

# BOOSTER PUMPS

## VARIABLE FREQUENCY DRIVE BYPASS FOR CONTINUOUS OPERATION

### The Customer

City municipalities, operators of commercial buildings, and industrial facilities that use booster pumps, such as clean water booster stations, wastewater treatment pumps, office buildings, hospitals, schools, and universities, can utilize the VFD Bypass Panel to regulate water pressure (PSI) or volume (GPM) to match variable system demand levels.

### The Challenge

Balancing supply and demand is a crucial challenge, as demand is an ongoing moving target based on customer consumption or process usage variables. Pumps that move gallons per minute (GPM) of liquids must adjust the volume delivered accordingly. Desired setpoints for volume, pressure, or temperature must be maintained within the system. When process interruptions occur, the system must re-adjust to return to the desired setpoint.

### The Solution

A VFD helps maintain desired setpoint values and provides up to 50% electrical energy savings, reduced equipment maintenance costs, and extended pump life. Efficient control of the booster pump is possible by controlling motor speed, usually via proportional, integral, derivative (PID) setpoint control. This control method automatically adjusts based on feedback from a system transducer signal, which varies depending on system pressure (PSI), gallons per minute (GPM), or other variables. In bypass mode, the system can operate at full speed if the VFD requires repair or replacement.



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### User Benefits

The Worlddrive Flex Control VFD Bypass Panel provides the following benefits in this application:

- Slim, compact design reduces installation space
- VFD keypad provides monitor, control, and diagnostic elements
- Manual selections for automatic VFD operation or full-voltage bypass
- Additional safety modes, such as Motor Overload (OL), Trip Detection
- Operation can be stand-alone
- Operation can interface to most PLC and computer-controlled system
- Integrated PID Loop Control for precise booster pump setpoint control
- 100 kA short circuit current rating (SCCR) for reliability and safety