Precision, Connectivity, and Automation Expertise

Automation and digitalization are transforming industrial coating processes and require control systems that are not only powerful but also seamlessly integrated and easy to use. A specialist in electrostatic powder coating systems has developed a next-generation control solution designed to embody these principles. According to the supplier, it combines precision, connectivity, and automation expertise.

Under the name Magic Control, Gema has launched control devices for industrial powder coating systems that are intended to serve as pioneers of Industry 4.0. They promise to centrally control coating parameters, spray guns, and axes in order to optimize the application of powder coating. At Paint Expo 2026, the Swiss specialist in electrostatic powder coating systems has presented the latest generation of control systems: Magic Control Max.

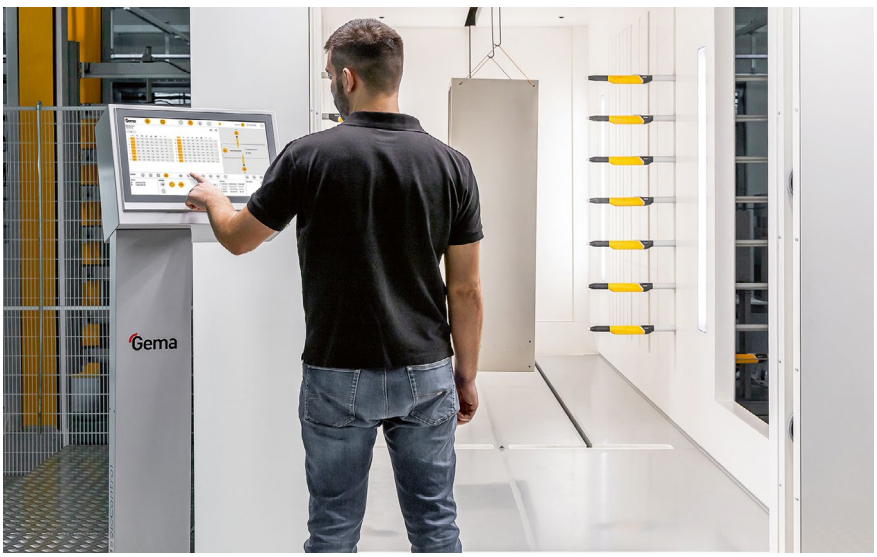
Machine intelligence

At the heart of the new generation of controllers are a multi-core processor and a modular platform architecture that centralize all coating operations within an integrated system controller. All components and every step of the coating process are interconnected via a standardized communication structure.

According to the supplier, this powerful system architecture performs all control functions with high efficiency and supports real-time monitoring, process diagnostics, and maintenance. Thanks to an intelligent control structure, the new generation of controls is designed to ensure high system availability and stable process conditions.

Gema also highlights the following advantages: Advanced features such as dynamic contour detection enable data-driven process control. Using laser scanning, the system identifies the part geometries and adjusts the positioning of the guns and the axis movements accordingly. This ensures precise powder application, less overspray, and consistent coating quality – even for complex parts with fine geometries and high conveyor speeds, according to the supplier.

Machine intelligence in Magic Control Max means more than just automated control; according to the manufacturer, it delivers adaptive precision and ensures reproducible coating results under variable production conditions.



According to the manufacturer, the new-generation control unit can be flexibly integrated into a freestanding column or a control cabinet.

Automation

The new generation of control systems achieves a high degree of automation by connecting all components of the coating system into a networked control system, explains Gema. It enables vertical integration with MES and higher-level production systems, as well as horizontal communication between all components of the application process.

This reliable control interface makes powder coating processes more autonomous and leads to greater efficiency, with improved and consistent coating quality, reduced operating costs, and process flexibility.

The control system is designed to enable seamless interaction between part recognition and the coating process, powder circulation, and color changes, while ensuring ideal coating conditions in the booth in compliance with all

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The quick view with customizable favorites simplifies operation and provides an intuitive display and easy control of key functions.

safety guidelines. According to the supplier, all operating parameters and coating programs can be saved, retrieved, or modified at any time. Process data and performance indicators are made available via the associated Gema Connect dashboard, which visualizes efficiency metrics, maintenance requirements, and system status in real time.

Automation using Magic Control Max is designed to reduce the need for manual intervention, minimize downtime, and ensure consistent coating results while optimizing powder, energy, and time consumption.

Simplified operation

Despite its technological sophistication, Magic Control Max is designed for simple and straightforward operation. Its 18.5-inch HMI touchscreen interface is intended to improve human-machine interaction through clear process visualization and intuitive access to all coating parameters. According to the manufacturer, operators can quickly adjust gun settings, axis configurations, and color change sequences via user-defined favorites and direct menu access.

The control unit simplifies training and operation by presenting complex system functions in a clear, graphical format. Routine procedures such as color changes, cleaning, and maintenance can be easily performed thanks to visualized step-by-step instructions, which are designed to reduce the operator's workload and prevent operating errors.

Status monitoring functions, alerts, and automated diagnostics further enhance the system's transparency. Maintenance work can be planned proactively, thereby minimizing unplanned downtime and supporting continuous production efficiency, explains Gema.

Magic Control Max is scalable for any system configuration – from compact lines to multi-axis robotic systems, thanks to its modular design. According to the manufacturer, expansions and upgrades can be seamlessly integrated, ensuring that the investment remains valuable over the long term.

Conclusion

Magic Control Max combines machine intelligence, automation, and simplified operation in a single integrated control platform. According to Gema, this is designed to help users realize their full coating potential: The control system provides a comprehensive overview of the coating process, ensures precise control of all parameters, and offers full digital connectivity for state-of-the-art production environments.

Designed for high reliability, the new generation of controls delivers reproducible coating results and complete process transparency, according to the manufacturer.

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