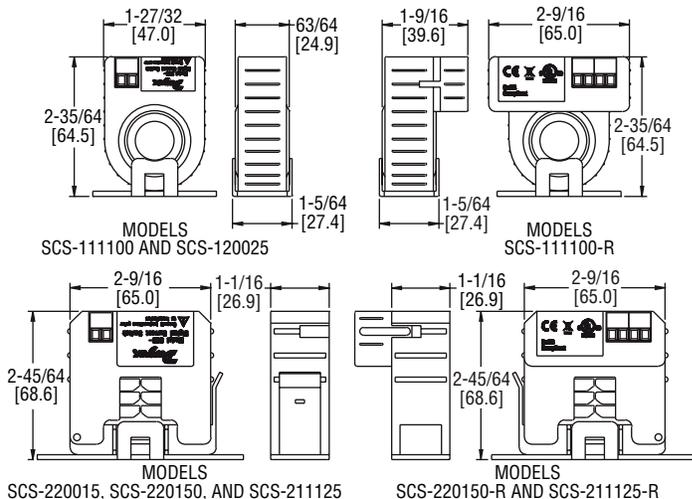




# Series SCS Current Switches

## Specifications - Installation and Operating Instructions



The Series SCS Low Cost Current Switches are ideal for monitoring whether fans, pumps, or motors are operating. The current flowing through the core of the device powers the circuit without an external power supply. All models have a built in solid state output and are easy to install. Optional LED's and 10 Amp relay modules are available. The Series SCS is available in both Split and Solid Core configurations.

### NOTICE

The Series SCS Current Switches are intended to provide an input to equipment under normal operating conditions. Where failure or malfunction of the current switch could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices such as supervisory or alarm systems or safety or limit controls intended to warn of, or protect against, failure or malfunction of the SCS.

**Caution: Risk of Shock**  
 Disconnect power supply before making electrical connections. Contact with components carrying hazardous voltage can cause electrical shock and may result in severe personal injury or death.

### INSTALLATION

#### MOUNTING

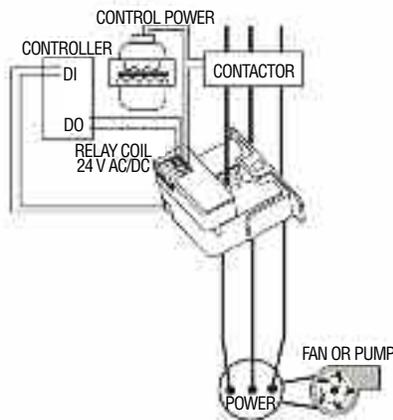
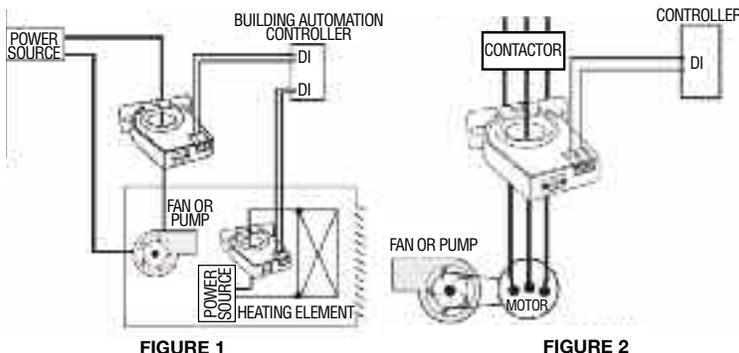
1. Detach the plastic mounting bracket from the current switch housing.
2. Using the two included screws, attach the mounting bracket to the rear of the electrical panel or enclosure.
3. Re-attach the current switch housing to the plastic mounting bracket.

#### WIRING (See figures 1 through 4 for examples of wiring)

1. Disconnect the power to the conductor cable from the power source.
- 2a. For solid core devices, slide the power conductor cable through the sensing hole of the current switch.
- 2b. For split core devices, open the core using the release tab. Snap the core closed around the power conductor cable. Make sure that the core release tab is locked in its original position.
3. Wire the Series SCS output terminals to the control box Digital Input (DI) terminal (30 V max. terminal voltage). For snap-on relay models, see figures 3 and 4 for wiring information.
4. Reconnect the power conductor cable.

### SPECIFICATIONS

- Output:** Isolated, normally open.
- External Relay:** SPST N.O., 10A at 260 VAC (5A at 30 VDC).
- Power Requirements:** None, self-powered.
- Temperature Limits:** 5 to 140°F (-15 to 60°C).
- Isolation Voltage:** 600 VAC RMS.
- Frequency:** 50/60 Hz.
- Enclosure rating:** UL, V-O flammability rated, ABS plastic housing (solid core) or Type 66 Nylon (split core).
- Agency Approval:** UL, CE.



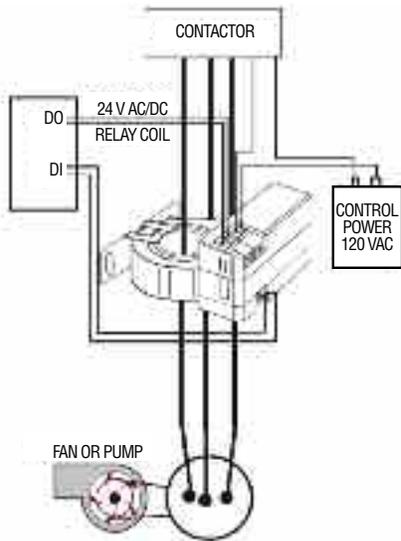


FIGURE 4

### INCREASING/DECREASING MEASURED CURRENT

If the measured current is too low to be detected or is higher than the maximum current rating of the SCS, use the following methods to increase or decrease current.

#### If measured current is too low to be detected:

Wrap the conductor (wire) through the sensing hole and around the SCS body to produce multiple turns to increase the measured current. Use the below equation to determine how many wraps are necessary:

Measured current = actual current times the number of turns. (See figure 5).

### NOTICE

Failure to derate the current capacity could result in damage to the Series SCS when using multiple turns to increase the measured current. Use the following formula to determine the new maximum current:

New maximum current = SCS current rating / number of turns  
 For example, Model SCS-211125 with 4 turns = 135 A / 4 = 33.8 A, new maximum current.

#### If measured current is above ratings of the switch:

Use a 5 A Current Transformer (CT) to reduce the current passing through the SCS as shown in figure 6. Run the current transformer secondary wire through the sensing hole. Terminate the 2 secondary wires of the 5 A current transformer to each other, and then install the 5 A current transformer on the monitored conductor.



FIGURE 5: SERIES SCS SHOWN WITH FOUR TURNS

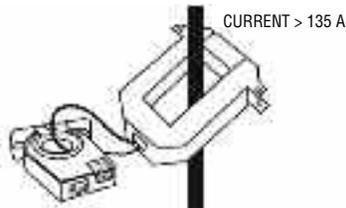


FIGURE 6: SERIES SCS WITH CT TRANSFORMER

### SET POINT CALIBRATION (For Adjustable Models Only)

Position the Series SCS such that the status output panel faces you. Confirm the monitored load (for example, a motor or heater) is running, and then use the following methods to calibrate the Series SCS.

#### Under Current Status Condition (Belt Loss, Coupling Shear, Fan, and Pump Status):

1. Turn the setpoint screw clockwise until the Status Closed Light-Emitting Diode (LED) turns off and the Status Open LED turns on.

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2. Slowly turn the setpoint screw counterclockwise until the Status Closed LED turns on and the Status Open LED turns off.

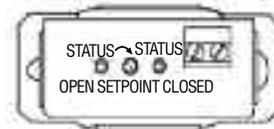


FIGURE 7



FIGURE 8

3. Turn the setpoint screw an additional 1/4 turn counterclockwise to create a deadband to prevent hunting.

The Series SCS is now calibrated to signal current flows below normal full load amperes.

#### Output Status:

- Normal: Output Closed
- Alarm: Output Open

#### Over Current Status Condition (Locked Roter, Seized Impeller):

1. Turn the set point screw counterclockwise until the Status Open LED turns off and the Status Closed LED turns on.

Note: This is the default factory setting.

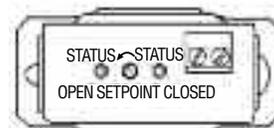


FIGURE 9

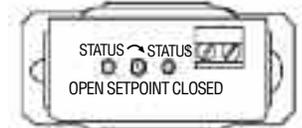


FIGURE 10

2. Slowly turn the set point screw clockwise until the Status Closed LED turns off and the Status Open LED turns on.

3. Turn the setpoint screw an additional 1/4 turn clockwise to create a deadband to prevent hunting.

The Series SCS is now calibrated to signal current flows above normal full load amperes.

#### Output status:

- Normal: Output Open
- Alarm: Output Closed

### TROUBLESHOOTING

Symptom	Action
Series SCS solid state output does not function	Verify that the maximum amperage range has not been exceeded. Voltages or currents above the rated levels may damage the Series SCS.
Set point screw keeps turning	The set point screw has a slip clutch to prevent damage at either end. To return the LED to its original setting, turn the set point screw 20 full turns counterclockwise and start the calibration procedure again.
Motor is turned on and switch does not close	Insufficient current to the load leads (for example a motor or heater) to reach the set point threshold. To turn switch on, wrap the cable multiple times through the sensing hole (see Figure 5).

### MAINTENANCE

Upon final installation of the Series SCS Current Switches, no routine maintenance is required. A periodic check of system calibration is recommended. The Series SCS is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.