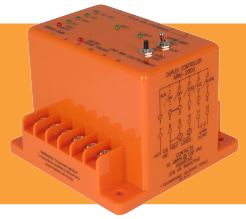


APPLICATION STUDY: EFFECTIVE PUMP PROTECTION AND SAFETY FOR HAZARDOUS ENVIRONMENTS - ATC DIVERSIFIED ELECTRONICS' ARM SERIES ALTERNATING DUPLEX CONTROLLER



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BACKGROUND:

A renowned designer and manufacturer of odorless pumping systems has been utilizing ATC Diversified's **ARM Alternating Duplex Controller** for over a decade. These systems are vital in industrial, commercial, and residential settings, demanding robust, reliable controls to handle critical operations in the water/wastewater world.

THE CHALLENGE:

Effective management of dual pump systems requires not only efficiency but also high safety standards, especially in potentially hazardous environments. The primary challenge was to ensure the longevity and equal runtime of pumps while guaranteeing safety in methane gas or other toxic conditions that are byproducts of the decomposition of organic materials that exist in the waste flows feeding the plant.

THE SOLUTION:

The ARM Alternating Duplex Controller, a microprocessor-based controller, is designed to seamlessly switch pumps on and off based on water levels detected by connected floats. This alternating action not only balances pump wear but also extends the overall lifespan of the system components.

Key Features:

- **Intrinsically Safe Inputs:** Designed for safe operation in environments with methane gas and other hazardous substances.
- **Cost-Effective:** A practical alternative to PLC systems, offering significant savings.
- **Malfunction Detection:** Equipped with a smart algorithm, the ARM detects and manages float switch issues, ensuring that even if one fails, the system continues to operate smoothly without risking motor burnout and pump damage or overflow.
- **Simplified Design:** Integrates several functions into one unit while utilizing a convenient surface mount design.

THE BENEFITS:

Enhanced Safety: The intrinsic safety features protect against risks in hazardous environments. This helps ensure that operations are safe and compliant with industry standards, avoiding potential legal and financial penalties.

Cost Savings: By balancing the runtime between two pumps, the system can operate more efficiently, which can extend the life of the pumps and reduce maintenance costs. Intrinsic safety eliminates the need for additional safety components, which might otherwise increase costs and complexity.

Malfunction Management: The ARM seamlessly manages any malfunctions by reallocating tasks to prevent dry running and overflow, which could lead to costly damages. Most models also include an alarm system that notifies you of any irregularities, allowing for timely interventions and continuous, safe operation.

Operational Reliability: The alternating function ensures each pump receives equal usage, minimizing wear and extending service life - crucial for continuous, uninterrupted operations.

THE FUTURE:

Building on this success, the potential of the ARM Alternating Duplex Controller extends beyond odorless pumping. This system is poised to revolutionize operations in any industry requiring safe and cost-effective dual pump management solutions.