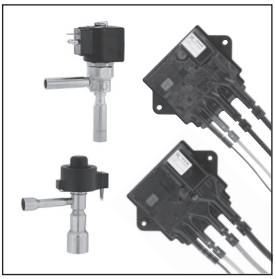
SCS-PB/SB Series
Hardware Installation Guide

SD-460 / 12021



1. COMPONENTS

Ensure all components are available:

A. SCS controller with attached:
- Coil out temperature sensor
- Pressure transducer cable
- Valve cable
- 120 VAC power cable

B. Pressure Transducer appropriate for the pressure range

C. 1A Fuse

D. Fuse Holder

E. MOV 300V

F. Electric Expansion Valve (Stepper or Pulse) compatible with the SCS

G. DIN Solenoid Coil if Pulse Width Valve and Controller are used
- OR -
External stator with M12 connection if a Unipolar EEV is used.

2. CONTROLLER INSTALLATION

Tools required:

- Mobile iOS device with Bluetooth® LE capability and either cellular or Wi-Fi connectivity
- Small flat screwdriver (for Pulse Valve connector)
- Wire cutters
- Two #10 (5 mm) mounting screws
- Magnet or magnetized screwdriver
- Scotch-Brite™ pad

1. The SCS should be mounted in a UV protected location where the mounting location will be between -22°F and 120°F (-30°C and 50°C). The controller and connections are hermetically sealed so the controller can be installed in wet environments. Take care not to mount the unit in such a way that it would block any air curtains of a refrigerated display case. Mount the unit in such a way that the Bluetooth ID on the label is visible for ease of connecting to the unit via Bluetooth. The controller MUST be mounted on a flat surface. Mounting the controller on a surface that is not flat or bends may cause damage to the controller.
2. Connect the valve. See wiring diagrams.
3. Connect the power wires. The power connection does not come with any connectors, so the connection to power must be made in compliance with local, state and federal regulations.

OV Category Application Data

SCS controls are designed for use in applications where the equipment is connected to the AC supply using a plug and socket (OV Category II applications). When applying the SCS controls in permanent wired equipment (OV Category III applications), a 1A inline fuse and MOV are required. See wiring diagrams.

- Fuse holder
- Fuse 1A Littlefuse Type 3AG Slo-Blo® or similar.
- MOV 300V Littlefuse V300LA20AP or similar. Certified UL 1449.

DOWNLOADS

Scan the QR code with your phone's camera to download.

Bulletin 100-50-11.1 SCS Series Installation and Operation Manual
Or visit sporlan.com.

Tech Check app
Or visit the AppStore.

Download on the App Store

Coming soon to Google Play.

Figure 1

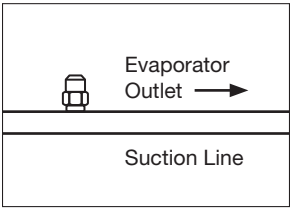


Figure 2

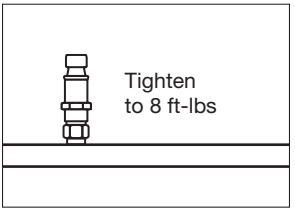
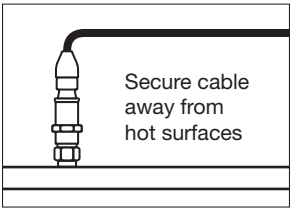


Figure 3



3. SETUP

Download the Tech Check app to your phone. This app will be used to configure the SCS controller.

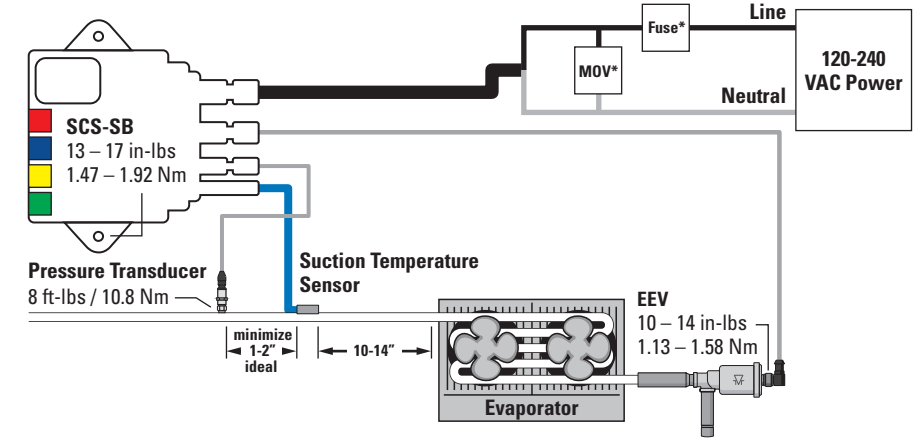
4. SENSOR INSTALLATION

Mount the Pressure Transducer

1. Locate or install a ¼" SAE access fitting on the suction line near the outlet of the evaporator. Mount it at 12 o'clock on a free-draining horizontal line to decrease the possibility of oil trapping (Figure 1). **WARNING:** Remove pressurized refrigerant from the line before installing the fitting.
2. Install the transducer, tighten it to 8 ft-lbs, and check for leaks (Figure 2). Do not use a gasket or a washer. **WARNING:** For safety, ensure that the correct Schrader core is installed in the access fitting and use caution when removing Schrader cap/installing transducer to avoid contacting escaping refrigerant.
3. Connect the pressure transducer cable to the transducer (Figure 3).
4. Route and secure transducer cable away from hot surfaces and high power A/C voltage lines.
5. Ensure pressure range and type (gauge or absolute) are configured properly in the controller, See Section 3 - SETUP.
6. After startup, use a gauge set to verify proper pressure reading through the controller. An improperly installed Schrader core can cause erroneous pressure readings.
7. Check for leaks after system is in operation.

Wiring Diagrams

SCS-SB



Refer to the evaporator manufacturer's installation/orientation instructions.

Mount the Suction Outlet Temperature Sensor

1. Per wiring diagram, the temperature sensor should be installed 10-14 inches (25-36 cm) from the heat exchanger, on a free-draining horizontal line. Minimize the distance from the pressure transducer.
2. Use Scotch-Brite™ to clean the copper line at the installation location. Removal of the oxides and dirt will increase sensor accuracy (Figure 5).
3. Fasten the suction temperature sensor as oriented in Figure 6. Mount the sensor on the suction line after the heat exchanger, near the pressure transducer.
4. Route the cable away from hot surfaces and high power A/C voltage lines.
5. Verify that the controller is configured properly for the temperature sensor used (2K, 3K, or 10K), See Section 3 - SETUP.
6. Wrap temperature sensor and copper tube with foam insulation to minimize ambient temperature effects (Figure 7).

Figure 4

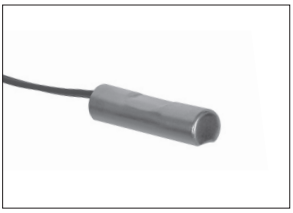


Figure 5

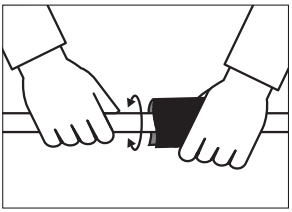


Figure 6

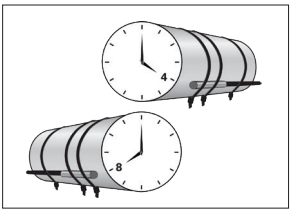
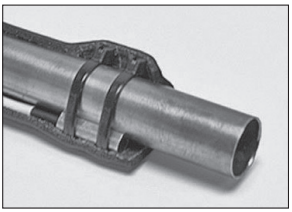
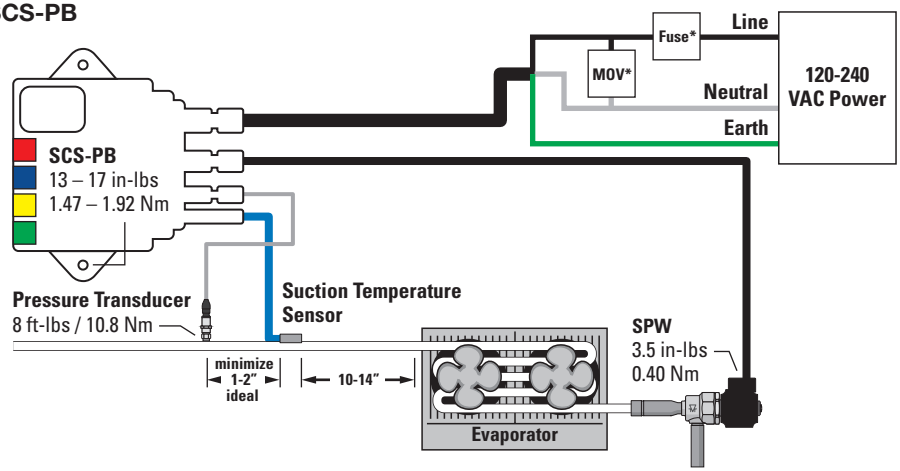


Figure 7



⚠**WARNING:** Route and secure cables away from hot surfaces, high voltage lines, and moving components. Use caution when working around high voltage components. Safety covers should be used for personal safety on high voltage panels. Ensure the wires are not placed close to any sharp or abrasive objects to avoid any nicking, scraping, or cutting of the wire insulation. Secure all wires to prevent pulling or applying tension to the wires.

SCS-PB



Refer to the evaporator manufacturer's installation/orientation instructions.

APPENDIX A: Technical Specifications

Electrical

- Supply Voltage: 100-240 VAC, 50-60 Hz
- SCS-PB Power Requirement:
  1.5W for controller
  Pulse Valve Power Rating (31W max)
  Coil must match supply voltage
- SCS-SB Power Requirement: 4W

Compliance

- FCC (US)
- IC (CA)
- CE
- UL Recognized (US and CA),
  UL File Number: E75259
- RoHS

Mechanical

- Operating Temperature:
  -22°F to 120°F (-30°C to 50°C)
- Storage Temperature:
  -40°F to 140°F (-40°C to 60°C)
- IP Rating: IPX6, IPX7
- Operating Humidity: 10% to 100% RH
- Storage Humidity: 10% to 100% RH

APPENDIX B: Ordering Information

Description	Item Number	Notes
Superheat Controls		
SCS Pulse Valve	SCS-PB	Controller only, valve not included.
SCS Stepper Valve	SCS-SB	Controller only, valve not included.
Pressure Transducers*		
PSPT0150SVSP-S	952572	0 to 150 psis transducer (all other refrigerants)
PSPT0300SVSP-S	952574	0 to 300 psis transducer (R410A)
PSPT0500SVSP-S	952576	0 to 500 psis transducer (R744)
PSPT0652SVSP-S	952579	0 to 652 psis transducer (R744)

*Select one per controller based on refrigerant.

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