

THE TW-2 CONTROL

Setpoint display

The window displays setpoints entered for the fluid temperature, the high and low temperature deviation alarms, the SPI baud rate and SPI address. The setup and actual windows also shows some alarm codes and setup instructions.

Run/Stop

Press the RUN button to start normal operation. Press STOP to stop the temperature control unit.

- = Running (green)
- = Stopped (red)
- = Alarm (red, flashing)

Actual values display

The green window displays the temperature at the middle of the process. This temperature is calculated as an average of the temperatures of the supply water and return water.

The lights indicate whether the temperature is in degrees Fahrenheit or Celsius.

Status lights

The lights indicate the operating status of the listed components. Except in Test Mode and Auto Start, the lights indicate:

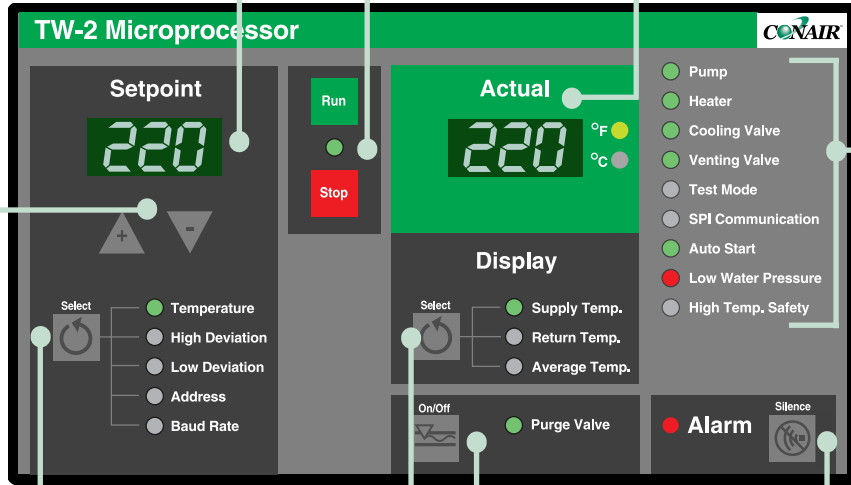
- = Off or inactive
- = On or active (green)
- = Alarm condition (red)

Test Mode is used for initial programming. When test mode is enabled, normal operation is disabled.

- = Test Mode off
- = Test Mode on (red); unit disabled

Auto Start allows you to start and stop the Thermolator from a remote switching or timing device, such as the processing machine control. This feature can only be enabled by configuring a dip switch on the control motherboard.

- = Disabled; Auto Start not available
- = Enabled; unit can start at any time (flashing green)
- = On and under control of the remote device (green)



Setpoint Select button

Press repeatedly until a green light appears next to the parameter you want to program or view.

NOTE: Default settings for the deviation setpoints are:

High = setpoint + 25° F

Low = setpoint - 25° F

A warning alarm occurs (indicator light turns red) if the actual temperature exceeds this range for more than 15 minutes. Recommended setting: ± 2° to 10° F.

Setpoint adjustment buttons

Press ▲ or ▼ to enter temperature and SPI parameters and passcodes. Press ▲ to increase a value. Press ▼ to decrease a value.

TIP: Press and hold the button for faster scrolling speed.

Alarm

Press to acknowledge the alarm light and silence the optional audible alarm. The alarm light will flash until the cause of the alarm condition is fixed.

Purge On/Off

The purge uses compressed air to clear fluid from the lines before a mold change. Press once to turn Purge on. Press again to turn it off.

Display Select button

Press repeatedly until a green light appears next to the parameter you want to program or view in the Actual values window. See the User Guide for programming information.

OPERATION

Starting the Thermolator.

- 1 Turn on water supply to the unit.**
If the water supply is 25 psi, go to Step 2.
- 2 Turn on main power to the Thermolator.**
 - ◆ Indicator lights blink green, then red.
 - ◆ Setpoint and actual windows display for three seconds, followed by the software version. The display then indicates the most recent setpoint temperature and the current actual temperature.
- 3 Enter the temperature setpoint.**
Press the Setpoint button until the green light appears next to Temperature. Press ▲ to increase the setpoint or ▼ to decrease. If a passcode is required, refer to the User Guide for instructions.
- 4 Press Run .**
 - ◆ The RUN/STOP light turns green.
 - ◆ The unit initiates a 60-second venting sequence. Cooling and venting valves are active for 60 seconds. The pump is active for the final 30 seconds.
 - ◆ Normal operation begins. The heater turns on if the actual temperature is below setpoint. The cooling valve remains active if the actual temperature is above setpoint.

If an alarm light turns on, press to silence the optional audible alarm and go to the Troubleshooting section.

Stopping the Thermolator.

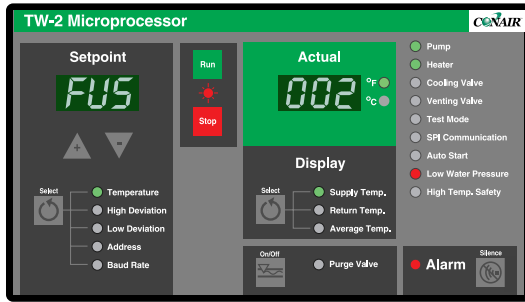
- 1 Press Stop .**
 - ◆ The RUN/STOP light turns red.

To purge mold and lines

You must have optional purge piping installed on the unit to use this feature.

- 1 Press Stop .**
 - ◆ The RUN/STOP light turns red.
- 2 Shut off the supply to the cooling water inlet.**
- 3 Press the button to begin purging.**
 - ◆ The green Purge light turns on.
 - ◆ The cooling and vent valve lights turn green.
 - ◆ Compressed air pushes water out of piping.
- 4 Press the button again to stop purging.**

TROUBLESHOOTING



If there is a problem, the Thermolator® activates the red Alarm light and changes the RUN/STOP light from green to flashing red.

1 Press to silence the optional audible alarm.

2 Check the indicator lights and messages to help determine the cause of the problem.



WARNING: Before servicing the Thermolator

Allow the unit to cool to below 100° F. Disconnect and lockout the main power source. Disconnect water and air supply lines.

Shut down alarms

The Thermolator has shut down automatically to prevent damage to equipment or personnel. To resume normal operation, press **Stop**, fix the problem, then press **Run**.

Pump

The pump overload has tripped. Contactor is open.

1. Verify that the correct voltage is supplied to the motor.
2. Process water flow may be more than the pump can handle. Check current draw against motor rating. Decrease flow as needed.

Low Water Pressure

Supply water pressure is less than 25 psi.

1. Verify that the water supply is turned on.
2. Increase supply water pressure to the inlet.

NOTE: The low water pressure alarm does not require manual reset. It will reset automatically when pressure is sufficient.

High Temp. Safety

The actual temperature of water supplied to the mold exceeds the 260° F temperature safety switch limit.

1. The unit is not running. Start the Thermolator.
2. Water has stopped flowing between supply outlet and return inlet. Check for closed valve or plugged line.
3. The heater contactor failed. Replace contactor.

Warning alarms

The Thermolator continues operating, but this problem could lead to a shutdown condition if not corrected.

Low Deviation

Actual temperature of water supplied to the mold is lower than the setpoint deviation limit allows.

1. Low deviation temperature is set too low. Increase.
2. The heater failed. Check for a bad heating element or a heater contactor that failed in the open position.
3. The cooling valve is stuck open. Clean valve as needed.
4. Perform AutoTune. See User Guide for instructions.

Hi

SAF

Actual temperature of water supplied to the mold is higher than the programmed 260° F safety limit.

1. Water has stopped flowing between supply outlet and return inlet. Check for closed valve or plugged line.
2. The heater contactor failed. Replace contactor.

Lo

SAF

Actual temperature of water supplied to the mold is below the programmed 20° F safety limit.

1. The cooling valve is stuck open. Clean valve.
2. The heater has failed. Check for a bad heating element, or a heater contactor that failed in the open position.

PHS

Err

The incoming power is out of phase. A leg may have failed or is disconnected.

1. The pump is rotating in the wrong direction. Reverse any two leads on the power connection.
2. Check fuses or circuits at the main power supply.

Pbr

Err

The return line temperature probe failed. Check for loose connections, or replace.

PbS

Err

The supply line temperature probe failed. Check for loose connections, or replace.

FUS

002

The pump fuse failed.

Replace the fuse on the motherboard.

NOTE: See the Thermolator User Guide for additional alarm messages regarding fuses and controller errors.

High Deviation

Actual temperature of water supplied to the mold is higher than the setpoint deviation limit allows.

1. High deviation temperature is set too low. Increase.
2. Water has stopped flowing between supply outlet and return inlet. Check for plugged pipe or failed cooling valve.
3. The heater contactor failed. Replace the contactor.
4. The heater and lines may be too large for this application.
5. Autotune. See User Guide for instructions.

SPI Communication

The SPI communication link has failed.

1. Check SPI device, cables and cable connections.

Quick Card

Thermolator® TW-2 Model

Water Temperature
Controller

Basic

Operation

Troubleshooting



**Instant Access
Parts & Service:**
(800) 458-1960
(814) 437-6861

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