



Sporlan Subcool Control

Quick Reference Guide

SD-358/112012



The Sporlan Subcool 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. For optimal performance, a counterflow heat exchanger is recommended. There are no user-serviceable components inside the Sporlan Subcool Control. 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.**

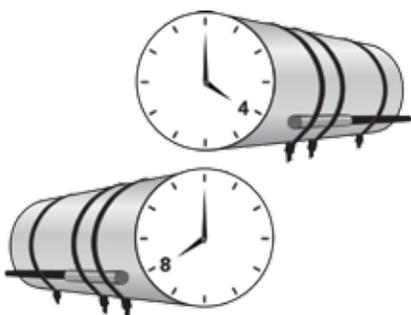
Tools required:

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

1. INSTALLATION

Reference diagram on back of page. For Subcool-O-Matic replacement see SD-358R.

1. Mount the controller in a rain-tight, protected location using the supplied DIN rail. The suggested mounting area is 10 inches high and 5 inches wide, the minimum depth is 3 inches.
2. Mount the liquid temperature sensor to the subcooled liquid outlet using the instructions provided with the sensor. Connect the non-polarized temperature sensor wires to terminals 29 and 30. **Maximum torque on screw terminals is 3.5 in/lbs.**



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

Sporlan Subcool-O-Matic Replacement Instructions



For Subcool-O-Matic replacement instructions, scan this QR code or go to www.sporlanonline.com/SD-358R.htm

3. Mount the suction temperature sensor to the suction line after the evaporator following the instructions provided with the sensor. Connect the non-polarized sensor wires to terminals 31 and 32.

NOTE: If using a 3K temperature probe (or if unsure which probe you are using) refer to Bulletin 100-50-5.2 for instructions on how to set the controller to the correct probe profile.

4. Mount the pressure transducer on the suction line near the suction temperature sensor, positioned at 12 o'clock. Connect the pressure transducer wires to terminals 33, 34, and 35. If the cable is spliced to extend its length, ensure that the new wire is properly connected.
5. Connect terminals 25 and 26 to a digital input. A short or a closed contact from an external relay will close the valve for pump down.
6. Connect the Sporlan Electric Expansion Valve (EEV) wires to terminals 5, 6, 7, and 8.
7. Connect power to terminals 1 and 2. Transformer requirements are 24 volts AC at 40 VA, Class II.
8. Remove the clear film from the front of the Subcool Control.

2. SETUP

Enter values for four 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 for the display and the controller. It will then display the first variable to set.

1. Set **StEP**, Step Motor Stroke. Press and then turn the SELECT button to select the correct number of steps for the EEV being used. Default is 2500. Press the SELECT button again to enter the value. The next variable is displayed.
2. Set **rEFR**, Refrigerant. Select the **actual** refrigerant used in the system, following the steps above. Default is **404A**.

3. Set **PLTP**, Pressure Sensor Type. Select Absolute or Gauge, following the steps above. Default is Gauge.
4. Set **PrnR**, Pressure Sensor Range. Select 150, 300, or 500 following the steps above. Default is 300.
5. Once setup is complete, the display will alternate between **LoUe** and actual Liquid Outlet Temperature. After the system is in operation, verify that the Liquid Outlet Temperature Setpoint, **LoSP**, is met. Default is 75 degrees.

3. OPERATION

For further system tuning, adjust setpoints as described in document Bulletin 100-50-5.2.

1. Enter the Parameter Menu: Press and hold the SELECT knob for 5 seconds. Enter the password "111" 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 enter the value and return to the Parameter Menu.
4. After all parameters are set, turn the SELECT knob to "ESC" and press the SELECT knob to save all changes. Observe the system for subcool operation.

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

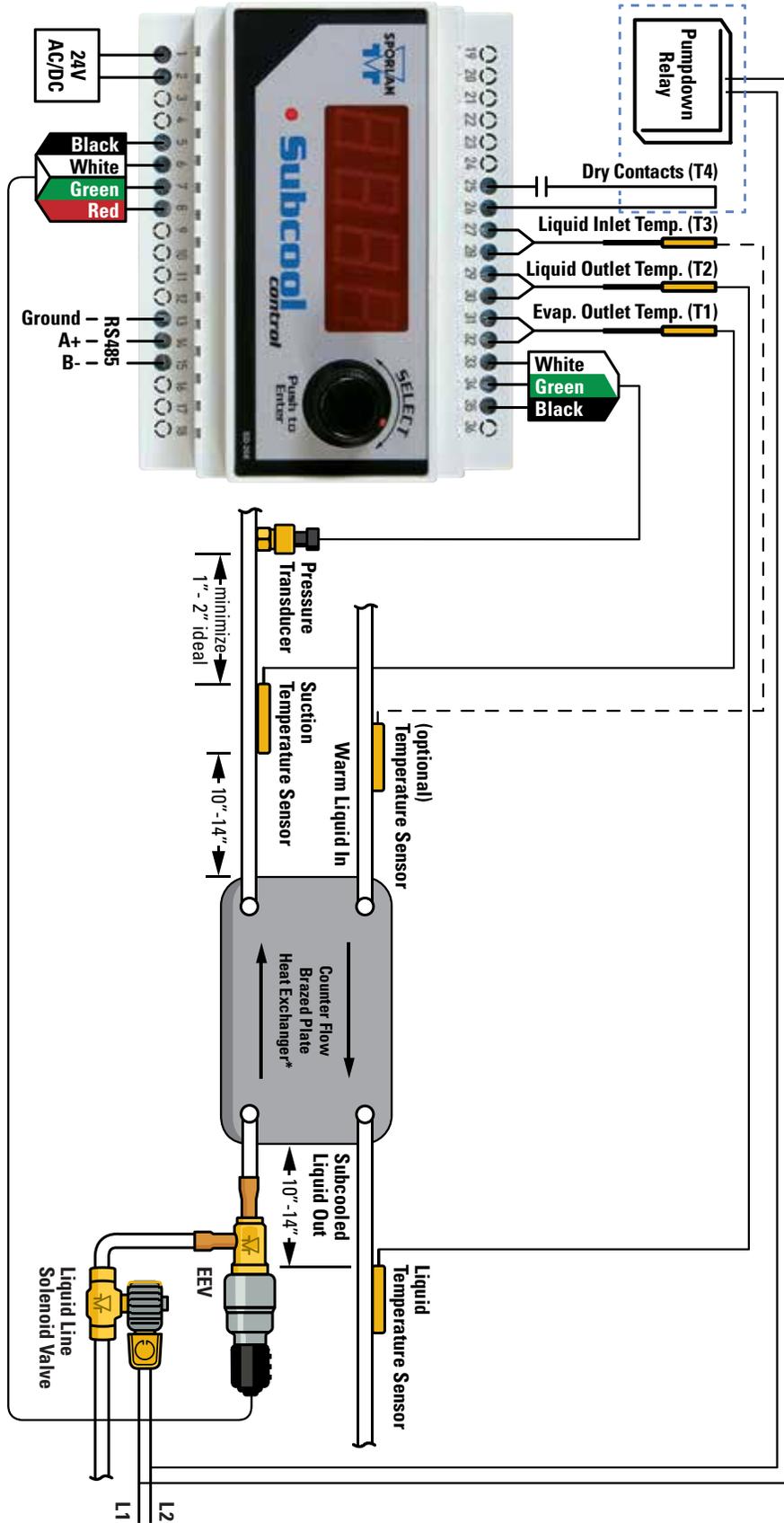
Sporlan Subcool Control Installation and Operation Manual



For detailed instructions, scan this QR code or go to www.sporlanonline.com/100-50-5.2.pdf



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* Refer to the heat exchanger manufacturer's installation/orientation instructions.

Note: Piping and sensor insulation not shown.

