

Overview

One of the most basic and popular Home Integration concepts is using motion sensors with a lighting control system like RadioRA®. The added convenience and security adds greatly to the value to your system at a relatively low cost. Exterior motion sensors can turn outside lights on when someone comes within a specific proximity of the residence. Inside rooms can be turned on or off automatically when people enter or leave with interior motion sensors. There are many possibilities, and the extra capability can give the homeowner a real sense of pride in their system, and confidence in the installer.

Many brands and types of motion sensors are available. For Interfacing purposes the units can be divided into 2 types. One that is integral to the power circuitry of the lighting and the other is separate.

An integral unit is one that cannot be powered separate from the lighting it controls. These units CANNOT be used with a RadioRA® system. Most units that are part of the lighting fixture are integral. Units that have only 2 wires (one line in and one load out) to them are integral.

A separate unit is one whose input power is or can be separate from the input power of the lighting. These units control an isolated mechanical switch or relay contact that is separate from the unit's internal circuitry. These units CAN be used with a RadioRA® system.

Separate units may have pulsed or latching contacts. Contacts can be rated for line or low voltage, delay-to-off or delay-to-on settings, and sensitivity settings. Different motion sensors used with the RadioRA® Switch Closure Interface (RA-SCI) maintained and momentary settings can be used for a wide range of applications. This application note is meant to help in the selection

Terminology

Photocell - a device that produces an electric reaction to visible radiant energy (light).

Motion Sensor - a control device that senses the presence of a person in a given space.

Dry Contact - metallic points making (shorting) or breaking (opening) a circuit.

Pulsed relay - Contacts making (shorting) for a predefined period of time regardless of input signal length.

Latching relay - Contacts making (shorting) equal to the input signal time.

Delay-to-ON - Preset time between input signal and contacts making (shorting).

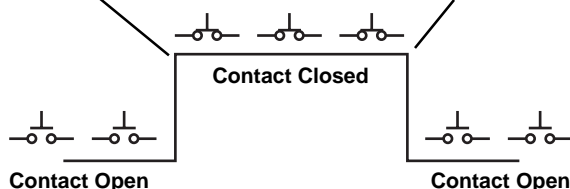
Delay-to-OFF - Preset time between input signal and contacts breaking (opening).

Maintained Closure - A latching or pulsed relay input at which the making (shorting) and breaking (opening) is a command signal.

Momentary Closure - A latching or pulsed relay input at which the making (shorting) is a command signal.

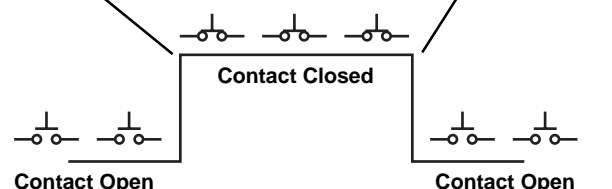
Maintained Closure

When the contact closes the RA-SCI sees the change and turns the scene ON.



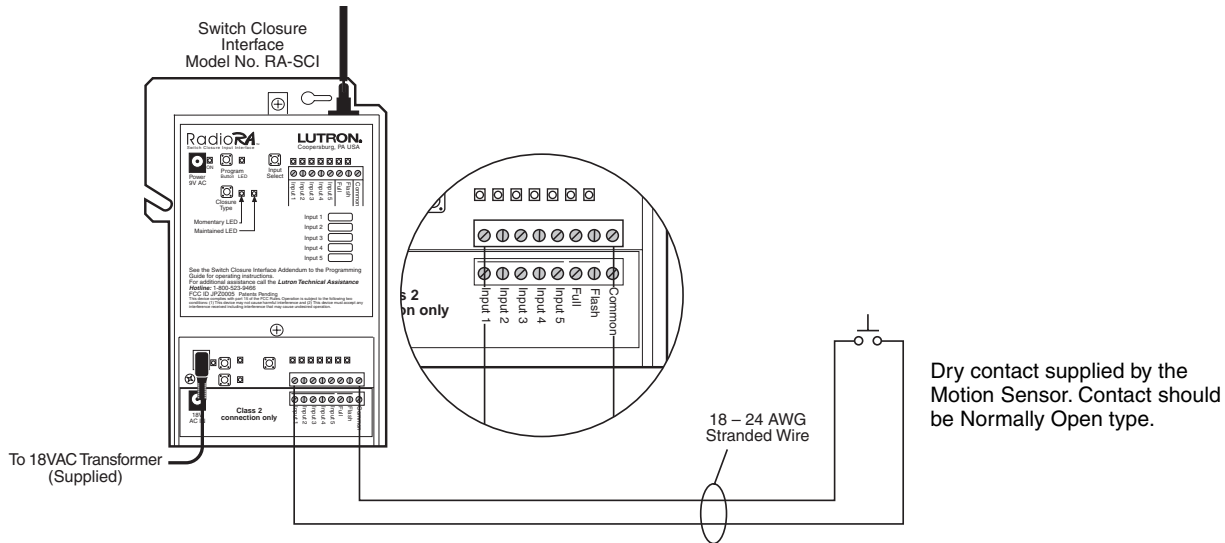
Momentary Closure

When the contact closes the RA-SCI sees the change and turns the scene ON.



Wiring

From the pulsed or latching relay dry contacts of the Motion Sensor wire directly to one of the INPUT's and COMMON of the RadioRA® Switch Closure Interface (RA-SCI). Two conductor 18 to 24 AWG wire can be used.



Programming

Program the input of the RA-SCI that the motion sensor is wired to turn ON or OFF the RadioRA® Devices you want the motion sensor to affect. Detailed programming instructions of the RA-SCI are included with the unit. When programming the RA-SCI remember to select the proper settings for maintained or momentary for the application you are looking for. Maintained if you want to toggle the Scene ON and OFF and momentary if you want only to turn the Scene ON. Set the motion sensor for the proper sensitivity for your application (i.e., set the sensitivity low enough so animals will not set the sensor off). Set the "delay-to-off" to allow enough time for the party to leave the area.

Selecting the Motion Sensor

Refer to the motion sensor suppliers for proper selection of a sensor for your particular application. Here is some helpful information for your search. Remember you need a Dry Contact that is Normally Open which is separate from the input power to the motion sensor.

Types of Motion Sensors:

Passive IR - This type senses heat from a person or animal to initiate the output signal.

Ultrasonic - This type senses motion from a person or animal.

Some Motion Sensor Manufacturers:

Watt Stopper
2800 De La Cruz Blvd.
Santa Clara, CA 95050
Phone: 408-988-5331
Fax: 408-988-5373
www.wattstopper.com

Novitas Inc.
5875 Green Valley Circle
Culver City, CA 90230
Phone: 310-568-9600
Fax: 310-568-9697
www.novitas.com

Sensor Switch Inc.
900 Northrop Road
Wallingford, CT 06492
Phone: 800-727-7483
Fax: 203-269-9621
www.sensorswitchinc.com

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If you need assistance call the toll-free **Lutron Technical Support Center**. Please provide exact model number when calling.
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