



TEMPERATURE CONTROLLERS... PORTABLE CHILLERS... CENTRAL CHILLERS... PUMP TANK STATIONS... TOWER SYSTEMS...

SUBJECT: INTERPRETATION OF PROCESS PRESSURE GAUGES IN TEMPERATURE CONTROLLERS #1-A-002 11/07/00



1. READ AVAILABLE WATER PRESSURE AT UNIT'S LOCATION

When the Sentra is attached to process to be controlled, with power on, water supply on, pump off, both gauges will read the water supply pressure at the unit's location.

2. READ PRESSURE DROP ACROSS PROCESS (Δ P)

With pump on, the **to process gauge** will rise to read the sum of the water supply pressure and pump generated pressure. The **from process gauge** reads the effect of water supply pressure and pump suction pressure. The difference between the to and from process gauges is the pump generated circulating pressure... which is also equal to the pressure drop across the process.

3. PUMP ROTATION INDICATION

If the pump is running, and both gauges are "close" to same value, chances are that the pump is rotating backward, or the pump is generating such a high flow that an overload condition will result.

4. PUMP MOTOR OVERLOAD CONDITION

If the Δ P is low with pump rotating correctly, then the flow rate is high, which probably will result in a motor overload. Refer to the representative pump curve below.

5. WATER HAMMER (COMPETITIVE SOLENOID VALVE UNITS)

On competitive mold temperature controllers, when Δ P gauges are supplied, the water hammer effect of on/off solenoid valves can be seen. At valve open, both to and from process gauges will fall as the system depressurizes. When the valve closes, there will be a momentary spike that will be seen on both gauges, then they will settle back to normal Δ P values. This spike is water hammer.

