RIB LSDUALC2 Low Voltage Ceiling Mount Sensors Instruction Manual

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OVERVIEW

LSDUALC2 sensors detect movement in the infrared energy that radiates from the sensor signals a power/relay pack to switch on the connected lighting. If equipped with passive dual technology (PIR/Acoustic), the unit's microphone is then enabled to further enhance detection while the lights are on. This overlapping passive acoustic occupancy detection is important for rooms with obstructions or where occupant motion will be limited. An internal timer is set to keep lights on during brief periods of inactivity, and is reset every time occupancy is signaled by either the passive infrared or acoustic detection technologies.

SPECIFICATIONS

ELECTRICAL

- OPERATING VOLTAGE
  12-24 VAC/VDC
- CURRENT DRAW
  16mA
- OUTPUT
  Logic High VDC (Occupied Mode)
- RECOMMENDED POWER PACK
  LR21BPP5, LR21BPP10
- DIMMING COMPATIBILITY
  0-10 VDC Ballasts or Drivers
  Compliant with IEC 60929 Annex E.2
- ISOLATED RELAY RATING
  1A @ 30 VDC/ VAC

ENVIRONMENTAL

- OPERATING TEMP
  32°F to 122°F (0°C to 50°C)
- RELATIVE HUMIDITY
  0-95% Non-Condensing, Indoor Use Only

PHYSICAL

- SIZE & WEIGHT
  4.00” Diameter x 1.25” H (10.16 x 3.17 cm) 4.75 oz
- COLOR
  White

OPERATION

- TIME DELAYS
  30 sec to 30 min (Typical) 10 Minute Default 5 sec Time Delay Expires After 10 min

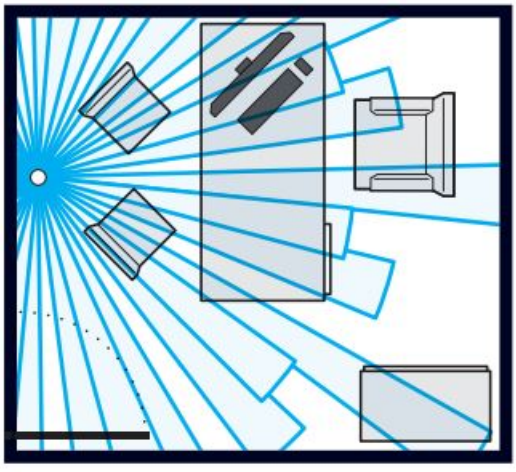
CODE COMPLIANCE
Sensors can be used to meet ASHRAE 90.1, IECC, & Title 24 energy code requirements

SENSOR PLACEMENT

Typically, a sensor should be located such that all entrances to the room/space are adequately covered. Ideally, a sensor should be located so that its coverage beams are perpendicular to the door. This ensures that an occupant is detected immediately upon entering. See Diagram 1. Note, however, it is important to locate a sensor such that its coverage pattern can not extend through an open door, which could result in detection of persons walking by, but not into, a room. If line of sight between a sensor and occupants is blocked (for example by a cubicle wall or stall), dual technology sensors should be alternatively utilized or additional PIR sensors should be added until line of sight is restored. Dual technology is recommended for all spaces where occupants are sitting or where motion within the space is limited (private restrooms with stalls, libraries). Dual technology is not recommended for hallways or warehouses.

COVERAGE

PASSIVE INFRARED (PIR)

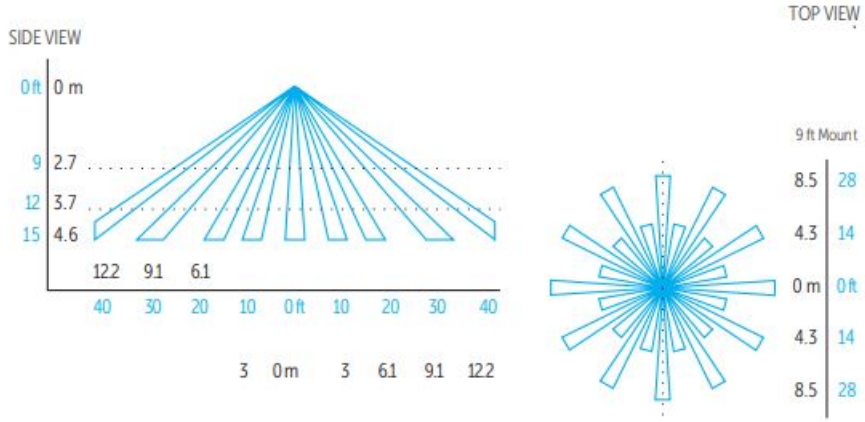


- 8 to 15 ft (2.44 to 4.57 m) mounting height recommended for large motion lenses.
- Detection range improves when walking across beams as compared to into beams.
- Lenses can be swapped in field if necessary, contact technical support for assistance.

DUAL TECHNOLOGY (PIR/AcOUSTIC)

- Units with dual technology have overlapping acoustic detection of the complete PIR coverage area.
- A PIR event is required to initialy enable acoustic detection.
- Sounds indicating OCCupancy reset the sensors time delay while non-occupant noises are filtered out.

LARGE MOTION 360



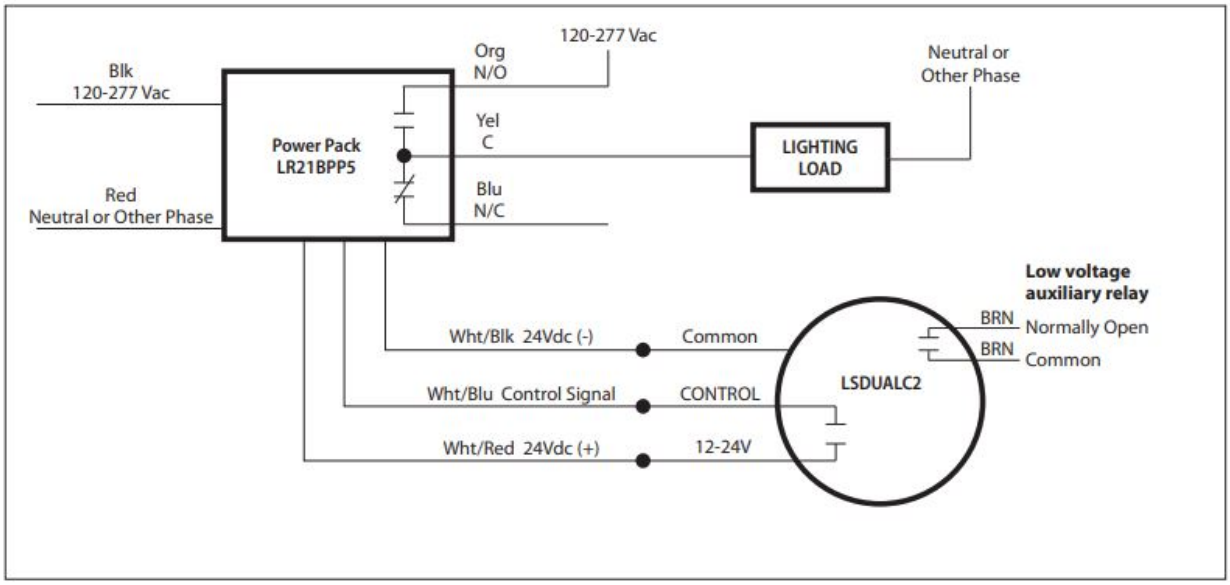
- Best choice for detection of larger motion (e.g. walking).
- 2000 ff of coverage.
- One of the longer segments of the coverage pattern aligns with the screw hole axis on the sensor (shown as dotted line on Top View diagram below).

WIRING

- Apply power to connected power packs only after low voltage sensor connections have been made.
- Wiring sensors to a live power pack is not recommended, although in cases where required, it is recommended that the wht/red wire be connected last

SENSOR AUXILIARY RELAY OUTPUT

- The auxiliary output relay is designed to interface with many types of building management systems (i.e. BMS), VAV units, and relay panels
- Operation of relay (brown wires) is configurable:
    - By default the relay latches closed when occupancy is detected (white wire goes high).
    - Relay polarity (open vs closed) can also be reversed.



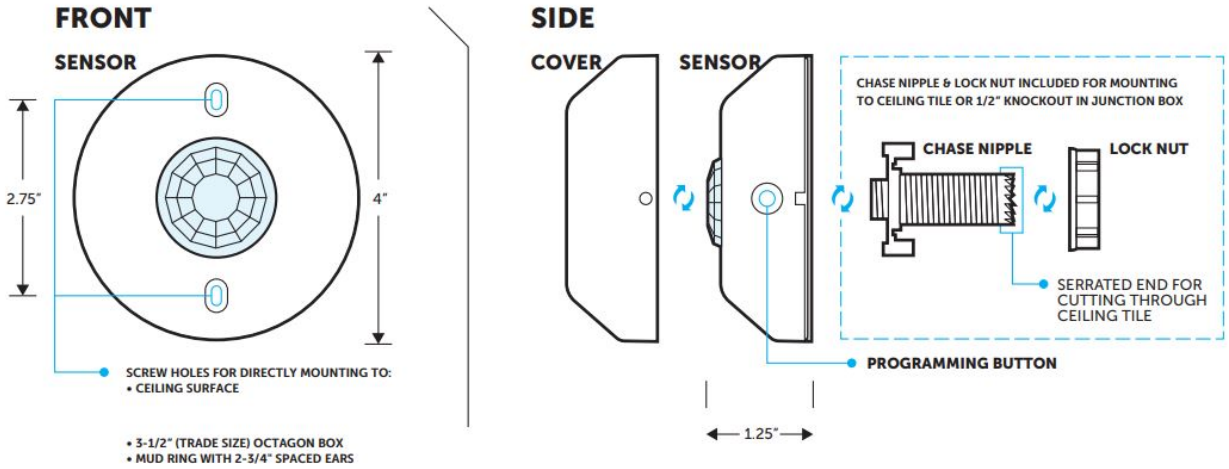
INSTALLATION INSTRUCTIONS

MOUNTING OPTIONS

- A. Chase nipple & lock nut (included) for mounting unit to ceiling tile or 1/2” knockout in junction box. See Side Diagram below.
- B. Screw holes for directly mounting to ceiling surface, 3-1/2” (trade size) octagon box, or mud ring with 2-3/4” spaced ears. See Front Diagram below.

INSTALLATION NOTES

- If mounting to ceiling tile, use the serrated end of the chase nipple to cut a 7/8” hole. Then thread the wires through nipple prior to screwing into rear of sensor. Install and tighten lock nut as needed.
- To install cover, line up dimples with indents on sensor and turn clockwise.



TESTING & TROUBLESHOOTING

TEST MODE

An occupancy test mode with a 5 second time delay is provided in order to eciently perform walk testing. The sensor will blink white on any detected PIR event and blue on any detected Acoustic event , although its time

delay will only be reset by a PIR event.

TO PUT A SENSOR IN TEST MODE FOR 10 MINUTES:

- Press sensor's pushbutton 2 times, then wait until LED starts blinking back current setting (approx 2 secs).
- Interupt blinking and press button 1 time to start test mode. After 10 minutes, the sensor's time delay will revert to previous setting.

RESET
To restore factory settings, press and release the pushbutton 8 times, wait 2 seconds, then press and release the pushbutton 3 times again.

GENERAL CONFIGURATION SETTINGS

FUNCTION #2 – TIME DELAY CONFIGURATION

The length of time after the last occupancy event that the sensor will stay in the OcCupied state.

FUNCTION #2 - TIME DELAY SETTINGS

SETTING #	DESCRIPTION
1	Test Mode*
2	30 sec
3	5 min
4	10 min (default)
5	15 min
6	20 min
7	30 min

* 5 SEC TIME DELAY, EXPIRES AFTER 10 MIN

EXTENDED TIME DELAYS**

SETTING #	DESCRIPTION
8	1 hr
9	2 hr
10	4 hr
11	8 hr

** EXTENDED TIME DELAYS GREATLY REDUCE ENERGY SAVINGS

CHANGING TIME DELAY SETTINGS:

1. Read through the Time Delay Settings list on the right and note the number of the desired time delay setting (e.g., default is 4 = 10 minutes).
2. Press and release the unit's pushbutton twice, then wait 2 seconds. The white LED will blink back the number of the current setting.
3. At any time after blink back starts, enter number of new setting (from Time Delay Settings tables on right).
4. New setting is saved after white LED blinks new number back 3 times. If blue LED double flashes at any time, start process over.

FUNCTION #6 – MICROPHONE (ACOUSTIC DETECTION)

Dual technology sensors prevent non-OCcupant sounds from resetting the time delay by dynamically reducing the microphones sensitivity at specific frequencies. In some environments, decreasing the sensitivity across all frequencies so that lights go off sooner, may be preferred. A units microphone can also be disabled (effectively changing sensor to a PIR only version).

FUNCTION #6 - MICROPHONE (ACOUSTIC DETECTION) SETTINGS

SETTING #	DESCRIPTION	
2	Normal Operation	(default)
3	Reduced Sensitivity	
4	Disabled	

CHANGING MICROPHONE SETTINGS:

1. Press unit's pushbutton 6 times, then wait two seconds. The white LED will blink back the number of current setting (from table on right).
2. At any ti me after blink back starts, enter number of new setting by pressing the button equal times to choice from table.
3. New setting will be saved after white LED blinks back new number 3 times. If blue LED double flashes at any time, start process Over.

FUNCTION #7 LED INDICATION

By default, the sensor blinks its white LED whenever it detects PIR motion. A unit with dual technology will also blink the LED white when it acoustically detects occupancy. Alternatively, the LED can be enabled to blink white for only PIR events and blue for an acoustic event.

FUNCTION #7 - LED INDICATION SETTINGS

SETTING #	DESCRIPTION	
2	White LED for all occupancy, normal brightness	(default)
3	NA	
4	Disable LED	
5	White LED for PIR, blue for Acoustic, normal brightness	
6	NA	

CHANGING LED INDICATION SETTINGS:

1. Press unit's pushbutton 7 times, then wait two seconds. The white LED will blink back the number of current setting ťfrom table on right).
2. At any time after blink back starts, enter new setting by pressing the button equal times to numbered choices.
3. New setting will be saved after white LED blinks back new number 3 times. If blue LED double flashes at any time, start process over

FUNCTION #14 AUXILIARY RELAY OPERATION

By default, the auxliary relay provided on sensors will follow the state of the sensor's white occupancy output wire li.e. when the white wire is high indicating occupancy. the auxiliary relay is closed).

FUNCTION #14 - AUXILIARY RELAY OPERATION

SETTING #	DESCRIPTION	
2	Disabled	
3	Relay closed when occupied (state follows white wire).	(default)
4	N/A	
5	Relay open when occupied (state opposite white wire)	
6	N/A	

CHANGING THE AUXILIARY RELAY OPERATION

1. Press unit's pushbutton 14 times, then wait two seconds. The LED will blink back white the number of current setting (from table on right).
2. At any time after blink back starts, enter new setting by pressing the button equal times to numbered choices.
3. New setting will be saved after white LED blinks back new number 3 times. If blue LED double tlashes at any tıme, start process over.

Documents / Resources

	RIB LSDUALC2 Low Voltage Ceiling Mount Sensors [pdf] Instruction Manual LSDUALC2, Low Voltage Ceiling Mount Sensors, Ceiling Mount Sensors, Mount Sensors, LSD UALC2, Sensors