



## NEW! VFDs from Delhi

Also called AFDs, VSDs, AC Drives and Inverter Drives

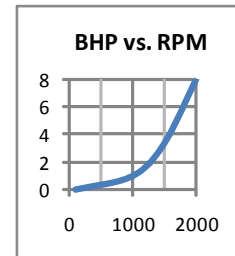


Delta B Series

For those of you who offer **HVAC solutions** to your customers, VFDs can be a marvelous addition. Fans and VFDs make a spectacular marriage, one based on a cubic relationship.

When you turn that knob, even a little, to slow the fan down, the **energy use plummets!** A turn-down of just 20% in rpm (or cfm) cuts power usage by 50%. Its the fan laws working in your favor.

While cfm falls in direct proportion to rpm, when it comes to power its another story. The relationship is cubic.



Small changes up or down in fan speed result in dramatic changes in the power required by the motor.

## Hey, I thought these were complex, difficult devices!

Times have changed since VFD prices came down and their use spread. You or your customers are probably quite experienced with them and can easily set the few parameters needed for simple blower speed control. They are essentially the same from brand to brand.

That said, of course they can be wired to feedback controls - like building pressure or kitchen hood temperature - and programmed

to respond as desired.

### Is it hard to make a proper selection?

Just ask:

1. NEMA 1 enclosure or a chassis/panel mount?
2. Input Voltage? (Can be 1 or 3 PH)
3. Output Voltage? (Always 3 PH)
4. Motor HP?

You will find it is easy to match up this information with our price list offerings.

### “And would you like a VFD with that?”

Just Listen to your customer. Here are your cues:

- “I need an inverter duty motor”.  
Obviously there will be a VFD connected.
- “I need a Two-Speed Motor”,  
2-speed motors are expensive, large, and don't offer a range of speeds.
- “And then when...”,  
Multiple operating points such as to compensate for loaded filters or, in a restaurant, low exhaust hood temperatures.

We think you will often get a positive response, it will be a purchase of convenience for your customer.

## About Delta Electronics

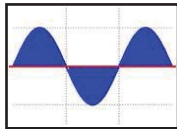
Every year our supplier, Delta, receives awards for outstanding quality and reliability, the number one factor for Delta's success since the beginning. They have earned recognition from Dell, HP, IBM, Intel, Microsoft, NEC, GE, Sony, and many others.

They are the world's largest provider of switching power supplies and DC brushless fans.

Manufacturing, sales and support offices are located worldwide .

Delta's mission is, “To provide innovative, clean and efficient energy solutions for a better tomorrow.”

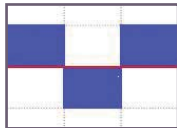
## How they do it (and why they call them inverters.)



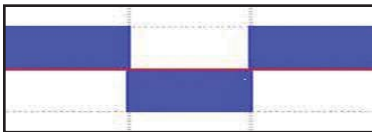
They take the incoming power, either single or three phase. (We will just show one phase, but commonly there are three.)



Then they convert to pure Direct Current. Boring! But DC is good stuff to transistor based devices like VFDs, PCs and so on. They can proceed to manipulate the wave form.



The VFD creates a *faux* sine wave by moving part of the wave form from above, to below the zero axis, thus "*inverting*" that portion. Actually, the blocks are made up of vertical spikes of varying duration, making it seem more like a sine wave to the motor.



Here the VFD has manipulated the wave form to have longer cycles, 30 cycles per second (30hz). The motor runs half speed and consumes only 12.5% of the power of normal speed.

## Other (non-VFD) Speed Controllers



Chassis Mount Model

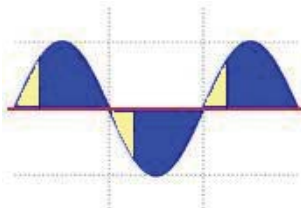
Enclosed Model

### From Dart, the manufacturer:

"A dependable, economical and compact variable AC voltage supply manufactured especially for fans, blowers, and similar products. All models feature single-phase AC input and fully variable AC output.

The enclosed version comes with a rugged housing, power on/off switch, power on indicator lamp, front access fuse, as well as convenient input and output cords and plugs.

The heart of the control is a triac fired in a manner to adjust phase and thereby vary speed. The 55 Series is designed to work with shaded pole, permanent split capacitor, universal motors or any resistive load. It is not designed for capacitor start motors."



### What are they really?

Basically they work like a big dimmer switch in that they limit some of the sinusoidal output in accordance with knob position. They are an inexpensive method to control the average voltage from an AC source. Designed for single phase input and output, 120 or 240 Volt.

The smallest of 4 available enclosed models in this "Series 55" costs about \$130 and handles up to 1 hp. The largest (240V) can serve about a 2-1/2HP load.

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