

Press release

COMPREHENSIVE ROBOT SOLUTIONS FOR TODAY'S ELECTRONICS MANUFACTURING

Ratingen, April 8, 2025

Precision, flexibility and efficiency are more important than ever in electronics manufacturing. And digitalization is playing an increasingly important role. Instead of a one-size-fits-all solution, Mitsubishi Electric offers a wide range of innovative approaches tailored to specific production requirements. Whether it is sensitive PCB production, PCB assembly, electronic component assembly or quality control - each application requires a tailor-made solution.

In modern electronics production, processes such as through-hole technology (THT) and printed circuit board (PCB) assembly are indispensable. The compact MELFA robots from Mitsubishi Electric more than meet the high production requirements. Highest precision (up to ± 0.02 mm repeatability), ESD certification (IEC 61340-5-1) for safe operation in EPAs (Electrostatic Protected Areas) and optional clean room certification (ISO class) by Fraunhofer IPA guarantee product quality from component placement to quality control.

ESD certification

Protection against electrostatic discharge (ESD) is critical in electronics manufacturing, as even the smallest voltages can cause irreparable damage to sensitive components. To ensure maximum safety and product quality, all MELFA robots from Mitsubishi Electric are ESD compliant and comply with the IEC

61340-5-1:2016 and ANSI/ESD S20.20:2014 standards. This allows them to be used reliably in ESD-protected areas, such as automated printed circuit board production. This includes tasks such as assembly and inspection of connectors and/or other components, functional and in-circuit testing, reflow soldering, AOI (Automated Optical Inspection) and packaging of electronic circuit boards and SMD assembly.

Clean room robots with ISO classification

These MELFA robots also have clean room certification (ISO class) issued by the Fraunhofer IPA Institute, the certification body for this type of regulation. This certification is highly sought after in the electronics industry, where clean room testing is often performed with forced air circulation to prevent microparticles from coming into contact with the product and contaminating it.

AI as a driving force

Collision avoidance for safe motion, AI-assisted precision force sensors for delicate assembly tasks, cooperative control for seamless integration with existing systems, and intelligent temperature compensation to maintain maximum accuracy under changing environmental conditions. These are just some of the useful features that are important in electronics manufacturing.

The robots are equipped with many intelligent algorithms that enable continuous process optimization and preventive maintenance. This significantly reduces downtime in the automated placement and assembly of electronic components..

Innovative approaches for a demanding market

With its versatile solutions, Mitsubishi Electric serves the entire electronics manufacturing industry - and not just with a broad portfolio of SCARA, jointed-arm and collaborative robots. The powerful drive and control systems also optimize processes along the entire value chain - from precision PCB production and automated PCB assembly to the manufacture of complex electronic systems. In this way, Mitsubishi Electric makes a decisive contribution to the competitiveness of the industry on the global market.

Further information can be found at: [Mitsubishi Electric - Robots in electronics production](#).

Image



Pic1: From the manufacture of semiconductors and chips to the use of industrial robots in electronics production. Mitsubishi Electric covers the entire value chain.

[Source: Mitsubishi Electric Europe B.V.]

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About Mitsubishi Electric Corporation

Mitsubishi Electric Corporation (TOKYO: 6503) has more than 100 years of experience in manufacturing reliable, high-quality products and is a recognized world leader in the manufacturing, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better". The company recorded sales of 5,257.9 billion yen (34.8 billion US dollars*) in the fiscal year ending March 31, 2024.

Further information can be found at www.MitsubishiElectric.com.

**Amounts in US dollars are converted from yen at the rate of ¥151=US\$1, the approximate rate on the Tokyo foreign exchange market on March 31, 2024.*

About the Mitsubishi Electric Factory Automation Business Group

Mitsubishi Electric offers a wide range of automation and processing technologies, including controls, drive products, power distribution and control products, electrical discharge machines, electron beam machines, laser processing machines, computer numerical controls and industrial robots, contributing to higher productivity - and quality - in manufacturing. In addition, the extensive service networks around the globe provide direct communication and comprehensive support for customers. The

global slogan "Automating the World" illustrates the company's approach of using automation to improve society by using advanced technologies, sharing its know-how and supporting its customers as a reliable partner.

You can find more information about the history of "Automating the World" here:

www.MitsubishiElectric.com/fa/about-us/automating-the-world

Factory Automation EMEA

Mitsubishi Electric Europe B.V., Factory Automation EMEA, has its European headquarters in Ratingen near Düsseldorf. It is part of Mitsubishi Electric Europe B.V., which has been represented in Germany since 1978 and is a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan. The task of Factory Automation EMEA is to manage sales, service and support via the network of local subsidiaries and distributors throughout the EMEA region.

For more information, please visit
emea.mitsubishielectric.com/fa

About e-F@ctory

e-F@ctory is Mitsubishi Electric's integrated approach to building reliable and flexible manufacturing systems that enable users to achieve many of their high-speed, information-driven manufacturing goals. Through its partner solutions, the e-F@ctory Alliance, and cooperation with open network

associations such as the CC-Link Partners Association (CLPA), users can build comprehensive solutions based on a far-reaching "best-in-class" principle.

In summary, e-F@ctory and the e-F@ctory Alliance enable customers to achieve integrated manufacturing while retaining the ability to choose the most optimal suppliers and solutions.

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