

Elite-AG Pump Control System

Maintaining constant pressure or volume by varying the speed of the motor is a much more economical means of control than mechanical valves and flow bypasses. Utilizing the *Elite-AG* System with a common induction motor provides an extremely rugged and reliable means to achieve this objective.

The key to the *Elite-AG* System is the powerful software built right into the Variable Frequency Drive (VFD). With its internal PID (Proportional Integral Derivative), all the set-point control is self-contained. Install a pressure or flow transducer into your water system and feed this into the drive and you are ready to go.

The standard *Elite-AG* is very user friendly. Using the standard English Operator or HMI Operator, all the information and control you need is at a simple touch of the finger. The *Elite-AG* can be stand-alone or can be customized and as high tech as required.

Key Features:

- Smooth control eliminates motor inrush current, water hammer, and impeller sanding
- Energy savings -- small speed reduction = large \$ savings
- Full control of your irrigation needs
- Flux Vector Control
- Sophisticated motor protection
- Serial communications capabilities
- 100,000 hours MTBF (mean time before failure)
- Three-Phase Input Line Reactor built in for reduced harmonics
- Internal RFI filters meets all industrial directives of CE without additional filters
- Special control programming required for vertical turbine and submersible motors



Set Point Controller (internal PID software) -- The brain inside the drive tells the motor to speed up or slow down. It takes a feedback from the pressure (or flow) transducer and compares it to the desired set-point. Once set, there is no adjustment necessary to maintain a constant pressure (or flow), regardless of external changes. The *Elite-AG* system will modulate the motor speed to maintain desired pressure (or volume). Changing the set-point can be as easy as a simple turn of a knob, a press of a keypad button, or a multitude of external devices. The *Elite-AG* system has a deviation comparator alarm (for pipe breakage) -- in the event that the pressure desired cannot be maintained after a specific time period (field adjustable), the motor will stop and a fault indication will be displayed.

Lead Pump System (optional custom software) -- The Lead Pump software has been designed to provide constant pressure control and stage additional motors based on demand. The system is designed to control the speed of a lead pump and to start and stop up to three fixed speed pumps. The fixed speed pumps are switched by the drive output relays. The PID controller within the drive sets the speed reference for the lead pump. The fixed speed pumps are switched on and off on a set-point deviation and time basis with a hysteresis.

Special features include:

- A run time sharing algorithm for fixed speed motors
- Motor automatic bypass on faulty motor
- Low pressure alarm
- Cavitation protection algorithm for the lead pump
- Soft stop algorithm eliminates water hammer during stopping



