The Designers™

E D G E

L-940 Series Theory of Operation Statement

This device is to be used in conjunction with an outside light source to form a security lighting system. This device uses an infrared detector to detect motion in front of the sensor. Once detected, the device transmits the RF signal to the receiver that switches on the power to the attached light fixture, causing the fixture to light. The device has different options as to the sensitivity of motion detected and time the light source will remain on. An 8 position DIP switch is provided on the receiver and transmitter to insure a unique code that will allow more than one device to operate in the same vicinity without unintended operation occurring.

The transmission occurs at 433.92MHz. Once the infrared is detected with a transistor, the signal is amplified and converted to a digital signal. The signal is then fed into a processor that determines if the level of detection warrants the transmitter activating the light source. If the decision is made to transmit, a pulsed output from the CPU is sent to the transmitter PCB. The PCB contains circuitry that receives the pulsed output and uses that to pulse modulate a 433.92 MHz frequency. This RF signal is then sent to the transit antenna which consists of an insulated wire monopole (24 AWG, 130mm long).

An internal transmission is made to instruct the receiver to turn the light on. The time function on the receiver, which is preset by the user, sends another transmission to turn the light off after the desired length of illumination is met.

These functions can be repeated as many times as necessary unless there is interruption to the power source for either the transmitter (battery powered) or the receiver.

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