

# SSC20 Series

## Solid State Contactors



**Solid state DC contactor with over-current shutdown protection offers many advantages over mechanical solenoid contactors**

### Technical Description

The SSC20 Series is InPower's second generation family of high current solid-state DC contactors. These single channel power switches are available in continuous current ratings of 100, 150 and 200 amps. Low on-resistance solid-state switches and high current fly back diodes provide not only outstanding surge current capability for starting high in-rush current loads but also maximum voltage spike suppression for high inductive loads.

**Applications include** high current DC loads such as master battery disconnect switching, blower motors, auxiliary air conditioner units, lights, and hydraulic motors.

**Packaging:** The solid-state contactors are sealed and packaged in an anodized aluminum case. Four corner mounting hole pads provide the required connection to ground. The control input utilizes a ¼ inch Faston blade terminal. ⅜"-16 threaded stainless steel studs with brass contact pads provide low contact resistance for connection to battery cables.

A **LED Status Indicator** displays a *steady on* when the contactor is on and operating normally, or *flashes* when the contactor has automatically turned off as a result of a detected fault such as loss of ground, over-current, under-voltage or over-temperature. A fault is automatically reset when the control input voltage is removed.

**Voltage Hysteresis** on the control input ensures high electrical noise immunity. An input control voltage greater than +8 volts will turn the contactor on and a voltage of less than +4 volts will turn the contactor off. The control input appears as 120 K-Ohm resistance to ground.

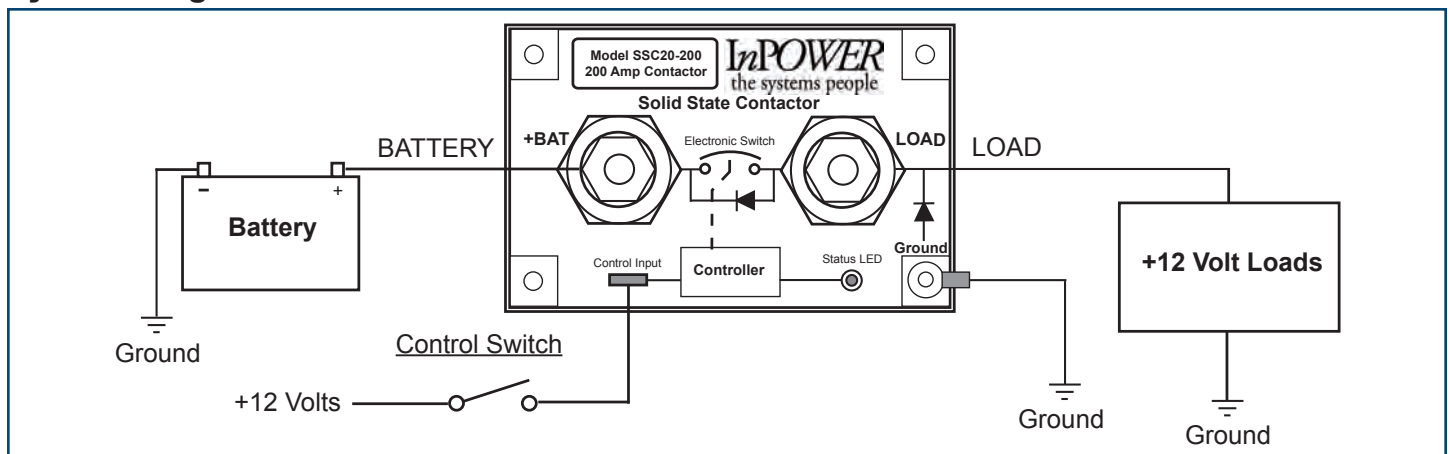
### Key Features

- Sealed Metal Case
- Compact Size and Low Profile
- Status LED Indicator
- 100 % Solid State Construction
- Automatic Over-Current, Under-Voltage and Over-Temperature Fault Shutdown Protection
- Loss of Ground Detection
- Protective Terminal Boot Option

### Ordering Guide

Model	Description
SSC20-100	Solid-state contactor, 100 Amp
SSC20-150	Solid-state contactor, 150 Amp
SSC20-200	Solid-state contactor, 200 Amp

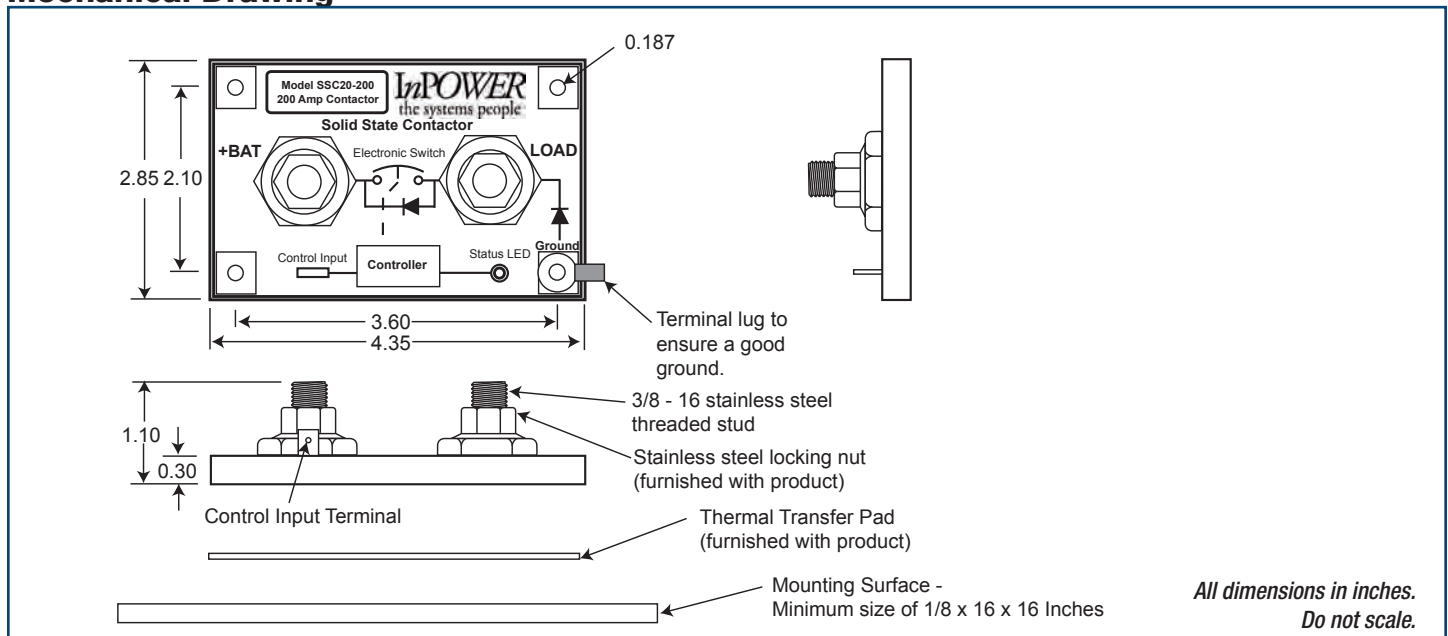
### System Diagram



### Specifications

Maximum Current Rating:	<u>SSC20-100</u>	<u>SSC20-150</u>	<u>SSC20-200</u>
Max. current rating at 110° F (43° C)*			
Type A Mounting**	100 Amps	150 Amps	200 Amps
Type B Mounting**	75 Amps	100 Amps	125 Amps
On-resistance at maximum temperature and current:	2.2 milliohms	1.1 milliohms	0.75 milliohms
* Mounting surface temperature			
** Mounting surface types:			
Type A - Mounting surface such as an aluminum plate 0.125 x 16 x 16 inch or larger.			
Type B - Mounting surface such as wood, plastic or free air.			
Operating Voltage Range:	+7.5 to +20.0 volts		
Case Maximum Temperature:	+185° F (85° C)		
Low Battery Voltage Trip:	+7.25 to +7.50 Vdc for 250 milliseconds		
Loss of Ground Trip:	250 milliseconds		
Over-Current Trip:	100% to 110% of rated amperage for 500 milliseconds		
Logic Power Current Draw			
With Status LED Off:	80 milliwatts		
With Status LED On:	150 milliwatts		
Turn-On Delay:	25 milliseconds		
Turn-Off Delay:	25 milliseconds		
Control Connector Type:	0.25 inch male Faston blade terminal		
Control Input Voltage:	>+8.0 Vdc to activate, <+4.0 Vdc to deactivate		
Control Input Resistance:	120 K Ohm to ground		
BAT+ to LOAD Terminal			
Leakage Current:	75 microamps maximum		
Weight:	0.40 lbs (0.181 kg)		
Dimensions:	2.85 (72.29 mm) x 4.35 (110.49) x 1.10 inches (27.94 mm)		
Power Terminals:	Two (2) 3/8 - 16 threaded stainless steel studs, with locking nuts.		

### Mechanical Drawing



# Ambulance Module Disconnect Switch

# SSC42-275 Series

*The ultra reliable solid state alternative to mechanical solenoid contactors.*

## Technical Description

The InPower Model SSC42-275 Series Module Power Disconnect Switch is designed for use in ambulances to disconnect battery power from module loads such as emergency lights, patient compartment lights, flood lights, loading lights, etc. The module disconnect switch includes a high current solid state contactor (power switch), a current sensor, and a micro-processor control/monitor circuit. It has an over current shutdown rating of 275 amps with a surge rating of 800 amps, and provides automatic shutdown for over current, high temperature and loss of ground conditions. Three standard models are available, listed below, though this product can be customized to meet specific requirements.

Five control inputs allow for a variety of different application configurations, including three time delayed power shut-off modes. Input A allows control of the power switch from a +12 volt switch without a timed shut-off function. Input B and Input C provide an adjustable off-delay power shut-off (module power is shut off after the timer has expired). Input B is activated from a +12 volt signal, and Input C from a ground signal. The time delay period can be set by the user via a potentiometer (screwdriver adjustment). Input D allows mode control from one, two or three momentary ground signal pulses, providing a power switch turn-on for 5, 10 or 15 minutes, respectively. Input E allows for a momentary ground input that will cancel (reset to zero) all timer shut-off modes.

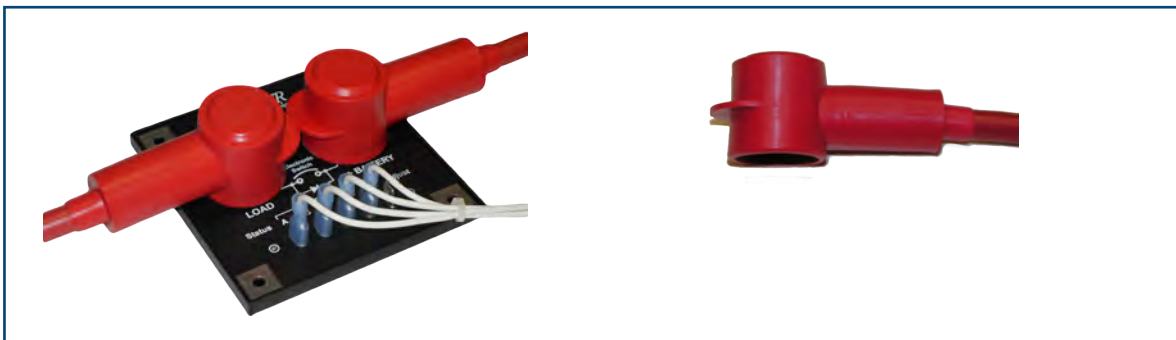
An amber LED indicator is provided to display the power switch status. It will be illuminated anytime the power switch is on, and it will flash to indicate if the power switch is on and in a timed shut-off mode (timer running). The LED will flash at a high rate to indicate a fault shut down condition.

Two 3/8 - 16 threaded studs with brass contact pads provide the DC power terminations. Optional terminal boots are available that will cover the power terminals. These terminal boots are flexible PVC (UL94-V2 rated) and offer protection from both the environment and accidental shorting. The five control inputs are 0.25 inch male Faston blade terminals, and the four mounting hole pads provide the required connection to ground. The module is sealed to protect it from the environment.

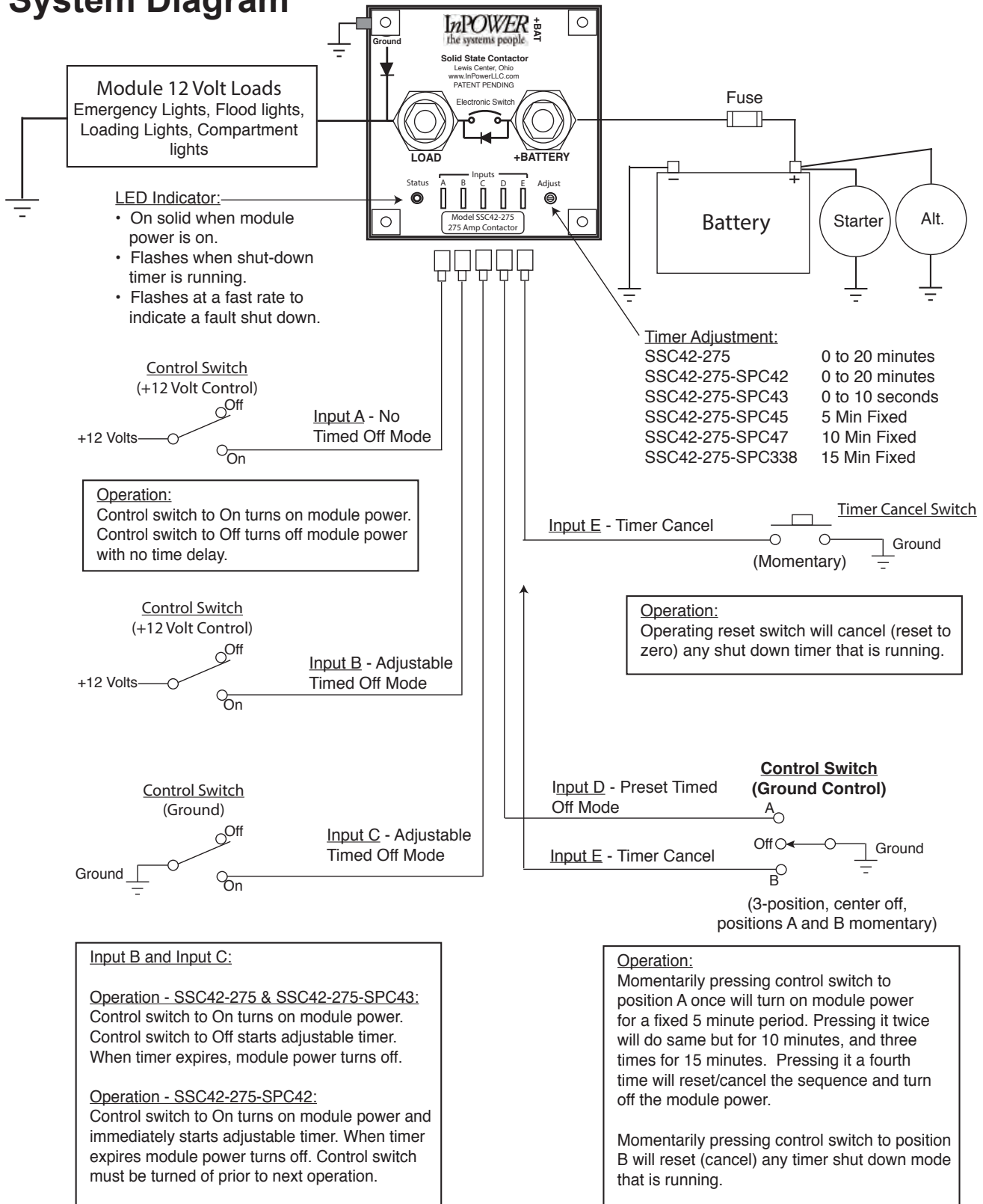
## Key Features

- 100% Solid-State Construction
- 275 Amp Capacity with Over Current Shutdown
- User-Adjustable Power Shut-Off Timer
- Multiple Internal Operating Modes
- 800 Amp Surge Capability
- Low Profile Design
- Over Temperature Shutdown
- Made in the USA right in our own facility
- Terminal Rubber Boot Option for Protection

## Terminal Rubber Boot Option



## System Diagram



## Specifications

Under voltage shut-off:	+7.5 Vdc (150 milliseconds)
Current rating:	
Current trip rating:	275 Amps (750 milliseconds)
Surge current rating:	800 Amps
On-resistance at maximum current:	660 micro ohms
Turn-on delay:	10 milliseconds
Turn-off delay:	10 milliseconds
Control Input:	
Connector type:	0.250 inch male Faston blade terminal (5 total)
Control voltage:	
Input A:	>2.6 Vdc to activate
Input B:	>2.6 Vdc to activate
Input C:	<2.1 Vdc to activate
Input D:	<2.1 Vdc to activate
Input E:	<2.1 Vdc to activate
Weight:	0.30 lbs (0.136 kg)
Dimensions:	4.15 x 4.15 x 1.50 Inches
Power terminals:	Two stainless steel 3/8 - 16 threaded studs with stainless steel locking nuts.
Mounting surface:	For optimal performance a metal mounting surface should be provided such as a 1/8 x 16 x 16 inch aluminum plate.
Terminal boot covers:	Order terminal boots to match cable size (not supplied with product). InPower Model TB28-2 for 8 to 2 gauge cable, TB28-3 for 2 to 2/0 gage cable.

## Mechanical Drawing

