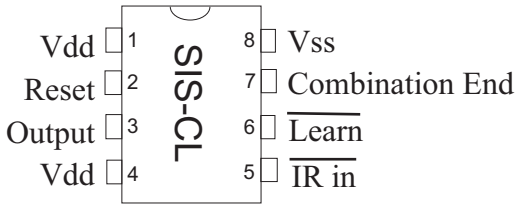
SIS-CL

Universal IR Remote Controllable Combination Lock Switch

General Description:

The SIS-CL makes it simple to implement an 8-digit, infrared (IR) remote controllable combination lock for a wide variety of applications. When used with an inexpensive IR receiver module, The SIS-CL recognizes (up to) an 8 digit code from an IR remote control source.

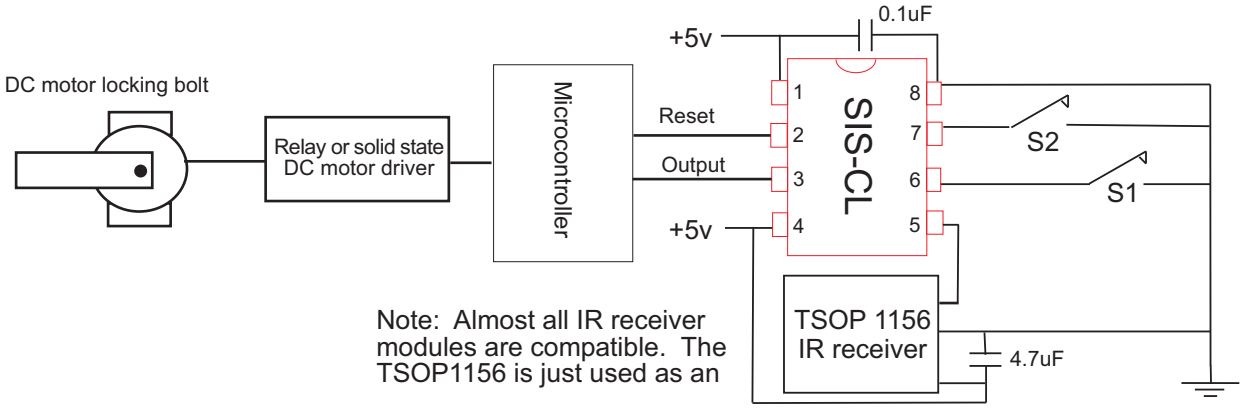
Works with over 99% of IR remotes, both universal and dedicated types.
IR code is easily "taught" by user with a few simple button presses on the IR remote.
IR code is stored in non-volatile, re-programmable memory.



Vdd (with respect to Vss): 2-5.5V,
Max current on I/O pins: 25 ma
Package: 300mil wide Plastic DIP

IR in from IR module: No signal = Vdd, Pulses = Vss
IR code is stored in non-volatile, re-programmable memory.
Current consumption (Vdd=5V): < 2mA

Application Example



Normal Operation of the SIS-CL

Once the SIS-CL is programmed with a combination, the Output from the SIS-CL (pin 3) will go from logic-low to logic-high, and remain at logic-high until a momentary logic-low pulse is applied to Reset (pin 2). The Reset pulse should be a minimum 1uS.

IMPORTANT: When the SIS-CL is first powered up, there may be fluctuations on the logic level on the Output pin. Therefore, for the best design, any controller that is connected to the Output pin should delay 100ms upon power-up before using the SIS-CL Output pin for polling/interrupting.

Programming the SIS-CL

To program the combination into the SIS-CL:

1. Select the combination of buttons from your IR remote that you want to use as the combination. This can be up to 8 digits, and can consist of any buttons on your remote, not just the numbers. As an example of a 4 digit combination, you could program the SIS-CL to recognize “play“, “1“, ”3”, “play“ as the combination.

2. Momentarily pull pin 6 low until pin 3 goes high, indicating that learning mode is active.

3. Aim the remote at the IR receiver and press the remote button. Release when pin 3 goes low.

4. Pin 3 will go back high after about 2 seconds. Repeat step 3 for each digit in the combination, up to 8 digits.

5. Once you have completed the above steps for each of the digits in the combination, lock the combination in by momentarily bringing SIS-CL’s pin 7 (Combination End) low. Pin 3 will pulse several times, then remain high. This indicates that the combination is locked in. If your combination is 8 digits, there is no need to lock the combination in via pin 7, as it will automatically do so, and pin 3 will pulse several times to indicate this.

The SIS-CL is now ready for normal use.

Considerations Using the SIS-CL

Delay Between Repeated IR Remote Button Presses

There is a minimum of a 250ms delay between consecutive IR code recognition. This is designed to prevent unwanted toggling of the output if the user presses the IR remote button a little too long.

Incompatible IR Remotes

The SIS-CL is known to work with over 99% of existing IR remotes. However, it has not been tested with Bang & Olufsen, high-frequency remotes, and is assumed not to work.

IR Receiver Modules

The vast majority of IR receiver modules are use negative logic -- the output from the receiver is high when no IR signal is being detected. The SIS-CL requires a negative logic signal on pin 5. If you choose to use a positive logic IR receiver module, simply use an inverter between the receiver’s output and pin 5 of the SIS-CL.

If you have a problem or questions regarding the SIS-CL, contact us: SUPPORT@SIMEREC.com