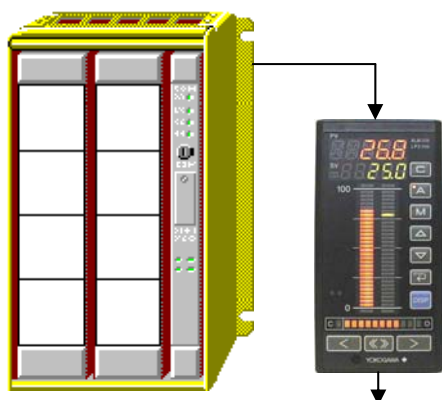


APPLICATION NOTE

Automatic Backup for PLC's

OVERVIEW

Many industrial plants have embedded the PID controls for flow, temperature, pressure, level, etc. in PLC's on the plant floor. In the event of a PLC failure, the control to these critical loops may be lost. The US1000-11 may be configured to act as an automatic backup station and operator interface if PLC service has failed.



units and shown in the upper red LED display at the top of the controller front panel. The remote set point value (SV) from the PLC is shown in the lower green LED display. A red vertical bar graph shows the PV in an analog format while the set point is shown in the right bar graph. The output can be observed numerically in the lower LED display by pressing the DISP key and in the horizontal bar graph. The US1000 tracks the set point from the PLC as well as the control output to allow bumpless transfer. The US1000-11 has a retransmit output which may be used to send the control output back to the PLC to allow a bumpless control transfer

after the PLC has returned to normal service. High and low alarm relays are available, as well as a FAIL alarm to indicate a malfunction.

SUMMARY

In critical applications such as clean room control and high purity water production, the US1000-11 Digital Loop Controller configured as an automatic backup station for a PLC or other higher level device is the solution. The pre-configured control strategy makes it easy to implement and provides a low cost insurance policy.

US1000 CONTROL STRATEGY

The US1000-11 Digital Loop Controller has a control strategy (US Mode 5) that accepts a tracking signal from a higher level device (PLC). This is the control output from the PLC and is simply passed through the controller while the PLC is operating normally. If the US1000 senses an OPEN discrete input connected from the PLC, the controller takes control automatically.

The process variable (PV) is connected to Analog Input 1. Refer to the block diagram to the right. PV is scaled for engineering

