

K595 Motion Sensor Product Guide

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Overview and General Concepts

The K595 wall mounted passive infrared (PIR) motion detector (Figure 1) adds occupancy sensing and peripheral-status reporting capability to INNCOM integrated guestroom control systems. The K595 is designed with a sleek screwless design that has the same look and feel as the INNCOM MODEVA system. The K595 can be a key participant in an INNCOM Integrated Room Automation System (IRAS) Deep Mesh network.

The K595, in conjunction with auxiliary input, a room controller, and an in-room communication network, helps determine guestroom occupancy. Occupancy sensing leads to better management of energy usage and security; extends heating, ventilation, and air conditioning equipment life; enhances the overall operating efficiency of the hotel; and improves guest satisfaction.

The K595 can also monitor and report on the status (e.g., open/closed) of other devices within the guestroom.



Figure 1. K595 Motion Sensor

Features

- 120° view angle
- Flush screwless magnetic mounting
- Easy installation
- No maintenance
- Long battery life
- 2.4Ghz IEEE 802.15.4 compliant RF transceiver (CC2430 radio core)
- FCC Part 15b listed

Application

The K595 microprocessor-controlled PIR detects motion in a guestroom and reports it to the room controller. Combined with information from other inputs (such as a lanai or window switch or a minibar), guestroom occupancy can be determined and used for energy control or lighting decisions. Occupancy information may also be signaled to Housekeeping using the corridor doorbell display or a floor-level terminal. The K595 can provide an audit trail for Security, and it can be networked to the hotel's central server.

On power up, the K595 will flash the LED for approximately two seconds as it configures itself using settings in nonvolatile memory (see table below) and transmits a beacon frame (SAC_ALARM_K594_REPORT). The K595 will then go into Operation Mode, where it checks the auxiliary input, the motion detector, and the Bind switch status. The K595 will process any actions instigated by those checks; after that (or if there is no action), it will enter a low-power state (Sleep Mode) to conserve battery power. (See also the *uCBL Engineering Manual*.)

The K595 can also act as a minibar server if the I/O Map is so programmed. For details, see the *uCBL Engineering Manual*, Sec. 2.4.2. *Factory Default NVM Configuration*.

Description	Value
Room ID	65535
RF Channel	26
TX Power	0x5F (0dB)
P5 Address	189
P5 Channel	1
I/O Map	255

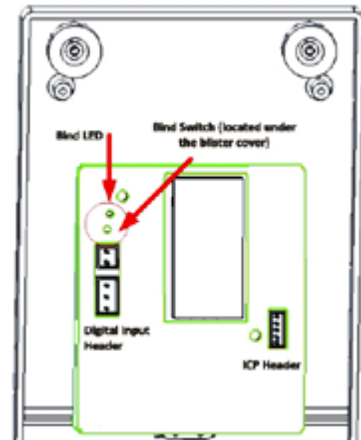
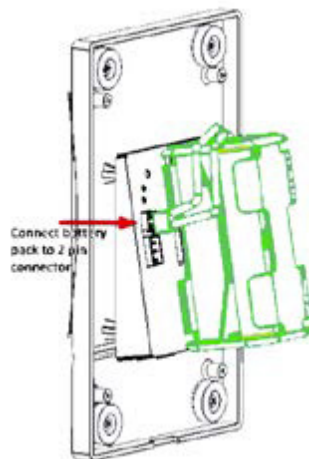
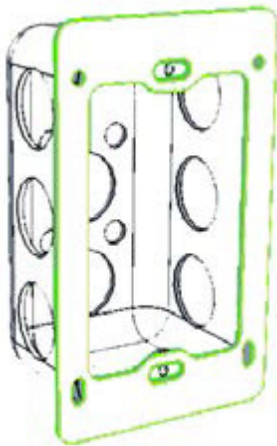
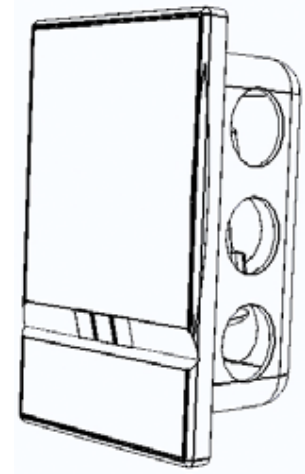
Installation

Installation requirements are as follows:

- K595 finished assembly
 - 2 X 2 battery pack and 4 AA batteries
 - I/O Map to be configured into K595 to set functionality (Table 1)
 - E528 thermostat loaded deep mesh RF software
- OR
- E529.RF battery thermostat loaded with E529.RF Deep Mesh software version 5.1 or later and radio

The individual guestroom design determines the K595's installation location. Placement should provide maximum room coverage by the PIR motion detector while maintaining RF communication between the device and the e4 thermostat. Ideally, the K595 should be positioned on a wall in opposition to entrances and interior doors (8ft. high, 0° angle, 0° pitch). The K595 PIR lens is pitched at a downward angle of 60° for optimal range and minimized blind area below the unit. It should be positioned to view both the guestroom entry door and the bed areas.

The K595 should be mounted within operational range of the e4 thermostat and any other Deep Mesh devices it may communicate with. Avoid possible sources of radio interference such as metallic boxes, WiFi access points, microwave ovens, water pipes, and areas of high humidity.



1. Install metal bracket using the two supplied 6/32" screws to an American gang box. Be careful not to bend the bracket.
2. Bind the unit by pressing the switch located under the blister cover circled. Refer to the "Binding" Section on the following page of this document.
3. Install the four AA Batteries into the 2X2" battery pack and attach it to the 2-pin connector on the unit.

Binding Device with an E528.4G or E529.LX

<p>Enter Service Parameter Mode</p>	<ol style="list-style-type: none"> 1. Press and hold °F/°C button 2. Press and release the OFF/AUTO button 3. Press and release the DISPLAY button 4. Release the °F/°C button 	<ol style="list-style-type: none"> 1. Screen displays rld (RoomID)
<p>Set Room ID</p>	<ol style="list-style-type: none"> 1. Press the OFF/AUTO button 2. Use UP / DOWN arrow button to find value. Press DISPLAY to set. 3. Find/set value as above. 4. Find/set value as above. 	<ol style="list-style-type: none"> 1. Room ID scrolls. After scrolling, highest Room ID digit will display (=to PAR 10 on an E528) 2. Next 2 Room ID digits are displayed (= to PAR 11) 3. Last 2 Room ID digits display (=to PAR 12) 4. New Room ID scrolls across display to confirm.
<p>Set PAN ID</p>	<ol style="list-style-type: none"> 1. In Service Mode, go to PAn (PAN ID) on the display and press the OFF/AUTO button. 2. Use the UP /DOWN buttons to change the displayed value to the desired PAN ID value. 3. Press the DISPLAY button to set the new value. 	<ol style="list-style-type: none"> 1. Current value displays. 2. Value changes to a number between 1 and 255). [Note: It cannot be set to 0]. 3. E529.LX will beep to indicate the value has been entered.
<p>Set RF Channel</p>	<ol style="list-style-type: none"> 1. In Service Mode, go to rF (RF Channel) on the display and press the OFF/AUTO button. 2. Use the UP /DOWN buttons to change the displayed value to the desired RF Channel value. 3. Only use the following RF Channels to minimize interference with other RF sources such as WiFi Access points: 26, 25, 20 or 15. 	<ol style="list-style-type: none"> 1. Current value displays. 2. Value changes to a number between 11 and 26 (default is 26). 3. E529.LX will beep to indicate the value has been entered. For multi-floor installations, alternating RF Channel between 25 and 26 can minimize cross-floor interference between thermostat radios.
<p>Set RF Power</p>	<ol style="list-style-type: none"> 1. In Service Mode, go to Loc (Local Parameters) on the display and press the OFF/AUTO button. 2. Change local parameter value to 4 (RF Tx Power) and press DISPLAY button. 3. Use the UP/ DOWN arrows to change the RF Tx Power (default value is 0—use a higher value only to improve communication). 	<ol style="list-style-type: none"> 1. Display shows P and a number representing the selected local parameter. 2. Loc value displays. 3. Press DISPLAY to set

Binding the K595

The binding process for the K595 is dependent on the software. The K595 uses a **reverse bind** by first placing the E528.LX/E529.LX into a “ready to teach” mode and then initiating the bind from the K595 by pressing button located under the blister cover.

1. Insert 4 AA batteries in the battery back and connect it to the unit if not already installed
2. Enter the Service Parameter mode on the E528.LX/E529.LX (as described above)
3. Prepare the thermostat to bind the K595

For the E528.LX

- Go to Parameter 15 (target address for teach commands).
- Press OFF/AUTO to view value.
- Change value using UP/DOWN arrows.
- Press OFF/AUTO to return to Parameter number mode and scroll to Parameter 14.
- Press OFF/Auto to view value of I/O Map.
- Enter the number of the I/O Map (see Table1 below) to be enabled in the bind.

For the E528.4G and e529.LX, go to **Adr** (target address for teach commands)

- Press OFF/AUTO to view value.
- Change value using the UP/DOWN arrows, then press DISPLAY.
- Exit **Adr** using OFF/AUTO (display shows **Pn6**).
- Press UP 5 times until Io (teach I/O Map) displays.
- Press OFF/AUTO to view value and change it to the map required for this installation (see Table 1 below).
- Press the blue S1 switch on the K595 to initiate binding. The K595 will broadcast a Bind Request message. If the thermostat saw the Bind Request, it will reply with a Bind Offer message. Upon seeing the Bind Offer from the E528/E529, the K595 will bind itself to the advertised Room ID and RF Settings.

If binding is successful, the K594 will

- Flash its LED 3 times
- Send the thermostat a message to sound its buzzer
- Reset itself
- Send a device startup message that includes the K595 software version and its battery status.

After binding is complete; attach the unit to the wall mounting bracket. Take care to align the guide posts so that the unit snaps into place.

K595 PIR Range

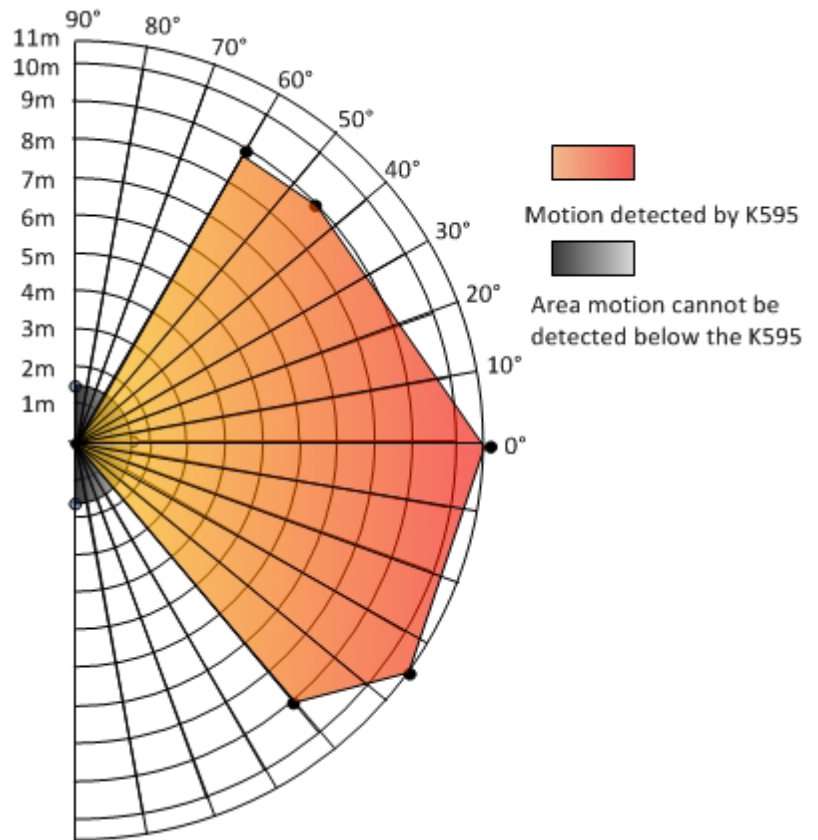
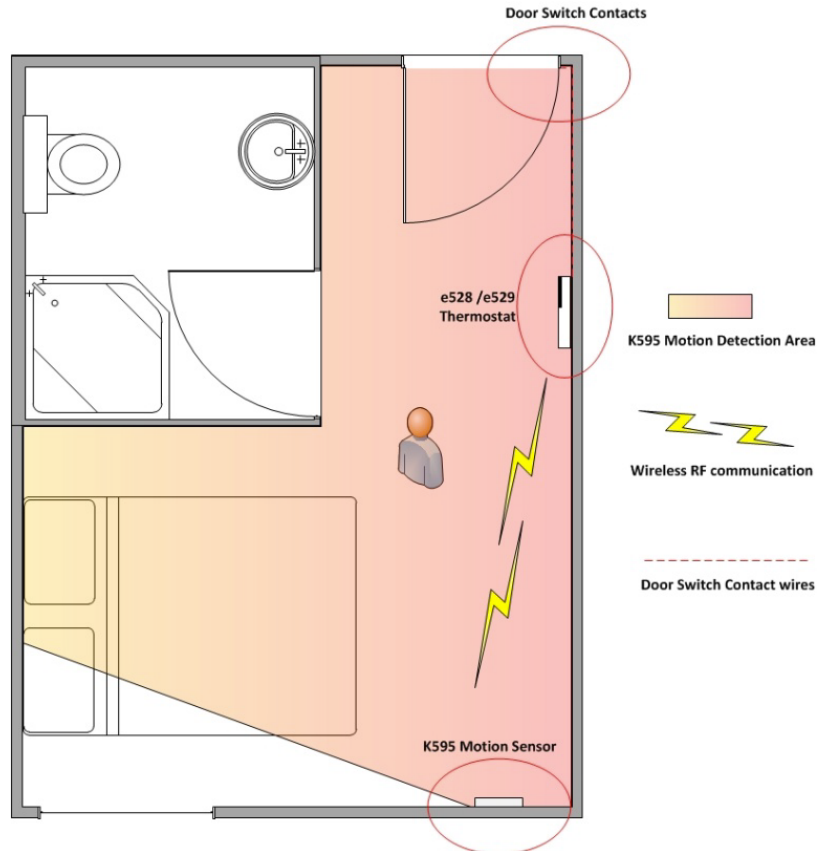
Angle	Distance (Feet)	Distance (Meters)
-60°	27ft	9.0m
-45°	27ft	9.0m
0°	33ft	11.0m
+45°	28.5ft	9.5m
+60°	33ft	11.0m

PIR Specifications

Parameter	K595
No. of Fresnel Beams	27
No. of Curtin Beams	9 + 5
Sensitivity	0.5m-12m (1.64-40ft.)

RF Specifications

Parameter	K595
RF Data Rate	27
Antenna Type	9 + 5
Indoor Range	70ft
Transmit Power	1mW (+0dBm)
Receive Sensitivity	-94.6dBm
Frequency Band	2.4Ghz
Encryption	AES-128
Protocol	802.15.4
Frequency Channels	11-26



Headers and Connectors

Headers	Connector
H1	Digital Input
H2	ICP
H3	Battery Input

Safety/Regulatory

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Document Revisions History

Document Revision History	DATE ISSUED	REASON FOR CHANGE
V1	02 May-2012	Initial Draft
V1.0	07-May-2012	First Release
V1.1	16-Jul-2013	Rebranded to INNCOM by Honeywell
V2.0	12-Jan-2016	Combine Data and installation Guide. Update to HON branding Requirements

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