

The Technology Consortium, Ltd.
Information Alert

How is the H.E.L.P. System a Truly Smart Controller?

- **PID/PLCs** React to Predetermined Signal Points
- **PID/PLCs** Require Restrictive Programming
- **PID/PLCs** Are Reactive, Not "Smart"
- **The H.E.L.P. System** Features True "Smart Control"
- **The H.E.L.P. System** has Proven Energy Savings of 30% and more in Actual Customer Installations!

Inside this issue:

PID/PLC Operation and Limitations	1
The H.E.L.P. System is TRUE Smart Control	2
Summary and Savings Comparison	2

THE H.E.L.P. SYSTEM IS THE ONLY SMART MOTOR CONTROL SYSTEM AVAILABLE...

H.E.L.P. SYSTEM
(HIGH EFFICIENCY LOCAL PROCESSOR)



Volume 2, Issue 7

February 29, 2011

Currently available "Smart" VFD's rely on some version of a PID (proportional-integral-derivative) or PLC controller, the H.E.L.P. (High Efficiency Local Processor) System does not!

The H.E.L.P. System versus PID/PLC Controllers:

PID/PLCs are Reactive, NOT "Smart"...

While PID/PLCs are used in many applications, they do not provide optimal control and can perform poorly in some (Motor control) applications. The problem with PID/PLC control systems is that constant values are used to determine control output over varying operational conditions. PID controllers operate by responding to a change in the program set-point and often deviate from the desired target setting while "Hunting" or "Overshooting" targets. In addition, PID systems also have difficulties in non-linear applications where they trade process regulation accuracy for response time. **Overall performance of a PID/PLC controlled process is always reactive and dependent on "Set & constant" parameters.**

PID/PLC Systems require programming or tuning of process parameters in the control loop. Because of this manual tuning process, PID/PLC control systems are a compromise between programming costs and control efficiency. While it is possible to program a PID/PLC process loop that accommodates most scenarios, it soon becomes economically impractical (Expensive) to define and dictate all of them as each specific implementation of a PID controller requires individual tuning. **PID/PLC control systems are based on process emulation and have no direct knowledge of the process being controlled.** Even when a PID control is implemented in a digital controller, it attempts to replicate a static analog system. This analog control was a great step forward in the days before affordable microprocessors; but is now only as "Smart" as the pre-defined constraints and limits the programmer incorporated into the controls protocol.



The H.E.L.P. System Smart Controller has no restrictive programming!

The Technology Consortium, Ltd.

H.E.L.P. System is a Truly SMART Controller

The H.E.L.P. (High Efficiency Local Processor) System is just as the name implies. This system utilizes a "Smart Controller" which is a Highly Efficient Local Processor to control the motor at optimum levels. Unlike the PID/PLC controlled VFD, the H.E.L.P. System is a true "Smart" device that adapts "On-the-fly" to varying real-world operating conditions, **there is no program that restricts motor efficiency.** This "Smart Controller" actually monitors and **Learns the process being controlled;** thereby, negating the inadequacies of the PID/PLC systems. The algorithm resident in the Smart Controller utilizes "Fuzzy Logic" and "Step-less" control to determine the optimum operational parameters for any combination of events. **Your motor is always running at the optimum level regardless of the circumstance.**



Summary:

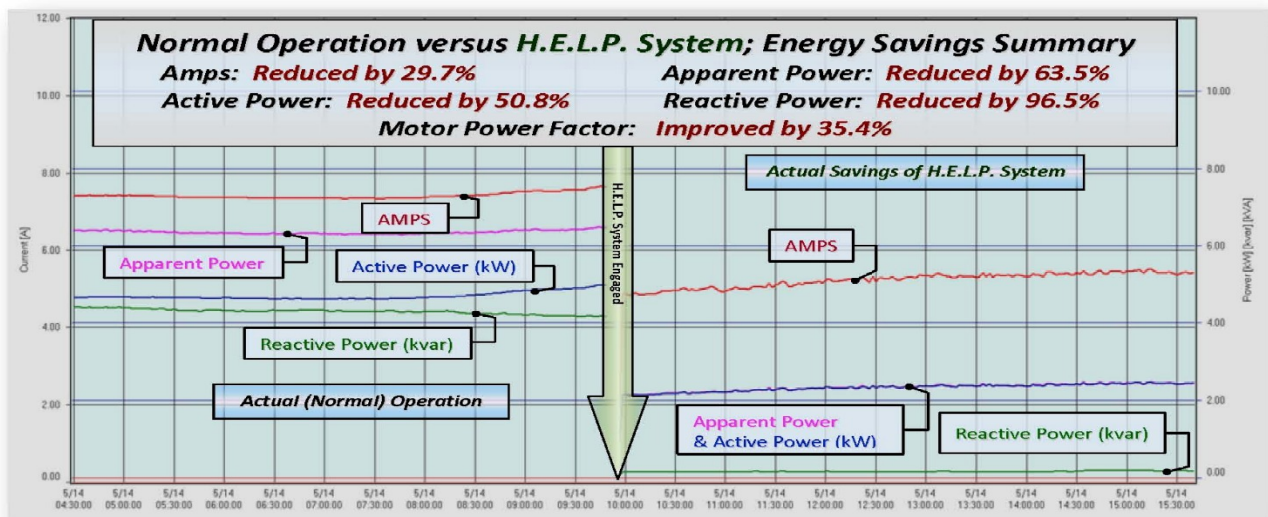
PID/PLC driven VFDs operate on Predefined and Set **Constraints**, they are not "Smart". The "Smart" moniker was a marketing tool manufacturers used when this PID control system was originally introduced about twenty years ago. This method of motor control is an inefficient way to reduce energy consumption...

The H.E.L.P. System utilizes **Real-time, Variable, Automatic, and Learned** process signals. The result is a flexible and highly efficient method of controlling and optimizing motor operation. **This is Truly SMART Technology...**

◆ No matter how "Smart" they claim their VFD technology is, they cannot attain the validated savings achieved by customers using H.E.L.P. System Technology...

H.E.L.P. System Smart Controller Savings (Continuous Test Results)...

Actual HVAC Energy Savings Test Results: The Technology Consortium, Ltd.



Normal Operation versus H.E.L.P. System; Summary of Energy Savings