

What's the difference?



Soft Starter

Adjustable Frequency Drive (AFD)



What is the major difference between the two products?

- Soft Starters are used to limit the large initial inrush of current associated with motor start up and provide a gentle ramp up to full speed. Soft starters are only used during startup (and stop if equipped). The gradual start to the motor is produced by ramping up the initial voltage to the motor.

- Adjustable Frequency Drives are used to control the speed of a motor by changing the frequency of the power. An AFD can control the speed at any point during the operation of the motor.

Applications

- Applications requiring speed and torque control ONLY during start up (and stop if equipped with soft stop)
- Applications where reducing large start up inrush currents associated with large motor is required
- Applications where the mechanical system requires a gentle start to relieve torque spikes and tension associated with normal start up (conveyors, belt driven systems, gears, etc.)
- Pump applications (to eliminate pressure surges caused in piping systems when fluid changes direction rapidly; water hammer)

- Can perform the same function as a soft starter, PLUS:
- Applications requiring complete speed control
- Applications where speed must be maintained regardless of changes in the load being driven
- Energy Savings (Reducing speed of centrifugal fans, pumps, and blowers can significantly reduce energy consumption)
- Custom Control (Drives have some microprocessor capability (PLC capability) with inputs and outputs)

Eaton's Product Offering

- Torque Limiter, S701 (15HP, 460V)
- DS6 (150HP, 460V)
- S801 (800HP, 460V)
- S811 (same as S801 but adds communications and monitoring)

- NFX (2HP, 240V)
- MVX, MMAX (10HP, 460V)
- SVX (200HP, 460V)
- SPX (1900HP, 460V)

Other Names?

- Reduced Voltage Motor Starter

- Variable Frequency Drive (VFD)
- Frequency Inverter
- Drive

Size and Costs Comparison

- Soft Starters are much smaller and less expensive than AFDs at larger horsepower applications

- Smaller Micro-Drives (<10HP) can be a less expensive option than a soft starter. Larger HP AFD's will be larger in size and more expensive than Soft Starters

The Bottom Line

Both are top-quality products ideally suited for their target applications!

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