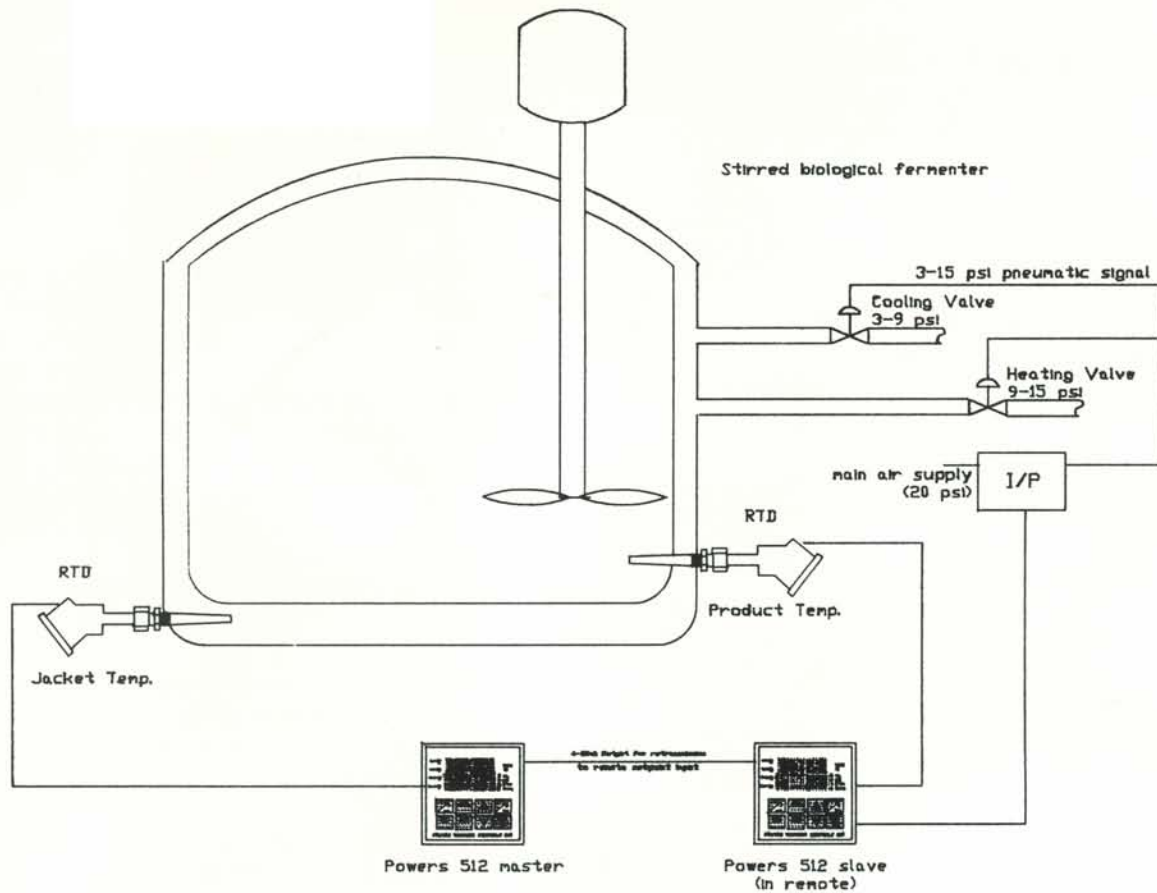


APPLICATION "SUCCESS STORY"

By: Steve Hands



Ray Makoski, from Industrial Instrumentation Services in Avenel, New Jersey, recently shared a particularly interesting "Success Story" with us, which I thought might interest you. Recently, a major pharmaceutical company had a need for a biological fermenter system to manufacture a component to be used in a newly developed injectable drug. They purchased the system from Ray's customer, an OEM who makes pharmaceutical processing equipment, who in turn used 512s to control dissolved oxygen, pH and temperature. Ray describes the temperature aspect of the system.

"The batch had to be brought up to 37°C and held to within $\pm 0.5^\circ\text{C}$ for up to 7 days. The temperature of the outer jacket of the fermenter had to be maintained within a band from 25°C to 40°C. I decided to use a cascade control system to maintain the tight control and not exceed the operating parameters. The 512s were perfect for the application (see the diagram). RTD temperature sensors were used to measure both the product temperature and the jacket temperature. The jacket temperature was used as the process variable input into the master. The output of the master was sent to a second 512 as the remote setpoint. This setpoint signal was then ratioed and biased (ratio set to .1 and bias set to 25). The control output of the second 512 (the slave) was sent to an I/P transducer which produced a variable 3-15 psi pneumatic air signal used to control a heating and cooling valve in sequence.

"We successfully used self tuning on both 512s. The process was extremely slow; one cycle in the temperature vs. time curve was approximately one and a half hours. The self tuned values for the master 512 turned out to be P=13, I=432, and d=24.

"In addition, the customer uses the manual feature of the slave 512 to sterilize the vessel by driving the output to 100% for a period of time.

"The end result was a sophisticated control system, using the most powerful features of the 512 (ratio/bias, remote set point, self tune and auto/manual), which exceeded our customer's expectations. Needless to say the customer was very impressed with the 512s."

This is truly a success story worthy of being shared. I hope you are able to put to work some of the principles Ray has utilized to take full advantage of the power of the 512 Controller for you and your customers. In appreciation of Ray sharing his story with us, we are sending Ray a crisp new \$100 bill and a "Success Story Champion" coffee mug. Thanks, Ray!

If you have an interesting or unique success story you would like to share with us, please send it to Steve Hands. All authors will receive a mug and, if yours is published, some cold cash!