ADVANTAGE ENGINEERING SENTRA SR Series Temperature Control Units User Guide

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ADVANTAGE ENGINEERING SENTRA SR Series Temperature Control Units

Product Information

Sentra SR Series with V Control Instrument

The Sentra SR Series is a temperature control unit designed for industrial use. It comes with a V Control Instrument that allows users to monitor and adjust the temperature of their process water supply. The unit is customizable and can be tailored to meet specific industrial needs. The complete user manual is available online at www.advantageengineering.com/Sentra-SRV.

Maximum Setpoint

The maximum setpoint of the Sentra SR Series temperature control unit will vary depending on the specific model and configuration. Refer to the user manual for details on the maximum setpoint of your unit.

Installation

Before installing and operating the Sentra SR Series temperature control unit, it is important to be aware of and follow any local laws and codes that apply to the installation. When contacting the Service Department, always have the unit Model and Serial number from the data tag located on the side of the unit. For complete details on installation, refer to the user manual.

To Process from Process Water Supply Drain

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. Connect To Process port to the Water In port on the process manifold.
3. Connect From Process port to the Water Out port on the process manifold.
4. Process water piping circuitry should be designed to avoid 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.
5. 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.
6. 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.
7. Connect unit water supply to plant's cooling water source. This is usually chilled water, tower water, city water or well water. Water supply pressure requirements vary with operating temperatures as shown in the chart below.

Start Unit

Before starting the Sentra SR Series temperature control unit, ensure that all installation steps have been completed. For complete details on start up and operations information, refer to the user manual. To start the unit:

1. Fill unit with water.
2. Apply power. All indicating lights and digits on the display will momentarily illuminate.
3. A System Fault may prevent startup. Items that may prevent start up are probe, water supply pressure, pump overload or high-temperature limit faults. A no FLO indication is displayed. Correction of the fault must be corrected prior to operation.
4. The instrument controller features a temperature display screen, four indicating lights and toggle switch.
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.

Maximum Setpoint 250°F*

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

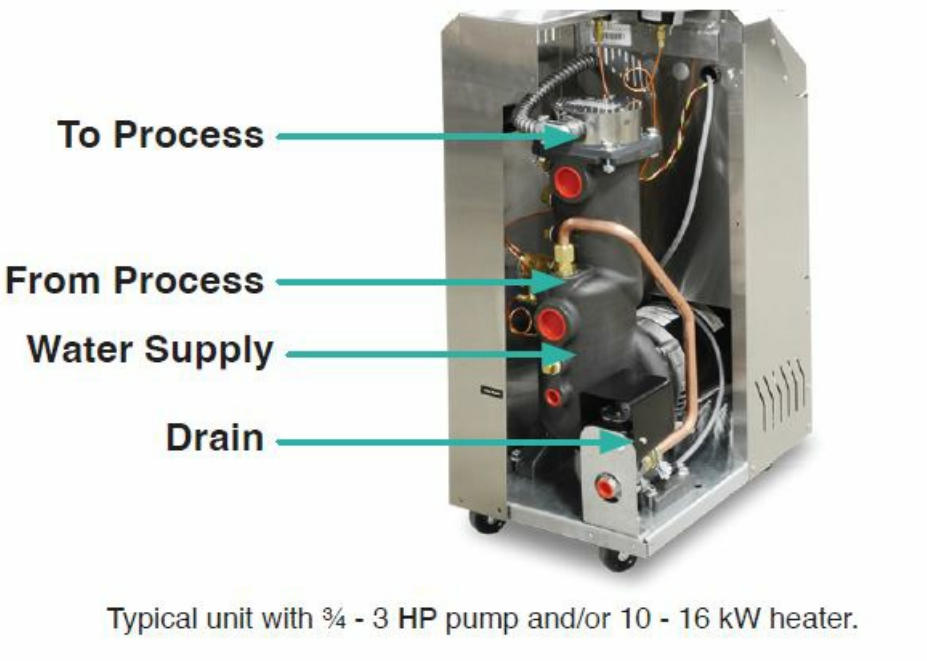
Before Installing or Operating

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.

SERVICE DEPARTMENT

- 317-887-0729
- Reference the manual for requirements for 250°F set point.

Installation



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

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 250°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 To Process port to the Water In port on the process manifold.
4. Connect From the Process port to the Water Out port on the process manifold.
5. Please note: Process water piping circuitry should be designed to avoid excessive use of elbows and/or lengths of pipe or hose. If the hose is the material of choice, avoid tight twists or curls and excessive lengths.
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 the Unit drain to the 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 cooling water source. This is usually chilled water, tower water, city water or well water. Water supply pressure requirements vary with operating temperatures as shown in the chart below.

Operating Temperature

- 180°F 190°F 200°F 210°F 220°F 230°F 250°F 20 PSI 25 PSI 30 PSI 35 PSI 40 PSI 45 PSI 50 PSI

Start Unit

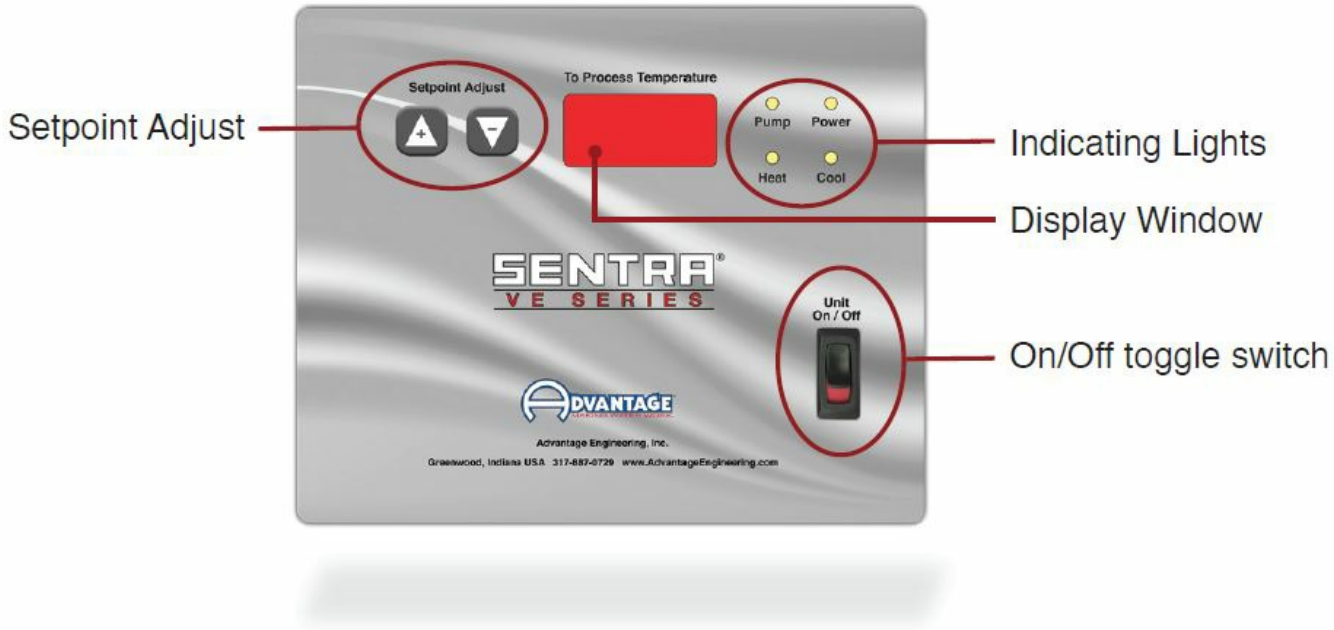
1. Fill the unit with water.
2. Apply power. All indicating lights and digits on the display will momentarily illuminate.
3. A System Fault may prevent startup. Items that may prevent start-up are the probe, water supply pressure, pump overload or high-temperature limit faults. A no FLO indication is displayed. Correction of the fault must be corrected prior to operation.
4. The instrument controller features a temperature display screen, four indicating lights, and a toggle switch.
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.
6. Switch the On/Off toggle to On to start the unit. The fluid temperature will show in the temperature display window. The unit will auto-vent if the fluid temperature is below 100°F.
7. Adjust the setpoint to the desired value by pressing the Up or Down arrow buttons until the value is displayed. The unit will heat or cool to maintain the setpoint temperature.

WARNING: proper care should be employed when checking pump rotation as power is applied to the unit at this point.

Stop Unit

1. Decrease the setpoint temperature lower than 85°F and allow the unit to cool to the temperature. Press the Stop Button to disengage the pump. Caution. Dissipate static pressure prior to disconnecting hoses.

Series Controller



Series Controller

On/Off Switch: Engages/disengages the pump, heater, and cooling valve.
Up & Down Arrows: Depress briefly to display the setpoint temperature. Depress and hold Up Arrow to increase the setpoint. Depress and hold Down Arrow to decrease the setpoint. If pressed momentarily the setpoint value will change by one degree. If held down longer the setpoint will change slowly at first and then faster. The setpoint control range is 32° to 250°F (0° – 121°C).
Power On: Illuminates when power is applied to the unit.
Pump: Illuminates when the unit's On / Off rocker switch is turned "on" and the motor pump is operating. The Pump light will not illuminate if a safety fault condition exists.
Heat: Illuminates when the heater is on to increase the process water temperature.
Cool: Illuminates when the cooling valve is open. Opening the valve will discharge process water to the drain. Opening the valve also allows cooling water flow from the water supply source to enter the circulating system and mix with the heated process water to reduce process temperature.

Troubleshooting

Unit Will Not Start (Display Blank & Off)

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

Unit Will Not Start (Display On)

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

Unit Overheats

1. Low water supply pressure.
2. PVTTM Cooling valve defective.
3. The drain line is obstructed.
4. Instrument defective.
5. Cooling requirement exceeds cooling valve capacity.

Unit Underheats

1. Process water leakage – defective PVTTM cooling valve.
2. Heater element failure.
3. Process heating requirement exceeds unit heating capability.
4. The control instrument is defective and not calling for heat.

Pressure Relief Valve Leaks

1. Water supply pressure too high. See manual.
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-SRV. If you have any questions regarding this Reference Guide, the Sentra SRV Series Operations Manual, installation, operation or servicing of the unit, please call the Advantage Service Department.

SRV
Scan me

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525 East Stop 18 Road, Greenwood, IN 46143 phone: 317-887-0729 fax: 317-881-1277 Web site: www.AdvantageEngineering.com Email: service@AdvantageEngineering.com Form #ADV-1090 updated 03/23/2023

Documents / Resources

	[ADVANTAGE ENGINEERING SENTRA SR Series Temperature Control Units](#) [pdf] User Guide SRV-3475, SENTRA SR Series, SENTRA SR Series Temperature Control Units, Temperature Control Units, Control Units

References

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