

CONTROL WITHOUT COMPROMISE

ADVANCED CONTROL FOR CAR
WASH PUMP SKID SYSTEMS

YASKAWA SUCCESS STORIES



A manufacturer of pump skids for the car wash industry, was looking for ways to reduce system costs without sacrificing performance or reliability. Their systems required several advanced control behaviors typically handled by complex drive platforms. By leveraging Yaskawa's DriveWorksEZ (DWEZ) programmable logic built directly into the drive, the team delivered the same advanced functionality using a compact Yaskawa microdrive.

Product GA500 Series VFD

Industry Automotive

Application Water Pump Skid

CHALLENGE

The pump skid systems relied on several advanced control behaviors to manage water demand, reduce energy use, and protect pump components. These functions had traditionally required a complex drive platform, making it difficult to find a more cost-effective alternative without sacrificing functionality.

The system required a drive capable of:

- Running a PID loop during active water demand
- Automatically reducing speed when consumption stabilizes
- Entering sleep mode during extended low-demand conditions
- Detecting pressure deviations that indicate loss of prime or supply water
- Allowing timers, limits, and setpoints to remain configurable for different skid designs

SOLUTION

Yaskawa partnered with their local distributor to develop a customized control solution using a Yaskawa microdrive and DriveWorksEZ (DWEZ), the programmable logic platform built directly into the drive. Working together with the pump skid manufacturer, the teams developed a control program that reproduced the advanced pump behaviors required by the system.

The logic regulates pressure using PID control during active water demand, automatically reduces speed when consumption stabilizes, and enters sleep mode during extended low-demand conditions. Protection logic monitors pressure feedback to detect conditions such as loss of prime or insufficient supply water.

All timers, limits, and setpoints remain adjustable through drive parameters, allowing the solution to support multiple skid configurations. Prototype testing at the pump skid manufacturer's facility confirmed the system delivered the required control performance.

COMPANY HIGHLIGHTS

The pump skid manufacturer designs and manufactures pump skids for the commercial car wash industry. Their equipment typically uses pumps ranging from 3 to 10 horsepower and can be built for either 230 V or 460 V installations depending on customer requirements. Known for dependable, well-engineered systems, they supply equipment to car wash operators across the United States.

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RESULTS

COST

Lower
System Cost

The GA500-based solution delivered the functionality previously provided by a more complex drive platform while reducing overall system cost.

SAVINGS

Energy and
Equipment

Automated reduced speed and sleep functions minimize electrical consumption and reduce wear on pump seals.

FLEXIBLE

System
Design

Adjustable parameters allow the pump skid manufacturer to use the same control platform across multiple skid configurations.

SERVICE

Improved
Serviceability

Built-in diagnostic status bits help technicians quickly identify operating conditions and troubleshoot systems in the field.



GA500 KEY FEATURES

- DriveWorksEZ® programming environment allows for development of simple, custom logic, using function blocks and drag and drop interface
- Normal Duty and Heavy Duty ratings for use in variable torque and constant torque applications
- Stall Prevention and Torque Limit features to manage motor current and machine stress to acceptable levels
- Capable of controlling various motor types, including induction, permanent magnet (both SPM & IPM), and synchronous reluctance
- Allows programming without connecting main power by use of the DriveWizard® Mobile application. Simply plug into one of your PC's USB ports or any USB on-the-go device and start programming
- All major communication networks are supported via a variety of option boards (RS-485 Modbus RTU is built-in as standard)
- Yaskawa's award-winning 24-hour technical support department is free

**Looking to maximize profits at your automotive-adjacent business?
Contact Yaskawa today.**

SCAN HERE



For more information on the GA500 Series VFD visit: www.yaskawa.com/ga500

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