ADVANTAGE ENGINEERING SENTRA SR Series Temperature Control Units with T300 Control Instruments User Guide

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Maximum Setpoint
300°F*

This reference guide covers standard Advantage temperature control units with the T300 Series Control Instrument. This guide may be used for customized units using the T300 Series Control Instrument even when the unit may not be physically the same as the units depicted in the included photos.

Download and read the manual before starting installation.
The complete manual is available online at www.advantageengineering.com/Sentra-SRT-300.

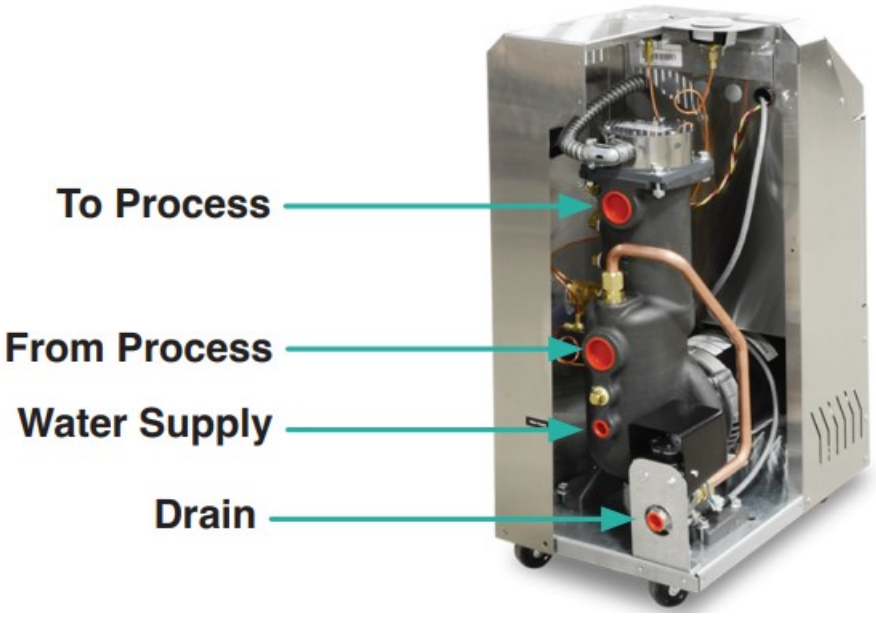
Contents

Before Installing or Operating

1. This unit is designed to be used with water as the circulating fluid. The quality of fluid used in your temperature control unit will greatly effect its short and long-term operation. Lack of as well as improper water treatment can damage the temperature control unit by causing scale build-up, excessive corrosion and/or bacterial contamination. It is the equipment owner's responsibility to prevent damage caused by poor water quality. The services of a water treatment professional is recommended.
2. Before installing and operating the unit, be aware of and follow any local laws and codes that apply to the installation.
3. When contacting the Service Department always have the unit Model and Serial number from the data tag located on the side of the unit.

Installation

1. Electrical: Be certain all electrical connections are tight in the unit. Install unit power cord (when supplied) to power disconnect switch. Applied power must be equal to the unit voltage and amps listed on the unit data tag. Follow all applicable local and national electrical codes.
2. Plumbing: Care should be taken to use materials (hose, rigid piping, valves or filters) rated for the temperature and pressure duty of your unit. Most units have a maximum operating temperature of 300°F or less and a maximum pressure of 150 PSI. The unit is most efficient when full size plumbing is run from the unit connections to and from the process. If necessary, reduce the plumbing size at your process, not at the unit.
3. Connect the unit's To Process port to the Water In port on the process manifold.
4. Connect the unit's From Process port to the Water Out port on the process manifold.
5. **Please note:** Process water piping circuitry should be designed to avoid an excessive use of elbows and/or lengths of pipe or hose. If hose is the material of choice, avoid tight twists or curls and excessive lengths.



Typical unit with ¾ – 3 HP pump and/or 10 – 16 kW heater.

6. Valves and filters may be installed in the process water piping circuitry to facilitate service and maintenance, provided that such devices maintain the full inside diameter of the process connection. If installed, all such devices must be open and clean during unit operation.
7. Connect Unit drain to plant's open drain, tower water system return or chilled water system return. The factory recommends a minimum of 20 psi pressure differential between the water supply and drain line.
   A larger differential may be required for larger cooling needs.
8. Connect Unit water supply to plant's city water or well water source or tower water supply or chilled water supply. Water supply pressure requirements vary with operating temperatures as shown in the chart below.

Operating Temperature

200°F	210°F	220°F	240°F	250°F	275°F	300°F
30 PSI	35 PSI	40 PSI	50 PSI	50 PSI	50 PSI	50 PSI

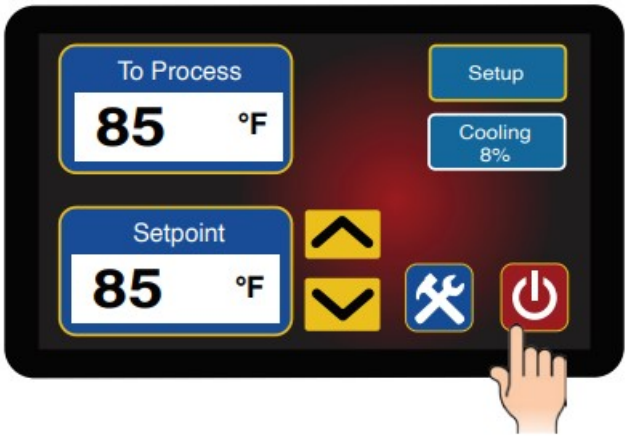
Water Supply Pressure

Start Unit

1. Fill unit with water.
2. Apply power. The Standby screen will illuminate. When Standby is displayed, the unit is not running.
3. A System Fault may prevent startup. Probe, cooling valve, water supply pressure, pump overload or high temperature limit may display once power is applied and must be corrected prior to operation.
4. This unit features a touch screen interface panel. Press gently on the screen to navigate. Do not press the screen with tools or other foreign objects when navigating.
5. Determine that the pump is rotating in a clockwise direction when viewed from the rear of the motor. Follow the instructions in Section 3.2 of the factory operations manual.
   WARNING: proper care should be employed when checking pump rotation as power is applied to the unit at this point.
6. The unit is ready to start when no errors are shown on the screen and pump rotation is correct.
7. Press the green start button. The unit will auto vent if the fluid temperature is below 100°F or as programmed in the features menu.
8. Adjust the setpoint to the desired value by pressing the Up or Down button until the value is displayed.
9. The unit will heat or cool to maintain the setpoint temperature.

Stop Unit

1. Decrease the setpoint temperature lower than 85°F and allow the unit to cool to the temperature.
2. Press the Stop Button to disengage the pump.
3. Caution. Dissipate static pressure before disconnecting hoses.
4. A pump seal cooling feature can be selected from the Features menu to automatically cool the unit once the stop button is pressed.



WARNING: When the pump seal cooling feature is activated, pressing the stop button will not turn off the unit. To completely shut down the unit, press the Stop button twice.

Controller

The Home Screen is the screen that appears once the unit has started. It offers To Process temperature, Setpoint temperature, Setup button, the Tools and Status button and various machine and alert icons.

- Icons with a gold outline are buttons. Press the button to advance to different screens.
- Icons with a white outline are indicators and only offer information.

Setup Button and Screens … Basic, Remote, Features and Machine Setup screens are displayed by pressing the blue Setup button and advancing to the Basic Setup Screen. The Remote, Features and Machine items can be pressed to advance to those screens. The Setup button can be pressed any time it is displayed to advance to the Basic Setup screen and then to the other set up screens.

Basic Setup … configures the Low Flow Alarm, High and Low temperature Deviation.

Remote Setup … configures Second Setpoint, Remote Start/Stop, Remote Setpoint and Communications.

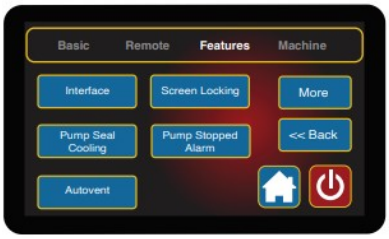
Features Setup … configures Interface, Pump Seal Cooling, Autovent, Screen Locking and Pump Stopped Alarm.

Machine Setup … configures Max Setpoint, Alarm Output, Flow, Heat Only Mode, Mold Purge Enable, Valve Size and System Information.

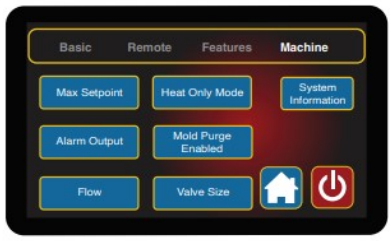
Tools and Status Button … from the Home screen use the Tools and Status icon (shown below) to advance Tools and Status screen. This screen gives the user insights into the operation and status of the unit. A Green light indicate the item is functioning normally A Red light indicates the item is in a stop or error condition.

Basic Setup Screen

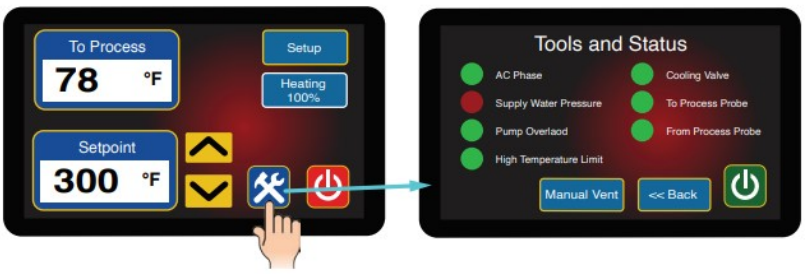
Remote Setup Screen



Features Setup Screen



Machine Setup Screen



Refer to the troubleshooting section for more information on items that have caused a stop or error condition.

Troubleshooting

Unit Will Not Start (Display Blank & Off)

1. Fuse open at main power disconnect
2. Transformer fuse open

Unit Will Not Start (Display On)

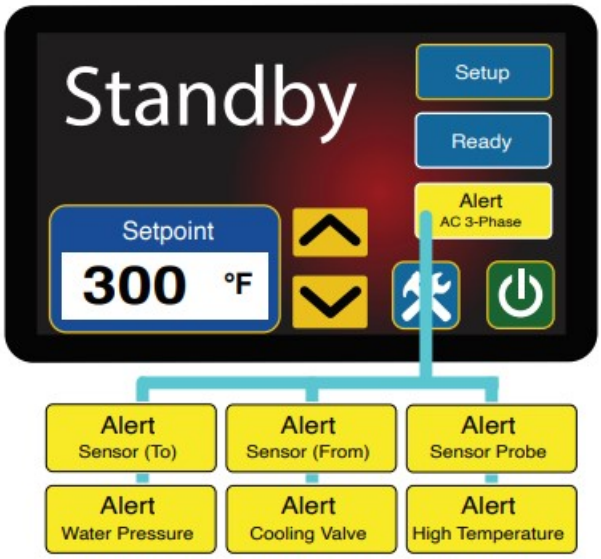
1. Error or alert indicator displayed.
2. Follow instructions on screen to troubleshoot and refer to manual or contact the service department.

Unit Overheats

1. Low water supply pressure.
2. Cooling solenoid valve defective.
3. Drain line obstructed.
4. Instrument defective.
5. Cooling requirement exceeds valve capacity.

Unit Underheats

1. Process water leakage – defective cooling solenoid valve.
2. Heater element failure.
3. Process heating requirement exceeds unit heating capability.
4. Control instrument defective.



Pressure Relief Valve Leaks

1. Water supply pressure too high.
2. Pressure relief valve contamination.

Current Factory Operations Manual

Scan this QR code to download an electronic PDF copy to a smart phone or tablet. Download the electronic PDF copy to a desktop computer for view or print: **www.advantageengineering.com/Sentra-SRT-300**.

If you have any questions regarding this Reference Guide, the Sentra SRT-300 Series Operations Manual, installation, operation or servicing of the unit, please call the Advantage Service Department.

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Form #ADV-1084 updated 03/23/2023

SRT-300

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Documents / Resources

	**ADVANTAGE ENGINEERING SENTRA SR Series Temperature Control Units with T300 Control Instruments** [pdf] User Guide SRT-2445-300, SENTRA SR Series, SENTRA SR Series Temperature Control Units with T300 Control Instruments, Temperature Control Units with T300 Control Instruments, Control Units with T300 Control Instruments, T300 Control Instruments

References

- Water Chillers | Industrial Process Cooling | Temperature Control | Cooling Towers