

# TCSC

## Twin Coil Switch Controller

For use with Twin Coil Snap Style Switch Machines  
(PECO, Atlas, RIX, etc.)

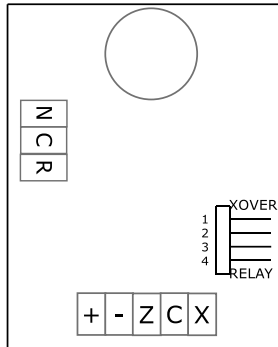


Figure 1

## Introduction to the TCSC

The TCSC is a capacitor discharge switch control module for controlling twin coil solenoid type switch machines. The module is also able to determine the position of the switch motor utilizing the same three switch motor connections. A pair of wires provides control and indication of switch position for simplified local/remote switch control and feedback.

## Installing the TCSC

Signalogic Systems recommends a good quality 12VDC accessory power supply and 18-24 AWG solid wire for all devices including the TCSC. Solid wire telephone and network cabling is a cost effective solution. Ensure that track power and the 12VDC power are off during installation and check wiring prior to turning power back on.

A three terminal connector is provided for connection to the snap type switch machine. The C (common terminal) is to be connected to both solenoid coils. Some switch machines already connect the two coils internally. The N terminal connects to the coil that throws the switch 'normal' and the R terminal connects to the coil that throws the switch 'reverse'.

The TCSC has a five pin terminal for powering and interfacing the TCSC:

- + 12VDC positive power input
- - GND / negative power input
- Z Switch Throw Request
- C Switch Position Indication (Correspondence)
- X Crossover Link

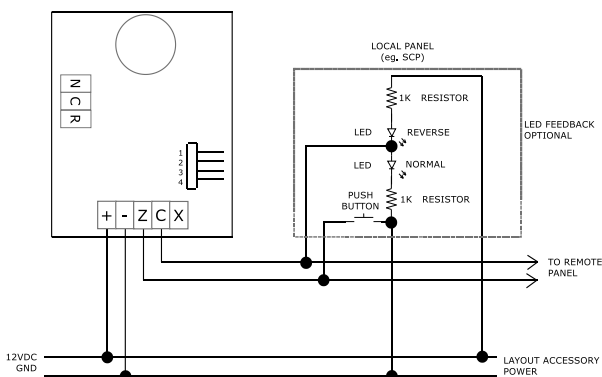


Figure 2

## Frog Power

The TCSC provides two pins for connecting a 12VDC relay. These relay terminals will energize when the switch is in the reverse position, allowing the relay's contacts to provide switching of frog power. A snubbing diode is already provided within the TCSC so no external diode is required across the relay coil. See Figure 3.

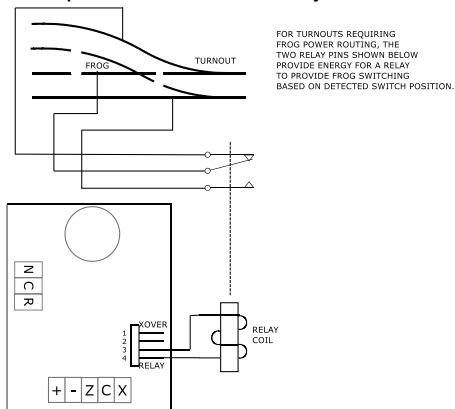


Figure 3

# Switch Control

## Local or Remote Control

Switch control is achieved with a single wire run from the TCSC 'Z' terminal to the control location. To initiate switch throwing, momentarily connect the 'Z' terminal to the '-' (GND) terminal or any other convenient access to the accessory power supply GND. This can be via a pushbutton or transistor output. See Figure 2. Multiple pushbutton/transistor controls may be used allowing control of the switch from multiple locations. Each time the control is activated, the switch will be thrown to the opposite position.

## Switch Indication

The position of the switch or full crossover is provided by the C terminal. The C terminal will output the following states according to switch position:

- 12V     Switch Normal
- 0V     Switch Reverse
- Open    Switch in neither position (in transition or crossover switches don't match).

Wire the LEDs as shown in Figure 2. The 'C' indication terminal can support a maximum of two LED indication circuits.

If the TCSC reports that the switch is in the normal position and it is in fact in the reverse position, simply swap the N and R connections on the switch motor terminals.

## Crossover Operation

The TCSC can be connected to another TSMSC (Tortoise Controller) or TCSC to handle a full crossover with one control interface. To enable a crossover application, one module needs to be the master. The master will have the control and indication interface attached to it. The master module must also have one of the provided jumpers installed over the XOVER pins as shown below. A single wire connected between the master and slave TCSC 'X' terminals will allow communications between the two modules as shown in Figure 4.

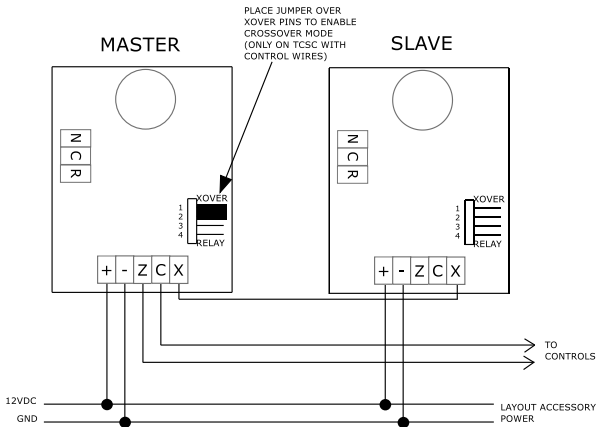
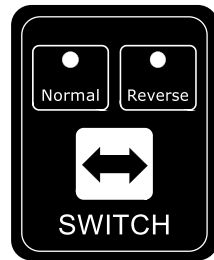


Figure 4

Both switches must be in the same position to output a valid indication. If a switch position mismatch occurs prior to a throw request, the master module will attempt to move its switch only to match the slave position.

## SCP Fascia Control Panel

The Switch Control Panel (SCP) is available from Signalogic Systems as an easy to install and attractive fascia-mount operator switch control. A simple four-wire telephone cable can be used to connect the SCP to the TCSC terminals.



### Maximum Specifications

|                            |        |
|----------------------------|--------|
| Minimum Power Voltage      | 10 VDC |
| Maximum Power Voltage      | 16 VDC |
| Maximum Indication Current | 25 mA  |
| Maximum Relay Current      | 400 mA |

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