



# Model SSC-2S/SSC-2H/SSC-4S/SSC-4H

## Operation and Installation Instructions

### Introduction

The Sure-Set Current Switch (SSC) Series of digital output switches are noninvasive devices designed to detect current flowing through a cable or wire. A cost effective solution for monitoring on and off status or proof of operation, these devices are ideal for monitoring the current load on motors driving fans, pumps, chillers, compressors and blowers. The Model SSC Current Switch has a universal power supply. Excitation is magnetically induced from the current carrying conductor (wire or cable) being sensed, making these devices completely self-powered.

**Warning: Risk of Electric 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.

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

### Dimensions mm(in.)

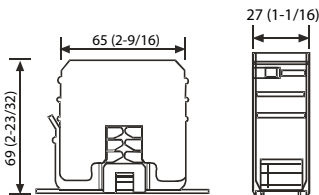


Fig. 1 Model SSC

### Setup and Adjustments

The Sure-Set Model SSC series of switches employ a unique method to set the operating set point of the device. The Sure-Set Current Switch is designed to allow the installer to select the operating setpoint prior to opening the electrical enclosure.

Since the Sure-Set does not require calibration on a powered and operating load, the safety hazards and Personal Protective Equipment (PPE) required for protection against Arc-Flash are not necessary! In fact, the installer or site engineer can pre-set all Sure-Set Current Switches used for a particular installation prior to delivering the parts to the job site. The installer selects the proper Sure-Set model for the application (230 VAC or 480 VAC) and verifies the Motor HP for the system to be monitored.

### Select Operating Range

1. Verify the motor Full Load HP for the system to be monitored.
2. Verify the motor operating voltage.
3. Verify that the proper Sure-Set model was selected to monitor the motor used in the system. (Sure-Set Current Switches are available for 230 VAC and 480 VAC motors both in standard low and high HP ranges.)
4. Set the Sure-Set operating setpoint to the motor Full Load HP by rotating the range selector switch on top of the Sure-Set to the proper motor HP (see Fig. 2). The Sure-Set operating setpoint is now set to properly monitor the motor operation. No calibration on a live load is necessary.



Fig. 2 HP Range Selector

# Installation

## Mounting

1. Shut off all power to the enclosure prior to installing.
2. Remove the Sure-Set mounting bracket from the main housing.
3. Using the two screws (included), attach the mounting bracket to the back of the electrical enclosure. (A piece of double side tape is included in the hardware kit to assist holding the mounting bracket while attaching the screws.
4. Snap the SSC into place on the mounting bracket.

## Wiring

1. Disconnect power to the conductor cable from the power source prior to proceeding.
2. Snap the split core around the power conductor cable, and close the housing until the latch snaps shut.
3. Wire SSC output terminals to the control box Digital Input (DI) terminal (30 V max. terminal voltage). *Note: the output switch contacts are solid state, and they work just like dry contacts. When the output switch is closed, less than 1 ohm is present; when the output switch is open, more than 1 ohm is present.*
4. Close the enclosure and reconnect power to the power conductor cable. (For wiring example, see Figure 3.)

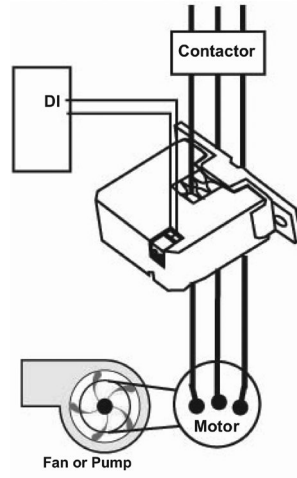


Fig. 3 Model SSC Typical Wiring

## RETURNING PRODUCTS FOR REPAIR

Please contact a Setra application engineer (800-257-3872, 978-263-1400) before returning unit for repair to review information relative to your application. Many times only minor field adjustments may be necessary. When returning a product to Setra, the material should be carefully packaged and shipped to:

Setra Systems, Inc.  
159 Swanson Road  
Boxborough, MA 01719-1304  
Attn: Repair Department

To assure prompt handling, returned unit(s) must be accompanied by Setra's Return Order Form, completely filled out, found on Setra's website at [http://www.setra.com/tra/repairs/cal\\_rep.htm](http://www.setra.com/tra/repairs/cal_rep.htm).

Note: Please enclose any required mating electrical connectors and wiring diagrams. Allow approximately 3 weeks after receipt at Setra for the repair and return of the unit. Non-warranty repairs will not be made without customer approval and a purchase order to cover repair charges.

## WARRANTY AND LIMITATION OF LIABILITY

SETRA warrants its products to be free from defects in materials and workmanship, subject to the following terms and conditions: Without charge, SETRA will repair or replace products found to be defective in materials or workmanship within the warranty period; provided that:

- a) the product has not been subjected to abuse, neglect, accident, incorrect wiring not our own, improper installation or servicing, or use in violation of instructions furnished by SETRA;
- b) the product has not been repaired or altered by anyone except SETRA or its authorized service agencies;
- c) the serial number or date code has not been removed, defaced, or otherwise changed; and
- d) examination discloses, in the judgment of SETRA, the defect in materials or workmanship developed under normal installation, use and service;
- e) SETRA is notified in advance of and the product is returned to SETRA transportation prepaid.

Unless otherwise specified in a manual or warranty card, or agreed to in writing and signed by a SETRA officer, SETRA pressure, current, humidity, and acceleration products shall be warranted for one year from date of sale. The foregoing warranty is in lieu of all warranties, express, implied or statutory, including but not limited to, any implied warranty of merchantability for a particular purpose. SETRA's liability for breach of warranty is limited to repair or replacement, or if the goods cannot be repaired or replaced, to a refund of the purchase price. SETRA's liability for all other breaches is limited to a refund of the purchase price. In no instance shall SETRA be liable for incidental or consequential damages arising from a breach of warranty, or from the use or installation of its products.

No representative or person is authorized to give any warranty other than as set out above or to assume for SETRA any other liability in connection with the sale of its products.

# Troubleshooting

Table 1: Troubleshooting

Symptom	Action
SSC solid state output does not change state when motor current is changed.	<p>Insufficient current to the load to reach the selected setpoint threshold.</p> <p>Incorrect motor HP range selected Verify that the Sure-Set range selector switch is set to the proper motor FLA.</p> <p>Incorrect Sure-Set model chosen. Check motor Full Load HP against the Sure-Set HP ranges.</p> <p>Check that the proper Sure-Set model was chosen for the motor operating voltage.</p> <p>The clamp is not fully closed. Press the Sure-Set housing to ensure the clamp latch is fully closed. Verify that the conductor is within the range of the conductor sizes that can be accommodated by the Sure-Set.</p>
Motor is turned on and switch does not close.	Verify that the range selector switch is set to the proper motor FLA.

Technical Specifications				
MODEL	SSC-2S	SSC-4S	SSC-2H	SSC-4H
Motor Hp Range	1, 2, 3, 5, 7.5, 10, 15, 20, 25	2, 3, 5, 7.5, 10, 15, 20, 25, 30	5, 7.5, 10, 15, 20, 25, 30, 40, 50	15, 20, 25, 30, 40, 50, 60, 75, 100
Continuous Operating Current	135A, 600V AC			
Switch Setpoint	Adjustable, 9 position selector switch			
Output Relay Contacts (option)	Optional. Output contacts rated 10A @ 260V AC, 5A @ 30V DC			
Output Relay Coil Voltage (option)	Optional, 12V AC/DC or 24V AC/DC			
Switch LED Indication	Yes	Yes	Yes	Yes
Relay LED Indication (option)	Yes	Yes	Yes	Yes
Trip Point Set Value	35% below FLA @ selected Hp value			
Current Switching Mode	Under Current Sensing			
Dimensions	2.7 x 2.56 x 1.08 in. (69 x 65 x 27 mm)	2.7 x 2.56 x 1.08 in. (69 x 65 x 27 mm)	2.7 x 2.56 x 1.73 in. (69 x 65 x 44 mm)	2.7 x 2.56 x 1.73 in. (69 x 65 x 44 mm)
Aperture Size	0.72 x 0.78 in. (18 x 20 mm)			
Sensor Power Source	Induced from power conductor cable			
Status Output	Switch normally open			
Switch Load Capacity	1A @ 30V AC/DC max.			
Isolation Voltage	600V AC rms.			
Temperature Range	5 to 140°F (-15 to 60°C)			
Frequency Range	50/60 Hz			
Humidity Range	0 to 95% non-condensing			
Agency Approvals/Compliance	CE Compliant, RoHS Compliant, UL/c-UL Listed: 508, IND. Cont. EQ: E317719			
Patents	Pending			

The performance specifications are nominal and conform to acceptable industry standards. For application of conditions beyond these specifications, consult your local Setra representative. Setra Systems, Inc. shall not be liable for damages from misapplication or misuse of its products.

For all CE technical questions, contact Setra Systems, USA. EU customers may contact our EU representative Hangstler GmbH, Umlandstr 49, 78554 Aldingen, Germany (Tel: +49-7424-89500).

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