



Superheat Control

Quick Reference Guide

SD-324/72016

Controller v. J



The Sporlan Superheat Control should be installed only by a qualified professional. All other system components (valves and sensors) should be supplied by Sporlan to ensure compatibility and proper operation. There are no user-serviceable components inside the controller. Opening the case will void the warranty.



Use caution when working around high voltage components.
Safety covers should be used for personal safety on high voltage panels.

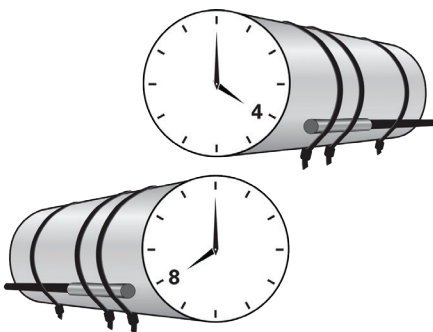
Tools required:

- Small flat screwdriver for terminals
- Cordless screwdriver
- Phillips and flat screwdrivers
- Needle-nose pliers
- Wire cutters
- Two #8 x 1/2" self-tapping screws to mount the DIN rail

1. INSTALLATION

Reference diagram on back of this guide.

1. Mount the controller in a rain-tight, protected location using the DIN rail. The suggested mounting area is 10 inches high and 5 inches wide, depth is 3 inches.
2. Mount the suction temperature sensor to the suction line after the heat exchanger following the instructions provided with the sensor. Connect the non-polarized sensor wires to terminals 31 and 32.
Maximum torque on screw terminals is 3.5 in-lbs.
3. Mount the pressure transducer on the suction line near the suction temperature sensor, positioned at 12 o'clock. Connect the wires to terminals 33, 34, and 35. Ensure that any splices are properly connected.



Temperature sensor should be mounted at either 4 or 8 o'clock, on a free-draining line.

4. Connect terminals 27 and 28 to a digital input. A short or a closed contact from an external relay will close the valve for pump down.
5. Connect the Electric Expansion Valve (EEV) wires to terminals 5, 6, 7, and 8.
6. Connect the optional case temperature sensor wires to terminals 29 and 30. The sensor is not polarized.
7. Connect power to terminals 1 and 2. Transformer requirements are 24 volts AC at 40 VA, Class II.

2. SETUP

Enter values for six system variables. The EEV is closed upon startup and the system will not operate until completing setup.

Once powered up, the controller will display the firmware versions and then the first variable to set.

1. Set **StEP**, Step Motor Stroke. Press and then turn the SELECT knob to select the correct number of steps for the EEV being used. Default is 2500. Press the SELECT knob again to save the value. The next variable displays.
2. Set **rEFr**, Refrigerant. Select the **actual** refrigerant used in the system. Default is **404A**.
3. Set **tE4P**, Temperature Sensor Type. Select 2K or 3K. Default is 2K.
4. Set **PE4P**, Pressure Sensor Type. Select Absolute or Gauge, following the steps above. Default is Gauge.
5. Set **Un_t**, Temperature Units. Select Fahrenheit or Celsius. Default is Fahrenheit.
6. Set **Un_P**, Pressure Units. Select PSI or Bar. Default is PSI.

Setup is complete. The controller will display **SuPH**. The controller is now in the Process Values Menu. Rotate the knob to view the values.

3. OPERATION

For further system tuning, adjust parameter setpoints as described below and in Bulletin 100-50-5.1.

1. Enter the Parameter Menu: Hold down the SELECT knob for 5 seconds. Rotate the knob to enter the password "###" and press the SELECT knob again.
2. To change a parameter, rotate the SELECT knob to the desired parameter and press the SELECT knob. The default parameter value will display.
3. Turn the SELECT knob to change the parameter value and then press the SELECT knob to save the value and return to the Parameter Menu.
4. After all parameters are set, rotate the SELECT knob to "ESC" and press the SELECT knob again to save all changes. Observe the system for superheat operation.

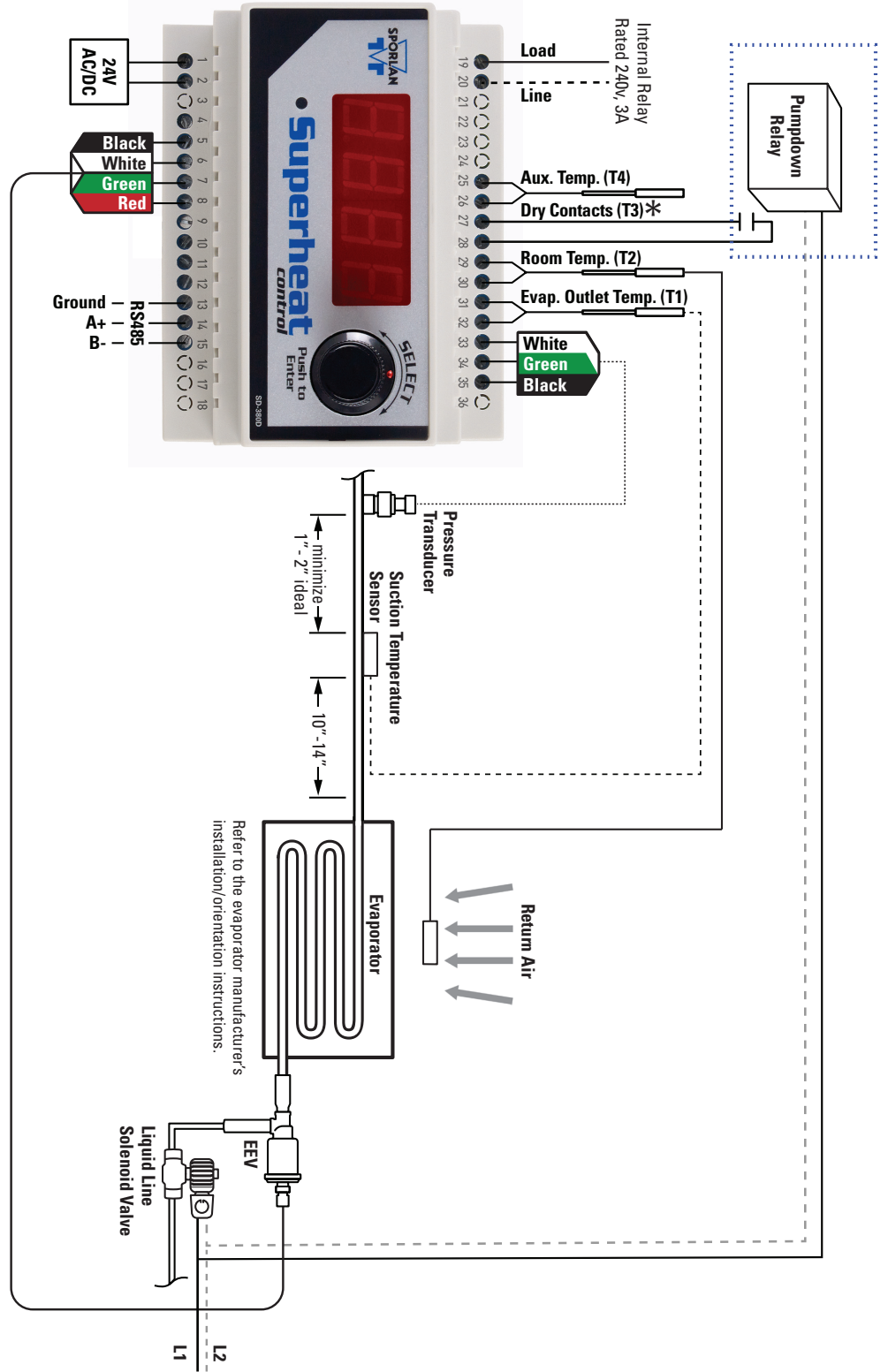
Note: The Parameter Menu times out after 60 seconds of inactivity and all changes entered will be lost.

Note: Not all refrigeration systems are designed alike. See the Kelvin II Installation and Operation Manual to adjust the settings according to the specific needs of the system.

Sporlan Superheat Control Installation and Operation Manual



For detailed instructions, scan this QR code or go to www.sporlanonline.com/electronic-controls and download Bulletin 100-50-5.1



*T3 can be used as an Auxiliary Temperature Input or a Pumpdown Input signal.
 Note: Piping and sensor insulation is not shown.

For 500 Step Sporlan Unipolar Valve

- 4 -> Gray Wire
- 5 -> Orange Wire
- 6 -> Yellow Wire
- 7 -> Red Wire
- 8 -> Black Wire



Note: Use caution when working around high voltage components.

For safety information, see the Safety Guide at www.parker.com/safety or call 1-800-CPARKER.

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