EXCLUSIONS

1.3 MARKET SCOPE

1.3.1 AUTOMOTIVE WIRING HARNESS MARKET SEGMENTATION

1.3.2 REGIONS COVERED

1.3.3 YEARS CONSIDERED

1.4 CURRENCY CONSIDERED

1.5 SUMMARY OF CHANGES

1.6 STAKEHOLDERS

2 RESEARCH METHODOLOGY

2.1 RESEARCH DATA

FIGURE 1 AUTOMOTIVE WIRING HARNESS MARKET: RESEARCH DESIGN

FIGURE 2 RESEARCH METHODOLOGY MODEL

2.1.1 SECONDARY DATA

2.1.1.1 List of key secondary sources to estimate vehicle production

2.1.1.2 List of key secondary sources to estimate market size

2.1.1.3 Key data from secondary sources

2.1.2 PRIMARY DATA

FIGURE 3 BREAKDOWN OF PRIMARY INTERVIEWS: BY COMPANY TYPE, DESIGNATION, AND REGION

2.1.2.1 List of primary participants

2.2 MARKET ESTIMATION METHODOLOGY

FIGURE 4 RESEARCH METHODOLOGY: HYPOTHESIS BUILDING

2.2.1 BOTTOM-UP APPROACH

FIGURE 5 AUTOMOTIVE WIRING HARNESS MARKET SIZE: BOTTOM-UP APPROACH (APPLICATION AND REGION)

2.2.2 TOP-DOWN APPROACH

FIGURE 6 AUTOMOTIVE WIRING HARNESS MARKET SIZE: TOP-DOWN APPROACH (ICE VEHICLE, BY TRANSMISSION TYPE)

2.3 RESEARCH DESIGN AND METHODOLOGY

FIGURE 7 AUTOMOTIVE WIRING HARNESS MARKET: RESEARCH DESIGN & METHODOLOGY

FIGURE 8 AUTOMOTIVE WIRING HARNESS MARKET: RESEARCH METHODOLOGY ILLUSTRATION OF SUMITOMO ELECTRIC INDUSTRIES' REVENUE ESTIMATION

2.3.1 FACTOR ANALYSIS FOR MARKET SIZING: DEMAND AND SUPPLY SIDES

2.4 DATA TRIANGULATION

FIGURE 9 DATA TRIANGULATION METHODOLOGY

2.5 FACTOR ANALYSIS

2.6 RECESSION IMPACT ANALYSIS

2.7 RESEARCH ASSUMPTIONS

TABLE 1 RESEARCH ASSUMPTIONS

2.8 RESEARCH LIMITATIONS

3 EXECUTIVE SUMMARY

3.1 REPORT SUMMARY

FIGURE 10 AUTOMOTIVE WIRING HARNESS MARKET, BY ICE VEHICLE TYPE, 2023 VS. 2030

4 PREMIUM INSIGHTS

4.1 ATTRACTIVE OPPORTUNITIES FOR PLAYERS IN AUTOMOTIVE WIRING HARNESS MARKET

FIGURE 11 GROWING VEHICLE PRODUCTION AND DEMAND FOR ADVANCED FEATURES IN VEHICLES TO DRIVE MARKET

4.2 AUTOMOTIVE WIRING HARNESS MARKET, BY ICE VEHICLE TYPE

FIGURE 12 PASSENGER CAR SEGMENT TO LEAD ICE WIRING HARNESS MARKET DURING FORECAST PERIOD

4.3 AUTOMOTIVE WIRING HARNESS MARKET FOR ICE VEHICLES, BY APPLICATION

FIGURE 13 SUNROOF WIRING HARNESS TO SHOWCASE FASTEST GROWTH DUE TO INCREASING USE IN PREMIUM AND SUV VEHICLES DURING FORECAST PERIOD

4.4 AUTOMOTIVE WIRING HARNESS MARKET FOR ICE VEHICLES, BY TRANSMISSION TYPE

FIGURE 14 ELECTRICAL WIRING SEGMENT TO DOMINATE ICE VEHICLE WIRING HARNESS MARKET DURING FORECAST PERIOD

4.5 AUTOMOTIVE WIRING HARNESS MARKET FOR ELECTRIC VEHICLES, BY TRANSMISSION TYPE

FIGURE 15 ELECTRICAL WIRING SEGMENT TO DOMINATE EV WIRING HARNESS

MARKET DURING FORECAST PERIOD

4.6 AUTOMOTIVE WIRING HARNESS MARKET, BY ELECTRIC VEHICLE TYPE

FIGURE 16 BATTERY ELECTRIC VEHICLE (BEV) SEGMENT TO LEAD MARKET DURING FORECAST PERIOD

4.7 AUTOMOTIVE WIRING HARNESS MARKET, BY COMPONENT

FIGURE 17 WIRES COMPONENT SEGMENT TO LEAD MARKET DURING FORECAST PERIOD

4.8 AUTOMOTIVE WIRING HARNESS MARKET, BY MATERIAL

FIGURE 18 METALLIC WIRING SEGMENT TO COMMAND LARGER MARKET SHARE DURING FORECAST PERIOD

4.9 DATA TRANSMISSION HARNESS MARKET, BY DATA RATE

FIGURE 19

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