Financial and Non-Financial Highlights



While price pass-through such as soaring raw material costs and progress in System Engineering business structure reform contributed positively, profit decreased by the effect of the elimination of other earnings due to the temporary changes in the retirement pension system and the sale of idle real estate in the previous fiscal year.





Annual dividend per share for FY2023 was 64 yen, the same as the record high for FY2022. The dividend payout ratio was 33.0% and kept the level of $30\%+\alpha$, which is the standard for our shareholder returns.

Equity attributable to owners of parent / Ratio of equity attributable to owners of parent to total assets



Equity attributable to owners of parent (left scale)

— Ratio of equity attributable to owners of parent (right scale) Total equity attributable to owners of the parent increased by 51.8 billioi

Total equity attributable to owners of the parent increased by 51.8 billion yen from the end of the previous fiscal year to 399.3 billion yen. The ratio of equity attributable to owners of the parent was 56.9%, which is higher than 50%, the level we consider appropriate for stable management.



In FY2023, ROE and ROIC were 13.6% and 11.8%, respectively, lower than the target of 15%, due to a decrease in profit attributable to owners of parent and an increase in equity attributable to owners of the parent.

Capital expenditures / Depreciation and amortization / R&D expenses



Capital investment in FY2023 increased by 10.3 billion yen from the previous year to 37.9 billion yen, due to the deployment of the "#-Mechatronics" concept to our own plants and facilities in Japan and overseas, as well as new construction and reorganization of plants to improve efficiency and strengthen facilities. Research and development expenses increased by 2.5 billion yen from the previous year due to the development of next-generation robots and controllers with a focus on our core business areas of motion control and robotics.

Interest-bearing debt / Net debt-to-equity ratio



The amount of interest-bearing debt at the end of FY2023 was 95.9 billion yen, a decrease of 3.7 billion yen from the end of the previous fiscal year. The net D/E ratio was 0.14 times, 0.02 points better than the end of the previous fiscal year. Current liabilities decreased compared to the end of the previous fiscal year due to a decrease in short-term borrowings.





In FY2023, CO2 emissions increased due to an increase in revenue and a deterioration in the CO2 emission coefficient of domestic electricity. CO2 emissions per unit of revenue improved due to an increase in revenue





In FY2023, our contribution to reducing CO₂ emissions increased significantly due to the increase in revenue of AC drive products, which contribute to the environment. We have commercialized 5 models of super green products and expect to continue contributing to the reductions

Frequency rate of lost-time injuries



In FY2023, the frequency rate of lost-time injuries was 0.16 for Yaskawa Electric, 0.44 for the Yaskawa Group in Japan, and 0.56 for the Yaskawa Group overseas. All three figures were worse than the previous year. Most of these injuries were caused by falls outside the workplace. In addition to thorough preventive measures and safety patrols, we are taking measures such as walking and other health events.

Amount of water used / Amount of water used per unit of revenue



At Yaskawa, the amount of water used in the production process is small, and most of the water used is domestic wastewater used by employees. In FY2023, the amount of water used increased due to an increase in the amount used overseas, despite a reduction in the amount used in Japan, but the per unit of revenue figure remained at the same level as in FY2022.

Consolidated employees / Ratio of employees in bases outside Japan



In FY2023, the number of consolidated employees decreased by 84 to 13,010. Overseas employees accounted for 56% of the total and there was no significant change from the previous year.

Local procurement rate at key business sites



In FY2023, there was no significant change in the local procurement rate at key business sites from the previous year

Business Performance of FY2023

FY2023 Management Review (Quantitative)

- Capital investment aimed at upgrading and automating production in the overall manufacturing industry remained robust, while demand for semiconductors and electronic components remained weak.
- Revenue set a new record high, as production, which had been delayed due to supply chain disruptions, normalized and order backlogs were steadily filled.

		FY2023 targets	Mid-term business plan "Realize 25" targets	FY2023 results
	Revenue	580.0 billion JPY	650.0 billion JPY	575.7 billion Record JPY
	Operating profit	70.0 billion JPY	100.0 billion JPY	66.2 billion JPY
intitative	Operating profit ratio	12.1%	15.4%	11.5%
Que	ROE		15.0% or more	13.6%
	ROIC		15.0% or more	11.8%
	Dividend payout ratio		30.0 %+α	33.0%

FY2023 Management Review (Qualitative)

	Production	 Plans to construct a new plant for integrated production of servo motors for robots and robots Completion of construction of an unmanned domestic robot machining plant to expand in-house production Decided to construct a new robot system plant in the United States
	Sales	 Construction of a new office building in Yaskawa Europe, as a base for developing solutions with customers and partners Promotion of indoor farm automation through capital alliance with Oishii Farm Corporation in the United States Expansion of lineup of large-capacity GA700 series of Yaskawa AC drives
Qualitative	Development	 Launch of MOTOMAN NEXT series, an autonomous robot aimed at opening up new automation fields Launch of Yaskawa Cell Simulator, an engineering tool for Digital Twin*1 environments Launch of iCube Control, a controller solution for "i³-Mechatronics" Shift from demonstration phase to full-scale introduction of "automating cucumber leaf raking" Power conditioner for photovoltaic power generation "Enewell-SOL P3A 25kW" won the "Japan Brand Prize at the Top Ten New Products Awards" and the "Energy Conservation Grand Prize, Agency for Natural Resources and Energy Commissioner's Award"
	Others	 Development of principles education programs for overseas subsidiaries (Europe, America and China) Promotion of human capital vitalization by disclosing the "health management declaration" and its promotion system Mid- to long-term incentives for all employees incorporating non-financial indicators (TSR, CO₂ reduction, etc.)

*1 Technology to reduce system setup time and enable remote operation by simulating production lines virtually and repeatedly

Sreakdown of Changes in Operating Profit (FY2022 \rightarrow FY2023)

Operating profit decreased by the effect of the elimination of other earnings due to the temporary changes in the retirement pension system and the sale of idle real estate in the previous fiscal year.

Value added increased significantly due to the price pass-through of increased cost of raw materials and other items.

Retarded recovery in the semiconductor market and sluggish Chinese markets led to <u>a decline in revenue</u> excluding the impact of weaker yen, resulting in a decline in operating profits.

Overhead costs increased due to the response to inflation and the resumption of economic activity after the spread of COVID-19 subsided.



FY2024 Plan

As for the business environment surrounding Yaskawa Group during the FY2024, capital investment related to automation and labor saving in the manufacturing industry is expected to recover, as investment in the semiconductor and electronic component markets is expected to resume. We plan to increase revenue and profit by accurately capturing rising demand in these markets.

In order to achieve the operating profit of 100 billion yen set in the mid-term management plan "Realize 25," in addition to controlling overhead costs, we will propose solutions globally based on our understanding of customers' "benefits" (improvement and evolution). Furthermore, by implementing "i³-Mechatronics" at our own production sites, we will create added value by realizing variable-mix variable-volume production at a minimum level of manpower dependence.

Key Implementation Items

Evolution of i³-Mechatronics	 Propose solutions based on a thorough understanding of customers' benefits (improvement and evolution) and expand the provision of products and technologies to realize these benefits Expand the automation field and advance manufacturing by implementing i³-Mechatronics at our production lines Implement horizontal deployment of solutions demonstrated in the i³-Mechatronics project and global deployment of YRM controllers
Business expansion	 Ensure to capture resumption of investment in the semiconductor market by strengthening cooperation with key global customers Improve our presence in the domestic semiconductor market through cooperation between core domestic sales companies and sales expansion partners Provide automation solutions that follow the changes in manufacturing and supply chains in the rechargeable battery electric vehicle (BEV) area, which is expected to expand Accelerate the expansion of sales of "MOTOMAN NEXT"
Promotion of partner strategies	 Expand sales of the new "Enewell-SOL P3A" power conditioner for solar power generation Promote cooperation with partners in the fields of food, agriculture, and biomedical automation
Implementation of sustainability management	 Rebuild PLM (Product Lifecycle Management) through data collaboration among production, sales, development and service Build the Yaskawa data lake Deepen our understanding of the Yaskawa Principles for the establishment of "One YASKAWA"

Segment Highlights

The Yaskawa Group deploys the technology and knowhow of the highest global standards to its products and services through business activities in the three core business segments of Motion Control, Robotics and System Engineering.







Supporting prosperous life and society through technologies and proven performance accumulated over a century

- Industrial automation drive business
- Environment & energy business'
 Social system business







Electrical systems for steel plants

Electrical instrumentation systems for water supply plants and sewage treatment facilities

Since FY2024, the environment & energy business, including PV inverter, has been integrated with the Drives business of Yaskawa Electric.

Breakdown of FY2023 revenue by region





Business breakdown by application (FY2023 results)



04 Creating Social Value and Solving Social Issues through Business

Business Strategy

Motion Control AC Servo & Controller Business



Kenji Ueyama Senior Executive Officer General Manager, Motion Control Div.

AC servo drive's role in manufacturing digital transformation

In the manufacturing industry, it is important to collect, analyze and utilize various data obtained from equipment in order to improve productivity. AC servo & controller is a key component that is built into and drive a variety of equipment used in manufacturing. By making AC servo drive, which controls the movement of equipment (motion), function as a sensor and acquire various data from the equipment, it is possible to provide new added value to manufacturing, such as preventive maintenance of equipment and improvement of production quality.

Yaskawa contributes to maximizing the added value of our customers' equipment by providing solutions to customers based on the concept of "i³-Mechatronics," which "realizes a new industrial automation revolution" by data utilization to improve productivity.

Overview of FY2023 performance

- Demand decreased due to sluggish market conditions, particularly in the semiconductor market in Japan and the United States.
- In China, despite strong demand in some markets at the beginning of the fiscal year, overall demand in the manufacturing industry remained sluggish.
- Secured profits through improvements in productivity, the effect of switching to new products, and price optimization.

SWOT analysis of business

Strengths: Strengths of our business and differentiation
 Developed the world's first "minertia motor" which is the prototype of the current servo motor in 1958
 World-class performance and quality
 Brand value as global No.1 market share

- Hold strong relationships of trust with leading companies in various manufacturing equipment
 - Contributing to the advancement and performance of machines through the pursuit of leading-edge technologies
- Practice of i³-Mechatronics
 Realization of new automation revolution

Opportunities: Business opportunities

- Enhancement of the added value of manufacturing equipment
- Large-scale investment related to generative AI in the semiconductor industry in various countries
- Acceleration of the adoption of EVs



 Reinforcement of response to rapid changes in demand in production

Threats: Business risks

- Supply chain dysfunction due to geopolitical risks
- Rise of emerging market competitors

Demonstration and construction of "i ³ -Mechatronics" solutions	
 Strengthening the product portfolio to realize "i³-Mechatronics" (expanding the lineup of Σ-X series 	
and YRM controllers, etc.)	- 🙊 🛃
 Accelerating global expansion of production methods of YASKAWA Solution Factory (hereafter Y'sF) 	
and expanding production models in demand areas	- 🔒 🛆

segment) Accelerate the global expansion CAGR:+4.8% of "i3-Mechatronics" through the (billion JPY) (from FY2022 to FY2025) (%) realization of Yaskawa Total Solutions, 290.0 300.0 - 30.0 269 4 and aim to maximize profits by 268.8 252.1 pursuing production efficiency and 250.0 -- 25.0 building a high-profit structure by strengthening manufacturing 200.0 -- 20.0 17.2 14.5 14.4 13.7 150.0 -- 15.0 Market size and CAGR (from 2022 to 2025) 100.0 -10.0 50.0FY2022 FY2025 39.0 50.0 -36.2 36.9 5.0 Market size Approx. 0.8 tn. JPY Approx. 0.9 tn. JPY Λ Λ 2025 (MTP target) CAGR +4.0% 2022 2023* 2024 (forecast) (FY)

Trends in performance, forecast and target of mid-term plan (Motion Control

Revenue (left scale) Operating profit (left scale) - Operating profit ratio (right scale)
 * Figures reflect the reclassification (from FY 2024) of information on PV inverter from the System Engineering segment to the Motion Control segment.

FY2023 results and future initiatives

	FY2023 results	FY2024 initiatives	FY2025 goals
Development	 Expand lineup of Σ-X series and YRM controllers 	 Continued expansion of product lineup 	 Expand solution coverage by expanding lineup of Σ-X series YRM controllers
Production	 Accelerating global development of Y'sF production system and expanding production models in demand areas 	 Pursuing production efficiency globally 	 Improve production efficiency by using Yaskawa products and expand local production
Sales	 Demonstrating and building "i^a-Mechatronics" solutions based on new products through collaboration with customers 	 Approach to growth markets by providing "i³-Mechatronics" solutions 	 Accelerate approach to growth markets by providing "i³-Mechatronics" solutions

TOPICS

Launched YRM controller, "YRM1010" and new machine controller, "MPX1000 Series" which realizes "i³-Mechatronics" solution concept.

YRM controller, "YRM1010" (January 24, 2024) and machine controller, "MPX1000 Series (MPX1310)" (January 25, 2024) were released in order to accelerate realization of the "i³-Mechatronics" solution concept, resolve issues and provide added value to customers. "YRM1010" integrally controls so-called "cells" composed of equipment and industrial robots, and at the same time collects and uses highly synchronized data in real time for feedback. This enables various manufacturing sites to accelerate measures toward the evolution of smart factories by using IoT and AI to improve production efficiency, quality, and ensure traceability. "MPX1310" is the first product in "MPX1000 Series" that succeeded machine controller, "MP3000 Series." The motion-processing performance is 8 times that of the previous model, and the number of axes that can be controlled is increased from 16 axes to 128 axes. This enables us to maximize the performance of our servo drive products and significantly improve equipment performance and added value for customers.





MPX1310

04 Creating Social Value and Solving Social Issues through Business

Business Strategy



Kozo Ide Executive Officer General Manager, Drives Div. General Manager, Engineering Dept., Drives Div.

AC drive's role in society and industry

AC drives can continuously change the motor's rotational speed by converting the voltage and frequency of the power supply. The use of AC drive not only enables advanced motor control, but also contributes to energy saving by operating as much as necessary. AC drive is widely applied to machinery and equipment in which motors are used, and the global market is estimated to reach 1.9 trillion yen. In the past, AC drive's growth drivers were (1) the advance of electrification in line with industrial sophistication, and (2) the rise of emerging economies. In recent years, however, the energy-saving effects of using AC drives have attracted renewed attention as part of efforts to achieve carbon neutrality in countries around the world. AC drive is increasing its presence as an indispensable device for the sustainable development of society and industry.

Overview of FY2023 performance

- Oil and gas-related demand in the U.S. and infrastructure-related demand in ASEAN countries and India remained firm
- Production normalized because procurement difficulties were solved and revenue grew substantially on a global basis.

SWOT analysis of business

Strengths: Strengths of our business and differentiation

- Power electronics technology and high-efficiency motor technology
- Control and sensing technologies based on motor drives developed over many years
- Knowledge of how machines and facilities are used (applications) based on system engineering
- Worldwide sales and service bases, development centers, and production plants

Opportunities: Business opportunities

- Expansion of energy conservation promotion policies in each country based on the sustainability codes (SDGs, carbon neutral, etc.)
- Accelerate factory automation including 5G and IoT
- Enhancing the performance of industrial equipment through AI, etc.
- Rise of market in emerging countries
- Enhancement of high-efficiency motor regulations

Weaknesses: Challenges

- Creating added value for customer machines
- Improvement of development speed including new technologies
- Improvement in cost competitiveness
- In-house production of main parts
- Reducing the impact of global shortages of materials

Threats: Business risks

- Geopolitical risks in Russia and China
- Movement toward in-house production by some customers
- High dependence on specific markets such as oil and gas markets
- Rise of emerging market competitors
- Modification of renewable energy-related systems and grid-connected regulations

- Accelerate deployment of high-value-added products and solutions for emerging economies, particularly in Southeast Asia
- Enhance QCD (Quality, Cost, Delivery) of technologies and products by fully utilizing the functions of YASKAWA Technology Center
- Realization of BCP through review of component, substrate, and product supply systems and
 expansion of in-house production of parts
- Increase the revenue ratio of stable growth markets (HVAC*, elevators, etc.) by capturing energy conservation demand
 *Heating, Ventilation and Air Conditioning



Revenue (left scale) Operating profit (left scale) - Operating profit ratio (right scale)
 * Figures reflect the reclassification (from FY 2024) of information on PV inverter from the System Engineering segment to the Motion Control segment.

FY2023 results and future initiatives

	FY2023 results	FY2024 initiatives	FY2025 goals
Development	 Enhancement of product lineup of Yaskawa AC drive series 	 Enhancement of product lineup of Yaskawa AC drive series 	 Completion of product lineup of Yaskawa AC drive series Development of flagship devices to create customer value
Production	 Eliminate backlogs by maximizing production Expand in-house production 	 Expansion of production automation Expand in-house production 	 Expand demand area production Expand in-house production
Sales	 Increase revenues in global focus segments (US HVAC market, Chinese semiconductor/ rechargeable battery market) Capture energy conservation demand through carbon neutral proposals 	 Expansion of domestic share of power conditioners by proposing self-consumption 	 Strengthen global customer responsiveness Expand sales opportunities for green products by accelerating energy conservation proposals

TOPICS

Launched Yaskawa AC drive series, "GA700 series" with large capacity

Yaskawa AC drive series, "GA700 series" which was commercialized in November 2015 expanded 400 V-class capacity lineup from 0.4~355 kW to 0.4~630 kW and launched on October 19, 2023.

The expansion of the large capacity models allows GA700 to be used in a wider range of applications, including large-scale general industrial machinery (large cranes, compressors, etc.) and equipment. It is also significantly smaller and lighter than conventional models. For example, the 630 kW model reduces the installation area by 40% and the weight by 35%, enabling effective use of factory space. Furthermore, the maximum output voltage has been improved, contributing to the control of motor current.



GA700 series

Business Strategy





Manabu Okahisa

Senior Executive Officer General Manager, Robotics Div. Department Manager, Business Planning Dept., Robotics Div Regional Manager, China

Role of robots in manufacturing

Industrial robots are used to automate welding, painting, assembly and transportation in various fields, including the automotive market. In recent years, against the backdrop of global labor shortages, demand has been increasing in general industrial fields such as the food, medical, pharmaceuticals, and 3C (computers, consumer electronics and communications equipment.)

Going forward, the demand for automation of the manufacturing sites is expected to grow in response to the sophistication of manufacturing, such as data utilization

and variable-mix variable-volume production. In this context, Yaskawa will contribute to further automation and optimization at manufacturing sites by providing solutions based on the "i³-Mechatronics" concept. In December 2023, we launched "MOTOMAN NEXT series," an autonomous robot, as a new automation solution in areas where robots have traditionally been difficult to apply and we are working to create value for a wider range of customers than ever before.

Overview of FY2023 performance

- In the general industry, while investment was sluggish in China, investment in advanced production and automation remained firm mainly in Europe and the United States against the backdrop of rising labor costs and labor shortages.
- In the automobile market, revenue increased due to the contribution of large-scale EV related projects in South Korea and Europe.
- Despite strong performance in the automotive and general industry sectors, volume did not recover as expected in the semiconductor market, resulting in an increase in revenue and decrease in profit overall.

SWOT analysis of business

Strengths: Strengths of our business and differentiation 愈

- Improved performance and evolving solutions through in-house production of motion control products (servo motors, drives, and controllers) that are the most important for robot performance
- Providing the cross-divisional solution based on the i³-Mechatronics concept
- Cross-business development system utilizing YASKAWA Technology Center
- Global sales, production and service bases

Opportunities: Business opportunities

- Expansion of automation needs in a wide range of fields
- Manufacturing innovation in the automotive industry (including the adoption of EVs and eco-friendly system)

strengthening partnership with strategically developed products

Advances in robot-related technologies



- Decline in demand for capital investment due to geopolitical risks
- Rise of emerging manufacturers

- Further evolution of the production system which is flexible to the volume fluctuations realized at the mother plant, and its expansion to overseas production bases
- Corporate-wide enhancement of supply chain strategy and expansion of in-house production Proposing high-value-added Yaskawa solutions based on the i³-Mechatronics concept and





Trends in performance, forecast and target of mid-term plan

FY2023 results and future initiatives

	FY2023 results	FY2024 initiatives	FY2025 goals
Development	 Launch of MOTOMAN NEXT and expansion of partners 	 Expand success cases and product evolution of MOTOMAN NEXT 	 Expansion of MOTOMAN NEXT lineup and development of business channels
Production	 Launch of new machining plant to improve internal manufacturing rate Global expansion of mother plant initiatives Capturing profits by in-house production at a new machining plant Reducing labor and improving productivity by expanding initiatives of mother plants Strer 		 Construction of integrated production system from parts to assembly as a mother factory Strengthen global production
Sales	 Increase orders through providing accurate solutions to collaborative robot, EV, and semiconductor markets 	 Developing solutions capturing trends in collaborative robot, EV, and semiconductor markets 	 Expand the automation fields by enhancing solutions for collaborative robots, EV, and semiconductor markets

TOPICS

"MOTOMAN NEXT series," autonomous next-generation robots, launched for the first time in the industry

We launched "MOTOMAN NEXT series" (5 models with payloads of 4 kg, 7 kg, 10 kg, 20 kg and 35 kg) which is an autonomous next-generation robot that adapts to its surroundings and makes decisions, for the first time* in the industrial robot industry in December 2023. In recent years, the number of industrial robots introduced has continued to expand due to improvements in basic robot performance and advances in application technology. On the other hand, a lot of

"unautomated areas" even now remain where workers make judgments and do tasks involving elements such as indefinite state, shape, and size of items, changes in work order, and interruptions. "MOTOMAN NEXT series," challenging automation of the "unautomated areas," can complete tasks in an optimal method by understanding the situation and making judgments and plans. It also provides an open platform that embeds customer and partner expertise to build solutions. This will accelerate automation in industries such as food, logistics, and agriculture, including the FA field, and lead to solutions for social issues such as labor shortages.



MOTOMAN NEXT series

* Estimate by Yaskawa, among major robot manufacturers

04 Creating Social Value and Solving Social Issues through Business

Business Strategy





Masaki Yagita President and CEO YASKAWA Automation & Drives Corporation

Overview of System Engineering business

In the System Engineering segment, we have developed system engineering technologies and electrical products over many years. This contributes to the high productivity and stable operation of steel plants, water treatment plants, large crane control, and industrial plants (textile, paper, film lines, etc.). We provide total solutions with advanced system technologies and high-quality products, and contribute to building reliable social and industrial systems, comfortable lifestyles, and a sustainable society.

* In FY2024, the environmental energy business, including PV inverter, was integrated with the Drives business in the Motion Control segment.

Overview of FY2023 performance

- Revenue increased due to strong sales of PV inverters and port cranes overseas
- Operating profit increased significantly as a result of increased revenue and business restructuring (sale of shares of a subsidiary related to large-scale wind power generation)

SWOT analysis of business

Strengths: Strengths of our business and differentiation

- Achievements in the field of electric systems for water supply and sewage and system technology development capabilities
- 100% domestic share of systems for blast furnaces in steel plants
- Share higher than 50% in port crane market in Japan, China and Southeast Asia
- Top-class share in Japan in the industrial electric business including film, textiles, and paper machinery

Opportunities: Business opportunities

- Accelerated efforts to achieve carbon neutrality
- Need for labor-saving and high-efficiency electricity systems for water and sewage systems using IoT, AI
- Increasing demand for lithium-ion battery production facilities
- Full automation and remote operation of port cranes

B Weaknesses: Challenges

- Improvement in cost competitiveness
- Improvement in product development speed
- Creating business synergies by integrating systems businesses
- Building optimal overseas systems for growth areas (Secondary battery and crane)

△ **Threats:** Business risks

- Concerns over project delays and cancellations due to rising prices of materials and procurement difficulties in building equipment and facilities
- Intensifying cost competition
- Decline in infrastructure investment in Japan

• Improvement of profitability through optimization of procurement, production structure and cost structure and introduction of new products	R	ê. 🐼	
Improvement of technological capabilities and development speed utilizing YASKAWA Technology Center			Ê,
Expansion of market and customer base and development of new business			
System response to customer manufacturing processes to achieve carbon neutrality in the steel market			æ
 Strengthening our business structure toward secondary battery manufacturers in China and Japanese companies in the growing materials market 			I
Capturing large-scale investment projects in port cranes in Southeast and South Asia		- 🙊	
 Securing profits by building efficient production systems and in-house production of high-value- added products (Drive panel for cranes and motor) 			Ê

Maximize added value and generate stable profits by pursuing engineering technologies to solve production issues and collaborating with customers to create system solutions to realize production innovation.



Trends in performance, forecast and target of mid-term plan

 Figures reflect the reclassification (from FY2024) of information on PV inverter from the System Engineering segment to the Motion Control segment.

FY2023 results and future initiatives

	FY2023 results	FY2024 initiatives	FY2025 goals
Development	 Completion of evaluation of the integrated controller Start of module application for drive panels 	 Commercialization of automation functions for port cranes 	 Complete development of integrated controller STEP1 Complete verification of vision system for cranes at domestic ports
Production	Design and manufacturing CAD automatic design and modularization Completion of design and manufacturing database development		 Implementation of design and manufacturing database for efficient production of drive panels
Sales	 Co-creation of carbon neutral technology with customers Start of development of vision sensor system 	 Receiving orders for projects related to carbon neutral testing Completion of crane automation project 	 Acquisition of project by actual application of carbon neutral technology Acquisition of orders for Asian automated port cranes

TOPICS

Launched "FSDrive-LIP series," low-voltage inverter drives for systems

We have always strived to improve the performance and functionality of inverter drives for systems from the customer's point of view with uncompromising quality.

FSDrive-LIP series is an inverter drive for high-performance systems that inherits the know-how, while realizing further space-saving and expanding the lineup of large capacity. It contributes to improving the added value of customers' machinery and equipment with cutting-edge motor control technology.

Features

- 1. Optimized structure saves space and maintenance Volume and footprint are reduced by approximately 50% compared to conventional models
- 2. Adoptable for 1200-2000 kW high-capacity output
- 3. Predictive diagnosis of the life of parts in power modules enables planned parts replacement
- 4. Regenerative converter and inverter power modules are in the same unit, which standardize spare parts



FSDrive-LIP series