

## Script-Free Lighting Level Event Programming with Motion Sensors

**Summary:** The Card Access™ InHome™ Wireless Motion Sensor (model numbers WMS10, WMS10-EXT) combines the features of a passive infrared (PIR) motion sensor with a Light Level Monitor into a single device for motion- and light-based events. The Motion Sensor easily integrates with the Control4 system and offers extensive feature controls without requiring additional script programming. Offering both a Day and a Night mode, the InHome Wireless Motion Sensor's monitoring features are easily managed via its Driver Properties Page settings in Control4®'s Composer software. No additional Control4 programming scripts are required for the tasks outlined in this Tech Tip.



## Introduction

While Control4's dawn and dusk-based events offer basic functionality for triggering things like outdoor lighting, the InHome Wireless Motion Sensor offers more customization for lighting events based not only on motion but on lighting levels. For example, the standard Control4 dawn/dusk modes will not switch if daytime cloud cover darkens the sky. The InHome Wireless Motion Sensor does this based on Light Level Monitor settings configured in the Driver Properties Page. The same threshold and timing settings automatically switch the Motion Sensor back to Day mode from Night mode if the light level changes from the temporary daytime cloud cover.

The Light Level Monitor settings give the Motion Sensor more flexibility, allowing it to switch back and forth between Day and Night modes as needed, based on the environmental levels and set times. Unlike Control4's dawn/dusk events that occur only on a set schedule, the Motion Sensor is managed based on measured light levels and their duration. The result is the home becomes proactive and better able to manage events around the house based on its changing environment versus fixed, time-based events.

Each Motion Sensor monitors its own light level settings with a threshold level ranging from 0%–100%. At 0%, the amount of available light is comparable to a room lit by a few candles. At 100%, the amount of available light is comparable to a room fully lit by sunlight.

**This Tech Tip is Written For:** Dealers, Installers

### Assumptions

This Tech Tip assumes that you're familiar with installing Card Access InHome Wireless Motion Sensors into Control4 projects. The steps listed below outline different ways to customize the functionality of individual Motion Sensors in existing projects.

**Installation Skill Level:** Control4 Tech I Trained

### Materials/Tools List:

- (1) InHome Wireless Motion Sensor installed per desired location

## Step-By-Step Instructions for Driver Page Programming

### Adjusting Mode Thresholds and Times

Setting thresholds and times controls for when the Motion Sensor switches between Day and Night modes is simple.

1. Using the **Composer** software, open the Motion Sensor's **Driver Properties** Page in the Control4 project for the specific Motion Sensor you want to customize.

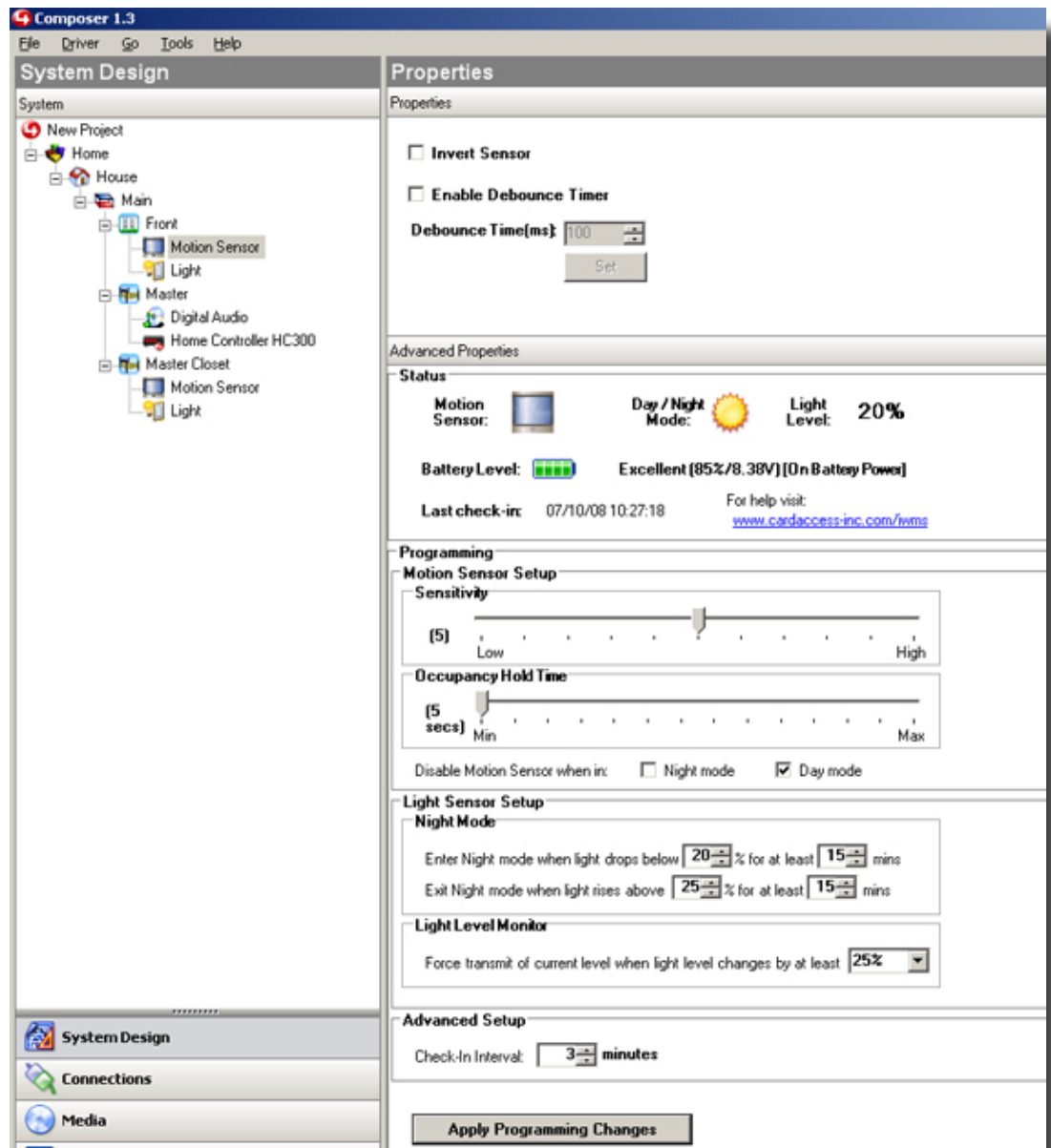


Figure One: InHome Wireless Motion Sensor Driver Properties Page

- Under **Light Sensor Setup**, you set the percent threshold for when the Motion Sensor enters and leaves **Night mode**.

**Light Sensor Setup**

**Night Mode**

Enter Night mode when light drops below  % for at least  mins

Exit Night mode when light rises above  % for at least  mins

**Figure Two: Motion Sensor Properties Page—Light Sensor Setup**

- In addition to the percent, you determine how long the threshold has to be met before triggering a mode switch.
- Click the **Apply Programming Changes** button.

### Disabling Night or Day Modes

Disabling modes allows you to accomplish two things: preventing Motion Sensor operation during either day or night, and conserving the Motion Sensor's power consumption. For example, if you've set your Motion Sensor to turn on the outside lights when it detects motion, the Motion Sensor doesn't need to do this during the day when natural light is readily available. By turning off the Motion Sensor during the day, you conserve both battery and hard-line power. This is accomplished by disabling the Motion Sensor while in Day mode.

- Using the **Composer** software, open the Motion Sensor's **Driver Properties** Page in the Control4 project for the specific Motion Sensor you want to customize.
- At the bottom of the programming section are two check boxes, one for **Night mode** and one for **Day mode**.

Disable Motion Sensor when in:  Night mode  Day mode

**Light Sensor Setup**

**Night Mode**

Enter Night mode when light drops below  % for at least  mins

Exit Night mode when light rises above  % for at least  mins

**Figure Three: Motion Sensor Programming—Night mode and Day mode**

3. Click the appropriate box to disable the Motion Sensor during your mode of choice.
4. Click the **Apply Programming Changes** button.

### Setting the Motion Sensor to Transmit Light Level Changes

To improve responsiveness to environmental changes, the Light Level Monitor forces transmission of the current light level value to the Control4 system based on the light level's percentage rate of change. The Motion Sensor's Check-In Interval determines how frequently the Motion Sensor checks-in with the Control4 system to relate light level changes to the system. The lower the percentage amount for this setting or the more frequent the check-ins, the greater the drain on the Motion Sensor's batteries.

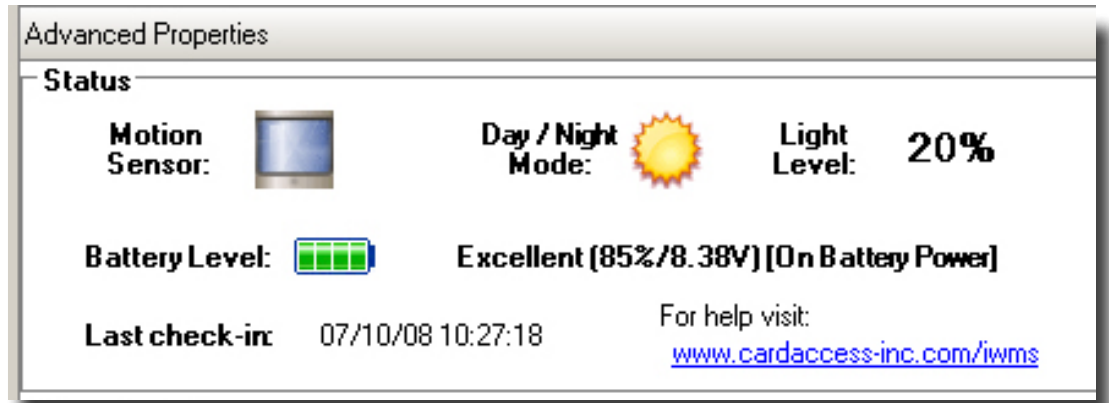
1. Using the **Composer** software, open the Motion Sensor's **Driver Properties Page** in the Control4 project for the specific Motion Sensor you want to customize.
2. Under the **Light Level Monitor Section**, set the percent the light has to change in for the Motion Sensor to transmit the light level to the system.
3. Under the **Advanced Setup Section**, set the **Check-In Interval** in minutes to increase or decrease how frequently the Motion Sensor transmits motion status and light levels to the system.
4. Click the **Apply Programming Changes** button.

### Installation Example

#### Triggering Outdoor Lights at the Right Time

**Issue:** Outdoor lights connected to the Control4 system and managed by the InHome Wireless Motion Sensor are turning on too early in the day. How do you determine the appropriate light level to trigger the Motion Sensor to watch for motion and turn the lights on only at the right times?

1. When the outside light level is low enough to meet your requirements, use the **Composer** software and open the Motion Sensor's **Driver Properties Page** in the Control4 project for the specific Motion Sensor you're configuring.
2. In the upper right-hand corner, check the current mode (in this example Day mode) and the detected light level. The number is represented as a percent (in this example 20%).



**Figure Four: Determining Current Mode and Light Level Percentage**

3. Use the current detected light level percent of 20% to set when the Motion Sensor should enter the **Night mode**.
4. Set the threshold for the **Day mode** at a higher percent, for example 25%.
5. Click the **Apply Programming Changes** button.

### **The Results**

By following these configuration steps, you can customize the InHome Wireless Motion Sensor through the Driver Properties Page without additional script programming. After each change, you must click Apply Programming Changes to add the changes to the system and send them to the Motion Sensor.

The level of available customization makes the InHome Wireless Motion Sensor a perfect option for automation systems that require greater awareness of their surroundings than offered by standard Control4 dawn/dusk times. The combination of light level monitoring and Motion Sensor activation times makes it a convenient add-on to a Control4 project both inside and outside the home.

### **Related Tech Tip(s):**

Using the InHome Wireless Motion Sensor's Cascading Function

### About Card Access

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