

SCATIR Switch User Guide

**Model # 51150
SCATIR Switch with Sensor**

**Model # 51200
SCATIR Switch with Eyeglass Mounting Kit**

**Model # 51250
SCATIR Switch with Gooseneck Mounting Kit**

**Model # 51300
SCATIR Switch Deluxe**



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Introduction

The Self-Calibrating Auditory Tone Infrared (SCATIR) Switch is a multi-purpose momentary-contact optical switch with auditory feedback designed for use by persons who experience difficulty in activating mechanical switches. It works by detecting a beam of reflected pulsed infrared light. It is suitable for use with a variety of movements, including eye-blink, eyebrow movement, finger movement, head movement or facial muscle movement. The controlling body part does not need to be in physical contact with the switch sensor.

Description

1. Front of Sensor Box



- Relay Out:** Plug the relay cable into this port. It connects directly to the device you want to control.
- Relay On:** This green light is on as long as the relay is closed/switch closure occurs.
- Valid:** The valid light flashes three times when the unit is turned on, when the dip switches are changed or the mode is set.
- To Sensor:** The end of the sensor plugs into this port.
- Mode/Status:** Flashes when switch closure occurs.
- Sens Power:** The red light blinks continuously as long as the sensor box has power.
- Off/On:** Slide to off position when not in use.
- Charge:** The light stays on while the unit is being charged.

2. Back of Sensor Box



12/24 VDC: Plug the 12V charger into this port to charge the internal 9V rechargeable battery.

Battery: This is a rechargeable 9 volt battery that has been installed for you.

3. Bottom of Sensor Box



Dip Switches: These switches are used to control the tone, the sound of the tone and the calibration mode.

Set Switch: This recessed switch is used when setting the manual calibration.

Operation

1. Dip Switches

On the bottom of the unit you will find 4 dip switches or four small white switches. These switches are used to control the tone, the sound of the tone and the calibration.

Up is on. Down is off.

Beep On	SW1	Up
Beep Off	SW1	Down
Continuous Tone	SW2	Up
Beep Tone	SW2	Down
Manual Calibration	SW3	Up
	SW4	Down
Self Calibration	SW3	Down
	SW4	Up

2. Adjusting Activation Distance

The maximum distance allowed for activation (“activation distance”) can be adjusted from a few centimeters to less than a millimeter. This adjustment can be made manually or automatically (self-calibration), as explained below. When the activation distance is reduced to its minimal value, the switch simulates a zero force touch switch. When activation distance of, say, four centimeters, is chosen, the switch can be activated from as far away as four centimeters.

3. Self Calibrating Mode

When the switch is being activated by a body part that cannot always maintain a constant activation distance from the sensor, the switch can be operated in self calibrating mode. In this mode, placing the activating body part at ANY given distance within range of the switch will serve to define that distance as the activation distance. Once activated at this distance, the switch may be turned off by moving the body part completely out of the range of the sensor.

To set the self calibrating mode:

1. Turn the sensor box off.
2. Set the dip switches to:

SW3	Down
SW4	Up
3. Position the sensor.
4. Place the body part in front of the sensor.
5. Turn the sensor box on.

Once activated the switch will be turned on by moving the body part any where within the range of the sensor.

4. Manual Calibrating Mode

When in manual calibrating mode, the activation distance is set by the user.

1. Turn the sensor box off.
2. Set the dip switches to:

SW3	Up
SW4	Down
3. Position the sensor.
4. Place the activating body part just beyond the desired activation distance.
5. Turn the sensor box on.
6. Press the set switch beside the Dip Switches with the end of a pencil until you hear three beeps and the valid light flashes three times.
7. The manual calibrating mode is now set.

5. Auditory Tone

The switch incorporates an auditory tone which emits a beep when the switch is activated. This auditory feedback can be enabled or disabled by means of a dip switch. The user can select either of two auditory feedback modes:

Beep Tone Mode:

A short momentary beep is emitted to indicate activation. The relay light remains on throughout the full period of activation.

Continuous Tone Mode:

A tone is emitted which lasts as long as the switch is activated. The relay light remains on throughout the full period of activation.

Power

Rechargeable Battery

To recharge the Nickel Metal Hydride (Ni/MH) battery in the SCATIR switch, plug the power unit into the charger jack labeled “12-24 VDC” on the back of the SCATIR switch. The yellow LED on the front of the box lights up to indicate that the charging current is going into the battery. The charging time for a fully discharged battery is 8 hours with the SCATIR switch turned on or off.

Do not attempt to charge non-rechargeable batteries. Do not plug the charger into the SCATIR switch if a non-rechargeable battery is installed.

Mounting

1. Gooseneck Mounting Option

The SCATIR switch gooseneck sensor is equipped with a standard 5/8 – 27 thread. The kit comes with a variety of clamps and couplers to assist you in mounting the gooseneck. The kit includes:

- ABS Plastic Mounting Plate
- Adhesive-backed Velcro ®
- Quick Release Gooseneck Mount assembly
- X-saddle
- Self Tapping Screws (#10, 1 inch long, Phillips, flat head)
- Band Clamp
- Multi-bit Screw Driver

For more mounting information please go to this site:
http://www.msu.edu/~artlang/SCATIR_Gooseneck/Gooseneck%20Mount%20Kit%20Guide2.pdf

2. Eyeglass Mounting Option

This kit comes with the sensor clamped in a typical position on a set of eyeglass frames. The eyeglass mounting may need to be adjusted to make it work well for the individual user.

The kit includes:

- Two Allen wrenches (5/64")
- Polyurethane bushings
- Sensor Clamp assembly, including two-part polished stainless steel clamp, socket head cap screws (2-56), polyurethane bushing and polyurethane protective grommets.
- Adhesive backed polyurethane tape
- Eyeglass frames
- Angled-head infrared sensor cable

*You may wish to remount the sensor on another pair of frames. The mounting kit provides additional materials to clamp the sensor in place on different frames. The angled head sensor may be mounted on flat surfaces, under clear lap trays, or on surfaces of wheelchair armrests or headrests. These alternate mounting sites can be used for sensing moving hands, fingers or other body parts.

If the sensor is not pointed at the correct angle, use the following tips to bend the sensor.

The angled-head sensor is constructed so that the wire leads and the plastic insulation may be bent. Imbedded in the right-angle sensor is soft wire that helps the sensor to stay in position after bending. This permits easy adjustment for pointing the sensor towards the body part that is used for operation of the SCATIR switch. The sensor head may be re-angled by simply grasping the end of the sensor and pushing and bending it into place.

If the sensor is attached to the temple with the stainless steel clamp when you attempt to bend it, you may need to loosen the clamp a bit and pull the head of the sensor a small amount away from the clamp to allow more freedom for bending it.

If you need to reshape the sensor with a large adjustment follow these directions.

- Warm the sensor with a hair dryer.
- Point the hair dryer at the sensor for one minute
- The heat softens the plastic and makes it more flexible.
- Grasp the end of the sensor and bend it into its new shape.
- Hold it in place while it cools.

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