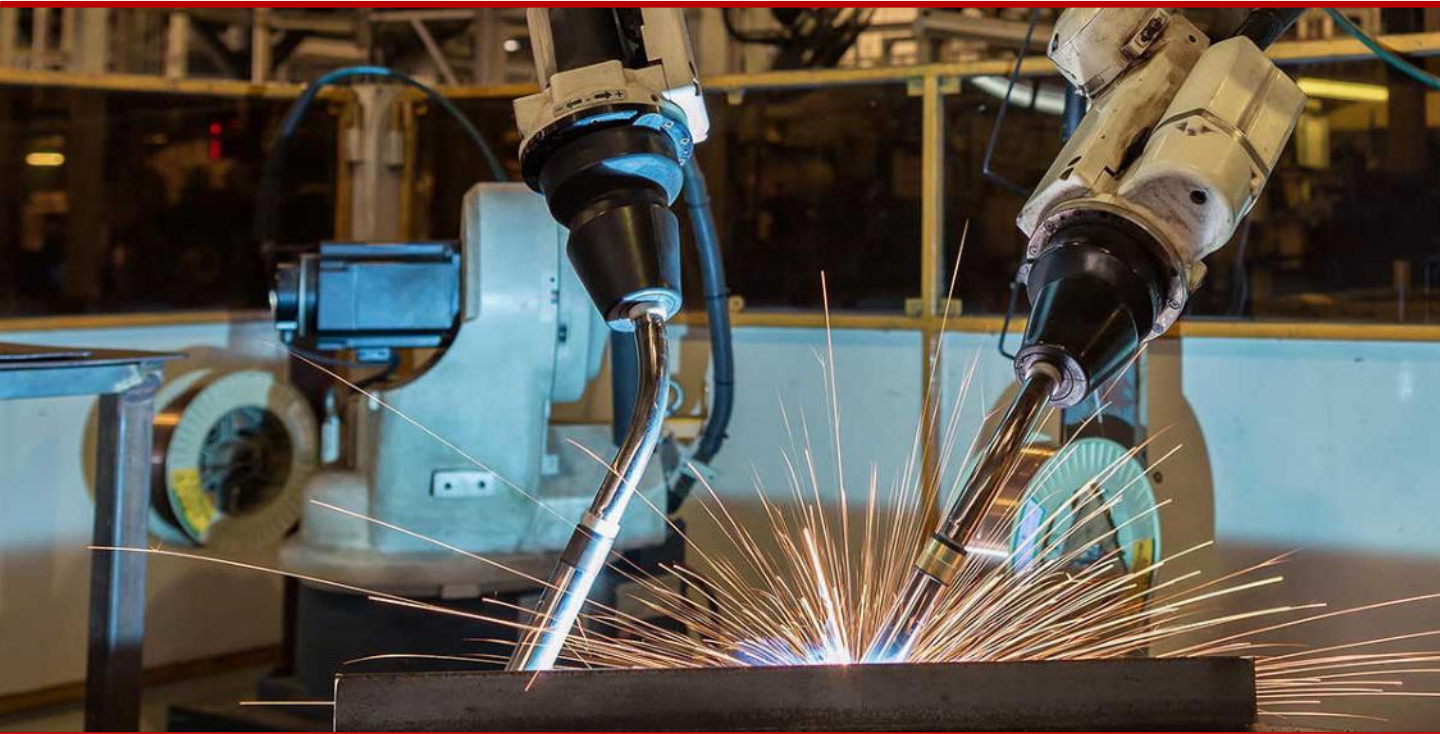




Success Stories



Enhancing Industrial CNC Welding with Winmate's Rugged Robotics Controller

Advanced CNC Welding Automation

Background

In Germany, a leading robotics supplier has significantly improved its industrial CNC welding solutions through the integration of Winmate's rugged robotics controllers. These controllers are employed in a state-of-the-art 6-axis robotic arm, designed for precise and efficient CNC welding operations.

Main Challenges

The integration of Winmate's rugged robotics controller into the Industrial CNC Welding Robot in Germany faced several significant challenges. Ensuring seamless compatibility with existing PLC and CNC systems required overcoming integration hurdles and ensuring effective communication between components. The controller needed to be durable enough to withstand the harsh conditions of industrial welding environments, including exposure to heat, metal spatter, and vibrations, while maintaining reliable performance. Achieving high precision and accuracy in CNC welding demanded meticulous calibration and fine-tuning to ensure consistent weld quality. Managing the 6kg payload of the robotic arm required the controller to handle varying weights and tool configurations without compromising stability.

Additionally, facilitating user-friendly teaching and programming for the robotic arm required intuitive interfaces and features to streamline setup and adjustments. Ensuring long-term reliability under continuous industrial use involved addressing potential wear and tear issues, reducing maintenance needs, and enhancing durability. Lastly, the controller had to be flexible enough to adapt to different welding tasks and applications, from metal fabrication to furniture production, requiring a high degree of customization and versatility.

Core Product

- **G101TG** - 10.1-inch Intel® Tiger Lake Rugged Ground Control Station

Why Winmate

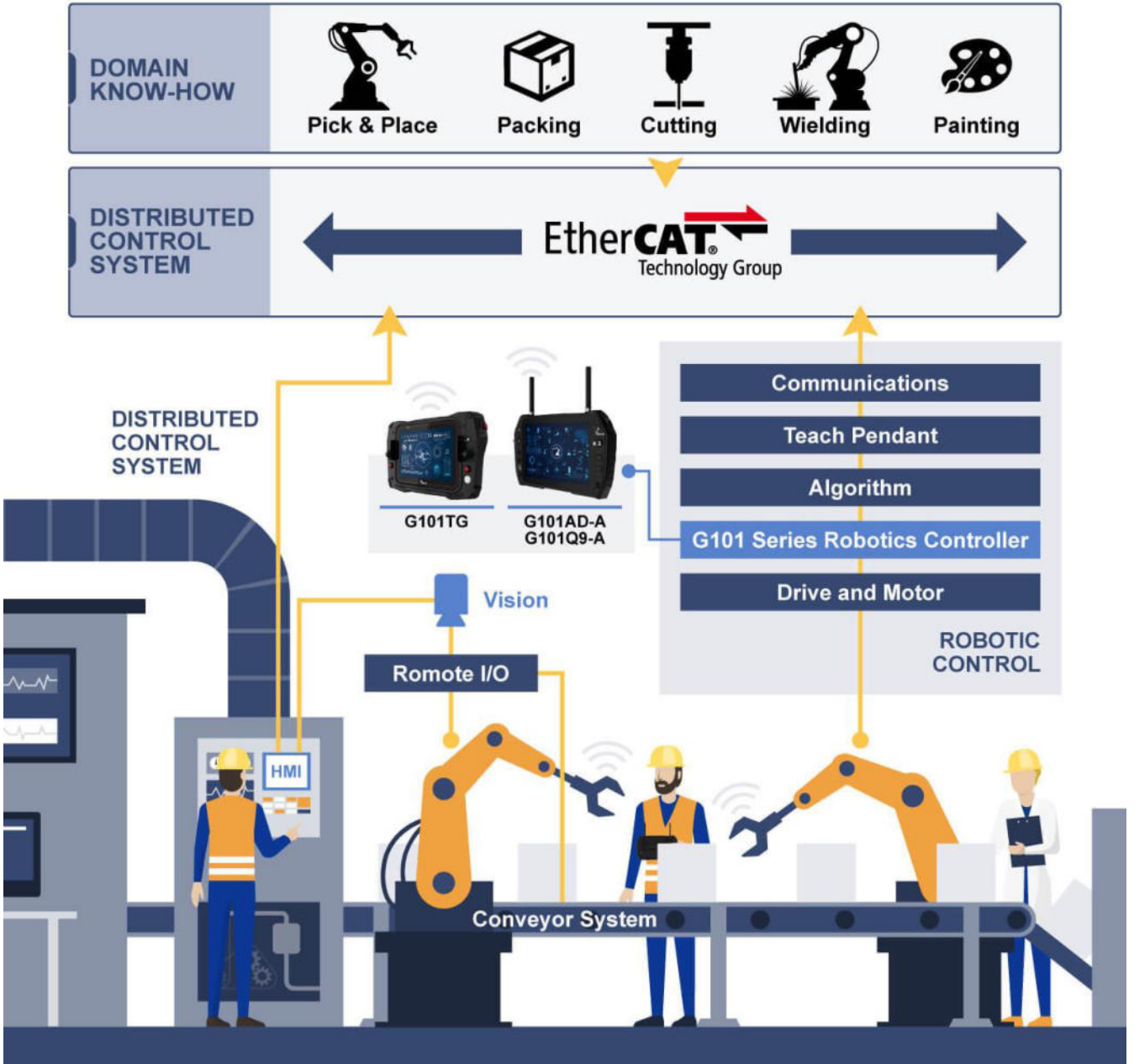
The German robotics supplier utilized Winmate's rugged robotics controller in their Industrial CNC Welding Robot, featuring a 6-axis arm with a 1500mm reach and a payload capacity of 6kg. This robotic arm is tailored for various applications, including welding and furniture manufacturing, providing enhanced precision and efficiency in industrial settings.

- **Robust Control Systems:** Winmate's rugged robotics controller offers the durability needed for harsh industrial environments. Its reliable performance ensures the seamless operation of the 6-axis robotic arm, even under continuous use and challenging conditions.
- **Precision Welding:** The controller's advanced capabilities enable high-precision CNC welding, improving the quality and consistency of welds. This is essential for applications requiring exacting standards, such as in metal fabrication and furniture production.

- **Versatile Integration:** The system supports integration with PLC (Programmable Logic Controller) and CNC (Computer Numerical Control) systems, providing flexibility in controlling and programming the robotic arm for various welding tasks.
- **Enhanced Teaching and Programming:** The controller facilitates efficient teaching and programming of the robotic arm, allowing operators to easily set up and adjust welding processes. This feature streamlines the workflow and reduces setup time.
- **Payload Management:** With a payload capacity of 6kg, the robotic arm can handle various tools and components used in welding, ensuring robust performance and adaptability to different manufacturing needs.
- **Industrial Durability:** Designed to withstand the rigors of industrial environments, the Winmate controller ensures long-term reliability and reduces maintenance needs, contributing to overall operational efficiency.

The integration of Winmate's rugged robotics controller has enhanced the performance and versatility of the CNC welding robot, leading to improved welding quality and operational efficiency. This success story highlights the potential of advanced control systems in revolutionizing industrial automation. Looking ahead, the technology can be adapted for various other industrial applications, further expanding its impact on manufacturing and production processes.

Application Diagram



Related Product

Winmate G101TG



- 10.1" Intel® Tiger Lake Rugged Ground Control Station
- Low Latency video SW decoder for real-time high-resolution video viewing
- All-weather, dust, and water-resistant design (IP65). MIL-grade drop, Shock and vibration
- Supports WIFI, BT and optional 4G/5G
- Embedded TPM IC and Optional OPAL SSD
- Providing improved wireless connectivity and stability Ground Control Station
- With a removable second battery and a battery life of over 10 hours is a must-have tool for serious UAV pilots