Intuitous Wireless Occupancy Sensor

Theory of Operation

The Intuitous occupancy sensor employs a PIR (Passive Infra-Red) sensor that detects motion by measuring changes in the infrared levels emitted by surrounding objects. The PIR sensor and circuitry is tuned to specific criteria to detect human presence. On power up, the sensor will take approximately 45 seconds to calibrate.

When human presence is detected by the PIR sensor, two actions are initiated;

1. A wireless transmission is sent to the controller containing 1-byte of data and a 3-byte device address. This transmission lasts approximately 0.5 seconds.
2. A 5-minute disable timer is started that prevents any further transmissions prior to the expiry of the 5 minute timer.

At most, the occupancy sensor will transmit once every 5 minutes when a human is present within the detection area. When no human is present, the sensor will continue sensing in low power mode, but it will not transmit at all until the next time a human enters the detection area. The central controller will presume that the space is vacant when a period of 30 minutes has passed without receiving any presence transmissions.

The encoder chip on each sensor is factory programmed with a 24-bit address. With up to 16 million possible addresses, the transmission is highly unique.

The Occupancy Sensor's RF (transmitter) circuitry is comprised of 3 components;

- LINX Technologies LC Series 418 Mhz transmitter module (TXM-418-LC)
- LINX Technologies MS Series Data Encoder module (LICAL-ENC-MS001)
- LINX Technologies Antenna ANT-418-HETH

The Controller's RF (receiver) circuitry is comprised of 3 components;

- LINX Technologies LC Series 418 Mhz receiver module (RXM-418-LR)
- LINX Technologies MS Series Data Decoder module (LICAL-DEC-MS001)
- LINX Technologies Antenna ANT-418-HETH

More information available on the Linx website: http://linxtechnologies.com/