

SUCCESS STORY

“REEL” ENERGY SAVINGS

INFORMATION

Industry

Material Handling

Application

Reeling Machine

Product

Yaskawa U1000 MATRIX VFD



A Yaskawa U1000 Matrix VFD maximizing energy savings and optimizing operation.

COMPANY HIGHLIGHTS

The Midwest based manufacturer specializes in wire, cable, and flexible material handling machines. Their machines cater to various industries such as aerospace, government, oil/gas, medical, automotive, plastics, and telecommunications. To address specific application challenges, Reel-O-Matic utilized Yaskawa's **U1000 Industrial Matrix VFD**.

APPLICATION CHALLENGES

The manufacturer faced challenges with machines that operated at variable speeds under heavy loads and required the motor to function as a brake. They previously employed dynamic braking packages or separate regenerative packages to manage the regenerative energy generated in these applications. While these solutions reduced operational costs, they incurred additional expenses, labor, and cabinet space. Furthermore, safety hazards arose due to the high energy directed towards brake resistors, resulting in excessive heat. The manufacturer sought a more efficient approach to redirect regenerative energy.

THE YASKAWA SOLUTION

The manufacturer adopted Yaskawa's **U1000 Industrial Matrix VFD** to address their application issues. Unlike conventional drives, the **U1000** directly switches from the input power, eliminating the need for a DC bus. This innovative drive allows regenerative energy to be reintroduced into the power line without introducing high levels of low-frequency current harmonics. By reducing current harmonics, transformer heating is minimized, enabling more efficient operation even under higher loads. Additionally, the **U1000's** standalone design eliminated the need for extra components, resulting in reduced cabinet size and cost. It also eliminated potential hazards, from externally mounted resistors.

The manufacturer's machines operate continuously in factory production, running 24/7. The implementation of the **U1000** ensures uninterrupted operation without downtime caused by overheating or high DC bus conditions.

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Furthermore, the reduced harmonics achieved with the **U1000** ensure that the manufacturer's customers automatically comply with the IEEE-519 standard. They no longer need to worry about utility companies raising concerns about elevated harmonic current levels affecting the power grid.

A representative of the manufacturer commented, "The operation and benefits of the **U1000** have been flawless for our applications."

KEY U1000 FEATURES

The Yaskawa **U1000 Matrix VFD** brings a set of notable advantages:

- Adheres to the 5% input Total Harmonic Distortion (iTHD) standard as per IEEE 519 guidelines for harmonic mitigation at the input stage
- Adjustable torque limit and overtorque settings for optimized acceleration and machine protection
- Equipped with a Safe Torque Off (STO) safety feature, meeting the requirements of IEC62061 (SIL3) and EN/ISO 13849-1 (PLe)
- Does not rely on bus capacitors that degrade over time, contributing to a long product lifespan
- Built-in fusing
- Access to Yaskawa's award-winning 24-hour technical support is free of charge

Contact Yaskawa today to learn more about how you can use Yaskawa AC drives to perfect your material handling industry applications!