

VFDs for the Farm

- Converting Single Phase to Three Phase
- Energy Savings by Controlling Speed
- Reducing Peak Demand
- Regulating Pressure on Your Irrigation System
- Longer Mechanical Life from Your Equipment
- Control Speed Where You Need To



Grain

- Dryers
- Bin Fans
- Legs
- Bin Sweeps
- Unloaders
- Conveyors
- Bucket Elevators
- Single to Three Phase

Irrigation

- Pumps
- Pivots
- Single to Three Phase

Manure

- Manure Pumps, Handling and Separation Control



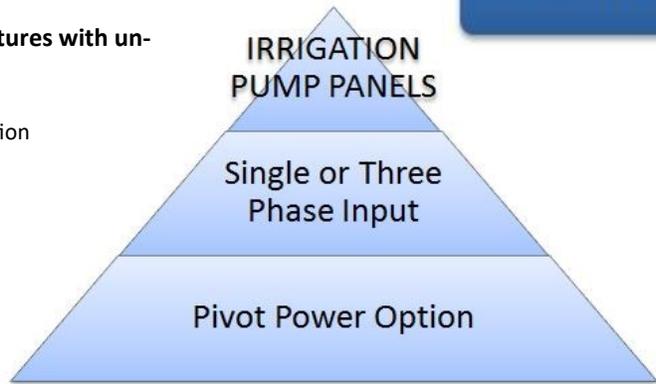
EP ELECTRO POWER



- Single to Three Phase Conversion for Pump
- Exact Pressure Regulation
- Decreased Peak Demand
- Energy Savings
- Water Conservation

Our Irrigation Panels offer the following standard features with unlimited options available.

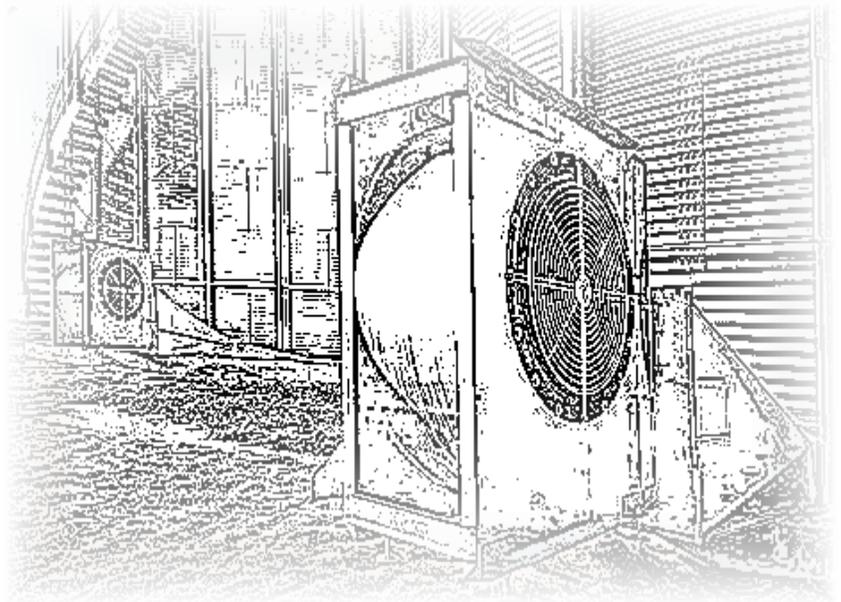
- Mitsubishi VFD for Speed Control and Energy Conservation
- NEMA 3R Outdoor Enclosure w/ Rain Hood
- Single or Three Phase Input
- Input Line and Output Load Reactors
- Circuit Breaker Disconnect w/ Door Interlock
- Easy connect terminal strip
- HOA and Potentiometer are Standard
- Control Power Transformer 110VAC (Fused Primary and Secondary)
- Service Entrance Rated
- Optional Built in Roto Phase for powering the Pivot
- Pre-Programmed and Ready to go
- Thermostatically Controlled Cooling
- 3 Year Warranty
- UL Approved
- 24/7 Tech Support. The Best in the Business



Single Phase Input Panel with Rotary Phase Converter built in for Three Phase Pump and Pivot Power

Our Grain Panels offer the following standard features with unlimited options available.

- Mitsubishi VFDs for Speed Control and Energy Conservation
- NEMA 3R Outdoor Enclosure w/ Rain Hood
- Single or Three Phase Input
- Input Line and Output Load Reactors
- Control Power Transformer 110VAC (Fused Primary and Secondary)
- Circuit Breaker Disconnect w/ Door Interlock
- Electrically Isolated Inputs
- Easy connect terminal strip
- Service Entrance Rated
- Pre-Programmed and Ready to go
- Thermostatically Controlled Cooling
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Grain

- Dryers
- Legs
- Bin Fans
- Bin Sweeps
- Unloaders
- Conveyors
- Air Transfer
- Bucket Elevators
- Single to Three Phase



CONVERTING SINGLE PHASE TO THREE PHASE

Can anyone's VFD convert Single to Three Phase ?

The answer to that is NO. Not all Variable Speed Drives are capable of doing it because of their particular design. Not only can this be a problem, but not all VFDs are UL Listed for Single Phase input and may not be approved by your electrical inspector.

How do you properly size a VFD for Single Phase input?

Because you are running a Three Phase motor you have three legs carrying equal power to the motor, but you have only two wires supplying the same amount of power to the VFD. So, the Input side or LINE SIDE of the VFD will be carrying more Amps. This amounts to Output Amps times 1.732 (Square Root 3). Therefore if you have 10 amps going to the three phase motor, there will be 17.32 amps on the input side of the VFD. Size your VFD for at least the motor Full Load Amps (FLA) times the Service Factor times 1.732. (10A motor x 1.15 service factor x 1.732 sqrt3 = 19.91 amp VFD minimum)

Energy Savings

By slowing down the speed of a motor on a Pump or Fan you also reduce the energy being used by the motor. Most Irrigation Pumps are supplying much more GPM than is required for the field. This excess water is being nossed down or restricted by the system for the particular system. The pump is still running at full speed and consuming full power. By adjusting the speed of the pump with a VFD, we are able to supply the proper pressure and reduce electrical consumption. A Speed decrease of only 10% results in a net savings of nearly 30%. Paying 30% less for your electricity adds up.

Utility Peak Demand Charge

On your utility bill you'll probably see what they refer to as a demand charge. A demand charge is a charge above what you actually use and accessed based on what the utility has to be able to provide you. This demand charge usually stems from the starting of motors across the line. A typical motor may require 10 amps to run, but it may take 70 amps to start the motor. This 60 amps is where the demand charge comes from. A motor started with a regular Motor Starter draws 6 to 7 times what it takes to run the same motor. A Soft-Start take a minimum of 3 to 4 times the Full Load Amps to start the motor. A VFD on the other hand can start a motor at just over the running amps of the same motor. Around 120% or 1.2 times FLA.

Mechanical Benefits

By controlling the speed of the Start and Stop and continuously monitoring the load, the mechanical components from the motor all the way through the entire system come under far less stress. Less stress means longer life and less maintenance.

ELECTRO POWER on the FARM

As a company we specialize in Phase Conversion, Speed and Pressure Regulation for the farm. We have been doing this for over 30 years and have the experience to know what it is you need and how it works. Whether it's Pumps and Pivots for Irrigation, Fans for Grain Bins and Dryers, Air Transfer and Conveying systems.

- 25+ years Design and Build experience
- 25+ Years Field Experience on the Farm
- 24/7 Tech Support by people that know what they are doing
- Full in house engineering team
- Customize to any specification
- Specializing in Variable Speed Drives for the Agricultural

