

## LM110 Light Sensor

### Description

The DMP Model LM110 is a wireless Light Sensor used with the XR200, XR2400F, and XR200-485 Command Processor™ Panels. Two modules work as a pair to detect illumination levels. The LM110 is housed in a weatherproof enclosure made from UV light-resistant gray ABS plastic.

The DMP Model LM110 Light Sensor detects changes in the amount of light in the surrounding area and reports to the central station if the light falls below a determined level. The module is adjustable to meet any light monitoring application.

The XR200 (Firmware version 112), XR2400F (Firmware version 112), and XR200-485 (Firmware version 206) panels have an added feature that allows arming type zones to have a delay before arming and disarming. The retard delay allows temporary changes in light, such as a shadow, to be ignored by the panel. This feature reduces unwanted armings and disarmings of the panel as well as false alarms: A true false alarm reduction feature.

### Light Module Interaction

Two light sensors work together to measure the level of light illumination. One module is used for arming and disarming and the other is used to send zone alarms when the light is blocked. The arming/disarming module should be adjusted to the sunlight levels, so that arming and disarming can occur at sunrise and sunset. This module should be programmed into the panel as an arming zone.

The second module sends alarm message to the central station if the light is blocked for a length of time that is longer than the retard delay programmed in the panel. For example, if a person momentarily blocks the light near the ATM, the LM110 will not report a zone alarm. If a person breaks the light near the ATM, the LM110 will send a zone alarm to the central station. This module is programmed as an Auxiliary 2 zone type in the panel.

### Programming the Transmitter into the Panel

The LM110 must be used with an FA426 16-Point Receiver or 472 Inovonics 900MHz Interface Card with an FA400-DMP Remote Receiver. The wireless transmitter must be programmed into the panel as a zone. Refer to the FA426 Installation Sheet (LT-0313) and the 472 Installation Sheet (LT-0289) for complete programming instructions.

### Transmitter Programming Options

Programming Option	Programming Selection
Internal Contact	No
End-of-Line	No
Normally Open	No
Check-in Time	10 - 60

### Observing the Green LED

The green LED indicates when the transmitter sends a “change in illumination status”. When the illumination drops below the threshold the LED emits two sets of flashes, separated by about 2 seconds. When the illumination raises above the threshold the LED emits a single set of flashes.

By observing the LED, you can easily set the illumination threshold as discussed in **Adjusting the Sensor**. Two sets of flashes indicates a transition from light to dark. One set of flashes indicates a transition from dark to light.

### Removing the Cover

Using a Snake Eyes Screwdriver®, remove all four screws from the cover of the sensors.

**Note:** You must have a screwdriver specifically designed to remove Snake Eyes® screws.

### Mounting the Light Sensor

After removing the cover, place the LM110 in the desired position on a wall or other flat surface. Secure the LM110 with two screws in the mounting holes on the LM110 casing. Refer to Figure 1 on the following page for mounting hole locations.

## Installing the Battery

After the cover of the LM110 is removed, remove the case to the wireless transmitter as directed in the wireless transmitter's installation sheet. Install the battery in the battery holder, while observing polarity. See Figure 1. Reset the transmitter after properly installing the battery. Test the sensor, as described below, before replacing the cover to the transmitter and the sensor cover.

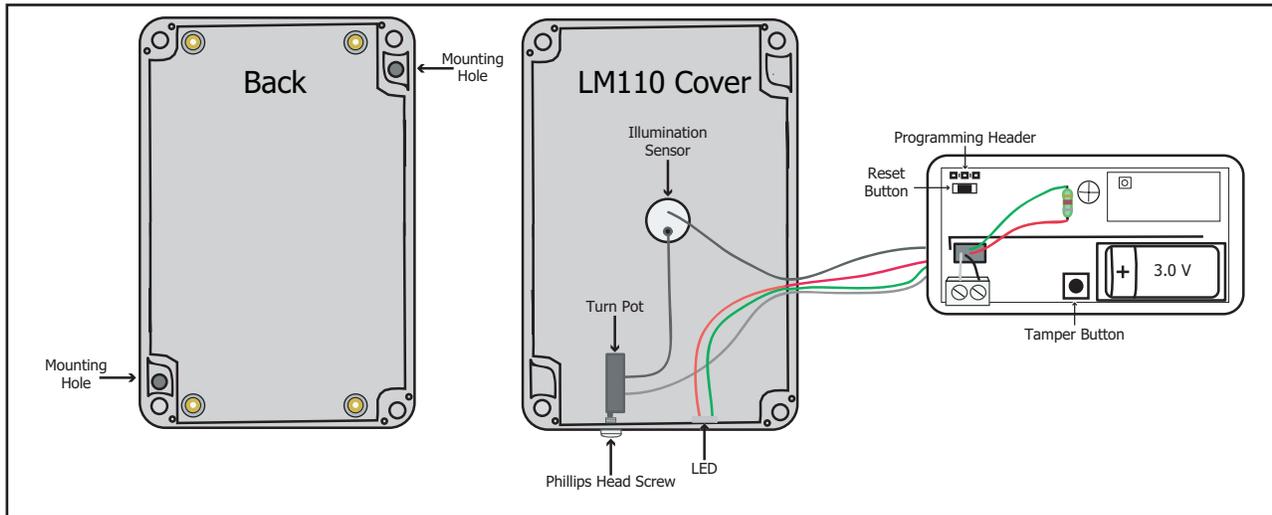


Figure 1: LM110 Wiring Diagram

Write down the installation date on the label on the inside of the sensor's casing for future reference. The estimated battery life is 3 years.

## Testing the Sensor

After you have properly installed the battery and pressed the transmitter's reset button, test the operation of the sensor as described below.

1. Using your hand, cover the light-detecting element located in the center of the sensor's cover. The green LED located on the side of the cover will immediately flash two sets of 7 flashes. There will be about a two-second pause between the sets of flashes.
2. Expose the light-detecting element to normal room lighting. The LED will flash one set of 7 flashes.

Two sets of flashes indicates a transition from light to dark. One set of flashes indicates a transition from dark to light.

**Note:** Be sure that the internal wireless transmitter cover is removed before testing the sensor.

## Adjusting the Sensor

When the sensor is shipped, the foot candle threshold is set to 7 fctd. To adjust the illumination trip threshold, remove the Phillips head screw located next to the LED on the side of the sensor casing. Adjust the turn pot clockwise for tripping at higher illumination levels and counterclockwise for lower illumination levels. The threshold ranges from about 1 fctd to 40 fctd.

If a specific luminous threshold is desired, use a light meter and a shadowing means to measure and control the light level at the sensor. Observe the LED indicator while the light level at the sensor is alternately changed to above and below the threshold. The LED will confirm the change in the status as discussed in the **Observing the Green LED** section.

### Specifications

Dimensions .75" x 3" x 5.5"  
Battery Life Up to 3 Years

### Panel Compatibility

XR200 (Firmware version 112 or higher)  
XR200-485 (Firmware version 206 or higher)  
XR2400F (Firmware version 112 or higher)  
**Note:** FA426 or FA400-DMP with 472 Card is required.



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