

**FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE
 INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY
 AND/OR PROPERTY DAMAGE.**

DESCRIPTION

SureSwitch™ is an electronically-controlled relay that can be used to replace single and two-pole contactors commonly used in air conditioners, heat pumps and other applications. A patented switching algorithm reduces arcing between contacts, which nearly eliminates pitting and welding for a longer life. The switching mechanism is sealed to prevent intrusion from insects and other debris.

SureSwitch is similar to a 1 1/2 pole contactor, in that L1 only the compressor terminal T1(C) is switched. The compressor terminal T2(R) is connected by a shorting bar to line input L2, and is energized even when a call is not present.

SPECIFICATIONS

Installation should be done by a qualified heating and air conditioning contractor or licensed electrician.

Do not exceed the specification ratings.

All wiring must conform to local and national electrical codes and ordinances.

ELECTRICAL RATINGS

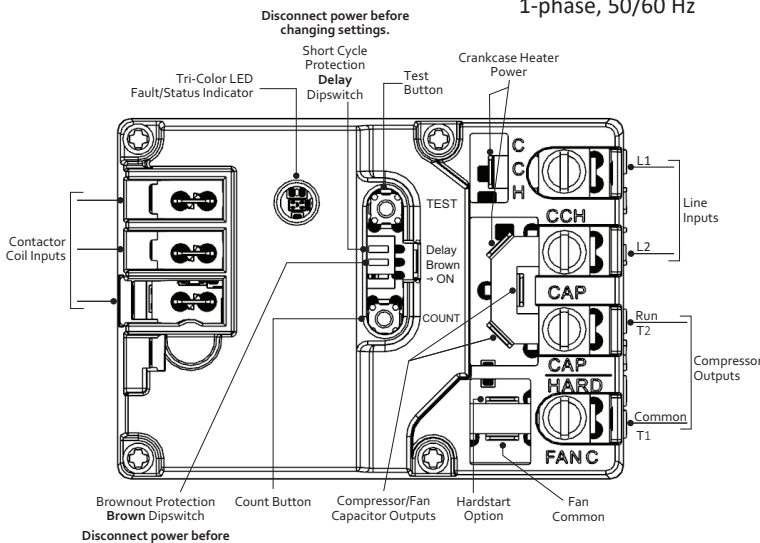
- Line Voltage Input.....120/208/240 VAC, 1-phase, 50/60 Hz
- Full Load Amperes (FLA)40 A
- Locked Rotor Amperes (LRA).....200A
- 24 VAC Control (Coil) Voltage (Y, C)...24 VAC, 50/60 Hz
- 120/240 VAC Control (Coil) Voltage (L1/L2).....120/208/240 VAC,
1-phase, 50/60 Hz

RECOMMENDED LUG TORQUE – L1, L2, T2(R) and T1(C)

- #4 – 6 AWG 45 in-lbs
- #8 AWG 40 in-lbs
- #10 – 14 AWG 35 in-lbs

Following installation or replacement, follow manufacturer's recommended installation/service instructions to ensure proper operation.

SureSwitch has no user serviceable parts. Replace as a unit.



WARNING



Failure to comply with the following warnings could result in personal injury or property damage.

FIRE HAZARD

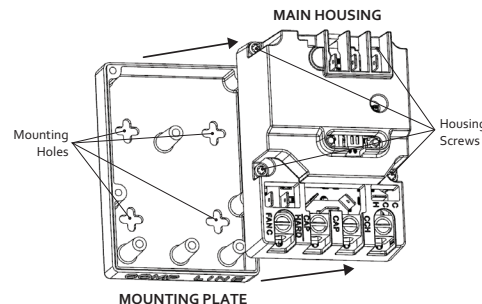
- Do not exceed the electrical ratings for voltage and current.
- Protect the control from direct contact with water (dripping, spraying, rain, etc.).
- If the control has been in direct contact with water, replace the control.
- Label all wires before disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.
- Safety route and secure wiring after installation.

SHOCK HAZARD

- Disconnect electric power before servicing or changing settings.
- Ensure proper earth grounding of appliance.
- Ensure proper connection of the L1 and L2 wires.
- Compressor output T2(R) is not switched and is energized at all times.

INSTALLATION

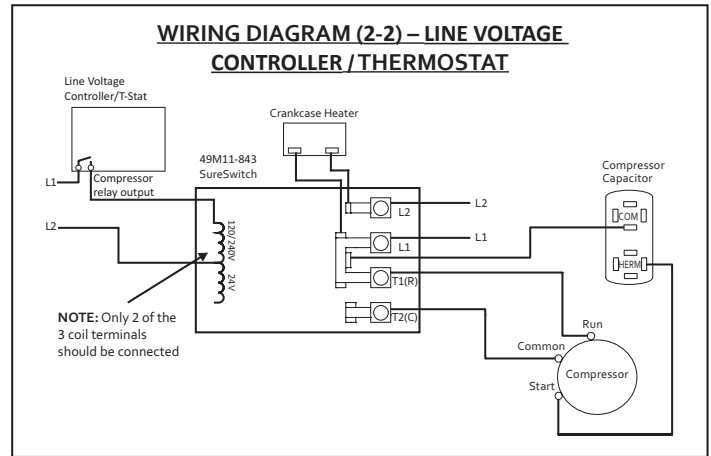
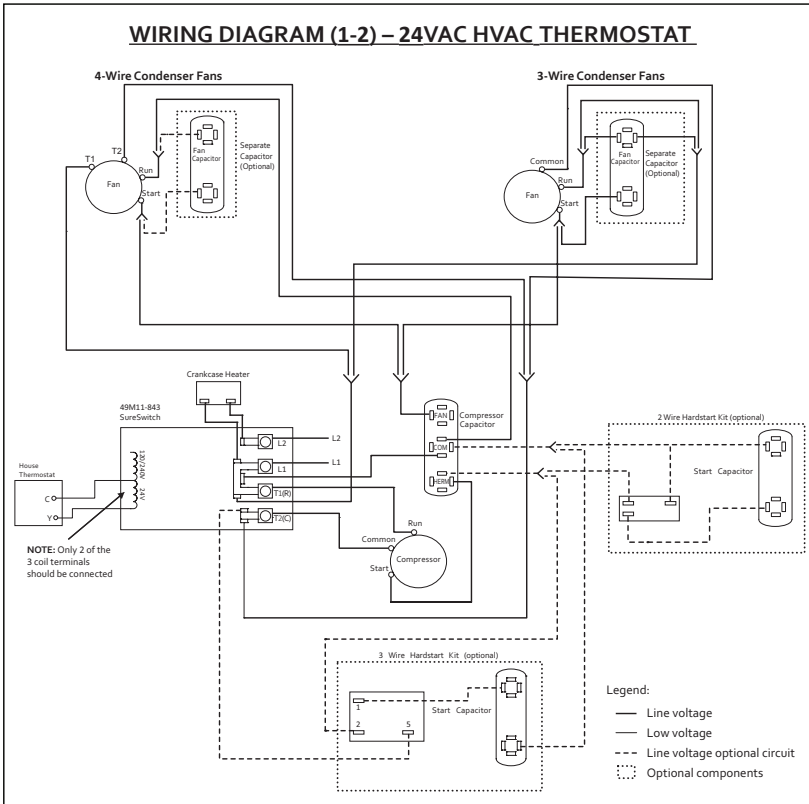
1. Disconnect power to the condensing unit or equipment at the disconnect switch and/or main electrical panel. Ensure that all sources of power are disconnected before proceeding.
2. Label wires and remove old contactor.
3. Find a suitable mounting location inside the control box. Rotate SureSwitch as necessary to allow space for wiring and other components.
4. Loosen four housing captive screws attaching the bottom mounting plate to the main housing and separate the mounting plate from the main housing.
5. The bottom of the mounting plate has four mounting holes that match the typical mounting screw locations of a single or two-pole



INSTALLATION

- contactor. Secure the bottom mounting plate to the control box using the two self-tapping screws provided.
- Replace the main housing on the mounting plate and secure by tightening all four housing captive screws. Take care to avoid over tightening.

- Connect line and control voltage wiring. Refer to the wiring diagrams provided for more information. Tighten the **L1**, **L2**, **T2(R)** and **T1(C)** lugs to the recommended torque specifications.
- Affix the provided Quick Reference Label inside the control box for future service.



CAUTION

L1/T1 is not switched. For each connected load, verify that both polarities are supplied from the contactor. If not, ensure the correct polarity is switched for proper operation.

OPERATION

TEST

SureSwitch includes a Test Mode to assist in system installation and troubleshooting. Press the "TEST" button for one second to energize the compressor and fan for five seconds without a Y call.

RANDOM START DELAY

At power-up and when SureSwitch recovers from a brownout, a random start delay of 5-90 seconds will be activated. This delay is in addition to the short cycle delay. During this delay the compressor will not be energized, even if a call for compressor operation is present. The random start delay can help reduce spikes in power consumption when multiple loads are re-energized after a blackout or brownout.

The random start delay cannot be disabled, but is only active at initial power-up and when recovering from a brownout. Normal compressor cycling will not activate the random start delay.

SHORT CYCLE PROTECTION

Disconnect power before changing this setting. At power-up, and any time the compressor is de-energized, SureSwitch will activate a three minute short cycle delay. During this delay the compressor will not be energized, even if a call for compressor operation is present, to prevent compressor damage due to rapid on and off cycling. Normal operation resumes when the delay expires.

Short cycle protection can be disabled by setting the "Delay" dipswitch to the OFF position.

LINE-VOLTAGE BROWNOUT PROTECTION

Disconnect power before changing this setting. This control has an auto-detect voltage level algorithm and will set the low line voltage limit on initial power up. This brownout limit will be saved and used on subsequent power ups. The level can be re-set using the Factory Reset process. Brownout protection can be disabled by setting the "Brown" dipswitch to the OFF position.

LIFETIME CYCLE COUNT

A count of compressor cycles since the control was installed is stored in the control's memory. To display the count, press and hold the "COUNT" button for one second. The LED will flash to indicate the total number of compressor cycles, rounded to the nearest 100 cycles:

- GREEN – One Flash per 10,000 Cycles
- RED – One Flash per 1,000 Cycles
- YELLOW – One Flash per 100 Cycles

FACTORY RESET

The control can be reset to clear cycle count and brownout voltage level by pressing both buttons for 2 seconds until the LED flashes red/yellow, then release buttons.