

CONTROL THE FLOW AND YOU'LL CONTROL YOUR COSTS

WITH **ULTRA HIGH PERFORMANCE HVAC** FROM OPTIMUM ENERGY

The key to reducing your HVAC's energy consumption is all about controlling the flow. OptimumHVAC is software technology that when applied can reduce your building's HVAC electricity usage by 30% to 60%. And that's not including the maintenance and manpower savings you'll generate once it's applied.

Ultra High Performance HVAC can best be described as an all-variable flow plant with control logic that will operate a chiller plant at the best possible efficiency (kW/ton). Most components of an HVAC system are driven by motors. Typically, these motors operate the system's components at full speed at all times, even when the plant is operating at less than full capacity.

Variable Frequency Drives (VFD's) make it possible to vary the speed of electric motors in real time. But VFD's don't improve efficiency, they are just

enablers. It's the control strategy that OptimumHVAC provides that determines the proper speed for the components creating the efficiency and meeting the demand on the building. It is these processes that differentiates Optimum Energy and allows your chiller plant to operate at its best efficiency, making your chiller plant a true all-variable, ultra high performance plant. As an example, brand new all-variable plants operate between 0.75 to 0.85 kW/Ton while OptimumHVAC all-variable plants operate between 0.5 to 0.6 kW/ton.

Here's how it all works: through the addition of VFD's and Ultra High Performance HVAC software the chillers, pumps and tower fans can be varied so that as the building heating/cooling demand increases and decreases the speed of the motors driving the

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START WITHOUT STARTING OVER WITH OPTIMUM ENERGY.

equipment increases or decreases in a relational partnership. The controller contains the software that calculates the optimum speed and optimum equipment sequences required to meet the building demand. The controller sequences the equipment and calculates every 30 seconds the optimum speed at which each motor should run to meet the amount of cooling required at the best possible plant efficiency (kW/Ton).

VFD's also slow down the equipment, resulting in longer life and lower maintenance costs for the equipment being driven.

Consider this...

Air conditioning systems are designed to provide cooling on the hottest day of the year. For instance, in San Diego the highest recorded temperature was 112 F. So when a building system is running at full capacity and speed it can cool the building when it is 112 F outside. On top of that, building designers

factor in a 10% margin of error – bringing us to 123 F. In addition, let's say the building is comprised with heat from elevators, computers, lighting, tenants and the outside environment, pushing the building cooling demand much higher.

However, building's air conditioning systems only need to run at full capacity (full load) less than 4% of the year. The rest of the time the chillers and air handlers are operating at constant speed wasting valuable electricity. So with the addition of VFD's and the proper control sequences from an Ultra High Performance HVAC software system, such as OptimumHVAC, the equipment is able to match the building demands, thus saving considerable money by managing HVAC energy consumption.



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Optimum Energy Motto:

Do Good. Do Well. And Prove It.