CP500-Standalone Capacitive Switch
Configurable Operation Momentary/Toggle Mode

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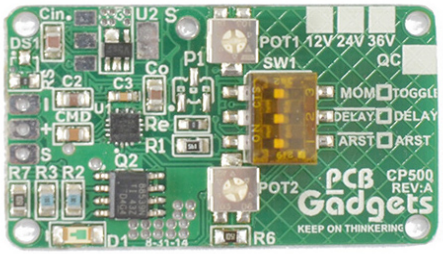
REVA

Introduction

CP500 is a state of the art solid state capacitive sensing switch with built-in selectable momentary and toggle mode. The switch offers adjustable delayed switch off as well as adjustable autoreset function that prevents switch lock out. CP500 has also excellent noise immunity against radiated and conducted noise, such as audio and radio frequency (RF) noise.

CP500 could be used anywhere a mechanical switch is required. The switch modes can be selected by simply toggling the on/off dip switch, no programing is required.
The delayed switch off and the autoreset period can be adjusted by the built in potentiometers.

CP500 will function with an off-board sensor connected with a wire length up to 15”. The external sensor is available in 0.5”and 1” diameter as an optional item (See P2 for details).



Max Electrical Ratings at 25 ˚C

Vin max=16-36v(Depending on the model)
Max switch load Current=3A.

Maximum Overlay Sensing Distance

Acrylic Overlay = 10mm.
Wood Overlay = 12mm.

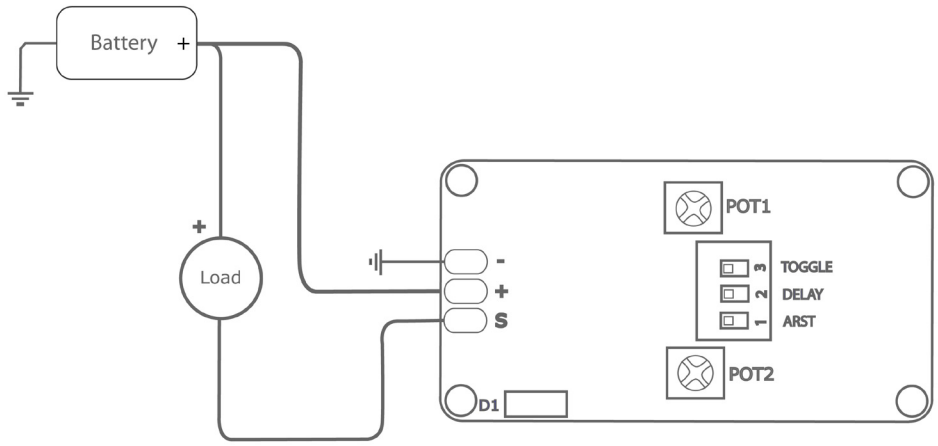
Operating Conditions at 25 ˚C

5.5v≤Vin≤16-36v. (Depending on the model)
$I_{standby}$ = 0.45 mA.
$I_{operating}$ = 14 mA.

Mechanical Dimensions

WxL=1.730" x 1"
Mounting Holes Inside Diameter=0.095"

Typical Switch Wiring Schematic



Please Note:

The load could be :
•A motor,
•An LED,
•A Solenoid
Or any electrical device as long as the load current draw does not exceed 3 amps.

Max Battery Voltage=16/36v
Max load voltage=16/36v

Figure.1: Typical switch connection.

Sensor Operation. Please Read:

In order for the capsense switch to function properly please follow this simple procedure:

1-Make sure the capsense switch is not powered.

2-Install the capsense switch in the desired location. Depending on your application, you may apply an overlay (see Figure 11) on top of the sensing pad or you may connect it to an external sensor (see page 7).

3- Apply power to the sensor and it will operate and respond to a finger touch. The sensor operation modes can be in either momentary or toggle mode. (See next page for modes of operations)

NOTE:
Any change to the sensor overlay or to the external sensor setup will require a power reset (power down then power up) to allow the sensor to re-calibrate to accomodate to the changes.

Modes Of Operation

Toggle Mode

In order to operate in toggle mode, please disconnect the switch power then set the DIP switch as shown in figure 2.

Important: Please make sure POT1 is turned counterclockwise till it stops then power on the switch.

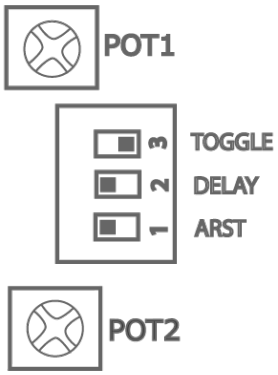


Figure.2: Toggle mode settings.

Functional Diagram

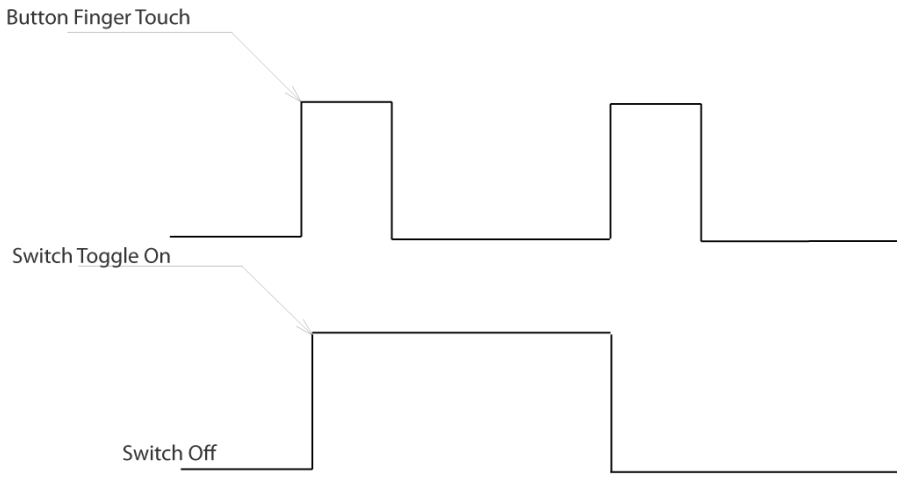


Figure.3: Toggle mode waveform.

Momentary Mode

In order to operate the switch in momentary mode, please disconnect the switch power then set the DIP switch as shown in figure 4.
Important: Please make sure POT1 is turned counterclockwise till it stops then power on the switch.

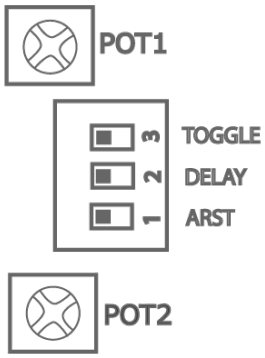


Figure.4: Momentary settings

Functional Diagram

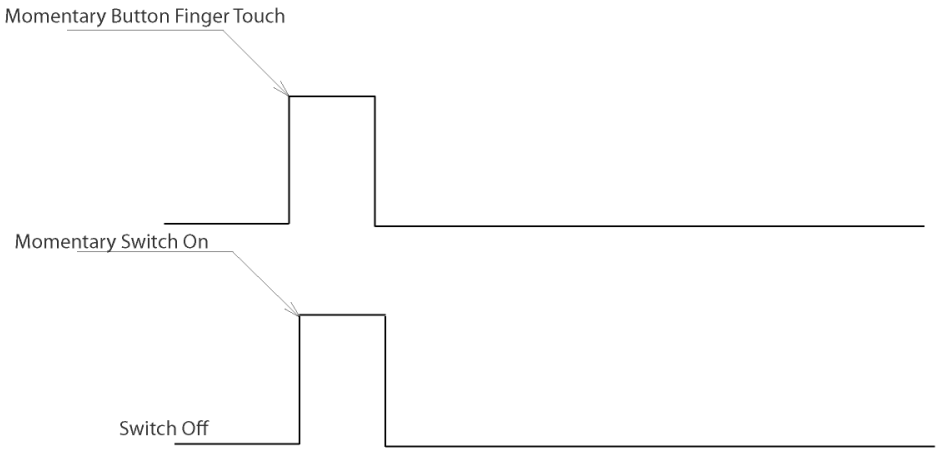


Figure.5: Momentary mode waveform

Momentary Mode With Delay

In order to operate the switch in momentary mode with delayed turn off, please disconnect the switch power then set the DIP switch as shown in figure 6. To adjust the switch delayed turn off after activation turn POT2 counterclockwise or clockwise to increase or decrease the delay. Important: Please make sure POT1 is turned counterclockwise till it stops then power on the switch.

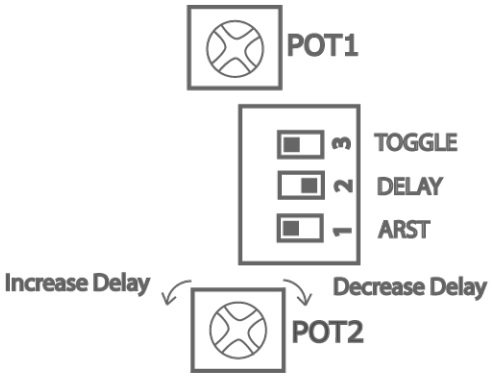


Figure.6: Momentary with delay settings.

Functional Diagram

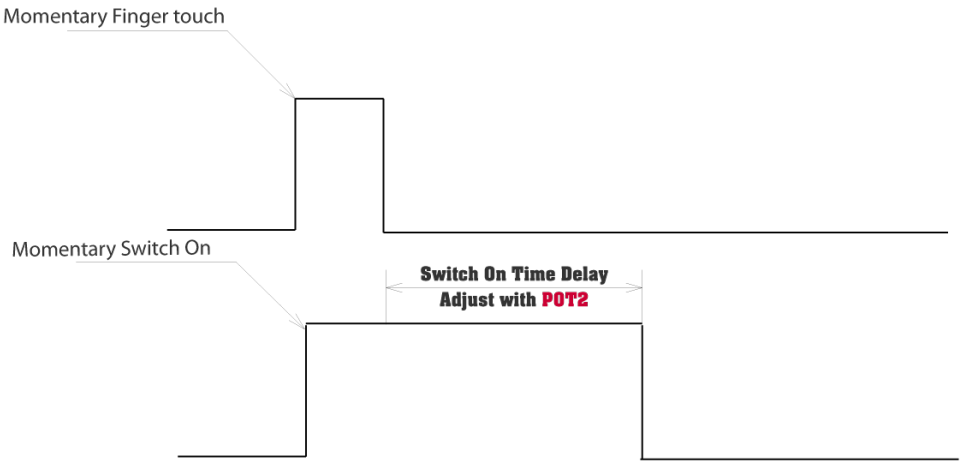


Figure.7: Functional diagram waveform.

Momentary Mode With Auto Reset

In order to operate the switch in momentary mode with auto reset, please disconnect the switch power then set the DIP switch as shown in figure 8. To adjust the auto reset period turn POT1 counterclockwise or clockwise to decrease or increase the period then power on the switch.

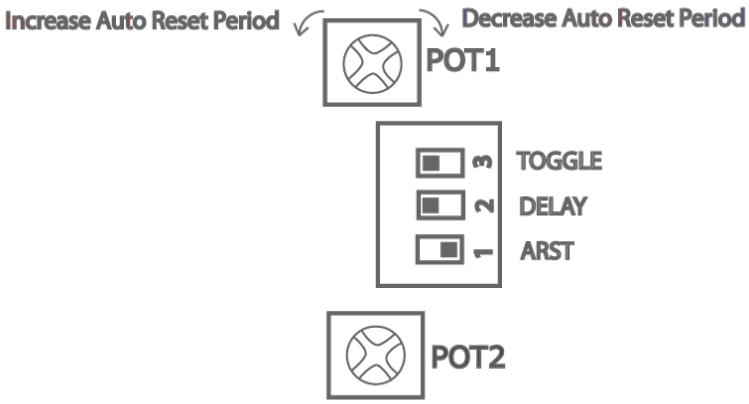


Figure.8: Momentary mode with auto reset settings.

Functional Diagram

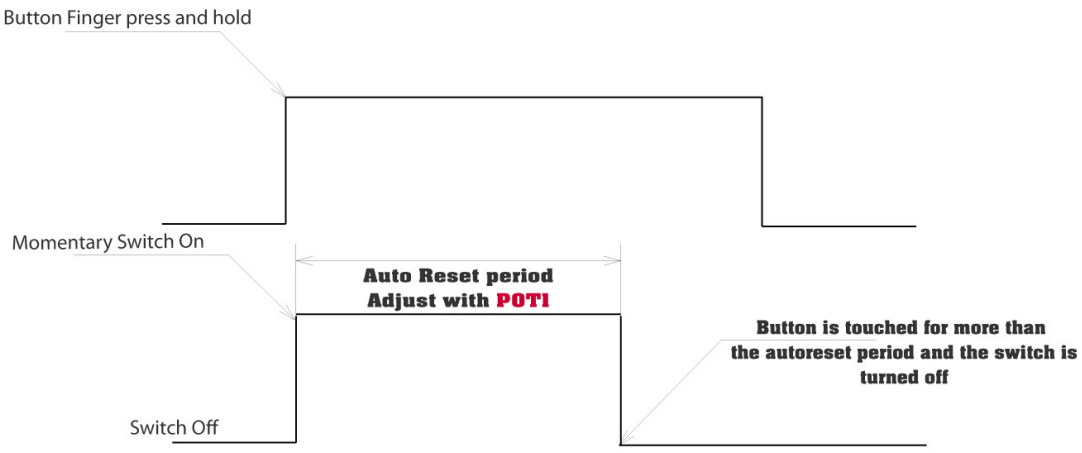


Figure.9: Momentary mode with autoreset waveform.

External Sensor

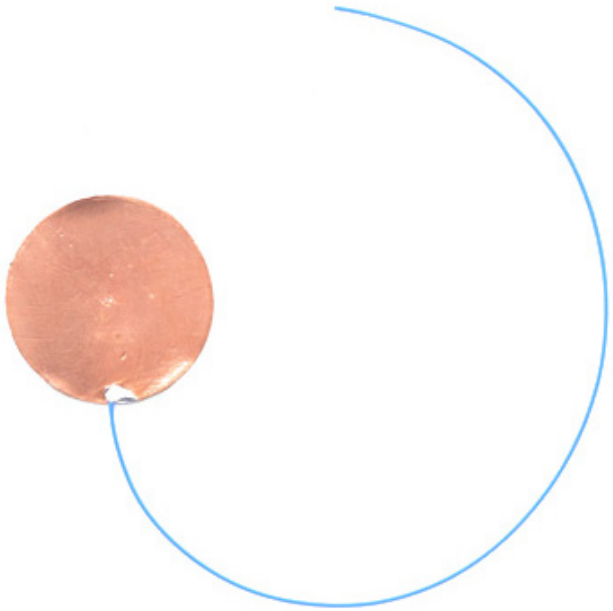
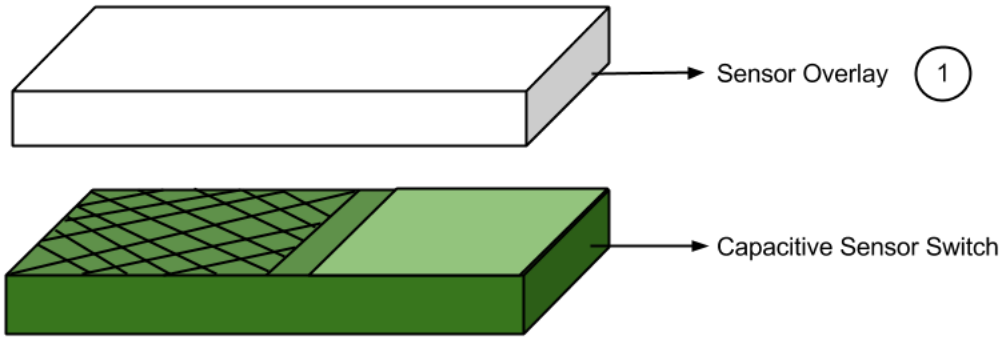


Figure.10: External Sensor can be ordered in different sizes and wire length.

Sensor Overlay



1 Sensor overlay is a **non-conductive** material (acrylic, glass, wood..etc) that covers the sensor area.
In order for the capacitive sensor to detect a finger touch through the overlay, the overlay thickness should not exceed 10mm if it's acrylic and 12mm if it's wood.

Figure.11: Sensor Overlay