

Input: 1.5 to 150 Amps AC Continuous
Output: Normally Closed or Normally Open SSR, 1.5 to 150 A Setpoint

- Self-Powered
- NO or NC Solid State Switch
- Potentiometer Adjustable Setpoint
- LED Status Indicator

Applications

- Detect Lighting Status
- Detect Motor, Pump, Conveyor Jams and Overloads
- Heater Break Detection

Switch Type and Rating

Magnetically isolated solid state switch
 Not polarity sensitive, <10µA off-state leakage

CS-AC-1
 Normally Closed switch opens when setpoint is exceeded
 CS-AC-2
 Normally Open switch closes when setpoint is exceeded

Setpoint Adjustment

4 turn potentiometer

Hysteresis

Approximately 5% of setpoint

LED Indication

Normal: Red LED flashes once every 2 to 3 seconds
 Alarm: Red LED flashes 2 to 3 times per sec. when tripped

Response Time

120 milliseconds

Frequency Range

6 to 100 Hz

Overload

400 Amps for 6 seconds
 1000 Amps for 1 second

Isolation Voltage

UL listed to 1270 VAC, tested to 5000 VAC

Power Supply

None, self-powered

Sensing Aperture

0.85" x 0.85" square (21.5 mm x 21.5 mm)

Case

UL 94V-0 flammability rated

Environmental

-4 to 122 °F (-20 to 50 °C), 0-95% RH, non-condensing

Listings

UL & CUL 508 industrial control equipment, CE certified

Model	Setpoint		Switch	Solid State Switch Rating
	Min.	Max.		
CS-AC-1	1.75 A	150 A	NC	0.20 A @ 135 VAC/VDC
CS-AC-2	1.75 A	150 A	NO	0.15 A @ 240 VAC/VDC

Description

The CS-AC series current switches consist of a current transformer, signal conditioner, and limit alarm in one compact package. The CS-AC series products are self-powered, operate over a wide frequency range, and contain a universal solid-state output that will trip when a field adjustable setpoint is exceeded.

The CS-AC series are designed to withstand harsh industrial environments. They can be mounted in virtually any position and either panel mounted using the built-in mounting bracket or hung directly on the wires and secured with a wire tie. The split core case design makes installation in new or existing applications very quick and easy since the product can be snapped shut around the wire to be measured.

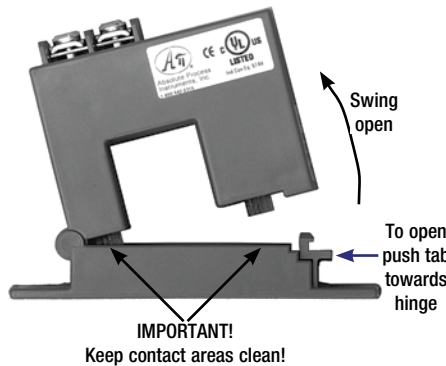
The built-in current transformer physically isolates the high current from the limit alarm circuitry making this product much safer to use than other products or methods.

Configuration and installation are simple. The switch is powered by the induction from the line being monitored. The AC current is measured by the built-in current transformer, eliminating the need for both power and input wiring. Once installed around the wire to be measured, only two wire connections are necessary for the solid state output.

Two models are available. The CS-AC-1 includes a "normally closed" solid state output and the CS-AC-2 a "normally open" solid state output. Both models include a status LED that flashes slowly if the setpoint has not been exceeded (non-alarm condition) and flashes rapidly if the setpoint has been exceeded (alarm condition).

Amps	CS-AC-1 (NC)	CS-AC-2 (NO)	LED
None or <1.75 A	Closed	Open	Off
Below trip level	Closed	Open	Slow
Above trip level	Open	Closed	Fast

Instructions



Installation

WARNING! Turn all power off before connecting or disconnecting wiring, or removing or installing switch. All wiring must be performed by a qualified electrician or instrumentation engineer. See wiring diagram or consult factory for assistance.

The switch should be protected from the environment or mounted in an enclosure. It can be mounted in any position or hung directly on wires with a wire tie. Just leave at least one inch distance between sensor and other magnetic devices.

Press the tab in the direction as shown to open the sensor. Place wire in opening, press the hinged portion firmly downward until a definite click is heard and the tab pops out fully.

KEEP SPLIT-CORE CONTACT AREAS CLEAN!

Silicone grease is factory applied on the mating surfaces to prevent rust and improve performance. Be careful not to allow



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grit or dirt onto the grease in the contact area. Operation can be impaired if the mating surfaces do not have good contact. Check visually before closing.

Output Wiring

Connect control or monitoring wires to the sensor.

Use up to 14 AWG copper wire and tighten terminals to 7 inch-pounds torque.

Be sure the output load does not exceed the switch rating.

CAUTION: Incandescent lamps can have "cold filament inrush" current of up to 10 times their rated amperage.

Setpoint Adjustment

The setpoint is adjusted with the potentiometer. The pot is shipped from the factory set fully clockwise (CW) to the lowest setpoint. Turning the pot counter-clockwise (CCW) will increase the setpoint.

The pot has a slip-clutch to prevent damage at either end of its rotation. To determine where the adjustment is, turn the pot all the way CW. This will return it to the minimum setpoint.

Adjusting setpoint to allow for voltage variations of 10 to 15%.

Checking Output Status

1. Check output status by applying voltage to the contacts and reading the voltage drop across the contacts. An ohmmeter set on "Continuity" will give misleading results.

Typical adjustment

1. Turn the pot to minimum setpoint (4 turns CW).
2. Have normal operating current running through sensor. The output should be tripped since the pot is at its minimum setpoint. The LED should be flashing 2 to 3 times per second.
3. Turn the pot CCW until the unit resets and the switch status will change. The LED will flash once every 2 to 3 seconds.
4. Now turn the pot CW slowly until the unit trips again. It is now set at the current level being monitored.

To set UNDERLOAD turn the pot about 1/8 turn further CW. To set OVERLOAD turn the pot about 1/8 turn further CCW.

Troubleshooting

Sensor is always tripped

Setpoint may be too low. Turn pot CCW to increase setpoint.

Sensor will not trip

1. Setpoint may be too high. Turn pot CW to decrease setpoint.
2. Open the sensor and clean the core contact area.
3. Current is below minimum. Loop the wire through the aperture several times until the current rises above minimum.

Sensed Amps = (Actual Amps) x (Number of Loops)
 Count loops on the inside of the aperture only.

Switch will not operate

Switch has been overloaded and contacts are burned out. Check the output load. Remember to include inrush on inductive loads (coils, motors, ballasts).

