

# ED&C·Drive Systems Group

ED&C·Drive Systems Group is composed of the core operating company Fuji Electric FA Components & Systems Co., Ltd. and five other domestic companies, together with nine overseas companies making a total of 15 consolidated subsidiaries. It accounts for around 20% of the consolidated sales of the Fuji Electric Group.

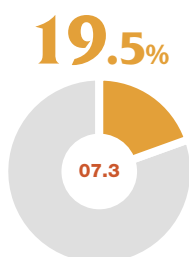
The group defines its mission as “FA Component & System Technology for the Best.” We provide a range of industry-leading components that support the operation and safety of factory automation (FA) production lines and intelligent buildings. We contribute to society by providing full-fledged customer service, ranging from proposal of the optimum system to customization and product upgrades.



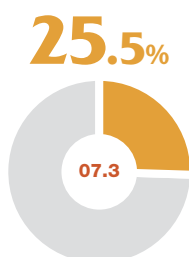
**Mitsunori Shirakura**

President  
Fuji Electric FA Components & Systems Co., Ltd.

Share of Total Net Sales



Share of Total Operating Income



## Message From the Segment Leader

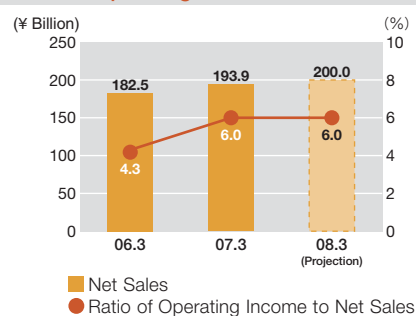
### Overview of Fiscal 2006 Operating Results

Net sales for the group as a whole were ¥193.9 billion, a 6.2% increase year on year, while operating income was up 46.7% at ¥11.6 billion. Accordingly, the ratio of operating income to net sales was 6.0%, an improvement of 1.7 percentage points compared to a year earlier.

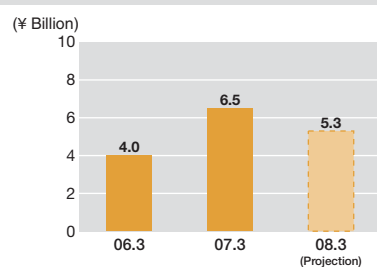
In Japan, the operating environment for the group remained positive against a backdrop of active private-sector capital investment. In this environment, we made efforts to expand sales to buoyant sectors such as automotive and machine tool manufacturers and worked to market system products in

the energy-efficiency and environmental fields. Overseas, sales rose significantly thanks to efforts to strengthen sales, service and manufacturing structures together with expanded sales of global products and enhancement of our industry-specific approach to sales. Operating income increased significantly despite the impact of rising prices for raw materials. This was achieved thanks to changes to design specifications and materials used, countermeasures in procurement and marketing, and initiatives to achieve total cost reductions, including eliminating inefficiencies and streamlining the product lineup, together with the effect of increased sales.

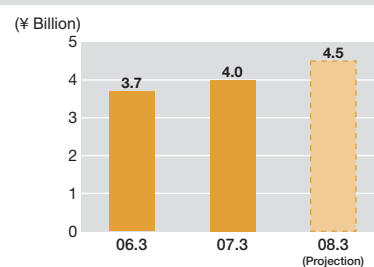
Net Sales/  
Ratio of Operating Income to Net Sales



Plant and Equipment Investment



R&D Expenditures



## Operational Policy for Fiscal 2007

On the whole, the growth trend is expected to continue into fiscal 2007 in terms of economic performance and private-sector investment in Japan and growth rates in overseas countries. The pace of expansion, however, is expected to lose some momentum. In addition, there are concerns over a leveling off in exports, inventory adjustments in the IT sector, fears of a slowing of economic growth in the United States and Asia, and entrenched high prices for raw materials. We are taking the following initiatives to ensure that we are able to continuously respond to such changes.

In Japan, we will boost sales by launching and expanding sales of new products in accordance with plans, enhancing marketing capabilities for system products, strengthening sales activities in buoyant sectors including automotive and machine tools, implementing projects on an industry-specific basis and promoting business cooperation with Fuji Electric Group companies. Overseas, we will expand sales of new global-specification products, establish our own sales network in the North America region and strengthen sales for Japanese companies in China, with the ultimate goal of increasing the level of sales.

In the second half of fiscal 2006, we made structural changes including changing to a domestic sales structure arranged along customer and industry lines, while overseas, we upgraded our support structure for customers moving production sites overseas. These activities are designed to expand sales.

To reinforce our management base, we will actively build a high-earnings structure by continuing to promote streamlining of our product lineup, promoting elimination of inefficiencies through ongoing QCM (quality chain management) activities, completely removing defect costs, ensuring appropriate inventory levels and further promoting measures to tackle environmental problems. We will also work to fully realize benefits from the integration of inverter development and production sites, which was completed in March 2007.



## Review of Operations by Subsegment

### ED&C COMPONENTS

#### Fiscal 2006 Operating Environment, Business Results and Key Initiatives

In Japan, we concentrated efforts in this subsegment on our major customer base of machine tool manufacturers and on other industries enjoying good performance amid an environment of strong private-sector capital investment. At the same time as pursuing higher sales, particularly of major products such as magnetic contactors and low-voltage circuit breakers, we expanded marketing of such system products as energy monitoring units by highlighting energy-efficiency as one of the benefits. Overseas, we extended our lineup of global products with CCC (China Compulsory Certification) and other international certifications, strengthened our ability to increase sales to Japanese companies located overseas and enhanced overseas marketing and production activities. Overseas sales, particularly in China, increased significantly as a result of these initiatives.

Operating profitability improved compared to a year earlier, despite the significant impact of high prices of raw materials such as silver and copper. This was due to promotion of total cost reduction initiatives including streamlining of our product lineup and efforts to eliminate inefficiencies, combined with the effect of increased sales.

We made a large-scale investment to update short-circuit testing equipment in Fukiage Factory. In another development, we reached the 250 million-unit mark in cumulative sales of our mainstay magnetic contactors. The product was launched just over 50 years ago, in 1954, and holds the top market share in Japan.

#### Operational Policy for Fiscal 2007

In fiscal 2007, we will concentrate efforts in this segment on active expansion of global products. In Japan, we will increase sales to end users by targeting higher sales in buoyant industries, pushing strategic AS-i equipment in key sectors and offering energy-saving solutions based on energy monitoring equipment. In our mainstay low-voltage circuit breakers and command switches, we will promote new products compatible with global standards. Overseas, we will focus on expanding our sales network and upgrading production facilities in China to drive an increase in sales that encompasses overseas production and sales sites.

We will also continue to make structural improvements, including promoting streamlining of our product lineup, promoting total cost reductions and cutting defect costs through improved quality. In fiscal 2007 we will use such initiatives to increase sales while improving our earnings structure.

### Magnetic Contactors



As a leading company in this field, we will develop a varied product lineup aimed at Japan and overseas that complies with all relevant standards.

### Low-voltage Circuit Breakers (G-Twin Series)



An integrated circuit breaker and earth-leakage circuit breaker rated from 125-800 amps provided in a single, compact high-performance unit that meets major global standards.

## CONTROL & DRIVE SYSTEMS

### Fiscal 2006 Operating Environment, Business Results and Key Initiatives

In fiscal 2006, sales to the main customers of this subsegment, including automotive and machine tool manufacturers, performed well. Overseas, sales to the crane and conveyance industries were good in Europe and China. We worked to expand sales in this environment by launching the FRENIC-MEGA series of high-performance, multi-functional inverters and, in servomotor systems, launched the ALPHA5 series, featuring industry-leading control performance.

In programmable logic controllers, we promoted systems marketing in combination with other products such as servomotor systems. In programmable operation displays (PODs) we worked to expand sales both in Japan and overseas. As a result, sales and operating income in this subsegment were significantly higher than a year earlier.

In terms of operating structure, in September we merged Fuji Electric Motor (Dalian) Co., Ltd. and Dalian Fuji Electric Motor Co., Ltd. to improve profitability and reinforce operating base in industrial motors manufacturing operations in the Dalian district of China. In the inverter business, in March 2007 we dissolved our business alliance with General Electric in the interests of strengthening our overseas presence. We also integrated two domestic inverter develop-

ment sites into a single location in the Suzuka complex, with the aim of strengthening development capabilities and improving manufacturing and operational efficiency. The integration was completed in March 2007.

### Operational Policy for Fiscal 2007

In fiscal 2007, we will focus efforts in this subsegment on increasing business volume and reorganizing manufacturing and marketing.

In the inverter business, we will upgrade marketing and production capabilities in North America following the dissolution of the business alliance with GE, and promote business expansion in China. In PODs, we will strengthen operations by concentrating the business in our consolidated subsidiary, Hakko Electronics Co., Ltd., located in Ishikawa Prefecture, while aiming to expand sales with the launch of new products. In terms of marketing, we will push inverters and servomotor systems in target industries and work to expand marketing of system products in areas such as motion control, which combines servomotor systems and programmable logic controllers. In overseas operations, China and the rest of Asia will be key regions. We will strengthen sales of inverters in industries such as air conditioners, conveyance and cranes, and increase sales of servomotor systems to the machine tools industry. In parallel with this, we will improve the abilities of our sales force and promote systems marketing initiatives.

### Inverters (FRENIC-MEGA Series)



The high-performance, multi-functional FRENIC-MEGA series of inverters features industry-leading products designed to be compatible with any type of equipment.

### Programmable Logic Controllers



Integrated controllers beyond the conventional boundaries of PLCs that meet needs for complex, high-performance machine control and provide high-speed calculation and compatibility with a variety of networks.

## Research & Development

### R&D Policy

To create a strong business framework, ongoing development of industry-leading products and an expanded lineup of global products, together with an increase in the pace of the R&D required to achieve such developments, are becoming increasingly important. To efficiently deal with this issue, we will approach R&D focusing on two themes: core technologies that are our strength and that support unique products, and the technology platforms that underpin those core technologies. We will strengthen and promote R&D in both these areas.

The core technologies with which we work include technology for global compatibility, technology to realize high-performance, high-precision current blocking and switching, technology to realize high-speed, high-performance conversion and control that optimize motor drives, and C language programming, redundancy and multi-axis motion control technologies that allow flexible system building.

We will also improve technology platforms, including noise reduction, wasted heat cooling and miniaturization technologies, product life assessment and remote maintenance technologies, high-speed CPUs and programming language technologies, Ethernet and other types of network compatibility technology, and system integration support technologies.

### Key Products Born out of Research Programs

In fiscal 2006, we enhanced our product lineup by introducing global products compatible with international standards, products and systems related to energy-saving, and a new high-performance series of products. In ED&C components, we launched the G-Twin series of MCCBs and ECLBs\* which achieves compatibility with new JIS/IEC, GB and UL standards in a single unit. Other products included an ELCB that is compliant with IEC standards and achieves interoperability with previous models.

In control and drive systems, we have developed products including the FRENIC-MEGA series of high-performance, multi-functional inverters with built-in EMC (electro-magnetic compatibility) filter—necessary for global compatibility—and harmonic suppression. We also launched the ALPHA5 series of globally compatible servomotor systems featuring shorter tact time and high-speed, precision positioning.

In controllers, we developed the SPH300EX CPU module that allows high-speed synchronous motion control for multi-axis machines and the SPH2000 CPU module with added redundancy feature.

\* MCCB: Molded case circuit breaker  
ELCB: Earth-leakage circuit breaker

### Roadmap for Developing Technologies for Core Products

	2006	2007	2008	2009	2010
Low-voltage power distribution equipment	G-Twin globally compatible low-voltage circuit breakers		New high-capacity circuit breakers		
Switch control devices	New globally compatible magnetic contactors, DC-powered magnetic contactors			New high-capacity magnetic contactors	
Programmable operation displays (PODs)	New 16mm push-button switches		New 22mm and 30mm push-button switches		
Power monitoring equipment/ED&C networks	Network compatibility for power monitoring equipment		Compatibility with switchboard systems for power distribution equipment and control devices		
Inverters	FRENIC-MX FRENIC-VGX		FRENIC-MEGA		
			New FRENIC-Mini		New FRENIC-Multi
Servomotor systems	ALPHA5 and medium-capacity ALPHA5		400V-input ALPHA5		High-capacity ALPHA5
	Compact, medium-inertia motors		Ultra-low inertia motors		
Controllers	CPUs compatible with C programming language		High-speed CPUs, high-speed bus systems		High-speed motion systems, instrumentation systems
	Multi-axis motion controllers		Controllers with integrated displays		High-speed motion controllers

# Strengthening and Expanding the Inverter Business

## Inverter Market

The market for inverters in the 0.1–75kW range is worth more than ¥70 billion in Japan (Japan Electrical Manufacturers' Association data) and ¥500 billion worldwide (ARC data). The market is growing at 8% annually, mainly driven by BRICs and other emerging economies.

## Strategy for Inverters

In March 2007, Fuji Electric FA Components & Systems dissolved the manufacturing alliance with General Electric of the United States, which had been in operation since 1996. This step was taken to develop our own framework for flexibly responding to rising demand for inverters driven by growth in emerging economies and demand for energy efficiency. In the short term we aim to increase our share of the global market from the current 8% to 10%. Further into the future, we are aiming for a global market share of 15%, making us a world-leading inverter manufacturing group equal to ABB of Switzerland and Siemens of Germany. To realize this, we will establish production sites in North America and Europe, which will combine with our existing plants in Suzuka, Japan and Wuxi, China, to create an integrated customer support network encompassing development, production, and quality assurance across the four sites.

## Consolidation of Production Facilities in Japan

We invested ¥1 billion to combine the development, production and quality assurance functions, previously spread between the Kobe and Suzuka plants, at the Suzuka plant. This move is aimed at improving efficiency, development capabilities and quality by gathering engineers in one location, while also providing enhanced technical support both in Japan and overseas. In fiscal 2007, we will enhance the sales structure for the FRENIC-MEGA series of high-performance general-purpose inverters, together with the Multi, Eco, Lift and Mini models. Furthermore, we will strengthen alliances with overseas facilities, with the plant in Suzuka, Japan, as the hub, while also putting in place a worldwide pre-sales and after-sales network integrating manufacturing and sales through cooperation among our sales sites across the globe.

## Steps to Expand Business Overseas

The market in China is expected to continue to show significant growth due to the combination of infrastructure building by the government and factors such as the spread of energy-saving initiatives. Accordingly, in fiscal 2007 we plan to increase monthly production capacity at our Wuxi plant from 8,000 units to 15,000 units.

New testing facility at Suzuka inverter plant (completed October 2006)



Wuxi plant (China)

