

Trust has to be earned.



**Measurable quality /// Fresh input /// Partnership /// Teamwork /// Service
and Support /// Security /// Reliability /// Return on investment /// The future**

World shaping contents...



We bring together the best minds to develop global leading products.

It is our conviction that better technology is the prerequisite for progress.

Technical innovations from Mitsubishi result in global improvements, make life easier for people, help companies to achieve even greater success and bring about worldwide benefit – for the current generation and all those to come.

Mitsubishi Electric is globally active in numerous markets. The most important ones are:

Power generation and electrical appliances

The spectrum ranges from power generation through to electrical appliances, from the power company through to the consumer.

Semiconductor products

State-of-the-art semiconductor components for individual applications and systems.

Electrical and electronic appliances for the private household

Mitsubishi air-conditioning systems and entertainment electronics are well known for their excellent reliability.

Information and communication technology

Devices and complete solutions for the business and private customer market.

Industrial automation technology

Up-to-the-minute concepts and solutions for productive and profitable manufacturing.

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More bite for your automation



You can expect fresh ideas from Mitsubishi Electric.

As a decision-maker you know how great the responsibility is when setting up or converting an automated system.

Investment security, flexibility, return on investment, total cost of ownership – today every solution is painstakingly examined according to business management principles.

Mitsubishi Electric has complete system solutions as well as individual components which will withstand any test and are often better by far than all the others in their category.

With Mitsubishi Electric as your partner you bring new bite to your business.

A well-automated production facility has staying power: It continues to run for years and decades without any downtime, without any problems. Mitsubishi Electric has set the benchmark in that respect.

Systems from Mitsubishi Electric drive a wide range of applications including drinking water pumps and control power stations. Others cultivate, assemble, fill, package, stack and move much of what later turns up on many dining tables.

Many millions of people are helped through the day by Mitsubishi Electric solutions. They place their trust in us, often without being aware of it.

You too can place your trust in the possibilities and potential that we offer you in this brochure.

Get to know a provider with the dynamism and commitment that matches your own.

Mitsubishi Electric has moulded and promoted the development of automation worldwide.

As a result we can now offer every company a solution that is appropriate to its needs, irrespective of the industry to which it belongs. The high art of Mitsubishi Automation can also be the key to more success for your company.



The ultimate in product range and quality

Control technology, drive units, protection systems, machining equipment, robots – Mitsubishi Electric offers a unique spectrum of automation components. All fit together and meet the relevant quality standards worldwide.

Mitsubishi Electric places great value on quality, this applies not only to the components used but also to the in-house manufacturing processes.

That makes our solutions so reliable that even companies manufacturing their own automation solutions prefer our products for their production facilities.

Benefit from this quality!

Successful together

Direct contact with decision-makers is crucial, particularly for larger projects. You should demand solid, long-term promises; that's what you get from Mitsubishi Electric.

Mitsubishi Electric began in 1921 as a separate branch of the Mitsubishi Group. Since then we have put the customers needs at the center of our business. It has paid off for both parties. Mitsubishi Electric now boasts 110,000 employees and 237 factories and research centres in 121 countries.

The main reason for this success is customer satisfaction. This is a personal concern for us. You will notice it the first time you meet us.



Automated systems produce goods worth billions, day in day out. Just a few cents can make the difference when calculating unit costs.



High-precision materials handling, mixing and dosing equipment for silo installations – a case for Mitsubishi Electric.

A perfect fit all round!



Automation from Mitsubishi Electric – the crucial factor for improved performance.

It's good to have produced fine products in the past. It's even better to continually produce innovative solutions in the present. Creating productivity for our customers is a hallmark that we wish to be recognised by. Mitsubishi solutions are made to measure.

Excellent availability

Excellent system stability, even under continuous peak load: The pressure of globalisation demands the ultimate in performance from every application.

Our expectations of all our suppliers are correspondingly high. Mitsubishi Electric components are impressive from the outset, and in the long term. They improve the availability of the smallest system, and safeguard the productivity of the largest production line.

Diverse solutions

Mitsubishi Electric has a wide range of experience in many industries and application fields. From machine building to water treatment, food packaging to process control and power plant management, our innovative ideas and solutions have helped create productivity and success for our customers.

Pumping and saving

For example: Water pumps have to be powerful, indestructible and designed for long service intervals. But low energy consumption is also becoming more and more important today. Many operators are in search of a solution that combines both.

Mitsubishi Electric supplies exceedingly durable and low-maintenance pump drive units, which achieve impressive energy-saving effects by means of their intelligent energy management systems.

Sensitive and compatible

Mitsubishi Electric has experience in surpassing the human eye and hand by means of especially sensitive motion control solutions.

Furthermore, Mitsubishi software simplifies the setup and control of the complex sequences of movements when assembling, packaging, labelling or checking foodstuffs.

Global support

So that you can devote your full attention to your work, Mitsubishi has created a global network of customer technology centres and partners, providing a wide range of services.

These stretch from advice about applications and standard solutions through to training and qualification, according to the specifications of our technician certification scheme if required.



Uninterrupted productivity: Mitsubishi Electric solutions get closer to this ideal than any other solution.

Even in the case of entirely "normal" automated packaging, Mitsubishi offers unequalled consistency, precision and durability. Changes to the system can be made quickly and simply – thanks to maximum compatibility between Mitsubishi Electric components.

Solutions that do the thinking for you

A mixer under changed mixture conditions, an assembly line switching between idle and maximum load – both are subject to widely fluctuating stresses. These put at risk production processes at the end of which there must generally be the highest consistency between batches. Mitsubishi Electric builds automation products that respond flexibly and as fast as lightning to changed circumstances. That ensures consistent product quality.



Mass manufacturing, machine building and Process industries are some examples of where Mitsubishi has added value.

Perfect teamwork



Add Mitsubishi Electric and e-F@ctory to your team and we will be a key supporter of your business.

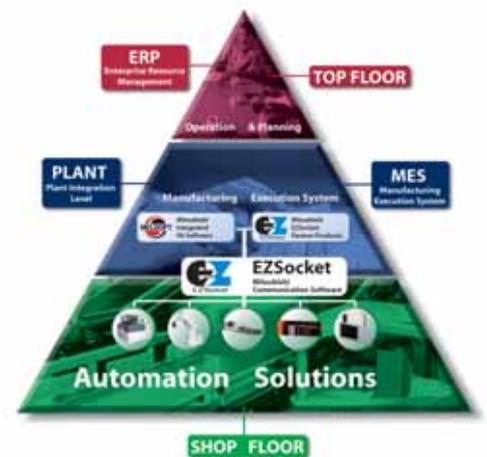
The optimum interoperability of many Mitsubishi Electric automation components forms the basis for communication in a new dimension.

Knowing more, making better decisions

e-F@ctory is the automation and information concept of Mitsubishi Electric for optimum communication both within corporate levels and also between them. The seamless flow of information between production and management is no longer a dream for the future but daily reality.

Thanks to e-F@ctory, the company management can rely on up-to-date and meaningful information. This simplifies, improves and speeds up decision-making.

e-F@ctory assists Mitsubishi Electric day after day in the optimisation of its own production facilities. Under the e-F@ctory label, every company gets tools that have long since passed the acid test and have proved their worth amidst the rigours of everyday production at Mitsubishi Electric.



e-F@ctory is so good we use it to produce our own products.

Products for better automation

■ **Software – interface for more functionality**

Efficient programming tools and software solutions help companies to apply the automation hardware to best effect.

■ **Compact and modular PLCs, advanced Process systems – economical and flexible**

The Mitsubishi Electric PLC concept is a successful combination of flexibility, economy and efficiency. It is by far the preferred automation platform for many professionals. Mitsubishi invented the compact PLC almost 30 years ago and continue to set the standard today. A million times over, around the globe.

■ **Frequency inverters – fit and forget**

Mitsubishi frequency inverters combine quality and durability with user friendliness and outstanding constancy of speed.

■ **Motion Control – cooperation between the axes**

The control and coordination of machine axes is one of the key disciplines in automation. Mitsubishi Electric has a comprehensive offering in this area from 1 to 96 axes.

■ **HMI, GOT, IPC – the entire gamut of control**

Mitsubishi offers what is currently probably the largest range of ergonomic, user-friendly human-machine interfaces – from text display via touchscreen through to industrial PCs.

■ **Mitsubishi robots – at the top of their class**

Mitsubishi robots are unequalled in speed and precision. They are the specialists in micro-handling (with positioning accuracy corresponding to the thickness of a human hair) as well as in rapid palletising, resorting or workpiece mounting.



Reliable, successful, user-friendly: frequency inverters from Mitsubishi



Brilliance, size, colour: Mitsubishi GOT systems are internationally unparalleled.

■ **CNC control systems – for maximum reliability**

Over 50 years of experience has made Mitsubishi Electric control systems a guarantee of excellent reliability and maximum productivity.

■ **Erosion systems – leading their field**

A wide range of products and services for wire erosion has made Mitsubishi a well-established and competent provider in this area too. In 2005 an independent market study declared Mitsubishi to be the global market leader in this particular machining method.



Modular and compact PLC from Mitsubishi Electric



Mitsubishi robots: precise and durable

Concentrating on essentials



Mitsubishi service: committed, competent, experience, letting you concentrate on the essentials!

Our network: Spanning the world

In international terms, Mitsubishi Electric has branch offices in 121 countries, divided up according to regional groups. In Europe there is an established pan-European team of support professionals, which is reinforced by skilled local service groups and user teams based in each country.

Europe: market and benchmark

Europe is a lynchpin for the engineer's art and innovation. That is why we have been involved in Germany for 25 years. That is also why our dedicated service team has been created here, the Europe Service Group (ESG).

Ratingen is the home of the main administration of the Europe-wide network made up of qualified engineers and service technicians. Their common aim is to provide the ultimate in terms of service and support.

Optimum support at all times

In all project phases, from planning through development, commissioning, maintenance and training, ESG can provide valuable assistance and support: In the choice of the right automation strategy, the supply of pre-fabricated, tested functional components, on-site support for development and commissioning, and later on also for expansion or staff training.

Voices from the real world



“Our Mitsubishi Electric frequency inverters will have already paid for themselves in the first year.”

Franz-Josef Heiming, head of the power plant at the Westphalian Clinic in Lippstadt

The clinic chose energy-saving frequency converters from Mitsubishi Electric for the operation of the sewage treatment works.



“The Mitsubishi Electric PLC solution cost about a quarter of what a conventional solution would have cost.”

Tim Hartley, Tritec

The backbone of a system for the heating and cooling system of the plastics-producing company is the extremely economical, fail-safe because redundant SPS from Mitsubishi Electric. The system is used in a plant operated by BP; Tritec was the company responsible for planning and execution.



The Chrysler Group estimates that it will save approx. 100 million dollars a year as a result of the new automation concept.

Global Engine Manufacturing Alliance

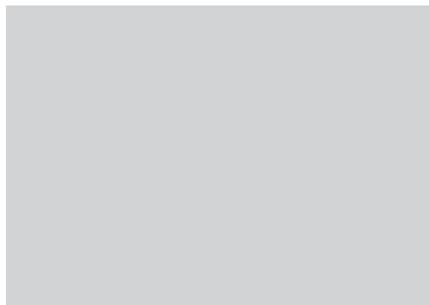
The Global Engine Manufacturing Alliance is a consortium made up of the Chrysler Group, Mitsubishi Motors and Hyundai Motor Co. The group is involved in the manufacture of motor vehicle engines at two production plants with an output of up to 840,000 engines per year. GEMA uses Mitsubishi Electric SPS, HMIs and CNC control units and software.



“This economical alternative to centralised control systems makes all the functions, the process and the production data transparent – from the production level through to the board of management.”

Axel Schuschies, Production Manager Follmann & Co.

The German adhesive manufacturer employs Mitsubishi SPSs and frequency inverters, and networks them via Ethernet and field bus. The system controls the manufacture of 17 different adhesives.



“The Mitsubishi Electric equipment was very easy to integrate. And it is so reliable that after it is installed you virtually never have to think about it again.”

Dave Simpson, AB Technology

Compact PLCs from Mitsubishi Electric undertake the control and monitoring of the baking process for cakes and pastries, including the weighing out and feeding of the ingredients. SCADA systems are used for monitoring.

The future of automation



Make the right connection to future productivity and success.

5 thoughts



More automation for more companies

By no means have all possibilities been exhausted. Companies whose processes do not yet seem economically capable of automation will soon be jumping aboard the automation train.

Our “product construction kit” is well prepared for that.

Crucial to success: research and development

Only companies that have the funds for continuous investment and innovation will survive.

We invest between 4 % and 6 % of our revenue in research and development.

Only the strongest survive

The automotive industry is an example to us all: the number of brands is diminishing. The necessary rate of innovation can only be financed in the long term by major companies.

We have a 40 % market share in the core Asian markets, plus continuing steady growth.

What the customer wants, counts

Technological expertise and the special solutions valued by the market will increasingly come from the major institutions.

We are already working intensively on supporting every industry to best effect.

More and better information for management

“Transparent production” is becoming ever more tangible. e-F@ctory is an essential key to more information and better strategies.

We demonstrate just how far transparency can go today – on our own systems and on those of our customers.

A world of solutions



One example of many solutions in the automotive industry.

We have had a presence in Europe for over 25 years, with eight Mitsubishi Electric factory automation offices. A wide-ranging network made up of good connections and reliable partnerships has since developed and continues to grow daily.

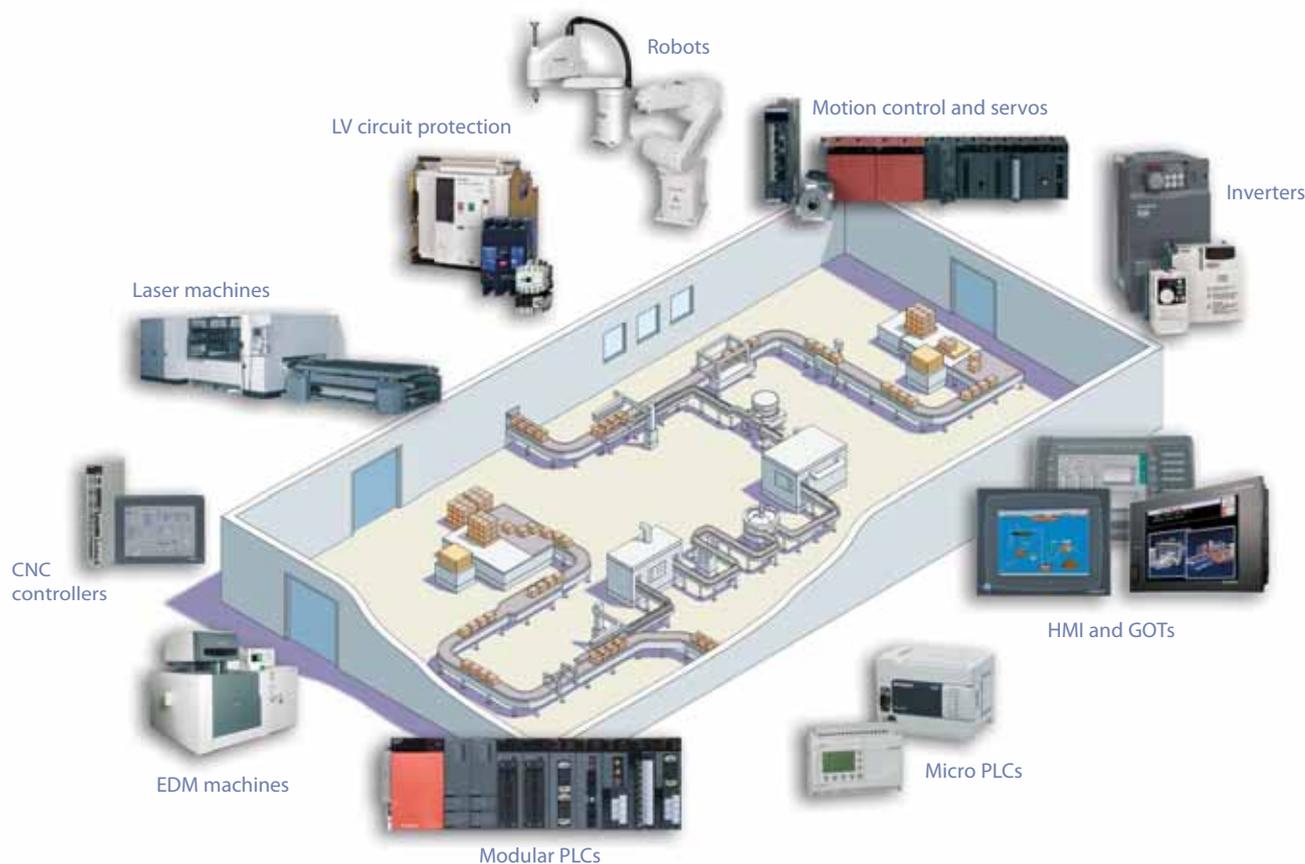
On the technical side, three production and automation centres represent the basis for made-to-measure automation solutions, and more centres are already at the planning stage.

A Europe-wide network, the European Service Group (ESG), offers interfaces to experienced German engineers and is able to offer support to customers and distributors in every project phase.

Mitsubishi Electric products prove their worth in a tremendous range of areas. Here is a list of a few examples of automation tasks that our customers have solved:

- Agriculture
 - Irrigation systems
 - Harvesting machinery
 - Sawmills
- Building services technology
 - Smoke alarm systems
 - Ventilation and temperature regulation
 - Lift control systems
 - Revolving door controls systems
 - Telephone exchanges
 - Energy distributions
 - Swimming pool control systems
- Construction industry
 - Manufacture of steel bridges
 - Tunnel boring systems
- Food industry
 - Preparation and baking of bread
 - Foodstuff processing (washing, sorting, cutting up and packaging)
- Leisure industry
 - Projector for multiplex cinemas
 - Animations in museums or theme parks
- Medicine
 - Testing ventilation devices
 - Sterilisation
- Pharmaceutical and chemical industry
 - Dosing
 - Systems for the measurement of air pollution
 - Cryogenic freezing
 - Gas chromatography
 - Packaging
- Plastics industry
 - Welding plastic
 - Energy management for injection moulding machines
 - Loading and clearing machines
 - Testing extrusion blow-moulding machines
 - Testing injection moulding machines
- Print shops
- Textile industry
- Automotive industry
- Transport and travel
 - Control of the sanitary installations on passenger ships
 - Control of the sanitary installations in railway coaches
 - Pump control for fire engines
 - Control of waste disposal vehicles
- Communal installations
 - Wastewater disposal
 - Pumps for drinking water
 - Sewage-treatment plants

A world full of automation solutions



Mitsubishi provides automation solutions and more: from PLCs and control panels through to CNC control units and spark-erosion machines.

A name that you can trust

Mitsubishi was established in 1870 and includes 45 companies from all sections of corporate finance, trade and industry.

Today the name Mitsubishi is considered worldwide as a synonym for first-class quality.

Mitsubishi Electric deals with aerospace technology, semiconductors, power generation and distribution, information and communication technology, entertainment electronics, building services technology and industrial automation, and has 237 factories and laboratories in 121 countries.

For that reason you can have confidence in an automation solution from Mitsubishi. We know at first hand just how important it is to have reliable, efficient and user-friendly automation and control systems.

As one of the world's leading companies, with an annual turnover of 3.4 trillion yen (approx. 30.8 billion US\$) and over 110,000 employees, Mitsubishi Electric has the opportunities and the obligation to deliver not only the best service and support but also the best products.

Global partner. Local friend.

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